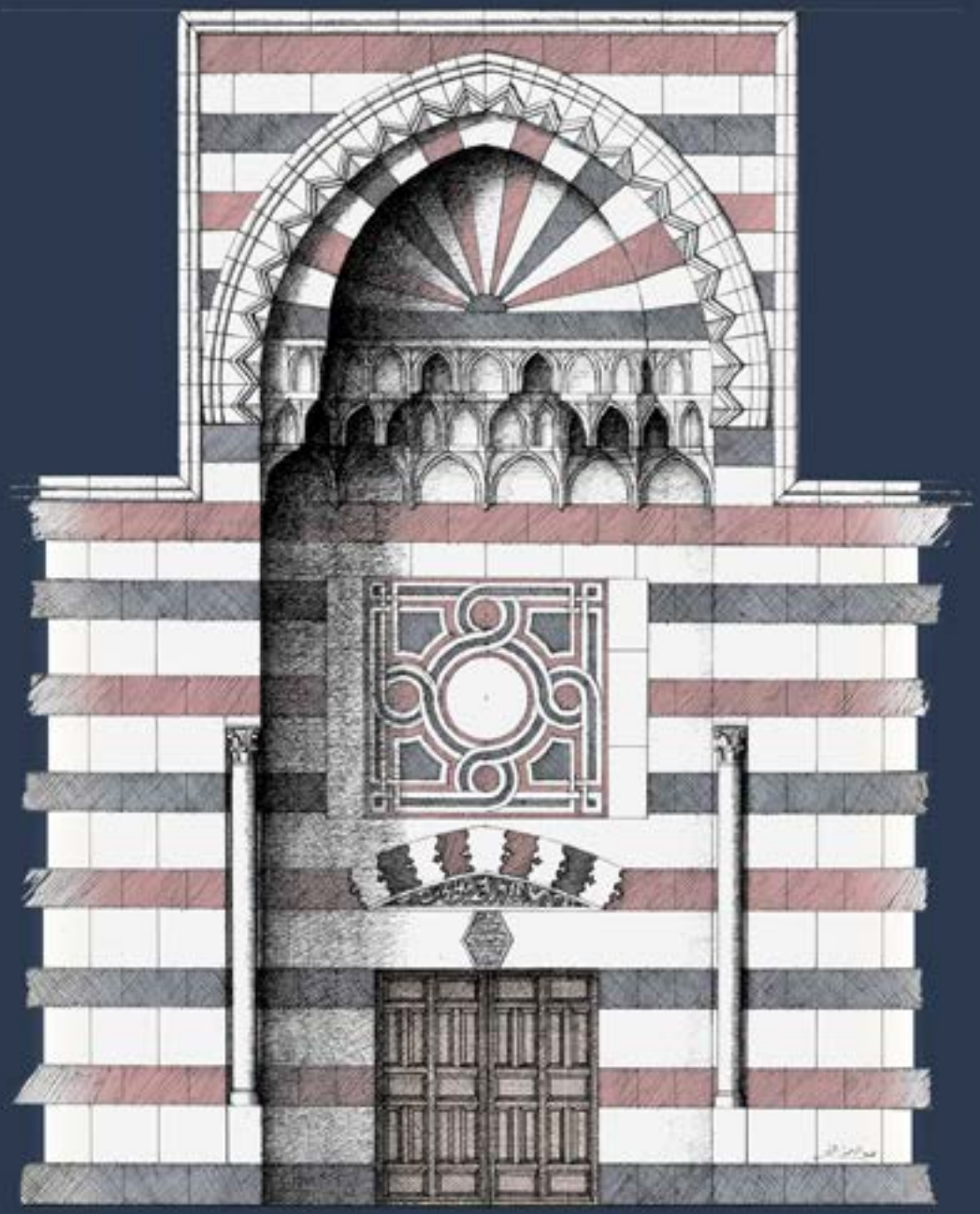
Journal of Traditional Building, Architecture and Urbanism

3- 2022



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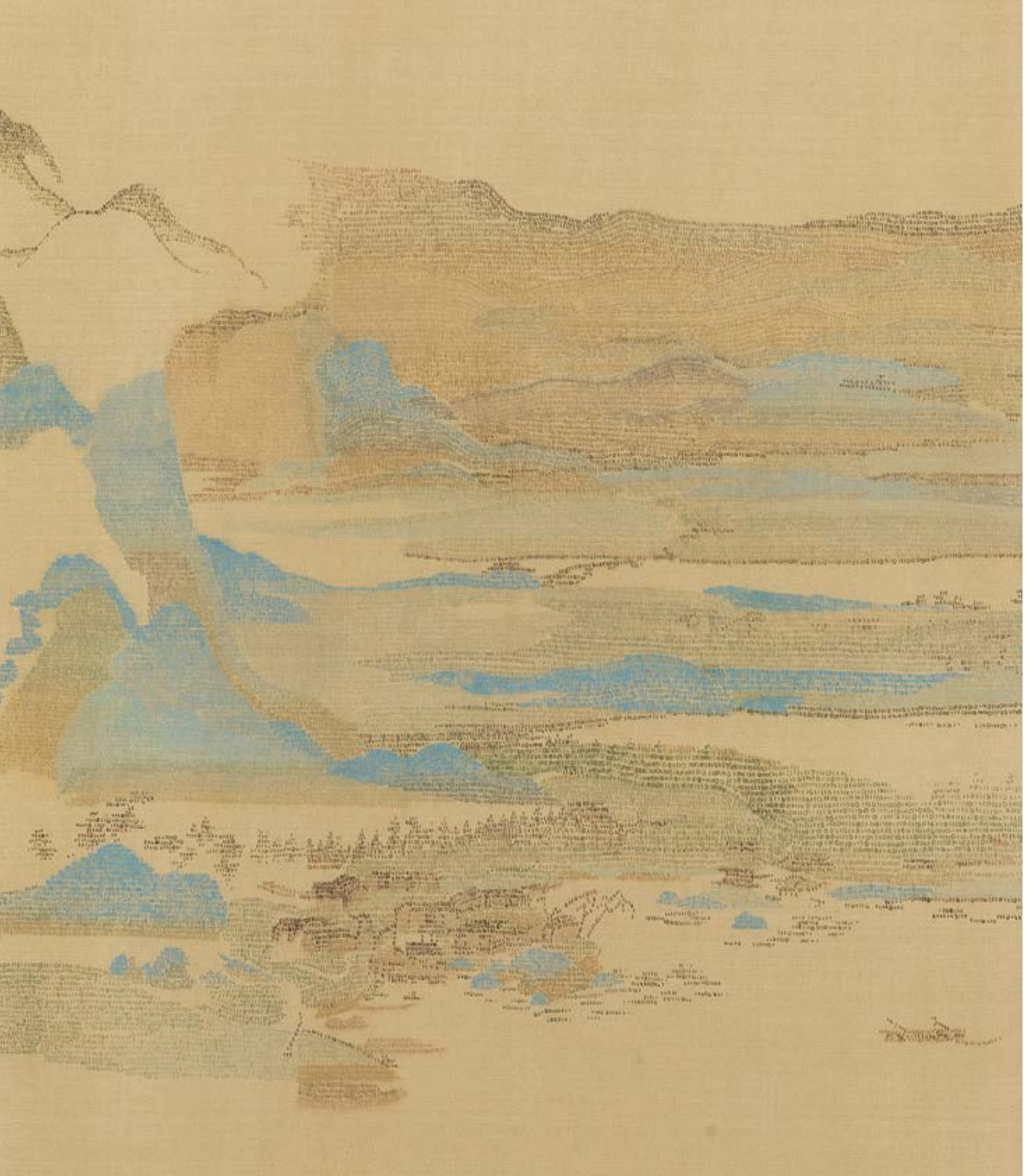


Works | *Obras*

Nygaardsplassen: A New Public Piazza in Fredrikstad, Norway

Nygaardsplassen: Nueva plaza pública en Fredrikstad, Noruega

Nygaardsplassen: Uma nova praça pública em Fredrikstad, Noruega

Karoline Kolstad Heen, Simon Øien, Trond Elverum, Martin Wesley-Holand

Fredrikstad is a city of some 80,000 inhabitants in south-east Norway, close to the Swedish border and about 90 km south of Oslo. It was founded near the sea by the Danish crown (which then ruled Norway) in the sixteenth century to guard the mouth of Norway's main waterway, the river Glomma.

On the east bank of the Glomma is Gamlebyen ("the old city"), protected by a well-preserved seventeenth-century system of bastion fortifications. But as Fredrikstad grew in the eighteenth century, the west bank – Vestsiden – was also developed, and this more recent area attracted settlers and ultimately became the city center.

Fredrikstad es una ciudad de unos 80.000 habitantes en el sureste de Noruega, cerca de la frontera sueca y a 90 km al sur de Oslo. Fue fundada en el siglo XVI cerca del mar por la corona danesa (que entonces gobernaba Noruega) para vigilar la desembocadura de la principal vía fluvial de Noruega, el río Glomma.

En la orilla oriental del Glomma se encuentra Gamlebyen ("la ciudad antigua"), protegida por un sistema de baluartes del siglo XVII bien conservados. A medida que Fredrikstad fue creciendo en el siglo XVIII la orilla occidental –Vestsiden– también se urbanizó. Esta zona, de creación más reciente, fue atrayendo colonos y terminó siendo el centro de la ciudad.

Fredrikstad é uma cidade com cerca de 80.000 habitantes no sudeste da Noruega, perto da fronteira Sueca e cerca de 90 km a sul de Oslo. Foi fundada junto ao mar pela coroa Dinamarquesa (que então governava a Noruega) no século XVI, para defender a foz da principal hidrovia Norueguesa, o rio Glomma.

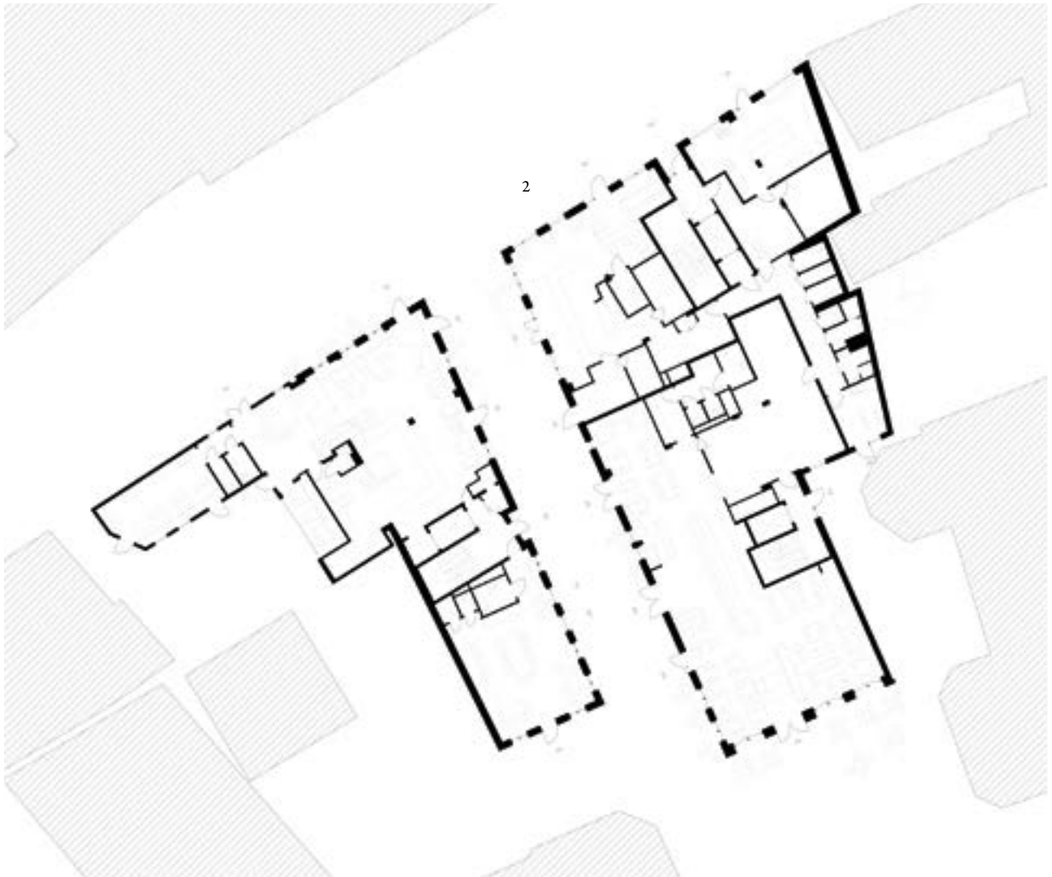
Na margem este do Glomma encontra-se Gamlebyen ("a cidade velha"), protegida por um bem preservado sistema de fortificações abaluartadas do século XVII. Mas à medida que Fredrikstad cresceu no século XVIII, a margem ocidental – Vestsiden – também se desenvolveu, e esta área mais recente atraiu colonos, acabando por tornar-se o centro da cidade.

< The square in summer | La plaza en verano | A praça no verão (Cityplan)

> Plan with new buildings in red | Plano con los nuevos edificios en rojo | Plano com os novos edifícios a vermelho

< New building seen from the square | Edificio nuevo visto desde la plaza | O novo edifício visto a partir da praça (Kyrre Sundal)

> 1: First floor plan (apartments) 2: Ground floor plan (restaurants and bakery) | 1: Plano de la primera planta (apartamentos) 2: Plano de la planta baja (restaurantes y panadería) | 1: Planta do primeiro andar (apartamentos) 2: Planta do piso térreo (restaurantes e padaria)



The Nygaardsplassen project is located within a previously existing block in central Vestsiden. The place was a run-down open space containing parking lots and not properly faced by the surrounding buildings, most of which were offices. Any commercial premises opening there would fail, and people tended to avoid the spot.

El proyecto de Nygaardsplassen se encuentra en una manzana que pertenecía anteriormente al centro de Vestsiden. Se trataba de un deteriorado espacio abierto donde había un aparcamiento y edificios sin fachadas apropiadas hacia él y en su mayoría dedicados a oficinas. Ningún local comercial que se abriera allí prosperaba, por lo que la gente solía evitar ese lugar.

O projeto Nygaardsplassen está localizado num quarteirão previamente existente no centro de Vestsiden. O local era um espaço aberto degradado que continha estacionamentos e as suas fachadas não se encontravam devidamente definidas pelos edifícios circundantes, a maioria dos quais eram escritórios. Qualquer espaço comercial que ali fosse aberto estava destinado a falhar, e as pessoas tinham tendência a evitar o local.

The buildings in the block were originally traditional log or brick houses with backyard stables and service buildings, several of which are preserved and currently listed. The rest of the block consists of three larger postmodern brick buildings from the 1970s and 1980s by local architects Arntzen and Solheim, all with porticos open to the central space on their ground floors, and a modernist 1930s building also of brick. Under the block is a pre-existing car park.

A 2009 zoning plan included a six-story shopping mall as a solution for the whole space. To have another mall here would have been tragic for the city center. Fortunately the local developer Cityplan bought the plot in 2013 with a very different plan: to create a more civic and lively area by combining different functions in a traditional manner. While the ground floor would host a new food market and/or restaurants, the new buildings, which Cityplan still owns, would also include as many small apartments as possible for residents. The developer then hired

Los edificios de la manzana eran originalmente casas tradicionales de troncos o ladrillo con establos y edificios que les daban servicio en el patio trasero, varias de las cuales se han conservado y están actualmente protegidas. El resto de la manzana está formada por tres edificios más grandes, de ladrillo y de estilo posmoderno, obra de los arquitectos locales Arntzen y Solheim en las décadas de 1970 y 1980, todos con pórticos abiertos al espacio central en las plantas bajas, y un edificio de estilo moderno de los años treinta también de ladrillo. Bajo la manzana hay un aparcamiento subterráneo que ya existía.

Un plan urbano de 2009 incluía un centro comercial de seis plantas como solución para todo el espacio. Construir aquí otro centro comercial habría sido trágico para el centro de la ciudad. Afortunadamente, el promotor local Cityplan compró la parcela en 2013 con un plan muy distinto: crear una zona más cívica y animada en la que se combinaran diferentes funciones de forma tradicional. Mientras que la planta baja albergaría un nuevo mercado y/o

Os edifícios do quarteirão eram originalmente casas tradicionais de toros ou tijolos, com estábulos no quintal e edifícios de serviço, vários dos quais foram preservados e são atualmente classificados. O resto do quarteirão consiste em três edifícios pós-modernos de maiores dimensões, construídos em tijolo, das décadas de 1970 e 1980, dos arquitetos locais Arntzen e Solheim, todos com pórticos abertos para o espaço central nos seus pisos térreos, e um edifício modernista dos anos 1930, também de tijolo. Por debaixo do quarteirão existe um parque de estacionamento pré-existente.

Um plano de zoneamento de 2009 incluía um centro comercial de seis andares como solução para todo o espaço. Ter aqui outro centro comercial teria sido trágico para o centro da cidade. Felizmente, o promotor local Cityplan comprou o lote em 2013, apresentando um plano muito diferente: criar um espaço mais cívico e animado, combinando diferentes funções de uma forma tradicional. Enquanto o rés-do-chão acolheria um novo mercado alimentar e/ou restaurantes, os novos edifícios – que a Ci-

1: South façade 2: North façade 3: The piazza during lockdown, with the old postmodern buildings and the two new ones 4: East façade 5: West façade | 1: Fachada sur 2: Fachada norte 3: La plaza durante el confinamiento, con los antiguos edificios posmodernos y los dos nuevos 4: Fachada este 5: Fachada oeste | 1: Fachada Sul 2: Fachada Norte 3: A piazza durante o confinamento, com os antigos edifícios pós-modernos e os dois novos 4: Fachada Este 5: Fachada Oeste (3: Kyrre Sundal)

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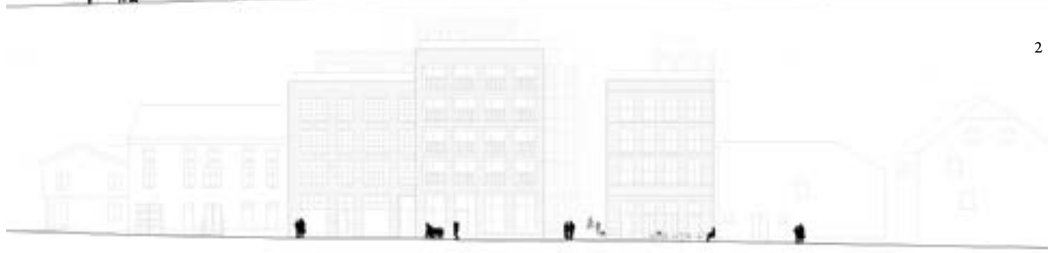

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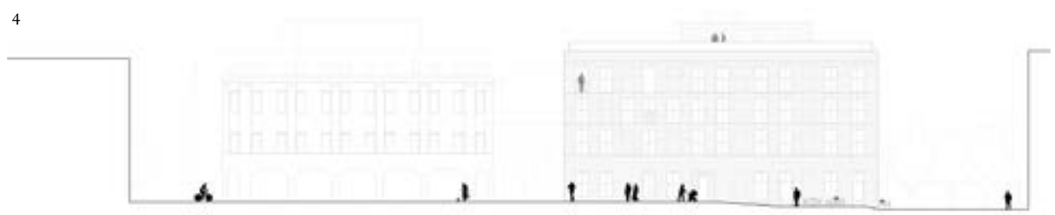

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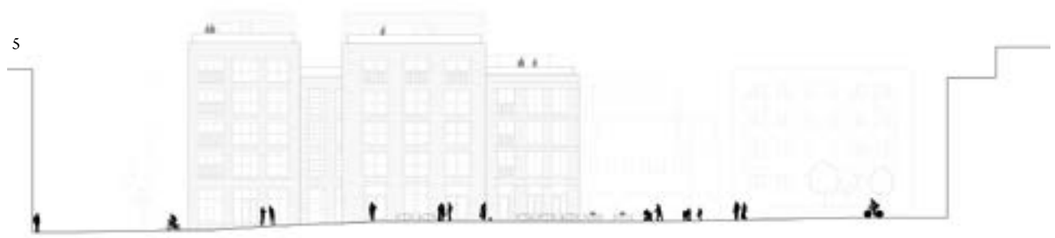

Mad Arkitekter from Oslo to develop and give shape to this initial concept.

We had to get a number of exemptions in order to fully reorient the design, diverging from what was in the zoning plan. It was important for us to get away from the increasing monotony and standardization that building codes are imposing. Happily the municipality understood and shared our aim.

restaurantes, los nuevos edificios, que siguen siendo propiedad de Cityplan, también incluirían el mayor número posible de apartamentos pequeños para residentes. El promotor contrató a Mad Arkitekter de Oslo para desarrollar y dar forma a este concepto inicial.

Tuvimos que conseguir una serie de exenciones para reorientar completamente el proyecto y poder así apartarnos de lo que proponía el plan de urbanismo. Para nosotros era importante alejarnos de la creciente monotonía y estandarización que están imponiendo las normativas de edificación. Por suerte, el Ayuntamiento lo entendió y compartió nuestro objetivo.

typlan ainda detém – incluiriam também o maior número possível de pequenos apartamentos para os residentes. O promotor contratou então a Mad Arkitekter de Oslo para desenvolver e dar forma a este conceito inicial.

Tivemos de obter uma série de isenções a fim de reorientar totalmente o desenho, divergindo do que estava no plano de zoneamento. Era importante que nos afastássemos da monotonia crescente e da padronização que os códigos de construção têm vindo a impor. Felizmente, o município compreendeu e partilhou o nosso objetivo.

Façades towards Holwech Street, with the new buildings divided into several smaller façades coinciding with the historic properties | Fachadas hacia la calle Holwech, con los edificios nuevos divididos en varias fachadas más pequeñas que coinciden con las propiedades históricas | Fachadas viradas para Holwech Street, com os novos edifícios divididos em várias fachadas mais pequenas que coincidem com as propriedades históricas (Kyrre Sundal)

The passage toward the piazza is just 6 meters wide | El callejón que da a la plaza solo tiene 6 metros de ancho | A passagem de acesso à piazza tem apenas 6 metros de largura (Kyrre Sundal)

The large pre-existing space was divided in two different outdoor areas by the new buildings: a passage or narrow street connecting with the main street and an intimate, self-contained piazza. This little piazza actually has a similar size and location to the square that existed here about a hundred years ago. The passage is just 6 m wide, for which we had to get special authorization. This was considered necessary for the kind of atmosphere we were trying to create.

As for the architectural character, we wanted it to be coherent with that of the nearby buildings, taking the pitched-roof wooden houses and the flat-roof brick buildings as a reference. We tried working with both, but finally

El gran espacio preexistente se dividió en dos zonas exteriores distintas mediante los nuevos edificios: un pasaje o callejón que conectaba con la calle principal y una plaza íntima e independiente. Esta pequeña plaza en realidad tiene un tamaño y una ubicación semejantes a los de la plaza que había aquí hace cien años. El callejón solo tiene 6 metros de ancho, por lo que tuvimos que conseguir una autorización especial. Esto se consideró necesario para el tipo de ambiente que intentábamos crear.

Queríamos que el carácter arquitectónico fuera coherente con el de los edificios próximos, por lo que tomamos como referencia las casas de madera con cubierta inclinada y los edificios de ladrillo con azotea. Intentamos trabajar

O grande espaço pré-existente foi dividido pelos novos edifícios em duas áreas exteriores diferentes: uma passagem ou rua estreita de ligação à rua principal, e uma *piazza* íntima e reservada. Esta pequena *piazza* tem na realidade um tamanho e uma localização semelhantes aos da praça que existia aqui há cerca de cem anos. A passagem tem apenas 6 m de largura, para a qual tivemos de obter uma autorização especial. Isto foi considerado necessário para o tipo de atmosfera que estávamos a tentar criar.

Quanto ao caráter arquitetónico, queríamos que fosse coerente com o dos edifícios circundantes, tomando como referência as casas de madeira de com telhado de duas águas e os edifícios de tijolo de telhado plano. Tentámos traba-


1

the regulations for the outdoor area which must be provided with buildings per housing unit made us opt for flat-roof brick buildings only. This also fitted in with our client's interest in an existing project for Spitalfields in London called Blossom Street. This architectural choice nicely suited the little piazza, with previous brick buildings on its three existing sides.

The developer Cityplan wanted both the buildings and the urban spaces to be "friendly architecture" in terms of scale, textures, and openness to the street. We sought to create inviting urban spaces, where everyone might feel welcome. The buildings are visually differentiated in smaller, narrower fragments with differing heights, numbers of stories, and openings, and even the color and bonding of the brickwork changes. A 1912 map informed the location of the building divisions, and we worked hard on designing different patterns for the different buildings. The ground floor is full of restaurants and fully open, allowing you to see inside and

con ambos modelos, pero finalmente las normas para el espacio exterior que deben complir los edificios por cada unidad de vivienda nos hicieron optar exclusivamente por las construcciones con azotea. Esto también coincidía con el interés de nuestro cliente en el proyecto de Blossom Street en el barrio londinense de Spitalfields. Esta decisión arquitectónica se adaptaba perfectamente a la pequeña plaza y a los edificios de ladrillo que había ya en sus tres lados.

El promotor Cityplan quería que tanto los edificios como los espacios urbanos fueran una "arquitectura respetuosa" en cuanto a escala, texturas y apertura a la calle. Intentamos crear espacios urbanos atractivos, donde todo el mundo se sintiera a gusto. Los edificios se diferencian visualmente en partes más pequeñas y estrechas de diferentes alturas, número de plantas y aperturas; incluso el color y el aparejo de la fábrica de ladrillo cambian. Un mapa de 1912 influyó en la ubicación de letras divisiones e hicimos un gran esfuerzo para diseñar modelos distintos para cada edificio. La planta baja está ocupada por restaurantes

lhar com ambos, mas no final de contas os regulamentos relativos à área exterior, que deve ser provida de edifícios por unidade de habitação, fizeram-nos optar apenas por edifícios de tijolo de telhado plano. Isto também foi de encontro aos interesses do nosso cliente num projeto existente para Spitalfields em Londres, chamado Blossom Street. Esta escolha arquitetónica adequava-se bem à pequena *piazza*, com os antigos edifícios de tijolo nas suas três fachadas existentes.

O promotor Cityplan queria que tanto os edifícios como os espaços urbanos fossem uma "arquitetura amigável" em termos de escala, texturas, e abertura para a rua. Procurámos criar espaços urbanos convidativos, onde todos pudessem sentir-se bem-vindos. Os edifícios são visualmente diferenciados em fragmentos menores e mais estreitos, com diferentes alturas, número de andares e aberturas, e até a cor e as juntas dos tijolos são variadas. Um mapa de 1912 dava a conhecer a localização das divisões dos edifícios, e trabalhámos arduamente na conceção de padrões distintos para os diferentes edifícios. O rés-do-chão está cheio de


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3

1, 2: Roof garden and brick detailing (Kyrre Sundal). 3: Entrances to the apartments in the form of loggias (Kyrre Sundal). 4, 5: Connection of old and new buildings (1-3: Kyrre Sundal 4,5: Karoline Kolstad Heen) | 1, 2: Jardín en la azotea y detalles constructivos de ladrillo (Kyrre Sundal). 3: Entradas a los apartamentos en forma de logias (Kyrre Sundal). 4, 5: Conexión entre los edificios antiguos y nuevos (1-3: Kyrre Sundal 4,5: Karoline Kolstad Heen) | 1, 2: Jardim no terraço e detalhe dos tijolos (Kyrre Sundal) 3: Entradas para os apartamentos na forma de lógias (Kyrre Sundal) 4, 5: Ligação entre os antigos e novos edifícios (1-3: Kyrre Sundal 4,5: Karoline Kolstad Heen)


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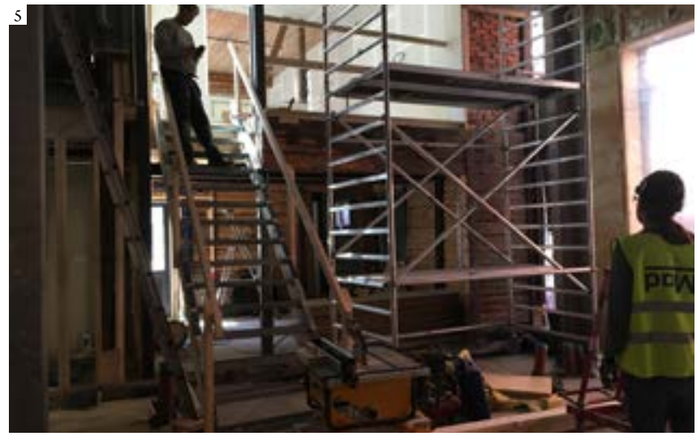
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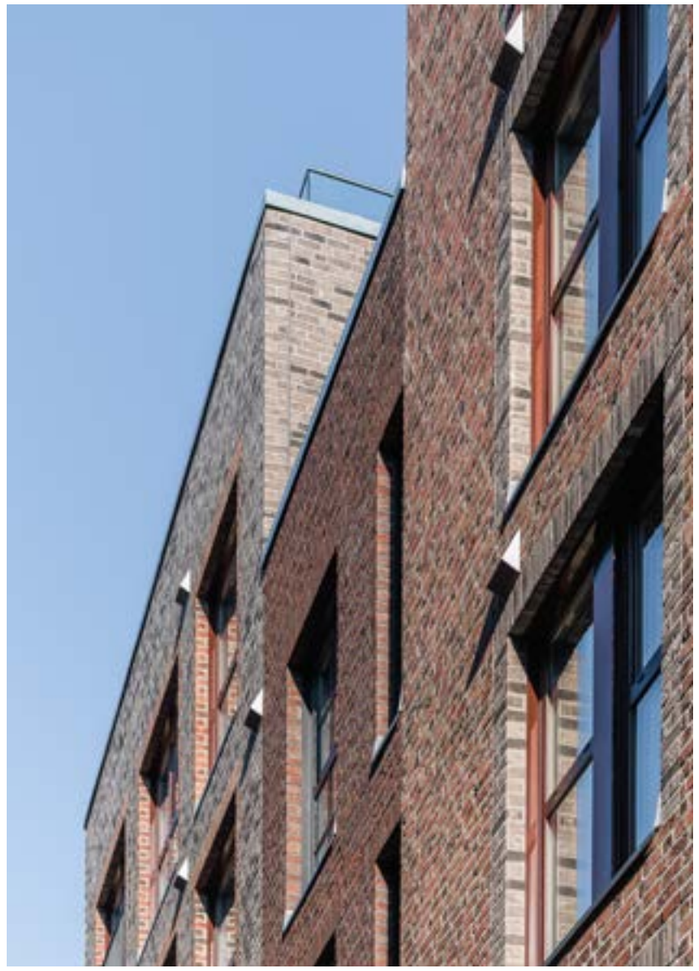


< The buildings are divided into smaller façades using different bricks, patterns, and colors | Los edificios se han dividido en fachadas más pequeñas utilizando diferentes aparejos y distintos tipos y colores de ladrillos | Os edifícios estão divididos em fachadas mais pequenas utilizando tijolos, padrões e cores diferentes (Kyrre Sundal)

> Old bricks in the passage defining the walking and café areas | Los adoquines antiguos en el callejón delimitan las zonas de paso y las terrazas | Tijolos velhos na passagem que define a zona pedonal e a de restauração (Kyrre Sundal)

inviting you in. The windows and doors are tall and have oak frames, making the buildings seem outgoing, connected to the street, and warmer. As for the character of the open spaces, though we were limited by the existing underground parking garage we did our best, and for the pavements the landscape architects COWI used different stonework in each area, with reused stones marking the restaurant terraces. This was also a clever way of avoiding having to fence off that area, as in Norway places serving alcohol must be delimited.

y está completamente abierta, lo que permite ver el interior e invita a entrar. Los ventanales y las puertas son altos y tienen carpinterías de roble, por lo que los edificios resultan "extrovertidos", conectados con la calle y más acogedores. En cuanto al carácter de los espacios abiertos, aunque estábamos limitados por el aparcamiento subterráneo existente, hicimos todo lo que pudimos. Los arquitectos paisajistas de COWI usaron para el pavimento de cada zona distintos tipos de cantería y, en las terrazas de los restaurantes, se colocaron adoquines reutilizados. Esta fue una forma inteligente de evitar cercar esas zonas, ya que en Noruega los establecimientos que sirven alcohol deben estar delimitados.

restaurantes e era totalmente aberto, oferecendo uma visão do interior e convidando-nos a entrar. As janelas e portas são altas e têm caixilhos de carvalho, fazendo com que os edifícios pareçam expansivos, mais conectados à rua, e mais calorosos. Quanto ao caráter dos espaços abertos, embora estivéssemos limitados pela garagem subterrânea existente, demos o nosso melhor, e para os pavimentos os arquitetos paisagistas COWI utilizaram diferentes tipos de alvenaria em cada área, com pedras reutilizadas a marcar os terraços dos restaurantes. Esta foi também uma forma inteligente de evitar colocar uma vedação nessa área, uma vez que na Noruega os locais que servem álcool devem ser delimitados.

We would of course have enjoyed building everything in a traditional way with load-bearing brick walls, but that was not possible. In Norway we have very strict building rules, especially for insulation, so there is a regular wooden structure inside the walls with exterior brick cladding. Then there are steel pillars and concrete slabs in the interior. Yet we were careful with the detailing, the brickwork has the right thickness in the composition and looks solid. The bricklayers loved the work and had fun crafting the many details. The contractor was the local firm AF Bygg Øst.

Naturalmente, nos habría gustado construir todo a la manera tradicional, con muros de ladrillo portantes, pero no fue posible. En Noruega existen normas de edificación muy estrictas, especialmente en cuanto a aislamiento, por lo que los muros cuentan con una estructura de madera revestida de ladrillo. La estructura cuenta con pilares de acero y losas de hormigón en el interior. Sin embargo, procuramos prestar especial atención a los detalles, por lo que la fábrica de ladrillo se compuso de forma que tuviera el espesor adecuado y parece maciza. A los albañiles les encantó el trabajo y se divirtieron realizando los numerosos detalles. El contratista fue la empresa local AF Bygg Øst.

É claro que teríamos gostado de construir tudo de uma forma tradicional, com paredes estruturais de tijolo, mas isso não foi possível. Na Noruega temos regras de construção muito rigorosas, especialmente em termos de isolamento, pelo que existe uma estrutura normal de madeira no interior das paredes com revestimento exterior de tijolo. Depois há pilares de aço e lajes de betão no interior. No entanto, tivemos cuidado com os pormenores, e a alvenaria de tijolo tem a espessura certa na composição e parece sólida. Os pedreiros adoraram o trabalho e divertiram-se a elaborar os muitos detalhes. O empreiteiro foi a empresa local AF Bygg Øst.

A century ago most people lived in city centers, but in the last 60 years many have moved to single-family houses in suburban areas. So now there is a great need to bring life back into cities, linked to the political priority of using less energy for both housing and transportation. This was moreover the first large project in central Fredrikstad in some 50 years to include housing.

Bearing this in mind, the ground floor is divided into five different concepts: a bakery, a fishmonger and restaurant, a steakhouse, a wine bar, and an Italian restaurant which is also occupying an old backyard house. Their limits correspond more or less to those of the various buildings we designed. These concepts were also thoroughly detailed so as to confer a particular identity on each one, and the tenants were carefully chosen in order to achieve the kind of civic life which was sought. The ground floor is generally quite generous and lofty, reaching 5 m in parts, and is accessed at five different levels because of the height difference from one side of the project to the other. The restaurant and bar interiors are made by the local Studio Gran and the Oslo-based Romlaboratoriet.

As for the residential space, the strategy was to create many small apartments, given that people living in such apartments are liable to go out for meals, and so this would also add more civic life. The six stories allowed by the zoning plan were built, but the two upper floors were set back. This gave the right proportion and height to the street, and let in more light.

Hace un siglo, la mayoría de la gente vivía en el centro de la ciudad, pero en los últimos 60 años muchos se han trasladado a viviendas unifamiliares de la periferia. Por ello hay ahora una gran necesidad de recuperar la vida de la ciudad, lo que se vincula a la prioridad política de utilizar menos energía para la vivienda y el transporte. Además, este era el primer gran proyecto del centro de Fredrikstad en casi 50 años que incluía viviendas.

Teniendo esto en cuenta, la planta baja se divide en cinco usos distintos: una panadería, una pescadería y restaurante, un asador, una enoteca y un restaurante italiano que también ocupa una antigua casa del patio trasero. Sus límites corresponden más o menos a los de los distintos edificios que diseñamos. Estos conceptos también se detallaron exhaustivamente para conferir una identidad propia a cada uno, y los inquilinos se eligieron cuidadosamente para conseguir el tipo de vida ciudadana que se buscaba. La planta baja es, por lo general, bastante amplia y de gran altura, alcanzando los 5 metros en algunas partes, y tiene acceso en cinco niveles distintos, dada la diferencia de altura entre ambos extremos del proyecto. Los interiores del restaurante y el bar son obra del Studio Gran de la propia ciudad, y de Romlaboratoriet de Oslo.

En cuanto al espacio residencial, la estrategia consistió en crear muchos apartamentos pequeños, puesto que la gente que vive en este tipo de vivienda suele salir a comer y esto añadiría otra forma de convivencia. Se construyeron las seis plantas permitidas por el plan de urbanismo, pero las dos últimas se retranquearon. Así se dio a los edificios la proporción y la altura adecuadas a la calle a la vez que se consigue que entre más luz.

Há um século atrás, a maioria das pessoas vivia nos centros das cidades, mas nos últimos 60 anos muitas delas mudaram-se para casas unifamiliares em zonas suburbanas. Por isso, existe agora uma grande necessidade de trazer a vida de volta às cidades, associada à prioridade política de utilizar menos energia tanto para a habitação como para o transporte. Este foi aliás o primeiro grande projeto que incluiu habitação no centro de Fredrikstad em cerca de 50 anos.

Tendo isto em consideração, o rés-do-chão está dividido em cinco conceitos diferentes: uma padaria, uma peixaria e um restaurante, uma churrascaria, um bar de vinhos, e um restaurante Italiano que ocupa também uma antiga casa no quintal. Os seus limites correspondem mais ou menos aos dos vários edifícios concebidos por nós. Estes conceitos foram também minuciosamente detalhados de forma a conferir uma identidade particular a cada um deles, e os inquilinos foram cuidadosamente escolhidos de modo a conseguir o tipo de vida cívica pretendida. O rés-do-chão é geralmente bastante generoso e elevado, atingindo 5 m em algumas partes, e é acedido em cinco níveis diferentes devido à diferença de altura entre um lado do projeto e o outro. Os interiores do restaurante e do bar foram feitos pela firma local Studio Gran e pelo Romlaboratoriet de Oslo.

Quanto ao espaço residencial, a estratégia foi a de criar muitos pequenos apartamentos, dado que as pessoas que vivem nesses apartamentos são suscetíveis de sair para comer, o que também aumentaria a vida cívica. Os seis andares permitidos pelo plano de zoneamento foram construídos, mas os dois andares superiores foram recuados. Isto deu a proporção e altura certas à rua, e deixou entrar mais luz.

All entrances face the streets and piazza, to promote activity and safety | Todas las entradas dan a las calles y la plaza para fomentar la actividad y la seguridad | Todas as entradas estão viradas para as ruas e piazza, para promoção da atividade e segurança (Kyrre Sundal)

Old backyard house connected with the new one | Casa antigua del patio trasero comunicada con la nueva | Ligação entre a antiga casa com quintal e a nova (Cityplan)

The passage in summer | El callejón en verano | A passagem no verão (Cityplan)

The passage during winter, lit up by historic and new lamps | El callejón en invierno, iluminado con farolas históricas y otras nuevas | A passagem durante o inverno, iluminada tanto por lâmpadas históricas como novas (Kyrre Sundal)

Though the 39 apartments built were initially intended to be sold, Cityplan decided to retain ownership. As they were finished just before the coronavirus restrictions on international travel, and the development is like a piece of Mediterranean urbanism in Norway, Cityplan decided to use the project as an apartment hotel. This has been a huge success. Now people visit Fredrikstad specifically to stay at Nygaardsplassen, try its restaurants and enjoy the new development's atmosphere.

Aunque los 39 apartamentos construidos estaban inicialmente destinados a la venta, Cityplan decidió conservar su propiedad. Como se terminaron justo antes de las restricciones a los viajes internacionales por el coronavirus y el proyecto es como un trozo de ciudad mediterránea en Noruega, Cityplan decidió utilizarlo como aparthotel. Ha tenido un éxito enorme. Ahora la gente visita Fredrikstad sólo para alojarse en Nygaardsplassen, visitar los restaurantes y disfrutar del ambiente de esta nueva zona.

Embora os 39 apartamentos construídos se destinassem inicialmente a ser vendidos, a Cityplan decidiu continuar como proprietária. Como tinham sido terminados pouco antes das restrições do coronavírus aplicadas às viagens internacionais, e o empreendimento é como uma peça de urbanismo mediterrâneo na Noruega, a Cityplan decidiu utilizar o projeto como um hotel de apartamentos. Isto foi um enorme sucesso. Agora as pessoas visitam Fredrikstad especificamente para ficar em Nygaardsplassen, experimentar os seus restaurantes e desfrutar da atmosfera do novo empreendimento.

The place has become extremely popular, nationally and internationally, and nearby areas are now also being upgraded. In the piazza there is a lot of life: concerts in the summer, a Christmas market in the winter... And now there is even a Mad Arkitekter office in one of the 1970s postmodern buildings overlooking the square.

Lately we have received requests from many clients interested in partaking in the qualities of Nygaardsplassen and ready to spend more on their projects to do so, as our work has shown that additional investment pays. Architecture creates value in many ways.

The project has received several prizes: Cityprisen 2020, Dogamerket 2021, Arnstein Arneberg Prisen 2020, and an honorary "Arkitekturopprøret" award in 2022.

El lugar ha adquirido enorme popularidad nacional e internacionalmente y las zonas próximas también se están rehabilitando. La plaza está llena de vida: conciertos en verano, un mercado navideño en invierno... y ahora hay incluso una oficina de Mad Arkitekter en uno de los edificios posmodernos de los años setenta que dan a la plaza.

Últimamente hemos recibido peticiones de muchos clientes interesados en replicar las cualidades de Nygaardsplassen y que están dispuestos a gastar más en sus proyectos para conseguirlo, ya que nuestro trabajo ha demostrado que una inversión adicional sale rentable. La arquitectura crea valor de muchas formas.

El proyecto ha recibido varios premios: Cityprisen 2020, Dogamerket 2021, Arnstein Arneberg Prisen 2020, y el premio honorífico "Arkitekturopprøret" en 2022.

O local tornou-se extremamente popular, a nível nacional e internacional, e as áreas vizinhas estão agora também a ser melhoradas. Na *piazza* há muita vida: concertos no Verão, um mercado de Natal no Inverno... E agora há até um gabinete Mad Arkitekter num dos edifícios pós-modernos dos anos 70 com vista para a praça.

Ultimamente temos recebido pedidos de muitos clientes interessados em participar nas qualidades de Nygaardsplassen, e que estão prontos a investir mais nos seus projetos para o conseguir, uma vez que o nosso trabalho tem demonstrado que o investimento adicional compensa. A arquitetura cria valor de muitas maneiras.

O projecto recebeu vários prémios: Cityprisen 2020, Dogamerket 2021, Arnstein Arneberg Prisen 2020, e um prémio honorário "Arkitekturopprøret" em 2022.

The square in summer | La plaza en verano | A praça no verão (Cityplan)

Biographies | Biografías | Biografias

Karoline Kolstad Heen

Karoline is an architect and partner and CEO of the Mad Arkitekter office in Fredrikstad. She holds a master's degree in architecture from NTNU I Trondheim and L'ENSAPLV in Paris. She has also studied art history at the University of Oslo. Besides running an architecture firm of 8 persons together with Simon Øien, Karoline is a guest teacher and reviewer for third-year students of architecture at NTNU in Trondheim as well as being a member of the study program council for the five- and two-year master's program in architecture and the two-year MSc in sustainable architecture at NTNU. She has a special interest in city development and the environment, and seeks to build for a better future. She managed the Nygaardsplassen project during the contract, detailing, and building phases, and together with Simon Øien and the rest of the Fredrikstad team, she now works from offices overlooking Nygaardsplassen.

Karoline es arquitecta, socia y directora ejecutiva de la oficina de Mad Arkitekter en Fredrikstad. Es máster en arquitectura por el NTNU I Trondheim y L'ENSAPLV de París. Estudió Historia del Arte en la Universidad de Oslo. Además de dirigir un estudio de arquitectura de 8 personas junto a Simon Øien, Karoline es profesora invitada y examinadora de tercer curso de arquitectura en NTNU Trondheim, así como miembro del consejo del plan de estudios del máster de arquitectura de dos y cinco años y del máster de arquitectura sostenible de dos años de NTNU. Tiene especial interés en el desarrollo urbanístico y el medio ambiente e intenta construir para un futuro mejor. Dirigió el proyecto de Nygaardsplassen durante las fases de contrato, detalles constructivos y obra. Junto a Simon Øien y el resto del equipo de Fredrikstad ahora trabaja en las oficinas que dan a Nygaardsplassen.

A Karoline é arquiteta, e sócia e diretora executiva do gabinete Mad Arkitekter em Fredrikstad. Tem um mestrado em arquitetura da NTNU I Trondheim e da L'ENSAPLV em Paris. Também estudou história da arte na Universidade de Oslo. Além de dirigir um gabinete de arquitetura com 8 pessoas juntamente com Simon Øien, a Karoline é professora convidada e censora dos estudantes do terceiro ano de arquitetura na NTNU em Trondheim, bem como membro do conselho do programa de estudos dos mestrados de cinco e dois anos em arquitetura, e do mestrado de dois anos em arquitetura sustentável na NTNU. Tem um interesse especial no desenvolvimento de cidades e no ambiente, e procura construir para um futuro melhor. Geriu o projeto Nygaardsplassen durante as fases de contrato, desenho técnico e construção, e juntamente com Simon Øien e o resto da equipa de Fredrikstad, trabalha agora em escritórios com vista para Nygaardsplassen.

Simon Øien

Simon is an architect and partner of Mad Arkitekter in Fredrikstad, Norway. He obtained his master's degree from the Oslo School of Architecture (AHO) and has been working with Mad since 2011 when he started as an intern at the Oslo office. He was taught the art and importance of detail drawings by Mad founder Trond Elverum. Simon has great knowledge of and a keen interest in historic buildings, of both wood and brick, and he is currently working on several listed buildings in Fredrikstad and in the nearby towns of Sarpsborg and Halden, where he resides. Simon also believes in creating architecture that adapts to and blends into its context.

Simon es arquitecto y socio de Mad Arkitekter en Fredrikstad, Noruega. Máster por la Escuela de Arquitectura de Oslo (AHO), ha trabajado en Mad desde 2011 cuando se incorporó como becario en el estudio de Oslo. El fundador de Mad, Trond Elverum, le enseñó la importancia de los planos de detalle. Simon tiene amplios conocimientos y un gran interés en los edificios históricos, tanto de madera como de ladrillo, y actualmente trabaja en varios edificios protegidos de Fredrikstad y en las ciudades próximas de Sarpsborg y Halden, donde reside. También piensa que hay que crear una arquitectura que se adapte e integre en su contexto.

O Simon é arquiteto e sócio na Mad Arkitekter em Fredrikstad, Noruega. Obteve o seu mestrado na Escola de Arquitetura de Oslo (AHO) e trabalha com a Mad desde 2011, quando começou como estagiário no escritório de Oslo. Aprendeu a arte e a importância do desenho técnico do fundador da Mad, Trond Elverum. O Simon tem um grande conhecimento e um grande interesse em edifícios históricos, tanto de madeira como de tijolo, e está a trabalhar atualmente em vários edifícios classificados em Fredrikstad, e nas cidades vizinhas de Sarpsborg e Halden, onde reside. O Simon também acredita na criação de uma arquitetura que se adapte e se misture com o seu contexto.

Trond Elverum

Trond is one of the three founders of Mad Arkitekter. He has special expertise in the implementation of projects as well as in reuse, architectural history, and historical construction methods. His contribution has been mainly in two phases of the Nygårdsplassen project: building applications and tender materials. In the tender phase, Trond prepared documentation specifying the exact construction procedure for each building in Nygårdsplassen.

Trond es uno de los tres fundadores de Mad Arkitekter. Está especializado en la implementación de proyectos así como en la reutilización, la arquitectura histórica y los métodos de construcción tradicionales. Ha contribuido fundamentalmente a dos fases del proyecto de Nygårdsplassen: en las cuestiones constructivas y en la licitación de materiales. En la fase de licitación, Trond preparó la documentación donde se especificaba exactamente el procedimiento constructivo para cada edificio de Nygårdsplassen.

Trond é um dos três fundadores da Mad Arkitekter. Tem competências especializadas na implementação de projetos, bem como em reutilização, história arquitetónica, e métodos históricos de construção. Contribuiu sobretudo em duas fases do projeto Nygårdsplassen: nos requerimentos de construção e materiais implicados na fase de concurso. Nesta fase, Trond preparou documentação especificando o procedimento de construção exato para cada edifício em Nygårdsplassen.

Martin Wesley-Holand

Martin obtained an architectural diploma from the Royal Danish Academy of Architecture in Copenhagen before joining Snøhetta in 2007, and then Mad in 2011. He has a special interest in the creative design process as well as in urbanism. For Nygårdsplassen, Martin managed the project from pre-design to design development.

Martin se diplomó en arquitectura por la Real Academia Danesa de Arquitectura, en Copenhague, antes de incorporarse a Snøhetta en 2007 y después a Mad en 2011. Le interesa especialmente el proceso de diseño creativo, así como el urbanismo. Martin gestionó el proyecto de Nygårdsplassen desde las fases previas hasta su desarrollo.

Martin obteve um diploma em arquitetura da Academia Real Dinamarquesa de Arquitetura em Copenhaga, antes de se juntar ao gabinete Snøhetta em 2007, e mais tarde ao Mad, em 2011. Detém especial interesse no processo de desenho criativo, bem como no urbanismo. Para Nygårdsplassen, Martin geriu o projeto desde a fase de pré-conceção até à de desenvolvimento do projeto.

Mad Arkitekter

The company was founded by architects Kurt Singstad, Trond Elverum, and Nicolai Riise in 1997. The three met in the early 1990s when going in search of an architectural dream in Berlin, between East and West. The Norwegian architectural community in the German capital was small at the time, which helped them quickly become acquainted. All three cultivated a shared interest in urbanism. Mad creates buildings and townscapes based on the premises of the local environment, climate, and nature. Today it is a leading firm in architecture and design in the field of reused materials in Norway, and its aim is to take reuse many steps further both in and outside Norway, for the sake of our environment.

El estudio fue fundado por los arquitectos Kurt Singstad, Trond Elverum y Nicolai Riise en 1997. Los tres se conocieron a principios de los años 90 cuando fueron a Berlín persiguiendo su sueño, entre el Este y el Oeste. Por aquel entonces, la comunidad arquitectónica noruega en la capital alemana era reducida, lo que les ayudó a conocerse muy pronto. Los tres compartían un interés por el urbanismo. Mad crea edificios y paisajes urbanos en los que el medio ambiente, el clima y la naturaleza locales tienen gran importancia. Actualmente es el primer estudio de arquitectura y diseño de Noruega en el uso de materiales reciclados y su objetivo es llevar aún más lejos el reciclado de materiales tanto dentro como fuera del país, por el bien de nuestro entorno.

A empresa foi fundada pelos arquitetos Kurt Singstad, Trond Elverum, e Nicolai Riise em 1997. Os três conheceram-se no início dos anos 90, quando partiram em busca de um sonho arquitetónico em Berlim, entre a parte este e oeste da cidade. A comunidade arquitetónica Norueguesa da capital alemã era pequena na altura, o que os ajudou a conhecerem-se rapidamente. Os três cultivavam um interesse comum pelo urbanismo. Mad cria edifícios e paisagens urbanas com base nas premissas do ambiente local, do clima e da natureza. Atualmente é uma empresa líder na Noruega em arquitetura e desenho, no domínio dos materiais reutilizados, e o seu objetivo é levar o conceito de reutilização muito mais longe, tanto dentro como fora da Noruega, em prol do nosso ambiente.

The shrine of Baba Hassan Din, Lahore

El mausoleo de Baba Hassan Din, Lahore

O santuário de Baba Hassan Din, Lahore

Hussain Ahmed,
Kamil Khan Mumtaz

I was introduced to the shrine of Baba Hassan Din long before I applied for my first internship in the office of Kamil Khan Mumtaz. At the time I was still a student at a well-known school of architecture, and after just a few years I had begun to feel at odds with certain aspects of my education, and particularly with the ideas surrounding the practice of modern architecture. It seemed strange to be studying an architecture that was wholly divorced from our own cultural and ecological context. I soon developed an interest in the practice of traditional Islamic architecture which eventually led me to discover the work of architects such as Hassan Fathy, Abdel-Wahed El-Wakil, and Kamil Khan Mumtaz.

Unfortunately, despite my being in the same city, the architect Kamil Khan Mumtaz seemed too distant a figure to approach. But I was keen to understand the mechanics of his design and there seemed to be no better example of his work than the shrine of Baba Hassan Din. Located in a bustling neighborhood not far from Lahore's famous Shalimar Gardens, the shrine is an open public space offering the community a place of refuge both spiritual and physical. According to its caretaker, Baba Hassan Din, formally called Alfred Victor, was born in northern England to a British father and a French mother, and on completing his education became a mechanical engineer in the British

Conocí el mausoleo de Baba Hassan Din mucho antes de solicitar una plaza de becario en el estudio de Kamil Khan Mumtaz. Por aquel entonces era todavía estudiante de una conocida escuela de arquitectura y al cabo de tan solo unos años empecé a no estar de acuerdo con algunos aspectos de lo que había aprendido y, en particular, con las ideas que rodeaban la práctica de la arquitectura moderna. Me parecía extraño estar estudiando una arquitectura completamente ajena a nuestro contexto cultural y ecológico. Muy pronto desarrollé interés por la práctica de la arquitectura islámica tradicional, lo que me llevó a descubrir la obra de arquitectos como Hassan Fathy, Abdel-Wahed El-Wakil y Kamil Khan Mumtaz.

Lamentablemente, a pesar de vivir en la misma ciudad, el arquitecto Kamil Khan Mumtaz parecía una figura demasiado distante como para intentar cualquier aproximación. Pero yo quería entender a toda costa la mecánica de su diseño y me parecía que el mejor ejemplo de su trabajo era el mausoleo de Baba Hassan Din. Situado en un barrio muy animado no muy lejos de los famosos Jardines de Shalimar de Lahore, el mausoleo es un espacio abierto al público que ofrece a la comunidad un lugar de refugio tanto espiritual como físico. Según el sacristán, Baba Hassan Din –cuyo nombre real era Alfred Victor– nació en el norte de Inglaterra de padre inglés y madre francesa y, tras terminar la carrera,

Fiquei a conhecer o santuário de Baba Hassan Din muito antes de me candidatar ao meu primeiro estágio no gabinete de Kamil Khan Mumtaz. Na altura ainda era estudante numa escola de arquitetura de renome, e após apenas alguns anos tinha começado a entrar em desacordo com certos aspetos da minha educação, particularmente com as ideias relativas à prática da arquitetura moderna. Parecia-me estranho estudar uma arquitetura totalmente divorciada do nosso próprio contexto cultural e ecológico. Rapidamente desenvolvi um interesse pela prática da arquitetura tradicional Islâmica, o que acabou por me levar a descobrir o trabalho de arquitetos como Hassan Fathy, Abdel-Wahed El-Wakil, e Kamil Khan Mumtaz.

Infelizmente, apesar de eu estar na mesma cidade, o arquiteto Kamil Khan Mumtaz pareceu-me uma figura demasiado distante para me aproximar. Mas eu estava interessado em compreender a mecânica do seu desenho, e não parecia existir um melhor exemplo do seu trabalho que o santuário de Baba Hassan Din. Localizado num bairro movimentado, não muito longe dos famosos Jardins Shalimar de Lahore, o santuário é um espaço público aberto que oferece à comunidade um local de refúgio tanto espiritual como físico. Segundo o seu cuidador, Baba Hassan Din, formalmente chamado Alfred Victor, nasceu no norte da Inglaterra, sendo filho de um pai Britânico e mãe Francesa, e ao completar a sua educação tornou-se engenheiro mecânico na British Railway

< Arcade flanking the shrine's courtyard | Arquería que rodea el patio del mausoleo | Arcada lateral ao pátio do santuário (Raza Kazim, Principal Architect of RK Studios)

Railway until one day he encountered a mysterious figure called Ali Hujveri, who took him into his protection. Under Ali's guidance Alfred Victor became Baba Hassan Din, a *shaikh* (spiritual master) of the *Awwal Qadir Sufi tareeqa* (Sufi spiritual path).

When Baba Hassan Din passed away in 1968, he was succeeded by his son Hafiz Iqbal, whose own story is no less remarkable. Din adopted Iqbal, the son of a close friend, after his own parents died, and raised him and oversaw his material and spiritual education. But despite acquiring three M.A. degrees and a teaching position at the renowned Government College of Lahore, Iqbal left all this behind to lead a life of relative seclusion, in the footsteps of his *shaikh* and adoptive father.

These saints, often referred to as *Wali-Allah* (friends of God), are able, through their piety, to bring into our material world a wealth of *baraka* (divine grace) that lives on even after they die. The shrines that are often built over their graves are intended to preserve this *baraka* in the vicinity.

ingresó como ingeniero mecánico en los Ferrocarriles Británicos hasta que un día conoció a un personaje misterioso llamado Ali Hujveri, quien lo tomó bajo su tutela. Guiado por Ali, Alfred Victor se convirtió en Baba Hassan Din, un *shaij* (maestro espiritual) de la *tariqa* sufí *Awwal Qadir* (una de las órdenes o caminos espirituales sufíes).

Cuando Baba Hassan Din murió en 1968, le sucedió su hijo Hafiz Iqbal, cuya historia no es menos singular. Din adoptó a Iqbal, huérfano de un amigo íntimo, lo crió y supervisó su educación material y espiritual. A pesar de obtener tres títulos de máster y un puesto de profesor en el prestigioso Government College de Lahore, Iqbal lo dejó todo para llevar una vida de relativo aislamiento, tal como había hecho su *shaij* y padre adoptivo.

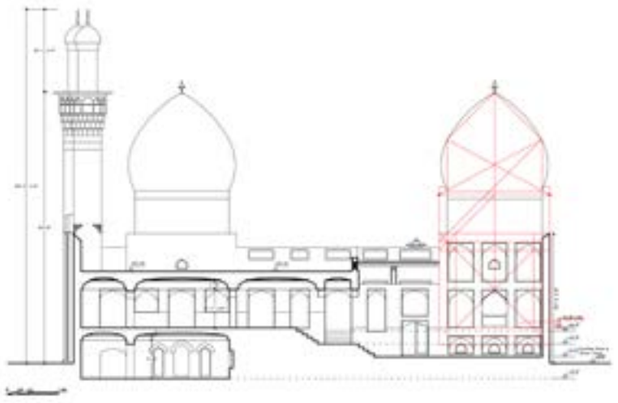
Estos santos, a los que se suele llamar *Wali-Allah* (amigos de Dios), con su devoción pueden traer a nuestro mundo material la *baraka* (gracia divina), que sigue viva incluso después de su muerte. Los mausoleos que a menudo se construyen sobre sus tumbas tienen la finalidad de conservar esta *baraka* en los alrededores.

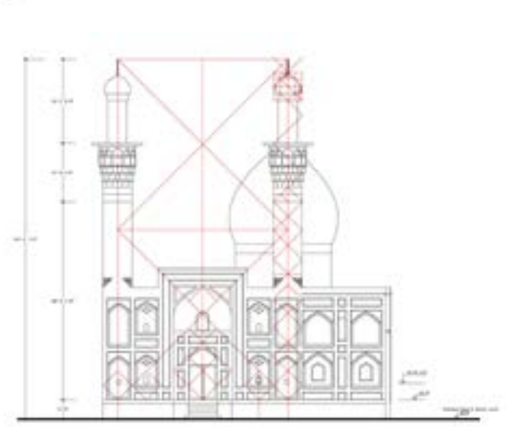
até que um dia se deparou com uma figura misteriosa chamada Ali Hujveri, que o acolheu sob a sua tutela. Sob a orientação de Ali, Alfred Victor tornou-se Baba Hassan Din, um *shaikh* (mestre espiritual) da *tariqa* sufi *Awwal Qadir* (uma das ordens ou caminhos espirituais do Sufismo).

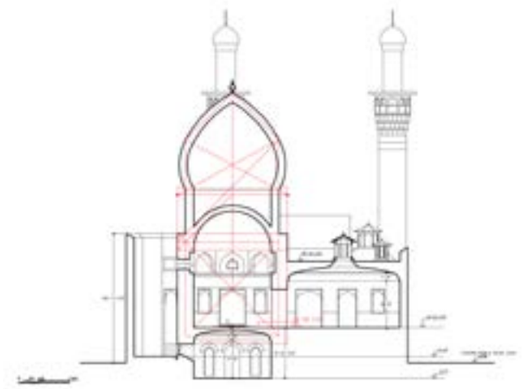
Quando Baba Hassan Din faleceu em 1968, foi sucedido pelo seu filho Hafiz Iqbal, cuja história não é menos notável. Din adoptou Iqbal, que era filho de um amigo próximo, após a morte dos seus próprios pais, e criou-o, acompanhando a sua educação material e espiritual. Mas apesar de ter obtido três mestrados e um cargo de professor no prestigiado Government College of Lahore, Iqbal deixou tudo isso para trás para viver uma vida de relativa reclusão, seguindo as pegadas do seu *shaikh* e pai adoptivo.

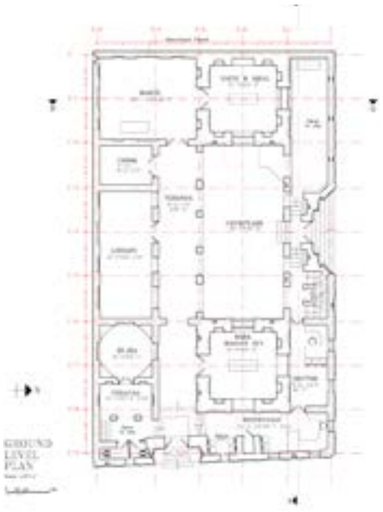
Estes santos, frequentemente chamados de *Wali-Allah* (amigos de Deus), são capazes, através da sua piedade, de trazer para o nosso mundo material uma abundância de *baraka* (graça divina) que continua viva mesmo depois da sua morte. Os santuários que são frequentemente construídos sobre os seus túmulos destinam-se a preservar esta *baraka* nas imediações.

Aerial view of the shrine | Vista aérea del mausoleo | Vista aérea do santuário (Raza Kazim, Principal Architect of RK Studios)









Sections, elevation and plan | Secciones, alzado y planta | Secções, elevação e plano

In early 2001, shortly after the passing of Hafiz Iqbal, the young engineers Rizwan Qadir and Shahid Niaz, who had been part of Iqbal's inner circle, inquired at Kamil Khan Mumtaz's office if he would be willing to design a shrine for their *shaikh*. At the time Mumtaz was beginning to transition his practice towards a more sustainable model and so he told them he would indeed design a shrine provided it was built as a traditional Islamic structure using only materials available locally. His clients wholeheartedly accepted and asked him to begin drafting the design as they set about their own research.

A principios de 2001, poco después de morir Hafiz Iqbal, los jóvenes ingenieros Rizwan Qadir y Shahid Niaz, que habían formado parte del círculo íntimo de Iqbal, preguntaron en el estudio de Kamil Khan Mumtaz si estarían dispuestos a diseñar un mausoleo para su *shaij*. Mumtaz, que por aquel entonces empezaba a redirigir su práctica profesional hacia un modelo más sostenible, les respondió que diseñaría el mausoleo siempre que se construyera siguiendo los principios de la arquitectura islámica tradicional y utilizando exclusivamente materiales locales. Sus clientes aceptaron estas condiciones y le pidieron que empezara con el proyecto mientras ellos investigaban por su cuenta.

No início de 2001, pouco depois da morte de Hafiz Iqbal, os jovens engenheiros Rizwan Qadir e Shahid Niaz, que tinham feito parte do círculo interno de Iqbal, perguntaram no gabinete de Kamil Khan Mumtaz se ele estaria disposto a projetar um santuário para o seu *shaikh*. Na altura, Mumtaz estava a começar a fazer a transição da sua prática para um modelo mais sustentável, e por isso disse-lhes que iria projetar um santuário desde que este fosse construído como uma estrutura Islâmica tradicional, utilizando apenas materiais disponíveis localmente. Os seus clientes aceitaram incondicionalmente e pediram-lhe que começasse a elaborar o projeto, ao mesmo tempo que começavam a fazer as suas próprias pesquisas.

Detail of the minaret | Detalle del alminar | Detalhes do minarete

As well as the two shrine chambers, the complex was to include a *majlis* room (open hall) where gatherings could be held, a small library for the youth of the community, and even a small doctor's office with a dispensary. These functional requirements determined the shrine's basic layout while the structure itself was designed with load-bearing walls along with vaulted ceilings and ribbed domes to cover the spans.

In the years I spent working in the office of Kamil Khan Mumtaz I found that the design process was simple enough to understand provided I was willing to forgo every instinct I had acquired during my education, particularly that basic instinct which makes an artist want to be "original". Unfortunately the true practice of traditional architecture is often

Además de las dos cámaras del mausoleo, el complejo debía incluir un *majlis* (salón de reuniones) donde celebrar asambleas, una pequeña biblioteca para los jóvenes de la comunidad e incluso un dispensario con una consulta médica. Estos requisitos de uso determinaron la distribución básica del mausoleo, mientras que la estructura propiamente dicha se diseñó con muros portantes, techos abovedados y cúpulas nervadas para cubrir los vanos.

Durante los años en los que trabajé en el estudio de Kamil Khan Mumtaz, me parecía que el proceso de diseño era bastante fácil de entender, siempre que estuviera dispuesto a olvidarme de los hábitos adquiridos durante mi formación, especialmente ese instinto básico que hace que un artista quiera ser "original". Lamentablemente, la práctica auténtica de la arquitectura tradicional

Para além das duas câmaras do santuário, o complexo iria incluir um salão *majlis* (salão aberto) onde se poderiam realizar reuniões, uma pequena biblioteca para os jovens da comunidade, e mesmo um pequeno consultório médico com um dispensário. Estes requisitos funcionais determinaram o esquema básico do santuário, enquanto a própria estrutura foi concebida com paredes de suporte de carga e tetos com cúpulas em cruzaria que cobrem os vãos.

Nos anos em que trabalhei no gabinete de Kamil Khan Mumtaz, descobri que o processo de conceção era suficientemente simples de compreender desde que estivesse disposto a abandonar todos os instintos que tinha adquirido durante a minha educação, particularmente aquele instinto básico que faz com que um artista queira ser "original". Infelizmente, a verdadeira prática da arquitetura tra-

1: Minaret. 2: Inner courtyard during construction | 1: Alminar 2: Patio interior en construcción | 1: Minarete. 2: Pátio interior durante a construção

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1: East side of the inner courtyard. 2: North side. 3: South side | 1: Ala este del patio interior. 2: Ala norte. 3: Ala sur | 1: Lado Este do pátio interior. 2: Lado Norte. 3: Lado Sul (Raza Kazim, Principal Architect of RK Studios)

conflated with copying or imitating, and while there is some truth in this, it is a gross oversimplification. According to traditional Islamic cosmology, all of creation is a manifestation of divine attributes where "form" represents a sacred archetype in which attributes of the divine are manifest. In the world of modern art, originality can be understood to represent a unique expression of one's own self in which the artist is expected to create beauty, whereas a traditional craftsperson understands originality as a return to the origin of all things, and since beauty is an attribute of the divine, traditional artists or craftspeople seek only to reflect this attribute in their work.

In later conversations with Mumtaz I was often struck by how fortunate he considered himself to have encountered so many traditional master craftspeople, from whom he continues to learn to this day. Masters

se confunde a menudo con la copia o la imitación y, si bien hay algo de verdad en esto, se trata de una simplificación. Según la cosmología islámica tradicional, toda la creación es una manifestación de los atributos divinos en la que la "forma" representa un arquetipo sagrado en el que se revelan los atributos de la divinidad. En el mundo del arte moderno se puede interpretar que la originalidad representa la expresión única del propio ser con la que se espera que el artista cree belleza. Un artesano tradicional, sin embargo, entiende la originalidad como el regreso al origen de todas las cosas y, dado que la belleza es un atributo de la divinidad, los artistas o artesanos tradicionales solo pretenden reflejar este atributo en su obra.

En posteriores conversaciones con Mumtaz me sorprendía a menudo lo afortunado que se consideraba por haber conocido a tantos maestros artesanos de los que aún sigue aprendiendo. Maestros como *Ustad* Ilm Din, el

dicional é frequentemente confundida com a cópia ou imitação, e embora haja alguma verdade nisto, é uma simplificação excessiva e grosseira. Segundo a cosmologia tradicional Islâmica, toda a criação é uma manifestação de atributos divinos onde a "forma" representa um arquétipo sagrado no qual os atributos divinos se manifestam. No mundo da arte moderna, a originalidade pode ser entendida como representando uma expressão única do eu pessoal, na qual se espera que o artista crie beleza, enquanto que um artesão tradicional entende a originalidade como um retorno à origem de todas as coisas, e uma vez que a beleza é um atributo divino, os artistas ou artesãos tradicionais procuram apenas refletir este atributo na sua obra.

Em conversas posteriores com Mumtaz, fiquei muitas vezes impressionado com o quão afortunado ele se considerava por ter encontrado tantos mestres artesãos tradicionais com quem continua a aprender até aos dias de hoje. Mestres como

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such as *Ustad* Ilm Din, the last known master mason of his time still able to build a traditional flat dome; or *Ustad* Haji Abdul Aziz, the last master of *leekhai* (drafting), who taught Mumtaz the intricacies of traditional Islamic geometry and proportioning; or *Ustad* Jaffar, a master of traditional *thooba-kari* (stucco relief work), who needed only to see an example of traditional *ghalib-kari* (vaulted stuccowork) to replicate it perfectly. It was on the shrine worksite that Mumtaz first came into contact with these traditional masters who not only offered invaluable guidance but also gave the younger craftspeople the confidence to build such challenging structures.

último alarife conocido de su época aún capaz de construir una bóveda plana tradicional; *Ustad* Haji Abdul Aziz, el último maestro de *leekhai* (dibujo), quien enseñó a Mumtaz los entresijos de la geometría y las proporciones islámicas tradicionales; o *Ustad* Jaffar, maestro del tradicional *thooba-kari* (estuco en relieve), quien solo necesitó ver un ejemplo de *ghalib-kari* (estuco conformando bóvedas) tradicional para reproducirlo perfectamente. Fue en las obras del mausoleo donde Mumtaz entró por primera vez en contacto con estos maestros tradicionales que, no solo le ofrecieron valiosos consejos, sino que dieron a los artesanos más jóvenes la confianza necesaria para construir estructuras tan complejas.

Ustad Ilm Din, o último mestre pedreiro conhecido do seu tempo ainda capaz de construir uma cúpula plana tradicional; ou *Ustad* Haji Abdul Aziz, o último mestre de *leekhai* (desenho arquitetónico), que ensinou Mumtaz sobre as complexidades da geometria e das proporções Islâmicas tradicionais; ou *Ustad* Jaffar, um mestre de *thooba-kari* tradicional (trabalho de estuque em relevo), que apenas precisava de ver um exemplo de *ghalib-kari* tradicional (abóbada de estuque) para o reproduzir na perfeição. Foi nas obras do santuário que Mumtaz entrou em contacto pela primeira vez com estes mestres tradicionais, que não só ofereceram uma orientação inestimável como também deram aos artesãos mais jovens a confiança necessária para construir estruturas tão desafiantes.

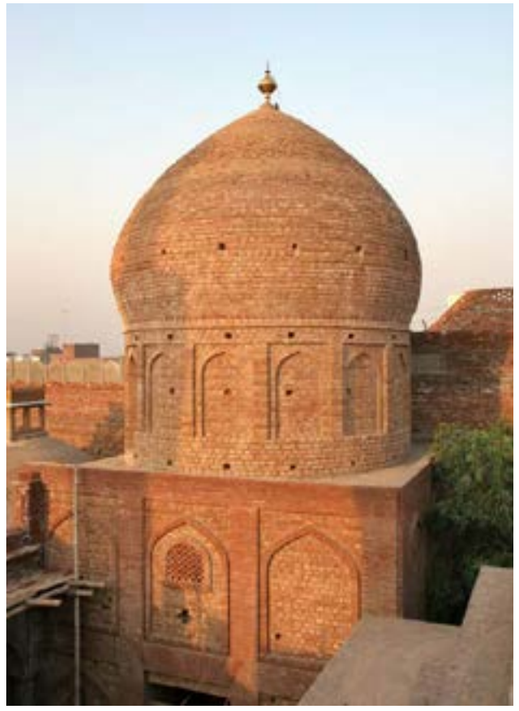
Courtyard and veranda | Patio y pórtico | Pátio e varanda
(Raza Kazim, Principal Architect of RK Studios)

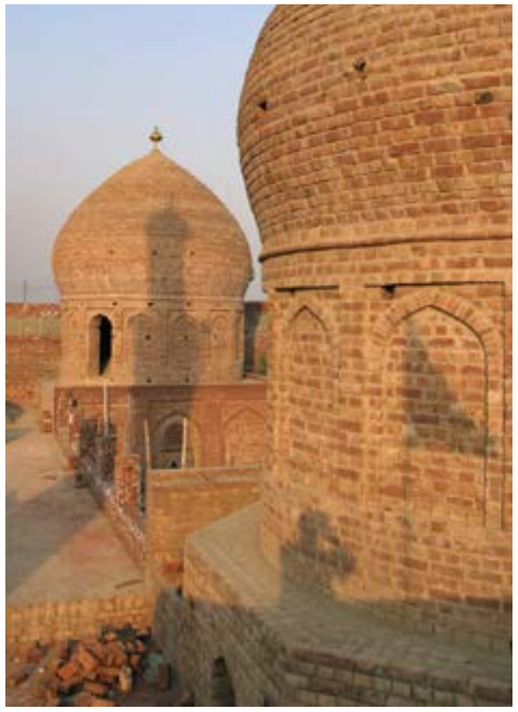
As promised to the architect, the engineers used no steel or concrete in the structure, preferring brick and lime. Even the retaining walls and the foundations were built of brick and lime, and of all the materials used, lime was perhaps the most challenging to fully master. There are two kinds commonly found in and around Lahore; white lime and *kankar* lime. White lime is the purer form of calcium carbonate, whereas *kankar* lime contains other elements giving it a dark brown hue. After being quarried, the limestones are burnt in a kiln where they undergo an exothermic reaction that turns the calcium carbonate into calcium oxide. The calcium oxide is then brought to the site where it is submerged in a pit dug

Tal como prometieron al arquitecto, los ingenieros no utilizaron acero ni hormigón en la estructura, sino que hicieron uso de ladrillo y cal. Incluso los muros de contención y los cimientos se construyeron con ladrillo y cal. De todos los materiales utilizados, quizá fuera la cal el más complicado de dominar. En Lahore y sus alrededores se encuentran normalmente dos tipos de cal: la cal blanca y la cal *kankar*. La cal blanca es la forma más pura del carbonato cálcico, mientras que la cal *kankar* contiene otros elementos que le confieren un color marrón oscuro. Tras la extracción, la piedra caliza se quema en un horno donde experimenta una reacción exotérmica que transforma el carbonato cálcico en óxido de calcio. El óxido de calcio se lleva después a la obra, donde se

Como prometido ao arquiteto, os engenheiros não utilizaram aço ou betão na estrutura, preferindo o tijolo e a cal. Até as paredes de suporte de carga e as fundações foram construídas com tijolo e cal, e de todos os materiais utilizados, a cal foi talvez o mais desafiante de dominar plenamente. Existem dois tipos geralmente encontrados em Lahore e arredores: cal branca e cal *kankar*. A cal branca é a forma mais pura de carbonato de cálcio, enquanto que a cal *kankar* contém outros elementos que lhe dão uma tonalidade castanha escura. Após serem extraídas, as pedras calcárias são queimadas num forno onde sofrem uma reação exotérmica que transforma o carbonato de cálcio em óxido de cálcio. O óxido de cálcio é então levado para o local, onde é submerso num poço esca-

The shrine's domes during construction | Cúpulas del mausoleo en construcción | Cúpulas do santuário durante a construção





on site or nearby. There it undergoes another exothermic reaction that produces calcium hydroxide. In this state the white or *kankar* lime is mixed with other organic materials such as lentils or brown sugar that increase its overall strength. This particular lime composition not only produces a stronger bond between each brick but also significantly reduces the building's carbon footprint. It is often said by local craftspeople who work with lime that although concrete is stronger when it is poured, it gets weaker over time, whereas lime, though weaker when first poured, gets stronger.

sumerge en una balsa excavada allí mismo o en las proximidades. La cal experimenta entonces una nueva reacción exotérmica que produce hidróxido de calcio. En ese estado, la cal blanca o cal kankar se mezcla con otras materias orgánicas, como lentejas o azúcar moreno, para aumentar su resistencia total. Esta composición especial de la cal no solo produce una unión más fuerte entre cada ladrillo, sino que reduce significativamente la huella de carbono del edificio. Los artesanos locales que trabajan con la cal suelen decir que, si bien el hormigón es más resistente cuando se vierte, con el tiempo se vuelve más débil, mientras que, por el contrario, la cal es más débil al comienzo pero se va haciendo cada vez más fuerte.

vado no local ou nas proximidades. Ali, é submetido a outra reação exotérmica que produz hidróxido de cálcio. Neste estado, a cal branca ou *kankar* é misturada com outros materiais orgânicos, tais como lentilhas ou açúcar mascavado, que aumentam a sua resistência global. Esta composição particular da cal não só produz uma ligação mais forte entre cada tijolo, mas também reduz significativamente a pegada de carbono do edifício. Os artesãos locais que trabalham com cal costumam dizer que embora o betão seja mais resistente quando é depositado, torna-se mais fraco com o tempo, enquanto que a cal, embora mais fraca quando é depositada pela primeira vez, torna-se mais resistente.

Muqarnas at the shrine entrance | Mocárabes en la entrada del mausoleo | Muqarnas na entrada do santuário

Once the walls of the structure were in place, the engineers and their team of craftspeople faced the greatest challenge: constructing a flat dome over each room. Flat domes are built using brick tiles one and a half inches thick and laid in such a way as to produce a cross section that follows the curve of an ellipse whose height is a third of its span. To achieve this exact profile, falsework was set up as a guide for the bricklayers. These masons were so unsure of the dome's ability to hold itself up that they actually refused to take the falsework down for fear that the whole thing would collapse in on itself with them inside. It was not until one of the engineers volunteered to assist in removing the falsework that the masons felt comfortable enough to actually do it.

Una vez construidos los muros de la estructura, los ingenieros y el equipo de artesanos se enfrentaron al mayor reto: construir una bóveda plana sobre cada estancia. Las bóvedas planas se construyen con dovelas de ladrillo de 3,8 cm de espesor dispuestas de tal forma que producen una sección transversal que sigue la curva de una elipse cuya altura es un tercio de su luz. Para conseguir este perfil exacto se montó una cimbra como guía para los albañiles. Estos desconfiaban tanto de la capacidad de la bóveda para sostenerse que se negaron a desmontar la cimbra por miedo a que todo se hundiera con ellos debajo. Hasta que los ingenieros no se prestaron voluntarios para ayudar a retirar la cimbra, los albañiles no se sintieron lo bastante seguros para hacerlo.

Assim que as paredes da estrutura estavam colocadas, os engenheiros e a sua equipa de artesãos enfrentaram o maior desafio: construir uma cúpula plana sobre cada divisão. As cúpulas planas são construídas utilizando tijolos de cerâmica com 3,8 cm de espessura e dispostos de modo a produzir uma secção transversal que segue a curva de uma elipse cuja altura é de um terço do seu vão. Para se conseguir este perfil exacto, foram colocados cimbres como orientação para os pedreiros. Estes pedreiros estavam tão reticentes relativamente à capacidade da cúpula de se manter em pé, que se recusaram a retirar os cimbres por medo de que tudo se desmoronasse com eles no seu interior. Foi apenas quando um dos engenheiros se ofereceu para ajudar na remoção dos cimbres que os pedreiros se sentiram suficientemente confortáveis para o fazer.

1: Building a flat dome with falsework. 2: Detail of brickwork | 1: Construcción de una bóveda plana con cimbra 2: Detalle de la fábrica de ladrillo | 1: Construção de uma cúpula plana com cimbres 2: Detalhe da alvenaria

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1: *Ayina-kari* in the *majlis* room. 2: *Ghalib-kari* over the shrine | 1: *Ayina-kari* en la *majlis* (sala de reuniones) 2: *Ghalib-kari* sobre el mausoleo | 1: *Ayina-kari* na sala *majlis*. 2: *Ghalib-kari* sobre o santuário (Raza Kazim, Principal Architect of RK Studios)

Today, just over twenty years since the project began, the shrine is nearly complete. In collaboration with his clients and the many traditional master builders contributing to the project, Kamil Khan Mumtaz has revived a building tradition which, since the advent of the British, had been quite forgotten. Its features include vaulted ceilings or flat domes, ribbed domes, traditional muqarnas using a single brick module, traditional *ayina-kari* (mirror work) seen most famously in the *sheesh mehal* of Lahore Fort; *ghalib-kari*; and most notably the use of *Lahori kashi* tiles whose color palette is unique to Lahore. Each

Actualmente, algo más de veinte años después del comienzo del proyecto, el mausoleo está casi terminado. En colaboración con sus clientes y muchos de los alarifes que intervienen en el proyecto, Kamil Khan Mumtaz ha recuperado una tradición constructiva que, desde que llegaron los británicos, había permanecido prácticamente en el olvido. Entre sus características destacan los techos abovedados o las bóvedas planas, las cúpulas nervadas, los típicos mocárabes con un único módulo de ladrillo, el *ayina-kari* (decoración a base de espejos) tradicional, realizado como en el conocido *sheesh mehal* del Fuerte de Lahore; el *ghalib-kari*; y especialmente el

Hoje, pouco mais de vinte anos desde que o projeto começou, o santuário está quase completo. Em colaboração com os seus clientes e os muitos mestres construtores tradicionais que contribuíram para o projecto, Kamil Khan Mumtaz reavivou uma tradição de construção que, desde o advento dos Britânicos, tinha sido bastante esquecida. As suas caraterísticas incluem tetos abobadados ou cúpulas planas, cúpulas de nervuras, muqarnas tradicionais com módulos de um só tijolo, *ayina-kari* (decoração à base de espelhos) tradicional, como o célebre exemplar do *sheesh mehal* do Forte de Lahore; *ghalib-kari* (trabalho de estuque em relevo); e mais notavelmente o uso

Calligraphy executed in gold leaf on the flat domes | Caligrafía realizada con pan de oro en las bóvedas planas | Caligrafia executada em folha dourada nas cúpulas planas (Raza Kazim, Principal Architect of RK Studios)

The domes over the shrines of the two saints also proved to be a unique challenge. They were modeled on the dome over the shrine of Imam Ali, son-in-law of the Prophet Mohammad, in Najaf, Iraq. It has a unique cross section consisting of two superimposed domes, one over the other with a void between them. Years later, after I had joined his firm, I asked Mumtaz what need there was to have two superimposed domes over a single space. He explained that the outer dome is meant to express a monumentality allowing pilgrims to see the shrine from a distance, and that if its inner size had exceeded a certain limit, the space would have overwhelmed an observer inside. So the purpose of the second dome is to contain the space so that it no longer feels out of proportion, while the void between the domes makes a home for wayward pigeons, which according to many Islamic traditions are a source of *baraka*.

Las cúpulas sobre los sepulcros de los dos santos también resultaron ser un importante desafío. Se inspiran en la cúpula del santuario del Imán Alí, yerno del profeta Mahoma, en Nayaf, Irak. Tiene una sección transversal singular, formada por dos cúpulas superpuestas con un espacio entre ellas. Años después, cuando ya trabajaba en su estudio, pregunté a Mumtaz qué necesidad había de construir dos cúpulas superpuestas sobre un mismo espacio. Me explicó que la exterior sirve para expresar la monumentalidad y permite a los peregrinos ver el mausoleo desde lejos, mientras que, si sus dimensiones interiores hubieran superado un cierto límite, el espacio habría abrumado a quien lo observara desde dentro. Así pues, la finalidad de la segunda cúpula es contener el espacio de manera que no parezca desproporcionado, mientras que el hueco entre ambas cúpulas sirve de hogar a las palomas descarriadas que, según muchas tradiciones islámicas, traen *baraka*.

A cúpula do santuário dos dois santos também revelou ser um desafio único. Foi inspirada na cúpula do santuário de Imã Ali, genro do Profeta Maomé, em Najaf, Iraque. Tem uma secção transversal singular, constituída por duas cúpulas sobrepostas com um espaço vazio entre elas. Anos mais tarde, depois de me ter associado à sua firma, perguntei a Mumtaz qual era a necessidade de ter duas cúpulas sobrepostas sobre um único espaço. Ele explicou que a cúpula exterior tem como objetivo expressar uma monumentalidade que permita aos peregrinos ver o santuário à distância, e que se o seu tamanho interior tivesse excedido um certo limite, o espaço teria arrebatado um potencial observador no seu interior. Assim, o objetivo da segunda cúpula é conter o espaço de modo a que este deixe de ser desproporcionado, enquanto que o vazio entre as cúpulas cria um lar para pombos errantes, que segundo muitas tradições Islâmicas são uma fonte de *baraka*.

of these techniques has been used throughout the shrine of Baba Hassan Din and provides a valuable reference for discerning the relevance that traditional Islamic architecture can have in our time.

uso de azulejos *kashi* de Lahore, con una gama de colores que solo se encuentra en dicha ciudad. Cada una de estas técnicas se ha utilizado en el mausoleo de Baba Hassan Din y ofrece una valiosa referencia para apreciar la relevancia que la arquitectura islámica tradicional puede tener en nuestra época.

de azulejos *Lahori kashi*, cuja paleta de cores é única em Lahore. Cada uma destas técnicas tem sido utilizada em todo o santuário de Baba Hassan Din e fornece uma referência valiosa para discernir a relevância que a arquitectura tradicional Islâmica pode ter na nossa era.

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1, 2: Traditional master craftsmen working on a capital and a marble latticework | 1, 2: Maestros artesanos trabajando en un capitel y una celosía de mármol | 1, 2: Mestres artesãos tradicionais a trabalhar num capitel, e um painel de mármore perfurado

Biographies | Biografías | Biografias

Hussain Ahmed

A recent graduate of the Razia Hassan School of Architecture at Beaconhouse National University, he joined the office of Kamil Khan Mumtaz as a junior architect and research assistant. As a junior architect he has managed both small residential projects and large monuments. As a researcher he has assisted Kamil Khan Mumtaz in developing a course at Beaconhouse National University entitled "Tradition and Modernity".

Graduado recientemente por la Escuela de Arquitectura Razia Hassan de la Universidad Nacional Beaconhouse, se incorporó al estudio de Kamil Khan Mumtaz en calidad de arquitecto junior y ayudante de investigación. Como arquitecto junior se ha encargado tanto de pequeños proyectos residenciales como de grandes monumentos. Como investigador ha ayudado a Kamil Khan Mumtaz a preparar un curso impartido en la Universidad Nacional Beaconhouse y titulado "Tradición y Modernidad".

Obteve recentemente o seu diploma na Escola de Arquitetura Razia Hassan da Universidade Nacional Beaconhouse, associou-se ao gabinete de Kamil Khan Mumtaz como arquiteto júnior e assistente de investigação. Como arquiteto júnior, geriu tanto pequenos projetos residenciais como grandes monumentos. Como investigador, ajudou Kamil Khan Mumtaz no desenvolvimento de um curso na Universidade Nacional Beaconhouse, intitulado "Tradição e Modernidade".

Kamil Khan Mumtaz

Principal architect at a private practice based in Lahore, he received his education at the Architecture Association in London in the 1960s, after which he returned to Pakistan to practice and teach. Between 1966 and 1975 he was principal of the National College of Arts in Lahore and after resigning that post he set up his own practice. In 1985 he authored the book *Architecture in Pakistan*, which has since become the chief source for researchers interested in understanding the history of architecture in Pakistan. He has lectured widely across Europe and Asia and has become a leading voice in the practice of traditional Islamic architecture.

Arquitecto director de un estudio privado con sede en Lahore, estudió en la Escuela de la Architectural Association de Londres en los años 60, tras lo cual regresó a Pakistán, donde ejerce y enseña. Entre 1966 y 1975 fue director del National College of Arts de Lahore, puesto que dejó para fundar su propio estudio. En 1985 publicó *Architecture in Pakistan*, que se ha convertido en la principal fuente de referencia para los estudiosos interesados en conocer la historia de la arquitectura de Pakistán. Ha impartido cursos en Europa y Asia y se ha convertido en una voz destacada en la práctica de la arquitectura islámica tradicional.

Arquiteto principal num gabinete privado sediado em Lahore, estudou na Associação de Arquitetura em Londres nos anos 60, regressando de seguida ao Paquistão para exercer e ensinar. Entre 1966 e 1975 foi diretor do Faculdade Nacional de Artes em Lahore, e depois de se demitir desse posto criou o seu próprio gabinete. Em 1985 publicou o livro *Architecture in Pakistan*, que desde então se tornou a principal fonte para os investigadores interessados em compreender a história da arquitetura no Paquistão. Tem dado palestras por toda a Europa e Ásia, e tornou-se uma voz de destaque na prática da arquitetura tradicional Islâmica.

Habits and Contradictions: Donkwall 5 & Peterstrasse 19 - 21, Kempen, North Rhine-Westphalia

Costumbres y contradicciones: Donkwall 5 y Peterstrasse 19 - 21, Kempen, Renania del Norte-Westfalia

Hábitos e contradições: Donkwall 5 e Peterstrasse 19 - 21, Kempen, Renânia do Norte-Vestfália

Sebastian Treese Architekten

To the west of the Rhine in northern Germany is the Lower Rhine region – a wide open landscape in an otherwise densely populated region of Europe, between the Ruhr to the east and the ports of the Netherlands and Belgium to the west. Drainage ditches punctuated by willows and oaks border meadows and fields, and immense skies stretch over a flat land. Small towns lie nestled in a landscape reminiscent of an old Dutch painting, and one such town is Kempen. This is an old, cultivated landscape: the Romans settled on the left bank of the Rhine and fortified it against attacks by the "barbarians". Later, market towns were built with defensive walls. Today, most of them bear the scars of bombing in the Second World War and subsequent hasty reconstruction.

In Kempen, however, the town's original structure is still plain to see despite the fact that its walls were demolished long ago and only one of its four gates still stands. At the heart of the town is St. Marien Church, which, as often in this region, is closely encircled by buildings. The four streets originating at the old town gates converge at the road around the church, and the main square is also here. To the north-east lies Kempen Castle, which has been a seat of the

Al oeste del Rin, en el norte de Alemania, se encuentra la región del Bajo Rin, un amplio paisaje abierto en una de las regiones más densamente pobladas de Europa, entre el Ruhr al este y los puertos de los Países Bajos y Bélgica al oeste. Los canales de drenaje salpicados de sauces y robles bordean las praderas y los campos, y unos cielos inmensos se extienden sobre la llanura. Hay pequeñas ciudades desperdigadas en un paisaje que recuerda al de las antiguas pinturas holandesas. Kempen es una de esas ciudades. Se trata de un paisaje antiguo de tierras de cultivo: los romanos se establecieron en la orilla izquierda del Rin y la fortificaron contra los ataques de los llamados "bárbaros". Más tarde se construyeron ciudades amuralladas con mercados. Hoy, la mayoría de ellas muestra las cicatrices de los bombardeos de la Segunda Guerra Mundial y de la apresurada reconstrucción posterior.

En Kempen se puede ver claramente la estructura original de la ciudad, a pesar de que las murallas se destruyeron hace mucho tiempo y solo queda en pie una de sus cuatro puertas. En el centro de la ciudad está la Iglesia de Santa María que, como sucede a menudo en esta región, está rodeada de edificios. Las cuatro calles que salían de las antiguas puertas de la ciudad convergen en el camino que rodea a la iglesia, donde está la plaza

A oeste do rio Reno, no norte da Alemanha, encontra-se a região do Baixo Reno – uma paisagem ampla situada numa região densamente povoada da Europa, entre o Vale do Ruhr a este, e os portos dos Países Baixos e da Bélgica a oeste. Valas de drenagem pontuadas por salgueiros e carvalhos delimitam prados e campos, e céus imensos estendem-se sobre uma terra plana. Pequenas cidades aninham-se numa paisagem que lembra uma antiga pintura Holandesa, e uma dessas cidades é Kempen. Esta é uma paisagem antiga e cultivada: os Romanos instalaram-se na margem esquerda do Reno e fortificaram-na contra os ataques dos "bárbaros". Mais tarde, foram construídas cidades mercantis com muros defensivos. Hoje em dia, a maioria delas exibe as cicatrizes dos bombardeamentos da Segunda Guerra Mundial e da subsequente reconstrução apressada.

Em Kempen, no entanto, a estrutura original da cidade ainda está à vista, apesar de as suas muralhas terem sido demolidas há muito tempo, e de apenas um dos seus quatro portões ainda estar de pé. No coração da cidade encontra-se a Igreja de St. Marien que, como é frequente nesta região, está rodeada de edifícios. As quatro ruas que partem dos antigos portões da cidade convergem na estrada em torno da igreja, onde também fica situada a praça principal. A nordeste situa-se o

< The corner building at Peterstraße Kempen | El edificio en esquina en Peterstraße, Kempen | O edifício da esquina, em Peterstraße Kempen (Ralf Schmitz)

Figure-ground plan of Kempen with project location | Plano de Kempen con la ubicación del proyecto | Mapa figura-fundo de Kempen com a localização do projeto

archbishops of Cologne since the fourteenth century.

The path of the original ramparts is visible as a park around the old town, and the four streets coming from the former town gates are still Kempen's radial roads. Land plots in the pre-modern town dictate the rhythm of the buildings within the original walls, but their influence is lesser where there are more modern developments. Yet though in the nineteenth century, developments such as the railroad station, factories or schools were part of urban extensions, after the Second World War, large-scale urban renewal also affected the old town. The most prominent example would be the town hall at Buttermarkt, but modern residential buildings also break with the scale of the old town – clearly as a result of economic and political forces.

mayor. Al noreste se encuentra el Castillo de Kempen, que ha sido sede episcopal de Colonia desde el siglo XIV.

Los restos de las murallas originales son aún visibles en un parque que rodea la ciudad antigua y las cuatro calles que salían de las cuatro puertas de la ciudad siguen siendo las vías radiales de Kempen. Las parcelas de la ciudad premoderna marcan el ritmo de los edificios intramuros, pero su influencia es menor donde hay construcciones más modernas. A lo largo del siglo XIX nuevos edificios como la estación del ferrocarril, las fábricas o los colegios formaron parte del crecimiento urbano y, tras la Segunda Guerra Mundial, la rehabilitación urbana a gran escala también afectó al casco antiguo. El ejemplo más notable es el de la casa consistorial, en Buttermarkt, pero los modernos edificios residenciales también rompen la escala de la ciudad antigua, como claro resultado de fuerzas políticas y económicas.

Castelo de Kempen, que tem sido a sede dos arcebispos de Colónia desde o século XIV.

O caminho das muralhas originais é visível como um parque à volta da cidade velha, e as quatro ruas que partem das antigas portas da cidade continuam a ser as estradas radiais de Kempen. Os lotes de terreno na cidade pré-moderna ditam o ritmo dos edifícios dentro das muralhas originais, mas a sua influência é menor onde há construções mais modernas. No entanto, embora no século XIX construções como a estação ferroviária, fábricas ou escolas fizessem parte de extensões urbanas, após a Segunda Guerra Mundial a renovação urbana em grande escala também afetou a cidade antiga. O exemplo mais proeminente é a Câmara Municipal, em Buttermarkt, mas os edifícios residenciais modernos também romperam com a escala estabelecida pela cidade velha – claramente como resultado de forças económicas e políticas.

Ralf Schmitz has been a Kempen developer for generations and is closely connected to the town. Yet the project on Donkwall, like most building projects of the time, was intended to break with the scale of the medieval townscape. The program included 13 apartments of various sizes with parking spaces. But by the time of its design, the town seemed to have become sensitized to the loss of quality of life that comes with a distortion of scale, and the town council rejected the investor's initial plan. In the hope of realizing the project even so with the envisaged financial and spatial parameters, the investor approached Sebastian Treese Architects with a request to rework it in a way acceptable to the council.

Ralf Schmitz ha sido promotor en Kempen durante generaciones y tiene estrechos vínculos con la ciudad. El proyecto de Donkwall, como la mayoría de proyectos de edificios de la época, estaba concebido de forma que rompía la escala del paisaje urbano medieval. El programa incluía 13 apartamentos de distintos tamaños y plazas de garaje. Sin embargo, cuando llegó el momento de presentarlo, la ciudad parecía haberse sensibilizado ante la pérdida de calidad de vida que conlleva la distorsión de la escala de los edificios y el ayuntamiento rechazó el plan inicial del inversor. Con la esperanza de realizar el proyecto con las condiciones financieras y espaciales previstas, a pesar de todo, el inversor se puso en contacto con Sebastian Treese Architects para que reelaboraran el proyecto de una forma que fuera aceptable para el ayuntamiento.

Ralf Schmitz é promotor em Kempen há gerações, e está intimamente ligado à cidade. No entanto, o projeto em Donkwall, como a maioria dos projetos de construção da altura, destinava-se a romper com a escala do ambiente urbano medieval. O programa incluía 13 apartamentos de vários tamanhos, com lugares de estacionamento. Mas na altura da sua conceção, a cidade parecia ter-se sensibilizado face à perda de qualidade de vida que resulta da distorção de escala, e a Câmara Municipal rejeitou o plano inicial do investidor. Na esperança de realizar mesmo assim o projeto, com os parâmetros financeiros e espaciais previstos, o investidor contactou a Sebastian Treese Architects com um pedido para o reformular de uma forma aceitável para a câmara municipal.

Typical street character of old town Kempen | Aspecto típico de las calles del centro histórico de Kempen | Caráter de rua típico do centro histórico de Kempen

The architects responded with a pragmatic solution, in which the parcellation of the medieval city was still apparent in the newly designed façade. In other words, the house looks like six houses. The listed façade of a baroque house on the site was integrated into the project, adding credibility to the ensemble. Admittedly, the division of a larger building into smaller units is nothing new. In Berlin this approach was often used after reunification in 1989 as a kind of "construction kit". Here, however, it has played out more radically and more subtly – and is more successful.

Los arquitectos respondieron con una solución pragmática en la que la parcelación de la ciudad medieval era todavía evidente en la fachada del nuevo diseño. Dicho de otra forma, parece que el inmueble está formado por seis casas. La fachada protegida de una casa barroca situada en la misma parcela se integró en el proyecto, dando credibilidad al conjunto. Evidentemente, la división de un edificio grande en unidades más pequeñas no es nada nuevo. En Berlín este planteamiento se utilizó frecuentemente tras la reunificación de 1989 como una especie de "kit de construcción". Aquí, sin embargo, se ha interpretado de una forma más radical y sutil, y el resultado es mucho mejor.

Os arquitetos responderam com uma solução pragmática, na qual o parcelamento da cidade medieval era ainda visível na fachada recém-desenhada. Por outras palavras, a casa parece ser seis casas. A fachada listada de uma casa barroca local foi integrada no projeto, acrescentando credibilidade ao conjunto. É certo que a divisão de um edifício maior em unidades mais pequenas não é novidade. Em Berlim, esta abordagem foi frequentemente utilizada após a reunificação, em 1989, como uma espécie de "kit de construção". Aqui, no entanto, revelou-se mais radical e mais subtil – e é mais bem sucedida.

1: The corner building looking from Donkwall. 2: Small ornamental gable on building along the historic Donkwall | 1: El edificio en esquina visto desde Donkwall. 2: Pequeño gablete ornamental en un edificio del histórico Donkwall | 1: Perspetiva do edifício de esquina a partir de Donkwall. 2: Pequena empena ornamental em edifício da zona histórica de Donkwall (Ralf Schmitz)

The radicality of the concept stems from the precise incorporation of the building lines of the town's pre-modern layout, although the building itself is not directly mirrored by the façade structure. The apartment floors also make subtle use of the given articulation. The interplay between façade and interior gives the building its structure and aesthetic as well as certain deviations and ambiguities. Avoiding a direct architectural expression of the "construction kit" enhanced the building's elasticity and granularity and allowed it to incorporate the site's history.

La radicalidad del concepto proviene de la incorporación precisa de las líneas de edificación del trazado premoderno de la ciudad, aunque el edificio propiamente dicho no se refleja directamente en la estructura de la fachada. Las plantas de los apartamentos también utilizan sutilmente la articulación dada. La interacción entre la fachada y el interior confiere al edificio su estructura y su estética, así como ciertas desviaciones y ambigüedades. Al evitar una expresión arquitectónica directa del "kit de construcción", se mejoró la versatilidad y el nivel de detalle del edificio y esto permitió incorporar la historia del emplazamiento.

A radicalidade do conceito deriva da incorporação precisa das linhas de construção da configuração pré-moderna da cidade, embora o edifício em si não seja diretamente espelhado pela estrutura da fachada. Os andares dos apartamentos também fazem um uso subtil da articulação oferecida. A interação entre a fachada e o interior confere ao edifício a sua estrutura e estética, bem como certos desvios e ambiguidades. Evitar uma expressão arquitetónica direta do "kit de construção" reforçou a elasticidade e granularidade do edifício, e permitiu-lhe incorporar a história do local.

To determine why historic parcellation works better than the more functionalist Berlin parcellation, we must first ask what the aim of such parcellation was. As the council's intervention shows, there is a psychological need for the small-scale format of the pre-modern town, linked to walking speed and the scale of the human body. Each individual building interacts with each individual human body. And interestingly, this relationship works better with variable and elastic plot divisions than with repetitive and functional divisions – and certainly better than when no or only rough plot divisions are established.

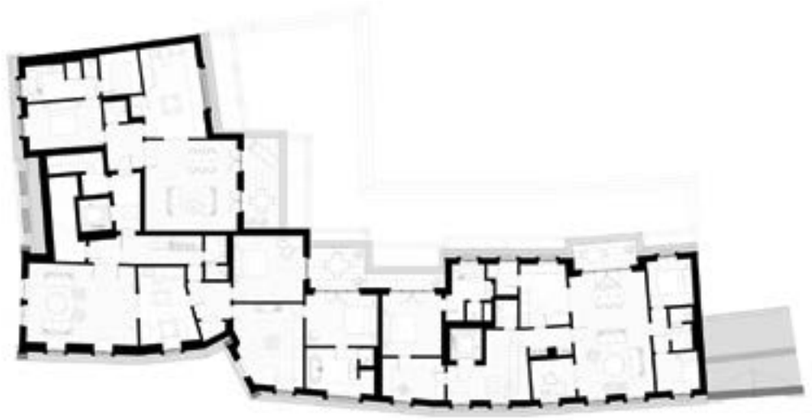
Para entender por qué la parcelación histórica funciona mejor que la parcelación más funcionalista de Berlín, debemos preguntarnos primero cuál era el objeto de dicha parcelación. Como demuestra la intervención municipal, existe una necesidad psicológica de los elementos de pequeña escala de la ciudad premoderna, vinculados a la velocidad a la que se camina y a la escala del cuerpo humano. Cada edificio interactúa con cada cuerpo humano individual. Y, curiosamente, esta relación funciona mejor con divisiones de parcelas variables y flexibles que con las repetitivas y funcionales y, por supuesto, mucho mejor que cuando no hay parcelación o esta es sólo aproximada.

Para determinar a razão pela qual o parcelamento histórico funciona melhor do que o parcelamento mais funcional de Berlim, devemos primeiro perguntar qual era o objetivo de tal parcelamento. Como mostra a intervenção da câmara municipal, existe uma necessidade psicológica do formato em pequena escala da cidade pré-moderna, associado à velocidade de marcha e à escala do corpo humano. Cada edifício individual interage com cada corpo humano individual. E, curiosamente, esta relação funciona melhor com divisões de terreno variáveis e elásticas, do que com divisões repetitivas e funcionais – e certamente melhor do que quando não se estabelecem divisões de terreno ou se estabelecem apenas divisões grosseiras.

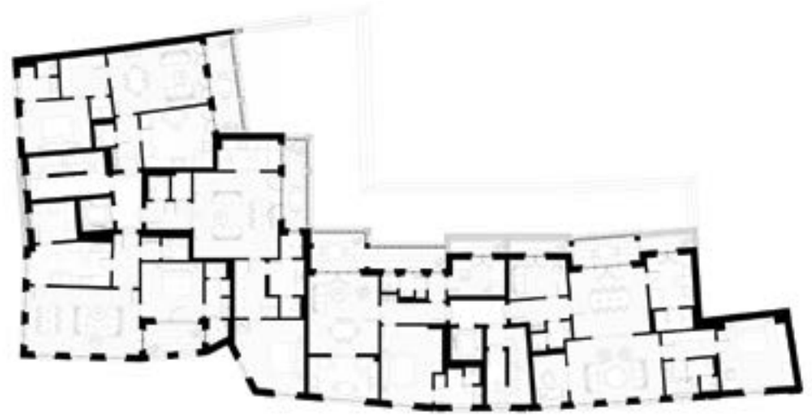
The language of traditional architecture expresses this interplay between bodies in the form of accumulated knowledge about how this mediation occurs and is accommodated at any scale. The small baroque façade on Peterstrasse with its knee-high plinth and full-story door

El lenguaje de la arquitectura tradicional expresa esta relación entre los cuerpos en forma de conocimientos acumulados sobre cómo sucede esta mediación y cómo se adapta a cualquier escala. La pequeña fachada barroca en Peterstrasse, con un zócalo al nivel de la rodilla y una

A linguagem da arquitetura tradicional expressa esta interação entre corpos na forma de conhecimento acumulado sobre como esta mediação ocorre e é acomodada em qualquer escala. A pequena fachada barroca em Peterstrasse, com o seu plinto à altura do joelho e a sua porta com a altura do andar, faz isto com tanto sucesso como a fachada maciça do Pala-



Attic floor plan | Plano del ático | Planta do sótão



Second floor plan | Plano de la segunda planta | Planta do segundo andar

First floor plan | Plano de la primera planta | Planta do primeiro andar

The ensemble along the historic Donkwall (city wall) | El conjunto en el histórico Donkwall (muralla de la ciudad) | O conjunto ao longo da zona histórica de Donkwall (muro da cidade) (Ralf Schmitz)

does this as successfully as the massive façade of Palazzo Farnese, with its bench and the aediculae that turn each window into a part of the whole.

The six façades of the house on Donkwall in Kempen precisely accomplish this transformation – between the body of the town, the body of the house, and the body of each pedestrian passing by. They structure the building in a way that is composed and casual, appropriate and familiar. And this articulation works without functional pretense. The building has two entrances and two garage doors, and that is all the six façades need. You do not have to be convinced by their presence; you simply experience them.

puerta de un piso de altura, lo logra con tanto éxito como la fachada masiva del Palazzo Farnese, con su banco y con los edículos que convierten cada ventana en una parte del conjunto.

Las seis fachadas de la casa de Donkwall en Kempen consiguen precisamente esta transformación: entre el cuerpo de la ciudad, el cuerpo de la casa y el cuerpo de cada peatón que pasa por delante. Las fachadas estructuran el edificio de una forma serena e informal, conveniente y familiar. Y esta articulación funciona sin pretextos funcionales. El edificio tiene dos entradas y dos puertas cocheras y eso es todo lo que necesitan las seis fachadas. No hay que dejarse convencer por su presencia, sino simplemente experimentarla.

zzo Farnese, com o seu banco e as aedículas que transformam cada janela numa parte do todo.

As seis fachadas da casa em Donkwall, Kempen, realizam precisamente esta transformação – entre o corpo da cidade, o corpo da casa, e o corpo de cada pedestre que passa. Elas estruturam o edifício de uma forma que é composta e casual, apropriada e familiar. E esta articulação funciona sem pretensões funcionais. O edifício tem duas entradas e duas portas de garagem, e isso é tudo o que as seis fachadas precisam. Não precisamos de ser convencidos pela sua presença; basta experienciá-las.

Blending in with the existing context | Integración en el contexto existente | Integrando-se no contexto existente (Ralf Schmitz)

There are other contradictions besides those resulting from the functional requirements of contemporary construction and expectations at street level. Most striking perhaps are the need to accommodate cars within buildings, the provision of outdoor spaces for apartments in the form of balconies and loggias, which tend to perforate rather than give form to an urban space, and the increasing scarcity of public uses such as stores and workshops at street level. Yet the question of ground-floor use and other social issues in general cannot be solved by a mere architectural project.

As with the building's overall structure, Sebastian Treese Architects approached this aspect with unapologetic pragmatism. The lack of public use on the ground floor was resolved almost brutally by using the space to accommodate residents' cars. At street level, this solution is discretely camouflaged by typical shop windows. As with the formulation of the six façades, it is not "honest" in a functional sense, i.e. it does not represent the actual function. But if the function cannot be represented aesthetically, surely it must somehow be transformed. Even in societies seen as enlightened, functions directly related to physical needs are not publicly represented. Perhaps the handling of our transportation needs may fall into the same category?

Hay otras contradicciones, además de las derivadas de los requisitos funcionales de la construcción actual y las expectativas a pie de calle. Quizás lo más sorprendente sea la necesidad de acomodar los vehículos en el edificio, la provisión de espacios exteriores para los apartamentos en forma de balcones y logias, que suelen perforar en lugar de conformar el espacio urbano, y la creciente escasez a pie de calle de usos públicos como tiendas y talleres. Sin embargo, la cuestión del uso de la planta baja y otros problemas sociales en general no se pueden solucionar con un mero proyecto arquitectónico.

Como ocurre con la estructura general del edificio, Sebastian Treese Architects enfocaron este aspecto con un pragmatismo sin complejos. La ausencia de uso público en la planta baja se solucionó casi brutalmente utilizando el espacio como garaje para los vehículos de los residentes. En la calle esta solución se camufló discretamente con escaparates típicos de tienda. Al igual que con la formulación de las seis fachadas, no es "honesto" en un sentido funcional, es decir, no representa la función real. Pero si la función no puede representarse estéticamente, seguramente debe transformarse de alguna manera. Incluso en aquellas sociedades que se consideran progresistas las funciones directamente relacionadas con las necesidades físicas no se representan públicamente. ¿Quizá la gestión de las necesidades de transporte entre en esta categoría?

Existem outras contradições para além das que resultam das exigências funcionais da construção contemporânea e das expectativas ao nível da rua. Mais marcantes talvez sejam a necessidade de acomodar carros dentro dos edifícios, o fornecimento de espaços exteriores para os apartamentos, sob a forma de varandas e lógias, que tendem a perfurar em vez de dar forma ao espaço urbano, e a crescente escassez de instalações públicas, tais como lojas e oficinas ao nível de rua. Contudo, a questão da utilização do rés-do-chão e outros problemas sociais de modo geral, não podem ser resolvidos por um mero projeto arquitetónico.

Tal como na estrutura geral do edifício, a Sebastian Treese Architects abordou este aspeto com um pragmatismo irreverente. A falta de instalações públicas no rés-do-chão foi resolvida quase brutalmente através da utilização do espaço para acomodar os carros dos residentes. Ao nível das ruas, esta solução é discretamente camuflada pelas típicas montras das lojas. Tal como na formulação das seis fachadas, não é "honesta" num sentido funcional, ou seja, não representa a função real. Mas se a função não pode ser representada esteticamente, certamente que deve ser de alguma forma transformada. Mesmo em sociedades vistas como iluminadas, as funções diretamente relacionadas com as necessidades físicas não são representadas publicamente. Talvez o manuseamento das nossas necessidades de transporte possa enquadrar-se na mesma categoria?

We may ask the underlying question of whether there is a general conflict between technically desirable solutions and solutions that can be perceived sensually as pleasant and appropriate. Could there be an objective conflict between human demands for an appropriate habitat, flexible as they may be, and the systemic logic of technical solutions?

Podríamos plantear la pregunta subyacente de si existe un conflicto generalizado entre las soluciones técnicamente deseables y las soluciones que resultan agradables y adecuadas a los sentidos. ¿Podría haber un conflicto objetivo entre la exigencia humana de un hábitat adecuado, todo lo flexible que pueda ser, y la lógica sistémica de las soluciones técnicas?

Podemos formular a questão subjacente de saber se existe um conflito geral entre soluções tecnicamente desejáveis e soluções que possam ser entendidas sensualmente como agradáveis e apropriadas. Poderá existir um conflito objetivo entre as exigências humanas de um habitat apropriado, por mais flexíveis que elas sejam, e a lógica sistémica das soluções técnicas?

Outdoor built spaces are an important part of contemporary living, and traditional architectural language has various ways of providing them – far more than are available to modernism with its reductive vocabulary. The courtyards of Roman townhouses, the terraces of Italian Renaissance villas, or Edwardian pergolas in English landscape gardens are just a few shining examples. In urban space, however, the task is more difficult. Balconies disrupt the streetscape and terraces prevent streets from being formed. There are indeed few examples of historic urban settings that are well defined by architecturally composed outdoor spaces.

Los espacios exteriores de los edificios son una parte importante de la vida actual y el lenguaje arquitectónico tradicional dispone de diferentes formas de proporcionarlos, muchas más que la modernidad con su vocabulario reduccionista. Los patios de las casas romanas, las terrazas de las villas renacentistas italianas o las pérgolas eduardianas de los jardines ingleses son solo algunos ejemplos brillantes. En el espacio urbano, sin embargo, la tarea es más complicada. Los balcones interrumpen el paisaje urbano y las terrazas impiden la formación de las calles. De hecho, hay pocos ejemplos de entornos urbanos históricos bien definidos por espacios exteriores de edificios compuestos arquitectónicamente.

Os espaços construídos ao ar livre são uma parte importante da vida contemporânea, e a linguagem arquitetónica tradicional tem ao seu dispor várias formas de os providenciar – muitas mais do que as que estão ao dispor do modernismo com o seu vocabulário redutor. Os pátios das casas de cidade Romanas, os terraços das moradias Renascentistas Italianas, ou as pérgulas Eduardianas nos jardins Ingleses são apenas alguns exemplos radiantes. Nos espaços urbanos, no entanto, a tarefa é mais difícil. As varandas perturbam a paisagem das ruas e os terraços impedem a formação de ruas. De facto, há poucos exemplos de cenários urbanos históricos que são bem definidos por espaços exteriores que são integrados arquitetonicamente.

View into the courtyard garden with individual apartment terraces | Vista del jardín del patio con las terrazas privadas de los apartamentos | Vista para o jardim do pátio e varandas individuais dos apartamentos (Ralf Schmitz)

The ensemble at Peterstraße with integrated listed façade (yellow house) | El conjunto en Peterstraße con la fachada protegida integrada (casa amarilla) | O conjunto em Peterstraße com fachada listada integrada (casa amarela) (Ralf Schmitz)

Yet what may have been even more decisive in the Donkwall development is the fact that even successful and innovative solutions for such outdoor spaces in an urban setting would break with historical continuity in a small town. And for the people of Kempen, the building should fit naturally into their town's fabric. Apart from two loggias on Donkwall, Sebastian Treese Architects therefore decided – again quite pragmatically – to make terraces to the rear of the building. The first-floor roof area of the garage can also be used as a garden. The exterior spaces that go with the apartments remain private and hidden and, of course, this contrast between the public façade and the private, more informal rear is again a proven traditional approach, courteous and considerate.

Sin embargo, lo que puede haber sido más decisivo en el proyecto de Donkwall es el hecho de que incluso las soluciones innovadoras satisfactorias para dichos espacios exteriores de edificios en un entorno urbano habrían roto la continuidad histórica en una ciudad pequeña como esta. En cuanto a los habitantes de Kempen, el edificio debía encajar naturalmente en el tejido urbano. Aparte de las dos logias en Donkwall, Sebastian Treese Architects decidieron –una vez más de forma bastante pragmática– situar las terrazas en la parte trasera del edificio. La azotea de la primera planta del garaje también se puede utilizar como jardín. Los espacios exteriores de los apartamentos siguen así siendo privados y quedan ocultos y, naturalmente, este contraste entre fachada pública y la parte trasera privada y más informal es un enfoque tradicional comprobado, respetuoso y considerado.

No entanto, o que pode ter sido ainda mais decisivo no projeto de Donkwall, é o facto de que mesmo soluções bem sucedidas e inovadoras para tais espaços exteriores num ambiente urbano, romperiam com a continuidade histórica numa cidade pequena. E para o povo de Kempen, o edifício deveria enquadrar-se naturalmente no tecido da sua cidade. Para além de duas lógias em Donkwall, a Sebastian Treese Architects decidiu – mais uma vez de forma bastante pragmática – construir os terraços na parte de trás do edifício. A cobertura da garagem no primeiro andar pode também ser utilizada como jardim. Os espaços exteriores que acompanham os apartamentos permanecem privados e escondidos e, claro, este contraste entre a fachada pública e a parte das traseiras, mais privada e informal, é mais uma vez uma abordagem tradicional comprovada, cortês e atenciosa.

Biographies | Biografías | Biografias

Tobias Zepter

Tobias (author of this article) studied architecture in Berlin and Delft (NL) and worked after his graduation for Modersohn & Freiesleben Architekten in Berlin. Since 2003 he has been freelance. In 2009 he published the book *Das Leben der Dinge* (The Life of Things), a monograph on the work of Modersohn & Freiesleben and a general reflection on architecture. Between 2008 and 2015 he worked in partnership with Modersohn & Freiesleben on a hotel project in Cochin, Kerala state, India. He and his family lived alternately in Cochin and Berlin from 2010 to 2015. The buildings in Kerala were constructed in close cooperation with local craftsmen and engineers, and reflect this cooperation as well as an engagement with local traditions, techniques and materials. In 2017 Antje Freiesleben and Tobias imported furniture produced in Kerala and designed by Hendrike Farenholtz and Tobias for a "pop-up" sale in Berlin. Since 2018 Tobias has been working in partnership with Sebastian Treese Architects on a house in Mumbai. At the same time he works on his own projects in Berlin and its region. Reflections on architecture and contemporary living culture are a necessary part of Tobias's professional practice.

Tobias (autor de este artículo) estudió arquitectura en Berlín y Delft (Países Bajos) y tras graduarse trabajó para Modersohn & Freiesleben Architekten en Berlín. Desde 2003 es autónomo. En 2009 publicó *Das Leben der Dinge* (La vida de las cosas), una monografía sobre la obra de Modersohn & Freiesleben y una reflexión general sobre arquitectura. Entre 2008 y 2015 se asoció con Modersohn & Freiesleben para el proyecto de un hotel en Cochín, en el estado indio de Kerala. Junto con su familia residió entre Cochín y Berlín desde 2010 hasta 2015. Los edificios de Kerala se construyeron en estrecha colaboración con artesanos e ingenieros locales y reflejan esta cooperación, así como el compromiso con las tradiciones, técnicas y materiales locales. En 2017 Antje Freiesleben y Tobias importaron muebles fabricados en Kerala y diseñados por Hendrike Farenholtz y Tobias para una venta "pop-up" en Berlín. Desde 2018 Tobias colabora con Sebastian Treese Architekten en una casa en Bombay. Al mismo tiempo, trabaja en sus propios proyectos en Berlín y alrededores. La reflexión sobre la arquitectura y la cultura viva contemporánea es una parte indispensable del ejercicio profesional de Tobias.

Tobias (autor deste artigo) estudou arquitetura em Berlim e em Delft (NL) e trabalhou após a sua graduação em Modersohn & Freiesleben Architekten em Berlim. Desde 2003 é trabalhador independente. Em 2009, publicou o libro *Das Leben der Dinge* (a vida das coisas), uma monografia sobre o trabalho de Modersohn & Freiesleben e uma reflexão geral sobre a arquitetura. Entre 2008 e 2015 trabalhou em parceria com Modersohn & Freiesleben num projeto hoteleiro em Cochim, no estado de Querala, na Índia. Ele e a sua família viveram alternadamente em Cochin e Berlin entre 2010 e 2015. Em 2017, Antje Freiesleben e Tobias importaram mobiliário produzido em Querala e concebido por Hendrike Farenholtz e Tobias para uma venda "pop-up" em Berlim. Desde 2018, Tobias tem colaborado em parceria com Sebastian Treese Architekten numa casa em Mumbai. Ao mesmo tempo, trabalha nos seus próprios projetos em Berlin e na sua região. Reflexões sobre a arquitetura e cultura viva contemporânea são uma parte necessária da prática profissional de Tobias.

Sebastian Treese Architekten

In 2008, Sebastian Treese established his own firm in Berlin after completing his studies at the Berlin University of the Arts and working with Hans Kollhoff also in Berlin. Sebastian grew up in Mainz in a Catholic region of Germany with a palpable Roman heritage, surrounded by Romanesque cathedrals and imperial palaces. The contrasts between a Catholic region of Europe and the rich and fragmented present state of architecture in Berlin have shaped Sebastian's architectural sensibility. Sebastian Treese Architects was founded in 2011. Julia Treese joined the practice in 2012, and Jan Burggraf joined as a partner in 2013. Since 2016, the practice has been architect of record in collaboration with Robert AM Stern Architects for a villa in Berlin Grunewald and for a large residential project in central Berlin. In 2021 the firm opened a branch office in Munich. At the core of its work lies the conviction that tradition in architecture is a cultural and technical accumulation of human knowledge and spirit. Building involves applying this heritage to the present. The firm has grown significantly in the past ten years. Ralf Schmitz has been its chief client and a valuable support. Outside Berlin, the focus of its work has been projects in Hamburg, Munich and Düsseldorf. Its first building outside Germany is situated in Mumbai, India, and is currently under construction. In 2021 Sebastian Treese Architects received the Richard H. Driehaus Prize. Since 2021, Sebastian and Julia Treese are visiting professors at the Notre Dame School of Architecture, Indiana, USA.

En 2008, Sebastian Treese abrió un estudio en Berlín tras terminar la carrera en la Facultad de Artes de la ciudad y trabajar con Hans Kollhoff, también en Berlín. Sebastian creció en Maguncia, una región católica de Alemania con un patrimonio romano tangible, rodeado de catedrales románicas y palacios imperiales. El contraste entre una zona católica de Europa y el rico y fragmentado estado actual de la arquitectura en Berlín han forjado la sensibilidad arquitectónica de Sebastian. Sebastian Treese Architekten se fundó en 2011. Julia Treese se incorporó al estudio en 2012, y Jan Burggraf se asoció en 2013. Desde 2016, el estudio ha llevado la dirección de obra, en colaboración con Robert AM Stern Architects, de una vivienda en el área de Grunewald y de un gran proyecto residencial en el centro de Berlín. En 2021 el estudio abrió una oficina en Múnich. En el fondo su trabajo subyace el convencimiento de que la tradición en arquitectura es la suma cultural y técnica de conocimientos y espíritu. Construir significa aplicar este legado al presente. El estudio ha crecido considerablemente en los diez últimos años. Ralf Schmitz ha sido su principal cliente y un valioso apoyo. Fuera de Berlín, el estudio se ha centrado en proyectos en Hamburgo, Múnich y Düsseldorf. Su primer edificio fuera de Alemania está en Bombay (India) y se encuentra actualmente en construcción. En 2021 Sebastian Treese Architekten recibió el Premio Richard H. Driehaus. Desde 2021 Sebastian y Julia Treese son profesores visitantes en la Escuela de Arquitectura de la Universidad de Notre Dame, en Indiana, EEUU.

Em 2008, Sebastian Treese estabeleceu a sua própria firma em Berlim após completar os seus estudos na Universidade das Artes de Berlim e após colaborar com Hans Kollhoff, também em Berlim. Sebastian cresceu em Mogúncia numa região católica da Alemanha com um património romano palpável, rodeado de catedrais românicas e palácios imperiais. O contraste entre a região católica da Europa e o seu rico e fragmentado estado atual da arquitetura em Berlim moldaram a sensibilidade arquitetónica de Sebastian. Sebastian Treese Architekten foi fundada em 2011. Julia Treese uniu-se ao gabinete em 2012, e Jan Burggraf como sócio em 2013. Desde 2016, o gabinete colabora com Robert AM Stern Architects para uma vila em Berlim Grunewald e para um grande projeto residencial no centro de Berlim. Em 2021, a firma abriu uma filial em Munique. O seu trabalho centra-se na convicção de que a tradição na arquitetura é uma acumulação cultural e técnica de conhecimento e espírito humano. A construção envolve a aplicação deste património ao presente. A firma tem crescido significativamente nos últimos dez anos. Ralf Schmitz tem sido o seu principal cliente e um valioso apoio. Fora de Berlim, o seu trabalho inclui projetos em Hamburgo, Munique e Dusseldorf. O seu primeiro edifício fora da Alemanha, atualmente em construção, localiza-se em Mumbai, Índia. Em 2021, Sebastian Treese Architekten recebeu o Prémio Richard H. Driehaus. Desde 2021, Sebastian e Julia Treese são professores convidados na Escola de Arquitetura de Notre Dame, Indiana, EUA.

Karaglukh Village, Nagorno-Karabakh: An Attempt at Revival through Traditional Architecture

El pueblo de Karaglukh, Alto Karabaj: Un intento de recuperación a través de la arquitectura tradicional

Aldeia de Karaglukh, Alto Carabaque: Uma tentativa de recuperação através da arquitetura tradicional

Maxim Atayants

I see this project as the most significant that I have done as an architect. It was a unique case in my practice in that between architect and client there was full understanding and no disputes. Yet this can be explained simply: I designed and built this little church wholly with my own funds.

The village of Karaglukh, that of my paternal ancestors, is on the outskirts of the former Soviet Union in the eastern Armenian highlands within an area of long-standing ethnic conflict, which after the collapse of the Soviet Union quickly turned into a bloody war of ethnic cleansing. Karaglukh, among many neighboring villages, was abandoned and destroyed.

In 2011 I decided to revive the village as best I could, planning to build five new stone houses and a workshop for processing local farm produce. But I started with the construction of a new church. Leaving spiritual motives aside, I may note that the choice had rational grounds: the building of a church was a symbolic gesture, making the locals believe in a revival of the village and convincing the authorities that I was in earnest.

Este proyecto me parece el más importante que he hecho como arquitecto. En mi experiencia profesional, fue un caso único de compenetración absoluta entre arquitecto y cliente, sin la más mínima controversia. La explicación es sencilla: proyecté y construí esta pequeña iglesia financiándola totalmente por mi cuenta.

El pueblo de Karaglukh, de donde procede mi familia paterna, está casi en el límite de la antigua Unión Soviética, en las montañas al este de Armenia, dentro de una zona sumida en un permanente conflicto étnico que, tras la desintegración de la Unión Soviética, pasó rápidamente a convertirse en una cruenta guerra de limpieza étnica. Karaglukh, como otros muchos pueblos cercanos, fue abandonado y destruido.

En 2011 decidí recuperar el pueblo lo mejor que pudiera, para lo que planifiqué la construcción de cinco casas nuevas de piedra y una planta de transformación de los productos agrícolas locales. Sin embargo, empecé construyendo una nueva iglesia. Dejando a un lado la motivación espiritual, me gustaría señalar que la decisión tenía un fundamento racional: la construcción de una iglesia fue un gesto simbólico para que los habitantes creyeran en la recuperación del pueblo y para convencer a las autoridades de que mi proyecto iba en serio.

Gostaria de falar sobre um projeto que para mim é o mais importante que já executei como arquiteto. Foi um caso único na minha prática, em que entre arquiteto e cliente existiu uma compreensão plena e nenhuma disputa. No entanto, isto pode ser explicado de forma simples: projetei e construí esta pequena igreja integralmente com os meus próprios fundos.

A aldeia de Karaglukh, dos meus antepassados paternos, situa-se na periferia da antiga União Soviética, nas terras altas da Arménia oriental, numa área de conflito étnico persistente, que após o colapso da União Soviética rapidamente se transformou numa sangrenta guerra de limpeza étnica. Karaglukh, entre muitas aldeias vizinhas, foi abandonada e destruída.

Em 2011 decidi recuperar a aldeia o melhor que pude, planeando construir cinco novas casas de pedra e uma oficina para a transformação de produtos agrícolas locais. Mas comecei com a construção de uma nova igreja. Deixando de lado os motivos espirituais, devo salientar que a escolha teve fundamentos racionais: a construção de uma igreja foi um gesto simbólico, que fez os habitantes locais acreditarem numa recuperação da aldeia, e convenceu as autoridades da minha seriedade.

< Church of St. John the Baptist, east facade | Iglesia de San Juan Bautista, fachada oriental | Igreja de S. João Batista, fachada este

Ruined and uninhabited village in 2011 | Pueblo deshabitado y en ruinas en 2011 | Aldeia deserta e em ruínas, em 2011

"Karaglukh" means "top of the rock" in Armenian. The village is built on the last spurs of the mountains before the terrain descends into the valley of the Araks River. The church was sited on flat ground near a cliff so that it would be right above the village and visible from afar, up to 10 km away.

For the design I determined the following principles: the church should become such an organic part of the landscape that it would seem to have always been there; and its language, logic, and form should be deeply traditional but without any copying of specific prototypes or stylization in the manner of any one century – a new, personal statement in a traditional discourse intelligible to future parishioners.

"Karaglukh" significa "alto de la roca" en armenio. El pueblo está construido en las estribaciones de las montañas. A partir de allí, el terreno desciende hacia el valle del río Araks. La iglesia se situó en un lugar llano cerca de un desfiladero para que quedara justo por encima del pueblo y se viera al menos desde una distancia de 10 kilómetros.

Para su diseño decidí seguir los siguientes principios: la iglesia se convertiría en una parte tan orgánica del paisaje que parecería que siempre hubiera estado allí; su lenguaje, su lógica y su forma debían ser profundamente tradicionales, pero sin copiar ningún prototipo específico ni llevar a cabo una estilización a la manera de un siglo concreto, sino que sería una propuesta nueva y personal dentro de un discurso tradicional inteligible para los futuros parroquianos.

"Karaglukh" significa "topo da rocha" em Arménio. A aldeia foi construída no cume das montanhas, antes do terreno começar descer para o vale do rio Araks. A igreja foi construída num terreno plano, perto de um penhasco, de modo a ficar mesmo acima da aldeia e a ser visível de longe, até 10 quilômetros de distância.

Para o projeto, determinei os seguintes princípios: a igreja deveria tornar-se uma parte orgânica da paisagem, que pareceria ter estado sempre ali; e a sua linguagem, lógica e forma deveriam ser profundamente tradicionais, mas sem qualquer cópia de protótipos específicos ou estilização à maneira de qualquer século - uma declaração nova e pessoal numa linguagem tradicional inteligível para os futuros paroquianos.

The characteristic features of Armenian church architecture – crystalline sharpness of form and precise geometry in volumes and planes together with sparse decoration – are largely owing to traditional construction techniques. The outer and inner surfaces of the walls are built of stone blocks, hewn cleanly on the outside and roughly inside for bonding with the lime-and-tuff concrete, forming the building's monolithic shell.

The decision to use traditional techniques for every detail was a matter of principle, so a team of qualified restorers with over thirty years' experience of working on seventh-

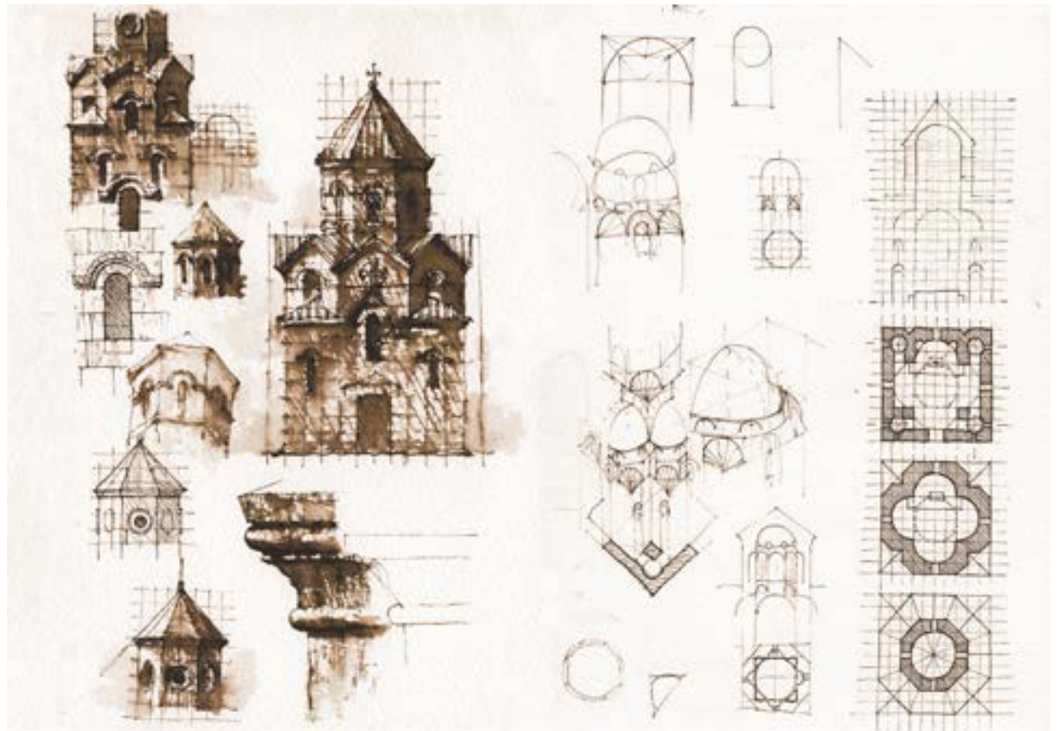
Las características de la arquitectura religiosa armenia –nitidez cristalina de la forma y geometría precisa de los volúmenes y planos junto con una decoración austera– vienen impuestas en gran medida por las técnicas de construcción tradicionales. Las superficies exteriores e interiores de los muros están construidas con sillares labrados limpiamente en el exterior y toscamente en el interior, para su mejor traba con el interior de hormigón de toba y cal con el que forman el caparazón monolítico del edificio.

La decisión de utilizar técnicas tradicionales en cada detalle era cuestión de principios, por lo que para las obras de construcción se contrató a un equipo

As características da arquitetura das igrejas na Arménia – contraste cristalino da forma e geometria precisa em volumes e planos, juntamente com decoração escassa – devem-se em grande parte às técnicas tradicionais de construção. As superfícies exteriores e interiores das paredes são construídas em blocos de pedra, talhadas de forma limpa no exterior e grosseira no interior para a colagem do betão de cal e tufo, formando a concha monolítica do edifício.

A decisão de utilizar técnicas tradicionais para cada detalhe foi uma questão de princípio, pelo que uma equipa de restauradores qualificados com mais de trinta anos de experiência de trabalho em igrejas dos séculos XVII a XIV, foi

Design for the Church of St. John the Baptist, freehand sketches | Diseño de la Iglesia de San Juan Bautista, bocetos a mano alzada | Desenho para a Igreja de S. João Batista, esboços à mão livre



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1, 2: Views of the Church from different points | 1, 2: Vistas de la Iglesia desde distintos puntos | 1, 2: Vistas da Igreja de diferentes pontos

to fourteenth-century churches was hired for the building work. The idea of using local stone had to be discarded because all the nearby quarries had been abandoned after the war. Following research, the traditional Armenian ginger-colored volcanic tuff and a more robust pinkish-gray basalt were chosen for the stylobate and roofing.

In selecting stone blocks, the masons applied the traditional method for revealing hidden defects: water was poured onto the horizontal surface of a roughly shaped block, and if it dried unevenly and faster along a line, this was taken to show a hidden crack. Before being used for masonry, the tuff blocks were split in half and the rear surface of each half was roughly chamfered to a pyramidal shape so that the side planes forming the joint with the neighboring stones were no more than 2 cm deep. This configuration allows the core of lime-cement mortar mixed with tuff fragments to bond more firmly with the blocks and to better withstand seismic shocks.

Work on the site began in April 2012 and continued for 16 months with a break in January-February, when temperatures often dip below zero. I was helped by Manushak Titanyan, who took care of the technical documentation and construction supervision, and Marat Petrosyan, who was in charge of the construction work. As the infrastructure had been destroyed by the war, a water tank had to be repaired and water temporarily piped from a spring 1.5 km away. Construction materials and dozens of tons of stone blocks which had to be transported from 400 km away and hauled up the mountain on an unpaved road. The local authorities helped with electricity.

de restauradores cualificados con más de treinta años de experiencia en trabajos en iglesias de los siglos VII al XIV. La idea de utilizar piedra local tuvo que descartarse porque todas las canteras de la zona quedaron abandonadas después de la guerra. Tras estudiarlo, se eligió la tradicional toba volcánica rojiza de Armenia y un basalto gris rosáceo más robusto para el estilóbato y la cubierta.

A la hora de elegir los sillares, los albañiles aplicaron el método tradicional para descubrir vicios ocultos: se vertía agua en la superficie horizontal de un sillar desbastado y si se secaba irregularmente y más deprisa a lo largo de una línea, significaba que había una grieta oculta. Antes de utilizarlos en las fábricas los bloques de toba se cortaron por la mitad y la superficie posterior de cada mitad se achaflanó toscamente dándole una forma piramidal, de manera que los planos laterales que forman la junta con los sillares adyacentes no tuvieran más de 2 centímetros de profundidad. Esta configuración permite que el núcleo de mortero de cal y fragmentos de toba se trabe más firmemente con los sillares para soportar mejor las sacudidas sísmicas.

Las obras comenzaron en abril de 2012 y duraron 16 meses, con una parada en enero y febrero, cuando las temperaturas suelen caer bajo cero. Conté con la ayuda de Manushak Titanyan, quien se encargó de la documentación técnica y de la supervisión de las obras, y de Marat Petrosyan, que estuvo a cargo de las obras. Como las infraestructuras se destruyeron durante la guerra, hubo que reparar un depósito de agua y ésta se trajo temporalmente desde un arroyo situado a 1,5 km de distancia. Los materiales de construcción y docenas de toneladas de sillares tuvieron que transportarse desde una distancia de 400 km y arrastrarse hasta la cima de la montaña por un camino de tierra. Las autoridades locales ayudaron con la electricidad.

contratada para o trabalho de construção. A ideia de utilizar pedra local teve de ser descartada porque todas as pedreiras locais tinham sido abandonadas após a guerra. Após investigação, foram escolhidos para o estilóbata e telhado o tradicional tufo vulcânico Arménio cor de gengibre, e um basalto cinzento-rosado mais robusto.

Ao seleccionar os blocos de pedra, os pedreiros aplicaram o método tradicional para revelar os defeitos escondidos: a água foi vertida sobre a superfície horizontal de um bloco com uma forma grosseira, e se secasse de forma irregular e mais rápido ao longo de uma linha, isto revelaria a existência de uma fenda escondida. Antes de serem utilizados na alvenaria, os blocos de tufo foram partidos ao meio, e a superfície posterior de cada metade foi chanfrada grosseiramente numa forma piramidal, de modo que os planos laterais que formavam as juntas com as pedras vizinhas não tivessem mais de 2 cm de profundidade. Esta configuração permite que o núcleo da argamassa de cimento e cal, misturado com fragmentos de tufo, se ligue mais firmemente aos blocos e resista melhor aos choques sísmicos.

As obras no local começaram em Abril de 2012 e continuaram durante 16 meses, com uma pausa em Janeiro-Fevereiro, quando as temperaturas frequentemente descem abaixo de zero. Fui ajudado por Manushak Titanyan, que se encarregou da documentação técnica e supervisão da construção, e Marat Petrosyan, que foi o responsável pela obra de construção. Visto que as infra-estruturas tinham sido destruídas pela guerra, foi necessário reparar um reservatório de água, e canalizar temporariamente água de uma nascente situada a 1,5 km de distância. Os materiais de construção e dezenas de toneladas de blocos de pedra tiveram de ser transportados desde 400 km de distância, e transportados pela montanha acima por uma estrada não pavimentada. As autoridades locais ajudaram com a electricidade.

1: Transition from square to circle with squinches. 2: Masonry in the conch of the eastern apse. 3: Masonry in the dome's octagonal drum. 4: Round windows in the dome's octagonal drum | 1: Transición del cuadrado al círculo mediante trompas. 2: Mampostería en la bóveda de cuarto de esfera del ábside oriental. 3: Mampostería en el tambor octogonal de la cúpula. 4: Ventanas circulares en el tambor octogonal de la cúpula | 1: Transição de quadrado para círculo com trompas de ângulo. 2: Alvenaria da semi-cúpula da abside do lado Este. 3: Alvenaria do tambor octogonal da cúpula. 4: Janelas redondas do tambor octogonal da cúpula (Marat Petrosyan)

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The stone blocks were dressed and the profiled cornices, portal, and ornamental carvings were executed in situ. A special mastery was required of the craftspeople when forming the round windows in the dome drum because of the complex curving three-dimensional shape of the blocks and the conical window openings connecting the octagonal outer surface with the cylindrical interior. As the church was not expected to be heated, the upper windows were left unglazed for natural ventilation. The baptismal icon was made in Saint Petersburg by artist Svetlana Ponomarenko in metal enamel, drawing on iconography in medieval Armenian manuscripts. The carved oak door was crafted in Yerevan and the church cross was made in Saint Petersburg by Alexander Bogdanov and together with the bell were brought by air and then by road.

La preparación de los sillares, así como las cornisas perfiladas, el pórtico y la talla ornamental se realizaron in situ. Una maestría especial fue necesaria para hacer las ventanas circulares del tambor de la cúpula, debido a la compleja forma tridimensional curva de los sillares y las aperturas cónicas de las ventanas que conectan la superficie exterior octogonal con el interior cilíndrico. Como no estaba prevista calefacción en la iglesia, las ventanas superiores no se acristalaron, para tener ventilación natural. El icono bautismal lo realizó la artista Svetlana Ponomarenko en San Petersburgo con esmalte metálico a partir de la iconografía de manuscritos armenios medievales. La puerta de roble se talló en Ereván y la cruz y la campana de la iglesia, obras de Alexander Bogdanov, se fabricaron en Rusia y se trasladaron por avión y carretera.

Os blocos de pedra foram revestidos e as cornijas perfiladas, portal, e pedras ornamentais esculpidas foram executadas no local. Foi necessária uma maestria especial por parte dos artesãos ao compor as janelas redondas do tambor, devido à complexa forma tridimensional curva dos blocos, e às aberturas cónicas das janelas que estabelecem a ligação entre a superfície exterior octogonal e o interior cilíndrico. Como não se esperava que a igreja fosse aquecida, as janelas superiores foram deixadas sem vidros para permitir uma ventilação natural. O ícone baptismal foi feito em São Petersburgo pela artista Svetlana Ponomarenko, em esmalte metálico, inspirado na iconografia de manuscritos Arménios medievais. A porta de carvalho esculpido, foi feita em Yerevan, e a cruz da igreja foi feita em Saint Petersburg por Alexander Bogdanov, e foi trazida juntamente com o sino, por via aérea e depois terrestre.

1: Master stonemason working stone. 2: Church of St. John the Baptist, portal and dedicatory inscription | 1: Maestro cantero labrando la piedra. 2: Iglesia de San Juan Bautista, pórtico e inscripción dedicatoria | 1: Mestre pedreiro trabalhando a pedra. 2: Igreja de S. João Batista, portal e inscrição de dedicatória

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Sections, elevations and plans of the project of the Church of St. John the Baptist | Secciones, alzados y plantas del proyecto de la Iglesia de San Juan Bautista | Seções, elevações e planos do projeto do Igreja de S. João Batista

My local colleague, an experienced qualified architect, constantly monitored the progress of construction, and over the 16 months I visited at least ten times to supervise. Difficulties were overcome with the help of unconditional support from my family – my parents, wife, and two sons. The residents of nearby villages and the local authorities gave support throughout.

Mi compañero local, arquitecto cualificado con gran experiencia, controló constantemente el progreso de la construcción. Durante los 16 meses de obras visité el lugar al menos en diez ocasiones, para supervisarlas. Pude superar las dificultades gracias al apoyo incondicional de mi familia: mis padres, mi mujer y mis dos hijos. Los residentes de los pueblos cercanos y las autoridades locales prestaron su ayuda en todo el proceso.

O meu colega local, um arquiteto credenciado e experiente, monitorizou constantemente o progresso da construção, e ao longo dos 16 meses visitei o local pelo menos dez vezes, de forma a supervisionar. As dificuldades foram ultrapassadas com a ajuda do apoio incondicional da minha família – os meus pais, esposa e dois filhos. Os residentes das aldeias vizinhas e as autoridades locais deram apoio ao longo de todo o processo.

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The church's completion paved the way for the next stages of the plan. In 2014 construction began on five stone houses of 180-200 m^2 each, with the styles and materials characteristic of Karaghlukh building in the eighteenth and nineteenth centuries – masonry of local stone with lime mortar, oak verandas with carved capitals, and tiled roofs. In 2016 the old village church built by my family at the turn of the eighteenth and nineteenth centuries and turned into a warehouse under communist rule was reconsecrated following restoration.

La terminación de la iglesia fue el primer paso para las siguientes fases del plan. En 2014 se empezaron a construir cinco casas de piedra de entre 180 y 200 m^2, con los estilos y materiales característicos de las edificaciones de Karaglukh de los siglos XVIII y XIX: mampostería de piedra local con mortero de cal, galerías de madera de roble con capiteles labrados y cubiertas de teja. En el año 2016, la antigua iglesia del pueblo, construida por mi familia a finales del siglo XVIII y principios del XIX, que se había transformado en almacén durante el régimen comunista, se volvió a consagrar una vez restaurada.

A conclusão da igreja abriu caminho para as fases seguintes do plano. Em 2014, começou a construção de 5 casas de pedra com 180-200 m^2 cada, com o estilo e materiais caraterísticos do tipo de construção em Karaghlukh nos séculos XVIII e XIX – alvenaria de pedra local com argamassa de cal, varandas em carvalho com capitéis esculpidos, e coberturas em telha. Em 2016, a antiga igreja da aldeia, que tinha sido construída pela minha família entre os séculos XVIII e XIX, e transformada em armazém sob o regime comunista, foi reconsagrada no seguimento da restauração.

1: Interior view of the domes and squinches. 2: Dedication of the church to St. John the Baptist and consecration of its altar by Archbishop Pargev in September 5, 2013. 3: Liturgy and prayer. 4: Feast for the church's consecration. At the tables are natives of the village who traveled from several countries for the occasion | 1: Vista interior de las cúpulas y las trompas. 2: Consagración de la iglesia a San Juan Bautista y consagración del altar por el arzobispo Pargev el 5 de septiembre de 2013. 3: Liturgia y oración. 4: Fiesta de la consagración de la iglesia. Sentados a la mesa los lugareños que llegaron desde distintos países para la ocasión | 1: Vista interior das cúpulas e trompas de ângulo. 2: Dedicação da igreja a S. João Batista e consagração do seu altar pelo Arcebispo Pargev. 5 de Setembro de 2013. 3: Liturgia e oração. 4: Banquete da consagração da igreja. Nas mesas encontram-se nativos da aldeia, que viajaram de vários países para esta ocasião (3, 4: Areg Balayan)

On September 5, 2013 the church was consecrated in the name of St. John the Baptist before a large crowd, with some 400 people actually from the village, many traveling great distances for the occasion.

El 5 de septiembre de 2013 se consagró la iglesia bajo la advocación de San Juan Bautista ante una gran multitud, con unas 400 personas del pueblo y muchas otras que recorrieron largas distancias para la ocasión.

A 5 de Setembro de 2013, a igreja foi consagrada em nome de São João Batista perante uma grande multidão, com cerca de 400 pessoas provenientes da aldeia, tendo muitas viajado grandes distâncias para este acontecimento.

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By 2018, three of the five houses had been given free of charge to families returning to the village. The work continued, and Karaglukh gradually returned to life. The Church of St. John the Baptist became popular, with families living three to four hours away coming to baptize their children there.

En 2018 se habían entregado gratuitamente tres de las cinco casas a las familias que regresaron al pueblo. El trabajo continuaba y, poco a poco, Karaglukh volvía a la vida. La Iglesia de San Juan Bautista cobró popularidad y familias que vivían a tres y cuatro horas de trayecto venían a bautizar en ella a sus hijos.

Em 2018, três das cinco casas tinham sido concedidas gratuitamente às famílias que regressavam à aldeia. As obras continuaram, e Karaglukh regressou gradualmente à vida. A Igreja de S. João Batista tornou-se popular, com famílias que viviam a três ou quatro horas de distância a virem lá batizar os seus filhos.

View of the church and the village | Vista de la iglesia y del pueblo | Vista da igreja e da aldeia (press service of the President of Nagorno-Karabakh)

New village houses, 2017 | Nuevas casas del pueblo, 2017 | Casas novas da aldeia, 2017

At that time the front line of the frozen conflict drew closer, just 30-40 km away. Alarming signs were growing and the short war that broke out in late September 2020 led to the loss of Karaglukh and dozens of other villages, whose inhabitants were forced to flee under threat of death.

Given the current circumstances it is all but certain that I will never again see these places, and that both churches will be desecrated and destroyed. So do I see the whole endeavor as a failure, and regret the effort and expense involved? Not at all. The risk of this outcome was evident, but we just did what we had to do. On the decorative frieze below the drum of the dome of the Church of St. John the Baptist are carved the opening lines of Psalm 27: "The Lord is my light and my salvation; whom shall I fear? The Lord is the strength of my life; of whom shall I be afraid?"

Sin embargo, en aquel momento, la línea de frente del conflicto, que llevaba un tiempo enquistado, comenzó a aproximarse, situándose a tan solo 30 o 40 km. Las señales alarmantes fueron en aumento y la breve guerra que estalló a finales de septiembre de 2020 produjo la pérdida de Karaglukh y de muchos otros pueblos cuyos habitantes se vieron obligados a huir bajo amenaza de muerte.

Dadas las actuales circunstancias es poco probable que vuelva a ver estos lugares y seguramente las dos iglesias sean profanadas y destruidas. ¿Considero por ello que la empresa ha sido un fracaso y lamento el esfuerzo y el gasto que supusieron? En absoluto. El riesgo de este resultado era evidente, pero hicimos lo que teníamos que hacer. En el friso decorativo debajo del tambor de la cúpula de la Iglesia de San Juan Bautista están tallados los primeros versículos del Salmo 27: "El Señor es mi luz y mi salvación; ¿a quién temeré? El Señor es el refugio de mi vida; ¿ante quién temblaré?"

Nessa altura, a linha da frente do conflito congelado aproximava-se, a apenas 30-40 km de distância. Os sinais alarmantes aumentavam, e a curta guerra que eclodiu em finais de Setembro de 2020 levou à perda de Karaglukh e de dezenas de outras aldeias, cujos habitantes foram forçados a fugir sob ameaça de morte.

Dadas as circunstâncias atuais, é quase certo que nunca mais verei estes lugares, e que ambas as igrejas serão profanadas e destruídas. Vejo então todo este empreendimento como um fracasso, e lamento o esforço e as despesas envolvidas? De modo algum. O risco deste resultado era evidente, e nós apenas fizemos o que tínhamos de fazer. No friso decorativo sob o tambor da cúpula da Igreja de São João Batista, está gravada a frase inicial do Salmo 27: "O Senhor é a minha luz e a minha salvação; quem devo temer? O Senhor é a força da minha vida; de quem terei medo?"

New houses and the former ruined village | Nuevas casas y ruinas del antiguo pueblo | Casas novas e a antiga aldeia em ruínas

Church dedicated to St. John the Baptist 39°27'44.89"N, 46°57'29.59"E

Second World War memorial 39°27'52.69"N, 46°57'20.79"E

Church of the Most Holy Theotokos 39°27'48.76"N, 46°57'19.67"E

Iglesia bajo la advocación de San Juan Bautista 39°27'44.89"N, 46°57'29.59"E

Monumento a los caídos en la Segunda Guerra Mundial 39°27'52.69"N, 46°57'20.79"E

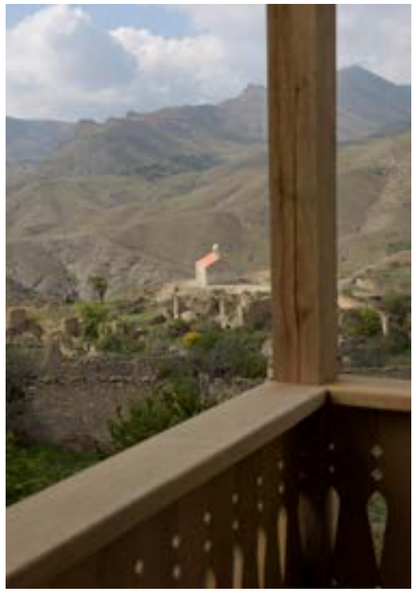
Iglesia de la Santísima Theotokos (Madre de Dios) 39°27'48.76"N, 46°57'19.67"E

Igreja dedicada a S. João Batista 39°27'44.89"N, 46°57'29.59"E

Memorial da Segunda Guerra Mundial 39°27'52.69"N, 46°57'20.79"E

Igreja do Santíssimo Theotokos 39°27'48.76"N, 46°57'19.67"E

Traditional details in wood in the houses | Detalles tradicionales en madera en las viviendas | Detalhes tradicionais em madeira das casas



View of the church and the new village houses | Vista de la iglesia y de las nuevas casas del pueblo | Vista da igreja e das casas novas da aldeia

Biography | Biografía | Biografia

Maxim Atayants

Maxim Atayants was born in 1966 in the city of Ryazan, Russia, in an Armenian-Russian family with roots in the village of Karaglukh, in Nagorno-Karabakh. He studied architecture at the Saint Petersburg Academy of Fine Arts, from which he graduated in 1995, and he continued his studies at the Prince of Wales Foundation Summer School. After obtaining a license in Russia, he taught at La Sapienza University in Rome and the University of Notre Dame in the Rome Study Program (1998-2000) as well as at the Saint Petersburg Academy of Fine Arts, and has participated in the design and implementation of many major urban projects. He also studies Ancient Greek and Roman architecture, traveling through the Middle East and North Africa to document the remains of Roman cities. He has created many well-known architectural and textural landscapes with ancient and historical buildings.

Maxim Atayants nació en 1966 en la ciudad de Riazán, Rusia, en el seno de una familia armenio-rusa con raíces en el pueblo de Karaglukh, en Nagorno-Karabaj. Estudió arquitectura en la Academia de Bellas Artes de San Petersburgo, donde se graduó en 1995, y continuó sus estudios en la Escuela de Verano de la Fundación Príncipe de Gales. Tras licenciarse en Rusia enseñó en la Universidad de Roma La Sapienza y en la Universidad de Notre Dame, dentro del Programa de Estudios de Roma (1998-2000), así como en la Academia de Bellas Artes de San Petersburgo. Ha participado en el diseño y la ejecución de numerosos proyectos urbanísticos. También ha estudiado la arquitectura clásica de Grecia y Roma y ha viajado por Oriente Medio y el Norte de África para documentar los restos de ciudades romanas. Ha creado numerosos paisajes arquitectónicos y de texturas muy conocidos con edificios antiguos e históricos.

Maxim Atayants nasceu em 1966 na cidade de Ryazan, Rússia, numa família arménia-russa com raízes na aldeia de Karaglukh, em Nagorno-Karabakh. Estudou arquitetura na Academia de Belas Artes de São Petersburgo, onde obteve o seu diploma em 1995, e continuou os seus estudos na Escola de Verão da Fundação Príncipe de Gales. Depois de obter uma licença na Rússia, lecionou na Universidade La Sapienza em Roma e na Universidade de Notre Dame no Programa de Estudos de Roma (1998-2000), bem como na Academia de Belas Artes de São Petersburgo, e participou na conceção e implementação de muitos projectos urbanos importantes. Estuda também arquitetura antiga Grega e Romana, viajando através do Médio Oriente e Norte de África para documentar os vestígios das cidades Romanas. Criou muitas paisagens arquitetónicas e texturais bem conhecidas, com edifícios antigos e históricos.

H. George Fink Studio, Coral Gables, Florida

H. George Fink Studio, Coral Gables, Florida

H. George Fink Studio, Coral Gables, Flórida

Ana Alvarez,
Frank Martinez,
Peter Kiliddjian

The H. George Fink Studio, built in 1925 in the city of Coral Gables, Florida, with an area of 4,500 sq. ft. (420 m²), is seen as a hallmark example of Mediterranean Revival architecture. Originally the office of the eponymous architect, it has Historic Landmark designation and reflects a great range of architectural styles, with Spanish, Moorish, Gothic, Italian, French, and Byzantine influences.

Today the Fink Studio stands in the heart of downtown Coral Gables, where it can be appreciated by the public at large. Though almost 100 years old, most of its significant original building elements and finishes were intact when Martinez Alvarez Architects was approached by the City of Coral Gables Economic Development Services Department about a preservation and adaptive reuse project. As the consulting architecture firm providing preservation services to Coral Gables, Martinez Alvarez Architects and partners performed a thorough on-site assessment, documented the building and studied contemporary examples of architecture in order to arrive at strategies for preservation and adaptive reuse, prepared construction documents for permitting, and provided construction administration services for the final project.

El Estudio de H. George Fink, edificado en 1925 en la ciudad de Coral Gables, Florida –y que cuenta con una superficie de 420 m²– se considera un ejemplo emblemático de arquitectura neomediterránea. Originalmente estudio del arquitecto homónimo, está catalogado como lugar histórico y refleja una amplia gama de estilos arquitectónicos con influencias españolas, moriscas, góticas, italianas, francesas y bizantinas.

En la actualidad el Estudio Fink se encuentra en el centro de Coral Gables, donde el público puede admirarlo. Aunque tiene casi 100 años, la mayoría de los elementos y acabados originales significativos seguían intactos cuando el Departamento de Servicios de Desarrollo Económico de la Ciudad de Coral Gables contactó con el estudio Martinez Alvarez Architecture para llevar a cabo un proyecto de conservación y rehabilitación. Como consultoría de arquitectura que ofrece servicios de conservación a Coral Gables, Martinez Alvarez Architecture y asociados realizaron una evaluación exhaustiva sobre el terreno, además de documentarse y estudiar ejemplos de arquitectura de la época para decidir la mejor estrategia de actuación. También prepararon los documentos necesarios para obtener las licencias y se ocupó de la coordinación de las obras del proyecto definitivo.

O estúdio H. George Fink, construído em 1925 na cidade de Coral Gables, Flórida, com uma área de 420 m², é visto como um exemplo emblemático da arquitetura revivalista mediterrânea. Tendo sido originalmente o gabinete do arquiteto epónimo, foi nomeado Marco Histórico, e reflete uma grande variedade de estilos arquitetónicos, com influências Espanholas, Mouras, Góticas, Italianas, Francesas, e Bizantinas.

Hoje em dia, o Estúdio Fink situa-se no coração da baixa de Coral Gables, onde pode ser apreciado pelo público em geral. Apesar de ter quase 100 anos, a maioria dos seus elementos de construção e acabamentos originais mais significativos, estavam intactos quando a Martinez Alvarez Architects foi abordada pelo Departamento de Serviços de Desenvolvimento Económico da Cidade de Coral Gables, sobre um projeto de preservação e reutilização adaptativa. Sendo a empresa de consultoria de arquitetura que prestava serviços de preservação a Coral Gables, a Martinez Alvarez Architects e os seus parceiros realizaram uma avaliação minuciosa no local, documentaram o edifício, e estudaram exemplos contemporâneos de arquitetura, de forma a encontrar estratégias de preservação e reutilização adaptativa, prepararam documentos de construção com vista ao licenciamento, e prestaram serviços administrativos de construção para o projeto final.

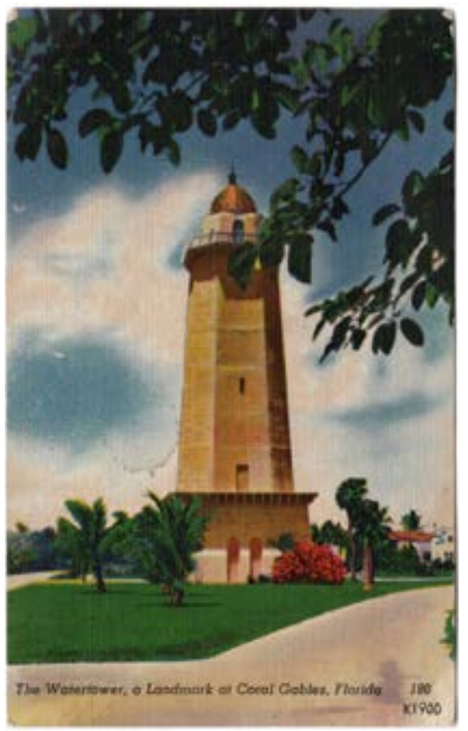
< Observation space after restoration | Mirador después de la restauración | Espaço de observação após a restauração (Alex Tarajano)

Coral Gables is a garden city located in Greater Miami and also known as the "City Beautiful". The *Washington Post* once called Coral Gables "a touch of dignity in the midst of Miami" (Lerner 1988). Often referred to simply as "the Gables", the town is an idealization of its founder George Merrick's vision: to transform his family's orange grove into a planned city with Mediterranean-style buildings, along with recreational facilities such as the Venetian Pool and the Biltmore Hotel.

Coral Gables es una ciudad jardín situada en el área metropolitana de Miam y se la conoce como la "City Beautiful". *The Washington Post* dijo una vez que Coral Gables era "un toque de dignidad en medio de Miami" (Lerner 1988). Denominada con frecuencia simplemente "the Gables", la ciudad es una versión idealizada de la visión de George Merrick, su fundador. Su sueño era transformar la plantación de naranjos de su familia en una ciudad planificada con edificios de estilo mediterráneo, junto a lugares de esparcimiento como la Piscina Veneciana y el Hotel Biltmore.

Coral Gables é uma cidade-jardim localizada na Grande Miami, também conhecida como a "Cidade Bonita". *The Washington Post* chamou-a uma vez de "um toque de dignidade no meio de Miami" (Lerner 1988). Muitas vezes referida simplesmente como "a Gables", a cidade é uma idealização da visão do seu fundador George Merrick: transformar o laranjal da sua família numa cidade planeada, com edifícios de estilo mediterrâneo, juntamente com instalações recreativas como a Piscina Veneziana e o Hotel Biltmore.

Aerial view of the location | Vista aérea del emplazamiento | Vista aérea do local



Postcards of Coral Gables | Postales de Coral Gables | Postales de Coral Gables (Personal collection of Ana Alvarez and Frank Martinez)

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1: Rendering of the Studio by H. George Fink. 2: Early photo of the Studio. 3: Photo from 2019 (before restoration work began) | 1: Dibujo del Estudio realizado por H. George Fink. 2: Foto antigua del Estudio. 3: Foto de 2019 antes de empezar las obras de restauración | 1: Desenho do Estúdio por H. George Fink. 2: Foto antiga do Estúdio. 3: Foto de 2019, antes das obras de restauração terem começado (1, 2: Coral Gables Historic Resources, Raul Valdes-Fauli Archives Department)

In *Coral Gables: An American Garden City*, historian Vincent Scully describes Merrick's Coral Gables as a "large airy city with many trees, remarkable from outside because of its gates; it is a place where people travel by car, tramway, and bus, train and boat, gondola and bicycle. All these means of transportation balance out, with no special weight allotted to the automobile. Once the specific destination is reached: the center city, the main shopping artery, the artisan center, the golf course, the beach, the parks…the rest of the promenade is made on foot. Everyone recognizes the convenient layout and the efficiency of the urban complex. But this is only, after all, the work of an excellent cook with good assistants."

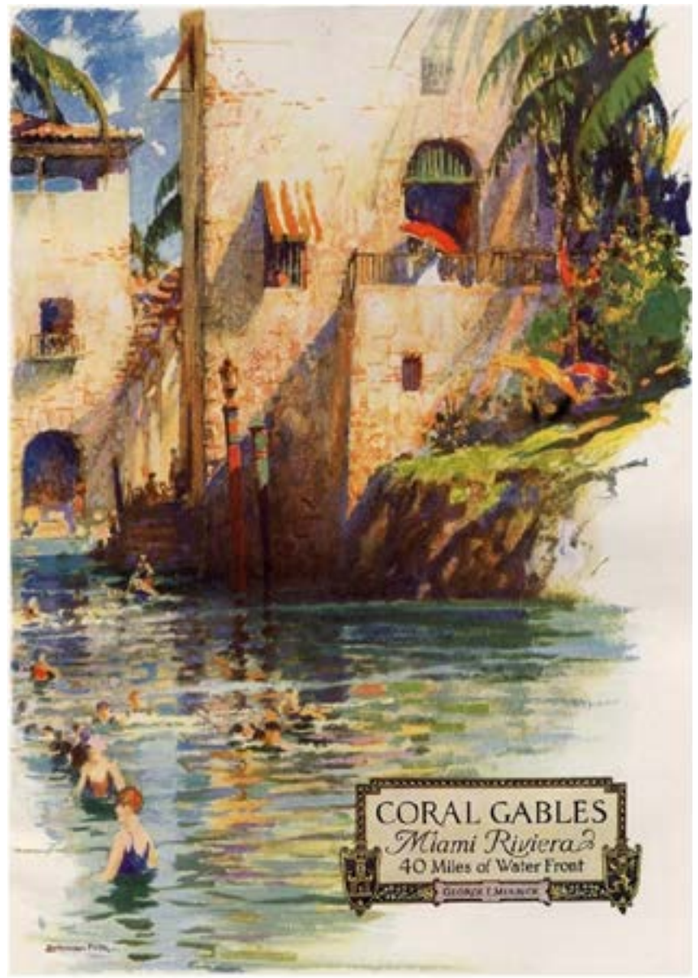
En *Coral Gables: An American Garden City*, el historiador Vincent Scully describe el Coral Gables de Merrick como una "gran ciudad espaciosa, con muchos árboles, que llama la atención desde fuera por sus puertas; es un lugar donde la gente se desplaza en coche, tranvía y autobús, tren y barco, góndola y bicicleta. Todos estos medios de transporte se equilibran y no se concede una especial importancia al automóvil. Una vez que se llega a un destino concreto, ya sea el centro de la ciudad, la principal arteria comercial, el centro artesanal, el campo de golf, la playa, los parques... el resto del paseo se hace a pie. Todo el mundo reconoce lo conveniente del trazado y la eficiencia del conjunto urbano. Pero, a fin de cuentas, es tan solo la obra de un excelente cocinero con buenos ayudantes".

Em *Coral Gables: An American Garden City,* o historiador Vincent Scully descreve a Coral Gables de Merrick como uma "cidade grande e arejada com muitas árvores, impressionante quando vista do exterior, por causa dos seus portões; é um lugar onde as pessoas viajam de carro, eléctrico, autocarro, comboio e barco, gôndola e bicicleta. Todos estes meios de transporte se equilibram, e não é atribuída uma importância especial ao automóvel. Uma vez alcançado o destino específico: o centro da cidade, a principal artéria comercial, o centro artesanal, o campo de golfe, a praia, os parques… o resto do passeio é percorrido a pé. Todos reconhecem a disposição conveniente e a eficiência do complexo urbano. Mas no final de contas, isto é apenas o trabalho de um excelente cozinheiro com bons assistentes".

Merrick assembled his "culinary" team in the early 1920s: his art professor uncle Denman Fink, his architect cousin H. George Fink, master architect Phineas Paist, and landscape architect Frank Button (the latter two already working nearby for the Deering family) all came together to develop the city Master Plan (Brotemarkle 2016 and Paist 2015).

Merrick formó su equipo "culinario" a principios de los años 1920: su tío Denman Fink, profesor de arte; su primo H. George Fink, arquitecto; el maestro arquitecto Phineas Paist y el arquitecto paisajista Frank Button (los dos últimos ya trabajaban en la zona para la familia Deering) se juntaron para desarrollar el Plan General de la ciudad (Brotemarkle 2016 y Paist 2015).

Merrick reuniu a sua equipa "culinária" no início dos anos 20: o seu tio e professor de arte Denman Fink, o seu primo e arquiteto H. George Fink, o mestre arquiteto Phineas Paist, e o arquiteto paisagista Frank Button (estes dois últimos já a trabalhar para a família Deering) juntaram-se para desenvolver o Plano Diretor da cidade (Brotemarkle 2016 e Paist 2015).



Early advertisement brochure. Drawing by Denman Fink | Uno de los primeros folletos publicitarios. Dibujo de Denman Fink | Folheto publicitário inicial. Desenho por Denman Fink (Coral Gables Historic Resources, Raul Valdes-Fauli Archives Department)

H. George Fink portrait photo | Retrato de H. George Fink | Retrato de H. George Fink (Coral Gables Historic Resources, Raul Valdes-Fauli Archives Department)

The team modified the traditional grid into a garden-city layout with "streets that have broad rights of way, richly planted with indestructible grasses and with great trees of the tropics… Dade County pines… fruit trees… live oak and red-limbed gumbo limbo… palms of every kind… the miraculous poinciana. Nevertheless, Coral Gables has never allowed the planting of hedges or the erection of garden walls high enough to screen the houses from the street. It holds to a tenacious American tradition: Coral Gables must remain a democratic town, with everything visible from the public way, and the individual houses must complement each other in shaping a communal town space" (Behar and Culot 1997). They also gave the city monumental gateways of great beauty – "they are true gates, like the city gates of antiquity and the middle ages, each has its special character" (Behar and Culot 1997).

When H. George Fink joined Merrick's team, he was already a practicing architect in Miami. Fink was born in Springdale, Pennsylvania on April 18, 1890, but moved with his family to Miami in 1904, where he attended Miami High School before going to Philadelphia to take a degree in Constructive Drawing at the Drexel Institute. After his graduation he worked with the well-known Miami architects August Geiger and H. H. Mundy before opening his own office in 1919 (Parks and Merrick 2015). Merrick approached Fink about his plans for Coral Gables before acquiring more property, asking him to serve as his lead architect and also to keep his plans secret until they were ready to begin (Parks and Merrick 2015). In the meantime Fink designed many notable South Florida buildings including the Miami Beach Public School, which the *Miami Herald-Record* would characterize as the "handsomest building in the south" (Parks and Merrick 2015).

From about 1920 to 1928, Fink designed most of the town's early homes in the Crafts and Granada districts, houses along the major boulevards (Coral Way and Greenway Drive), plans for five water towers, Merrick's home and real estate offices, and his own architectural studio (Rupp 2021).

Fink and Merrick traveled to Spain in 1924 to study the architecture informing their work in Coral Gables, having previously relied on published works and scholars' interpretations. King Alfonso XIII of Spain later honored Fink for his "interesting, outstanding, and extremely artistic interpretation and reproduction of the Spanish Arts in America." Merrick promised free plans for coral rock homes by H. George Fink for all lot buyers in his early years of marketing the neighborhood (Parks and Merrick 2015). Fink would go on to describe his style as distinctly Coral Gables – "a modified and Americanized Spanish with daring exterior development" utilizing "Miami rock" (oolitic limestone) for foundations and decoration, courtyards, screened loggias, old-style variegated tile roofs, and the use of strong color, such as tinted stucco, bright balustrades, and colorful doors, window frames, and awnings (Parks and Merrick 2015).

El equipo modificó la retícula tradicional para crear un trazado de ciudad jardín con "calles que tienen amplias servidumbres de paso, todas abundantemente plantadas con césped y grandes árboles tropicales… pinos del Condado de Dade… árboles frutales… encinas y almácigo de corteza rojiza… palmeras de todas las especies… el prodigioso flamboyán. Sin embargo, en Coral Gables siempre ha estado prohibido plantar setos o levantar muros en los jardines de una altura tal que no permita ver las casas desde la calle. Se mantiene una tenaz tradición estadounidense: Coral Gables debe seguir siendo una ciudad democrática, en la que todo es visible desde la vía pública y las viviendas individuales deben complementarse para formar un espacio urbano comunitario" (Behar y Culot 1997). También proyectaron para la ciudad puertas monumentales de gran belleza –"son puertas auténticas, como las de las ciudades de la Antigüedad y de la Edad Media, cada una con su carácter propio" (Behar y Culot 1997).

Cuando H. George Fink se incorporó al equipo de Merrick ya trabajaba como arquitecto en Miami. Fink nació en Springdale, Pensilvania, el 18 de abril de 1890, pero se trasladó con su familia a Miami en 1904, donde cursó secundaria antes de marcharse a Filadelfia para estudiar dibujo en el Instituto Drexel. Tras graduarse trabajó con los conocidos arquitectos de Miami August Geiger y H. H. Mundy antes de abrir su propio estudio en 1919 (Parks y Merrick 2015). Merrick abordó a Fink con sus planes para Coral Gables antes de adquirir más terrenos, pidiéndole que fuera su arquitecto jefe y que mantuviera sus planes en secreto hasta que estuvieran listos para empezar (Parks y Merrick 2015). Entre tanto, Fink proyectó muchos edificios notables del sur de Florida, como el colegio público de Miami Beach, que el *Miami Herald-Record* calificaría como el "edificio más bonito del sur" (Parks y Merrick 2015).

Entre 1920 y 1928, aproximadamente, Fink proyectó la mayor parte de las primeras viviendas de la ciudad en los distritos de Crafts y Granada, además de casas a lo largo de los principales bulevares (Coral Way y Greenway Drive), planos para cinco depósitos de agua, la casa y oficinas de la inmobiliaria de Merrick, y su propio estudio (Rupp 2021).

Fink y Merrick viajaron a España en 1924 para estudiar la arquitectura que inspiraría su trabajo en Coral Gables, ya que en un principio se basaban en trabajos publicados e interpretaciones académicas. El rey Alfonso XIII de España condecoró más tarde a Fink por su "interesante, excepcional y extremadamente artística interpretación del arte español en América". Merrick prometió planos gratuitos realizados por H. George Fink para las viviendas de roca de coral a todos los que compraran parcelas en los primeros años de promoción del barrio (Parks y Merrick 2015). Fink describiría su estilo como inconfundible de Coral Gables, "un estilo español adaptado y americanizado con audaces modificaciones en el exterior" que utilizaba "piedra de Miami" (caliza oolítica) para los cimientos y la decoración, con patios, pórticos con celosías, cubiertas de tejas variegadas de estilo antiguo y el característico uso de tonos fuertes, como el revoco teñido, de radiantes balaustradas y con las puertas, las marquesinas y los marcos de las ventanas llenos de color (Parks y Merrick 2015).

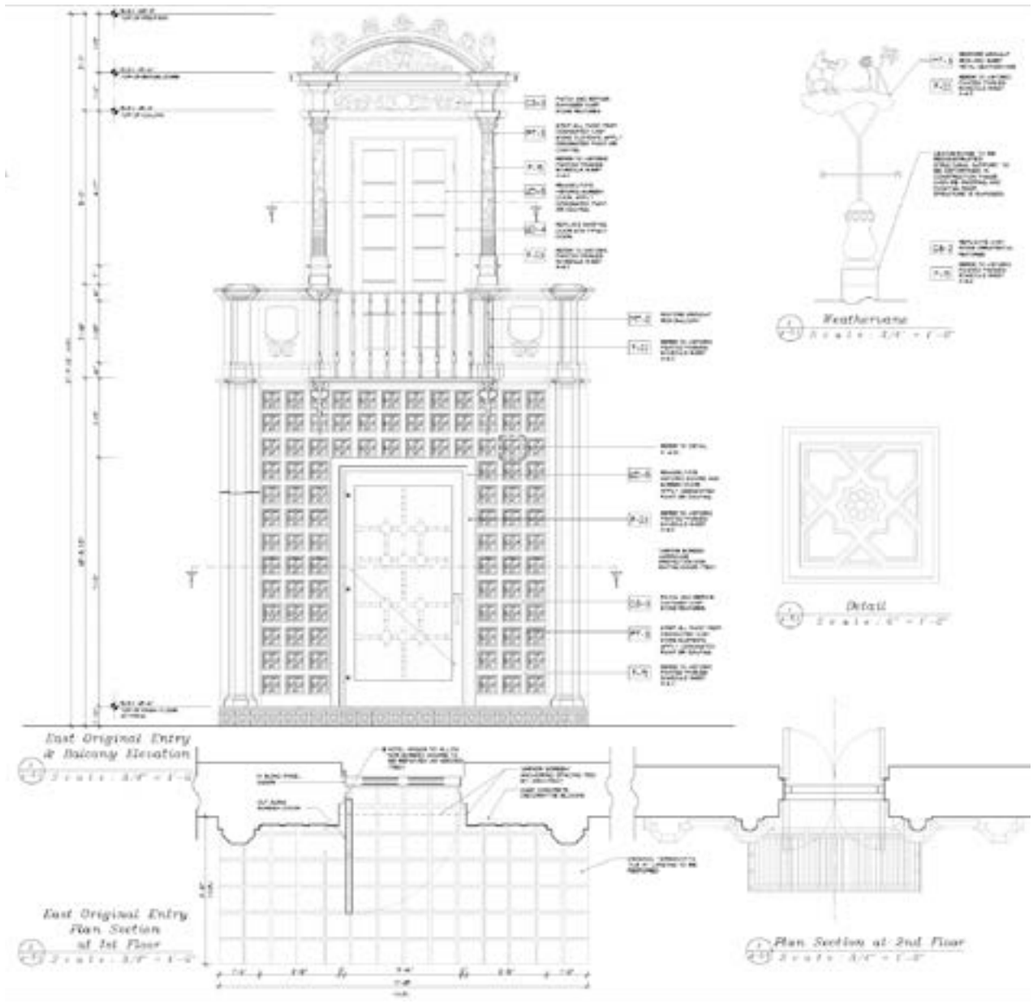
A equipa modificou a grelha tradicional para uma configuração de cidade-jardim com "ruas com áreas amplas, ricamente plantadas com ervas indestrutíveis e com grandes árvores dos trópicos... pinheiros de Dade County... árvores de fruto... carvalho vivo e gumbo-limbo vermelho... palmeiras de todos os tipos... a miraculosa acácia-rubra. No entanto, em Coral Gables nunca se permitiu a plantação de sebes, ou a ereção de muros de jardim suficientemente altos para separar as casas da rua. Mantém-se fiel a uma tenaz tradição Americana: Coral Gables deve continuar a ser uma cidade democrática, com tudo visível a partir da via pública, e as casas individuais devem complementar-se na formação de um espaço citadino comunitário" (Behar e Culot 1997). Também foram oferecidos à cidade portões monumentais de grande beleza - "são verdadeiros portões, como os portões da cidade da antiguidade e da Idade Média, cada um tem o seu caráter especial" (Behar e Culot 1997).

Quando H. George Fink se juntou à equipa de Merrick, ele já exercia como arquiteto em Miami. Fink nasceu em Springdale, Pensilvânia, a 18 de Abril de 1890, mas mudou-se com a sua família para Miami em 1904, onde frequentou a Escola Secundária Miami antes de ir para Filadélfia para se licenciar em Desenho Construtivo no Instituto Drexel. Após a sua graduação, trabalhou com os conhecidos arquitetos de Miami, August Geiger e H. H. Mundy, antes de abrir o seu próprio gabinete em 1919 (Parks e Merrick 2015). Merrick abordou Fink sobre os seus planos para Coral Gables antes de adquirir mais propriedades, pedindo-lhe para servir como seu arquiteto principal e também para manter os seus planos em segredo até que estivessem prontos para começar (Parks e Merrick 2015). Entretanto, Fink concebeu muitos edifícios notáveis no sul da Flórida, incluindo a Escola Pública Miami Beach, que o *Miami Herald-Record* caracterizaria como o "edifício mais bonito do sul" (Parks e Merrick 2015).

De cerca de 1920 a 1928, Fink concebeu a maioria das primeiras casas da cidade nos distritos de Crafts e Granada, casas ao longo das principais avenidas (Coral Way e Greenway Drive), planos para cinco torres de água, a casa de Merrick e gabinetes imobiliários, e o seu próprio estúdio de arquitetura (Rupp 2021).

Fink e Merrick viajaram para Espanha em 1924 para estudar a arquitetura que estava na base do seu trabalho em Coral Gables, tendo-se baseado anteriormente em obras publicadas e interpretações de académicos. O rei Alfonso XIII de Espanha louvou mais tarde Fink pela sua "interessante, notável e extremamente artística interpretação e reprodução das Artes Espanholas na América". Merrick prometeu planos gratuitos para as casas de coral rock projetadas por H. George Fink, para todos os compradores de lotes nos primeiros anos de divulgação do bairro (Parques e Merrick 2015). Fink continuaria a descrever o seu estilo como distintamente Coral Gables - "um estilo Espanhol modificado e Americanizado com um desenvolvimento exterior ousado" utilizando "pedra de Miami" (pedra calcária oolítica) para as fundações e decoração, pátios, lógias protegida, telhados em telha de estilo antigo e variegado, e o uso de cores fortes, tais como estuque tingido, balaustradas luminosas, e portas coloridas, caixilhos de janelas, e toldos (Parks e Merrick 2015).

1: Photo of surround and balcony in Cordoba, Spain. 2: Drawings for restoration of the surround and balcony of H. George Fink Studio, Coral Gables, Florida | 1: Foto de balcón y cerco en Córdoba, España. 2: Dibujos para restauración del cerco y el balcón del Estudio de H. George Fink, Coral Gables, Florida | 1: Foto do contorno da janela e varanda em Córdoba, Espanha. 2: Desenhos para a restauração do contorno da janela e varanda do Estúdio H. George Fink, Coral Gables, Flórida (1: Whitlesey 1917)



From 1928 to 1937 Fink stepped away from his work on Coral Gables to serve as designing architect for the J.C. Penney Company of New York and then as supervising architect for the state of Maine (through the Works Project Administration). Afterwards he was able to return to private practice from his office in downtown Coral Gables. During World War II he was called upon to contribute to various naval bases, such as at Richmond or Chamblee, and to the Bell Bomber Plant.

Entre 1928 y 1937 Fink se apartó de su trabajo en Coral Gables para ejercer como arquitecto de proyectos para la J.C. Penney Company de Nueva York y después como arquitecto supervisor del estado de Maine (a través de la Administración de Proyectos de Obras). Después regresó a la práctica privada en su estudio del centro de Coral Gables. Durante la Segunda Guerra Mundial se requirió su colaboración en varias bases navales, como la de Richmond o Chamblee, y en la base aérea de los bombarderos Bell.

De 1928 a 1937, Fink afastou-se do seu trabalho em Coral Gables para exercer como arquiteto projetista para a J.C. Penney Company de Nova Iorque, e depois como arquiteto supervisor para o estado do Maine (através da Works Project Administration). Posteriormente, pôde regressar à prática privada a partir do seu gabinete no centro da cidade de Coral Gables. Durante a Segunda Guerra Mundial foi convidado a contribuir para várias bases navais, tais como a de Richmond ou Chamblee, e para a Fábrica de Bombardeiros Bell.

Photo of the surround and balcony of H. George Fink Studio, Coral Gables, Florida | Foto del cerco y balcón del Estudio de H. George Fink, Coral Gables, Florida | Foto do contorno da janela e varanda do Estúdio H. George Fink, Coral Gables, Flórida (Alex Tarajano)

Fink was a member of the American Institute of Architects, secretary of its South Florida Chapter, and president of the Coral Gables Optimist Club (known for its community service). He also chaired the South Miami Planning and Zoning Board and was a member of the Coral Gables Board of Architects.

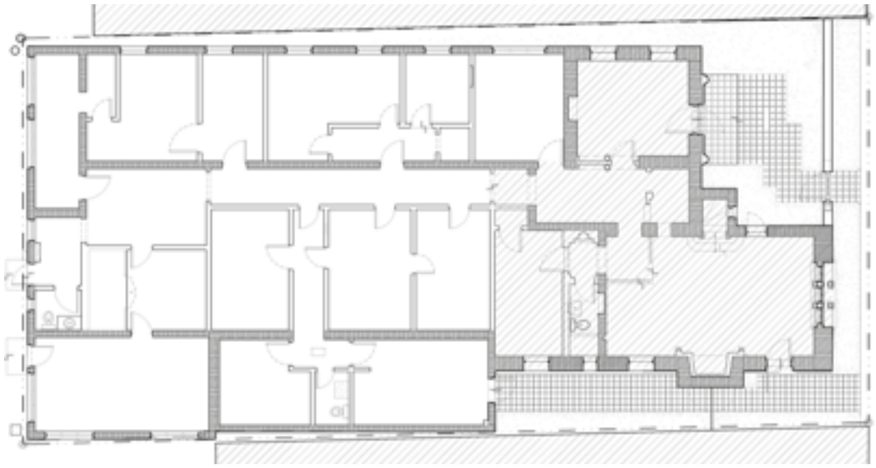
The city of Coral Gables awarded H. George Fink's office Local Historic Landmark Designation in 1984, and purchased the building in 2016.

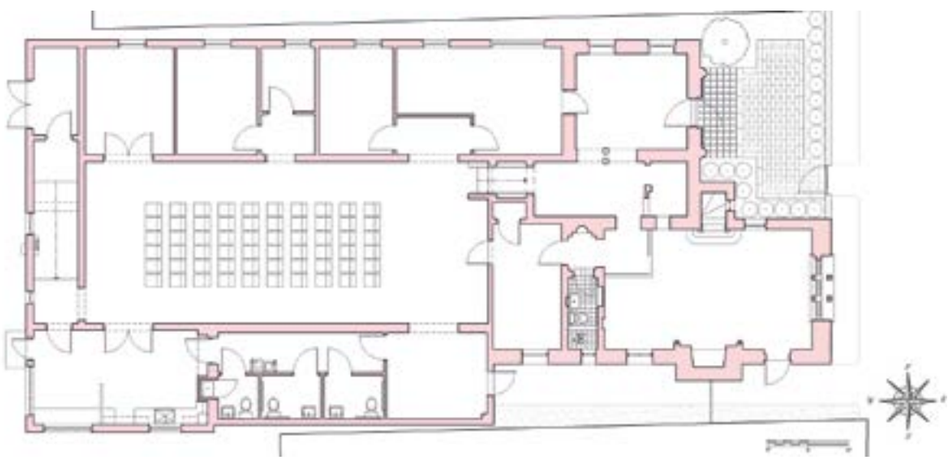
Fink fue miembro del Instituto de Arquitectos Americanos, secretario de la sección de Florida y presidente del Optimist Club de Coral Gables (conocido por sus servicios a la comunidad). También presidió la Junta de Planificación y Ordenación del Sur de Miami y fue miembro del Consejo de Arquitectos de Coral Gables.

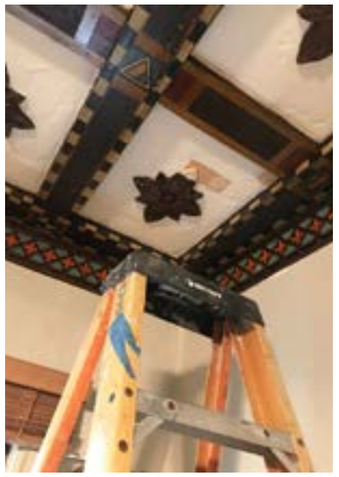
La ciudad de Coral Gables catalogó el estudio de H. George Fink como monumento histórico en 1984 y compró el edificio en 2016.

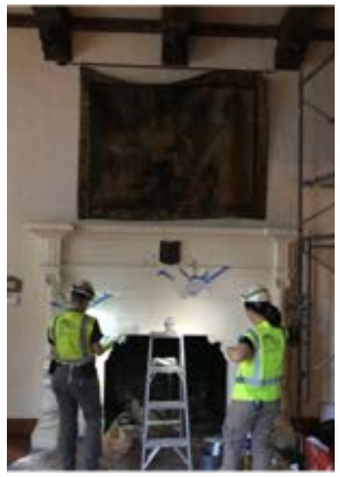
Fink foi membro do Instituto Americano de Arquitetos, secretário da sua Secção do Sul da Flórida, e presidente do Coral Gables Optimist Club (conhecido pelo seu serviço comunitário). Presidiu também ao Conselho de Planeamento e Zoneamento de Miami do Sul, e foi membro do Conselho de Arquitetos de Coral Gables.

A cidade de Coral Gables atribuiu ao gabinete de H. George Fink a designação de Marco Histórico Local em 1984, e adquiriu o edifício em 2016.









< Plan of the building in 2019 and proposed plan | Plano del edificio en 2019 y plano propuesto | Planta do edifício em 2019 e planta proposta

> In the documentation and assessment stage, the team was joined by Ricardo Lopez, faculty at the University of Miami, who previously had HABS documentation drawings made with students. The project team collaborating on site | En la fase de documentación y evaluación el equipo contó con la colaboración de Ricardo López, profesor de la Universidad de Miami, que previamente hizo dibujos de documentación HABS con los estudiantes. El equipo trabajando *in situ* | Na fase de documentação e avaliação, a equipa foi acompanhada por Ricardo Lopez, docente da Universidade de Miami, que anteriormente tinha realizado desenhos de documentação HABS com os estudantes. A equipa do projeto a colaborar no local

Prior to this purchase the building had been subdivided into a maze of micro-offices, occupying the two gardens originally flanking Fink's long drafting room. But the acquisition now presented a unique opportunity to preserve this significant building. The Studio reflects Fink's playful use of eclectic composition and building elements. Indeed, when it was built, Mediterranean Revival in South Florida was a novel approach, in which Fink's appreciation of history and the precedents of Spanish, Moorish, Gothic, Italian, French, and Byzantine architecture gave rise to a new style for Coral Gables's tropical climate.

Antes de la compra, el edificio se había dividido en un laberinto de oficinas minúsculas que ocupaban también los dos jardines que originalmente flanqueaban la larga sala de dibujo de Fink. Pero la compra representaba una oportunidad única para conservar este importante edificio. El estudio refleja el uso lúdico que hacía Fink de la composición y muestra los elementos constructivos eclécticos. En efecto, cuando se construyó, el estilo neomediterráneo del Sur de Florida era un planteamiento novedoso en el que el aprecio por la historia y los precedentes de la arquitectura española, morisca, gótica, italiana, francesa y bizantina dieron lugar a un nuevo estilo para el clima tropical de Coral Gables.

Antes desta compra, o edifício tinha sido subdividido num labirinto de micro-escritórios, ocupando os dois jardins que originalmente flanqueavam a longa sala de desenho de Fink. Mas a aquisição apresentou agora uma oportunidade única para preservar este edifício significativo. O estúdio reflecte o uso brincalhão de Fink da composição eclética e dos elementos de construção. De facto, quando foi construído, o Revivalismo Mediterrâneo no Sul da Florida era uma abordagem inovadora, na qual a apreciação de Fink da história, e os precedentes da arquitetura Espanhola, Moura, Gótica, Italiana, Francesa e Bizantina deram origem a um novo estilo para o clima tropical de Coral Gables.

The architectural team Frank Martinez, Peter Kiliddjian, and Ana Alvarez in the observation space during construction (H. George Fink's original office space) | El equipo de arquitectos Frank Martínez, Peter Kiliddjian y Ana Álvarez en el mirador durante la construcción (espacio original del despacho de H. George Fink) | A equipa de arquitetura, composta por Frank Martinez, Peter Kiliddjian, e Ana Alvarez, no espaço de observação durante a construção (o espaço original do gabinete de H. George Fink)

The building has survived hurricanes and other harsh weather, material deterioration, sundry uses over the years, and also its setting, exposed to wear and tear in a vibrant downtown.

We understood that the building had been modified to its existing plan with the micro-offices and that portions of it were in disrepair. We were given the program of (1) making the building accessible by the public for access to its historic interiors, (2) providing new offices with modern conveniences, and (3) incorporating a lecture space for the building's tenants as well as for guests and the broader community. The Studio needed to comply with contemporary hurricane and accessibility codes.

El edificio ha sobrevivido a huracanes y otros fenómenos extremos, al deterioro material, a los diversos usos a lo largo de los años y también a su ubicación, expuesto como se encuentra al desgaste natural en el animado centro de la ciudad.

Sabíamos que el edificio había sido modificado para conseguir la actual distribución con microoficinas y que algunas partes del mismo estaban en mal estado. El programa que nos dieron consistía en (1) hacer el edificio accesible para que el público pudiera visitar los interiores históricos, (2) crear nuevas oficinas con instalaciones modernas e (3) incorporar una sala de conferencias para los inquilinos del edificio, así como para invitados y la comunidad en general. El Estudio debía cumplir los códigos contra huracanes y de accesibilidad actuales.

O edifício sobreviveu a furacões e outras intempéries, à deterioração dos materiais, aos usos diversificados ao longo dos anos, e também à sua localização, sendo exposto ao desgaste num centro da cidade vibrante.

Compreendemos que o edifício tinha sido modificado para corresponder ao seu plano existente que incluía os micro-escritórios, e que partes do mesmo se encontravam em degradação. Foi-nos atribuído o projeto de (1) tornar o edifício acessível ao público, para criar acesso aos seus interiores históricos, (2) fornecer novos escritórios com comodidades modernas, e (3) incorporar um espaço de conferências para os inquilinos do edifício, bem como para os convidados e a comunidade em geral. O Estúdio precisava de respeitar as normas contemporâneas relativas a furacões e acessibilidade.

To accomplish this we needed a team with engineers, contractors, craftspersons, and conservators in order to restore the historically significant features, including the wrought-iron front balcony, the leaded glass Venetian window with tracery in cast stone, the cast-stone surround on the facade (facing the front courtyard), a gargoyle, grotesques in the arched pediment, and the building eave with its ornamental brackets. Interior elements to be preserved included painted and coffered ceilings, a cast-stone fireplace, terracotta tile floors, and the ornamental tiled staircase. The Project Conservators were Rosa Lowinger and Associates (Caroline Dickensheets and Rosa Lowinger). Evergreene Architectural Arts (Mark

Para lograrlo necesitábamos un equipo de ingenieros, contratistas, artesanos y restauradores que restauraran los elementos de importancia histórica, como el hierro forjado del balcón delantero, la ventana veneciana con cristal emplomado y tracería en piedra tallada, el borde de piedra tallada de la fachada (que da al patio delantero), una gárgola, las quimeras en el frontón curvo y el alero del edificio con ménsulas ornamentales. Entre los elementos interiores que había que conservar estaban los techos pintados y los artesonados, una chimenea de piedra tallada, las baldosas de terracota de los suelos y la escalera con azulejos decorativos. Rosa Lowinger y Asociados (Caroline Dickensheets y Rosa Lowinger) actuaron como conservadores. Evergreene Architectural

Para o conseguir, precisávamos de uma equipa com engenheiros, empreiteiros, artesãos, e conservadores, para restaurar as caraterísticas historicamente significativas, incluindo a varanda frontal em ferro forjado, a janela Veneziana em cristal de chumbo com arrendado em pedra reconstituída, a borda da fachada em pedra reconstituída (virada para o pátio da frente), uma gárgula, figuras grotescas no frontão arqueado, e os beirais com as suas mísulas ornamentais. Os elementos interiores a preservar incluíam tetos pintados em caixotão, uma lareira em pedra reconstituída, pavimentos em azulejo de terracota, e a escadaria em azulejo ornamental. Os Conservadores do projeto foram a Rosa Lowinger and Associates (Caroline Dickensheets e Rosa Lowinger). A

1: Details of the Venetian window. 2: Venetian window and tracery after restoration with new lighting for the observation space | 1: Detalles de la ventana veneciana. 2: La ventana veneciana y la tracería tras la restauración con la nueva iluminación del mirador | 1: Detalhes da janela veneziana. 2: Janela veneziana e arrendado após a restauração, com a nova iluminação do espaço de observação (2: Alex Tarajano)

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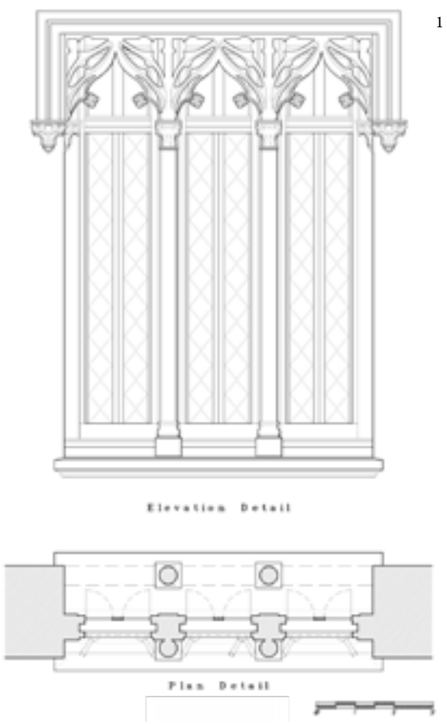

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1, 2: Images of the gargoyle fragments. 3: Eave with a reconstructed gargoyle | 1, 2: Imágenes de los fragmentos de la gárgola. 3: Alero con una gárgola reconstruida | 1, 2: Imagens dos fragmentos da gárgula. 3: Beiral com uma gárgula reconstruída (3: Alex Tarajano)

Rabinowitz and Mary Slater) acted as consulting conservators and did the paint study and condition assessment. Critical Path Construction was the contractor.

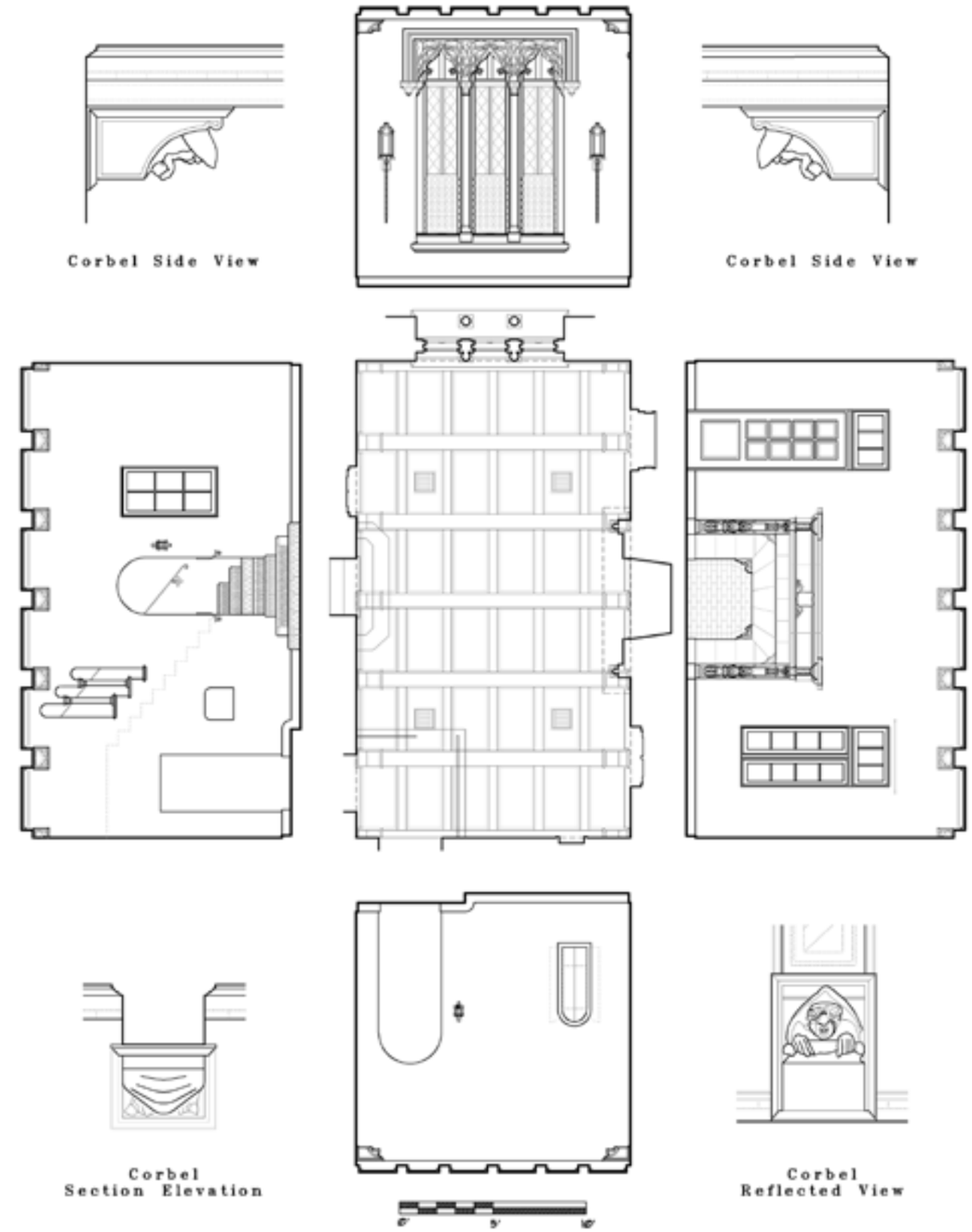
Over seven months spanning late 2018 and early 2019 the existing building was extensively documented, including color studies for understanding the original color schemes, and some explorative demolitions were done to check the building's structure. At the same time we studied other contemporary buildings.

Arts (Mark Rabinowitz y Mary Slater) actuaron como conservadores consultores y se encargaron del estudio de la pintura y de la evaluación de las condiciones. Critical Path Construction fue el contratista.

En los siete meses entre finales de 2018 y principios de 2019 el edificio se documentó exhaustivamente. Se llevaron a cabo estudios de color para comprender la composición cromática original y se hicieron algunas demoliciones exploratorias para comprobar la estructura del edificio. Simultáneamente, estudiamos otros edificios de la misma época.

Evergreene Architectural Arts (Mark Rabinowitz e Mary Slater) agiram como conservadores consultivos, tomaram conta do estudo da pintura e da avaliação das condições. A Critical Path Construction foi o empreiteiro.

Ao longo de sete meses, entre finais de 2018 e o início de 2019, o edifício existente foi amplamente documentado, incluindo estudos de cor para compreensão dos esquemas de cor originais, e algumas demolições exploratórias foram feitas para verificar a estrutura do edifício. Ao mesmo tempo, estudámos outros edifícios contemporâneos.

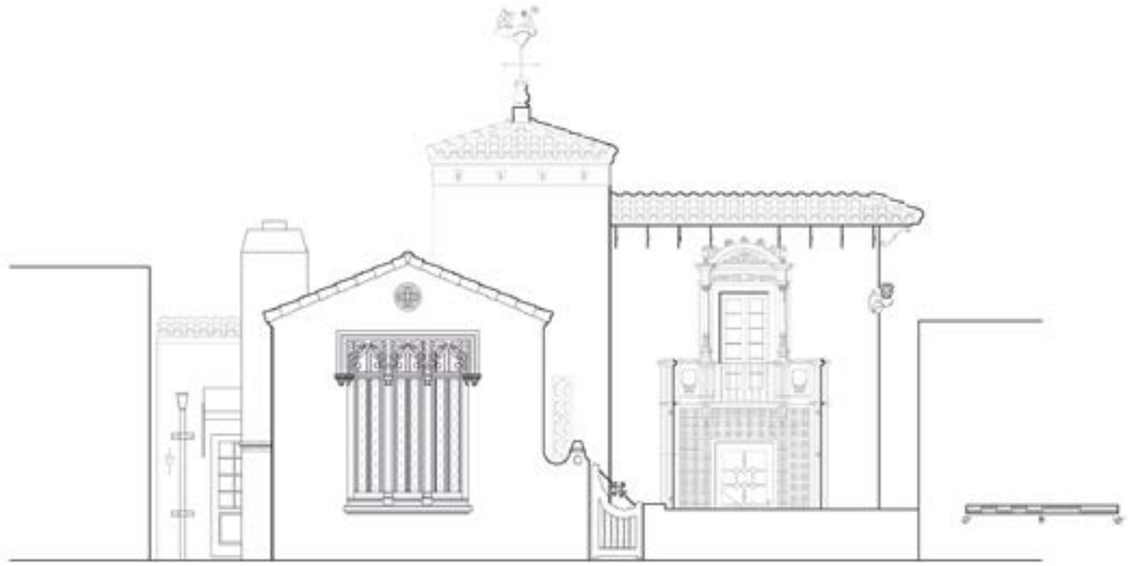


Fink Studio's interiors | Interiores del Estudio de Fink | Interiores do Estúdio de Fink

Next came the construction documents. We matched the program of providing a large lecture space with the building's original plan, opting to remove the micro-offices so as to create a large lecture venue roughly where Fink's original long drafting room had been. This stage involved dealing with multiple wall sections, all with different structural conditions, ceiling heights, and finishes. The architectural team had to decide what to conserve and what to reconstruct.

Después preparamos los documentos necesarios para iniciar la construcción. Adaptamos la idea de proporcionar un espacio amplio para conferencias al plano original del edificio y optamos por eliminar las microoficinas, con el fin de crear una gran sala de conferencias en la antigua ubicación de la larga sala de dibujo original de Fink. En esta fase tuvimos que lidiar con múltiples secciones de muros, todas con diferentes estados estructurales, alturas de techos y acabados. El equipo de arquitectos tuvo que decidir qué conservar y qué reconstruir.

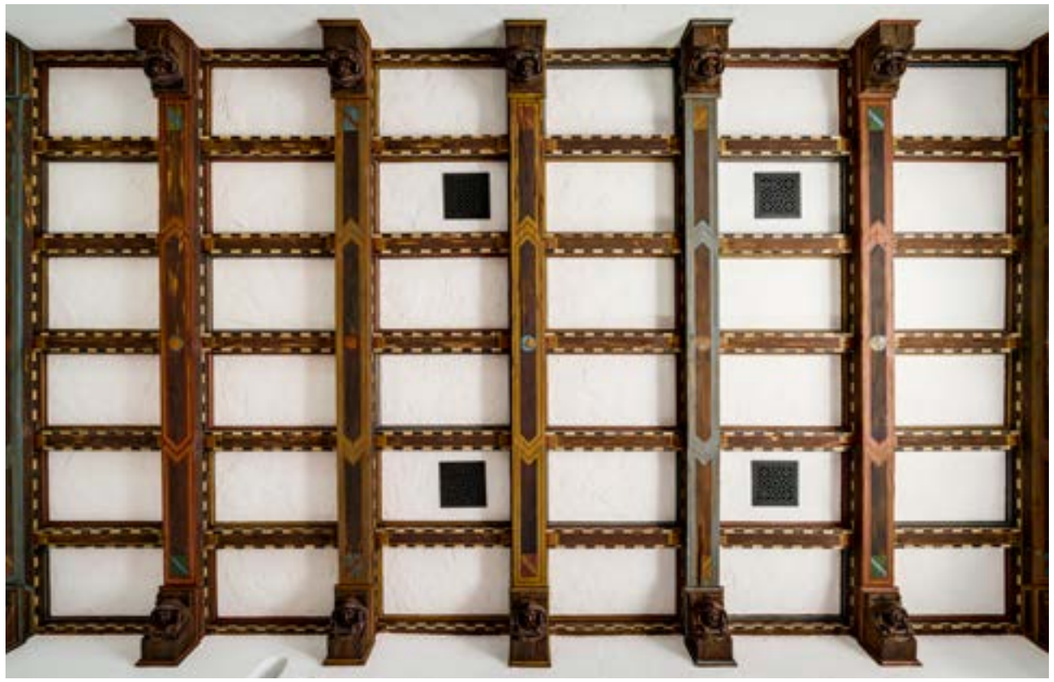
A seguir vieram os documentos de construção. Combinámos o projeto de criação de um grande espaço de conferências com o plano original do edifício, optando por retirar os micro-escritórios, de modo a criar um grande espaço de conferências, aproximadamente onde tinha estado a longa sala original de desenho de Fink. Esta etapa consistiu em lidar com secções de parede múltiplas, todas com diferentes condições estruturais, alturas de tecto, e acabamentos. A equipa de arquitetura teve de decidir o que conservar e o que reconstruir.



East elevation | Alzado este | Elevação este (Alex Tarajano)

Restored Corinthian column, ceiling, and flooring | Columna corintia, techo y suelo restaurados | Coluna coríntia restaurada, teto, e pavimento (Alex Tarajano)

Observation space and stairway | Mirador y escalera | Espaço de observação e escadaria (Alex Tarajano)



Restored ceiling | Techo restaurado | Teto restaurado (Alex Tarajano)

Accessibility codes required the building to have two accessible entries. We provided accessibility in the east section containing historic interiors and a public observation space, and in the west section we created a space with new finishes, also accessible. The west section houses the lecture hall and offices of the Coral Gables' Economic Development Services Department.

La normativa exigía que el edificio tuviera dos entradas accesibles. Una de ellas se situó en el ala este, que contiene interiores históricos y un espacio de observación público, y en el ala oeste creamos un espacio con nuevos acabados, también accesible. La parte oriental alberga la sala de conferencias y las oficinas del Departamento de Servicios de Desarrollo Económico de Coral Gables.

As normas de acessibilidade exigiam que o edifício tivesse duas entradas acessíveis. Criamos acessos na secção este, que contém interiores históricos e um espaço de observação pública, e na secção oeste criámos um espaço com novos acabamentos, também acessível. A secção oeste alberga a sala de conferências e os escritórios do Departamento de Serviços de Desenvolvimento Económico de Coral Gables.

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Biographies | Biografías | Biografias

Ana Alvarez

She received a Bachelor of Architecture from the University of Miami and a Master in Design Studies from Harvard University. She is a member of the American Institute of Architects, serves on the Board of Architects in Coral Gables and volunteers as a member of several committees at the Sylvester Comprehensive Cancer Center in Miami, Florida. Her work ranges in scale and complexity from new custom homes and historic renovation projects to campus design and institutional buildings. Design Projects include single and multi-family dwellings in the New Urban Towns of Windsor and Alys Beach in Florida, and Tannin in Alabama; custom homes in Coral Gables and the Miami area; as well as renovation of historic and architecturally significant buildings in Miami Beach, Edgartown, Martha's Vineyard and Boston, Massachusetts.

Licenciada en Arquitectura por la Universidad de Miami y Máster en Estudios de Diseño por la Universidad de Harvard. Miembro del American Institute of Architects, pertenece a la Junta directiva del Colegio de Arquitectos de Coral Gables y es voluntaria en varios comités del Sylvester Comprehensive Cancer Center de Miami, Florida. Su trabajo es variado en escala y complejidad y abarca desde nuevas viviendas por encargo y proyectos de rehabilitación del patrimonio hasta el diseño de campus y edificios institucionales. Entre sus proyectos de diseño hay viviendas uni y plurifamiliares en las nuevas ciudades de Windsor y Alys Beach, Florida, y Tannin, Alabama; casas por encargo en la zona de Coral Gables y Miami, así como la rehabilitación de edificios de importancia histórica y arquitectónica en Miami Beach, Edgartown, Martha's Vineyard y Boston, Massachusetts.

Recebeu um Bacharelato em Arquitectura pela Miami University e um Mestrado em Estudos de Design pela Harvard University. É membro do American Institute of Architects, faz parte do Board of Architects de Coral Gables e é membro voluntário de vários comités no Sylvester Comprehensive Cancer Center em Miami, Flórida. O seu trabalho varia em escala e complexidade, desde novas casas personalizadas e projectos históricos de renovação até à concepção de campus e edifícios institucionais. Os seus projectos de design incluem habitações unifamiliares e multifamiliares nas Novas Cidades Urbanas de Windsor e Alys Beach na Flórida, e Tannin no Alabama; casas personalizadas em Coral Gables e na área de Miami; bem como a renovação de edifícios históricos e arquitectonicamente significativos em Miami Beach, Edgartown, Martha's Vineyard e Boston, Massachusetts.

Frank Martinez

He is an Associate Professor at the University of Miami, School of Architecture. He received a Bachelor's Degree in Architecture from the University of Miami, School of Architecture in 1987 and the degree of Master in Architecture in 1991 from Princeton University. His teaching focuses on courses in Design, History/Theory and Drawing in the core of both undergraduate and graduate programs; including teaching in the Rome Program, where he lectures and leads courses on Roman Villas and Gardens, Renaissance and Baroque Architecture and Urban Design. He also teaches seminars on selected topics on Early American Architecture and heads the UM Grand Tour of Europe (a university wide summer study abroad program), along with participating in international summer programs on traditional architecture and urban design research.

Profesor asociado de la Escuela de Arquitectura de la Universidad de Miami. Se licenció en la Escuela de Arquitectura de la Universidad de Miami en 1987 y obtuvo el Máster en Arquitectura por la Universidad de Princeton en 1991. Imparte las asignaturas de Proyectos, Historia y Teoría y Dibujo en el programa básico de grado y posgrado; además participa en el Programa Roma, donde enseña y dirige los cursos sobre villas y jardines romanos y arquitectura y urbanismo renacentistas y barrocos. Asimismo, imparte seminarios sobre temas seleccionados de la arquitectura temprana de Estados Unidos y dirige el Grand Tour de Europa de la Universidad de Miami (amplio curso universitario de verano en el extranjero), además de participar en programas de verano internacionales de investigación sobre arquitectura y urbanismo tradicionales.

É Professor Associado na University of Miami, School of Architecture. Recebeu um Bacharelato em Arquitectura pela University of Miami, School of Architecture em 1987 e um Mestrado em Arquitectura em 1991 pela University de Princeton. O seu ensino centra-se em cursos de Design, História/Teoria e Desenho no núcleo de ambos os programas de graduação e pós-graduação; incluindo o ensino no Programa de Roma, onde lecciona e dirige cursos sobre Vilas e Jardins Romanos, Arquitectura Renascentista e Barroca e Design Urbano. Também lecciona seminários sobre temas seleccionados sobre Arquitectura Americana Antiga e dirige o Grand Tour of Europe da University of Miami (um programa de estudo de verão universitário no estrangeiro), juntamente com a participação em programas internacionais de verão sobre investigação de design urbano e arquitectura tradicionais.

Peter Kiliddjian

Peter is the Principal in Charge of Design at Pascual, Perez, Kiliddjian (PPK) & Associates. He is a 1990 graduate of the University of Miami and holds both an Architecture license and a General Contractor's license for the state of Florida. He is also a LEED accredited professional and a member of the Latin Builders Association (LBA). He has led multidisciplinary teams to produce some of the largest and most diverse mixed-use projects in South Florida, including traditional neighborhood developments and New Urbanist communities.

Peter es director de proyectos de Pascual, Perez, Kiliddjian (PPK) & Associates. Se graduó en 1990 por la Universidad de Miami y tiene licencia de arquitecto y contratista general en el estado de Florida. Además, es un profesional acreditado por el sistema de certificación LEED y miembro de la Asociación de Constructores Latinos (LBA). Ha dirigido equipos multidisciplinares en algunos de los proyectos de mayor envergadura del Sur de Florida, entre los que se incluyen barrios tradicionales y comunidades que siguen los principios del Nuevo Urbanismo.

Peter é o Diretor Responsável pelo Design em Pascual, Perez, Kiliddjian (PPK) & Associates. Obteve o seu diploma em 1990 pela Universidade de Miami, e detém uma licença de Arquitetura e uma licença de Empreiteiro Geral para o estado da Flórida. É também um profissional acreditado pelo LEED e membro da Associação Latina de Construtores (LBA). Liderou equipas multidisciplinares na produção de alguns dos maiores e mais diversos projetos de uso misto no Sul da Flórida, incluindo empreendimentos de bairros tradicionais e comunidades do Novo Urbanismo.

With the Project Team: Sergio Perez (Project Manager), Marcela Gamarra, Francisco Cuello and Rafael Pena, the Documentation & Assessment Team: Rick Lopez, Andrew Schnieder, and University of Miami, HABS Drawings, and the photographer: Alex Tarajano Photography.

Con el equipo formado por Sergio Perez (Project Manager), Marcela Gamarra, Francisco Cuello y Rafael Pena, el equipo de documentación y evaluación formado por Rick Lopez, Andrew Schnieder, la University of Miami y HABS Drawings., y el fotógrafo: Alex Tarajano Photography.

Com a equipa do projeto: Sergio Perez (Gestor do Projeto), Marcela Gamarra, Francisco Cuello e Rafael Pena, a Equipa de Documentação e Avaliação: Rick Lopez, Andrew Schnieder, e a Universidade de Miami, Desenhos HABS, e o fotógrafo: Alex Tarajano Photography.

Restoration of the Roof of the Virgen de las Nieves Chapel in the forest of Irati, Navarra

Restauración del tejado de la ermita de la Virgen de las Nieves, Selva de Irati, Navarra

Restauração do telhado da ermida da Virgem das Neves, Floresta de Irati, Navarra

Leopoldo Gil Cornet, Javier Goicoa Juango

The forest of Irati is an expanse of beech and fir woodland in the north of Navarra at the head of the Pyrenean valleys of Aezkoa and Salazar. Situated in the basin of the river Irati and its tributaries the Urtxuria and the Urbeltza, it is reputed to be the largest and best-conserved European beech and fir forest after the Black Forest in Germany. The beech woods are delimited to the west by mount Orzanzurieta near Roncesvalles, and to the east by mount Orhi; their southern limit is marked by the imposing Sierra de Abodi. The woodland consists largely of common beech (*Fagus sylvatica*) and silver fir (*Abies alba*). Irati is normally reached from the west via Orbaiceta (in the Aezkoa valley) or from the east via Ochagavía (in the Salazar valley).

El bosque o la selva de Irati es un hayedo-abetal que se encuentra en el norte de Navarra, en la cabecera de los valles pirenaicos de Aezkoa y Salazar. Situado en la cuenca del río Irati y de sus afluentes el Urtxuria y el Urbeltza, es conocido por ser el segundo hayedo-abetal más extenso y mejor conservado de Europa, sólo superado por la Selva Negra, en Alemania. El hayedo está delimitado por el monte de Orzanzurieta, en Roncesvalles, al oeste, y por el monte Orhi al este; el límite meridional lo marca la imponente Sierra de Abodi. En el bosque predomina el haya común (*Fagus sylvatica*) y el abeto blanco (*Abies alba*). Los accesos principales a Irati se encuentran al oeste, a través de Orbaiceta (perteneciente al Valle de Aezkoa) y al este, atravesando Ochagavía (perteneciente al Valle de Salazar).

O bosque ou floresta Irati é uma floresta de faias e abetos no norte de Navarra, na cabeceira dos vales pirenaicos de Aezkoa e Salazar. Localizada na bacia do rio Irati e dos seus afluentes Urtxuria e Urbeltza, é conhecida por ser a segunda maior e melhor preservada floresta de faias e abetos da Europa, só ultrapassada pela Floresta Negra na Alemanha. A floresta de faias é delimitada a oeste pela montanha Orzanzurieta, em Roncesvales, e pela montanha Orhi a este; a fronteira sul é marcada pela imponente serra de Abodi. Na floresta predomina a faia comum (*Fagus sylvatica*) e o abeto branco (*Abies alba*). Os principais acessos a Irati são a oeste, através de Orbaiceta (pertencente ao Vale de Aezkoa) e a este, através de Ochagavía (pertencente ao Vale de Salazar).

The Virgen de las Nieves chapel

The chapel of Irati was built on the initiative of the inhabitants of the Aezkoa and Salazar valleys, with support from the archdiocese of Pamplona. According to the statutes of the Brotherhood of La Virgen de las Nieves (Our Lady of the Snows): "A chapel dedicated to the Virgin was built in the Marian year of 1954, in the heart of the Irati forest, with

Ermita de la Virgen de las Nieves

La construcción de la ermita de Irati se debe a la iniciativa de los habitantes de los valles de Aezkoa y Salazar, en colaboración con el Arzobispado de Pamplona. En los estatutos de la Hermandad de la Virgen de las Nieves podemos leer: "En el año mariano 1954, en el corazón del Monte Irati, se ha construido una ermita dedicada a Nuestra Señora en

Ermida da Virgem das Neves

A construção da Ermida de Irati deve-se à iniciativa dos habitantes dos vales de Aezkoa e Salazar, em colaboração com o Arcebispado de Pamplona. Nos estatutos da Irmandade da Virgem das Neves pode ler-se: "No ano mariano de 1954, no coração do Monte Irati, foi construída uma ermida dedicada a Nossa Senhora no seu título de Mãe de Deus das Neves". As

< Detail of the finished beech shingle roof | Detalle del tejado de tablillas acabado | Detalhe do telhado de telhas de madeira depois de acabado

the name of Our Lady of the Snows". Its construction began in 1953 and it was completed in 1954.

The chapel was built of stone extracted in the earthworks done on the site. The building is small but of great social and religious significance for the valleys' inhabitants. It has a single nave along with an antechamber wider than the rest of the building with a dividing portal and two stores or sacristies on either side. The antechamber is followed by a twin straight section with structural trusses and a semi-circular apse, with a central stained-glass window framing an image of the Virgin.

su advocación de Madre de Dios de las Nieves". Las obras comenzaron en 1953 y concluyeron en 1954.

La ermita se construyó con la piedra extraída de la propia explanación del terreno. Se trata de una construcción de reducidas dimensiones pero de gran relevancia social y religiosa para los habitantes de los valles citados. De nave única, cuenta con un tramo de entrada más ancho que el resto del templo y que incluye un pórtico en el centro y tiene dos almacenes o sacristías a los lados. Este tramo de entrada es seguido de dos tramos rectos marcados por las cerchas de su estructura y por un ábside semicircular rematado por una ventana central, con vidriera, que acoge la imagen de la Virgen.

obras começaram em 1953 e foram concluídas em 1954.

A ermida foi construída com pedra resultante do próprio nivelamento do terreno. É uma construção de dimensões reduzidas, mas de grande importância social e religiosa para os habitantes dos vales acima mencionados. Com uma única nave, tem um tramo de entrada que é mais amplo que o resto do templo, e que inclui um pórtico no centro e dois depósitos ou sacristias em ambos os lados. Este tramo de entrada é seguido por dois tramos retos marcados pelas treliças da sua estrutura e por uma abside semicircular rematada por uma janela central, com vitral, que alberga a imagem da Virgem.

The forest of Irati | El Bosque o Selva de Irati | O bosque ou floresta de Irati (Gobierno de Navarra)

In its straight sections the chapel has a graceful structure of silver fir, carved and polychrome in parts, and a fine, unusual framework bearing the apse roof. The roof is tiled with beech shingles laid on battens. Beech and silver fir are the native species of the Irati woods: the firs used to be sawn by hand by the Urtxuria stream and then dragged up the hillside by horses. For the roof the carpenters of the Irati valleys made over 7500 shingles of beech wood from the vicinity of the chapel.

A year later, in 1955, the chapel's exterior and interior were decorated with murals painted by the couple formed by Pedro Lozano de Sotés and Francis Bartolozzi. The mural in the chancel shows villagers from the nearby valleys engaged in local traditions and trades, and a large mural at the back of the chapel depicts the travels of the statue of the Virgin. On the side walls they painted the four chapels that hosted her image in 1954.

In 1984 the Brotherhood stopped tending to the chapel, though the August festivity continued to be held every year. In 2018, due to a lack of maintenance, the risk of collapse required the building to be shored up with scaffolding. Finally in 2020 the Brotherhood that had been founded in 1953 was reformed and steps were taken toward restoring the chapel. It was the late Josecho Tellechea – a woodcutter and devotee both of the place and of Our Lady of the Snows – who raised the alarm over the chapel's state of decay and proposed and promoted its restoration. He stated just one condition: that the roof should be tiled with beech shingles.

La ermita tiene en los tramos rectos una estructura elegante, labrada y puntualmente policromada, de madera de abeto blanco, y cuenta con una singular y bella armadura que soporta la cubierta del ábside. La estructura del tejado se cubrió con tablillas de haya, que se fijaron en rastreles. El haya y el abeto blanco son las especies autóctonas del bosque de Irati. Los abetos se aserraron a mano junto a la regata Urtxuria y fueron después arrastrados con caballerías, ladera arriba. Para la construcción de la cubierta los carpinteros de los valles del Irati prepararon más de 7.500 tablillas, procedentes de hayas del entorno próximo a la ermita.

Un año más tarde, en 1955, tanto el exterior como el interior de la ermita fueron decorados con pinturas murales, realizadas por el matrimonio formado por Pedro Lozano de Sotés y Francis Bartolozzi. En el presbiterio de la ermita representaron a los vecinos de los valles cercanos ejercitando las tradiciones y oficios del lugar y en los pies del templo ejecutaron un gran mural en recuerdo del traslado de la imagen de la Virgen. En los laterales aparecen representadas las cuatro ermitas que recibieron la imagen en 1954.

En 1984 la Hermandad abandonó el cuidado de la ermita, aunque se siguió celebrando ininterrumpidamente la festividad de agosto. En el año 2018, debido a la falta de mantenimiento, el riesgo de que el edificio colapsara obligó a proteger su perímetro con andamios. Finalmente, en el año 2020, se reconstituyó la Hermandad fundada en 1953 y se iniciaron las gestiones para la restauración de la ermita. Fue el recientemente fallecido Josecho Tellechea –maderero y amante del lugar y de la Virgen de las Nieves–, quien dio la voz de alarma sobre el avanzado estado de deterioro en el que se encontraba la ermita y quien propuso e impulsó su restauración. Sólo impuso una condición: el tejado tenía que ser de tablilla de haya.

A ermida tem nos tramos retos uma estrutura elegante, esculpida e ocasionalmente policromada, de madeira de abeto branco, e tem uma treliça singular e bonita que suporta o teto da abside. A estrutura do telhado foi coberta com telhas de faia, fixadas em ripas de madeira. A faia e o abeto branco são as espécies nativas da floresta de Irati. Os abetos foram serrados à mão junto ao rio Urtxuria, e depois arrastados pela colina acima com cavalos. Para a construção do telhado, os carpinteiros dos vales de Irati prepararam mais de 7.500 telhas, provenientes de faias dos arredores da ermida.

Um ano mais tarde, em 1955, tanto o exterior como o interior da ermida foram decorados com pinturas murais, realizadas pelo casal Pedro Lozano de Sotés e Francis Bartolozzi. No presbitério da ermida retrataram os habitantes dos vales próximos, praticando as tradições e ofícios locais, e na base do templo pintaram um grande mural em memória da transladação da imagem da Virgem. As quatro ermidas que receberam a imagem em 1954 são retratadas nas laterais.

Em 1984, a Irmandade abandonou os cuidados da ermida, embora as celebrações de Agosto tenham continuado a ser celebradas sem interrupção. Em 2018, devido à falta de manutenção, o risco de colapso do edifício forçou o perímetro a ser protegido com andaimes. Finalmente, em 2020, a Irmandade fundada em 1953 foi reconstituída, e foram tomadas medidas para restaurar a ermida. Foi o recentemente falecido Josecho Tellechea - um carpinteiro e amante do lugar e da Virgem das Neves - que lançou o alarme sobre o estado avançado de deterioração da ermida, e que propôs e promoveu a sua restauração. Impôs apenas uma condição: o telhado tinha de ser feito com telhas de faia.

The Virgen de las Nieves chapel, in the heart of the forest of Irati | La ermita de la Virgen de las Nieves, en el corazón del Bosque de Irati | A ermida da Virgem das Neves, no coração da Floresta de Irati (Gobierno de Navarra)

Beech shingle roofs

In a not very distant past it was the climate of a place that determined the form of roofs, and the land that provided roofing materials according to what was available locally. In the mountainous parts of northern Navarra, where there can be heavy snowfalls, the climate required steep roof slopes of up to 40 or 50 degrees, with a hipped format. As to materials, wood was used for both roof frames and tiling. There was a time when the roofs of Burguete and Roncesvalles, the Aezkoa valley, and the north of the Salazar valley were all tiled with beech shingles. Yet this way of building had several disadvantages: the possible warping and rotting of the shingles and above all a fire risk when the wood was dry. These issues with wooden shingles, as compared to the advantages of the local flat clay tiles, caused the latter to gradually take over. More recent still is the introduction of flat tiles as are to be found today in Burguete and Espinal.

Javier Fuentes y Ponte, in his *Memoria histórica y descriptiva del Santuario de Nuestra Señora de Roncesvalles* (History and Description of the Community of Our Lady of Roncesvalles), tells us what the roofs of the Community's collegiate church were like in 1880:

> *The roofs of the buildings at Roncesvalles, as well as those of all the houses in Burguete, have the unusual feature of sloping steeply so that the abundant snows may easily slide off them. The materials used in these roofs are highly dangerous and, unfortunately for the Roncesvalles Community, there have been many mishaps on this account. The tiles are slats of beech wood 0.40 long, 0.14 m wide and 0.02 m thick, attached by a wedge or peg to the roof-frame battens in an overlapping arrangement as used in slate roofs in other parts. The effect of the snow and of other atmospheric phenomena is to destroy the wood's softer fibers, causing the material to resemble cork or tinder, and in drier weather it can, if exposed to fire, cause a blaze to spread with extraordinary speed. The system is primitive, unique and worthy of study.*

Los tejados de tablilla de haya

En tiempos no muy lejanos era el clima de cada lugar el que determinaba la forma de los tejados y era el territorio el que proporcionaba el material de cubrición, en función de qué materiales pudieran encontrarse localmente. En la zona montañosa del norte de Navarra, donde se producen abundantes nevadas, el clima imponía vertientes de gran inclinación, de hasta 40 a 50 grados, con cubiertas a cuatro aguas. En lo que respecta a los materiales, se usaba la madera tanto para las armaduras de las cubiertas como para los elementos de cubrición. Hubo un tiempo en que todas las cubiertas de Burguete y Roncesvalles, del Valle de Aezkoa y del norte del Valle de Salazar se construían con tablilla de haya. Varios eran, sin embargo, los inconvenientes que esta manera de construir llevaba aparejada: el posible abarquillamiento y la putrefacción de las tablillas y, sobre todo, el peligro de incendio cuando la madera estaba seca. Los problemas ocasionados por la tablilla, al ser comparados con las ventajas que ofrecía la teja plana local, de arcilla cocida, propiciaron la progresiva sustitución de aquélla por ésta. En una época aún más reciente se introdujo la teja plana que hoy encontramos en Burguete y Espinal.

Don Javier Fuentes y Ponte, en su *Memoria histórica y descriptiva del Santuario de Nuestra Señora de Roncesvalles*, nos cuenta cómo eran los tejados de la Colegiata de este Santuario en 1880:

> *Las cubiertas de los edificios de Roncesvalles, así como (las) de todas las casas de Burguete, ofrecen un rasgo raro y original, su pendiente es muy fuerte, a fin de que las sucesivas y constantes nieves puedan resbalar fácilmente: la materia de dichas cubiertas es harto peligrosa y, por desgracia para el Santuario, han tenido lugar lamentables siniestros debido a tal causa; las tejas son unas tablas de madera de haya, cuya medida es de 0,40 m de largo, 0,14 m de ancho y 0,02 m de grueso, que colgadas por medio de una cuña ó clavija en el enlistonado de la armadura, se colocan a tapajuntas con el mismo sistema de las cubiertas de pizarra en otros países. La acción de la nieve y los demás fenómenos atmosféricos destruyen las fibras más blandas de la madera reduciéndola a un estado de corcho y de yesca, que cuando viene el tiempo menos húmedo y siente junto a sí el fuego, en un caso fortuito, lo propaga con extraordinaria rapidez; el sistema es primitivo, único y digno de estudio.*

Telhados de telha de faia

Num passado não muito distante, era o clima de cada lugar que determinava a forma dos telhados, e era o território que fornecia o material respetivo, dependendo dos materiais que podiam ser encontrados localmente. Na zona montanhosa do norte de Navarra, onde neva de forma abundante, o clima exigiu declives íngremes de até 40-50 graus, com telhados de quatro águas. Em termos de materiais, a madeira foi utilizada tanto para as treliças do telhado como para os elementos de cobertura. Houve uma época em que todos os telhados de Burguete e Roncesvales, do Vale de Aezkoa e do norte do Vale de Salazar foram construídos com telhas de faia. No entanto, havia várias desvantagens neste tipo de construção: o possível empenamento e apodrecimento das telhas e, sobretudo, o perigo de incêndio quando a madeira estava seca. Os problemas causados pelas telhas de madeira, em comparação com as vantagens oferecidas pela telha plana local, feita de barro cozido, conduziram à substituição gradual da primeira pela segunda. Num período ainda mais recente, foi introduzida a telha plana que pode ser encontrada hoje em dia em Burguete e Espinal.

Don Javier Fuentes y Ponte, na sua *Memoria histórica y descriptiva del Santuario de Nuestra Señora de Roncesvalles*, conta-nos como eram os telhados da Igreja Colegiada deste Santuário em 1880:

> *Os telhados dos edifícios de Roncesvales, bem como (aqueles) de todas as casas de Burguete, têm um aspeto raro e original, a sua inclinação é muito íngreme, de modo que as sucessivas e constantes neves podem deslizar facilmente: o material destes telhados é muito perigoso e, infelizmente para o Santuário, tem ocorrido acidentes infelizes devido a esta causa; as telhas são tábuas de madeira de faia, medindo 0,40 m de comprimento, 0,14 m de largura e 0,02 m de espessura, que, penduradas com o auxílio de uma cunha ou cavilha nas ripas da treliça, são colocadas com o mesmo sistema dos telhados de xisto noutros países. A acção da neve e outros fenómenos atmosféricos destroem as fibras mais macias da madeira, reduzindo-a a um estado de cortiça ou madeira seca facilmente inflamável, e quando o clima é menos húmido e existe fogo por perto, num caso acidental, este propaga-se com extraordinária rapidez; o sistema é primitivo, único e digno de estudo.*

Restoration of the roof of the Virgen de las Nieves chapel

The restoration of the roof of the Virgen de las Nieves chapel in the heart of the Irati forest involved the adventure of recovering the traditional technique of roofing with wooden shingles. As mentioned, it was Josecho Tellechea who proposed restoring the roof with shingles. But the key question was: who might be able to make such a roof in 2019? The chapel had been built over 60 years before and its roof was probably one of the last such to have been made.

By chance Josecho came across Javier Goicoa, an enthusiastic "youngster" of 74 from the Aezkoa valley as well as a master woodcutter, to whom he proposed the task of coordinating the operation. Javier accepted and offered to teach the technique to any young volunteers wishing to learn the trade of *tablillero* roofer. This account owes much to the teachings of Javier Goicoa and to the contributions of Benito Ancho, another Aezkoa valley woodcutter.

La restauración del tejado de la ermita de la Virgen de las Nieves

Con la restauración del tejado de la ermita de la Virgen de las Nieves, en pleno corazón del bosque de Irati, en Navarra, dio comienzo la apasionante aventura de recuperar la técnica tradicional de cubrir los tejados con tablilla de madera. Tal como se ha mencionado, fue Josecho Tellechea quien propuso llevar a cabo la restauración del tejado con tablilla. Sin embargo, la cuestión capital era, ¿quién sabía hacer aún tejados de tablillas en el año 2019? Hacía más de sesenta años que se había construido la ermita y probablemente el tejado de ésta fuese uno de los últimos que se habían hecho con este material.

El azar quiso que Josecho se encontrara con Javier Goicoa, un apasionado "joven", de setenta y cuatro años, del Valle de Aezkoa, y maestro maderero, a quien propuso coordinar la operación. Javier Goicoa aceptó y se ofreció a enseñar la técnica a jóvenes voluntarios que quisieran iniciarse en el oficio de *tablillero*. Este texto es deudor de las enseñanzas de Javier Goicoa y de las explicaciones de otro maestro maderero aezkoano, Benito Ancho.

A restauração da ermida da Virgem das Neves

A restauração do telhado da ermida da Virgem das Neves, no coração da floresta de Irati em Navarra, marcou o início da emocionante aventura de recuperação da técnica tradicional de cobertura de telhados com telhas de madeira. Como mencionado, foi Josecho Tellechea que propôs levar a cabo a restauração da cobertura de telha. Contudo, a questão principal era, quem saberia fazer telhados de telha em 2019? A ermida tinha sido construída há mais de sessenta anos, e o seu telhado foi provavelmente um dos últimos a ser feito com este material.

Foi por acaso que Josecho conheceu Javier Goicoa, um "jovem" apaixonado de setenta e quatro anos do Vale de Aezkoa, e mestre carpinteiro, a quem propôs coordenar a operação. Javier Goicoa aceitou e ofereceu-se para ensinar a técnica a jovens voluntários que queriam aprender o ofício de *tablillero*. Este texto está em dívida com os ensinamentos de Javier Goicoa e as explicações de outro mestre carpinteiro de Aezkoa, Benito Ancho.

Making of the beech shingle roof

Every step in the long process of making wooden shingles is important. It should be kept in mind that between the choosing of the most suitable trees and the actual laying of shingles, quite a few months may elapse.

The process starts with the selection of the raw material: beech wood. This should be sourced on north-facing slopes of woodland – *pakos*, as the locals say – in hollows where the soil is rich and fertile. The trees growing in lush, fertile and sheltered areas are normally healthy, smooth, straight and tall.

Elaboración del tejado de tablilla de haya

Todos los pasos del largo proceso de elaboración de la tablilla son importantes. Hay que tener en cuenta que desde que se seleccionan los árboles más adecuados hasta que las tablillas se colocan en el tejado pueden pasar varios meses.

El proceso comienza con la elección de la materia prima, la madera de haya. Hay que buscarla en las zonas boscosas adecuadas, que son las situadas en las laderas orientadas al norte –*pakos*, las llaman los lugareños–, en hondonadas donde el terreno sea rico y fértil. Los árboles que crecen en terrenos frondosos, fértiles y protegidos suelen ser lozanos, lisos, bien erguidos y más altos.

Elaboração do telhado de telha de faia

Cada etapa do longo processo de produção da telha é importante. Há que ter em consideração que podem decorrer vários meses desde o momento em que as árvores mais adequadas são seleccionadas, até as telhas serem colocadas no telhado.

O processo começa com a escolha da matéria-prima, a madeira de faia. Ela deve ser procurada em áreas florestais adequadas, que se encontram em encostas viradas a norte - *pakos,* como lhes chamam os locais -, em depressões onde o solo é rico e fértil. As árvores que crescem em áreas luxuriantes, férteis e abrigadas são geralmente exuberantes, suaves, verticais e mais altas.

The beech trunk cut and prepared for making *trozas* or *trallos* | El tronco de haya cortado y preparado para hacer las *trozas* o *trallos* | O tronco da faia, cortado e preparado para fazer as *trozas* ou *trallos* (Javier Goicoa)

In selecting suitable trees, several aspects should be looked out for: a thick trunk (ideally 45-60 cm in diameter), smooth bark without deep furrows, and grain – longitudinal and circular – that is as parallel and fine as possible. Among the beeches with these features the ones to prefer will be those with most moss on their trunk, as this means that the tree is older and hence that its grain will be easier to work.

Traditionally it is recommended that trees be felled with the moon in the first quarter, between the first November moon and the last one of February. This is the best time because it is when the trees are dormant for winter. In the first quarter the wood is paler and more ductile and has well-defined grain, facilitating the subsequent straightening of any bends in the

A la hora de seleccionar los mejores ejemplares hay que tener en cuenta varios factores: el grosor del tronco – idealmente de entre 45 y 60 centímetros de diámetro–, que la corteza sea lisa, que no tenga surcos profundos y que las vetas –tanto las longitudinales como las circulares– sean lo más paralelas y finas posibles. De entre las hayas que cumplan estas características serán preferibles aquellas que tengan más musgo en la corteza, ya que esto quiere decir que el árbol es más viejo y que, por tanto, sus vetas son más dóciles.

Tradicionalmente se recomienda llevar a cabo la tala con luna creciente, entre la primera luna de noviembre y la última de febrero. Éste es el momento idóneo para el apeo de los árboles, porque es cuando se encuentran en su letargo

Ao seleccionar os melhores exemplares, vários fatores devem ser tidos em conta: a espessura do tronco - idealmente entre 45 e 60 centímetros de diâmetro -, que a casca seja suave, que não tenha sulcos profundos, e que as veias - tanto longitudinais como circulares - sejam tão paralelas e finas quanto possível. Entre as faias que reúnem estas caraterísticas, são preferíveis as que têm mais musgo na casca, uma vez que isto significa que a árvore é mais velha e por isso as suas veias são mais dóceis.

Tradicionalmente, recomenda-se que o corte seja efetuado durante uma lua crescente, entre a primeira lua de Novembro e a última lua de Fevereiro. Este é o momento ideal para o abate das árvores, porque é quando elas estão no seu torpor de Inverno. Durante os períodos de lua crescente a madeira é mais branca, mais

shingles. This also prevents them from shifting about in the roof once laid.

After the beech has been felled, its trunk is left to settle for three or four months in a bleeding process called *purga*. Thus when spring arrives and the woods recover their splendor, the sap remaining inside will cause shoots to appear on the felled trees. Bleeding makes the shingles more durable, as the sap finally drains out of the vessels in the wood and its pores close.

invernal. Durante los periodos de luna creciente la madera es más blanca, más dúctil y sus vetas están más definidas, lo que facilita el enderezamiento posterior de las tablillas menos rectas. Se evita así el movimiento de las mismas en el tejado tras su colocación.

Una vez talado el tronco del haya se deja reposar la madera un tiempo, alrededor de tres o cuatro meses, para *purgarla*. Así, cuando comienza la primavera y el bosque recupera su esplendor, algunos brotes aparecen en los árboles cortados gracias a la labor de la savia que queda en su interior tras la tala. Este reposo repercute en la durabilidad de la tablilla, ya que de esta manera los vasos del tronco se vacían por completo de savia y los poros quedan cerrados.

maleável, e as suas veias são mais definidas, o que facilita a correção subsequente das telhas menos retas. Isto impede o seu movimento depois de terem sido colocadas no telhado.

Uma vez cortado o tronco da faia, a madeira é deixada em repouso durante algum tempo, cerca de três ou quatro meses, a fim de ser *purgada*. Assim, quando chega a Primavera e a floresta recupera o seu esplendor, alguns rebentos aparecem nas árvores cortadas, graças ao trabalho da seiva que permanece no seu interior após o corte. Este período de repouso tem um impacto na durabilidade da telha, uma vez que os vasos do tronco se esvaziam completamente de seiva, e os poros são fechados.

1: *Troza* or *trallo* divided into segments. Each segment becomes one shingle. The heartwood is used for making pegs. 2: The piles of shingles are dried in their own environment | 1: La *troza* o *trallo* dividida en gajos. Cada gajo será una tablilla. Del corazón del haya se sacarán las clavijas. 2: La tablilla apilada se seca en su propio ambiente | 1: A *troza* ou *trallo* dividida em gomos. Cada gomo será uma telha de madeira. Do coração da faia são extraídas as cavilhas. 2: As telhas de madeira empilhadas secam no seu ambiente original (1: Javier Ochoa 2: Javier Goicoa)

1

After this settling period the lumber should ideally be worked within two months. During drying and later tasks it is not recommendable to move it out of the shade of the forest. It should be kept out of direct sunlight because otherwise it would dry too quickly and the shingles might crack.

The trade of a *tablillero* roofer is not difficult: all that is required is a certain knowledge of wood, so as to be able to predict how it will behave, and, as in any trade, suitable tools. Anyone unacquainted with the trade but familiar with the behavior of wood may learn the procedure with just a little instruction.

Una vez concluido el periodo de reposo la madera debe trabajarse idealmente en los dos siguientes meses. Tanto durante el secado como durante los trabajos posteriores es recomendable no trasladar la madera, que se debe mantener a la sombra, en la masa forestal. No es conveniente que le dé el sol directamente, ya que la madera se secaría demasiado rápido y después las tablillas se agrietarían.

El oficio de *tablillero* no tiene gran dificultad: únicamente requiere de ciertos conocimientos sobre la madera –para predecir su comportamiento– y, como en cualquier oficio, trabajar con las herramientas adecuadas. Aquéllos que desconocen el oficio pero están familiarizados con el comportamiento de la madera podrán aprender, con muy pocas explicaciones, el procedimiento a seguir.

Uma vez terminado o período de repouso, a madeira deve ser trabalhada idealmente nos dois meses seguintes. Recomenda-se que a madeira não seja deslocada durante o período de secagem e durante o trabalho subsequente, e que seja mantida à sombra na floresta. Não deve ser exposta à luz solar direta, pois a madeira secaria demasiado rápido e as telhas rachariam.

O ofício de *tablillero* não é muito difícil: requer apenas alguns conhecimentos sobre a madeira - para prever o seu comportamento - e, como em qualquer ofício, trabalhar com as ferramentas adequadas. Aqueles que desconhecem o ofício mas estão familiarizados com o comportamento da madeira, poderão aprender com muito poucas explicações o procedimento a seguir.

2

Obtaining shingles involves dividing the trunk into *trozas* or *trallos* – logs sawn at either end, 65 cm long. No more *trozas* than those that can be worked and finished in a day should be made, as if left unworked, they lose the freshness they have when recently cut. The *trozas* are taken to the site where they are to be cut, where the shingles will later be piled up for drying.

The next step is to cleave each *troza* vertically into segments or wedges of the same size, from which the shingles will be made. The shingle width should be 9-14 cm, as those wider than 14 cm will be liable to warp over time and split, and those of less than 9 cm are overly narrow and light and liable to shift about. The shingles must be finished one by one so as to remove bark, rough parts and splinters, so that when laid on the roof they will fit nicely with minimal gaps.

Para obtener las tablillas el tronco se divide en *trozas* o *trallos* –secciones de tronco cilíndricas aserradas por los extremos– de 65 cm de longitud. No se deben hacer más *trozas* de las que se puedan trabajar y terminar en el mismo día, ya que, si se deja pasar tiempo sin trabajarlas, pierden el buen punto que tienen cuando están recién cortadas. Las *trozas* se trasladan al sitio donde se vayan a trabajar, que será el mismo lugar donde posteriormente se apilarán las tablillas obtenidas para su secado.

El siguiente paso es dividir cada *troza* verticalmente en gajos o cuñas del mismo tamaño, de donde se obtendrán las tablillas. El ancho de las tablillas debe de ser de entre 9 y 14 cm: las que tienen más de 14 cm no dan buen resultado porque se suelen alabear y con el tiempo se rajan, mientras que las que tienen menos de 9 cm son muy estrechas, pesan poco y se mueven con facilidad. Estas tablillas se han de repasar una por una para quitarles la corteza, las asperezas y las astillas, de manera que al colocarlas en el tejado queden bien ajustadas unas con otras sin huecos grandes entre ellas.

Para obter as telhas, o tronco é dividido em *trozas* ou *trallos* - secções de tronco cilíndricas, serradas nas extremidades - com 65 cm de comprimento. Não devem ser feitas mais *trozas* do que as que podem ser trabalhadas e acabadas no mesmo dia, pois se não forem trabalhadas durante muito tempo, perdem o estado bom que têm quando são cortados de fresco. As *trozas* são transferidas para o local onde serão trabalhadas, que será o mesmo local onde as telhas resultantes serão mais tarde empilhadas para secagem.

O passo seguinte é dividir cada *troza* verticalmente em gomos ou cavilhas do mesmo tamanho, de onde serão obtidas as telhas. A largura das telhas deve ser entre 9 e 14 cm: as que têm mais de 14 cm não servem, porque tendem a deformar-se e rachar com o tempo, enquanto que as que têm menos de 9 cm são muito estreitas, pesam pouco e movem-se facilmente. Estas telhas devem ser examinadas uma a uma para remover a casca, rugosidade e lascas, de modo a que, quando são colocadas no telhado, encaixem bem umas nas outras sem grandes espaços entre elas.

1: The master on site with his "young" apprentices, by a pile of shingles. 2: Shingles and pegs | 1: El maestro a pie de obra con sus "jóvenes" alumnos, junto a la pila de tablillas. 2: Tablillas y clavijas | 1: O mestre no local da construção com os seus jovens alunos, junto à pilha de telhas de madeira. 2: Telhas de madeira e cavilhas

1: Drilling of holes in the shingles and insertion of pegs. 2: Preparation of shingles for laying on the roof. 3: Each *tablillero* occupies one position: one prepares the shingles, another tosses them up to his fellow on the scaffold, and the latter passes them on to the shingle-layer. 4: Tiling of a corner of the roof with shingles | 1: Perforación de las tablillas y colocación de las clavijas. 2: Preparación de la tablilla para su colocación en el tejado 3: Cada *tablillero* ocupa una posición: uno prepara las tablillas, otro se las lanza al que está en el andamio y éste último se las pasa al colocador. 4: Cubrición de un rincón de la ermita con las tablillas | 1: Perfuração das telhas de madeira e colocação das cavilhas. 2: Preparação da telhas de madeira para a sua colocação no telhado. 3: Cada *tablillero* ocupa uma posição: um prepara as telhas, outro atira-as para o que está no andaime, e este último passa-as ao que as irá colocar. 4: Cobertura de um canto da ermida com telhas de madeira.

Given the large quantity of water contained in recently cut wood, the shingles cannot be laid at once, as they might crack as they dry, so a few months of drying are needed. This process requires suitable ventilation and should preferably be conducted in the forest itself, with the wood receiving the corresponding daily periods of sunlight and shade.

Debido a la gran cantidad de agua que contiene la madera recién cortada, las tablillas no se pueden colocar inmediatamente, pues podrían agrietarse durante el proceso de secado. Para evitarlo, las tablillas deben secarse durante algunos meses antes de su colocación. Para que este proceso se realice correctamente debe haber una ventilación adecuada y preferentemente llevarse a cabo en su propio ambiente, dentro del bosque, asegurando que las piezas reciban la cantidad de sombra y de sol que les corresponde cada día.

Devido à grande quantidade de água contida na madeira recém cortada, as telhas não podem ser colocadas imediatamente, uma vez que podem rachar durante o processo de secagem. Para evitar isto, as telhas devem ser secas durante alguns meses antes da sua colocação. Para que este processo seja realizado corretamente, deve existir uma ventilação adequada e, de preferência, deve ser realizado no seu próprio ambiente, na floresta, assegurando que as peças recebem a quantidade adequada de sombra e sol em cada dia.

The shingles are attached to the *latas* or battens with wooden pegs. View from the interior | Las tablillas se cuelgan de las *latas* o rastreles mediante clavijas de madera. Vista desde el interior | As telhas de madeira penduram-se nas *latas* ou ripas utilizando cavilhas de madeira. Vista a partir do interior (Javier Ochoa)

For proper drying, the shingles should be piled on two logs, not touching the ground. One shingle should then be placed over another so as to form a square, with the end of one resting on the tip of the next so that air may get in between them. The piles normally comprise 100 units. This arrangement allows any warped shingles to be straightened by the weight of the pile plus that of the additional weight placed on top. Though at first the pile is unstable, after a few days it settles, as twisted or warped shingles become straighter. They should stay like this for seven or eight months, *madurando* (maturing), during which process they not only become straighter but also lose weight, and their pores close.

Para realizar el secado correctamente las tablillas deben apilarse sobre dos maderos, para que no toquen el suelo. A continuación, se debe colocar una tablilla sobre otra formando un cuadrado, apoyando el extremo de una sobre la punta de la siguiente para permitir que circule el aire entre ellas. Las pilas se suelen hacer de cien unidades. Si entre las tablillas hubiera alguna alabeada esta disposición permite que la tablilla se enderece con el peso de la propia pila y con el de un peso añadido que se les coloca encima. Aunque en un primer momento la pila es muy inestable, pasados unos días se asienta completamente, una vez que las piezas torcidas y alabeadas se enderezan. Las tablillas deben permanecer así durante siete u ocho meses, *madurando*, proceso en el que, además de enderezarse, pierden peso y se cierran sus poros.

Para uma secagem adequada, as telhas devem ser empilhadas em duas peças de madeira, de modo a não tocarem no chão. Depois, uma tábua deve ser colocada em cima da outra, formando um quadrado, repousando a extremidade de uma em cima da extremidade da seguinte para permitir a circulação de ar entre elas. As pilhas são geralmente constituídas por cem unidades. Se houver alguma tábua deformada entre elas, esta disposição permite que as telhas se endireitem devido ao peso da própria pilha e ao peso adicional colocado em cima delas. Embora no início a pilha seja muito instável, ao fim de alguns dias ela assenta completamente, uma vez que as peças tortas e deformadas se endireitam. As telhas devem permanecer assim durante sete ou oito meses, *madurando*, um processo em que, além de se endireitarem, perdem peso e fecham os seus poros.

Once the drying is complete, the shingles are ready to be laid on the roof. This process is quite simple: over the rafters of the roof truss, battens or *latas* are affixed as supports. Rather than being nailed, the shingles rest loosely over each other, and to prevent slippage they are attached to the *latas* by wooden pegs. The pegs are made from the core of the beech log, i.e. the hardest part, and are inserted into holes drilled in the shingles. The only shingles to be nailed are those in the last row (nearest the ridge) and those at just one hip end. All the rest are laid loosely.

Finalizado el proceso de secado, las tablillas ya están listas para su colocación en el tejado. El proceso es bastante sencillo: una vez colocados los cabios de la armadura de la cubierta, se fijan los rastreles o *latas* sobre los que descansarán las tablillas. Las tablillas no deben clavarse, sino apoyarse, y para que no deslicen se cuelgan de las *latas* utilizando para ello clavijas de madera. Las clavijas son puntas de madera que se obtienen de la parte del tronco desechada, la del núcleo, que es más dura, y que se introducen en un taladro realizado previamente a la tablilla. Las únicas tablillas que se clavan son las de la última hilera –la que queda próxima a la cumbrera– y sólo las de uno de los faldones. Todas las demás quedan sueltas.

Uma vez concluído o processo de secagem, as telhas estão prontas para serem colocadas no telhado. O processo é bastante simples: uma vez colocadas as vigas da treliça no telhado, são fixadas as ripas ou *latas* sobre as quais as telhas assentarão. As telhas não devem ser pregadas e sim apoiadas, e para que não deslizem, são penduradas nas *latas* usando cavilhas de madeira. As cavilhas são bocados de madeira obtidos da parte do tronco que é descartada, o núcleo, que é mais duro, e que são inseridos num furo realizado previamente nas telhas. As únicas telhas que são pregadas são as da última fila - a que está perto do topo -, e apenas as de uma das águas. Todas as outras permanecem soltas.

1: The shingles are not nailed but rather rest on the battens, and to prevent slippage they are secured with pegs. 2: The shingles overlap: three are always overlaid across the whole roof surface | 1: Las tablillas no se clavan; se apoyan sobre los rastreles y, para que no deslicen, se fijan con clavijas. 2: Las tablillas se solapan: en toda la superficie del tejado siempre se superponen tres tablillas | 1: As telhas de madeira não se pregam; apoiam-se sobre as ripas e, para que não deslizem, fixam-se com cavilhas. 2: As telhas de madeira sobrepõem-se: em toda a superfície do telhado existem sempre três telhas sobrepostas (Javier Goicoa)

1

2

1: The finished beech shingle roof. 2: Shingle tiling over the apse | 1: El tejado de tablilla acabado. 2: Las tablillas del ábside | 1: O telhado de telhas de madeira depois de acabado. 2: As telhas da abside (Javier Goicoa)

The first *lata* batten should be twice as thick as the others so as to offset the slope where it reaches the eave. The shingles in the first course should also be as wide as possible and about 40 cm long. The shingles in the remaining courses will be 65 cm long. They should overlap those in the course below by a little more than half, staggered so as to cover the joints in the row below. Thus in every part of the roof there will always be three layers of overlaid material. Though the roof's main task is to keep water from getting in, it is also a fine thermal insulator thanks to the thickness provided by three overlapping shingles, of up to 6 or 7 centimeters.

A shingle roof traditionally had a service life of some 50 years. After 35 years the shingles would be turned over and their position inverted, allowing the roof to last at least another 15 years. In any event, an airy environment contributed to a longer duration.

La primera *lata* ha de ser el doble de gruesa que las demás, para compensar la inclinación del faldón en el encuentro con el alero. Además, las tablillas de la primera hilada deberán tener la mayor anchura posible y aproximadamente 40 centímetros de largo. Las tablillas del resto de hiladas serán de 65 centímetros de largo. Cada tablilla debe cubrir algo más de la mitad de las tablillas de la hilada inferior, solapándose, y deben colocarse a matajuntas. De esta manera en cada punto de la cubierta hay siempre tres capas de material superpuesto. Si bien el principal cometido del tejado de tablilla es evitar la entrada del agua de lluvia, éste es también un magnífico aislante térmico, gracias al espesor conseguido al solapar tres tablillas, de hasta 6 o 7 centímetros.

Tradicionalmente un tejado de tablilla tenía una vida útil de unos cincuenta años; para ello, a los treinta y cinco años se daba la vuelta a las tablillas, invirtiendo su posición, lo que permitía que el tejado durara al menos quince años más. En todo caso, los entornos aireados favorecían una duración mayor.

A primeira *lata* deve ter o dobro da espessura das restantes, para compensar a inclinação da água onde esta faz a ligação com o beiral. Além disso, as telhas da primeira fila devem ser o mais largas possível e ter aproximadamente 40 centímetros de comprimento. As telhas das restantes filas devem ter 65 cm de comprimento. Cada tábua deve cobrir um pouco mais de metade das telhas da fila inferior, sobrepondo-se umas às outras, e deve ser colocada de uma forma escalonada. Desta forma, em cada ponto do telhado há sempre três camadas de material sobrepostas. Embora o principal objetivo do telhado de telha de madeira seja evitar a infiltração da água da chuva, é também um excelente isolante térmico, graças à espessura alcançada pela sobreposição de três telhas, até 6 ou 7 cm.

Tradicionalmente, um telhado de telha de madeira tinha uma vida útil de cerca de cinquenta anos; para este fim, após trinta e cinco anos, as telhas eram viradas, invertendo a sua posição, o que permitia que o telhado durasse pelo menos outros quinze anos. Em qualquer caso, os ambientes arejados favoreciam uma vida mais longa.

Legacy

Once the shingles were laid, the project was deemed complete. The home of Irati's Virgin of the Snows at last had a roof – tiled with beech shingles, as Josecho wished.

Martín Landa, Bernardo Landa, Antero Fernández, David Fernández, Pio Sarriés and Isaac Juanco, from Salazar, and the natives of Aezkoa, Javier Goicoa and Jesús María Larrañeta, who also oversaw the process, managed to produce and lay the 7500 shingles forming the roof of the Virgen de las Nieves chapel and thereby to salvage and propagate a trade – that of *tablillero* roofer – which had seemed lost. Thus the torch lit by Josecho Tellechea remains alight, passing from hand to hand.

Legado

Una vez colocadas las tablillas se dio la aventura por concluida. La casa de la Virgen de las Nieves de Irati por fin tiene tejado. Y este es de tablilla de haya, como quería Josecho.

Los salacencos Martín Landa, Bernardo Landa, Antero Fernández, David Fernández, Pio Sarriés e Isaac Juanco, junto a los aezkoanos Javier Goicoa y Jesús María Larrañeta –que guiaron el proceso–, han logrado producir y colocar las siete mil quinientas tablillas que cubren la ermita de la Virgen de las Nieves y con ello recuperar y difundir un oficio, el de tablillero, que parecía perdido. Así, la antorcha que en su día prendió Josecho Tellechea sigue encendida y pasando de mano en mano.

Legado

Uma vez colocadas as telhas, a aventura estava concluída. A casa da Virgem das Neves de Irati tem finalmente um telhado. E é feito de telhas de faia, como Josecho queria.

Martín Landa, Bernardo Landa, Antero Fernández, David Fernández, Pio Sarriés e Isaac Juanco, oriundos do Vale de Salazar, juntamente com Javier Goicoa e Jesús María Larrañeta do Vale de Aezkoa, orientaram o processo e conseguiram produzir e colocar as sete mil e quinhentas telhas da cobertura da ermida da Virgem das Neves, e assim recuperar e divulgar um ofício, o de *tablillero*, que parecia ter-se perdido. Assim, a tocha que Josecho Tellechea acendeu no seu tempo, continua acesa e a passar de mão em mão.

View of the chapel roof and bell gables tiled with shingles | Vista del tejado y la espadaña de la ermita cubiertos con tablillas | Vista do telhado e do campanário da ermida cobertos com telhas de madeira

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Biography | Biografía | Biografia

Leopoldo Gil Cornet

An architect, Leopoldo worked for the Historic Heritage Service in the government of Navarra's Directorate General for Culture (Príncipe de Viana Institute) from 1986 to 2021, when he drew up and directed over a hundred conservation and restoration projects for various heritage buildings in Navarra. He lectured at the Navarra University School of Architecture from 1985 to 2017 and coordinated the specialization course on Architecture Restoration and Rehabilitation up to 2017. Winner of the Rafael Manzano Prize in 2012, since then he has sat on the juries for the following awards and competitions: Rafael Manzano Prize for New Traditional Architecture, Richard H. Driehaus Medal for Heritage Preservation, Richard H. Driehaus Building Arts Awards, and Richard H. Driehaus Architecture Competition. He is a corresponding member for Pamplona of the Royal Catalan Academy of Fine Arts of Sant Jordi, and a member of the Academia del Partal heritage restorers' association.

Arquitecto, ha trabajado en el Servicio de Patrimonio Histórico de la Dirección General de Cultura-Institución Príncipe de Viana del Gobierno de Navarra de 1986 a 2021, desde donde ha redactado y dirigido más de un centenar de proyectos de conservación y restauración en diversos monumentos de Navarra. Ha sido profesor de la Escuela de Arquitectura de la Universidad de Navarra de 1985 a 2017 y coordinador de la Especialización en Restauración y Rehabilitación de la Arquitectura hasta el mismo año. Ganador en el año 2012 del Premio Rafael Manzano Martos, desde entonces forma parte de los jurados de los siguientes premios y concursos: Premio Rafael Manzano de Nueva Arquitectura Tradicional, Medalla Richard H. Driehaus a la Conservación del Patrimonio, Premios Richard H. Driehaus de las Artes de la Construcción y Concurso de Arquitectura Richard H. Driehaus. Es académico correspondiente por Pamplona de la Reial Acadèmia Catalana de Belles Arts de Sant Jordi y miembro de la Academia del Partal.

Arquiteto, trabalhou no Serviço de Património Histórico da Direção Geral da Cultura-Instituição Principe de Viana do Governo de Navarra, de 1986 a 2021, onde elaborou e dirigiu mais de uma centena de projetos de conservação e restauro de vários monumentos de Navarra. Foi professor na Escola de Arquitetura da Universidade de Navarra entre 1985 a 2017, e coordenador da Especialização em Restauração e Reabilitação da Arquitetura até ao mesmo ano. Em 2012, venceu o Prémio Rafael Manzano Martos, e desde então tem sido membro do júri dos seguintes prémios e concursos: Prémio Rafael Manzano de Nova Arquitetura Tradicional, Medalha Richard H. Driehaus de Conservação do Património, Prémios Richard H. Driehaus das Artes de Construção, e Concurso de Arquitetura Richard H. Driehaus. É membro correspondente de Pamplona da Academia Real Catalã de Belas Artes de Sant Jordi, e membro da Academia do Partal.

Javier Goicoa Juango

Javier, born in the Irati area, is well acquainted with the trade of *tablillero* roofer, which was formerly common in the Navarran Pyrenees thanks to the traditional roofing methods with beech shingles. In his spare time as a child he would assist his neighbor Fermín Elizondo and his father, a forestry surveyor. At the age of eighteen he qualified with the Provincial Council of Navarra as a firefighter and joined a mountain rescue unit in the Irati forest. After an accident in 1998 he became an instructor at the Navarra Government Safety School, where he trained new firefighters in safe working techniques at heights. Once retired, he returned to his great passion: wood. He has researched and experimented with and, with the help of his friend Jesús María Larrañeta, revived the trade of shingle tiler, which had been close to becoming irremediably lost. Recently he set up a museum on forest harvesting and the manufacture of wooden shingles.

Javier, originario de la zona de Irati, conoce bien el oficio del *tablillero*. Este oficio era muy común en el Pirineo navarro, ya que la forma tradicional de cubrir las edificaciones empleaba la técnica de las tablillas de haya. Siendo joven comenzó a ayudar en su tiempo libre a su vecino Fermín Elizondo y a su padre, medidor de masa forestal. A los dieciocho años, opositó a bombero de la Diputación Foral de Navarra y se convirtió en miembro de un grupo especial de rescate en montaña en la selva de Irati. Tras un accidente en 1998, pasó a ser docente en la escuela de seguridad del Gobierno de Navarra, donde formó a las nuevas promociones de bomberos en aseguramiento y manejo de técnicas en altura. Una vez jubilado, volvió a relacionarse con su gran pasión: la madera. Ha investigado y experimentado y, ayudado por su amigo Jesús Mª Larrañeta, ha recuperado el oficio de *tablillero*, que estaba cerca de perderse irremediablemente. Recientemente ha montado un museo donde se expone la explotación forestal y su transporte, así como la elaboración de las tablillas.

Javier, nascido na região do Irati, conhece bem o ofício de *tablillero*, que era antigamente comum nos Pirinéus de Navarra, graças aos métodos tradicionais de construção de telhados com telhas de faia. No seu tempo livre, quando era criança, ajudava o seu vizinho Fermín Elizondo e o seu pai, um agrimensor florestal. Aos dezoito anos de idade formou-se como bombeiro através do Conselho Provincial de Navarra, e juntou-se a uma unidade de resgate de montanha na floresta de Irati. Após um acidente em 1998, tornou-se instrutor na Escola de Segurança do Governo de Navarra, onde treinou novos bombeiros em técnicas de trabalho seguro em altitude. Uma vez reformado, regressou à sua grande paixão: a madeira. Pesquisou e experimentou e, com a ajuda do seu amigo Jesús María Larrañeta, reavivou o ofício de *tablillero*, que estava quase a perder-se irremediavelmente. Recentemente abriu um museu sobre a exploração florestal e o fabrico de telhas de madeira.

< The master *tablillero* Javier Goicoa approves his apprentices' handiwork | Javier Goicoa, el maestro *tablillero*, da el visto bueno al trabajo de sus alumnos | Javier Goicoa, o mestre *tablillero*, aprova o trabalho dos seus alunos

> The shingles one year after being laid | Las tablillas un año después de su colocación | As telhas de madeira um ano após a sua colocação

Al-Jaleel Mosque, Jeddah

Mezquita de Al-Jaleel, Yeda

Mesquita de Al-Jaleel, Gidá

M. Hosam Jiroudy

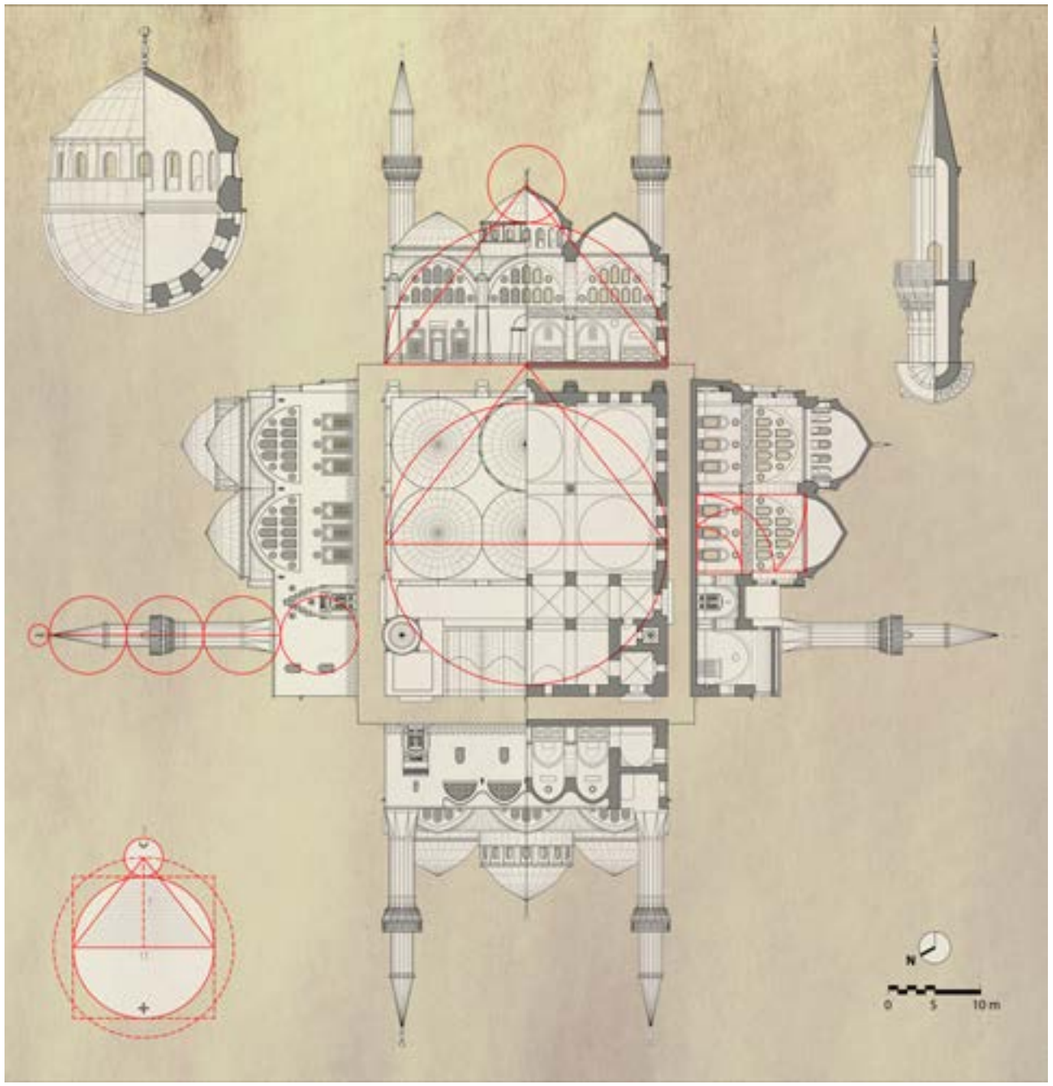
The Hijaz region, i.e. Saudi Arabia's Western Province, contains the holy mosques of Mecca and Medina, and throughout the history of Islam, numerous pilgrims from the world over have visited them each year as part of the Hajj and Umrah pilgrimages. Though many return home, a few decide to stay. As a result, each set of settlers has brought its own culture and building techniques and assimilated

En la región de Hijaz, esto es, la provincia occidental de Arabia Saudita, se encuentran las mezquitas de La Meca y Medina, visitadas año tras año a lo largo de la historia del islam por numerosos peregrinos de todo el mundo durante las peregrinaciones del *hach* y la *umrah*. Si bien muchos de ellos regresaban a casa, otros muchos decidían quedarse. Cada grupo de colonos traía su cultura y técnicas constructivas propias que la

A região de Hijaz, isto é, a província Ocidental da Arábia Saudita, contém as mesquitas de Meca e Medina, e ao longo da história do Islão numerosos peregrinos de todo o mundo visitaram-nas todos os anos no âmbito das peregrinações Hajj e Umrah. E embora muitos regressem a casa, alguns decidem ficar. Como resultado, cada grupo de colonos trouxe a sua própria cultura e técnicas de construção, e assimilou-as na

<Al-Jaleel Mosque minaret | Alminar de la Mezquita de Al-Jaleel | Minarete da Mesquita de Al-Jaleel

> Orthographic projection of Al-Jaleel Mosque| Proyección ortogonal de la Mezquita de Al-Jaleel | Projeção ortogonal da Mesquita de Al-Jaleel



Architectural template: Plans, sections, and elevations with details of the main dome and minaret and the earth-moon geometry on which the design is based | Plantas, secciones y alzados con detalles de la cúpula principal, del alminar y de la relación geométrica entre la tierra y la luna en la que se basa el diseño | Planos, secções e elevações detalhadas da cúpula principal, do minarete, e da relação geométrica entre a terra e a lua, em que o desenho se baseia

The Ottoman tradition, among many others, was widely present in the region prior to the advent of modern architecture and planning. Its language can still be traced today in what remains of the Ottoman parts of the holy mosques of Mecca and Medina.

In early 2011 I was invited to design Al-Jaleel Friday Mosque in the north-east of Jeddah, the region's historic port city. The engineering consultant Mohammed Osama Al-Kabbani, also representing the mosque's benefactor, favored a central dome structure: them into the region's architecture, for once an influence has been absorbed into the rich multicultural fabric of Hijaz, it becomes distinctly Hijazi. This unique recurring pattern has made the area a microcosm of the Islamic world and one of the richest exemplars of the Islamic built environment.

La tradición otomana, entre muchas otras, estaba presente en la región antes de la llegada de la arquitectura y el urbanismo modernos. Su lenguaje se puede encontrar todavía en los restos otomanos de las mezquitas de La Meca y Medina.

A principios de 2011 me invitaron a proyectar la Mezquita del Viernes Al Jaleel en el noreste de Yeda, la histórica ciudad portuaria de la región. El ingeniero consultor Mohammed Osama Al-Kabbani, que también representaba al benefactor de la mezquita, era partidario de una estructura con una cúpula arquitectura de la región fue asimilando ya que, cuando una influencia se ha integrado en el rico tejido multicultural de Hijaz, ésta se vuelve inconfundiblemente *hijazi*. Este modelo ha convertido la zona en un microcosmos del mundo islámico y en uno de los ejemplos más ricos del entorno construido de esta cultura.

A tradição Otomana, entre muitas outras, esteve amplamente presente na região antes do advento da arquitetura e planeamento modernos. A sua língua pode ser identificada ainda hoje no que resta das partes Otomanas das mesquitas de Meca e Medina.

No início de 2011 fui convidado a projetar a Mesquita de sexta-feira de Al-Jaleel, no nordeste de Gidá, a histórica cidade portuária da região. O consultor de engenharia Mohammed Osama Al-Kabbani, que é também representante do benfeitor da mesquita, favoreceu uma estrutura central em cúpula: um arquitetura da região, pois uma vez que uma influência foi absorvida pelo rico tecido multicultural de Hijaz, ela torna-se distintamente Hijazi. Este padrão recorrente singular fez da região um microcosmo do mundo Islâmico, e um dos exemplos mais ricos do ambiente construído Islâmico.

Rear elevation showing the vaulting over the women's prayer hall | Alzado posterior donde se muestra la bóveda sobre la sala de oración de las mujeres | Elevação posterior que mostra a cúpula sobre a sala de oração das mulheres

an Ottoman model known for its grandness and uninterrupted interior. Instead, after months of research and a gradual design process, I proposed a fresh, geometrically based refinement of the sixteenth-century Piyale Pasha Mosque in Istanbul. A six-dome hypostyle hall (each dome 8.5 m in diameter) resting on two pillars and able to accommodate 800 worshipers, with a smaller hall at the back for 200 female congregants, separated by a vaulted gallery. Thus all the spaces along with the service buildings (imam's and muezzin's houses and ablution area) may be accessed from the ground floor. The front mihrab dome (20 m high), from which the

central, un modelo otomano conocido por su grandiosidad y apertura interior ininterrumpida. Sin embargo, tras meses de estudio y un proceso gradual de diseño, propuse una alternativa nueva cuya geometría se basaba en la Mezquita de Piyale Pasha de Estambul, del siglo XVI: una sala hipóstila con seis cúpulas (cada cúpula de 8,5 metros de diámetro) apoyada sobre dos pilares y con la capacidad requerida para 800 fieles, además de una sala más pequeña al fondo para 200 mujeres de la congregación, separada por una galería abovedada. De esta manera, todos los espacios, junto con los edificios de servicios (las viviendas del imán y el muecín y la zona de abluciones) tienen acceso desde la planta

modelo Otomano conhecido pela sua grandiosidade e abertura interior ininterrupta. Em vez disso, após meses de pesquisa e um processo de conceção gradual, propus um novo refinamento geométrico baseado na Mesquita de Piyale Pasha do século XVI, em Istambul. Um salão hipostilo de seis cúpulas (cada cúpula com 8,5 m de diâmetro) assente em dois pilares e capaz de acomodar os necessários 800 adoradores, com um salão mais pequeno ao fundo para 200 congregantes femininas, separados por uma galeria abobadada. Assim, todos os espaços juntamente com os edifícios de serviço (as casas do imã e do muezim, e a área de ablução) podem ser acedidos a partir do rés-do-chão. A cúpula do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1: Front elevation showing the qibla wall. 2: Benefactor plaque: "Al-Jaleel Mosque, built by the late Dr. Abdelhadi Hussain Taher (and sons)". 3: Rear entrance to the women's prayer hall. 4: Interior view of the six-dome main hall. 5: The main mihrab dome | 1: Alzado frontal con el muro de la quibla. 2: Placa de homenaje al benefactor: "Mezquita de Al-Jaleel, construida por el difunto Dr. Abdelhadi Hussain Taher (e hijos)". 3: Entrada trasera a la sala de oración de las mujeres. 4: Vista interior de la sala principal con seis cúpulas. 5: Cúpula principal del mihrab | 1: Elevação frontal que mostra a parede qibla. 2: Placa comemorativa do benfeitor: "Mesquita de Al-Jaleel, construída pelo falecido Dr. Abdelhadi Hussain Taher (e filhos)". 3: Porta dos fundos da sala de oração das mulheres. 4: Vista interior da sala principal com seis cúpulas. 5: Cúpula principal do mihrab


2


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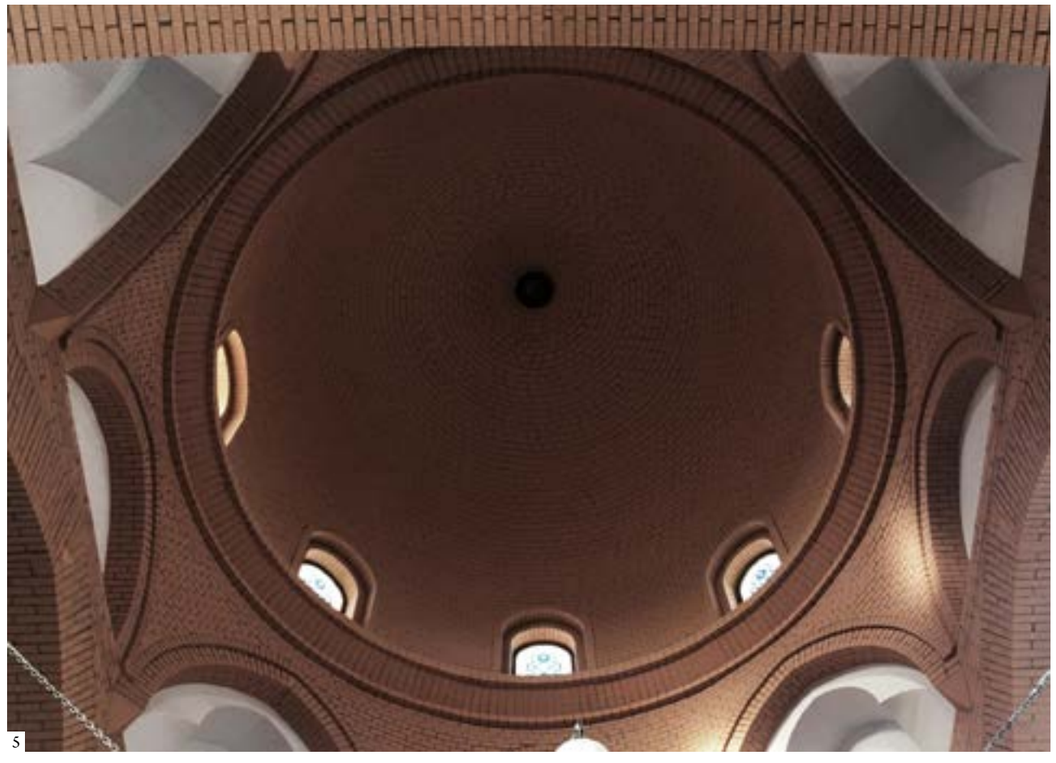
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imam leads prayers and delivers Friday sermons, was raised above the adjacent domes so as to indicate the qibla direction, to facilitate internal gatherings, and to enhance the hall's acoustics. Two further minarets are sited so as to advertise the mosque's location across its large residential catchment. We eventually opted for a six-bay solution as a more economic model that better suited the site and the mosque's purpose.

The project was conceived from the start as a load-bearing structure using locally fired bricks for the walls and the vaulted ceilings, forming all the necessary structural and mechanical details. But the challenge was to win the hearts and minds of the engineering team. Before construction, and despite the benefits of using bricks and their intrinsic connection with traditional forms, they recommended the use of reinforced concrete for all forms and structural elements – with the exception of Mr. Al-Kabbani, without his trust and support the building would have never been realized in brick. Yet on the site the opposition slowly turned into appreciation as bonded brickwork turned into thick walls carrying the vaults, rising high and effortlessly completing the domes over the main hall. The work was done thanks to Ghazi El-Maimani group, one of the remaining brick suppliers and builders in the western region. Finally, with the coordinated efforts of the consultant, the builders, and the main contractor (Allied Contracting), the mosque was finished in July 2013 and opened to the public, becoming a popular place of worship that attracts the faithful from afar.

In conclusion, traditional art can be superficially perceived as a nostalgic revival, seemingly tied down in history. But for a dedicated few, it continues a long chain of accumulated knowledge and divine aspiration. It involves an intimate relationship with the cycles of the physical world along with its metaphysical connotations, creating a delicate balance between the limitations and the inherent possibilities of resources, and shows how matter can manifest meaning of the highest order when the sacred becomes the center of the human intellect.

baja. La cúpula delantera del mihrab (20 metros de altura), desde donde el imán dirige la oración y da el sermón del viernes, se alzó sobre las cúpulas adyacentes para indicar la dirección de la quibla, facilitar las reuniones internas y mejorar la acústica de la sala. Hay otros dos minaretes situados de forma que indican la ubicación de la mezquita dentro de la gran zona residencial en la que se encuentra. Finalmente optamos por una solución de seis crujías como modelo más económico y adecuado para la ubicación y la finalidad de la mezquita.

El proyecto se concibió desde el principio como una estructura portante construida con ladrillos tanto para los muros como para los techos abovedados, formando todos los detalles estructurales y mecánicos necesarios. Pero el reto estuvo en ganarse las mentes y los corazones del equipo de ingeniería. Antes de la construcción, y a pesar de las ventajas de utilizar ladrillos y su conexión intrínseca con las formas tradicionales, los ingenieros recomendaron utilizar hormigón armado para todas las formas y elementos estructurales, excepción hecha del señor Al-Kabbani; sin su confianza y apoyo el edificio nunca se habría construido en ladrillo. Sin embargo, una vez en la obra, la oposición se fue transformando poco a poco en reconocimiento, a medida que la fábrica de ladrillo se convertía en gruesos muros sobre los que apoyaban las bóvedas y se elevaban y completaban sin problemas las cúpulas de la sala principal. La obra se realizó gracias al grupo Ghazi El-Maimani, una de las empresas de construcción, que además provee ladrillos, que quedan en la región occidental. Finalmente, con el esfuerzo coordinado del consultor, los albañiles y el contratista principal (Allied Contracting), la mezquita se terminó y abrió al público en julio de 2013, convirtiéndose en un lugar popular para la oración que atrae a fieles de zonas lejanas.

El arte tradicional puede percibirse superficialmente como un resurgimiento nostálgico, aparentemente anclado en la historia. Sin embargo, para unos pocos convencidos, es la continuación de una larga cadena de conocimientos acumulados y de aspiración espiritual. El arte tradicional entraña una relación íntima con los ciclos del mundo físico, así como connotaciones metafísicas y un delicado equilibrio entre las limitaciones y posibilidades inherentes de los recursos utilizados, demostrando que la materia puede expresar significados del orden más elevado cuando el intelecto humano se aplica a lo sacro.

mihrab frontal (20 m de altura), a partir da qual o imã conduz as orações e faz os sermões de sexta-feira, foi elevada acima das cúpulas adjacentes de modo a indicar a direcção da qibla, para facilitar as reuniões internas, e para melhorar a acústica do salão. Dois minaretes foram colocados de forma a anunciar a localização da mesquita ao longo da grande área residencial em que se encontra. Acabámos por optar por uma solução de seis baías como um modelo mais económico que se adequava melhor ao local e à finalidade da mesquita.

O projeto foi concebido desde o início como uma estrutura de suporte de carga, utilizando tijolos refratários locais para as paredes e os tetos abobadados, formando todos os detalhes estruturais e mecânicos necessários. Mas o desafio era conquistar os corações e as mentes da equipa de engenharia. Antes da construção, e apesar dos benefícios da utilização de tijolos, e da sua ligação intrínseca com as formas tradicionais, eles tinham recomendado a utilização de betão armado para todas as formas e elementos estruturais - com excepção do Sr. Al-Kabbani. Sem a sua confiança e apoio o edifício nunca teria sido realizado em tijolo. No entanto, no local, a oposição transformou-se lentamente em apreciação, à medida que os tijolos unidos se transformavam em paredes espessas que suportavam as cúpulas, elevando-se e completando sem esforço as cúpulas do salão principal. O trabalho foi realizado graças ao grupo Ghazi El-Maimani, um dos únicos fornecedores e produtores de tijolos na região ocidental. Finalmente, graças aos esforços coordenados de consultores, construtores e empreiteiro principal (Allied Contracting), a mesquita foi concluída em Julho de 2013 e aberta ao público, tornando-se um local de culto famoso, que atrai os fiéis que vêm de longe.

A arte tradicional pode ser vista superficialmente como um renascimento nostálgico, aparentemente preso à história. Mas para uma minoria de pessoas dedicadas, ela dá continuidade a uma longa cadeia de conhecimento acumulado e de aspiração divina. Envolve uma relação íntima com os ciclos do mundo físico, juntamente com conotações metafísicas e um delicado equilíbrio entre as limitações e as possibilidades inerentes dos recursos, e mostra como a matéria pode manifestar significado da mais alta ordem, quando o intelecto humano é aplicado ao sagrado.

Construction of the six domes over the main hall | Construcción de las seis cúpulas sobre la sala principal | Construção das seis cúpulas sobre a sala principal (Ghazi El-Maimani group)

1: Interior of the women's prayer hall. 2: Construction of the vaulted gallery | 1: Interior de la sala de oración de las mujeres. 2: Construcción de la galería abovedada | 1: Interior da sala de oração das mulheres. 2: Construção da galeria abobadada (2: Ghazi El-Maimani group)

1

2

Islamic building tradition began as a continuation of an ancient legacy through the assimilation, modification, and negation of former archetypes according to its particular worldview. Within a spiritual unity, non-Modernist mosque architecture has expressed a vast variety of formal types and local styles ever since the early periods of Islam, across a great geographic span. Yet it has always tended to also express the essence of place, landscape, materials, local culture, and history, adhering to principles that seem intuitive and worth perpetuating, regardless of age.

La tradición constructiva islámica empezó siendo una continuación de un legado ancestral a través de la asimilación, modificación y negación de arquetipos anteriores según su particular visión del mundo. Dentro de una unidad espiritual, la arquitectura de mezquitas de estilo no moderno adoptó una gran variedad de tipos formales y estilos locales desde los primeros tiempos del islam en una zona geográfica muy amplia. No obstante, siempre ha tendido a expresar también la esencia del lugar, el paisaje, los materiales, la cultura local y la historia, de acuerdo con unos principios que parecen intuitivos y que merece la pena perpetuar en cualquier época.

A tradição islâmica de construção começou como uma continuação de um antigo legado através da assimilação, modificação e negação de antigos arquétipos, de acordo com a sua visão particular do mundo. No contexto de uma unidade espiritual, a arquitetura não modernista de mesquitas expressou uma vasta variedade de tipos formais e estilos locais, desde os períodos iniciais do Islão, ao longo de uma grande amplitude geográfica. No entanto, teve sempre a tendência de expressar também a essência do lugar, paisagem, materiais, cultura local e história, aderindo a princípios que parecem intuitivos e que vale a pena perpetuar, independentemente da idade.

Interior of the vaulted gallery separating the two halls | Interior de la galería abovedada que separa las dos salas | Interior da galeria abobadada que separa as duas salas

Biography | Biografía | Biografia

M. Hosam Jiroudy

Born in Damascus, M. Hosam graduated from the Damascus School of Architecture in 2000. Described as "an eminent force of traditional Islamic architecture", he has been involved in projects in the Arab world as well as in Malaysia, Japan, and the UK. During his postgraduate research he practiced with Abdel-Wahed El-Wakil, a key figure in traditional architecture and structures. In 2010 he went into private practice with the goal of transforming human capacities and material properties into a harmonious expression of local conditions and culture. His work and research ranges from urban planning to mosques, public and private buildings, and even rural dwellings. In 2021 he was nominated for the Philippe Rotthier European Prize for Architecture.

Nacido en Damasco, M. Hosam se graduó en la Escuela de Arquitectura de Damasco en el año 2000. Considerado una "influencia eminente de la arquitectura islámica tradicional", ha participado en proyectos en el mundo árabe, así como en Malasia, Japón y Reino Unido. Durante sus estudios de posgrado trabajó con Abdel-Wahed El-Wakil, figura clave de la arquitectura y las estructuras tradicionales. En 2010 fundó su propio estudio con el fin de transformar las capacidades humanas y las propiedades materiales en una expresión armoniosa de las condiciones y la cultura locales. Su obra y labor investigadora abarcan desde el urbanismo a las mezquitas, los edificios públicos y privados e incluso la vivienda rural. En 2021 fue nominado al Premio Europeo de Arquitectura Philippe Rotthier.

Nascido em Damasco, M. Hosam formou-se na Escola de Arquitectura de Damasco em 2000. Descrito como "uma força eminente da arquitetura tradicional Islâmica", tem estado envolvido em projectos no mundo Árabe, bem como na Malásia, Japão e Reino Unido. Durante a sua investigação de pós-graduação, colaborou com Abdel-Wahed El-Wakil, uma figura chave na arquitetura e estruturas tradicionais. Em 2010 começou a prática privada com o objectivo de transformar as capacidades humanas e propriedades materiais numa expressão harmoniosa das condições e cultura locais. O seu trabalho e investigação vão desde o planeamento urbano a mesquitas, edifícios públicos e privados, e mesmo habitações rurais. Em 2021 foi nomeado para o Prémio Europeu de Arquitetura Philippe Rotthier.

British Normandy Memorial, Ver-sur-Mer, Calvados

Monumento conmemorativo británico en Normandía, Ver-sur-Mer, Calvados

Memorial Britânico da Normandia, Ver-sur-Mer, Calvados

Liam O'Connor

Introduction

In 2016, Liam O'Connor Architects was appointed to prepare designs for a national memorial in Normandy, France, dedicated to the fallen who served under British command and died on the beaches on D-Day and in the battle that followed in the summer of 1944.

Introducción

En 2016 el estudio Liam O'Connor Architects fue elegido para diseñar un monumento nacional en Normandía, Francia, dedicado a los caídos que sirvieron bajo mando británico y murieron en las playas el Día D y en la posterior batalla del verano de 1944.

Introdução

Em 2016, a Liam O'Connor Architects foi nomeada para elaborar os desenhos de um memorial nacional na Normandia, França, dedicado aos que serviram sob o comando britânico, e que morreram nas praias no Dia D e na batalha que se seguiu no Verão de 1944.

< Aerial view of the Memorial looking south-east | Vista aérea del monumento hacia el sudeste | Vista aérea do Memorial para sudeste

> Normandy veteran Field Marshal Lord Edwin Bramall and Liam O'Connor with the model of the British Normandy Memorial | El mariscal de campo Lord Edwin Bramall, veterano del Desembarco de Normandía, y Liam O'Connor con la maqueta del Monumento conmemorativo británico en Normandía | Veterano da Normandia e Marechal de Campo Lord Edwin Bramall e Liam O'Connor com a maquete do Memorial Britânico da Normandia

The design, planning, site selection, and construction involved a five-year endeavor to bring our vision to reality: finding an appropriate site, developing a concept design and a masterplan for the 60-acre site, then taking the final design through a complex consultation and permit process, and selecting materials and highly skilled craftspeople.

We managed the choice and production of materials, approved samples and prototypes, and supervised the construction of the entire monument superstructure. We curated the involvement of the five artists and sculptors whose work provides poignant focal points throughout the memorial complex: Richard Kindersley, inscription artist, and David Williams-Ellis, Charles Bergen, Christophe Charbonnel, and Valentine Herrenschmidt, sculptors from the UK, USA, and France. In my office, architects Khalid Seydo, Takako Kugo, Emmanuelle Vainqueur, and Adam Louriki, as well as other support staff over the life of the project, played a huge role in it. Over 500 people were involved in bringing the project to fruition for inauguration on June 6, 2021. We are indebted to everyone who had a part in supporting this ambitious and remarkable endeavor and who worked alongside us to deliver it for the engagement and judgment of future generations.

I owe a great debt to Léon Krier for his encouragement, friendship and generosity in this undertaking and over so many years.

El proyecto, la planificación, la selección del emplazamiento y la construcción supuso un esfuerzo de cinco años hasta que pudimos hacer realidad nuestra visión: encontrar la ubicación adecuada, desarrollar un diseño conceptual y un plan de ordenación del terreno de 20 hectáreas para luego someter el proyecto final a un complejo proceso de consultas, así como proceder a la selección de los materiales y de artesanos altamente cualificados.

Gestionamos la elección y la producción de los materiales, dimos el visto bueno a las muestras y prototipos y supervisamos la construcción de toda la superestructura del monumento. Coordinamos la participación de los cinco artistas y escultores cuyas obras destacan en el conjunto monumental: Richard Kindersley, especializado en inscripciones en piedra, y David Williams-Ellis, Charles Bergen, Christophe Charbonnel y Valentine Herrenschmidt, escultores del Reino Unido, Estados Unidos y Francia. En mi estudio, los arquitectos Khalid Seydo, Takako Kugo, Emmanuelle Vainqueur, y Adam Louriki, así como el personal de apoyo, tuvieron un papel fundamental. Más de 500 personas hicieron posible que el proyecto llegara a buen término para la inauguración el 6 de junio de 2021. Estamos en deuda con todos aquellos que nos han apoyado en esta empresa ambiciosa y excepcional y que han trabajado con nosotros para que las generaciones futuras puedan disfrutarla.

Tengo una deuda enorme con Léon Krier por su apoyo, amistad y generosidad en esta iniciativa y a lo largo de tantos años.

A conceção, planeamento, seleção do local e construção envolveram um esforço de cinco anos para trazer a nossa visão à realidade: encontrar um local apropriado, desenvolver um desenho concetual e um plano diretor para o local de cerca de 60 acres (25 hectares), submetendo depois o desenho final a um processo complexo de consultoria e licenciamento, e selecionando os materiais e artesãos que fossem altamente qualificados.

Gerimos a escolha e produção de materiais, aprovámos amostras e protótipos, e supervisionámos a construção de toda a superestrutura do monumento. Gerimos o envolvimento dos cinco artistas e escultores, cujo trabalho proporciona pontos focais comoventes por todo o complexo do memorial: Richard Kindersley, artista especializado em inscrições, e David Williams-Ellis, Charles Bergen, Christophe Charbonnel, e Valentine Herrenschmidt, escultores do Reino Unido, EUA, e França. No meu gabinete, os arquitetos Khalid Seydo, Takako Kugo, Emmanuelle Vainqueur, e Adam Louriki, bem como outro pessoal que deu o seu apoio ao longo da vida do projeto, desempenharam um papel significativo no mesmo. Mais de 500 pessoas estiveram envolvidas na concretização do projeto, para que fosse inaugurado a 6 de Junho de 2021. Estamos gratos a todos os que apoiaram este ambicioso e notável empreendimento, e que trabalharam ao nosso lado para o concretizar, para o envolvimento e julgamento das gerações futuras.

Tenho uma grande dívida para com Léon Krier pelo seu encorajamento, amizade e generosidade neste empreendimento, e ao longo de tantos anos.

Photomontage showing the development location | Fotomontaje con la ubicación del proyecto | Fotomontagem que mostra a localização do projeto

The Site and Context

Following a period developing designs for sites to the east of the D-Day invasion coast in the proximity of Sword Beach (the easternmost of the five beaches codenamed Utah, Omaha, Gold, Juno and Sword for Operation Overlord, launched on 6 June 1944), we discovered an ideal site: right at the heart of the five D-Day invasion beaches.

On elevated ground, with an unobstructed view of the Normandy coast, just west of the town of Ver-sur-Mer, where Allied troops, under British command, landed on the shores of France, it was the perfect location: overlooking the historic battlespace of Gold Beach and within sight of Port Winston (the Mulberry Harbour created at Arromanches just

Emplazamiento y contexto

Tras un periodo en el que desarrollamos proyectos para emplazamientos al este de la costa del desembarco del Día D, cerca de la Playa de Sword (la más oriental de las cinco playas con los nombres en clave de Utah, Omaha, Gold, Juno y Sword que fueron utilizados en la invasión conocida como Operación Overlord, lanzada el 6 de junio de 1944), descubrimos un lugar ideal en el centro de las cinco playas.

En un terreno elevado, con vistas panorámicas de la costa de Normandía, precisamente al oeste del pueblo de Ver-sur-Mer, donde las tropas aliadas desembarcaron bajo el mando británico, era la ubicación perfecta: dominando el teatro de batalla de la Playa Gold y a la vista de Port Winston (el puerto "Mulberry" construido en Arromanches poco después del Día D). Vital para

O Local e Contexto

No seguimento de um período de desenvolvimento de projetos localizados a este da costa de desembarque do Dia D, próximo da Sword Beach (a mais oriental das cinco praias denominadas de código Utah, Omaha, Gold, Juno, e Sword, no contexto da invasão conhecida como Operação Overlord, lançada a 6 de Junho de 1944), descobrimos um local ideal, no coração das cinco praias do Dia D.

Numa zona elevada do terreno, com uma vista desobstruída da costa da Normandia que fica a oeste da cidade de Ver-sur-Mer, onde as tropas Aliadas desembarcaram sob comando britânico, era o local perfeito: com vista para o histórico teatro de batalha de Gold Beach, e à vista de Port Winston (o porto "Mulberry" pré-fabricado que foi construído em Arromanches logo após o Dia D). Vital

Memorial Walk with newly planted trees and the sea just east of the main Memorial | Paseo conmemorativo con árboles recién plantados y el mar al este del monumento principal | Passeio do Memorial com as árvores recentemente plantadas e o mar a este do Memorial principal

after D-Day). Vital for the support of the Allied frontline troops, this huge engineering achievement is the largest archaeological remnant of D-Day events on the French coast, and its prominence when seen from our chosen site adds significance and historic connectivity to events that took place in June 1944.

With the Normandy D-Day area soon to be inscribed as a UNESCO World Heritage Site, there were additional sensitivities within an already complex legal and planning context to be overcome.In an area typical of agricultural Calvados, fifteen parcels of land had to be acquired to create a 60-acre space that would provide access from the town of Ver-sur-Mer, car parking, public facilities and maintenance buildings for the long-term operation and upkeep of the site. In addition, hundreds of trees and acres of wildflower meadow were planted. The resulting landscaped gardens form a unique and ecologically rich and fully accessible park for visitors and local inhabitants alike.

el apoyo a las tropas de la línea del frente aliado, este enorme logro de la ingeniería es el mayor resto arqueológico del Día D en la costa francesa, y su prominencia cuando se contempla desde el emplazamiento que elegimos se suma a la relevancia y la conexión del monumento con los acontecimientos de junio de 1944.

Como la zona del Día D en Normandía va a ser declarada pronto Patrimonio Mundial de la UNESCO, había otros aspectos relevantes que resolver en un contexto ya de por sí complejo desde el punto de vista legal y de la planificación. En un área típica del Calvados agrícola se tuvieron que adquirir 15 parcelas de terreno para crear el espacio de 20 hectáreas que proporciona acceso desde el pueblo de Ver-sur-Mer y en el que se proyectaron un aparcamiento, servicios públicos y edificios de mantenimiento para el funcionamiento y la conservación del monumento a largo plazo. Además, se plantaron cientos de árboles y hectáreas de praderas con flores silvestres. Los jardines resultantes forman un parque de una riqueza ecológica única y son totalmente accesibles tanto para los visitantes como para los habitantes del pueblo.

para o apoio às tropas aliadas da linha de frente, este enorme feito da engenharia é o maior vestígio arqueológico do Dia D na costa Francesa, e a sua proeminência, quando visto do nosso local seleccionado, atribui ao memorial um maior significado e uma maior conectividade com os acontecimentos de Junho de 1944.

Com a área do Dia D da Normandia a tornar-se em breve Património Mundial da UNESCO, havia vulnerabilidades adicionais a ultrapassar num já complexo contexto jurídico e de planeamento. Numa área agrícola típica de Calvados, foi necessário adquirir quinze parcelas de terreno para criar um espaço de 60 acres (25 hectares), que permitisse o acesso a partir da cidade de Ver-sur-Mer, parque de estacionamento, instalações públicas, e edifícios de serviço para operações e manutenção a longo prazo. Além disso, centenas de árvores e acres de prados de flores silvestres foram plantados. Os jardins pitorescos resultantes formam um parque único, ecologicamente rico e totalmente acessível, tanto para os visitantes como para os habitantes locais.

Patrimony and Inspiration

The historic context of this part of Calvados is rich in inspirational works of architecture, from the beautiful churches of the Romanesque period of the eleventh and twelfth centuries, to the exquisite gardens and châteaux from the seventeenth and eighteenth centuries dotted around the charming, undulating Norman landscape.

Farm buildings and barns in the immediate location of our memorial site are also testimony to the long-held values of an enduring, resilient and, ultimately, sustainable building tradition, and are inspirational works of architecture in their own right. As our designs progressed, the study of these structures and ensembles was crucial to our evolving consciousness of the rich patrimony of this part of Normandy. The longevity and beauty of the buildings provided ample justification for us to build in this time-honoured manner with solid, natural materials, utilising great skill and craftsmanship. This resulted in a series of buildings and structures that will mellow gradually and blend seamlessly into the Norman landscape, while remaining resolutely modern in their unique contemporary design sensibility.

With the passage of time, and the ebb and flow of architectural criticism and journalism – generally hostile to the classical tradition – this distinctly twenty-first century endeavour will

Patrimonio e inspiración

El contexto histórico de esta parte de Calvados está plagado de obras arquitectónicas inspiradoras, desde las bellas iglesias románicas de los siglos XI y XII hasta los exquisitos jardines y casas solariegas de los siglos XVII y XVIII que salpican el encantador y ondulante paisaje normando.

Los edificios y graneros de las granjas próximas al monumento dan testimonio de los valores arraigados de una tradición constructiva perdurable y, en definitiva, sostenible. Todos ellos son obras arquitectónicas estimulantes por derecho propio. A medida que el proyecto avanzaba, el estudio de estos conjuntos y estructuras fue crucial para ser más conscientes del rico patrimonio de esta parte de Normandía. La longevidad y belleza de los edificios nos proporcionaron una más que sobrada justificación para construir de esta forma ancestral, con materiales sólidos y naturales. Con ello conseguimos una serie de edificios y estructuras que se suavizarán gradualmente con el paso del tiempo, fusionándose con el paisaje normando sin perder su modernidad.

Con el paso del tiempo y las fluctuaciones de la crítica y el periodismo arquitectónicos –generalmente hostiles a la tradición clásica– este monumento inequívocamente del siglo XXI se comparará con antecedentes dignos de siglos pasados en lugar de con las modas pasajeras a las que aspiran una

Património e Inspiração

O contexto histórico desta zona de Calvados é rico em obras de arquitetura inspiradoras, desde as belas igrejas Românicas dos séculos XI e XII até aos requintados jardins e castelos dos séculos XVII e XVIII, espalhados pela encantadora e ondulante paisagem Normanda.

Os edifícios agrícolas e celeiros nos arredores do nosso memorial, são também testemunho dos valores de longa data de uma tradição de construção duradoura, resiliente e, em última análise, sustentável, e são por si só obras arquitetónicas inspiradoras. À medida que os nossos projetos foram progredindo, o estudo destas estruturas e conjuntos foi crucial para a nossa consciência crescente da rica herança desta parte da Normandia. A longevidade e a beleza dos edifícios justificou amplamente que construíssemos desta forma honrada pelo tempo, com materiais sólidos e naturais, e grande habilidade e destreza artesanal. Isto resultou numa série de edifícios e estruturas que irão amadurecer gradualmente e misturar-se harmoniosamente na paisagem Normanda, permanecendo ao mesmo tempo resolutamente modernos na sua sensibilidade única de desenho contemporâneo.

Com o passar do tempo e o fluxo e refluxo da crítica e do jornalismo arquitetónico – geralmente hostis à tradição clássica – este memorial nitidamente do século XXI será medido contra antecedentes

be measured against worthy veterans of bygone centuries, rather than the passing fads and fashions to which so much contemporary architecture and criticism aspire.

Much hospitality and generosity was shown by the owners of the great houses of the area during our frequent inspections of the construction site; in particular, Didier Wirth (along with his wife, Barbara), whose remarkable work at Château de Bercy exhibits a lifetime of dedication to creatively reconstructing one of the most spectacular gardens in France. The owners of Château de Lantheuil, Château de Creullet and Château de Balleroy also showed support and friendship.

gran parte de la arquitectura y la crítica contemporáneas.

Los propietarios de las grandes casas de la zona dieron muestras de una gran hospitalidad y generosidad durante nuestras frecuentes inspecciones a la obra, en particular Didier Wirth (junto a su mujer, Bárbara), cuyo trabajo notable en el Château de Bercy es el resultado de una vida dedicada a reconstruir creativamente uno de los jardines más espectaculares de Francia. Los propietarios del Château de Lantheuil, del Château de Creullet y del Château de Balleroy también nos proporcionaron su apoyo y amistad.

dignos de séculos passados, em vez das modas passageiras a que a arquitetura e crítica contemporâneas tanto aspiram.

Foi mostrada muita hospitalidade e generosidade pelos proprietários destas grandes casas durante as nossas frequentes inspeções do local de construção; em particular, Didier Wirth (juntamente com a sua esposa, Bárbara), cujo trabalho notável no Château de Bercy exprime uma vida inteira de dedicação à reconstrução criativa de um dos jardins mais espectaculares de França. Os proprietários de Château de Lantheuil, Château de Creullet e Château de Balleroy também mostraram o seu apoio e amizade.

View of the village of Meuvaines from the fields to the south-west of the Memorial | Vista del pueblo de Meuvaines desde los campos al suroeste del monumento | Vista da aldeia de Meuvaines a partir dos campos a sudoeste do Memorial

Architecture: The Past, the Present, ...

Everything in the past belongs to the contemporary space of creative endeavour. All that we see, respect, study and value in myriad diverse historical contexts is the shared inheritance of the modern designer. There are countless great spaces and buildings that we are indebted to in the evolution of this design project: from the stoas of classical Greece, the Roman reconstruction of Plato's Academy at Hadrian's Villa at Tivoli, the courtyards of Renaissance Italy and the cloisters of medieval English, French and German abbeys – even the spectacular courtyards of eighth- and twelfth-century mosques in Cairo, Damascus and Umayyad Spain.

Our intention was to create not an isolated object in space, but a 'space of memory' – one where the experience of the visitor was paramount; where a complex of unfolding settings and events, interspersed with works of art and carved inscriptions would invite the visitor into a peaceful place of reflection. Translating these intentions into an architectural vision to support a visitor experience that was conducing to reflection led us to the world of the cloister.

In the tradition of the eighteenth-century French theorist JNL Durand, we have studied the evolution of the 'cloister typology' from antiquity to the present day, charting the development of a single spatial idea – through time, cultures, languages, religions and uses. In Normandy, we have distilled this vast cultural and historical framework to its very essence and, in so doing, we have created a modern and compelling shared human space.

The minimal and abstract cloister is open to its surrounding landscape and especially to the sea, recalling the similarly sited temple to Poseidon at

Arquitectura: pasado, presente...

Todo lo del pasado forma parte del espacio contemporáneo de la actividad creativa. Todo lo que vemos, respetamos, estudiamos y valoramos en infinidad de contextos históricos diferentes es la herencia común del diseñador moderno. Innumerables espacios y edificios magníficos han contribuido a la evolución de este proyecto: las estoas de la Grecia clásica, la reconstrucción romana de la Academia de Platón en la Villa Adriana de Tívoli, los patios del Renacimiento italiano y los claustros de las abadías medievales de Inglaterra, Francia y Alemania; incluso los patios espectaculares de las mezquitas del siglo XII de El Cairo, Damasco y la España de los omeyas.

Nuestra intención no era crear un objeto aislado en el espacio, sino un "espacio de la memoria", donde lo primordial fuera la experiencia del visitante, donde se despliegan un conjunto de espacios y acontecimientos, intercalados con obras de arte e inscripciones talladas que invitan al visitante a entrar en un apacible lugar de reflexión. El traducir estas intenciones en una visión arquitectónica tal que la experiencia del visitante llevara a la reflexión nos encaminó hacia la idea del claustro.

En la línea del teórico francés del siglo XVIII Jean-Nicolas-Louis Durand, estudiamos la evolución de la "tipología del claustro" desde la Antigüedad hasta el presente, cartografiando el desarrollo de una única idea espacial a través del tiempo, las culturas, los idiomas, las religiones y los usos. En Normandía destilamos este vasto marco histórico y cultural y, de esa forma, creamos un espacio humano compartido moderno y fascinante.

El claustro abstracto y minimalista está abierto al paisaje circundante y especialmente al mar y, por su ubicación, recuerda al Templo de Poseidón en el

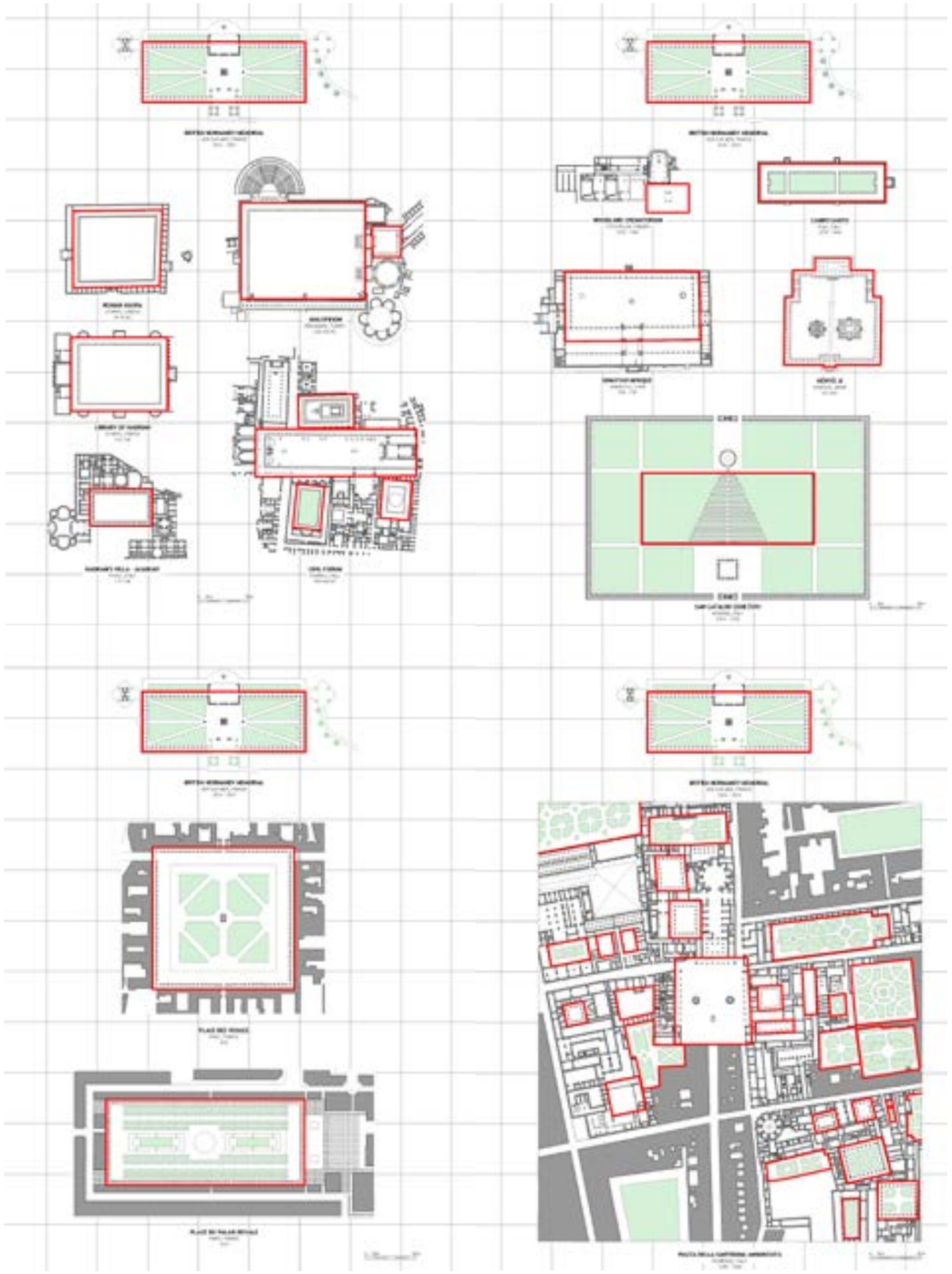
Arquitetura: O Passado, o Presente, ...

Tudo no passado pertence ao espaço contemporâneo do esforço criativo. Tudo o que vemos, respeitamos, estudamos e valorizamos na miríade de contextos históricos diversos, é a herança partilhada do projetista moderno. Inúmeros espaços e edifícios magníficos contribuíram para a evolução deste projeto: desde as estoas da Grécia clássica, à reconstrução Romana da Academia de Platão na Villa Hadrian no Tivoli, aos pátios da Itália Renascentista, e aos claustros das abadias medievais Inglesas, Francesas e Alemãs – mesmo os espetaculares pátios das mesquitas dos séculos VIII e XII no Cairo, Damasco e Espanha Omíada.

A nossa intenção foi criar não um objeto isolado no espaço, mas um "espaço de memória" – um espaço onde a experiência do visitante era primordial; onde um complexo de cenários e eventos decorrentes, intercalados com obras de arte e inscrições esculpidas, atrairiam o visitante para um local de reflexão tranquilo. Traduzir estas intenções numa visão arquitetónica que reforça uma experiência do visitante que conduz à reflexão, levou-nos ao mundo dos claustros.

Na tradição do teórico Francês do século XVIII Jean-Nicolas-Louis Durand, estudámos a evolução da "tipologia do claustro" desde a antiguidade até aos dias de hoje, mapeando o desenvolvimento de uma única ideia espacial através do tempo, culturas, línguas, religiões, e usos. Na Normandia, destilámos este vasto enquadramento cultural e histórico, e ao fazê-lo criámos um espaço humano partilhado que é moderno e atraente.

O claustro minimalista e abstrato abre para a sua paisagem circundante e especialmente para o mar, recordando o templo de localização semelhante de Poseidon, no Cabo Súnio, reconstruído por Péricles após a destruição causada



Cape Sounion, rebuilt by Pericles after the destruction wrought by the Persian invasion of Greece in 480 BC.

cabo Sunio, reconstruido por Pericles tras la destrucción provocada por la invasión persa de Grecia en el 480 a.C.

pela invasão Persa da Grécia em 480 AC.

The Design

With fifteen separate landowners expressing a willingness to support this project and a favourable response from the local mayor and commune, the task to develop a masterplan for the 60-acre site and a fitting memorial design could commence.

As mentioned, our study of the local heritage, as well as our instinct to create "space" rather than an "object", drew us to the concept of the cloister. As ideas evolved and complexity slowly gave way to a simplicity of space and form, a modern cloister garden emerged, with uninterrupted views of the Normandy coast, all within the D-Day battle space.

El proyecto

Los quince propietarios de los terrenos manifestaron su voluntad de apoyar el proyecto y, con la respuesta favorable del alcalde y el municipio, pudimos comenzar el trabajo para desarrollar un plan de ordenación de la parcela de 20 hectáreas y un diseño adecuado para el monumento conmemorativo.

Como se ha mencionado, nuestro estudio del patrimonio local, así como nuestra intuición de crear un "espacio" en lugar de un "objeto" nos llevaron al concepto de claustro. A medida que las ideas evolucionaban y la complejidad fue dando paso lentamente a la sencillez del espacio y de la forma, surgió un moderno jardín en forma de claustro, con vistas panorámicas de la costa de Normandía, todo ello dentro del campo de batalla del Día D.

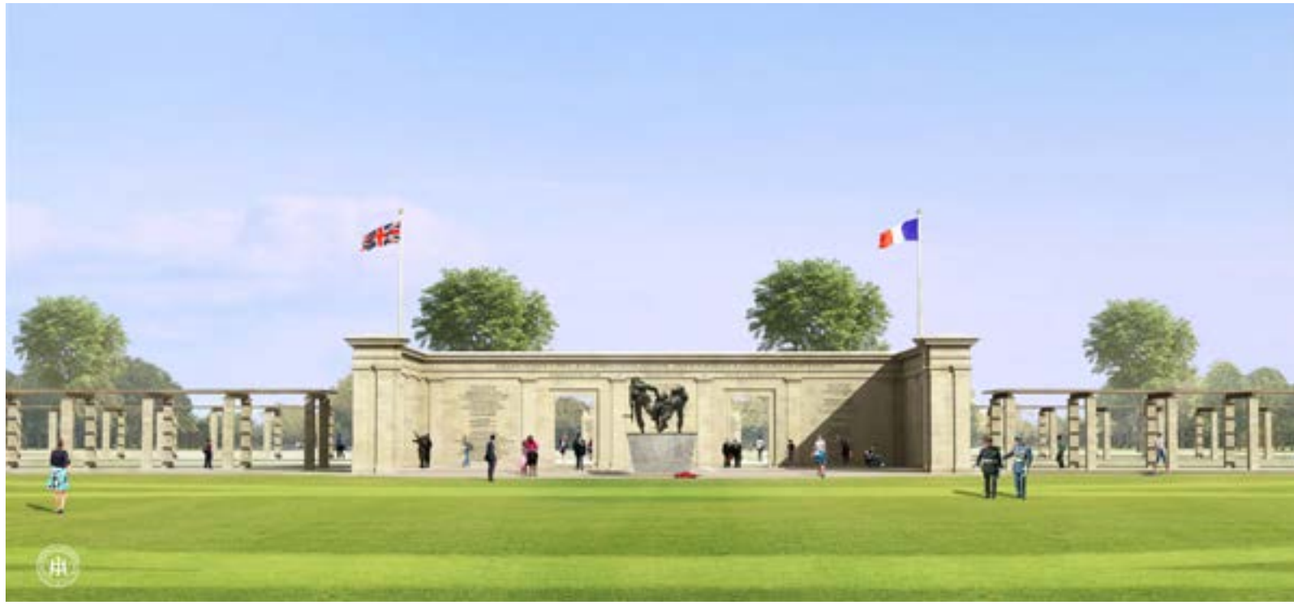
O desenho

Com quinze proprietários a manifestar a sua vontade de apoiar este projeto, e uma resposta favorável do presidente da câmara e da comunidade, pôde iniciar-se a tarefa de desenvolver um plano diretor para o local de 60 acres (25 hectares) e para um desenho adequado do memorial.

O nosso estudo do património local, bem como o nosso instinto de criar um "espaço" em vez de um "objecto", levou-nos ao conceito de claustro. À medida que as ideias evoluíam, e a complexidade lentamente dava lugar a uma simplicidade de espaço e forma, surgiu um moderno jardim com claustro, com vistas ininterruptas sobre a costa da Normandia, tudo dentro do espaço de batalha do Dia D.

< Comparison of the British Normandy Memorial with notable historic cloisters | Comparación del monumento conmemorativo británico en Normandía con claustros históricos notables | Comparação do Memorial Britânico da Normandia com claustros históricos notáveis

> Photomontage, view looking south | Fotomontaje, vista hacia el sur | Fotomontagem, vista para o sul



With so many examples from the Athenian schools of Plato and Aristotle, the mosques and cloisters of medieval places of worship, Italian renaissance *palazzi* and the quadrangles of Oxford and Cambridge universities – over two thousand years of evolution – we developed our own modern and contemporary classical design, inspired by this ancient precedent.

We were also determined that the materials we used, as well as the actual construction, would demonstrate a high level of skill and craftsmanship alluding to a certain unity of design and purpose. Our intention was for the final work to be infused with a sense of respect and longevity.

Con los ejemplos de las escuelas atenienses de Platón y Aristóteles, las mezquitas y claustros de los lugares de culto medievales, los palacios renacentistas italianos y los patios de los colegios en las universidades de Oxford y Cambridge, y tras una evolución de más de dos mil años, desarrollamos nuestro propio diseño clásico, moderno y contemporáneo, inspirado en estos antiguos antecedentes.

También estábamos decididos a que los materiales que íbamos a usar, así como la propia construcción, mostraran un alto nivel de destreza y oficio que aludiera a una unidad de diseño y propósito. Nuestra intención era que la obra definitiva estuviera impregnada de una sensación de respeto y longevidad.

Com tantos exemplos das escolas Atenienses de Platão e Aristóteles, das mesquitas e claustros dos locais de culto medievais, dos *palazzi* renascentistas Italianos, e dos pátios quadrangulares das universidades de Oxford e Cambridge, com mais de dois mil anos de evolução, desenvolvemos o nosso próprio desenho clássico, moderno e contemporâneo, inspirado por estes antigos precedentes.

Também estávamos determinados a que os materiais que utilizávamos, bem como a construção propriamente dita, demonstrassem um elevado nível de perícia e destreza, alusivo a uma unificação de desenho e propósito. A nossa intenção era que o trabalho final fosse infundido de um sentido de respeito e longevidade.

Meeting between the architect and the local authorities in Ver-sur-Mer during planning | Reunión entre el arquitecto y las autoridades locales en Ver-sur-Mer durante la planificación | Reunião entre o arquiteto e as autoridades locais em Ver-sur-Mer durante o planeamento

The Planning Process and Beyond

Two years of negotiation, consultation and the production of endless professional reports ensued (including a lengthy defence of why we sought to erect a new memorial on a site awaiting inscription as a UNESCO World Heritage Site) as part of the complex permit application process.

Exhibitions of our designs in London and Paris, as well as an extensive series of deliberations with the Services of the French State and the wider local community in France prepared the ground for the eventual issuing of construction permits.

A period of detailed design followed with the research and development of materials for the memorial project. We established a shortlist of possible contractors and craftspeople who could work to the required standard as set out in our design drawings and detailed specifications. The coastal location of the memorial demanded laboratory testing of stone, and an order was duly placed for a quantity of Burgundy limestone from Massangis.

The announcement of a further £7 million to be added to the original UK government grant of £20 million came just in time and, together with a number of private donations, brought the project budget to £30 million.

HRH The Prince of Wales became the Royal Patron for the project, and on 6 June 2019 – the 75th anniversary of D-Day – the foundation stone was laid at the site on by the French President, Emmanuel Macron and the British Prime Minister, Theresa May.

El proceso de planificación y el después

Siguieron dos años de negociaciones, consultas y elaboración de infinidad de informes (incluida una prolija defensa de las razones para erigir un nuevo monumento en un lugar que esperaba ser inscrito en el Patrimonio de la Humanidad de la UNESCO) como parte del complejo proceso de solicitud de permisos.

La exposición de los diseños en Londres y París, así como las largas deliberaciones con los departamentos franceses y la población local prepararon el terreno para la posible concesión de los permisos de construcción.

Vino después un periodo de diseño detallado, con la investigación y el desarrollo de materiales para el monumento. Hicimos una selección de posibles contratistas y artesanos que podrían trabajar con el nivel de calidad requerido, tal como se indicaba en nuestros planos y especificaciones. Al estar el monumento situado en la costa se analizó la piedra en un laboratorio y se hizo el correspondiente pedido de la cantidad necesaria de piedra caliza de Massangis, en Borgoña.

El anuncio de que se sumarían otros 7 millones de libras a la subvención original de 20 millones del gobierno del Reino Unido llegó justo a tiempo y, junto a otras donaciones privadas, elevó el presupuesto a 30 millones de libras.

S.A.R. El Príncipe de Gales se convirtió en el Presidente de Honor y el 6 de junio de 2019 –en el 75º aniversario del Día D– el Presidente de Francia, Emmanuel Macron, y la Primera Ministra británica, Theresa May, pusieron la primera piedra.

O Processo de Planeamento e Além

Seguiram-se dois anos de negociação, consultoria e produção de relatórios profissionais intermináveis (incluindo uma longa defesa dos motivos pelos quais procurámos erigir um novo memorial num sítio que esperava a sua inscrição na lista de Património Mundial da UNESCO), como parte do complexo processo de licenciamento.

As exposições dos nossos projetos em Londres e Paris, bem como extensas deliberações com os departamentos Franceses e a comunidade local mais ampla em França, prepararam o terreno para a eventual emissão de licenças de construção.

Seguiu-se um período de desenho detalhado, com a investigação e desenvolvimento de materiais para o memorial. Fizemos uma seleção de possíveis empreiteiros e artesãos que poderiam trabalhar ao nível exigido, tal como estabelecido nos nossos desenhos e especificações. A localização costeira do memorial exigiu testes laboratoriais de pedra, e uma certa quantidade de calcário Borgonhês de Massangis foi devidamente encomendada.

O anúncio de que 7 milhões de libras (aproximadamente 8 milhões de euros) seriam adicionadas à subvenção original do governo britânico de 20 milhões de libras (23 milhões de euros), chegou mesmo a tempo e, juntamente com donativos privados, elevou o orçamento do projeto para 30 milhões de libras (35 milhões de euros).

Sua Alteza Real, o Príncipe de Gales, tornou-se o Patrono Real do projeto, e a 6 de Junho de 2019 – o 75º aniversário do Dia D – a pedra angular foi colocada no local pelo Presidente Francês, Emmanuel Macron, e pela Primeira-Ministra Britânica, Theresa May.

The Art of Making

How buildings are made has always been integral to architectural identity, albeit alas, less frequently in our times. In a world focused on image, the substance, physical reality and performance of things is rarely of importance. This is especially true in architecture, where unrealistic budgets, development finance structures and TV makeover shows conspire to give the impression that things of value or significance can be achieved overnight. This, unfortunately, is very rarely the case.

We devised a way to build this memorial whereby the historical and cultural importance of the project is perfectly aligned with our design ethos and the methods of construction we developed to ensure that a certain integrity of design and purpose was achieved.

El arte de crear

La forma de construir los edificios ha sido desde siempre una parte integral de la identidad arquitectónica. Sin embargo, desgraciadamente, lo es menos en nuestra época. En un mundo centrado en la imagen, la sustancia, la realidad física y el funcionamiento de las cosas apenas tiene importancia. Esto es especialmente cierto en la arquitectura, donde presupuestos inverosímiles y programas televisivos sobre reformas conspiran para dar la impresión de que las cosas de valor o trascendencia pueden hacerse en dos días. Lamentablemente, esto no suele ser así.

Ideamos una forma de construir el monumento en la que la importancia histórica y cultural del proyecto estuviera en consonancia con nuestra filosofía de diseño y desarrollamos métodos de construcción que aseguraran una cierta integridad de diseño y propósito.

A arte de Criar

A forma como os edifícios são criados sempre foi inseparável da identidade arquitetónica, embora infelizmente isso aconteça menos no nosso tempo. Num mundo centrado na imagem, a substância, realidade física, e desempenho das coisas raramente é tem importância. Isto é especialmente verdade na arquitetura, onde orçamentos irrealistas, estruturas de financiamento dos projetos, e programas de televisão baseados na vida real, conspiram para dar a impressão que as coisas de valor ou importância podem ser alcançadas de um dia para o outro. Isto, infelizmente, é raramente verdade.

Concebemos uma forma de construir o memorial em que o significado histórico e cultural do projeto está alinhado com a nossa ética de conceção e com os métodos de construção que desenvolvemos, para assegurar que uma certa integridade de desenho e propósito foi alcançada.

1: Massangis quarry. 2: Quarried stone, Trentino, Italian Alps – centuries-old source of porphyry paving for many Italian towns and villages, and of paving for the Memorial | 1: Cantera de Massangis. 2: Piedra extraída, Trentino, Alpes italianos: yacimiento centenario de pórfido con el que se han pavimentado muchas ciudades y pueblos italianos, y ahora también en el monumento | 1: Pedreira de Massangis. 2: Pedra extraída, Trentino, Alpes Italianos – fonte secular de pavimentação de pórfiro para muitas cidades e aldeias Italianas, e de pavimentação para o Memorial

1: Fine letter-work to enhance visibility. 2: A worker checking the stones' alignment | 1: La calidad de las inscripciones realza su visibilidad. 2: Un obrero comprueba la alineación de las piedras | 1: Inscrição refinada para aumentar a sua visibilidade. 2: Um trabalhador que verifica o alinhamento das pedras

How this design looks and how it was built are the same. This is not a series of expedient construction-industry norms hidden by a veneer of visual effect; on the contrary – what visitors see is what we built. There is a unity of purpose, design and construction that tells a rare and compelling truth.

Utilising 3,500 tons of Burgundy limestone, the memorial structures are built in loadbearing masonry with fine lime mortar jointing, in much the same way that classical temples or medieval cathedrals were built, utilising the time-honoured methods of construction developed in classical antiquity that are still applicable today.

El diseño y su construcción son lo mismo. El resultado no es producto de una normativa a la que se aplica un barniz o un efecto visual; al contrario, lo que los visitantes ven es lo que hemos construido. Hay una unidad de propósito, diseño y construcción que cuenta una verdad poco común e irrefutable.

Con 3.500 toneladas de piedra caliza de Borgoña, las estructuras del monumento se construyeron en mampostería portante con mortero de cal en las uniones, de manera muy parecida a cómo se edificaron los templos clásicos o las catedrales medievales. Se emplearon métodos de construcción tradicionales desarrollados en la Antigüedad clásica y que siguen siendo aplicables hoy en día.

O aspeto deste desenho e a forma como foi construído são a mesma coisa. Este não é um produto de normas industriais de construção convenientes, sob uma aparência de efeito visual; pelo contrário – o que os visitantes vêem é o que nós construímos. Existe uma unificação de propósito, desenho e construção, que diz uma verdade rara e convincente.

Com 3.500 toneladas de calcário Borgonhês, as estruturas do memorial são construídas em alvenaria estrutural, com juntas finas de argamassa de cal, da mesma forma que foram construídos os templos clássicos ou catedrais medievais, usando métodos de construção consagrados pelo tempo, desenvolvidos na antiguidade clássica e ainda hoje aplicáveis.

Almost the same quantity of Italian porphyry paving stone was quarried and laid by three generations of skilled masons. Eighty mature oak trees were felled to create the pergola roof beams, while twice as many were replanted, in accordance with an edict of Louis XIV, when he established the Forêt de Villandry in the Loire Valley for the growing of tall, straight oaks for the French navy – an excellent sustainability regime that we were able to follow.

Casi la misma cantidad de adoquines de pórfido italiano fueron extraídos y colocados por tres generaciones de maestros albañiles. Se talaron ochenta grandes robles para crear las vigas del tejado de la pérgola y se replantaron el doble, de acuerdo con un edicto de Luis XIV por el que se fundaba el Forêt de Villandry en el Valle del Loira para el cultivo de robles para la Marina francesa, un modelo sostenible que pudimos respetar.

Foi extraída quase a mesma quantidade de pórfiro Italiano para o pavimento, colocada por três gerações de pedreiros habilidosos. Oitenta carvalhos maduros foram abatidos para criar as vigas do telhado da pérgula, enquanto que duas vezes mais foram replantados, de acordo com um decreto de Luís XIV, que determina que a Floresta de Villandry no Vale do Loire se destina ao cultivo de carvalhos altos e retos para a marinha Francesa – um regime de sustentabilidade que pudemos seguir.

Odorizzi stonemasons laying porphyry paving at the French Memorial | Un cantero de Odorizzi coloca el pavimento de pórfido en el monumento francés | Pedreiros Odorizzi colocando o pavimento de pórfiro no Memorial Francês

1

2

1: Memorial Court entablature (Massangis stone). 2: Execution of letter-work | 1: Entablamento del Patio conmemorativo (piedra de Massangis). 2: Realización de las inscripciones | 1: Entablamento do Tribunal Memorial (pedra Massangis). 2: Realização do inscrições

Centuries of knowledge, skill and tradition have been deployed for this project. This is human skill at its best, using 'appropriate' technology to create environmentally sound, robust and resilient architecture.

Siglos de conocimientos, destreza y tradición se desplegaron en este proyecto, utilizando la tecnología "adecuada" para crear una arquitectura respetuosa con el medio ambiente, robusta y resiliente.

Séculos de conhecimento, perícia e tradição foram implementados neste projeto, utilizando tecnologia "apropriada" para criar uma arquitetura sólida, robusta e resiliente do ponto de vista ambiental.

Landscape and Architecture

As landscape is the setting for architecture, so architecture is the setting for fine art and sculpture. Our design intent was to integrate these artistic disciplines into a single overall concept. Our landscape design turned 60 acres of agricultural land into open, accessible public parkland with hundreds of trees and tracts of grassland and wildflower meadow, bringing ecological and horticultural richness to a place that has been plowed for centuries.

Paisaje y arquitectura

Así como el paisaje es el marco de la arquitectura, la arquitectura es el marco de las bellas artes y de la escultura. La intención del proyecto era integrar estas disciplinas artísticas en un concepto global. El diseño del paisaje convirtió 20 hectáreas de terreno agrícola en un parque abierto y accesible al público con cientos de árboles y extensiones de pastos y praderas con flores silvestres que aportan variedad ecológica y hortícola a un lugar cultivado durante siglos.

Paisagem e Arquitetura

Assim como a paisagem é o cenário da arquitetura, a arquitetura é o cenário da arte nobre e da escultura. A intenção do nosso projeto era integrar estas disciplinas artísticas num único conceito global. O nosso projeto paisagístico transformou 60 acres (25 hectares) de terrenos agrícolas em parques públicos abertos e acessíveis, com centenas de árvores e pradarias com flores silvestres, trazendo riqueza ecológica e hortícola a um lugar que tinha sido arado durante séculos.

Aerial view of the Memorial from the south | Vista aérea del monumento desde el sur | Vista aérea do Memorial a partir do Sul

The Memorial Walk, a tree-lined avenue leading toward the place of remembrance | El Paseo conmemorativo, una avenida bordeada de árboles que lleva hacia el lugar para el recuerdo | O Passeio do Memorial, uma avenida arborizada que conduz ao local de lembrança

The stone cloister garden columns are carved with the 22,442 names of the men and women who served under British command and died on D-Day or in the ensuing Battle of Normandy. The cloister colonnade is covered with carved French oak beams and rafters. A stone Memorial Court structure is at the center, with a fourth façade open to the sea. Quotations from Winston Churchill, Charles de Gaulle, King George VI, and Field Marshal Montgomery are carved on its walls.

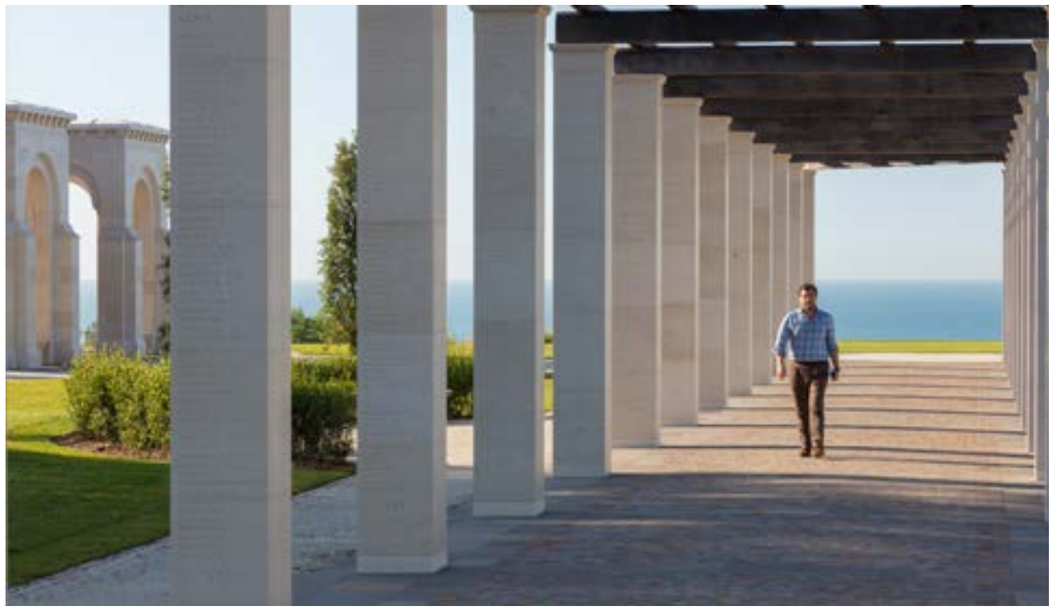
To the west is a memorial designed to recall the sacrifice made by French civilians during the battle; its Norman arches and simple projecting stone corbels evoke the Romanesque architectural heritage so redolent of this part of Normandy. Interspersed in the various memorial spaces are several sculptures and works of fine art. A dynamic compositional group

En las columnas de piedra del jardín del claustro se han tallado los 22.442 nombres de los hombres y mujeres que sirvieron bajo mando británico y murieron el Día D o en la posterior Batalla de Normandía. La columnata del claustro está cubierta con vigas de roble francés talladas. La estructura de piedra del patio de honor ocupa el centro, con una cuarta fachada abierta al mar. Los muros están inscritos con citas de Winston Churchill, Charles de Gaulle, el rey Jorge VI y el mariscal de campo Montgomery.

Al oeste hay un monumento diseñado para recordar el sacrificio de los civiles franceses durante la batalla: los arcos normandos y las sencillas ménsulas de piedra evocan el patrimonio arquitectónico románico que abunda en esta parte de Normandía. Intercalados en los distintos espacios del monumento hay varias esculturas y obras de arte. Un

As colunas do claustro de pedra do jardim são esculpidas com os 22.442 nomes dos homens e mulheres que serviram sob o comando Britânico, e que morreram no Dia D ou na Batalha da Normandia que se seguiu. A colunata do claustro é coberta com vigas e caibros de carvalho Francês esculpido. Uma estrutura de pedra do Tribunal Memorial está no centro, com uma quarta fachada aberta para o mar. Citações de Winston Churchill, Charles de Gaulle, o Rei George VI, e do Marechal de Campo Montgomery estão esculpidas nas suas paredes.

A oeste situa-se um memorial concebido para recordar o sacrifício feito pelos civis Franceses durante a batalha; os seus arcos normandos e simples mísulas salientes de pedra evocam o património arquitetónico Românico, reminiscente desta parte da Normandia. Intercaladas nos vários espaços do memorial estão várias esculturas e obras de arte nobre. Um



Cloister Garden colonnade with the French Memorial to the left and the sea beyond | Columnata del jardín del claustro con el monumento francés a la izquierda y el mar al fondo | Colunata do Jardim do Claustro com o Memorial Francês à esquerda e o mar ao fundo

of three bronze figures stands on a single block of granite, triangular in plan and angled to suggest the prows of battleships in the offing, supporting the D-Day infantry landing.

Five Waymarker sculptures in the North Terrace Garden ingeniously depict the battle on all five invasion beaches. At the very heart of the memorial, a battered bronze shield rests on a solid block of limestone, symbolizing the end of war. Above it lies a wreath of olive and laurel, signifying peace, inspired by the exchange of wreaths by Charles I and Henrietta-Maria, daughter of the king of France, in a painting by Anthony van Dyck. The wreath is surrounded by the words “courage, sacrifice, dignity, victory, liberty, peace” in English and French

dinámico grupo formado por tres figuras de bronce sobre un bloque de granito de planta triangular inclinada recuerda las proas de los buques de guerra en lontananza que el Día D apoyaron el desembarco de la infantería.

Cinco esculturas que señalan el camino en el jardín de la terraza norte representan ingeniosamente la batalla en las cinco playas del desembarco. En el centro del monumento un escudo de bronce abollado descansa sobre un bloque macizo de caliza para simbolizar el final de la guerra. Sobre él hay una corona de olivo y laurel que significa la paz y se inspira en el intercambio de coronas entre Carlos I y Enriqueta María, hija del rey de Francia, en un cuadro de Antón van Dyck. La corona está rodeada de las palabras “valor, sacrificio, dignidad, victoria, libertad, paz” en inglés y francés.

grupo composicional dinâmico de três figuras de bronze encontra-se sobre um único bloco de granito, de plano triangular, e inclinado para sugerir as proas dos navios de guerra no mar distante, que apoiavam o desembarque da infantaria no Dia D.

Cinco esculturas que assinalam o caminho no jardim do terraço norte retratam engenhosamente a batalha nas cinco praias invadidas. No coração do memorial, um escudo de bronze danificado repousa sobre um bloco sólido de pedra calcária, simbolizando o fim da guerra. Acima dele encontra-se uma coroa de oliveira e louro, que representa a paz, inspirada pela troca de coroas de Carlos I e Henrietta-Maria, filha do rei de França, numa pintura de Anthony van Dyck. A coroa é rodeada pelas palavras “coragem, sacrifício, dignidade, vitória, liberdade, paz”, em inglês e francês.

1

1: View of the French Memorial. 2: Wreath and shield at the center of the Memorial, surrounded by the Cloister Garden columns inscribed with names of the fallen | 1: Vista del monumento francés. 2: Corona de laurel y escudo en el centro del Monumento, rodeados por las columnas del jardín del claustro en las que se han grabado los nombres de los caídos | 1: Vista do Memorial Francês. 2: Coroa e escudo no centro do Memorial, rodeados pelas colunas do Jardim do Claustro inscritas com os nomes dos caídos

2

Legacy: Quality, Rarity, Beauty

The project to find the site for, then design and build the British Normandy Memorial has been an exceptional challenge, but one met with enthusiasm and dedication over the five years it took from inception to inauguration.

We are acutely aware of the historic and cultural importance of this project and, accordingly, we set out to achieve both an architectural legacy and a place of tranquillity and beauty for generations to come. Whether for recalling a comrade in arms or a family member, contemplating the huge scale of sacrifice on all sides or simply a place of dignity, conducive to remembrance and reflection, this memorial was designed to create such a space.

Legado: calidad, singularidad, belleza

El proyecto de encontrar un emplazamiento para el Monumento conmemorativo británico en Normandía y su posterior diseño y construcción fue todo un reto, pero en los cinco años transcurridos desde su inicio hasta la inauguración lo abordamos con entusiasmo y dedicación.

Plenamente conscientes de la importancia histórica y cultural de este proyecto, nos dispusimos a crear tanto un legado arquitectónico como un lugar de tranquilidad y belleza para las generaciones venideras. Ya sea para recordar a un compañero de armas o a un familiar, contemplar el enorme sacrificio de todas las partes, o simplemente como un lugar digno que invita al recuerdo y la reflexión, este monumento se proyectó para constituir ese espacio.

Legado: Qualidade, Raridade, Beleza

O projeto de encontrar um local para o Memorial Britânico da Normandia, e para depois o desenhar e construir, foi um verdadeiro desafio, mas ao longo dos cinco anos decorridos desde o início do projeto até à sua inauguração foi recebido com entusiasmo e dedicação.

Cientes da importância histórica e cultural deste projeto, propusemo-nos a alcançar tanto um legado arquitetónico como um lugar de tranquilidade e beleza para as gerações vindouras. Seja para recordar um companheiro de luta ou um membro da família, contemplando o enorme nível de sacrifício de ambas as partes, ou simplesmente como um lugar de dignidade, conducente à recordação e reflexão, este memorial foi concebido para ser um tal espaço.

As an architectural practice, we have a long and proven track record for delivering complex projects with a strong sense of culture, aligned with an in-depth knowledge of the practicalities of construction.

Whether we are designing an important house for a family, a new building in the setting of a royal palace or a monument to significant historic events, our approach to design, team building, stakeholder consultation and project management is always guided by dedication, passion and precision. Attention to the beauty inherent in the detail as well as strategy and direction for maintaining team focus - always remain central to securing the ultimate objective of the bigger project picture.

Como estudio de arquitectura contamos con una larga trayectoria en la realización de proyectos complejos de carácter cultural, en consonancia con un conocimiento profundo de los aspectos prácticos de la construcción. Ya sea el proyecto de una gran casa para una familia, un nuevo edificio en el terreno de un palacio real o un monumento conmemorativo de acontecimientos históricos, nuestro enfoque del diseño, la creación de equipos, la consulta a las partes interesadas y la gestión del proyecto siempre se guía por la precisión y la dedicación. La atención a la belleza inherente en el detalle, así como a la estrategia y la dirección para mantener la concentración del equipo es esencial para lograr, finalmente, la visión del proyecto en su conjunto.

Na nossa prática arquitetónica, temos um longo e reconhecido historial de concretização de projetos complexos e com um forte sentido de cultura, alinhado com um conhecimento profundo dos aspectos práticos da construção. Quer estejamos a projetar uma casa importante para uma família, um edifício novo no contexto de um palácio real ou um monumento alusivo a eventos históricos, a nossa abordagem da conceção, construção de equipas, discussão com as partes interessadas e gestão de projetos, é sempre orientada pela precisão e dedicação. A atenção à beleza inerente aos detalhes, bem como a estratégia e a direção para manter o foco da equipa, continuam a ser centrais para, em última análise, alcançar uma visão de projeto mais ampla.

Biography | Biografía | Biografia

Liam O'Connor

Liam O'Connor is an architect with an international reputation for high-quality buildings and landscapes in a contemporary classical idiom. He has built numerous houses, major public memorials, and cultural buildings, such as an extension to the eighteenth-century Magazine building in Hyde Park (with Zaha Hadid) and an extension to the Orangery at Kensington Palace. He has taught at the University of Notre Dame, Indiana, and on its Rome Program. He has been Special Adviser to the Secretary of State for the Environment in the UK and has exhibited and published widely over his career. His Normandy Monument has won various awards: the Italian Iconic Landscape Award, the International Property Award 2021 for France, and the Global Award for Best Public Architecture, and recently the Henry Hering Medal for Art and Architecture in the USA.

Liam O'Connor es un arquitecto de fama internacional por la gran calidad de sus edificios y paisajes con un lenguaje clásico contemporáneo. Ha construido numerosas viviendas, grandes monumentos públicos y edificios culturales, como la ampliación del edificio del Magazine del siglo XVIII en Hyde Park (con Zaha Hadid) y la ampliación de la Orangerie del Palacio de Kensington. Ha ejercido como profesor en la Universidad de Notre Dame, Indiana y en su Programa de Roma. Ha sido asesor especial del Secretario de Estado para el Medio Ambiente del Reino Unido y durante toda su carrera ha realizado numerosas exposiciones y publicado ampliamente. Su Monumento de Normandía ha obtenido diversos premios: el Premio al Paisaje Icónico en Italia, el Premio Internacional de la Propiedad 2021 para Francia, el Premio Global a la Mejor Arquitectura Pública y, recientemente, la Medalla Henry Hering de Arte y Arquitectura en Estados Unidos.

Liam O'Connor é um arquiteto com uma reputação internacional pela conceção de edifícios e paisagens de alta qualidade, num idioma clássico contemporâneo. Construiu numerosas casas, memoriais públicos importantes, e edifícios culturais, tais como uma extensão do edifício Magazine do século XVIII, no Hyde Park (com Zaha Hadid), e uma extensão da Orangery no Palácio de Kensington. Foi professor na Universidade de Notre Dame, Indiana, e no Programa de Roma. Foi Conselheiro Especial do Secretário de Estado do Ambiente no Reino Unido, e realizou muitas exposições e publicações ao longo da sua carreira. O seu Monumento à Normandia ganhou vários prémios: o Prémio Italiano para Paisagens Icónicas, o Prémio de Propriedade Internacional em 2021 para a França, o Prémio Global para Melhor Arquitetura Pública, e recentemente a Medalha Henry Hering para a Arte e Arquitetura nos EUA.

< Walls of the Memorial Court with columns carved with names and carved oak beams | Muros del Patio conmemorativo con los nombres inscritos en las columnas y vigas de roble talladas | Paredes do Tribunal Memorial com as colunas esculpidas com nomes e vigas de carvalho esculpidas

Restoration of a Monumental Seventeenth-Century Canal House in the Center of Amsterdam, The Netherlands

Restauración de una casa monumental del siglo XVII en un canal del centro de Ámsterdam, Países Bajos

Restauração de uma monumental casa do século XVII com vista para o canal no centro de Amesterdão, Países Baixos

Wolbert Vroom,
Jan-Willem Kuipers,
Debby Heilker-Lamerigts

Our project concerns a canal house on the Keizersgracht, built around 1620 in the Grachtengordel (the Canal District) of Amsterdam as part of an urban expansion project in which wetlands were drained and canals constructed. This expansion model served as a reference around the world up to the nineteenth century, and has been part of the UNESCO World Heritage list since 2010. Along these canals are countless heritage buildings, including the one involved in this project.

The canal house's current owners bought it in 2017 with the intention of completely renovating it and futureproofing it by installing a lift to cater for any future mobility issues. This is where we were brought in to give guidance on the feasibility of such an installation in a listed building.

The project was carried out by restoration-certified craftspeople, with Pronk Bouw BV as main contractor. Its first phase started in October 2018, with foundation repairs and preparation for subsequent installations. The second phase, in June 2019, involved architectural restoration work. Finishes were executed in collaboration with an

El proyecto actúa sobre una casa del canal Keizersgracht, construida aproximadamente en 1620 en el Grachtengordel (barrio de los canales) de Ámsterdam como parte de un proceso de desarrollo urbano en el que se desecaron los humedales y se construyeron los canales. Este modelo de crecimiento fue una referencia en todo el mundo hasta el siglo XIX y, desde el año 2010, forma parte del Patrimonio Mundial de la UNESCO. A lo largo de estos canales hay infinidad de edificios históricos, entre los que se encuentra el de este proyecto.

Los propietarios actuales compraron la casa del canal en 2017 con la intención de reformarla completamente y prepararla para el futuro. Para ello decidieron instalar un ascensor en previsión de posibles problemas de movilidad. Es ahí donde intervinimos nosotros, para asesorar sobre la viabilidad de dicha instalación en un edificio protegido.

El proyecto lo realizaron profesionales expertos en rehabilitación y la empresa Pronk Bouw BV como contratista principal. La primera fase comenzó en octubre de 2018 con la reparación de los cimientos y la preparación para las posteriores instalaciones. La segunda fase, en junio de 2019, consistió en obras

O nosso projeto consiste numa casa com vista para o canal Keizersgracht, construída por volta de 1620, no Grachtengordel (o Distrito dos Canais) de Amesterdão, como parte de um projeto de expansão urbana em que foram drenadas zonas húmidas e construídos canais. Este modelo de expansão serviu de referência pelo mundo fora até ao século XIX, e faz parte da lista de Património Mundial da UNESCO desde 2010. Ao longo destes canais encontram-se inúmeros edifícios monumentais, incluindo o que está envolvido neste projeto.

Os atuais proprietários da casa do canal compraram-na em 2017 com a intenção de a renovar completamente e de antecipar e minimizar os efeitos de potenciais eventos futuros, instalando um elevador para atender a quaisquer problemas futuros de mobilidade. É aqui que nós entramos, para dar orientação sobre a viabilidade de uma tal instalação num edifício classificado.

O projeto foi levado a cabo por artesãos credenciados no domínio da restauração, tendo sido a Pronk Bouw BV o principal empreiteiro. A primeira fase começou em outubro de 2018, com as reparações das fundações e a preparação para instalações subsequentes. A segunda fase, em junho de 2019, envolveu trabalhos de

< Period room with concealed doors, almost finished | Sala de época con puertas ocultas, casi terminadas | Sala de época com portas ocultas, quase terminada

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1: Project location in Amsterdam. 2: Keizersgracht Canal in the Canal District | 1: Emplazamiento del proyecto en Ámsterdam. 2: El canal Keizersgracht en el barrio de los canales | 1: Localização do projeto em Amesterdão. 2: Canal Keizersgracht, no Distrito dos Canais (1: adapted from Schadd, K.H., 1869. Amsterdam, Kalverstraat bij den Heiligen weg. Tresling & Co. 2: adapted from Google Earth, https://earth.google.com/web/)

interior designer and various third parties. In June 2020 the project was preliminarily handed over. Sundry tasks were then done by others over the summer and the official handover was in late August 2020.

The historic home was due for an overhaul: the building's original layout had been altered so that the interior and exterior were largely eighteenth century, with many additions from the nineteenth and twentieth centuries. The lightwell was filled with stairs, corridors, and bathrooms. This

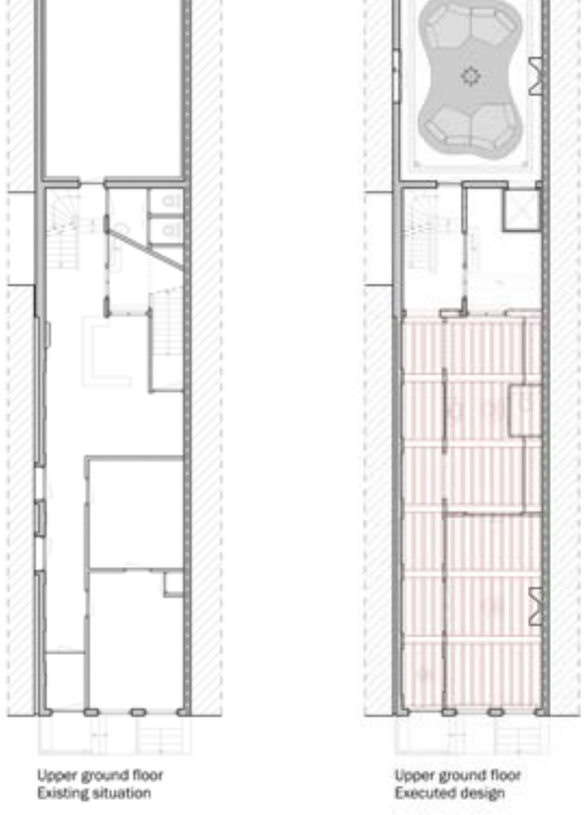
de rehabilitación arquitectónica. Los acabados se ejecutaron en colaboración con un diseñador de interiores y otros profesionales. En junio de 2020 se entregó el proyecto de forma preliminar. Durante el verano se realizaron diversos trabajos y la entrega oficial se hizo a finales de agosto de 2020.

La vivienda histórica necesitaba una rehabilitación completa: la distribución original del edificio se había alterado con un interior y un exterior principalmente del siglo XVIII y muchas adiciones de los siglos XIX y XX. El patio de luces

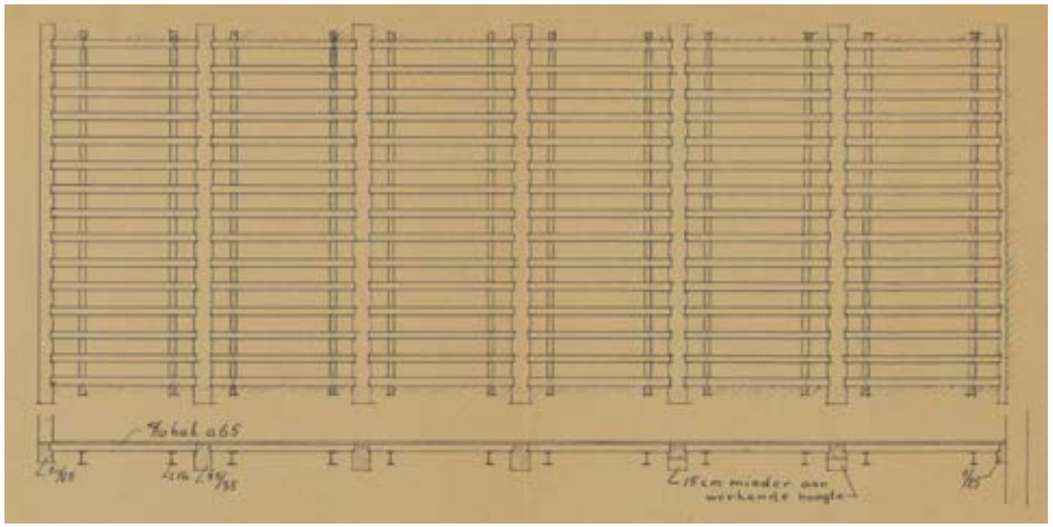
restauro arquitetónico. Os acabamentos foram executados em colaboração com um decorador de interiores e outros intervenientes. Em junho de 2020, o projeto foi entregue de forma preliminar. Foram então realizadas tarefas diversas por outros participantes durante o verão, e a entrega oficial foi feita em finais de Agosto de 2020.

A casa histórica necessitava de uma renovação: a disposição original do edifício tinha sido alterada, com um interior e exterior maioritariamente do século XVIII, e com muitos acréscimos dos séculos

Drawing of the restored front and rear façades and new garden house façade | Dibujo de las fachadas principal y trasera rehabilitadas con la nueva fachada al jardín | Desenho das fachadas principal e traseira restauradas e da nova fachada da casa de jardim



Floor plans of the upper ground floor, previous situation and design as built | Planos del entresuelo, con la situación anterior y el diseño construido | Plantas do piso térreo superior, situação prévia, e desenho tal como foi construído



Fragment of a construction drawing from W. Hilhorst, 1938 | Fragmento de un plano de construcción de W. Hilhorst, 1938 | Fragmento de um esboço de construção de W. Hilhorst, 1938 (Hilhorst, W. 1938. *Revisie balklaag 1e verdieping Keizersgr. (Bouw- en omgevingsdossiers)*. Amsterdam City Archives: dossiernummer 89341. https://data.amsterdam.nl/data/bouwdossiers/bouwdossier/SA89341/)

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1: Double-framed ceiling behind three lower ceilings. 2: Steel reinforcement removed. 3: Restored double-framed ceiling | 1: Armadura oculta tras tres techos más bajos. 2: Refuerzo de acero retirado. 3: Armadura bidireccional restaurada | 1: Teto com armação dupla por detrás de três tetos inferiores. 2: Reforço de aço removido. 3: Tecto com armação dupla restaurado

impaired state, however, provided an opportunity to negotiate with the municipal Monuments and Archaeology department (M&A): on condition that the lightwell was properly restored, M&A granted permission to install a lift in it. As with most of our projects, we began with extensive historical research with the aim of conserving and restoring the building's original structure, without shying away from including modern amenities or amending our plans to accommodate unexpected needs.

From a conservation perspective, the building's façade and main composition (front house, middle section, and back house) are of high value. The rear façade, lightwell walls, main load-bearing structure, remnants of a stucco corridor (marble floor, left corridor wall) and staircase with lenticular balusters (with a stucco ceiling) are of positive value.

According to our desk research, including construction drawings from the 1930s, a unique double-framed ceiling of oak joists and ties from about 1620 was concealed behind the current upper ground floor ceiling. This type of ceiling was already a rarity in its time. With some tentative demolition, its presence was confirmed, and this historical fabric was further researched.

The double-framed ceiling was laid bare, conserved, and restored where required; steel supports (remnants of the building's use as an office) were removed, and the joists repaired with matching oak.

estaba ocupado por escaleras, pasillos y cuartos de baño. Sin embargo, este deterioro nos brindaba la oportunidad de negociar con el departamento municipal de monumentos y arqueología (M&A): con la condición de que el patio de luces se restaurara adecuadamente, el M&A dio permiso para instalar un ascensor en él. Como en la mayoría de nuestros proyectos, empezamos con un exhaustivo estudio histórico a fin de conservar y restaurar la estructura original del edificio sin huir por ello de incluir instalaciones actuales o modificar nuestros planes para hacer frente a posibles imprevistos.

Desde un punto de vista arquitectónico, la fachada y la composición principal del edificio (parte delantera, sección intermedia y parte posterior de la casa) son de gran valor. A su vez, la fachada posterior, los muros del patio de luces, la estructura portante principal, los restos de un pasillo decorado con estuco (suelo de mármol, pared izquierda del pasillo) y la escalera con balaustres lenticulares (con techo de estuco) tienen sólo un cierto valor.

Según nuestra investigación documental, que incluía planos de construcción de la década de 1930, sobre el actual techo del entresuelo había una armadura bidireccional con vigas y viguetas de roble de hacia 1620. Este tipo de estructura ya era poco frecuente en su época. Tras realizar una pequeña demolición de prueba se confirmó su presencia y pudimos estudiar más a fondo este tipo de elemento histórico.

Así, se dejó al descubierto esa estructura de madera, conservándola y restaurándola donde fue necesario; se retiraron los soportes de acero (restos de cuando el edificio se utilizó como oficina) y se repararon las vigas con el mismo tipo de roble.

XIX e XX. O saguão estava cheio de escadas, corredores, e casas de banho. No entanto, este estado debilitado implicava uma oportunidade de negociar com o departamento municipal de Monumentos e Arqueologia (M&A): na condição de que o saguão fosse devidamente restaurado, o M&A concedeu permissão para instalar um elevador no mesmo. Como na maioria dos nossos projetos, começámos com uma extensa pesquisa histórica com o objetivo de conservar e restaurar a estrutura original do edifício, sem evitarmos incluir comodidades modernas, ou alterar os nossos planos para acomodar necessidades inesperadas.

De uma perspectiva de conservação, a fachada e a composição principal do edifício (casa frontal, secção central e casa traseira) são muito valiosas. A fachada posterior, as paredes do saguão, a estrutura principal de suporte de carga, os restos de um corredor de estuque (chão de mármore, parede do corredor esquerdo) e a escadaria com balaústres lenticulares (com teto de estuque) têm um valor positivo.

De acordo com a nossa investigação documental, que incluiu desenhos de construção dos anos 30, tinha existido sobre o teto atual do piso térreo superior, um teto singular de armação dupla, de cerca de 1620, com vigas e elementos de ligação em carvalho. Este tipo de teto era uma raridade já no seu tempo. Após algumas tentativas de demolição, a sua presença foi confirmada, e este tecido histórico foi ainda mais investigado.

O teto de armação dupla foi exposto, conservado e restaurado onde se considerou necessário; os suportes de aço (vestígios da utilização do edifício como escritório) foram removidos, e as vigas foram reparadas com carvalho a condizer.

4: Joist repair (oak). 5: Replacement corbels. 6: Restored corbel | 4: Reparación de vigas (roble). 5: Ménsulas nuevas. 6: Ménsula restaurada | 4: Reparação das vigas (de carvalho). 5: Mísulas de substituição. 6: Mísula restaurada

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Ceiling during demolition with construction traces and results of historical paint research by J. Tegelaar. Blue: original floor plan, ca. 1620. Yellow: adjusted floor plan, eighteenth century | Techo durante la demolición con restos de construcción y resultados del estudio de pintura histórica de J. Tegelaar. Azul: planta original, ca. 1620. Amarillo: planta adaptada, siglo XVIII | Teto durante a demolição, com vestígios de construção e resultados da pesquisa histórica da pintura, por J. Tegelaar. Azul: planta original, ca. 1620. Amarelo: planta ajustada, século XVIII (by author, on photogrammetry by D. Derksen, Monumenten en Archeologie Municipality of Amsterdam)

Architectural paint research by a specialist gave us an understanding of the original room finishes and layouts. The traces found indicate 400 years of building history, as was described in an extensive report. The research showed that the original layout comprised a wide entrance (3) and a narrow room (2), and behind that, a narrow corridor to the garden (5), adjacent to a wider room with a fireplace (1). This layout was changed in the eighteenth century, with a continuous corridor from the entrance to the garden (6 and 4) and two equally sized rooms, one facing the lightwell (1) and the other the canal (2).

Un especialista en pintura nos ayudó a entender los acabados y la disposición original de las habitaciones. Los restos hallados indican que el edificio tiene 400 años, tal como expusimos en un amplio informe. La investigación demostró que la distribución original constaba de una amplia entrada (3) y una sala estrecha (2), y tras esta, un pasillo estrecho que llevaba al jardín (5), adyacente a una sala más amplia con chimenea (1). Esta distribución se modificó en el siglo XVIII con un pasillo continuo desde la entrada hasta el jardín (6 y 4) y dos salas del mismo tamaño, una que daba al patio de luces (1) y otra al canal (2).

O estudo de pintura arquitetónica que foi realizado por um especialista ajudou-nos a compreender os acabamentos e disposições da sala original. Os vestígios encontrados indicam 400 anos de história de construção, como descrito num extenso relatório. A investigação mostrou que a disposição original incluía uma entrada larga (3) e uma sala estreita (2), e por trás, um corredor estreito para o jardim (5), adjacente a uma sala mais ampla com uma lareira (1). Esta disposição foi alterada no século XVIII, com um corredor contínuo a partir da entrada até ao jardim (6 e 4) e duas salas de dimensões iguais, uma virada para o saguão (1) e a outra para o canal (2).

< 3D model of the final design | Modelo en 3D del proyecto definitivo | Modelo 3D do desenho final

> Working drawing of the period room design | Plano de trabajo del diseño de la sala de época | Esboço técnico da sala de época

The eighteenth-century layout was chosen as the one to restore, in accordance with the house's mostly eighteenth-century interior and exterior. The double-framed ceiling and this layout became the outstanding design features on the upper ground floor.

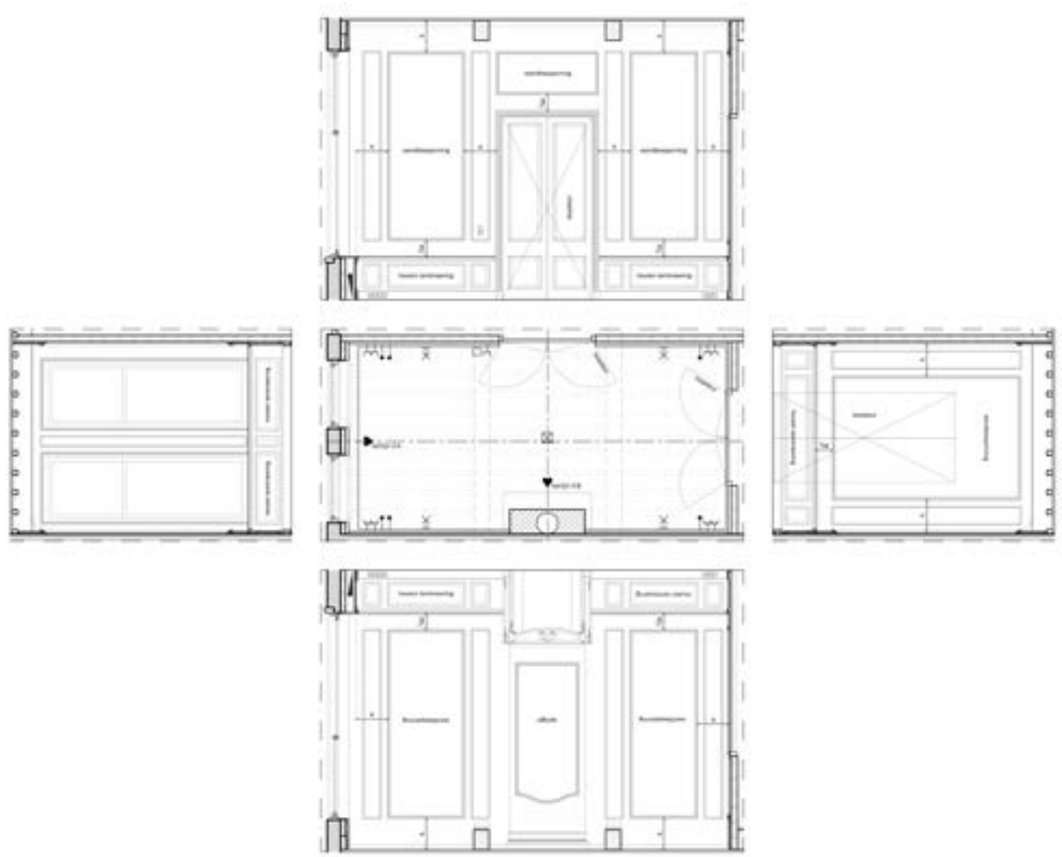
As part of our restoration of the composition, the front room was to regain its status as the most prominent space. Hence we carefully designed a reconstructed classic period room,

A la hora de llevar a cabo la rehabilitación se decidió mantener la distribución del siglo XVIII, dado que la mayoría de los interiores y el exterior de la casa eran de esa época. El techo de madera y la distribución se convirtieron en las características de diseño destacadas del entresuelo.

Como parte de la rehabilitación, la sala delantera recuperó la categoría de espacio principal. Así, diseñamos y reconstruimos con el máximo cuidado una sala de época clásica respetando las

A configuração do século XVIII foi a escolhida para a restauração, em conformidade com o interior e exterior da casa, em grande parte do século XVIII. Esta configuração, assim como o teto com armação dupla, tornaram-se as características singulares do desenho do piso térreo superior.

Como parte da nossa restauração da composição, a sala da frente deveria recuperar o seu estatuto de espaço mais proeminente. Assim, concebemos cuidadosamente uma sala de época clássica

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1: Paneling options. 2: Wallcovering framework. 3: Color options for paneling. 4: Color options for beams | 1: Opciones de panelado. 2: Estructura de soporte del revestimiento mural. 3: Opciones de color para el panelado. 4: Opciones de color para las vigas | 1: Opções de revestimento com painéis. 2: Estrutura do revestimento de parede. 3: Opções de cor para a colocação de painéis. 4: Opções de cor para as vigas

respecting traditional proportions and detailing. Reference projects were carefully considered for panels and wallcovering dimensions. The fireplace and the entrance from the hallway form the focal point. Double doors to the room at the rear were designed as "concealed" entrances behind continuous paneling and wallcoverings. The finish for millwork was chosen from among the colors detected in our architectural paint research. The wallcovering color and pattern were selected according to personal preference.

Para las dimensiones de los paneles y de los revestimientos murales examinamos cuidadosamente proyectos de referencia. La chimenea y la entrada desde el pasillo forman un punto focal. Las puertas dobles de la sala del fondo se diseñaron como entradas "ocultas" tras el panelado y los revestimientos murales continuos. El acabado de la carpintería se eligió entre los colores detectados al estudiar la pintura de arquitectura. El color y el motivo del revestimiento mural se eligieron según el gusto personal.

tradicionais e os pormenores. Foram cuidadosamente tidos em consideração projetos de referência para os painéis e dimensões dos revestimentos de parede. A lareira e a entrada a partir do corredor constituem o ponto focal. Foram concebidas portas duplas para a sala traseira, como entradas "escondidas" por detrás de painéis e revestimentos contínuos das paredes. O acabamento para a carpintaria foi escolhido de entre as cores detetadas na nossa pesquisa de pintura arquitetónica. A cor e o padrão dos revestimentos de parede foram seleccionados com base na preferência pessoal.

As these are primarily new finishes and not a restoration or conservation of existing décor, the choice of materials was influenced by cost and the room was decorated to modern standards. But the wallcovering was applied in a traditional manner: linen was stretched over a wooden frame and secured with nails, then paper was applied as a primer, followed by a flannel layer, over which the final fabric was laid and stretched manually. A wonderful result with beautiful acoustics.

Como se trataba fundamentalmente de acabados nuevos y no de restaurar o conservar la decoración existente, la elección de los materiales estuvo influida por el coste y la sala se decoró en estilo moderno. Sin embargo, el revestimiento mural se aplicó de forma tradicional: se tensó una tela de lino sobre un bastidor de madera al que se fijó con clavos, después se aplicó papel como imprimación, seguido de una capa de franela sobre la que se dispuso la última tela, que se tensó manualmente. El resultado es magnífico y la acústica, excelente.

Como se trata principalmente de acabamentos novos e não de um restauro ou conservação da decoração existente, a escolha dos materiais foi influenciada pelo custo, e a sala foi decorada de acordo com padrões modernos. Mas o revestimento de parede foi aplicado de forma tradicional: o linho foi esticado sobre uma moldura de madeira e fixado com pregos, depois foi utilizado papel como primeira camada, seguido de uma camada de flanela, sobre a qual o tecido final foi colocado e esticado manualmente. O resultado foi maravilhoso e com uma bela acústica.

At the end of the long corridor is the lightwell, whose walls had been altered over the years with the replacement and removal of window frames as additions were made on various floors.

Al final del largo pasillo está el patio de luces, cuyos muros se habían modificado a lo largo de los años con la sustitución y eliminación de los marcos de las ventanas y con añadidos en varias plantas. Todos

No extremidade do longo corredor encontra-se o saguão, cujas paredes tinham

1: Lightwell as it was. 2: Lift installation. 3: Lightwell as restored | 1: Estado anterior del patio de luces. 2: Instalación del ascensor. 3: Patio de luces una vez restaurado | 1: Saguão como era anteriormente. 2: Instalação do elevador. 3: Saguão restaurado


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5: Flannel preparation. 6: Craftsman stretching the fabric | 5: Preparación de la franela. 6: Artesano tensando el tejido | 5: Preparação da flanela. 6: Artesão que estica o tecido

All of these, including staircases and bathrooms, were removed. The lightwell walls and windows were modified so as to reflect the original design. Where possible, existing frames were reused and rehabilitated.

In close consultation with M&A, it was determined that a small lift could be installed in the corner between the rear façade and the neighboring property. It was built of glass so as not to obstruct light nor overpower the restored lightwell.

The canal house is now inhabited by its contented owners. Thorough renovations of heritage buildings by private owners (foundations included) are an integral part of maintaining Amsterdam's UNESCO city center. And though the project was not open to the public, it has been a valuable addition to our experience. Each project brings with it a past for us to unravel, and this context guides carefully considered choices about conservation, restoration, reconstruction, and additions. Heritage should remain accessible to the next generation, but a home cannot be static, and must accompany its inhabitants into the future.

ellos, incluidas las escaleras y los cuartos de baño, se eliminaron. Los muros y las ventanas del patio de luces se modificaron para reflejar el diseño original. Cuando fue posible se reutilizaron y rehabilitaron los marcos existentes.

En estrecha colaboración con el M&A, se decidió que se podía instalar un pequeño ascensor en la esquina entre la fachada posterior y la propiedad contigua. Se construyó acristalado para no bloquear la luz y evitar así que el patio de luces fuera sombrío.

En la casa del canal viven ahora unos propietarios satisfechos. Las rehabilitaciones integrales (incluidos los cimientos) de edificios históricos por propietarios particulares son parte integrante del mantenimiento del centro de Ámsterdam, que es patrimonio de la UNESCO. Y, aunque el proyecto no esté abierto al público, ha sido una valiosa incorporación a nuestra cartera. Cada proyecto trae consigo un pasado que debemos descubrir y este contexto influye en las cuidadosas decisiones que tomamos sobre conservación, rehabilitación, reconstrucción y adiciones. El patrimonio debe ser accesible a las siguientes generaciones, pero una casa no puede permanecer estática y debe acompañar a sus habitantes hacia el futuro.

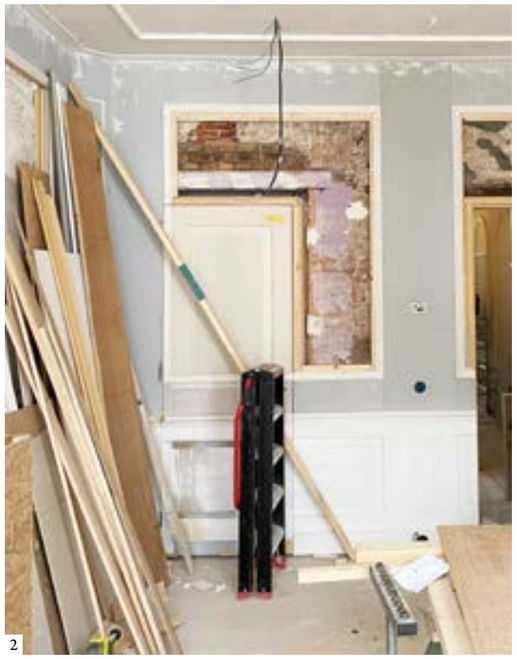
sido alteradas ao longo dos anos, com a substituição e remoção de caixilhos de janelas, à medida que eram feitos acréscimos em vários andares. Todos eles, incluindo escadarias e casas de banho, foram removidos. As paredes e janelas do saguão foram modificadas de modo a refletir o desenho original. Sempre que possível, as molduras existentes foram reutilizadas e reabilitadas.

Em estreita colaboração com a M&A, foi determinado que um pequeno elevador poderia ser instalado no canto, entre a fachada traseira e a propriedade vizinha. Foi construído de vidro, para não obstruir a luz e dotar de sombra o saguão restaurado.

A casa do canal é presentemente habitada pelos seus proprietários satisfeitos. Renovações minuciosas de edifícios patrimoniais por parte de proprietários privados (incluíndo fundações) são parte integrante da manutenção do centro da cidade de Amesterdão da UNESCO. E embora o projeto não tenha sido aberto ao público, foi uma valiosa adição ao nosso portfólio. Cada projeto traz consigo um passado a desvendar, e este contexto guia cuidadosamente as escolhas que são tidas em consideração sobre a conservação, restauração, reconstrução, e adições. O património deve permanecer acessível à próxima geração, mas uma casa não pode ser estática, e deve acompanhar os seus habitantes rumo ao futuro.

1: Installed lift. 2: Wallcoverings | 1: Ascensor instalado. 2: Revestimientos murales | 1: Elevador instalado. 2: Revestimentos de parede

1



2

3: Concealed door. 4: Finished lift entrance | 3: Puerta oculta. 4: Entrada del ascensor terminada | 3: Porta oculta. 4: Entrada do elevador acabada

3

4

Period room after handover | Sala de época tras la entrega | Sala de época após ter sido entregue

Biographies | Biografías | Biografias

Wolbert Vroom

Wolbert Vroom studied architecture at the Delft University of Technology in The Netherlands. He is the founder and owner of Architectenbureau Vroom, which he set up in 1988. He and his firm specialize in the restoration and renovation of monumental houses in and around Amsterdam. His other passion is collecting rare architecture books from the fifteenth century onwards. He is also involved in publishing Dutch and English translations of architectural books, such as *The Idea of a Universal Architecture*, by the Venetian architect Vincenzo Scamozzi, *The Elements of Architecture*, by Sir Henry Wotton, and *The Art of Building (Over de Bouwkunst)*, by Leon Battista Alberti.

Wolbert Vroom estudió arquitectura en la Universidad Técnica de Delft, Países Bajos. Es fundador y propietario del Architectenbureau Vroom, que estableció en 1988. Tanto el estudio como él mismo están especializados en la restauración y rehabilitación de casas monumentales en Ámsterdam y sus alrededores. Su otra afición es coleccionar libros raros de arquitectura del siglo XV en adelante. También ha publicado traducciones al inglés y el holandés de libros de arquitectura, como *La idea de la arquitectura universal* del arquitecto veneciano Vincenzo Scamozzi, *Los elementos de la arquitectura* de Sir Henry Wotton, y *El arte de edificar (De re aedificatoria)* de Leon Battista Alberti.

Wolbert Vroom estudou arquitetura na Universidade de Tecnologia de Delft, na Holanda. É o fundador e proprietário do Architectenbureau Vroom, que fundou em 1988. Ele e o seu gabinete especializaram-se na restauração e renovação de casas monumentais em Amesterdão e arredores. A sua outra paixão é colecionar livros raros de arquitetura publicados a partir do século XV. Está também envolvido na publicação de traduções Holandesas e Inglesas de livros de arquitetura, tais como *The Idea of a Universal Architecture* do arquiteto veneziano Vincenzo Scamozzi, *The Elements of Architecture* de Sir Henry Wotton, e *The Art of Building (Over de Bouwkunst)* de Leon Battista Alberti.

Jan-Willem Kuipers

Jan-Willem Kuipers studied architecture at Delft University of Technology and has built up knowledge and expertise as a restoration professional at various architectural firms since 2004. He has been employed at Architectenbureau Vroom since 2016, where he has worked as a restoration architect and project manager in several restoration projects on historic canal houses within Amsterdam's UNESCO-listed canal belt.

Jan-Willem Kuipers estudió arquitectura en la Universidad Técnica de Delft y, desde 2004, ha adquirido conocimientos y experiencia como profesional de la restauración en distintos estudios de arquitectura. En 2016 se incorporó a Architectenbureau Vroom, donde ha desempeñado el cargo de arquitecto restaurador y director de proyecto en diversos proyectos de rehabilitación de casas históricas en el cinturón de canales de Ámsterdam, patrimonio mundial de la UNESCO.

Jan-Willem Kuipers estudou arquitetura na Universidade de Tecnologia de Delft e desenvolveu conhecimentos e competências como profissional de restauro em vários gabinetes de arquitetura desde 2004. Foi contratado pelo Architectenbureau Vroom em 2016, onde tem trabalhado como arquiteto de restauro e gestor de projetos em vários projetos de restauro de casas de canal históricas na cintura de canais listada pela UNESCO, em Amesterdão.

Debby Heilker-Lamerigts

Debby Heilker-Lamerigts studied architecture at Delft University of Technology with a specialization in Public Housing & Urban Renewal. She has specialized in research and renovation of post-war housing since 1998. As of November 2008 she has been working at Architectenbureau Vroom as a project manager and project architect on restorations of old and often historic buildings. As a photographer she regularly records the construction and end results of these projects.

Debby Heilker-Lamerigts estudió arquitectura en la Universidad Técnica de Delft y se especializó en vivienda pública y renovación urbana. Desde 1998 se ha dedicado a la investigación y la rehabilitación de viviendas de posguerra. Se incorporó en noviembre de 2008 a Architectenbureau Vroom como arquitecta y directora de proyectos de rehabilitación de edificios antiguos e históricos. Como fotógrafa deja regularmente constancia de la construcción y el resultado final de estos proyectos.

Debby Heilker-Lamerigts estudou arquitetura na Universidade de Tecnologia de Delft, tendo-se especializado em Habitação Pública e Renovação Urbana. Especializou-se na investigação e renovação de habitações do pós-guerra desde 1998. Desde Novembro de 2008, tem trabalhado no Architectenbureau Vroom como gestora de projetos e arquiteta de projetos de restauro de edifícios antigos e muitas vezes históricos. Como fotógrafa, regista regularmente a construção e os resultados finais destes projetos.

With colleagues and interns:

Matthew van Lint (draughtsman), Matthijs Bos (draughtsman), Lily Knox (draughtswoman), Pieter de Jong (draughtsman), Saar van Greevenbroek (draughtswoman), Nick van den Oever (intern), Bo Teng (intern).

Con los compañeros y becarios:

Matthew van Lint (delineante), Matthijs Bos (delineante), Lily Knox (delineante), Pieter de Jong (delineante), Saar van Greevenbroek (delineante), Nick van den Oever (becario), Bo Teng (becario).

Com os colegas e estagiários:

Matthew van Lint (desenhador), Matthijs Bos (desenhador), Lily Knox (desenhadora), Pieter de Jong (desenhador), Saar van Greevenbroek (desenhadora), Nick van den Oever (estagiário), Bo Teng (estagiário).

Dar Al Uquod: A Traditional House in Amman

Dar Al Uquod: Una casa tradicional en Amán

Dar Al Uquod: Uma casa tradicional em Amã

Maher Azmi Abu-samra

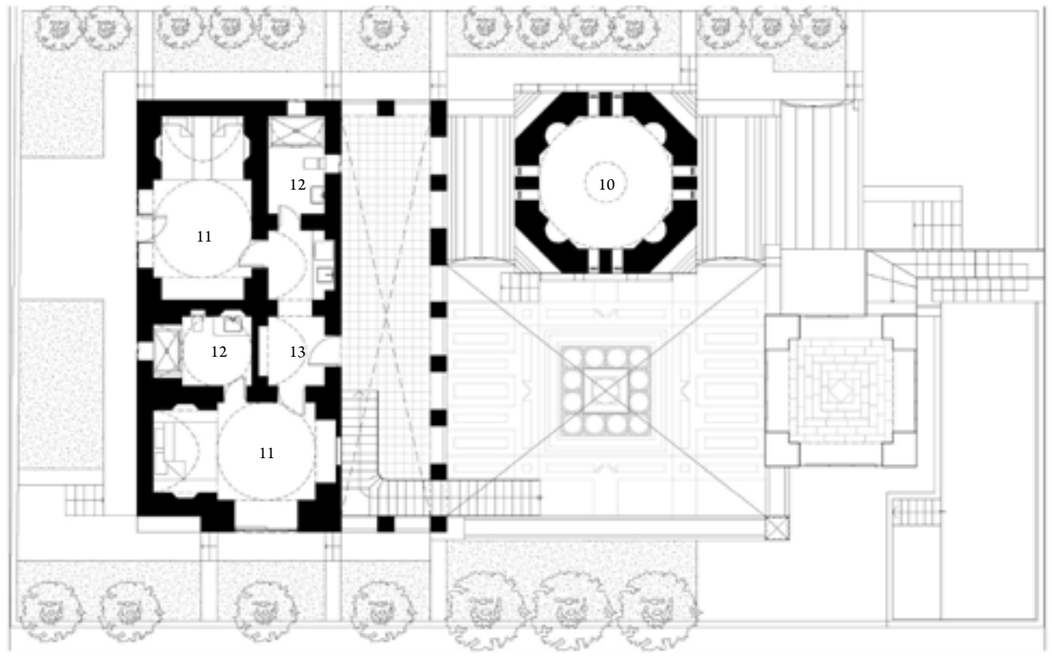
After a pleasant trip with my wife to Morocco in 2018 on which we saw the traditional Moroccan houses in Fez and Marrakech known as *riyad* (Arabic *riyad* – gardens – here is a metaphor for a dwelling with a leafy inner courtyard), I resolved to build such a courtyard house for us in Jordan. Thus I am both the project's architect and its contractor. We built from August 2019 to April 2022, when we stopped for financial reasons.

Tras un agradable viaje que hice con mi mujer a Marruecos en 2018 en el que vimos las casas tradicionales de Fez y Marrakech, llamadas *riad* (en árabe *riyad* –jardines–, una metáfora de una vivienda con un patio interior con plantas), decidí construir en Jordania una casa del mismo estilo para vivir nosotros. De esta manera, soy el arquitecto y el contratista de este proyecto. Las obras duraron desde agosto de 2019 hasta abril de 2022, cuando tuvimos que parar por motivos económicos.

Após uma agradável viagem com a minha esposa a Marrocos em 2018, na qual vimos as casas tradicionais Marroquinas em Fez e Marraquexe, conhecidas como *riyad* (a palavra Árabe *riyad* – jardins – é aqui uma metáfora para uma habitação com um pátio interior frondoso), decidi construir para nós uma casa com pátio similar, na Jordânia. Assim, sou simultaneamente o arquiteto do projeto e o seu empreiteiro. Construímos entre Agosto de 2019 e Abril de 2022, quando parámos por razões financeiras.

< Entryway | Entrada | Entrada

> Side elevation rendering | Representación del alzado lateral | Renderização da elevação lateral



Ground and first floor plans: 1 parking, 2 entrance, 3 toilet, 4 courtyard, 5 loggia, 6 pool, 7 *iwan*, 8 kitchen, 9 Arabic *qa'a*, 10 dome drum, 11 bedroom, 12 bath, 13 entrance | Planos de la planta baja y la primera planta: 1 aparcamiento, 2 entrada, 3 aseo, 4 patio, 5 logia, 6 alberca, 7 *iwan*, 8 cocina, 9 *qa'a* árabe, 10 tambor de la cúpula, 11 dormitorio, 12 baño, 13 entrada | Plantas do rés-do-chão e do primeiro andar: 1 estacionamento, 2 entrada, 3 WC, 4 pátio, 5 lógia, 6 piscina, 7 *iwan*, 8 cozinha, 9 *qa'a* árabe, 10 tambor da cúpula, 11 quarto, 12 banho, 13 entrada

The house is on the outskirts of the northern city of Amman, Jordan. Its plot has an area of 633 m^2 and is located at the foot of a mountain overlooking the city. It is 870 m above sea level, with a level difference of about 7 m. The hottest month in Amman is July, with average temperatures ranging from 31°C to 19°C, and it is coldest in January, averaging from 12°C to 4°C.

The courtyard house plan is very simple: on the ground floor is the main courtyard, open to the sky, a pool at the east-south boundary, a western *iwan* (a vaulted space open on one side) overlooking the court, a loggia between the court and the pool, an Arabic *qa'a* (salon), and a kitchen. From the courtyard there is a staircase to the upper level, where the bedrooms are. The *qa'a* is covered by the main dome with a height of 9.5 m, built between two *iwans*.

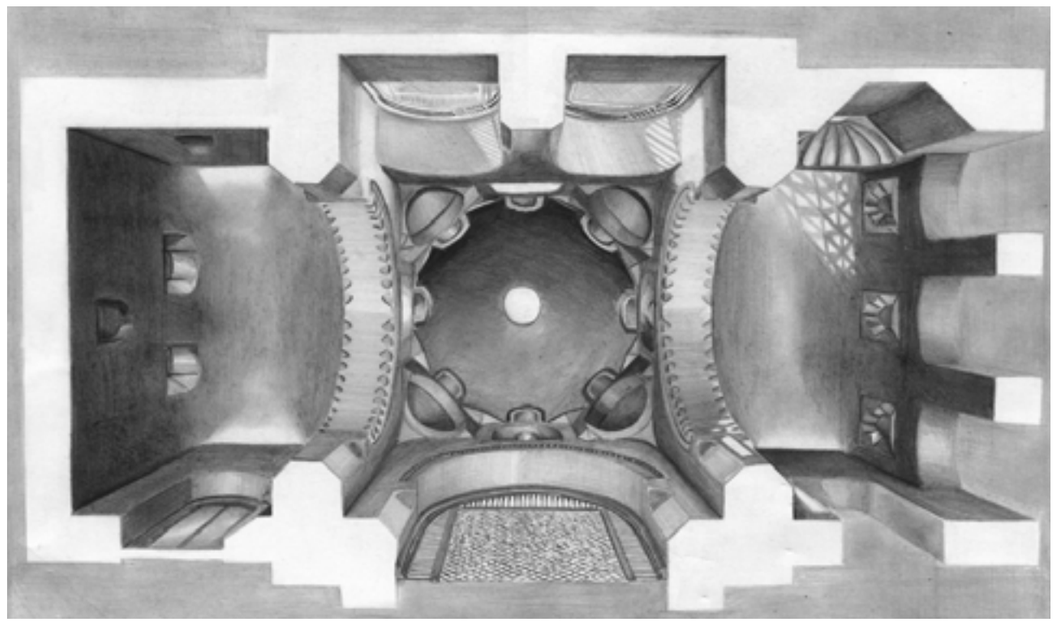
La casa está a las afueras de la ciudad de Amán, al norte de Jordania. La parcela tiene una superficie de 633 m^2 y se encuentra al pie de una montaña con vistas a la ciudad. Está a 870 m sobre el nivel del mar, con un desnivel de unos 7 m. El mes más caluroso en Amán es julio, con temperaturas medias que van de 31 a 19°C, y el mes más frío es enero, con unas temperaturas medias de 12 a 4°C.

El plano de la casa-patio es muy sencillo: en la planta baja hay un patio principal sin techar, una alberca en el extremo sureste, en el lado oeste un *iwan* (espacio abovedado abierto por un lado) que da al patio, una logia entre el patio y la alberca, un *qa'a* (salón) árabe y una cocina. Desde el patio sale una escalera a la planta superior, donde están los dormitorios. El *qa'a* está cubierto por la cúpula principal de 9,5 m de altura, construida entre dos *iwans*.

A casa fica na periferia da cidade de Amã, no norte da Jordânia. O seu terreno tem uma área de 633 m^2 e está localizado no sopé de uma montanha com vista para a cidade. Está situado a 870 m acima do nível do mar, com uma diferença de nível de cerca de 7 m. O mês mais quente em Amã é Julho, com temperaturas médias que variam entre 31°C e 19°C, sendo a temperatura mais baixa em Janeiro, com uma média de 12°C a 4°C.

A planta da casa com pátio é muito simples: no rés-do-chão está o pátio principal, a céu aberto, a piscina na fronteira este-sul, um *iwan* (um espaço abobadado aberto de um dos lados) no lado oeste, com vista para o pátio, uma lógia entre o pátio e a piscina, um *qa'a* (salão) Árabe, e uma cozinha. A partir do pátio existe uma escadaria até ao nível superior, onde se encontram os quartos. O *qa'a* é coberto pela cúpula principal com uma altura de 9,5 m, construída entre dois *iwans*.

Domes of the Arabic *qa'a* (reception room) | Cúpulas del *qa'a* árabe (salón) | Cúpulas do *qa'a* Árabe (sala de receção)



Courtyard under construction | Patio en construcción | Pátio em construção

The idea of building in the traditional way was to create a beautiful, correct model which might encourage other architects to take the same path. Building traditionally using the natural materials available locally results in buildings of high aesthetic value, not to mention environmentally friendly, sustainable over their whole lifecycle.

When I decided to build in this way I lacked appropriate craftspeople and could not find, for example, videos on the internet explaining how to build a groin vault in stone. So I had to use logic and analysis to rediscover ancient building methods in existing buildings, especially regarding how to transfer loads from vaulted and curved ceilings to arches and columns, and on to underground plinths.

La idea de construir en la forma tradicional era crear un modelo apropiado y bonito que animara a otros arquitectos a seguir el mismo camino. Con la construcción tradicional y el uso de materiales locales se consiguen edificios de gran valor estético, sin olvidar que son sostenibles y respetuosos con el medio ambiente durante todo su ciclo de vida.

Cuando decidí construir de esta forma no tenía a los obreros adecuados, ni tampoco pude encontrar vídeos en Internet que explicaran cómo construir una bóveda de arista en piedra, por ejemplo. Por eso tuve que servirme de la lógica y el análisis para descubrir métodos de construcción antiguos en edificios existentes, especialmente en cuanto a la transferencia de cargas desde techos abovedados y curvos a los arcos y las columnas, así como a las cimentaciones.

A ideia de construir da forma tradicional era criar um modelo bonito e correto, que pudesse encorajar outros arquitetos a seguir o mesmo caminho. Construir tradicionalmente utilizando os materiais naturais disponíveis localmente, resulta em edifícios de elevado valor estético, para não falar em edifícios amigos do ambiente, e sustentáveis durante todo o seu ciclo de vida.

Quando decidi construir desta forma, faltavam-me artesãos apropriados e não consegui encontrar, por exemplo, vídeos na Internet a explicar como construir uma abóbada de aresta em pedra. Assim, tive de usar a lógica e análise para redescobrir antigos métodos de construção em edifícios existentes, especialmente no que diz respeito a como transferir as cargas de tetos abobadados e curvos para arcos e colunas, e para plintos subterrâneos.

In traditional architecture there is nothing without a reason. It is the architecture of truth, and from that it acquires its aesthetic value. The transfer of the loads in a curved shape from the dome to the squinches and on to the arches and columns yields a space of subtle beauty. When a contemporary beholder, accustomed to sitting under low horizontal concrete ceilings, looks upon such a structure, he is fascinated by it. As the saying goes: "Straight is the line of duty; curved is the line of beauty".

En la arquitectura tradicional todo tiene una razón de ser. Es la arquitectura de la verdad y de ahí procede su valor estético. La transferencia de cargas a una forma curva desde la cúpula a las trompas y hacia los arcos y las columnas produce un espacio de sutil belleza. A un observador actual, acostumbrado a estar sentado bajo techos horizontales de hormigón y poca altura, le resulta fascinante contemplar este tipo de estructuras. Como dice el refrán: "La línea del deber es recta, la de la belleza, curva".

Na arquitetura tradicional não existe nada sem um motivo. É a arquitetura da verdade, e é aí que ela vai buscar o seu valor estético. A transferência das cargas de uma forma curva, da cúpula, para as trompas de ângulo e para os arcos e colunas, produz um espaço de beleza subtil. Quando um observador contemporâneo, habituado a sentar-se sob tetos baixos e horizontais de betão, olha para uma tal estrutura, ele sente-se fascinado por ela. Como diz o ditado: "Reta é a linha do dever; curva é a linha da beleza".

Kitchen domes | Cúpulas de la cocina | Cúpulas da cozinha

1

2

1: Arch being built over the *qa'a*. 2: Construction of a catenary vault | 1: Arco en construcción sobre el *qa'a*. 2: Construcción de una bóveda de catenaria | 1: Arcos a serem construídos sobre o *qa'a*. 2: Construção de uma abóbada de catenária

The traditional construction process is not as complex as building a high-rise commercial tower. One just needs to believe in the importance of using natural materials as well as in the techniques and their vocabulary, accumulated over thousands of years, civilization after civilization.

In spite of being an architect who believes in traditional building, I had to start with the help of ordinary construction workers experienced only in making concrete and steel buildings and forming horizontal reinforced concrete ceilings with wooden molds – the prevailing building method of our time. So I had to train them to build in the traditional way, using the knowledge I had gained from working for ten years designing traditional buildings in brick with my mentor, Prof. Abdel-Wahed El-Wakil, whose whole life has been spent reviving traditional architecture and whose legacy I do my best to adhere to.

El proceso de construcción tradicional no es tan complejo como el de edificar un rascacielos comercial. Solo hay que creer en la importancia de utilizar materiales naturales, así como en las técnicas y su vocabulario, amasado durante miles de años, civilización tras civilización.

A pesar de que soy un arquitecto que cree en la construcción tradicional, tuve que empezar con la ayuda de obreros corrientes que solo tenían experiencia en edificios de hormigón y acero y en hacer cubiertas de hormigón armado con encofrados de madera, el método predominante en la actualidad. Así pues, tuve que formarlos para construir con métodos tradicionales utilizando los conocimientos que adquirí trabajando durante diez años en proyectos de edificios tradicionales de ladrillo con mi mentor, el profesor Abdel-Wahed El-Wakil, que ha pasado toda su vida recuperando la arquitectura tradicional y cuyo legado intento seguir en la medida de lo posible.

O processo de construção tradicional não é tão complexo como a construção de uma torre comercial de arranha-céus. Basta acreditar na importância da utilização de materiais naturais, bem como nas técnicas e no seu vocabulário, acumulados ao longo de milhares de anos, civilização após civilização.

Apesar de ser um arquiteto que acredita na construção tradicional, tive de começar com a ajuda de trabalhadores comuns da construção civil, que tinham experiência apenas na construção de edifícios de betão e aço, e na formação de tetos horizontais de betão armado com moldes de madeira – o método de construção predominante no nosso tempo. Por isso, tive de os ensinar a construir da forma tradicional, utilizando os conhecimentos que tinha adquirido ao trabalhar durante dez anos na conceção de edifícios tradicionais de tijolo com o meu mentor, o Professor Abdel-Wahed El-Wakil, cuja vida foi passada a reviver a arquitetura tradicional, e cujo legado dou o meu melhor para seguir.

Construction of a groin vault in the loggia | Construcción de una bóveda de arista en la logia | Construção de uma abóbada de aresta na lógia


1

When an architect is on site daily and builds with his hands with the workers as a team, explaining what he wants to achieve in the end and how to apply their experience of making wooden roof molds to the construction of vaults, arches and domes, surely such work will bear fruits.

In the work team I trained, several people were instrumental. Mr. Muhammad Anwar Al-Talawi is a 55-year-old Syrian refugee who came to Jordan in 2012, when the situation in Syria deteriorated. He is an expert carpenter, but all his previous experiences were limited to construction in concrete. His brother, Mr. Hussein Al-Talawi, a 45-year-

Cuando un arquitecto va a la obra cada día y utiliza sus manos para trabajar junto a los obreros en equipo, y les explica lo que quiere conseguir al final y cómo deben aplicar su experiencia en hacer encofrados de madera para la construcción de bóvedas, arcos y cúpulas, no cabe duda de que ese trabajo dará fruto.

En el equipo de trabajo que formé había varias personas que resultaron decisivas. Muhammad Anwar Al-Talawi es un refugiado sirio de 55 años que llegó a Jordania en 2012, cuando la situación en Siria se deterioró. Es un carpintero experto, pero su experiencia anterior se limitaba a construcciones en hormigón. Su hermano, Hussein Al-

Quando um arquiteto está no local de construção diariamente, e constrói com as suas mãos, em equipa com os trabalhadores, explicando o que pretende alcançar no final e como aplicar a sua experiência de fazer moldes de telhado em madeira na construção de abóbadas, arcos e cúpulas, certamente esse trabalho dará frutos.

Na equipa de trabalho que formei, várias pessoas foram instrumentais. Muhammad Anwar Al-Talawi é um refugiado Sírio de 55 anos de idade que veio para a Jordânia em 2012, quando a situação na Síria se deteriorou. É um carpinteiro especializado, mas todas as suas experiências anteriores se limitaram à construção em betão. O seu irmão, o Sr. Hussein Al-Talawi,

1: Mullioned window in the drum of the main *qa'a* dome. 2: Dome squinches. 3: *Qa'a* arch under construction | 1: Ventana geminada en el tambor de la cúpula principal del *qa'a*. 2: Trompas de la cúpula 3: Arco del *qa'a* en construcción | 1: Janela mainelada no tambor da cúpula do *qa'a* principal. 2: Trompas de ângulo da cúpula. 3: Arco do *qa'a* em construção


2


3

old former marble cutter, became passionate about traditional building and was good at understanding complex geometric forms. Abu Khaled, a 58-year-old Jordanian and former hotel manager in Kuwait, became an expert in lime. Maher Zaarour is also a Syrian refugee who came from Homs in 2013, and is distinguished by a strong physique that helped him cut and carry rocks. The team's learning curve climbed steadily as the months went by. Whereas it took us two weeks to build our first vault with full wooden formwork, we were then able to build another one three times larger using partial formwork, in a technique developed through experience, in just three days.

Talawi, un antiguo marmolista de 45 años, se entusiasmó con la construcción tradicional y entendía muy bien las formas geométricas complejas. Abu Khaled, jordano de 58 años y antiguo director de hotel en Kuwait, se hizo experto en cales. Maher Zaarour es un refugiado sirio que llegó desde Homs en 2013, y su fuerza física era idónea para cortar y acarrear piedras. La curva de aprendizaje del equipo fue creciendo constantemente a medida que transcurrían los meses. Si bien tardamos dos semanas en construir la primera bóveda con un encofrado completo de madera, después fuimos capaces de construir en solo tres días otra bóveda tres veces mayor utilizando un encofrado parcial con una técnica desarrollada a base de experiencia.

um antigo cortador de mármore com 45 anos, tornou-se apaixonado pela construção tradicional e tinha facilidade em compreender formas geométricas complexas. Abu Khaled, um jordano de 58 anos e ex-gerente de hotel no Kuwait, tornou-se perito em cal. Maher Zaarour é também um refugiado sírio que veio de Homs em 2013, e distingue-se por um físico forte que o ajudou a cortar e a carregar pedras. A curva de aprendizagem da equipa subiu de forma consistente à medida que os meses foram passando. Embora tenhamos levado duas semanas a construir a nossa primeira abóbada com cofragem integralmente em madeira, pudemos então construir outra que era três vezes maior, usando cofragem parcial – uma técnica desenvolvida através da experiência – em apenas três dias.

1: The team: Kenan Tellawi, Husain Tellawi, Maher Zarour, Mohamed Tellawi, and Abu Khaled. 2: Bathroom wall and ceiling details during construction. 3: Bathroom ceiling after application of lime plaster. 4: Ten-point starburst on the left *iwan* of the *qa'a* | 1: El equipo: Kenan Tellawi, Husain Tellawi, Maher Zarour, Mohamed Tellawi y Abu Khaled. 2: Detalles del muro y el techo del baño durante las obras. 3: Techo del baño tras aplicar mortero de cal. 4: Estrella de diez puntas en el *iwan* izquierdo del *qa'a* | 1: A equipa: Kenan Tellawi, Husain Tellawi, Maher Zarour, Mohamed Tellawi, e Abu Khaled. 2: Detalhes da parede e do teto da casa de banho durante a construção. 3: Teto da casa de banho após a aplicação de reboco de cal. 4: estrela com 10 pontas no *iwan* esquerdo do *qa'a*


1


2


3


4

1

2

1: Construction of the loggia ceiling. 2: 75 cm stone wall filling. 3: Intersected vaulting over the kitchen. 4: Keystone at the intersection | 1: Construcción de la cubierta de la logia. 2: Relleno del muro de 75 cm. 3: Intersección de bóvedas sobre la cocina. 4: Clave en la intersección | 1: Construção do teto da lógia. 2: Preenchimento de pedra da parede com 75 cm. 3: Intersecção das abóbadas sobre a cozinha. 4: Pedra angular na intersecção

Stone is the main building material naturally available in Jordan. Understanding the transmission of forces in stone is vital for both builders and engineers. Any mistake in the process will result in the roof falling in on the workers. On the other hand, if well implemented, it will stand for centuries. Perhaps reinforced concrete and the cantilevers it allows gave us courage to challenge gravity – but reinforced concrete usually has a lifespan of no more than 70 years.

Various methods were used in building the walls. Each block was joined to its neighbors without mortar. The thickness of the wall, sometimes as much as one meter, was filled with the rock debris resulting from dressing the stones used for the exterior (on their outer face and also those adjoining the adjacent courses). A layer of rather liquid cement was applied just to fill a few voids inside the wall and to obtain a sufficiently level surface to keep on building above. For the stone arches no mortar was used. For the vaults, stone blocks such as are normally used for cladding the facades of modern buildings were chosen, as these are available on the local market. As a first experiment we used them so that their sides (4 cm thick) appear inside the space, resulting in a ceiling thickness

La piedra es el material de construcción típico de Jordania. Entender la transmisión de fuerzas en la piedra es fundamental para constructores e ingenieros. Cualquier error en el proceso podrá significar el desplome de la bóveda sobre los obreros. Por otra parte, si se hace bien, durará siglos. Quizá el hormigón armado y los voladizos que permite nos dieran el valor necesario para desafiar a la gravedad, pero el hormigón armado no suele durar más de 70 años.

En la construcción de los muros se utilizaron varios métodos. Cada sillar se unió a los adyacentes sin mortero. El espesor del muro, a veces de hasta un metro, se llenó con los escombros de las piedras sobrantes de la decoración del exterior (en la cara externa y también las que integraban las hiladas adyacentes). Se aplicó una capa de un cemento bastante líquido para rellenar algunos huecos dentro del muro y obtener una superficie lo suficientemente lisa para seguir construyendo por encima. En los arcos de piedra no se utilizó mortero. Para las bóvedas se eligieron sillares como los que suelen utilizarse para revestir las fachadas de los edificios modernos, ya que se pueden comprar localmente. En un primer experimento los utilizamos de forma que los lados (de 4 cm de espesor) quedaran dentro

A pedra é o principal material de construção naturalmente disponível na Jordânia. A compreensão da transmissão de forças na pedra é vital tanto para os construtores como para os engenheiros. Qualquer erro no processo resultará na queda do telhado sobre os trabalhadores. Por outro lado, se for bem implementada, ela irá resistir durante séculos. Talvez o betão armado e as consolas que este permite nos tenham dado coragem para desafiar a gravidade – mas o betão armado tem normalmente uma duração de vida não superior a 70 anos.

Foram utilizados vários métodos na construção das paredes. Cada bloco foi unido aos seus vizinhos sem argamassa. A espessura da parede, por vezes chegando a um metro, era preenchida com os detritos rochosos resultantes do revestimento das pedras utilizadas para o exterior (na sua face exterior e também nas que fazem a ligação com as fiadas adjacentes). Uma camada de cimento bastante líquido foi aplicada apenas para preencher alguns vazios no interior da parede, e para obter uma superfície suficientemente plana para continuar a construir para cima. Para os arcos de pedra não foi utilizada argamassa. Para as abóbadas, foram escolhidos blocos de pedra como os que são normalmente utilizados no revestimento das fachadas dos edifícios modernos, uma vez que estes estão disponíveis no

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of 25 cm. Though such a thickness is unnecessary in structural terms, this is the size available at an affordable price.

del espacio, consiguiendo un techo de 25 cm de espesor. Aunque este espesor es innecesario desde el punto de vista estructural, es el tamaño disponible a un precio asequible.

mercado local. Como primeira experiência, utilizámo-los de forma a que as suas laterais (4 cm de espessura) aparecessem dentro do espaço, resultando numa espessura de teto de 25 cm. Embora tal espessura seja desnecessária em termos estruturais, este é o tamanho disponível a um preço acessível.

We worked with stone wedges that were cut with a small saw in situ, with a conical shape and a triangular base, and used to fill the gaps between the blocks in the extrados of the arches and vaults. Other gaps were then filled with a liquid mixture of white cement and slaked lime. This method of using stone wedges was developed during the work itself after we had started to set the tilting vault stones perpendicular to the curve of the arch with wedges of wood, which later had to be removed.

Trabajamos con cuñas de piedra de forma cónica y base triangular cortadas con una pequeña sierra en la propia obra y que se utilizaron para rellenar los huecos entre sillares en el trasdós de los arcos y las bóvedas. Los demás huecos se rellenaron con una mezcla líquida de cemento blanco y cal apagada. El método de las cuñas de piedra surgió durante la propia obra, después de que hubiéramos empezado a poner las piedras inclinadas de la bóveda perpendiculares a la curva del arco con cuñas de madera, que después tenían que quitarse.

Trabalhámos com cunhas de pedra que foram cortadas com uma pequena serra no local, com uma forma cónica e uma base triangular, e que foram utilizadas para preencher as lacunas entre os blocos nos extradorsos dos arcos e abóbadas. As outras lacunas eram então preenchidas com uma mistura líquida de cimento branco e leite de cal. Este método de utilização de cunhas de pedra foi desenvolvido durante o próprio trabalho, depois de termos começado por colocar as pedras basculantes da abóbada perpendicularmente à curva do arco com cunhas de madeira, que mais tarde tinham de ser removidas.

Iwan with a pointed vault and ornamental arch | *Iwan* con una bóveda ojival y arco decorativo | *Iwan* com abóbada de arco quebrado e arco ornamental

Two-volume space in the lobby | Espacio de dos volúmenes en el vestíbulo | Espaço de dois volumes no átrio

We used several types of stonework:

- Rubble masonry, with larger stones for the foundations and smaller ones for filling the wall interiors.

- Block-in-course ashlars, with a rock-faced finish.

- Cornerstones, or stones with more than one hammer-dressed face, used at the corners of outer walls and around doors, windows and openings.

- Voussoirs for arches.

- Local cladding stones, with headers of 4 x 25 cm and different lengths up to 120 cm, were used in building vaults with stone wedges, tapering from 3 cm to zero with various lengths (an average of 10 cm), knocked in with a hammer.

Utilizamos varios tipos de piedra:

- Mampostería de piedra sin trabajar, con mampuestos más grandes para los cimientos y más pequeños para rellenar los muros interiores.

- Sillería por hiladas, sin buscar un acabado plano en su cara vista.

- Piedras angulares o sillares con más de una cara trabajada, utilizados en las esquinas de los muros exteriores o alrededor de las puertas, ventanas y aberturas.

- Dovelas para arcos.

- Piedras de revestimiento locales con testas de 4 x 25 cm y diferentes longitudes, de hasta 120 cm, para construir las bóvedas, y cuñas de piedra ahusadas de 3 a 0 cm y con distintas longitudes (unos 10 cm por término medio), insertadas con martillo.

Utilizámos vários tipos de cantaria:

- Alvenaria de entulho, com pedras maiores nas fundações e pedras mais pequenas para encher os interiores das paredes.

- Alvenaria silhar combinada com alvenaria de entulho, com acabamento não regularizado na face exposta.

- Pedras angulares, ou pedras com mais do que uma face martelada, utilizadas nos cantos das paredes exteriores e ao redor das portas, janelas e aberturas.

- Aduelas para os arcos.

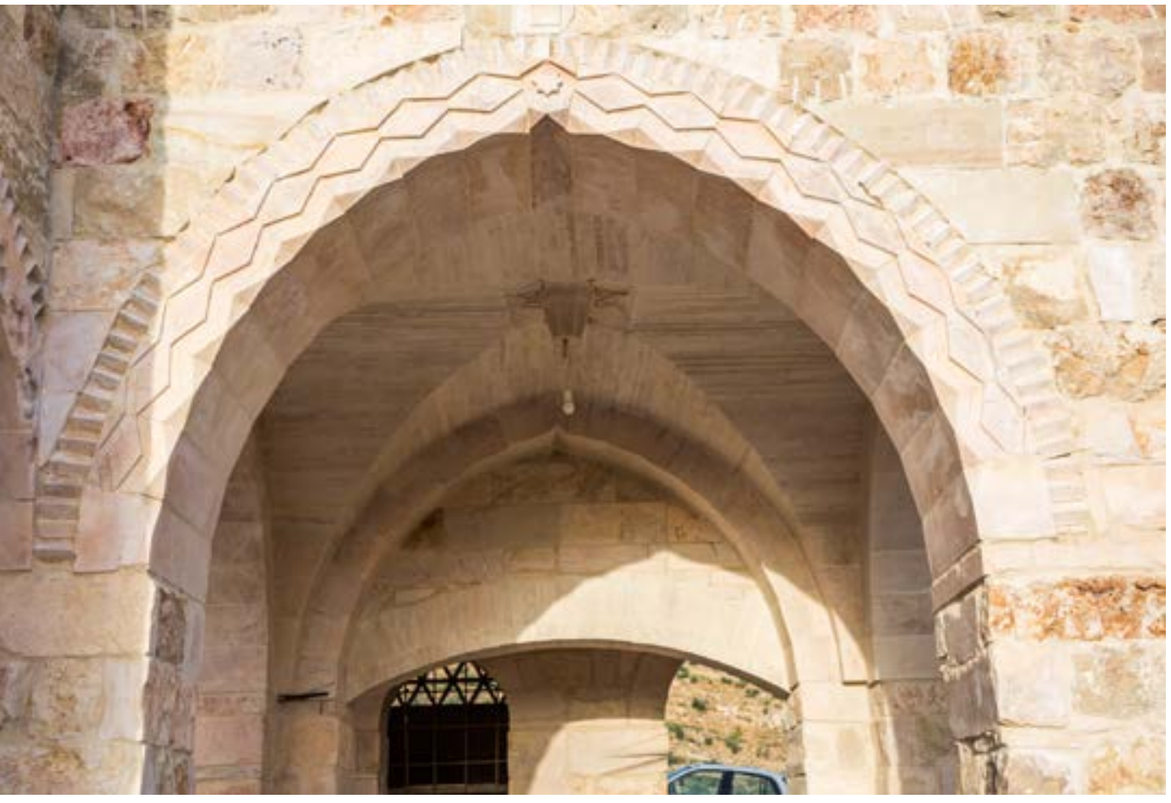
- Pedras de revestimento locais, com extremidades de 4 x 25 cm e comprimentos diferentes até 120 cm, foram utilizadas na construção das abóbadas com cunhas de pedra cónicas, de 3 até 0 cm, com vários comprimentos (uma média de 10 cm), enfiadas com um martelo.

The load-bearing walls of natural stone 75 to 100 cm thick with lime joints will allow the walls to breathe, and provide a better indoor climate in summer and winter. One can already feel this even as the project is being built. The high ceilings and the distribution of small upper windows and wide lower windows will let fresh air flow through in the summer and maintain natural ventilation in the rooms.

Los muros portantes de piedra natural de 75 a 100 cm de espesor con juntas de cal permitirán que las paredes respiren y proporcionarán un ambiente interior más agradable tanto en verano como en invierno. Durante la construcción del proyecto ya se podía notar este efecto. Los altos techos y la distribución de las pequeñas ventanas superiores y las amplias ventanas inferiores permitirán que el aire fresco corra en verano y mantendrán la ventilación natural de las estancias.

As paredes estruturais de pedra natural com 75 a 100 cm de espessura e com juntas de cal, permitem que as paredes respirem, e proporcionam um melhor clima interior no verão e no inverno. Isto já pode ser sentido à medida que o projeto está a ser construído. Os tetos altos e a distribuição de pequenas janelas superiores e amplas janelas inferiores, permitirão a circulação de ar fresco no verão, e manterão uma ventilação natural nos quartos.

Loggia with groin-vault ceiling and ornamented outer arch | Logia con cubierta en bóveda de arista y arco exterior ornamentado | Lógia com abóbada de aresta e arco exterior ornamentado



The decoration, ornaments, inscriptions, and sculptural details add artistic value to the space. These details and the varied types of arches are characteristic of the geographical area, embedded in local cultural heritage.

La decoración, ornamentos, inscripciones y detalles escultóricos añaden valor artístico al espacio. Estos detalles y la variedad de arcos son característicos de la zona geográfica y forman parte del patrimonio cultural local.

A decoração, ornamentos, inscrições, e detalhes esculturais acrescentam valor artístico ao espaço. Estes detalhes e os variados tipos de arcos são característicos da área geográfica, fazendo parte do património cultural local.

1,2: Islamic calligraphic ornament. 3,4: Stone for the upper *qa'a* windows | 1,2: Ornamento con caligrafía islámica. 3,4: Piedra para las ventanas superiores del *qa'a* | 1,2: Ornamento caligráfico islâmico. 3,4: Pedra para as janelas superiores do *qa'a*

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Building laws and regulations were among the greatest challenges we faced, as the municipality and the Engineers' Association do not recognize construction without reinforced concrete, and floor heights over 3 or 4 m are not allowed. Further to this, the regulations on setbacks from the adjacent plot do not allow you to make an inner court on plots of 500-750 m² – although setbacks are usually not used at all.

Las leyes y los códigos de edificación plantearon grandes problemas, ya que el Ayuntamiento y el Colegio de Ingenieros no permiten la construcción sin hormigón armado, ni tampoco construir techos de más de 3 o 4 metros de altura. Por otra parte, las normas sobre retranqueos no permiten construir patios interiores en parcelas de entre 500 y 750 m², aunque el retranqueo no se utiliza normalmente.

As leis e regulamentos de construção foram dos maiores desafios que enfrentámos, uma vez que o município e a Associação de Engenheiros não reconhecem a construção sem betão armado, e não são permitidos andares com alturas superiores a 3 ou 4 m. Além disso, os regulamentos sobre os recuos face ao terreno adjacente não permitem fazer um pátio interior em lotes de 500-750 m² – embora os recuos não sejam normalmente utilizados.

Syrian-pattern stone carving executed by Maher Azmi Abusamra with hand tools | Talla de piedra con un motivo sirio realizado por Maher Azmi Abusamra con herramientas manuales | Escultura de pedra de padrão Sírio executada por Maher Azmi Abusamra com ferramentas manuais

Stairway and *iwan* arch | Escalera y arco del *iwan* | Escadaria e arco do *iwan*

I saw satisfaction and pride on the faces of the masons as they laid the keystone for each arch or removed the wooden or steel formwork for an arch or vault. I saw them standing by arches and vaults right after they were finished, without fear of collapse, taking selfies. Such situations seldom arise among workers who can only view their work as a source of livelihood, not as an aesthetic product to be proud of. I saw the architecture students trained over the summer on the site full of enthusiasm and with a desire to continue with this approach to building, and their perplexity at not being taught such traditional construction methods using load-bearing walls and vaulted ceilings without reinforced concrete in their architecture or structural engineering courses.

Observé la satisfacción y el orgullo de los albañiles cuando colocaban la clave de cada arco o retiraban el encofrado de madera o de acero de un arco o una bóveda. Los vi ponerse bajo los arcos y las bóvedas recién terminados para hacerse *selfies*, sin miedo a que se derrumbaran. Esto se observa muy raras veces entre los obreros, que solo ven su trabajo como una forma de ganarse la vida y no como un producto estético del que sentirse orgullosos. Vi a los estudiantes de arquitectura que hicieron prácticas durante el verano entusiasmados y con ganas de seguir utilizando este planteamiento de la construcción y comprobé su perplejidad ante la inexistencia en los cursos de arquitectura o ingeniería estructural de la enseñanza de estos métodos de construcción tradicionales, con muros portantes y techos abovedados sin hormigón armado.

Vi a satisfação e orgulho nos rostos dos pedreiros ao colocarem a chave de cada arco, ou removerem a cofragem de madeira ou aço de um arco ou abóbada. Vi-os de pé, junto aos arcos e abóbadas logo após a sua conclusão, sem medo de colapso, tirando fotografias a si mesmos. Tais situações raramente surgem entre trabalhadores que apenas vêem o seu trabalho como uma fonte de subsistência, e não como um produto estético do qual se podem orgulhar. Vi os estudantes de arquitetura que foram ensinados localmente durante o verão, cheios de entusiasmo e com o desejo de continuar com esta abordagem à construção, e a sua perplexidade por não serem sido ensinados métodos de construção tão tradicionais, utilizando paredes de suporte de carga e tetos abobadados sem betão armado, nos seus cursos de arquitetura ou engenharia estrutural.

Documenting the construction process with pictures and videos may help others in the future to follow this path, as one of the main reasons why traditional building methods are little used is that master craftspeople hardly exist anymore. Most construction workers forgot how to make traditional roofing systems such as domes, barrel vaults, groin vaults, etc. once demand from architects and customers fell away.

The revival of traditional building methods needs to be supported by government institutions, universities and vocational training colleges, as it cannot rely just on individual efforts such as mine. The chain of craft

La documentación del proceso de construcción con fotos y vídeos puede ayudar a otros a seguir este camino en el futuro, ya que una de las razones principales por las que los métodos tradicionales de construcción se utilizan muy poco es que apenas quedan maestros artesanos. La mayoría de los obreros de la construcción se olvidaron de cómo hacer cubiertas tradicionales, con cúpulas, bóvedas de cañón o bóvedas de arista, una vez que los arquitectos y los clientes dejaron de pedirlas.

La recuperación de los métodos de construcción tradicionales debe contar con el apoyo de las instituciones públicas, universidades y centros de formación profesional, ya que no puede

Documentar o processo de construção com imagens e vídeos pode ajudar outras pessoas a seguir este caminho futuramente, pois uma das principais razões pelas quais os métodos tradicionais de construção são pouco utilizados é que os mestres artesãos já quase não existem. A maioria dos trabalhadores da construção esqueceu-se de como fazer sistemas tradicionais de cobertura, tais como cúpulas, abóbadas de berço, abóbadas de arestas, etc. uma vez que a procura por parte de arquitetos e clientes diminuiu.

O renascimento dos métodos tradicionais de construção precisa de ser apoiado por instituições governamentais, universidades e institutos de formação profissional, uma vez que não pode depender

View from the street with two vaults under construction | Vista desde la calle con dos bóvedas en construcción | Vista da rua com dois cofres em construção

Loggia between the pool and the courtyard | Logia entre la alberca y el patio | Lógia entre a piscina e o pátio

3D rendering of the *qa'a* interior | Representación en 3D del interior del *qa'a* | Renderização 3D do *qa'a* interior (Sajedah Fayed, MAS Office)

transmission was largely interrupted in the last century, after a long history of many generations of passing on such skills. The internet and modern communications can restore this chain and encourage youngsters to master the old crafts, without dispensing with modern machines.

The revival of traditional building methods is no longer a luxury, a fashion, or an elite tendency. Rather it is a necessity in all countries, and especially those that import their steel, cement, and fossil fuels. In some places it would make a great difference, such as for example in the Gaza Strip. For after the last war, Egypt and Israel imposed a blockade on Gaza, preventing the import of steel and cement. Gaza residents were thus unable to rebuild, due to a lack of industrial building materials, whereas if traditional construction skills had been available, things would have been different.

depender exclusivamente de la iniciativa privada, como es mi caso. La cadena de transmisión de los oficios se interrumpió en gran medida durante el siglo pasado, tras una larga historia de muchas generaciones que transmitieron esos conocimientos. Internet y los sistemas de comunicación modernos pueden restablecer esa cadena y animar a los jóvenes a dominar los antiguos oficios sin renunciar a las máquinas modernas.

La recuperación de los métodos de construcción tradicionales ha dejado de ser un lujo, una moda o una tendencia elitista. Al contrario, es una necesidad en todos los países, especialmente en los que tienen que importar acero, cemento y combustibles fósiles. En algunos lugares marcaría una gran diferencia, como en la Franja de Gaza, por ejemplo, ya que, tras la última guerra, Egipto e Israel impusieron un bloqueo económico que impide la importación de acero y cemento. Los residentes de Gaza no pudieron reconstruir por falta de materiales de construcción industriales, mientras que, si se hubieran conservado los métodos de construcción tradicionales, las cosas habrían sido distintas.

apenas de esforços individuais como o meu. A cadeia de transmissão artesanal foi amplamente interrompida no século passado, após uma história de transmissão de tais competências ao longo de várias gerações. A Internet e as comunicações modernas podem restaurar esta cadeia e encorajar os jovens a dominar o artesanato antigo, sem dispensar as máquinas modernas.

O renascimento dos métodos tradicionais de construção já não é um luxo, uma moda, ou uma tendência de elite. É antes uma necessidade em todos os países, e especialmente naqueles que importam o seu aço, cimento, e combustíveis fósseis. Em alguns locais faria uma grande diferença, como por exemplo na Faixa de Gaza. Pois após a última guerra, o Egito e Israel impuseram um bloqueio a Gaza, impedindo a importação de aço e cimento. Os habitantes de Gaza foram assim incapazes de reconstruir, devido à falta de materiais industriais de construção, enquanto que se as habilidades tradicionais de construção tivessem estado disponíveis, as coisas teriam sido diferentes.

In a few years, in just three small projects, my team has managed to significantly reduce cost, speed up the construction process and better manage stone blocks as a building material. All this has been possible by an individual effort – so how would it be if there were an institution supporting such work?

En unos pocos años, con tan solo tres pequeños proyectos, mi equipo ha conseguido reducir significativamente los costes, acelerar el proceso de construcción y manejar mejor los sillares como material de construcción. Todo esto ha sido posible con el esfuerzo individual. ¿Qué no sería posible si este trabajo tuviera el apoyo de las instituciones?

Em poucos anos, em apenas três pequenos projetos, a minha equipa conseguiu reduzir significativamente os custos, acelerar o processo de construção e gerir melhor os blocos de pedra como material de construção. Tudo isto foi possível graças a um esforço individual – e como seria se houvesse uma instituição que apoiasse tal trabalho?

Biography | Biografía | Biografia

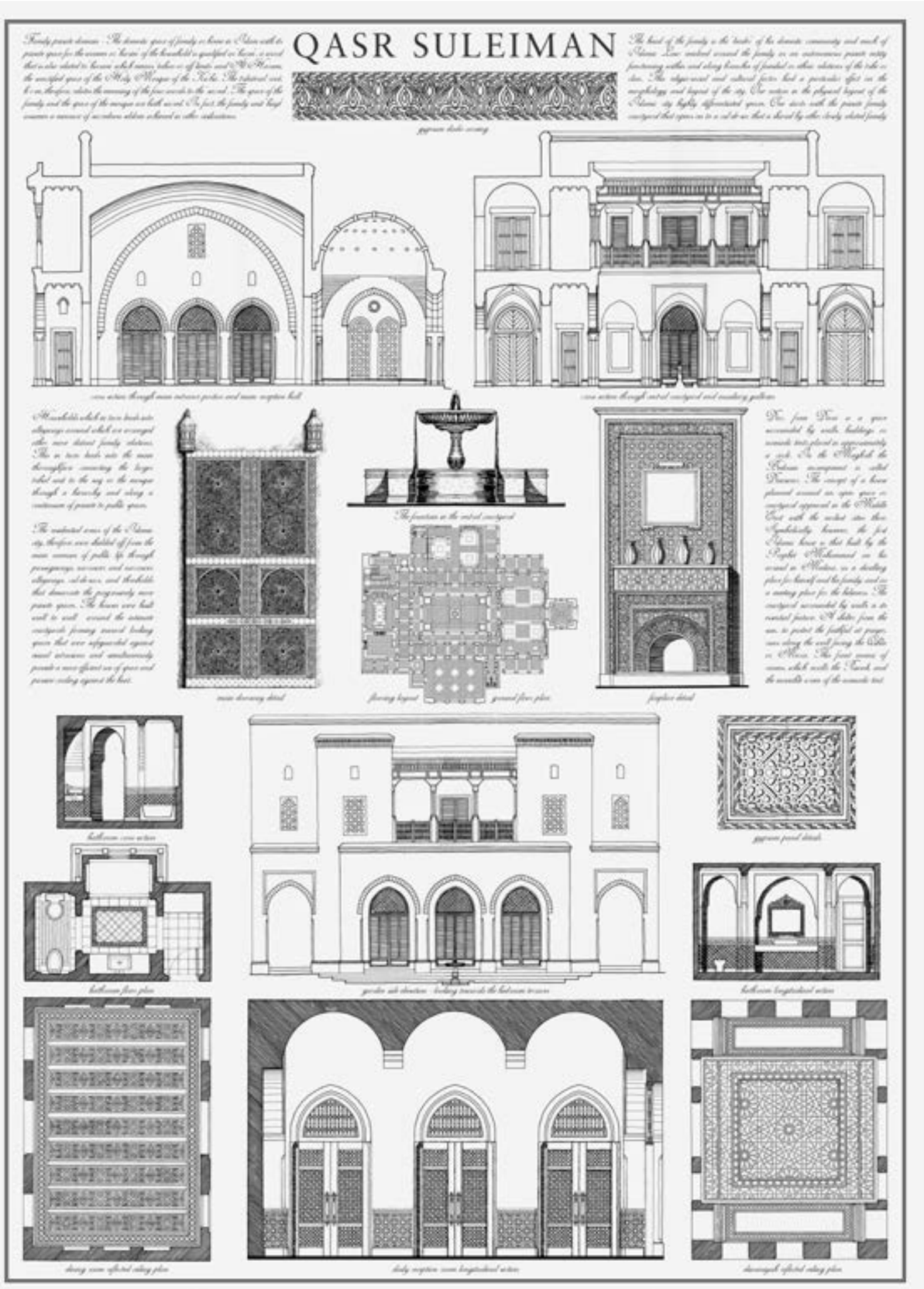
Maher Azmi Abu-samra

Maher received a Bachelor's degree in Architectural Engineering from the University of Mosul, Iraq, in 1997. He is Senior Scientific Researcher at the College of Islamic Studies' Department of Architecture in Hamad Bin Khalifa University (Qatar Foundation), Doha. He worked with the internationally renowned architect Prof. Abdel-Wahed El-Wakil for ten years and has participated in the design of dozens of traditional buildings in several countries. He established the MAS Design Studio in Jordan for architectural design and has had a specialized team for traditional stone construction in Jordan since 2018. He has designed and built three projects using traditional techniques also in Jordan.

Maher se graduó en Ingeniería arquitectónica en la Universidad de Mosul, Irak, en 1997. Es Investigador jefe del Departamento de Arquitectura en el Colegio de Estudios Islámicos de la Universidad Hamad Bin Khalifa (Qatar Foundation), Doha. Trabajó con el profesor Abdel-Wahed El-Wakil, arquitecto de fama internacional, durante diez años y ha participado en numerosos proyectos de edificios tradicionales en varios países. Fundó el estudio de arquitectura MAS Design en Jordania, donde desde 2018 tiene un equipo especializado en construcción tradicional con piedra. Ha proyectado y construido en Jordania tres edificios con técnicas tradicionales.

Maher obteve o seu Bacharelato em Engenharia Arquitetónica na Universidade de Mosul, Iraque, em 1997. É Investigador Científico Sénior no Departamento de Arquitetura da Faculdade de Estudos Islâmicos da Universidade Hamad Bin Khalifa (Qatar Foundation), Doha. Trabalhou com o arquiteto de renome internacional Prof. Abdel-Wahed El-Wakil durante dez anos, e participou na conceção de dezenas de edifícios tradicionais em vários países. Criou o MAS Design Studio na Jordânia para o design arquitetónico, e tem uma equipa especializada na construção tradicional em pedra na Jordânia, desde 2018. Concebeu e construiu três projetos utilizando técnicas tradicionais, também na Jordânia.

Reflections
Reflexiones
Reflexões



Mohamad Hamouié

The Builder-Architect

El constructor-arquitecto

O construtor-arquiteto

Abstract | Resumen | Resumo

Today we have failed in creating built environments that serve our wellbeing. Rather such environments alienate us and cause anxiety and other pathologies of the soul. Modern buildings rarely touch us deeply because they are produced with an ethos of profit, self-absorbed egotism, stale utility, and mass production. History shows that there is an alternative. Few buildings today possess the quality that moves us, and yet traditional buildings seem to have it unfailingly. What is this quality that emanates from traditional buildings and that modern ones are devoid of? What values can we learn from past generations of Builder-Architects? And how can new buildings capture a spirit of place while responding to contemporary demand for sustainability?

Hoy en día no conseguimos crear entornos construidos que favorezcan nuestro bienestar. Al contrario, dichos entornos nos alienan, y nos causan ansiedad y otras patologías del alma. Los edificios modernos raramente nos llegan a lo más hondo porque se construyen siguiendo un *ethos* del beneficio, del egocentrismo, de la utilidad obsolescente y de la producción en serie. La historia demuestra que hay una alternativa. Muy pocos edificios de ahora poseen esa cualidad que nos conmueve y, sin embargo, las construcciones tradicionales parecen tenerla indefectiblemente. ¿Cuál es esa cualidad que emana de los edificios tradicionales y de la que carecen los edificios modernos? ¿Qué valores podemos aprender de las generaciones anteriores de constructores-arquitectos? ¿Y cómo pueden captar los edificios nuevos el espíritu del lugar y responder a las exigencias actuales de sostenibilidad?

Nos dias de hoje, falhámos na criação de ambientes construídos que servem o nosso bem estar. Pelo contrário, tais ambientes alienam-nos e causam ansiedade e outras patologias da alma. Os edifícios modernos raramente nos sensibilizam profundamente porque são produzidos com um caráter de lucro, egoísmo egocêntrico, utilidade obsoleta, e produção em massa. A história mostra-nos que existe uma alternativa. Hoje em dia, poucos edifícios possuem uma qualidade que nos comove, e no entanto os edifícios tradicionais parecem tê-la infalivelmente. Que qualidade é esta que emana dos edifícios tradicionais, e da qual os modernos são desprovidos? Que valores podemos aprender com as gerações passadas de Construtores-Arquitetos? E como podem os novos edifícios captar o espírito de um lugar, enquanto respondem à procura contemporânea de sustentabilidade?

< Drawings and details of Qasr Suleiman, Eastern Province, Saudi Arabia, under construction

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1: Watercolor view of the central courtyard of Qasr Sulaiman, Eastern Province, Saudi Arabia

2: Watercolor view from the garden of Qasr Sulaiman, Eastern Province, Saudi Arabia

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1: 3D detail of the repeated barrel vault in the living room of Dar Al Qasir

2: 3D detail of the domed entrance portico of Dar Al Qasir

Places have an effect and leave traces in sensitive hearts.
Ibn ʿArabī

Living Nature

It is common today for us to seek refuge in nature from the insanity of our modern cities. But why do we need to escape to the natural environment? This was not always so for urban societies of the past. According to traditional principles, the built environment is intrinsically part of the natural one. It is only modernist egotism that has suggested otherwise, at a great cost to our souls and lives. Our current return to nature, due to our prolonged alienation from it, makes the lessons of traditional architecture more pertinent.

3: 3D detail of the *Malqaf* windcatcher tower of Dar Al Qasir

4: 3D detail of cross-vaults on the ground floor of Dar Al Qasir

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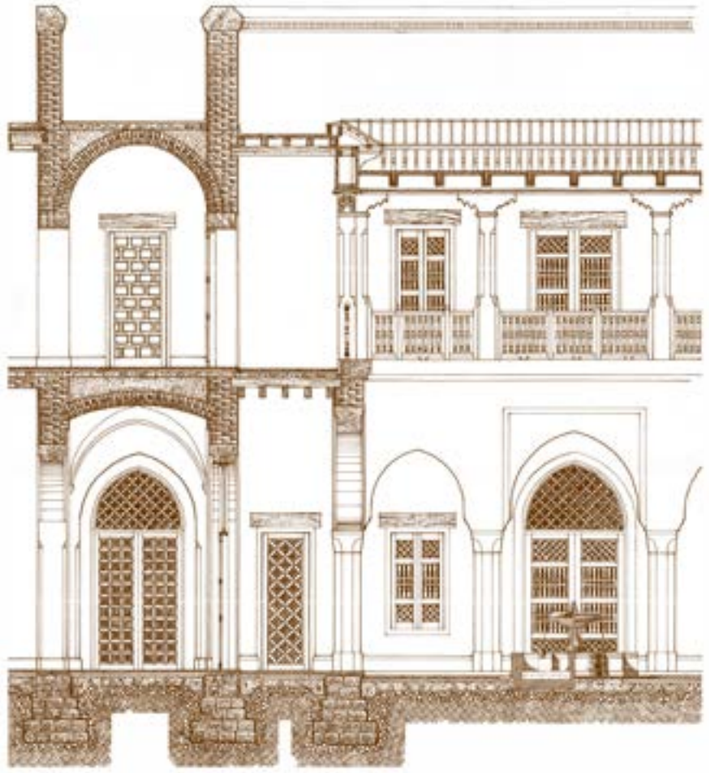
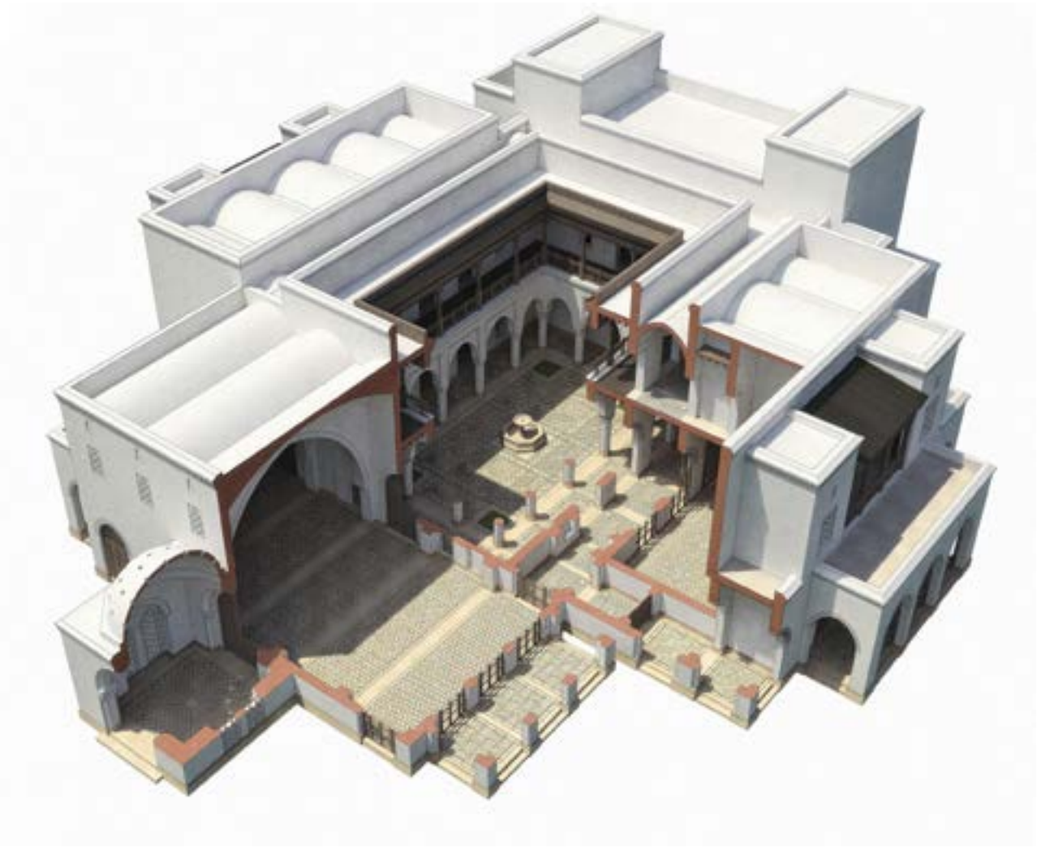


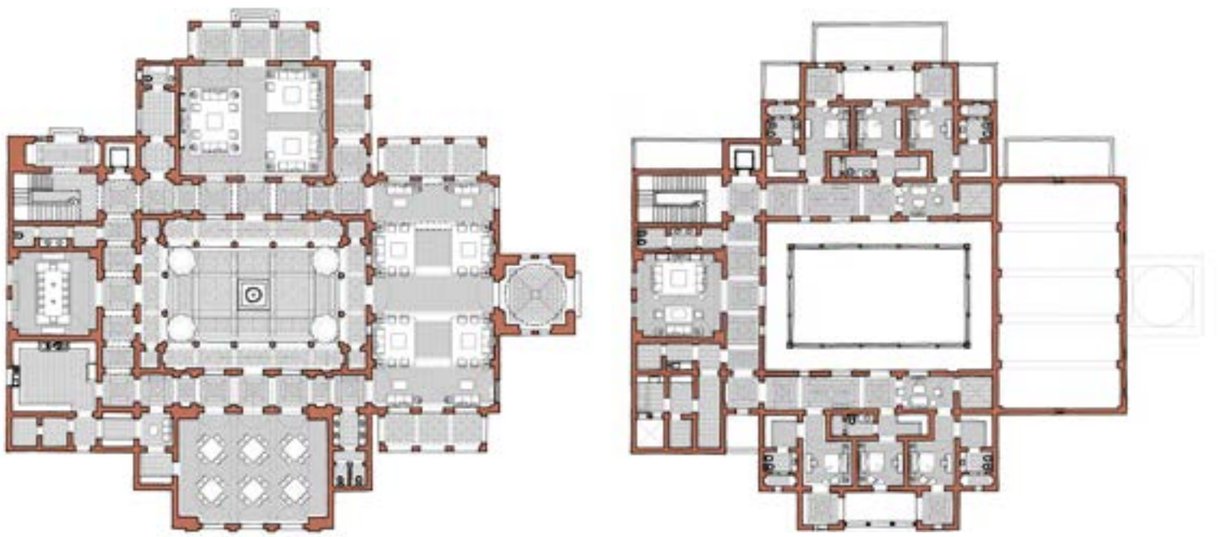
Partial detail section through the central courtyard of Qasr Sulaiman



Section-cut model of Qasr Sulaiman showing various interior spaces arranged around the central courtyard

The ancients had a deeper understanding of life than we do. They believed that every existing entity, including what we may mistakenly see as inert or dead, possessed a degree of life. Life is a quality that inheres in space; it is in every brick, every stone, every structure of any kind. Everything is alive.

Ground and first floor plans of Qasr Sulaiman

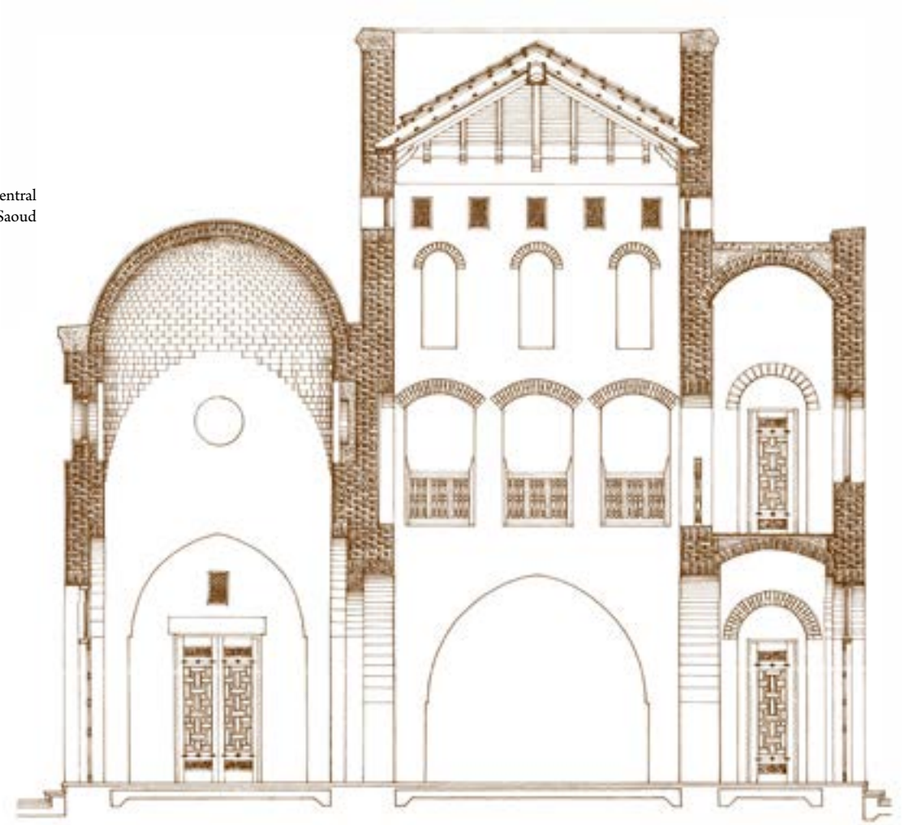


Where there is life, there is beauty: a primordial, objective beauty that lies deep within all things, as opposed to subjective beauty. Objective beauty is eternal and universal; subjective beauty is time-bound and relative to sociocultural and personal taste. Objective beauty – that of nature – heals and completes us because it flows from the fount of life and courses through all things. It is not determined by culture, nation, or individuality; it elicits the same deep movement of the soul and triggers the same train of meditation in us all. Though objective, it is nonetheless experienced subjectively.

Living Architecture

If nature is objectively and universally beautiful and alive, can buildings be so equally? Can buildings partake in that objective beauty that is eternal and transcends time, taste, and style? To do so, manmade objects must pulse with life, like nature.

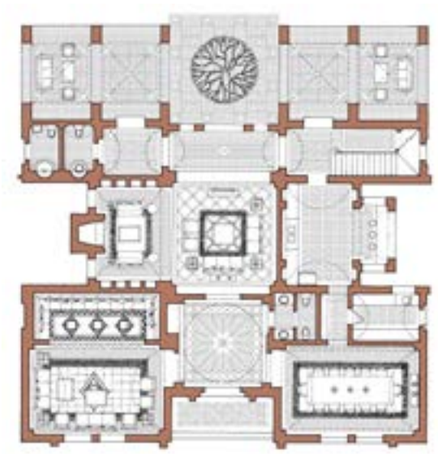
Most traditional towns have this timeless, even numinous quality – the quality of being alive. Though manmade they feel organic as though nature herself had produced them. They were molded into their present form over a history which despite upheavals and cultural diversity possessed a shared vision and values. It is true that their buildings are the product of ad hoc acts of construction over long periods. But despite this intermittent and incremental character, pre-modern towns emerged over the centuries with coherence. Together these buildings form an ecosystem of living structures that could not be other than what they are and where they are, much like any ecosystem of flora and fauna.

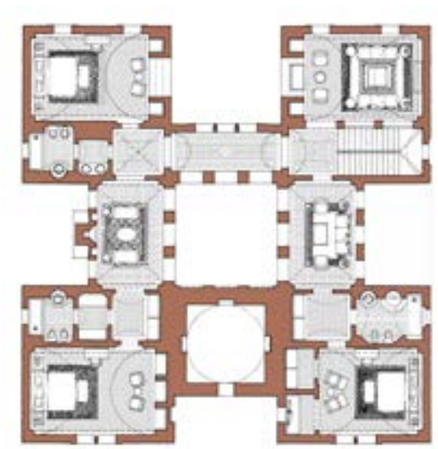


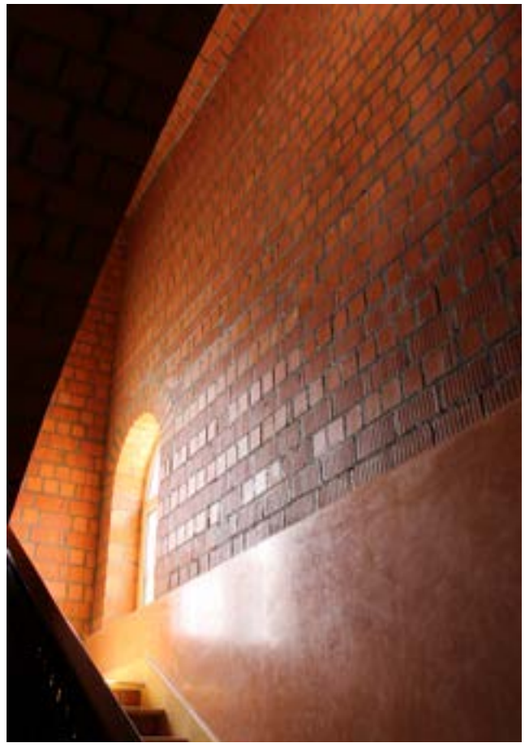
Detail section through the central atrium of Dar Abu Saoud

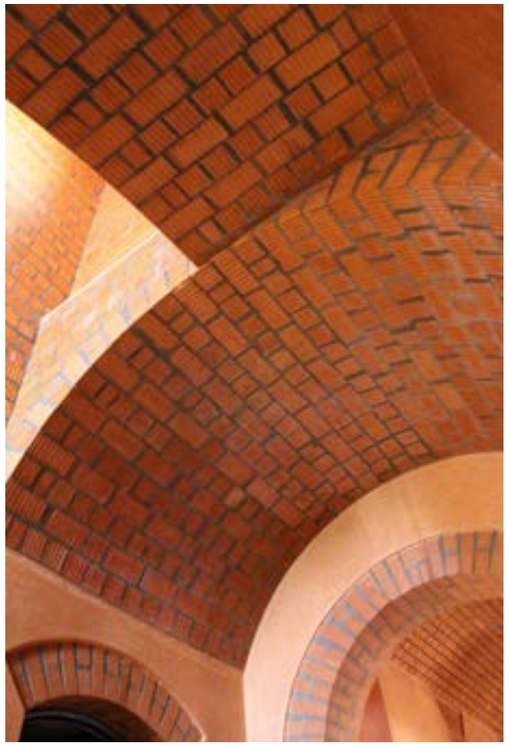
Notice the effect that these towns have on us: they elicit a deep feeling, an echo of our soul, a mirror of our deepest self. Ibn ʿArabī put it nicely: "Places have an effect and leave traces in sensitive hearts". In the atmospheric embrace of old buildings it is easy to lose track of time, as nature and artifice collude to produce an effect that is magical, mysterious, and sacred. Indeed the same living quality animates the beauty of nature and that of traditional townscapes: a "unity of feeling" expressed by an overall harmony.

Ground and first floor plans of Dar Abou Saoud

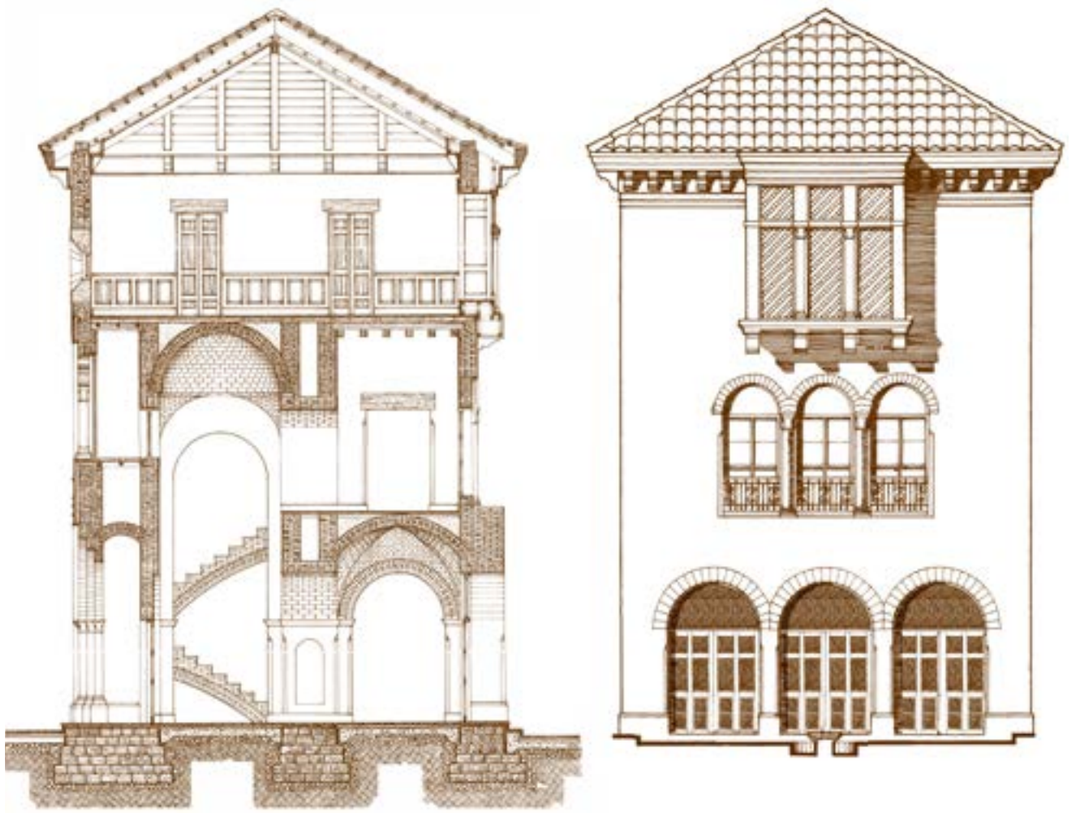








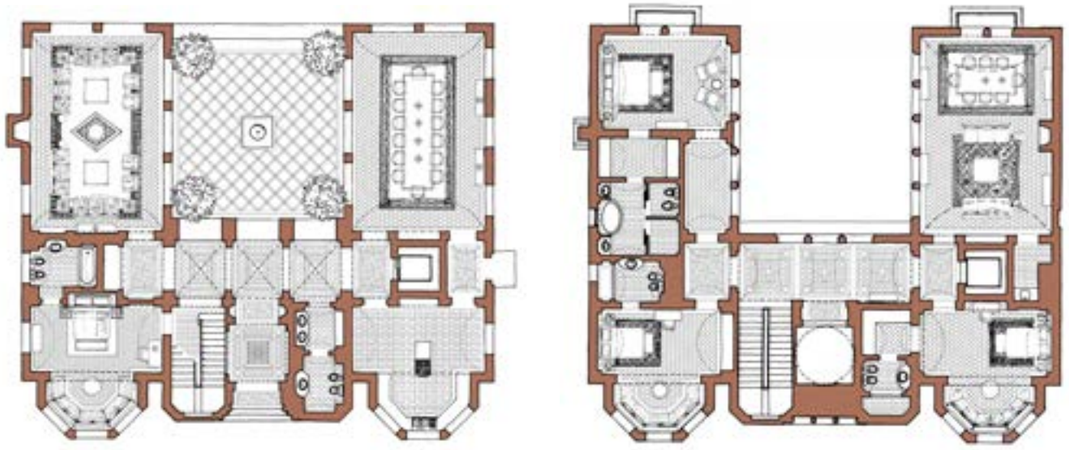
Interior details with glazed brickwork and tadelakt finishes



Partial detail cross section and partial elevation of the entrance portal of Dar Al Fahim

The builders of the past knew that if artifice is to intervene in nature it should do so by generating buildings that sympathize with nature. Since it is impossible to reproduce the same beauty, for man cannot compete with the Creator, we can produce only modest beauty in emulation of nature. This is the best we can hope for or desire to achieve, while humbly recognizing the Divine Model we emulate.

Ground and first floor plans of Dar Al Fahim



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1: View looking towards the wooden mashrabiya of Dar Al Fahim

2: Detail of the interior ribbed vaults in the ground floor gallery

3: View of the carved stone and brick entrance portal

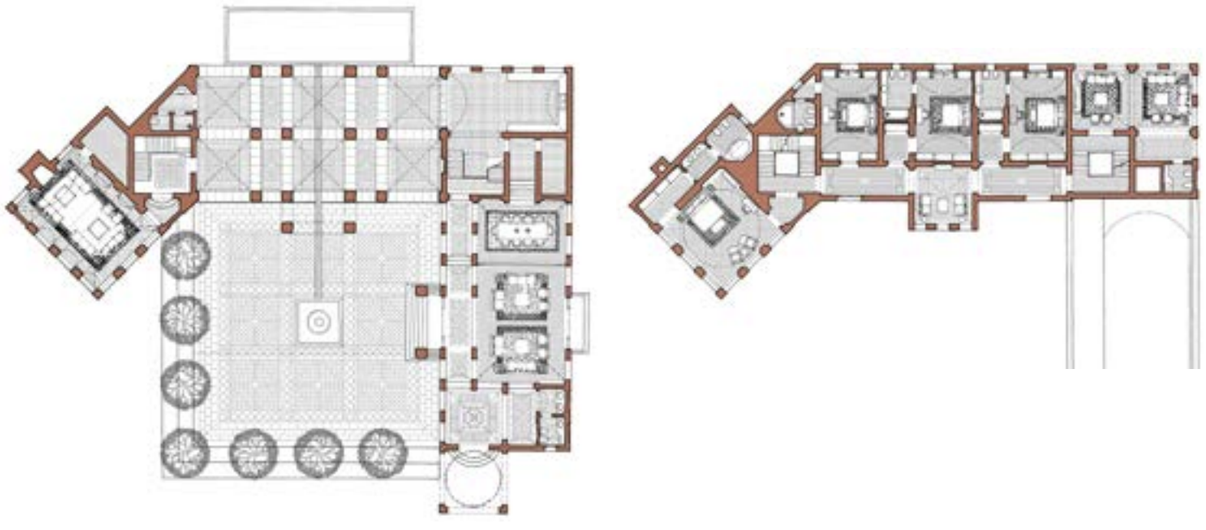
Construction of Dar Al Qasir,
Manama, Bahrain, 1995

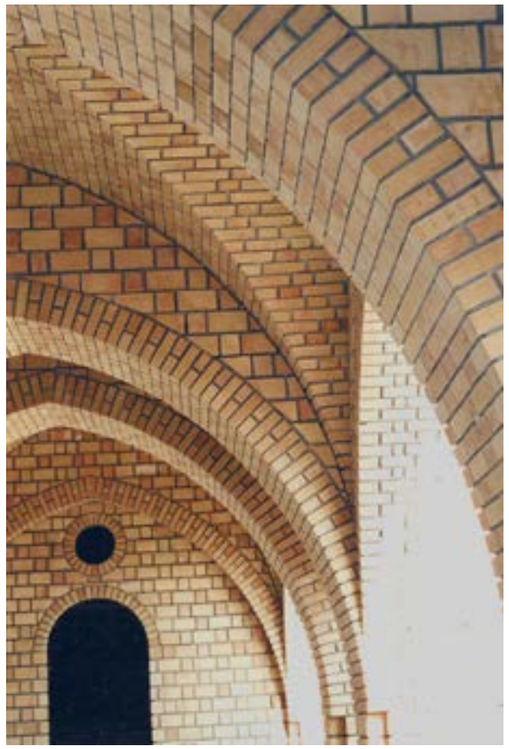
The Builder-Architect

Before the modern world gave us the "artist-architect", concerned with self-expression and innovation for its own sake, there was the "builder-architect", who expressed the needs of a community, the wisdom of a tradition, and the truth of techniques.

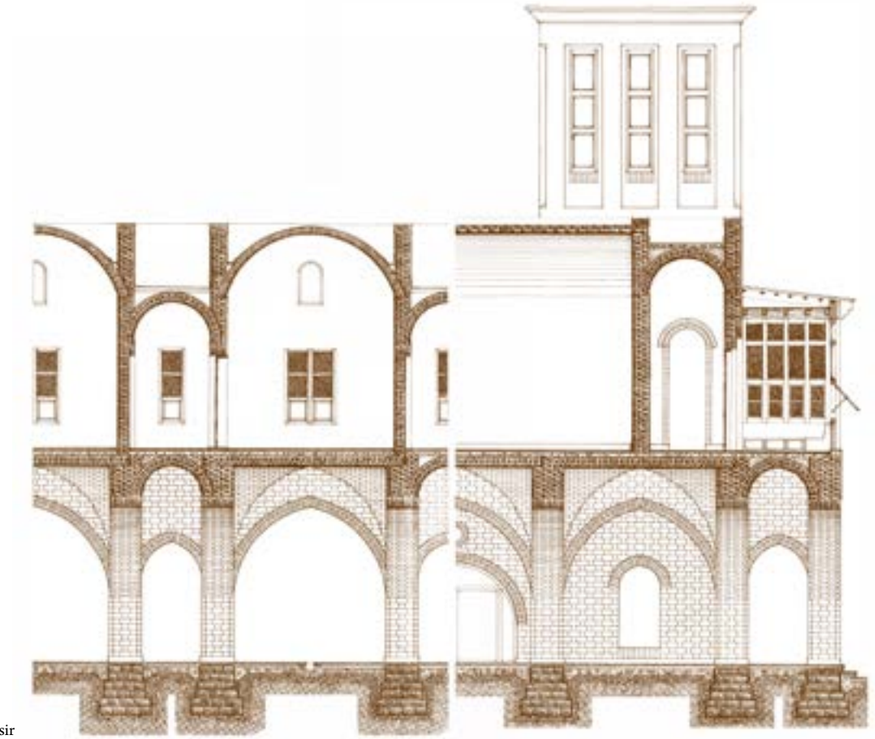
For the most part these builder-architects were endowed with something we have sadly lost: a faculty to appreciate the world as it is. They were more in tune with the nature of the universe and their own spiritual depths, and that is why they were able to build living structures reflecting this harmony. The unity and coherence of their worldview was reflected in a built environment that "spoke" to them. As Ruskin put it, these were "buildings raised by feeling", a deep religious feeling that originates in the basis of things, as opposed to "those corrected by rule", such as the sterile one-dimensional theories of modernism.

Ground and first floor plans
of Dar Al Qasir





Interior details showing brickwork during construction



Partial detail section of Dar Al Qasir

Contemporary critiques and reflections on the state of our built environment unfortunately neglect the need to inject life into our constructions and express only a need to embrace an architecture that is ostensibly "sustainable" and yet soulless in its essence. Over the past two decades, schools and interpretations calling for change in the trajectory of the building industry have proliferated. Some insist on the use of natural materials without regard for local culture or for achieving a sense of place. Others seek to innovate, implementing active mechanical and digital systems to respond to the local climate without concern for embodied energy, durability, or integration into the natural environment.

Before modernism, society was at heart sustainable, authentic, and alive. Tradition teaches us through a correct use of typological planning, massing, orientation, and spatial organization that our buildings can achieve adaptability and utility. Through construction and innovation with locally sourced materials our buildings reduce energy consumption, respond to the climate, blend into the natural surroundings, and withstand time. Through the hands of skilled builders, our buildings mirror and emanate the life that was transmitted to every brick and stone, every carved beam and door, by graceful tradition.

Innovation within continuity

But tradition is not a blind handing down of knowledge. Rather it is a dynamic process in which the past can guide, direct, and transform the present and the future, and also be transformed in the process. This dynamism is evident when we explore the relationship between tradition and innovation and is visible in buildings separated by centuries yet standing side by side within a single spatial rhythm. Such is the power of tradition: to harmonize and synchronize otherwise discordant tones.

View from the open-air vaulted lounge area of Dar Al Qasir

Innovation within continuity is the principle of change in traditional cultures. When change is called for, the adaptive processes inherent in construction do not impede it. When change is not called for, the culture's conservative habits allow existing building types and practices to persist and be reproduced because they have proven their ability to meet a need, and generate affection by connecting people to something intangibly deeper.

Biography | Biografía | Biografia

Mohamad Hamouié

Mohamad's private research and practice have made him one of the leaders of New Traditional Architecture in the Middle East. He is a member of the INTBAU College of Traditional Practitioners, a Professor of Practice and the Founding Chair of the INTBAU Levant Chapter. In 1993, Hamouié established his private practice. His first project, the Central Mosque in Shkodër, Albania, was nominated for the Aga Khan Award for Architecture in 2001. He was nominated for the Driehaus Architecture Prize in 2020. Through his comprehensive knowledge of history and awareness of local context, Mohamad has designed and built more than 300 projects. In collaboration with master craftsmen worldwide, his buildings are guided equally by contemporary theories and traditional values.

Jonathan Weatherill

Two New Traditional Neighborhoods for the Town of Rozzano, Milan

Dos nuevos barrios tradicionales para el municipio de Rozzano, Milán

Dois novos bairros tradicionais para a cidade de Rozzano, Milão

Abstract | Resumen | Resumo

A town of 42,000 inhabitants in the agricultural belt on the south side of Milan, Rozzano was developed in the 1960s and 1970s on the Soviet suburban model to house migrant workers from the south. The stock of modular cement high-rises is now deteriorating rapidly and will not be restored or replaced with similar buildings. The town council intends to replace this fabric with one that is more livable, following the principles of New Urbanism. Two projects are being developed for new mixed-use, walkable neighborhoods on municipal sites. The projects will become part of the town's Development Plan and the sites will be offered to developers who are to build the new quarters as designed. The results will serve as examples of how to renew Rozzano – using traditional local building models of urban, rural, and agricultural architecture. The initiative is a chance to create a ground-breaking example of suburban sprawl repair.

Rozzano es un municipio de 42.000 habitantes en el cinturón agrícola del sur de Milán que se desarrolló en los años 60 y 70 según el modelo suburbano soviético para alojar a los obreros que habían migrado desde el sur de Italia. Hoy en día, las torres modulares de hormigón se están deteriorando rápidamente y no van a ser rehabilitadas ni reemplazadas con edificios similares. El ayuntamiento quiere sustituir este tejido por otro más habitable, de acuerdo con los principios del Nuevo Urbanismo. Así, se están desarrollando dos proyectos de barrios nuevos de uso mixto y peatonales sobre terreno municipal. Los proyectos serán parte del Plan de ordenación del municipio y los solares se ofrecerán a promotores que deberán construir los nuevos barrios tal como se han proyectado. El resultado será un ejemplo de cómo renovar Rozzano utilizando modelos constructivos tradicionales y locales de arquitectura urbana, rural y agrícola. Esta iniciativa es una oportunidad de crear un ejemplo innovador de cómo rehabilitar las extensiones urbanas.

Uma cidade de 42.000 habitantes na faixa agrícola da zona sul de Milão, Rozzano foi desenvolvida nos anos 60 e 70, com base no modelo suburbano soviético, para albergar trabalhadores migrantes do sul. O estoque de edifícios altos de cimento com estrutura modular está agora a degradar-se rapidamente e não será restaurado ou substituído por edifícios semelhantes. A Câmara Municipal pretende substituir esta estrutura por outra mais habitável, seguindo os princípios do Novo Urbanismo. Estão a ser desenvolvidos dois projetos para novos bairros pedonais de uso misto situados em zonas municipais. Os projetos tornar-se-ão parte do Plano de Desenvolvimento da cidade, e os locais serão oferecidos a promotores, que deverão construir os novos bairros tal como foram concebidos. Os resultados servirão de exemplo de como renovar Rozzano - utilizando modelos locais de construção tradicional, de arquitetura urbana, rural, e agrícola. A iniciativa é uma oportunidade de criação de um exemplo pioneiro de reparação da expansão suburbana.

A new neighbourhood for Rozzano (Pier Carlo Bontempi, Architettura civile & Disegno urbano)

Introduction

In northern Italy a process of repairing a piece of modern suburbia has just begun. The result of a new approach, it is an opportunity to present a viable model for such redevelopment that could be engaging and appealing. It is also a chance to show how a setting of little character can be transformed into a place to live in, not just to inhabit.

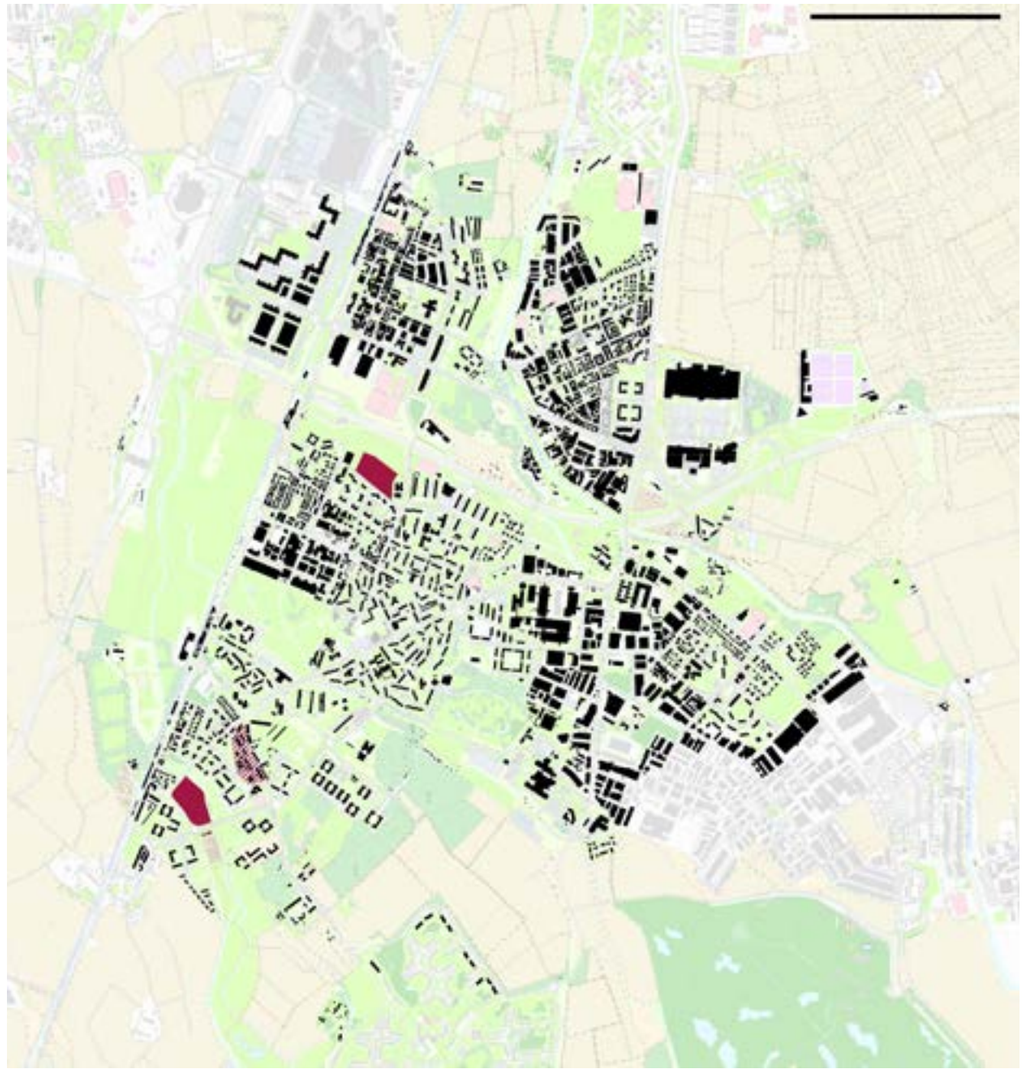
This opportunity was presented by the municipality of Rozzano, a modern town of over forty thousand inhabitants in the agricultural belt on the south side of Milan. The town administrators commissioned the design of two new neighborhoods that are to serve as models for future development. The one specification was that the neighborhoods respect the principles of New Urbanism.

The main street of Rozzano today

Rozzano is an example of the suburban blight typical of much of northern Italy, Europe, and indeed the world. Historically a rural hamlet surrounded by large rice farms, the town grew rapidly in the 1960s and 1970s to meet sudden demand for cheap social housing for migrant workers from southern Italy. Whilst rural populations were diminishing due to the decline of agriculture and the rise of mechanization, Rozzano grew more than tenfold, from 2,700 to almost 33,000 inhabitants. The model for this new development was used worldwide at the time: modular high-rise blocks of prefabricated concrete panels, with ample empty land in between. In a few years, 27,000 people were accommodated in social housing blocks whose construction quality and appeal were poor. Over fifty years later, these buildings have clearly reached the end of their lifespan.

The municipality's vision is to gradually replace these obsolete blocks with urban fabric of a human scale and character that is welcoming and provides the sense of place and identity lacking in the Rozzano of today. Two seven-acre plots of public land have been supplied to show examples of how this may be done. Part of each site overlooks adjacent parkland.

The extent of Rozzano today. Project sites highlighted in red. Historic center highlighted in red hatching



Schematic plan of the Southernmost new neighbourhood

Urban form

At an urban level, the unwelcoming and anonymous nature of present-day Rozzano posed a daunting challenge. The natural solution would be to draw examples from nearby historic rural villages, but how is one to integrate a close-knit, walkable, traditional neighborhood into an existing fabric of low-density, high-rise blocks? The risk would be to create secluded islands that not only fail to engage with the context but that could also form barriers to the one valuable commodity possessed by Rozzano: green space.

The response to this problem was to create neighborhoods around piazzas rather than streets, with sequences of clearly defined public spaces that provide permeability, leading from one to another and to the parkland beyond. Greenery would be present in any vista and the spaces and buildings would be positioned in such a way as to invite exploration. The urban form of iconic "ideal" Renaissance towns such as Pienza and Sabbioneta was examined. The centers of both are similar in size to the new neighborhoods for Rozzano, but they are densely built, street-based towns with one or two central public spaces. The centers of towns such as Padua and Mantua offered more suitable inspiration, with their sequences of market squares, parade grounds, and civic and religious venues, providing a variety of spaces, calibrated from intimate to magnificent. The inner gardens and courtyards of the individual blocks of the new neighborhoods are a private counterpoint to the public urban spaces, in communication with and overlooking the adjacent parkland.

A secondary, more intimate piazza in one of the new neighborhoods (Pier Carlo Bontempi, Architettura civile & Disegno urbano)

A New Vernacular for Rozzano

The lack of historic architecture representative of Rozzano was another challenge. Of the scarce existing historic buildings, few possess characteristics interesting enough to be taken as precedents. We had to look further afield to compile a library of precedents so as to identify a new, more humane way forward for Rozzano and give the new neighborhoods a sense of place and identity.

Vernacular architecture is inherently sustainable and representative of its setting. It is made with local materials and methods and responds to the characteristics and climate of the place. It also reflects the uses and culture of the society that inhabits it. In some cases it is not only utilitarian but borrows elements from more elevated precedents. As well as being decorative, these elements can also express the aspirations of builders and inhabitants.

A new vernacular would have to be shaped for Rozzano, able to express a way of life to aspire to. The architecture of small rural Lombard towns was examined. Rather than the simplest farm workers' dwellings, houses incorporating a modest level of decorative elements as well as aspects from non-vernacular sources were documented. Buildings of more elevated types were also studied, such as rural villas and modest *palazzi*.

But the needs of today are not the same as a century ago. The vernacular dwellings of rural Lombardy tend to be almost devoid of external features such as terraces, balconies, or loggias, as the life of traditional rural society was communal and took place in the public arenas of courtyards and piazzas. In modern Italian society, communal gathering spaces are still important but there is a greater need for privately inhabitable outdoor space.

Houses in the historic center of the rural town of Pieve del Cairo, Pavia

Cascina Guardia di Sopra, Corsico, Milan

As the most characteristic architecture of Rozzano is that of the surviving buildings of some large local historic farms, the architecture of a variety of Lombard farms was also examined. This type of architecture is of interest for two reasons in particular. The first is that Lombard farm buildings typically make references to non-vernacular precedents. In the rural economy of Lombardy the cowshed, pigsty, and granary are specific building types that are celebrated as representing major sources of income. By understanding how these buildings incorporate decorative and iconic elements and characteristics of more monumental architecture, we may better see how to apply the same principles to the simple rural Lombard dwelling.

Secondly, for practical reasons traditional Lombard agricultural buildings incorporate abundant external space. Covered porticos and loggias allow fresh air to reach produce and livestock while offering shelter from the elements. Solariums serve to dry and preserve produce in the sun. In the Lombard plains, covered open-air spaces are particularly suitable for residential purposes, as they may be enclosed with netting to keep out insects and in particular the voracious mosquitoes from the surrounding rice fields.

La Spinosa, Mantua, the granary of the Gonzagas' lucrative rice farm, built by Giulio Romano in the 1530s. One of the first uses of a temple front on a secular building

The identifying characteristics established for the architecture of Rozzano's new neighborhoods were duly implemented. Each project site has an urban side and a rural side, facing parkland. The character of the new neighborhoods was calibrated accordingly, with a more urban aspect on the town side and a more rural, almost agricultural aspect on the other.

Cascina Grande, now the municipal library of Rozzano

Cascina Casalta, a farm in the Royal Park of Monza, built in the eighteenth century by Luigi Canonica

Shops in the centre of Rozzano today

Other issues

There were also more prosaic obstacles to overcome. At first the town administrators were skeptical regarding the introduction of mixed-use and commercial units. They were concerned that existing neighborhood retail outlets in Rozzano had failed to prosper and that people preferred to drive to malls rather than shop close to home. On seeing these shops, it is easy to understand why: most are in isolated, poorly built single-story buildings, in an urban context devoid of form or quality. Not surprisingly, many are derelict. Eventually the administrators were persuaded of the symbiotic qualities of local shops and services together with urban space of character: if a place is engaging and welcoming, commercial activity can thrive and provide a neighborhood service, helping to nurture a complete community. Conversely, a beautiful space without any daytime activity will gradually lose its charm and fail to function as a center of a community, just as shops will fail if they are located in a hostile environment. Although luxury subdivisions and gated communities that are purely residential may be able to maintain their appeal with intensive maintenance fueled by high service costs, this solution is not feasible in urban environments intended to be economically sustainable and not reserved for the socio-economically privileged. Societal activity and well-defined urban space are essential for one another to allow both to thrive, especially in Italy.

View of the northernmost neighborhood from the adjacent parkland (Pier Carlo Bontempi, Architettura civile & Disegno urbano)

Plan of the northernmost new neighborhood (Pier Carlo Bontempi, Architettura civile & Disegno urbano)

Another obstacle to contend with was that of parking minimums, and this is likely to remain a problem as long as society remains so car dependent. The new neighborhoods are mainly closed to vehicle traffic, with public parking on perimeter roads. Private parking is located underground, with basement windows providing ventilation. The neighborhood ground level rises gently, and in the northernmost quarter a piazza overlooks the adjacent parkland from a raised vantage point reached by a staircase that connects to a footpath traversing the park.

Conclusions and next steps

The design process for these neighborhoods was challenging but offered insight into how to develop a method to address the problem of urban and architectural design in places with low-grade contexts and little material to build on. Applied with care, thorough documentation of the various levels and origins of a region's vernacular architecture together with an understanding of history and present-day uses can permit the creation of places that are representative of a society and address its practical and aspirational needs.

A new neighborhood for Rozzano, view D-D (Pier Carlo Bontempi, Architettura civile & Disegno urbano)

The next step for the two new neighborhoods is to incorporate the projects into Rozzano's development plan and then to put the sites to tender for builders to acquire and develop as designed. The new neighborhoods will mark the start of a gradual remodeling of Rozzano as a whole. An overall masterplan will also be drafted to define the centers of the regenerated town and the extent, nature, and form it will have. In time, Rozzano will turn into a new town with its own identity, building on the area's past but able to satisfy the needs of the citizens of today and of the future. The aim is that Rozzano may finally become a welcoming community able to offer its inhabitants quality of life, close to Milan yet in harmonious communication with the surrounding countryside.

Biography | Biografía | Biografia

Jonathan Weatherill

Jonathan is an Associate Professor in the Rome Program at the University of Notre Dame School of Architecture. He runs his own practice in Italy and has also collaborated with 2014 Driehaus laureate Pier Carlo Bontempi since they met in Milan thirty years ago. His professional experience has spanned the genres of Modernism and Classicism in a range of fields from industrial design to restoration and urban planning. He is inspired by the timelessness of the rural vernacular and the elegant equilibrium of architectural language of the past. His work is the result of an eclectic education informed by his varied experience and a comprehension of local reality through on-site and archival investigation.

Rudy R. Christian

Resurrecting the Detroit Central Farmers Market

Resucitar el Central Farmers Market de Detroit

Ressuscitando o Central Farmers Market de Detroit

Abstract | Resumen | Resumo

This article discusses the 162-years history of the only known nineteenth-century timber-frame farmers' market in existence today. Designed by an architect, this immense building required great skill from the tradespeople who built it from old-growth Michigan white pine timbers. No machinery was used in planing the surfaces or cutting the mortise-and-tenon joinery that holds the structure together. It is without question one of the most highly finished and decorated timber frames known to exist today. Its reconstruction in Greenfield Village at the Henry Ford Museum will guarantee its continuing existence for generations to come.

Este artículo analiza los 162 años de historia del único mercado conocido del siglo XIX con estructura de madera que sigue existiendo en la actualidad. Diseñado por un arquitecto, este inmenso edificio exigió una gran habilidad de los artesanos que lo construyeron con madera de pino blanco de Michigan. No se utilizó maquinaria para trabajar las superficies ni para realizar las uniones de caja y espiga que conforman la estructura. Es, sin duda, una de las estructuras de madera más finamente decoradas y acabadas conocida en la actualidad. La reconstrucción de la estructura en el Museo Henry Ford de Greenfield Village garantizará su permanencia durante generaciones.

Este artigo analisa os 162 anos de história do único mercado de agricultores construído no século XIX com estrutura de madeira que é conhecido na atualidade. Concebido por um arquiteto, este imenso edifício exigiu grande perícia aos comerciantes que o construíram a partir da madeira de pinho branco proveniente de florestas virgens do Michigan. Nenhuma maquinaria foi utilizada no aplainamento das superfícies ou no corte das montagens de caixa e espiga que mantém a estrutura unida. É sem dúvida a estrutura de madeira mais bem acabada e decorada que existe hoje em dia. A sua reconstrução em Greenfield Village, no Museu Henry Ford, garantirá a continuação da sua existência ao longo das gerações vindouras.

Figure 1. The Detroit Central Farmers Market with the timber-framed vegetable shed in the foreground and the masonry meat market in the background, c. 1880 (From the collections of The Henry Ford)

The City Market (1860 - 1892)

The Detroit Central Farmers Market was built by the City Council as a matter of civic responsibility. The city had grown a lot since the opening of the Erie Canal in 1825 and the railroads that soon followed. What had been a small trading center and fort grew into a thriving hub of agriculture and forestry. In 1860 Detroit Mayor Christian Buhl stated that "Our public markets should be far improved so as to offer protection from the inclement weather to those compelled to do business upon them." Architect John Schaffer, originally from Austria, was hired to design the market building. Joel Gray was hired as building contractor and by September of that year the market was nearly complete. It was praised by the *Detroit Free Press* as "...an ornament as well as a great convenience to that important branch of city commerce" (Fig. 1).

Figure 2. The timber frame market building being deconstructed in 1892 under police guard (From the collections of The Henry Ford)

Detroit continued its rapid growth and by 1890 it was a major industrial center. At the heart of the city that had grown up around it, in what is now Cadillac Square, the market was becoming a problem. Farmers' wagons and horse carts were causing congestion and agriculture was no longer seen as vital to civic prosperity. The Eastern and Western Markets were beginning to take over from the Central Market and in 1892 the latter was closed – but its closure met with resistance and its occupants had to be forcibly removed by police (Fig. 2).

Belle Isle (1894 – 2003)

Rather than demolishing it, the city transferred ownership of the market building to the Parks and Boulevards Department, so it was carefully dismantled and reconstructed in 1894 on Belle Isle, Detroit's main park. It was used as a stable and park-vehicle shed, and then when horses were no longer required for city services it was leased to the Belle Isle Riding Academy. Significant modifications were made, including the addition of brick walls to the perimeter. A full-length monitor roof was installed to let sunlight into the now enclosed building. Horse stalls were added inside and offices were created on both the first floor and an added second floor (Fig. 3).

Figure 3. The Belle Isle Riding Academy still in use in 1978 (From the collections of The Henry Ford)

Figure 4. The abandoned Riding Academy building showing evidence of the car crash and ensuing fire as well as general dilapidation in 2003 (Christian & Son, Inc.)

Figure 5. The interior of the Riding Academy building revealed a very well-built and highly decorated timber frame plus the added monitor and support framing (Christian & Son, Inc.)

Recreational tastes changed in the late twentieth century and horse-riding slowly fell out of fashion, and by the 1990s the building was abandoned and falling into disrepair. A car had run into it, causing a fire which was thankfully extinguished. The place had become derelict and efforts to restore it never gained traction. But before its demolition was scheduled, it was offered to the Henry Ford Collection, and in early 2003, Jim McCabe, then curator for Greenfield Village, was asked to take a look at it. From outside, the building clearly did not appear worth including in Henry Ford's Collection of American Innovation (Fig. 4).

Documentation, deconstruction and storage (2003 – 2020)

In April 2003 Jim McCabe invited me – Rudy R. Christian, President of Christian & Son, Inc. – to visit the building to help him decide if it might be worthy of the Collection, and if it could be dismantled and salvaged. What was inside was magnificent. The timber-frame structure was an outstanding example of its type in the mid-nineteenth century and the decoration was amazing. The braces along the perimeter were adorned with hand-carved filigree "snowflakes". The bolsters under the two-piece rafters were supported by hand-carved brackets, and every timber in the structure was carved with chamfers and stop chamfers (Fig. 5).

The challenge in documenting and deconstructing the market building was to determine what was part of the original structure and what was not. It had undergone slight alterations in 1894 and major ones later on, and when the weight of the monitor roof system was added, plank trusses had been installed between the original purlin posts. Those were easily discernible, but the damage done to the original down braces would have to be repaired. Luckily the original rafters were left in place below the monitor. And when the brick walls were added, the masonry was laid around the decorative rafter ends, so most of these also survived. But when the second-floor offices were added, the upper rafters, bolsters, and bolster brackets were removed and discarded, as were many decorative details in the office area. All these would have to be remade. The decision was taken to deconstruct and document the historic components and to put them in trailers for storage on Greenfield Village land.

Reconstruction (2020 – 2022)

Seventeen years of storage in semi-trailers had not damaged the timbers, which was an advantage when restoration work began at last in 2020, although first the lead paint on every timber had to be abated. A warehouse space in Romulus, Michigan, was rented and partially converted into an abatement facility. And before excavation began for the new foundation, it was critical that all the dimensions shown on the drawings be accurate. I was concerned that there might be mistakes in the drawings generated in 2009 because the bay spacings were unequal. This seemed illogical, as with three different spacings, many of the pieces would have to be cut to custom dimensions, compromising the interchangeability common to square-rule frames made in the mid-nineteenth century. The building originally had eleven bays longitudinally but this was reduced to seven in order to fit into the Greenfield village site. The drawings (Fig. 6) showed the second, third, fifth, and sixth bays as having their columns on 20'-11" centers, but the first and seventh bays appeared as 20'-8" and the fourth bay as 20'-10". After measuring every piece in the inventory, we determined that all the bays had been 20'-11", and the drawings were updated.

The timbers themselves had survived intact but little had changed in the understanding of the strength of historic building materials between 2003 and 2019, when the Museum decided to move forward with reconstruction. The engineer present when the 2009 construction drawings – which allowed for reuse of the historic timbers and columns – were created had retired by 2019 and his replacement had little experience of historic structures. To further complicate the issue, the timber roof system was originally constructed on highly ornate cast-iron columns. These had been cleaned, prime-coated and put into storage (Fig. 7), but the new engineer of record considered not enough was known about the strength of the cast iron and preferred not to use half of them, opting instead for steel columns of known design value. She was also concerned about the strength of the historic timbers and suggested to the Museum's construction committee that they consider not using them, given their age, and that all the major historic wooden members be replaced with select structural Douglas fir. There was also to be a "moment frame" to resist lateral loading and replace many of the historic wooden members with steel I-beams. Such engineering work clearly involved replicating the structure rather than restoring and reusing it.

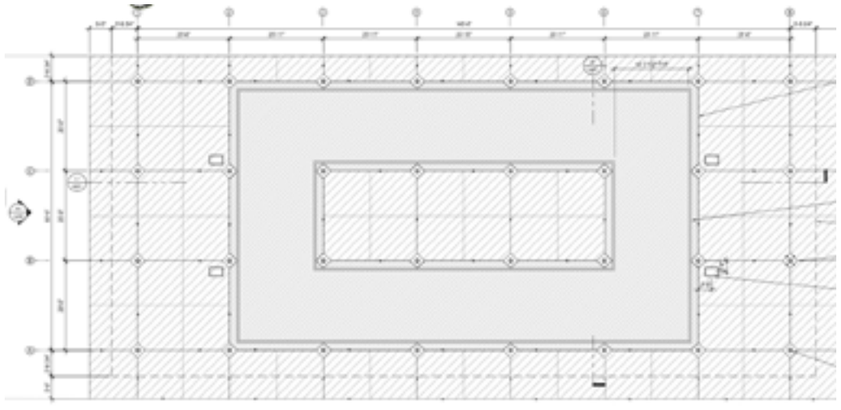


Figure 6. 2009 plan view showing unequal bay spacing which would have to be corrected (Quinn Evans Architects)

Figure 7. The original cast-iron columns were cleaned, prime-coated and put into storage (Christian & Son, Inc.)

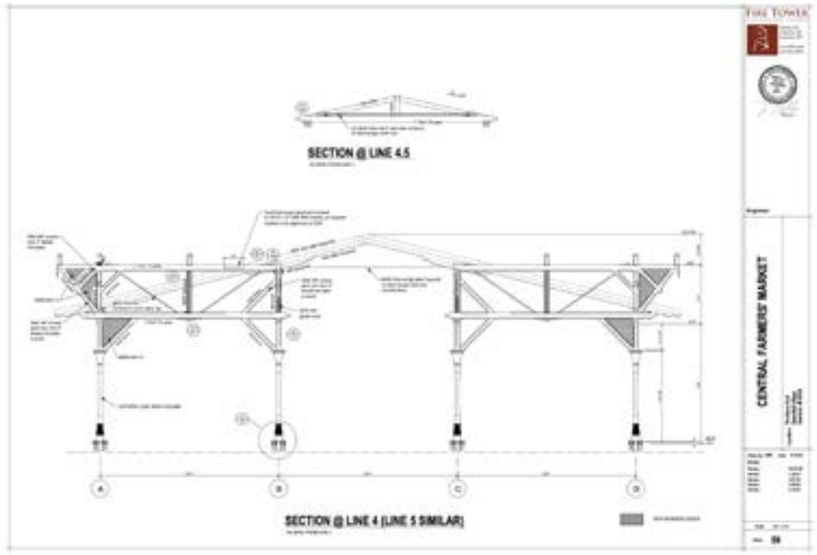


Figure 8. Sheet from the Fire Tower Engineered Timber drawing set showing the use of tension rods, steel brackets and compression posts to stiffen and reinforce the historic timbers (Fire Tower Engineered Timber)

Several members of the construction committee were becoming dismayed at the suggested changes, as was I. In discussions with Jamie Corcoran, project supervisor for the general contractor (O'Neal Construction), I said that if this design went ahead, Christian & Son was not the firm for the job, which would require builders familiar with steel. He asked if I had any suggestions for getting a restoration back on track, and so we had a Zoom call with him, Bart Fraley, construction superintendent for the Museum, myself, and Ben Brungraber, owner of Fire Tower Engineered Timber, who I had worked with for over 35 years. Ben has experience with historic timber structures and was hired as the new engineer of record. He judged that modern white pine was not a suitable replacement for the old-growth white pine, and that select structural Douglas fir was unnecessary and hard to source.

Figure 9. View of the finished frame showing the added compression post/tension rod system installed (Christian & Son, Inc.)

Figures 10 and 11. The decorative ends of timbers removed in the twentieth-century alterations would require replacement, using sections salvaged from other parts of the frame (Christian & Son, Inc.)

Douglas fir also does not hold paint well, and the entire frame was to be painted to match the historic colors. Ben specified glue-laminated southern yellow pine for any timbers needing to be replaced or remade. He too was concerned about the historic timbers handling the loads required by modern building codes and so a system of tension rods and compression posts was added (Figs. 8 and 9). He also devised a way of moving the moment frame into the foundation, eliminating the need for steel in the roof. Thus all the restorable historic timbers could be used.

Following the decision to reuse the historic timbers, a plan was created to minimize material handling. Being pine, the timbers were prone to impact damage, and considering their importance, the less they were handled the safer they would be from mishaps. As the timbers were documented and reassessed in the Romulus warehouse space they were sorted according to whether they needed no repair, minor repair, or significant repair. The latter were shipped to Christian & Son's shop in Burbank, Ohio, and the rest remained at Romulus, where a satellite workshop was created for minor repairs. Several of the historic timbers had considerable cosmetic damage, and decorative ends had been cut off in the modifications to create offices (Fig. 10). These ends were replaced with sections of unused timbers salvaged from the market frame and joined to the timber being repaired with blade-and-fork joints, sawn with a portable band saw and chamfered to match the original pattern (Fig. 11).

A common structural repair in historic timber-framed buildings is to fix "relish blowout". This is primarily the result of racking forces causing movement which puts the braces under strain, although it can also occur as the frame is raised or dismantled. The example shown was probably caused by improper handling by the deconstruction crew because the missing wood has surfaces with no

Figures 12, 13 and 14. Brace tenons with "relish blowout" and dovetail infills (Christian & Son, Inc.)

Figures 15, 16 and 17. Brace tenons damaged during installation of the added monitor trusses required blade-and-fork repairs with salvaged ends from damaged braces (Christian & Son, Inc.)

patina, whereas if it had happened earlier there would likely be darkening of the broken surface. To make a strong repair without the use of fasteners, a dovetail section was removed from the brace tenon. The matching long-grain repair piece, cut from a salvaged timber, was secured with urethane glue and fixed in place in the brace mortice (Figs. 12, 13, and 14). In some cases the tenon was more severely damaged and had to be replaced. And when the plank trusses were installed in the early 1900s to support the monitor roof, the noses of the braces attached to the lower purlin were cut off so that the built-up struts could abut against them. But as the building was being shortened by four bays, we had surplus braces to work with, and so we removed the damaged ends and created blade-and-fork joints to make one good brace from two damaged ones (Figs. 15, 16 and 17). These joints were secured with urethane glue and all-thread trim-head structural screws.

Quite a few of the scarf joints (end-to-end joints to form longer timbers) were damaged and required full or partial replacement. This meant extending the repair back into solid sections of the timber and creating a matching section of scarf joint with an "undersquinted" abutment to lock the repair in place and withstand axial loading (Figs 18, 19, and 20). These repairs were secured with urethane glue and GRK structural screws, whose head holes were later plugged. A challenge arose when the engineering team determined that the hips and valleys all required replacement glulam timbers with double-depth section. This was accomplished by extending them up into the common purlin over-structure concealed by the beadboard ceiling. The valleys terminated in the roof structure but the hip timbers extended out in nearly 4-foot overhangs, which required carving of decorative ends to match the originals. Figure 21 shows glulam hip timber ends carved to match the original hip in the foreground. The hip affected by the fire caused by the car accident can also be seen in the foreground.

18

19

20

Figures 18 and 19. Damaged scarf joints required repairs that extended back into the solid section of timber (Christian & Son, Inc.)

Figure 20. Infill repair installed with an undersquinted abutment (Christian & Son, Inc.)

Figure 21. The deeper glulam hip timbers needed matching decorative ends duplicating the original pattern (Christian & Son, Inc.)

After repairs and replication work, the timbers were shipped to the building site in Greenfield Village in Dearborn, Michigan. The fact that the timber roof system sat on 15-foot tall steel and cast-iron columns meant that all the installation work had to be done with manlifts (Fig. 22). Extendable forklifts were used to bring the timbers into position and the roof system was assembled piece by

Figure 22. As the historic roof frame sat on top of 15-foot cast-iron and steel columns, installation had to be done with manlifts, extendable forklifts and a crane (Christian & Son, Inc.)

Figure 23. Drone view of the building and surrounding area as slate roofing began (From the collections of The Henry Ford)

Figure 24. Completed market building with added rows of salvaged cast-iron columns to give visitors a sense of its original size (From the collections of The Henry Ford)

Interior view of the finished market during the grand opening, giving a sense of what it might have looked like in the nineteenth century in all its glory (Christian & Son Inc.)

piece. The braces were pegged in place with traditional treenails, but the engineering drawings specified Rothoblaas all-thread structural screws imported from Italy for securing the rest of the joinery. The screws were fitted so as to be unseen from the ground. Some 80% of the original timbers were able to be reinstalled in the structure. Once the roof sheathing was installed, slate shingles matching the originals were laid over the roof (Fig. 23). The entire frame was painted to match the original color, concealing the replacement timbers. And after nearly 20 years of storage, the Detroit Central Market now stands in Greenfield Village where millions of visitors will be able to view the incredible work of craftspeople working entirely with hand tools over 160 years ago and get an insight into how buildings were built when they were made to last for generations (Fig. 24).

Biography | Biografía | Biografia

Rudy R. Christian

Rudy R. Christian was introduced to timber-frame carpentry in 1982. Since then he has built up a company that is world renowned in traditional timber framing, working in the United States, Europe, and Southeast Asia. Rudy's experience with the Henry Ford Museum includes being part of the team that documented and deconstructed Thomas Edison's laboratory #11 from Greenfield Village during major renovation. His team later rebuilt it in its original location in West Orange, New Jersey. His work with the World Monuments Fund includes creating and running a workshop in Mount Lebanon Shaker Village for restoring the last known Shaker granary, and assisting in the restoration of the Golden Palace Monastery in Mandalay, Myanmar.

Rosario Argüello, Patricia Enríquez de los Ríos

Maguey leaf kitchens in the Mezquital Valley, Hidalgo

La cocina de pencas de maguey del Valle del Mezquital, Hidalgo

A cozinha de pencas de agave do Vale de Mezquital, Hidalgo

Abstract | Resumen | Resumo

The Otomi communities in the Mezquital Valley in the Mexican state of Hidalgo build their homes using the region's natural materials, such as the maguey plant, which has a vital role in the gastronomy and lifestyle of these indigenous communities. This paper offers a description of several construction systems characteristic of the region, highlighting the traditional Otomi kitchen. As well as questions of architecture and building, it analyzes the geographical sphere and social dynamics of Otomi communities. It also describes the political and environmental issues linked to these traditional building systems today along with the efforts being made to document them in view of their identity-related, cultural and architectural significance.

Las comunidades otomíes del Valle de Mezquital, en el estado de Hidalgo, construyen sus viviendas con materiales naturales de la región. La planta de maguey es un material que tiene un papel fundamental en la gastronomía y el estilo de vida de estas comunidades indígenas. Este trabajo ofrece una descripción de varios de los sistemas constructivos propios de la región y hace especial hincapié en la cocina tradicional otomí. Además de las cuestiones arquitectónicas y constructivas se analiza el espacio geográfico y las dinámicas sociales de las comunidades otomíes. También se describen tanto las problemáticas políticas y ambientales a las que se enfrentan estos sistemas constructivos tradicionales en la actualidad como los esfuerzos que se están llevando a cabo para documentarlos por su relevancia identitaria, cultural y arquitectónica.

As comunidades Otomi do Vale de Mezquital, no estado de Hidalgo, constroem as suas vivendas com materiais naturais da região. A planta do agave é um material que desempenha um papel fundamental na gastronomia e no estilo de vida destas comunidades indígenas. Este artigo oferece uma descrição de vários dos sistemas de construção típicos da região e coloca uma ênfase especial na cozinha tradicional Otomí. Para além das questões arquitetónicas e construtivas, são analisados o espaço geográfico e as dinâmicas sociais das comunidades Otomi. São também descritas as questões políticas e ambientais que estes sistemas tradicionais de construção enfrentam atualmente, e os esforços que são levados a cabo para os documentar, devido à relevância da sua identidade, cultura e arquitetura.

El Valle del Mezquital es una región árida que ha sufrido grandes transformaciones a lo largo del siglo XXI. Si bien en la actualidad abundan las zonas de cultivo y de pastoreo de ganado, las condiciones geográficas dificultan el desarrollo de estas actividades en algunas comunidades, lo que ha precarizado las condiciones de vida de gran parte de sus habitantes. Son muchos los que emigran a los Estados Unidos en busca de mejores oportunidades laborales e importan a su vuelta técnicas constructivas foráneas que desplazan a los sistemas constructivos tradicionales locales (Moreno Alcántara, Garret Ríos, y Fierro Alonso 2006: 24–27). A pesar de ello, una gran parte de la población ha mantenido sus costumbres, sus festividades, su lengua, su gastronomía, sus tejidos y, en general, su cosmovisión, que, a pesar de encontrarse en constante evolución, permite reforzar su identidad colectiva como otomíes.

Los asentamientos del pueblo otomí cuentan, por lo general, con una iglesia con un cementerio adosado –en algunos casos frente a un parque o un quiosco– que generalmente está emplazada en terrenos ejidales (Moreno Alcántara et al. 2006: 14). El paisaje de la región es árido y está poblado de magueyes, lechuguillas, biznagas, mezquites, huizaches, pirules, magueyes, garambullos y de otros arbustos pequeños como los nopales y los cardones (Moreno Alcántara et al. 2006: 6). Dentro de estos terrenos ejidales aún se conservan algunas edificaciones construidas con fibras naturales como *jikia**, *itdho**, cactus de órgano y pencas de maguey. Estas últimas se utilizan tradicionalmente en la construcción de cocinas y bodegas (Moreno Alcántara et al. 2006: 14).

Son de gran importancia las leyendas que el pueblo otomí ha transmitido en torno a la planta del maguey, en las que basan su tradición constructiva. De especial relevancia es el conocido como "mito del conejo de la luna" que según cuentan fue quien mostró al pueblo la planta con la que debían construir sus viviendas. Igualmente importante es el "mito del pájaro", que según la tradición muestra a los habitantes de esta región cuándo y cómo deben construir sus hogares. Algunas historias milenarias cuentan que la planta de maguey fue regalada por los dioses para crear los techos y los muros de sus viviendas, junto al aguamiel para hidratarlos, el pulque para darles alegría, el *ixtle** para elaborar ayates, cuerdas, estropajos, tejidos y *mecapales**, y flores para elaborar alimentos.

El proceso de aprovechamiento de la planta del maguey comienza con la producción de pulque a partir de los resultados de la *milpa*, el espacio de cultivo cercano a la casa. En la *milpa* se cultivan malva, aguacates, alfalfa, granada, higo, durazno, maíz criollo y plantas como el nopal. Los residuos de la planta de maguey se llaman pencas, y pueden ser aprovechados de las siguientes tres maneras: para producir *ixtle*, utilizado para elaborar productos textiles; para elaborar platos típicos de la región, como barbacoa de borrego o el *ximbó*, que es un tamal grande de pollo enchilado con nopales y piel de puerco; y, por último, para la creación de espacios habitables, ya sean cocinas o bodegas para la cosecha.

La cocina es uno de los espacios más importantes de las viviendas otomíes y junto a ella tiene lugar la cría de animales de corral como gallinas, guajolotes, borregos y cerdos. La riqueza de los otomíes se mide por la cantidad de animales que poseen, lo que determina –junto al tipo de plantas cultivadas– cómo construyen los distintos espacios de la vivienda. Por ejemplo, aquellos que se dedican al cultivo del pulque construyen su vivienda con penca de maguey, por ser este el recurso que encuentran más a mano.

Hoy en día apenas quedan casas de pencas de maguey en el Valle de Mezquital, a pesar de que era frecuente encontrarlas en el pasado en los valles templados y secos del estado de Hidalgo. En el Valle del Mezquital las hojas del agave se utilizan tradicionalmente para cubrir los techos, con la

Detalle de una cubierta construida con pencas de maguey

1: Cocina de pencas de maguey en Santiago de Anaya

2: Proceso de doblado de las pencas por el maestro Mateo

particularidad de que en esta región se utilizan también para construir los muros. Para ello se construye previamente una estructura de varas (Prieto 1978: 120). Este sistema constructivo tradicional se encuentra en proceso de extinción por la desaparición paulatina de la planta del maguey, debido en gran parte a la presencia de aguas residuales provenientes de Ciudad de México (Moreno Alcántara et al. 2006: 15). Si bien estas aguas han permitido que las tierras de las planicies se vuelvan más fértiles y se pueda producir en ellas alimentos para el comercio, también han acabado con el cultivo de la planta del maguey, por ser una planta que no prospera en tierras húmedas (Moreno Alcántara et al. 2006: 15).

Además, la llegada de nuevos materiales al Valle del Mezquital, la importación de sistemas constructivos extranjeros, la creciente desconexión del pueblo con el medio natural y el tráfico de hidrocarburos son otros factores que han favorecido la práctica extinción de las construcciones tradicionales con penca de maguey y con fibras naturales. Si bien, afortunadamente, los hombres de avanzada edad aún recuerdan cómo construir con penca de maguey, estos conocimientos se perderán una vez que éstos fallezcan. La mayor parte de los jóvenes no tienen intención de conservar este saber, que se encuentra estigmatizado y que suele asociarse a la pobreza y marginación.

En la comunidad de Monte Noble, en el municipio de Santiago de Anaya, se conserva una cocina tradicional. La propietaria es Claudia, una cocinera que lleva a cabo, entre otras actividades, el raspado de la planta del maguey para la extracción del aguamiel que posteriormente se procesa con agregados de fermentos y se convierte en pulque. Dentro de sus terrenos cuenta con una gran cantidad de plantas de maguey y árboles de piñón. La familia de Claudia tiene una estrecha relación con el medio que rodea su hogar y con los recursos que les proveen sus tierras.

1: Tratamiento y colocación de las pencas de maguey

2: Vista interior de la cubierta de la cocina


1


2

Detalles constructivos del interior de la estructura

El proceso de construcción con pencas de maguey comienza con la recolección de la materia prima, que se obtiene principalmente de los *quiotes** de la planta. Este proceso se lleva a cabo tres días después de la luna llena, al igual que el corte de las pencas de maguey. Esta costumbre atiende al llamado calendario Galván y se basa en la observación del contexto natural y en los efectos de la luna sobre las mareas. Recolectar la madera en el momento óptimo permitirá que ésta sea más resistente al paso del tiempo, a las plagas y a las polillas que la amenazan. Se cree que después de la luna llena la savia, que es rica en polisacáridos y almidones, baja desde las hojas a la raíz, lo que permite que la madera quede libre de olores dulces que puedan atraer plagas.

Una vez que se cortan los *quiotes* y las pencas de maguey, ambos pasan por un proceso de curado con una duración que varía entre los cinco y los diez días. Las pencas de maguey se dejan a la intemperie, a la sombra, para que así se deshidraten lo suficiente y puedan ser moldeadas por el maestro *penquero* para la construcción de techos y muros. El proceso que siguen los *quiotes*, sin embargo, es distinto al de las pencas. Éstos, una vez que el periodo de curado ha concluido, son ahumados en el fogón, de manera que la madera se impregne del aroma a humo y quede protegida de posibles plagas.

La estructura de la cocina de la casa de Claudia es de madera de árbol de piñón, obtenida de un pequeño bosque de árboles de piñones que se encuentra en Hermosillo Monte Noble, a dos kilómetros de distancia. El proceso de curado de esta madera es idéntico al de los *quiotes*. Primero se llevó a cabo el trazo rectangular de la planta y se colocaron los horcones o pilares de madera de piñón, a una distancia aproximada de dos metros entre ellos. Cada lado largo de la planta queda así formado por 6 horcones. En el lado corto posterior se colocó un único horcón, en su centro, a 1,5 metros de distancia. El acceso a la cocina se encuentra en la fachada delantera y tiene 1,3 metros de ancho. Para reforzar el vano se colocó un horcón a cada lado de la puerta.

En cada horcón se construyó una pequeña cimentación de 50 cm de profundidad, que se rellenó posteriormente con el propio material extraído del terreno, después de haberlo apisonado. En las fachadas laterales, sobre los horcones, se colocaron 6 tijeras de madera, que sostienen la estructura

Estructura de madera de piñón de la cubierta de la cocina

de la cubierta a dos aguas. Una de las tijeras cae sobre el eje del acceso, mientras que en la parte posterior se construyó una pequeña estructura radial. Una vez colocada la estructura se colocó una parrilla de varas horizontales entrelazadas, de arriba abajo, con una separación de 20 centímetros entre ellas. Las varas se amarraron con *ixtle* o con alambre galvanizado.

Las pencas de maguey se colocaron dobladas por la mitad, de arriba hacia abajo, dejando el extremo de cada penca hacia afuera y superponiendo unas sobre otras como si fueran tejas de barro. Desde el interior queda visible el entramado formado por las pencas, que cubren toda la estructura secundaria de la cubierta. Aunque se dejó un hueco abierto a modo de ventana en la parte posterior de la cubierta, éste no es un elemento característico de la tradición constructiva, ya que las cocinas pueden ventilar a través de las pequeñas ranuras del tejido de la penca de maguey. Con el tiempo, una vez que las pencas se secan y se encogen, es necesario colocar otras nuevas en los huecos que se forman.

Los pequeños muros que sostienen la estructura de la cubierta se construyeron con bloques de mampostería de adobe. Los muros cuentan con un acabado fino de tierra y fueron pintados con una mezcla de tierras, en cuya composición se utilizó baba de nopal *bhondo**. El fogón se elevó a petición

de Claudia, algo que no es muy común, ya que generalmente se colocan sobre el suelo de la cocina, en un rincón. Aunque se empleó cemento para su construcción, después se aplicó una mezcla de tierra y paja para realizar el acabado del mismo. Cuenta con un quemador principal en el que se cocinan las tortillas y los *tlacoyos**. Alrededor de él se sitúan tres quemadores de menor tamaño sobre los que se colocan las cazuelas en las que se cocinan los guisados. La *petaca** se encuentra sobre una pequeña barra en el lado derecho, junto a la máquina de hacer tortillas. Sobre un pequeño desnivel se sitúa el *metate**, donde se muelen los granos de *maíz nixtamalizados** que son utilizados en la preparación de las tortillas.

Pese a que el futuro de estos sistemas constructivos tradicionales es incierto, el pueblo otomí aún intenta conservar este conocimiento y transmitirlo a las generaciones siguientes. Por ello es importante no sólo documentar el proceso sino seguir construyendo estas estructuras. La cocina es el espacio central de la cultura otomí, y permite a familias como las de Claudia conservar su cultura gastronómica. Su construcción con pencas de maguey y otros elementos vegetales les permite recordar que vienen de las montañas y lo importante que es conservar los bellos parajes del Valle del Mezquital.

Agradecimientos

Agradecemos su ayuda y disponibilidad al maestro de obra Felix Larrieta; a Claudia Hernández y a su familia, del pueblo de Hermosillo Monte Noble; a Cecilia Aldana y a su familia, de la cabecera municipal de Santiago de Anaya, en el Estado de Hidalgo; y a Marcelina Espinoza del pueblo de San Nicolás, en el municipio de Ixmiquilpan del estado de Hidalgo. Map of the Carpathian region with the churches presented in this article

1

2

3

4

1: Diseño participativo del fogón de la cocina de pencas de maguey

2: Trazado del fogón

3: Proceso de construcción del fogón

4: Colocación del comal central del fogón

*** Glossary** | Glosario | Glossário

Bhondo: nopal espinoso y carnoso de frutos muy ácidos que se consume como alimento.

Itdho: arbusto bajo de hojas largas y delgadas parecido al conocido como "agave lechuguilla".

Ixtle: fibra de agave trabajada en forma de lazo.

Jikia: vara larga espinosa de la que brotan gran cantidad de hojas pequeñas y carnosas verdes en época de lluvia.

Maíz nixtamalizado: proceso de cocción de granos de maíz con cal viva.

Mecapal: faja con dos cuerdas en los extremos que sirve para llevar mercancía a cuestas. La cinta es de *ixtle.*

Metate: piedra volcánica rectangular sobre la que se muele el maíz.

Petaca: cesto de carrizo tejido donde se sirven las tortillas recién hechas.

Quiote: tallo de flor del maguey. Se obtiene de las plantas utilizadas para la producción del *pulque.*

Tlacoyo: tortilla gruesa de maíz rellena de frijoles u otro alimento.

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Biographies | Biografías | Biografias

Rosario Argüello

Rosario Argüello es arquitecta por la Universidad Autónoma del Estado de Hidalgo. Durante su carrera profesional ha estudiado las técnicas constructivas tradicionales de México y ha realizado intervenciones de carácter social en distintos estados del país. Ha trabajado como arquitecta en Raíz Arquitectura y ha colaborado en proyectos de reconstrucción en los estados de Chiapas y Oaxaca. En 2021 su trabajo fue seleccionado para formar parte del Pabellón de México en la 17ª Bienal de Arquitectura de Venecia. Ha impartido diversos talleres y conferencias sobre la arquitectura de tierra en diferentes lugares de México. Actualmente desarrolla proyectos de arquitectura tradicional en un esfuerzo por rescatar los saberes constructivos de las comunidades del estado de Hidalgo. Es también profesora en la Universidad Politécnica de Francisco I. Madero, en el campus de Metztitlán.

Patricia Enriquez de los Rios

Patricia Enríquez de los Ríos es Máster en Restauración de Monumentos y Sitios por la Universidad de Guanajuato. Ha trabajado en el Instituto Nacional de Antropología e Historia en proyectos de restauración de monumentos históricos y ha investigado y catalogado material etnográfico de las comunidades indígenas de Tepehuanes del Sur, en la Sierra de Durango. En 2019, junto a Rosario Argüello, participó en el Segundo Diplomado en Procedimientos y Sistemas Constructivos Tradicionales, impartido por la Facultad de Arquitectura de la UNAM, a través del Laboratorio de Procedimientos y Sistemas Constructivos Tradicionales en colaboración con el Centro de las Artes de San Agustín Etla (CaSa), en Oaxaca. Escribe artículos de divulgación cultural sobre arquitectura vernácula de Durango y trabaja como voluntaria en el programa Salas de Lectura del Fondo de Cultura Económica para el fomento de la lectura.

Leon Krier, Jamshid Sepehri

Sehpolis, Tonb-E-Kochak: A Pilot Project for a New Town in the Persian Gulf

Sehpolis, Tonb-E-Kochak: Un proyecto piloto para una nueva ciudad en el Golfo Pérsico

Sehpolis, Tonb-E-Kochak: Um projeto piloto para uma nova cidade no Golfo Pérsico

Abstract | Resumen | Resumo

The Iranian government has announced the development of its uninhabited Persian Gulf islands in order to secure their territory against claims by neighboring Gulf States. On hearing of Teheran's decision to develop these islands we decided to prepare and donate a pilot project, showing what a new traditional Iranian city of the future might look like if Tonb-e-Kochak, the smallest of the islands, were to be developed. We hope above all to stimulate discussion among Iranian authorities, professions, and citizens as to what the country's future architecture and urbanism are to be.

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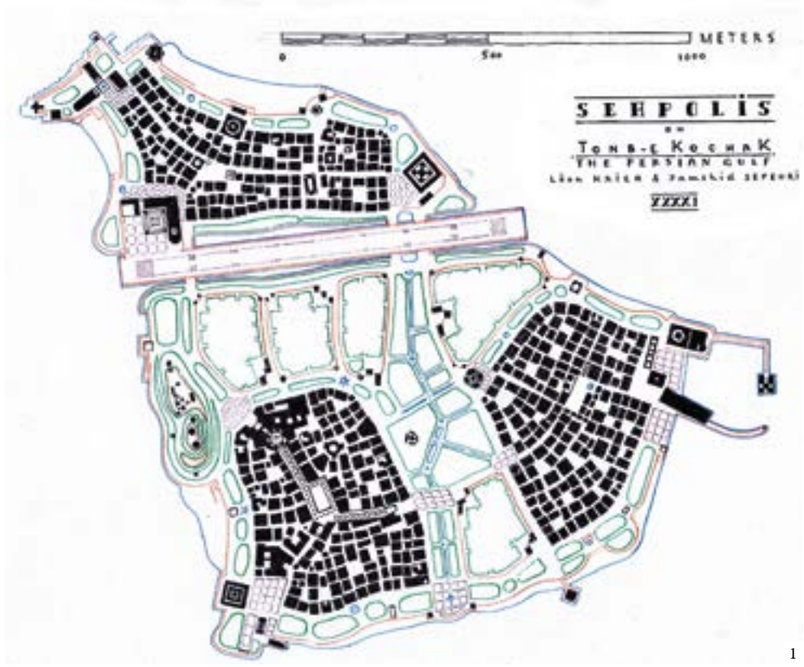
O governo Iraniano anunciou o desenvolvimento das suas ilhas desabitadas do Golfo Pérsico, a fim de proteger o seu território contra as reivindicações dos Estados vizinhos do Golfo. Ao tomar conhecimento da decisão de Teerão de desenvolver estas ilhas, decidimos preparar e doar um projeto-piloto, mostrando que aspeto teria uma nova cidade tradicional Iraniana do futuro, se Tonb-e-Kochak, a mais pequena das ilhas, fosse desenvolvida. Esperamos sobretudo estimular a discussão entre as autoridades, profissionais e cidadãos iranianos sobre o que virá a ser a arquitetura e urbanismo do país no futuro.

The Iranian government has announced the development of its uninhabited Persian Gulf islands in order to secure their territory against claims by neighboring Gulf States.

As architects we have had a lifelong fascination with classical Persian art, architecture, cities, and gardens. We believe that architecture and stylistic trends are not a matter of mere fate but that choices exist, as is being proven by many New Traditional Architecture and Urbanism projects. We are part of a worldwide movement practicing, teaching, and propagating new traditional building

Bird's eye view of the island



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1: Plan of Sehpolis

2: View from the north-east

3: View of the east corniche; Tolu lighthouse to the left, Farmandari government palace and tower to the right

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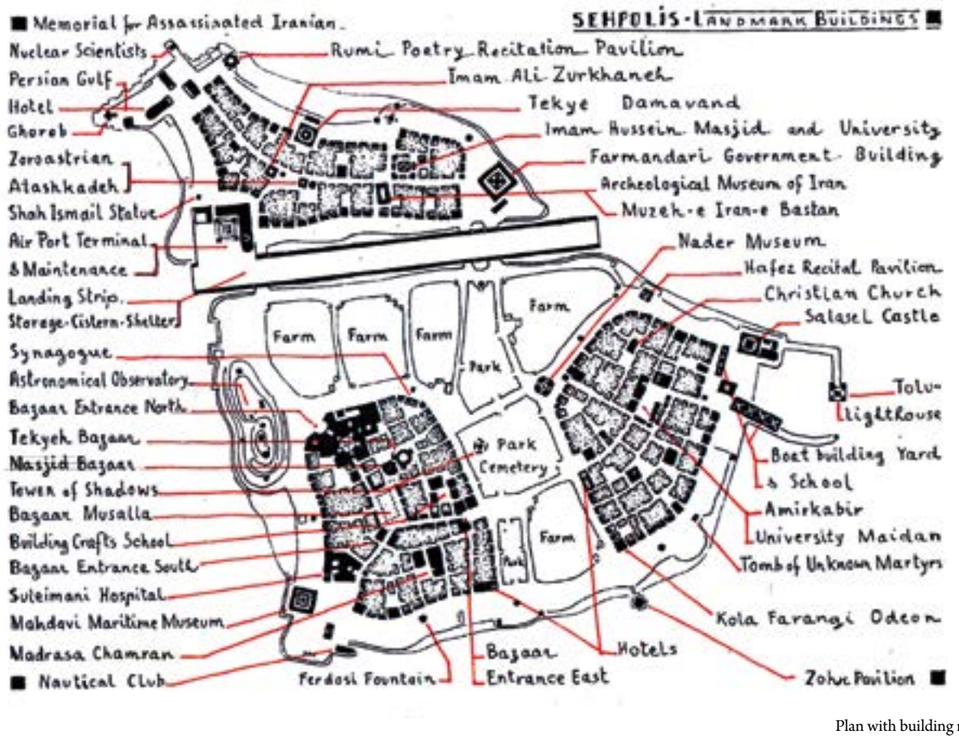
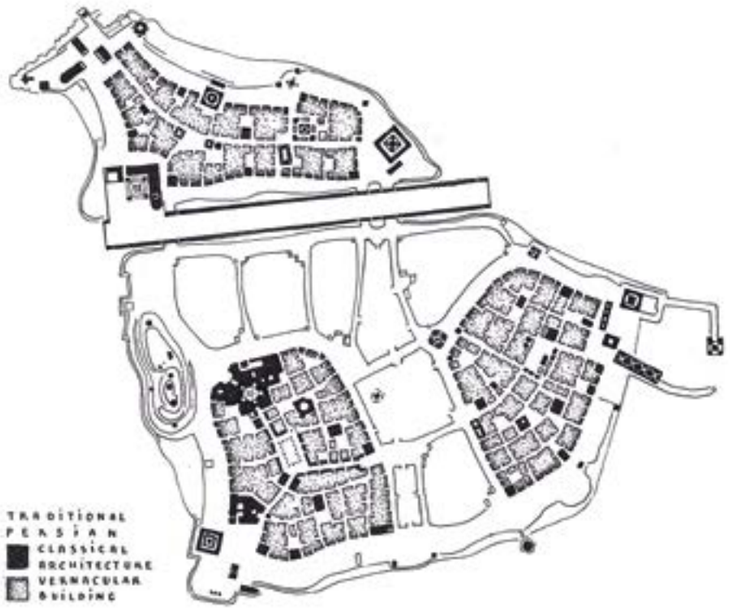


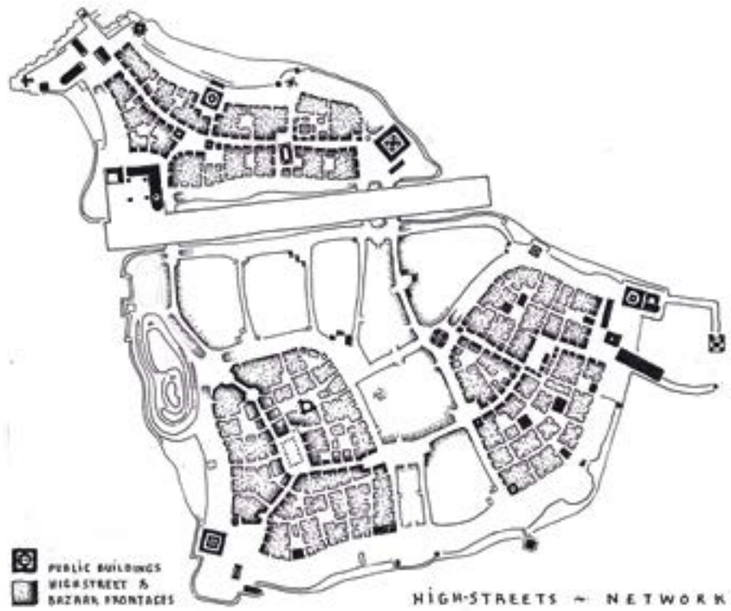
Plan with building names

crafts, architecture, and urbanism as part of our living heritage. These are matters which transcend passing ideological, political, or economic regimes. If practiced with the right methods, techniques, forms, scales, and materials, they give physical reality to an essential part of "the common good": the urban public realm. This has been second nature for generations and yet is under attack, as the vast spatial restructuring and cultural revolutions engineered by modern industrial economies have eroded the nature of traditional cities and their public domain.

Public space on the south corniche



Plan with classical and vernacular buildings



Plan with street network and public buildings

Few people perceive the inextricable connection between good public space and "the common good". Few are aware of how decisively "the common good" is given substance by the form of traditional cities and their built fabric, their streets and squares. These have knitted societies together despite profound divisions in customs, religions, languages, economies, politics. The urban public realm, a unique gift of the Persian-Greek-Roman-Christian civilizations, is a neutral ground on which the spectrum of human diversity unfolds peaceably and interacts in constructive rivalry. Without this public space, active citizenship could not have developed, and where it is lacking, democracy fails.

1: Acropolis elevation and Sehpolis skyline

2: Skyline from the north-east

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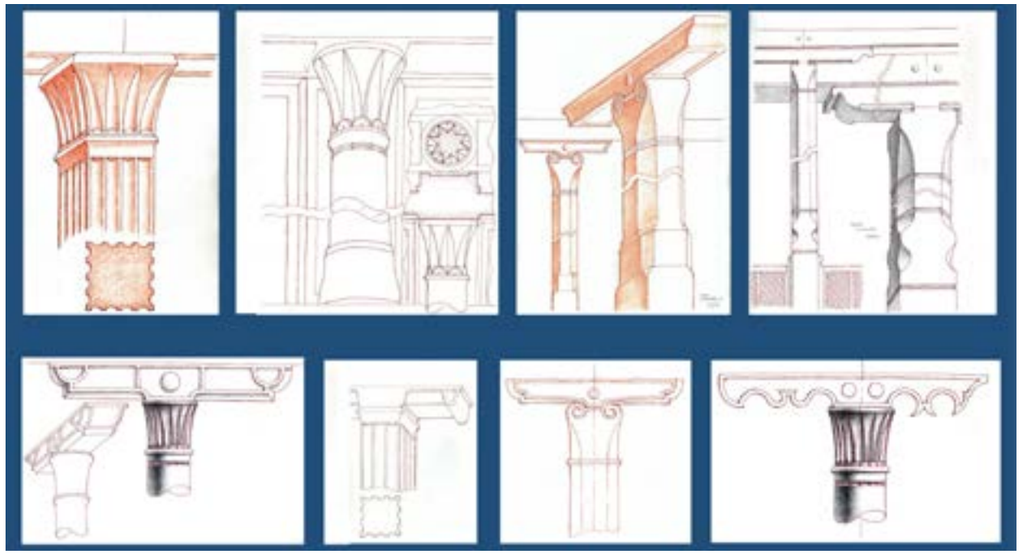
We observe with alarm that since World War II Iran too has, like most countries, suffered a profound change in the fabric, appearance, and organization of its cities and architecture. The loss of human scale, character, and beauty and the shocking contrast with the country's precious traditional built heritage and landscapes are commonly perceived or justified as inevitable. Yet to the majority of Iranians too, modern buildings and settlements are awkward and discordant, confirming that "an unspoiled landscape is not a landscape without buildings but merely a landscape without modern buildings", as Quinlan Terry says.

Column orders



On hearing of Teheran's decision to develop its Persian Gulf islands we decided to prepare and donate a pilot project, showing what a new traditional Iranian city of the future might look like if Tonb-e-Kochak, the smallest of the Persian Gulf islands, were to be developed. This "gift" is sponsored by us, independent designers working without outside help, in a symbolic gesture intended to help temper the reigning climate of hostility toward Iran. We hope above all to stimulate discussions among Iranian authorities, professions, and citizens as to what the country's future architecture and urbanism are to be. Such a national effort could enable Iran to lead new traditional development policies based on the country's stellar technical and artistic heritage, and its age-old tradition of crafts and stewardship of land and resources. Persia was for centuries the standard-bearer of architectural refinement, influencing cultures as distant as those of India or Spain, Uzbekistan or Yemen. Iran

1: Bazaar (south entrance)

2: Mosque dome viewed from the Musalla Maidan arcade

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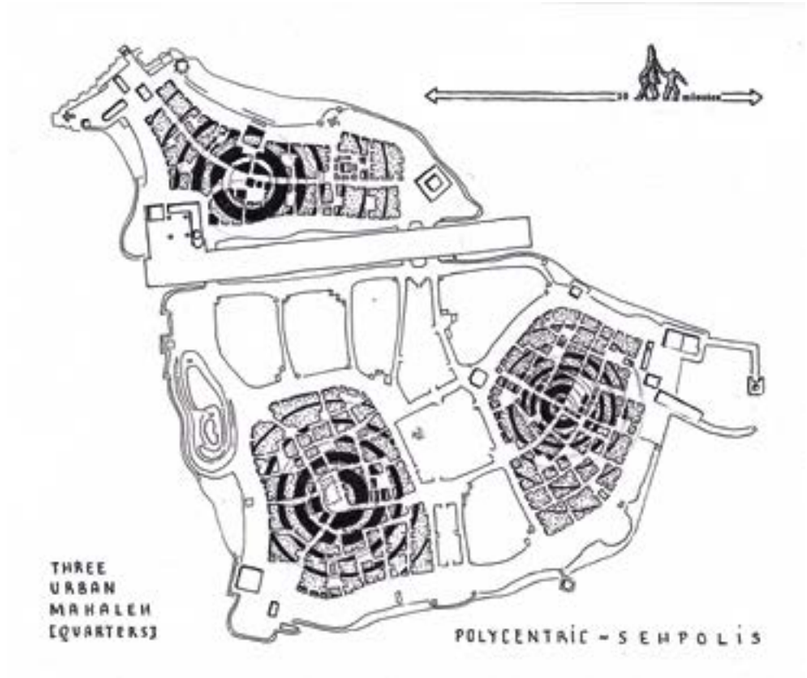

Plan showing the three *mahales*

may on this tiny island realize an inspiring pilot project, a much-needed counter-model to the garish developments of Dubai, Abu Dhabi, Qatar, and particularly of Saudi Arabia's futureless Neom vision or Egypt's New Capital City.

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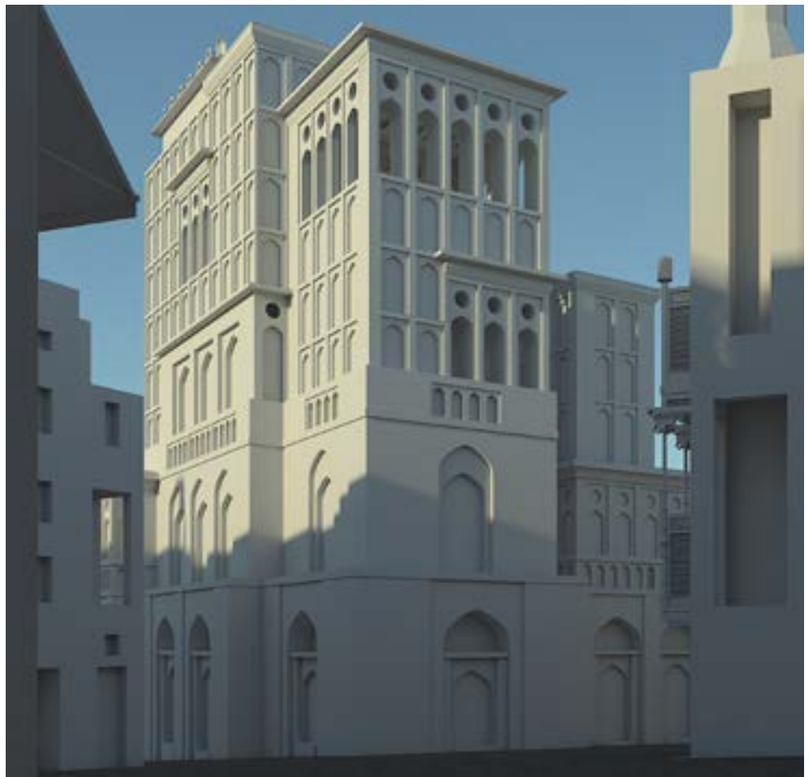
1: Airport terminal

2: Bird's eye view of the landing strip and the north *mahale* seen from the south-east. The urban fabric is formed of 3- or 4-story buildings above which rise the domes, roofs, and spires of public buildings

Masterplan of Sehpolis

Sehpolis is divided into three *mahales* (urban quarters with a 5-10-minute walk diameter). The three *mahales* are separated by formal water gardens, walled market-garden blocks and an airport complex. Each *mahale* houses some 1400 to 1600 residents in 3-4-story buildings (walkable building heights). The basic *mahale* fabric is modeled on traditional settlements in the Persian Gulf and the Gulf of



Mixed-used block

> 1: Harbor buildings and square at the south-east tip of the east *mahale*
2: Salasel castle
3: Amirkabir University maidan in the east *mahale*

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1: Nader Museum, inspired by the Khorshid Palace in Khorasan

2: View east toward the Farmandari Palace and the east-gate tower past the Imam Hussein Mosque and university to the left

Aden. The vernacular geometry of *mahale* streets and squares, generated by a loose arrangement of small apartment blocks as realized in historic Shibam (urban space type II), contrasts with the spatial formality of the bazaar and maidan (urban space type III), and the institutional and transport ensembles (urban space type I).

The typical residential buildings hold up to 12 apartments, duplexes and penthouses. Their ground floors and mezzanines are reserved for non-residential uses, work, retail, or storage. Public buildings, such us a museum, public baths, schools, poetry recitation pavilions, a college for 38 building crafts, a college of marine architecture, an astronomical and oceanographic research station, a local government building, hotels, a hospital, a *zurkhaneh*, memorials, water towers, fountains, etc., are designed as landmarks, marking a unique skyline, adorning prominent locations, vistas, squares, gardens, promenades, and promontories. The walled market gardens supply the local market with fresh produce.

The vast vaulted 1000 x 100 m undercroft of the airport runway is divided in three compartments. The largest, holding a water cistern, is modeled on the monumental Kish and Constantinople cisterns. The smaller sections hold a dry store and car park, a repair shop, and a bomb shelter. On the observatory mound is a meteorological and astronomical observation station, seminar rooms and scientists' residences. Hotels are located along the ocean promenades and parkways. Park-promenades and small white sand beaches border the island on all sides.

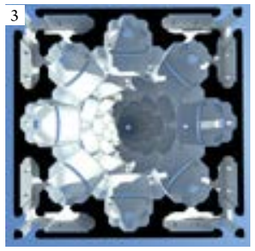
It is hoped that Sehpolis be developed not as a place of mass consumption but as a civilizational and cultural counter-project – a model of what physical form best allows individual human talents and independence to flourish in communities.

3: Faceted conical dome of Tekye Damavand, a Ta'zieh performance space, seen from below

4: Tekye Damavand and portico

5: Monumental wooden portico of Tekye Damavand

6: Front of a mosque



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1: Synagogue

2: Christian church

3: Summit astronomical observatory on the acropolis overlooking the terminal building and landing strip. The walled compound contains research installations and scientists' residences

Biographies | Biografías | Biografias

Leon Krier

Born in 1946 in Luxembourg City, Leon Krier is an architecture and urbanism consultant as well as a designer, author, and teacher. He is renowned for his pioneering role in promoting the technological, ecological, and social rationality and modernity of traditional urbanism and architecture. He studied at Stuttgart University in 1967, then left to work with James Stirling from 1968 to 1974. Since then he has combined an international urban planning and architectural practice, including projects in Mexico, Guatemala, the US, England, France, Germany, Holland, Belgium, Romania, Cyprus, Italy, and Spain, with writing and teaching. He has taught at the Architectural Association and the Royal College of Arts in London and at the Universities of Princeton, Virginia, Notre Dame, and Yale, and has lectured at numerous institutions. From 1987 Krier was advisor to the Prince of Wales, now King Charles III, in charge of master-planning and architectural coordination at Poundbury, the Duchy of Cornwall's urban development in Dorset. Also in England Krier has been responsible since 2018 for the Fawley Waterside Masterplan. Other outstanding model new-town developments of his are: in Belgium, Heulebrug, built according to his 2000 masterplan in collaboration with DPZ; and in Guatemala, with Estudio Urbano, the developments of Paseo Cayala, since 2003, El Socorro, since 2015, and Nogales, since 2020. Currently Krier is starting two new urban projects in Virginia and Colorado. He has also worked in parallel as an industrial designer for Giorgetti and Assa Abloy since 1990.

Jamshid Sepehri

Jamshid is a licensed architect in Washington, DC. He was born in 1960 in Tehran, and holds an undergraduate and a graduate degree in architecture from Maryland University and a graduate degree in architecture from Columbia University. He has been chief designer in various international architecture firms and has realized many large-scale residential, commercial, and institutional projects in America, Europe, and Asia. The Katzen Arts Center and American University Museum, the Saint Elizabeths Psychiatry Hospital, and the new addition to St. Albans School in Washington DC are just three examples. Since 2006 he has been collaborating with Léon Krier on many architecture and urban design projects.

Radu-Remus Macovei

Buildings in a State of Flux: The Wooden Churches of the Carpathians

Edificios en proceso de transformación permanente: Las iglesias de madera de los Cárpatos

Edifícios em processo de transformação permanente: As igrejas de madeira dos Cárpatos

Abstract | Resumen | Resumo

The prevailing paradigm of resilience in architecture relies on the assumption that a building is a static artifact. But historical models of resilience enable buildings to be in a constant state of flux, able to adapt their physical form in response to societal and environmental changes. The thousands of wooden churches in the Carpathian Mountains of Eastern Europe have physically transmuted over time thanks to the malleability of their constituent materials. Wood has endured as a material of profound social importance and wooden construction has proven to be adaptable for continuing use and longevity. With wood making a comeback through mass-timber technologies, could the wooden churches of Eastern Europe help us improve how we design and build for resilience today?

El paradigma imperante de la adaptabilidad en arquitectura se basa en el supuesto de que un edificio es un objeto estático. Sin embargo, los modelos históricos de adaptabilidad permiten a los edificios estar en un estado de evolución constante y ser capaces de adaptar su forma física en respuesta a los cambios sociales y medioambientales. Las miles de iglesias de madera de la Cordillera de los Cárpatos en Europa Oriental se han transformado físicamente a lo largo del tiempo gracias a la maleabilidad de los materiales con los que están construidas. La madera, como material, ha tenido una profunda importancia social y las construcciones en madera han demostrado su durabilidad y capacidad para adaptarse a un uso continuado. Con el renovado protagonismo de la madera gracias a las tecnologías de madera procesada, ¿podrían las iglesias de madera de Europa Oriental ayudarnos a mejorar la adaptabilidad del diseño y de la construcción de hoy en día?

O paradigma dominante de resiliência na arquitetura assenta no pressuposto de que um edifício é um artefacto estático. Mas os modelos históricos de resiliência permitem que os edifícios estejam num estado constante de fluxo, capazes de adaptar a sua forma física em resposta às mudanças sociais e ambientais. Os milhares de igrejas de madeira nos Cárpatos da Europa de Leste transmutaram-se fisicamente ao longo do tempo, graças à maleabilidade dos seus materiais constituintes. A madeira subsistiu como um material de profunda importância social, e a construção em madeira mostrou ser suficientemente adaptável para uma utilização contínua e duradoura. Com o regresso da madeira através das tecnologias de produção de madeira em massa, poderiam as igrejas de madeira da Europa de Leste ajudar-nos a melhorar a forma como concebemos e construímos para a resiliência hoje em dia?

One does not typically think of buildings as objects in a state of flux. On the contrary, one thinks of them as static artifacts whose "original" physicality is liable to be preserved. While traveling in the valleys of the Carpathian Mountains of Eastern Europe, through the Maramureș region of Romania, the Zakarpattia and Galicia regions of Ukraine, the Lesser Poland region of Poland, and the Prešov region of Slovakia with the Robert A.M. Stern Traveling Fellowship in 2019, I found another paradigm: wooden churches as "buildings in a state of flux". Although built and rebuilt many times since at least the twelfth century in remote mountain villages, these Greek Orthodox, Greek Catholic, Russian Orthodox, Lutheran and Roman Catholic wooden churches establish a consistent formal vocabulary through their constituent materials and their unique construction system. The *Blockbau* system, following a logic of laying logs horizontally at equal heights, advancing from one row to the next, is well preserved in Carpathian communities, which are its "principal refuge of styles" (Buxton 1981: 1) and continue to treat churches as communal village property.

On visiting the Church of St. James in Powroźnik, Poland, originally built in the seventeenth century, I noticed that works were underway to replace the deteriorated wood-shingle roofing, a process that occurs every two or three decades. The three roofs and walls of the building are covered with fir shingles, but because different parts have been restored at different times, there are shingles of differing ages, sizes and hues, depending on the craftsperson who made them, the type of wood, and the technique used, with manual or machine cutting. The ease with which the church's eclectic aesthetic can change suggests that it might have looked very different when first built. The bell tower above the narthex is dated to the eighteenth century, meaning it was added onto or replaced a former structure, and it is uncommonly built with a timber frame, suggesting that new building techniques had changed the wooden church's makeup.

Church of St. James in Powroźnik, Poland

Researchers find that dating specific elements is difficult, as "even with documentation, one cannot be sure that what exists now is what was documented" (Patterson 2001: 22). In this context I relied on orally transmitted histories to identify key moments of change in the churches' transformations. From a talk with the parish priest at Powroźnik it transpired that the church had been moved in the nineteenth century due to a flood at its original location nearer the river. He added that the sacristy, which is thought to have once been the building's sanctuary, was rebuilt and enlarged in the move. And while the stacking logic of the *Blockbau* system means that any modification in a wall will affect neighboring elements, I found this to have been common practice, at Powroźnik and elsewhere.

The question of the architectural style of these churches is the subject of art history debate. Topped with bulbous domes or tall spires, the wooden churches of the Carpathians derive their form either from the masonry domes of Persia (a disputed theory) or from the Western Gothic and Baroque (Buxton 1981: 37). Given the frequency and ease with which modifications were made above their ceilings, we can assume that their roof shapes have changed considerably, along with their architectural aesthetic. Currently Roman Catholic, the church at Powroźnik used to serve a Greek Catholic community of Lemk ethnicity, displaced from the region after World War II. The complicated history of the church at Powroźnik is typical of these wooden churches and has resulted in the evolving form that we find today. This suggests that the churches' "state of flux" is inherent to their design and materiality.

Map of the Carpathian region with the churches presented in this article

RAMSA Travel Fellowship, Church of St. Cosmo & Damian, Lukov, Slovakia

A Model of Resilience?

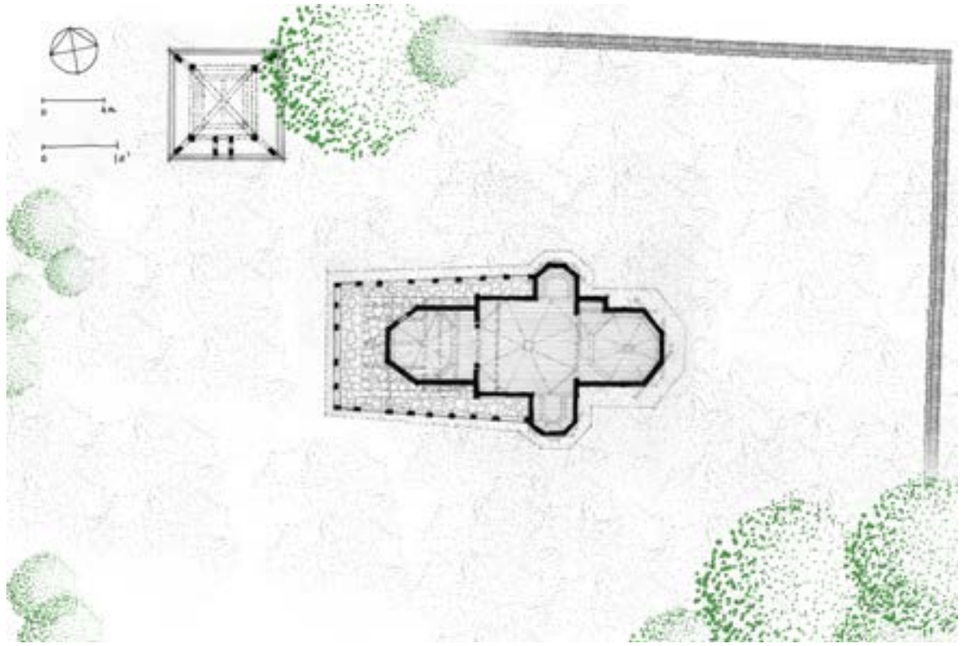
By contrast with the qualities of masonry, concrete, and steel, the plasticity of timber and the dismantlability of *Blockbau* construction enabled the builders of wooden churches to experiment with complex sculptural forms, add appendages, and make incisions in the building envelope. In response to frequent border changes, migration, and economic fluctuations, Carpathian communities modified the architectural envelope of their wooden churches to accommodate changing needs. This transformational capacity has made them resilient as sacred spaces and community anchors up to this day. The physical survival and continuous use of these fragile wooden structures attest to times when everything was made of wood, from weapons and beds to vehicles and buildings. In forested regions, entire towns were built of wood. With easy and affordable access to concrete in the past decades, the Carpathian villages one may visit today bear little resemblance to those archaic timber villages – with the sole exception of the wooden church, still serving as a place of worship.

In the context of contemporary pressures on the architectural profession to design for flexible uses, I reflect on the historical precedent of the wooden churches of Eastern Europe as an architectural model that resiliently combines changing uses and architectural form. We will look specifically at three such churches identified during my Travel Fellowship in the Carpathians which show visible traces of physical transformation: the Church of St. George in Drohobych, Ukraine; the Church of Archangels Michael and Gabriel in Şurdeşti, Romania; and the Church of St. Philip and St. James in Sękowa, Poland. In August 2019 I documented 50 of the region's thousands of wooden churches in dimensioned plans and sections. These planar studies show that, while local variations exist, the wooden churches are typically laid out in three spaces – narthex, nave, and sanctuary – in an enfilade commonly offset by exterior colonnades forming an exonarthex. The sectional studies highlighting

"Stitched-on" narthex, Church of St. George, Drohobych, Ukraine

the articulated forms reflect the experience I had on approaching these wooden buildings: the monumental massing of the typical church extends the architectural experience to the surrounding mountainous landscape from whose valleys the church towers rise. I also contextualize this graphic documentation with orally transmitted histories which, while not verifiable, collectively suggest the churches' transformations over time.

Bulbous domes, Church of St. George, Drohobych, Ukraine

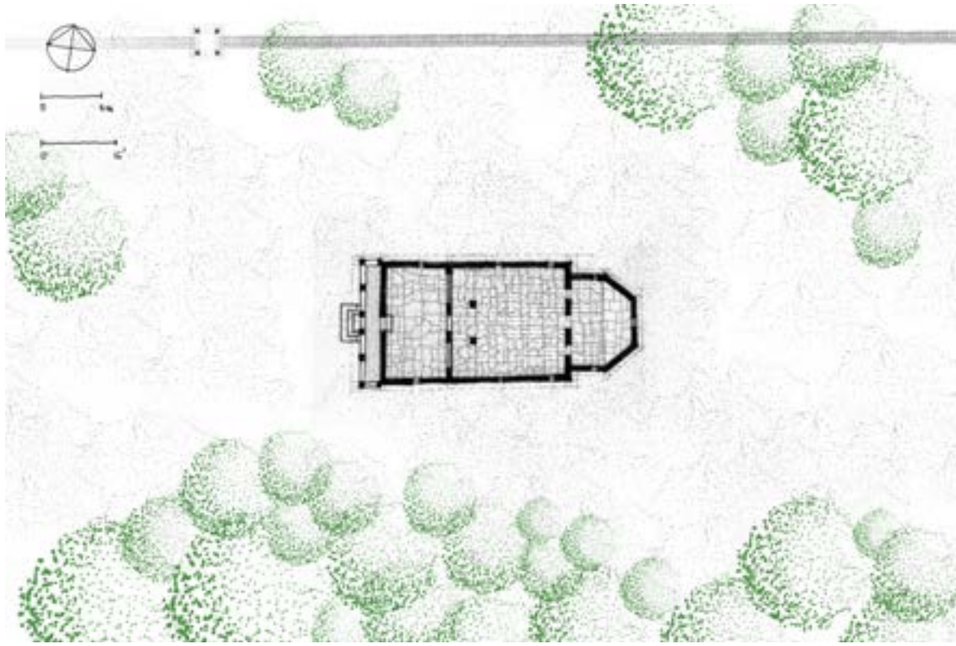


Plan of the Church of St. George, Drohobych, Ukraine

1. Change through Destruction: Church of St. George in Drohobych, Ukraine

In the Western Ukrainian town of Drohobych, a wooden church surrounded by a lush green plain stands among the AAC (autoclaved aerated concrete) block buildings currently under construction. Originally built in the 15th century and rebuilt several times, the wooden church has a legible arrangement of three volumes, each crowned by a large onion dome. The nave extends sideways into a modest transept capped by even more modest cupolas. On walking through the exonarthex I noticed in the joinery that one bit of the building – the narthex – had been "stitched" on. The plan shows a polygonal narthex – a first in narthex types – adjoining the nave, suggesting that the narthex was added after the building's construction. Oral history accounts for the atypical polygonal shape as resulting from this narthex being the sanctuary of a church from a neighboring village. Following fire damage in the eighteenth century, the Church of St. George needed to be rebuilt, and so the community acquired the sanctuary of another wooden church in an economically struggling village in exchange for salt, thereby replacing their damaged narthex while also rebuilding the nave and sanctuary. Though this narrative cannot be verified, one thing must be true given the peculiar shape: the polygonal narthex is the decommissioned sanctuary of an older church. The wooden church's *Blockbau* building system made the "stitching" of the structure possible, enabling the builders to reuse building fragments in the renewed construction.

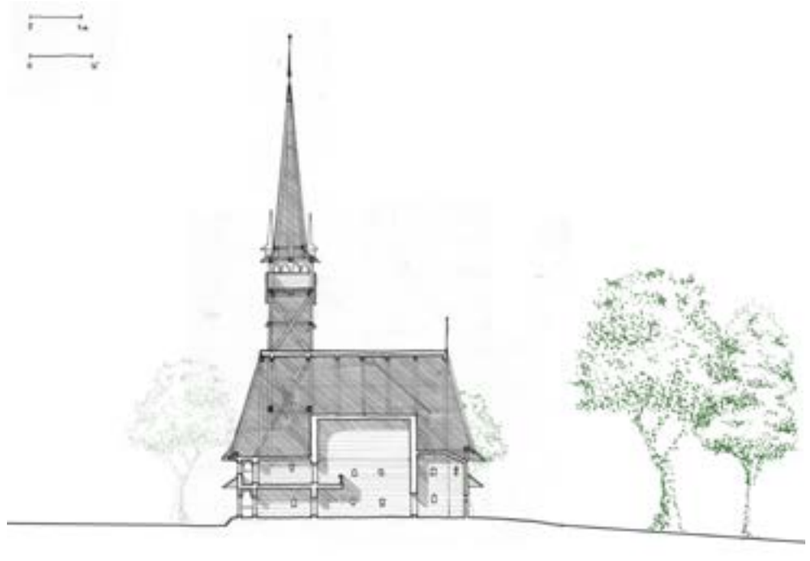
Section of the Church of St. George, Drohobych, Ukraine



Plan of the Church of Archangels Michael and Gabriel in Şurdeşti, Romania

2. Change through Shifts in Religious Practice: Church of Archangels Michael and Gabriel in Şurdeşti, Romania

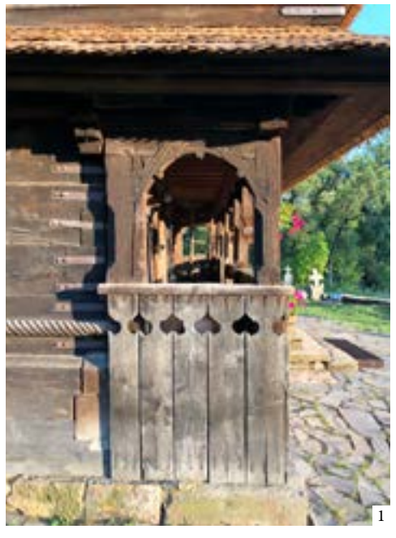
A few Carpathian peaks to the south, in the village of Şurdeşti, the spire of the Church of the Archangels Michael and Gabriel, built in 1721, stands high at 72 meters. Unlike the church at Drohobych with its three-part massing, the one at Şurdeşti has a rectangular plan with a narthex and a nave and a polygonal sanctuary at the end. These are merged under an unusual long shingle roof.



Section of the Church of Archangels Michael and Gabriel in Şurdeşti, Romania

Gothic spire of the Church of Archangels Michael and Gabriel in Şurdeşti, Romania

Above the exonarthex and narthex, a slender spire-topped tower pierces the roof with the Gothic aesthetic that many of the wooden churches in the region of Maramureș are associated with (Buxton 1981: 297). The exonarthex is covered by a projecting canopy above which a series of small apertures punctuates the church wall. At the front of the building the exonarthex is articulated in the form of a veranda, included in the building's volume. The exonarthex adds a fourth space in the enfilade sequence but also darkens the interior proper, as the roof projects over it.



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1: Exonarthex of the Church of Archangels Michael and Gabriel in Şurdeşti, Romania

2: Iconostasis, Church of Archangels Michael and Gabriel in Şurdeşti, Romania

Historically, the narthex was the space where women and children would attend mass, as the parish priest explained. Religious practice changed in the early twentieth century and women and men ceased to be seated separately. Hence whereas the partition between narthex and nave used to be closed, reflecting gender segregation, today large apertures are cut into it, opening up the space. This was made possible by wood's plasticity, allowing incisions into the mass.

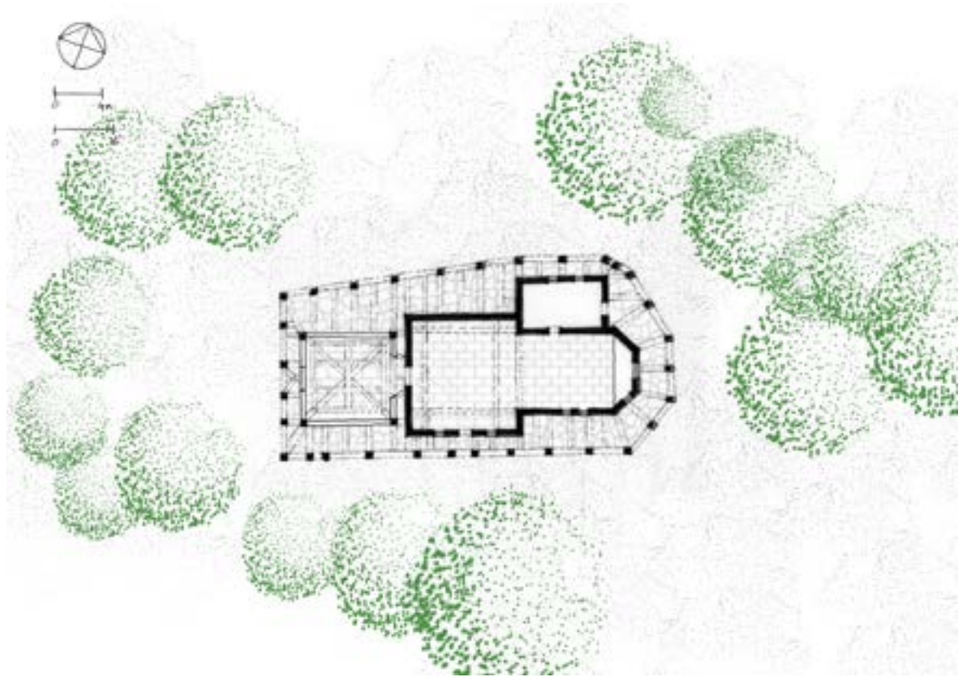
The unique conception of sacred space in Eastern European Christianity is also crystallized in the interior experience at Şurdeşti. The entrance door is low in height so as to encourage the faithful to bow on entering. It also has a thick, intricately carved frame, elevating the door into a portal. The interior across the narthex, nave, and sanctuary, separated by an ornate iconostasis, is dimly lit with just small apertures in the nave and sanctuary walls letting in shafts of light and focusing one's attention on the intimate candlelit setting.

3. Change through Technological Innovation: Church of St. Philip and St. James in Sękowa, Poland

At the bucolic spot where a stream flows into the Sękowka River in the Carpathians of Lesser Poland, fragments of a great wooden shingle roof are framed by dense vegetation flourishing at the confluence. The shingle surface of the side elevation comes into full view as one approaches. Below the eave where the curved roofing begins, an exonarthex wraps around the entire building, unifying its enfilade. Along the exonarthex canopy, strips of roof peel off from this wrapper either to allow a window to poke through or to accommodate a lateral volume interrupting the planar symmetry typical of these churches. The operations described – curving, wrapping, peeling – are signs that the physical building has adapted to the alteration, addition, or removal of constituent fragments over time. Thus when the Roman Catholic Church of St. Philip and St. James in Sękowa was first built in the sixteenth century, its appearance would have been very different. And looking up into the bell tower from what seems to be a space combining narthex and exonarthex, I noticed a timber-frame system used in the tower structure, atypical of these wooden churches' vocabulary.

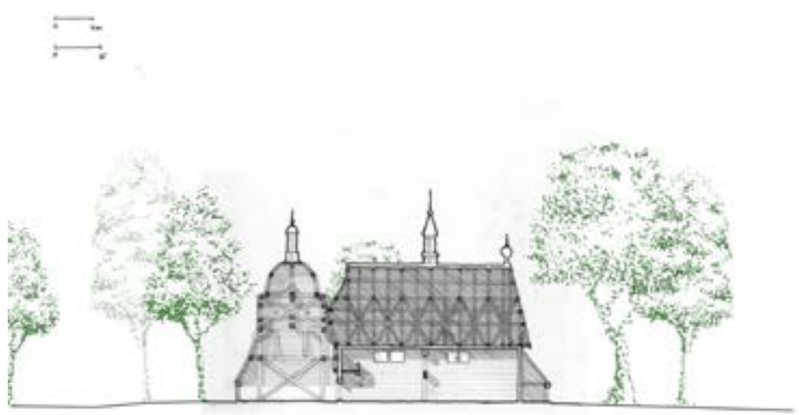
With *Blockbau* endemic to the Carpathian region, the timber-frame system must have been introduced at a later date than the building's original construction for reasons of economy, as a

Monumental roof of the Church of St. Philip and St. James in Sękowa, Poland



Deformed plan of the Church of St. Philip and St. James in Sękowa, Poland

technological innovation borrowed from Western Europe. The peeling-off of the canopy above the priest's room – the space which breaks the symmetry in plan – indicates that this volume may have been added more recently to serve as a sacristy with separate access for the clergy. And while historical accounts of these transformations are transmitted orally, the church's twentieth-century history is more clearly recorded. In the Gorlice-Tarnów offensive of World War I, as the German and Austro-Hungarian Empires fought the Russian Empire in Prussia, wood from the church at Sękowa was used for trenches and making fire, leaving the building damaged. Then after the war the church was reconstructed into the building we see today.



Timber frame and *Blockbau*, Church of St. Philip and St. James in Sękowa, Poland

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1: Bulbous domes of the Church of St. Paraskevi in Kwiaton, Poland

2: Tripartite arrangement of the Church of the Holy Virgin in Matkiv, Ukraine

Wood in its Social Dimension

Throughout the Carpathians, timber from church structures was used in both world wars. This depletion required a post-war restoration of many churches. Fires, storms, congregation growth, and changes in religious practice are further examples of events prompting physical transmutations in these wooden churches across the centuries. My observations of current restoration work and the oral histories passed down over generations suggest that today's churches bear little resemblance to their original versions. In the three churches described above, the malleability of wood has enabled local communities to exercise resilience by adapting the buildings to changing demographic, religious, and social circumstances in ways allowing them to thrive as community anchors up to this day.

Recently wood has re-emerged as a material of bio-economy, renewable energy, and carbon neutrality, and recent technological innovations in mass-timber products have made it viable as an urban construction material. Some contemporary timber technologies, such as glulam, use *Blockbau* logic on engineered wood. Yet mass-timber trends today favor the limited formal vocabulary of standardized timber panelization and few contemporary constructions explore wood's sculptural potential, inherent in its malleable quality. Instead, the mass-timber panel merely replaces steel or concrete elements. This is a missed opportunity to rethink the design paradigm with flexibility and resilience into a model of designing buildings for a state of flux. In the regional and cultural context of the Carpathians, wood has endured as a material of profound social importance, demonstrating that wooden construction techniques can be adapted for continued use and longevity. Could the living history of the wooden churches of Eastern Europe, made possible by their timber materiality, provide a precedent for rethinking the way we design and build for resilience today?

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3

1: Boat-like volume, Church of the Archangel Michael in Uzhok, Ukraine

2: Textured skins, Church of the Ascension of Christ in Yasinia, Ukraine

3: In the fields, Church of St. Michael in Krive, Slovakia

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Biography | Biografía | Biografia

Radu-Remus Macovei

Radu-Remus is the 2022-2023 Architectural Activism Fellow at the University of Wisconsin Milwaukee School of Architecture and Urban Planning. Until recently, Remus was Architectural Designer at Diller Scofidio + Renfro and Robert A.M. Stern Architects in New York City and, as Urban Planner, advised the United Nations Human Settlements Organization on urban regeneration in a post-Covid-19 world. In 2019 he was awarded the Robert A.M. Stern Architects Fellowship in order to investigate the wooden churches of the Carpathians and continued this effort through the Julia Amory Appleton Fellowship awarded by Harvard University Graduate School of Design. His research today is focused on bringing together the rich formal experimentation of archaic *Blockbau* wood construction and contemporary mass-timber technologies. Radu-Remus holds an undergraduate degree (RIBA Part I) from the Architectural Association School of Architecture and graduated with distinction from Harvard University Graduate School of Design with a Master in Architecture and a Master in Urban Planning. His international professional experience spans architectural design and urban planning and design, having previously trained at the offices of Herzog & de Meuron, Dogma, Robert A.M. Stern Architects, Hosoya Schaefer Architects, the NYC Department of City Planning and the United Nations, among others.

Santiago Martínez Otero

Lead for Fixing Metals in Construction

El plomo como fijador de metales en la construcción

O chumbo como fixador de metais na construção

Abstract | Resumen | Resumo

Lead, one of the most widely used metals since ancient times, is characterized by being soft, ductile, malleable, and highly resistant to corrosion – characteristics allowing it to be worked with ordinary manual tools. Lead fixings allow joints between metal elements and the masonry structures to which they are attached to be formed in an exceptionally durable way. The deformability of lead allows it to absorb the stresses transmitted by movements and changes in the volume of the iron without these being transmitted to the masonry and thereby causing cracks. Despite these properties, it has fallen into disuse. This text reviews the history of its use in historic buildings and outlines its qualities and the techniques for its application.

El plomo, uno de los metales más utilizados por el hombre desde la antigüedad, se caracteriza por ser un metal blando, dúctil, maleable y de gran resistencia a la corrosión. Estas características permiten que se pueda trabajar con herramientas manuales de uso común. Las emplomaduras permiten resolver de una forma singularmente duradera las uniones de los elementos metálicos con las estructuras de fábrica a las que se anclan. La deformabilidad y la densidad del plomo permiten absorber la transmisión de ondas y las tensiones transmitidas por los movimientos y cambios de volumen del hierro sin que se transmitan a las fábricas y sin que éstas lleguen a fisurarse. A pesar de estas propiedades, se trata de un material en desuso. Este texto presenta un recorrido histórico de su empleo en construcciones históricas y describe tanto sus cualidades como sus técnicas de uso.

O chumbo, um dos metais mais utilizados pelo homem desde a antiguidade, caracteriza-se por ser um metal macio, dúctil, maleável e altamente resistente à corrosão. Estas características permitem que seja trabalhado com ferramentas manuais comuns. O revestimento de chumbo permite resolver de uma forma especialmente duradoura a questão das juntas entre os elementos metálicos e as estruturas de alvenaria a que estão ancorados. A maleabilidade do chumbo permite-lhe absorver as tensões transmitidas pelos movimentos e mudanças de volume do ferro sem que estas sejam transmitidas às construções, impedindo que estas rachem. Apesar destas propriedades, é um material em desuso. Este artigo apresenta uma revisão histórica da sua utilização em construções históricas e descreve tanto as suas qualidades como as suas técnicas de utilização.

Introducción

El plomo es uno de los metales más utilizados por el hombre desde la antigüedad. Se tiene constancia de que la civilización egipcia utilizaba este metal hace más de 6.000 años para crear figuras decorativas, así como el óxido de plomo para la alfarería. También se ha documentado su uso en la Antigua Grecia, con fines muy variados, o en el Imperio Romano, donde se empleaba en canalizaciones, tejados y recubrimientos.

Durante la época medieval el plomo comenzó a utilizarse de manera extensa en diversas construcciones, como iglesias o catedrales, debido a su gran resistencia y durabilidad. Con la amplia difusión de su uso nació un nuevo oficio, el de plomero, que era aquella persona especializada en los trabajos con plomo, que dominaba las técnicas de engatillado y sabía cómo llevar a cabo fijaciones de metales a fábricas, juntas de tejados y limas, sellado de juntas, laminados de plomo en juntas de pilares a bases y capiteles y ornamentaciones labradas en rejerías, puertas, púlpitos y portales.

Plomo purificado antes y después de ser golpeado en el yunque hasta quedar aplanado sin sufrir fisuras

Vertido de plomo líquido para la fijación de una rejería histórica en las Burgas de Caldas de Reis, Pontevedra

Características del plomo

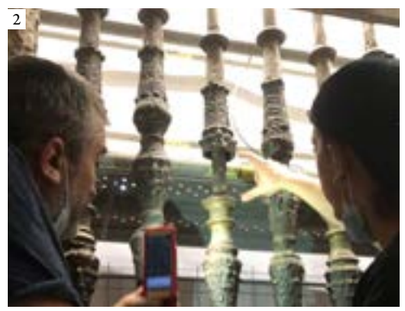
El plomo se caracteriza por ser un metal blando, dúctil, maleable y de gran resistencia a la corrosión. Estas características permiten que se pueda trabajar con herramientas manuales de uso común. Se trata de uno de los metales que menos afectados se ven por las condiciones atmosféricas, ya se encuentre en el campo, en la ciudad o junto al mar. Si bien tiene un acabado brillante en su estado natural, el contacto con el oxígeno le produce un tono grisáceo oscuro, que crea una pátina que sirve para proteger el metal. En ocasiones, debido a condiciones ambientales muy adversas, el plomo puede adquirir un tono blanquecino, pero que en ningún caso afecta a las fábricas en contacto con el mismo. Un tono amarillento, cercano al del azufre, nos indica la presencia de óxido de hierro junto al plomo. En condiciones normales el plomo es un metal muy estable y poco alterable. La corrosión por electrólisis es muy poco frecuente. El plomo tampoco se ve afectado por el contacto con morteros de cal, pero sí por el contacto con morteros de cemento tipo Cosmo o Portland, especialmente cuando estos están húmedos.

Preparación del plomo

El plomo debe purificarse a través de diversos procesos térmicos antes de ser utilizado como fijador de elementos a fábricas. En primer lugar, el plomo debe fundirse a 330ºC, con el fin de retirar escorias y restos de estaño. Se lleva a cabo a continuación una segunda cocción, para retirar más restos de estaño y zinc. Finalmente se vuelve a fundir para que la molécula de plomo quede completamente estable. Si el proceso de purificación y cocción del plomo se lleva a cabo correctamente, se pueden realizar emplomaduras (técnica para la fijación de elementos) a fábricas mediante el uso de tacos

1: Recubrimiento con plomo de una solana de la Colegiata de Cangas do Morrazo

2: Estudio de la rejería con piezas de plomo repujadas y policromadas de la Catedral de Orense



Emplomado de los caños de bronce durante la restauración de una de las siete fuentes históricas de Santiago de Compostela

de plomo en frío. También puede aplicarse por vertido, en estado líquido (cuando se encuentra entre los 327 y los 345ºC), para la fijación de elementos. Es importante tener en cuenta que pueden producirse problemas a corto y medio plazo cuando se emplean morteros de cemento tipo Portland o resinas, aunque menores si éstos se encuentran ya secos.

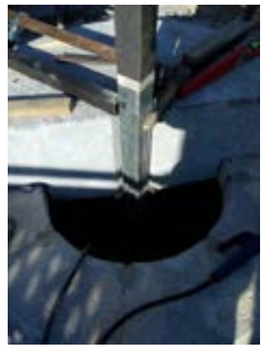
Usos del plomo

El ácido carbónico, que aparece al fijar un metal férrico o no férrico (bronce, latón o acero inoxidable) a una fábrica con un mortero, afecta a todos los metales menos al plomo.

El plomo es un cojinete natural que debido a su poca dureza y a su densidad absorbe y evita la transmisión de las ondas a los elementos metálicos. Los metales, al dilatarse, pueden producir tensiones en las fábricas. El plomo, gracias a su ductilidad, podrá absorber estas tensiones. Si las uniones se realizaran, en cambio, con hormigón o cemento, las dilataciones producirían la rotura de las mismas.

Además, si los elementos fijados se encuentran en zonas soleadas, las dilataciones y contracciones de los elementos metálicos generarán microfisuras que afectarán tanto a la fábrica a la que estén

Colocación del vástago interno de un pináculo para fijar sobre él una bola



Proceso de fijación de un vástago en la cruceta que lo ancla a la cúpula y grapa que une las dos piezas que conforman la pieza superior de la cúpula

conectados como a los propios elementos metálicos, por oxidación. Estos mismos problemas aparecen al utilizar resinas como fijador.

Los metales también se ven afectados por las ondas producidas por el tráfico rodado o por el exceso de decibelios característico de las ciudades de hoy en día. Por ello, donde antiguamente se empleaba plomo, un material que demostró su valía durante siglos, hoy en día suelen utilizarse elementos plásticos, gomas o polímeros que anulen la transmisión de las ondas a los elementos férricos, a pesar de su escasa vida útil.

En ocasiones, al analizar el patrimonio, encontramos fábricas que presentan fisuras en sus puntos de unión con los elementos metálicos, a pesar de la presencia de plomo, lo que suele ocurrir cuando las emplomaduras no se realizan correctamente o por una mala praxis en las labores de mantenimiento. Para llevar a cabo un emplomado bien hecho, debe conocerse en profundidad el proceso de purificación del plomo, así como todos los procesos térmicos que tienen lugar.

Es indispensable que ningún metal quede en contacto directo con las fábricas, para así evitar la transmisión de onda y los efectos de las dilataciones y de las contracciones. Por ello debe realizarse una "cama" de plomo antes de colocar el elemento metálico. Durante el proceso de vertido del plomo fundido debe controlarse la temperatura del mismo, que dependerá de la fábrica a la que vaya a ir

Restauración de la fijación con plomo de una baranda a una losa de piedra

Estado previo y posterior a la restauración de una mala fijación de una reja a una losa de piedra

unida el metal (ya sea una fábrica de granito, de mármol, de arenisca, de pizarra o de piedra caliza). Igualmente importante es llevar a cabo un control de la humedad de la fábrica, seleccionar la técnica de "ataque" (compactación del plomo por golpeo) adecuada, y controlar la fuerza y la secuencia de golpeo, además de tener en cuenta la granulación de la piedra. Un error común, pero más habitual de lo que debiera, es el de utilizar clavos de hierro, cuñas metálicas, o, aún peor, varillas de hierro.

Presencia de procesos patológicos por mala praxis

Con el paso del tiempo, debido a las pequeñas dilataciones, contracciones y sobrecargas a las que se ve sometido el plomo, éste debe ser "atacado" de nuevo. En ocasiones, si hay una pérdida considerable de volumen de este material, pueden utilizarse fragmentos de cuarzo, que se introducen en la emplomadura mediante un golpeo armonioso y con cuidado de que no entre en contacto con ningún metal férrico.

Cuando entre la piedra (fábrica) y el plomo aparece una línea amarillenta del color del azufre la unión nos está mandando un aviso de que necesita ser saneada. Para ello, debe retirarse el plomo y sustituirse, si es posible, el elemento metálico. Si se actúa de manera correcta podrá tanto recuperarse el elemento férrico como evitar que éste rompa la fábrica.

Utilización del plomo en edificios históricos

El plomo se ha utilizado históricamente en gran parte de los edificios que conforman nuestro Patrimonio. Encontramos este metal, por ejemplo, en los elementos ornamentales de los altares mayores y púlpitos de las catedrales de Plasencia y Ourense, obras del maestro Juan Bautista Celma (1540-1608). También podemos encontrarlo en las bases y centros de los balaustres, o en forma de láminas repujadas como recubrimiento de los elementos de forja. Estos elementos de plomo eran después policromados. Tanto las rejerías como los púlpitos se fijaban a los pisos y fábricas mediante el uso de plomo purificado fundido y "atacado".

También se tiene constancia del uso de plomo, por ejemplo, en el Palacio de Carlos V de Granada, obra del arquitecto Pedro Machuca (1490 - 1550). Se ha documentado su uso en los elementos de cubrición, para fijar los elementos de pizarra que permiten la impermeabilización del edificio.

También fue empleado en forma de planchas en las uniones de los pilares con los capiteles y bases, para que de esta manera las dilataciones producidas por los cambios de temperatura no afectasen a los elementos de arenisca, mármol o granito. Estas planchas actúan como un cojinete natural, que permite además la rotura de la onda sísmica en caso de terremoto.

En gran parte de las grandes estructuras de piedra de los siglos XV al XIX encontramos elementos metálicos como refuerzo contra el viento. Es frecuente encontrar crucetas de hierro forjado sobre las torres de las catedrales y otros edificios. Estas crucetas se conectan a un vástago que refuerza la estructura completa. Para impedir que la fuerza del viento dañara los elementos estructurales, era frecuente el uso de plomo para fijar estos elementos metálicos, por su elasticidad y densidad. Los elementos de metal, encapsulados con plomo purificado, fundido y "atacado", quedan así protegidos contra el agua, el oxígeno o el ácido carbónico.

Empleo del plomo en la actualidad

El plomo, utilizado desde la Antigüedad en gran cantidad de elementos –incluidas tuberías–, se ha ido retirando como material de construcción por su aparente toxicidad y los riesgos que supone su presencia para la salud de las personas. Es importante tener en cuenta que el plomo sólo es tóxico durante su manipulación o en contacto con otros líquidos de consumo humano, como es el caso del agua al pasar por una tubería hecha con este material. Pero, una vez que el plomo ha sido manipulado, y siempre que no se utilice con tales fines, ya no supone ningún riesgo para la salud. El plomo es utilizado por ejemplo por el personal sanitario para protegerse de la radiación.

Las normativas sobre el uso del plomo son más o menos restrictivas dependiendo del país. En España, se permite su uso para la fijación de elementos en edificios históricos, mientras que en otros países como Alemania su empleo está completamente prohibido.

Vertido del plomo en el proceso de fijación de un vástago

Emplomado de una verja metálica en una casa particular en Marrociños, La Coruña

Es importante señalar que muchas construcciones históricas, de varios siglos de antigüedad, se han visto más dañadas en los últimos 30 años que en los siglos anteriores. En muchas ocasiones esto se debe al empleo de nuevos materiales (menos elásticos y resistentes), a la falta de profesionales y a la falta de maestros artesanos que dominen las técnicas históricas. Encontramos, por ejemplo, vigas de madera de un campanario sustituidas por vigas de perfil metálico, mucho menos flexibles y con problemas de transmisión de onda, que se conectan además con gomas o neoprenos que no permiten una correcta ventilación para hacer frente a la humedad. ¿Qué solución será más duradera? ¿Por qué nos olvidamos de las técnicas y los materiales que han permitido que muchas de estas construcciones se mantengan en perfecto estado de conservación durante siglos?

Hoy en día parece que hemos olvidado gran parte de los oficios que fueron perfeccionando las técnicas constructivas durante siglos. En muchas ocasiones son las propias instituciones las que no han sabido dar continuidad a estos saberes, e incluso fomentan activa e inconscientemente su extinción. Mientras que el patrimonio material se protege en mayor o menor medida, los oficios y el patrimonio inmaterial están desapareciendo a gran velocidad. Sin embargo, estamos aún a tiempo de revertir este proceso.

Biography | Biografía | Biografia

Santiago Martínez Otero

Santiago, más conocido como Chago, es un maestro forjador especializado en la forja de construcción y en su restauración. Comenzó su formación en la escuela-taller de restauración y rehabilitación de Santiago de Compostela. Pronto dejó la escuela para trabajar en distintos talleres en los que fue familiarizándose con múltiples ramas del trabajo del metal, si bien siempre sin perder de vista su interés principal: la forja. En 2005 montó su propia empresa. Santiago ha recuperado algunas técnicas de acabado y protección del metal de gran durabilidad, especialmente para hierros antiguos. A lo largo de su carrera ha trabajado en los elementos de forja de monumentos como la Catedral de Santiago, la Catedral de Tuy, antiguos palacios como el de Gelmírez o el de Rajoy o el Castillo de San Felipe, entre otros. Santiago recibió el Premio Richard H. Driehaus de las Artes de la Construcción en el año 2021.

Patrice Elmer

The Propylaea of Paris

Los propileos de París

Os propileus de Paris

Abstract | Resumen | Resumo

Ledoux, les Propylées de Paris is an animated slideshow portraying all the octroi tollhouses of Paris, built by Claude Nicolas Ledoux (1736-1806), a visionary architect, urbanist and utopian. 3D modeling was done with SketchUp Pro, rendering with Artlantis Studio and Photoshop CS, and video editing with iMovie. Each building rendered in 3D is graphically explored using transparency and greyscale. The source documents are the writings of Claude Nicolas Ledoux – *L'architecture considérée sous le rapport de l'art, des mœurs et de la législation* (Architecture Considered in Relation to Art, Mores and Legislation), Volumes I, II, and III, viewable online at the French National Library website: gallica.bnf.fr

Ledoux, les Propylées de Paris es una presentación animada que muestra todas las barreras de aduana de París construidas por Claude Nicolas Ledoux (1736-1806), un arquitecto y urbanista visionario y utopista. El modelado en 3D se hizo con SketchUp Pro, el *rendering* con Artlantis Studio y Photoshop CS y el vídeo se editó con iMovie. Cada edificio representado en 3D se explora gráficamente mediante transparencias y escala de grises. Los documentos originales proceden del libro de Claude Nicolas Ledoux *L'architecture considérée sous le rapport de l'art, des mœurs et de la législation* (La Arquitectura vista desde la relación del arte, de las costumbres y de la legislación), tomos I, II y III que pueden consultarse *online* en el sitio web de la Biblioteca Nacional de Francia: gallica.bnf.fr

Ledoux, les Propylées de Paris é uma apresentação animada de slides que retrata todas as portagens *octroi* de Paris, construída por Claude Nicolas Ledoux (1736-1806), um arquiteto, urbanista e utopista visionário. A modelação 3D foi feita com o SketchUp Pro, a renderização com o Artlantis Studio e o Photoshop CS, e a edição de vídeo com o iMovie. Cada edifício renderizado em 3D é explorado graficamente usando a transparência e escala de cinza. Os documentos originais são os escritos de Claude Nicolas Ledoux – *L'architecture considérée sous le rapport de l'art, des mœurs et de la législation* (A Arquitetura Considerada na sua Relação com a Arte, Costumes e Legislação), Volumes I, II, e III, disponíveis *online* no website da Biblioteca Nacional Francesa: gallica.bnf.fr

Claude Nicolas Ledoux and the octroi tollhouses of the Fermiers Généraux wall

There can be no better introduction to the work of Claude Nicolas Ledoux than the review of his book *L'Architecture considérée sous le rapport de l'art, des mœurs et de la législation*, by Daniel Rabreau[1]:

> *Born in 1736 at Dormans in the department of Marne, after studying with a scholarship at the Beauvais College in Paris, Ledoux started out as a draftsman and engraver while also learning architecture at the school of Jean-François Blondel. Linked to poets such as Dellile or Saint-Lambert, friend of Physiocrats and familiar with the world of the fermiers généraux tax collectors and of high finance, Ledoux became one of the most fashionable architects from the latter reign of Louis XV to the Revolution. He was one of the outstanding builders of his time, though his work was largely demolished in the nineteenth century and has been reassessed really only in the last fifty years or so. Appointed inspector of saltworks in Lorraine and Franche-Comté in 1771, then architect of the Ferme Générale [the corporation responsible for collecting taxes on the king's behalf] in 1773, Ledoux had an essentially Parisian career albeit with significant ventures in the provinces. A member of the Royal Academy of Architecture from 1773, protégé of Madame Du Barry, of Trudaine, and then of the chief ministers of Louis XVI, he was commissioned to perform some major innovative projects: the Royal Saltworks of Arc-et-Senans (1775-1779), the Theater of Besançon (1775-1784), or the octroi tollhouses of Paris (1785-1789). The Château of Bénouville in the department of Calvados and the Hallwyll Hotel in Paris are the sole remaining testimonies of his private-sector output, also extensive.*
>
> *As a theorist of narrative iconography in the art of building, much influenced by the morality of Jean-Jacques Rousseau and the sensualist philosophy of Condillac, Ledoux shared with his colleague Etienne-Louis Boullée (author of a book entitled Architecture, essai sur l'art – Essay on the Art of Architecture – written in 1781-93), an altruistic and didactic view of the art of architecture at the service of society. In 1804, two years before his death, Ledoux published one of the five promised volumes of L'Architecture... A second posthumous volume, published without text by Daniel Ramée in 1847, contained unpublished engravings compiled by his heirs. The first prints of L'Architecture... had appeared back in 1773; over thirty years, Ledoux set some twenty engravers to work on this unique publication.*

1: Cover of *L'Architecture considérée sous le rapport de l'art, des mœurs et de la législation* by Charles Nicolas Varin (Ledoux 1840 edition)

2: Cover pages of the various volumes of *L'Architecture considérée sous le rapport de l'art, des mœurs et de la législation* (Ledoux 1804, 1847)

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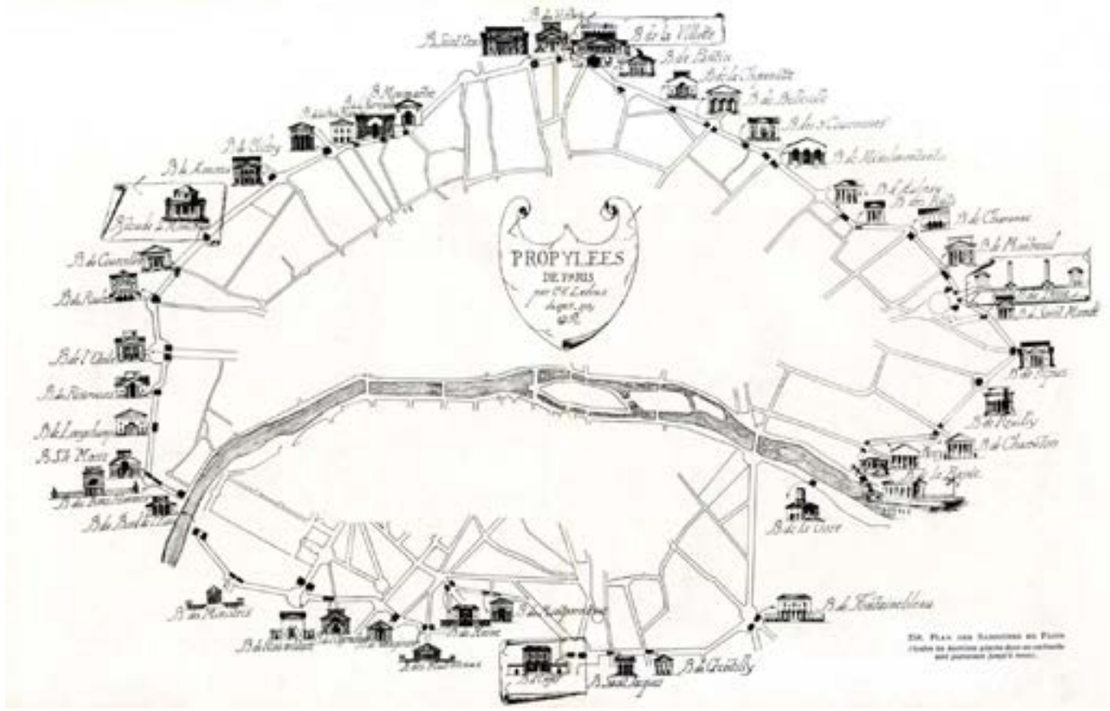


Plan of the octroi tollhouses of Paris by Claude Nicolas Ledoux (https://www.fulltable.com/VTS/v/vis/pr/26.jpg, consulted on 03/01/2022)

> *In his epic metaphorical style, with storytelling and mythological poetry, Ledoux celebrates architectural creation. Utopian visions are combined with details of his work as actually built and designed. The book is an artwork in itself rather than a treatise in the usual sense, but its encyclopedic character (as Ledoux himself says) makes it a work for the edification of practiced architects* (Ledoux 1804. Introduction by Daniel Rabreau).

In 1785, through the offices of the Controller General of Finances, Charles-Alexandre de Calonne, Louis XVI tasked Ledoux with a project for the construction of 51 octroi duty tollhouses encircling Paris. These "propylaea", built over three years, prompted popular discontent in Paris: "Ce mur murant Paris, rend Paris murmurant" (This wall around Paris makes Parisians grumble), according to a punning alexandrine quoted by Beaumarchais referring to the wall's unpopularity in 1785, to the point of its becoming one cause of the Revolution.

Jailed after the Revolution, Ledoux escaped the guillotine only through the intervention of the painter David. Ruined and disillusioned, he died in Paris on 18 November 1806.

Architectural Drawings

As we lack plans (except for the tollhouses of Chaillot-Sainte-Marie, Lavillette, Charonne, Enfer, and Maine) for reproducing these structures, mostly demolished in 1860, we have relied mainly on the subtle watercolors of Jean Louis Gaspard Bernardin Palaiseau, portraying poetic pastoral scenes, and the drawings of Léon Leymonnerye (1803-1879), the artist and surveyor, both of whom produced a full collection of Ledoux's octroi tollhouses.

The numbering of octroi gates is that of Jacques Hillairet (1886-1984), a French historian specialized in Parisian history.

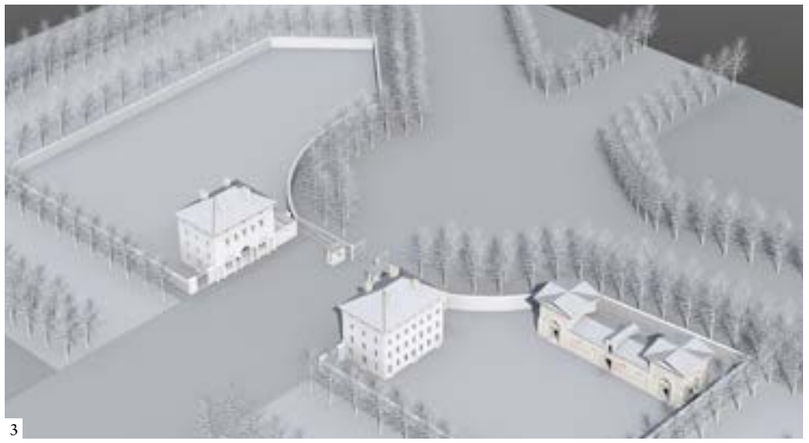
The Fermiers Généraux wall had a total length of 24 km. It was a continuous wall of stone masonry, interrupted by the Seine, by the railings bordering the Monceau park (where, instead of a wall, a trench was dug). It was 10 feet (*pieds*) high, i.e. 3.24 m, with a walkway 33 feet (11.69 m) wide on the inside and boulevards 90 feet (29.23 m) wide on the outside.

The octroi tollhouses consisted of 63 buildings, built over three years. They had a floor area of 46,000 m^2, almost equivalent to that of the Château of Versailles.

Outside the octroi gates, avoiding tax duty, a recreational streetscape grew up with restaurants, cabarets, dance halls and *guinguette* cafés, giving Ledoux the chance to deploy his talents as a visionary architect and utopian: "For the first time, the magnificence of *guinguettes* and of palaces shall be seen on the same scale" (Ledoux 1804: 18).

A French Architecture

In *Description de Paris et de ses édifices* (Description of Paris and its Buildings), by Landon et Legrand (expanded edition of 1818), the architect Nicolas Goulet describes Ledoux's still controversial architecture for the octroi tollhouses in the Fermiers Généraux wall as follows: "This architecture, full of grace and strength, is neither Egyptian, Greek nor Roman; it is French architecture; it is new and its creator drew its form and style from his own imagination" (Landon and Legrand 1818).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1: Photo of the front of the west pavilion of the Enfer tollhouse (https://fr.m.wikipedia.org/ wiki/Fichier:Barri%C3%A8re_d%27Enfer,_place_Denfert- Rochereau,_ Paris_0 2.jpg, consulted on 03/01/2022)

2: Watercolor of the Enfer tollhouse by Jean Louis Gaspard Bernardin Palaiseau (Gallica, Bibliothèque Nationale de France)

3, 4: 3D rendering of the Enfer tollhouse


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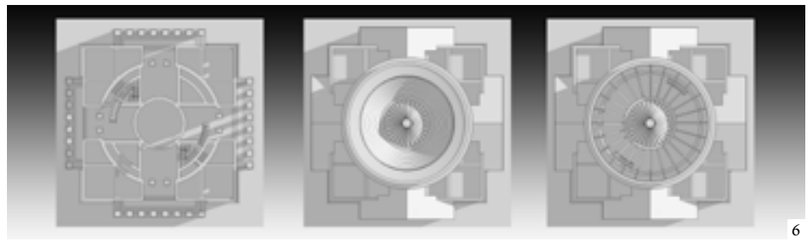
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5: Section of the Rotonde de la Villette, former tollhouse of La Villette

6: Plans of the tollhouse of La Villette

7: 3D view of the tollhouse of La Villette

8: Photo of the Rotonde de la Villette (http://pietondeparis. canalblog.com/archives/2011/12/16/22977678.html, consulted on 03/01/2022)

9: Watercolor of the tollhouse of La Villete by Jean Louis Gaspard Bernardin Palaiseau (Gallica, Bibliothèque Nationale de France)

Ledoux was the first architect to revisit the classical orders. By creating his own, stripping them of embellishments not indispensable to beauty of line, he stands as a precursor of modern architecture.

A reading of his work *De l'Architecture considérée sous le rapport de l'art, des mœurs et de la législation*, from which we have extracted the following aphorisms, shows the universality of his thinking (Ledoux 1804):

On beauty: "Unity, as a type of beauty, *omnis porro pulchritudinis unitas est* (Saint Augustine), consists of the correlation of masses with details or ornaments, in uninterrupted lines allowing the eye not to be distracted by deleterious accessories" (10).

1: Drawing of the tollhouse of Le Trône by Ransonnette, 1787 (Gallica, Bibliothèque Nationale de France)

2: 3D view of the tollhouse of Le Trône

On architects: "... almost always subject to narrow calculations, to hazardous chances, to vagaries counteracting the impulses of the spirit ..."; and "Let the nations sound the trumpet! Let all be summoned to the philanthropic gathering! Architects will be quick to answer the call and their busy and generous hands will furnish society with treasures that will be valued only once they themselves have gone. Like dew, shiny nourisher of our fields, appreciated only once it has disappeared, after the plentiful harvest that it fertilized, their work will be remunerated only in the immortality of their names" (9).

On architecture: "Architecture is to masonry what poetry is to literature: it is the dramatic enthusiasm of the trade; one can only speak of it with exhilaration. Design gives form, and it is form that imparts the charm animating any work of architecture. As there is no uniformity in thinking, there can be none in expression" (16).

On economics: "Public finances enjoy recognition through the simple and great characteristic of being nurtured by the very good that they supply to all members of society" (5).

On bioclimatic construction: "Healthful winds and the most suitable site must always determine the arrangement and construction of buildings; one must build in accordance with the temperature" (9).

On himself, and destiny: "Everyone, I grant, has their way of setting sail; but when one is organized so that a slack sail trimmed with skill by an ordinary captain carries one beyond the poles, to resist one's destiny would be reprehensible" (7).

On happiness: "It is natural for men to wish to be happy, but true happiness is nowhere to be found: men hardly ever find what they seek; anxious for what they lack, they are rarely anxious about what they possess (...) The best things that we pursue are not worth what we possess, which is inside us" (181).

3: Watercolor of the Bercy tollhouse by Jean Louis Gaspard Bernardin Palaiseau (Gallica, Bibliothèque Nationale de France)

4: 3D model view of the Bercy tollhouse

Watercolor by Palaiseau (Gallica, Bibliothèque Nationale de France) and 3D rendering of the Place de l'Italie tollhouse

Drawing by Léon Leymonnerye (Gallica, Bibliothèque Nationale de France) and 3D rendering of the tollhouse of La Glacière

Drawing by Léon Leymonnerye (Gallica, Bibliothèque Nationale de France) and 3D rendering of the Saint-Jacques tollhouse

Watercolor by Palaiseau (Gallica, Bibliothèque Nationale de France) and 3D rendering of the Montparnasse tollhouse

Drawing by Léon Leymonnerye (Gallica, Bibliothèque Nationale de France) and 3D rendering of the tollhouse of Les Fourneaux

Drawing by Léon Leymonnerye (Gallica, Bibliothèque Nationale de France) and 3D rendering of the tollhouse of Les Paillasons

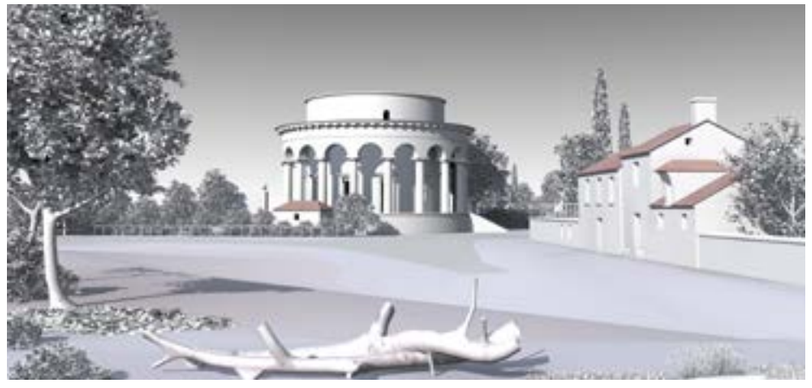
Watercolor by Palaiseau (Gallica, Bibliothèque Nationale de France) and 3D rendering of the tollhouse of La Cunette

Drawing by Nash and Watkins (Gallica, Bibliothèque Nationale de France) and 3D rendering of the Passy tollhouse

Watercolor by Palaiseau (Gallica, Bibliothèque Nationale de France) and 3D rendering of the Sainte-Marie tollhouse

Watercolor by Palaiseau (Gallica, Bibliothèque Nationale de France) and 3D rendering of the tollhouse of Le Roule

Anonymous drawing (Gallica, Bibliothèque Nationale de France) and 3D rendering of the tollhouse of Le Combat



Watercolor by Palaiseau (Gallica, Bibliothèque Nationale de France) and 3D rendering of the Reuilly tollhouse

Genesis of the Project

In 1984, after six years of adventures at sea, I decided to settle in the south of France and to build my own house. Imbued with theories of bioclimatic construction and passive solar heating, and seeking a façade concept liable to suit my preferred building type, namely bioclimatic with conservatory glazing on two levels, it was the "Temple of Terpsichore" designed by Ledoux in 1775 for Mademoiselle Guimard, a famed eighteenth-century dancer, that became my source of inspiration.

In 2018, after ending my architect's career for health reasons, it was time to pay a tribute for this loan.

The choice of theme – the octroi tollhouses of the city of Paris – came naturally in view of the unity that it gave to such a project.

Implementation

The source documents are the writings of Claude Nicolas Ledoux – *L'architecture considérée sous le rapport de l'art, des mœurs et de la législation* (Architecture Considered in Relation to Art, Mores and Legislation), Volumes I, II, and III, viewable online at the French National Library website: gallica.bnf.fr

In 1860, due to the expansion of Paris under the direction of Baron Haussmann, the Fermiers Généraux wall was knocked down, along with the octroi tollhouses. The only ones left were the Barrière d'Enfer in Place Denfert-Rochereau (14th *arrondissement*), the Rotonde du parc Monceau by the Monceau park (8th *arrondissement*), the Rotonde de la Villette in Place de Stalingrad (19th *arrondissement*), and the Barrière du Trône in Place de la Nation, where the 11th and 12th *arrondissements* meet. Two tollhouses also remain on Quai de Bercy, which were part of the Seine embankment, and which we have replaced with a modeled Barrière de la Rapée after the illustration by Antoine-Nicolas Misbach (1779-1805) and a drawing from the Paris City Plan produced by Edme Verniquet in 1791.

[1] Daniel Rabreau, born in Guérande in 1945, is an art historian, emeritus professor at the Paris University I-Panthéon-Sorbonne, and a specialist in eighteenth-century architecture.

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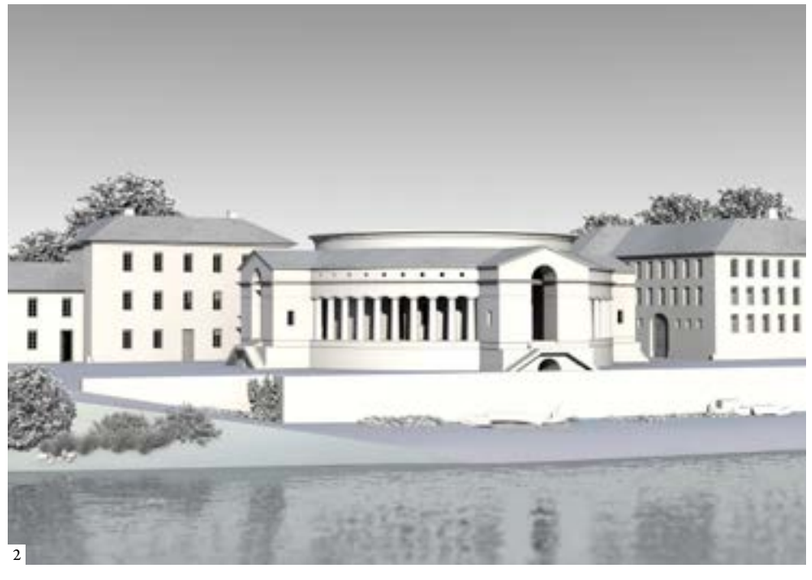

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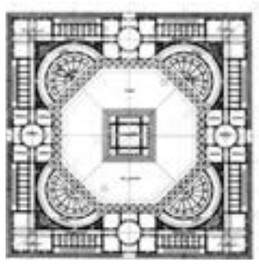
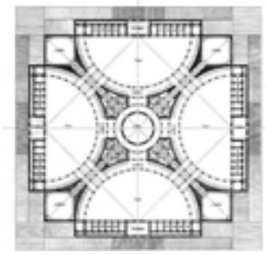
1: Drawing of the tollhouse of La Rapée by Misbach (Gallica, Bibliothèque Nationale de France)

2: 3D view of the tollhouse of La Rapée

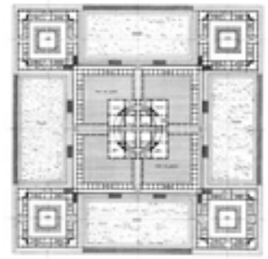
3D rendering by the author and plan by Claude Nicolas Ledoux of the *guinguette* of La Poissonnière (Ledoux 1804)



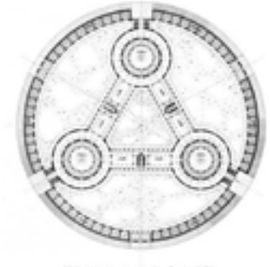
3D rendering by the author and plan by Claude Nicolas Ledoux of the *guinguette* of Chaillot (Ledoux 1804)



3D rendering by the author and plan by Claude Nicolas Ledoux of the *guinguette* of Le Temple (Ledoux 1804)



3D rendering by the author and plan by Claude Nicolas Ledoux of the *guinguette* of Saint-Marceau (Ledoux 1804)



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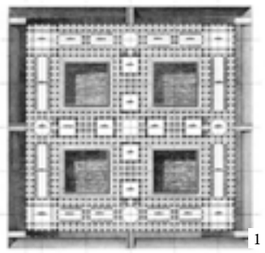
1: Plan by Claude Nicolas Ledoux of the *guinguette* on Quai de la Rapée (Ledoux 1804)

2: Section by Claude Nicolas Ledoux of the *guinguette* on Quai de la Rapée (Ledoux 1804)

3: 3D rendering of the *guinguette* on Quai de la Rapée



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Biography | Biografía | Biografia

Patrice Elmer

Patrice followed technical courses at the National Vocational School of Saint-Étienne and then obtained a Bachelor of Philosophy at the International Cévenol School. He set up his first ceramics workshop in Ardèche in 1970 and in 1978 he built a 13 m steel ketch with which he set sail for six years. On his return to France, in 1984 he built himself a house in the Gard department and worked again in ceramics for a few years. Then in 1992 he set up an architecture workshop on Nosy Be, Madagascar. Over twenty years he produced some sixty designs for individual houses, hotels, shops, and the creation of tourist areas.

Lucien Steil, John Simpson

An Alternative Project for the Euston Station Area in London

Un proyecto alternativo para la zona de la Estación de Euston en Londres

Um projeto alternativo para a área da Estação de Euston, Londres

Abstract | Resumen | Resumo

In July 2018 the University of Buckingham School of Architecture and the University of Notre Dame held a joint Architecture and Urban Design Summer Program in Central London: a four-week, full-time series of seminars, lectures, and field studies focusing on the Euston area between King's Cross Station and Regent's Park that will be impacted by the proposed HS2 high-speed railway terminus development. The program explored how a modern transport interchange can be accommodated within a historic city such as London in a manner that may enhance urban connectivity and serve the local community.

En julio de 2018 la Escuela de Arquitectura de la Universidad de Buckingham y la Universidad de Notre Dame desarrollaron un programa conjunto de Arquitectura y Urbanismo en el centro de Londres: una serie de seminarios, conferencias y estudios de campo intensivos de cuatro semanas enfocados en la zona de Euston, entre la Estación de King's Cross y Regent's Park, que va a verse afectada por el proyecto de la estación del tren de alta velocidad HS2. El programa exploró cómo se puede integrar un intercambiador de transporte moderno en una ciudad histórica como Londres de manera que mejore la conectividad urbana y dé servicio a la comunidad local.

Em Julho de 2018, a Escola de Arquitetura da Universidade de Buckingham e a Universidade de Notre Dame organizaram um Programa de Verão conjunto de Arquitetura e Design Urbano, no centro de Londres: uma série de seminários, palestras e estudos de campo, ao longo de quatro semanas e a tempo inteiro, que incidem na área de Euston, entre a Estação de King's Cross e o Regent's Park, que será afetada pelo desenvolvimento previsto do terminal ferroviário de alta velocidade HS2. O programa explorou como um interface de transportes moderno pode ser acomodado dentro de uma cidade histórica como Londres, de uma forma que possa melhorar a conetividade urbana e servir a comunidade local.

Following the proceedings of the 2018 Buckingham University and Notre Dame University Summer School, on August 27, 2018 Clive Aslet wrote in *The Times*[1]:

> *There is a visionary alternative for the new Euston station [...]. Rail travelers who have been gnashing their teeth at the closure of Euston station in London this weekend have a bitter consolation. The chaos is as nothing to that which will descend when the station is rebuilt. This is one of the consequences of the HS2 project, the impact of which on its London terminus has been ignored, with few people seeming to know the plans. Hear, then, my warning: many years of misery are coming down the track.*
>
> *The masterplan is now in the public domain but hasn't been widely advertised. It's not a pretty document. The proposal is to enlarge the Network Rail station by adding an HS2 limb to the west. Since Euston is too important a hub to be allowed to close, disruption caused by building works will be huge. The footprint of the station will become enormous.*
>
> (Note: The government is paying for the station and the infrastructure works, with land and air rights being put into the hands of a development company that is making the most of them with plans for massive high-rises – and the resulting profits will not necessarily be returning to the public purse!)
>
> *There is an alternative. It has been proposed by John Simpson, the Dean elect of the School of Architecture at Buckingham University. This summer I lectured on the history of Euston at a summer school organized by the university. Students were busily at work on a revolutionary scheme – revolutionary because it envisages the building of traditional streets, and development in low blocks and terraces rather than tall towers. The key to making this possible is simple: stack the Network Rail and HS2 tracks on top of each other. This double-decker approach is used in many stations around the world and engineers say it's feasible at Euston. It would mean that a completely new station could be built, independent of the old Euston. Once ready, the old station would be closed and services transferred; the site of the old station would then be redeveloped, knitting it back into the urban fabric.*

Euston Station area context in 2018

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1: A modernist Euston Station reconstruction proposal (*The Times*, November 2016, Sydney and London)

2: HS2 Euston Station concept design – exterior (Grimshaw Architects)

The Summer School Program started with a study tour of exemplary planned towns including Bath and Poundbury to see original and contemporary examples of traditional architecture and urban planning. The students then explored techniques of urban and building design which are responsive to their setting. The course also offered tours of London streets and buildings, looking at the urban fabric and its history and social make-up. It emphasized both practice and theory in traditional architecture and urban design and explored varying design approaches and techniques in a uniquely intensive environment, showing how design in architecture contributes to our cities' development and their inhabitants' wellbeing. With the support of faculty advisors and external consultants as well as input from John Simpson Architects, the students were able to produce a sophisticated and comprehensive alternative masterplan perfectly responding to the official program requirements, as well as to an extremely complicated technical agenda.

The program was directed by Professor John Simpson, Dean Elect of the University of Buckingham, and the faculty were Professor Samir Younés, of the University of Notre Dame, and Lucien Steil, of the University of Buckingham. Participants were Sophie Bakkali, William Hedley, Yanjia Jin, Michail Sarafidis, Alexander Athenson, Ellen Chen, Anthony Fitheoglou, Puisan Lee, Hallie Swenson and Lauren Sommerville. Amanda Potts was in charge of the planning and coordination and Digby Ogston was the event manager.

Aerial view showing the scale of the new HS2 station in the existing Euston Station area (mediacentre.hs2.org.uk_HS2-VL-28447)

Urban impact of a proposed modernist project for Euston Station seen from Drummond Street (Perspective drawing and rendering by Yanjia Jin)

Urban impact of the alternative 2018 Summer School Project seen from Drummond Street (Perspective drawing and rendering by Yanjia Jin)

There follows an interview conducted by Lucien Steil with John Simpson, who initiated and directed the 2018 University of Buckingham Summer School.

Lucien Steil: When you organized your first University of Buckingham Summer School in Traditional Architecture and Urbanism in Summer 2018 you suggested the program be dedicated to an alternative design for the reconstruction of Euston Station. There were already massive demolition works underway, and the building project had already been allocated to Grimshaw Architects. It seemed a rather desperate situation and by then it also seemed clear that the major public and private stakeholders were not going to bow to pressure from preservation, environmental, and citizen groups. What led you to go ahead with the Euston Station counter-project in such a dire context?

John Simpson: Summer 2018 was a crucial time in the development of the HS2 Station at Euston. As you can imagine, HS2 is a long-term, difficult project, with complexities both technical and political. It started life with a parliamentary bill being deposited in November 2013, which gained Royal Assent in 2017, and the HS2 Station Design was to take place during 2017 and 2018, with time allocated for community engagement in 2018. Grimshaw Architects had only been commissioned at the time to put forward a feasibility study and the work of the Summer School was designed to contribute to the public engagement. Although local groups had been fighting the proposals and had put a lot of energy into trying to influence the direction of the project with alternative designs for the station, no one had produced anything to demonstrate the potential this had in improving the surrounding urban context of the whole Euston area. This was the right time to be doing a counter-project to add to a powerful argument for improvements to the proposed scheme. It would show what a lost opportunity this would be to this part of London and provide a vision for what could be possible.

This was a once-in-a-lifetime opportunity to dramatically improve a significant area of central London which was being missed by the proposals for the new station. Historically, before the arrival of the railway in 1837, the character of this area was predominantly residential and determined by John Nash's plans for Regent's Park and the introduction of the New Canal in 1812, which initially served three market squares which were quickly adopted as residential squares of small houses.

The opening of Euston Station with its cuttings and railway tracks changed the area irrevocably. It introduced an unbreachable barrier between the more affluent Regent's Park residences and the areas to the east. This, combined with the heavy wartime damage and a hasty post-war reconstruction providing social housing estates in the form of blocks and towers, resulted in the degradation of this part of the city. Our feeling was that the unprecedented investment which comes with the HS2 project should be used to remedy this. Instead, the proposed scheme, as configured, only compounded the problem. Rather than increasing permeability through the site it did quite the opposite by doubling the area given over to the combined railway stations, which was completely unnecessary. Camden, the local authority, was very disappointed, as before Grimshaw Architects were appointed to do the feasibility study they had been proposing that the station should be used as the opportunity to do just that, and improve the urban character of the area.

We felt this was too important an issue to be ignored, and having the Summer School students tackle a real and relevant problem like this was also the perfect tool for educational purposes. It would give the students an insight into a real-life project and had the potential to show just how a modern transport interchange of this scale could be accommodated within the urban fabric of a historic city like London.

L.S.: Can you explain what differentiated your alternative design concepts from the official project?

J.S.: The most significant difference was the strategy adopted from the outset, which assumed that restoring the urban fabric and coherence of the Euston area must be a priority, not an afterthought. To achieve this we pursued a strategy of reducing the amount of land taken up by the station and reorientated the station building so that it ran east-west. This increased permeability through the site. Rather than placing the new high-speed train platforms next to the existing railway ones, we proposed to stack them up, reducing the footprint considerably. This was an adaptation of proposals already put together by the local pressure groups. Both our and the official proposals assumed that the new tracks and platforms will be located underground, but by reducing the width of the station we were able to introduce gentle slopes which meant that the street network could go across the tracks uninterrupted, allowing eastern parts of the quarter to be once again connected with areas leading toward Regent's Park and beyond. Well-defined streets, squares, and parks were created to make this part of town welcoming to pedestrians, residents and visitors alike, a place where communities and business can thrive, in contrast to the emerging official scheme where the station itself once again would overwhelm the neighborhood, ignoring the impact it will have on the local community.

Elevational studies of the southern part of the alternative proposal for the Euston Station area (Puisan Lee and Anthony Fitheoglou)

L.S.: Traditional projects are often reproached for being naïve and idealistic, focusing more on image than on content and taking program requirements too lightly. This project encompasses a very large building envelope with an extremely complex functional program and an extraordinarily complicated technical agenda. Not only did you have to consider restructuring a vast urban area, adding tracks for high-speed rail, expanding and improving service and commercial facilities, offices, and retail, as well as housing, etc., but you also needed to allow for Euston Station and the surrounding urban area to continue operating without too much disruption. How did your Summer School handle all of these monumental challenges in a single month of design work?

J.S.: To make the best of the time available to the students during the four-week Summer School a lot of preparatory work was done by John Simpson Architects in advance. We collated and analyzed the historical and planning context of the scheme and studied emerging proposals to ensure that what is put forward as the alternative meets the same commercial objectives in terms of floor plates and saleable areas.

Southern part of the alternative proposal for the Euston Station area with a processional entrance from Euston Road (Puisan Lee and Anthony Fitheoglou)

Areal view of general area

Nolli Plan Showing Site And Context

Perspective of Arcade to Bus Station

We also benefited from the work done by other interested parties and pressure groups who wanted to influence the outcome of the HS2 project. For example the technical details of the railway solution were developed in advance by Jeff Travers, an architect/engineer with experience designing stations across the country. He had been campaigning to improve the HS2 proposals over the preceding years and already had the technical information from the relevant authorities and had worked on the technical proposals. He in effect did all the engineering technical work for the station design before the Summer School started. He happily got involved with the School, contributing to the teaching and the liaison with the local community.

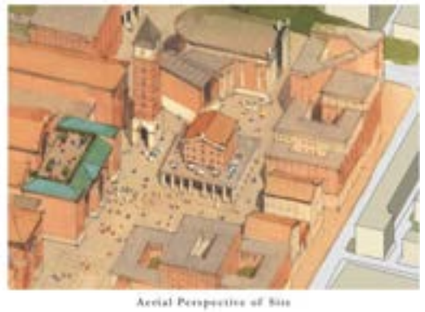
We also got our network of professional advisers who had relevant experience involved and had their advice from an early stage, and they too eventually interacted with the students, helping them with the project. They included David Taylor, a highly respected and experienced highways engineer, as well as David Stillman, an equally distinguished services engineer. An outline strategy for the engineering was therefore prepared and handed over to the students at the outset, giving them and their tutors a firm engineering foundation from which to develop the design.

L.S.: As you mentioned, the Summer School participants were a mix of undergraduate and graduate students as well as one high-school student: probably none of them had ever worked at such a large scale and within such a level of urban and technical complexity. Can you explain how the School handled both the pedagogical challenges and the productive objectives, namely to deliver a believably professional project?

J.S.: The in-depth preparatory work I have just described was just one part of the approach we adopted. The other was a range of tours and exercises which took place at the outset of the Summer School. They included a study tour of exemplary towns including Bath and Poundbury to see original and contemporary examples of traditional architecture and urban planning. The students had a chance to explore techniques of urban design and methods of designing buildings that respond effectively to their urban setting. I thought you and Samir as tutors used this effectively, exploring the urban fabric, its history and social make-up, to emphasize the importance of both practice and theory in traditional architecture and urban design. By doing this you gave the students a solid understanding and grounding as to the context within which the main design was set and explained the means by which they might put right any deficiencies. The students could not have had better tutors to lead them and take them through a project like this. In addition, the involvement of experienced practicing architects and engineers such as Craig Hamilton, Robert Adam, Alan Baxter, Richard Economakis, Demetri Porphyrios, Alireza Sagharchi, Samina Shahzady, David Taylor, Francis Terry, David Stillman, and others who incidentally volunteered to come and tutor the students without any payment, ensured that a theoretical, academic approach was always balanced by practical considerations which are a necessity for a design in the real world and give the proposed solutions the necessary credibility that you describe.

Most importantly, however, by leading a group of students of mixed ability all working together you managed to replicate the situation in a real-life professional office where you and Samir had the students learning both from you and from their peers. This is very much building on the *atelier* system used in the past at the *Beaux Arts*.

Main eastern entrance to the new Euston Station and adjacent public realm (Ellen Chen and Yanjia Jin)



Aerial Perspective of Site

Perspective sketch of the Euston Station area from the south with a rebuilt Euston Arch (Drawing and rendering by Ellen Chen)

Perspective drawing of the main Euston Station east entrance square (Drawing and rendering by Ellen Chen)

L.S.: Not all the ten participants had a classical background and design experience in traditional architecture and urbanism. How were you able to teach principles of traditional design and at the same time resolve major design challenges? What type of training and support were the participants given from your own architectural firm, external consultants, and engineers, as well as neighborhood associations and preservation activists?

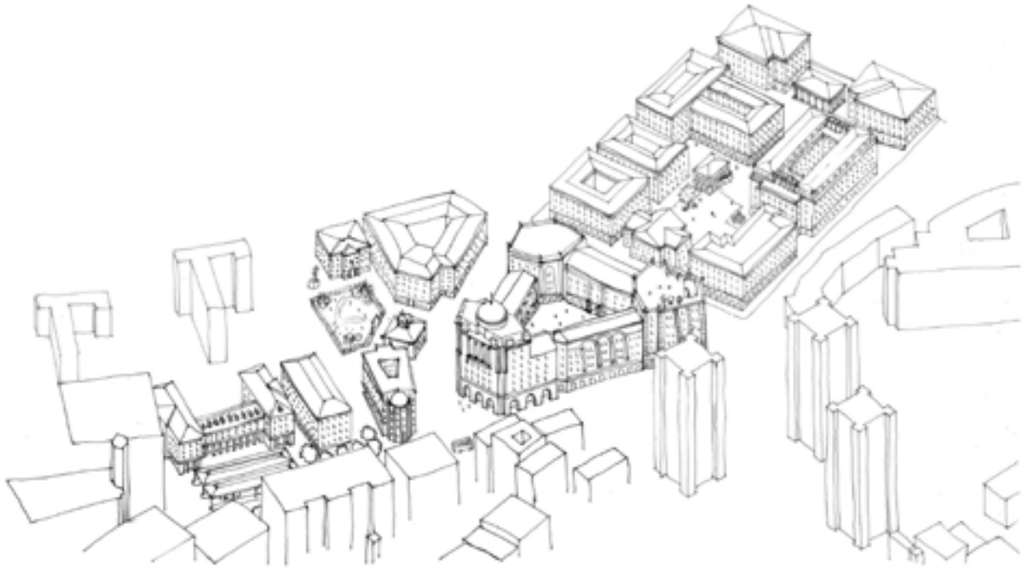
J.S.: An accompanying series of lectures by prominent theorists, academics, and historians including Léon Krier, Samir Younes, Mark Wilson Jones, Frank Salmon, and Clive Aslet provided the necessary stimulus and academic input. Furthermore it was important that the Summer School design studio was run, as I mentioned, in the way an architectural office would work, where people of varying experience come to work together to develop a scheme. Everyone's unique strengths can be recognized and employed in the realization of a common goal, where the students are learning by doing. It's through this that they learn how to interact with others, build teamwork, and gain the knowledge and confidence they need to design. As you know, I as well as Joanna Wachowiak and Tiffany Abernathy, who work for the practice, took a very hands-on approach to helping the students with their tasks and education. From the preparation of the initial outline masterplan and background project information all the way to regular visits in the studio which was located just around the corner from our office, and being at hand to respond to any specific queries or design

Hampstead Road elevation study (Sophie Baccali and William Hedley)

issues. The same can be said of the engineers and other consultants, including particularly David Taylor and David Stillman, while the involvement of Jeff Travers was invaluable both from an engineering point of view regarding the station but also for his local knowledge, which gave the students a unique insight into the community concerns. This is so often overlooked in teaching when it comes to large urban design and infrastructure projects.

All in all, a relaxed, informal atmosphere combined with an ambitious approach to the task at hand, underpinned by continuous support from the tutors and professionals, allowed all the students to blossom. In addition the students were given a unique opportunity to learn from the many practitioners who generously contributed their time, participating in student critiques, city walks, and lectures.

New square at the west entrance to Euston Station (Sophie Baccali and William Hedley)



L.S.: How did yourself and your staff interact with the faculty and participants of the summer school?

J.S.: The daily interaction was the norm both with students and the faculty for whom our office became a bit of the base. There, over an evening, as the official work business came to a close, we could sit around the conference room table and discuss issues that arose that day and strategize how to overcome any difficulties or build on the opportunities presenting themselves. Several informal evening events like, for example, an opera outing where students and tutors and the office staff could get to know each other on a more personal level meant that communications were always easy and relaxed.

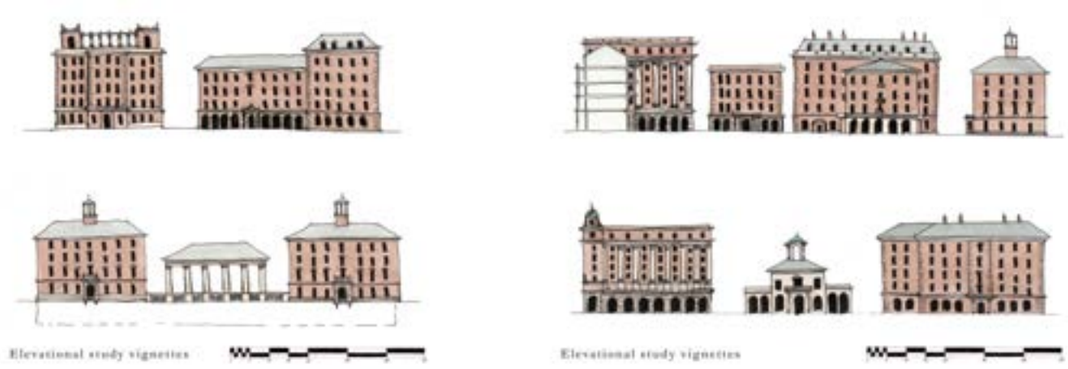
Northern part of the alternative Euston Station area proposal (Hallie Swenson and Michail Sarafidis)

View north-west from residential park

Areal view of general area

View north-east along Hampstead Road

etional-elevational study



Elevational study vignettes

Elevational study vignettes

Elevational studies in the northern part of the alternative Euston Station area proposal (Hallie Swenson and Michail Sarafidis)

L.S.: What was your expectation when you decided to have your first University of Buckingham Summer School tackle such an extraordinary and ambitious project?

J.S.: I wanted the school to make a difference, for the students in particular. Design is not an academic subject you can learn from a book. There is nothing like a real-life project to teach students what it's all about. It's not just the project itself that they have to learn how to interact with. They need to learn how to interact with each other, with the technical data from the engineers, with the authorities, with the community, and with all the other stakeholders involved. They must understand how decisions are made and that it is a multidimensional matrix that requires many skills and sometimes a good deal of diplomacy and foresight.

North-east perspective view along Hampstead Road with the new bus station (Hallie Swenson and Michail Sarafidis)

Intermediate review of the alternative proposal for the Euston Station area

In addition, at the time there was a very good chance to influence the direction in which the HS2 Euston Station design was being taken. This however was seen as a bonus if it worked. The primary objective was to set the scene and the background for the project for the students, which this project did perfectly, down to the reception we received from the local community, from the local authority, and even the local member of parliament for the area, who all got involved.

L.S.: Were your expectations rewarded? What would you highlight as the achievements of the Summer School?

J.S.: I believe so. I thought Samir and you together with the students produced a very convincing result which was professionally executed and presented. The School ended with an exhibition of all the students' work, and it was well attended and received with great interest and expressions of support. I am sure you found the comments of the local community members as well as the local planners, as I did, especially heartening. I certainly know the students found it so. The scheme was presented to the local MP Kier Starmer, who has since become leader of the Labour Party, and I have no doubt that the students learned a great deal as to the complex issues that surround such projects and felt rewarded by the praise they got for their hard work. I certainly feel you, Samir, and the students should be proud of what you achieved in terms of good design in such a short time… and moreover to do so in a real-life situation where you are having to convince the stakeholders. This was backed up by the *London Evening Standard*, if you remember, and they ran a piece on the counter-project with pictures of the students' work that coincided with the final days of the Summer School.

L.S.: How would you assess the pedagogical achievements? Would you confirm that you can teach by design, and that the dynamic of studio pedagogy is able to achieve both design excellence and technical efficiency?

J.S.: In my opinion, as you and Samir proved on this project, the best way to teach architecture and design is through experience. This is how it has always been done in the past and it was done that way for a very good reason! It's only in the twentieth century that this ceased to be the case in the UK, and you only have to look around you to see where that has got us. This Summer School more than any other was so directly involved with the local community and even the local authority participated, giving it this particularly real dimension. I also thought the ten students were especially suited to the project, and the involvement of the engineers and Jeff Travers, together with all the tutors we had,

Final masterplan by the 2018 London Summer School team (John Simpson Architects and consultants Jeff Travers, David Taylor, and David Stillman)

contributed to the intensity of the project, which added to the flavor of reality that surrounded the studio. In addition, the studio was led by two of the most inspiring tutors I can think of, which at the end is perhaps the most significant thing about the program.

L.S.: How was the Euston Project received by the public and the authorities? Was there any significant feedback? How did the press follow it up?

J.S.: There is no doubt that the public was fully supportive of the proposals which emerged from the Summer School. These were presented to the local community, the local authority, and, as it has been mentioned, the Member of Parliament for the area.

Aerial Perspective

Hampstead Green Perspective

Hampstead Road Elevation

North part of the alternative Euston Station area proposal with the new Mosque and Hampstead Square (Lauren Sommerville and Alex Athenson)

Following the exhibition, at the end of July, the *London Evening Standard* published an article entitled: "Students go full steam ahead with their own plan for a new-look Euston Station", by Ross Lydall, which was extremely complimentary about their work and published several drawings by the students.

L.S.: Can you tell us what happened with Euston Station? What is the status of the official project?

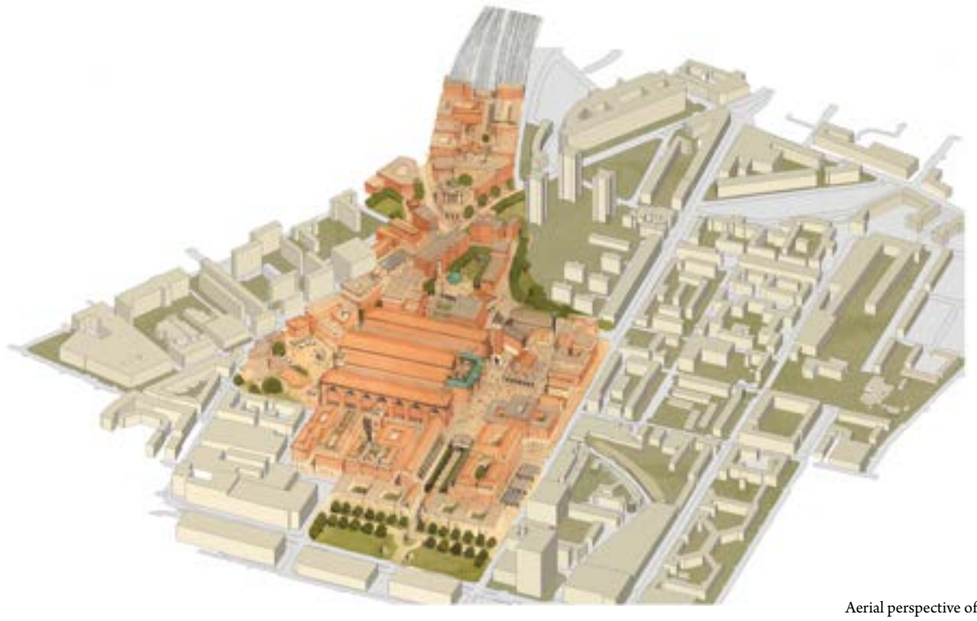
North part of the alternative Euston Station area proposal with the new Mosque and Hampstead Square (Lauren Sommerville and Alex Athenson)

J.S.: After the feasibility scheme done by Grimshaw Architects, Arup were commissioned to take the project further. Following that, Grimshaw Architects were asked to come up with a concept design but for the station only. On March 9th, 2022 two images of the station were released with an

Hampstead Square Perspective

Transverse Section

Longitudinal Section



Aerial perspective of the alternative proposal for the Euston Station area in the context of the HS2 development program (Watercolor rendering by Chris Draper)

announcement that HS2 has a new updated scheme for the high-speed railway terminus . This is the first update since the scheme was published in 2015 and no plans are available. We are told that the station has been reduced in size to ten platforms and that "The station will feature a bold geometric roof design to allow natural light to flood into the station concourse. The roof is an identifying feature of the station and emphasizes its north-south alignment, and its role as a regional gateway. The ground-level concourse will be 300 m long and will allow free movement for both passengers and visitors through the station and will open out onto new public spaces at the north and south. The station hall – 20% larger than Trafalgar Square – will become the largest station concourse in the UK. Retail and station facilities will be available on the ground and first floor, underneath the dramatic top-lit station roof."

Exhibition of the final project for an alternative proposal for the Euston Station area

Since the Summer School, HS2 has been plagued by major overruns with cost, a section of the planned route was axed as a result, and there has been great pressure to keep costs contained, hence the reduction in the number of platforms. It's also a major infrastructure project with its own bill in parliament, which means that as a project it's not subject to the usual planning process, making it more difficult for Camden as the local authority to influence the project directly as it normally would.

Based on the description and the two CGI images released, it's difficult to see whether the solution as currently proposed has been improved with respect to the surrounding area. Although the project continues to march on this concept design, drawn up by a consortium made up of Arup, WSP, and Grimshaw Architects, it's now subject to further public engagement which is just beginning. Perhaps it's time to resurrect the good work that you, Samir, and the students did then, to republish and continue the good fight. The scheme after all still needs to get planning consent from the London Borough of Camden.

Acknowledgements

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Faculty: Professor Samir Younés, University of Notre Dame, and Lucien Steil, University of Buckingham

Participants: Sophie Bakkali, William Hedley, Yanjia Jin, Michail Sarafidis, Alexander Athenson, Ellen Chen, Anthony Fitheoglou, Puisan Lee, Hallie Swenson, Lauren Sommerville

Planning and Coordination: Amanda Potts; Event Manager: Digby Ogston

[1] Aslet, Clive. 2018. There is a visionary alternative for the new Euston station. The Times, https://www.thetimes.co.uk/article/there-is-a-visionary-alternative-for-the-new-euston-station-gphg6tv63 (consulted on 15/03/2022)

Biographies | Biografías | Biografias

Lucien Steil

Lucien was born in Joao Monlevade (Brazil), and lived and studied in Luxembourg. He studied architecture and urbanism in Paris and Vincennes and graduated as an Architecte DPLG (*Diplômé par le gouvernement*). He has collaborated with Maurice Culot and Léon Krier at the Archives d'Architecture Moderne, in Brussels, and later with Colum Mulhern in Luxembourg. "Mulhern & Steil" produced a wide range of projects in traditional urbanism and traditional architecture. Lucien Steil has lectured and taught at the Prince of Wales's Urban Design Task Force in Potsdam and Berlin, the Oregon School of Design (Portland, Oregon), the University of Miami, the Universidad Politécnica de Puerto Rico, the University of Notre Dame in Rome and in Indiana, the Università di Bologna, the Universidade Católica Portuguesa in Viseu, the Prince's Foundation and the University of Buckingham. He has been actively involved in traditional and ecological urbanism and architecture, which have become central to his teaching and design practice. Lucien Steil was the editor of *Katarxis* and principal of "Katarxis Urban Workshops ASBL".

John Simpson

John is principal of John Simpson Architects. He is a leading proponent of New Classicism and believes Architecture, as a public art, must draw on our collective experience and traditions as a society. His work came to prominence in the 1990s with his masterplan for Paternoster Square by St Paul's Cathedral in London. He pioneered mixed-use urban planning long before it was adopted as government policy. Through his work he has had considerable influence in bringing the Classical tradition to the fore with works which include the Queen's Gallery, Buckingham Palace, buildings at Poundbury for the Duchy of Cornwall, Kensington Palace for the Queen's Jubilee, and the DMRC rehabilitation facility for injured service personnel near Loughborough. Within academia his work includes Gonville & Caius College and Peterhouse at Cambridge, Lady Margaret Hall at Oxford, McCrum Yard quadrangle at Eton, the music rooms at RCM, London, and the School of Architecture at Notre Dame, Indiana. John has taught at the Prince's Foundation and lectured at Notre Dame University and is a professor at Buckingham University. In 2021 he was appointed professor at Cambridge University, and he is a Fellow at Gonville & Caius College.

Patrick Moore

Stereotomy and L'Art du Trait*: The* Guitarde *as a Case Study*

Estereotomía y L'Art du Trait*: La* guitarde *como caso de estudio*

A estereotomia e a L'Art du Trait*: A* guitarde *como caso de estudo*

Abstract | Resumen | Resumo

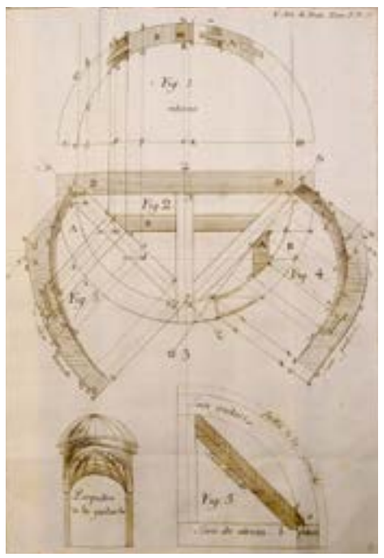
One example of the combination of structurally sound construction techniques and attention to pleasing aesthetics can be seen in the *guitarde*, an elaborate type of dormer that was developed in the Loire Valley in France during the eighteenth century. Although the traditional methods of joinery are still taught and practiced, their use in contemporary *guitardes* is uncommon. Historic preservation work and the insights provided by the construction practices employed in buildings being preserved may give us a new perspective, providing a more holistic and profound approach to sustainable architecture than is allowed by an exclusive reliance on new technologies.

Un ejemplo de combinación de técnicas de construcción estructuralmente sensatas y atención a los detalles estéticos es el de la *guitarde*, un tipo de ventana abuhardillada decorada que se desarrolló en la región francesa del Valle del Loira durante el siglo XVIII. Aunque los métodos tradicionales de carpintería se siguen enseñando y practicando, su aplicación a las *guitardes* contemporáneas es poco frecuente. El trabajo de conservación del patrimonio histórico y la información que ofrecen los métodos de construcción utilizados en los edificios conservados pueden darnos una nueva perspectiva que proporcione un enfoque más integral y profundo de la arquitectura sostenible frente a la dependencia exclusiva de las nuevas tecnologías.

Um exemplo da combinação de técnicas de construção estruturalmente sólidas com a atenção à estética agradável pode ser visto na guitarde, um tipo elaborado de trapeira que foi desenvolvido no Vale do Loire, em França, durante o século XVIII. Embora os métodos tradicionais de ensambladura ainda sejam ensinados e praticados, a sua utilização nas guitarde contemporâneas é pouco comum. O trabalho de preservação histórica e os conhecimentos proporcionados pelas práticas de construção utilizadas nos edifícios a preservar, podem dar-nos uma nova perspetiva, proporcionando uma abordagem mais holística e profunda à arquitetura sustentável do que é permitido por uma dependência exclusiva das novas tecnologias.

Today, as our society faces pressing challenges with respect to environmental sustainability, one approach to more sustainable building in the future is to be found in the field of historic preservation. The conservation of historic buildings reveals the structural integrity with which they were often built, as buildings that have already lasted for centuries could not have done so without sound principles of design and construction. Their combination of functionality and timeless beauty provide insights of value as we attempt to adopt more sustainable ways of building. The craftsmanship involved in their construction also illustrates not only the skill of the craftspeople involved but also an intellectual approach different from and often more profound than that which we frequently see today.

One example of this combination of structurally sound construction techniques and attention to pleasing aesthetics is the *guitarde*, an elaborate type of dormer developed in the Loire Valley in France during the eighteenth century. Dormers became popular as they enabled the creation of an additional story of fully lit rooms above a building's eave line. The earliest dormers were functional and simple, but architects later integrated them into their designs, using them to emphasize vertical



These two *guitardes* by Nicolas Fourneau, author of the *L'art du trait de charpenterie*, for Hôtel du Président de Bailleul, Rouen, were made shortly before the publication of his treatise in 1767. They can be found at 5 rue du Moulinet, Rouen, Normandy (Andy Hyde)

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2

1: Designed and built by Arnaud Delaunay in order to qualify as a Compagnon du devoir during his Tour de France while in Lamothe-Landerron, Aquitaine, the creation of this extra-large *guitarde* shelter took more than 740 man-hours (Arnaud Delaunay)

2: Two elliptical *guitardes*, with a balcony (below) and supporting an ogee roof (above), to be found at Musée des Compagnons du Tour de France, 14 rue Tripière in Toulouse (Michel Ravitsky)

and horizontal lines of symmetry and framing windows with pediments and other detailing. Some of these dormers were referred to as *guitardes* because their curving lines resemble the shape of a guitar. The first documented example of such elaborate dormers in timber is a pair of *guitardes* designed and built in 1765 by Nicolas Fourneau, a master carpenter from Rouen in Normandy. Interestingly, much traditional *guitarde* joinery is simpler than its overall form might suggest. For example, Louis Mazerolle's 1866 treatise *Traité Théorique et Pratique de Charpente* details a highly complex *guitarde* joined primarily with variations on standard mortise-and-tenon and half-lap joints.

The *lucarne guitarde* and its slightly less complex cousin, the *lucarne capucine*, became a mark of quality and craftsmanship in carpentry. Throughout the nineteenth century, clients and architects wishing to hire the best craftspeople would commission elaborate dormers to be built on their roofs, and carpenters, in a spirit of competition, would build increasingly complex exemplars to advertise their skill. These structures are admired by professionals as well as the public, and some are regarded as masterpieces.

A *guitarde* is a composition of interlacing, double-curved pieces with curvilinear (typically circular or elliptical) profiles in plan view and in both front and side elevation views. A related dormer type, the *capucine*, is often confused with the *guitarde*. The difference is that, in plan, *capucines* are rectilinear, whereas *guitardes* are curvilinear, though the internal components of both are double curved. "*Capucine*" comes from the French *capuche*, meaning "hood", for the similarity to the hooded robes of Capuchin monks. Both *capucines* and *guitardes* are used as structural supports for a range of cantilevered roof features, including dormers, balconies, or porch roofs, and as canopies above entryways, alcoves, and statuary niches.

In plan view, the circular or elliptical circumference of a *guitarde* is often defined by a solid wood cornice, commonly adorned with detailed moldings, below the upper roof structure. This cornice is supported by two flanking, double-curved braces known as *guitarde* braces. The spandrels, or triangular spaces, created between the cornice and braces are often filled with curved paneling with decorative motifs. The space between the *guitarde* braces is filled with numerous double-curved pieces. Principal among these are *liens de tenailles* (pincer links), which in part are hips and valleys

Hippolyte Moreau was a master carpenter in Châteauroux, and made these dormers in 1871 on his family house at the corner of 12/14 rue de la Gare and rue Ledru Rollin, Châteauroux. They reflect all the challenges of his trade and all his knowledge of stereotomy (Geomotifs)

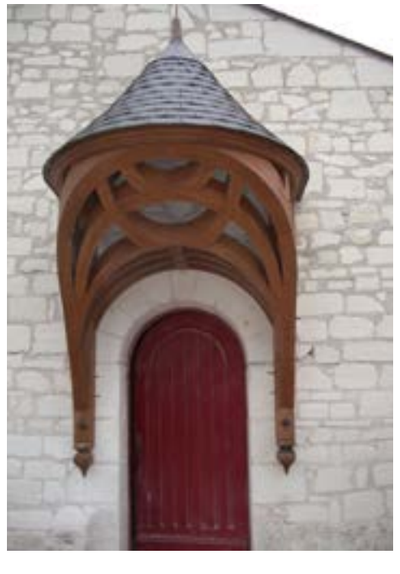
at the intersection of the curved front and side elevation profiles, often taking the form of irregular groin vaults. Pincer links are essentially curved Saint Andrew's crosses that resemble a curule seat, a Roman chair style that symbolized political or military power. Note that Fourneau's *guitardes* have hips that are straight in plan rather than pincer links, indicating that the radii and elevation of the front and side profiles are identical. Also in this space, often between the interlaced timbers, we find letters referring to Compagnon craftsmen, dates, initials, and diverse motifs, such as stars, crosses, and flowers.

Fourneau wrote the first French treatise on carpentry stereotomy by a working craftsman, *L'art du trait de charpenterie*, published in 1767 and including working drawings of early *lucarnes guitardes*. Fourneau's treatise was the culmination of nearly twenty years of teaching the techniques of complex stereotomical carpentry to his fellow guildsmen. It was the first compilation of techniques that until

The façade of the Aux Arts et Sciences réunis restaurant at 161 avenue Jean Jaurès in Paris features a small *guitarde* canopy with a double-curved surface that has been sectioned on an angle to create two double-curved hips and a straight valley in the center (Sim Ayers)

then had been the domain of individual master carpenters, each with his own favored methods. By repeatedly setting out problems and testing solutions with his students, Fourneau arrived at a set of techniques and procedures that could be formally taught rather than simply practiced on worksites where apprentices and journeymen would learn from a master.

Stereotomy, as the application of complex geometry to building methods is known, in the French tradition is commonly referred to as *l'art du trait*. This term, roughly translatable as "the art of the line," was first used by the Compagnons du devoir, the ancient French craft guild system whose origins likely predate the twelfth century. Similar notions exist in Germany (*Schiften*) and in Japan (*Kikujutsu*). As an art and a set of techniques, stereotomy reflects empirical knowledge that



Masterpiece of carpentry at the Compagnons du devoir guild house in Saumur (Tim Whitehouse)

House and *guitarde* built by the master carpenter Albert Fisseau in 1947. Fisseau "Tourangeau l'Ami du Trait" qualified as a Compagnon du devoir in Tours in 1959 (David Poiron)

developed into an intellectual discipline. As a method of cultivating independent problem-solving, stereotomy is relevant on any worksite. As of 2009 *l'art du trait* has been listed on the Representative List of the Intangible Cultural Heritage of Humanity.

For eight centuries *l'art du trait* has been used in France to determine and express the values of structural details through precise working drawings. With this method a carpenter or stone carver can determine all the dimensions and angles required, prior to layout or assembly of components. This was originally done with full-size working drawings, often drawn on the floor. With the evolution of technology the method was developed to include the use of scaled-down drawings.

Masterpiece of carpentry at the Compagnons du devoir guild house in Toulouse (Jonathan Lahaye)

Canopy built by Nathaniel Gruenwald for which he was awarded an Advanced Professional Certificate by the Professional School of Stereotomy. The porch consists of a groin vault formed by two *capucines* based on Billon Frères plate 89, published in *L'art du trait de charpenterie* (Nathaniel Gruenwald)

Although the traditional methods of joinery are still taught and practiced, their use in contemporary *guitardes* is uncommon. Modern mechanical fasteners and glues and techniques such as glue lamination can speed up manufacture and produce highly stable structures. But the enduring legacy of manual stereotomy is its intellectual orientation – the way of seeing and conceptualizing design and construction that it involves.

In *The Artisans and Guilds of France*, François Icher sums up the experience of *l'art du trait*: "For centuries, youngsters on the Tour de France [an itinerant apprenticeship for craftspeople] have been initiated into the mysteries of the *trait* in courses given by journeyman teachers who are past masters in its subtleties. In fact the working drawings used in realizing masterpieces of carpentry are just as remarkable as the artifacts themselves … The *trait* transforms the work as well as the worker. With the support and supervision of his teacher, the student thinks, reflects, and learns to envision differently."

Historic preservation work and the insights provided by the construction practices employed in buildings being preserved may give us a new perspective, providing a more holistic and profound approach to sustainable architecture than is allowed by an exclusive reliance on new technologies. Surprisingly to some, exposure to these time-tested techniques clearly assists the practice of sustainable building and shows that future sustainable practices would be enriched by the incorporation of old wisdom.

A complex *guitarde* above the entrance to the Compagnons du devoir guild house in Mont-Saint-Aignan near Rouen (Hans-Peter Koennecke)

Masterly classic *guitarde* constructed by two students, Jérémie Abbatte and Luc Adam, at the Professional School of Practical Stereotomy, Ottawa, respecting all the rules of the art, and the first ever built in the Americas. The *guitarde* and roof structure combined represent more than 1500 man-hours (The Professional School of Practical Stereotomy)

Lander Uncilla Cortaberria

Thresholds

Umbrales

Limiares

Abstract | Resumen | Resumo

The term *umbral* (threshold) denotes the bottom part or sill, normally of stone, lying directly below the lintel of a doorway or entrance. But it also evokes a part of a house – a sphere around the opening connecting the interior and exterior. This divergence between what is denoted and what is evoked gives rise to a reflection. Setting out from examples apparently remote from one another, we explore similarities between them: connections going beyond formal aspects and taking us both to the origin of the word and to the connotations or architectural potential of thresholds.

El término "umbral" nombra la parte inferior o el escalón, por lo común de piedra –y contrapuesta al dintel–, situado en la puerta o entrada de un edificio. Pero a su vez, evoca un lugar de la casa, un ámbito en torno a una abertura que comunica lo interior y lo exterior. Esta diferencia entre lo nombrado y lo evocado da pie a una reflexión. Se parte de ejemplos aparentemente lejanos entre sí y se buscan similitudes entre ellos: conexiones que van más allá de lo formal, y que nos acercan tanto al origen de la palabra como al trasfondo o potencial arquitectónico del umbral.

O termo "umbral" refere-se à parte inferior ou degrau, geralmente feito de pedra - e oposto ao lintel -, situado na porta ou entrada de um edifício. Mas, ao mesmo tempo, evoca um lugar na casa, uma área em torno de uma abertura que liga o interior e o exterior. Esta diferença entre o que é nomeado e o que é evocado dá lugar a uma reflexão. Partimos de exemplos aparentemente distantes e procuramos semelhanças entre eles: ligações que vão para além do formal, e que nos aproximam tanto da origem da palavra como do contexto ou do potencial arquitetónico do umbral.

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Biography | Biografía | Biografia

Patrick Moore

Patrick is the first North American to have become a fully inducted member of the Compagnons du devoir, having spent several years in France doing the Tour de France and participated in the restoration of two UNESCO World Heritage Sites and many *Monuments Historiques* such as the National Opera House in Strasbourg and the Château du Haut-Koenigsbourg in Orschwiller, Alsace. Patrick has two diplomas, one in heritage millwork and carpentry and the other in heritage and traditional masonry. He holds two Red Seal certificates, in carpentry and cabinetmaking, and is Gold Seal Certified as a Superintendent, as well as being a certified National Construction Safety Officer. He founded the Professional School of Practical Stereotomy in Ottawa, Canada, where he gives courses in stereotomy. He has also delivered workshops in stereotomy across the U.S., Europe, and Canada.

Caserío Ibarra en Mallabia. Fotografía en blanco y negro de Indalecio Ojanguren; negativo en película (Archivo General de Gipuzkoa. Colección Indalecio Ojanguren. Referencia: AGG-GAO_ OA02363)

...l'arbre entier est, pour l'oiseau, le vestibule du nid.
Gaston Bachelard

Introducción

Este artículo recoge una primera reflexión en torno al devenir del umbral en la arquitectura doméstica. Esta última abarca una gran parte de la actividad constructiva y sin duda es la que más personas acoge. A pesar de ello, paradójicamente, no es la que mayor atención recibe.

Son tantas las formas que el umbral ha adoptado a través del tiempo y de las culturas que resulta imposible abarcar el tema en su totalidad. De ahí que, aunque solo sea para indagar en una parte de su territorio, es necesario escoger los ejemplos de acuerdo con algún criterio. Este criterio no es aquí formal, ni geográfico, ni cultural. Puesto que se quiere hablar de lo que las distintas formalizaciones del umbral tienen en común, aquí se recurre a conexiones menos tangibles quizá, pero que se sitúan más cerca de su esencia. Se parte de la convicción de que la comprensión de los fundamentos del umbral puede enriquecer la manera en que estos –los umbrales, y en especial los domésticos– se abordan en el presente.

Se han escogido tres ejemplos lejanos entre sí, tres umbrales retratados por personas ajenas al mundo de la arquitectura. El primer ejemplo es una pintura de Fra Angelico. El segundo, una casa de té retratada por Yasuhiro Ozu. Y el tercero y último, un trabajo del pintor danés Peter Vilhelm Ilsted. Su elección se debe a que la distancia –temporal y cultural– existente entre ellos ofrece un punto de partida abierto. Pero también a que, a medida que se avanza en la exposición, hacen posible aproximarse al lugar en el que los distintos umbrales se conectan entre sí.

La exposición que sigue a esta breve introducción se estructura en tres partes. La primera es una aproximación a dos de los tres ejemplos seleccionados. La segunda, una exploración sobre lo que aporta el lenguaje –como repositorio– al respecto del umbral. Y la tercera, vuelve sobre los dos ejemplos anteriores, para después introducir al lector en el tercer ejemplo. Para finalizar se hace una breve recapitulación señalando algunas vías de investigación que quedan abiertas.

Annunciazione. Fra Angelico. c. 1425. Témpera sobre tabla. 191,5 x 162,3 cm (Museo del Prado)

Primera parte

El primero de los ejemplos escogidos es un conjunto pictórico conocido como *La Anunciación,* conservado en el Museo del Prado en Madrid. Se trata de un trabajo del primer cuarto del siglo XV y una de las varias versiones elaboradas en torno a este mismo tema en el taller de Fra Angelico. Esta versión es un conjunto de tablas pintadas con témpera y dorados, de formato rectangular y apaisado. La escena principal en torno a la que gravita el trabajo tiene lugar en un pórtico abierto a un jardín. Allí, una mujer sentada recibe la visita de un ángel. Al espacio cubierto se le dedican aproximadamente dos terceras partes del lienzo.

Cada ambiente –jardín y edificio– contiene una escena. En el jardín –y concretamente en el límite entre la zona ajardinada y la arbolada– un hombre y una mujer abandonan esta última zona bajo la atenta mirada de un ángel que los invita a salir. El edificio, por su parte, contiene la escena principal, reconocible tanto por su luminosidad como por el mayor tamaño de sus protagonistas. Allí, otro ángel –posado en el suelo– se comunica con la mujer sentada de espaldas a la pared del lado derecho del cuadro. El libro abierto que tiene ella sobre su regazo parece indicar lo inesperado de la visita. En la esquina superior izquierda hay un Sol dorado del que emergen dos manos. Desde ellas un haz de luz se dirige hacia el pecho de la mujer sentada, atravesando en diagonal la escena principal. Envuelta en este haz de luz una paloma vuela hacia ella.

El espacio cubierto, situado en una de las esquinas del edificio, está bordeado por una arcada compuesta de cuatro arcos atirantados de medio punto. Estos descansan sobre esbeltísimas y refinadas columnas de piedra. La posición de tres de estas columnas coincide con las subdivisiones verticales mencionadas a propósito de la composición del conjunto. El pórtico es de planta cuadrada y está cubierto con una bóveda rebajada de lunetos. Dos de sus lados están abiertos al jardín a través de la columnata descrita. Los otros dos están delimitados por un muro.

En ambos ambientes –jardín y edificio– el primer plano y el fondo se matizan, lo que da lugar a ámbitos de carácter diferenciado. En el caso del edificio, además del pórtico que se encuentra en primer plano, una abertura en el muro de fondo muestra una habitación amueblada e iluminada por una ventana. Fuera del edificio el cuidado jardín en primer plano da paso a una zona boscosa situada al fondo y en la que se distinguen distintas especies de árboles. Este bosque es lo que se ve también más allá de la ventana.

Nos encontramos ante una representación del umbral rica en matices y símbolos. Estos símbolos son a veces evidentes, como ese techo estrellado, que representa al cielo; un cielo protector, como el manto que cubre a la mujer. Y otras veces son sutiles, como ese tejido con doble pliegue que cuelga de la pared y que asemeja a la mujer a su visitante. Todos estos detalles vienen a reforzar una misma idea de fondo.

El segundo de los ejemplos escogidos es el umbral de una casa de té en Japón. En este país el culto al té derivó en un ritual basado en la adoración de la belleza. Su práctica conducía a un contacto con un orden cuya armonía era ajena a la condición trivial que atraviesa la existencia cotidiana. Pero este culto no es reducible a una experiencia estética, ya que a partir del mismo se construía una manera de estar en el mundo.

> *El té (…) más que la idealización de una forma de beber, fue una religión del arte de la vida. Este brebaje se convirtió en un pretexto del culto de la pureza del refinamiento; una función sagrada en la que el huésped y su invitado se unían para alcanzar juntos la beatitud de la vida mundana.*[1](Okakura 1906: 43)

Describir gráficamente el umbral de la casa de té no puede limitarse a mostrar la imagen del porche del pabellón que acoge la ceremonia (*chasitsu*). Porque, aunque su refinado diseño contiene –para quien lo sepa ver– la idea matriz que impregna al conjunto, este no es separable del jardín que envuelve al pabellón (*roji*). En el jardín los elementos naturales se trabajan para ensalzar su belleza hasta dotarlo de esa apariencia inmaculada. La hierba cortada, los setos arreglados, las agrupaciones de flores, el arbolado lejano, la presencia de la construcción y de los objetos de piedra… todo en ese lugar contribuye a aislar al visitante del mundo exterior.

> *El cuarto del té fue un oasis en el desierto de la vida, en el que los viajeros, cansados, podían encontrarse para beber en el manantial común de la apreciación del arte. La ceremonia fue un drama improvisado cuyo argumento fue tramado alrededor de la mesa del té, de las flores y de las pinturas. Ningún color alteraba la tranquilidad del recinto, ningún ruido turbaba el ritmo de las cosas, ningún gesto rompía la armonía, ninguna palabra destruía la unidad de los alrededores, todos los movimientos se ejecutaban simple y naturalmente –tales eran los designios de la ceremonia del té.*[2] (Okakura 1906: 43, 44)

Como en el ejemplo anterior, también aquí jardín y edificio se complementan para dar forma a una versión muy depurada del umbral.

1

2

3

1, 2, 3: Vistas del entorno de una casa de té en Kamakura, Japón. Fotogramas de *Banshun*, de Yasujiro Ozu. 1949.

Caserío Mallabiabarrena en Mallabia. Fotografía en blanco y negro de Indalecio Ojanguren; negativo en placa de vidrio (Archivo General de Gipuzkoa. Colección Indalecio Ojanguren. Referencia: AGG-GAO_ OA02365)

Segunda parte

Existe una distancia entre la noción evocada por la palabra "umbral" y su significado. El vocabulario constructivo que rodea a este término[3] gravita en torno a la presencia de una abertura que comunica el interior con el exterior, haciéndolos accesibles. Y al hablar de la casa vinculamos el "umbral" a su límite, y más concretamente, al contorno o ámbito del acceso a la misma.

El significado de la palabra umbral no alude, sin embargo, a un ámbito, sino a determinados elementos de la abertura. Se denomina umbral bien a la "superficie inferior o escalón en el vano de una puerta de acceso" (elemento que también recibe el nombre de *limen*) o bien "a la pieza que se atraviesa en lo alto de un vano para sostener el muro que hay encima", es decir, un dintel (Real Academia Española 2014).

La etimología ofrece una vía de aproximación para explorar esa distancia entre los dos sentidos de la palabra, el literal y el evocado. Pero antes de exponer cómo distintos idiomas han construido palabras para este concepto partiendo de raíces que difieren en significado, es preciso señalar los distintos aspectos a los que se presta aquí atención. Al comienzo de esta reflexión se ha aludido a una doble vertiente del umbral. De una parte, sus múltiples formas; los innumerables resultados de moldear estos ámbitos fronterizos a través del tiempo y las distintas culturas, que atienden a los más variados requerimientos –domésticos, agrícolas, representativos, defensivos, o relativos a la privacidad, entre otros–. De otra, su condición inmutable; aquello que, al margen de las diferentes solicitaciones, une a las formas transitorias. En este estudio en torno al término "umbral" coexisten por tanto dos vertientes: el umbral *como ser*, y el umbral *como forma*.

El umbral, más allá de su ser y de su forma, está también vinculado íntimamente a los rituales; y, más concretamente, a los ritos de paso. Esta tercera vertiente –el umbral *como acto*– es un aspecto antropológico que de nuevo se despliega en un sinfín de variantes y respuestas desde la arquitectura. Los rituales, con independencia de su grado de sofisticación, dan forma al acto en sí de franquear un límite en torno a la casa, haciendo del umbral una antesala, un lugar puesto al servicio de otro. El umbral *como acto* es, por tanto, un tránsito, un preámbulo de la casa. Y como tal, adquiere una condición de margen. El lugar donde prepararse para un inminente cambio de ambiente.

Al abordar –ahora sí– la etimología de la palabra, encontramos que la ascendente latina de umbral conduce directamente a la palabra *lumbral*[4], en la que confluyen los términos *lumen* y *limen*. *Lumen* significa fuente de luz, y es también la raíz de lumbre (materia encendida). Por su parte, *limen* nombra el límite de la casa y en lengua castellana ha quedado vinculada a un elemento situado al pie de la abertura. Su derivado *liminaris* conserva casi intacta tanto su forma como su significado en el idioma portugués.[5]

La ascendente germánica del concepto de umbral, por otro lado, de la que deriva la palabra inglesa *threshold*[6], agrupa a un conjunto de palabras actualmente empleadas por diversas lenguas del norte de Europa[7]. Todas ellas están vinculadas a la raíz protoindoeuropea **tere-*. Esta raíz, asociada a significados como moler, frotar o batir para separar el grano, está también presente en las palabras castellanas trigo, triscar y trillar. Es muy probable que las palabras derivadas de aquella raíz que dio nombre al umbral estuvieran vinculadas a un lugar; un lugar destinado a las tareas de campo mencionadas.

Así, vemos cómo la construcción del lenguaje en torno al concepto de umbral difiere en ambas ramas. La rama nórdica establece un vínculo de connotaciones rurales entre el campo y un lugar destinado a tareas asociadas a este. La rama latina, por su parte, concibe una palabra más neutra, que es en sí misma un lugar de confluencia. Vincula la luz o la lumbre a un límite. Al hacerlo, se concibe el umbral como límite de la presencia del hogar.

Antes de cerrar esta breve incursión etimológica es preciso mencionar que en torno a la palabra "umbral" revolotea la noción de "atravesar". De una parte, porque *limen* proviene de *limus*, palabra de origen desconocido que significa "atravesado"; un atravesar que, probablemente, se refiera a algo tan prosaico como un elemento que precisamente para formar un umbral cruza el vano de una abertura. De otra parte, porque el concepto de "atravesar" conecta con la ya mencionada vertiente de "umbral" como tránsito. El vínculo de esta idea con el ritual de paso ofrece un ángulo distinto desde el que abordar las distintas formas constructivas del umbral. Y la arquitectura se presentaría como un acompañante que hace posible una preparación; un adoptar la debida disposición para lo que espera al otro lado.

Las dos vertientes lingüísticas aludidas, latina y germánica, no recogen ciertamente todas las posibles aproximaciones etimológicas a la palabra umbral. Pero sí proporcionan una vía por la que descender hacia los cimientos de su idea, válida para un espectro cultural occidental bastante amplio. En la tercera parte se volverá sobre los ejemplos anteriores con la voluntad de profundizar en ellos a la luz de lo ya expuesto.

Detalle del acceso al pabellón de una casa de té en Kamakura, Japón. Fotograma de *Banshun*, de Yasujiro Ozu. 1949.

Annunciazione. Detalle. Fra Angelico. c. 1425. Témpera sobre tabla. 191,5 x 162,3 cm (Museo del Prado)

Tercera parte

Sobre el jardín de la casa de té ya se ha dicho que es un lugar de transición desde el que tomar distancia del ruido exterior. Y también, que como parte del umbral, este constituye una antesala al pabellón; un preámbulo a la ceremonia del té. Todo él es por tanto un margen, un lugar intermedio o de tránsito, que, como tal, deberá ser atravesado y sustituido por la habitación.

Obsérvese la imagen del detalle del límite entre el jardín y la habitación para comprender esto mejor. En poco más de un metro se resuelve la salida del jardín y el ingreso en el edificio, o viceversa. Jardín y edificio están separados por un canal. Este, a pesar de su sencillez, separa dos mundos: hierba y tierra apisonada, natural y construido, formas orgánicas y geométricas… El conjunto está construido a partir de dualidades.

Los dos márgenes del canal son en sí mismos un resumen del conjunto. Dentro del perímetro delimitado por esa zanja, un mundo de pobreza refinada aguarda al visitante. Su geometría, ajena al mundo vegetal, da lugar a una regularidad que impregna los elementos y la atmósfera del edificio, y que se extiende hasta el borde mismo del canal. Este mundo reglado se aísla para acercarse en lo posible a un ideal. Ese mismo deseo de aislarlo separa la habitación del suelo. Y sólo los elementos limítrofes conservan a ese lado de la zanja algo del jardín situado al otro lado: la forma redondeada de los postes, las piedras que atraviesan el porche... Estas últimas, cuya irregularidad no parece casual, acompañan al visitante hasta el momento de ingresar en la cámara interior.

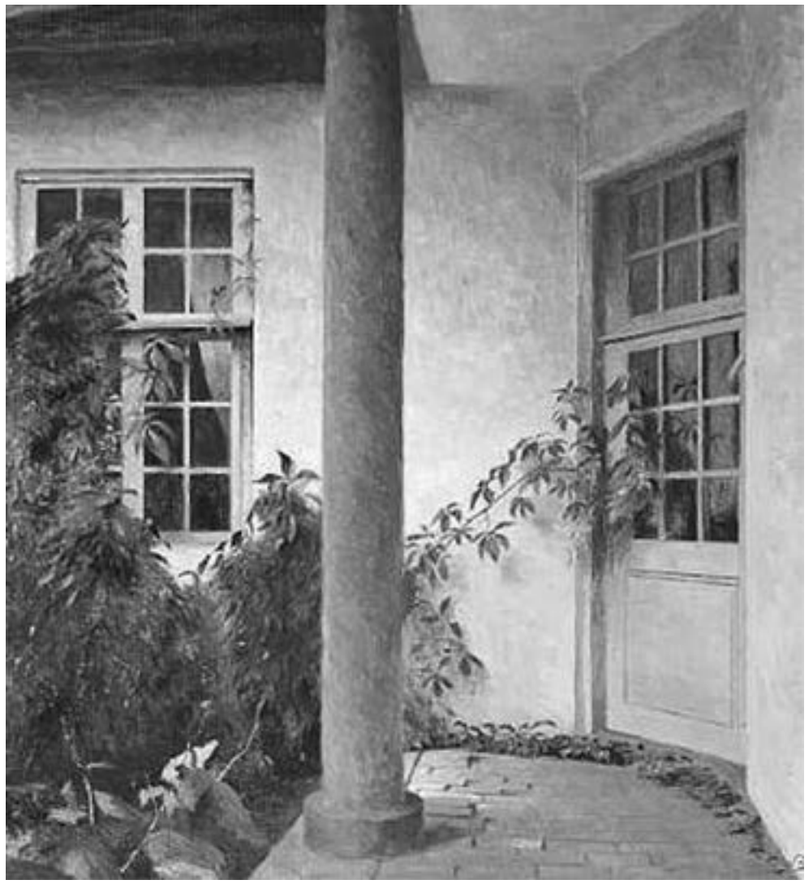
En este lugar de tránsito que envuelve a la habitación, todo –la hierba, las ramas de los árboles mecidas por el viento, las flores, e incluso el pabellón– rezuma fragilidad. La arquitectura contribuye a sumergir a quien traspasa este umbral en un lugar que está más allá del mundo que habita. Y al hacerlo, todo se supedita a la consecución de la idea de fondo: trascender lo cotidiano.

De manera similar al ejemplo anterior, la escena representada en *La Anunciación* está construida también contraponiendo parejas homólogas. Y para mostrar este conjunto de parejas se escoge un punto de vista descentrado y ligeramente elevado que, como se ha visto, hace posible matizar cada uno de los ámbitos. Así, al analizar el conjunto, las dualidades se multiplican: naturaleza-artificio, expulsión-anunciación, divino-humano, día-noche, cielo-techo, jardín-bosque, habitación exterior-interior, ángeles, Dios, hombre-mujer, paloma-golondrina, refinamiento y ausencia de él...

En ese juego de parejas está de nuevo contenida la representación de dos mundos, el divino y el terrenal. Y en la escena ambos mundos entran en contacto cuando lo divino trasciende lo físico y se hace presente. Este "trascender", es un "traspasar" el límite entre ambos mundos que protagoniza el ángel. En su presencia –en ese poner en contacto ambas partes– se crea una zona intermedia de la que ambos mundos participan. El haz de luz es una representación casi literal de ese "atravesar" anteriormente referido, y el ángel, como las piedras elevadas del pabellón de té, encarna ese tránsito.

Obsérvese el detalle correspondiente a la crujía que enmarca al ángel. A la izquierda lo divino; a la derecha lo terrenal. Entre ambos, el lugar intermedio donde los dos mundos se unen en ese atravesar. Nótese con qué cuidado y esmero se tratan los bordes para que los límites se vuelvan imprecisos: las franjas de vegetación que asoman entre los fustes de las columnas, la abertura en el muro que asoma a ambos lados de la columna central, el talón del visitante, sus alas a medio camino entre la construcción y el vergel del que proviene, el trocito de manto y el tejido extendido sobre el suelo que rebasan la columna central…

Fra Angelico retrata una teofanía donde el límite, ya disuelto, hace posible la relación entre lo divino y lo humano. Y lo hace solapando sus respectivos elementos. He aquí cómo, bajo una apariencia totalmente distinta, se vuelve al mismo tema descrito en el ejemplo anterior: una cotidianidad trascendida –en este caso por la manifestación de lo sagrado–.



Parti fra Liselund med vildvin, der vokser op af husmuren. Peter Vilhelm Ilsted. 1917. Óleo sobre lienzo. 77 x 70 cm.

Como Fra Angélico, Peter Vilhelm Ilsted volvió en varias ocasiones sobre un mismo tema: el patio de una casa en Liselund. El trabajo escogido muestra el patio en cuestión. Allí la vegetación crece sin aparente control humano, extendiéndose más allá del espacio acotado para el jardín. Al hacerlo, coloniza un porche.

La composición está presidida por una columna que la divide verticalmente en dos mitades. A un lado de la misma está el jardín. Al otro, el espacio cubierto. En profundidad, ambos –jardín y porche– quedan acotados por el muro de la casa, telón de fondo de la escena. En este se recortan una ventana y una puerta, que asoman respectivamente al jardín y al porche. Ambas están cerradas y la vegetación se cierne sobre ellas. En su avance las plantas se abren paso a través de las irregularidades e intersticios de la construcción y, al hacerlo, desdibujan los límites entre jardín y edificación.

Más allá de lo visible una atmósfera de aparente abandono impregna el ambiente. Se percibe un leve aire de decadencia contenido por algunos signos de refinamiento. Junto al ya mencionado atrevimiento de la vegetación, algo indefinido –una especie de amenaza– late en ese lugar; una tragedia casi invisible. Y ese algo oculto vincula este trabajo con la Anunciación.

Corresponde al lector descubrirlo.

Conclusiones

Los ejemplos escogidos –formas elaboradas del umbral– han dado pie a una mirada subliminal, un tipo de mirada sobre la realidad que la acerca a una idea. El culto al té para la cultura japonesa y *La Anunciación* para quienes profesan la fe cristiana son distintas versiones de ese ideal. Y como tal pertenecen a lo inalcanzable.

Aunque este tipo de soluciones refinadas de umbral se puede encontrar en la arquitectura tradicional culta –tanto en la civil como en la religiosa–, lo explicado a través de los tres ejemplos seleccionados no está disociado de la arquitectura tradicional anónima. Esta, aunque situada a una mayor distancia de lo ideal, participa de esa misma urdimbre. La arquitectura doméstica del mundo rural, con sus innumerables umbrales vinculados a aquella noción hermanada con las tareas del campo, es buen ejemplo de ello.

Mantener permanentemente esa disposición interna que atiende a lo intangible es difícilmente conciliable con las demandas del día a día. La formalización del umbral en la arquitectura doméstica ha discurrido, inevitablemente, por otros senderos. En la actualidad, con gran parte de la población aglutinada en núcleos urbanos, el umbral doméstico –carente ya de su vínculo rural– requiere ser ordenado para no naufragar en lo anodino. Y ello requiere, a su vez, la atención de personas que conscientes de esa distancia entre lo ideal y lo cotidiano sean capaces de transformar su potencial en algo cualificado y factible.

El umbral como ámbito sigue siendo, mientras forme parte de la casa, un elemento abierto a respuestas. Cómo en un mundo profano lo sagrado sigue aguardando al otro lado del umbral, cómo algunas culturas han sabido conservar rasgos propios que cualifican este ámbito, o qué aspectos son los que ordenan en la actualidad el umbral de la casa, son cuestiones abiertas que forman parte de una reflexión posterior.

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[1] "Tea with us became more than an idealization of the form of drinking; it is a religion of the art of life. The beverage grew to be an excuse for the worship of purity and refinement, a sacred function at which the host and guest joined to produce for that occasion the utmost beatitude of the mundane" (Okakura 1906).

[2] "The tea-room was an oasis in the dreary waste of existence where weary travelers could meet to drink from the common spring of art-appreciation. The ceremony was an improvised drama whose plot was woven about the tea, the flowers, and the paintings. Not a color to disturb the tone of the room, not a sound to mar the rhythm of things, not a gesture to obtrude on the harmony, not a word to break the unity of the surroundings, all movements to be performed simply and naturally – such were the aims of the tea-ceremony…" (Okakura 1906).

[3] Alfeizar, alfarjía, jamba, limen, limón, lumbral, telar, tranco/a, tranquero, tranquillo, guardacantón.

[4] Son varios los autores que señalan que en la evolución de la palabra el uso del artículo propició la pérdida de la primera letra.

[5] También en castellano quedan restos de esta noción: liminar, preliminar, subliminal, sublime...

[6] La palabra inglesa *threshold* podría explicarse a partir de *tresh* que significa separar el grano golpeándolo y que deriva de la raíz protoindoeropea **tere-* (frotar, moler girando). La huella del significado germánico de la palabra es visible en las lenguas romances que la tomaron prestada. Es el caso de las mencionadas "trillar" y "triscar", esta última derivada del gótico **thriskan*.

[7] Entre ellas la danesa *tærskel*, la sueca *tröskel*, las alemanas *Drischaufel*, *Drissufle*, *Trüschübel* y la islandesa *þröskuldur*. Todas ellas son variantes del proto-germánico **þreskaną*, que a su vez proviene de la mencionada raíz protoindoeuropea **tere-*.

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Biography | Biografía | Biografia

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Boyuan Zhang

A Chinese Renaissance: Henry Killam Murphy and His Interpretation of Traditional Chinese Architecture

Un Renacimiento chino: Henry Killam Murphy y su interpretación de la arquitectura tradicional china

Um Renascimento Chinês: Henry Killam Murphy e a sua interpretação da arquitetura tradicional Chinesa

Keywords | Palabras clave | Palavras chave

Architectural drawing, Campus planning, Revivalism, Historicism, Cultural hybridization

Dibujo de arquitectura, Diseño de campus, Revivalismo, Historicismo, Hibridación cultural

Desenho arquitetónico, Planeamento do campus, Revivalismo, Historicismo, Hibridização cultural

Abstract | Resumen | Resumo

American architect Henry Killam Murphy (1877-1954) dedicated his career to a "Chinese Renaissance" that adapted traditional Chinese architecture to meet technological and programmatic needs. Although previous scholarship has surveyed Murphy's work, it deserves a closer analysis in order to measure Murphy's design outcomes against the goals he described. This paper examines archive drawings by Murphy's office so as to show the architect's design intent, identifying creative design solutions provided by Murphy and his team that balance traditional architectural principles with modern requirements.

El arquitecto estadounidense Henry Killam Murphy (1877-1954) dedicó su carrera a un "Renacimiento chino" que adaptó la arquitectura tradicional china para satisfacer necesidades tecnológicas y programáticas. Aunque la obra de Murphy ya se ha estudiado, merece un análisis en profundidad en el que se midan los resultados de sus proyectos respecto a los objetivos que se había marcado. Este artículo examina los dibujos del archivo del estudio de Murphy para mostrar las intenciones de sus diseños e identifica aquellas soluciones creativas que Murphy y su equipo ofrecieron en las que existía un equilibrio entre principios arquitectónicos tradicionales y requisitos modernos.

O arquiteto americano Henry Killam Murphy (1877-1954) dedicou a sua carreira a um "Renascimento Chinês", que adaptou a arquitetura tradicional Chinesa para satisfazer necessidades tecnológicas e programáticas. Embora a sua formação académica prévia tenha servido de medida do seu trabalho, este merece uma análise mais atenta a fim de avaliar os resultados do design de Murphy em relação aos objetivos que ele descreveu. Este artigo examina desenhos de arquivo do gabinete de Murphy, de modo a mostrar a intenção de desenho do arquiteto, identificando soluções criativas de desenho fornecidas por Murphy e pela sua equipa, que equilibram os princípios arquitetónicos tradicionais com os requisitos modernos.

Introduction

Different architectural traditions, such as Western classicism or Chinese *guanshi* architecture, have developed distinct elements and organizational rules, often likened to "lexicons" or "grammar books" (Liang 1945). If architecture is analogous to language, is translation possible between traditions? The case of the American architect Henry K. Murphy provides a positive answer that enriches discourse on cultural hybridization, challenges conventional views on appropriation, and sets a precedent for traditional design today.

Henry Killam Murphy (1877-1954), a Yale-trained, New York-based architect, developed Chinese traditional architecture to make it compatible with up-to-date building technology and programmatic requirements. In his new Chinese Revival style, he planned and designed major college campuses across China, led the planning of the country's capital city, and brought Chinese style back to the United States with a belief in Chinese architecture's universal value.

Through the lens of his Beaux Arts training, Murphy identified key principles and details of traditional Chinese architecture and applied them gracefully in his designs. He produced accomplished architecture with little command of the language or direct artisanal knowledge. This mutual intelligibility between distant architectural traditions is not an "accidental affinity" (Ruan 2002) but rather suggests a common foundation of different human cultures.

Previous scholarship has surveyed Murphy's projects and documented his time in China, but discussions of his architecture and design process have been superficial. This paper fills the gap by closely reading Murphy's drawings and writings in order to pinpoint his adherence to or deviation from traditional Chinese principles and details, and to measure his design outcomes against his stated aims.

Cultural and political meanings aside, Murphy's work is architecturally significant, as it points a way to reviving and transforming an architectural tradition through sensitive and meticulous studies. His design approach is still applicable today for architects seeking to design in traditional styles and cultural settings beyond their direct experience.

Figure 1: Staff reviewing drawings, with Henry K. Murphy in the middle (Manuscripts and Archives, Yale University)

Background

On his first trip to China in 1914, Murphy immediately became an admirer of Chinese architecture and undertook to revive its tradition. He viewed Chinese architecture as equal to European canons, stating that "there are not two, but three great styles of architecture, and that to the Classic and the Gothic must be added the Chinese" (Murphy 1921).

The "Chinese architecture" to which Murphy referred was almost exclusively the *guanshi jianzhu* (lit. "official buildings") of the Ming (1368-1644) and Qing (1644-1911) dynasties. There are indeed many other traditions across China's vast geographic span and diverse cultural groups, but for the purposes of this paper, the term "traditional Chinese architecture", unless otherwise specified, refers to this official style established to symbolize the sovereignty and unified identity of imperial China. Murphy's practice in China was centered in Beijing and Nanjing – ancient capitals of the north and south that offer a rich cultural context and exemplars of palaces, monuments, and religious buildings.

The tumultuous period between the Boxer Rebellion (1900) and the outbreak of World War II (1937) saw a great wave of American missionary campaigns in China (Bays and Widmer 2009). This generated growing demand for missionary schools and hospitals. To allay anti-missionary sentiment, many missions began to favor a locally inspired character for new buildings. Prior to Murphy, designs in Chinese style by Western architects had had mixed outcomes. Dwight H. Perkins (1867-1941) created a delightful composition of blue-tiled roofs on gray-brick walls for Nanjing University (1912), but its masses showed a mason's sensibility, not reflecting the local tradition of wooden construction. The Hsiang-Ya Hospital (1918) in Changsha by James Gamble Rogers was an apathetic hybridization. Rogers struggled to put a Chinese-inspired roof over a four-story, largely utilitarian brick complex, resulting in "a ritual mask for an otherwise faceless institution" (Betsky 1994), incoherent and clumsy.

Murphy was aware of issues such as those faced by Rogers and proposed a more rigorous study of traditional Chinese architecture. In a significant speech he asserted that "it is not enough to put Chinese roofs on buildings which are otherwise foreign … we must start the Chinese treatment from the ground and continue it all the way to the ridge."[1] He went on to identify three essential aspects of traditional Chinese architecture: first, the orderly planning of building ensembles organized around axes and open courtyards; second, exposed columns, with their frankness and tectonic clarity; third, the splendid polychromy complementing architectural expression.

Of these three points of inspiration, Murphy's planning ideas and his use of color require further study. His Nanjing Capital Plan (1931) should be compared with Burnham's Chicago, Griffin's Canberra, and Lutyens's Delhi. He also blended American garden suburbs with Chinese houses in Nanjing, as well as in Coral Gables, Florida. Murphy may be seen as a transitional figure between the previous generation of Raymond Unwin and the next one of Edmund Bacon, who worked for Murphy in Shanghai.

As for Murphy's architectural design, certain key projects show how his approach progressed. His first period includes his designs for Yali (known as Yale-in-China) in Changsha, Hunan, starting in 1914, where Murphy first attempted to unify all the buildings with a Chinese Revival style. The singular, centrally placed open space and buildings facing it, however, were still largely Jeffersonian, and the detailing of the buildings had room to improve. His second period showed a more rigorous interpretation of both traditional Chinese planning and architecture. Buildings were organized into series of courtyards instead of one grand campus, with details adhering more closely to traditional principles. His designs for Ginling College (1921) and the earlier plans for Yenching University (1920) best exemplify this. His third period shows a more romantic tendency, such as the picturesque plan for Yenching University's lakeshore complex, the playful rotation of axes in Fukien Christian University, or the imaginatively curved walls at the Memorial Cemetery for Heroes of Revolution in Nanjing. Murphy's work culminated with his unbuilt Nanjing Capital Plan, in which all his previous studies and prototypes were synthesized into an idealized Chinese city.

It should be noted that most of Murphy's work was carried out when a thorough understanding of Chinese architectural history was not yet available. Traditional building knowledge was held by craftspeople, such as the Lei family, who served as the Qing court's chief architects for generations. Its abstruse principles and terminologies were never widely known and quickly fell into neglect with

Figure 2: Murphy and Dana, aerial view of Yali Middle School, 1916 (Yale-China Association Records. Manuscripts and Archives, Yale University)

Figure 3: Henry Killam Murphy, Architect, central dormitory building of Ginling College (Talbot F. Hamlin Papers, Avery Architectural & Fine Arts Library, Columbia University)

Figure 4: Perspective drawing of the library court, Yenching University (Henry Killam Murphy Papers)

Figure 5: The National Government Center, the focal point of Murphy's new city plan for the area outside Nanjing's historic walls, 1929 (Henry Killam Murphy Papers)

the collapse of the Qing court in 1911. On the other hand, the first generation of Western-trained Chinese architects, who would eventually rediscover those rules, had not yet formed when Murphy began working in China. The ground-breaking surveys and research by the Society for the Study of Chinese Architecture (Yingzao Xueshe) founded by Chinese scholars and architects in 1930 did not inform Murphy's work until the very end of his career. The best references he had were photographs from his own travels or in books such as that by Ernst Boerschmann, whose illustrated plates served as a direct inspiration.[2] Publications on the Forbidden City by Japanese scholars were another visual reference, most likely for decorative details.[3] In short, Murphy had to study built examples on his own so as to hypothesize the principles of Chinese architecture, with limited means for doing so when not in China.

Figure 6: An excerpt from Murphy's writings on the adaptation of Chinese architecture, 1921 (Henry Killam Murphy Papers)

The Adaptation of Chinese Architecture

BY HENRY KILLAM MURPHY, A. I. A.

Architect of Yenching University, Peking.

"Old Wine in New Bottles"—a clever cartoon, strikingly bringing out one aspect of what we are accomplishing at Yenching University by the use of the new reinforced-concrete construction for buildings in the old Chinese style of architecture. But to another aspect this might be called "New Wine in Old Bottles"—for I like to think of our adaptations of Chinese architecture as furnishing an old setting for the new education offered to China by such institutions as Yenching.

When we undertook, in 1918, the planning of the new group of buildings for Yenching University—then called Peking University—the choice of architectural style was a matter for much discussion. There were those who felt that institutions offering Western education (and Western religion) should, for the sake of consistency, be housed in buildings of Western architecture; there were those who felt that the cost of constructing buildings in adapted Chinese architecture would be very much greater than for foreign architecture, and that Mission institutions should therefore not attempt it; and, finally, there were those who felt that the architectural problem was too difficult to justify the hope of an aesthetically successful solution.

The Decision

On the first point, the view eventually prevailed that the use of foreign architecture for a Mission institution tended to stamp its education as alien; whereas the use of adapted native architecture would help to emphasize the essential community of its educational interests with those of the country in which it was working.

On the second point, the general study I had already made of Chinese architecture, in designing the Academic Group for Yale-in-China, supplemented by the intensive study I had just begun of the Forbidden City, in designing the group at Nanking for Ginling College, convinced

3

He maintained a global practice for decades and eventually established offices in both New York and Shanghai. The office's correspondence and balance sheets from Murphy's archive are an invaluable resource for understanding the architectural industry and economic globalization in a connected world between the two world wars.

Methodology

Through a close reading of architectural drawings generated by Murphy's office and of his own writings (Fig. 6), this paper seeks to identify Murphy's design goals and to evaluate his design solutions to the challenges and constraints he faced.

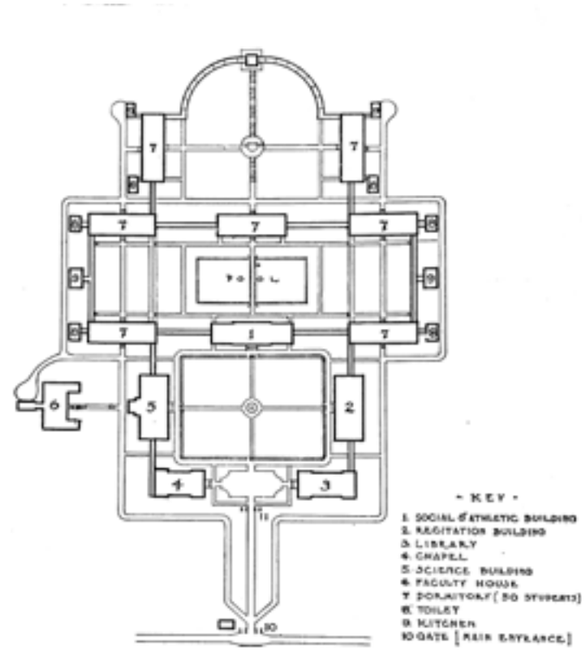
Murphy often used the word "adaptation" to describe his method, implying that he aimed to preserve certain qualities of traditional Chinese architecture but was also prepared to make creative changes on responding to constraints or needs. Not enough has previously been written to identify which details he preserved, which he changed, and how successful his method ultimately was.

This study's primary sources are technical drawings by Murphy's office.[4] Largely neglected by previous research, these elevations, sections and details contain much more information and are more objective than Murphy's often-quoted perspectives. Drawings for Yenching University and Ginling College are chosen as representing high points of Murphy's Chinese Revival design. Both projects are comprehensive undertakings, from the scale of planning to the designs for individual building types and their detailing.

Our analysis aims to answer the following questions: how closely did Murphy adhere to the principles and forms of traditional Chinese architecture? What deviations did he have to make in order to address modern requirements as to technology and program, and what treatments did he employ to address that challenge? If the term "Renaissance architecture" denotes a creative adaptation of ancient architectural forms to modern needs, is "Chinese Renaissance" a fair term for Murphy's work?

The Problem of Façade Proportion

Traditional Chinese architecture defines a series of outdoor spaces in axial alignments through the grouping of simple, rectangular building types that vary in size and importance. This flexible planning principle, applied ubiquitously in residential compounds, religious temples, or imperial palaces, bears a degree of similarity with early American campus plans and monastic cloister quadrangles, as their European forebears. The convergence of the two traditions offered Murphy a convenient tool for accommodating the programmatic requirements of American institutions. These usually call for a series of typical classroom buildings



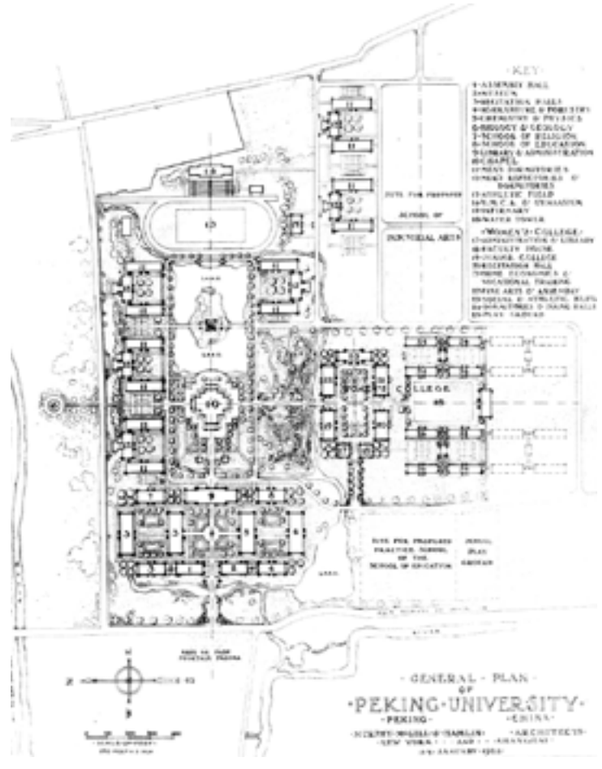


Figure 7: Campus plans with series of courtyards for Ginling (above) and Yenching (below) (Henry Killam Murphy Papers)

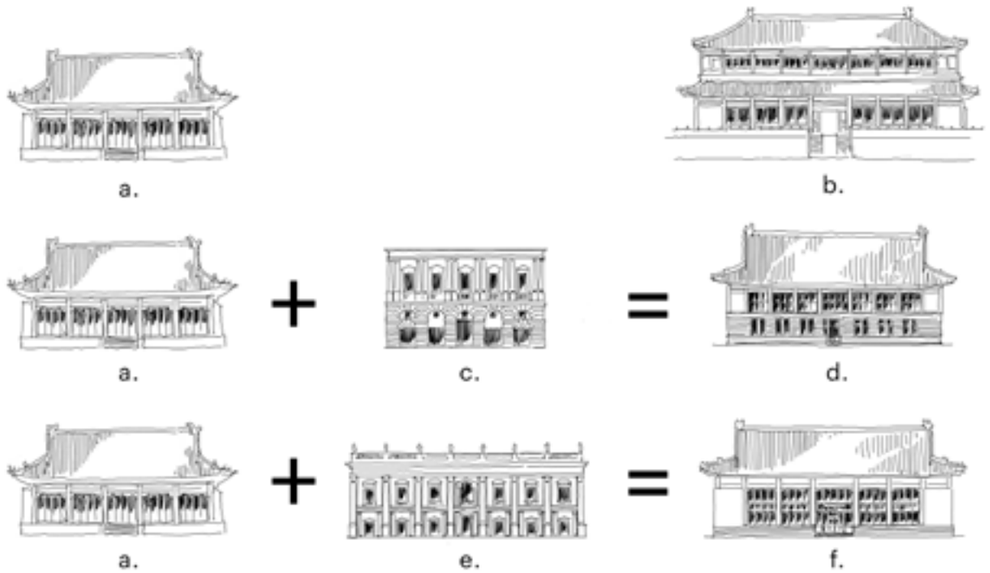


Figure 8: Diagrams synthesizing two-story elevations: (a) typical traditional Chinese palace, after Prince Gong's Mansion, Beijing; (b) traditional way of forming two-story buildings with an eave as a horizontal division; (c) Renaissance palazzo, after Bramante's Palazzo Caprini; (d) Murphy's Ginling College building; (e) colossal order, after Michelangelo's Campidoglio; (f) Murphy's Yenching building

and dormitories mixed with a few special structures such as libraries, gymnasiums, auditoriums, or chapels. Murphy's plans often group basic, repetitive building types into courtyard units while placing special buildings at axial intersections or terminations to mark their importance (Fig. 7).

Unlike with special buildings, which can always be treated uniquely, it is more challenging for an architect to come up with a systematic design for plainer and more repetitive building types. To leave behind the undesirable "Chinese roof on foreign buildings", Murphy applied the proportional principles of a single-story Chinese palace to buildings that were usually required to have at least two stories. Although historic precedents of two-story or taller buildings do exist – such as Tiren Ge in the Forbidden City (Fig. 8b) – their façades are usually divided by a substantial eave separating the two floors, too elaborate for this to be an economical building type.

Murphy's designs provide two creative solutions. The first, as demonstrated by the buildings at Ginling College, composes the ground floor out of heavy masonry blocks and opens up the second floor with a running colonnade

Figure 9: First solution: a masonry ground floor supporting a colonnaded upper floor. Auditorium building, Ginling College, 1932 (Talbot F. Hamlin Papers)

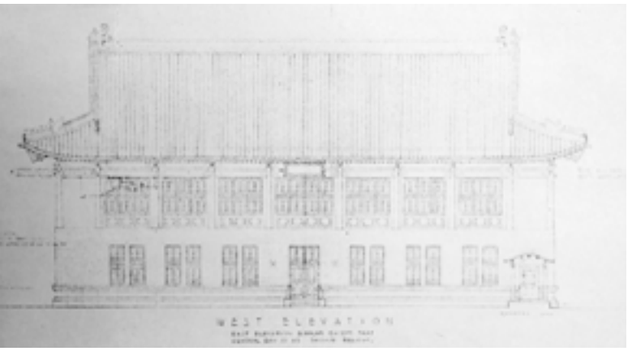


Figure 10: Second solution: double-height columns with spandrel panels. Henry Killam Murphy Architect, Library Building, Yenching University, 1924 (Talbot F. Hamlin Papers)

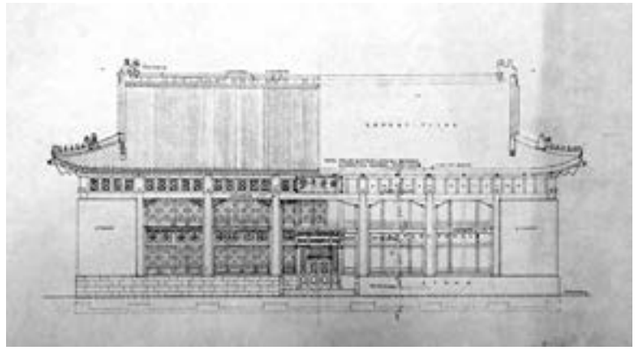


Figure 11: Photograph of the library court, Yenching University (Henry Killam Murphy Papers)

(Figs. 8d and 9). The width of each column bay follows the traditional cascading order, in which the middle bay (*ming jian*) is widest, usually the same as the column height, and the end bay narrowest. This treatment partially diverges from traditional Chinese precedents and was perhaps more inspired by the *parti* of a Renaissance palazzo, where a pilastered *piano nobile* extends over a rusticated ground floor (Fig. 8c). In Murphy's case, the subtly rusticated base also indistinctly recalls the heavy, tiered masonry platforms by which Chinese palace buildings are traditionally supported, as in the case of the three great halls of the Forbidden City.

This palazzo-Chinese hybrid solution has pros and cons. Its direct expression of two separate floors facilitates flexibility in working with varying story height combinations. But the columns, confined to only one floor, are out of proportion to the massive roof, sized to suit the building's overall height. Murphy must have recognized this, for his later designs for the Yenching buildings took a different approach (Figs. 8f and 10). There, the columns spanned two stories, similar to the "colossal" order used in Renaissance architecture (Fig. 8e). They are appropriately sized to provide enough visual support for the roof. The stone base is kept at a much lower height, almost like a plinth aligned with the ground-floor window sills, and is also more akin to a Chinese palatial platform. A special "spandrel" panel is designed to cover the slab between stories, decorated with the same tracery as the windows above and below so as to give the harmonious look of a single-story building.

The second solution is effective. The Yenching buildings look convincingly Chinese throughout and it is difficult to immediately identify any foreign elements, to the extent that many Chinese beholders have taken the campus for historic Qing architecture. Together they comfortably enclose scaled courtyards or quadrangles, as Murphy tellingly preferred to call them, achieving a spatial quality that echoes the "stately courts" of the Forbidden City while also evoking the American campus model (Fig. 11).

The Problem of Corner Columns

Beyond its proportional framework, traditional Chinese architecture also has a long tradition of tectonic expression, with façades in which structural elements and enclosing surfaces are visually differentiated from one another, partly through variations in depth. Murphy noted that traditional Chinese wooden columns are set within walls and half-protrude from the wall surface in a frank, assertive expression of their structural role, whereas the wooden partitions between the columns recede, showing that they are merely a thin layer of enclosure. Most of Murphy's new buildings, however, were built in reinforced concrete rather than wood, to meet modern structural and thermal performance needs. A concrete wall is much thicker than a traditional wooden one, making it impractical to directly copy a traditional design. Murphy therefore created a wall assembly separating the exterior and interior layers (Fig. 12), taking advantage of concrete's plasticity to form engaged columns with all the correct detailing, such as

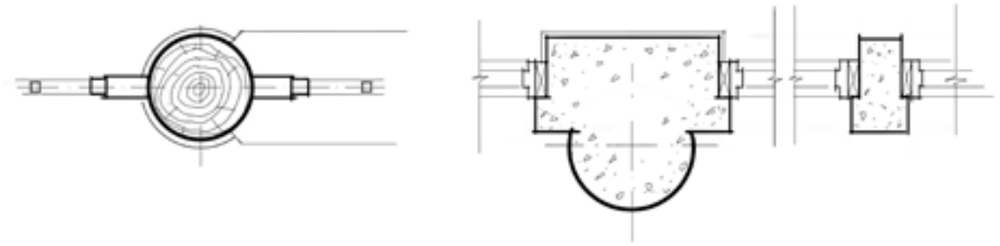


Figure 12: Comparison of real wood columns in traditional Chinese construction versus engaged columns in Murphy's concrete wall assembly (Drawing by the author after Sicheng Liang, *Qingshi Yingao Zeli*, and Murphy's Junior College building in Yenching)

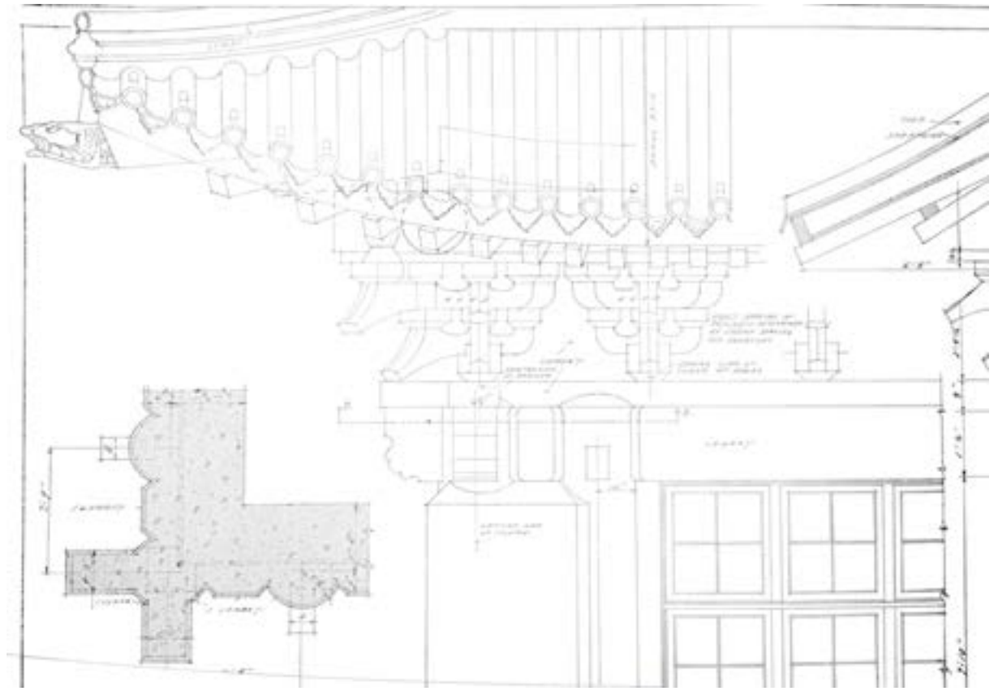
entasis. The exterior elevation becomes a cast relief that freezes traditional wooden elements into the masonry.

Such translating of wooden architectural forms into masonry was not new. Precedents range from the Han dynasty *Que* monuments to numerous grottos and masonry pagodas across China, not to mention the theorized development of ancient Greek architecture from wooden construction. When Murphy designed engaged Chinese columns, he made sure that a little more than half of the column emerged from the wall (Fig. 12). This is an optical refinement known to architects of the Western classical tradition. Exposing exactly half of the column makes the protruding portion seem like less than half, whereas exposing a little more makes it look just right.

There is another fascinating feature where Murphy's walls turn a corner. In traditional Chinese architecture, a single column is usually placed at the corner as an intersection of the colonnades running along two façades. Another common practice is to wrap the corner column in a little masonry at the end to anchor the colonnade, similar to an *antae* wall in early Greek temples. Although visually heavy, such end walls do not directly bear any structural load. They often stop short near the top of the columns embedded in them, exposing the upper tip of the column shaft and the bracket sets above, revealing the true structural members.

In most cases Murphy drew the embedded column and the *antae* wall accurately, except for a few buildings such as the School of Religion at Yenching University, where

Figure 13: Murphy, McGill, and Hamlin, Junior College, Yenching University (Talbot F. Hamlin Papers)



an additional column is placed right next to the end of the *antae*, resulting in a double column at the corner (Fig. 13).

Murphy's use of double columns is foreign to traditional Chinese architecture and may be traced to Renaissance and Baroque designs, such as Palladio's Basilica in Vicenza, where the façade series is ended with double columns as a visual anchor. The extremely close spacing in Western classical architecture is not a problem because the capital is not substantially wider than the column diameter.

But as Murphy placed double columns at the corner, the immediate problem was the collision of the bracket sets (*dougong*) supposed to be directly supported by each column. There is simply not enough space for two bracket sets side by side, as they have an inverted pyramid shape in which each tier of the wooden bracket protrudes farther than the one below. If traditional craftspeople had dealt with this narrow spacing, they might have altered the bracket design to join the horizontal members and lock the two sets together (these have a poetic name, *yuanyang jiaoshou gong*, "mandarin-duck-holding-hands bracket", as is occasionally to be seen on the upper tiers of a corner bracket set). Lacking an intimate knowledge of the craft, Murphy got round the problem by displacing one bracket set off the column grid.

Although, in blending the two traditions, this misalignment reflects a conflict, having architectural elements turn a corner while maintaining all their geometrical parameters is a problem shared by both traditions. As an example, to turn a triglyph around a corner in the Doric order, one must either vary the column spacing or the size of the metope or the size of the triglyph itself, and there is no single solution that is most satisfying. Murphy's subtly misaligned bracket suggests that designing in traditional Chinese architecture is as intellectually stimulating as in other traditions, about not just reproducing shapes but also piecing together a puzzle. Doric or Chinese, such ingenious corner treatments add richness to architecture.

The Problem of Curving Roofs

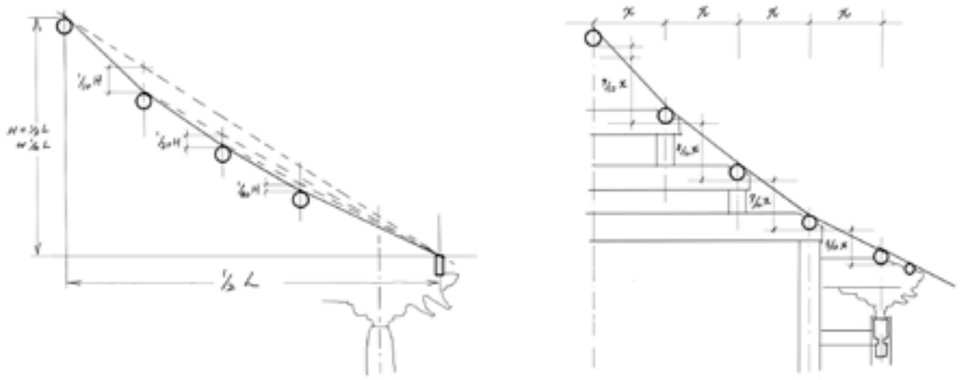
A massive, upward-curving roof was a striking feature of traditional Chinese architecture from its inception to its twilight in the Qing dynasty. Through the work of Yingzao Xueshe, we now know that those graceful roof curves were achieved by a calculated placement of purlins forming a segmented curvature. Traditionally there are two methods for determining the position of each purlin: either a series of deductions from the roof's overall triangle (*ju zhe*, lit. "raise and deduct") or a series of increments in each rise (*ju jia*, lit. "raised frame"). In either case, the curving roof has an underlying geometry of ascending triangles (Fig. 14), and the tiles and mortar above the rafters smooth out the curve.

The intricacies of *ju zhe* or *ju jia* were not known to Murphy when he designed his Chinese Revival buildings for Ginling or Yenching. He had to devise his own theory to guide the construction of roof curves. Instead of triangles, he reconstructed the curvature through a series of inverted arcs. The section drawing for the Faculty Club building in Yenching University clearly marks the center points and radii of these arcs (Fig. 15).

As a result, roofs in Murphy's built work are generally stiffer and slightly higher than traditional examples. His geometric method is evidently incorrect in hindsight, but it was a scholarly attempt to reverse-engineer a traditional roof shape as seen in field surveys or photographs. In the section drawing for the Faculty Club, the rooftop seems to follow a straight line, but according to the annotations, it is in fact an arc with a radius of 150 ft (45 m), whose center point is so high in the sky that it cannot be shown. It is hard to know if this enigmatic curve could ever be accurately executed, but as a drawing it suggests an unprecedented way of perceiving a roof – as if it were carved out of a massive, imaginary sphere.

Murphy's theory of roof curvature arose from a profound difference between traditional Chinese and traditional

Figure 14: *Ju zhe* and *Ju jia* (drawing by the author after Bingjian Ma, *Zhongguo Gujianzhu Muzuo Yingzao Jishu*)



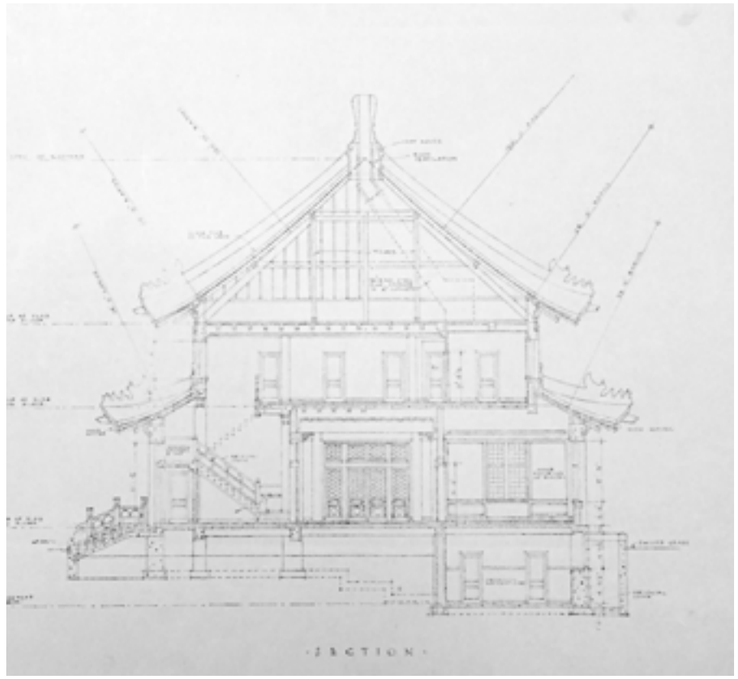
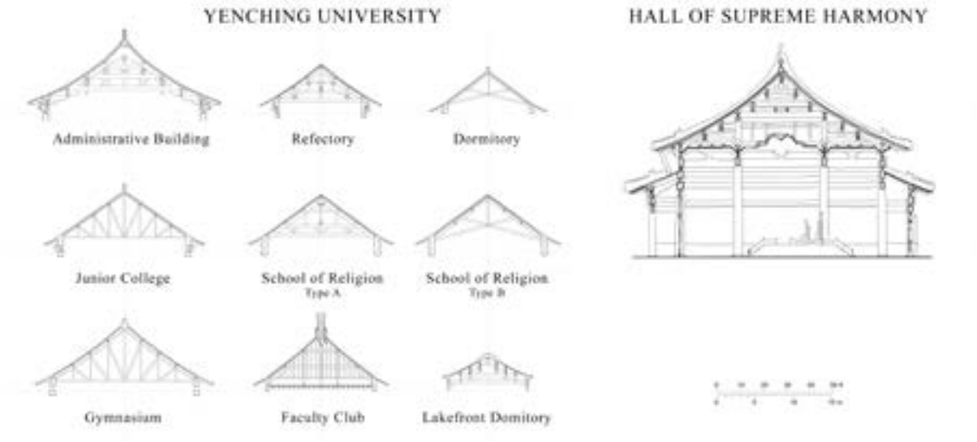


Figure 15: Murphy, McGill, and Hamlin, section drawing of the Faculty Club, Yenching University (Talbot F. Hamlin Papers)

Western building cultures. Ancient Chinese master builders were not trained in the Euclidean tradition. They made no use of irrational numbers, deeming them impractical for engineering work. For roof slopes they preferred to use integer ratios or, better still, Pythagorean triples (*gougu shu*). Moreover, ancient Chinese mathematicians divided the full circle into 365¼ degrees, as opposed to the Babylonian 360-degree system. The Chinese system is useful for astronomy but harder to apply to earthly structures (Liu 2014). All these mathematical tendencies made the circle a less popular design choice for ancient Chinese architects, except in extremely important buildings where circular symbology prevails, as circles were seen as representing heaven. If there were to be a symbol of a Chinese architect, it would be a wooden pole marked with critical measurements (*zhang gan*) rather than a pair of compasses.

Figure 16: Variety of roof types used in Yenching University, as compared to the Hall of Supreme Harmony in the Forbidden City



Murphy, however, came from the building culture that produced the Pantheon of Rome. His auditorium at Tsinghua University is modeled on that famous low dome, following a lineage passed down from Hadrian to Brunelleschi to Palladio to Jefferson and Latrobe, and then to McKim, Mead and White. It was natural for Murphy to use arcs to construct the Chinese roof shape. Despite differences in culture, language, or design approach, it is fascinating that architects from different traditions should have seen curving shapes as ennobling forms, stretching toward the sky, and expended great effort in realizing them mathematically and physically.

Murphy also recognized the importance of the variety and hierarchy of Chinese roof types. The diagram of roof types used for his Yenching buildings shows a pragmatic division between exterior and interior treatments. For Murphy, the exterior had to achieve a consistent look across all building types, but the interior framing could take on different expedient forms, ranging from the traditional *tailiang* (raised beams) used in palaces to the simpler, efficient scissor truss. In a similarly pragmatic way, many technical devices were incorporated into the traditional roof form. The finial at the roof's apex, for example, became an open-top chimney. Although Murphy had not used dormers since his buildings in Yali, seeing them as disruptive of roof shape, he continued to use openwork with decorative patterns at gable ends and roof ridges to ventilate large, enclosed attic spaces.

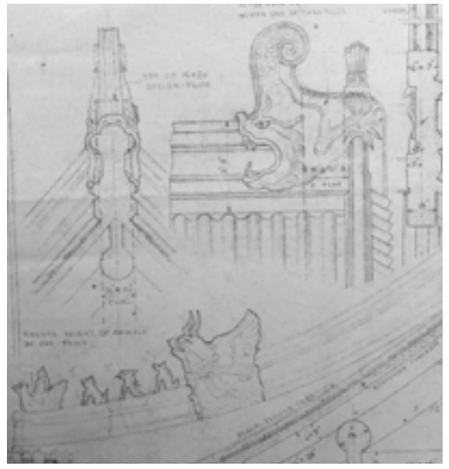
Murphy's understanding of the Chinese roof hierarchy was intuitive: the more elaborate, the more important. This understanding was mostly correct, except in the complicated case of *wudian* and *xieshan* roofs. *Wudian* roofs are evenly hipped on all four sides, whereas *xieshan* roofs have a straight gable face turning into a smaller hipped eave below. Traditionally, *wudian* is the most prestigious form and is reserved for the chief buildings of an ensemble, such as the Hall of Supreme Harmony. *Xieshan* roofs can be seen on secondary buildings such as the Gate of Heavenly Peace (Tian'anmen). But Murphy's design often reversed the two types. For example, in Yenching University, the Bashford administrative building has a *xieshan* roof, whereas the university gym is of *wudian* style. Yet even though Murphy's ranking of roofs is not completely correct, it helped him establish a clear hierarchy and formal order for his building ensembles.

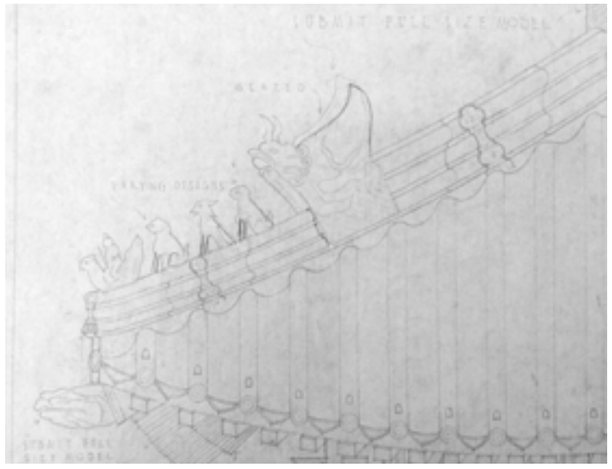
Other details in Murphy's design, such as tiles, rafters, and statuary on roof ridges, were meticulously drawn in line with traditional forms. Murphy may not have known the exact symbolism or story behind each detail, but he and his team took details seriously. As an example, their drawings of roof-ridge animals would receive pencil corrections adjusting the legs (Fig. 17).

Conclusion: A Chinese Renaissance

In the above three aspects of architectural innovation within tradition – multi-story treatment, corner execution, and roof curvature – we see that Murphy's work largely adhered to traditional Chinese proportions and principles, resulting in designs that are aesthetically pleasing and culturally viable. Instances differing from traditional principles sprang either from technological constraints, programmatic preferences, or cultural differences. In any case, Murphy's adaptations affected the overall image of his Chinese Revival architecture only minimally. Thus he enriched and advanced the language of traditional Chinese architecture, making it more flexible and applicable to addressing increasingly complex building programs and technologies.

Figure 17: Roof detailing. Left: Bashford administrative building, Yenching University, 1924. Right: gate to the Memorial Cemetery for Heroes of Revolution, Nanjing, 1931 (Talbot F. Hamlin Papers)





As suggested by the analogies drawn above, traditional Chinese architecture and Western classical architecture are parallel canons. Murphy's interpretation of traditional Chinese architecture is comparable with the way that Renaissance architects interpreted classical architecture. Both closely studied and borrowed architectural forms from ancient precedents, and at the same time creatively adapted traditional elements to suit modern programs and building types.

In Murphy's case, the question of cultural appropriation is irrelevant and out of context. Murphy was certainly not Chinese by birth, but he immersed himself in China and its architecture, spent years living and working in the country, produced designs that are contextually and culturally pertinent, and mentored an emerging generation of Chinese architects who were proficient in both traditions, eventually leading to an architectural movement that promoted an "intrinsically national style" (*minzu guyoushi*).

Prefixing "American" as a hybridizing adjective to venerable European nouns was a trend in the United States around the turn of the twentieth century: "American Vitruvius", "American Vignola", and above all an "American Renaissance", as a collective effort to shape the cultural identity of a young nation. Comparable to how American architects codified Gothic, classical, and Renaissance precedents, Murphy's "Chinese Renaissance" followed a similar path. From carefully selected Chinese precedents, he distilled a system of his own to translate a traditional vocabulary of wood and terracotta into concrete and steel, while also accommodating modern programmatic requirements. Through his work he proved that traditional Chinese architecture could be creatively revived without losing its cultural significance. A hundred years on, Murphy should be placed among other great architects of his generation, such as Bertram Goodhue or John Russell Pope, for the best of his work does indeed resemble a Chinese Renaissance.

[1] Murphy, "Address before Peking Language School".

[2] Ernst Boerschmann (1873-1949) was a German architect and sinologist best known for his research and publication on Chinese architecture. His *Chinesische Architektur* (1925) and *Baukunst und Landschaft in China* (1926) featured an abundance of photographs and drawings of China's historic buildings. See Lai, Delin. 2011. *The Influence of Ernst Boerschmann on Modern Chinese Architecture*. Tianjin: Tianjin University.

[3] Murphy wrote "…with the aid of the splendid photographs and measured drawings of the Forbidden City published by the Imperial Museum of Tokyo…" in Murphy, Henry K. 1926. Adaptation of Chinese Architecture. *The Oriental Engineer*, vol. 7, 3. He was likely referring to *Photographs of Palace Buildings of Beijing*, published in 1906 by the photographer Ogawa Kazumasa in collaboration with the architect Ito Chuta.

[4] Primary sources were the "Henry Killam Murphy Papers (MS 231). Manuscripts and Archives, Yale University Library" and the "Talbot Faulkner Hamlin papers and architectural records. Located in the Department of Drawings and Archives, Avery Architectural and Fine Arts Library, Columbia University".

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Biography | Biografía | Biografia

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Francisco García Moro

Stone Carving for the Rising Sun: A History of the Japanese Replicas of the Salamancan University Façade and New Cathedral Nativity Portal

Talla en piedra para el Sol Naciente: Historia de las réplicas japonesas de la fachada de la Universidad y del pórtico de la Natividad de la Catedral Nueva de Salamanca

Escultura em pedra para o Sol Nascente: Uma história das réplicas japonesas da fachada da Universidade e do portal da Natividade da Nova Catedral de Salamanca

Keywords | Palabras clave | Palavras chave

Plateresque, Stone carving, Arts and crafts, Architectural replicas, Spanish Renaissance

Plateresco, Talla en piedra, Artes y oficios, Réplicas arquitectónicas, Renacimiento español

Plateresco, Escultura em pedra, Artes e ofícios, Réplicas arquitetónicas, Renascimento Espanhol

Abstract | Resumen | Resumo

In 1994 the Japanese government commissioned the construction of scale replicas of two sculptural landmarks of the Castilian city of Salamanca: the university façade and the Nativity Portal of the New Cathedral. The reproductions were carved by local sculptors in the same sandstone as the originals and installed as entrances to a concert hall in the Prefecture of Gifu on Honsu Island. Given the nature of the hall, the client required the replicas to include modifications relative to the originals, for which the craftspeople had to develop an analytical understanding of the logic of Plateresque and Late Gothic ornamentation. The Nativity Portal's intricacy and complexity made this task particularly challenging, as such work could not be automated. A team consisting of sculptors and an architect was formed to "think like the original builders" and deliver the replicas as specified.

En 1994 el gobierno japonés encargó la construcción de réplicas a escala de dos trabajos escultóricos emblemáticos de la ciudad de Salamanca: la fachada de la universidad y el pórtico de la Natividad de la Catedral Nueva. Las reproducciones las realizaron escultores locales con el mismo tipo de piedra caliza utilizada en las esculturas originales y se instalaron en la entrada de una sala de conciertos en la prefectura de Gifu, en la isla de Honsu. Dada la naturaleza de la sala de conciertos, el cliente exigió que las réplicas incluyeran modificaciones respecto a los originales, por lo que los artesanos tuvieron que hacer un estudio analítico de la lógica de la ornamentación plateresca y gótica tardía. Dada la complejidad del Pórtico de la Natividad, esta tarea resultó especialmente difícil, ya que el trabajo no podía hacerse con medios mecánicos. Se creó un equipo formado por escultores y un arquitecto capaces de "pensar como los constructores originales" y de entregar las réplicas según las especificaciones dadas.

Em 1994 o governo Japonês encomendou a construção de maquetes de dois marcos esculturais da cidade Castelhana de Salamanca: a fachada da universidade e o Portal da Natividade da Nova Catedral. As reproduções foram esculpidas por escultores locais no mesmo arenito que os originais, e instaladas como entradas para um salão de concertos na Prefeitura de Gifu, na Ilha de Honsu. Dada a natureza do salão, o cliente pediu que as réplicas incluíssem modificações relativas aos originais, o que exigiu que os artesãos tivessem de desenvolver uma compreensão analítica da lógica da ornamentação Plateresca e Gótica tardia. O caráter sofisticado e complexo do Portal da Natividade tornaram esta tarefa particularmente desafiante, uma vez que tal trabalho não podia ser automatizado. Foi formada uma equipa composta por escultores e um arquiteto, para "pensar como os construtores originais" e entregar as réplicas conforme especificado.

Introduction

The emergence of the Plateresque as an architectural style, along with the exuberance of Spanish Late Gothic ornamentation, owed largely to the suitability of the Salamanca's Villamayor sandstone for intricate carving, and this stone was used in the building of most of Salamanca's architectural heritage. The city's university is one of the oldest in Europe, and had its heyday in the sixteenth century, in the context of European humanism and the colonization and evangelization of vast overseas territories. The city contains several monumental landmarks that soar over the surrounding roofs: the New Cathedral (110 m), the Jesuit complex known as La Clerecía (61 m), and the College of Santo Domingo de la Cruz (44 m). It was declared a World Heritage Site by UNESCO in 1988.

But Salamanca has a distinct feature that is often overlooked. Early in the Franco dictatorship, strict architectural styling guidelines were imposed across the country, resulting in public and private buildings in Salamanca being clad with local Villamayor stone and decorated with historicist motifs evoking the town's former glory, thereby preserving the historic quarter's aesthetic homogeneity. This sandstone cladding blended mediocre new buildings with historic ones, assuring a uniformity that is still appreciated by locals and visitors alike. Aside from political considerations, this practice facilitated the survival of local master stone carvers and the generational transmission of skills and experience to the present.

In 1994 the Japanese Prefecture of Gifu commissioned the construction of a replica of the front façade of the city's University and two replicas of the Nativity Portal of the New Cathedral ("new" only in the sense of being less old than the adjoining Old Cathedral). The former is in early Renaissance style (an imported trend known as *all'italiana* or Italian style) and the latter is Late Gothic, though the two buildings were built partly at the same time. The three sandstone replicas were to be carved in Salamanca and then shipped and installed as decorative reliefs in the foyer of a concert hall in Gifu. The local craftspeople involved (particularly the stone carver César Valle and the architect Francisco García) had been pupils of the sculptors and artisans of the post-war wave of historicist architecture, giving them a training that would have been harder to acquire in more prosperous nations, then engaged in industrialization (García Gómez 2014: 15).

Objectives

The project had several singular features: the cultural divide between the Japanese clients and the Salamancan contractors, the great reliance on traditional crafts, and the issues arising from the obscure symbolism and convoluted geometry of Plateresque ornamentation. Despite media coverage, the story of the Gifu replicas has not yet been told in all its complexity, probably because the accounts available are fragmentary. Rather than as an oddity, as it was portrayed by Spanish media in the nineties, we seek to apprehend the execution of these Plateresque reproductions as part of a developing history.

Methodology

We collected sundry written and spoken testimonials of artisans involved in the project and consulted original blueprints in the architect's files. Certain assertions, particularly those made when there were fewer online resources, were checked and expanded upon. The Japanese account, chiefly to be found in the memoirs of Hiroshi Tsuji, was also consulted.

The princess and the organmaker

The Japanese government's reasons for having elaborate replicas made of two Salamancan monuments is complex, linked to a reproduction that was made of the Epistle organ in the New Cathedral choir. This pipe organ was built in 1554 and refitted in 1778 and 1825 (Fig. 1), and is named after the Romanesque cathedral's "Epistle" nave.[1]

The Japanese organmaker Hiroshi Tsuji (1933-2005), a world expert in the field, visited Salamanca and first heard the Epistle organ in 1974. Tsuji built a total of 81 pipe organs over his career and restored several in Europe. He worked regularly with the city of Pistoia in Tuscany and made several replicas of its Baroque organs in his workshop in Shirakawa.

To understand the impression that Salamanca may have made on its Japanese visitors, we may refer to the experience of another organbuilder, Greg Harrold, who attended a masterclass at the New Cathedral given by Guy Bovet and Montserrat Torrent in 1984. The organ and the music for which it was specifically designed were still largely unknown to international scholars. After a second visit to Salamanca, Harrold made a replica of it for the Pacific Lutheran Theological Seminary in Berkeley:

> *The experience of being in Salamanca – the big meal at noon, the* siesta *afterward to avoid the intense sun, afternoon coffee in the* plaza*, shopping during the* paseo*, the fabulous dinners at midnight followed by a brandy, the language, the climate, the food and the glorious architecture – put the Spanish organ builder's art in context* (Harrold 2019).

In his memoirs, Tsuji says he was struck by the Epistle organ's sound quality and amazed that it had not been tuned in almost a century (Tsuji 2007). Given his future engagement with Salamanca, the city must have left an impression on him similar to that described by Harrold. Then in February 1985 the relationship between Salamanca and Japan became closer with a visit by Crown Prince Akihito and his wife Michiko. This led to a series of cooperation initiatives and reciprocal honors that continue to the present.

Figure 1: The Epistle organ in the New Cathedral, 1544

According to those involved in the project, Princess Michiko's friendship and admiration for the reputed organmaker were vital to what followed. In 1988 the Salamanca dioceses asked Tsuji to restore the organ, which Tsuji called *Tenshi no utagoe* (the Chant of Angels).[2] With the help of the Hispanist Eikichi Hayashiya, who had also been Japanese ambassador to Spain, the necessary funds were raised over the following year (Tsuji 2007). The restoration started almost immediately and in March 1990 the refurbished organ was officially presented (Fig. 2).

This restoration was just a first step. A replica was then built in Japan, inaugurated four years later. Measuring 10.5x8.5m, it presides over a concert hall seating 708 people within a convention center designed by the firm Nikken Sekkei in the city of Gifu, some 130 km east of Kyoto. Its spectacular chandeliers, drawing on traditional Japanese crafts, were designed by Motoko Ishii. The organ case ornamentation was made by the Salamancan religious art workshop Orejudo.

Given the singularity of the venue, later renamed the "Salamanca Hall", an appropriate portal was to be built to usher visitors into the cultured realm of classical music. In keeping with the origin of the organ, reproductions of two icons of Salamancan heritage that could easily be rendered in low relief were sought to adorn the hall's foyer, and presumably because of their rich decoration, the Salamanca University façade and the New Cathedral Nativity Portal were chosen. Unlike with the organ, there was no relevant expertise available in Japan, so recourse was had to local craftspeople. The quarrying and stone-carving company Sanchón Diego S.L., directed by Justino Sanchón, was hired in 1994 by the Gifu Prefecture to sculpt scale replicas in Salamanca, then to be disassembled and shipped to Japan. Sanchón Diego accordingly hired the architect Francisco García Gómez to survey the original buildings and supervise the construction process. Skilled stone carvers such as Santiago López, Juan Iglesias, César Valle, José Luis Pinto, Luis Alonso, Pedro Alonso or Ramón Baylón worked on the project for almost three years (Figs. 3-4). This team was supported by former students of the Salamanca Craft School selected for their modeling and drawing skills (García Gómez 2014: 16). The project was coordinated by Luis Alonso and Antonio Sanchón and assisted by the Salamanca-based translator Noriko Hamamatsu. The process was recorded in a documentary made by Carlos Triguero Mori (Mori 1998).

Figure 2: Organ by Hiroshi Tsuji in Salamanca Hall, Gifu Convention Center, 1994 (Salamanca Hall)

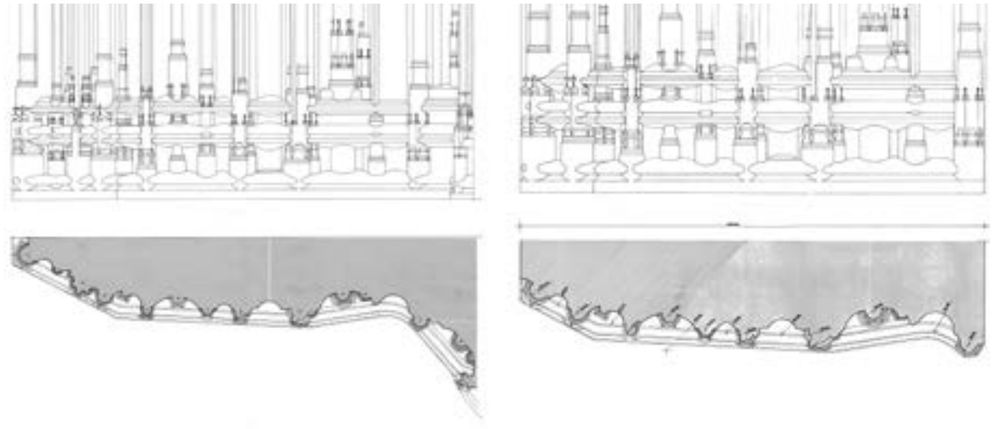
Figures 3 and 4: Images from the documentary by Carlos T. Mori *The Reproduction of the Façades of the University and the Cathedral of Salamanca*, 1998

The making of the Gifu replicas

The concert hall is accessed by two doorways at mezzanine level, and the university façade was to stand as a mere decorative element between them, 8 m high and 5 m wide, at a scale of 1 to 2.43. The two replicas of the cathedral Nativity Portal, on the other hand, were to frame the entrances, leaving pass-through openings of 2x2 m (García Gómez 2014: 10), 6 m high and 4 m wide at their perimeter. In short, the proportions rendered had to be substantially different from those of the actual façade and the cathedral replicas had to be scaled unevenly: 1 to 2.80 in height and 1 to 2.45 in width. Additional difficulties emerged: the Nativity Portal's paired doors had to be merged into single openings to facilitate evacuation and, most significantly, the Gothic façade had to be flattened. Whereas the Nativity Portal's original gothic ribs and niches were hierarchically arranged in depth, echoing the cathedral's interior structure,[3] the replicas had to be no deeper than 255 mm. Such unequal scaling would result in a distortion of the Gothic ornaments, with squares turning into irregular quadrilaterals and circles into ellipses. In order to preserve aesthetic quality, the replica ornaments and reliefs had to be redesigned and rearranged within the limits imposed, as shown in Fig. 5.

The Japanese were expected to have suitable technology to facilitate this task, but things proved less simple. The photogrammetry techniques available in 1993 were inadequate, and even where the intricate Plateresque

Figure 5: Left: plan and elevation of the original base of the New Cathedral Nativity Portal. Right: adapted proposal with reduced depth and simplified motifs designed by Francisco García Gómez



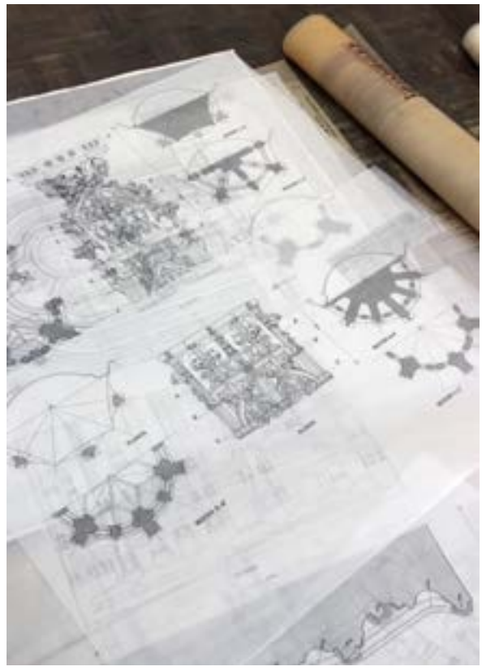


Figure 6: Architectural documentation of the gothic ornaments in the New Cathedral Nativity Portal by Francisco García Gómez, 1994

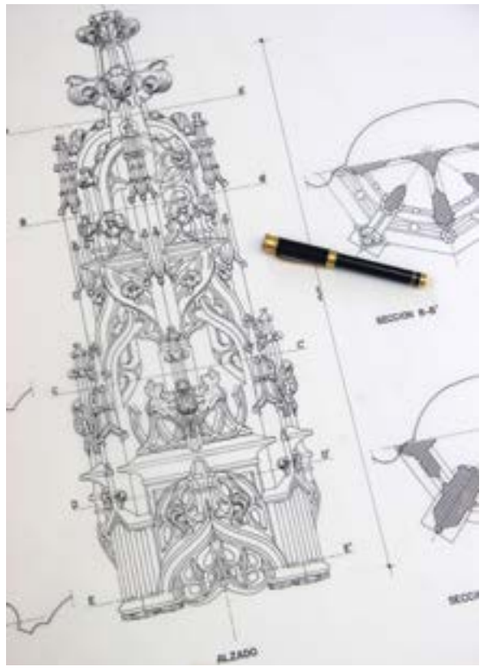


Figure 7: Detail of the blueprints of the replica portal by Francisco García Gómez, 1994

ornaments could be three-dimensionally plotted with sufficient resolution, the figures and motifs still needed to be modified by a human designer (García Gómez 2014: 12). It was necessary to interpret the Gothic ornaments' semantics, understanding how the figurative and abstract elements interrelated and delivering creative yet contextual solutions to the client's requirements.

This is where the team's drawing skills, acquired in various periods at the local craft school, were essential (Figs. 6-8). The flora and fauna populating the Gothic ornamentation had to be delimited precisely: first in ink on paper, then as multiview projections on each face of the sandstone blocks. The sculptural work was done in 1994-96 at the Sanchón Diego facilities in Villamayor, a few kilometers north of

Figure 8: Blueprints of the replica portal by Francisco García Gómez, 1994

Figure 9: The replicas at the Salamanca Hall in Gifu Prefecture (Salamanca Hall)

Salamanca, near the quarries. The university façade replica had 354 pieces – like the original – while the replicas of the Nativity Portal had 66 pieces each. After being carved and assembled in the factory, the blocks were packed and shipped to Japan, where their onsite erection concluded in March 1998 (Fig. 9).

Controversy over iconography

While the message of the Nativity Portal is clear, with familiar Christian motifs, the iconographic program of the university façade remains a mystery. It was built in a period of political turmoil[4] and there are no records of bills, contracts or the like, and the year of construction can be reckoned only at some point between 1519 and 1529.[5] There is no consensus even as to which pope is portrayed in the upper section: Alexander IV, Benedict XIII, and Martin V have all been proposed. The convoluted language and symbolic codes characteristic of the early sixteenth century make it hard for historians to offer more than "weakly founded" speculation (Sebastián 1977: 90). As recently as 2014, the historian and epigraphist Alicia Canto pointed to a hitherto unnoticed acronym signature in the second section that appears to identify the sculptor as Juan de Talavera (Canto 2014).

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Figures 10 and 11: Replica of the university façade in Gifu, Japan, 1996 (Salamanca Hall)

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Figure 12: Replica of the Nativity Portal in Gifu, Japan, 1996 (Salamanca Hall)

This mystery had unforeseen implications beyond academia. The Japanese clients' brief made clear that there should be no religious or political imagery in the replicas, for Article 20 of the Japanese Constitution requires the State to refrain from any religious activity, and Article 89 states that no public funds shall be used to support any religious enterprise (Constitution of Japan 1946). Yet the traditional linkage between monarchy and religion has subsisted, and it has been practically impossible to separate imperial traditions from religious practice (Kobayashi 2010). The same paradox arose in the "erasure" of religious symbols from the Gifu replicas while historical features were preserved, so that Greek and Roman deities could be maintained while historical elements such as Christian symbols – given that Christianity is a living religion – had to be removed (Figs. 10-12).

So the reproduction went ahead. García Gómez opted to adhere to Santiago Sebastián's exegesis of 1977 (García Gómez 2014: 10), setting aside any iconographic interpretation not based on factual proof or historical record (Sebastián 1977), such as regarding the façade as an allegory glorifying the nascent reign of Charles V. All unequivocally political or religious symbols were by stylistic references. The medallion showing King Ferdinand and Queen Isabella was replaced by a plateresque rosette, a *botón charro* typical of the traditional local silverwork after which the Plateresque style is named (Fig. 13). The papal tiara in the top section was turned into a simple hat. The scene could now be seen as a professorial lecture without religious significance, albeit still relating to university life.

Figure 13: Left: medallion featuring the Catholic Monarchs in the original university façade. Right: modified proposal replacing Ferdinand and Isabella with a traditional plateresque rosette

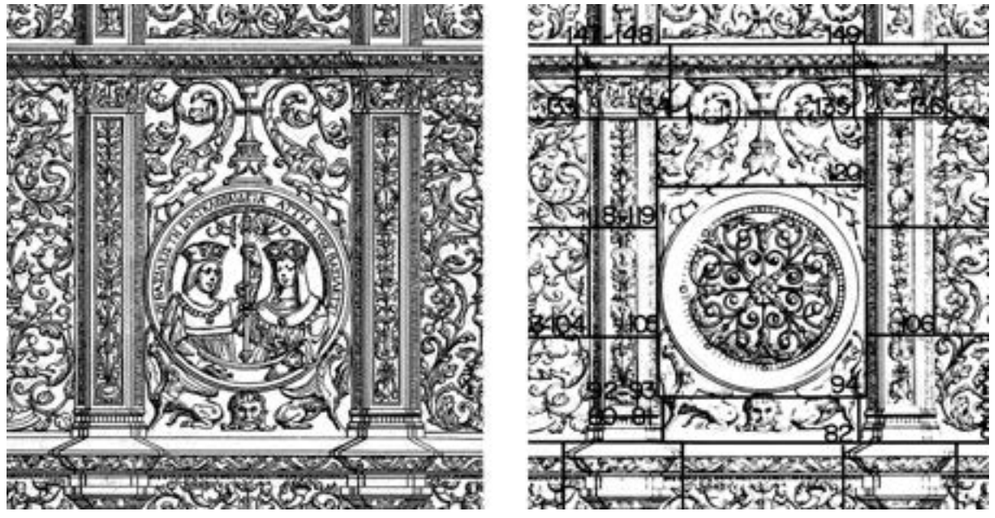
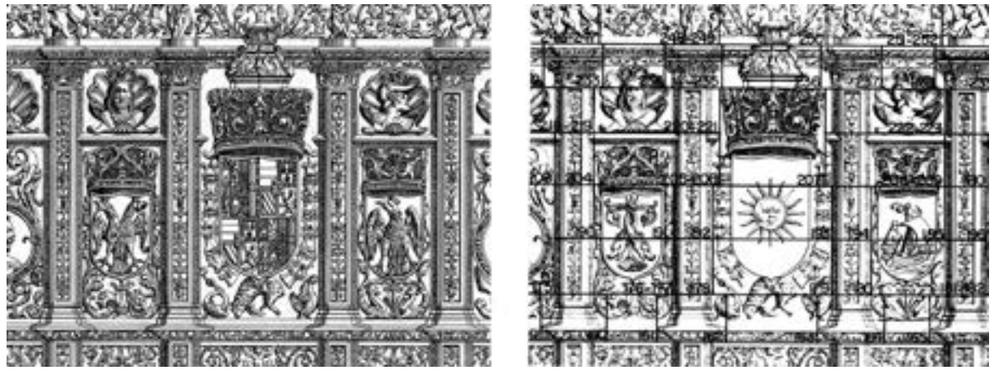


Figure 14: Left: imperial emblems in the original university façade. Right: modified proposal with coats of arms replaced by apolitical motifs



The royal emblems were replaced by "anonymous heraldic ornaments" inspired by Renaissance motifs (García Gómez 2014: 11). Charles V's imperial coat of arms with the Habsburg double-headed eagle became a Renaissance anthropomorphic sun, a westernized reference to the *Nisshoki* (the Japanese Flag of the Sun) (Fig. 14).[6] It is worth noting, though it is most likely a coincidence, that the same motif appears in the arms of the Solís family, still to be seen in their sixteenth-century mansions in Salamanca and Cáceres, and its use by the same family is recorded in Villaviciosa, Cervera and Solares (De Avilés 1999). The lower coats of arms were replaced by a ship, alluding to the shipping of the replicas to the far side of the globe. Interestingly, the ship as a symbol of enterprise and exploration is also present in another replica built in the United States in 1926, as we will see below.

Though geometrically more complex, the iconography in the Nativity Portal was easier to adapt. The central Nativity scenes were turned into a pottery market simply by means of replacing the Child Jesus with a clay pot, turning the Holy Family into merchants seemingly bargaining with the Magi. The many saints surrounding the scene were turned into musicians playing medieval instruments. Other emblems that would be less intelligible to a Japanese public, such as the seal of the Cathedral Chapter (its ruling body), were maintained.

These changes aroused some criticism in Spanish media once the project became public. Probably because the iconography of the Nativity Portal is relatively transparent, critical attention focused on the university façade. The project was dismissed by Spanish columnists as an Asian eccentricity, a "frivolous", "vulgar" and extravagant exercise (Casado 1995). Well-known intellectuals such as Enrique de Sena Marcos were also critical, arguing that the iconographic program was an integral part of the artwork and that to distort it was to mutilate it.

The diocese was understandably not actively involved in the project, as it had been for the organ restoration. But this case could be seen as analogous to the widespread use of images of Buddha in nightclubs or in tattoos, sometimes regarded as offensive to the Buddhist faith. Such desacralization and decontextualization of symbols could be viewed as orientalism in reverse, with Western traditions being reinterpreted to satisfy a desire for exoticism in a remote country.

Reproductions around the world

This is not the only copy of the Salamanca University façade,[7] and a look at two buildings that it inspired in the United States may give some perspective on the Gifu replicas. The Salamancan plateresque style became internationally known with the Spanish pavilion at the 1900 Paris Exhibition designed by José Urioste y Velada. This was an idealized version of the Palace of Monterrey from Salamanca – built in part by the Renaissance architect Juan Gil de Hontañón – merged with other coetaneous buildings such as the University of Alcalá de Henares and the Alcázar fortress in Toledo. Echoes of this appeared in buildings such as the Puerto Rico School of Tropical Medicine (1925), the Cavalry School in Valladolid, Mexico (1921) or Banco Hipotecario in Mendoza, Argentina (1926), all inspired to some extent by Monterrey Palace.

But "Spanish Colonial Revival" was a more festive, light-hearted approach that became popular after the San Diego Panama-California Exposition of 1915. It was a style suited to California's growing opulence and benign climate, devoid of pious Castilian Renaissance gravity. The San Diego Museum of Art in Balboa Park, designed by William Templeton Johnson and Robert W. Snyder in 1926, features a replica of the Salamanca University façade as its

Figure 15: Facade of the San Diego Museum of Art in Balboa Park, San Diego, California (Bernard Gagnon, 2013)

Figure 16: Images from the opening sequence of Citizen Kane by Orson Wells, 1941

main entrance. About two-thirds smaller than the original, the twin doorway was replaced by a single entrance topped by a niche occupying the lowest of the three sections. The middle section, originally for the coat of arms of Charles V, contains three niches with statues of Velázquez, Murillo, and Zurbarán sculpted by Chris Mueller (Fig. 15). The upper section contains the coats of arms of the United States along with those of California and Castile and Leon. Other elements, such as the papal scene, were removed or relocated. The set-back side walls serve to visually enhance the façade's intricate surface, as in the original building. We should note that, in his vivid description of the San Diego Art Museum, William Davenport wrongly credits Salamanca as the *alma mater* of Cervantes (Davenport 1966: 27), and so caution should be used in interpreting the other ornaments, freely reconfigured according to contemporary aesthetic preferences. This ambiance of opulent extravaganza prompted Orson Wells to shoot the opening sequence of Citizen Kane (1941) in Balboa Park, as conceived by his art director Van Nest Polglase (Carringer 1985). The university façade replica rears imposingly in a low-angle shot supposedly showing Xanadu, the protagonist's lavish residence (Fig. 16).

In 1926, shortly before Art Déco became a popular style for movie theaters, the architect Benjamin Marcus Priteca designed the San Francisco Pantages Theater (Fig. 17)[8], whose upper section recreates the Salamanca University façade's composition and ornaments with its iconography transformed into a heathen festival. In a twist that may be seen as a celebration of paganism, the pope in the central scene is replaced by a minotaur. The figures' attire is largely Tudor, in keeping with the theater interior. But although the façade below is a conventional grid of windows stretching along the block, key elements such as the pilasters remain, intersecting with the modern features and reaffirming the original Salamancan layout. Unlike Snyder, who was a consistent exponent of the Spanish Colonial Style, Priteca employed various styles over his career depending on the circumstances.

Figure 17: Orpheum Theatre, 1192 Market Street, San Francisco, California, by Benjamin Marcus Priteca, 1926 (Andreas Praefcke, 2008)

The existence of these two replicas was unknown to the Spanish building team, and nothing points to their having any influence on the Gifu project. But they show how symbols and icons may be freely rearranged when original models are replicated in remote lands with foreign agendas, regardless of whatever obscure message the façade may have been conveying over its four-hundred year history.

The craft of sandstone carving has survived as a living tradition, both in monumental restorations[9] and in vanity projects such as coats of arms or private portraits. With the experience gained and the training received through the making of the Gifu replicas, the sculptors and other craftspeople continued to work in a range of local projects, from private homes to hotels and monuments. The main dancefloor of Cum Laude (1994), an upmarket nightclub designed by García Gómez in Salamanca, was designed as a two-level arcaded 1500s courtyard. The mythological and historical characters traditionally represented in medallions were substituted by sandstone music idols such as Michael Jackson, Freddy Mercury, Elvis or Marta Sánchez. Cum Laude was to enjoy great success partially thanks to its extravagant decor, much featured in the local media. The sandstone statuary was made by artisans trained at the same craft school as the builders of the Gifu replicas, within a tradition going back to post-war historicism. García Gómez

Figure 18: Architectural documentation of the Nativity Portal's Gothic ornamentation with the saints replaced by medieval musicians, by Francisco García Gómez, 1994

was then commissioned to design the Garamond Club in Madrid (1995). The idea was that the people queueing outside should feel as if they were about to enter an old Spanish mansion or a members' club in a Gothic Revival sandstone townhouse in Manhattan. In Calle Claudio Coello, the entrance is flanked by Gothic ribs which, despite their simplicity, hint at the architect's command of Gothic language acquired with the Japanese replicas.

The latest known replica of the university façade is on the gate of a four-star hotel in the outskirts of Salamanca, although it features only the lower quarter of the original artwork. It was also carved by Ramón Baylón and based on the blueprints used for the Gifu replica. In place of the Catholic Monarchs in the central medallion is a portrait of the parents of the hotel owner, a unique feature that will surely challenge future archaeologists.

A marvel of craft and drawing

The Gifu replicas belong to a long tradition of assimilation and assemblage of classical motifs, not far removed from the genesis of the facade itself and its early Italian lineage.

The replicas also show the potential of hand-drawing in managing levels of complexity which automated software cannot cater for. Even today, twenty years on and despite technological advances, commercially available tools would still lack the necessary capacity to handle such an endeavor.

Skills such as hand-drawing and stone carving survived due to sustained demand for artisans in post-war Salamanca. Drawing allowed modern sculptors to reconstruct motifs based on the blending of geometric and organic shapes as is characteristic of Gothic and Plateresque ornamentation, keeping close to the original builders' form-making techniques. As a result, a project that would have remained a mere mechanical reproduction of a historical artifact became a contemporary marvel of hand-drawing and traditional craft on a scale rarely seen today.

We have looked at some of the issues that may arise in a project as seemingly straightforward as building a scale replica of a historic building. Although the story of the Gifu replicas is recurrently shared on social media, always partially and inaccurately, the true story had to be told in its full complexity. Beyond the controversy over the distortion of the façade's iconography, we have contextualized the Gifu replicas within a series of reproductions of this plateresque monument. From the didactic program of Balboa Park to the frivolous world of the California movie industry in the roaring twenties, the series takes us most recently to the nineties wave of postmodern Spanish nightclubs.

Living craftsmanship that remains active in the contemporary world cannot stay pure as pristine heritage; it will inevitably be affected by the complexities and contradictions of modern society and market conditions. Though manual working procedures survive as taught by previous generations, shifts in aesthetic preferences and consumer demands transform the way that a craft is applied. The issues raised by the Gifu replicas show a response by traditional crafts – sculpture and drawing – to such technological and cross-cultural challenges.

[1] This organ is often confused with the one made by Pedro de Echevarria two centuries later (1744), on the far side of the choir.

[2] Probably referring also to the small statues of angels at the top of the organ case.

[3] Note that the building of Salamanca's New Cathedral started (in 1513) with the front gates rather than the altar and apse, as was common practice. See the analysis by Fernando Chueca Goitia and Gómez Moreno (Chueca Goitia 1951; Gómez-Moreno 1967).

[4] The Comuneros Revolt, a failed uprising against the young Charles V, occurred in 1520-21 and had a great impact on Salamanca's social fabric and elites.

[5] The historian Gómez-Moreno noted that this absence coincides with the gaps in the *Libros de Claustros* for 1513-25 (Gómez-Moreno 1967: 235). The first reference to the finished building dates from 1529.

[6] Also an allusion to the founding myth of Japanese monarchy, descending from the sun empress *Amaterasu*.

[7] Built replicas of the cathedral also exist, not addressed here because they are of the whole ensemble.

[8] Today known as the Orpheum Theater, on Market Street in Downtown San Francisco.

[9] See the famous astronaut carved in the north façade as part of the restoration of the New Cathedral in 1992 by Miguel Romero, also a former student of the Salamanca Craft School. Or the restoration of the tomb of Saint Teresa in Alba de Tormes by Ramón Baylón.

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Biographyx | Biografía | Biografia

Francisco Garcia Moro

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Marcos Merino Pérez

Objective Subjectivity: After the Values Assigned to Vernacular Architecture by Bernard Rudofsky

Subjetividad objetiva: Tras los valores asignados a la arquitectura vernácula por Bernard Rudofsky

Subjetividade objetiva: Por detrás dos valores atribuídos à arquitetura vernácula por Bernard Rudofsky

Keywords | Palabras clave | Palavras chave

Traditional architecture, Anonymous building, Architecture without architects, Interpretation, Mediterranean

Arquitectura tradicional, Construcción anónima, Arquitectura sin arquitectos, Interpretación, Mediterráneo

Arquitetura tradicional, Construção anónima, Arquitetura sem arquitetos, Interpretação, Mediterrâneo

Abstract | Resumen | Resumo

The methodology of studies on vernacular architecture has long been challenged as regards both its rigor and the criteria on which it is based. Studies such as those by the multifaceted architect Bernard Rudofsky have been questioned from various disciplines, such as architectural anthropology, sociology, architectural history, or architecture itself. But through the "objective" subjectivity in the methodology applied by Rudofsky, we can apprehend how he appraises each vernacular reference analyzed. This paper focuses on the rationale of this methodology and also on a systematic study and cataloging of each reference to be found on his work.

La metodología de los estudios sobre arquitectura vernácula ha sido siempre puesta en entredicho tanto por su rigor como por los criterios en los que se fundamenta. Trabajos como el del polifacético arquitecto Bernard Rudofsky han sido cuestionados desde diferentes disciplinas, como la antropología arquitectónica, la sociología, la historia de la arquitectura o la propia arquitectura. Sin embargo, gracias a la subjetividad –objetiva– que existe en la metodología aplicada por Rudofsky, somos capaces de comprender la valoración asignada a cada referencia vernácula analizada. El presente trabajo se centra tanto en la justificación de esta metodología, como en el estudio sistemático y la catalogación de cada una de las referencias sobre su trabajo que se han identificado.

A metodologia dos estudos sobre arquitetura vernácula sempre foi questionada tanto pelo seu rigor como pelos critérios em que se baseia. Obras como a do arquiteto multifacetado Bernard Rudofsky foram postas em causa por diferentes disciplinas, tais como a antropologia arquitetónica, sociologia, história da arquitetura ou a própria arquitetura. No entanto, graças à subjetividade – objetiva – que existe na metodologia aplicada por Rudofsky, somos capazes de compreender a avaliação atribuída a cada referência vernácula analisada. Este artigo centra-se tanto na justificação desta metodologia como no estudo sistemático e catalogação de cada uma das referências ao seu trabalho que foram identificadas.

Introducción

Entre los muchos arquitectos e investigadores centrados en el estudio y análisis de la arquitectura vernácula, el vienés Bernard Rudofsky (1905-1988) es reconocido como aquel polifacético arquitecto –polémico a veces– que fue capaz de no mirar la arquitectura vernácula desde un romanticismo edulcorado o cegado por la belleza de la ruina, sino desde la búsqueda de aquellos valores que son resultado de los modos de vida desde los que fue concebida, desde la cultura que existe detrás de la sociedad que la habita.

Es posible que hoy en día Rudofsky siga siendo un total desconocido para gran parte de los arquitectos e investigadores. Sin embargo, su gran interés por el Mediterráneo, por sus formas de vida y, sobre todo, por la arquitectura vernácula –a partir de la que reflexiona sobre la importancia de la arquitectura anónima en el discurso historiográfico– ha permitido que probablemente muchos se hayan cruzado con alguna de sus teorías, estudios u obras.

Durante las últimas dos décadas la arquitectura tradicional, resultado de la evolución natural de las sociedades que la ha concebido y habitado y que en muchos casos es ajena a las normas impuestas por la arquitectura formal, ha atraído el interés de la historiografía y del ámbito académico. Sin embargo, esto es un fenómeno relativamente reciente. Una breve revisión de la historia de la arquitectura escrita en las últimas décadas en las sociedades occidentales nos permite descubrir la influencia que ha tenido la arquitectura reglada o académica[1] en los juicios sobre el origen de las formas y de los usos arquitectónicos, así como en el de su evolución posterior (Rudofsky 1964).

Tanto Rudofsky como otros especialistas en esta materia, como Sibyl Moholy-Nagy, Ronald William Brunskill, Paul Oliver, Dell Upton, Henry Glassie o Roderick J. Lawrence, por citar a algunos, han expuesto cómo los historiadores se han centrado en una serie de ejemplos particulares y, en muchas ocasiones, de alta sofistificación técnica, resultado de un contexto de abundancia y ostentación, mientras que se ha ignorado la arquitectura vernácula. También cómo a menudo se ha vinculado este tipo de arquitectura a una especie de "trogoliditismo". Y, por ello, han señalado la importancia para la historiografía de la arquitectura que Rudofsky llamaba "sin pedigrí", pero que también ha recibido otros nombres como "anónima", "espontánea", "indígena", "rural", "no formal" y, en última instancia, simplemente "vernácula".

Bernad Rudofsky manifiesta su interés por la arquitectura anónima y vernácula por primera vez en 1964, con la exposición *Architecture Without Architects*, promovida por el Departamento de Exposiciones Itinerantes del Museo de Arte Moderno de Nueva York (MoMA), que en ese momento se encontraba bajo la dirección de Renè d'Harnoncourt. Tal fue el interés que despertó esta exposición que Rudofsky decidió editar un catálogo de la muestra. Rudofsky dio continuidad a los temas abordados en este catálogo en su obra *The Prodigious Builders*, publicada en 1977, en la que, por no existir las restricciones

impuestas por un discurso expositivo, puede desarrollar y ampliar el contenido de la primera publicación, tanto desde el punto de vista cultural como geográfico.

La lectura en profundidad de estas dos obras permite identificar los valores asignados a los ejemplos expuestos de arquitectura vernácula, que son los que justifican en cierta manera el discurso de Rudofsky. En el siguiente texto se intentará, por tanto, desvelar algunas de las ideas e interconexiones que se esconden tras el discurso principal del autor, que ya ha sido ampliamente difundido y estudiado.

La metodología de Rudofsky y sus detractores

El mundo académico se encuentra en permanente disputa. Son frecuentes las críticas entre autores y son muchos los campos de la historiografía que quedan desatendidos. También es frecuente que determinadas metodologías menos ortodoxas se vean desplazadas o arrinconadas, cuando, en ocasiones, aproximaciones más subjetivas pueden ser de gran utilidad y validez, como por ejemplo en el estudio de la arquitectura vernácula.

En el caso de Bernard Rudofsky, resulta sencillo identificar un patrón metodológico propio, que se repite independientemente del objeto de estudio. Por ejemplo, la inclusión de una gran cantidad de ilustraciones, que por sí mismas forman un discurso con entidad propia, gracias a su poder visual y estético. Estas ilustraciones permiten una lectura independiente de la ofrecida por la literatura que acompaña a estas imágenes, con lo que el discurso gráfico posee una cierta autonomía respecto al literario, si bien se produce un diálogo entre ellos en paralelo.

Bernard Rudofsky dedicó gran parte de su carrera al análisis, la crítica, la experimentación y el estudio de la arquitectura. Su carácter, tan polifacético, le permitió aproximarse al objeto de estudio desde enfoques muy diferentes. Con su obra *Architecture Without Architects* Rudofsky fue capaz de aproximar la arquitectura no-formal, espontánea y desconocida a un nuevo público que estaba dispuesto a descubrir aquella arquitectura que hasta ese momento había quedado desatendida por la historiografía. Su obra, sin embargo, "por alguna extraña razón, conservaba su audiencia y su credibilidad" (Upton 1993).

Tanto en *Architecture Without Architects* como en *The Prodigious Builders* Rudofsky se esforzó por presentar por medio de imágenes esta arquitectura desconocida. De esta manera, ofreció un discurso gráfico inalterado que permite la libre interpretación del lector y apela a su propio criterio. Este enfoque es muy distinto del habitual en obras de estas características, en el que suele imponerse un punto de vista y un marco de análisis definido por la disciplina de estudio. Rudofsky, a riesgo de que su obra no sea considerada suficientemente científica o académica, prefirió proponer un discurso gráfico que permitiera al lector la libre interpretación de las formas, las relaciones y las intenciones que se encuentran detrás de esta arquitectura.

La singularidad metodológica de Rudofsky tiene algunos precedentes, como la obra de 1901 *Die spätrömische Kunst-Industrie nach den Funden in Österreich-Ungarn* (El Arte Decorativo Romano-Tardío según los Descubrimientos en Austria-Hungría) del historiador del arte austriaco Alöis Riegl (1858–1905). Su metodología descriptiva y analítica bien pudo influir en la de Rudofsky. De especial relevancia es la reflexión que el autor austriaco realiza sobre la información que puede ser transmitida a través del texto de una obra y aquella que puede serlo a través de las ilustraciones que lo acompañan, así como sobre el diálogo que se establece entre ambos. Este enfoque, que causó cierta controversia, parece que pudo haber servido como referencia a Rudofsky. En *Die spätrömische Kunst-Industrie nach den Funden in Österreich-Ungarn* el propio Riegl señaló el rechazo que su aproximación sufrió por parte de la Academia, por haber realizado una valoración artística de los objetos tardo-romanos y altomedievales como elementos pertenecientes a un contexto específico, alejándose de la objetividad analítica propia del discurso dominante.

Figura 1: Página completa de la publicación *Die spätrömische Kunst-Industrie nach den Funden in Österreich-Ungarn* de 1901, de Alöis Riegl, tomada de Lockard 2016

Figura 2: Fotografía de Bernard Rudofsky aparecida en la publicación *The Prodigious Builders*, 1977

De hecho, autores como Lawrence muestran cómo todas las aproximaciones metodológicas a la arquitectura vernácula poseen un importante componente subjetivo e interpretativo, difícilmente eludible por tratarse de una arquitectura que no se rige por las reglas formales que definen a la "arquitectura con arquitectos".

Por otro lado, existen igualmente trabajos que justifican la pertinencia de las aproximaciones más subjetivas a la arquitectura vernácula. Entre ellos podemos destacar la obra de Sibyl Moholy-Nagy[2] *Native Genius in Anonymous Architecture*, publicada en 1957. En ella la autora defiende no sólo la sabiduría anónima que se encuentra detrás de la arquitectura vernácula, sino también cómo esta sabiduría puede captarse a través de la fotografía o de los dibujos a mano alzada (Davidson 2013). Igualmente influyentes han sido los trabajos de la investigadora Jesse Lockard sobre el poder del discurso visual creado por la fotografía.

El viaje como aprendizaje o *life as a voyage*

El viaje, que Rudofsky entendía como un medio de conocimiento, es un elemento esencial en su obra. Desde sus primeros años en la Technische Hochshule de Viena Rudofsky pronto descubrió su pasión por el viaje, que le permitió conocer y estudiar las formas de vida y la arquitectura de todos aquellos lugares que visitó. Pronto su afán de descubrimiento le llevó a los lugares más recónditos tanto de Europa como de otros continentes, donde pudo analizar la arquitectura y las formas de vida locales. El viaje

En su artículo de 1983 "The Interpretation of Vernacular Architecture" Roderick J. Lawrence hace una clasificación de los diferentes métodos de estudio de la arquitectura vernácula, para lo que tiene en cuenta la intención interpretativa de diversos autores. Su clasificación resulta de especial interés por incluir aquellos métodos que abordan temáticas que se sitúan en la periferia de la subjetividad. El autor tiende, sin embargo, a dar preferencia a las prácticas metodológicas sujetas a cierta "exactitud científica". En todo caso, Lawrence sitúa los trabajos de Rudofsky (1964, 1977) dentro de la categoría "*the aesthetic/formalist interpretation*" y lo excluye, de esta manera, de aquellas otras aproximaciones interesadas únicamente en cuestiones histórico/temporales. Rudofsky estaría por tanto más interesado por las cuestiones visuales y descriptivas que por las técnicas o arqueológicas, y se aleja de conjeturas sobre la evolución simbólica o constructiva de estos ejemplos de arquitectura vernácula. Lawrence señala también cómo algunos autores, como Paul Oliver, han criticado del trabajo de Rudofsky su desinterés por explicar el origen y el significado de los diversos ejemplos de arquitectura vernácula que presenta.

Este ejemplo nos permite ver cómo se fue estableciendo cierta disconformidad con una metodología basada en la subjetividad interpretativa, pero a su vez se proponían aproximaciones más arqueológicas, antropológicas o sociológicas que no escapaban de una cierta subjetividad.

Figura 3: Fotografía de la exposición de Bernard Rudofsky *Architecture Without Architects*, celebrada en 1964 en el MoMA de Nueva York (Archivo del MoMA)

Figura 4: Reelaboración por el autor del mapa elaborado por Andrea Bocco en su publicación *Bernard Rudofsky. A Humane Designer*, 2001

Figura 5: Reelaboración por el autor del mapa elaborado por Andrea Bocco en su publicación *Bernard Rudofsky. A Humane Designer*, 2001

fue para Rudofsky la única manera de acceder de forma directa a los valores subyacentes de estas arquitecturas desconocidas (Rossi 2017).

El análisis de las viviendas primitivas de las islas Cícladas[3] le permitió doctorarse. De nuevo, el viaje se convirtió en un medio esencial de comprensión de la arquitectura vernácula y una fuente de experimentación y conocimiento.

Además, el constante movimiento le permitió establecer relaciones profesionales con destacadas figuras internacionales de su campo de estudio (Bocco Guarneri 2003).

El Mediterráneo pronto adquirió para Rudofsky un valor especial. Allí encontró formas de vida dignas de ser analizadas y de las que aprender, pues "lo que hace falta no es una nueva forma de construir, sino una nueva forma de vivir" (Fernández-Galiano 2007). Por ello, en su obra se descubre un especial interés por mostrar el paisaje, la sostenibilidad y los valores de las sociedades, y en especial de las que habitan en torno al Mediterráneo (Loren-Méndez 2014). El Mediterráneo es un lugar donde alcanzar la verdadera "vocación utópica", donde vivir una vida feliz, por ser un lugar de identidad sin genealogía (Rossi 2017).

Catalogación e identificación de los valores asignados: Interrelación de referencias

El trabajo doctoral en el que se encuadra este artículo tiene como uno de sus objetivos principales el estudio sistemático de cada una de las referencias a la arquitectura vernácula en la obra de Rudofsky. En él se trata de desentrañar el enfoque y los valores no siempre apreciables a simple vista que cada uno de estos ejemplos muestra a través del propio discurso gráfico.

Además de las referencias incluidas en las ya mencionadas *Architecture Without Architects* y *The Prodigious Builders*, se han estudiado también las de la publicación de 1969 *Streets for People: A Primer for Americans*. Esta obra, en la que Rudofsky reflexiona sobre el uso del espacio público y critica las prácticas urbanas dominantes durante la segunda mitad del siglo XX, especialmente en Norteamérica, ha sido un referente para distintas generaciones de arquitectos.

Con el fin de poder categorizar y catalogar cada una de estas referencias, el análisis comienza con un proceso de extracción de datos sobre los propios ejemplos. Se tienen

Figura 6: Izquierda: Trulli, Alberobello, Sur de Apulia, Italia (Rudofsky 1964). Derecha: Urüp, Capadocia, Turquía (Rudofsky 1977)

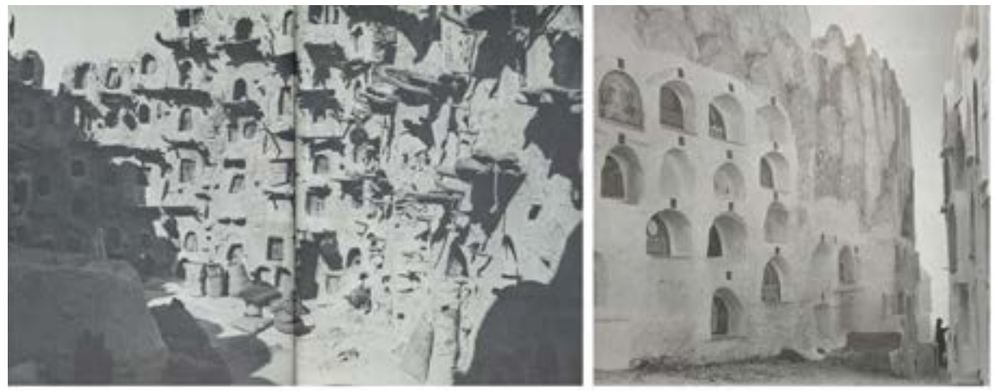

Figura 7: Izquierda: Torre de almacenaje en Medenine, Túnez (Rudofsky 1964). Derecha: Cementerio español (Rudofsky 1977)

en cuenta, entre otros factores, la numeración de cada una de las imágenes dentro de la obra, el capítulo en el que se incluyen, el lugar y el país al que pertenecen las referencias, la fecha de construcción de las arquitecturas presentadas, la fecha en que las fotografías fueron tomadas, o las fechas en que los lugares fueron visitados por Rudofsky. Además, se aporta un breve análisis sobre los aspectos compositivos de cada referencia.

Una vez realizado esto, se lleva a cabo un estudio subjetivo, en atención a la hipótesis establecida al comienzo de la investigación. Con este fin, se lleva a cabo un análisis de una doble dimensión de cada una de las imágenes. Por un lado, se identifica la forma en que Rudofsky describe y contextualiza cada ejemplo, así como de aquellos valores destacables mostrados en el propio discurso literario que lo acompaña. Por otro lado, se incorpora a cada ilustración una dimensión crítica que se acerca a una valoración propia en el marco de esta investigación.

Para analizar las cualidades de cada una de las referencias se han agrupado las referencias mediante un proceso sistemático de localización, fragmentación, análisis y valoración.

Esta forma de proceder permite establecer interrelaciones entre las distintas referencias, incluso entre aquellas aparecidas en publicaciones distintas, y, a partir de ello, identificar los motivos que llevaron a Rudofsky a seleccionarlas. De esta manera, se pueden desentrañar los valores generales del discurso de Rudosky que subyacen en este conjunto de referencias e interrelaciones. Esto es posible, en parte, porque, como se ha explicado, en toda la producción del autor podemos encontrar dos discursos independientes pero complementarios: el discurso gráfico y el discurso literario. Las obras *Architecture Without Architects* y *The Prodigious Builders* son las que han permitido establecer más relaciones entre sus referencias, por contar con una temática común.

De este modo, se ha podido verificar la hipótesis de la propia dicotomía discursiva dentro del propio trabajo de Rudofsky, una dicotomía que habla de la desvinculación de cada discurso particular dentro de uno general que los abarca y reconoce. Así mismo, se ha visto refrendado el entendimiento del material de estas obras como parte de un discurso gráfico con una forma y un significado propios.

Figura 8: Izquierda: Antiguos palomares en el Valle de Anapo, Sicilia (Rudofsky 1964). Derecha: Antiguo acueducto en Évora, Portugal (Rudofsky 1977)

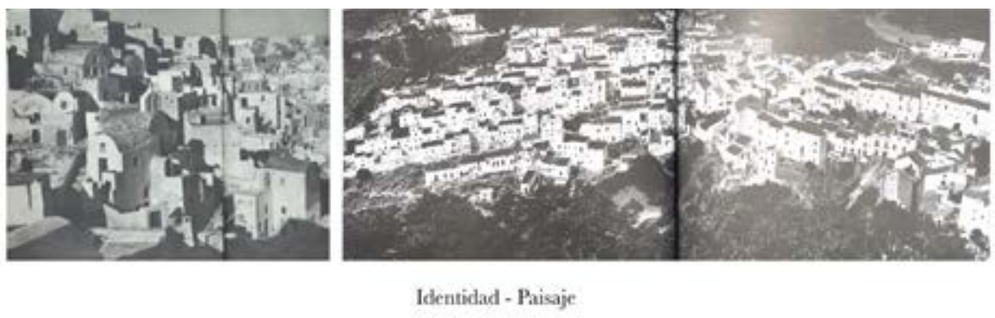

Figura 9: Izquierda: Apanomeria, Isla de Thera, Grecia (Rudofsky 1964). Derecha: Pueblo de Casares, España (Rudofsky 1977)

Figura 10: Izquierda: Caldas de Reis, Pontevedra, España (Rudofsky 1964). Derecha: La Alberca, Salamanca, España (Rudofsky 1977)

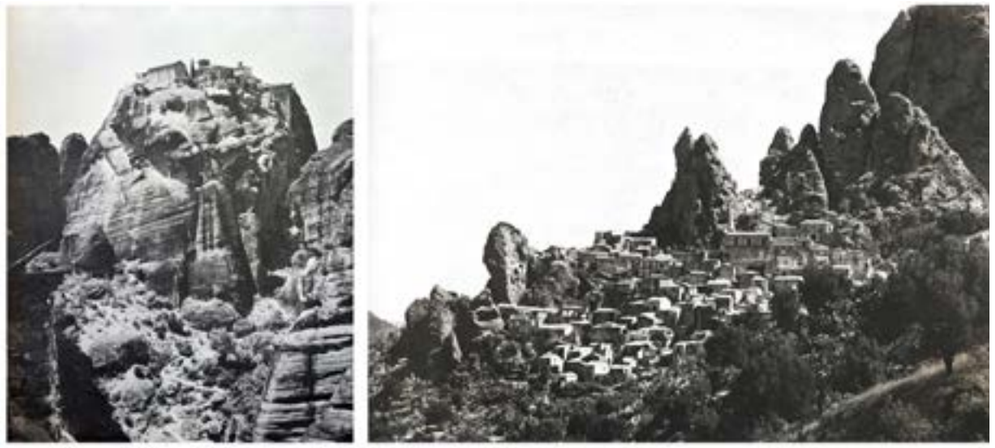

Figura 11: Izquierda: Fuerte de Meteora en Trikala, Grecia (Rudofsky 1964). Derecha: Pentedattilo, Calabria, sur de Italia (Rudofsky 1977)

Tanto es así, que aquellas referencias vinculadas en una de las publicaciones a un apartado concreto del discurso literario principal, en la siguiente publicación nos las podemos encontrar en un contexto diferente y utilizada con una intención diversa, con lo que se confirma la posibilidad de posicionar estas referencias vernáculas en función de las necesidades o los objetivos de un discurso más amplio. Para esta autonomía de cada ejemplo y para esta contextualización diferente dentro de cada obra, Rudofsky se apoya en el detalle e incluso en las diferencias formales existentes en esta clase de arquitecturas espontáneas, incluso entre ejemplos localizados en el mismo contexto geográfico y cultural.

Conclusiones

Este análisis desde un punto de vista actual de los trabajos sobre arquitectura vernácula realizados por Bernard Rudofsky tenía como objetivo la defensa de la libertad metodológica e interpretativa del autor para abordar el estudio de una arquitectura alejada de los parámetros académicos que suelen aplicarse a otro tipo de edificios, así como la reivindicación de una mirada crítica y reflexiva hacia la arquitectura.

La metodología de la crítica arquitectónica en el marco de los estudios sobre arquitectura vernácula se ha visto sometida de forma recurrente al juicio de diferentes autores. Este juicio ha sido a menudo ajeno a la especificidad de este

tipo de objeto de estudio y ha ignorado que escapa a los parámetros convencionales de análisis a los que la historia de la arquitectura nos tiene acostumbrados. En el estudio y la valoración de arquitecturas ubicadas en la periferia de la arquitectura formal, al tratarse de arquitecturas en mayor o menor medida espontáneas, fruto de la propia evolución de su contexto sociocultural, no debe ser un demérito el recurso a una metodología más subjetiva. Ante tales casos de estudio menos formales, muchos de los habituales criterios objetivos de análisis carecen de validez y parece apropiado recurrir a otros.

Ser capaces de localizar aquellos valores sobre los que autores como Bernard Rudofsky han construido su discurso en torno a la arquitectura vernácula nos permitirá comprender mejor los objetivos subyacentes en sus estudios y publicaciones. Además, el acercamiento a la intencionalidad y la valoración tanto de este tipo de arquitectura como de esta clase de estudios nos permitirá comprender la relación, a menudo velada, de tales discursos e intenciones con la búsqueda de nuevas prácticas de arquitectura que den respuesta a determinadas formas de vivir.

[1] Tanto en los textos divulgativos de la exposición como en el propio catálogo de la misma, Bernard Rudofsky comienza su trabajo subrayando de forma clara y tajante la responsabilidad de la Historia de la Arquitectura en el abandono de estas arquitecturas anónimas y reivindicando un discurso historiográfico más incluyente y, por tanto, más verdadero.

[2] Sibyl Moholy-Nagy (1903-1971), autora polifacética, se considera una figura importante en la revisión de la modernidad arquitectónica tras la Segunda Guerra Mundial. En 1957 publicó *Native Genius in Anonymous Architecture*, un manifiesto para la promoción de la sabiduría anónima de la arquitectura vernácula como fuente de reflexión e inspiración para la arquitectura contemporánea.

[3] Durante el verano de 1929 Rudofsky viajó a la isla de Santorini, en Grecia, donde se centró en el desarrollo y la conclusión de la que sería su tesis doctoral *Eine primitive Betonbauweise auf dass südlichen Kyklade*, que defendió finalmente en 1931.

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Biography | Biografía | Biografia

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César Prieto Pérochon

In Search of Lost Scagliolas: Historical Investigation of the Traditional Wallcoverings of Iconic Buildings in Madrid

En busca de los estucos perdidos: Investigación histórica de paramentos tradicionales en edificios emblemáticos de Madrid

Em busca dos estuques perdidos: Pesquisa histórica dos paramentos tradicionais em edifícios emblemáticos de Madrid

Keywords | Palabras clave | Palavras chave

Wallcoverings, Trade, Historic finishes, Francisco Largo Caballero, Masonry

Revestimientos, Oficio, Acabados históricos, Francisco Largo Caballero, Albañilería

Revestimentos, Ofício, Acabamentos históricos, Francisco Largo Caballero, Alvenaria

Abstract | Resumen | Resumo

A study of scagliolas executed by the historic Spanish socialist leader Francisco Largo Caballero (a plasterer by trade) as well as by other fellow plasterers, following an exploration of many iconic nineteenth- and twentieth-century palaces in Madrid, highlights the importance of historical research involving archives, bibliographies, and photos, along with workers' testimonies and stratigraphic probes, in ascertaining how the interiors of these buildings were originally decorated. Original plaster and lime finishes have been systematically replaced by emulsion paints of lower practical and historical value. For example, the Palace of Villamejor no longer contains any scagliola, the Bank of Spain has less than 5% of the scagliola that it had originally, and the tens of thousands of square meters of hot-ironed scagliola at the Air Force Ministry have been painted over.

A raíz de un estudio sobre los estucos realizados por el histórico líder socialista español Francisco Largo Caballero, estuquista de profesión, así como por otros de sus compañeros de oficio, y tras la prospección de numerosos palacios emblemáticos del siglo XIX y XX de Madrid, se puso de manifiesto la importancia de la investigación histórica en archivos, bibliografías y fotografías, unida a los testimonios de trabajadores y a la realización de calas estratigráficas para poder conocer la decoración original de los interiores de estos edificios, que han sufrido cambios radicales. Los estucos originales de yeso y cal han sido sustituidos sistemáticamente por pinturas plásticas de menor valor práctico e histórico. Como muestra de ello, el palacio de

Villamejor no contiene ya estuco alguno; el Banco de España, menos del 5% de los que tuvo en origen; y en el Ministerio del Aire sus decenas de miles de metros cuadrados de estuco al fuego se encuentran pintados.

No seguimento de um estudo dos estuques realizados pelo histórico líder socialista Espanhol Francisco Largo Caballero, estucador de profissão, bem como por outros colegas seus, e após o levantamento de numerosos palácios emblemáticos dos séculos XIX e XX em Madrid, tornou-se evidente a importância da pesquisa histórica em arquivos, bibliografias e fotografias, juntamente com os testemunhos de trabalhadores e a realização de levantamentos estratigráficos a fim de descobrir a decoração original dos interiores destes edifícios, que sofreram mudanças radicais. Os estuques originais de gesso e cal foram sistematicamente substituídos por tintas plásticas de menor valor prático e histórico. Por exemplo, o palácio de Villamejor já não contém qualquer estuque; o Banco de Espanha, com menos de 5% do que tinha originalmente; e no Ministério do Ar, as suas dezenas de milhar de metros quadrados de estuque queimado foram pintadas.

Introducción

El presente artículo sobre paramentos estucados en Madrid es, en su mayor parte, el resumen de un trabajo de investigación histórica más amplio[1] sobre la desconocida labor de juventud de Francisco Largo Caballero (1869-1946), quien fuera líder sindical socialista, Ministro de Trabajo durante la II República Española y Presidente del Consejo de Ministros desde septiembre de 1936 a mayo de 1937, durante la Guerra Civil Española. Desde los nueve años y hasta 1910, cuando comenzó a dedicarse de manera profesional a la política, Largo Caballero trabajó durante 32 años como estuquista, oficio en el que comenzó como peón y en el que acabó como maestro (Fig. 1).

Este trabajo se sitúa en un ángulo muerto de la historia de la construcción, que suele centrar su estudio en la historia del arte, de la arquitectura y de la ingeniería. La historia de la albañilería, sin embargo, es una disciplina muy desatendida. El texto se centra, concretamente, en el arte del estuco. Los

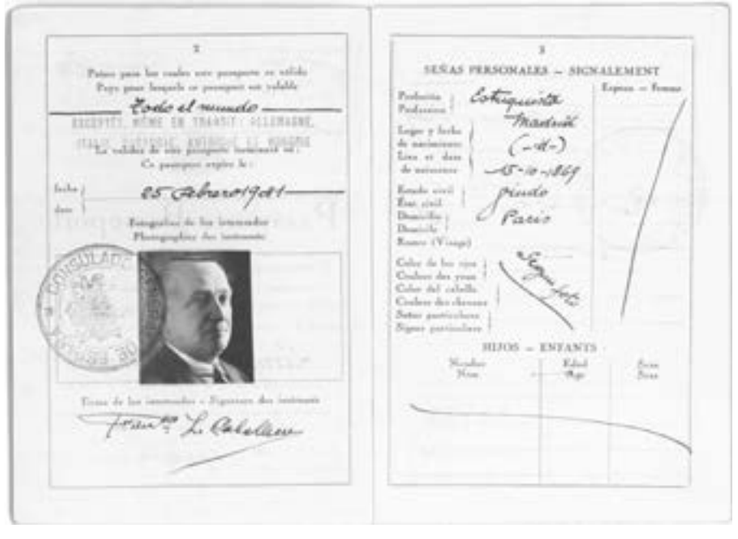

Figura 1: Último pasaporte español de Francisco Largo Caballero, expedido en París el 26 de febrero de 1939. En él figura su profesión: estuquista. Largo Caballero trabajó en los estucos de los dos primeros edificios estudiados en este artículo (FPI. AFLC. 199)

acabados de los edificios, pese a ser percibidos de manera cotidiana por sus habitantes o usuarios, suelen escapar a los estudios de los especialistas, como se muestra a continuación. Este tipo de revestimiento tradicional, en vías de desaparición, se estudia aquí siguiendo el trabajo de un tipo concreto de albañiles que no aparecen nunca mencionados en placas o en libros: los estuquistas.

El estuco es una técnica de revestimiento utilizada en paramentos interiores y exteriores desde la Antigüedad. Se consigue mediante el apretado, el alisado y el pulimentado con llana, con piedras o con otros elementos de una fina mezcla de yeso y/o cal, generalmente con pigmentación, sobre un guarnecido. Se obtiene como resultado un acabado liso, brillante y duro que imita, en mayor o en menor medida, al mármol (Figs. 2 y 3). Utilizado durante toda la Edad Moderna en numerosas construcciones civiles y religiosas, su uso se popularizó a lo largo del siglo XIX por su calidad y por su buen encaje con la nueva estética residencial burguesa. Aparecieron así por toda Europa albañiles especializados en este tipo de revoco, los estuquistas, cuyo oficio poca relación tiene –tanto por el trabajo que realizan como por su consideración social–, con el de los escultores de yeserías (antiguamente muchas veces llamadas también estucos). Aunque el estuco ha sido considerado históricamente una técnica económica con la que conseguir la imitación del mármol –material de lujo por excelencia–, ha sido a su vez también una técnica con la que crear nuevos veteados y obtener colores ausentes en la naturaleza, y tiene un importante componente de creación artística. A lo largo del siglo XX, el encarecimiento de la mano de obra y las mejoras técnicas introducidas en la producción y en el transporte de mármoles, con el consiguiente abaratamiento de costes, junto a los cambios propiciados por la introducción del cemento y los derivados del petróleo, provocó la casi desaparición de este oficio.

Figura 2: Hornacina de estuco-mármol en la entrada del Palacio de Linares de Madrid. Hay indicios de que estos estucos fueron realizados por Largo Caballero o por otros estuquistas al servicio del maestro Agustín Pérez (Luis Prieto)

Figura 3: Pinturas marmóreas de gran calidad situadas en el Palacio de Linares y que fueron restauradas en 1992 con motivo de la transformación del Palacio en la Casa de América. Poder distinguir visualmente entre mármoles, estucos y pinturas al óleo resulta en ocasiones muy difícil (Luis Prieto)

Metodología

Este trabajo muestra cómo la investigación histórica en archivos, en fondos bibliográficos y en fondos fotográficos, junto a la información aportada por los trabajadores de un oficio o los empleados de un edificio, puede resultar indispensable para estudiar los acabados originales de edificios históricos y documentar su destrucción, un fenómeno bastante generalizado que ha resultado en una importante pérdida de patrimonio. El método utilizado habitualmente para conocer la historia de un paramento y obtener información más allá de lo inmediatamente visible es la cala estratigráfica (Fig. 4). Consiste en la realización de incisiones puntuales en techos y paredes con el fin de retirar y poder estudiar las diferentes capas que componen el revestimiento, como la piedra o el ladrillo. Se han llevado a cabo calas en los tres edificios que se presentan a continuación, cuyo análisis complementa la información obtenida por la investigación histórica.

La investigación llevada a cabo sobre la conservación de los estucos en diversos edificios emblemáticos madrileños ha permitido localizar tres edificios singulares en los que se pueden seguir los pasos de la labor como estuquista de Largo Caballero en Madrid: el Palacio de Linares, el Palacio de Villamejor y el Banco de España, si bien en el primero de ellos es difícil confirmar su participación[2]. En el Palacio de Linares, además, apenas se conservan ya estucos (aunque sí hay una importante presencia de pinturas marmóreas al óleo, una técnica que queda excluida de este trabajo) y, por tanto, no se ha considerado de utilidad para este estudio. Se han estudiado en detalle, por el contrario, el Palacio de Villamejor y el Banco de España, y a ellos se ha sumado una tercera obra, el Ministerio del Aire, uno de los más emblemáticos edificios construidos durante el periodo franquista en Madrid. Se trata de un gran edificio construido más de sesenta años después que el Palacio de Villamejor y el Banco de España, cuando ya había fallecido Largo Caballero, pero donde la superficie de estucos ejecutada resulta de especial interés para abordar la atención recibida por este tipo de acabados. Aunque existe información sobre los estucos del Ministerio, se ha aportado nueva documentación gracias a este estudio. Se han elegido, por tanto, tres ejemplos paradigmáticos de los que se pueden obtener una serie de conclusiones extrapolables a la arquitectura más representativa de los siglos XIX y XX.

Debido a la ausencia de fuentes escritas, recabar información sobre los obreros y artesanos que trabajan en las obras de construcción es mucho más complicado que hacerlo sobre arquitectos, ingenieros o artistas. Ni los proyectos de ejecución ni los pliegos de condiciones recogen habitualmente información sobre los acabados interiores de los edificios ni sobre las obras de rehabilitación llevadas a cabo con el paso de los años. Tampoco la documentación administrativa suele recoger información completa sobre las diferentes empresas constructoras contratadas y, menos aún, sobre aquellas otras subcontratadas de las que solían formar parte las plantillas de estuquistas. Ni siquiera en las instituciones de servicio público se conserva este tipo de documentación sobre la construcción de sus sedes, como es el caso del Banco de España.

De Largo Caballero, sin embargo, por su relevancia política posterior, sí se conserva una autobiografía póstuma en que relata la dureza de sus primeros años de vida, aunque en ella no entra, por desgracia, a describir con detalle los 32 años dedicados al oficio. También existe una biografía inédita e inacabada,[3] escrita por su correligionario Rodolfo Llopis (1895-1983), en la que se describen de manera pormenorizada cuestiones técnicas de su oficio. Se trata de una obra etnográfica única que describe el mundo de la construcción en Madrid a finales del siglo XIX.

Además de la extensa bibliografía sobre Largo Caballero se han revisado exhaustivamente una quincena de archivos en busca de documentos que versen sobre la construcción y las diversas reformas acaecidas en los edificios estudiados. Aunque se ha revisado exhaustivamente el conjunto de la amplia bibliografía existente sobre estos tres edificios, no se ha encontrado información alguna sobre sus estucos. Los fondos de fotografías históricas, también estudiados, rara vez incluyen imágenes tomadas en los pasillos y en las escaleras de estas construcciones, que son los espacios de más interés. Se han llevado también a cabo algunas entrevistas con trabajadores de estos edificios que han tenido una larga relación con ellos.

Figura 4: Cala estratigráfica realizada en 2022 en el Senado, Madrid, en busca de los acabados históricos del edificio (Luis Prieto)

El Palacio de Villamejor: Los estucos perdidos del palacio presidencial

Situado en el comienzo del Paseo de la Castellana, el Palacio de Villamejor es un ejemplo típico de la arquitectura burguesa propia de este eje de Madrid a finales del siglo XIX y principios del XX. Gran parte de los palacetes de la Castellana fueron sistemáticamente destruidos, a pesar de su gran valor arquitectónico, en la segunda mitad del siglo XX. El de Villamejor, conservado muy probablemente por ser de titularidad pública desde hace más de cien años, posee por esta razón un especial valor e interés a día de hoy. Construido entre 1885 y 1893, fue de 1914 a 1977 la sede de la Presidencia del Consejo de Ministros, en sus diferentes denominaciones. Hoy acoge el Ministerio de Política Territorial. El edificio destaca por sus salones históricos a la francesa, por su rico mobiliario (en parte trasladado por orden de Manuel Azaña desde el Palacio de La Granja en 1931, poco después de la proclamación de la República) y por sus chimeneas de mármol. A día de hoy no se conserva ningún estuco, si se excluye una serie de pinturas plásticas de color rosado que imitan al estuco (Fig. 5) y que probablemente hayan sido realizadas sobre ciertos paramentos donde anteriormente sí los hubo. Tampoco se hace mención alguna a los estucos del edificio en la bibliografía estudiada (Casas Ramos y Aguilar Olivan 1999, Navascués y Casas 2006, Rivas Quinzaño 1988 y Timoteo Álvarez, Gutiérrez Álvarez y García López 2002)[4]. Sin embargo, por la época, y, sobre todo, por la participación documentada de Largo Caballero[5] en la construcción del inmueble, se puede concluir que originalmente sí los hubo.

La documentación sobre la construcción del edificio no se encuentra ni en el archivo del propio Palacio de

Figura 5: Escalera del Palacio de Villamejor, Madrid, en cuyos paramentos se observan estucos sintéticos de color rosa de reciente producción y, en torno a ellos, pintura plástica (Luis Prieto)

Villamejor, ni en las diferentes ubicaciones de los archivos de la Presidencia, ni en el archivo de Carlos Tancredo de Borbón-Dos Sicilias (1870-1949), segundo propietario del edificio, de 1907 a 1914. Podrían encontrarse aún en manos del marquesado de Villamejor, o, probablemente, haberse perdido. Del año 1914 a esta parte, siendo ya sede del Consejo de Ministros, sí que se conserva numerosa documentación sobre las diferentes obras de restauración que han tenido lugar; pero en ninguna parte se hace referencia a los estucos. Existe un proyecto de 1982 para la restauración y la decoración de los vestíbulos y la Secretaría General[6], que, muy probablemente, fue ejecutado. En él se puede leer lo siguiente: "La ejecución de las obras, que se acometerán en fecha inmediata, para acondicionar las instalaciones eléctricas del Palacete del Paseo de la Castellana número 3, sede de este Departamento Ministerial, y con el fin de dotarlo, a la vez, de un sistema eficaz de detección de incendios, provoca la necesidad de atender con urgencia a la restauración del decorado de dicho Palacete que, como consecuencia de dichas obras, quedará gravemente deteriorado". La incorporación o renovación de instalaciones que tuvo lugar a lo largo del siglo XX llevó en muchas ocasiones al picado de los paramentos antiguos y a su sustitución por otros de peor calidad.

El proyecto de 1982 estaba organizado en tres fases. Los trabajos de una de ellas afectaban a la escalera principal[7]: "el proyecto tiene por objeto la restauración y decoración de la escalera principal del edificio, que se encuentra en mal estado de pinturas, artesonados y elementos decorativos". En el mismo documento podemos leer "se picarán todos los paramentos horizontales y verticales, respetando al máximo las molduras existentes". Los paramentos verticales se cubrieron posteriormente con pintura de esmalte.

Teniendo en cuenta el estado actual del edificio y la documentación estudiada, parece que la hipótesis más probable es que los estucos, que presumiblemente se encontraban en la escalera principal (Fig. 6), fueron realizados en fecha bastante anterior a 1982 y que tanto el guarnecido como los estucos originales fueron picados durante los trabajos llevados a cabo aquel año. Se trataría de unos 325 metros cuadrados de pared y 100 metros cuadrados de techo. Muy probablemente los paramentos fueron picados porque para los albañiles y los pintores no especialistas los yesos tradicionales son más difíciles de trabajar que los modernos. Asimismo, su destrucción podría explicarse por la dificultad de encontrar artesanos que dominen el oficio y estas técnicas.

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Figura 6: Escalera principal del Palacio de Villamejor, Madrid. Todos los paramentos y relieves están pintados con pinturas plásticas realizadas los mismos tonos (Luis Prieto)

Figura 7: Restos de estuco ocre en el bocel de la base de una columna

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En el año 1994 se llevó a cabo una licitación de trabajos de "restauración, rehabilitación y decoración interior del Ministerio"[8]. De esta fecha podrían ser originarias las preparaciones de estuco sintético rosado antes mencionadas, aunque otros falsos estucos de color ocre que se encuentran en un salón de oficinas en la planta baja daten de 2010. En cualquier caso, estos trabajos no son estucos a base de yeso o cal y pigmentos naturales que hayan sido realizados por estuquistas profesionales, por lo que escapan al ámbito de este estudio. La búsqueda de fotografías históricas y los testimonios de antiguos trabajadores del Ministerio tampoco han permitido obtener más información sobre los estucos originales del palacete.

Las estratigrafías analizadas en abril de 2022 han confirmado el picado de los paramentos de la escalera principal, pero también han permitido encontrar algunos rastros de estuco ocre en el bocel de la base de una columna de la planta baja. Se trata de un elemento más difícil de picar y que probablemente fue directamente pintado. También se localizaron pinturas históricas de color ocre bajo la pintura plástica en el pasillo que conecta la escalera principal con el ala este, en la planta principal. Las estratigrafías parecen, por tanto, confirmar las hipótesis planteadas (Fig. 7).

El Banco de España: 40.000 metros cuadrados de estuco

El edificio de la sede central del Banco de España es uno de los más emblemáticos de Madrid. Fue construido entre 1884 y 1891. Diversas ampliaciones, llevadas a cabo a lo largo de los siglos XX y XXI, han completado la manzana que ocupa, a la vez que han respetado el espíritu de las fachadas originales. Tanto el exterior como el interior destaca por la calidad de los trabajos llevados a cabo por maestros canteros, herreros, escultores, marmolistas, vidrieros, herreros y relojeros (Serrano 2020: 197). Según puede leerse en el BOE publicado el 31 de diciembre de 1999 (RD 1933/1999), cuando el edificio antiguo fue declarado BIC: "Las fachadas recogen un repertorio decorativo ecléctico, aunque la sobriedad de zócalos y plantas bajas acentúan la idea de solidez representativa que corresponde a la institución que alberga". Tal sobriedad puede ponerse en duda tras el hallazgo de una liquidación de estucados realizada en 1892[9], finalizadas ya las obras, en la que se recoge la ejecución de 41.000 metros cuadrados de estuco, de los que solo se conservan, en la Galería del Prado de la planta principal, algo menos de 2.000, es decir, un 5% del total (Figs. 8 y 9). Existen además tramos parcialmente restaurados, reemplazados o pintados con pinturas que imitan el estuco.

Figura 8: Estucos en la planta de basamento del edificio en 1891, actualmente perdidos (AHBE. Colección de Planos de arquitectura. 76/2,2)

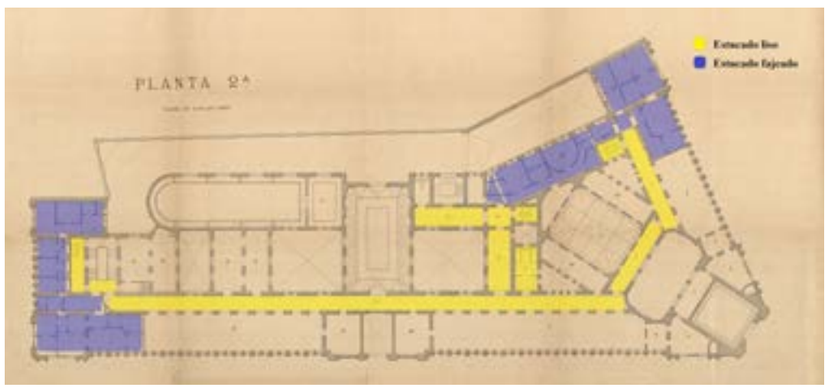

Figura 9: Estucos en la planta de basamento del edificio en 1891, actualmente perdidos (AHBE. Colección de Planos de arquitectura, 76/2,3)

Los estucos mencionados no han sido previamente estudiados ni documentados por especialistas, a pesar de la extensa bibliografía que existe sobre el Banco de España, uno de los edificios históricos mejor documentados de Madrid (Serrano García 2020, Peral 2021 y Alonso y Campano 2001). Dichos estucos no están estudiados en la densa bibliografía sobre la arquitectura del Banco, sin duda una de las más ricas relativa a un edificio histórico de Madrid, probablemente por encontrarse la documentación archivística dentro de la carpeta de "albañilería interior". Pero es precisamente esa albañilería interior la que nos permite hacernos una idea de cómo era el interior del Banco en 1891, con un aspecto muy diferente del actual, tanto por la disposición de los espacios como por los decorados y policromías existentes. Puede recrearse cómo eran estos interiores gracias en gran medida a la continuidad histórica de la institución del Banco en el mismo edificio y a la continuidad de su servicio de archivo, lo que ha permitido que se conserve numerosa documentación que en otras circunstancias hubiera sido destruida o perdida, como ha ocurrido en muchos otros edificios emblemáticos de la misma época.

Figura 10: Paramentos estucados de la galería principal del Banco de España, 2022

Figura 11: Detalle de los paramentos estucados de la galería principal del Banco de España, 2022

Gracias a la documentación obtenida en estos archivos (se ha recurrido principalmente a las liquidaciones definitivas, por ser generalmente la documentación más fiable) se ha podido calcular que, excluyendo los sótanos, existían en el edificio 80.274 metros cuadrados de superficies lisas (paramentos y techos), de los cuáles 35.453 fueron cubiertos con pintura común[10], 6.976 con pintura para decorados especiales y 41.065 con estuco. Excluyendo los techos, que rara vez se estucaban, puede concluirse que más de la mitad de los paramentos del Banco fueron revocados con esta técnica. Sólo quedan excluidos los espacios más ceremoniales: el Salón de la Comisión Ejecutiva, el Salón de Juntas Generales o el Despacho del Gobernador, mientras que todos los demás estaban estucados: patios, escaleras, ascensores, vestíbulos, galerías, retretes, porterías, comedores, cuentas corrientes y giros, tipolitografía, cuerpo de guardia, archivo, oficinas, caja de alhajas, cajas supletorias, caja de metálico y patio de cobradores.

El estuco de estas estancias era liso –un estuco de yeso con una pequeña proporción de cal– blanco y con ligeros veteados grises, como los conservados hoy en día en la galería principal. Los paramentos están divididos en amplios rectángulos con el fin de imitar sillares (Figs. 10 y 11). Este tipo de estucos lisos representaban el 90% de los estucos del banco y su precio de ejecución fue de una peseta el metro cuadrado, precio extremadamente económico si lo comparamos con las 2 pesetas por metro cuadrado que costaba la pintura, las 1,40 pesetas del metro cuadrado de guarnecido con cal común, o las 4 pesetas el metro cuadrado del revoco realizado con cemento Portland que puede encontrarse en los zócalos del sótano. La diferencia es abrumadora si lo comparamos con las 19,71 pesetas que costaba el metro cuadrado de suelo de mármol blanco, las 32,50 pesetas del metro de mármol para escaleras (precio correspondiente al mármol de las escaleras comunes, no al mármol de Carrara de la magnífica escalera principal, cuyo precio era bastante más elevado) y las 58 pesetas del metro cuadrado del mármol de los zócalos.

Otro tipo de estuco que se puede encontrar en el edificio (1.685 metros cuadrados de superficie) es el "fajeado", con un coste de 1,20 pesetas el metro cuadrado y que se llevó a cabo únicamente en los exclusivos apartamentos (de algo más de 800 metros cuadrados cada uno) del cajero de papel y del cajero de metálico, en el segundo piso, espacios hoy completamente reacondicionados en los que no queda ningún rastro de los paramentos originales. Puede suponerse que el nombre de "estuco fajeado" se deba a la manera en la que era ejecutado, en diferentes fajas de tonalidades, presumiblemente, distintas.

Figura 12: Escalera del Banco de España en 1970. No hay rastro de los estucos a la plancha históricos y la tonalidad y la homogeneidad de los paramentos y relieves se corresponden con los del estado actual (Banco de España 1970)

El último tipo de estuco que se puede encontrar en el edificio y que, por su precio (tres pesetas el metro cuadrado) puede suponerse que contaba probablemente con mayor valor artístico, es el estucado con plancha (también conocido como estuco al fuego o a la catalana) del que se realizaron 1.730 metros cuadrados, la mayoría de ellos (1.313) en la escalera que sube al despacho del gobernador (Fig.12), situada en el chaflán del edificio, y tanto en el vestíbulo del chaflán como en otros dos de planta semicircular, espacios hoy desaparecidos. Tampoco se conservan ejemplos de este estuco.

La suma del coste de estos tres tipos de estucos asciende a 39.317 pesetas, por lo que los acabados de más de la mitad de los paramentos del edificio representan apenas el 0,2% del coste total de la obra, que se elevó a 17.300.000 pesetas (coste que incluye el precio de adquisición del solar).

En otra hoja del documento que contiene la liquidación de estucados puede encontrarse el coste detallado de los gastos del personal y de los materiales que fueron necesarios para arreglar los desperfectos causados por artesanos de otros oficios antes de la inauguración del edificio, una vez que los estucos ya habían sido encerados. Estos costes se añadieron al total de los gastos de estucado. El "repaso" supuso un total de 625 jornales, suma del trabajo de los oficiales estuquistas (entre los que se encontraba Largo Caballero, que cobraban a 4,50 pesetas el jornal), de los ayudantes de estuquista (3,50 pesetas) y de los peones de mano (2,50 pesetas), por un total de 2.167 pesetas. El coste del material utilizado fue relativamente modesto: la suma de la escayola (70 pesetas), el yeso (30 pesetas), la cal (20 pesetas) y el barniz (30 pesetas) asciende a 150 pesetas. Se puede adivinar observando estas cifras globales que la decadencia del oficio de estuquista pudo estar muy ligada al coste de la mano de obra.

El estudio de estas cifras nos permite adivinar la composición de los estucos, aunque ésta debería ser confirmada también mediante análisis químicos. La receta se corresponde, además, con la descrita por Largo Caballero en la biografía inédita ya mencionada, escrita por Rodolfo Llopis: "el peón de mano, en un cuezo grande, amasa. Hace la mezcla de yeso blanco, bien tamizado con un tamiz del cuarenta, con escayola. La mezcla no se hace siempre en las mismas proporciones. Depende de los gustos del propietario y, a veces, de los escrúpulos del maestro. Se mezcla mitad y mitad, o dos partes de yeso por una de escayola, según. Se amasa con una 'lechada' de cal muerta, también tamizada con el mismo cedazo, o mejor con el de cincuenta. Se amasa con unas paletas de madera, batiendo bien la masa y dejándola reposar. Cuando toma consistencia, se aparta la superficie, la "flor", a un lado del cuezo. El peón, con una pala, va sirviendo la masa al ayudante y al oficial, que la tienden: es el *ensabanado*".[11]

Las plantas bajas del edificio del Banco de España tenían un uso industrial (estancias para la confección de billetes, tipolitografía, secadero, taladro de billetes, salón de máquinas, maquinaria del alumbrado eléctrico, horno y caja de quema …) y su arquitectura, con espacios abiertos, techos altos y estructuras metálicas, parece recordarlo. A medida que la actividad industrial fue desapareciendo o siendo transferida a otros edificios, el edificio fue incrementando su espacio de oficinas. Así, se construyeron numerosas entreplantas que transformaron por completo los decorados interiores. Algunas de estas obras son difíciles de seguir en los archivos, aunque sabemos que ya en 1933 se dividió en dos el Salón de Juntas Generales, lo que implicó bajar los techos y esconder las yeserías y las pinturas presentes. Con la ampliación llevada a cabo en el año 1936, las galerías de la calle Alcalá se adaptaron al nuevo estilo del edificio. En esa época puede también observarse una tendencia a la uniformización de los colores, como por ejemplo en un proyecto de 1940 de reforma del Salón de Consejos. En general, en todo el edificio puede observarse una tendencia a cubrir las grandes superficies de los paramentos de las


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Figura 13: Imagen histórica de los estucos de la galería principal del Banco de España (Baldasano 1953: 102)

Figura 14: Imagen de los estucos de la galería principal del Banco de España, 2001 (Javier Campano. Cat. F_328. Colección Banco de España)

Figura 15: Imagen histórica de los estucos de la galería principal del Banco de España (Banco de España 1970)

Figura 16: Imagen actual de los estucos de la galería principal del Banco de España, 2022

escaleras y de las galerías con pintura plástica "blanco perla" (color RAL1013) y a disminuir o suprimir los contrastes entre superficies lisas y corridos de yeso.

Algunas de estas diferencias se pueden hallar comparando el estado actual con el de fotografías antiguas (Figs. 13, 14, 15 y 16). Sin embargo, pese a la cantidad de bibliografía histórica existente, y pese a la relevancia de la institución y a la céntrica situación del edificio, es muy difícil encontrar imágenes de los espacios interiores aquí estudiados. Otra posible fuente de información podrían haber sido los archivos privados de las empresas que han trabajado en las obras llevadas a cabo en el edificio, como, por ejemplo, la empresa de pintura Wenceslao García, que tiene una relación de casi cien años con dicha institución. Sin embargo, tampoco se ha encontrado en sus archivos información relevante. Por último, existe la posibilidad de recurrir a la memoria de los trabajadores, aunque ésta no se remonta más allá de la década de 1980. Ninguno de los trabajadores veteranos entrevistados recuerda haber visto nunca estucos más allá de la planta principal. Probablemente esto se debe a que esos estucos eran anteriores a la década de 1950.

Las calas estratigráficas efectuadas en julio de 2022 confirmaron la información obtenida en los archivos: el interior del Banco estuvo ampliamente estucado. Estos estucos, al menos en el examen preliminar, parecen contener cal. La escalera del chaflán tenía un basamento rojo y ocre y los paramentos que suben al despacho del gobernador eran de color ocre, al igual que el vestíbulo del chaflán, el vestíbulo del Paseo del Prado y el del patio de cobradores (hoy depósito de la biblioteca). En todos los demás espacios (pasillos, escaleras, vestíbulo de Greda) se ha encontrado un estuco verdoso, algo más oscuro que la pintura que actualmente lo recubre (Fig. 17).

El Ministerio del Aire: Los estucos al fuego más relevantes

Francisco González Yunta, en su tesis *Estuco a fuego: técnica tradicional y posibilidades de actualización,* investiga muestras históricas de estucos al fuego que ha localizado en el antiguo Ministerio del Aire, hoy Cuartel General del Ejército del Aire, edificio neoherreriano construido en pleno periodo franquista entre los años 1943 y 1958 por la empresa Huarte en el lugar que antes ocupaba la cárcel Modelo de Madrid. En su obra González Yunta estudia la bibliografía sobre el maestro estucador Emilio Quílez (1934-2009), uno de los poco estuquistas que ha escrito sobre su oficio y su obra en canales como, por ejemplo, su página web, hoy inaccesible[12], en la que escribió: "El Ministerio del Aire, la obra más importante del mundo de estuco a fuego, fue realizada por los Hermanos Estradé (tres hermanos). La obra duró diez años, y contiene más de 80.000 m2 de estuco a fuego". Cuando González Yunta inspeccionó el edificio no encontró rastro alguno de los citados estucos, y no halló más que "lisas paredes pintadas con pintura plástica de color ocre en tonos claros" (González Yunta 2016: 121).Además, "el personal de mayor edad nos indicó que el edificio había sido objeto de numerosas reformas de ampliación de las instalaciones existentes y de creación de otras nuevas, como las de telecomunicaciones por ejemplo; fruto de dichas obras se habían realizado rozas en gran número –para empotrar las canalizaciones– y se optó, ante la dificultad en repetir el acabado 'brillante' que recordaban, por tender los desperfectos con pasta de yeso y pintar la totalidad de los paramentos con una pintura plástica. Esto debía ser una práctica antigua ya que otras personas presentes –que llevaban unos quince años destinados en el edificio– no recordaban esta cuestión".


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Figura 17: Las calas estratigráficas efectuadas en los paramentos de la escalera del chaflán muestran la decoración original con estucos rojos y ocres


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Figura 18: Decapado de la pintura plástica efectuado en los paramentos del Ministerio del Aire, Madrid. El estuco, con su brillo característico, empieza a aparecer (González Yunta 2016: 124)

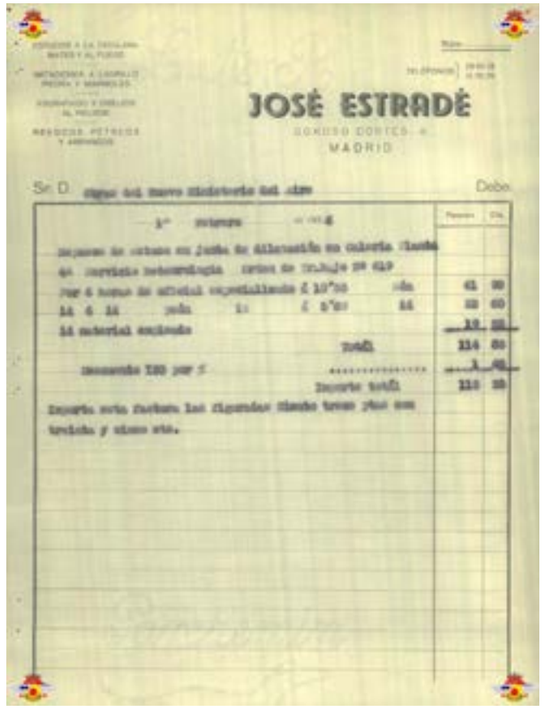
Figura 19: Toma de muestras del estuco al fuego hallado en los paramentos del Ministerio del Aire, Madrid, para proceder a su análisis fisicoquímico (González Yunta 2016: 125)

Para confirmar esta información se han llevado a cabo calas y se ha decapado la pintura en un lugar poco susceptible de haber sufrido modificaciones recientes. Los primeros estucos aparecieron bajo esta capa de pintura plástica (Fig. 18 y 19).

Se ha revisado extensamente la bibliografía sobre el Cuartel General del Aire (Portela Sandoval 2000)[13], sobre la empresa constructora Huarte S.A. (Huarte 1944, Paredes Alonso 1993 y Paredes Alonso 1997) y sobre el arquitecto Luis Gutiérrez Soto (1900-1977) (Baldellou 1973).[14] En la bibliografía sobre este último sólo se ha encontrado una referencia a los trabajos de estuco en la inscripción registral de Obra Nueva, que anómalamente no se llevó a cabo hasta el año 1982 (Portela 2000: 70). En la breve mención se puede leer: "revocos interiores estucados a fuego, revestidos en arcos y servicios de mosaico". Esto parece demostrar la tesis de la investigación de González Yunta.

En el archivo histórico del Ejército del Aire se ha encontrado una sola factura de Estradé por unos trabajos de repaso efectuados en 1956 (Fig. 20). Lo más probable es que todos los trabajos de estucos fueran realizados directamente para la constructora Huarte y que, de existir documentación sobre estos trabajos, se encuentren en los archivos privados de la empresa y no en los del Ministerio.

Figura 20: Factura emitida el 1 de febrero de 1956 por José Estradé por los trabajos realizados en el nuevo Ministerio del Aire (Archivo Histórico del Ejército del Aire)



Es también reseñable que las dos oficinas de Estradé se encontraban muy cerca de donde tuvieron lugar las obras del Ministerio, en la calle Donoso Cortés y en la calle del Tutor. Estas obras duraron más de una década, y se tiene constancia de la ejecución de estucos ya en 1946.[15]

No resulta por tanto posible confirmar los metros cuadrados de estucos que se realizaron, pero sí resulta verosímil la afirmación de que el Ministerio del Aire fue la obra con el legado de estuco más importante de Madrid, y seguramente de España.

Es interesante señalar que el estuco es una técnica importante dentro de la estética de aquel momento, en relación con la admiración por la arquitectura alemana de la arquitectura franquista de la década de 1940. El estuco, palabra de origen germano, que vivió su primer apogeo con la llegada del barroco alemán, tuvo gran relevancia en la arquitectura del período nacionalsocialista y en sus émulos españoles. Se pueden encontrar importantes estucos en el Teatro Clara Eugenia, en el Palacio del Senado (transformado en 1939 en el Palacio del Consejo Nacional del Movimiento, Ambrós 1974) o en el edificio de Seguros Ocaso (los estucos de estos tres inmuebles, de gran calidad, presentan grandes similitudes). Parece posible que estos ejemplos sirvieran como referencia durante la construcción del Ministerio del Aire.

Conclusiones

Cuando el Banco de España fue ampliado en el año 1936 no se llevó a cabo un solo metro cuadrado de estuco. Se optó en cambio por cubrir los paramentos con mármol. En ese mismo año, José Antonio Primo de Rivera, líder de la Falange, calificó el oficio de su rival socialista Largo Caballero como "casi prehistórico" (Primo de Rivera 1976: 294). En 1953, el conservador del Banco de España, Félix Luis Baldasano, en el pie de una fotografía que muestra los estucos de la galería principal del Banco, realizó otra asociación entre el estuco y su supuesto carácter primitivo: "160 metros de longitud de blanco pavimento de mármol, de brillantes paramentos de estuco y de impostas, jambas y zócalos, elementos todos característicos de una época que, aunque no muy lejana, ya pasó. La repetición de este recorrido, muchas veces al cabo del día, hace pensar a la gente de la casa en la conveniencia de un medio de locomoción interior, aunque fuese primitivo y contemporáneo del estuco" (Baldasano 1953:102). Sorprende estas dos asociaciones entre el estuco y su carácter primitivo, pues la mayor obra de estuco realizada en Madrid, y probablemente en España, se llevaría a cabo unos años más tarde en el Ministerio del Aire, tal como se ha explicado.

Esta anécdota es un ejemplo más de la fe en la modernidad tecnológica, característica del siglo pasado, que hace olvidar que, pese a que los medios de comunicación dan siempre mucha visibilidad a las innovaciones técnicas, la generalización de su uso es siempre un proceso mucho más largo. Si se investiga la frecuencia de aparición de las palabras "estuco" o "estucado" en la *Revista Nacional de Arquitectura* desde su fundación en 1918 hasta nuestros días, se puede observar la caída en el olvido de esta técnica a partir de mediados de los años 60, pero no antes.[16]

Resulta también interesante señalar cómo, mientras que el aspecto exterior del Palacio de Villamejor, del Banco de España y del Ministerio del Aire no ha variado con los años, y en las sucesivas ampliaciones del Banco de España se ha respetado el estilo original del edificio, en los interiores podemos encontrar el fenómeno contrario: salvo algunos salones, los diferentes espacios han sido reacondicionados para adaptarse a los nuevos usos, para lo que generalmente se han utilizado materiales considerados actuales (en este caso, pinturas plásticas) y en supuesta concordancia con los gustos estéticos contemporáneos. Esto ha redundado en la destrucción de los estucados históricos, que poseían mayor valor artístico y, al menos, el mismo valor práctico. Sería importante, por tanto, que cuando se estudiara la protección integral de un monumento también se contemplase proteger los elementos de interés existentes en los paramentos interiores.

La destrucción y la sustitución de paramentos estucados acaecida en las últimas décadas puede deberse a varios factores, entre los que pueden señalarse la introducción de materiales considerados más económicos o el desconocimiento técnico sobre cómo han de conservarse. Aunque el estuco es una técnica sencilla, llevada a cabo con materiales simples, su correcta ejecución necesita de una mano entrenada y de un largo aprendizaje empírico. Este aprendizaje es propio de la formación tradicional en el oficio de albañil, pero no es frecuente en las escuelas actuales de construcción, de arquitectura o de restauración.

Respecto a las fuentes de investigación, la desaparición de los archivos de obra, las imprecisiones que éstos contienen –pues no siempre se ejecuta lo que se proyecta– y la ausencia de una bibliografía extensa, supone que resulte de gran interés investigar también los archivos personales, empresariales, sindicales o gremiales de los artesanos de la construcción. Estos archivos pueden resultar claves para la protección de nuestro patrimonio.

El presente artículo también ha mostrado como la técnica del estuco, uno de los revestimientos más utilizados en la arquitectura madrileña de los siglos XIX y XX, está muy poco documentada. Esto puede deberse a su encuadre como trabajo propio de la albañilería, un oficio que no ha sido muy estudiado por la historia del arte, de la arquitectura o de la ingeniería. El amplio patrimonio de estucados históricos está en peligro. La desaparición de los estucos relatada en este texto es generalizable a otros muchos edificios emblemáticos. El correcto estudio, la conservación, la restauración e incluso la reactualización de esta técnica para obra nueva son tareas indispensables.

[1] Se trata de un trabajo de fin de Máster presentado en el año 2021 en la Universidad de Burdeos con el título: *Francisco Largo Caballero (1869-1946). L'étude de la technique du stuc à Madrid à la charnière du XIXème et du XXème siècle par le biais d'un leader ouvrier* (El estudio de la técnica del estuco en Madrid a finales del siglo XIX y principios del XX a través de un líder obrero).

[2] En los archivos personales de José de Murga (1833-1902), I Marqués de Linares, conservados en la Biblioteca Regional de Madrid, se encuentra una tarjeta del estuquista Agustín Pérez, maestro de Largo Caballero, en que puede leerse lo siguiente: "Los estuquistas de Agustín Pérez felicitan a Ud. las Pascuas". Dicha tarjeta es de la época en que Largo Caballero trabajaba con Agustín Pérez y en la que se estaba construyendo el Palacio de Linares. En ausencia de otras fuentes nos parece difícil confirmar que Largo Caballero formara parte del equipo que realizó los estucos, aunque es probable que así fuera.

[3] Llopis, Rodolfo. *Biografía de Largo Caballero*. Se trata de una biografía parcialmente inédita. A finales de la década de 1940 se publicaron los tres primeros capítulos de la obra en *El Socialista*, entre los que se encuentra el capítulo "Estuquista" (Legado Rodolfo Llopis: Centro documental La Llum de Alicante).

[4] Además del Expediente BIC del Palacio del Marqués de Villamejor, AGA.

[5] Tres documentos prueban la participación de Largo Caballero en la construcción del Palacio de Villamejor. En primer lugar, el testimonio de Rodolfo Llopis, que recoge las palabras de Largo Caballero en su biografía inédita: "estucó la casa del Conde de Romanones, en la Castellana, lo que más tarde fue Presidencia del Consejo de Ministros, donde entraría años después, primero como ministro y más tarde como presidente"; el testimonio del también dirigente socialista Enrique de Francisco (1878-1957) en el prólogo de su autobiografía póstuma: "de ahí la firme y digna actitud ante el aristócrata (creo que se trataba del Marqués de Villamejor) que pretendía que los trabajadores no utilizasen la escalera para llegar al lugar de su trabajo, aun con peligro de su vida" (Largo Caballero 1976); y el testimonio de Luis Gómez Llorente (1939-2012): "como estuquista de joven hizo los estucos del Palacio de la Presidencia del Gobierno. Ese palacio que como sabéis, palacete, ahí en la Castellana cerca de las Torres de Colón. En esa casa en la que él con sus manos materialmente había hecho la decoración de las escaleras y de los techos de los salones, es donde bastante años más tarde entró como Jefe de Gobierno" (Gómez Llorente, Luis. 2003. *Largo Caballero. Líder obrero*. Ciclo de conferencias. Casa del pueblo de la UGT de Madrid. Transcripción de la conferencia conservada en la Fundación Francisco Largo Caballero). Además, se tiene constancia de que el arquitecto que firma el proyecto del Palacio de Villamejor, José Purkiss, es el mismo que años después firma el de su casa en la Dehesa de la Villa.

[6] *Exp43/1982 Proyecto de restauración y decoración de los vestíbulos de planta y secretaría general.* 1982. Archivo central del Ministerio de Política Territorial.

[7] *Exp43/1982 Proyecto de restauración y decoración de la escalera principal.* 1982. Archivo central del Ministerio de Política territorial.

[8] *Exp224/1994 Remodelación escalera principal y vestíbulos planta baja.* 1994. Archivo central del Ministerio de Política territorial.

[9] Archivo Histórico del Banco de España, Secretaría C1442.

[10] AHBE Secretaría C1447 *Pintura en muros y techos*.

[11] Llopis, Rodolfo. *Biografía de Largo Caballero*. Ver nota número 3.

[12] www.emilioquilez.com, sustituida por la página web de la empresa de venta de cales artesanales que fundó: www.calgrasa-alandalus.es

[13] Existe también una amplia bibliografía sobre el Ministerio del Aire en varias revistas de arquitectura de los años 40 y 50.

[14] Además, los números 75 y 92 de la revista *Hogar y Arquitectura* se dedicaron de manera parcial a la obra de Gutiérrez Soto.

[15] En una entrevista en el número 485 de la *Revista de aeronáutica y astronáutica*, de mayo de 1981, el General López-Pedraza, quien dirigió las obras del Ministerio, afirma que en 1946 las paredes estaban recién estucadas.

[16] "Estucado": 127 menciones en 105 números. De ellas, sólo 14 entre los años 1964 y 2019 (varias de ellas se corresponden, además, al papel estucado). "Estuco": 189 referencias en 146 números. De ellas, sólo 43 desde 1964. "Estuquista": 92 referencias en 92 números, todas ellas, salvo una, anteriores a 1958. La mayoría se corresponde con anuncios de Juan Sorli, de José Sorli y de Estradé. "Estucador": 68 referencias en 66 números, la última de ellas del año 1964. Casi todas se corresponden a anuncios de José Estradé y de Pedro Royo Ferreras.

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Biography | Biografía | Biografia

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Laia Gemma García Fernández

Toward the Production of Contextual Built Environments: Unfolding Building Materials' Sociocultural Meanings in a Maasai Community

Hacia la creación de entornos construidos conforme a su contexto: La revelación de los significados socioculturales de los materiales de construcción en una comunidad maasai

Rumo à produção de ambientes construídos contextuais: Revelação dos significados socioculturais dos materiais de construção numa comunidade maasai

Keywords | Palabras clave | Palavras chave

Environmental behavior studies, Innovative building techniques, Indigenous communities, Meanings, Building materials

Estudios de conducta medioambiental, Técnicas de construcción innovadoras, Comunidades indígenas, Significados, Materiales de construcción

Estudos de comportamento ambiental, Técnicas de construção inovadoras, Comunidades indígenas, Significados, Materiais de construção

Abstract | Resumen | Resumo

Is it possible to analyze building materials' culturally specific meanings? How can understanding such meanings be useful in the integration of sustainable building practices in local communities? Our research explores this question with the objective of informing future pathways in the transition to a carbon-neutral built environment including locally sourced materials. Relying on environmental behavior studies and using Rapoport's methodology for three-tier categorization of meanings, our study examines sociocultural perceptions and behaviors around the use of building materials. It focuses on the case of a Maasai rural community in northern Tanzania with a view ultimately to shedding light on specific practices and innovations in building materials, such as compressed earth blocks, whose use should be considered by architects and designers in preference to counterproductive or non-contextual techniques.

¿Es posible analizar los significados específicos desde el punto de vista cultural de los materiales de construcción? ¿Cómo puede contribuir el conocimiento de esos significados a la integración de las prácticas constructivas sostenibles en comunidades locales? En nuestra investigación exploramos esta cuestión con el objetivo de documentar las futuras vías de transición hacia un entorno construido neutro en carbono que incluya materiales de origen local. A partir de los estudios de conductas medioambientales y utilizando la metodología de Rapoport para la categorización de los significados en tres niveles, nuestro estudio examina las percepciones y conductas socioculturales sobre el uso de los materiales de construcción. El estudio se centra en el caso de una comunidad rural masái del norte de Tanzania con el fin último de arrojar luz sobre

prácticas e innovaciones específicas en materiales de construcción, tales como los bloques de tierra prensada, cuyo uso debería ser tenido en cuenta por arquitectos y proyectistas en lugar de otras técnicas no contextuales o contraproducentes.

Será possível analisar os significados culturalmente específicos dos materiais de construção? Como pode a compreensão de tais significados ser útil na integração de práticas de construção sustentável nas comunidades locais? A nossa investigação explora esta questão com o objetivo de informar os caminhos futuros na transição para um ambiente construído neutro em termos de emissão de carbono, incluindo materiais de origem local. Baseando-se em estudos de comportamento ambiental e utilizando a metodologia de Rapoport para a categorização de significados em três níveis, o nosso estudo examina as perceções e comportamentos socioculturais em torno da utilização de materiais de construção. Centra-se no caso de uma comunidade rural massai no norte da Tanzânia, com vista a elucidar sobre as práticas e inovações específicas nos materiais de construção, tais como os blocos de terra comprimida, cuja utilização deve ser considerada por arquitetos e projetistas como preferível face a técnicas contraproducentes ou não-contextuais.

1. Introduction

At the last United Nations Framework Convention on Climate Change (COP25), a group consisting of social movements and civil-society and grassroots organizations advocated the use of local building materials as follows:

> *It is essential to recognise the right to the construction of habitats in continuity with local traditions, by making use of local materials linked to adapted techniques that promote the improvement of the local economy and provide employment to the producers of materials and construction workers* (HIC-LA 2019).

With globalization and the growth of the construction industry (Foroudi 2020), which in 2018 accounted for 39% of global greenhouse gas emissions (IEA 2019), such an approach is essential in combating climate change and in achieving the eleventh Sustainable Development Goal, for "inclusive, safe, resilient and sustainable" dwellings and settlements (United Nations 2015).

Several authors have remarked upon the decontextualization undergone by architecture. Hassan Fathy, for instance, claimed that Egypt was forgetting its indigenous "identity" and that its new houses had lost all sense of character (Bertini 2020). The architect Demas Nwoko writes likewise that preferences for "modern" building forms and materials in Nigeria reflect an architectural colonization (Nwoko 2020, as cited in Croyle 2020).

Preferring the trappings of modernity and the imagery of material wealth, many local communities have forsaken their traditional buildings and vernacular techniques, thereby losing valuable knowledge needed to manage natural resources (Low 1988). This has led to the disintegration of sociocultural interactions with the environment and a resultant failure in the promotion of resilient and sustainable communities (Nwoko 2020).

However, an adapted, updated vernacular architecture has begun to gain traction in the fields of architecture and anthropology (Bonell and Van Geert 2009). In 2019, in *Lo-TEK, Design by Radical Indigenism* the academic Julia Watson highlighted "ignored local wisdom and indigenous innovation" (Taschen review: 1) as a way of putting into perspective the values and ethnological heritage of "non-pedigreed architecture". This is in turn a way of challenging Western intellectual hegemony in architecture in favor of what Pietro Belluschi defined as "communal architecture" (Rudolfsky 1964: 3).

Unfortunately, many efforts to revitalize vernacular architecture fail to win the approval of locals, as external influences and new social values bias preferences toward standardized building materials (Rapoport 1983; Kaitilla 1994; Magutu 2015). The complexities of the built environment make it difficult to homogenize the intertwined socio-political, environmental and economic structures influencing the choice of building materials. Hence the challenge lies in supporting the use of locally sourced building materials that are culturally acceptable (Grierson 2009).

Focusing specifically on environmental behavior studies (EBS) and cross-cultural theories of architecture, the following questions are proposed:

1. How do sociocultural conditions influence the choice of building materials? Is it possible to analyze this influence in a constantly changing society?

2. How can an understanding of building materials' culturally specific meanings be useful in the promotion and integration of sustainable design practices including locally sourced materials?

2. Sedentary Maasai Communities and Cultural Syncretism

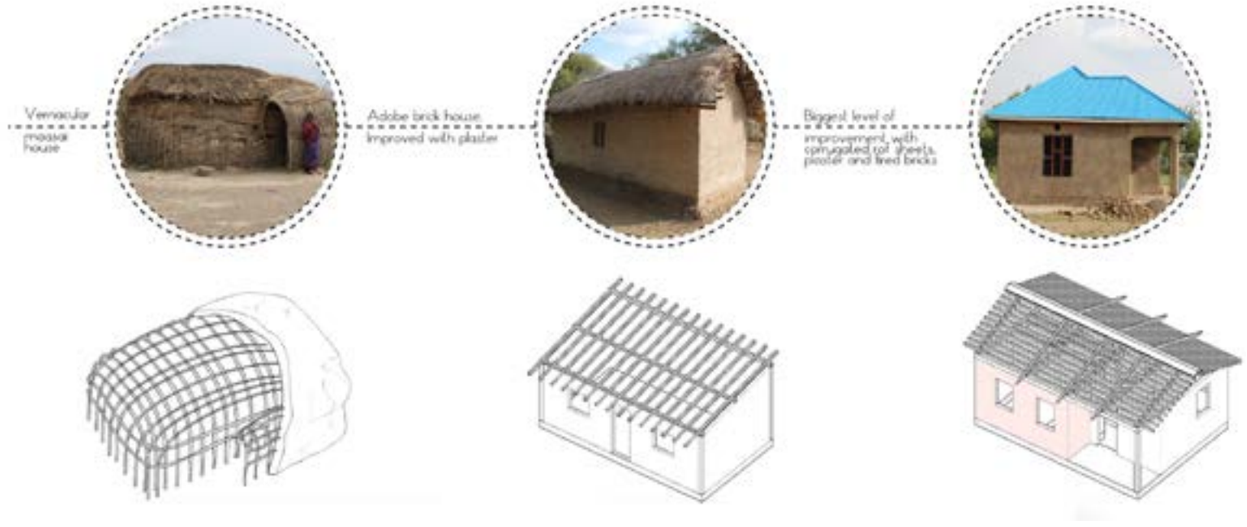
With rapid globalization, conflicts between tradition and "modernity" are inevitable worldwide. Indigenous communities under pressure to modernize face the difficulty of coping with a cultural landscape that is changing fast. Rapoport argues that for developing communities the problem is neither development nor the influence of modernity, as both are inevitable, but "radical, abrupt and frequently excessive rapid cultural change" (Rapoport 1983: 254). In order to understand how such pressure might be alleviated, it may be helpful to examine the socio-political pressures that modern indigenous societies face.

The idea of a "self-contained European culture" relies on the notion of "uncontaminated" (Bhabha 1994: 52) non-European cultures. This is of course not a reality, given the heterogeneous nature of culture and the problematic portrayal of different traditional practices as "other". Cultures are by nature plural and thus can be conceptualized only in relation to their environments and everyday practices. Furthermore, indigenous communities such as the Maasai have been subjected to the influence of colonial regimes, in this case German and English. For this reason Bhabha (1994) spoke of "cultures in-between". By apprehending culture as a construct made of different influences with no delimited area, today's anthropological theories explore blurred cultural boundaries and view them as active and alive rather than passive and static. The term fits with Andersen's definition of indigenous cultures as "dynamic societies, in a continual process of adaptation, choice, and constraint" (Andersen 2001: 83). Such cultures ensure the preservation of traditions and living heritage, and at the same time, external influences enable the arrival of new patterns, techniques, and activities (Hauser and Banse 2011). Thus new cultural practices arise and are gradually integrated into everyday life.

The result of this process is not the copying of Western models (as could seem from a glance at a present picture of sedentary Maasai settlements); rather the change appears as a form of "cultural syncretism" (Rapoport, 1983: 255).

In the context of settled Maasai communities in Tanzania, this phenomenon can be explored by looking at the spatial-temporal evolution of built forms (Fig. 1). In this process of synthesis (and the reasons for it) within design, what needs to be considered is which elements are new, changing, or being replaced, and why.

Figure 1: Building types over time



3. Analytical Framework: Three-tier Categorization of the Cultural Meanings of Building Materials

Rapoport posited a three-tier categorization in order to apprehend how cultural meanings influence human-environment interactions. He aimed thereby to develop an empirical method through which to deconstruct and examine sociocultural influences on the built environment.

Drawing on this categorization, our study seeks to reinterpret this technique in order to explore the significance of building materials as an essential component of the built environment. Thus we contend that this three-tier system of meanings may be applied as follows (Fig. 2):

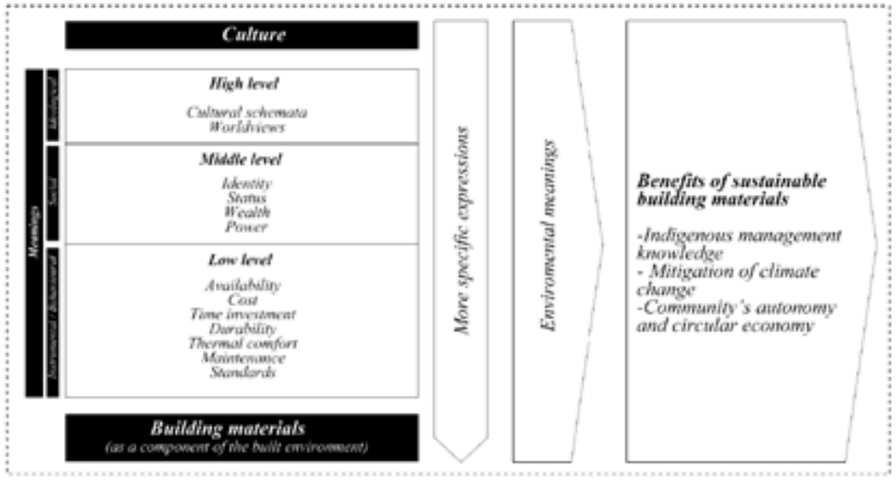
1. High-level or ideological meanings: These relate to the most spiritual and symbolic level of meaning, and therefore are the least specific. But two meaning types may still be useful in the exercise of unpacking the cultural dimensions of building materials: "cultural schemata", i.e. mental structures containing knowledge about culture and social interactions, often created through shared experiences (Garro 2000), and "worldviews", i.e. the particular way in which certain groups see the world, intimately linked to the values of a society.

2. Middle-level or social meanings: This set of meanings concerns social expressions of culture highly relevant to understanding the way in which indigenous communities relate to building materials. Of particular interest are: "identity", i.e. how a group maintains a view of itself over time; "status", i.e. key indicators of reputation in a certain social context; "wealth", expressed through sought-after and expensive materials used in facades and roofing; and "power", i.e. building materials used by influential groups that may be associated with authority.

3. Low-level or behavioral meanings: These sets of meaning are the most straightforward signifiers to be seen in the use of building materials. Low-level meanings in built forms are found in patterns such as practicality, accessibility, privacy, and the like, analyzable in relation to behaviors (Rapoport 1990). By focusing on these instrumental meanings, we can apprehend mundane, day-to-day interactions with building materials. Transparency, texture, warmth, etc. all impact on daily behavior and navigation through space. To circumscribe our study's scope, only specific indicators were analyzed in detail: "availability", measured in relation to the quantity of a material available locally and the distance users need to travel to access it; "cost", i.e. a material's affordability; "time investment", i.e. the time needed to complete a building using a specific material or technique; "durability", referring to resistance to the elements and aging; "thermal comfort", concerning the capacity of a material or technique to maintain comfortable temperatures inside a building; "maintenance", referring to the repairs or adjustments that a material or technique may need over time; and "standards", concerning policies and norms as to the quality and suitability of building materials.

We should note that Rapoport has argued that this classification of meanings requires flexibility on accounting for shifting meanings (Rapoport 1990). A precondition for such a three-tier classification is that a theory of cross-cultural architecture must also be able to explore how meanings may vary over time, along with the variables influencing change.

Figure 2: Analytical framework



4. Analysis of Maasai Communities' Building Techniques: The Case of Maji Moto

Methodology and Limitations

We grant that our findings might not be representative or applicable to a wider context given the singularity of Maasai culture and our narrow field of study, a Maasai village called Maji Moto (Arusha), as we analyze the different sociocultural meanings that have influenced the choice of building materials in this Maasai settlement. Yet our research could help to understand future changes and to influence the design outcomes of architectural projects in other sedentary Maasai settlements, given similarities with the case-study village.

Nomadism

According to the tribe's own oral history, the Maasai, originally from Lake Turkana, started migrating from the Great Rift Valley in the fifteenth century (Waller 1976). The extent of Maasailand has now been reduced to a region around the border between Kenya and Tanzania (Coast 2000) following numerous displacements undergone by the Maasai since 1896 (Homewood et al. 2009), due at first to the wildlife control regulations introduced by the German colony and expanded as of 1940 by the British colony (ibid.).

These lands have historically been used by the Maasai for nomadic pastoralism, as cattle are their main livelihood (Sambu 2018). Given this nomadism (Fig. 3), shelter has generally been treated as temporary and consequently the materials used to build a traditional Maasai hut (*enkaji* in Maa language) must be readily available in a dry-savanna environment (Fig. 4). Thus, traditionally, non-intensive materials have been used and then discarded.

The walls of an *enkaji* are normally of wattle and daub, an indigenous construction technique consisting of a wooden framework smeared with a mix of cow dung and mud (Fig. 5) (Coast 2000). Similarly, roofs are made of thatch, consisting of layered dry vegetation such as straw, reeds, or rushes. On top, layers of cow dung and mud are applied to make a waterproof surface (Edström and Nyman 2017).

The traditional form of the Maasai hut is either circular (Figs. 6 and 7) or semi-rectangular, and normally the pastoralist Maasai move about in groups creating compounds called *Olmarei*: a "collection of houses about a communal gate" (Coast 2000: 38). In the nomadic Maasai culture, women own houses and are responsible for their construction

Figure 3: Chronology of building techniques

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Figure 4: Typical savanna landscape around Maji Moto

Figure 5: Derelict *Enkaji* currently used as kitchen

Figure 6: Traditional house self-built with adobe bricks and a thatched roof

Figure 7: Circular house built in 1978 with wattle and daub and a thatched roof

and upkeep. They build homes for themselves and their children, while their husbands stay only periodically. Talle (1987) describes women as the "head of houses", with a degree of economic and domestic autonomy. Women's role in construction, along with proximities and domestic responsibilities, is important in understanding the shape of houses and the choice of building materials (ibid.). The use of temporary materials to build *enkaji* enables pastoralist groups to move on when needed and at no cost, and so building materials are intimately linked to the lifestyle and activity forming part of the encoded symbols within nomadic Maasai communities. Thus, as Rapoport says (1983: 258), "highly supportive environments become essential" to maintain the lifestyle and practices of a given group.

Transition from Nomadism to Sedentism

Until 1896, the Maasai communities of Tanzania had been able to practice nomadism with no great difficulty, as all land was managed and owned communally (Sambu 2018). But during the colonial period and in particular in the 1940s, individual land ownership began to be imposed over Maasailand (Coast 2000), and as a result, nomadic territory shrank and land use changed, drastically reducing the extent of their territory (De Vries and Fortmann 1979). Another factor that has contributed to a progressive decline in the nomadic Maasai lifestyle is conservation policies, through which large tracts of land have been expropriated for national parks and wildlife conservation.

Yet the most significant policy was introduced in 1967 when the Tanzanian government led by Julius Nyerere implemented its so-called "villagization" policy (Cannon 1999), aimed at encouraging nomadic communities to shift to a sedentary lifestyle by settling in official villages. By 1973, villagization became compulsory and within three years many nomadic groups were obliged to settle in villages (Raikes 1978). Thus the traditional Maasai hut built with wattle and daub and thatch ceased to be suitable for their lifestyle (though in some cases the Maasai still practice semi-nomadism).

The first villagers arrived at Maji Moto around 1976, according to several elders interviewed, i.e. when the Tanzanian government completed the villagization process. Villagization has continued to have a profound impact on the culture of Maasai communities (Sambu 2018) and has been partly responsible for a great loss of traditional knowledge.

Sedentary Lifestyle

From 1976, Maasai villages experienced a drastic transformation of their built environment. The decline in livestock farming and the introduction of agriculture have visibly changed local architecture (Bryceson 1990). Sedentism has also led to a loss of traditional knowledge, resulting in a reliance on external resources and building materials. These are expensive, which has impoverished village inhabitants, and men have migrated to towns in order to be able to provide for their families. Adobe bricks are largely neglected in favor of more recent building materials, and the most popular walling solution is fired clay bricks (Fig. 8).

These are an "improved" version of adobe bricks, namely mud-clay bricks that bake for 48 hours in a stacked hand-made kiln (Fig. 9) (Edström and Nyman 2017). The main problem with their use is the desertification associated with their production. According to the Holcim Foundation, fourteen trees need to be felled to produce enough bricks for one house (Lafarge Holcim 2016). Similarly, intensive production of concrete blocks has become popular (Rukwaro et al. 2001).

The use of thatch as a roofing system has almost disappeared, and the few vernacular houses with thatched roofs are now derelict or used as kitchens (Fig. 10). And whereas corrugated iron sheets (CIS) once had to be purchased in Arusha City, 40 km away, they are now widely available in nearby settlements.

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Figure 8: Neglected house currently used as a kitchen detached from the main house

Figure 9: Hand-built brick kiln

Figure 10: House built with fired bricks for an orphan by the NGO Dorcas

Comparative Analysis of the Cultural Meanings of Current Building Techniques

The above chronology reflects a progressive neglect of locally sourced building materials. Indeed, in Maji Moto, 78% of houses had CIS roofs in 2019, and more than 56% had fired bricks (Figs. 11 and 12).

Two main drivers of this change are discernible. The first is the shift in land tenure with the forced settlement of Maasai communities (De Vries and Fortmann 1979; Munei 1991). The second is the sudden contact with other cultures and societies experienced by the Maasai, leading to a process of syncretism (Coast 2000). As a result, building materials that supported the nomadic lifestyle have been relegated. New values have taken precedence over traditional ones, and so the meanings encoded by some materials are now obsolete or forgotten.

According to Rapoport's three-tier categorization, middle-level social meanings are less important in defining the characteristics of a culture (Rapoport 1990). But in sedentary Maasai communities, new middle-level meanings have become more important than old high-level ones. This trend has been accentuated by the advent of social media and the notions of individual social identity that they highlight (Baird 2017).

Ironically, in nearby towns such as Arusha or Moshi, buildings offering services to tourists as bars or hotels have thatched roofs similar to those of traditional huts, making a selling point of otherness and distinct identity. Moreover, in some European contexts, thatched roofs denote status (Rapoport 2001) through a perceived ownership of heritage.

The greater importance of mid-level social meanings has also influenced values attached to instrumental and behavioral meanings (low-level meanings). In the past, requirements such as availability and low cost (with far less emphasis on time invested) were essential. As noted in the Village Museum in Dar es Salaam, a nomadic lifestyle allows for little time to be spent at home. "A house is a place to sleep, to prepare and partake of food during rainy weather. It is a place to be born, to be ill, to make love and ultimately to die" (Edström and Nyman 2017).

On the other hand, factors such as maintenance and durability have proven highly significant (Fig. 13). Earthen walls, if not properly protected, will deteriorate rapidly in rainy seasons. In Maji Moto some elderly women still painstakingly repair surface cracks in their adobe brick houses as soon as they appear, yet this practice is seen as pointless and outdated by younger generations whose purchasing power enables them to build concrete houses. Now just 30% of houses in Maji Moto have adobe walls, and just 2% have wattle and daub.

Another factor driving the shift toward concrete blocks and CIS is standards. The Tanzanian government is encouraging rural dwellers to adapt their houses to standardized materials (Kasilima 2008) and claims that through these measures housing is broadly "improving" (ibid.). Thus the authorities' disparagement of locally sourced materials is encouraging the notion that buildings made with them are backward and poor (Croyle 2020).

According to the 2002 Tanzanian National Population Census, just 17.9% of rural dwellers have houses with concrete blocks or fired bricks, and 32.5% have houses with CIS roofs (Kasilima 2008). In Maji Moto, 78% of homes have CIS roofs and 56% have fired brick, so the trend away from building tradition has been faster here than nationally. This is probably due to the proximity of Arusha City, whose influence on the village has become patent. And despite concrete blocks being the most expensive walling solution, their strength and official approval makes them increasingly sought after, and they are currently found in 12% of village houses.

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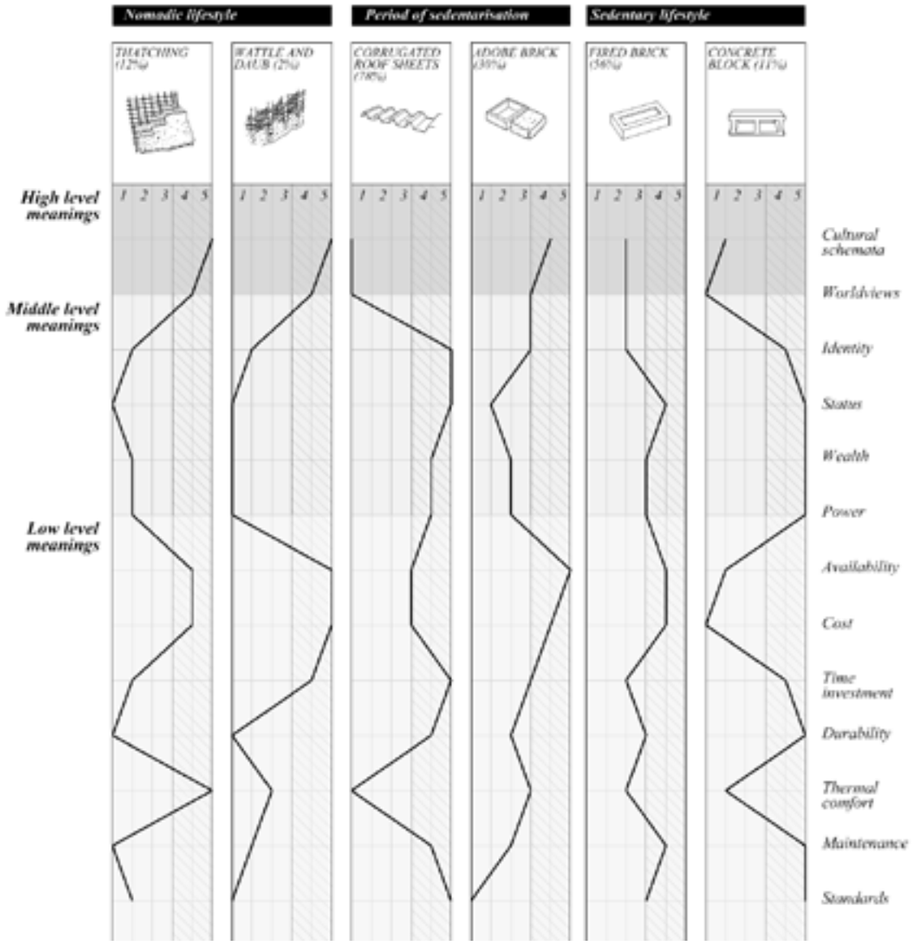
Figure 11: Unfinished house of fired bricks and corrugated iron sheets in Maji Moto

Figure 12: Typical modern house of fired bricks and corrugated iron sheets in Maji Moto

Figure 13: Comparative analysis of cultural meanings



Regarding thermal comfort across the various building techniques, moreover, standardized materials prove less climatically suitable (Fig. 13). This is especially the case with CIS roofs, as their thermal conductivity results in high indoor temperatures. By contrast, the use of traditional thatched roofs results in lower temperatures (Svard 1980), while walls built with earthen techniques such as adobe bricks and rammed earth have low heat conductivity (Foroudi 2020; Synder 2020). CIS roofs and concrete blocks are less comfortable climatically, yet status and waterproofing take precedence. Only around 12% of Maji Moto villagers still have thatched roofs, and most of these intend to replace them with CIS once they can afford it.

Cultural schemata and worldviews have changed in a short period, but the image of the traditional hut is clearly still a key cultural symbol. Despite new construction trends neglecting vernacular building techniques, the Maasai people see the values of their nomadic tradition reflected in the Maasai hut or *enkaji*. Also, with increasing tourist interest in the Maasai, there has been a growing recognition of their cultural values and sense of belonging in relation to vernacular structures (Koot et al. 2019). *Olmarei* are often visited by tourist groups and have become a source of income for Maasai communities. Hence "Maasainess" has a valuable meaning both for group members and for non-members, in both past and present (Coast 2000).

This is not to say that Maasai ethnicity has a static meaning (ibid.). The current picture of sedentary Maasai settlements like Maji Moto partly represents a local desire for change and progress, in which inhabitants value access to education and healthcare (Rukwaro et al. 2001). For instance, with the implementation of villagization, the government managed to provide schools for a larger number of children, enabling the Maasai to converse more freely with other peoples, further modifying their values and expectations (Rukwaro et al. 2001).

And while their present buildings may not represent traditional Maasai beliefs and values, these new built forms, often a combination of old and new, communicate multiple identities and aspirations. New worldviews and cultural schemata represent "the many different affiliations of an individual with other kinds of groupings such as gender, region, class, and religion" (Coast 2000: 28), given the high degree of syncretism between ethnic groups in Tanzania.

Comparative Analysis of the Socio-Environmental Meanings of Selected Building Techniques

Most Maasai settlements such as Maji Moto are facing the effects of climate change, resulting partly from deforestation. One driver of this is high demand for firewood as required to produce fired clay bricks (Lafarge Holcim 2016). Maji Moto's population is growing and many more houses are needed, and fired clay bricks are the most viable solution for most villagers (García 2020).

In response to this, in 2018, the C-re-a.i.d. NGO promoted the construction of a local health center with an innovative sustainable technique: Compressed Stabilized Earth Blocks (CSEB) (Fig. 14).

Following a study of the area, a group of local workers was trained to produce these blocks by means of pressing them in a hand-worked machine (Fig. 15). They consist of 70% clay from the site itself, 15% sand, and 7-10% of a stabilizing agent, which can be cement or lime (Nambatya 2015).

The fact that they are water-cured rather than fired means that no firewood is needed, and their use instead of concrete blocks avoids environmental degradation through sand and gravel extraction as well as reducing cement use. As the blocks are compressed, they are much more durable than traditional adobe bricks. CSEBs have an 80% higher compressive strength than fired bricks, similar to that of concrete blocks (Nambatya 2015).

Figure 14: Health center built with compressed stabilized earth blocks in Maji Moto

Figure 15: Two skilled workers producing compressed stabilized earth blocks in Maji Moto

A skilled group of four produces around 500 blocks in an eight-hour working day, and the time required to build one linear meter of wall is much the same as for concrete and fired bricks (Pérez-Peña 2009).

And while 500 concrete blocks cost around 200 GBP, making the same amount of CSEBs requires four cement bags at a cost of 8 GBP each. Even with additional costs such as sand and labor, CSEBs are still much more affordable (García 2020). Disadvantages of CSEBs are the need for skilled workers to produce a quality product, and that by contrast with the popular fired bricks that can be made for free, the production cost can be restrictive for some, although the overall cost remains affordable compared to that of other techniques.

CSEBs could be an alternative solution to fired bricks and concrete blocks in Maji Moto. Unfortunately, if we look at the social meanings of CSEBs relative to those of the other two walling solutions currently used (Fig. 16), we find that the technique embodies negative social values. This is because, despite CSEB being an innovative technology, the use of raw earth causes it to be viewed as poor and backward. The embodied meanings of wealth, status, and power achieved with concrete blocks and fired bricks are not currently offered by CSEBs.

To seek to understand the community's concern over earthen building techniques, meetings were held with women's groups, local government, and community representatives. The local authorities also offered to organize campaigns to tackle the environmental issues linked to the use of fired bricks. Several participatory workshops were also held, as well as training sessions for young workers wishing to learn CSEB techniques. During the construction process many were curious about the block-making machine and were also surprised by the strength of CSEBs. Finally, some villagers asked about hiring the machine and showed an interest in the technique.

An impactful transition toward a recognition and normalization of the use of locally sourced materials should start with an awareness of personal and environmental benefits. Education about the benefits of such materials is essential in mitigating climate change, and the use of CSEBs can considerably contribute to mitigation at the local level by avoiding deforestation (Fig. 16). It will also contribute to protecting indigenous knowledge about resource management, essential to environmental protection. In this context, local government should also implement policies against uncontrolled tree-felling (García 2020).

Above all, the use of locally sourced materials such as CSEBs contributes to the autonomy of local communities, boosting local economies and strengthening the social fabric, and promoting social and environmental justice (HIC-LA 2019).

A recognition of the need for a move away from the current building mainstream should however not be imposed. It should be about proposing affordable and sustainable alternatives for all, especially for those who cannot otherwise afford high-quality building materials. The use of locally sourced materials is a viable solution as well as crucial to making the housing sector energy-efficient, both during and after construction (UN-Habitat 2019). House prices could be considerably reduced with the use of such materials where they are widely available in the vicinity, along with renewable resources (RICS 2008). Such a move should be accompanied by a greater acknowledgement in the construction market of the impact of building materials, leading to more environmentally sustainable building solutions that are affordable for all.

With this in mind, the government should take steps toward promoting the integration of locally sourced building materials by reviewing the regulations preventing the use of such materials (Croyle 2020). Furthermore, according to the International Habitat Coalition for Latin America (HIC LA), financial and technical support for residents from government could ensure the proper quality of building materials while promoting autonomy and self-reliance in local communities (Comunal 2020).

5. Conclusions

Current building material preferences in the village of Maji Moto are part of a complex multi-generational cultural milieu built up over decades and that may require further decades in order to be effectively challenged (Sadalla et al. 1993). This study has shown how years of forced cultural erasure through government policy have taken their toll on Maasai cultural norms (Cannon 1999). Through both the forced abandonment of pastoralism and nomadism and inflexible building standards based on hegemonic Western models, the authorities have hindered the ability of communities and grassroots organizations to adapt to change and re-contextualize architecture. Also, the previously somewhat peripheral status of architecture within Maasai culture has given way to fast change involving an intertwining of architecture and status and a view of traditional vernacular techniques as inferior. But policymakers and community activists should take some comfort in the fact that this also makes these areas potentially more open to change, as we found with the rapid growth of interest in CSEB bricks.

In an increasingly urbanized world, the construction industry's substantial environmental impact (Rodgers 2018) makes it essential for academics to understand societal behaviors that may help promote sustainable building practices. With a view to encouraging the integration of locally sourced building materials into building practices in indigenous contexts, this study has adopted Rappaport's (2005) three tiers of cultural meaning so as to provide a new tool for social scientists and designers. Our study has also highlighted a couple of key areas for change in policy and praxis to help support the use of more sustainable materials.

While this study offers only one potential building material solution for sustainable construction (Fig. 16), we have addressed concerns for this particular Maasai community that may be mirrored (albeit with local differences) in other societies. Such local initiatives have great potential through the promotion of autonomous construction networks, although as a result they are highly dependent on community uptake, and thus flexible finance needs to be available for pilot schemes along with more sensitive building standards. For the Maasai, still coping with upheavals in their lifestyle, such activities could act as a stabilizing force, empowering communities to reconnect with their territory and their culture and encouraging inter-community interaction.

Our study has also highlighted the importance of reshaping the role of designers. Acceptance of new techniques improved only with participation in the construction process through demonstrations. This shows the importance of participatory design in which the designer or expert acts chiefly as a facilitator (Freire 1968). As this study has found, ignoring values and social expectations can be counterproductive, and so the paternalism of conventional architecture must be challenged. We have also sought to show how regulations can be called into question by offering viable, immediately workable solutions showing that standards cannot be universal.

Figure 16: Comparative analysis including socio-environmental factors

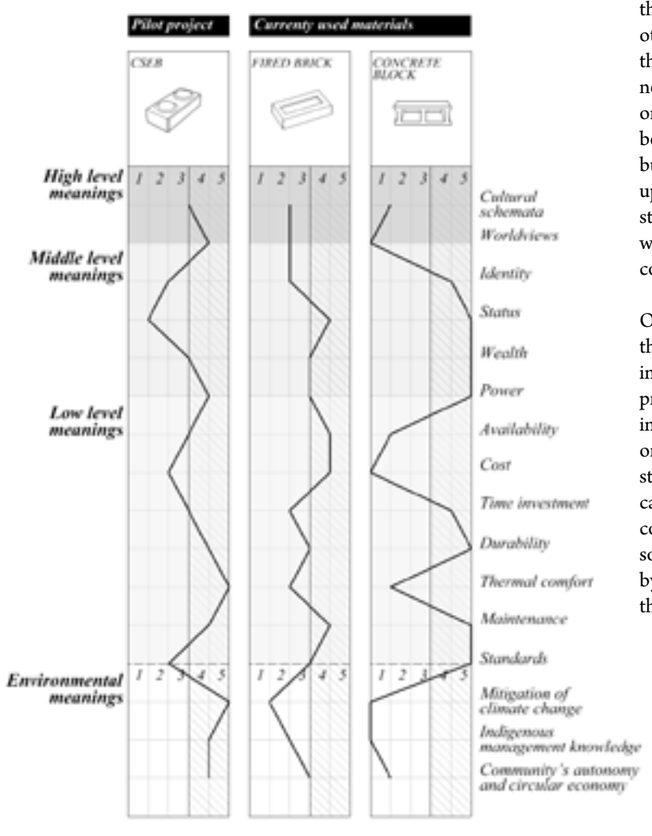


Figure 17: Compressed stabilized earth bricks stacked for use in Maji Moto

It should be noted that this study has offered only a snapshot, and so to properly explore the effectiveness of introducing new building materials, further visits will be needed to measure change over time as well as in other locations, so as to understand how popular such new methods may be. Furthermore, while it is easy to hold designers and communities responsible, responsibility must also be taken by the construction industry, which has a major role in finding viable sustainable solutions and in establishing what is seen as socially acceptable. Larger firms need to promote building methods that rely on locally available and sustainable resources.

List of abbreviations

CIS Corrugated Iron Sheets
CSEB Compressed Stabilized Earth Blocks
EBS Environmental Behavior Studies
GHG Greenhouse Gas
IPCC Intergovernmental Panel on Climate Change

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Biography | Biografía | Biografia

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Laia is A PhD candidate in Architecture at the University of Ferrara. She holds an MSc in Building and Urban Design in Development awarded by the Bartlett Development Planning Unit. With over five years' experience in the urban and community development sector, she has taken part in various research and practice projects in East African countries and Europe. She has worked alongside community-based organizations to provide access to sustainable public facilities for indigenous and vulnerable communities through participatory processes. In 2018 she co-founded Un Refugio Colectivo, for promoting environmental justice through spatial interventions. Her research focuses on communities' sociocultural practices and perceptions of their built environment as a tool for promoting the use of locally available and sustainable building materials.

Lisa Virgillito

Corrala *Buildings and* Corral *Theaters in Madrid: Dramatic History and Typology*

Corralas y corrales de comedia en Madrid: Historia dramática y tipología

Corralas *e* corrales de comedia *em Madrid: História dramática e tipologia*

Keywords | Palabras clave | Palavras chave

Golden Age, Theater, Collective housing, Cultural heritage, Spain

Siglo de Oro, Teatro, Vivienda colectiva, Patrimonio cultural, España

Idade de Ouro, Teatro, Habitação Coletiva, Património cultural, Espanha

Abstract | Resumen | Resumo

Corralas are a type of residential building characteristic of Madrid whose origins go back to the sixteenth century. These buildings of dwellings arranged around a courtyard evolved out of many prior architectural models, such as Muslim houses or the Roman *domus*. This paper considers the relationship between *corralas* and a kindred architectural type: *corral* theaters. The latter, regarded as the first public theaters in Spain, were in the Spanish Golden Age closely linked, both formally and programmatically, to *corralas*. Through an analysis of archive documents, we show how theatrical and domestic activities have coexisted in these two types of locale and how their cultural legacy subsists today.

Las corralas son un tipo de vivienda característico de Madrid cuyo origen se remonta al siglo XVI. Estos edificios con patio se desarrollaron sobre la base de muchos modelos arquitectónicos previos, como la casa musulmana o la *domus* romana. En este artículo se estudia la relación entre las corralas y otro tipo arquitectónico hermano: el de los corrales de comedia. Estos últimos –considerados los primeros teatros públicos de España– estuvieron estrechamente ligados durante el Siglo de Oro, tanto de manera formal como programática, con las corralas. Mediante el análisis de documentos de archivo se mostrará cómo la actividad teatral y las cuestiones de ámbito doméstico han coexistido en estos dos tipos de espacios y cómo su herencia cultural continúa en la actualidad.

As *corralas* são um tipo de habitação caraterística de Madrid cuja origem remonta ao século XVI. Estes edifícios com pátio foram desenvolvidos com base em muitos modelos arquitetónicos anteriores, tais como a casa muçulmana ou a *domus* romana. Este artigo estuda a relação entre as corralas e outro tipo arquitetónico: os *corrales de comedia*. Estes últimos – considerados os primeiros teatros públicos em Espanha – estiveram intimamente ligados às *corralas* durante a Idade de Ouro, tanto de forma formal como programática. Através da análise de documentos de arquivo, mostraremos como a atividade teatral e as questões domésticas coexistiram nestes dois tipos de espaço, e como o seu património cultural continua até aos dias de hoje.

Figura 1: Representación de *La Revoltosa* en la Corrala de Mesón de Paredes, 1955 (Navarro de Zuvillaga 1976).

Introducción

Corral de comedias y corrala: una única letra diferencia a estos dos tipos edificatorios. Mientras uno acogió las obras teatrales del Siglo de Oro, el otro acogió a los trabajadores que llegaron a la capital en el siglo XIX. Estas funciones diferenciadas, sin embargo, no siempre estuvieron tan marcadas: los corrales de comedias también se utilizaban como viviendas y las corralas como escenarios. Estos dos tipos se han influido mutuamente en el plano formal y en el programático a lo largo de los siglos. Si bien los corrales de comedias, tal y como se conocían en el Siglo de Oro, han desaparecido en la actualidad, una parte de su actividad teatral ha sobrevivido gracias a las corralas actuales. En este artículo se tratará de explorar cómo las cuestiones del ámbito doméstico y el teatral han ido de la mano en estos dos tipos desde el siglo XVI hasta nuestro tiempo.

Los corrales de comedias como vivienda

El término "corral" se refiere generalmente al patio cuya construcción era obligatoria en los nuevos edificios del Madrid de Felipe II. En 1565 el rey promulgó varias leyes edificatorias, entre las que se mencionaba la obligación de incluir un patio en los nuevos edificios.[1] Las cofradías de la época, que se encargaban de recaudar fondos para diversas obras de caridad, tuvieron la idea de hacerse cargo de muchos de estos patios y rentabilizarlos a través de obras de teatro. El dinero obtenido por el alquiler de estos espacios a las compañías de teatro se donaba a diversas instituciones. La primera mención a estas representaciones se remonta

a 1568, cuando la Cofradía de la Pasión alquiló un corral: "El miércoles á 5 de Mayo 1568 años entró á representar Velázquez en el corral desta casa" (Varey y Davis 1997a). En otro documento se afirma que la cofradía alquilaba con frecuencia corrales a particulares, que convertían en teatros, y que en estos lugares se daban limosnas que tenían por fin ayudar al mantenimiento del hospital cercano. Más tarde varias de estas hermandades comenzaron a comprar algunos de estos espacios, en lugar de alquilarlos, y los transformaron en espacios de actuación permanente.

Un artículo de la revista del Colegio Oficial de Arquitectos de Madrid apoya esta teoría y sugiere que "[…] no otra cosa fueron los corrales de comedias sino un espacio entre casas donde se montaba un tablado, utilizando las ventanas y corredores de aquellas para el público y, a veces, para la acción […]" (Navarro de Zuvillaga 1976). El investigador José Morales y Marín afirma también que las primeras casas que se alquilaron en torno a dicho patio fueron las habitaciones que daban a los corrales de comedias y así nació "la costumbre de abrir nuevos huecos de aire y luz en los tabiques que daban a las galerías", lo que "se convirtió en una constante más o menos anárquica en la historia de Madrid" (Morales y Marín, Caruncho y González Lamata 1987).

Si bien los corrales de comedias han tenido una relación muy estrecha con las casas que los rodean, este no ha sido su único vínculo con lo doméstico: los propios corrales fueron en muchas ocasiones utilizados como viviendas. Podría decirse, por tanto, que las corralas son edificios de viviendas con un carácter teatral mientras que los corrales de comedias son un espacio teatral que también puede emplearse como viviendas. Los autores de *Los corrales de comedias y los hospitales de Madrid: estudio y documentos* (Varey y Davis 1997) han recopilado numerosos documentos que atestiguan el uso de los corrales de comedias como viviendas. La documentación recopilada es tan precisa que incluso proporcionan información sobre la edad, la ocupación y el estado civil de los habitantes de los corrales de hace más de 400 años (Varey y Davis 1997b): Pedro Ferrer, maestro zapatero, ocupa, por ejemplo, el sótano junto a la botica de estas casas, por el que paga 400 reales al año; Teresa Sánchez, que se encarga de cobrar los alquileres de las habitaciones que dan al corral, tiene alquilada una pequeña habitación por la que paga 12 reales al mes (144 al año); Isadora García, viuda, ocupa una habitación en el entresuelo por la que paga 10 reales al mes (120 al año); María Buenvecino ocupa la pequeña habitación del segundo piso de esta casa; a Penón, otro vecino, "Dios le había cedido la casa", pero aun así tenía que pagar 11 reales al mes (132 al año)...

En su obra, los autores explican cómo estas propiedades, pobladas por personajes tan diversos como los mencionados, fueron adaptadas para funcionar como un teatro, aprovechándose de una configuración espacial que facilitaba el control del acceso y permitía la fácil instalación de una entrada de pago y asientos para los espectadores:

> *Todos estos detalles nos recuerdan que los corrales de comedias de Madrid no eran espacios exclusivamente teatrales. Además de los salones y otros recintos para los espectadores, y de las escaleras que conducen a ellos, los*

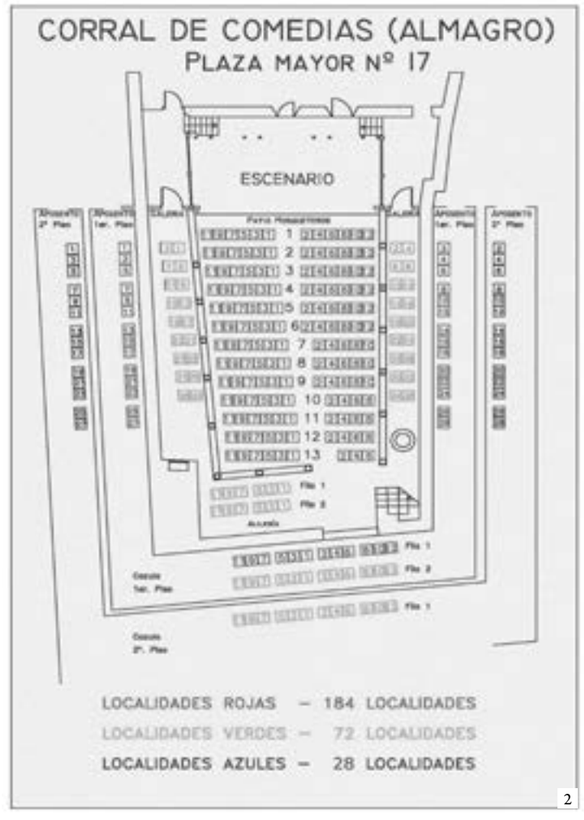

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Figura 2: Corral de comedias de Almagro. Planta, ficha técnica. 2019 (Fundación Festival Internacional de Teatro Clásico de Almagro)

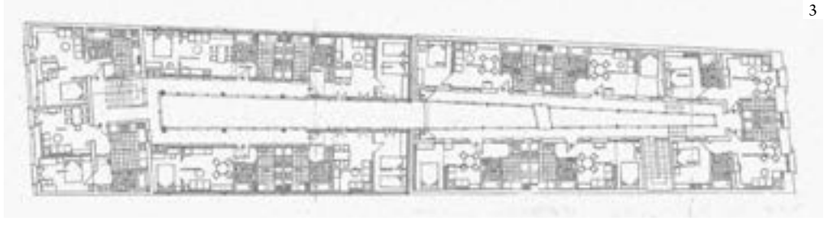

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Figura 3: Corrala de Mesón de Paredes renovada. Planta primera. 1994 (Empresa Municipal de la Vivienda y del Suelo de Madrid)

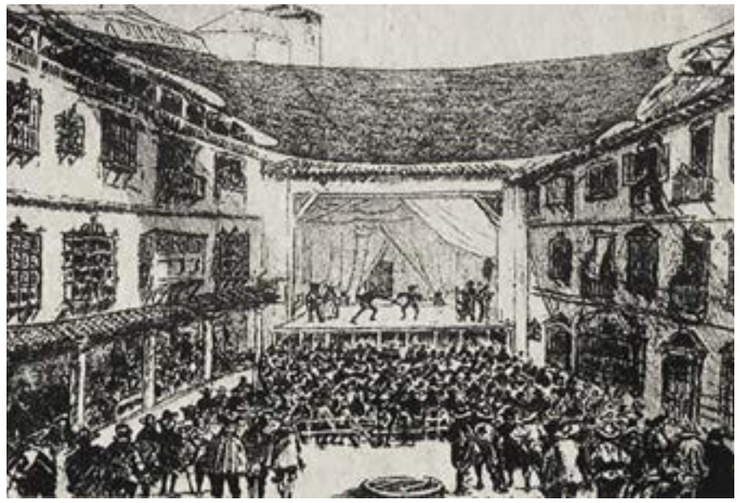

Figura 4: Corral del Príncipe de Madrid en 1760. Reconstrucción de J. Comba sobre un dibujo actual (Sepúlveda 1993)

> *edificios que bordean los tres lados del patio contienen una serie de viviendas; de hecho, eran casas normales antes de ser adaptadas para el uso teatral. Algunas de las personas que se alojaban en estas casas estaban vinculadas a los corrales –propietarios, coleccionistas de obras–, pero la mayoría eran simples inquilinos aparentemente sin ninguna relación con el teatro. Por otro lado, la presencia de una serie de tiendas indica que en los mismos edificios se desarrollaba una actividad comercial variada* (Varey y Davis 1997b: 42).

Estas propiedades tenían un patio, de forma más o menos rectangular, situado detrás de la casa. El patio estaba rodeado por muros o por las paredes de las casas vecinas. En la parte trasera se construía un pequeño edificio que servía de guardarropa y que ocupaba toda la anchura del patio; delante de este edificio había una plataforma para los actores. El escenario y las bambalinas solían llamarse simplemente "teatro". Los espectadores podían situarse en el centro del patio, frente al escenario, o sentarse en los tablados –como se llamaban en los primeros tiempos– construidos a ambos lados del patio. En el siglo XVII se conocían como "grados" las estructuras que seguían esta disposición. La fachada trasera de la casa, que daba al patio frente a la *loggia*, ofrecía otros espacios para el público: un corredor en el primer piso, sobre la entrada, y habitaciones con ventanas que daban al patio. En el siglo XVII el pasillo se llamaba "cazuela" y estaba destinado a las mujeres. También se cubrieron los espacios que rodeaban al patio, lo que incluía el escenario y los asientos laterales, de manera que sólo el espacio central quedaba a cielo abierto. Normalmente se colocaba un toldo sobre este patio para dar sombra.

Si bien el lugar de cada miembro de la sociedad durante las representaciones estaba definido de antemano, todas las clases sociales estaban presentes, desde los trabajadores hasta la nobleza. Incluso el rey asistía regularmente a estos actos. Se tiene constancia de que la popularidad de las representaciones teatrales fue aprovechada por los distintos gobiernos. El historiador Juan Aguilera Sastre explica que la mayoría de los corrales de comedias en el siglo XVII se gestionaban mediante decretos oficiales, típicamente municipales, que controlaban este importante instrumento cultural y lo utilizaban como un arma de acción política, tanto en el aspecto social y económico como en el ideológico. Los ayuntamientos controlaban el acceso a los corrales, los horarios, el contenido de la programación o el tamaño de los espacios, entre otros factores, por lo que disponían así de una herramienta con la que podían gestionar el espacio urbano en desarrollo del siglo XVII. El aspecto ideológico era también de gran importancia, por tratarse de un medio precursor de la comunicación de masas.

Los edificios adyacentes a los corrales de comedias no estaban sujetos a este control, ya que no pertenecían al ayuntamiento ni a las cofradías. Con el fin de aprovechar

Figura 5: El retablo de las maravillas representado en el Corral de Comedias de Almagro (Archivo Higueras Arte)

la creciente popularidad de estos lugares, los propietarios de los edificios colindantes vendían entradas que permitían acceder a las ventanas que daban al teatro, desde las que podía seguirse la representación. Se tiene constancia de propietarios que incluso construyeron palcos con vistas a estos patios. Los beneficios eran compartidos, ya que debían donar una parte de los mismos a las compañías de teatro. Matthew Isaiah Feinberg describe esta situación como un "collage de espacios privados y públicos, todos ellos dedicados a la producción de una representación teatral" y sostiene que esta ambigüedad sigue presente en las corralas actuales (Feinberg 2011: 62).

A mediados del siglo XVIII el Gobierno comenzó a prohibir estos espectáculos. Se esgrimieron como argumentos que las condiciones higiénicas no eran óptimas y esto favorecía las epidemias, que el riesgo de incendio era alto y que, en general, en estos espacios reinaba el desorden. La creciente burguesía exigía, además, nuevos espacios teatrales que fueran más "cómodos". Por estas razones, a finales del mismo siglo se decretó la prohibición total de los corrales de comedias y la mayor parte de ellos desaparecieron. Algunos fueron transformados en teatros "a la italiana", como por ejemplo el Corral del Príncipe, que se convirtió en el Teatro Español de Madrid. En 1845, cuando el Estado quiso establecer un Teatro Nacional, decidió construir este nuevo edificio en el lugar donde estuvo situado el antiguo Corral del Príncipe. Hoy en día esta parcela alberga el Teatro Español, con un programa similar (Feinberg 2011: 70).

El único superviviente fue el Corral de Comedias de Almagro, debido a que se le devolvió su uso original de posada. El edificio se ha rehabilitado en la actualidad como corral de comedias y acoge cada verano el Festival Internacional de Teatro Clásico de Almagro.

Dos de los ejemplos más conocidos de corrales de comedias históricos son el Corral de la Cruz y el Corral del Príncipe, construidos entre 1579-80 y 1582-83, respectivamente. No se trataba de espacios de vivienda reconvertidos en teatros comerciales, como los descritos anteriormente, sino que ambos fueron concebidos y construidos originalmente con un escenario permanente, con asientos y una marquesina que tenía por fin proteger al público de las inclemencias del tiempo. Estos dos espacios de representación fueron los escenarios de una notable producción teatral, y en ellos se representaron algunas de las obras capitales del teatro español.

Los corrales de comedias son una prueba de la importancia que tuvo el teatro en el desarrollo del tejido urbano madrileño. La mayor parte de estos corrales de comedias se ubicaron en el barrio de Lavapiés-Embajadores, donde hoy en día se concentran la mayor parte de las corralas que siguen en pie.

Las corralas como escenario

Si podemos fechar el nacimiento de los corrales de comedias en aquel citado 5 de mayo de 1568, es más complicado establecer un principio (¿y un final?) a la representación de obras de teatro en las corralas. Los orígenes formales de estos edificios se remontan a la Baja Edad Media, cuando el modelo de vivienda castellano, heredero de la *domus* romana y de la vivienda musulmana, dio lugar a dos desarrollos paralelos: en el norte se desarrollaron los tipos castellanos de casa rural compacta, mientras que en el sur prevalecieron los tipos de casa en torno a un patio. Madrid, por su posición central, se encuentra a caballo entre estas dos influencias, por lo que, desde el inicio de su urbanización, integró ambos modelos.[2]

Menos información existe sobre la historia programática de las corralas como vivienda-teatro. Su organización fue más espontánea –menos reglada– y, por tanto, estuvo menos documentada que la de los corrales de comedias de las cofradías, a la que ya hemos hecho mención. Algunos datos

Figura 6: Reconstrucción del Corral de Comedias del Príncipe. Dibujo de Carlos Dorremochea (Allen 1983)

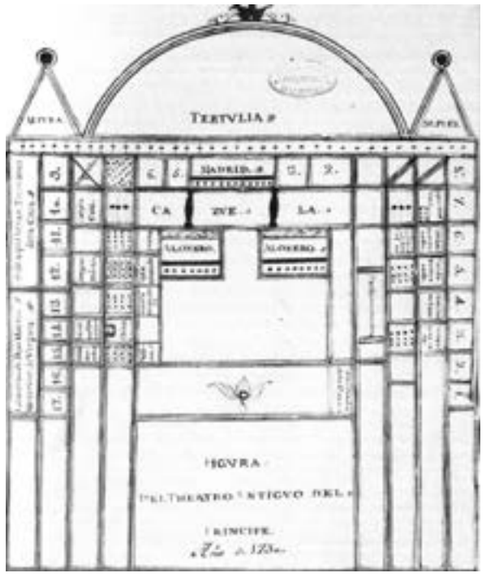

Figura 7: Esquema de localidades del Corral de Comedias del Príncipe realizado por José Antonio de Armona (Museo Municipal de Madrid)

documentación sobre las actuaciones de principios del siglo XX o anteriores, por lo que nos centraremos en uno de los ejemplos que más información ofrece: la Corrala de la calle Mesón de Paredes.

Esta corrala fue uno de los escenarios favoritos de Madrid a finales de los años 50. Se dice que allí se han representado muchas veces obras como *La Verbena de la Paloma*, *La Revoltosa*, *La Gran Vía* o *El pobre Valbuena*. *La Revoltosa*, dirigida por José Tamayo en 1955, representa un ejemplo memorable de cómo la arquitectura puede convertirse en escenografía. Para estas representaciones la fachada de la corrala se trasformaba en el telón de fondo del escenario, con reminiscencias de ciertos decorados pintados o del conocido trampantojo del Teatro Olímpico de Vicenza. El autor de la obra *Arquitectura. Ritos y ritmos* explica cómo el escenario romano, con su *frons scenae* –que representa una parte del *forum*– no es un paisaje natural sino un paisaje urbano y que por tanto se puede considerar que "el escenario es la ciudad y la ciudad es el escenario" (Arnau Amo y Gutiérrez Mozo 2014).

La forma de la estructura de madera de esta corrala evoca algunos dispositivos escénicos antiguos, como el *periactus*, u otros recientes, como las cerchas que conforman la estructura de algunos escenarios temporales. La ropa y otros enseres personales que cuelgan de las cuerdas en el patio también forman parte de esta escenografía. La analogía se puede llevar un paso más allá, asignando roles a los personajes de la corrala, con los habitantes del balcón convertidos en figurantes, el portero convertido en el jefe de la sala, etc.

En 1973 se demolió uno de los laterales de esta corrala para permitir la apertura de la plaza a la calle Mesón de Paredes. La nueva plaza se convirtió en anfiteatro y acogió numerosas representaciones teatrales de géneros como la zarzuela o el teatro chico. Esta corrala fue declarada Monumento Nacional en 1977. A partir de ese momento el Ayuntamiento de Madrid organizó en este espacio varias representaciones de zarzuela en las que los inquilinos participaron activamente. En 1978, con motivo de las fiestas de los Veranos de la Villa, el espectáculo *Madrid Castizo* volvió a transformar la corrala en un gigantesco escenario, como en 1955 o 1958. El éxito fue tal que el 25 de septiembre (más de 20 días después de su primera representación), el periódico *Hoja del Lunes* anunció que las representaciones se prolongarían mientras "el tiempo no lo impidiera". Este éxito animó al Ayuntamiento de Madrid a continuar con las representaciones, de modo que en agosto de 1979 la corrala de Mesón de Paredes parecía más un corral de comedias del siglo XVII que un edificio residencial. En noviembre de ese mismo año se inauguró el Teatro de Lavapiés en la misma calle de la Corrala, motivo por el que ésta fue perdiendo su función teatral. Durante las dos décadas siguientes se organizaron algunos eventos teatrales, con la programación de clásicos como *Madrid Castizo* o *La Revoltosa* en 1994, pero este fenómeno se nos llegan de un texto de Mesonero Romanos, *Escenas y tipos matritenses*, en el que plasmó la esencia de la ciudad de Madrid en forma de pequeños "cuadros literarios". En una de estas descripciones el narrador cuenta cómo él y su primo se involucran en la organización de una representación teatral y describe las tareas que tiene que realizar. Entre estas se encuentra una crucial: encontrar un espacio para representar la obra y, según especifica "encontrar una casa donde producir la obra":

> *El contarle a usted, amigo mío, las profundas discusiones, los acalorados debates, las distintas proposiciones, indicaciones, adiciones y resoluciones que han ido eslabonándose en las posteriores juntas, sería nunca acabar. Baste, pues, decirle, que encontramos en la calle de... una casa con sala bastante capaz (después de tirar tres tabiques y construirlos más apartados), de un aspecto bastante decente (después de blanqueada y pintada), y con los enseres necesarios (que se alquilaron y colocaron donde convino). Así que resuelto este problema y el del permiso favorablemente, los demás fueron ya de más fácil resolución, o quedaron subordinados a la importante discusión, acerca de la elección de pieza que se había de representar* (Mesonero Romanos 1842).

Como indica esta cita, en aquella época muchas obras de teatro se representaban también en salones privados, con un público de una clase social mucho más acomodada que la que vivía en las corralas[3]. Nos ha llegado muy poca

Figura 8: Representación de *La Revoltosa* en la Corrala de Mesón de Paredes, Madrid, 1955 (Navarro de Zuvillaga 1976)

hizo cada vez más raro. Un periodista escribía sobre estas representaciones: "Hoy, como ayer, Madrid se encuentra a sí mismo en *La verbena de la Paloma* y se siente más madrileño al verla en el escenario de La Corrala, entre las casas de corredor, donde resonó la risa de *La Revoltosa*" (García Valero 2017).

Recientemente, parece haber un resurgimiento del interés en organizar este tipo de eventos teatrales, aunque de un carácter más discreto que en la época de los corrales de comedias, con varias iniciativas en curso. "El Teatro vuelve a las Corralas" es el nombre de una compañía teatral que se ha instalado en la pequeña localidad de Aranjuez. Se trata de un grupo de artistas diversos comprometido con la recuperación de la tradición teatral de las corralas.

En 2013 y 2014 la compañía "AlmaViva Teatro" fue invitada a actuar en el patio de la corrala del número 56 de la calle Montesinos de Aranjuez. El análisis de esta representación puede explicar por qué las corralas tienen aún un potencial teatral tan poderoso. La obra representada fue *Fuente Ovejuna. Ensayo desde la violencia*. Marta Olivas explica que esta iniciativa fue puesta en marcha por AlmaViva en colaboración con la comunidad de vecinos y la empresa Focus Aranjuez (Olivas 2015). La corrala, ahora un espacio no teatral pero de un carácter eminentemente público, está directamente relacionada con esta tragedia colectiva del famoso dramaturgo madrileño Lope de Vega. La disposición del público en un cuadrilátero, como si de una asamblea se tratase, era ideal para presentar el sufrimiento y la rebelión histórica que se describe en la obra. Muchas de las decisiones tomadas por la dirección de la obra estuvieron determinadas por la incorporación de los elementos arquitectónicos de la corrala. Se trata de un ejemplo en el que se multiplica el carácter social y colectivo del espacio: no sólo se muestran las características que el espacio tiene *per se* como lugar de encuentro y convivencia entre vecinos, sino que la actividad teatral permite que también sea percibido como un lugar de protesta, que se reivindica como un espacio de la comunidad para la comunidad, un lugar activo en sí mismo, con vida propia, que ofrece a los vecinos una visión de su propia condición de ciudadanos a través de la representación que acoge.

En la corrala no existe la jerarquía entre público y actores propia del espacio teatral convencional. La participación del público es más activa e incluso la incomodidad que producen las escenas violentas es muy perceptible. Cuenta Javier Vallejo en una entrevista para *El País* que durante una representación un espectador que estaba sentado en el patio se levantó e interrumpió a los actores, no queriendo


"LA REVOLTOSA", DE LA CORRALA, CONFIRMO ANOCHE EL GRANDIOSO EXITO DE SU PRIMERA REPRESENTACION

Figura 9: Recorte de periódico. Anuncio de *La Revoltosa*. 1956 (Eduardo Valero García, Archivo HUM 2017)

Figura 10: El Teatro vuelve a las Corralas. Representación en una corrala de Aranjuez. 2013 (Héctor Campos Castillo, Retina de cristal)

ser partícipe de tanta verosimilitud ni estar tan próximo a la violencia, aunque ésta fuera actuada (Vallejo 2013). Una actriz que había actuado en el mismo patio de la corrala de Aranjuez dijo en otra entrevista que al actuar allí podía mirar al público directamente a los ojos y conseguir de esta manera aquello que Federico García Lorca hubiera anhelado, es decir, hacer "el teatro de la gente para la gente con la gente donde está la gente" (Saraví 2015).

En 2019 la compañía Mosaicos Teatro Comunitario actuó en la Corrala de Tribulete, en Madrid, durante la quinta edición del Festival Con-Vivencia. Esta innovadora compañía nació en 2017 y busca llevar el teatro comunitario a los barrios de Madrid a través de la investigación teatral sobre la identidad, la memoria y la convivencia, en colaboración con asociaciones, colectivos y vecinos de cinco barrios de la ciudad. Han actuado varias veces en diferentes corralas. En el año 2020, durante la fase de confinamiento debido a la pandemia mundial, algunos vecinos de Madrid fueron testigos de un espectáculo singular: un vecino de La Latina, José Luis, cantante y actor, transformó su propia corrala en un teatro, en el que cantaba y bailaba cada día para sus vecinos (TeleMadrid 2020).

Conclusión

El estudio de las diferentes fuentes –ya sean recortes de prensa o los libretos de obras de teatro– demuestra que estos dos tipos se han desarrollado en paralelo e influido mutuamente. La producción teatral que a día de hoy tiene lugar en las corralas de la Comunidad de Madrid permitirá, con gran seguridad, la salvaguarda de muchos de estos edificios. Esto ya fue demostrado en 1976 cuando el periodista Javier Navarro expresó la posición del Colegio Oficial de Arquitectos de Madrid respecto a la declaración del estado de ruina de la Corrala de Tribulete en el emotivo artículo "La corrala sí, la corrala no", en el que se apoyó en la la teatralidad de la corrala como principal argumento para su conservación.

> *Siendo el corral de comedias nuestra original aportación espacial a la historia del teatro sería un argumento a tener en cuenta para la conservación de la Corrala. Porque la Corrala es un corral de comedias del siglo XIX y como tal es único. Por otro lado, y no es la primera vez que lo digo, el corral de comedias está aún por descubrir, en el país en que nació, como espacio teatral de hoy.*
>
> *Parece que alguien en el Ayuntamiento ya ha planteado la conservación de la Corrala como "corrala" de comedias. Que esa idea prospere sería, cuando menos, un magnífico y serio pretexto para que más de quinientas personas sigan teniendo la vivienda que les corresponde y de la que están muy orgullosos, como ya han demostrado con tanto acierto en muchas ocasiones.*
>
> *Que sigan ofreciéndonos sus verbenas y un teatro popular castizo y español sería una gran alegría para todos* (Navarro de Zuvillaga 1976).

Actualmente muchos arquitectos se esfuerzan por inventar nuevas formas de vivienda social u otros espacios compartidos innovadores. Realmente, muchas de estas "nuevas formas" que buscamos con tanta insistencia ya existen, y se pueden encontrar en algunos tipos tradicionales como el de las corralas. La manera en que se convive en estos espacios, así como la economía de medios, fue en su día la norma, y basta con que nos fijemos más en estos tipos tradicionales para encontrar soluciones a los problemas de habitabilidad de hoy en día. Además, la restauración de estas construcciones, en la que se tenga en cuenta no sólo su historia formal sino también la programática, puede ayudar a salvaguardar una parte importante de la historia urbana de Madrid.

[1] En *Lavapiés, Madrid as twenty-first century urban spectacle* Feinberg cita el trabajo de Coso Marín y Sanz Ballesteros, quienes explican que "estas casas, tanto en Madrid como en Alcalá, seguirán las leyes que promulgó Felipe II, en el año 1565, sobre la construcción de casas de nueva planta [...] La ley obligaba a construir casas superiores a 630 pies castellanos cuadrados, con su fachada, de dos plantas, a la calle y un patio o corral en su trasera".

[2] El lector puede encontrar más información sobre este tema en el capítulo "Origen y evolución histórica del modelo de casa de corredor" de la tesis *Estudio tipológico,constructivo y estructural de las casas de corredor en Madrid* de Jaime Santa Cruz Astorqui.

[3] El lector puede encontrar más información sobre este tema en la obra *Literatura y sociedad: los teatros en casas particulares en el siglo XIX* de Ana Freire López.

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Biography | Biografía | Biografia

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Patrícia Marchante, Amanda Rivera Vidal

Characterization of Traditional Coatings in Earthen Vernacular Architecture in the Limarí Valley: Their Role in the Conservation of Built Heritage in Chile

Caracterización de los revestimientos tradicionales en la arquitectura vernácula de tierra del Valle del Limarí: Su papel en la conservación del patrimonio construido de Chile

Caracterização dos rebocos tradicionais da arquitetura vernácula de terra no Vale do Limarí: O seu papel na conservação do património construído do Chile

Keywords | Palabras clave | Palavras chave

Earthen heritage, Earthen renders, Preservation, Traditional finishes, Vernacular techniques

Patrimonio de tierra, Revestimientos en tierra, Conservación, Acabados tradicionales, Técnicas vernáculas

Património construído em terra, Rebocos de terra, Preservação, Acabamentos tradicionais, Técnicas vernáculas

Abstract | Resumen | Resumo

Despite its seismic activity, Chile has a large number of heritage buildings built with earth. Their conservation depends on elements such as roofing and foundations, but also on the quality of renders and finishing materials. This study seeks to identify and characterize the coating systems and materials used on the wall surfaces of earthen heritage structures in the Limarí valley, Chile, seeking to contribute to the dissemination, promotion, and preservation of these traditional renders. The case studies included are historic buildings in various Limarí valley villages. Render and plaster samples of earthen built heritage were taken for analysis from a diversity of wall structures (such as adobe, *pandereta,* or *quincha*) and finishing techniques. Despite differences, the conclusions of our fieldwork and sample observations and analysis allow us to identify effective, common coating systems and finishes.

A pesar de la actividad sísmica, Chile cuenta con un gran número de edificios patrimoniales construidos con tierra. Su conservación depende de factores tales como las cubiertas y los cimientos, pero también de la calidad de los revestimientos y de los materiales de los acabados. Este estudio pretende identificar y caracterizar los sistemas de revestimiento y los materiales utilizados en los muros de las estructuras de tierra del valle del Limarí, en Chile, para contribuir a la difusión, promoción y conservación de estos revestimientos tradicionales. Los casos estudiados incluyen edificios históricos de varios pueblos del valle del Limarí. Las muestras de revestimientos que fueron analizadas se tomaron de edificios patrimoniales construidos en tierra. Para su selección se atendió a los diversos tipos de muros (de adobe, *pandereta*, o *quincha*) y de técnicas de acabado. A pesar de las diferencias, las conclusiones del trabajo de campo y de la observación y el análisis de las muestras nos han permitido identificar sistemas de revestimiento y acabado comunes y eficaces.

Apesar da sua atividade sísmica, o Chile tem um grande número de edifícios patrimoniais de terra. A sua conservação depende de elementos como coberturas e fundações, mas também da qualidade dos rebocos e materiais de acabamento. Este estudo procura identificar e caraterizar os sistemas de revestimento e materiais utilizados nas superfícies das paredes das estruturas patrimoniais de terra no vale do Limarí, Chile, procurando contribuir para a divulgação, promoção e preservação destes rebocos tradicionais. Os estudos de caso incluídos são edifícios históricos em várias aldeias do vale do Limarí. Foram recolhidas amostras dos rebocos do património construído com terra, para a análise de uma diversidade de estruturas de parede (tais como adobe, *pandereta*, ou *quincha*), e as diferentes técnicas de acabamento. Apesar das diferenças, as conclusões do nosso trabalho de campo, e as observações e análises das amostras, permitem-nos identificar sistemas de revestimento e acabamento eficazes e comuns.

1. Introduction

In Chile, as in the whole world, earthen construction techniques have existed since ancient times, and they continue today. Thus the forms of buildings can be seen as a reflection of a knowledge that has matured over time, always adapting to local characteristics: traditions, socioeconomic organization, climate, topography, local resources, etc. (Houben and Guillaud 2006).

Despite its seismic hazards, Chile has a large number of structures built with earth, in which adobe is the best-known technique. Their conservation depends on elements such as roofing and foundations, but also on the quality of their coatings against erosion and rain infiltration, as well as for natural hygrometric control of wall interiors (Röhlen and Ziegert 2013). Moreover, finishes add a social component to structures, contributing to their image and evidencing how well they are cared for.

Wall coverings are often inappropriately reworked, in a way that can jeopardize structural integrity. Such interventions are generally linked to an ignorance of the functions of the materials and techniques used in earthen structures. In some such practices it is common to find adobe walls or wooden structures with earth filling covered with cement stucco or emulsion paint, which deteriorate over time owing to damp accumulating in the wall (Minke 2005). In addition, once these coatings are removed, the retained moisture is often found also to have compromised the structural interior.

This study is part of a larger project called "Revestimientos de Tierra" (Earthen Coverings) that started in 2015 with research on historic building renders in Santiago de Chile (Marchante and Silva 2017). In 2019[1], with the FONDART Fund, the "Coatings in the conservation of earthen heritage in Limarí" research project undertook a survey of traditional finishing systems in various villages along the Limarí river (Fig. 1) in the Coquimbo region of northern Chile (30°34'S 71°12'W). The Coquimbo region was at the center of a big 8,4 Mw earthquake in 2015 (Jorquera and Rivera 2017) and during our research major structural restorations were still in progress. This presented an opportunity to study building techniques and to take samples of finishes.

2. Contextualization: The Limarí Valley

South of the great Atacama desert is the Norte Chico area, a semi-arid territory between the river Copiapó to the north and the river Aconcagua to the south, with successive valleys connecting the Andes and the Pacific. The Limarí valley is one of these, between those formed by the rivers Elqui and Choapa.

In the early colonial period (i.e. the sixteenth century), the only major town founded here was La Serena, and the territory served mainly as an overland route to Santiago. The "Camino Real" route prompted the establishment of settlements around churches (Fig. 1), such as Barraza in 1648 and Combarbalá in 1757 (Benavides 1961). With the rise of small-scale mining and agriculture, in the

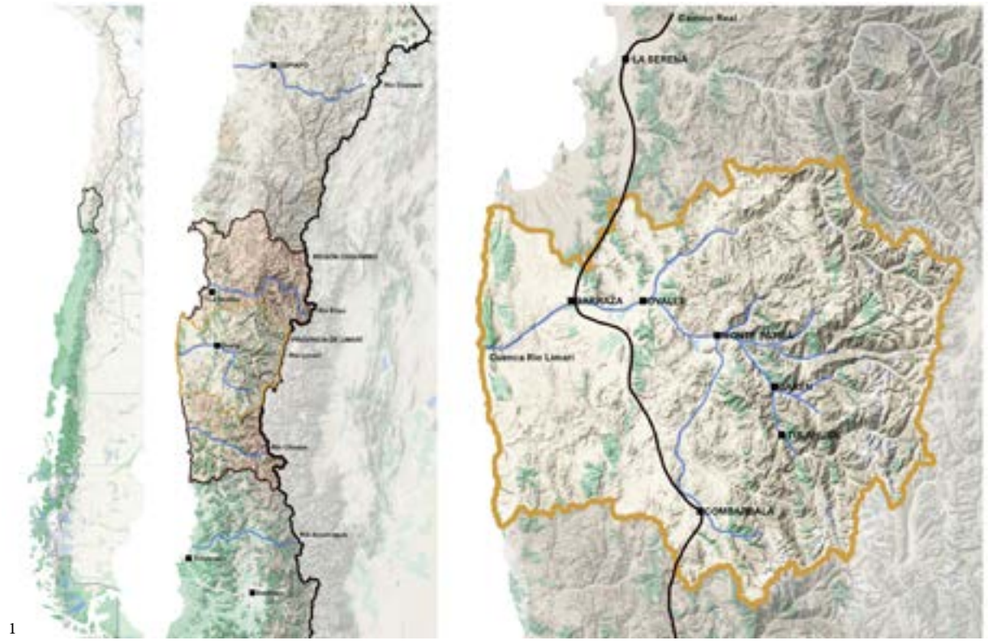

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Figure 1: The Coquimbo region in Chile | Limarí province in the Coquimbo region and the Norte Chico area | Distribution of the main settlements in the Limarí valley with the Limarí river basin and the Camino Real

2

Figure 2: Indoor finish sample from the Contreras family house in Carén (CAR02D). Top: whole sample (13 × 18 cm) with stratigraphic survey showing the different layers of earthen render and wallpaper. Middle and bottom: section showing 4 mm of earth and sand plaster (*enlucido*) and 30 mm of *enfoscado* plaster with earth and fiber

Enlucido: 4 mm of soil and sand plaster

Enfoscado plaster: 30mm of soil and fiber

seventeenth century the first churches were erected in the Limarí valley, initially associated with *hacienda* estates and later developing into towns. Most of these were built along main roads, and more were founded in the eighteenth and nineteenth centuries, such as Combarbalá and Ovalle (Segovia and Ferrada 2007).

3. Scope and Methodology

The aim of our study is to identify, characterize, and catalog the coating techniques and materials to be found on existing earthen structures in the Limarí valley, as well as to disseminate the traditional techniques and materials used in the finishes of earthen buildings.

Case studies were chosen so as to cover a diversity of architectural typologies on one hand (religious, residential, and agricultural), and of settlement context (urban or rural) on the other.

From these buildings, samples of 10 × 18 cm were taken from the walls (Fig. 2), of variable thickness depending on the coating depth, as far as the structural substrate (Fig. 3). Thirty samples were taken and thirteen cases selected from six buildings. The samples were used to identify the coating systems, from the first layer to the finish.

Earthen layers of render were characterized by observing their texture, composition, and thickness, confirmed by optical microscopy. The finishing layer of each sample was subjected to stratigraphic analysis, microscopy and physico-chemical tests (Fig. 4).

The stratigraphic analysis consisted of controlled mechanical stripping by layers – in most cases firm and well defined, though in others friable and degraded, tending to contaminate one other. Ordinary and microscopic photos of the samples were taken, allowing us to ascertain their composition. The microscopic imaging was done with digital recording equipment: Celestron 500x–1800x.

Physico-chemical and solubility tests were performed on some strata so as to define the dispersion capacity of paint layers, including polar solubility (vinyl-acrylic) or nonpolar solubility (alkyd). The TEA triangle system was used as a solubility test, with organic solvents, alcoholic ethers, aromatic hydrocarbons, benzenes, and nitrobenzenes. Alkalinity tests were also done on some samples with exposure to a solution of 25% phenol in ethanol and to a phosphoric acid solution so as to detect any lime in the composition. Activating the sample materials allowed us to observe accelerated alteration by oxidation reduction (Redox) of salts, hydroxides, and carbonates present in the agglutination of older strata, which cohere by the calcification process when calcium hydroxide is slaked.

At the end of this stage, talks were given in various towns in the Limarí valley along with a series of workshops on the earthen building systems and finishes found in the area. These were aimed both at the general public and at high-school students and their teachers. During these activities, prototypes of the local earthen building systems were made, from earthen renders to traditional finishes. A two-month exhibition was also held in the local museum including videos and the catalog of our research, also available online.

4. Traditional Earthen Structures of the Limarí Valley

In the Limarí valley we find diverse traditional construction techniques, all involving soil. Many of them use raw earth blocks (adobe), either as simple masonry or as fillers in wooden structures (Rivera 2016). It is also common to find different types of *quincha* structure[2].

4.1 Adobe Masonry

The technique found most widely is adobe masonry (Fig. 5), with cuboid blocks of unfired earth laid with a header bond, where the block length becomes the wall thickness

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Figure 3: Extraction of a sample (13 × 18 cm) from the adobe wall of a house in Carén (CAR02D)

Figure 4: Physico-chemical tests. Top right: Test with nitrobenzene (Nitro C) on the CAR02A sample, with immediate solubility confirming that the paint layer is vinyl (latex). Top right: 1000x microscopic image of a phosphoric acid test on the OVA02A sample with high oxide reaction and redox (third layer), confirming that the pigments are bonded to lime. Bottom: Solubility test on the fifth layer of the CAR02B sample, with a clear reaction to organic solvents confirming that this is vinyl latex with a high calcium carbonate content (Manuel Concha)

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Figure 5: Adobe house in Combarbalá

Figure 6: *Pandereta* hybrid wood-and-earth system with external branches and metal wire for containment, Tulahuen

Figure 7: *Quincha* hybrid wood-and-earth system infilled with branches and earth, confined with external horizontal canes, Carén

(Muñoz and Rivera 2017). Various block sizes were found, typically 55 × 30 × 10 cm, 40 × 20 × 10 cm, 60 × 40 × 10 cm or 60 × 30 × 10 cm, resulting in walls with thicknesses of 50-70 cm in smaller structures, and thicker ones in larger structures (Marchante and Rivera 2020).

4.2 Hybrid Structures: Timber Frames with Earthen Infill

Timber frameworks are infilled with adobe blocks laid on edge, locally called *adobe en pandereta* (Guzmán 1979) (Fig. 6), confined in the wall by containing elements (Rivera 2017). The *quincha* technique (Fig. 7) involves a main structure of wood, a secondary structure traditionally of plant matter, and a filling of earth and fiber. In the cases studied, willow branches were arranged vertically and contained by horizontal elements anchored to the main structure, infilled with an earth-and-fiber mixture. In both *pandereta* and *quincha* structures the external confinement elements are made of sawn wood, local cane, branches of various local trees, and metal wires.

It is common to find all these construction techniques complementing each other, with some specific variations. When these systems are found together, the perimeter walls are generally of adobe, and mixed techniques are used to delimit interior spaces, extensions, and sometimes second floors. Structures were also observed built only with hybrid timber-earth systems, either *quincha* or *pandereta.*

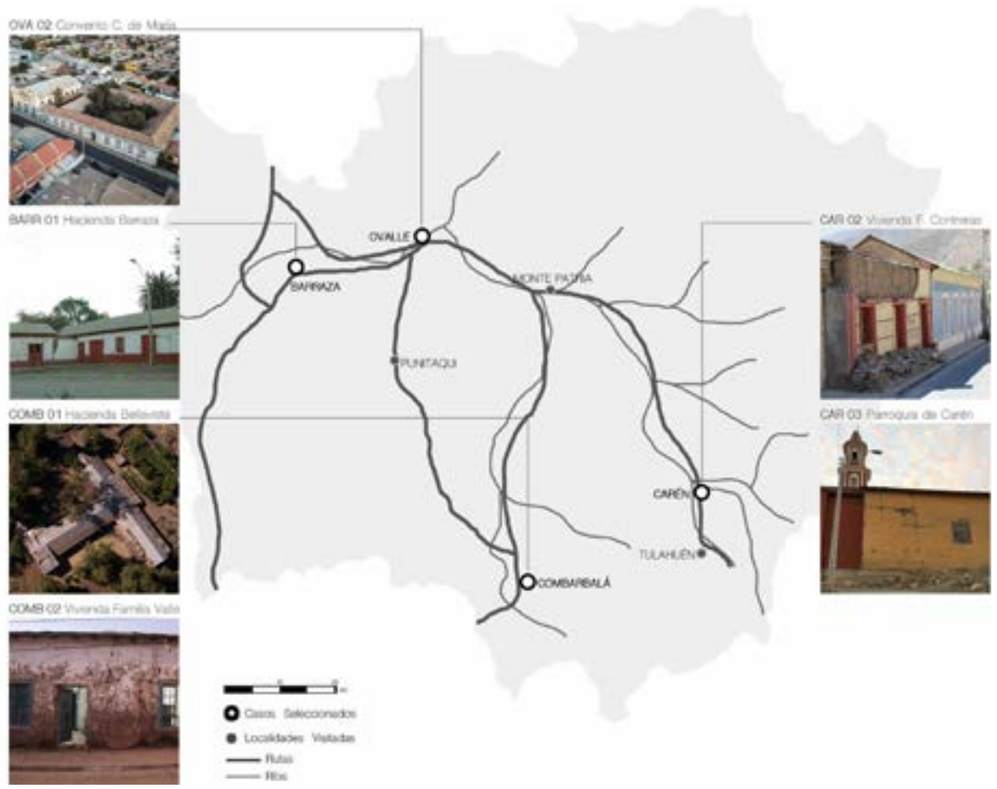


Figure 8: Map of the Limarí Valley with locations of buildings chosen for analysis of finishing layers in Ovalle OVA02 (convent), Barraza BARR01 (*hacienda*), Combarbalá COMB01/COMB02 (house and *hacienda*), and Carén CAR02/CAR03 (church and house)

5. Plasters and Renders in Historic Limarí Earthen Buildings

The coating system for the earthen structures characterizing the built landscape of the Limarí valley, and to be found in much of Chile, seems to have been used for many years, up to the present. It might be several centuries old judging by some buildings in our study, built prior to the nineteenth century. The finishing layers of this traditional system were largely transformed in the late twentieth century with the advent of synthetic materials.

5.1 Case Studies

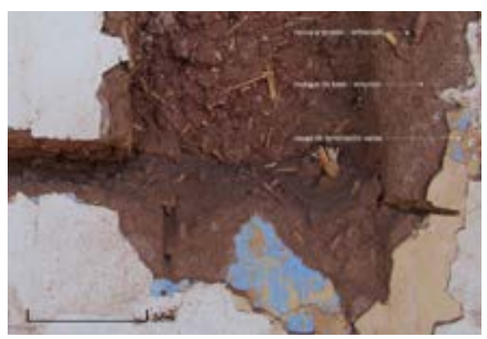
Our case studies were selected and samples were taken with an approach of investigating the valley's building culture, extending previous knowledge about local forms and construction materials, focusing on buildings under restoration or seriously damaged (Fig. 8).

Case studies were selected where original and older building coatings were present. Another criterion was the use of diverse earthen techniques with a variety of wall coverings.

5.2 Coating System

With all structural techniques, the coating system has two layers of earthen render and a finishing coat (Fig. 9). In the finishing layer, variations in materials were found by period, place, wall function, and state of upkeep.

Figure 9: Layers of the finishing system: adobe wall structure, first layer of earth and straw (*enfoscado*), second layer of an earth and sand mixture (*enlucido*), and various finishing plasters. Combarbalá, sample COMB02A



Core	Interior/Exterior wall	Wall structure	1st Earthen Layer	2nd Earthen Layer
BARR 01-B	Interior	*Adobe*	Earth and plant fiber render (30 mm)	Earth and sand render (5 mm)
OVA 02-A	Interior	*Adobe en Pandereta*	Earth and plant fiber render (35 mm)	Earth and sand render (5 mm)
OVA 02-C	Exterior	*Adobe*	Earth and plant fiber render (15 mm)	Earth and sand render (3 mm)
CAR 02-A	Interior	*Adobe en Pandereta*	Earth and plant fiber render (30 mm)	-
CAR 02-B	Interior	*Adobe en Pandereta*	Earth and plant fiber render (40 mm)	Earth and sand render (10 mm)
CAR 02-D	Interior	*Adobe*	Earth and plant fiber render (30 mm)	Earth and sand render (4 mm)
CAR 02-G	Interior	*Quincha*	Earth and plant fiber render (75 mm)	Earth and sand render (3 mm)
CAR 03-A	Exterior	*Adobe*	Earth and plant fiber render (40 mm)	-
CAR 03-B	Interior	*Adobe*	Earth and plant fiber render (60 mm)	Earth and sand render (5 mm)
COMB 01-A	Interior	*Adobe*	Earth and plant fiber render (30 mm)	Earth and sand render (5 mm)
COMB 01-B	Exterior	*Adobe*	Earth and plant fiber render (50 mm)	Earth and sand render (5-6 mm)
COMB 02-A	Exterior	*Adobe*	Earth and plant fiber render (50 mm)	Earth and sand render (2-3 mm)
COMB 02-B	Interior	*Adobe*	Earth and plant fiber render (45 mm)	Earth and sand render (5 mm)

Figure 10: Location, type of wall and composition (first and second earthen layer) of the 13 samples

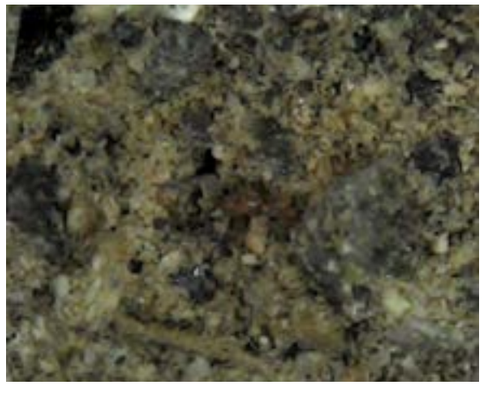
The first layer is earthen render of variable thickness, as it must cover the irregularities of the wall structure (Fig. 10). In the samples analyzed, this layer can vary between 15 and 75 mm and is made up of earth and normally also plant fibers, usually wheat straw. The second intermediate layer is a mortar of sandy earth or a blend of earth and sand. Normally no thicker than 10 mm, it makes the wall even and serves as a base for the finish.

The wheat straw fibers in the first plaster layer (Fig. 11) serve to reduce cracking (as the clayey earth tends to fissure), and is also thought to give greater resistance against horizontal and diagonal movements caused by frequent earthquakes. The fibers must also help this layer adhere to the structure (Lima and Faria 2016), which is especially important in composite structures. In this layer one also often finds pebbles and even fruit stones that may have been mixed into the mortar.

The second intermediate layer is thinner and needs to be carefully executed so as to achieve a smooth, vertical surface without cracks. It is worked with a plaster trowel, and so it contains sand but not straw (Fig. 12). The sand grains allow the surface to be worked evenly and stabilize the clayey earth, preventing fissuring. But it results in a plaster with little surface cohesion due to its low clay content, and which easily sheds sand when rubbed. The subsequent layers provide a firmer finish.

Figure 11: 1000x microscopic image of the earth and fiber layer of the CAR02A sample (Manuel Concha)

Figure 12: 1000x microscopic image of the earth and sand layer of the COM02B sample, where the layer is uniform (Manuel Concha)



Different finishes may then be applied over this layer. On exterior walls, pigmented lime or water-based paints are often found, or on more recent walls, latex paints. The latter have problems of compatibility with older coating substrates.

Core	Interior/Exterior wall	Finishing layer (from oldest to newer)
BARR 01-B	Interior	1. Whitish wallpaper, printed and finished by hand 2. Brown and blue wallpaper, printed and finished by hand 3. White and blue printed wallpaper. 4. Thicker printed wallpaper
OVA 02-A	Interior	1. Calcium Hydroxide (lime) 2. Terracotta paint (lime paint) 3. Vinyl yellow paint on a highly degraded calcium carbonate primer 4. Calcium carbonate mortar (pasta muro) 5. Vinyl damask paint 6. Vinyl white paint
OVA 02-C	Exterior	1. Calcium Hydroxide (lime) 2. Colonial blue paint (lime paint) 3. Colonial red paint (lime paint) 4. vinyl light blue paint 5. Vinyl damask paint 6. Vinyl white paint 7. Vinyl pink white paint
CAR 02-A	Interior	1. Calcium sulfite (gypsum) 2. Ocher paint (water paint)
CAR 02-B	Interior	1. Vinyl blue paint 2. White vinyl paint 3. Vinyl pink paint 4. Vinyl damask paint
CAR 02-D	Interior	1. Wallpaper with phytomorphic motifs
CAR 02-G	Interior	1. 1st layer of printed paper on earth and sand mortar 2. 2nd layer of printed paper
CAR 03-A	Exterior	1. Yellow ferrous oxide paint
CAR 03-B	Interior	1. Textured wallpaper
COMB 01-A	Interior	1. Ecru wallpaper 2. White wallpaper 3. Vinyl binder textured paint
COMB 01-B	Exterior	1. Calcium hydroxide (lime paint) 2. 3 to 4 mm earth and sand mortar 3. Calcium hydroxide (lime paint)
COMB 02-A	Exterior	1. Blue pigment paint (water paint) 2. Ocher paint layer (water paint) 3. Calcium hydroxide (lime paint)
COMB 02-B	Interior	1. Vinyl white paint

Figure 13: Finishing layers of the 13 samples

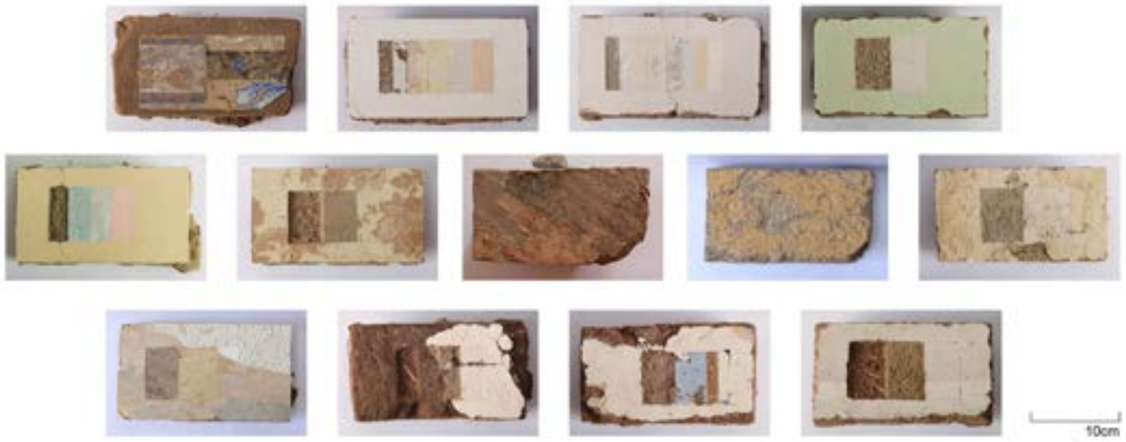


Figure 14: Stratigraphic survey of the 13 samples. From top left: BARR01B, OVA02A, OVA02C, CAR02A, CAR02B, CAR02D, CAR02G, CAR03A, CAR03B, COMB01A, COMB01B, COMB02A, COMB02B

5.3 Types of Finish

Interior finishes are more varied and the older ones include lime and pigment paints as well as a range of wallpaper colors and designs (Fig. 13). Gypsum plaster, *pasta muro*,[3] and latex paints (vinyl or acrylic) are some of the materials used in interior renovations of the late twentieth century. But in areas with fewer economic resources and/or less access to industrialized materials, lime and pigments continue to be used (Fig. 14).

Lime has been employed since colonial times, both in mortars and in paints, for interior and exterior coatings (Figs. 15 and 16). This is the oldest finishing material commonly used up to the early twentieth century.

Figure 15: Indoor finish from the Corazón de María Convent in Ovalle (OVA02A). Left and top right: stratigraphic survey showing different layers of lime finishings and vinyl paints. Right center and bottom: section showing 5 mm of an earth and sand plaster (*enlucido*) and 35 mm of *enfoscado* with earth and fiber.

Figure 16: Phosphoric acid (H3PO4) test on the third and fourth strata of the OVA02C sample. The blue and colonial red paint layers show a reaction and a redox oxide product, confirming that these are pigments bonded to lime (Manuel Concha)

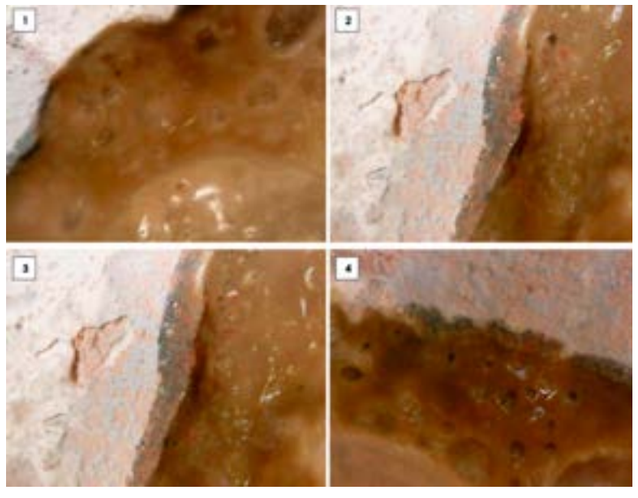
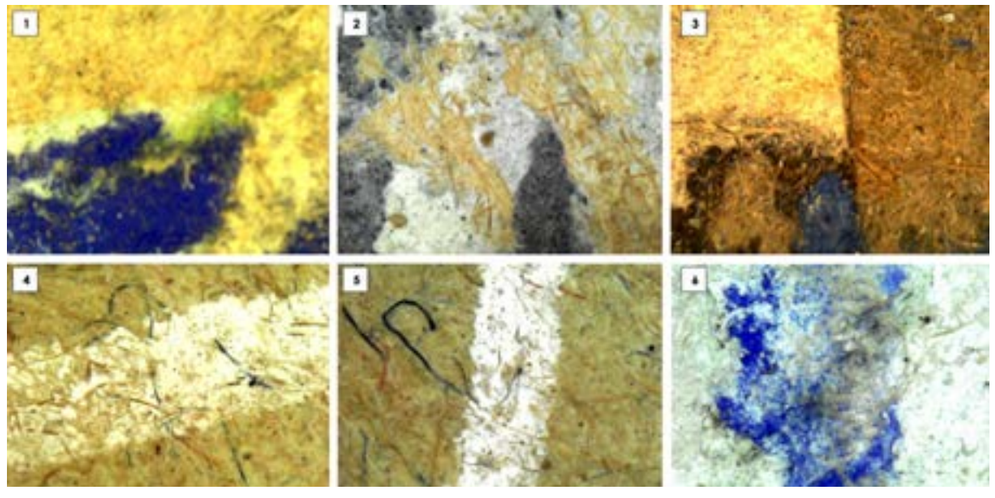


Figure 17: Indoor finish from an abandoned *hacienda* estate in Barraza (BARR01B) with various wallpaper layers. Right from bottom: the white first paper and blue second paper are printed and hand painted from approx. 1850-1930; the third must have been manufactured around 1950. The last is a thicker stamped wallpaper. Left top: whole sample with paper finishes and stratigraphic survey. Left center and bottom: section showing 5 mm of an earth and sand plaster (*enlucido*) and 30 mm of *enfoscado* with earth and fiber

Figure 18: 1000x microscopic images of wallpapers in the BAR01B sample, with fibers and mineral pigments agglutinated with aqueous polymer (Manuel Concha)



On interior walls, the use of wallpaper dates back to the early nineteenth century (Figs. 17 and 18). Wallpapers have evolved over time and their manufacturing period can be identified by the paper type and the technique applied. The oldest were made with plant fibers and could be printed and painted by hand. Industrially printed mixed-fiber papers (plant-based and synthetic) have been used since the 1950s.

Although all of these materials can still be used, since the second half of the twentieth century they have been largely replaced by cement, gypsum plasters, *pasta muro*, and synthetic paints. As to durability, there are layers of lime and pigments that are probably more than two centuries old over earthen plasters and which still adhere. In the stratigraphic survey of our samples, these layers were difficult to separate due to being quite firmly attached both to the earthen layer and to each other. Latex paints, by contrast, are often detached from the base and are easily removed (Fig. 19).

6. Conclusions

Coatings are designed to protect structures and to provide a good finish to walls, both inside and outside. In our samples a clear difference was observed between the first earthen layers and the finishing ones. Directly on the structure, these first layers of wallcovering have the function of evening out and smoothing the facing, providing a substrate for the finish. In all our case studies a layer of earth and plant fibers was found with a thickness range of 15 to 75 mm, with an average of 41 mm. Moreover, 85% of our samples had a thinner second layer of earth and sand with an average thickness of 5 mm. All our samples showed a decreasing thickness from the first layer containing fibers to the second layer containing sand. The first layer with earth and fibers is

Figure 19: Detachment of synthetic paint layers due to damp retained in the wall. Pathology found in a wall at the Corazón de Maria Convent in Ovalle in 2019

assumed to have better adhesion to the substrate (Lima and Faria 2016), and has the specific function of smoothing the wall and covering its imperfections, resulting in a surface with only small cracks. The sandy layer is designed to avoid any cracking and to provide a homogeneous substrate for thinner plasters or wallpapers.

The successive layers have the function of providing a finished and decorated surface, and in the case of exterior finishes, they need to protect against rainwater. On these layers different interior finishes were observed, with lime, gypsum, paint, and wallpaper, the latter being the most common (56%). On exteriors, paint, earthen pigment and lime were found, with lime plaster being the commonest finish (50%).

Coatings must also keep walls dry, protecting mainly against surface deterioration due to rainfall, as a skin enveloping the structure but allowing it to "perspire", releasing excess moisture from the interior. The covering materials compatible with earthen structures are therefore those permeable to water vapor, mechanically equal to or less resistant than their substrate and not liable to crack (Faria Rodrigues 2005). Good execution and selection of covering materials meeting these conditions is therefore vital. It should be noted that such coverings allow early detection of damp and seepage in walls, as moisture soon becomes visible on the surface and can be repaired before the structure is permanently damaged.

Traditional materials such as lime have coexisted since ancient times with earthen buildings. Lime layers applied over mud layers effectively protect walls and show good adhesion. The replacement (Minke 2005) of these materials with cement and synthetic paint is detrimental to the appropriate maintenance of earthen structures.

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We thank everyone who helped us carry out this project, particularly all the owners who allowed us to remove pieces of their historic buildings in Carén, Tulahuén, La Cisterna, Combarbalá, Ovalle, and Barraza. Thanks to Cristian Muñoz, Matilde Muñoz Rivera, and Manuel Cortés Marchante for their patience and company during field visits and the rest of the project. Manuel Concha (conservator-restorer), Sergio Peña (historian), and Cristian León (visual recorder) were also part of the project. Claudio Vega (construction engineer at La Ruta de la Tierra) took part as an external collaborator.

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[2] *Quincha* is a native Quechua term meaning "wall", normally used to describe an earth-and-wood building technique with wattle and daub used in the southern Andes.

[3] *Pasta muro* is the trade name of a local putty made of calcium carbonate and synthetic components, such as a blend of acrylic and vinyl additives.

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Biography | Biografía | Biografia

Patrícia Marchante

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Similarities and Divergences in Attitudes Toward Georgian Irish Heritage

Similitudes y diferencias en las actitudes hacia el patrimonio georgiano de Irlanda

Semelhanças e divergências de atitude face ao património Georgiano na Irlanda

Keywords | Palabras clave | Palavras chave

Colonial, Conservation, Legislation, Ireland, Dissonant heritage

Colonial, Conservación, Legislación, Irlanda, Patrimonio desacorde

Colonial, Conservação, Legislação, Irlanda, Património dissonante

Abstract | Resumen | Resumo

This paper makes a comparative analysis of the treatment of Georgian heritage in Northern Ireland (NI) and the Republic of Ireland (Éire). It assesses this treatment through a review of listing practices, lost houses, and the parallel evolution of planning policies along with the historical reasons for this, analyzing the nature of the drivers of and limits to the conservation of the Georgian buildings of Ireland. NI and Éire share most of the factors that led in the early twentieth century to significant heritage loss, and later to the creation of effective and inclusive conservation legislation. Our study shows that the political mindset in Éire is what has most discouraged listing and conservation, along with a lack of key legislation as passed in Great Britain but not in Ireland prior to partition, due to the political context.

En este artículo se hace un análisis comparativo del cuidado del patrimonio georgiano en Irlanda del Norte (NI) y en la República de Irlanda (Éire). Se valora dicho cuidado a través del estudio de las prácticas de protección, las casas abandonadas y la evolución paralela de las políticas urbanísticas junto con los motivos históricos para ello, mientras que se analiza la naturaleza de los factores y las limitaciones para la conservación de los edificios georgianos en Irlanda. Irlanda del Norte e Irlanda comparten la mayoría de los factores que, a principios del siglo XX, condujeron a una pérdida importante de patrimonio y, posteriormente, a la creación de una legislación sobre conservación inclusiva y eficaz. Nuestro estudio muestra que la mentalidad política en Irlanda es lo que más ha desincentivado la protección y conservación de este patrimonio, junto a la ausencia de una legislación eficaz como la que fue aprobada en Gran Bretaña pero no en Irlanda antes de la división debido al contexto político.

Este artigo faz uma análise comparativa do tratamento do património Georgiano na Irlanda do Norte (IN) e na República da Irlanda (Éire). Avalia este tratamento através de uma revisão das práticas de listagem, casas perdidas, e da evolução paralela das políticas de planeamento, juntamente com as razões históricas para tal, analisando a natureza dos fatores impulsionadores e dos limites da conservação dos edifícios Georgianos na Irlanda. IN e Éire partilham a maioria dos fatores que levaram no início do século XX a uma perda significativa do património, e mais tarde à criação de uma legislação de conservação eficaz e inclusiva. O nosso estudo mostra que a mentalidade política no Éire é o que mais desencorajou a listagem e a conservação, juntamente com a falta de legislação chave, como aquela que foi aprovada na Grã-Bretanha mas não na Irlanda antes da separação, devido ao contexto político.

Introduction

This study investigates the concept of dissonance in heritage by analyzing the value attached to colonial heritage in post-colonial contexts and the consequences of this for planning policy and conservation practices through a comparative analysis of attitudes to Georgian buildings and the evolution of conservation legislation in Northern Ireland (NI) and the Republic of Ireland (Éire), reflecting on the links between political complexity and ideology in planning legislation and heritage construction.

The views taken by postcolonial publics of colonial heritage and the relationships developed with it are varied. But some patterns may be identified regarding how such heritage may be experienced and treated by independent peoples and nationalist governments. At independence, the general view was often characterized by resentment, since colonial buildings and monuments often conveyed messages of hegemony, civilizing mission, and superiority – strong ideological themes aimed at the colonizers as much as at the colonized. This affirmation of dominance led to a hostility to these symbols of colonialism, recalling what the formerly colonized people see as suffering and a denial of their culture and identity.

"What is Irish is good; what is foreign is bad and therefore Fitzwilliam Street must go" (Ryan 1963, as cited in Parkinson et al. 2015: 208). Our hypothesis sets out from this quote, representative of the 1960s Irish attitude toward Georgian heritage in particular: that an antipathy toward British heritage is what caused its poor treatment, and that an absence of such antipathy toward this heritage may have created the opposite situation in NI.

The concept of dissonance in heritage may point us to the reasons for the adoption of particular planning policies and help us understand how political complexity and sociocultural and economic differences determine decision-making in different societies. Associations between buildings and ideas or memories could be central to establishing a conservation philosophy based on social values shaped by history and culture.

Methodology

Aim

Our aim is to apprehend the process by which colonial buildings are viewed as dissonant heritage and the relevance of this to planning legislation and conservation practice within a post-colonial context, exemplified by a comparison of attitudes to Georgian heritage in NI and Éire.

Objectives

Our methodology involves both quantitative and qualitative data, illustrating shifting perspectives in conservation practice:

- Assessing the treatment of Irish heritage

- Political issues rooted in sovereignties and the politico-religious divide, particularly in NI
- Parallel comparison of the evolution of planning policy in NI and Éire, and the reasons for this
- The current situation of heritage listing and protection in the two Irelands

First we quantify listed Georgian buildings in both Éire and NI, highlighting listing patterns and tendencies through the numbers of listed buildings by period of construction along with potential biases in conservation practice in the two Irelands, with reference also to ruined or demolished country houses. The Georgian period considered here is 1714-1830, although precise figures about heritage are difficult to obtain for NI due to a lack of data (Officer in Communities NI 2019). Our second part reviews relevant literature and conservation legislation so as to identify the underlying reasons for conservation efforts or for neglect leading to demolition. We review planning policy documents in order to get an insight into the change in Irish perceptions of heritage, in parallel to historical events and changing political and economic situations. Finally we assess how colonial heritage has been treated, so as to detect drivers of and limits to heritage conservation.

Figure 1. Listed buildings in Éire by period

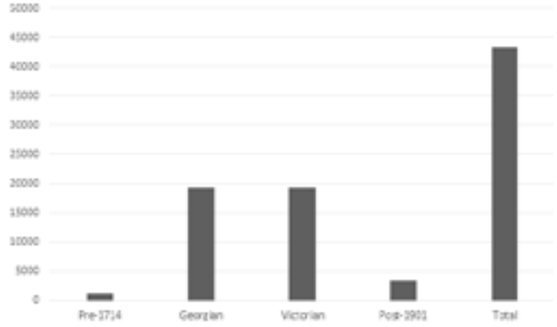
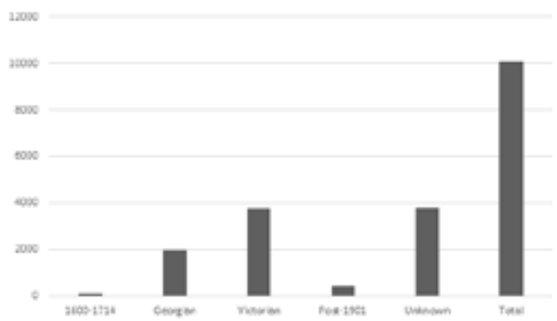


Figure 2. Present situation of listed buildings in NI by period



Initial Data

Listed Buildings

According to the databases of listed heritage in Éire (Fig. 1) and NI (Fig. 2), the vast majority of listed buildings are of the Georgian and Victorian periods.

Ruined or Demolished Country Houses

The data for ruined or demolished country houses come from the "Lost Ireland" project, recording historic country houses that have been spoiled over the years, with details of the cause and their present condition. These data are in turn based on *Vanishing Country Houses of Ireland* by Knight of Glin (David Griffin et al.), supplemented with other sources.

In Éire, some 624 country houses have been lost for multiple reasons, some unknown:

- About 250, i.e. nearly half, were burned in 1919–1923 by the Irish Republican Army due to their symbolic associations, and never restored
- A number were demolished for redevelopment

Figure 3. Reasons for the loss of Irish country houses

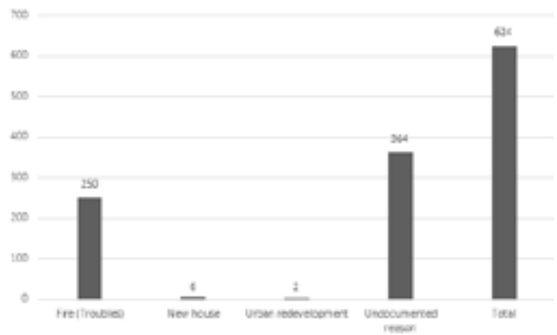


Figure 4. Present condition of country houses in Éire

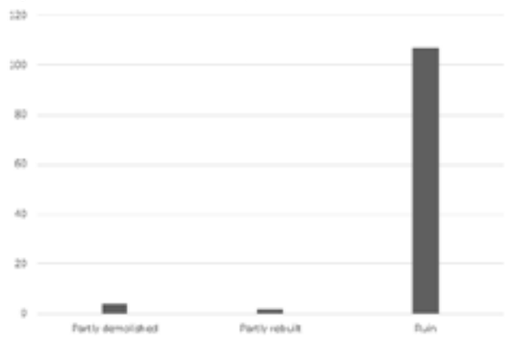


Figure 5. Reasons for losses of country houses in NI

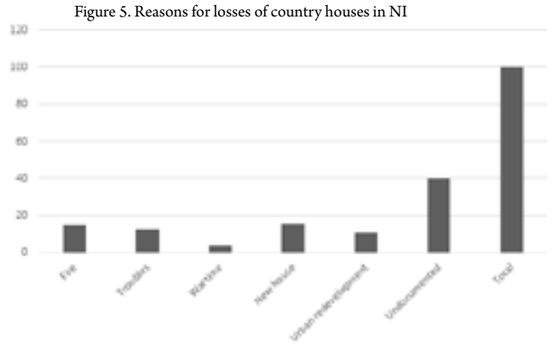


Figure 6. Present condition of country houses in NI

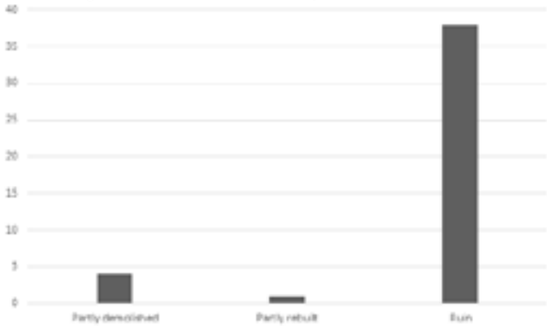
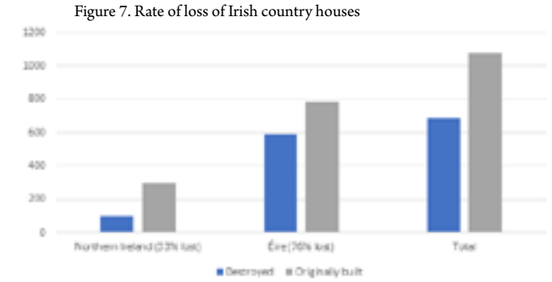


Figure 7. Rate of loss of Irish country houses



Most damaged or abandoned country houses remained as ruins or empty shells and were not redeveloped. A small proportion were partly rebuilt or wholly restored to some version of their original state.

In NI, some 100 country houses have been lost – a difference due partly to the smaller size of NI as compared to Éire, but the rate of loss is also less than half that in Éire.

Discussion

Early Conservation in Britain and Ireland

Before partition, Irish concern for conservation materialized in the Irish Church Act (1869), a starting point for the conservation of disused churches by classifying them as National Monuments. This act also had the tacit aim of weakening the Church in Ireland by transferring control from religious institutions to the secular state. Later came the Ancient Monuments Protection Act (1882), empowering the state to purchase monuments by putting them into guardianship. A first list of Scheduled Monuments was made including 50 ancient ones, all prehistoric structures, as the act did not cover Roman or medieval heritage. These two acts are seen as decisive stages in the evolution of conservation practice in the UK.

In 1908 a divide emerged between Great Britain and Ireland as the Royal Commissions on Ancient and Historic Monuments were established to promote an understanding of archaeological, built, and maritime heritage, providing authoritative information to decision-makers on conservation matters (Royal Commission of Wales). No such commission was created in Ireland, and this was to impact on post-partition conservation (Fry 2003 and McClelland 2017). The Ancient Monuments Consolidation Act (1913), allowing protection to be enforced over scheduled monuments' owners and introducing fines for infringements was likewise not applicable in Ireland. Consequently at the time of partition there was a legislative disparity, which was carried over to NI and Éire after partition.

Post-Partition Conservation Legislation

As of 1922, planning and conservation were delegated by Westminster to the NI Stormont administration, and its first post-partition legislation was the Ancient Monuments Act (1926), giving the NI government conservation powers similar to those in 1913 British act and creating a statutory body: the Ancient Monuments Advisory Committee – later "Council". This had members with a range of experience in archaeology and preservation of structures of historical or cultural value.

From 1921 to 1976 the Ministry of Finance, as senior government department, managed ancient monuments and was responsible for various units offering related public services: Land Valuation, Registry of Deeds, Ordnance Survey, etc. The result of this arrangement was a general inefficiency (Fry 2003), since although the minister was officially responsible for heritage protection, there was no clear attribution of responsibilities within the ministry itself nor any officially appointed staff to deal with these matters. According to Fry (2003) they were managed by the Work Division (or Branch), as the most closely related

Figure 8. The four historic regions of Ireland

department. Yet the Division lacked the required staff and funds and was a large organization with many tasks – a situation that hindered NI conservation practice, which after 1922 continued to rely on the deficient pre-partition heritage upkeep system.

However, at Stormont there was more interest than in Éire in preserving heritage, albeit hindered by adverse political and economic conditions, understaffing, and weak organization of NI conservation mechanisms, despite their early establishment. Indeed, NI legislation assumed a need for exterior funding, unavailable after partition. The legislation also gave no conservation responsibilities to local authorities, which were therefore not bound by law to act. For this reason the Finance Ministry kept accepting new monuments into its care, as no other body legally had to or could do so. To increase revenue, Westminster sought to shift conservation funding from taxpayers to ratepayers, but as none of these were keen on becoming the owners of monuments in view of the cost of their preservation, the move was unsuccessful. Thus everyone disclaimed responsibility.

The source of the NI legislative weakness was Westminster's disinterest in Irish matters as of the 1900s, as the prospect of Ireland becoming separate did not encourage lawmaking. One aspect of this early British disengagement was the creation of a Royal Commission for Ancient Monuments in England, Scotland, and Wales, but not in Ireland. This is seen as a key step in the improvement of conservation practice in Britain (Fry 2003 and McClelland 2017). Consequently neither NI nor Éire benefitted from a finance plan as required for conservation. Only in 1950 was the Archaeological Survey created, responsible for making an inventory of NI ancient monuments in what was the first attempt at having protected buildings cataloged by a professional body, prior to which there had been only voluntary initiatives. Today their work is part of the NI Historic Buildings Record.

Likewise, after independence, Éire struggled with economic stagnation due to national reorganization and a shortage of capital. This resulted in a "benign neglect" (Negussie 2003: 18) of Irish urban landscapes, with limited planning developments. Buildings remained legally unprotected and the first post-partition Monuments Act came into effect only in 1954 and with limitations, excluding occupied housing and religious buildings in use. Additionally, it protected pre-1700 structures only, excluding buildings of British styles in what may be seen as a move against colonial heritage, as Georgian and Victorian buildings were perceived as a testimony of a resented history (Negussie 2003). This act can therefore be regarded as an add-on to the 1882 Ancient Monuments Act.

Such non-inclusive legislation resulted in political inaction. The 1913 British act detailed funding for conservation, enabling the government to allocate money, but the introduction of such a system in NI after partition would have required legislative gymnastics and "no one in Stormont nor Westminster considered the move possible" (Fry 2003: 169).

In response to the poor condition of heritage in NI, after the war the Ancient Monuments Advisory Council appealed to the ministry for more government involvement. But the government had merged the budgets for conservation and construction and most funds went to redevelopment, as reconstruction was urgent. The lack of funds was also often due to misappraisals of the budgets needed for conservation projects, due to a skill shortage (Fry 2005); while England had a staff of 500 inspectors of ancient monuments after WWII, NI had ten. The imperial contribution (catering for colonial troops that fought in World War I) was another issue (Fry 2005) that was resolved only in the mid-1930s, forcing the country to fund housing and social care rather than conservation. The Westminster Labour government's solution to this was to redistribute tax revenue, whereas previously NI had had only NI tax income. With better funding it was able to initiate conservation projects, albeit focused only on ancient monuments and excluding legally occupied structures, whereas in Britain the amendments to the 1913 act extended protection to occupied buildings. So both practical and financial issues impacted conservation practice and heritage was not a priority.

The Voluntary Sector's Response

As little imminent threat was posed to Irish heritage at the time, there was little public awareness of conservation matters. Early voluntary mobilization included members of the Anglo-Irish elite sympathetic to their British heritage. In Éire in 1948 the National Trust for Ireland – An Taisce – was founded as "an independent charitable voice for the environment and for heritage issues" (An Taisce 2019), although it focused chiefly on the natural environment until built heritage started to be threatened (Negussie 2003). Ten years later the Irish Georgian Society was created, focusing first on Georgian country houses and then on more urban heritage. Thus the early attempts at saving historic buildings in Éire came from civil society associations seeking to make up for the absence of effective statutory protection (Parkinson, Scott and Redmond 2015). The state's small share in ownership of heritage buildings and its reluctance to own more buildings "led to attempts to create independent property-owning trusts to safeguard great historic buildings of national importance on behalf of the public" (Negussie 2006: 1820). One issue with such groups, however, was their focus on certain types of heritage and not on others, with funds being directed accordingly (Sengupta 2008). Even so, their practice of restoration could be effective (Figs. 9 - 12).

The Role of the State

Meanwhile, heritage conservation took a turn for the worse in Éire. In the 1960s the country received foreign investments resulting in new urban developments, and a combination of the need for cleared sites and the latent negative perception of the Georgian buildings forming a significant part of urban centers along with weak planning regulations led to a series of demolitions for redevelopment. A first attempt at regulation was the Planning and Development Act (1963), which set out general conservation concepts but lacked practical guidance as "there was nothing in the act that defined what you meant by preservation" (Planner 1 2000, as cited in Negussie 2003: 19).

Concurrently, amid government changes, legislative action was initiated as of 1963 in NI to catch up with Britain, and there was considerable progress between the 1926 and the 1971 Planning Acts. But this legislation remained ineffective due to the authorities' lack of commitment and to its not echoing the voluntary sector's concerns. Frustrated by a lack of reciprocity, and despite the O'Neill government's efforts, in 1972 Westminster ordered the dissolution of the NI Parliament and proclaimed Direct Rule, deeming the collaboration of the Stormont government unsatisfactory.

As in NI, Éire's listing system languished for decades due to factors such as a lack of guidance in development plans, understaffing, and a lack of conservation expertise. For a long time conservation policies overlooked the interiors of historic buildings and the vague definition of conservation powers left Irish heritage in constant danger of alteration, damage, and demolition.

Exemplary of the complex Irish situation were the country houses erected across Ireland, usually by members of the Anglo-Irish elite. These represented wealth and power and were negatively viewed by most Irish nationalists, leading many such houses to be targeted in the Troubles. Attempts at restoring them often sparked a social uproar. Moreover, a weak conception of the "public good", seen as secondary to the principle of property rights, resulted in high levels of owner-occupancy and low public ownership of buildings, and a state of political paralysis.

Éire also appears to have had an inefficient distribution of responsibilities across the various levels of government resulting in slow progress in conservation policy, partly to be explained by the colonial label attached to its heritage (Negussie 2006). It is in these changing economic and urban contexts that the National Institute for Physical Planning and Construction Research was set up in 1964 to manage planning at state level, although it is considered to have had little positive effect on heritage (Negussie 2003).


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Figure 9. Demolition of Georgian townhouses in Mountjoy Square, Dublin (RTÉ Archives)

Figure 10. Fitzwilliam Street Lower, looking south-east from the corner of Merrion Square (Irish Architectural Archives)

Figure 11. Fitzwilliam Street Lower E.S.B. Head Office (Irish Architectural Archives)

The 1960s saw an ever greater loss of Georgian buildings in Éire, arousing public concern. Bodies such as An Taisce and the IGS took on the role of watchdogs (Negussie 2003: 18), monitoring planning applications and physically mobilizing against demolitions. Some changes to conservation and planning policies were achieved through these actions, with the introduction of protection for interiors. But the number of statutorily protected buildings remained low, partly because the Irish state was concerned about the legal battles it could face in the event of large-scale listing of private townhouses within an ethos of priority for property rights (Negussie 2003). The safeguarding of Irish heritage thus rested mainly with the voluntary sector through the organization of trusts and associations of students and professionals.

Voluntary actors played a non-negligible role in resisting the demolition of Georgian buildings, "providing building inventories, restoration and management of heritage property, monitoring of planning applications and lobbying for policy and legislative reform" (Negussie 2006: 1813). Although most redevelopment plans went ahead and many Georgian buildings were knocked down in cities, voluntary bodies succeeded in raising conservation awareness in civil society (Negussie 2003). Moreover, the economic stagnation of the 1970s positively impacted Irish heritage by bringing a halt to redevelopments, except for transportation projects, although the government continued to prefer renewal to conservation.

Figure 12. Victorian houses demolished in Belfast at 95-107 North Street (*Belfast Telegraph* 2016)

Figure 13. Site of the demolition of the previous houses before they could be listed, in 2016 (*Belfast Telegraph*)

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The Wind of Change

Significant legislative progress was made with the National Monuments Acts of 1987, giving the state more powers to protect historic buildings. This protection was extended to post-1700 structures, representing a new approach (Negussie 2003). Student associations also formed new movements in support of Georgian heritage, mainly in Dublin, such as Students Against the Destruction of Dublin. Likewise, north of the border, a series of Planning Acts including conservation provisions were enacted during Direct Rule.

In the 1990s, more effective conservation policies were put into place, principally due to pressures from the EU, for on signing the Granada Convention in 1997, Éire had to review its legislative and administrative measures for the protection of built heritage. In return the EU provided funding for conservation-led urban regeneration.

Éire's heritage conservation legislation was thus improved, and in 1998 a new urban renewal plan was issued with specific planning guidelines, new decision-making procedures, and more power for local authorities to regulate conservation with a more democratic approach to planning.

Similarly, with Direct Rule, conservation policy finally progressed in NI. As of 1974 the "listed building" label was introduced, stemming from the earlier loss of historic buildings through redevelopment or damage linked to the Troubles (McClelland 2017). But Irish conservation philosophy has remained different from that in the UK, as conservation areas are not yet strongholds, listing focuses on individual structures, and planning permissions are still granted for renewal of assets – in both NI and Éire.

Dissonant Heritage

In the framework provided by Tunbridge & Ashworth (1996), and with a comparative reading of NI and Éire conservation history, Ireland is an interesting example of dissonance with colonial heritage due to the associated memories (Parkinson et al. 2015). It is also an example of issues in the transmission of heritage (Tunbridge and Ashworth 1996), with many Irish actors being alienated by the character and design of cities such as Dublin and desiring their redevelopment, while in NI other factors (albeit sometimes similar) prevented the establishment of good conservation practice despite good intentions. This shows that, beyond dissonant feelings for any particular legacy, it is ultimately the law that determines the fate of heritage; strong conservation legislation can protect it from those inclined not to, and good intentions alone, whether in institutions or civil society, cannot substitute for this. The transmission issues in the Irish case are similar to those in other decolonized contexts, such as in the Caribbean, where certain heritage assets such as slave plantations and mills were abandoned and not treated as heritage or used for tourism.

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The Irish example also highlights that some elements often relevant in colonial remembrance, such as race, language, geography, and culture, are not prerequisites for dissonant feeling, although the Irish case, by opposing notions such as "Irish" and "British", "Celtic" and "Anglo-Saxon", and "Catholic" and "Protestant", does involve religious and potentially ethnic differences, the latter historically even preventing the Irish from being considered as "White". This shows that heritage is strongly associated with national identity, which itself transcends ethnic, religious, linguistic, and racial boundaries, as also seen in Russia and Ukraine. It shows that the building of national identity is a complex process that can take place even after centuries of foreign domination and regardless of how short the geographic distance is between colonizer and colonized.

Finally, Belfast and other NI cities continue to be the theater of political grievances through heritage appropriation, particularly with the use of highly symbolic mural paintings and shrines to fallen fighters. These "land holdings", as can be seen on the Falls Road, are identifiable with other cases of conflict where physical presence on the ground is key to the struggle, such as between Palestine and Israel, or in the Basque Country vis-à-vis the French and Spanish governments, or in Cuba vis-à-vis American expansionism.

Matrix for Assessing the Treatment of Colonial Heritage in Ireland

In keeping with our research and the various aspects of Irish heritage studied, the following matrix sums up the historical drivers of and limits to the appreciation and conservation of colonial heritage in the two parts of Ireland.

Table 1–Assessment matrix. Author's work.

Figure 14. Nationalist mural painting by Ardoyne Avenue (Extramural Activity)

Figure 15. Loyalist painting in Belfast (Liam McBurney/PA Wire)

Figure 16. Garden of Remembrance (Stock Photo)

Figure 17. Mural paintings on the Falls Road, Belfast(Rossographer)

Indicator		Northern Ireland	Éire	Comparison
Nature of limits to heritage conservation	Psychological (refusal of heritage, not listed or protected)	x	v	Different
	Practical (lack of material means or knowhow)	v	v	Similar
Nature of causes of heritage losses	Voluntary (replacements)	v	v	Similar
	Accidental (attacks, fires, war damage)	v	v	Similar
Alterations	Optional	v	v	Similar
	Compulsory	x	x	Similar
Nature of the drivers for heritage conservation	Economic (tourism)	v	v	Similar
	Identity-related	v	x	Different
Source of stronger policies and legislation	Supra-national (foreign)	v	v	Similar
	National (own)	v	x	Different
State responsiveness to the voluntary sector	Low	v	v	Similar
	High	x	x	Similar
Were heritage losses related to inefficiency of legislation?	Yes	v	v	Similar
	No	x	x	Similar

Table 1: Assessment matrix.

Conclusion

The evolution of conservation practice in NI and Éire has been mainly determined by the legislation framing conservation practice, passed in the early twentieth century in Britain but not in Ireland.

The two Irelands show similarities in their heritage situation, with a comparable evolution and ineffective legislation that failed to protect built heritage at partition in 1922. The complexity of the antagonized political context created an unfavorable climate for democratic processes of decision-making and heritage management by governments and local authorities. Yet both Irelands benefited from active involvement by the voluntary sector, which mobilized early in defense of Anglo-Irish heritage. But these groups did not receive significant reciprocity from the government and so legislative weakness allowed similar situations to develop in Éire and NI, with opposition to the preservation of colonial heritage from nationalists conflicting with a mobilization of Anglo-Irish and loyalist communities wishing to celebrate it. The voluntary sector's involvement appears to have had marginal effects, lacking the organization and distribution of responsibilities, expertise, funding, and professional input needed to ensure effective conservation. This situation was exacerbated by socioeconomic aspects: underfunding, understaffing, and urban redevelopment.

But the two Irelands also shared drivers of engagement in heritage conservation, and both were prompted by external factors to provide stronger conservation legislation. In NI, despite Stormont's will to engage in heritage conservation, it was political instability and Direct Rule from Westminster as of 1972 that led to a stronger framework. In Éire, although there were some legislative advances, it was in the 1990s, with the Good Friday Agreement and EU investments into Éire with requirements attached for standardization of planning and conservation legislation, that the country truly engaged in inclusive conservation practice.

In conclusion, though psychological motivation played a role in the demolitions of Georgian buildings, as borne out by the damage being greater in Éire than in NI, indicating a link between heritage resentment and destruction, this was made possible by two circumstances: the absence of protective legislation, and rapidly growing economies triggering heritage destruction, encouraged by certain political stances in Éire. The reconciliation of the nations and peoples involved in the construction of their shared heritage could be the key to its protection and celebration.

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Biography | Biografía | Biografia

Samir Belgacem

Samir is a PhD candidate in Heritage Conservation Studies at the Department of Archaeology of the University of York, England. His professional practice has been focused on architectural and urban developments as part of the historic evolution of cities and other places, and his research interests focus on the establishment of heritage conservation practice based on the values of civil society in Algeria. He is a licentiate member of the Royal Town Planning Institute, and a student member of ICOMOS. For his MSc at the University of Dundee he was awarded the Town and Country Planning (Scotland) Prize on getting the best overall marks in the MSc Spatial Planning programs, and he received the Global Excellence Scholarship Award for his architecture studies in Blida, Algeria.

Book Reviews
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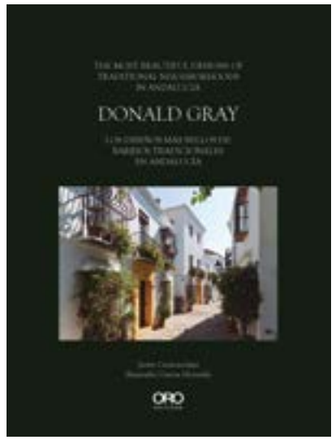


Donald Gray: The Architecture of Ecology, Civility and Beauty

Donald Gray: La arquitectura de la ecología, del civismo y de la belleza

Donald Gray: A arquitetura da ecologia, civismo e beleza

Michael Lykoudis

At first glance this monograph on the work of Donald is a beautiful book on his magnificent architecture and urbanism. Its photographs in lush color, accompanied with plans, elevations, details and perspectives all bring a multi-dimensional description of this extraordinary architect's work. As one peruses the pages, it becomes obvious that aside from the first impression, this a textbook for anyone, but especially for architects, to understand the inextricable relationship between architecture and urbanism, typology and character, the monumental and the vernacular. That all of the work is set in Andalusia, Donald Gray's adopted home, is also a portal into understanding how a regional architecture alludes to the universal language of cities, villages, hamlets and their buildings.

The section illustrating urban and architectural projects is loosely organized in accordance with a rubric that allows the reader to unfold and understand a design process that concludes with a rational, resilient, accessible and beautiful place for a community of people to flourish. Each project begins with aerial photographs of the villages giving a comprehensive overview of streets, squares and blocks, building types and the walls, openings and roofs that give character and identity to each project. The aerial views are followed by photographs and drawings that explore the streets, the individual buildings and finally the details that include floor patterns, ironwork, masonry, carpentry and all of the crafts that provide a sense of place and purpose.

Donald Gray in his work has posited the best critique of the modern suburban model by presenting to us an alternative that has been with humanity for centuries and continues to be relevant as it addresses the critical ecological and social issues of our time. Each village and building is an essay in ecology. The principle of durability conserves the energy expended for its construction for generations, its urban form facilitates community and protects the social contract between its denizens with a clear definition of the public and private realms. The materials and methods that shape the architecture and the built environment are local and reflect an adaptation of the collective accumulated wisdom through to the regional climate and culture of the place.

Of particular note is the subtle and nuanced diversity of urban forms that through the architecture are given a unity of character through the tectonic character defined by the buildings' walls, openings and roofs. Throughout the pages one can explore the particular language of each project by observing the means of construction at the level of detail. The spans over windows and doors, columns, pilasters and eaves combine to give the reader a comprehensive understanding of what an integrated approach to the making of habitat can be in the modern world. The regional character is a universal lesson for us all in making each place on the planet more adapted to its climate and local resources using the principles of conservation and investment as compared to the modern cult of consumption and waste.

This monograph by Javier Cenicacelaya and Alejandro Garcia Hermida is a significant contribution to the architectural literature required to understand how humanity can continue to flourish and maintain what is human about our culture. In an age of domination by a techno-utopian monoculture, the lessons from this book provide a powerful antidote to the unsustainable and tragic contemporary planning and building practices that have brought us to the brink of climatic upheaval.

Javier Cenicacelaya, Alejandro García Hermida
Donald Gray: The Most Beautiful Designs of Traditional Neighborhoods in Andalucia
ORO Editions, 2022

Recovery of a material, of several trades, and of untold heritage

La recuperación de un material, de varios oficios y de innumerable patrimonio

A recuperação de um material, de vários ofícios e de um património inumerável

Alfonso Muñoz Cosme

El yeso es un material omnipresente en nuestras construcciones históricas y como tal ha formado parte de nuestro patrimonio arquitectónico: desde los revestimientos de estuco a las yeserías, desde los cielos rasos a las bóvedas encamonadas y desde los elementos estructurales a los pavimentos.

Pese a que el yeso es muy importante en la construcción actual, se trata de un material cuyo oficio se ha visto injustamente olvidado en tiempos recientes. Pocos libros se han ocupado de él, con dos notables excepciones: la obra *Artes de los yesos: yeserías y estucos*, publicado en el año 1999 por Ignacio Gárate Rojas, y el *Manual del yeso*, publicado dos años después por Luis de Villanueva Domínguez y Alfonso García Santos.

El libro *El yeso en la arquitectura histórica*, editado por David Sanz y Alberto Sepulcre, se ha propuesto llenar esa relativa ausencia en nuestra bibliografía contemporánea. Ofrece para ello diversas perspectivas sobre la utilización del yeso, con aportaciones realizadas por especialistas en la materia.

En la primera parte diversos autores nos aproximan al origen, a la naturaleza y a las propiedades del material. Se narra cómo se encuentra el yeso en la naturaleza, cómo se extrae y cómo se transforma para poder ser utilizado. También expone las propiedades que adquiere durante estos procesos y su durabilidad.

La segunda parte del libro aborda diversas cuestiones de la construcción en yeso, para lo que cuenta con la visión experta de grandes conservadores de nuestra arquitectura histórica, como Antonio Almagro, Fernando Vegas o Camilla Mileto, entre otros. El estudio de la utilización del yeso en la arquitectura histórica islámica, cristiana y tradicional, en general, se complementa con sus aplicaciones en revestimientos exteriores, elementos estructurales y pavimentos.

El yeso en la decoración, desde un punto de vista eminentemente práctico, es el tema de la tercera parte del libro. En ella se tratan desde las yeserías y los mocárabes hasta los estucos, las cornisas y los techos de escayola. También hay una parte dedicada a la conservación y a la restauración desde dos puntos de vista complementarios: la restauración de la arquitectura del yeso y la conservación de su paisaje cultural.

La última parte de esta publicación incluye ejemplos de utilización del yeso en la conservación de la arquitectura histórica, con la exposición de cuatro obras sobresalientes: el Real Alcázar de Sevilla, el Monasterio de El Paular, en Rascafría, Madrid, la Alhambra de Granada y la localidad turolense de Albarracín. Numerosas fotografías en color acompañan a los textos y una bibliografía al final de cada capítulo permite una posterior profundización. Un glosario de términos específicos completa este volumen.

En su conjunto, este libro ofrece una visión extensa, completa y experta sobre las características del yeso, sobre su presencia en la arquitectura histórica y sobre su conservación, restauración y mantenimiento. Es una aportación muy necesaria para entender mejor nuestra arquitectura histórica, para mantener los oficios del yeso y para conservar y disfrutar de una parte muy importante de nuestro patrimonio cultural.

David Sanz Arauz, Alberto Sepulcre Aguilar (eds.)
El yeso en la arquitectura histórica
Universidad Politécnica de Madrid, 2022

Documenting the Architecture of Ramses Wissa Wassef: The Case for the Vernacular

Documentación de la arquitectura de Ramses Wissa Wassef: A favor de lo vernáculo

Documentação da arquitetura de Ramses Wissa Wassef: Um caso a favor do vernáculo

Daniel Ayad

Since the 2011 revolution in Egypt and the political upheaval which ensued, the urban landscape of major Egyptian metropolises – Cairo in particular – has seen rampant building activity characterized by an increase in informal settlements on the one hand, and major government-sponsored infrastructure projects on the other.

While this phenomenon has been the subject of scholarly analysis, such as in the publications of David Sims or Diane Singerman, the attendant near-systematic demolition of twentieth-century architectural production has only recently received the attention of archivists, documenting and highlighting buildings whose fate has come to rest with the backhoe operator.

The recent volume on the work of Ramses Wissa Wassef (1911-1974) by Conchita Añorve-Tschirgi and Ehsan Abushadi seeks to supplement these records, presenting for the first time in a cohesive manner the complete works of the late twentieth-century Egyptian architect who, alongside Hassan Fathy, albeit lacking the latter's international acclaim and readership, was a major proponent of reintroducing vernacular Egyptian architecture and its characteristic mudbrick and domed vaulting techniques in the building program of modern Egypt: a newly independent state in search of its own architectural language.

Conchita Añorve-Tschirgi, Ehsan Abushadi
The Architecture of Ramses Wissa Wassef
AUC Press, 2020

Regarding Earth, Architecture, and Archaeology

Sobre tierra, arquitectura y arqueología

Sobre a terra, arquitetura e arqueologia

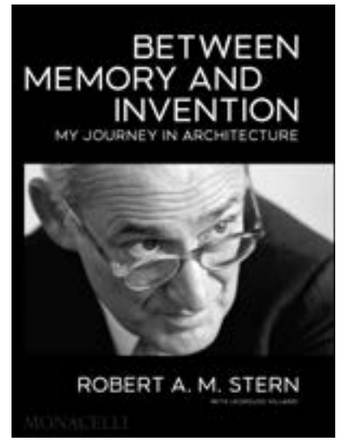
Luis Miguel Carranza Peco

La tierra como material de construcción ha sido utilizada desde que el ser humano comenzó a establecerse en el territorio de forma más o menos estable. Su versatilidad, su disponibilidad y su coste han contribuido a que continúe siendo una de las opciones más utilizadas en el presente y que por ello conforme gran parte de la arquitectura tradicional, aunque manteniendo sus peculiaridades edilicias dentro de cada contexto cultural presente y pasado.

Mientras que campos como la restauración, la bioconstrucción o la etnografía presentan avances significativos, dentro de las investigaciones arqueológicas resultan escasos los trabajos encaminados al análisis arquitectónico. La obra aquí expuesta llama la atención sobre algunas deficiencias de la historiografía española, entre las que destacan la falta de consenso terminológico, la descompensación en las zonas de estudio y la inexistencia de una metodología de trabajo clara. Estas circunstancias han provocado una pérdida de información ingente en los yacimientos, puesto que se han obviado parte de los elementos constructivos o se han documentado de manera incorrecta.

La autora presenta un necesario estado de la cuestión y pasa luego a describir y analizar conceptos y procesos tecnológicos que ayudarán a la comunicación entre especialistas. Aunque el libro ofrece herramientas para el estudio de la arquitectura de tierra en contextos arqueológicos, también mantiene una perspectiva antropológica. Gran parte de la obra está dedicada a analizar la arquitectura vernácula, tanto histórica como actual, las técnicas y los materiales utilizados en ella y los problemas existentes en torno al patrimonio construido en tierra, así como sus implicaciones sociales. Por estos motivos, la autora desarrolla un trabajo en conexión con el presente estado de la arquitectura. Este enfoque, en el que convergen arqueología y arquitectura tradicional, resulta habitual en territorio americano, pero novedoso y prometedor en la Península Ibérica. Impulsa una línea que amplía el conocimiento histórico a partir de la información que nos aporta el estudio científico de la arquitectura.

María Pastor Quiles
La construcción con tierra en arqueología. Teoría, método, técnicas y aplicación
Publicacions Universitat d'Alacant, 2021



Living Proof That There Is No More Solid Foundation for Architecture Than Precedent

No hay cimientos más sólidos para la arquitectura que los ofrecidos por los precedentes: Una evidencia viva

A prova viva de que não existem alicerces mais sólidos para a arquitetura do que os precedentes

Alejandro García Hermida

This book presents a personal path in architecture, full of lessons for any architect or lover of architecture. It tells the story of one of the world's most prolific and eclectic architectural practices, along with the people, ideas, travels, books and, above all, buildings that have informed one of the most independent and well-grounded voices in contemporary architecture.

The journey takes the reader through a series of critical moments in recent architectural history: the latter years of early Modernism and its late attempts to reinvent itself; the emergence, diversification, and final decline of the Postmodern style; and the rise and growth of Modern Traditionalism, in which Robert A.M. Stern found his own path. This, as explained in the text, is not a "nostalgic return to the past" but a quest to enrich contemporary architecture and make it more meaningful by accepting that it, "like every other form of learning, is based on preceding models – and that each generation of architects should not be expected to reinvent the discipline" (252).

The places frequented in this tour through several decades are various cities, suburbs, universities (most notably Yale), Disney developments, and above all New York. This city takes center stage to the point that its evolution seems to accompany that of RAMSA's practice. As for the companions on the trip, they could hardly be more appealing: Paul Rudolph, Philip Johnson, Vincent Scully, Robert Venturi, Léon Krier, Demetri Porphyrios… Their teachings, characters, influence, methods, and ideas are glimpsed along the way, often accompanied by amusing anecdotes.

On page after page, a deep and infectious passion for architecture is generously shared – the kind of passion sorely needed in the profession today.

Robert A. M. Stern with Leopoldo Villardi
Between Memory and Invention: My Journey in Architecture
The Monacelli Press, 2022

It is high time for Europeans to return to their time-tested models of urbanism

Es hora de que los europeos vuelvan a sus modelos probados de urbanismo

É mais que tempo de os Europeus regressarem aos seus modelos de urbanismo comprovados pelo tempo

Stefanos Polyzoides

Climate change is caused primarily by random urban development. European political and architectural elites have not yet come to grips with the negative effects of the post-war urban growth of continental cities based on the bankrupt ideas of CIAM Urbanism. This auto-oriented *Slaburbia*, as the Swedes are fond of calling it, is still marching along triumphantly in almost every country. Consuming urban, suburban and exurban land with highways, fragmentary subdivisions and random, oversized architectural projects that entirely deny the millennial European model of place-specific urban development in favor of an urbanism of nowhere. The social, economic and environmental consequences of this fateful design choice have been, and continue to be, catastrophic.

Few architects have been willing to pin the responsibility for class segregation, economic and fiscal decline and global warming on their country's bankrupt model of urban growth. Ettore Mazzola, an architect/urbanist based in Rome, is a notable example of a voice that has dared speak out. He has dedicated his practice and his teaching at the University of Notre Dame program in Rome to exposing the failure of the hermetic, mega-structural housing projects of the late 20th century, and to charting a design alternative to them. His recent book *Urban Regeneration* documents his opposition to the process that promoted these abhorrent modernist nightmares. It exposes the confluence of top-down state planning, precedent-free, tech-based design, state-imposed social policy and industrial-scale production that continue to make them possible. Finally, he proposes an alternative, evidence-based method for approaching the design of cities and illustrates it with two counterprojects, for the Corviale in Rome and for the ZEN in Palermo.

While the musings of the first part of the book do not amount to a coherent theory of urban regeneration, his two projects are a brilliant illustration of the merits of a new, place-based traditional architecture and urbanism. Mazzola advocates a return to the design of housing as a prominent ingredient of use-integrated, human-scaled, walkable, compact, diverse and permanent cities. Solidly based on both Italian pre-modernist precedents and recent American new urbanist theories, his urban development strategy is especially relevant and notable in the European context. In large part, because of the ideological clarity and the design character and quality of his work. The two projects follow a bottom-up design process that is community-generated and community-run. Their implementation is to be incremental, based on precise financial calculations and private-public partnerships. They are to be realized through an open-ended, phased development process of twenty-plus years, that involves the contributions of many developers and their architects.

Their form is unique and particular by virtue of the climate and culture specificity of their design. No details go unaddressed: The typology and network of streets, the aggregate figure of public and private space, the choice and distribution of many traditional housing types, the appropriate location and special architecture of civic and religious monuments. The final urban form of the new Corviale and ZEN are radically different from what current Italian and European conventional practice would produce. They propose not only a new kind of place for generous living, but a return to a society in peace with itself, in better balance with nature, with a local cooperative economy and a civic realm that inspires participation in forging the common good. The drawings are comprehensive and beautiful.

It is high time that we start thinking about the rebuilding of European cities along these lines.

Ettore Maria Mazzola
Urban Regeneration
Vertigo Edizioni, 2021

Timeless Architecture: A Look at the Richness of Traditional Building in Iberia

Arquitectura atemporal: Una mirada a la riqueza de la construcción tradicional ibérica

Arquitetura atemporal: Um olhar sobre a riqueza da construção tradicional Ibérica

Laura Miguel Baumann

Entre junio y octubre de 2021 las personas que se acercaron al espacio expositivo de CentroCentro, en Madrid, tuvieron la suerte de presenciar una exposición extraordinaria sobre los oficios tradicionales de las construcción, caracterizados por una serie de valores a menudo olvidados del patrimonio urbano y cultural ibérico.

Se trataba de un recorrido que partía de los materiales más básicos que nos proporciona la tierra y mostraba cómo éstos se transforman gracias a las expertas manos artesanas por medio de herramientas y técnicas tradicionales hasta convertirse en elementos arquitectónicos. Aunque reconocemos y admiramos estos elementos por su belleza, habitualmente desconocemos cómo y quién los ha producido.

Cada uno de estos trabajos son parte de nuestro patrimonio y cómo tal deben ser conocidos, reconocidos y protegidos. Esta es precisamente la labor que desde hace más de una década realiza exitosamente INTBAU España con todas sus iniciativas, premios, actividades divulgativas, libros, becas y cursos.

El libro *Arquitectura atemporal* recoge el fruto de este trabajo, dirigido a fomentar y conservar la arquitectura y el urbanismo tradicionales y los oficios de la construcción. Con este fin sigue la misma estructura que la exposición e inicia su recorrido por los materiales del entorno que se usan en la construcción tradicional, desde las fibras vegetales, las maderas, las piedras y los minerales, como el yeso, la cal o el barro cocido, hasta el vidrio o los pigmentos usados para dar color.

Se muestran a continuación las herramientas y las técnicas que permiten transformar estos materiales en soluciones arquitectónicas que han perdurado en el tiempo, en muchas ocasiones por haber sido testadas durante siglos a base de prueba y error. Se ofrecen ejemplos de las artes de la construcción, lo que incluye distintos oficios, como la carpintería y la forja, pasando por la vidriería, la albañilería, el estucado, la azulejería, la cantería y otros que prácticamente se han perdido en la actualidad, como la construcción de chozas o molinos.

El recorrido concluye con la exposición de trabajos ejemplares de restauración, actualización y conservación de edificios y entornos existentes o con ejemplos en los que se han aplicado estos principios en la construcción de nuevas propuestas en entornos urbanos en las que se toma prestada la sabiduría de la tradición para aportar soluciones actuales.

El libro es un repositorio de este conocimiento en el que además se mapea dónde pueden encontrarse los materiales, las técnicas y los artesanos que hoy en día conservan este valioso conocimiento, que debemos valorar, conservar e integrar en nuestra forma de vida.

En definitiva, se propone un recorrido que no dejará indiferente a nadie. El libro hace replantearse la arquitectura y el urbanismo de hoy en día e invita a reflexionar sobre la sostenibilidad de los materiales y de los procesos que usamos.

Alejandro García Hermida (coord.)
Aquitectura atemporal
Ediciones Asimétricas, 2022

The Grandeur of Humility and Honesty

La grandeza de lo humilde y de lo honesto

A grandeza do humilde e do honesto

Estefanía Fernández-Cid

Fernández-Viña

La publicación Nueva Arquitectura Tradicional MMXXII es al mismo tiempo un canal de difusión del conocimiento propio de los diversos oficios de la construcción tradicional y un medio para hacer pedagogía a través de premios, concursos y otras iniciativas culturales.

Su contenido trasciende las cuestiones materiales y abarca aspectos más profundos de la profesión y de los oficios de la construcción –como la belleza o el valor de lo inmaterial–, siempre desde un posicionamiento firme –ético y en cierta manera poético–. Promueve así la sensibilización y la educación en la recuperación de tradiciones constructivas ya perdidas o en peligro de hacerlo, que deben ser fomentadas o conservadas.

La arquitectura tradicional tiene, por tanto, un camino lógico a recorrer, que pasa por mirar hacia nuestro pasado o nuestros orígenes para recuperar los más relevantes y perdurables conocimientos de los distintos oficios de la construcción. El reconocimiento y la divulgación de la labor de los maestros artesanos es fundamental para que se adquiera una conciencia colectiva al respecto y puede ayudar a cambiar un mundo hoy dominado por la estandarización. Mientras que lo industrial nace muerto, hay vida en todo aquello que es creado con las manos.

Parafraseando el texto "De buen soñar y de malvivir" de Irene Vallejo[1], *Nueva Arquitectura Tradicional* da sentido también a la idea de "habitar", entendida ésta como raíz de la cultura, pues quien cultiva un territorio lo habita en cierta manera. Como expone la autora, "la historia y la memoria son también un hogar. Heredamos rituales y relatos que nos preceden y nos cosen". Así, también heredamos técnicas y modos de construir y habitar los espacios que rinden homenaje al legado de nuestros antepasados.

Reconocer este legado para darle continuidad es una forma de fomentar sus valores, entre los que destacan su humildad y su honestidad. Es precisamente en estos profundos valores donde se ve reflejado el trabajo diario de nuestros maestros artesanos. Que puedan continuar su labor es responsabilidad de todos.

[1] Vallejo, Irene. 2022. De buen soñar y de malvivir. *El Ciervo*, 795, https://elciervo.es/producto/septiembre-octubre-de-2022/ (consultado el 12/10/2022).

Alejandro García Hermida (coord.)
Nueva Arquitectura Tradicional MMXXII
INTBAU España, 2022

Timbrel Vaults: A Tradition with a Future

Una tradición con futuro: A propósito de las bóvedas tabicadas

Abóbadas Catalãs: Uma tradição com futuro

José Luis Baró Zarzo

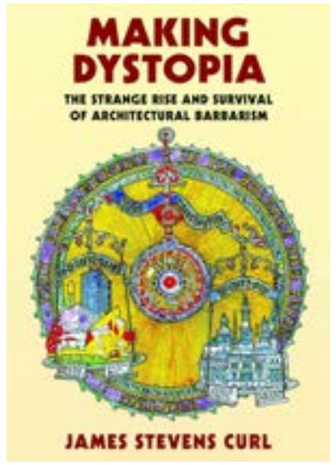
Bajo el título *Construyendo Bóvedas Tabicadas II* se reúnen los textos revisados del segundo simposio sobre bóvedas tabicadas celebrado en Valencia en 2018 como extensión de la primera edición del evento, que tuvo lugar en 2011. El enfoque, en esta ocasión, se dirige hacia las nuevas posibilidades funcionales y materiales que esta técnica milenaria puede ofrecer. Para ello, las contribuciones se organizan alrededor de una triple aproximación: aquellas que atañen al pasado, al presente y al futuro de las bóvedas tabicadas.

Respecto al primer ámbito, el libro recoge estudios sobre el posible origen musulmán de estas bóvedas construidas sin cimbra, así como diversos análisis sobre modalidades, combinaciones, elementos complementarios y variantes locales.

El "presente" viene determinado por la necesidad de actualización, esto es, de recuperación de aquellas estructuras dañadas a través de experiencias de restauración concretas.

Pero, lejos de quedar enterrada por la historia, la técnica tabicada continúa proyectándose hacia el futuro. En un mundo en el que el cambio climático está cambiando la manera en que se seleccionan los materiales –decisión condicionada por la huella ecológica– las técnicas tradicionales suponen una alternativa viable –no solo en lugares con menos recursos– de reducido impacto, con amplios márgenes para ser optimizadas. Y es aquí donde tradición e innovación confluyen. A las inagotables prestaciones compositivas y operativas que brinda el sistema (versatilidad, sencillez, economía, rapidez de ejecución), incluso para grandes luces –recordemos las obras de Rafael Guastavino–, se unen las mejoras que proveen los programas de modelización y cálculo, el conocimiento de las implicaciones de las variables constructivas (aparejos, direcciones, tabiquillos…), la experimentación con nuevos materiales ligeros (lana de madera, vidrio celular reciclado…) o con viejos conocidos (BTC), como también la oportunidad no tan lejana de una ejecución robotizada sin necesidad de guías ni cimbras.

Fernando Vegas López-Manzanares, Rafael Marín Sánchez, Lidia García-Soriano y Camilla Mileto (eds.)
Construyendo Bóvedas Tabicadas II
edUPV, 2022



Pretentious Starchitecture: Modernism and its Conceits

Arquitectura de arquiestrellas: El modernismo y su arrogancia

A arquitetura-estrela pretensiosa: o Modernismo e as suas presunções

Frank Albo

One of the most eminent architectural historians of our time – James Stevens Curl – has penned a magisterial *tour de force* that dismantles the conceits and folly of architectural Modernism. It exhibits the work of a scholar at the height of his perceptive powers and provides a penetrating interrogation into one of the greatest shams in the history of architecture. Having already made outstanding contributions in many unexplored tributaries ranging from Freemasonry to Egyptian Revivalism, Curl turns his discerning gaze to what he calls a "Catastrophe" in contemporary architecture and urban design. This indispensable volume exposes the numerous misconceptions about the Modern Movement and illustrates the gross fallacies perpetuated by CIAM, MARS, and Corbusianity. But make no mistake, this is no mere revisionist account of twentieth-century architecture; it is a surgical takedown of the juggernaut of Modernism itself, unmasking the baleful manifestations of International Style on streets from Brasilia to Milwaukee.

Curl also provides dire warnings about the growth and health of our cities, while opening our eyes to the cult-like fundamentalism of the Modern Movement and the blind devotion accorded to its chief propagandists. Combining wit and erudition to debunk the pseudo-scientific pretensions and snobbery of the Athens Charter, Curl demolishes the myth that Modernism would engender an egalitarian utopia and offer a panacea for the ills of twentieth-century urbanism. The massive 57-acre Pruitt–Igoe housing project in St Louis – infamous for its abject poverty, crime, and racial segregation – is but one of the many colossal failures of Modernist principles and American urban development.

Curl's excoriation does not end with the patriarchs of the Modern Movement but extends to their acolytes, Gehry, Libeskind, Hadid, and a medley of other exalted "star architects" who have filled our skylines with ever more jarring towers of Babel devoid of cohesion, history, context, or a straight line. As Curl reminds us, "it is impossible to create pleasant, ordinary, humane streets or places when every ill-educated, conceited architect is straining beyond his or her capabilities to be "original", which really means cribbing exemplars of the latest fad..." (14). Every subject in this cornucopia of scholarship is scrutinized with fluency and élan. Curl's tome is a timely marvel, and nothing previously published comes anywhere close to this meticulous dissection of a century of deceit, pomposity, and destruction. The reader will be engrossed with the author's masterful command of primary sources and sage insights about the life and works of neglected figures, including Baillie Scott, Erich Mendelsohn, and C.F.A.

Voysey, who was erroneously labeled a Modernist "pioneer" despite his disdain for the Movement's incoherent design language, trivial eclecticism, and "false originality".

Curl's fiery manifesto has spawned a legion of enraged detractors, including one British design critic, who compared the book with death, while spuriously equating the crudely minimalist Farnsworth House with the towering elegance of Chartres. This is not a work to be read passively but instead must be mined as a vast repository of cultural learning about the failures and hubris of modern architectural education, theory, and design. With this invaluable study, Curl solidifies his place as the nonpareil among scholars unafraid to challenge received opinion and the "Mosaic authority" of luminaries such as Pevsner, Ruskin, and Philip Johnson. *Dystopia* is unquestionably a major contribution to the history of architecture and the most important publication in Curl's enormously prodigious oeuvre.

James Stevens Curl
Making Dystopia: The Strange Rise and Survival of Architectural Barbarism
Oxford University Press, 2018

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