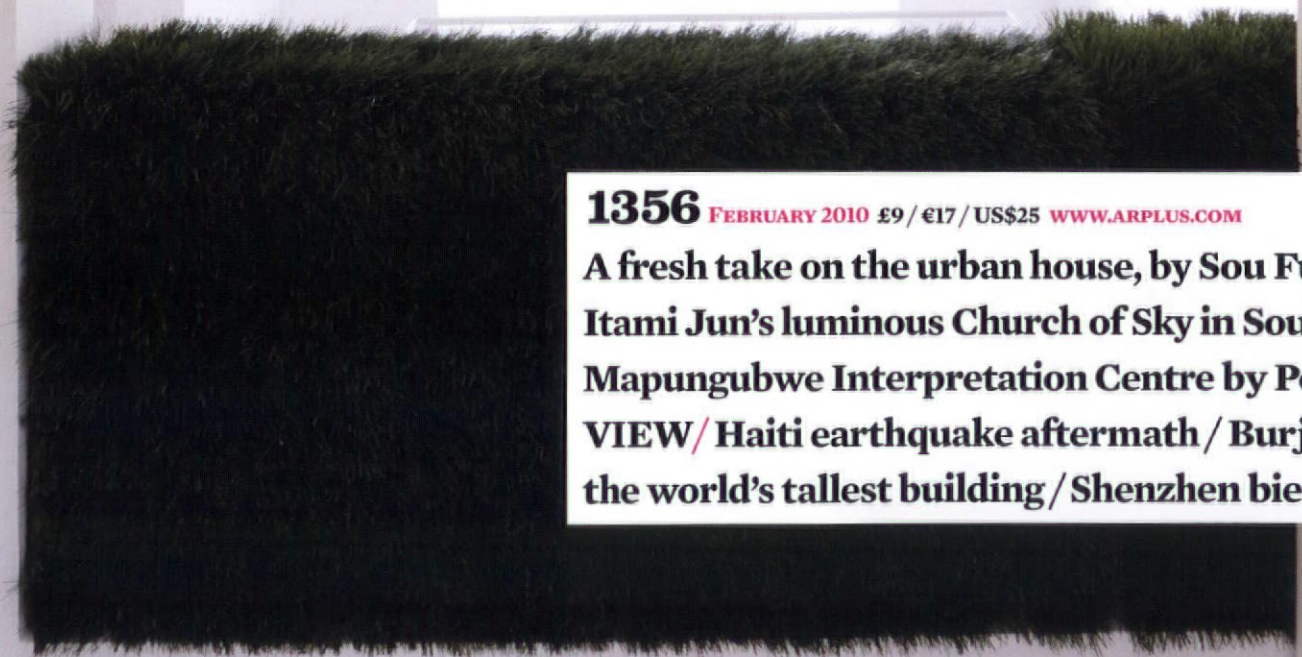


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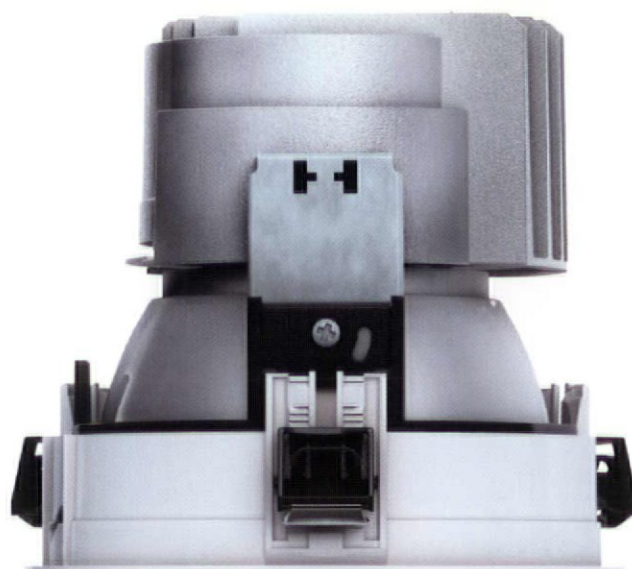


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A fresh take on the urban house, by Sou Fujimoto
Itami Jun's luminous Church of Sky in South Korea
Mapungubwe Interpretation Centre by Peter Rich
VIEW / Haiti earthquake aftermath / Burj Khalifa:
the world's tallest building / Shenzhen biennale



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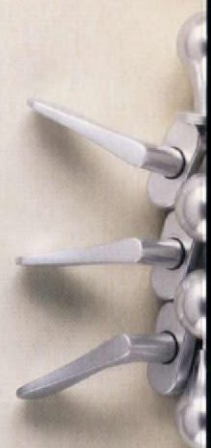
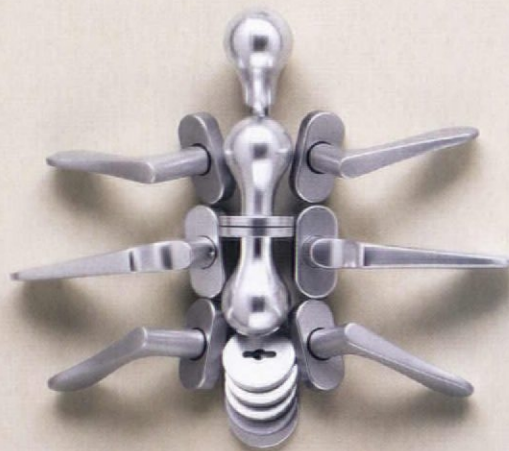
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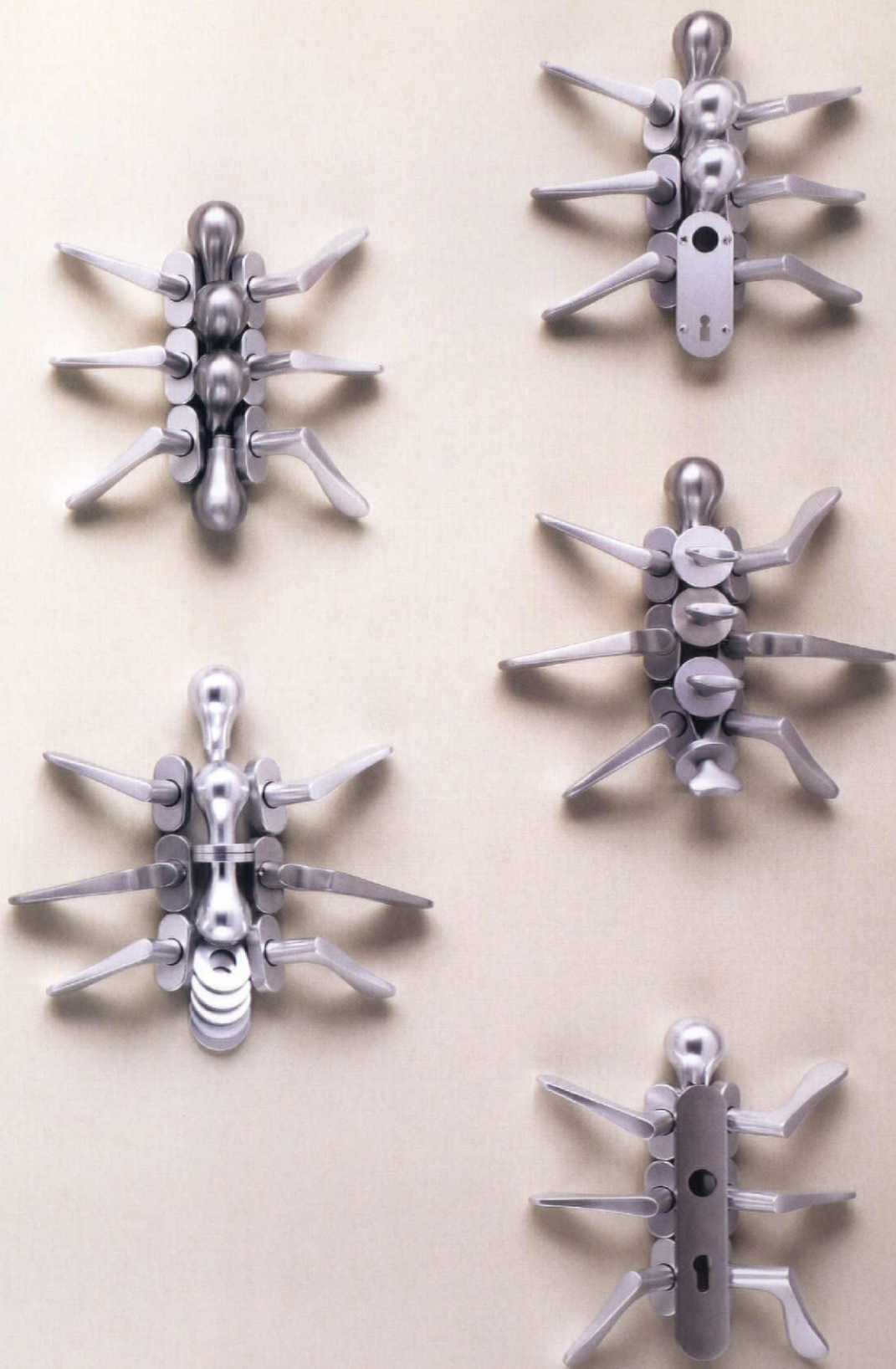
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
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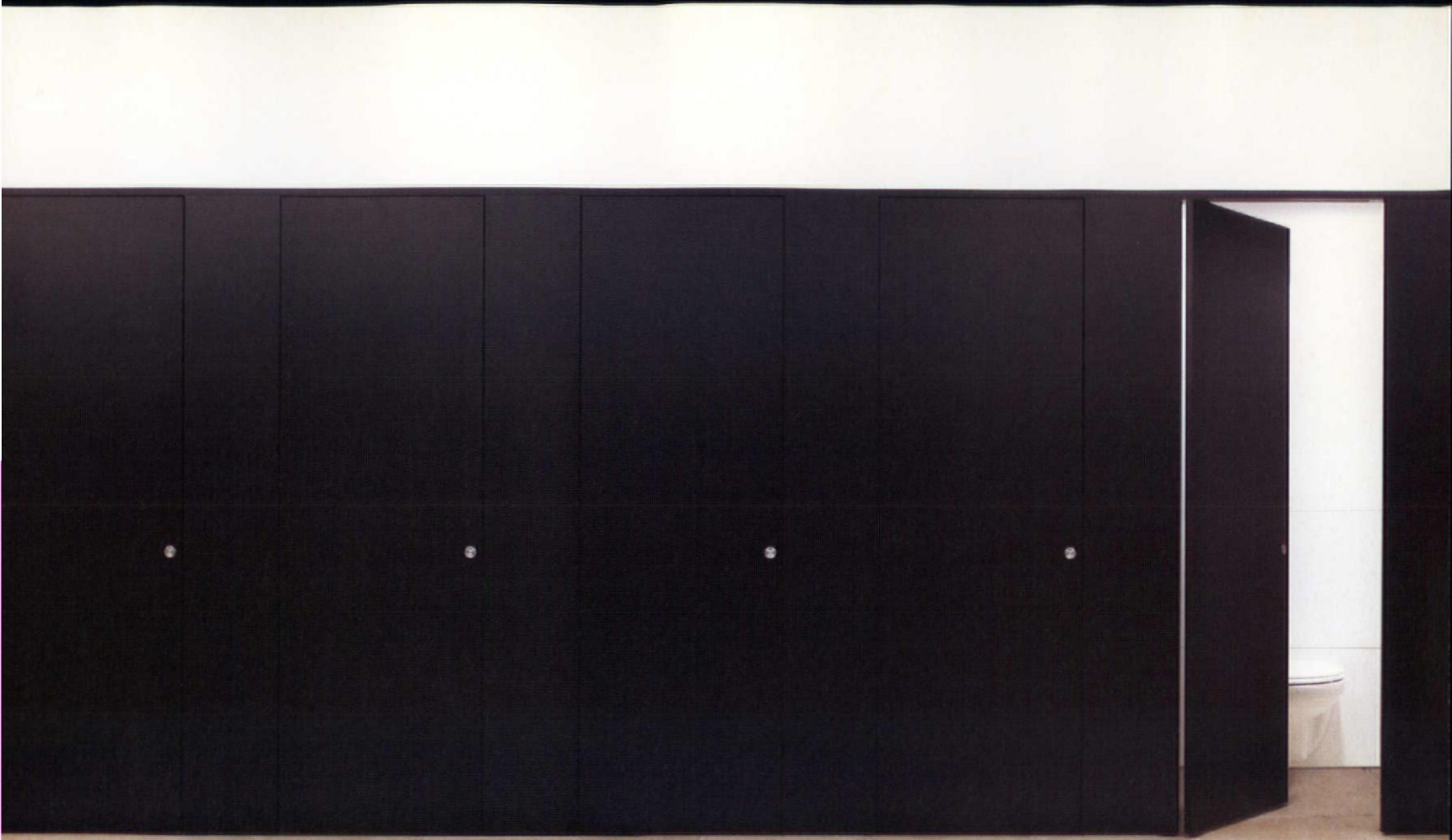


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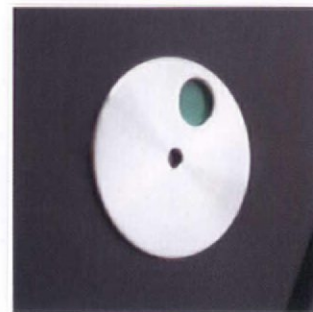
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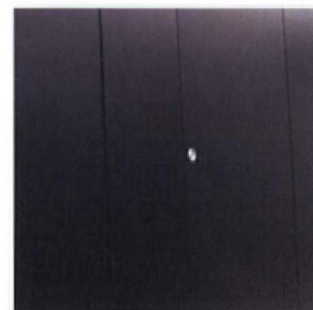
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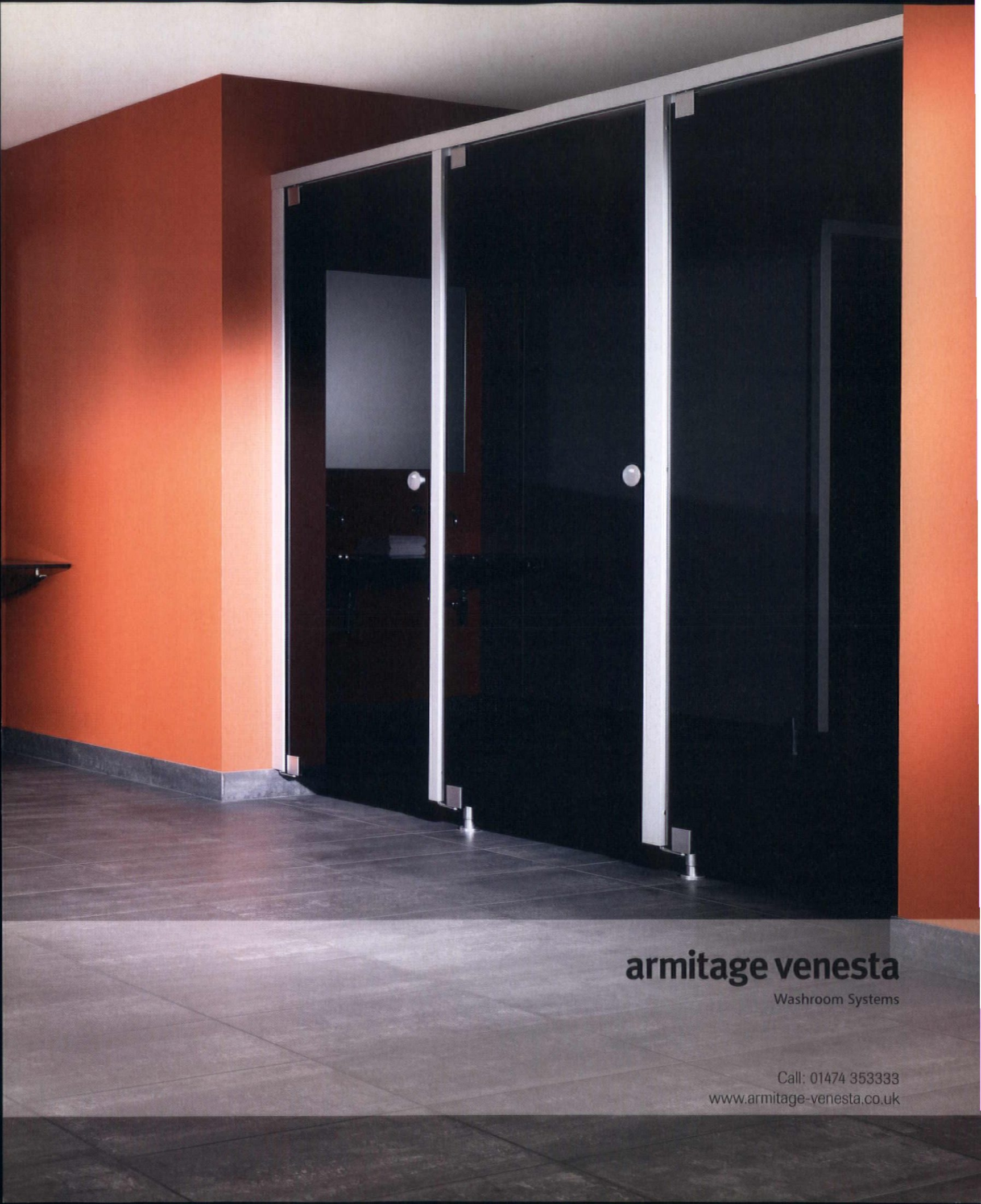
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With its origins in the Dutch shipbuilding industry, sheet metal former Centraalstaal International is not usually associated with architectural projects. But over 40 years' experience of shaping sheet metal into the fluid shapes of ships' hulls has given the firm a world-class reputation for technical innovation. This expertise has caught the eye of architects looking for ways to bring their most daring visions to life.

Normal construction techniques often limit the complexity of shapes and curves. Yet by adapting sheet metal forming techniques from the shipbuilding industry, Centraalstaal International offers new and practical solutions to complex construction problems. One notable example is the sidra trees structure at the Qatar National Convention Center in Doha. Designed by Japanese architect Arata Isozaki and RHWL Architects, the centre's main facade is adorned by a series of giant, softly curved arboreal structures. These resemble an abstract version of the native sidra tree, the graphic identity of parent organisation Qatar Foundation. Inventively exploiting shipbuilding techniques, the structures are wrapped in an external skin comprising over 1,100 steel plates curving in three dimensions to ensure a perfectly smooth surface. Solving new problems with unorthodox solutions, it demonstrates the potential of Centraalstaal International's innovative approach.

One of Centraalstaal International's largest and most recent architectural projects was the construction of a link bridge that

straddles the track and connects the Yas Marina Hotel at the Formula 1 circuit in Yas Island, Abu Dhabi. The sensuously curved, self-supporting bridge was designed by New York architects Asymptote Architecture, working with structural engineer Arup. Because of the project's immense time pressure (it had to be finished in time for the Formula 1 season), local construction company Al Futtaim Carillion requested that Asymptote find a specialist contractor who would be able to build the bridge – which was still only at concept stage – in just 30 weeks.

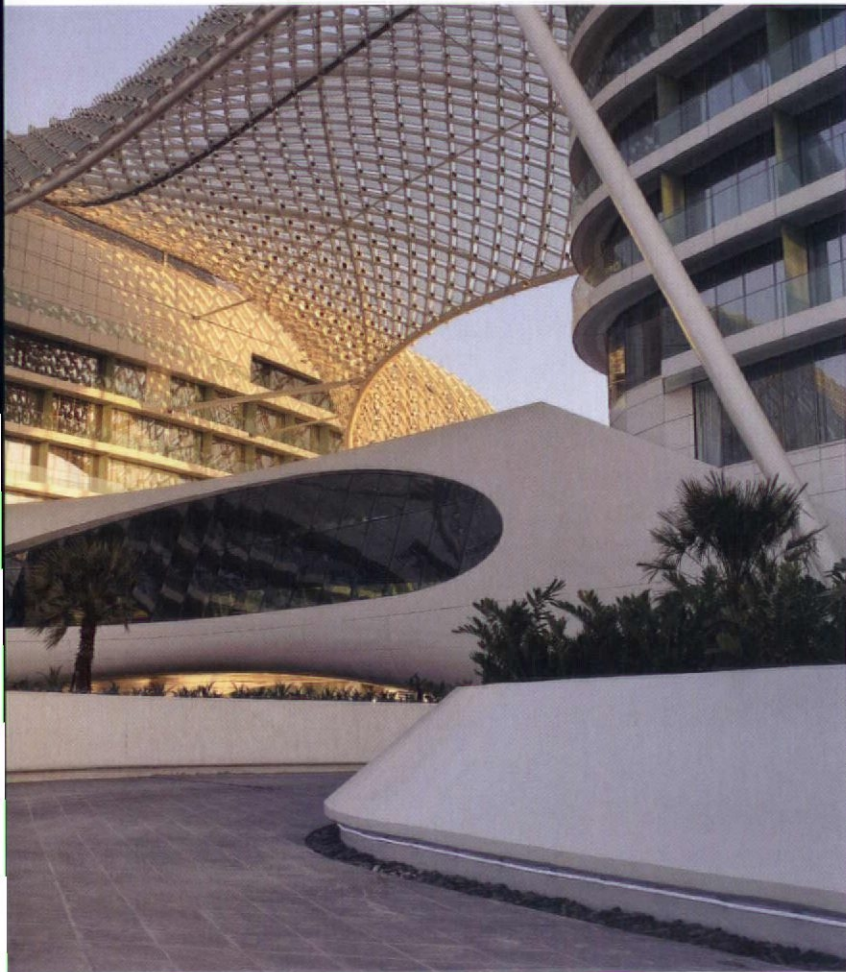
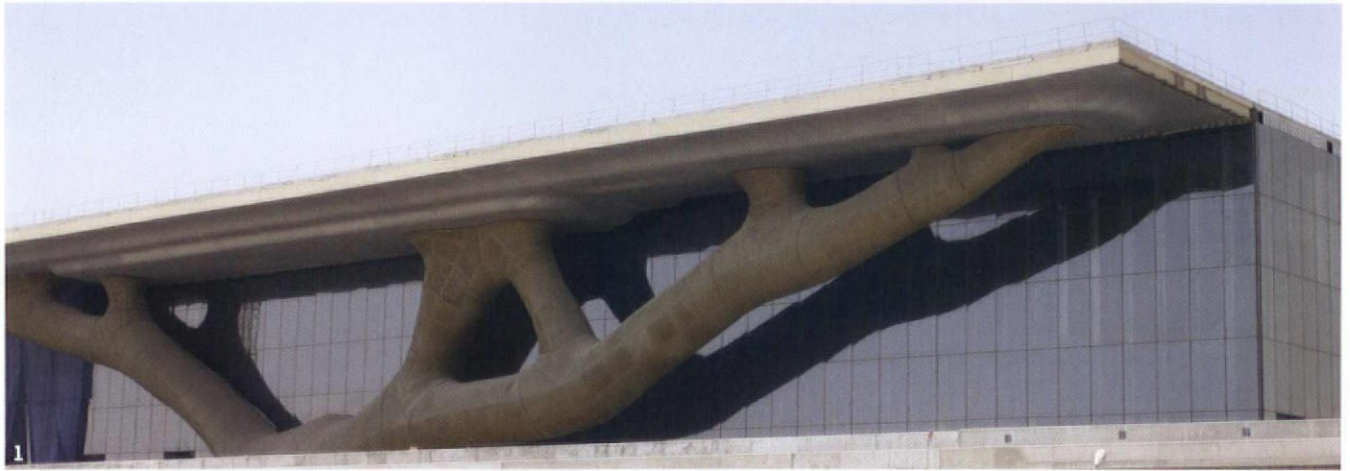
With its specialist engineering, production and assembly departments, Centraalstaal International was the only company that could complete a complex project of this scale within the specified timeframe. Rigorous project management and flawless production combined with in-house expertise and on-site assembly skills to deliver a striking result exactly on schedule.

Whether making architectural ideas a reality or fabricating works of art, Centraalstaal International is always pioneering new solutions. The firm has participated in a wide range of projects, ranging from sculptor Anish Kapoor's *Memory and Hive* artworks to the construction of the Münchner Freiheit bus station designed by OX2 Architects, in Germany. In each case Centraalstaal International's sheet metal constructions proved an imaginative response to highly challenging artistic and architectural concepts.

www.centraalstaal.com
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- 1_ The Qatar National Convention Centre in Doha bears a complex facade that mimics the native sidra tree
- 2_ Centraalstaal International constructed the link bridge that straddles Abu Dhabi's Formula 1 race track
- 3_ Subway station entrance at Monte Sant'Angelo, by artist Anish Kapoor and Future Systems
- 4_ The elegant execution of Münchner Freiheit bus station's sheet metal canopy





AL_A IN COLLABORATION WITH ANISH KAPOOR



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CHRIS THURLBOURNE
KAZYS VARNELIS
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- 033 **MICHAEL WEBB**

Jon Beswick is an architect who has recently completed an extended tour of Africa's West Coast. While there, he raised money for charity and helped build shelters for HIV clinics. This issue features the second of his three-part series on the region's vernacular architecture

Architect, engineer, craftsman, sailor and musician, Gabriel Fagan is a veritable and venerable polymath who lives in Cape Town. He visited the Mapungubwe National Park to report on Peter Rich's remarkable, award-winning Interpretation Centre

Jeremy Melvin is a seasoned architectural critic and writer based in London. He ponders critical reaction to the recent opening of the Burj Khalifa in Dubai, newly anointed the world's tallest building

Correction The subscription card insert in this issue wrongly states that the AR redesign was solely conceived by AR's art director Cecilia Lindgren. The AR wishes to make clear that the redesign was a collaboration between Violetta Boxill of Alexander Boxill and Cecilia Lindgren

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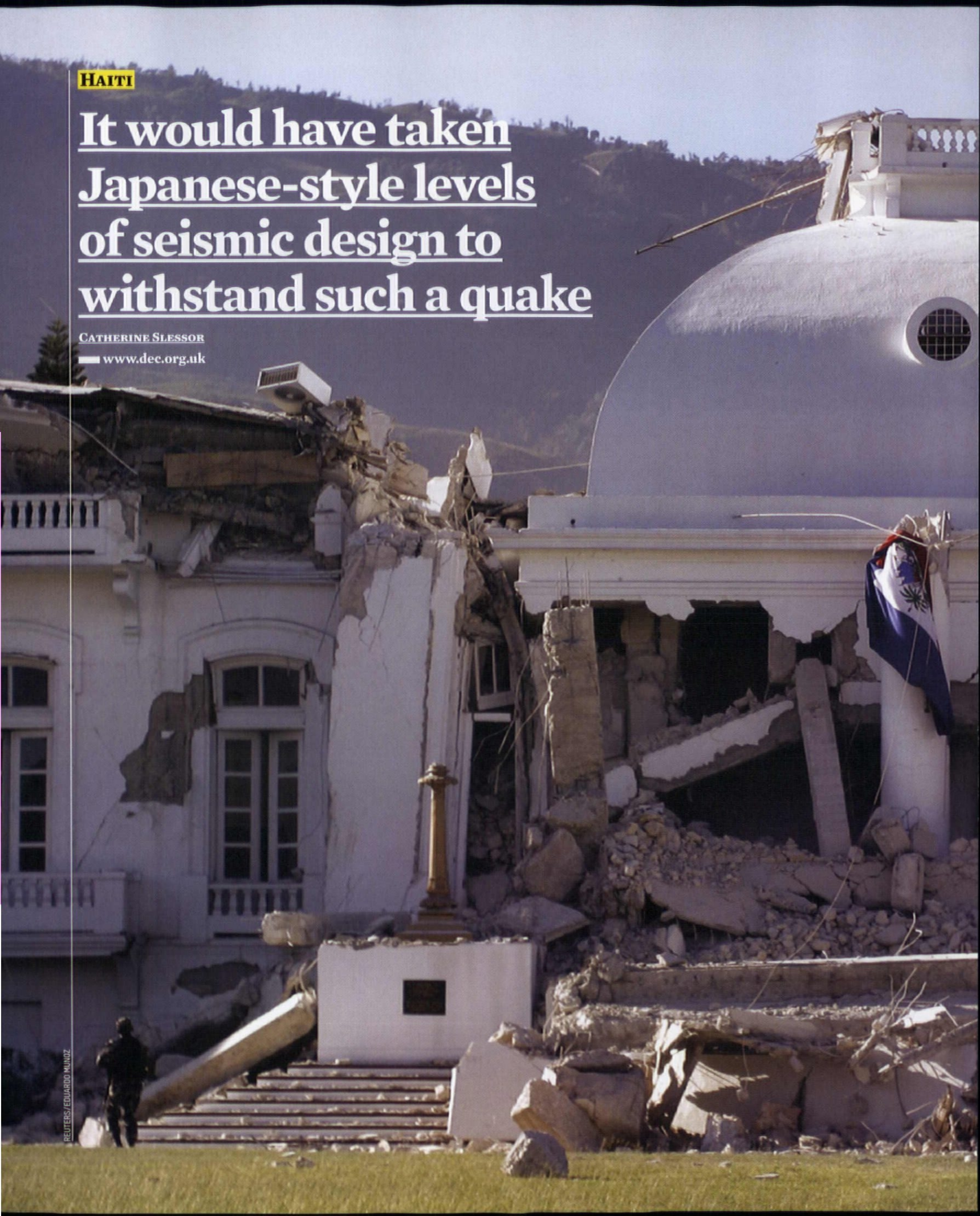


HAITI

It would have taken Japanese-style levels of seismic design to withstand such a quake

CATHERINE SLESSOR

— www.dec.org.uk





Previous page_
The shattered
National Palace,
emblematic of
the scale of
the destruction
in Haiti

Below_ Rescuers
sift through
the rubble, but
the collapse of
infrastructure
has hampered
efforts to
save lives

Collapsed like a pack of cards, the stucco debris of the National Palace in Haitian capital Port-au-Prince wretchedly embodies the impact of the catastrophic earthquake that hit the country on 12 January.

Dating from 1912, the National Palace was designed in the French colonial manner by Georges Baussan, a leading Haitian architect whose commissions included Port-au-Prince's city hall and Haiti's supreme court. His son, Robert Baussan, also an architect, studied under Le Corbusier. Most of Haiti's state institutions are now damaged or destroyed, including the city hall, supreme court, parliament, finance ministry, prison and Sacré-Coeur cathedral. Large areas of housing have been flattened and damage to infrastructure is severely hampering relief efforts. The UN Office for the Coordination of Humanitarian Affairs called it the 'worst disaster the UN has ever confronted'.

As the AR goes to press, nearly two weeks after the earthquake hit, the death toll

continues to rise, with current estimates of between 100,000 and 200,000 dead. 80,000 bodies have been recovered to date, but tens of thousands are still trapped under the rubble of tottering buildings. The difficulty of getting specialist teams into the area, compounded by the sheer scale of the disaster, has fatally compromised rescue efforts. Just 130 people have so far been pulled out alive and aid efforts are now focused on dealing with the survivors. A million people are estimated to be homeless in a country already suffering the effects of chronic social deprivation. Battered by economic calamities, voodoo dictators and natural disasters, Haiti has the dubious distinction of being the poorest country in the western hemisphere. It is hard to imagine how it can recover from such an appalling disaster without massive and sustained assistance from the international community.

At 7.0 in magnitude with an epicentre 25km west of Port-au-Prince, the quake was felt as far away as Venezuela.

Quakes of this strength are actually quite common, but in this case the epicentre was close to the surface and near a densely populated area, affecting around three million people. A major geological fault runs east-west along the southern part of Haiti, marking the boundary between two tectonic plates, so the region is prone to earthquakes. In 1751, Port-au-Prince was almost entirely destroyed, and in 1843 a quake killed 10,000 people. To minimise damage in future, one possible tactic might involve leaving an undeveloped strip of land 30-40m wide on both sides of the fault. Banning construction on hillsides and on ground prone to waterlogging are other preventative measures, but given that many Haitians build where they can, spawning huge informal settlements, such prohibitions may be difficult to enforce.

In the aftermath, questions are inevitably being asked about standards of construction. But despite the prevalence of shack settlements and jerry building, it would probably have taken Japanese-style levels of seismic design to withstand such a lethal quake; levels which are simply beyond the resources of such a poor country. Much has also been made of the fact that Haiti had 'no building codes'. This not strictly true – a recent study by the Organization of American States (OAS) concluded that Haiti had no *national* building codes, and instead architects and engineers appropriated American, French or Canadian ones, depending on their background. Clearly, the development of a unified national construction code (which has already been discussed by the OAS Department of Sustainable Development) will be an urgent priority in the effort to rebuild.



MATT RAINEY/STAR LEDGER/CORBIS

A vertical collage of 15 images showcasing various architectural details and building exteriors. The images include: a green, tent-like roof structure; a hexagonal glass entrance; a modern interior with skylights and large windows; a white door; a modern building at night; a red brick building with arched windows; a glass and metal structure; a white door with yellow trim; a rocky building facade; a long window with a view of a lake; a wooden door; a modern building with a green roof; and a large, modern building with a glass facade.



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DUBAI, UNITED ARAB EMIRATES

On a clear day, you can see Iran from the Burj Khalifa

JEREMY MELVIN



AL HAIDER/EPA/CORBIS

Seeing advanced architectural opinion tying itself up in knots is always entertaining, but rarely more so when these intellectual fumbles come close to those of our own heir to the throne. 'Pointless' summarises German architect Meinhard von Gerkan's rather self-contradictory criticism of the newly completed Burj Khalifa – a sentiment that fits in with Prince Charles' comment that tall buildings take 'commercial macho into the realms of adolescent lunacy'. Throw in gratuitous references to Shelley and misinformed claims that Frank Lloyd Wright inspired the Burj's design, and you cover most of the limited critical armoury with which the finest architectural writers have tried to make sense of the world's tallest building, opened with due fanfare on 4 January.

At 160 storeys and 828m, SOM's Burj trumps the previous record holder, Taiwan's Taipei 101, by well over 300m. When fully occupied, it will hold 35,000 people. Among the crunching battery of statistics and facts deployed in its wake are odd offbeat items, such as, it contains the world's highest place of worship (a mosque on the 158th floor) and on a clear day you can see Iran, just across the Persian Gulf.

The Burj Dubai (as it was originally called before being renamed after Sheikh Khalifa bin Zayed Al Nahyan, emir of Abu Dhabi and president of the United Arab Emirates), featured in the exhibition *Height: Between Possibility and Responsibility* at the first World Architecture Festival, in 2008. As curator, I wanted to suggest a possible basis for making sense of tall buildings that avoided the simplistic polarities of Prince Charles on one side and technophiles on the other —

Below _ The 828m-high Burj Khalifa is over 300m taller than previous record holder Taipei 101 in Taiwan
Below right _ Cladding the structural frame

(AR October 2008). Taking inspiration from novelist Henry James' comment in 1907 that tall buildings are 'the most piercing notes in that concert of the expensively provisional into which your supreme sense of New York resolves itself', the exhibition explored how tall buildings redefine and

transform what is possible and responsible.

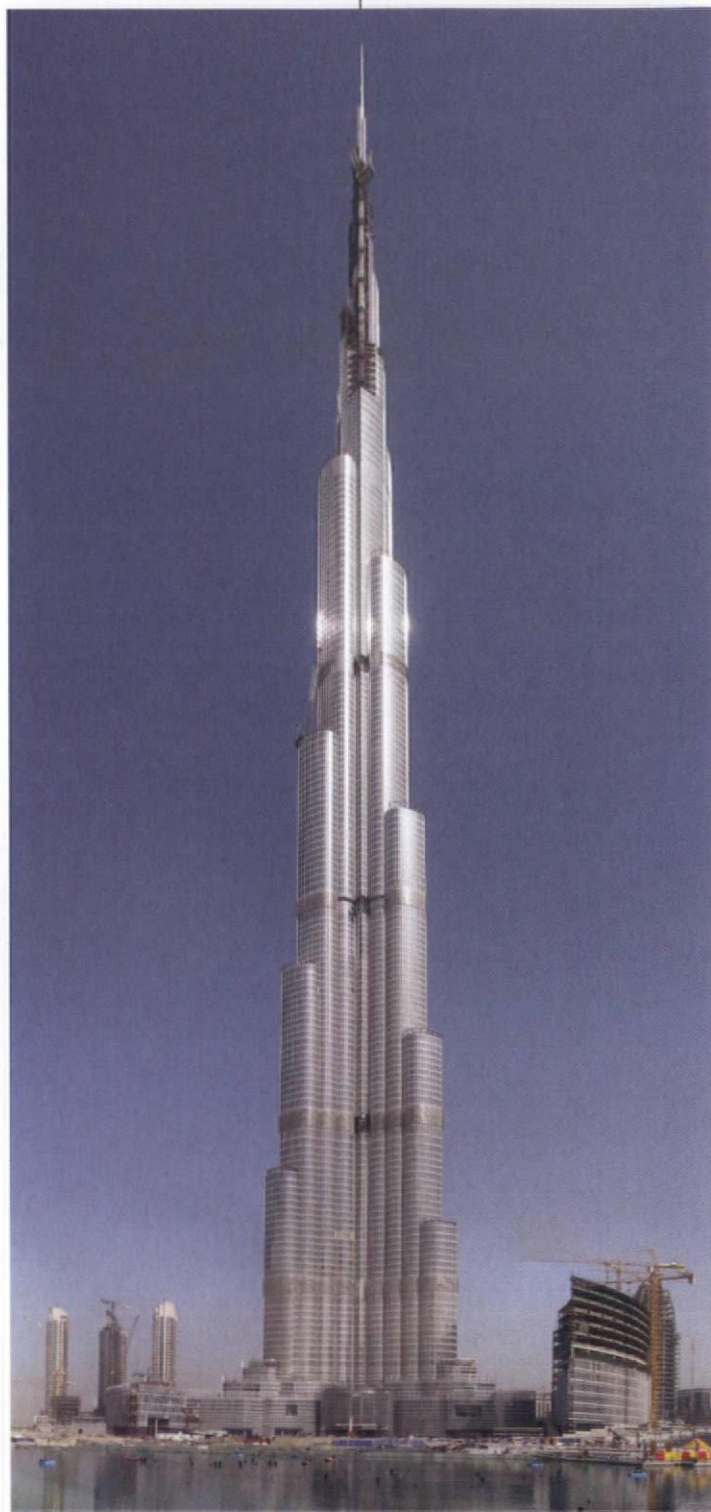
By making possibility and responsibility functions of each other, they become provisional and contingent rather than subject to absolute criteria. That takes them out of the realm of scientific certainties to a place where judgement, balance and nuance are the order of the day – which is exactly where aesthetics and professional skill should both lie. **Architecture, as a balance between aesthetics and professionalism, has to make possibility responsible, and responsibility out of the possible. Tall buildings take this to the extreme.**

This context shows the limitations of terms such as 'pointlessness' and 'adolescent lunacy'. The Burj's water consumption of almost a million litres of water a day sounds decidedly irresponsible, especially in a place where water is in very limited supply. But a certain number of people need a certain amount of water whether they are living vertically or horizontally, so it's more relevant that nearly 20 per cent of the water comes from trapping condensation on the building's outer skin that would

otherwise evaporate: its shape makes responsibility into a possibility. That is not enough in itself to justify the Burj, but it does show how tall buildings can stretch and transform these criteria.

Looking at the balance between possibility and responsibility also helps to focus on the design itself, rather than the economic and technical criticisms of questionable authority. Writing in the *Daily Telegraph*, design critic Stephen Bayley presented dubious history, economics and technology as if they were incontrovertible facts while saying almost nothing about the design itself – adding one of those ambiguous headlines, 'The new pinnacle of vanity', that sub-editors so enjoy.

So let's not impose normative readings on a building that set out to be the world's tallest and, like so many of its predecessors, consciously defies convention. Instead we can see it for what it is – an extraordinary cat's-cradle of contingency, opportunism, imagination, skill and sheer determination. And if the cradle unravels, it will merely help us to understand its threads better.



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Nature, science and architecture combine on the polluted industrial site of a fatal explosion

PHIL ROE



At 10.17am on 21 September 2001, exactly 10 days after the terrorist attacks in the US, a massive explosion in Toulouse, France, killed 30 people, injured over 2,000 and damaged around 30,000 buildings.

Coming so soon after 9/11, the tragedy was largely unreported outside France. Initial fears that the country had suffered its own terrorist atrocity were quickly put to bed. All we know is that 300 metric tons of ammonium nitrate somehow blew up at the AZF chemicals plant, a Total subsidiary, three miles from the city centre. The exact cause still remains a mystery.

Five years later, in September 2006, the first brick was laid on the site for the construction of the one billion euro Toulouse Cancéropôle (or 'Cancer Campus'), a 220ha medical research and treatment facility (or rather, small town) comprising private sector research labs, a public scientific institute, hospital, university departments and an enterprise zone for the incubation of life sciences companies. The collaborative goal: finding a cure for cancer.

The most striking new buildings in this vast development so far are the research laboratories of French

pharmaceutical giant Pierre Fabre. Paris-based architect Roger Taillibert has designed the labs to resemble pharmaceutical capsules; pills in a blisterpack. The architect is most famous for Parc des Princes rugby stadium (1972) in Paris and Montreal's 1976 Olympic Stadium, which, despite decades of financial and structural problems beyond his control, has been described as a masterpiece of 'organic' architecture (Francois Rémillard, *Montreal Architecture: A Guide to Style and Buildings*, 1990).

Taillibert is the permanent architect of the Pierre Fabre

Group and has executed many commissions for them over the years while working full time at his agency for a variety of clients. Themes from Taillibert's earlier work are much in evidence here: inspired by natural forms, there are curves everywhere. 'The building and its approaches play on the ambivalence of organic forms which are simultaneously fluid and symmetrical,' his website explains. 'Life isn't straight,' he says elsewhere. The tragic history of this old, polluted industrial site is far from neat and linear; the years to come are sure to bring many —

AGENCE TAILLIBERT



twists and turns in the quest for a miracle cancer cure.

Landscapers will transform 30ha of wasteland into public parks. Trees and greenery will also grow in the main communal hall of the Pierre Fabre buildings, their upside-down likenesses perfectly visible in the polished floor. The main entrance's mirror-like external walls will reflect the landscaped gardens back at people as they approach the dazzling white, futuristic capsules. Nature (of a sort), science and architecture will combine.

The grim, congested roads running next to the site are also being improved. A campus-

Previous page_ Capsule-like labs at the new Cancéropôle
Top_ An architecture of fluid, organic forms
Above_ The smouldering site, after the 2001 explosion

wide transport system will link to the Metro and provide bicycle 'pistes' and shuttles for up to 6,000 commuters – doctors, nurses, researchers, support staff, academics, managers and entrepreneurs. The Cancéropôle aims to be green in more than one sense.

The desire for heavy symbolism at every turn goes hand-in-hand with the intention to create a highly functional, inspirational, earth-friendly work environment that encourages collaboration.

Parts of the Cancéropôle have opened and the Pierre Fabre laboratories will do so soon. Town planner interventions aside, the difficult terrain caused the biggest delays to the building work. Potentially catastrophic flooding from the adjacent River Garonne had to be addressed, and de-pollution of the poisonous site was more complicated and time-consuming than anticipated. Despite these constraints, Taillibert's completed capsules are remarkably close to his original designs.

The extreme sensitivities of developing a site where so many people died might easily have led to local hostilities. Toulousans are furious at a French court's recent decision not to apportion blame for the disaster to the chemical plant's management – or anyone, despite eight years of investigations and a trial. Instead, the symbolic, hope-giving nature of this redevelopment has largely met with local support.

Whether viewed from the nearby banks of the Garonne, from the air (EasyJet flies right over it to Gatwick), from close up or from inside, the Pierre Fabre labs' intriguingly fluid symmetry derives from the dual inspirations of organic forms and medical capsules. The campus is still a building site undergoing transformation. It's easy to imagine the capsules medicating the sick land and local economy around them, slowly restoring health. The Cancéropôle is scheduled for completion in its entirety in 2012.



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LANDSKRONA, SWEDEN

Urban Japan meets small-town Sweden

Nothing usual about this 'Japanese' house you might think, just another inventive addition to urban Tokyo. Until you realise that it's thousands of miles away in the Swedish town of Landskrona. Designed by Elding Oscarson, the house is sandwiched between two historic buildings. Partner Jonas Elding worked in Tokyo with SANAA for seven years, so that probably explains it.



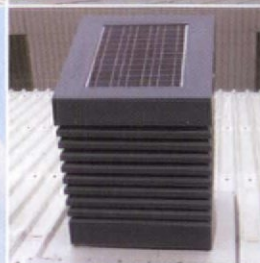
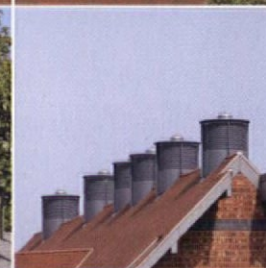
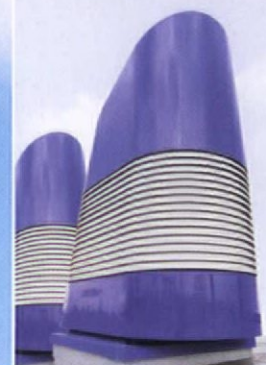
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SHENZHEN, CHINA

The Shenzhen biennale: less architecture, more a mobilisation of the people

ADRIAN HORNSBY

www.szhkbiennale.org.cn

Below: feld72's *Public Speaker*, one of three bicycle trailers the practice created for the biennale. In the background is *Bug Dome*, a bamboo construction by WEAK! Architects

The notion of 'City Mobilisation' – the theme of the 2009 Shenzhen & Hong Kong Bi-City Biennale of Urbanism/Architecture – is really about mobilising citizens. To date, China's astonishing wave of urbanisation has mobilised the factories of the world, the mice of a thousand architects and the labour of millions of Chinese construction workers. Least apparent, however, has been the voice of the new-wave urbanites. It's a profound gap which is at last receiving some attention.

Post-Olympics China is now moving beyond patent awe at

raw development and is becoming more critical. **There is a sense that an overload of new architecture has allowed China to fall out of touch; it now needs to get over buildings and engage with people.** Most obviously in this biennale – the third since the event's launch in 2005 – this manifests as a lot of non-architecture. Almost half the participants, chief curator Ou Ning included, aren't architects, and their contributions – ranging from outdoor screenings to short stories and barbecues – are driven by the curatorial directive to 'communicate with

the public'. These are 'spiritually fragile times', Ou notes. Architectural design, by itself, is too easily dominated by state power or the profit-interests of a privileged elite. The appropriate response is therefore to rediscover and embrace the human dimension.

Interaction and participation are prominent among the exhibitions and installations, which are scattered across town in public spaces and include a bamboo dome for readings and events, shady spaces for people to gather and sit, and swings, trampolines and spinning roundabouts for fun. At their best, these are beautifully, refreshingly, eloquently obvious. At their worst, they are nothing new masquerading in spurious theory-speak as sublime discoveries. Most guilty in this respect is a shallow-water pool that invites us to 'play', as we are informed how water 'creates ripples... splashes, makes sounds, reflects' and, ultimately, presents a 'dynamic game tool'.

Shenzhen's architects, planners and municipal government badly needed to teach themselves this lesson in play. Effectively founded in 1979, Shenzhen is the world's youngest megacity. Yet, riding around, one cannot help but be struck by how *old* Shenzhen looks: how shabby and dilapidated its buildings, how poor the quality of its squares, how lacking it is, for all its programmatic highways, in soft or civil infrastructure, and indeed, how little fun is had in any of its public spaces. Thus the biennale – puddles, playpens and all – is a breath of youth and fresh air, and a bold attempt by Ou to 'inject new ideas into Shenzhen on its 30th birthday'.

His intervention could not be better placed. For the first time, the event's main venue



ADRIAN HORNSBY

Below *Eggs of the City* by Standard Architecture, which addresses the issue of homelessness
Bottom *Creature* by Triptyque, outside the Civic Centre



is the Shenzhen Civic Centre, an aggressively oversized building in the city's lifeless civic heart. Thanks to the biennale's presence, the area has thronged with visitors. In particular, the open-air works have transformed the vast but empty Civic Square into a bustling social destination.

Government buildings across China are fronted by large austere squares that serve the purpose of framing power but do little to make themselves usable as public space. They are *supposed* to be empty, in a way that relates back to the idea of government being more higher authority than public servant. Thus the repossession of such a space in Shenzhen by people chiefly for the purpose of enjoying themselves stages a subtle but tangible urban coup.

That the government agreed to the biennale's use of its space came as a surprise to Ou. However, he knew the 30th anniversary of the creation of the Shenzhen Special Economic

Zone (in which government control over the economy was relaxed) obliged politicians to do something impressive with the city this year. Secondly, earlier in 2009, Shenzhen had won the status of UNESCO City of Design. Consequently, the government was unusually keen to support architectural culture and to advance its status as a global design capital. These two factors, as well as a sympathetic vice mayor, gave Ou a unique leveraging position, and one which allowed him to extend a spatial concept into the highly sensitive political arena.

Mobilisation and public space have a fraught political history in China, where the last big outing they had was during the Cultural Revolution. For ten chaotic and disastrous years, the masses were mobilised in an expression of the will of the leadership. **Now, with this biennale, the same principle of mobilisation (or *dongyuan*) suggests a new meaning: people mobilising in an expression of their own interests, rather than for political struggle. It marks the advent of citizen politics, in which people participate for themselves, not for the state.**

The seed of this ulterior political model has long been urbanisation itself, which has mobilised the Chinese people into negotiations (i.e. protests) with the government over land use and compensation. Ou describes this as 'the great process of China today'. But as its cities become more sophisticated, the genius of the biennale is to develop this process from the realm of protecting immediate interests to that of inspiring new desires. What the biennale's engaging contributors demonstrate is that space can be used not only to defend your rights, but also to come out and have fun.



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Atelier Li Xiaodong + ODOS Architects

Tuesday 2 February, 18.30

Beijing-based Atelier Li Xiaodong, combine spiritual exploration with rational thinking, artistic judgement with technical knowledge to create spaces of tranquility, harmony and order. Three projects give an overview of their work in China.

ODOS Architects is a Dublin based practice that challenges and exposes its clients to the unfamiliar, questioning how people work, rest and play. They talk about their project at The Carmelite Friary in Co. Kilkenny alongside recent works.

José María Sánchez García Estudio de Arquitectura + Matharoo Associates

Tuesday 16 February, 18.30

José María Sánchez García, from Spain develops projects and competitions with a multidisciplinary team. He discusses their work, including the prize-winning entry into the awards, a raised, circular building on the dam Gabriel y Galán, Cáceres.

Indian practice Matharoo Associates present a journey through their work with projects such as House with Balls. They talk about their interest in mechanical systems, leading to the creation of Curtain Door, their award-winning project.

Studio Sanjeev Shankar + GRAFT

Tuesday 23 February, 18.30

Sanjeev Shankar, presents his globally acclaimed project Jugaad, where 90 residents of an Indian urban village turned discarded oil cans into a suspended shade pavilion.

GRAFT Architects present their project for the Make It Right Initiative – rebuilding a Ward of New Orleans after hurricane Katrina – where, as part of a group of high-profile international architects, they were engaged to develop affordable yet sustainable houses for low income residents.

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**AWARDS
FOR
EMERGING
ARCHITECTURE
2009**

Studio Sanjeev Shankar, Jugaad, New Delhi,
India, 2008. Photo: Sundeep Bali

ABUJA, NIGERIA

Arts complex is a symbol of unity for the capital of a deeply divided country

MICHAEL WEBB



As the new, centrally located capital of Nigeria, Abuja supplanted the coastal city of Lagos in 1991, much as Brasilia took the place of Rio 50 years ago. Both are boom cities that have exploded beyond the diagrams of visionary planners, and both have suffered from the distortions of military rule. The challenge for Abuja may be even greater, for Nigeria is deeply divided between its Muslim north and Christian south, and is one of the world's most corrupt countries. Oil wealth

has been squandered and Africa's most populous nation is often perceived as a dismal example of the continent's failings.

The capital was sited to bridge the ethnic-religious divide and New Abuja City Gate is intended as a symbol of unity and hope. Ehrlich Architects of Los Angeles collaborated with Nigerian firm Triad Associates to win an international design competition for a complex that pairs an official reception hall with a gathering area for arts and recreation. The two halves

New Abuja City Gate comprises an official reception hall, arts and recreation spaces plus a marketplace and children's zoo

are linked by a dramatic north-south footbridge that spans the broad highway linking the city to the airport.

Steven Ehrlich absorbed the lessons and imagery of African vernacular architecture working in the Peace Corps soon after graduating and he designed an open-air university theatre workshop in Nigeria while teaching there in the mid 1970s. The houses and institutional buildings he has since designed in California are infused with a feeling for earth and nature, the expressive wall and the intimate courtyard. Now he has returned to the source, working with a former student, Zubair Ahmed, who established Triad in 1983 and has built all over Nigeria.

This new project is a soaring abstract form inspired by the traditional bow harp and village loom. Flags can be strung along the tensile cables supporting the walkway, which will also be animated by pedestrians in their bright clothing. A bowed canopy of photovoltaic panels shades the 800-seat amphitheatre. The concrete structure with its canted pylon is coloured to match the paving clay. Sinuous walkways and ramps tie the complex together and carry people over a water cascade. The 98-acre site will include a marketplace, playing fields, a gym and a children's zoo to form a year-round destination, easily reached by bus from the city centre, six miles away.

The design has been well received by residents of Abuja but its realisation depends on the success of a public-private partnership and the input of foreign firms. Ehrlich is also working on Abuja Technology Village, masterplanned by Rogers Stirk Harbour + Partners, which may prove a good augury for the creation of this new urban landmark.

175 PRODUCTS. 1 DESIGN LANGUAGE.

Istanbul Collection By Ross Lovegrove 1-175



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VARDØ, NORWAY

A proposal to regenerate a remote Norwegian town on the Barents Sea predicts a sustainable future built on both oil and ecology

CATHERINE SLESSOR

www.euopan-europe.com/e10



Above: Buildings for cultural activities form the initial vanguard, sowing seeds for future development

Isolated on the roof of the world, on that part of north-eastern Norway that curves round Sweden to meet Finland and Russia, Vardø is a rugged and remote Norwegian port town on the Barents Sea.

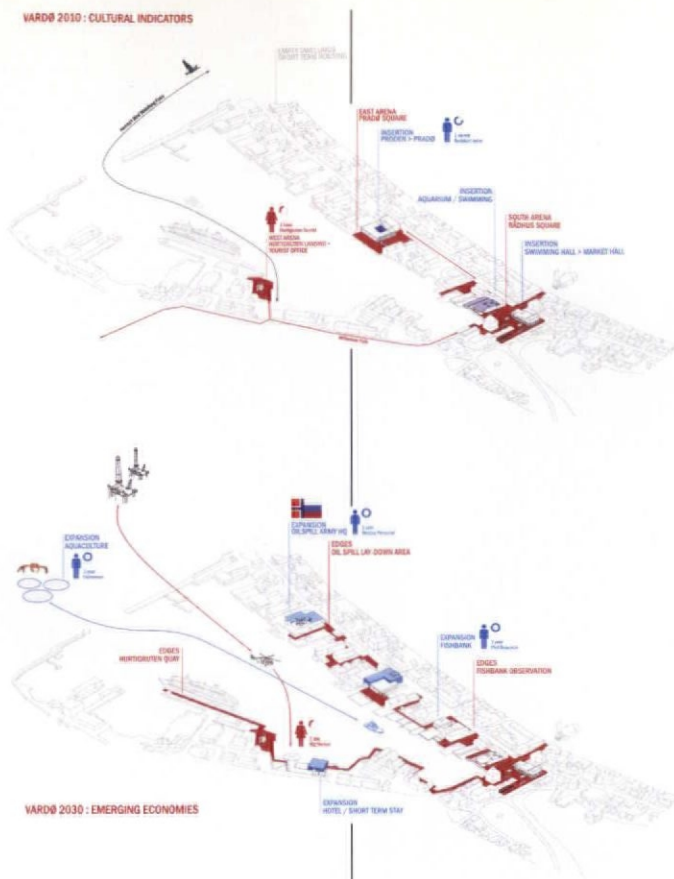
Historically, it was a prosperous trading centre with strong links to neighbouring Russia, but the fishing industry, for years a staple of the economy, is now on the wane and the town suffers the familiar modern problems of decline and depopulation.

The harbour front, formerly at the heart of Vardø's economic and civic life, is now a sad succession of vacant industrial sheds and unmoored docks. Plunged into Arctic winter darkness for two months each year, the town struggles against a harsh, depressive climate.

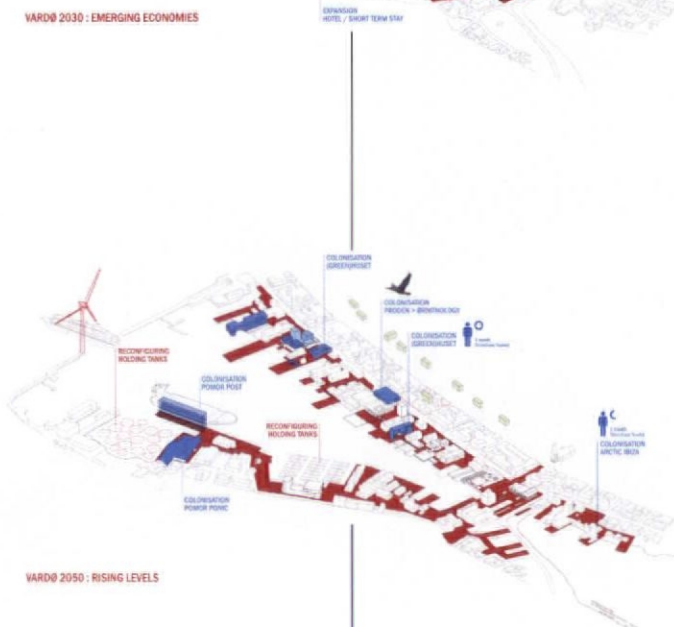
Yet its heraldic motto, 'cedant tenebrae soli' (darkness shall give way to the sun), crystallises a dogged, if perhaps unintentionally ironic, Nordic optimism. And for the hardy and intrepid, Vardø has its charms: a bleak but beautiful landscape, beguiling vernacular architecture, abundant birdlife, a cautiously expanding tourist industry and a sheltered port that does not freeze in winter thanks to the benign effect of the North Atlantic drift.

Vardø was one of 62 sites for the 10th iteration of European – the biannual pan-European forum for investigating and implementing new ideas about urban design and development – which ran in 2009. Proposals are restricted to architects under 40, so the programme aims to channel youthful(ish) enthusiasm and brio in the quest to address often challenging sites and contexts. The 2009 theme was 'Inventing urbanity: regeneration, revitalisation, colonisation', and Vardø was one of three Norwegian locales —

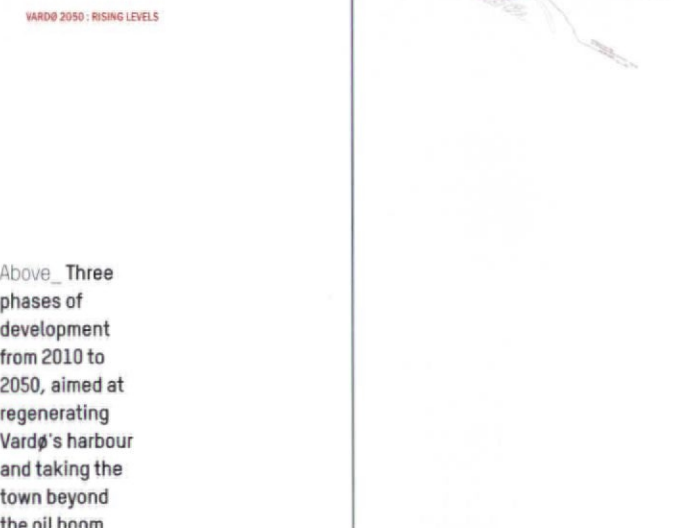
VARDØ 2010: CULTURAL INDICATORS



VARDØ 2030: EMERGING ECONOMIES



VARDØ 2050: RISING LEVELS



Above: Three phases of development from 2010 to 2050, aimed at regenerating Vardø's harbour and taking the town beyond the oil boom

(the others were Oslo and Trondheim). Not surprisingly, it was by far the most isolated and northerly site in the entire European programme.

'Repositioning the Remote' – the winning proposal for Vardø by London-based Langdon Reis Architects, with Kelly Doran and Louis Hall – aims to redefine Vardø's historic relationship with the Barents Sea, a relationship that has continuously evolved in response to changing economic and political conditions. 'Geographically, Vardø's unique location has constantly been reframed to adapt to these changes,' says director Ross Langdon. 'As this frame shifts further north towards receding ice sheets, Arctic shipping lanes, offshore oil fields and ecological transformation, Vardø is poised to redefine its relationship to the Barents once more.'

Langdon Reis proposes three strategies for short, mid and long-term development. In the short term, new cultural buildings and spaces will replace or colonise existing abandoned industrial structures with the aim of kick-starting civic life, boosting the local economy and attracting interest from outside. These spaces, each with a distinct set of uses, will be the seeds of future development of the harbour, and will begin to regenerate the town's relationship with the Barents Sea.

By 2030, the team predicts that Norwegian oil and gas production will be concentrated on reserves in the Barents Sea (though such development has been politically controversial). Vardø's proximity to such reserves makes it the obvious choice for a harbour base to service the industry, but the team is mindful of the need to protect the region's fragile

ecology. 'The inherent conflict between offshore oil production and ecological preservation could yield a diverse set of economic and architectural opportunities that would convert oil revenues into a framework for a post-oil paradigm,' says Langdon.

Oil exploration monitoring and servicing operations currently operating out of Vardø would need to expand their operations, requiring new harbour buildings. But Vardø is uniquely positioned to develop as an Arctic outpost of ornithology and marine biology.

Vardø's long-term future depends on a set of levels: oil and energy production, rising seas and temperatures, aquacultural development and, ultimately, a high level of self-sufficiency given its geography. Norway's post-oil economy will need to establish alternative, localised and diversified means of producing energy and food to maintain the qualities of remote urban life previously sustained through oil production and transport. Power from offshore Arctic winds could meet local requirements, with the surplus pumped into the European grid. The harbour could be reconfigured in response to rising sea levels, and fish and crab could be farmed.

'Beyond the oil horizon, Vardø must create new means of production, and exploit the harbour as the centre of a post-carbon economy,' says Langdon. 'By 2050, its future will hinge on revitalising existing industrial structures with a cultural programme, regenerating the water's edge through marine infrastructures and colonising interstitial spaces with new modes of ecological production, so that the harbour will again become the centre of public and private life.'



Photography: © GKD

Mosque without Walls

Tuanku Mizan Zainal Abidin Mosque, Putrajaya

Escale 7x1 stainless steel mesh forms the semi-transparent outer skin of the new landmark of the seat of the Malaysian government. The delicate aesthetics of the spiral weave corresponds to the protection of the faithful from sun and driving rain. Twenty floor-to-ceiling mesh windows are the distinguishing feature of this modern sacred architecture. They provide enough ventilation so that the inner area requires no additional air conditioning.

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LOCATION SANTIAGO, CHILE

ARCHITECT FRANCISCO
IZQUIERDO & MARIA
JOSE VARAS

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PAGE 062

HOUSE H

LOCATION TOKYO, JAPAN

ARCHITECT SOU FUJIMOTO

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MUSEO NACIONAL COLEGIO
DE SAN GREGORIO

LOCATION VALLADOLID, SPAIN

ARCHITECT NIETO SOBEJANO

Nieto Sobejano's remodelling of the 15th-century Colegio de San Gregorio to house Spain's foremost collection of religious art provides a set of dignified, modern spaces for devotional works

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MAPUNGUBWE
INTERPRETATION CENTRE

LOCATION MAPUNGUBWE
NATIONAL PARK,
SOUTH AFRICA

ARCHITECT PETER RICH
ARCHITECTS

Set in a spectacular but remote veld landscape, the Mapungubwe Interpretation Centre houses archaeological relics from the surrounding site. Synthesising vernacular wisdom with modernity in a direct and unselfconscious way, it exemplifies a resonant, contemporary African architecture

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CULTÚRLANN UÍ CHANÁIN
IRISH LANGUAGE ARTS
AND CULTURAL CENTRE

LOCATION DERRY,
NORTHERN IRELAND

ARCHITECT O'DONNELL + TUOMEY

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CHURCH OF SKY

LOCATION JEJU ISLAND,
SOUTH KOREA

ARCHITECT ITAMI JUN
ARCHITECTS

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MAPUNGUBWE INTERPRETATION CENTRE

LOCATION

MAPUNGUBWE NATIONAL
PARK, SOUTH AFRICA

ARCHITECT

PETER RICH ARCHITECTS

WRITER

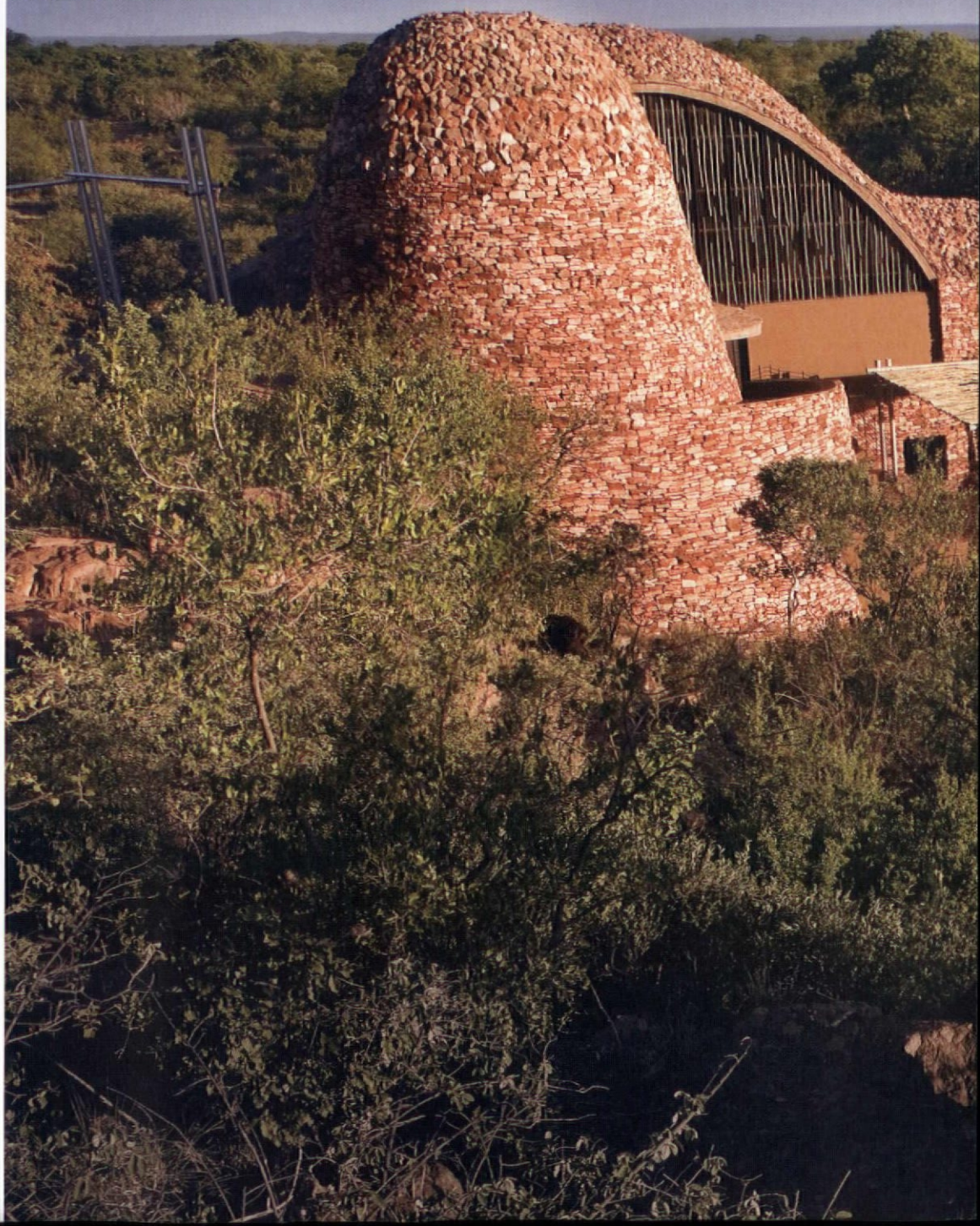
GABRIEL FAGAN

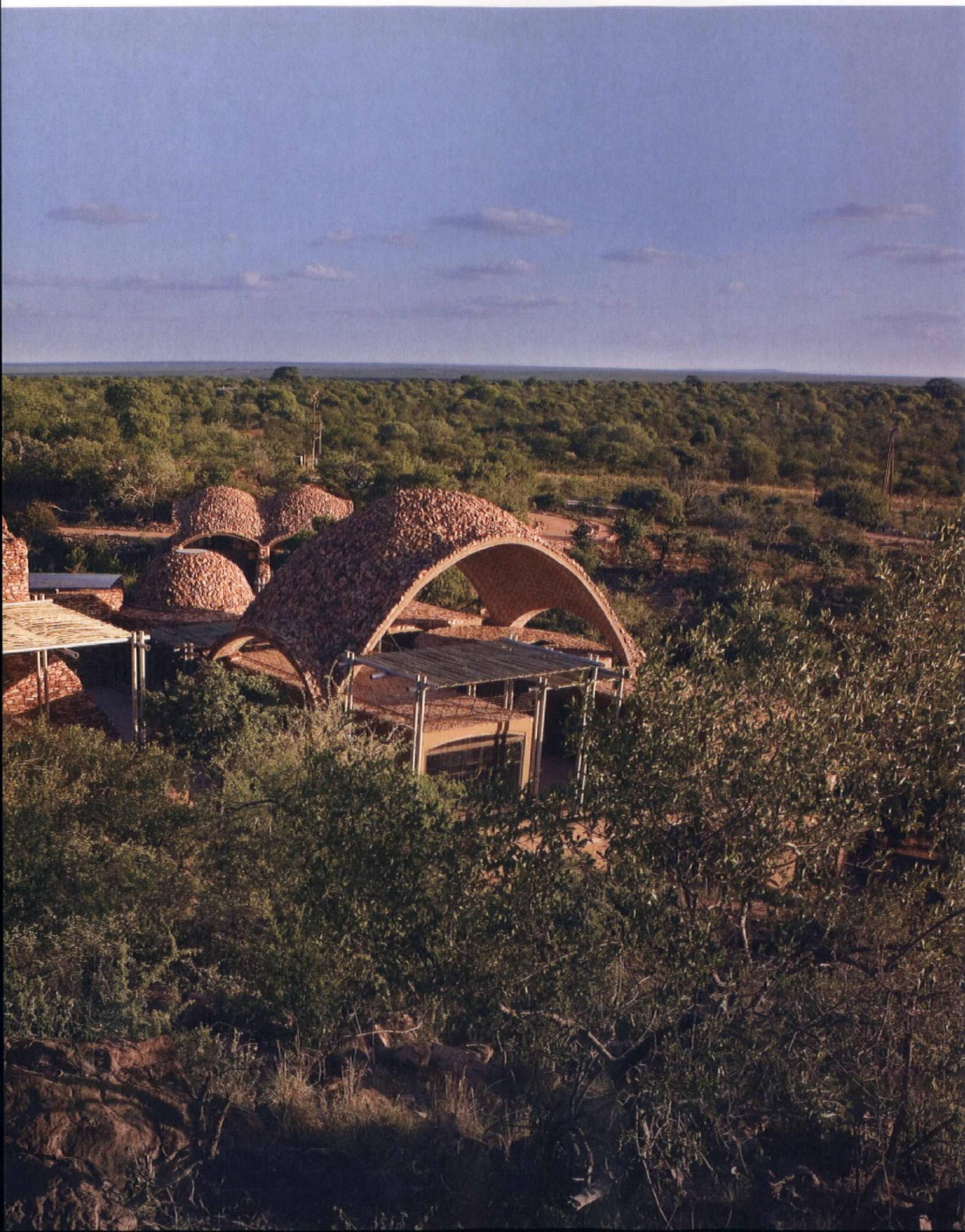
PHOTOGRAPHY

OBIE OBERHOLZER

The confluence of the Shashe and mighty Limpopo rivers mark the area where the borders of South Africa, Botswana and Zimbabwe meet. Here, vast tracks of veld with rifts of beautiful native trees such the fever tree and the remarkable baobab alternate with valleys, flat-topped hills, jagged horizontal ledges and groups of rounded stony hillocks. This is the landscape of the Mapungubwe National Park, classified as a World Heritage Site because of the important archaeological discoveries made here. Graves containing artefacts from the 9th to 12th centuries indicate that the site was occupied by traders with Egypt, Persia, India, Malaysia and China.

In 2005 South African National Parks held a competition for the design of an Interpretation Centre on a plot set away from the main archaeological site. Johannesburg-based Peter Rich won. Rich has a boundless passion for architecture in general and for indigenous African architecture in particular – its cultural significance, and how —





A SERIES OF EQUILATERAL TRIANGLES STRUCTURES THE LANDSCAPE AND THE WAY THE BUILDINGS ADDRESS IT

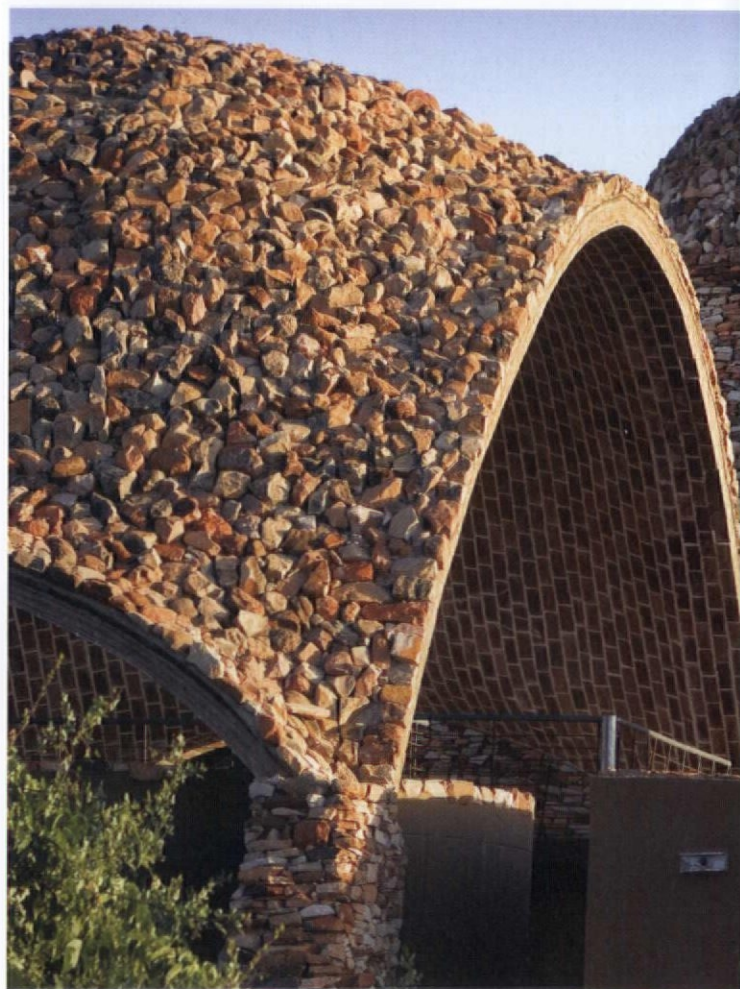
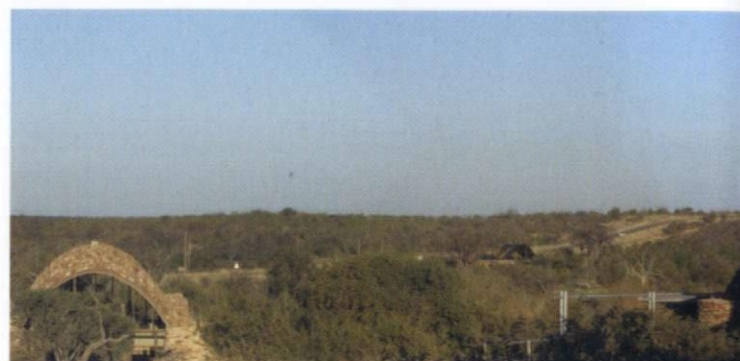
buildings interrelate and integrate with their environment (AR March 1995). His design was also declared the Building of the Year at last year's World Architecture Festival (AR December 2009).

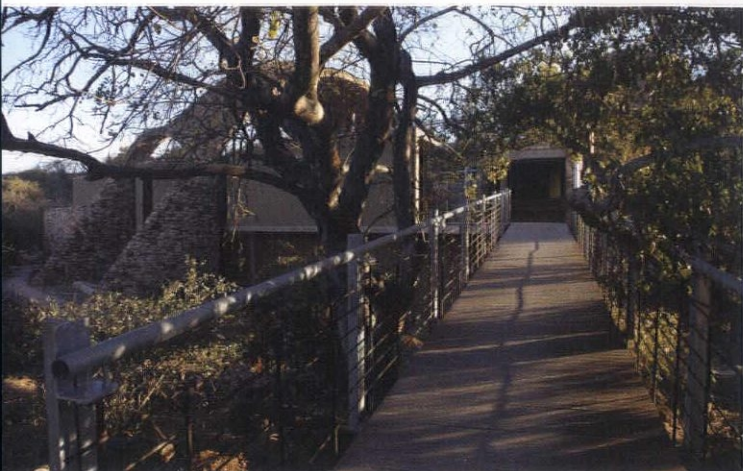
The project not only provides unusual and imaginative exhibition spaces for disseminating the intricate history of successive civilisations who have occupied this area from the 9th century until the present, but it also raises awareness of the vulnerability of the local ecology and the importance of its preservation. All this comes underpinned by a strong social dimension. Unemployed local people were taught and inspired to use the surrounding earth and rocks to make building materials and employ these in construction.

Visible from its entrance gate, the Mapungubwe Centre is approached through a valley from where the outcrop of new buildings merges naturally into the southern slope of a rocky plateau. From here, there is a view to a hill about 1km away, where the original archaeological site was discovered and excavated. The clever

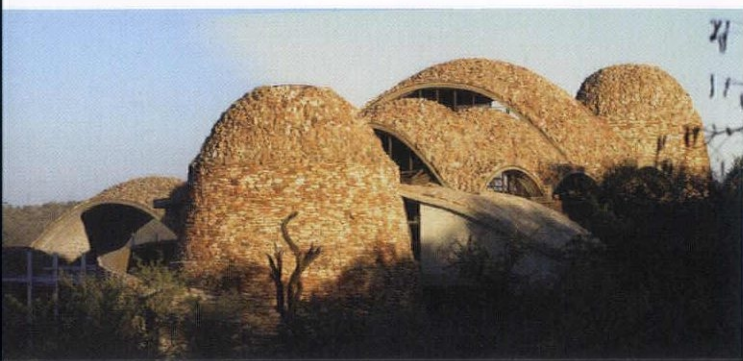
analysis of the site and the way it is structured to accommodate the programme becomes more apparent as you move from the entrance in the valley to the plateau 14m above. From here, the whole complex is revealed and linked visually to the archaeological site on the hill beyond. As you experience the sequence of changing directions, the orientation and variety of structures, from lightly covered walkways to vaulted spaces, all punctuated by open courtyards landscaped with rocks, plants and pools, you can only marvel at the ingenious organisation of a complex and historically potent site.

A series of equilateral triangles structures the landscape and the way the buildings address it. The triangles are designed around an axis linking the centre's entrance and the archaeological excavations. This axis traverses the site, running parallel with the hilltop ridge and rivulet below. It is not obviously articulated, but nonetheless provides a subconscious appreciation of the ordered way in which the buildings are grouped and the informal —





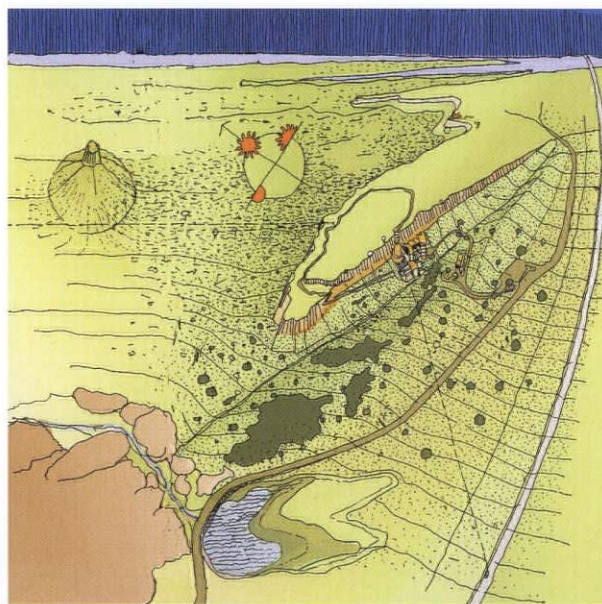
ROBERT RICH



PETER RICH

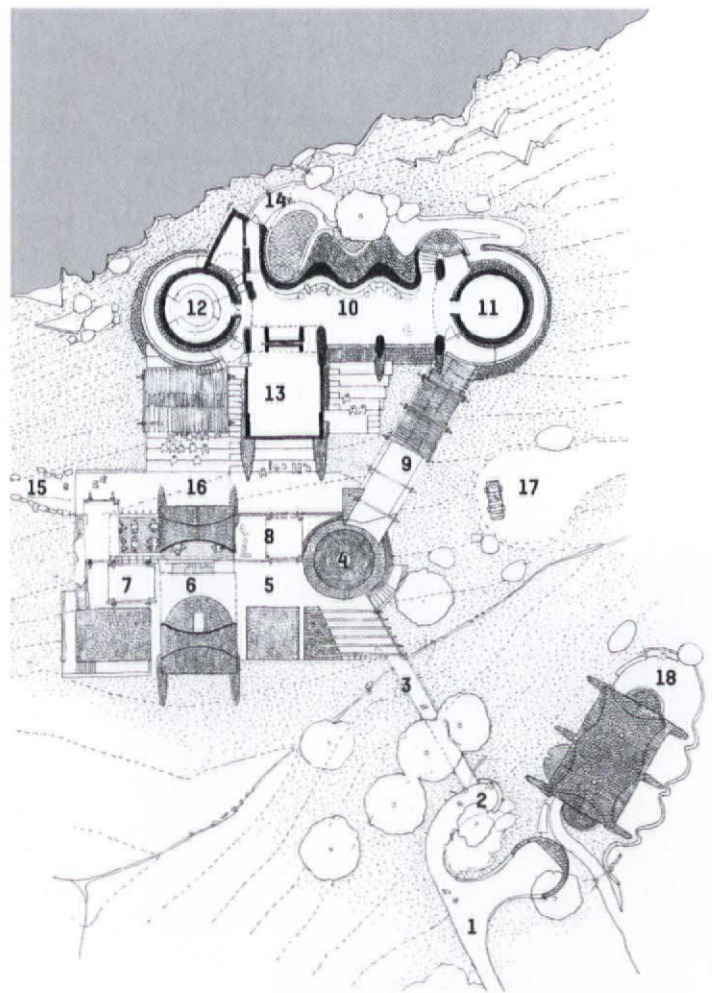
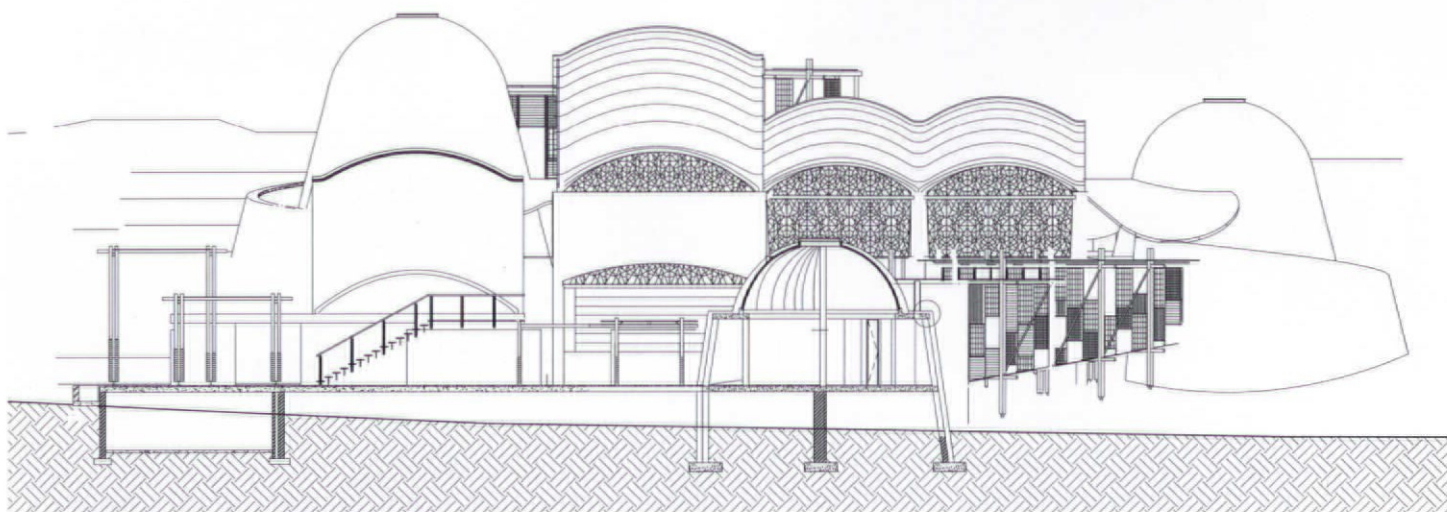


GIOVANNI VIO

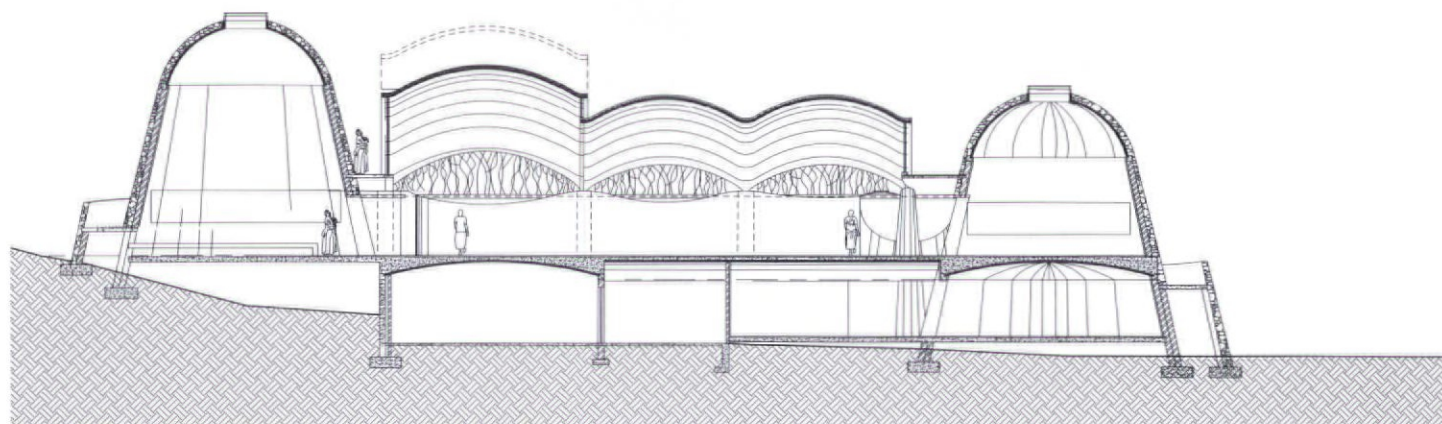


Previous page_
The veld landscape
of Mapungubwe,
a historically
charged site
Top left_ A ramp
leads up to the
reception cairn
and restaurant
Far left, middle_ The
rock-clad, bulbous
forms merge with
the landscape
Far left, bottom_
The timber vault
structure consists
of a thin skin of brick
Left_ Site analysis
Above_ The
undulating vaults
frame views in
the landscape

**RICH DEvised A TIMBREL
VAULTING SYSTEM CONSISTING
OF THREE VAULT TYPES**



- | | |
|-------------------------------------|---|
| 1 pedestrian arrival/
departure | 12 west (afternoon)
cairn |
| 2 arrival landing | 13 teaching and
learning |
| 3 bridge | 14 Mesa walkway
access |
| 4 reception cairn | 15 return route |
| 5 outdoor court | 16 external teaching |
| 6 WCs | 17 game drive
drop-off |
| 7 restaurant | 18 South African
National Park
headquarters |
| 8 craft shop | |
| 9 floating walkway | |
| 10 main vaulted
exhibition space | |
| 11 east (morning) cairn | |



flow of outside spaces and planned landscape elements between them. Rich was aware of the significance of the triangle in local Venda culture; a common arrangement is three dwellings placed in an equilateral triangle and linked with low walls. He had also seen isolated triangles carved into stones at the nearby archaeological site.

Arriving at the parking area (tactfully obscured by a hillside spur), you move past an outdoor introductory exhibition to cross the open veld to a group of shade-providing trees with views of the south elevation. A sloping bridge brings you to the reception cairn, which is punctured by an oculus so the sun's light bathes the interior. A free-standing vault generously spans the space between the ablution and restaurant facilities.

From the reception area a darkened passage curves around the cairn to an inclined, elevated walkway with a slatted timber floor and mesh screen balustrade. Shaded by tall trees on either side, you reach a heavy, stone-clad sloping buttress

marking the threshold to the crypt-like exhibition areas. In these spaces vaulted tiled soffits exhibit the faces of people who have been part of the historic continuum of Mapungubwe.

Peter Rich carries his sketchbook with him wherever he goes, so it is no surprise that he has cultivated an acute awareness of the light and shade, shapes and patterns of the world around him. With its alternating veld, valleys, stony ledges and rounded stony hills, Mapungubwe is a fascinating landscape. The introduction of synergic buildings into this terrain prompted Rich to consider the use of timber vaults – ancient structures originating in the Mediterranean region 600 years ago and still in use today by the Catalans. Shaped by natural structural forces, large vaulted spans can be achieved with minimal roof thickness. Local materials were used to make the brick vaults and because of the simplicity of the construction, unskilled labour could be employed. This had the advantage of being both economical and providing work for local people.


In collaboration with two structural engineers (John Ochsendorf of MIT and Michael Ramage of Cambridge) Rich devised a timber vaulting system consisting of three vault types. He describes these as 'a rectangular or square vault taking the natural distribution of horizontal compression forces via the hyperbolic parabola through buttresses to the ground', 'a circular timber dome' and 'a shallow pitched vault spanning between horizontal structural supports'.

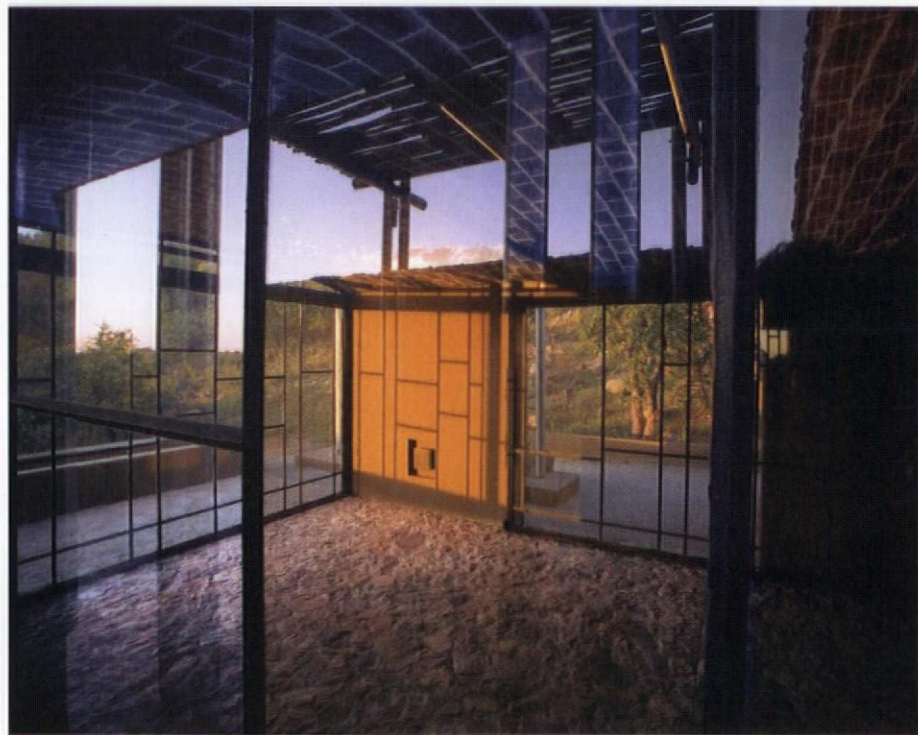
The vaults resemble a system of caves, which is culturally significant. Caves were regarded here not only as places of refuge and shelter but were also used ritually, in rainmaking ceremonies. Large areas cut out of the vaults admit a soft, almost sacred half-light to the exhibition areas inside. These openings are protected from glare by polycarbonate sheeting and eucalyptus stalks, and from baboons with iron grilles based on the pattern of kanniedood plants growing in the courtyards below. External terraces are shaded by horizontal slats to create areas —

Above_ Long section through the suite of exhibition spaces
Opposite, top_ Long section through the reception cairn
Opposite, bottom left_ Site plan showing the relationship of the building to the plateau above
Opposite, bottom right_ Main-level plan shaped by traditional triangular forms and cairn-like structures



reminiscent of the traditional African gathering space, or *kgotla*. The shaded areas and covered walkways bind together the landscaped spaces between the buildings which are planted with the indigenous species of the surrounding veld, so nature seems to flow through the structures.

Passing through the sequence of different spaces, vaguely aware of the triangular ordering system as you ascend through the building, you finally arrive at the generous vaulted exhibition area at the building's summit. Curving in two directions, the lofty, undulating vaults bear lightly on the side walls. Coloured light falls through the glass panels on the south wall and the famous Golden Rhino, one of Mapungubwe's most precious treasures, shines in its own impressive display cabinet. A sense of serenity prevails, unifying artefacts, architecture and nature. Peter Rich's orchestration of space and light resonantly connects the building with site and history, evoking wonder at the memory of so many civilisations that walked the earth before we did. 





ARCHITECT

Peter Rich Architects,
Johannesburg,
South Africa

STRUCTURAL AND CIVIL ENGINEER

Henry Fagan & Partners
**STRUCTURAL ENGINEERS
(TIMBREL VAULT DESIGN)**

John Ochsendorf,
Michael Ramage

CONSTRUCTION SUPERVISION

Peter Rich, Heinrich
Kammeyer, Franz Prinsloo

SOCIAL PROGRAMMING

Lineo Lerotholi

EMPOWERMENT AND POVERTY RELIEF PROGRAMME

Anne Fitchett

COST CONSULTANT

DH Construction

Techniques

CONTRACTOR

Ousna Bouers

Opposite, top_ Main
exhibition space.
Light is filtered
through a variety
of veiling devices
to soften the
harshness of the sun

Opposite, bottom_
The building
synthesises
vernacular wisdom
with modernity in
an unselfconscious
and direct way
Left_ Eucalyptus
stalks form simple
shaded pergolas

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CULTÚRLANN UÍ CHANÁIN IRISH LANGUAGE ARTS AND CULTURAL CENTRE

LOCATION

DERRY, NORTHERN IRELAND

ARCHITECT

O'DONNELL + TUOMEY

WRITER

MARK HACKETT

PHOTOGRAPHY

DENNIS GILBERT

Cities and towns have become rarified places in Northern Ireland. The previous intensity of their form and social relations could not survive the inward retreat of citizens during the conflict of the last 40 years. By choice or by coercion, people moved to suburban and segregated communities and now almost 80 per cent of the population lives in areas according to their religious affiliation. Indeed, rarefaction in cities was a conscious urban strategy for government agencies to deal with social conflict. O'Donnell + Tuomey's intensification of form in Cultúrlann Uí Chanáin, a new centre for Irish language arts and culture, can be seen along with a number of other projects that now seek to reclaim the norms of civic life in Northern Ireland.

One beginning of the Troubles – for there were many – can be traced to a former marshland out of which rise some inclined Georgian terrace streets (Cultúrlann Uí Chanáin stands among these terraces). The Battle of the Bogside – a citizens' revolt against what they saw as illegitimate authority – raged nearby for three days in 1969. Three years later, from the rear of the building that originally occupied O'Donnell + Tuomey's site, the first shots were fired by the British army on what became known as Bloody Sunday.

Above this marshland are the 17th-century walls of the colonial city, set on an inclined plateau. The city walls follow older ramparts and the contours of the land, while inside, a rectilinear grid of streets holds a series of tight urban blocks with some significant buildings emerging over the walls. The city saw a concerted firebomb campaign by the IRA in the 1970s in which much urban grain was lost, but as ever, tragic urban road decisions, bleak suburban estates, the decline of local clothes mills, neglect and incessant rain chiselled away at what was once a coherent townscape leading down to the quays and docks. Gradually it is being rebuilt, unfortunately with little skillfulness.

At the centre of this deeply landlocked and mid-terrace site, Dublin-based practice O'Donnell + Tuomey has created a building that evokes the idea of the ruined Irish tower house. The void space is a necessity and, like in an inverted ruined tower house, you climb and clamber through hidden or temporary stairways, exploring along its thick walls, nooks and remaining ledges that once adjoined long-gone timber floor and roof structures. The architects cite the influence of casual enfilade movement through medieval structures, a time when architecture viewed circulation less as a

controlling system. The arrangement suits the open nature of the institution. Rooms seem non-specific and connected, and you get the strong sense of a non-hierarchical space, conceived as a place for people to gather and converse.

Yet in seeking lost certainties in form, the image of the ruined tower house perhaps runs the danger of romanticism that could reflect on a perception of the building's core function of Irish language renewal. In many respects, Irish was a dying language until the events of recent decades redefined it as a method of gaining cohesion in the often soulless environments of housing estates and inner city neglect. The commitment involved in the formation of Irish language schools has enabled an authentic rebirth of language as a social movement. The schools inspire a social cohesion that is otherwise lacking and children are often trilingual before the age of ten. Irish also became a code language and form of resistance during the Republican prison protests of the late 1970s, adding a new influx of language activists. Knowing this background, it is possible to perceive the authenticity of the building stemming from an urban and social context.

The insistence on a strong form is manifest in horizontally —

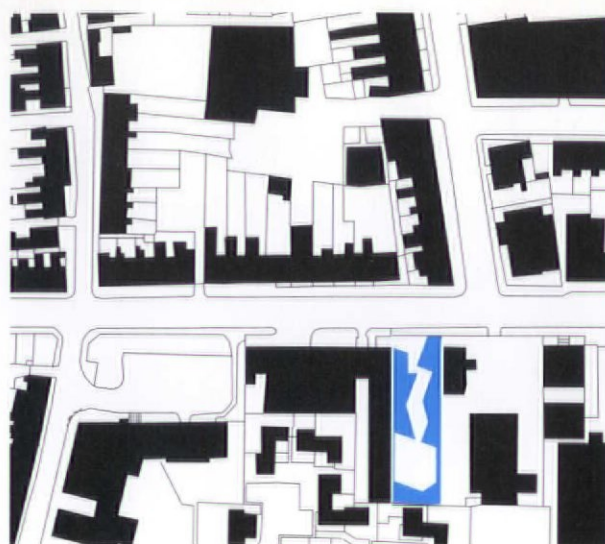


AT THE CENTRE OF THIS DEEPLY
LANDLOCKED SITE IS A BUILDING
THAT EVOKES THE IDEA OF THE
RUINED IRISH TOWER HOUSE



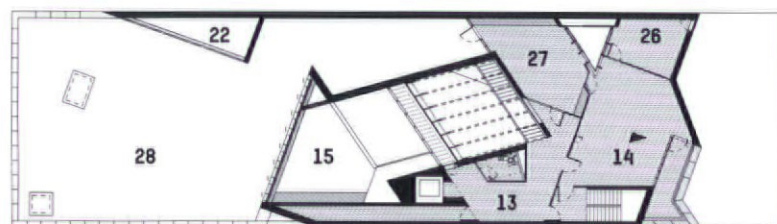
Previous page_
A light filled,
arcade-like passage
draws visitors
through to the
performance space
at the back
Left_ The folded
street elevation
sets up angular
bay windows in
the flat fronted
Georgian terrace
Right, middle_
Derry context
Right, bottom_
The central arcade
resembles a
ruined tower

- | | |
|----------------------|-----------------------|
| 1 entrance | 15 void |
| 2 shop | 16 projection room |
| 3 reception | 17 changing room |
| 4 kitchen | 18 make-up room |
| 5 substation | 19 teaching room |
| 6 servery | 20 arts & crafts room |
| 7 café | 21 staff room |
| 8 courtyard | 22 plant room |
| 9 WC | 23 green room |
| 10 performance space | 24 dimming room |
| 11 backstage | 25 external courtyard |
| 12 external terrace | 26 CEO office |
| 13 lobby | 27 boardroom |
| 14 office | 28 roof |

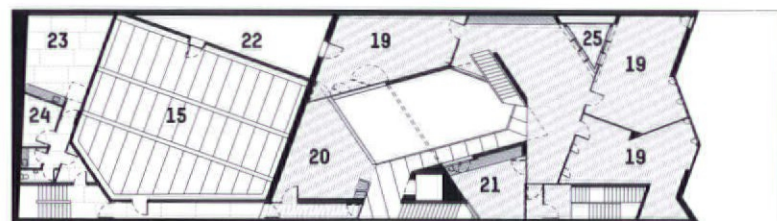


site plan

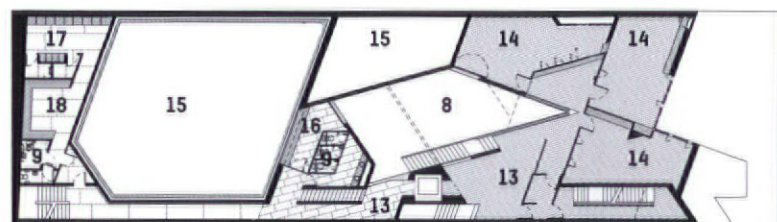
third-floor plan



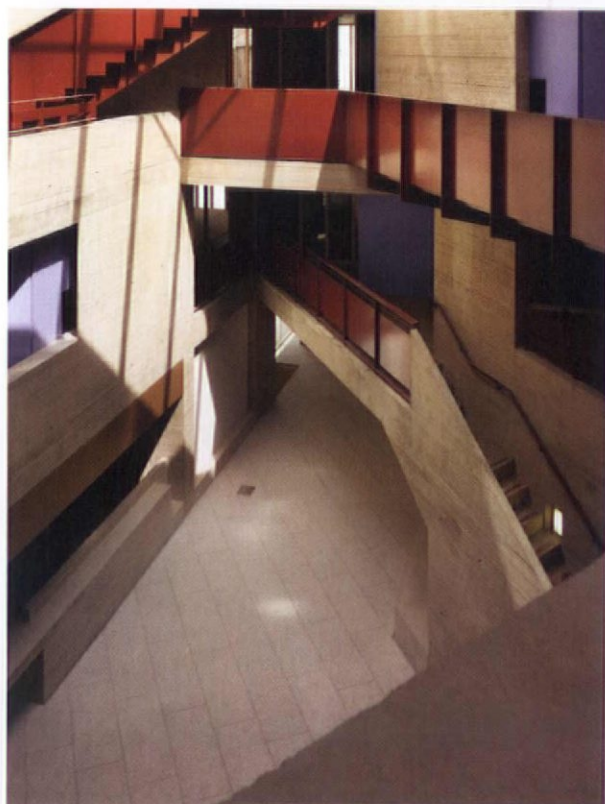
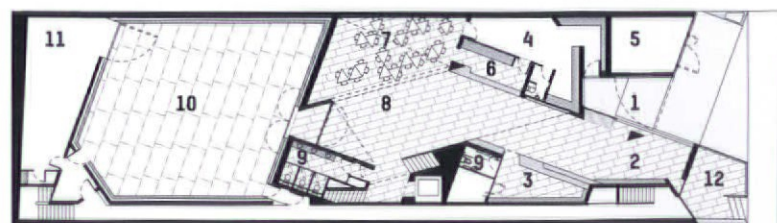
second-floor plan



first-floor plan



ground-floor plan




YOU GET THE STRONG SENSE OF A NON-HIERARCHICAL SPACE, A PLACE FOR PEOPLE TO GATHER AND CONVERSE

shuttered concrete. The boards are thin, relating perhaps to petrified brickwork coursing. In previous projects, O'Donnell + Tuomey has referenced the handball alleys of mid 20th-century Ireland – vernacular angular forms in coarse, horizontal boardmarked concrete – which sit mute at the edge of many villages following the sport's decline. Cultúrlann Uí Chanáin's formwork, however, has been sandblasted to expose the grain in fine detail, and the horizontal boards and lack of joints clearly sever the allusion to brutalist architecture, in which vertical boards and the articulation of day joints and floors express a constructive tectonic.

In José Antonio Coderch's La Barceloneta apartments of 1951, geometry is employed to lengthen the relationship of the hallway and living space, by using quarry tile floors to trace the diagonal to the corner window. The angular wave of Coderch's plan appears in part to derive from an interpretation of the building lines of adjacent blocks and their bay windows – the taut cranked elevation works into the compact plans of the apartment, so each room and door benefit in this easing. Coderch's black-and-white photographs accentuate the abstract nature of the elevation. But while it is a radical proposition, the

vertical folded forms also relate to neighbouring vertical window bays. Something similar is going on in Cultúrlann Uí Chanáin: the folded elevation evokes two town houses when viewed obliquely, setting up unexpected bay windows in a street which has none. As with Coderch's use of quarry tiles, you notice the diagonal timber flooring on the upper floors and these spaces appear more drawn out, seeking dimension where it is constrained.

The constraints of the site are indeed immense. It's a narrow, landlocked plot and the already compressed frontage must accommodate an existing electrical substation and fire exits. The idea of a taut, open court came to the architect almost immediately, as did the idea of a central arcade-like passage to shepherd people through to the civic performance space at the rear. The entrance has an informality and depth of threshold that draws the public realm inwards – but you yearn for a greater extension of this threshold, for a sense of rain hitting the terrazzo floor in the courtyard space. Architecturally, it inevitably struggles to achieve the atmosphere of an unheated atrium of old. The client may not agree, but a pinch in the air temperature would make this urban space all the more remarkable. 

Below_ The performance space at the heart of the building
Far right, middle_ Glazed external walls and internal partitions capture light in the deep plan
Far right, bottom_ Entrance hall and reception

ARCHITECT

O'Donnell + Tuomey,
Dublin, Ireland

PROJECT TEAM

John Tuomey, Sheila O'Donnell, Willie Carey, Anne-Louise Duignan

STRUCTURAL ENGINEER

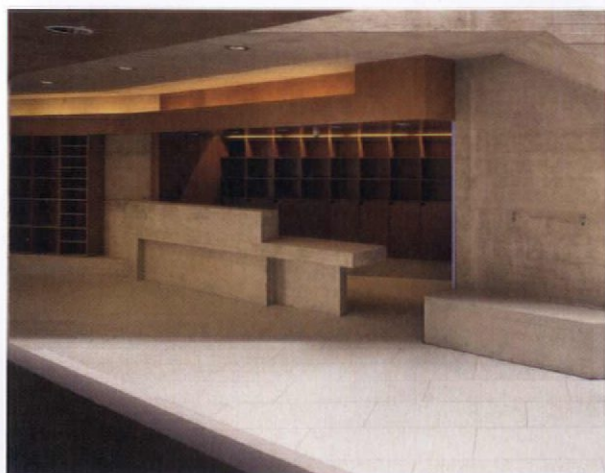
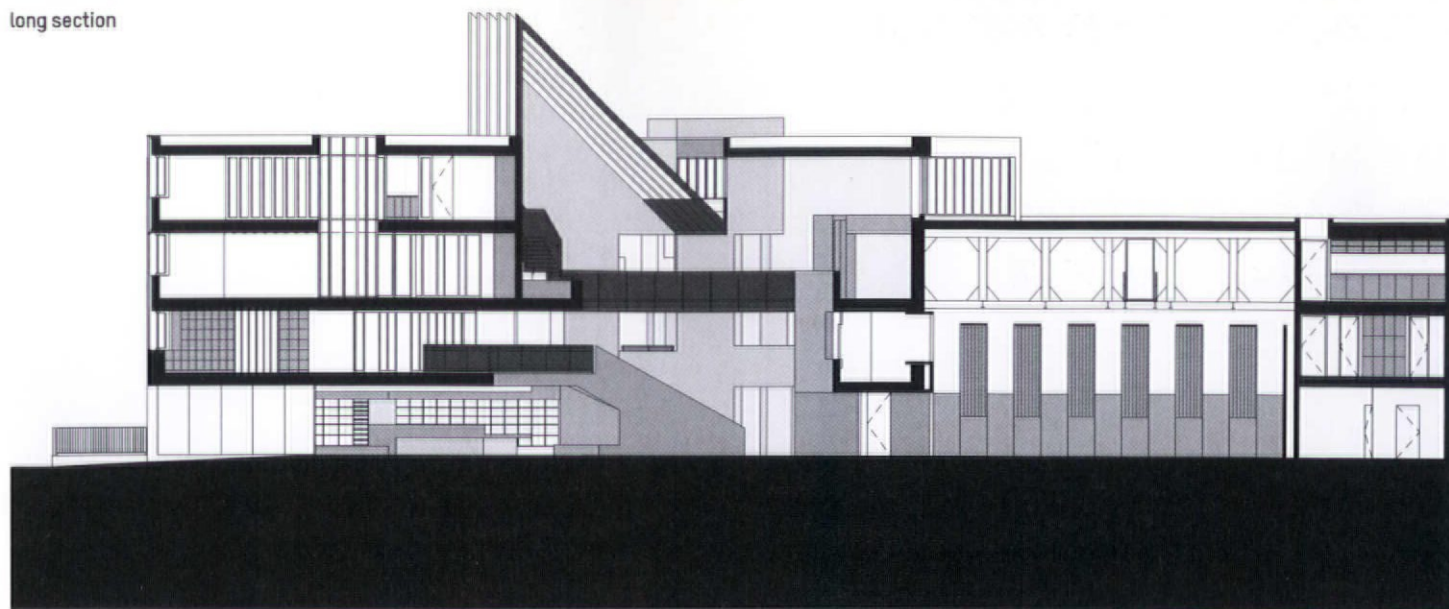
Albert Fry Associates

SERVICES ENGINEER

IN2 Engineering



long section



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**MUSEO NACIONAL COLEGIO
DE SAN GREGORIO**

LOCATION

VALLADOLID, SPAIN

ARCHITECT

NIETO SOBEJANO

WRITER

CATHERINE SLESSOR

PHOTOGRAPHY

ROLAND HALBE

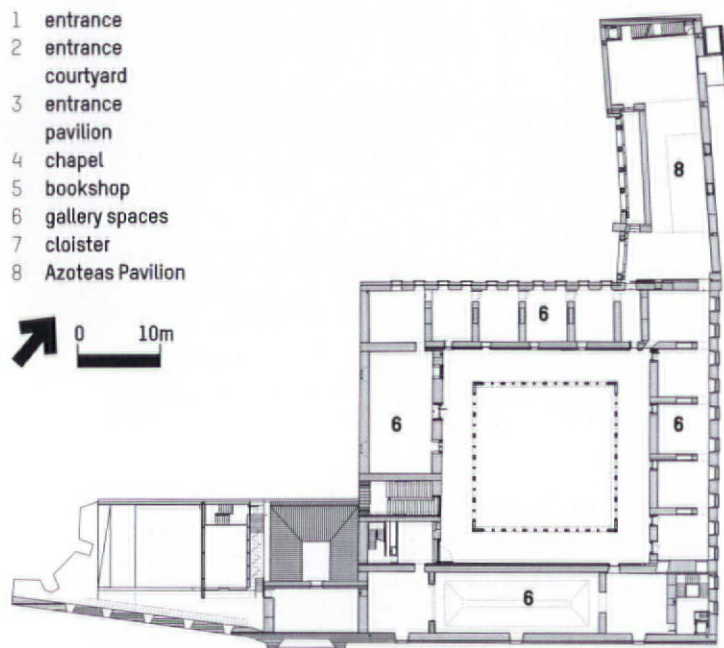




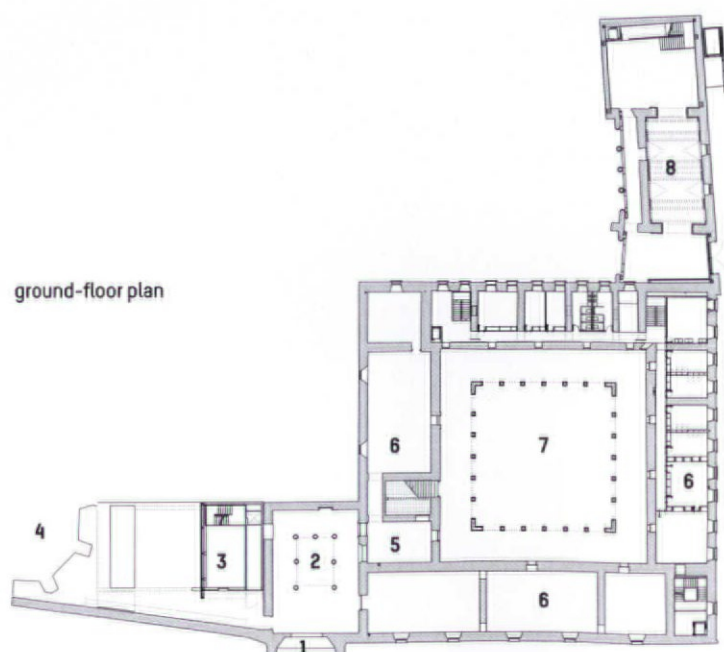
'THE TRACES LEFT BY EACH OF THE OPERATIONS OVER THE YEARS ARE A REFLECTION OF THE LIFE OF THE BUILDING'

ENRIQUE SOBEJANO

- 1 entrance
- 2 entrance courtyard
- 3 entrance pavilion
- 4 chapel
- 5 bookshop
- 6 gallery spaces
- 7 cloister
- 8 Azoteas Pavilion



second-floor plan



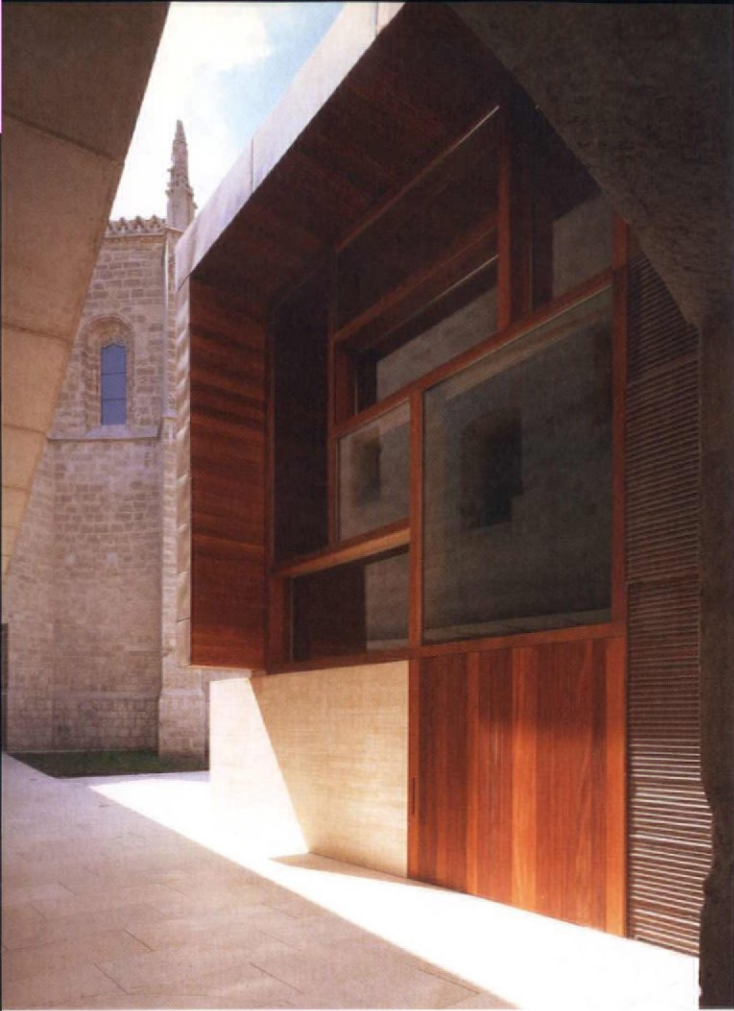
ground-floor plan

The Museo Nacional Colegio de San Gregorio in Valladolid is one of Spain's foremost museums of fine arts. Its collection concentrates almost exclusively on religious art, encompassing a temporal arc that begins in the Middle Ages and runs up to the 20th century. However, within this timespan, the focus compresses sharply on the *siglo d'oro*, the golden age of Spanish visual arts between the 15th and 17th centuries, and especially the great polychrome wood carvers who worked in Castile and the north of the Iberian peninsula between 1520 and 1650. The huge sculpture collection brims with often visceral and expressive sacred works, showing the explicit torment and torture of a sacrificial religion, but there are also furniture, paintings, processional floats for Holy Week, tombs, choir stalls and a clutch of exquisite coffered ceilings salvaged from cannibalised convents.

The quality of the artefacts is more than matched by the building that houses them. Described by museum director María Bolaño Atienza as 'a spiritual machine of the *siglo d'oro*', the College of San Gregorio was founded by a Dominican bishop in the late 15th century. Compacted into the city fabric like a giant piece of nougat, it occupies a site in the centre of Valladolid, next to the church of San Pablo. Within its high outer walls is a luscious Gothic cloister oozing with delicate tracery and twisted barley sugar columns. A chapel abuts a smaller entrance courtyard and the entrance itself is adorned with a fantastically picturesque medieval tableau of saints, knights, children, flowers and demons, as if melted wax had been dripped onto the facade. Over the centuries San Gregorio has been variously reincarnated as a school, prison, offices, tram depot and now a museum for devotional art; a curious yet somehow apt squaring of the circle.

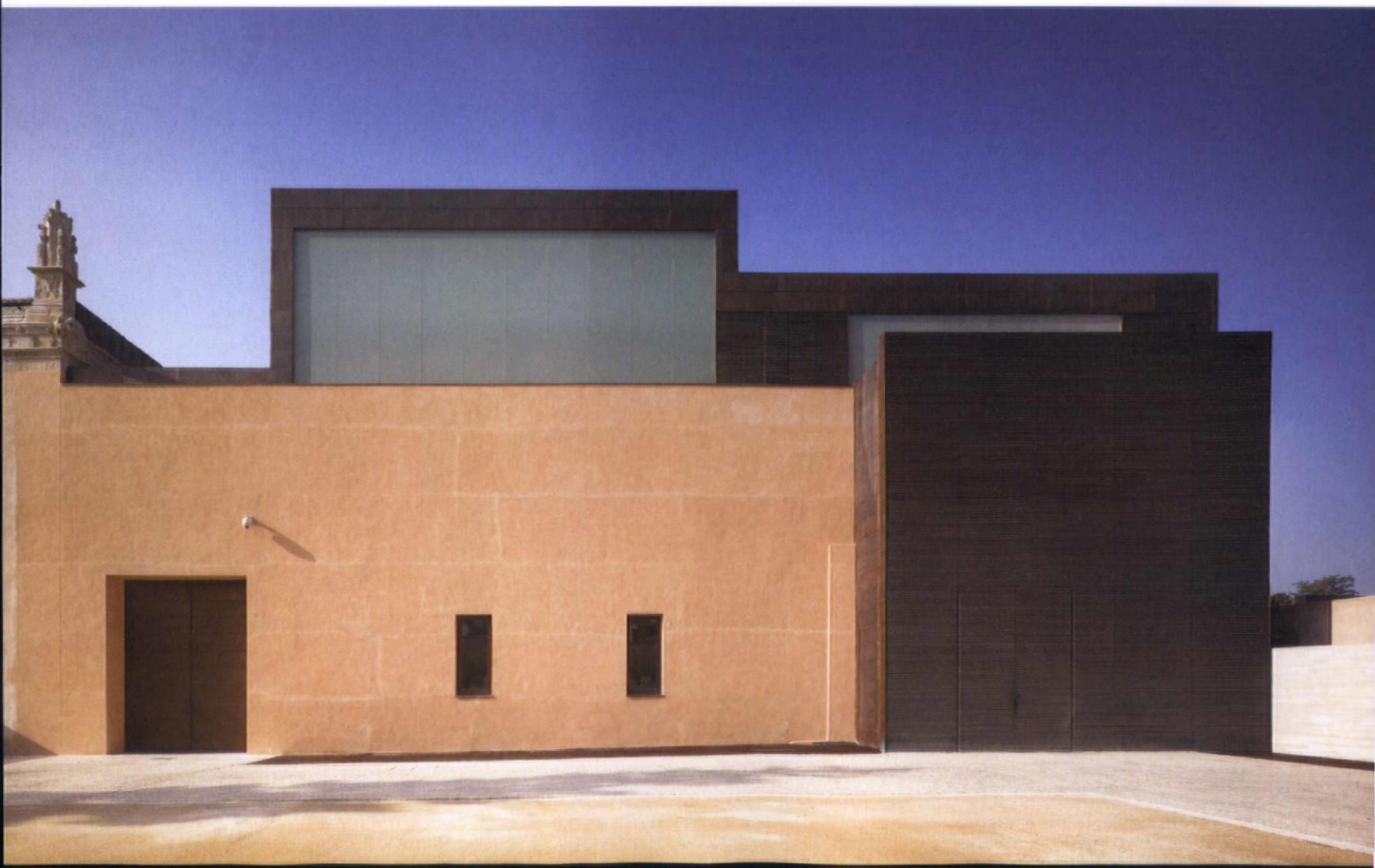
This colourful trajectory echoes that of the museum itself. From —





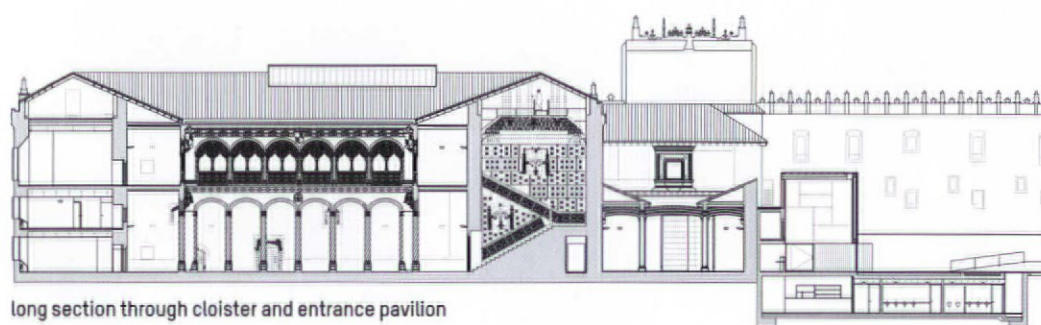
Previous page_
The new entrance
pavilion, another
chapter in the life
of the building
Left_ Detail of
entrance pavilion;
new parts are
identifiably
contemporary,

but nonetheless
at ease in the
overall composition
Below_ The luscious
Gothic cloister at the
heart of the building
Bottom_ The
renovated Azoteas
Pavilion

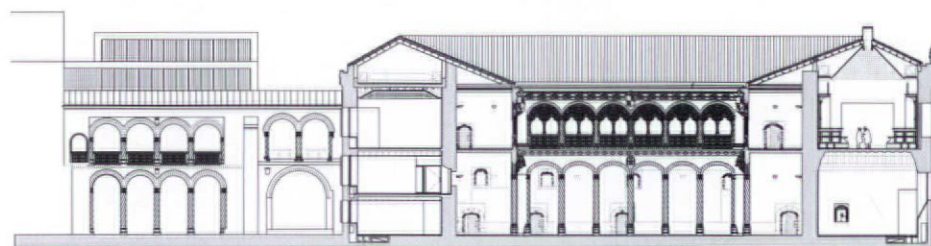


Right_ The new galleries in the Azoteas Pavilion

THE APPROACH ALLOWS CERTAIN ELEMENTS TO SPEAK FOR THEMSELVES, SUCH AS THE RESTORED CLOISTER, WHILE TACTFULLY ADDING NEW PARTS



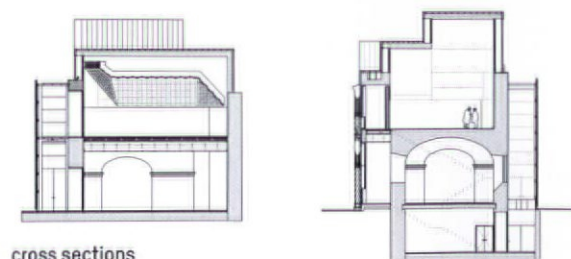
long section through cloister and entrance pavilion



cross section through cloister



long section through Azoteas Pavilion



cross sections



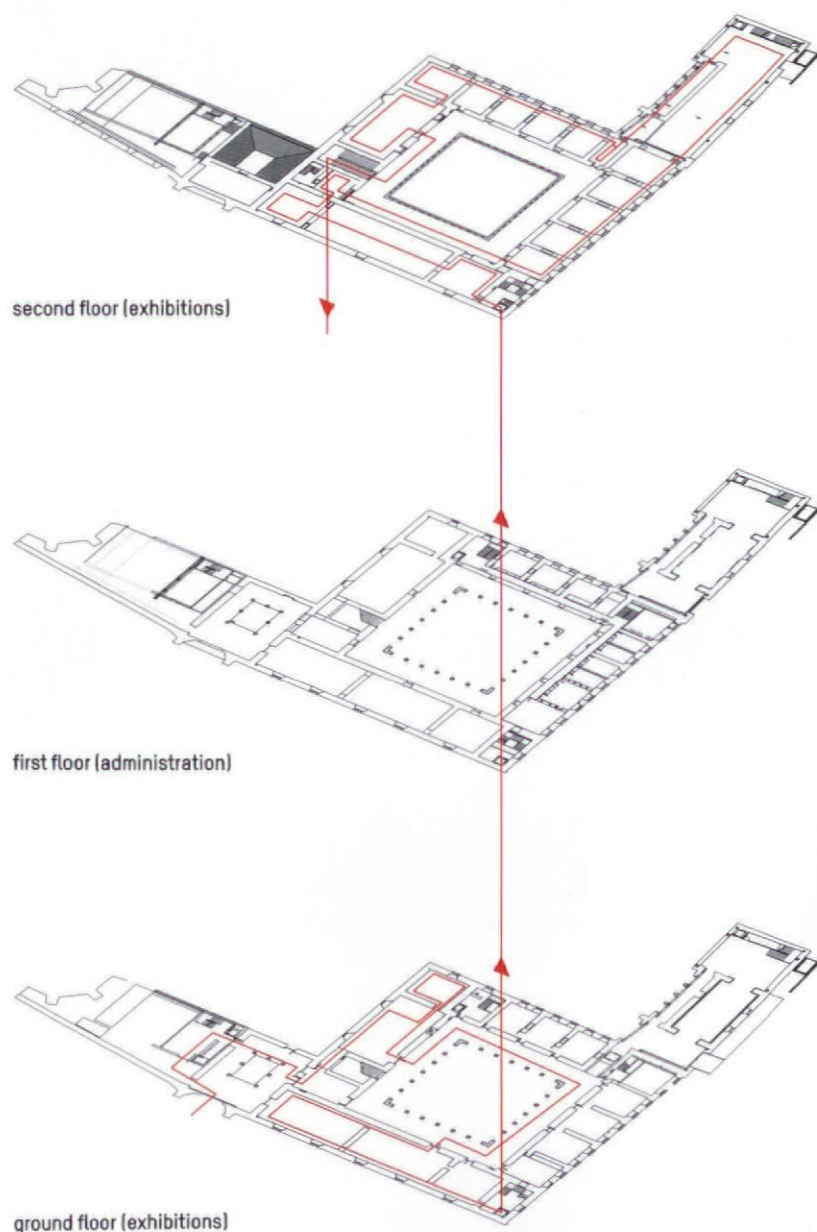


its founding in 1842 to its present manifestation, its journey has been as tortuous and prolonged as some of the more gruesome representations of Christian martyrdom held in its collection, involving different buildings, modifications of its charter, fluctuating funding and a succession of name changes. In 1933 the republican government transferred the museum to San Gregorio and, in an move calculated to extol the 'Spanishness' of the collection, dignified it with the title National Museum of Sculpture. Following the most recent refurbishment by Nieto Sobejano, initiated in 2001 and finally opened to the public last year, it is now known as the Museo Nacional Colegio de San Gregorio. This latest semantic shift reinforces the museum's relationship with a nationally important historic building and consolidates its roots and presence in the city.

With projects such as the archaeological museum at Madinat Al-Zahra (AR April 2009) and an extension to the Moritzburg Museum, Nieto Sobejano is clearly adept at breathing life back into historic structures. The biographies of old buildings exude a particular fascination in the sense that new work adds another layer to a shifting, imprecise continuum. 'The traces left by each of the operations over the years are a reflection of the life of the building,' says Enrique Sobejano, acknowledging San Gregorio's multivalent history. But this also gives a sense of the building's adaptability. 'Far from being frozen in a given period, it has adapted,' he says. 'It's another chapter in the life of a building in constant transformation, within an open-ended process that does not know yet how or when it will conclude.'

At San Gregorio, Sobejano and his partner Fuensanta Nieto extend their repertoire of making subtle composites of new and old that are beautifully nuanced and genuinely contemporary. 'Like components of an altarpiece built over centuries, —


SPACES ARE TRANSFORMED INTO STAGE SETS INHABITED BY DISMANTLED ALTARPIECES, CHOIR STALLS OR ELABORATELY CARVED CEILINGS



the new work will become part of the never-ending process of additions and modifications that accompany the life of the building,' says Nieto.

The approach is rigorous yet responsive, allowing certain elements to speak for themselves, such as the restored cloister, while tactfully adding new parts, such as a simple rusting steel and iroko-clad entrance pavilion adjoining the smaller courtyard. The most obvious intervention is in the appendix-like Azoteas Pavilion attached to the main cloister, where the building is hollowed out and new floors inserted.

A chronological circuit steers visitors around the museum, looping around and up the cloister, through the Azoteas Pavilion and back down again. The chronology begins with the touching primitivism of early medieval sculpture and ends with contemporary processional tableaux for Holy Week. Dark iroko floors and simple plastered walls transform the exhibition spaces into suitably neutral receptacles for the often riotous polychromy and gilding of the medieval Christian sculpture pantheon. In some cases, the spaces are animated and transformed into stage sets inhabited by dismantled altarpieces, choir stalls or elaborately carved ceilings detached from their original settings. The dramatic yet thoughtful counterpointing of splendid artefacts and sober rooms enriches both the collection and the building.

As the architecture is impregnated with layers of meaning, so too are the artefacts. 'Behind each sculpture, behind each canvas hides an infinite universe,' says Atienza. 'The work is not only an image, it also contains a story waiting to be revealed, and behind every visible story lie other invisible stories and previous truths; deeper, richer and more complex.' Nieto Sobejano's great skill is to create calm, receptive spaces for the centuries-old work of artists and craftsmen, so that they resonate more powerfully both in reality and in the imagination. 



Left_ Exhibition spaces are neutral containers for the visually and emotionally charged devotional works
Left, bottom_ Gallery with the upper level of the cloister beyond. Circulation is scrupulously chronological

Bottom_ Richly carved choir stalls give one gallery a surreal, stage-set quality
Below_ The skilful counterpointing of artefacts and architecture enriches both

ARCHITECT

Nieto Sobejano
Arquitectos, Madrid

PROJECT TEAM

Fuensanta Nieto, Enrique Sobejano, Pedro Quero, Carlos Ballesteros, Denis Bouvier, Vanessa Perelló, Juan Carlos Redondo

STRUCTURAL ENGINEER

N.B.35

STRUCTURAL ENGINEER

Geasyt



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HOUSE H

LOCATION

TOKYO, JAPAN

ARCHITECT

SOU FUJIMOTO ARCHITECTS

WRITER

ROB GREGORY

PHOTOGRAPHY


IWAN BAAN

House H is situated in a typical residential district of Tokyo. Sou Fujimoto's clients, however, are described as less typical, possessing 'a sophisticated understanding of quality in space'. They set the architect a contradictory brief asking for a variety of clearly defined rooms that combine to produce a singular continuous space. Parents to a young daughter, they wanted space for 'shared independence' with 'well connected and well separated rooms'. The outcome is this compact cluster of interiors that take on a stripped, Loosian quality, with plans divided into four quadrants. Yet they bear little of the intricacy of the Viennese architect's Raumplan houses (AR January 2009). Instead, Fujimoto's interiors derive complexity in section, through relationships of floor slabs and the composition of openings in both walls and floors.

Fujimoto applies a curious metaphor to this rectilinear concrete construction, likening it to a tree. The association is abstract, as he explains: 'It is not tree shaped but is like a tree in terms of the relationship between branches. Each room [or branch] defines its own space but shares a single three-dimensional atmosphere.'

Stairs create a dynamic route connecting rooms in a sequence that on Fujimoto's terms allows the family

to 'climb the tree'. Tested using 1:20 scale models, architect and client worked together to understand connectivity, deciding the size of each aperture and room, and prioritising the dining room as the most 'special, luxurious room', reaching up to 4.3m.

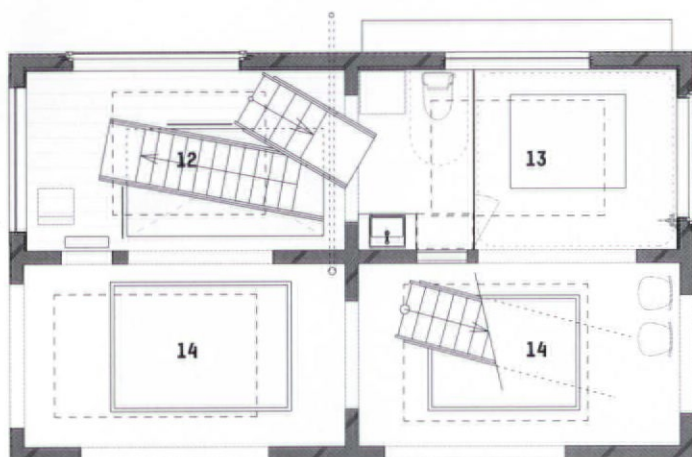
From the ground (which includes parking space, library and guest bedroom) a split-level hall leads up to the first-floor kitchen. From here, four timber risers lead into the double-height dining room, which is connected to the living room by a three-step plinth. Another stepped plinth connects the living room to the master bedroom and the annexed daughter's room – the most daring space, it has its own dead-end staircase sitting precariously above the kitchen. From the master bedroom, a long timber staircase leaps back across the living room to a 'private room' and bathroom, which leads into two external rooms that occupy residual space within the house's rectangular silhouette. From these sheltered roof-rooms, a final staircase leads to a rooftop viewing platform. Throughout, the dominance of Fujimoto's quadrant plan is expressed, with either staircase, plinth or up-stand reinforcing the threshold between spaces, creating another controlled but liberated domestic setting. 



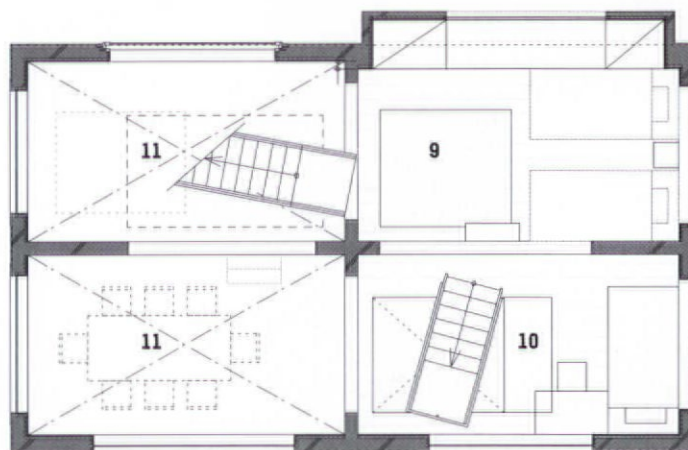
THE CLIENT WANTED SPACE
FOR 'SHARED INDEPENDENCE'
WITH 'WELL CONNECTED AND
WELL SEPARATED ROOMS'

- 1 car parking space
- 2 entrance hall
- 3 library
- 4 guest bedroom
- 5 storage
- 6 kitchen
- 7 dining room
- 8 living room
- 9 master bedroom
- 10 daughter's bedroom
- 11 void
- 12 private room
- 13 bathroom
- 14 roof room

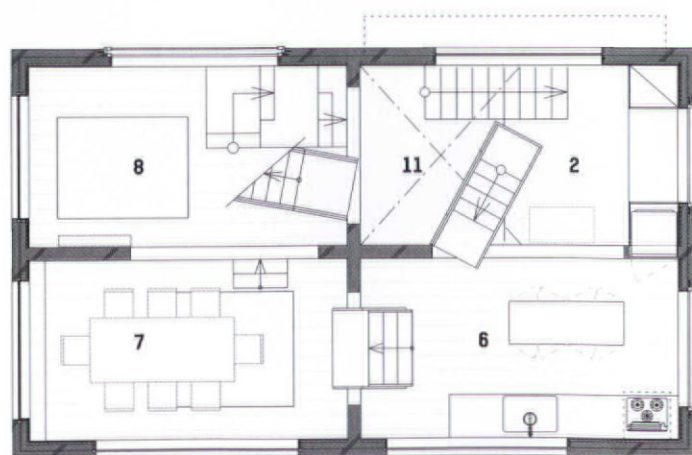
Previous page_ From the street, apertures allude to the spatial complexity of House H's cross section
Right_ Internally, dramatic spatial relationships exist, seen here with the client's daughter's bedroom sitting above and open to the kitchen



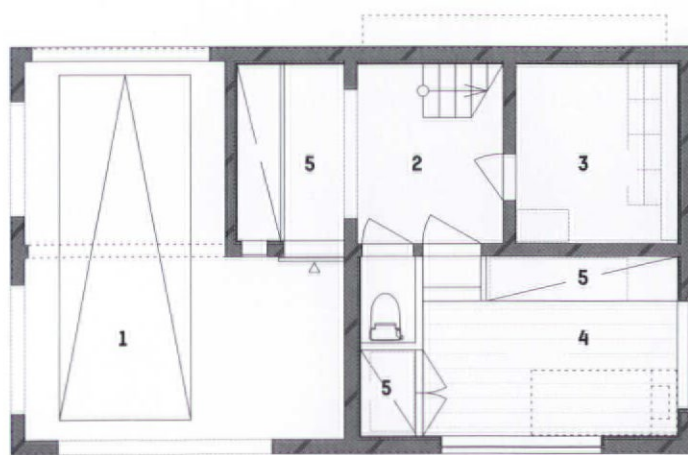
third-floor plan



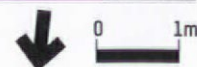
second-floor plan



first-floor plan



ground-floor plan

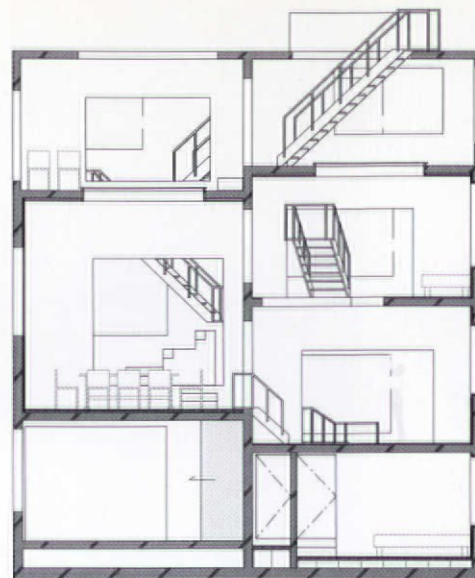




**'EACH ROOM [OR BRANCH]
DEFINES ITS OWN SPACE BUT
SHARES A SINGLE THREE-
DIMENSIONAL ATMOSPHERE'**

SOU FUJIMOTO

Below_ Seen from the split-level hall, the kitchen is accessed via a stepped plinth and short stair. Above the hall is the master bedroom, which has a glazed floor
Below right_ One of the roof-rooms, with apertures on all six sides
Far right_ Stepped plinths connect dining, living and bedroom spaces while a long stair leaps back over the living room to reach the uppermost floor



section through kitchen and dining room





ARCHITECT
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Japan
ARCHITECT PROJECT TEAM
Sou Fujimoto,
Hiroshi Kato
STRUCTURAL ENGINEER
Jun Sato
GENERAL CONTRACTOR
Heisei Construction Co

section through hall and kitchen



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SAN LUCAS SCHOOL

LOCATION

SANTIAGO, CHILE

ARCHITECT

FRANCISCO IZQUIERDO
AND MARIA JOSE VARAS

WRITER

CATHERINE SLESSOR

PHOTOGRAPHY

CRISTOBAL PALMA





HERE, THE GRUNGY AND STILL UNRESOLVED SURROUNDINGS CALL FOR A MORE DIRECT ARCHITECTURAL LANGUAGE

San Lucas School is a new primary school located near the intersection of two urban highways in the Lo Espejo district of Santiago, south-west of the city centre.

Operated by Fundación El Camino, a private charitable foundation that aims to give children from poorer backgrounds a decent education, San Lucas sits outside the state system but is funded by a mix of government subsidies and private donations. Designed by Francisco Izquierdo and Maria Jose Varas, it forms a new civic and social focus for a still emerging neighbourhood.

The school's site lies within a larger urban design initiative by the Elemental research group. Headed by Alejandro Aravena and based at Santiago's Pontificia Universidad Católica, Elemental specialises in designing and implementing social housing and urban renewal projects on the margins (AR July 2009).

When this project is complete it will transform 50,000m² of wasteland into a habitable new city quarter. It also aims to become a development exemplar for other neighbourhoods, showing how to remodel derelict parts of the city through the collaboration of private institutions, local communities and government.

In terms of programme and site, this tough little urban school is quite

different from Izquierdo's Ventolera winery (AR November 2009). There, on a remote rural site, the assemblage of carefully engineered structures had a conscious sculptural and topographic quality. Here, in the backstreets of Lo Espejo, the grungy and still unresolved surroundings call for a simpler and more direct architectural language of concrete-framed pavilions interspersed with courtyards.

Yet despite the brusqueness of form and materials, this is an intensely sociable building. Most of the classrooms, workshops and labs are deck access, so alleviating the banality of corridors, encouraging contact with the outside and creating spaces for informal interaction. Ramps and stairs thread through structure and children swarm with abandon, so the school resembles a giant, inhabited jungle gym.

Lying on a former reservoir, the site was originally covered with landfill and sediment. In clearing the site for this building, much of it was excavated and the resulting spoil reused to sculpt the surrounding terrain, forming a protective berm around the school's sports field and creating a new landscape of changing levels. The building sits cradled in the excavated space, one storey down from street level, so its urban —

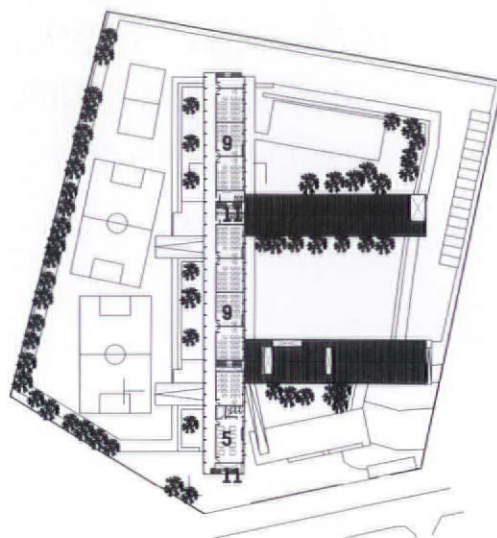




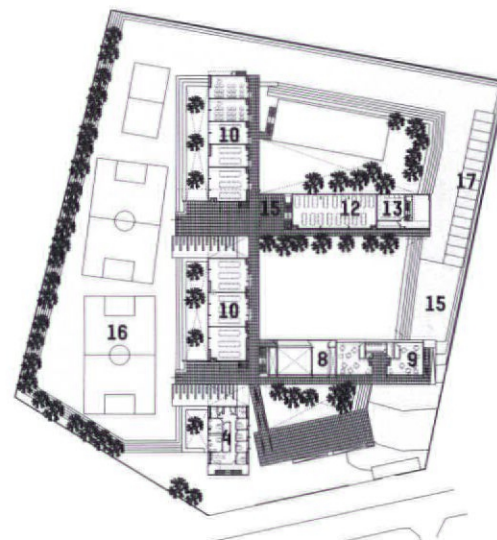
Previous page_
The school's pupils
animate the stark,
simple architecture
Left_ Occupying
the site of a former
reservoir, the
building is sunk
down a level
from the street
Below_ The spinal
street. The modular
structure allows the
building to expand
– a future phase
is planned which
will add a new
secondary school

- 1 entrance
- 2 reception
- 3 administration offices
- 4 directors' offices
- 5 teachers' room
- 6 mediatheque
- 7 chapel
- 8 choir room
- 9 classroom
- 10 laboratory
- 11 WC
- 12 dining room
- 13 kitchen
- 14 storage
- 15 courtyard
- 16 sports field
- 17 parking

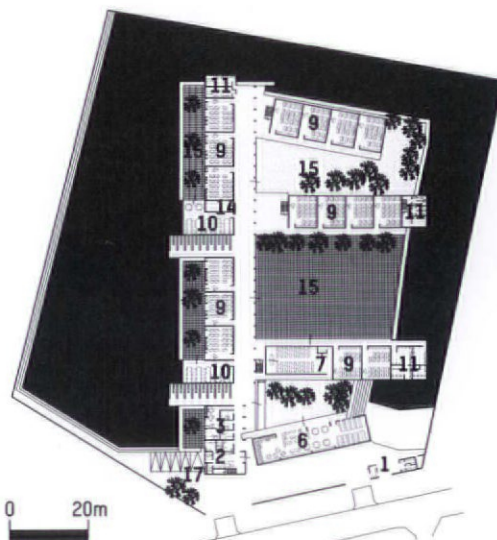
second-floor plan



first-floor plan




ground-floor plan

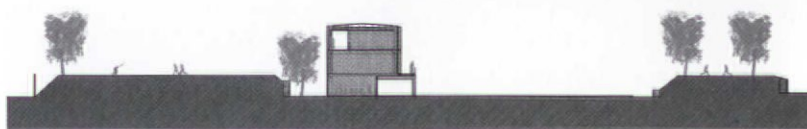


WITH GLAZED WALLS AND OPEN ACCESS DECKS, THE BUILDING'S PERMEABILITY CULTIVATES A SENSE OF ANIMATION

impact is tempered. This 'ground' level contains a series of planted courtyards that provide respite from the hard playgrounds and also soften the modular geometry of the architecture.

The building is organised logically and legibly. A three-storey spine, conceived as a convivial street, anchors a quartet of two-storey wings that dock at various angles along its east side. These subsidiary volumes define the courtyards and act as bridges. The lowest level contains classrooms, offices and the school chapel, with workshops, laboratories and dining room above. When the school decides to expand, the structure can be easily extended.

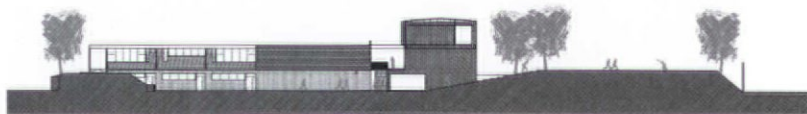
With glazed classroom walls and open access decks, the building's permeability cultivates a sense of animation, making pupils and staff feel part of a perpetually lively school community. This permeability is also an important aspect of environmental control, with narrow plans and openable windows encouraging natural ventilation in the hot, dry climate. The overhanging concrete structure provides additional shade. Showing what can be achieved on an unpromising site and modest budget, the school catalyses and uplifts the neighbourhood in its ongoing mission of renewal. 



cross section through spinal block



cross section through spinal block and planted courtyard



cross section through spinal block and main courtyard

Above_ Pupils being put through their paces.
Internal finishes are understated and robust
Right_ One of the softer planted courtyards

ARCHITECT

Francisco Izquierdo,
María José Varas

PROJECT TEAM

Francisco Izquierdo,
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Claudio Tapia,
Andrés Alvear

STRUCTURAL ENGINEER

Ingevs, Eduardo
Valenzuela







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CHURCH OF SKY

LOCATION

JEJU ISLAND, SOUTH KOREA

ARCHITECT

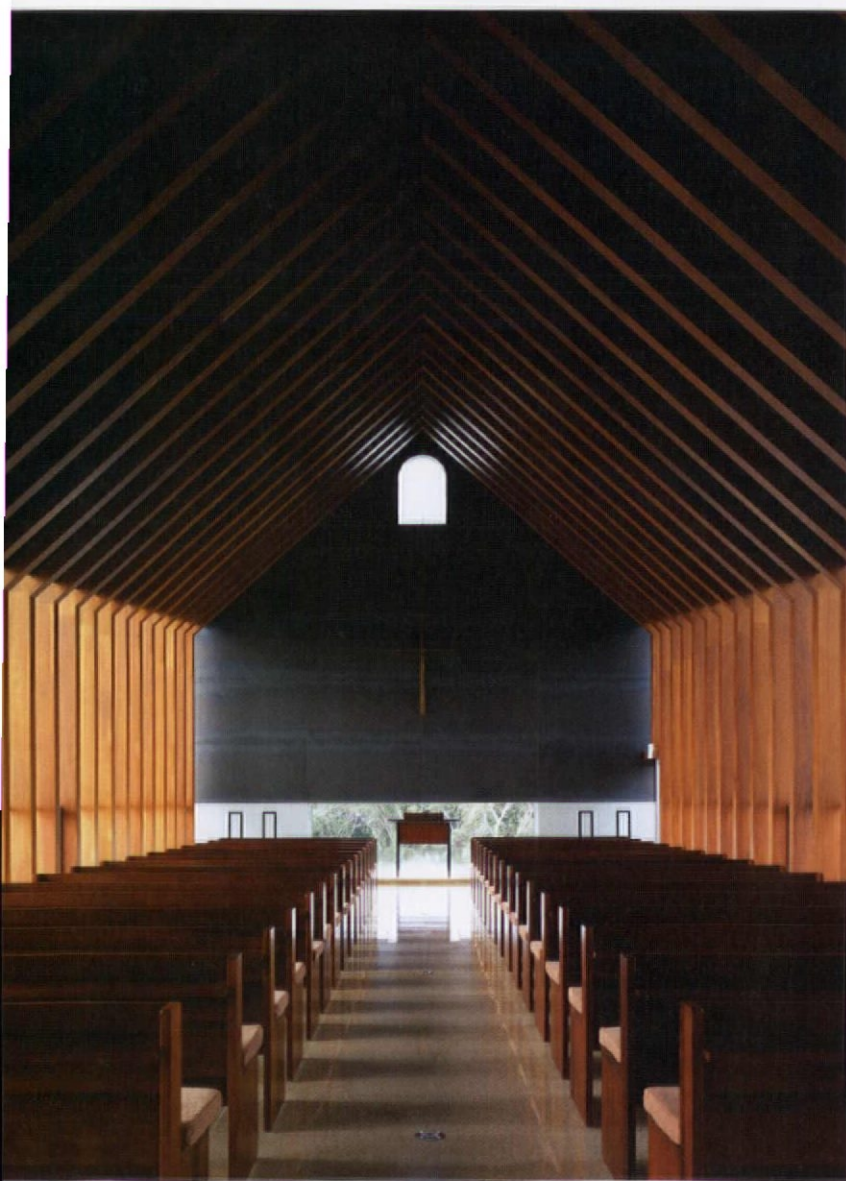
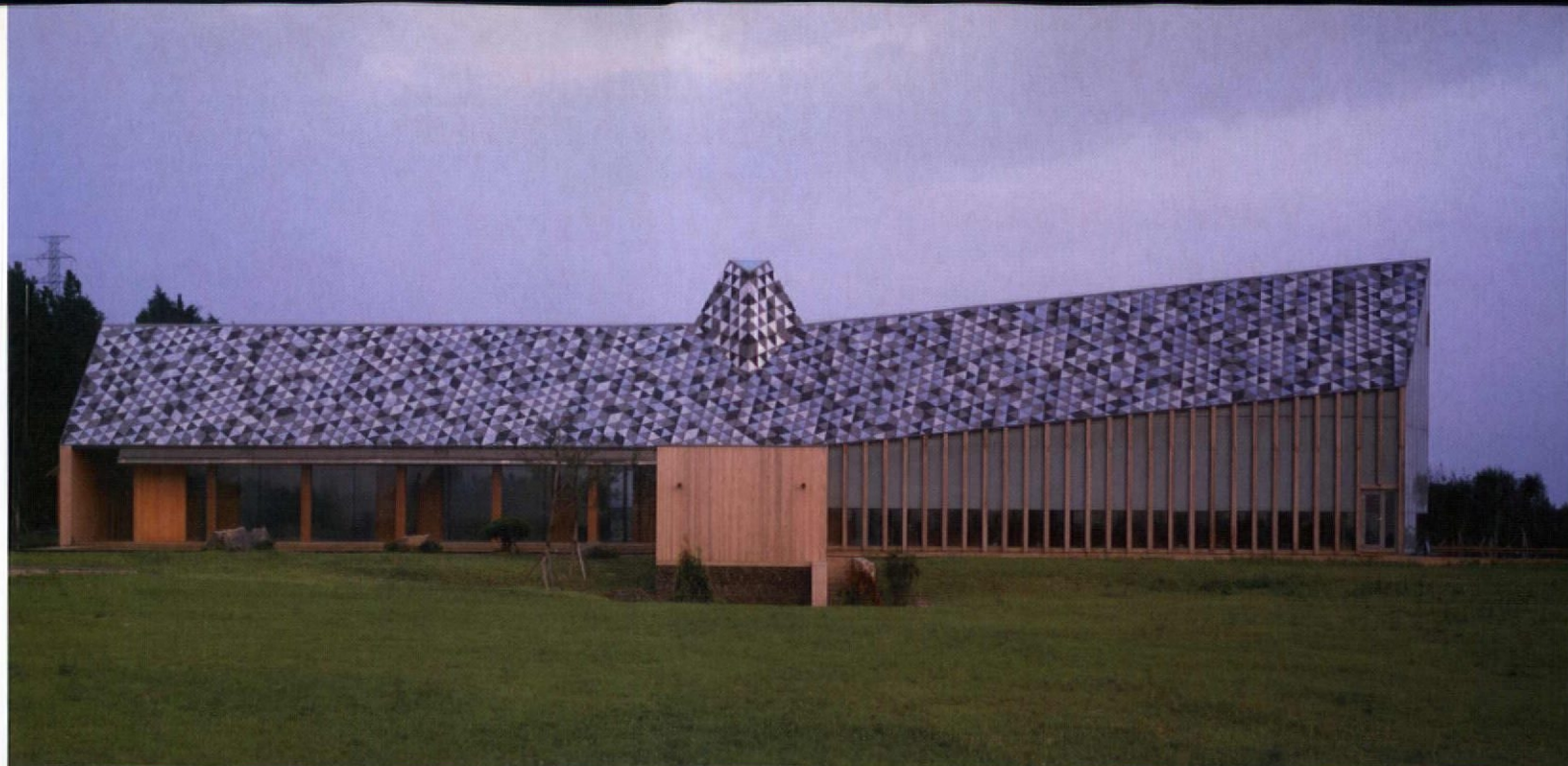
ITAMI JUN ARCHITECTS

WRITER

CATHERINE SLESSOR

PHOTOGRAPHY

SHINICHI SATO



Previous page_ Surrounded by a tranquil pool, the church is symbolically separated from its surroundings. The patchwork pattern of the zinc tiled roof is the sole concession to ornament in an assiduously austere building
 Above_ The long volume flares up over the chapel. The other end is occupied by parish offices
 Left_ Inside the simple chapel, a welcoming barn-like space washed by natural light

Just over three years ago, Japanese architect Itami Jun was asked to design a small church on Jeju, South Korea's largest island. The project was finally completed last year. The rural site lies near a quartet of new art museums and the church will eventually serve a new town being built in the vicinity.

Christianity's roots in the Korean peninsula date back to the establishment of the first Catholic prayer house in 1784. Today, with the exodus of Christians from North Korea following the Korean War, and boosted by a vigorous period of expansion in the 1960s and '70s, the religion is firmly established and practised with an astonishing fervour. The capital, Seoul, contains one of the world's largest Christian congregations (750,000 members of a single gospel church) and many South Koreans regard the constancy of their faith as a factor in the country's economic growth. The historical success of Christianity can also be attributed to its development as an indigenous lay movement, rather than being imposed by a foreign ecclesiastical hierarchy.

Poised in the rural landscape like a great ark, Itami's Church of Sky reflects the confidence of the modern Christian community. Yet such

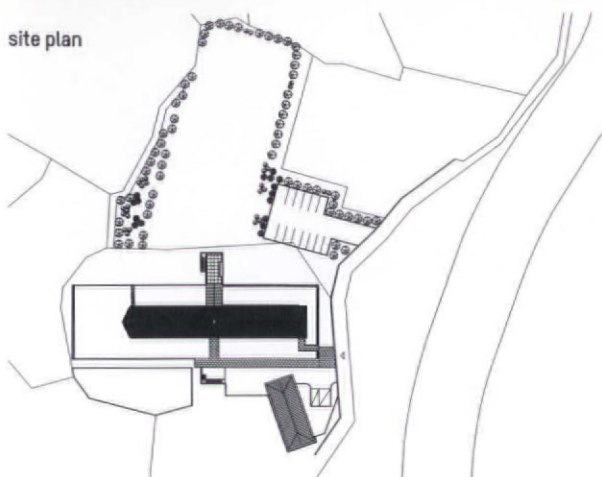
confidence does not make for gratuitously flashy or piously anodyne architecture. Itami's language of simple, quasi-vernacular forms (the building also resembles a barn) coupled with a restrained palette of materials and nuanced play of light, seem more inspired by Japanese austerity and understatement than some of the more hectic expressions of Western Christianity. There's little to distinguish it explicitly as a church, save for the mullions that form a slim cross high up in the translucent glass prow of the building's south facade.

Surrounded by a tranquil pool traversed by stone walkways, the building is symbolically separated from its earthly surroundings. The long volume is divided more or less equally into the chapel at one end and parish offices at the other, with an entrance hall at its midpoint. The main staircase and minister's room are separated and contained in a bar set at right angles to the main volume. A lower subterranean floor houses a large refectory, kitchen, storage, plant and a parish hall.

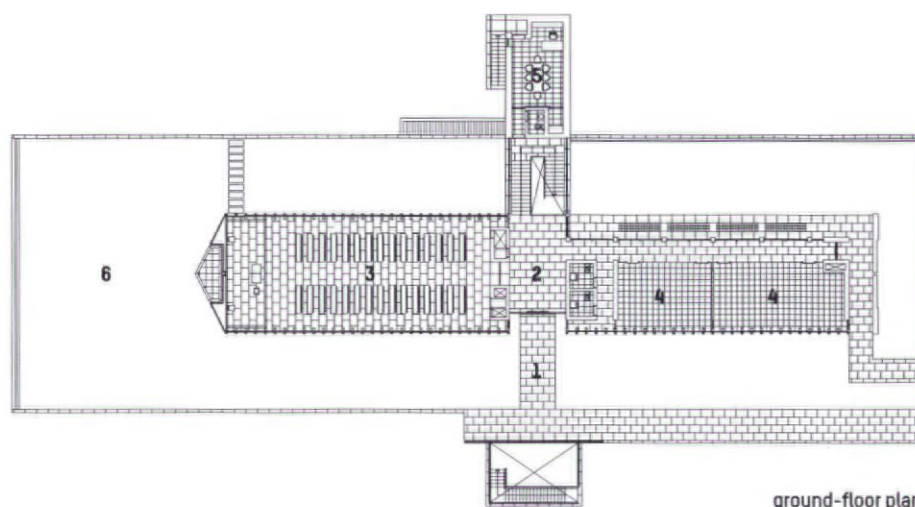
Supported by a steel structure wrapped in timber, the pitched roof flares up gently over the volume of the church to form a shallow prow overlooking the pool and landscape beyond. Its pixellated, pointillist surface is the sole concession to ornament. Triangular zinc panels finished in three different colour coatings, from anthracite to quartz, are arranged in a computer-generated patchwork pattern so the roof scintillates like a giant metal quilt.

'The biggest concern,' says Itami, 'was to make a structure "conscious" of the sky. In other words, strike a balance between the roof, or rather the upper structure, and the sky'. Natural light is funnelled into the entrance hall through a tapering, rhomboidal shaft and the side walls of the church are clad in long strips of translucent and clear glass. Changes in light and shadow are manifest in the interior, washing through the sober space and subtly imparting a sense of the numinous.

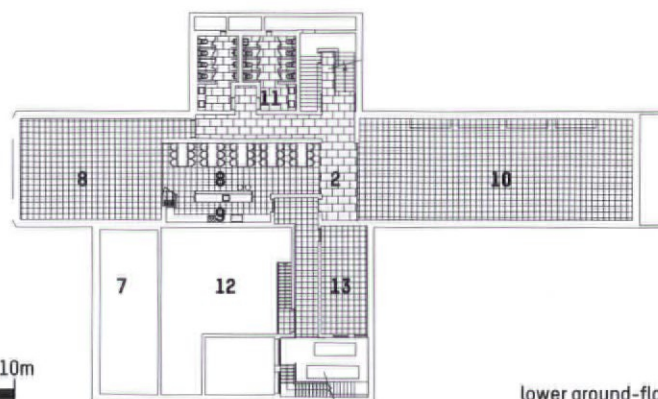
site plan



- 1 entrance
- 2 entrance hall
- 3 chapel
- 4 office
- 5 minister's room
- 6 water garden
- 7 water tank room
- 8 dining area
- 9 kitchen
- 10 parish hall
- 11 WC
- 12 plant
- 13 storage



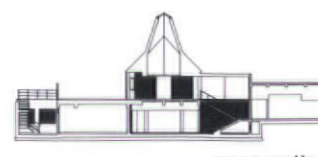
ground-floor plan



lower ground-floor plan



long section



cross section



OSNABURGH STREET PAVILION

LOCATION

LONDON, UK

KEY WORDS

STAINLESS STEEL,
RESONANT
FREQUENCY,
PAVILION

ARCHITECT

CARMODY GROARKE

WRITER

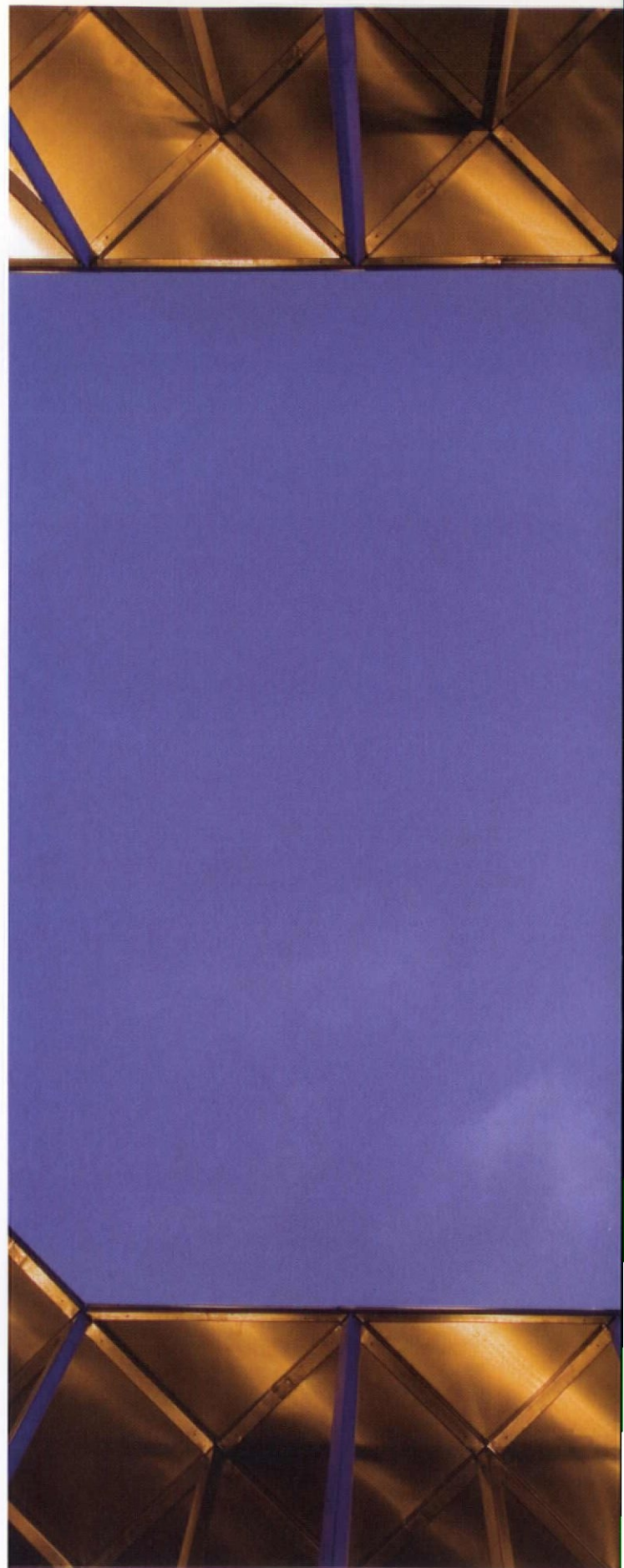
ROB GREGORY

PHOTOGRAPHY

LUKE HAYES

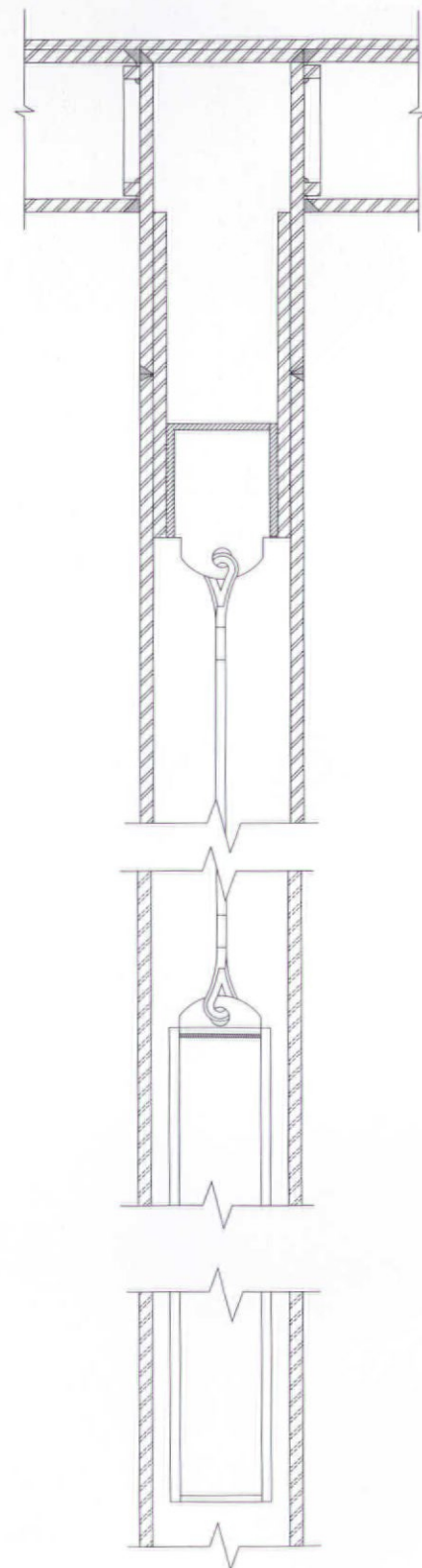
Commissioned by developer British Land and designed while Carmody Groarke was working on sculptor Antony Gormley's 2007 installation *Blind Light*, this new pavilion, near Regent's Park in London, shares a number of similarities to Gormley's work. Like many of his figures (such as *Quantum Cloud*, 1999, on the banks of the Thames), its structure is made entirely from square hollow sections of stainless steel. And as a study in place-making, Carmody Groarke – which also designed the cluster of vertical pillars commemorating the 2005 London bombings (AR August 2009) – has extended Gormley's investigation into the spatial potential of identical uniform elements. The architect has applied similar working practices, through the production of hand-made prototypes and through an acknowledged reliance upon structural engineers, to achieve this vision; one that in this instance was predicted 'would not stand up' by the consulting engineer who sat on the 2007 Architecture Foundation competition jury. Despite this scepticism, however, Carmody Groarke captivated the jury with its exquisite model (a brass etching comprising 1,200 rods, each 0.5mm in diameter) and, together with collaborators, set about the task of scaling up the concept without losing any of its refinement or lustre.

In doing so, the challenge was not simply to address the extremely high slenderness ratio of the 258 50 x 50mm sections that reach 8 metres up, like toothbrush bristles, to align the wafer-thin 3mm plate steel roof with the soffits of neighbouring colonnades. Or indeed, how to make the pavilion capable of providing —



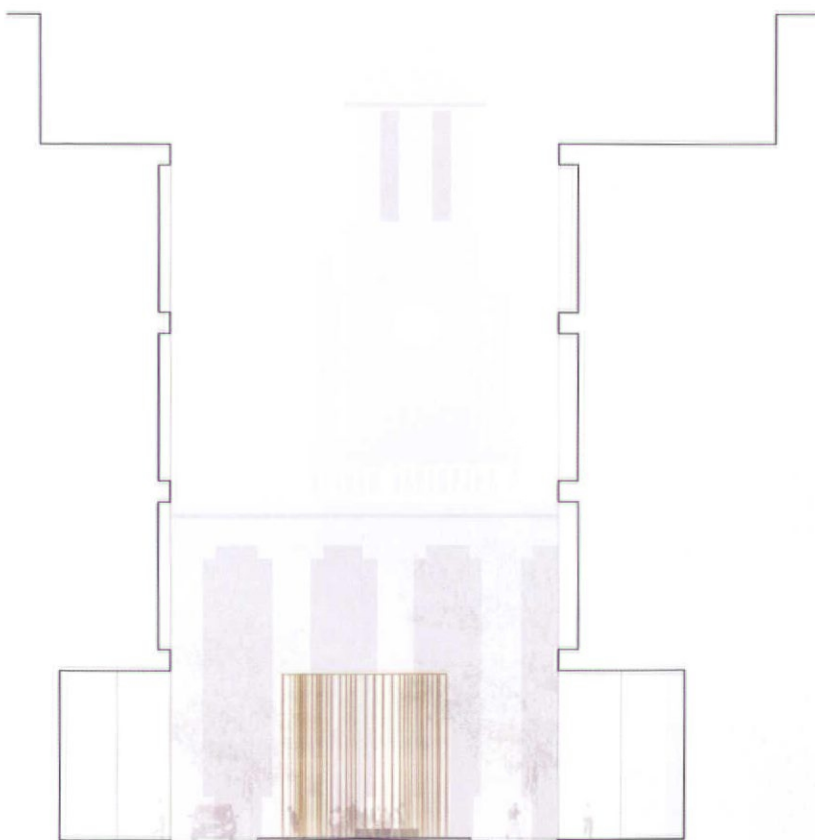


**SET IN THE GAP BETWEEN TWO
HUGE OFFICE BUILDINGS AND
FACING DUE WEST, THE EFFECT
OF WIND WAS CRITICAL**





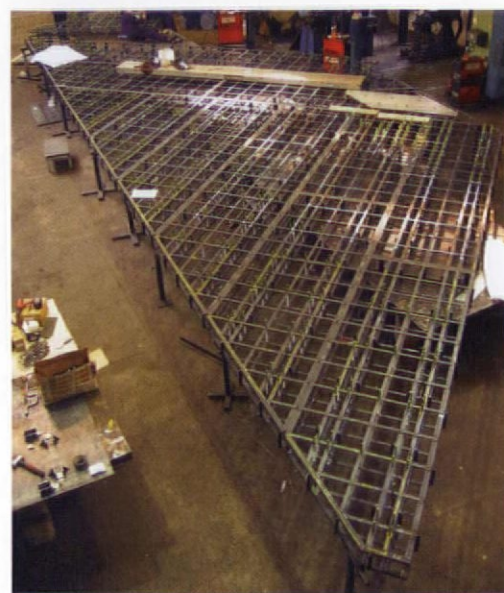
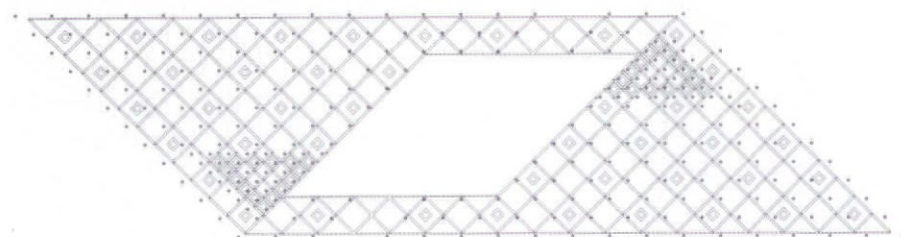
Previous page_ In the tradition of the belvedere, the architect wanted to frame a principal view – in this instance, the sky
 Opposite page, left_ The stainless steel structure is given a rich brass lustre using coloured LED base lights. With this method, the pavilion provides all the ambient lighting for this part of the new piazza
 Opposite page, right_ Detailed section through the damper
 Left_ The original competition-winning model shows the original scale of the proposition
 Below_ The cross section demonstrates the relationship between the pavilion and the adjacent colonnades



all of the piazza's ambient lighting. The architect also had to address health and safety concerns that presented scenarios such as what would happen if a posse of lairy revellers attempted to discover the structure's resonant frequency. The engineer's description of the challenges were more sophisticated: addressing the pavilion's sway-sensitivity, the non-linear stress strain characteristics of stainless steel, and any possible excitation from 'galloping, vortex shedding and interaction vortex shedding'. In other words, how to stop external forces causing the columns to resonate to the point of destruction, as seen in the failure of the Tacoma Narrows Bridge in the US in 1940.

Set in the gap between two huge Terry Farrell office buildings and facing due west, the effect of wind was critical. Following extensive wind tunnel tests, columns were arranged to shelter each other from prevailing winds. With no cross bracing, however, the structure could still sway, and it was insufficient to simply cluster the bristles more densely, as described (principally for composition purposes) in the architect's original design. Instead, spanning between the slim 50mm-thick rigid roof lattice and a 250mm-deep subterranean bolt cage, each column had to be fitted with an internal damper so that when shaken, little or no disturbance would be transferred to adjacent sections. In their final form, the dampers comprise silicone cloaked steel rods, freely suspended inside each column. When the column begins to vibrate, silicone collides with stainless steel, absorbing sufficient energy to ensure the responding movement is controlled. As demonstrated by —

IT IS EASY TO ACHIEVE A 100MM
DEFLECTION, BUT APPARENTLY
IMPOSSIBLE FOR THIS TO VISIBLY
AFFECT ADJACENT COLUMNS





Opposite, top left_ The structural grid illustrates setting-out of columns, bolt cage and lattice. Light fittings sit within this grid

Opposite, top right_ Fabrication of the pavilion was done in sections; this component is part of the subterranean bolt cage

Opposite, bottom_ Shop drawings reveal evidence of many on-site conversations

Left_ A stockpile of dampers, showing cable suspension
Below_ The Building Research Establishment at Watford, one of many test rigs for the pavilion



ARCHITECT

Carmody Groarke,
London, UK

PROJECT MANAGER

M3 Consulting

ENGINEER

Arup

LANDSCAPE ARCHITECT

EDCO

LIGHTING DESIGN

Maurice Brill
Lighting Design

CONTRACTOR

Bovis

SUB CONTRACTOR

Skanska

SPECIALIST SUB


CONTRACTOR

Sheetfabs, Nottingham

architect Andy Groarke, when an individual column is manhandled it is easy to achieve a 100mm deflection, but apparently impossible for this to visibly affect the adjacent columns.

With Arup silencing structural sceptics, Carmody Groarke applied its trademark finesse to the project, including bespoke LED fittings with a colour-matched gel that produces a rich brass glow, and extraordinarily tight coordination tolerances, whereby at the base of each column a 50 x 50mm grid of granite cobble is resolved with perfect accuracy.

The only shortcoming with the pavilion is that there isn't quite enough of it. Smaller than the original competition-winning scheme, the scale fails to compete with the dominance of the Farrell offices, and with only one clearing and a single route – conventionally signalled by standard dropped kerbs – the potential for passers-by to spontaneously interact with and meander through the field of columns seems less convincing in reality.

That said, it is exquisite – and in anticipation of building on a larger scale, Carmody Groarke has proved its technical and artistic capacity to take a project from charming concept to convincing reality. It is also testament to the practice's ambition and know-how, showing how to make the most of a relatively conventional brief by not only giving the client something that went beyond the original commission (which called for a café), but also by creating an opportunity to pursue its own architectural interests. The outcome is a beautiful structure that extends the tradition of the belvedere, bandstand and folly in an undeniably contemporary way. 

EXPLORING EYE

IN THE SECOND OF A THREE-PART SERIES, THE AR RETURNS TO THE WEST COAST OF AFRICA TO EXAMINE ITS TRADITIONAL AND EMERGING VERNACULAR ARCHITECTURE

WRITER, PHOTOGRAPHY
JON BESWICK

High levels of poverty impel the vast majority of Africans to live in shelters constructed from cheap, natural materials. Building solutions and building forms have therefore evolved from the availability of materials shaped in response to prevailing climatic conditions. And while there may be an infinite number of architectural variations between villages, inhabitants are still limited to the availability of materials in specific climatic zones.

The first article on this topic (AR September 2009) discussed three climate zones north of the equator: desert, Sahelian and savannah. Yet along Africa's immense length there are in fact six major climatic regions. Towards the equator, the climate changes dramatically with increased humidity and precipitation. The grassy savannah plains morph into the thick, lush forests of the humid tropical zone, followed by the impenetrable rainforest of equatorial regions. South of the equator, the climates reverse back from equatorial to humid tropical, savannah, Sahelian and desert, culminating in the

Mediterranean climate of the southerly regions of South Africa.

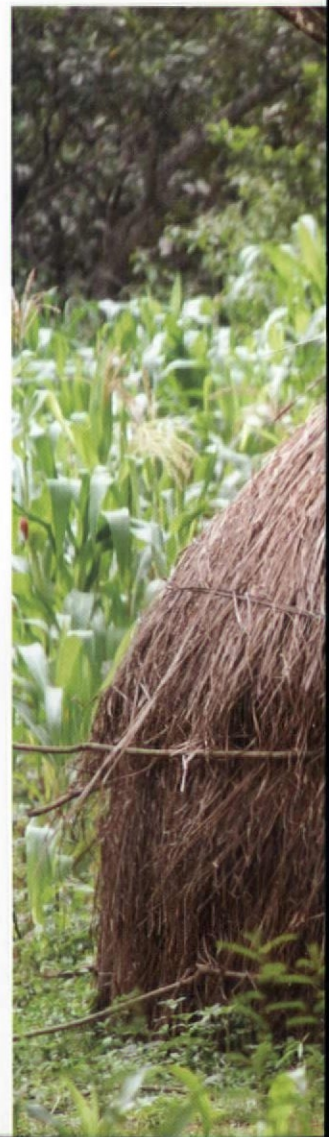
HUMID TROPICAL CLIMATE

The humid tropical climate characterises parts of Ghana, Ivory Coast, Togo, Benin and Cameroon. As in other regions, reeds and grasses play a hugely important role here, forming the basis of all the variants of thatched roof familiar throughout Africa. Thatch continues to be the primary building choice in rural areas despite the array of man-made materials that can be obtained cheaply, such as corrugated iron. For all their durability, metal sheets have inherent problems, so thatched roofs continue to dominate the architectural landscape. An obvious advantage is cost – no matter how cheap metal or other man-made materials are, they will never be free.

Close proximity to materials encourages whole communities to learn the skills required for construction and maintenance. Such skills, far simpler than those employed by complicated modern roofing systems, are then passed

on from generation to generation. The only tool required to manufacture thatched roofs is a machete, and in rural Africa these are inexpensive and easy to acquire. The beauty of thatch lies in its simplicity, which gives rise to the conical plan employed by many dwellings. Another advantage is that when built up in layers, natural roofs are not only waterproof but also provide some degree of insulation from the midday sun. Corrugated iron roofs become unbearably hot during the day, forcing occupants to find shelter outside and, paradoxically, dwellings with corrugated roofs are often too cold at night. Yet despite the clear advantages of natural roofs, corrugated iron continues to proliferate in African cities, especially in the booming slums.

As the nature of society changes, so does its architecture. Part of the global trend towards urbanisation, the power and influence of Africa's shifting population should not be underestimated. Many African tribes are nomadic traders by nature, but these numbers have been bolstered by failed farming communities —





Above left_ A simple thatched home in Cameroon. Walls are decorated with whitewash made using water and powder from the distinctive-smelling durian fruit

Above_ Slices of large durian fruit are left to dry on a roof in Cameroon. Just one example of how inhabitants use free natural resources to build and decorate their homes

Left_ A thatched dome building in Nigeria. Multiple layers of thatch mitigate against extreme heat conditions. The use of corrugated iron in vernacular construction is proliferating, despite the material becoming extremely hot in the daytime and allowing valuable heat to escape at night

IT IS NOT UNCOMMON TO SEE SHELTERS CONSTRUCTED FROM OLD CARS, TYRES AND WASHING MACHINES

and millions of displaced people all looking for work. Most of this mobile workforce (owning little and possessing few skills) are drawn to the cities by the false promise of a better life. Larger cities have subsequently exploded in size in the last two decades and overstretched or non-existent housing and infrastructure has resulted in millions living in shanty towns. In Nigeria's largest city, Lagos, where the population is loosely estimated to be around 15.5 million, a majority occupy primitive lean-to shacks surrounded by open sewers and piles of rubbish. These shanty towns form the vernacular architecture of the urban population. Dwellings are erected in minutes from any available rubbish; everything is salvaged. Crashed cars and lorries are quickly and eagerly stripped down, with material being sold or used for building. The ingenuity of the urban population is impressive. It is not uncommon to see basic shelters constructed from old cars, tyres, shipping containers and domestic fittings such as washing machines.

In Freetown, Sierra Leone, I came across basic shelters that echoed Bedouin tents, with strips of canvas sacking (and occasional corrugated iron) fixed to timber frames. Shanty towns here seamlessly merge and intermingle with existing structures. Any unclaimed and available land is utilised in these overcrowded cities, nowhere is exempt. Even train tracks provide space for mobile markets, which break up when trains pass, only to reform moments later. The inherent inadequacies and failings of cheaply constructed buildings and their intolerable internal climates cause the streets, rail tracks and waterways to become part of the transient architectural landscape where African life is lived.

If you are a stranger, Africans seize any opportunity to talk to you, watch you, sit with you, or eat with you. I reflected that sitting and conversing with total strangers would never happen in London, so why is it such an important part of West African life? An educated Nigerian engineer told me: 'In London you have things to do... Here, nobody works, so

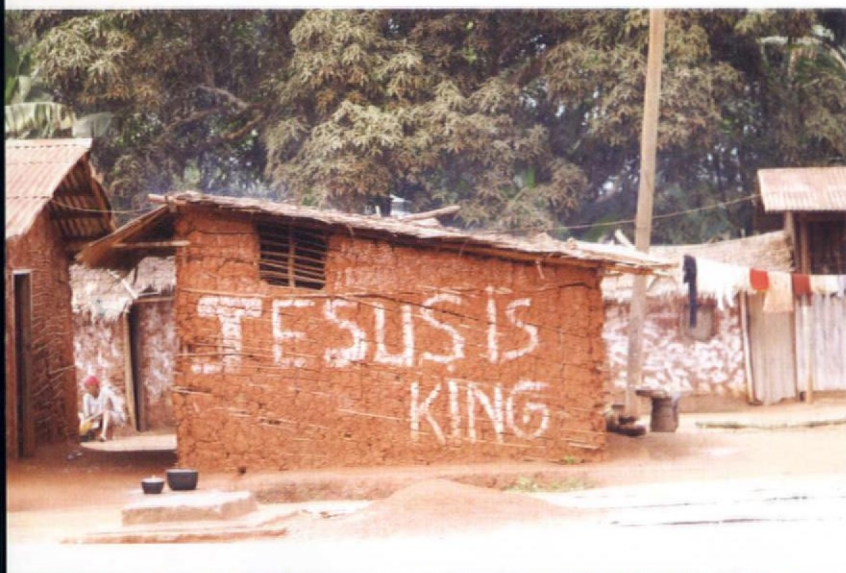
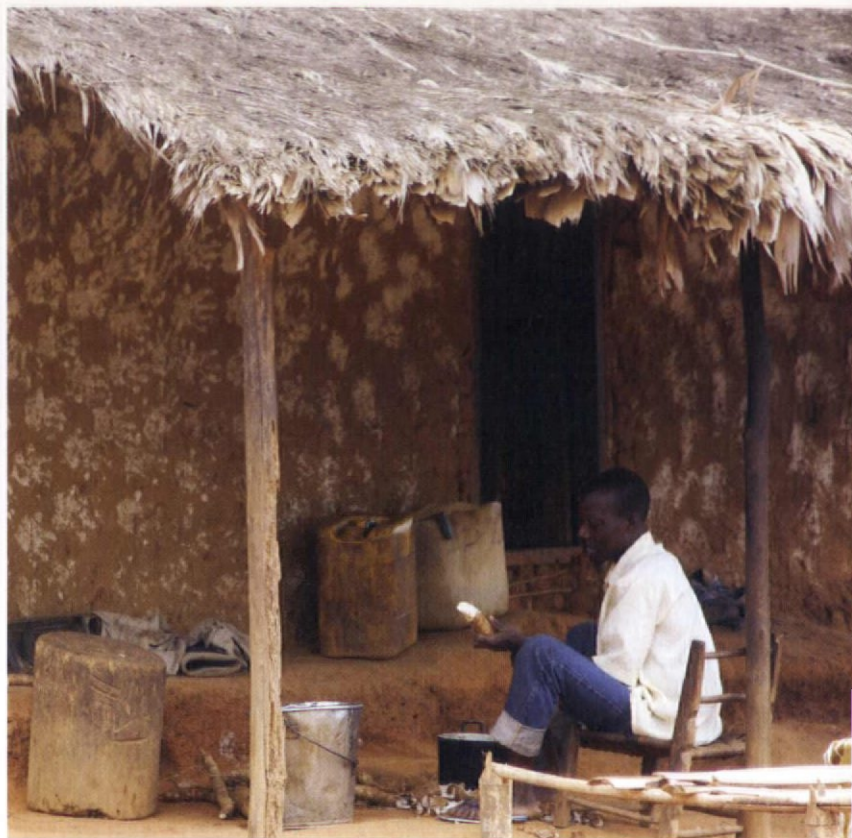
you are a great way of relieving our boredom.' But life is more public in Africa and for many, privacy is a luxury. I soon learnt to appreciate the importance of communal spaces. Here, under the shade of a tree, stories are told, community decisions made and even lessons taught.

EQUATORIAL CLIMATE

In the equatorial zones of West Africa, the dense rainforest hinders movement, architecture and, to some extent, life itself. Before logging companies carved red mud roads through the impenetrable undergrowth, movement was restricted to seashores and river edges. Fast passage through a rainforest is impossible – in Gabon, it took several hours to progress a few hundred metres away from the logging road by cutting through the vegetation with a machete. Gabon also has a large population of snakes, as demonstrated by the number of roadside vendors selling python, the local delicacy. So movement is not only slow but dangerous and for this reason building techniques rely —

Above_ A building decorated with an advertising mural in Gabon's rainforest
Above right_ Handprints on a home in Liberia. This could be interpreted as ornamentation or as an indication of status or secret society membership
Right_ A religious message adorns a structure in Cameroon
Right, below_ A shelter constructed from material and corrugated iron in Freetown, Sierra Leone
Far right_ One of countless impassable roads in the equatorial rainforest of Liberia. Difficulty of movement means that vernacular structures are often composed of locally sourced materials





IN THIS CLIMATE, THE MUD IS THICK, WITH THE CONSISTENCY OF CLAY, AND SO PERFECT FOR CONSTRUCTION

on local materials that do not need to be transported.


Tropical hardwood is one of the most readily available materials. In the equatorial regions of Sierra Leone, Liberia, Cameroon, Gabon and the Democratic Republic of Congo, timber dwellings are constructed with varying degrees of skill and craftsmanship. Some are quite sophisticated, using timber planks to clad a structural frame. Others employ a mix of old building styles with new materials such as corrugated iron roofs. In Gabon, corrugated iron was also imaginatively employed to prevent large amounts of rainwater run-off entering at low level.

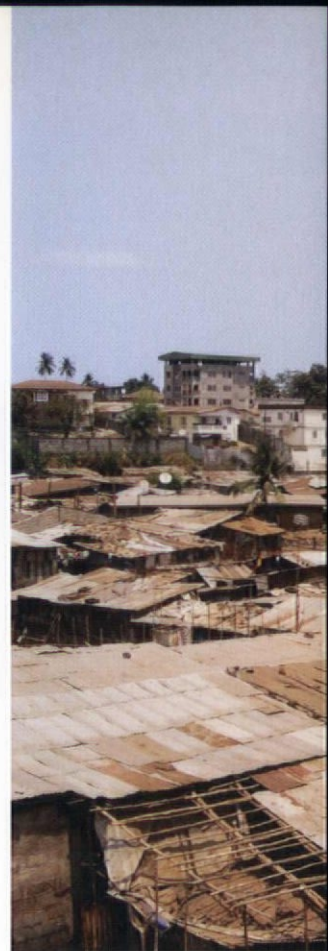
As with grass-thatched roofs, mud plays a substantial role in the construction of many vernacular communities around the equator. In this wet and humid climate, the mud is thick, with a consistency of clay, and so perfect for construction. One particular technique, employed solely in equatorial countries, combines a timber lattice with mud walls. The frame is erected first using a tight grid of sticks tied together with reeds

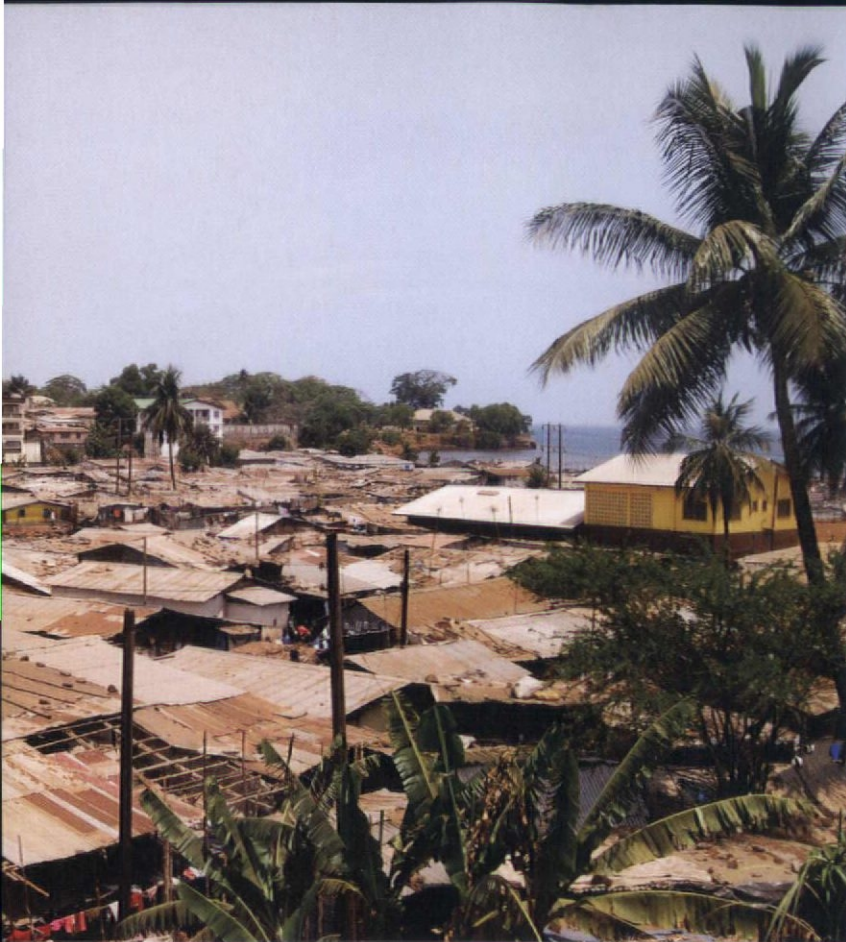
and/or string. Under construction, these structures bear an uncanny resemblance to cages, emphasised by the tight grid of the timber. Once the 'cage' is finished, wet mud is plastered onto the lattice and allowed to dry in the sun. As the mud dries, it expands and sets. To preserve structural integrity, the timber lattice is continued through the window openings; only the missing mud indicates the window. The whole structure is then topped with a layered grass roof. This technique is also employed for other building types such as domestic cooking structures – in which the timber lattice is infilled with mud on one wall so that fires are sheltered but smoke is still vented – and, in one instance, a mosque.

In the developed Western world, individuality has become highly prized. Socially, it is often associated with wealth, intelligence and character. But individuality goes against the West African disposition. Traditionally, it is a sign of unhappiness – it means the individual has been ostracised from the clan. In a continent with an impassable

interior, dangerous animals and lack of roads, under constant threat of tropical diseases and food shortages, it requires the collective will and ingenuity of the clan to survive.

With this collective mentality in mind, it was interesting to discover pockets of communities that decorated their dwellings, since ornamentation is a manifestation of individualism. In Sierra Leone, houses feature a stippled pattern, created by throwing a paint-soaked object against the walls. In Gabon, elaborate painted motifs denote building type. In parts of Cameroon, buildings are adorned with graffiti proclaiming religious messages. Elsewhere, whole villages are whitewashed with water and durian powder, made from a fruit distinctive for its uniquely pungent smell. The reasons for such ornamentation vary country by country, however perhaps the most intriguing is found in the rainforest in Liberia, where some building facades are adorned by handprints, seemingly at random, but suggested by one local to be connected with the secret societies common here. 





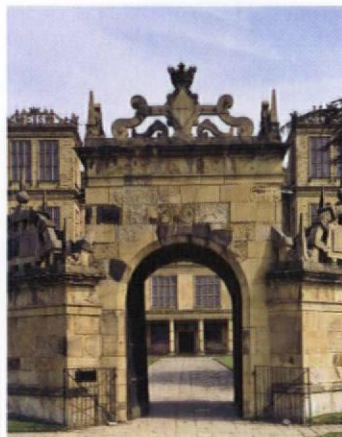
Above left_ Slums in Freetown, Sierra Leone. Inhabitants make use of any available space to build; even train tracks and waterways become part of the transient architectural landscape

Top_ A thatched mud mosque in Sierra Leone

Above_ A mud and timber lattice construction in Sierra Leone. The thick consistency of mud in equatorial regions makes it particularly suitable for building; as a free resource, it is therefore prevalent

Left_ A separate building for cooking and food preparation on the border between Sierra Leone and Liberia. The timber lattice framework has not been infilled, to allow ventilation for smoke

The wonder is that architects today take so little notice of it



BOOK / Elizabethan Architecture: Its Rise and Fall, 1540-1640

Mark Girouard, Yale University Press, 2009, £45

Mark Girouard's account of the houses of Elizabethan England has been keenly anticipated for some time as the swansong of one of the UK's most influential and innovative architectural historians. At last the book is here – a massive linen-bound tome containing more than 600 images, many of them photographs by former AR and AJ stalwart Martin Charles at his finest. Here are Hatfield, Burghley, Montacute, Hardwick and countless unfamiliar smaller houses, presented in the context of the domestic lives of those who commissioned them and with the stories of those who actually built them. There's a lot, also, about the iconography of the houses and their sculpture and carvings, and their structural inventiveness. This is a rich, scholarly and sometimes poetic

book, written, like everything else Girouard publishes, in a captivating, enthusiastic style. Its arrival is an important event; no one will be disappointed.

Elizabethan architecture deserves special affection because it was invented in England – concocted from French, rather than Italian, neo-classicism, and with wonderful brickwork and fantastical decoration from Flanders. The wonder is that architects today, in common with their Georgian and Victorian predecessors, take so little notice of it. Why make bad copies of fashionable contemporary architects when you have all this richness to be inspired by: wonderful, meaningful geometry; funny, rude ornament; the best windows imaginable (have you ever noticed how amazing those at Hardwick or Little Moreton Hall actually are?). A more entrancing or better illustrated book on this subject is unimaginable.

BOAZ BEN MANASSEH

+ Defines the Elizabethan era
– A shame that such glorious English invention did not feed through into wider architectural currency

Below – A surprisingly elegiac shot of dismantled fencing around one of the H Blocks at the infamous Maze Prison near Belfast, now being finally torn down. Photographer Donovan Wylie is nominated for this year's Deutsche Börse Photography Prize, along with Anna Fox, Zoe Leonard and Sophie Ristelhueber. See all the nominees' work at the Photographers' Gallery in London from 12 February until 18 April.





DONOVAN WYLLIE / MAGNUM PHOTOS

They give equal measure to poetic and pragmatic design decisions

BOOK /
Snøhetta Works
Lars Müller Publishers,
2009, £45

While last year was overshadowed by a reported £6 million out-of-court settlement, paid by the Snøhetta-led design team to Kent County Council over the troubled Turner Contemporary art centre in Margate, it did bring some reward for the practice. Highlights included winning the prestigious Mies van der Rohe Award for its fine Norwegian National Opera and Ballet in Oslo (AR June 2008), and the publication of *Snøhetta Works*, a record of the firm's first two decades.

Snøhetta was formed in 1989, when it was projected onto the world stage with its competition-winning design for the Bibliotheca Alexandria in Egypt (AR September 2001). Since then, while developing a strong international reputation, the firm claims to have 'existed on the fringe of most international academic and professional networks', and this book serves to show that the majority of its 800 or so projects have been located 'well away from the beaten path of architectural pilgrimage destinations'.

Having witnessed co-founders Craig Dykers and Kjetil Thorsen in action, as they presented the Norwegian National Opera and Ballet to the 2009 Mies Award jury (AR June 2009), it is clear how convincing they are as a

unit, presenting with clarity and eloquence their philosophy of giving equal measure to poetic and pragmatic design decisions. This book goes some way towards encapsulating this clarity, with its 78 projects divided into four thematic sections: cut in the ground/ roof as a landscape; box-like structure/framing the landscape; public spaces and buildings; and smooth forms and structures. In addition, 10 key projects are described in much more detail, including the Norwegian National Opera and Ballet, Bibliotheca Alexandria, Sandvika Cultural Centre, Karmøy Fishing Museum, Petter Dass Museum and Lillehammer Art Museum.

The book also includes three critical essays: 'Artificial Mirages' by Dutch critic Bart Lootsma; 'The Intertwined', by Norwegian writer Thure Erik Lund; and 'Points of Origin' by Ingerid H Almaas, editor-in-chief of Norwegian magazine *Arkitektur* N. **ROB GREGORY**

+ Certainly covers the ground
- Only goes some way towards encapsulating the clarity of Snøhetta's work

Photography and ruins might have been invented for each other



EXHIBITION /
Gargoyles and Shadows: Gothic Architecture and 19th-Century Photography
Until 16 May, Victoria and Albert Museum, London, UK
www.vam.ac.uk

'Photography', wrote French Gothic Revival architect Eugène-Emmanuel Viollet-le-Duc, 'seems to have arrived just

in time to assist the great work of restoring ancient edifices'. As the current exhibition *Gargoyles and Shadows* at the V&A is intended to demonstrate, photography was an almost essential tool of the Gothic Revival, allowing (as journal *The Builder* noted in 1862) architects to 'study from photographs with almost the same advantages as from the monuments themselves'.

Photography and ruins might

Below, left_ Westminster, by Stephen Ayling, circa 1869 Below_ Lincoln Cathedral, by Frederick H Evans, 1895



have been invented for each other. In the early days, photographic technique demanded very long exposures, which is why people look so solemn in mid-Victorian photographs. Buildings had the advantage of being static by nature; exposures could be for any length of time, so allowing small apertures that offered great depth of field. Just as the industrial revolution was destroying acres of ancient



buildings, an industrialised process allowed them to be recorded in detail.

Because of this paradox, the massively influential critic of industrialisation John Ruskin was initially a great enthusiast for this 'most blessed invention'. But Ruskin did not remain uncritically enamoured of photography. His watercolour sketch of a window and balcony of the Palazzo Foscari, made without photographic

assistance, shows why: he captured the light and colour of Venice with no more than a wash or two. Formal architectural photography demanded static conditions; the buildings may not have moved but the light did, so photographers generally chose overcast days. Only a few photographers seemed to escape from the overall pall, notably Roger Fenton, whose 1854 image of Rievaulx Abbey in North Yorkshire marvellously

contrasts the strong solidarity of the ruin with the softness of the valley landscape beyond.

Recording old buildings proceeded apace. In France, the Mission Héliographique was set up in 1851 to record monuments that the Commission des Monuments Historiques contemplated preserving. The newly founded V&A started its photographic collections at the same time, acquiring work from organisations like the Architectural Photographic Association. For all the technical limitations, some of the results are astonishing, for instance a study of Westminster by Stephen Ayling (*pictured, far left*) in which old and new Gothic are startlingly brought together in a way that would have made Pugin proud. By the end of the century, technology had changed enough to allow architectural photography to capture some of the evanescent effects of light, and this show ends with images by Frederick Evans and John Weaver that magnificently capture the atmosphere of Gothic buildings, as well as their construction. Little did anyone realise that modern movement photography was just around the corner.

PETER DAVEY

+ A form of rescue for the architectural victims of industrialisation

— More floor space, please!

The fate of Elsaesser's Großmarkthalle highlights the problem of large-scale preservations

EXHIBITION / Martin Elsaesser and the New Frankfurt

Deutsches Architektur Museum, Frankfurt, until 14 March
www.dam-online.de

Shortly after Martin Elsaesser's Großmarkthalle for Frankfurt opened in 1928, the Great Depression broke out. When Coop Himmelblau won the European Central Bank (ECB) competition in 2004 to augment Elsaesser's now historic building for its 1,800 employees, the world was on the brink of another economic meltdown.

Eighty years ago, the 50m-wide, 23m-high and 220m-long hall was the largest column-free space in Europe. Its advanced use of reinforced concrete shell vaults and its immense size changed the Frankfurt skyline. As a monument to trade, it was nicknamed the 'Vegetable Church'. When the ECB's headquarters is completed in 2014, the Großmarkthalle will again transform the city by moving attention away from the familiar cluster of 'Mainhattan' towers towards the Ostend, the former River Main port area. Initially created to symbolise Frankfurt's rising importance as an international trading centre, the building is once again at the sharp edge of development, as a seductive repository for the virtual world of international money trading.

Martin Elsaesser (1884-1957)

was a professor of medieval architecture history, with conservative tastes in music and poetry, and a German middle-class distaste for politics. His political naivety led to ambiguous statements on 'the good of fascism for modern architecture', an audience with Mussolini in the pursuit of Italian commissions, and many unsuccessful attempts, despite his contacts with Albert Speer's planning team, to gain work under the Nazis. He built his best projects – schools, hospitals, churches – before and during his appointment as Frankfurt municipal building director in 1925. But post-1945 he was unable to complete any meaningful works.

If the Großmarkthalle had not risen, like a phoenix, to new

prominence, Elsaesser's anonymity would have been assured. As it is, the controversy over Coop Himmelblau's dynamic additions (two skyscrapers encircling a 180m-high glass atrium and a 'groundscraper') to the restored skeleton of the Großmarkthalle has prompted this fascinating retrospective of all Elsaesser's Frankfurt works at the Deutsches Architektur Museum.

The fate of Elsaesser's Großmarkthalle highlights the problem of large-scale preservations. When the state pleads poverty, cultural relics that have outlived their original purposes must be auctioned off to the highest bidder, with or without guarantees of historical consideration. The demolition of a section of the building's

post-war reconstruction, and the addition of a low horizontal block, wedged like an arrow into the side of the hall, raised vehement protest. But how original must a restoration be? A new design can act like an architectural elixir, and renovating and restoring structures with new functions have all assumed a more urgent importance in the current climate of making do.

LAYLA DAWSON

+ A compelling exhibition
- Additions to historic buildings don't have to ruin them – they can act as a shot in the arm

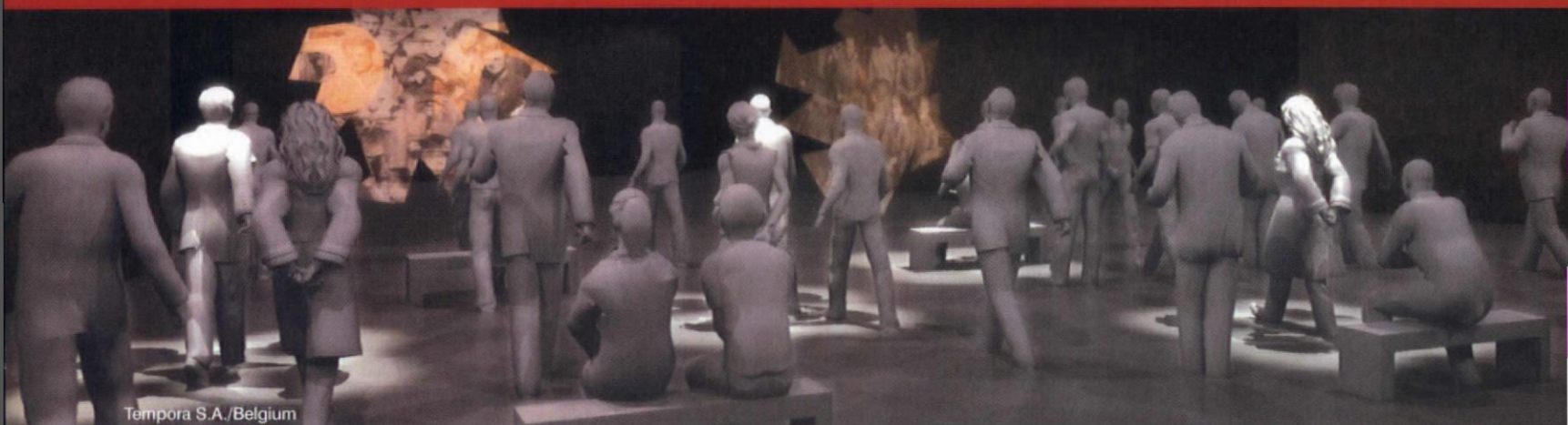
Below_ Martin Elsaesser's Großmarkthalle in Frankfurt, seen across the River Main in 1934



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announces an international

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for the concept of the Museum's building



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Museum of the Second World War

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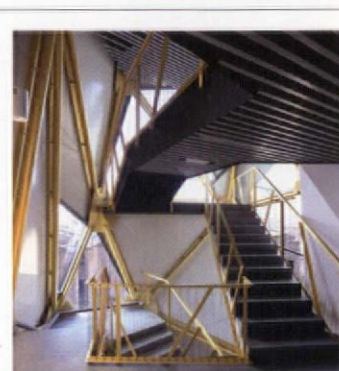
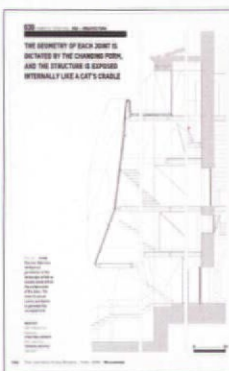


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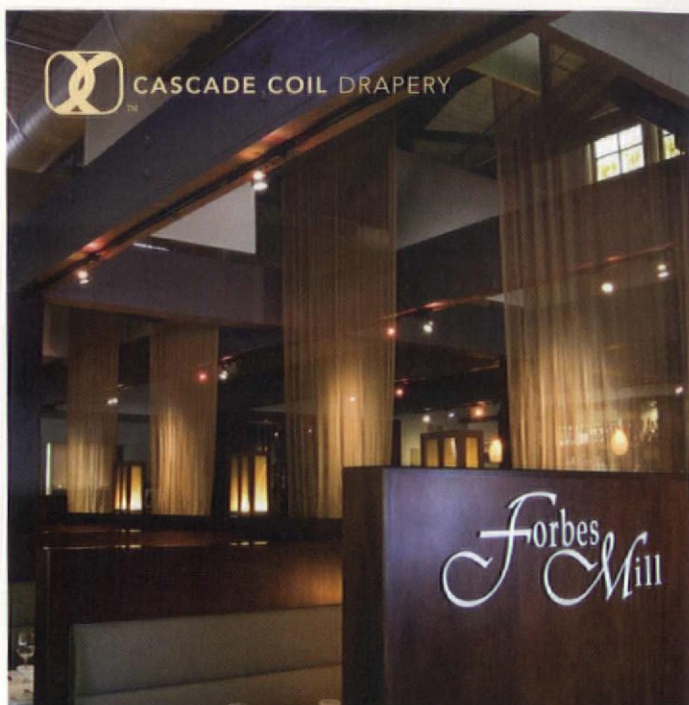


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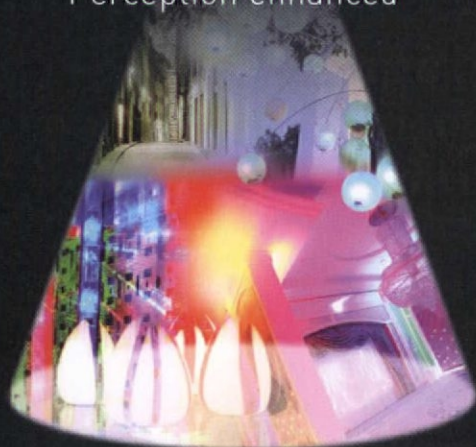
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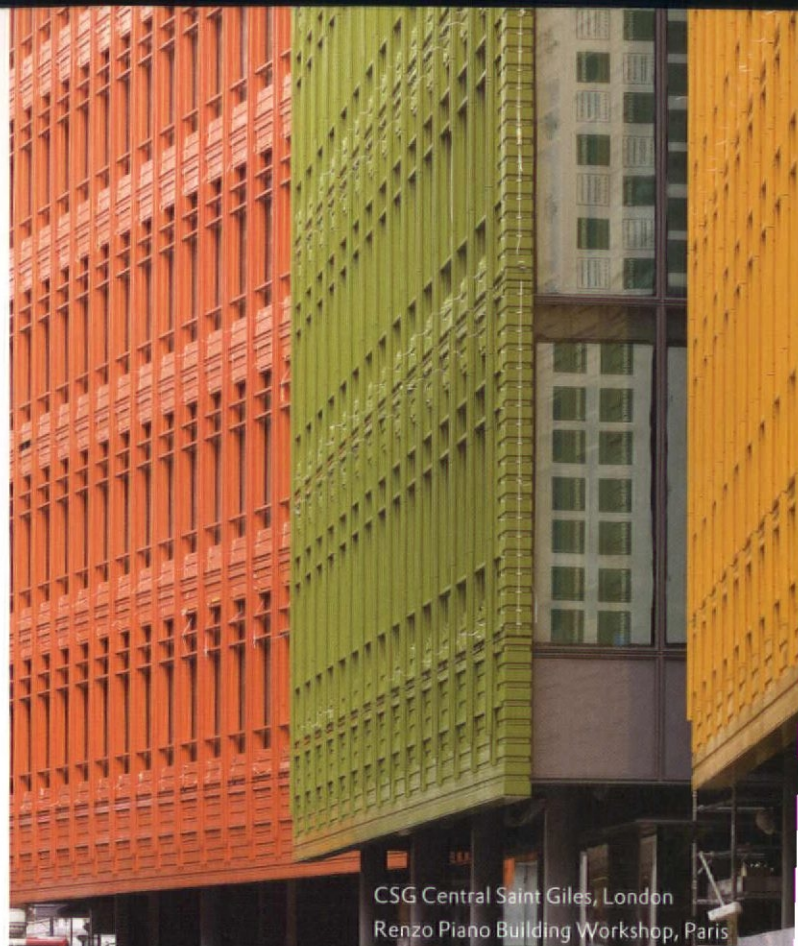


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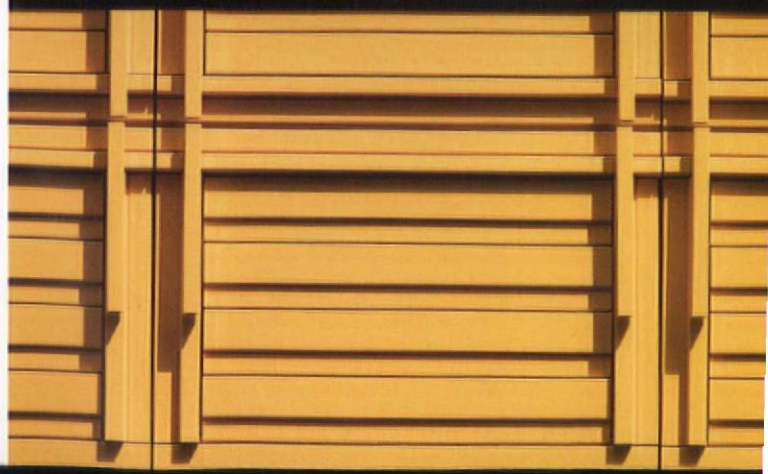
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#11 PER PULVEREM AD ASTRA EVA STENRAM

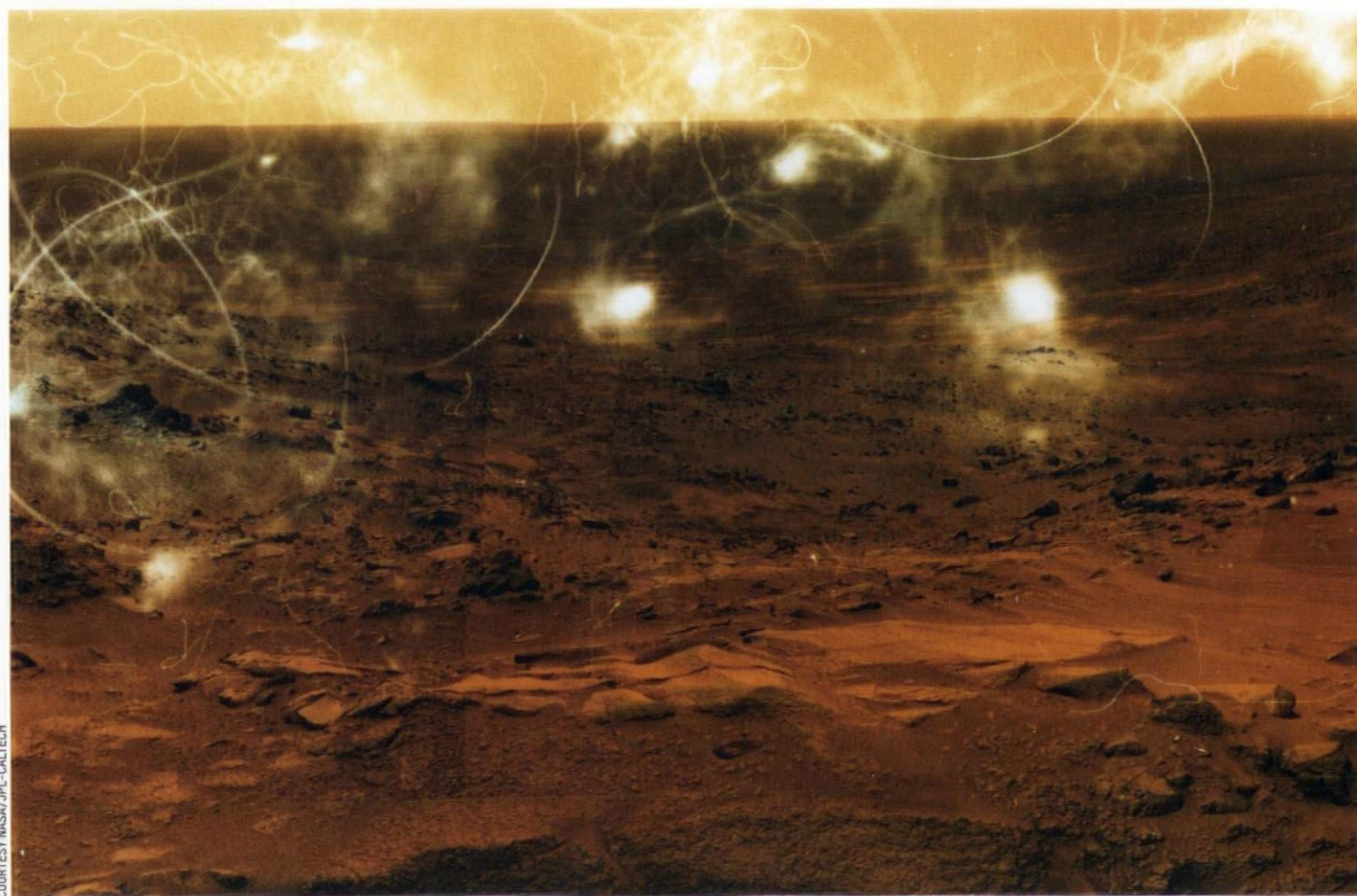
This image of open and epiphanic space has been made by the artist Eva Stenram through using NASA's digital images of Mars, converted into negatives and left in her bedroom to collect dust, before carefully printing them.

Just as in the spatially evocative photograph *Dust Breeding* by Man Ray and Marcel Duchamp, dust

extends its gravitational pull towards decay and death. Auspiciously, in the work of Stenram, dust is furthermore translated into explosions of gleaming light and celestial flashes.

RUT BLEES LUXEMBURG

The photographer and artist Rut Blees Luxemburg curates a monthly series of artworks for the AR relating to questions of space and architecture



COURTESY NASA/JPL-CALTECH