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issue 26

Spring Street Salt Shed
Collection Lambert
Tarrawarra Abbey

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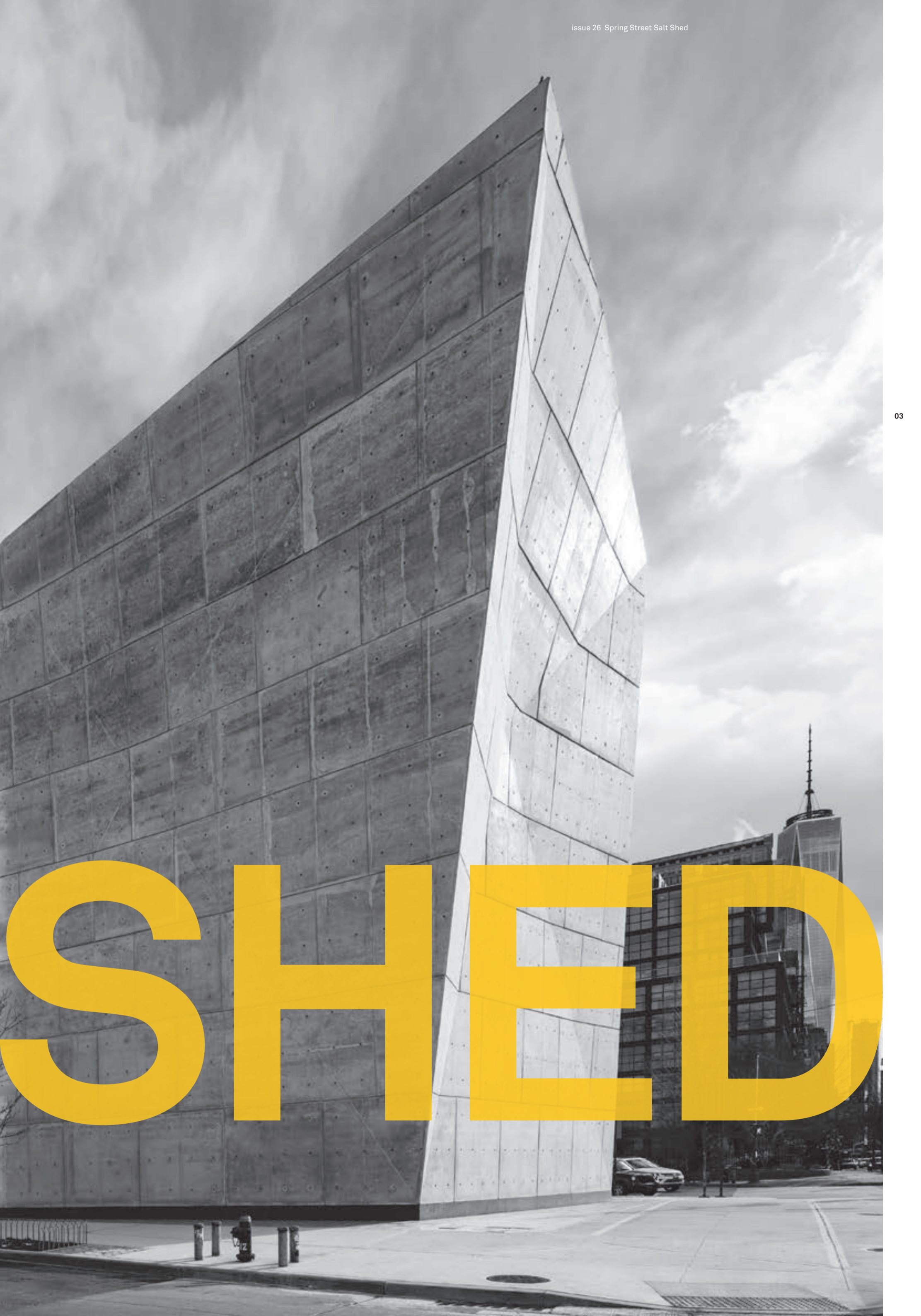
Dattner
Architects
with WXY
Architecture +
Urban Design

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02

SALT



SHEED



created as a singular sculptural object, the structure is a wonderful example of necessary utilitarian buildings done in appropriate and beautiful ways

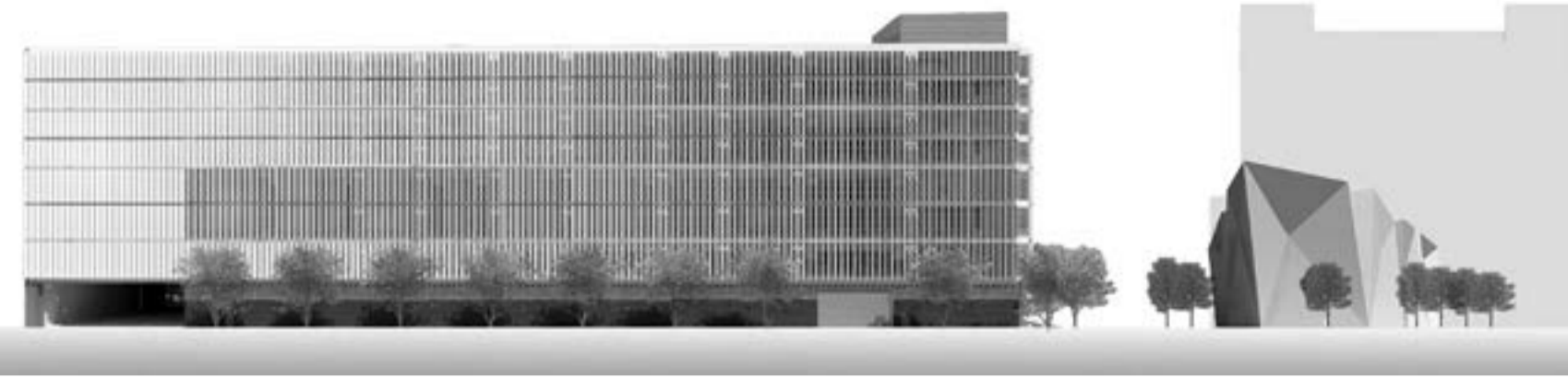
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> After years of protests – the late actor James Gandolfini didn't like it, singer Lou Reed hated it, "Mad Men" co-star John Slattery complained that it wasn't just about wealthy people complaining, it was about the "actual liveability of the neighbourhood" – New York's newest landmark was finally unveiled late last year at the corner of Spring and West Streets on Hudson Square, sandwiched between a ventilation tower for the Holland Tunnel and the Hudson River, at the northern edge of TriBeCa. It is, wait for it, a salt shed! A US\$20 million crystalline polygon of cast-in-place concrete designed to store 5,000 tons of salt just waiting to be spread on road surfaces by the truckload when it snows. Designed by New York architects Dattner Architects with WXY Architecture + Urban Design, the shed is part of a US\$250 million development for New York's Department of Sanitation (DSNY) that includes the five storey, 40,000 square metre Manhattan Districts 1/2/5 Garage across the street. The garage, designed to park, fuel, repair and clean garbage trucks, is hidden behind a sound-blocking fritted glass curtain wall and a skin of aluminium perforated panels, like fins, designed to pixilate the building's 400m long facades. The garage has the capacity to hold up to 150 trucks and there are workspaces for around 200 staff. The star of the show, however, is the salt shed, a 21-metres-tall cube of glacial-blue faceted concrete in the shape of a salt crystal. There are 40 salt sheds spread across the city's boroughs, many of them barely more than shacks piled high with mountains of salt, just waiting for the snow to hit. The Spring Street Salt Shed is the first fully enclosed structure of its type commissioned by DSNY and replaces one 19 blocks north on the Gansevoort Peninsula. Writing in *The New York Times*, architecture critic Michael Kimmelman described the shed as "the Sydney Opera House by comparison." Rising from a 1350 square metre triangular site, the 720 square metre structure is constructed from architectural concrete with a special waterproofing admixture. The concrete, which measures up to 1.8 metres deep in places, was poured on site into formwork sections, 2.4x7.4 metres, lined with polystyrene moulds. The formwork was later stripped away revealing a lustrous surface of glacially blue coloured concrete. The colour comes from slag in the concrete mix and it is expected that as the concrete surface weathers and fades over time it will more closely resemble the colour of salt. The shed stands in stark counterpoint to the sanitation garage. Taller on the side facing the Hudson River, the building starts out narrower at street level and spreads out as it reaches its full height, rather like a flower opening, allowing for more sidewalk space for pedestrians. And it appears to float within a 'moat' of frosted glass at its base which illuminates the façade at night. Road salt – most of it imported from Chile and as far away as Argentina – is ferried to the shed from a terminal on Staten Island. Piled up to about 12 metres high inside the shed the salt will assume a natural angle of repose of 32 degrees, with piles replenished constantly throughout winter periods as needed. The doors of the shed measure 11 metres high and 7.5 metres wide, making it easier for trucks to travel in and out of the structure. The taller walls on the river side are designed to allow the piles of salt to assume their "natural angle of repose". Trucks move along one side of the salt mound, dumping new batches of salt on top as needed. The walls are 1.8 metres deep to prevent the building from being damaged. Sections of the interior walls are also lined with steel plating, which is replaceable, to minimise the potential for damage caused by the constant stream of trucks driving in and out. Created as a singular sculptural object, the Spring Street Salt Shed is a wonderful example of necessary utilitarian buildings done in appropriate and beautiful ways. **Joe Rollo**





West Street Elevation, Garage & Shed



Southern Elevation

a 21-metres tall cube of faceted concrete in the shape of a salt crystal floating in a 'moat' of frosted glass at its base



a lustrous surface of glacially blue coloured concrete... the colour comes from slag in the concrete mix and it is expected that as the surface fades it will resemble the colour of salt



Project Statement

Described as a remarkable work of public structure by New York Times' Michael Kimmelman, New York City's Department of Sanitation's new Spring Street Salt Shed, housing 5,000 tons of salt for winter snow storms, creates an iconic landmark on the Hudson River. Located at the terminus of Canal Street at the Hudson River, the salt shed's crystalline, faceted concrete planes enliven this highly visible structure. Rising nearly 70 feet from a glazed moat illuminated at night, the cast-in-place concrete structure tapers toward the bottom, creating more pedestrian space.

The form of the shed is based on its function and how it is used. The roof and walls of the structure slope from their highest point at West Street to their low point at the service yard following the natural angle of repose for salt, at 32 degrees, and how DSNY personnel will pile and move salt within the shed. The faceted exterior is inspired by a collection of salt crystals. Architectural concrete was a natural material selection, since all the major structural components of the shed would be concrete including the push walls. Architectural concrete with a crystalline waterproofing admixture was used as both the structure and final finish of the building, contributing to the use of fewer materials and providing a robust and lasting envelope to stand up to the corrosive nature of the program over the life of the building. The smooth finish and light colour of the concrete emphasize the form of the building, while its natural colour variations provides a grounded appearance, resonating with the salt contained within.

The salt shed's solid, crystalline surface acts as a counterpoint to the diaphanous, scrim-like façade of the Manhattan 1/2/5 Garage, directly across Spring Street to the north. The shed houses 5,000 tons of salt within an iconic landmark at this important intersection. Although municipal infrastructure projects are often targeted as undesirable uses, the community has embraced this project, and its accompanying sanitation garage, applauding its architecture as a means for successfully integrating critical services into the neighbourhood. Dattner Architects/WXY Architecture + Urban Design

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a crystalline polygon of cast-in-place concrete designed to store 5,000 tons of salt just waiting to be spread on road surfaces by the truckload when it snows



Project Spring Street Salt Shed
Location New York, New York
Architects Dattner Architects with WXY Architects + Urban Design
Clients New York City Department of Sanitation, New York
Department of Design & Construction
Structural Engineer The Burns Group
Architectural Concrete Consultant Reginald Hough Associates
MEP Engineer Greeley and Hanson
Geotechnical Engineer Langan Engineering
Landscape Architect Abel Bainnson Butz
Lighting Design Domingo Gonzalez Associates
Contractor Oliveira Contracting Inc.
Construction Manager Turner Construction Company
Photography Albert Vecerka/ESTO + Field Condition



COLLE LAMMI

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LECTION BERT

Collection
Lambert
Avignon
France

Berger&Berger
Architects

COLLEGE

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LECTION

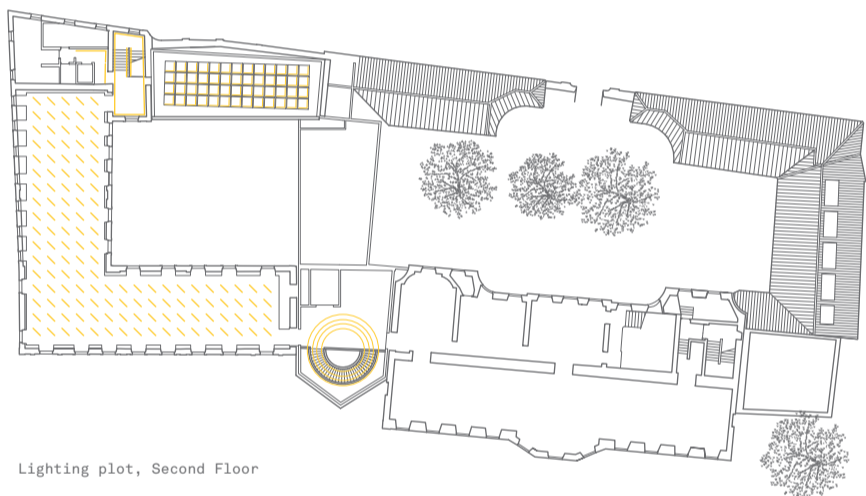
white is not the sign of architectural style here, more the objective, physical quality for reflecting light

› Back in 2000 Paris art collector and gallery owner Yvon Lambert made the first of an extraordinary gift to the French state of his collection of works by leading figures in minimalist and conceptual art, on condition that the collection be housed and exhibited in the historic city of Avignon, in southeast France. Originally housed in an 18th century townhouse, the Hotel de Caumont, the collection was extended to include an adjacent townhouse, the Hotel de Montfaucon, when Lambert increased his gift to a total of 556 works, providing a total of 6,000 square metres of exhibition spaces across the two buildings. Now the two buildings have been brought together in a major renovation and expansion under the direction of Paris-based firm Berger&Berger, a team of brothers comprising visual artist Laurent P. Berger and architect Cyrille Berger. To ensure optimum conditions for the highly diverse collection, the pair adopted a variety of approaches for the exhibition spaces; some minimalist artificially lit “white cube” spaces, combined with historic design elements and the introduction of highly orchestrated natural light. New works included four new interventions, all in concrete, to improve exhibition spaces and circulation across the two buildings.

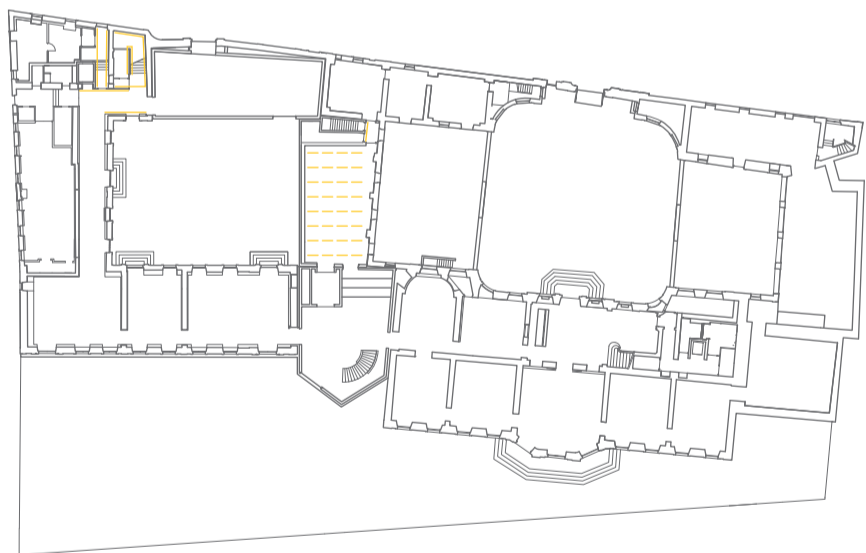
While the public still enters the galleries through the courtyard of the Hotel de Caumont, with its preserved entrance hall and a staircase listed as an historical monument, it is the spectacular concrete atrium which, like a hinge and socket, has become the new focal point of the building. Described by Laurent P. Berger as a ‘knee joint’, pivoting to link the two historic townhouses, the atrium is the focal space through which all visitors must pass to access the various galleries. Constructed from a mix of insitu and prefabricated sections of concrete the atrium, which soars up to 8.2 metres high, is remarkable for a spectacular circular concrete stair which rises from basement to first floor level. A concealed mechanism allows the exterior concrete panels to pivot, enabling even the largest works to be received directly into the building, then taken to a lift serving the various exhibition levels or towards the museum’s newly-added restoration rooms. The atrium, like much of the new architectural interventions, is finished in white concrete with embedded white marble aggregate, linking it visually to the white concrete floors and the four-metre diameter oculus which floods the space with natural light.

Laurent P. Berger explains that white was the predominant colour they wanted to achieve throughout the new interventions. “White is not the sign of an architectural style here, more the objective, physical quality for reflecting light. This neutral architecture, using simple geometric shapes, makes the museum a ‘mineral setting’ defined by its reflective levels,” he says. The oculus is set into a ceiling of four decreasing rings of insitu concrete edged by neon lights. The ceiling was cast on site using formwork panels of varying sizes and shapes to achieve the desired shape.

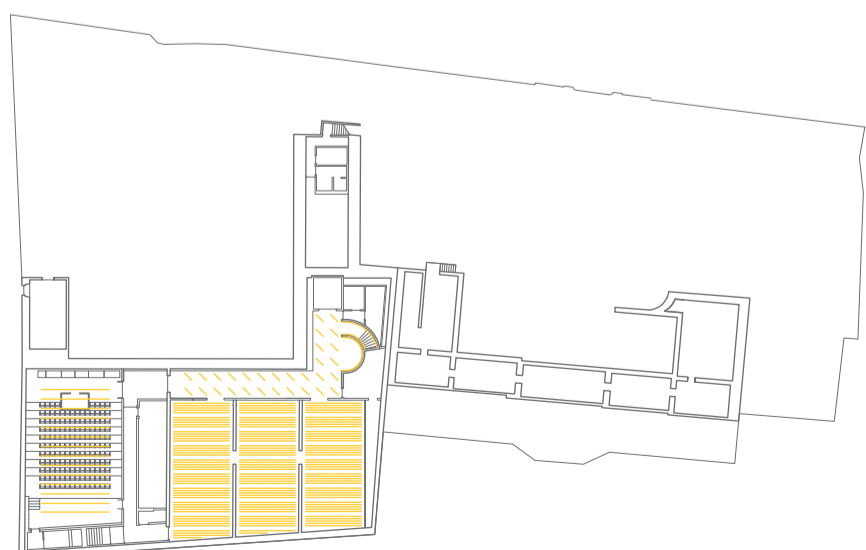
A new high ceiling room, 5.5 metres tall, within the Hotel Montfaucon enables for the first time exhibition of the collection’s largest works which previously could not be put on show. The room’s coffered ceiling makes it possible to light the space by reflecting natural light through an opening created in the upper part of the coffer. Natural and artificial light blend together in this space. Direct light cannot reach the floor or the walls in this room, so protecting the works on display. It is possible to close shutters in the coffer to throw the room into darkness. A set of horizontal steel rails set into concrete panels, concealed behind gypsum boards, makes it possible to carry heavy loads for hanging works. The floor of the walkway connecting the Hotel de Caumont to the Hotel de Montfaucon is in terrazzo, like the prefabricated concrete shear walls which are also composed of the same white-marble aggregate. Like the walls, floors within the atrium are white (light grey) and create a space shared by visitors and large works displayed directly onto the floor. The architectural surfaces diffuse natural light entering the atrium, making it possible to avoid practically all use of artificial lighting. **Joe Rollo**



Lighting plot, Second Floor



Lighting plot, Ground Level



Lighting plot, Basement

01 5 10 20m



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LECTION



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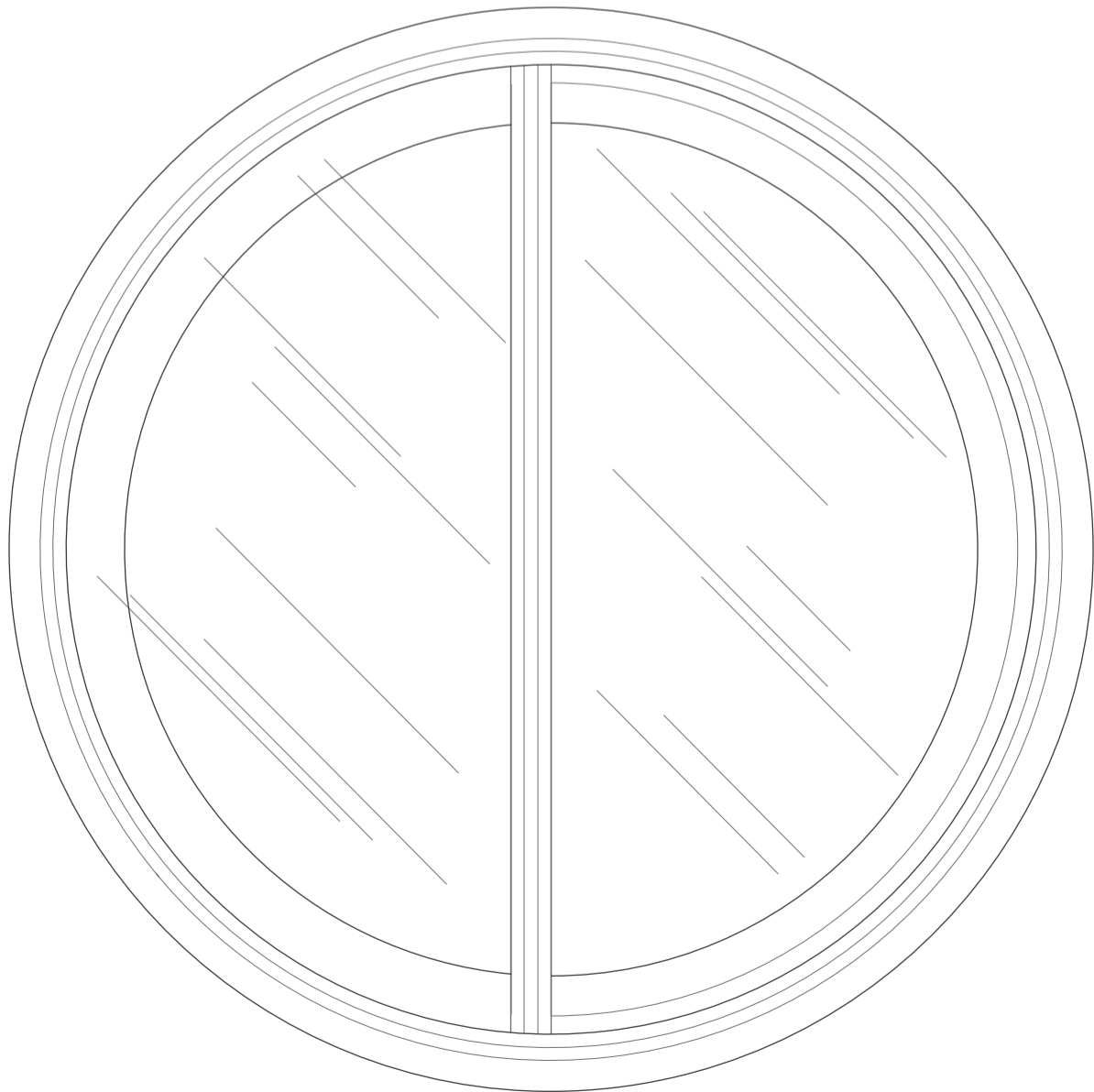
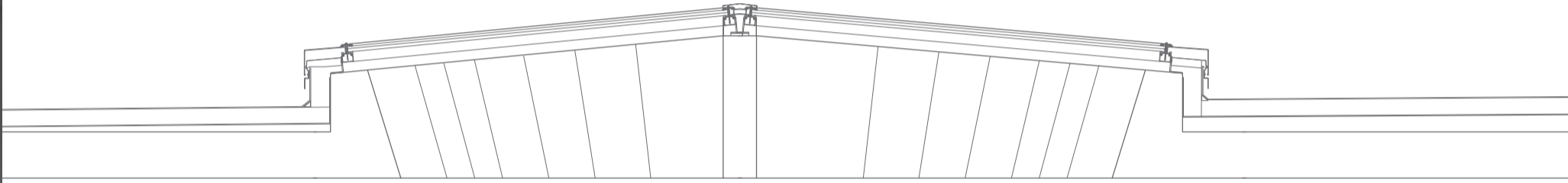


LECTION

the neutral architecture, using simple geometric shapes, makes the museum a 'mineral setting' defined by its reflective levels

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LECTION



it is the spectacular concrete atrium which, like a hinge and socket, has become the new focal point of the building

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LECTION

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LECTION



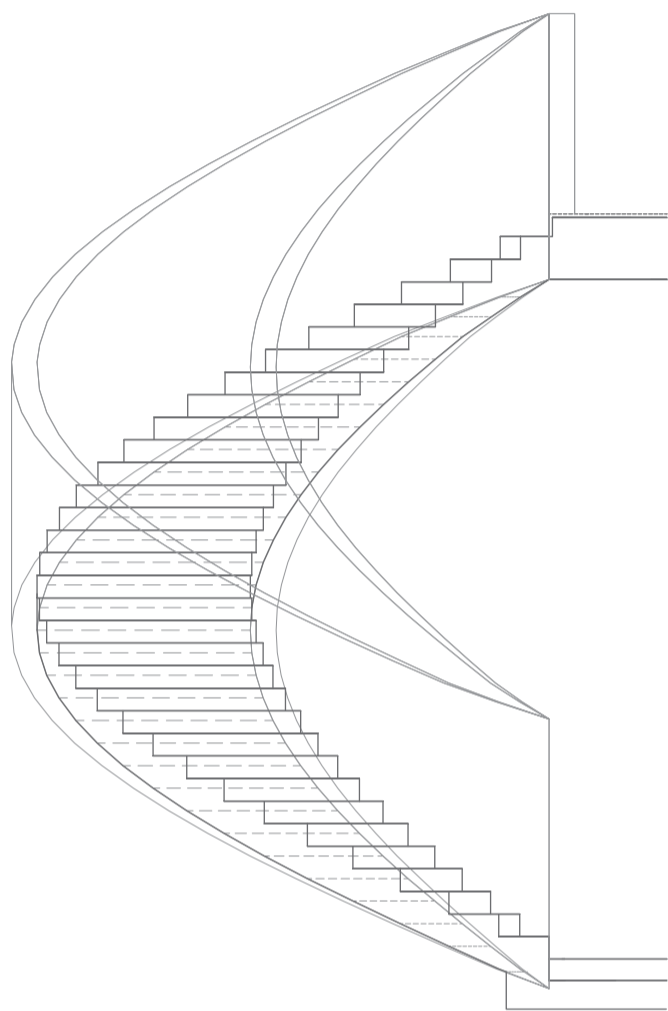
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LECTION



Project Statement

The Collection Lambert's new museum highlights the coherence and advantages of two private mansions by creating links at all levels whilst meeting the climate requirements for preserving artworks. Three new buildings were also created: the first an atrium acting as a pivot between the two mansions; the second between the two historical courtyards; and the third an enclosure of the Montfaucon courtyard housing a single grand exhibition room, the "high ceiling room."

The outer walls of the new buildings show no piercing compared to the two 18th century buildings. The project joined geometric spaces and varying atmospheres. Works are exhibited in spaces that meet lighting and hygrometric requirements, alternating or blending artificial with controlled natural lighting. The ensemble includes spacious galleries infused with natural light from the historic buildings and artificially-lit abstract galleries that correspond more to the "white cube" of large modern museums.

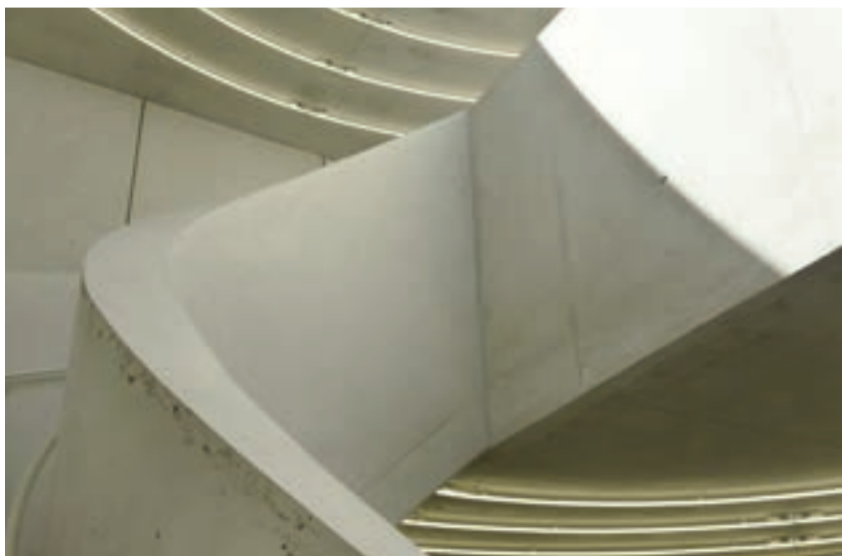
The exhibition rooms compose multiple 'landscapes' created with the same tools, i.e whiteness, light and volumes. Some of the new exhibition rooms have been custom-built for works in the collection that could not be shown in the old museum because of its limited space. The museum's numerous galleries provide a variety of atmospheres and spatial qualities that make it possible to exhibit a varied range of works such as videos, photographs, sculptures, installations and paintings.

The public still enters the collection through the courtyard of the Hotel de Caumont. It embodies and identifies the museum every bit as much as the preserved entrance hall with its staircase listed as an 'historical monument.'

There are three rooms in a row on the ground floor of the Hotel de Caumont, with original windows providing natural light combined with even and regularly distributed artificial light using adjustable LED lights in the ceiling.

Works in the courtyard of the Hotel de Montfaucon can be seen from these galleries, making the courtyard a genuine open air exhibition room. The outer walls of the two original mansions face two marble rails attached to the walls of the new buildings like an abstract white background against which the exhibited works stand out. They redefine the courtyard around which the mansion's galleries are organised. The white of the marble reflects direct daylight into the galleries on the ground and first floors.

A new, high-ceilinged room has been built, creating 5.5 metres of free space that makes it possible to exhibit the largest of the collection's works. The room's coffered ceiling makes it possible to light this space and the coffer's walls by reflecting the natural light entering through an opening created in the upper part of the coffer. On the first floor a new, continuous L-shaped gallery of about 400 square metres has been created as an extension of a gallery of the Hotel de Caumont, providing about 700 square metres of exhibition space revolving around the atrium. Three large rooms in the basement of the Hotel de Montfaucon are devoted to the exhibition of drawings and photographic works, artificially lit by diffuse light. The auditorium has been preserved and re-dimensioned. And lastly the atrium – like a hinge and socket – has become a new access point into the building, capable of receiving even the largest works, then take them to a new lift serving the various exhibition spaces. The atrium joins the two historic buildings and has been executed entirely in white concrete with prefabricated polished walls of white marble aggregate, linking it to the raw quality of the white concrete, the floors and the stairway which was poured in place. A large four metre oculus draws natural light in to the atrium. **Berger&Berger**



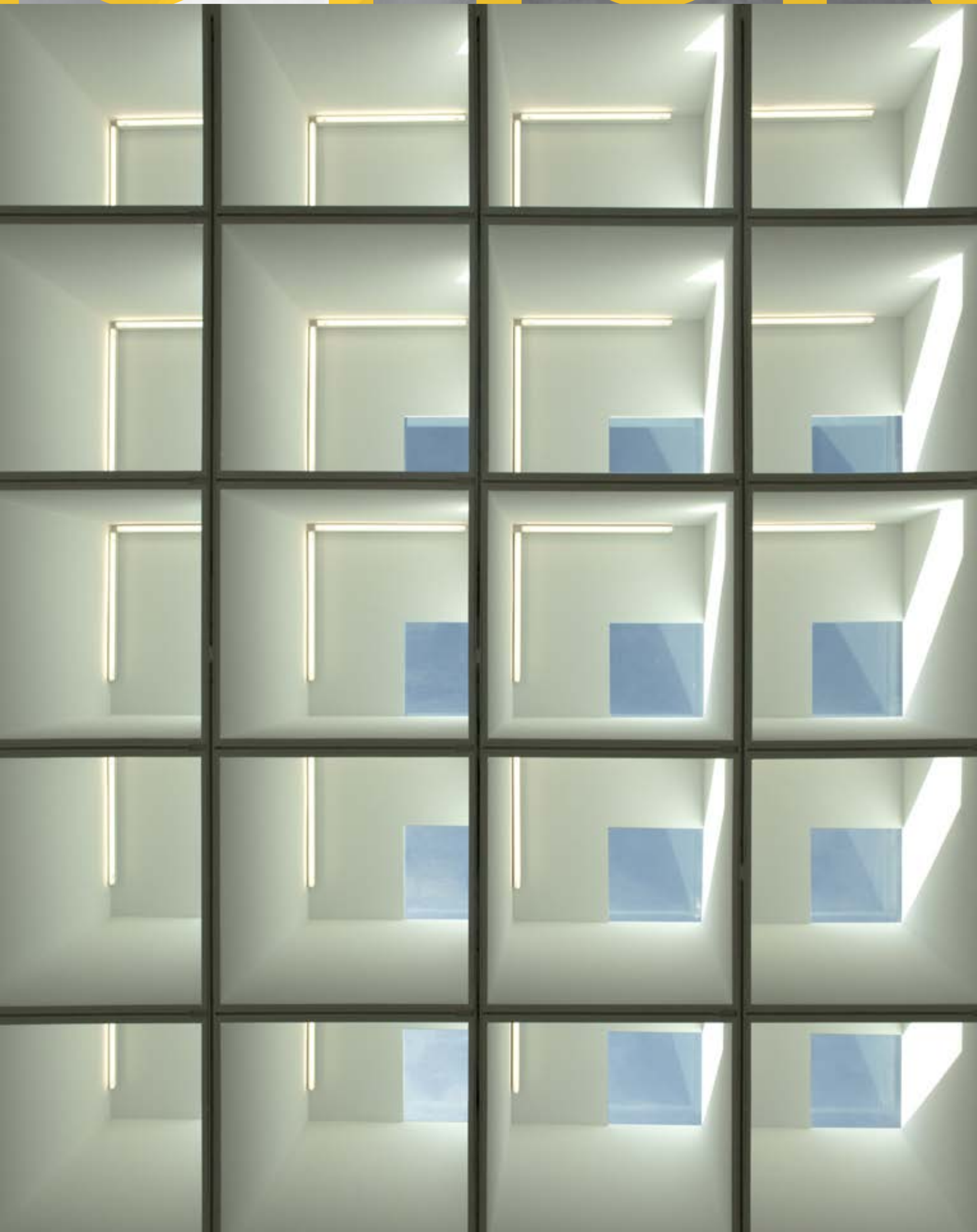
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minimalist artificially lit
'white cube' spaces, combined
with historic design elements
and the introduction of highly
orchestrated natural light



LECTION



COLLE

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LECTION



COLLE LAMMI

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Project Collection Lambert
Location Avignon, France
Architects Berger&Berger
Project Team Laurent Berger, Cyrille Berger,
Nina Baniahmad, Luke Gleeson, Theo Vachon,
Jean-Benoit Vetillard, Christine
Schmuckle-Mollard (associate architect)
Structural Engineer Bollinger + Grohmann
Quantity Surveyor VPEAS
Contractor Leon Grosse
Photography Courtesy Berger&Berger

LECTION BERT

TARRAW

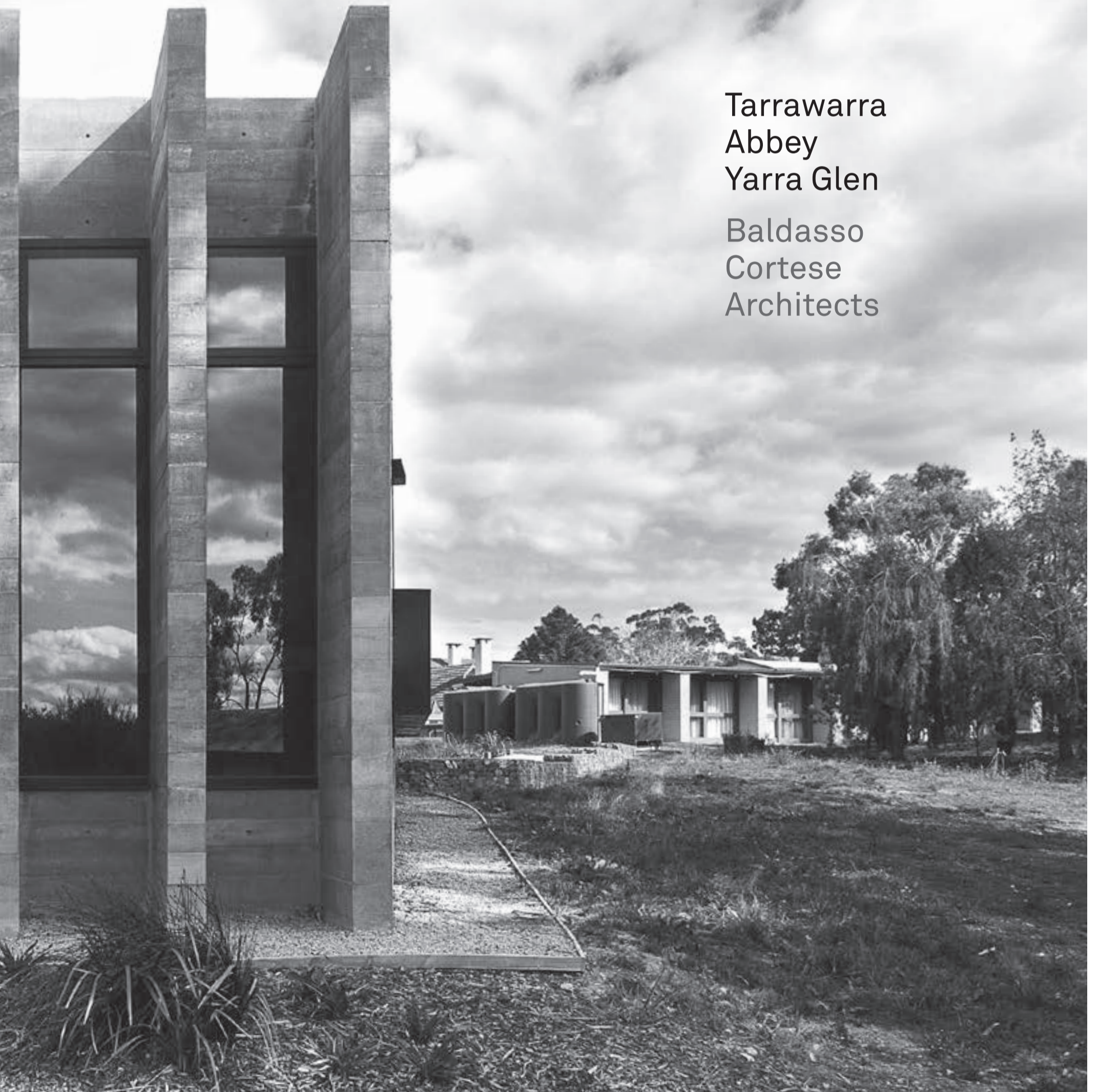
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TARRARRA

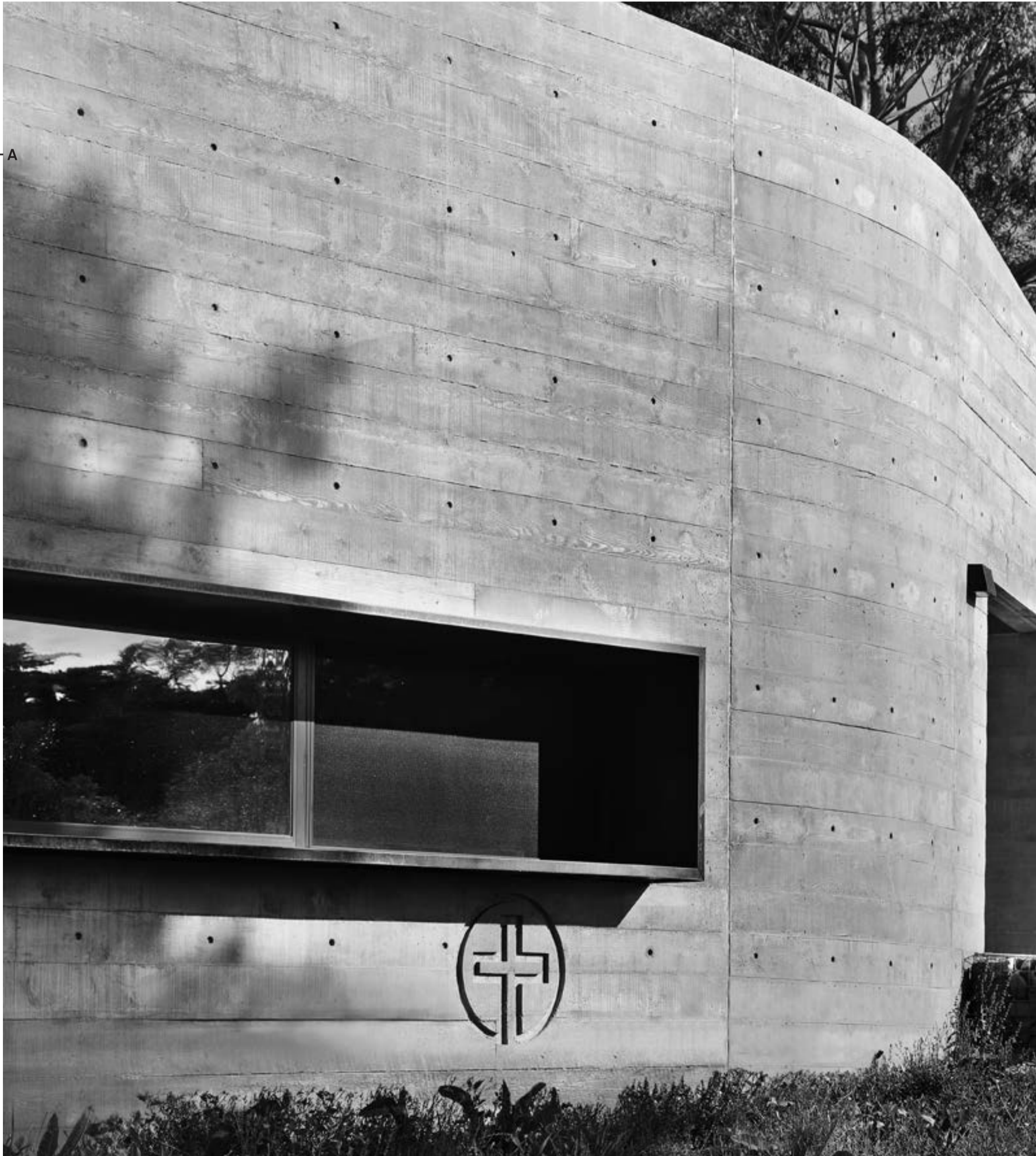
Tarrawarra
Abbey
Yarra Glen

Baldasso
Cortese
Architects



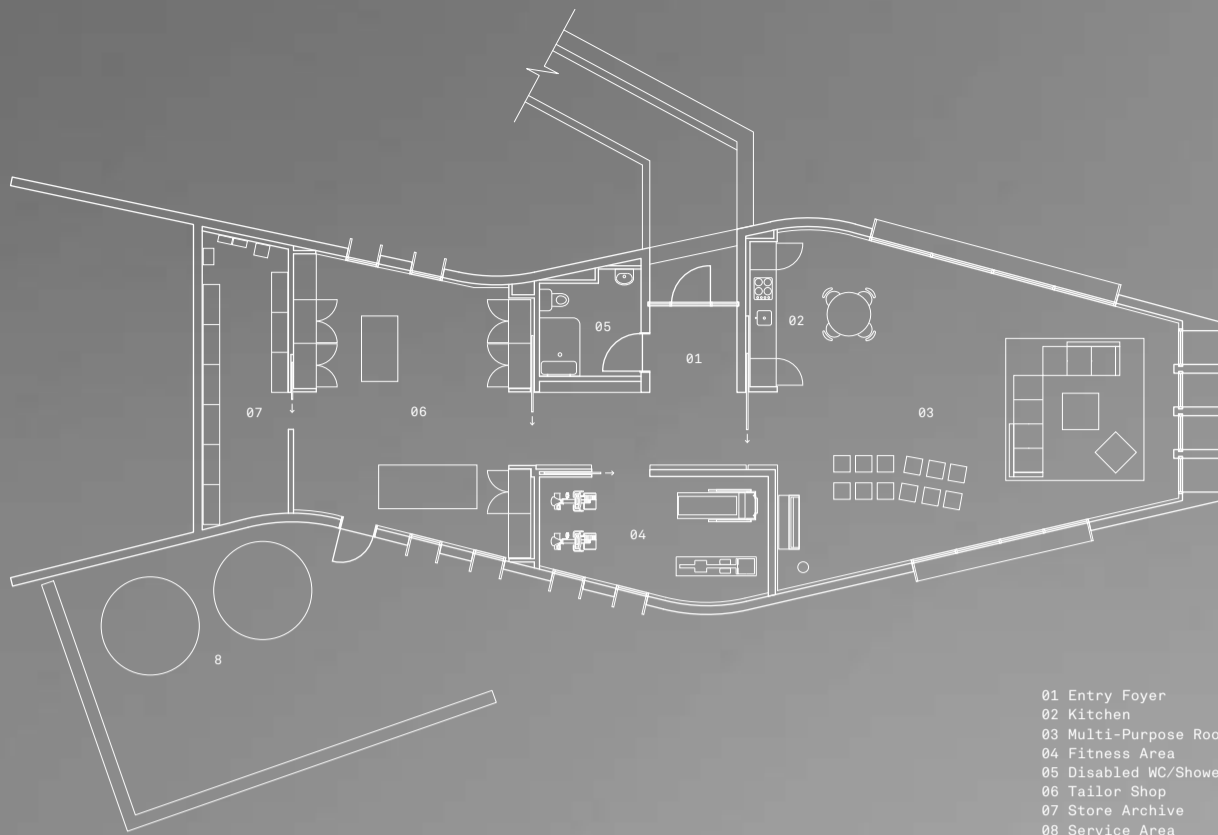
a concrete bunker growing out of a gentle slope, sited in close proximity to some of the farm's residential buildings

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> Tarrawarra Abbey is a Cistercian monastery set on 400 hectares of grazing land at Yarra Glen in Victoria's beautiful Yarra Valley, 60 kilometres northeast of Melbourne. Established in 1954, the property takes the form of gently rolling pastures running down to the Yarra River. It operates as a working farm; running 300 head of beef cattle, predominantly Red Angus and Charolais, and for the production of Eucharistic breads, which are sold and distributed to Catholic churches and parishes across Victoria. A large house on the site, now serving as a monastic guest house dates back to 1900. It was built by David Syme, the then owner of The Age newspaper, for his daughter Lucie. A cottage and several other buildings are used as retreat buildings. The devastating bushfires of Black Saturday, 7 February 2009, saw a searing grass fire, driven by fierce winds, blaze across the property, killing 40 head of beef and destroying several hectares of pasture. The fires passed dangerously close to buildings in which several members of the abbey's community sought shelter. Briefly, the Black Saturday fires were the worst in Victoria's history: 173 lives lost, 2,029 homes destroyed and 4,500 square kilometres of bush burnt out. Following a review of the fires, a brief was developed to build a secure fire shelter where the abbey's monks and other members of the farm community could take refuge in the event of future fires. The result is a concrete bunker growing out of a gentle slope, sited in close proximity to some of the farm's residential buildings. Designed by Baldasso Cortese Architects, a Melbourne-based practice, the building is made of board marked insitu concrete, slightly folded and bent as it grows out of the slope. Formwork using Oregon boards laid horizontally was used to obtain an organic finish to the grey colour of the concrete, which is expected to soften as it weathers and ages. A sloped planted green roof makes the building all but invisible from certain aspects while protruding copper shrouds with fire screens add to a sense of movement in the building. These, too, will also soften as they weather. Orientated to north, the building rises to 4.5 metres, and it is here that a series of concrete blades, also cast insitu, have been placed to focus views over a valley and distant views. The blades have also been designed to temper the harshness of the northern sun as it shifts across the building through the course of the day. Designed to double as a multi-purpose centre for the abbey's monks, the interior of the building contains a communal gathering space, a tailor's workroom, gymnasium and an archive store. Here, floors are of polished concrete with spotted gum timber linings. Joe Rollo



- 01 Entry Foyer
- 02 Kitchen
- 03 Multi-Purpose Room
- 04 Fitness Area
- 05 Disabled WC/Shower
- 06 Tailor Shop
- 07 Store Archive
- 08 Service Area

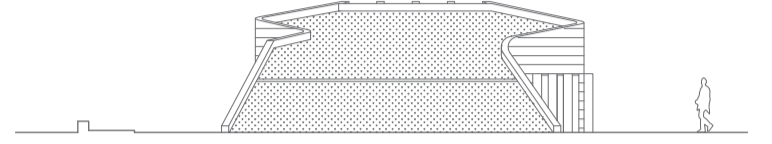
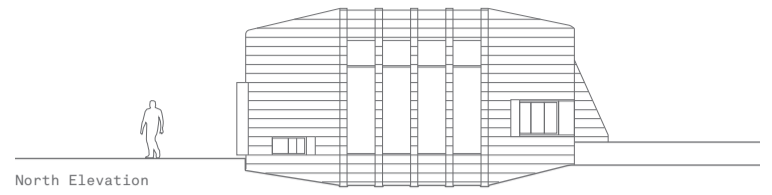


Ground Plan



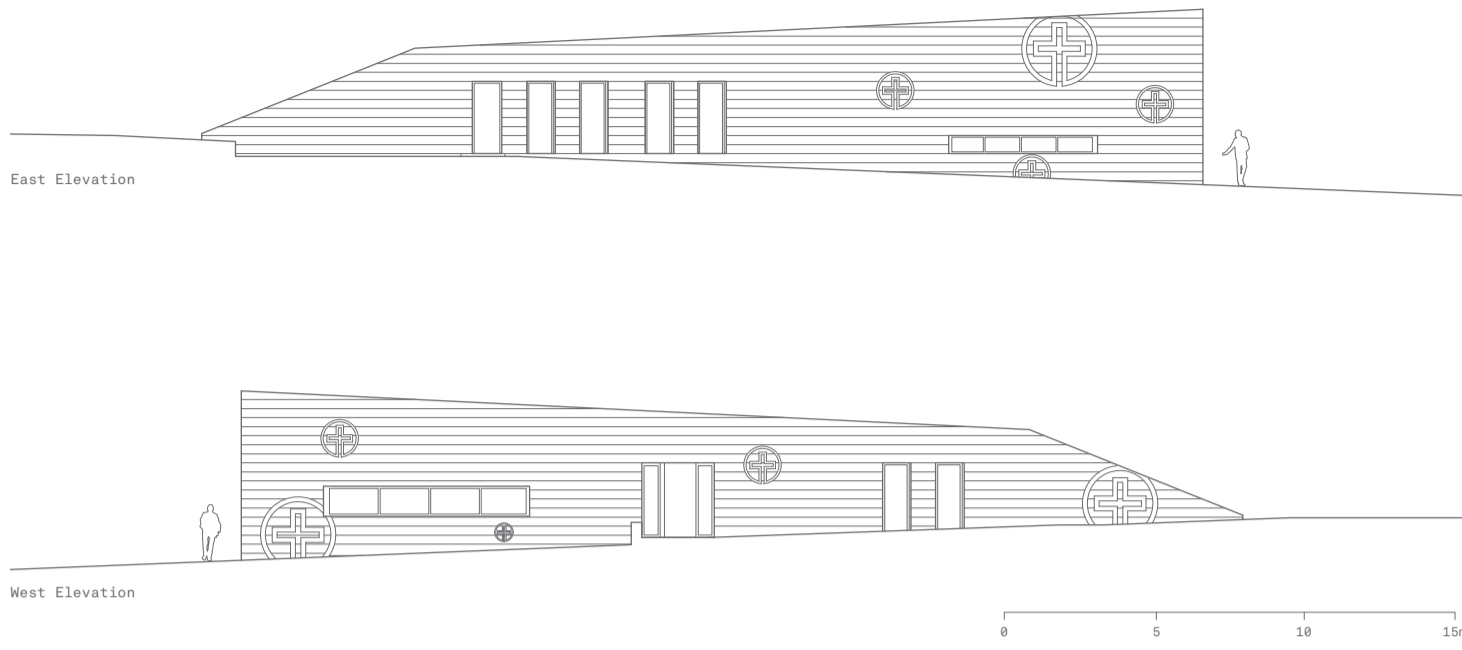
a series of concrete blades,
also cast insitu, have been placed
to focus views over a valley





formwork of Oregon boards laid horizontally was used to obtain an organic finish to the grey colour of the concrete, which is expected to soften as it weathers and ages







Project Statement

Located on the Tarrawarra Abbey site, the conceptual design for the building was developed in response to grass fires which passed dangerously close to the site in 2009. Utilising the inherent protective qualities and thermal mass of insitu concrete external walls, the design complements the existing timber buildings on the site and provides a more robust sanctuary. Designed as a fire shelter, the contemporary design cuts into a gentle slope and is topped with a planted green roof.

The green roof adds to both the fire resistance and thermal performance of the building shell. Other ESD initiatives include natural ventilation and roof water storage tanks for irrigation and landscape purposes. Double glazed windows are protected by distinctive copper shrouds and protective screens where required to comply with BAL requirements.

Responding to increasing local and international research into benefits of incorporating organic elements within building design, the extensive green roof system contributes to the building's insulation and energy efficiency, biodiversity and wildlife value, water management and fire prevention. At selected locations within the banded finish to the external concrete walls, rebated patterns reflect the Cistercian Monks of Tarrawarra Abbey motif. The interiors respond to the uniquely rural setting, using natural materials including polished concrete floors and spotted gum timber linings. While enhancing the overall aesthetic and requiring minimal maintenance, the green roof comprises a series of layers above the concrete roof deck, including waterproofing membrane, roof protection, drainage and filter layers, growing media, irrigation, ballast and selected grasses. Catering for both recreational activities and workshop duties, the building is a contemporary facility which complements the monks' lifestyle of simplicity and order in this uniquely Australian setting. Baldasso Cortese Architects



Project Tarrawarra Abbey Fire Shelter
Location Yarra Glen, Victoria, Australia
Architects Baldasso Cortese Architects
Project Team Steven Cortese, Nic Lymn, Konrad Schaller,
Wuff Keebie, Sherman Tan, Gabriella Muto
Contractor Building Engineering Pty Ltd
Landscape Architects Aspect Studio
Structural Engineer Perrett Simpson Stanton
Photography Michael Gazzola, Sherman Tan, Gabriella Muto





10 Cal Tower, Thailand 2014
Supermachine Studio

REARVIEW

Drive 100km or so south of Bangkok and you reach Bangsaen Beach, a popular seaside public park. There you'll notice a recently built red concrete play tower. It's called the Labyrinth, or 10 Cal Tower, because of the average amount of energy you'll expend climbing it. Designed by Supermachine Studio, the 8.5m tower carries the notion of the traditional playground upwards and outwards in what amounts to a vertical maze. The architects say the tower is a "reimagining of the traditional playground into a play-about or play-through structure". Constructed of cast insitu red-coloured concrete, there are echoes here of Escher's 1953 *Relativity*. Indeed, Supermachine Studio used Escher's lithograph to help illustrate their idea. With multiple combinations of circulation and crossing routes – there at least ten – the tower has become a focal point for activities in the park. The main load-bearing construction is in the middle of the tower, from which cantilevered paths project. Width of the paths vary from 600mm to one metre.

Photograph: Wison Tungthunya

