

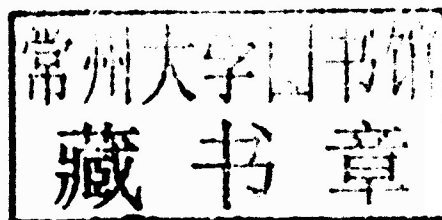
The background of the cover is a complex architectural drawing, likely a section or elevation, showing the intricate details of a building's concrete structure. The drawing features various levels, walls, and structural elements, with some areas shaded to indicate different materials or construction techniques. The overall style is technical and precise, typical of architectural blueprints.

# Detail in Contemporary Concrete Architecture

David Phillips  
and Megumi  
Yamashita

Free  
CD-ROM  
with  
drawings

**Detail in  
Contemporary  
Concrete  
Architecture**





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## Contents

### 06 Introduction

### 08 Cultural Buildings

- 10 **01** BNKR Arquitectura  
Sunset Chapel, Acapulco,  
Guerrero, Mexico
- 14 **02** Bernard Tschumi Architects  
Acropolis Museum, Athens,  
Greece
- 18 **03** C.F. Møller Architects  
Darwin Centre, London, UK
- 22 **04** Caruso St John  
Nottingham Contemporary,  
Nottingham, UK
- 26 **05** David Chipperfield Architects  
The Hepworth Wakefield,  
West Yorkshire, UK
- 30 **06** Ellis Williams Architects  
Oriol Mostyn Gallery, Llandudno,  
North Wales, UK
- 34 **07** Foster + Partners  
Masdar Institute, Masdar, Abu  
Dhabi, United Arab Emirates
- 38 **08** HMC Architects  
Frontier Project, Rancho  
Cucamonga, California, USA
- 42 **09** :mlzd  
Extension to the Historisches  
Museum, Bern, Switzerland
- 46 **10** Nuno Ribeiro Lopes  
Volcano Interpretation Center,  
Capelinhos, Faial Island, Azores,  
Portugal
- 50 **11** O'Donnell + Tuomey  
An Gaeláras Irish Language and  
Cultural Centre, Derry,  
Northern Ireland
- 54 **12** Pysall Ruge Architekten  
Museum of Polish Aviation  
Kraków, Poland
- 58 **13** Ryue Nishizawa  
Teshima Art Museum,  
Teshima, Kagawa, Japan

- 62 **14** Eduardo Souto de Moura  
Arquitectos  
Casa das Histórias Paula Rego,  
Cascais, Portugal
- 66 **15** wHY Architecture  
Grand Rapids Art Museum,  
Grand Rapids, Michigan, USA
- 70 **16** UN Studio  
MUMUTH - Haus für Musik und  
Musiktheater, Graz, Austria
- 74 **Residential Buildings**
- 76 **17** AFF Architekten  
Fichtelberg Mountain Hut,  
Saxony, Germany
- 80 **18** BAK Arquitectos  
Casa de Hormigón,  
Mar Azul, Buenos Aires,  
Argentina
- 84 **19** Dosmasuno Arquitectos  
102 Dwellings in Carabanchel,  
Madrid, Spain
- 88 **20** EASTERN Design Office  
MON Factory / House,  
Kyoto, Japan
- 92 **21** Ensamble Studio  
The Truffle, Costa de Morte,  
Spain
- 96 **22** Head Architektid & Antón  
García-Abril  
Villa Lokaator, Paldiski, Estonia
- 100 **23** id-ea  
Alam Family Residence, Jakarta,  
Indonesia
- 104 **24** Joseph N. Biondo  
House Equanimity,  
Northampton, Pennsylvania, USA
- 108 **25** Mount Fuji Architects Studio  
Rainy / Sunny House, Tokyo,  
Japan
- 112 **26** Paul Bretz Architectes  
House F, Luxembourg,  
Rameldange
- 116 **27** Peter Stutchbury Architecture  
Springwater, Seaforth, Sydney,  
Australia
- 120 **28** Pezo von Ellrichshausen  
FOSC House, San Pedro, Chile
- 124 **29** Shubin + Donaldson  
Architects  
Toro Canyon Residence, Santa  
Barbara, USA

- 128 **30** TNA  
Colour Concrete House,  
Yokohama, Japan
- 132 **31** Torafu Architects  
House in Kohoku, Yokohama,  
Japan
- 136 **32** Wood / Marsh  
Merricks House, Mornington  
Peninsula, Victoria, Australia
- 140 **Commercial and Public  
Buildings**
- 142 **33** Barbosa & Guimarães  
Vodafone Building, Porto,  
Portugal
- 146 **34** Becker Architekten  
Hydro-Electric Power Station,  
Kempten, Germany
- 150 **35** Bennetts Associates  
Mint Hotel Tower of London,  
City of London, UK
- 154 **36** Claus en Kaan Architecten  
Crematorium Heimolen,  
Sint-Niklaas, Belgium
- 158 **37** Heikkinen-Komonen  
Architects  
Hämeenlinna Provincial  
Archive, Hämeenlinna, Finland
- 162 **38** Hohensinn Architektur  
Hotel am Domplatz, Linz, Austria
- 166 **39** PleskowRael Architecture  
Santa Monica Boulevard  
Transit Parkway Wall, Los  
Angeles, USA
- 170 **40** Rafael De La-Hoz Arquitectos  
Torres de Hércules, Los Barrios,  
Cádiz, Spain
- 174 **41** Scott Brownrigg  
Bodleian Book Storage Facility,  
South Marston, Swindon, UK
- 178 **42** SPASM Design Architects  
Aon Insurance Headquarters,  
Dar es Salaam, Tanzania
- 182 **Educational Buildings**
- 184 **43** Aebi and Vincent  
Schulheim Rossfeld Renovation  
and Extension,  
Bern, Switzerland
- 188 **44** Atelier Bow-Wow  
Four Boxes Gallery,  
Skive, Denmark

- 192 **45** Diener & Diener  
Music House for Instrumental  
Practice and Choral Rehearsal,  
Benedictine Einsiedeln Abbey,  
Einsiedeln, Switzerland
- 196 **46** HCP  
Indian Institute of Management,  
Ahmedabad, Gujarat, India
- 200 **47** Toyo Ito & Associates  
Architects  
Tama Art University Library,  
Hachioji, Tokyo, Japan
- 204 **48** LAN  
Children's Toy Library,  
Bonneuil sur Marne, France
- 208 **49** Zaha Hadid Architects  
Evelyn Grace Academy, London,  
UK
- 213 Directory of Details
- 217 Directory of Architects
- 221 Index and Further Information

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Acropolis Museum, Athens,  
Greece

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Cascais, Portugal

66 **15** wHY Architecture  
Grand Rapids Art Museum,  
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70 **16** UN Studio  
MUMUTH - Haus für Musik und  
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76 **17** AFF Architekten  
Fichtelberg Mountain Hut,  
Saxony, Germany

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Casa de Hormigón,  
Mar Azul, Buenos Aires,  
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Northampton, Pennsylvania, USA

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Japan

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Australia

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Barbara, USA

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House in Kohoku, Yokohama,  
Japan

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Vodafone Building, Porto,  
Portugal

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## Introduction

Concrete, despite its image as a modern material, was invented by the Romans. Its use in structures such as the Pantheon in Rome allowed for the first time the formation of large spans. Despite concrete's manifold qualities its early use was limited, and, like many other technologies, after the fall of the Roman Empire it was nearly forgotten. Over the next thousand years the use of concrete declined to almost nothing and extant examples of concrete as a construction material from this period are infrequent.

In 1756 the process of making cement, the key material for making concrete, was essentially reinvented. This was the work of the pioneering British engineer John Smeaton, who conducted experiments with hydraulic lime and a combination of pebbles and powdered brick as aggregate. Through the nineteenth century concrete continued to be developed as a structural construction material.

The French architect Auguste Perret was a key figure in the adoption of concrete as a key construction material by the modern movement. Starting in the early twentieth century he, along with his brother Gustave, pioneered many of the techniques that characterize contemporary concrete construction. This leading role was obscured in the post-war period, the beautiful St. Joseph's Church at Le Havre and the reconstruction of his city being overshadowed by the dramatic work of his former employee Corbusier.

The influence of Corbusier allowed concrete to become the pre-eminent 'modern' material. The use of concrete as a raw unfinished material was a central theme of much of Perret's post-war work; and the influence can still be seen clearly in contemporary projects.

Modern concrete differs from the material used by the Romans in a couple of important ways. The Roman material was formed as a dry mix that was layered up in the wall or other structure it was a part of. Its strength was almost entirely in compression and it did not make use of any additional internal strengthening. In contrast, contemporary concrete is placed into formwork in a fluid state. This allows the concrete to be formed into complex shapes. Modern concrete also makes extensive use of internal steel reinforcement, giving the finished concrete strength in tension in addition to compressive strength.

Today concrete is the most used man-made material in the world. At every scale and in every area of building design concrete fulfils diverse functions. We have buildings where concrete is almost the only material used, others where it performs a traditional structural role and yet others where it forms a delicate skin.

The projects in this book bring together, from around the world, a range of approaches to building with concrete. In these projects we can see concrete used in many varied ways: concrete as structure, concrete as enclosure and concrete as decoration. There are large public buildings and tiny structures that are no more than huts. In each case concrete's unique properties have been utilized differently. Because concrete is both fluid and rigid there are two stages to the design of many details. We can think of these as the detail of construction and the detail of use. Architectural details explain to us how materials come together. It is in these junctions that we can observe and then understand the nature of the structure. Many of the details are very simple, essentially because concrete as a construction material is a very simple material.

Concrete's ability to record as an impression the form of an element that is now absent allows it to become a transitional material – recalling the past in the present. We can see concrete being used in this way in the raw simplicity of AFF's forest hut (p76). At first sight it mimics the simple wooden structure that it replaces. It has the quality of a Dada found object, having the unrefined appearance of something that has just occurred. We then discover that it contains in its form a history, a reflection of the past.

Concrete gives the architect the opportunity to shape the structural elements of buildings into complex shapes. De La-Hoz's twin towers (p170) have a dramatic lattice-like typographic structural skin that proclaims a message across the landscape. Likewise in Caruso St John's Nottingham Contemporary art gallery (p22), a historic narrative is etched into the building's surface as a record of the local lace industry. The patterned surface in scalloped panels appears like a curtain just about to shimmer in the wind. Concrete's image as a hard material is challenged by many of the projects in this book. The delicate eau-de-nil patina that wraps the skin of Pezo von Ellrichshausen's FOSC House (p120) confers on it the quality of a ripe fruit.

Just as softness can be found in concrete so too can hardness. Souto de Moura's gallery for the display of the painter Paula Rego's work (p62) also uses a coloured surface, but here the effect is of a tough mineral density. The red pyramid roofs are evocative of objects fashioned from the earth. At the Mostyn Gallery (p30) the crystalline-faceted cavern that Ellis Williams has designed as the central axis has a majestic power that both complements the original gallery spaces and establishes a new language for the building's circulation. Here the board-marked concrete gives an impression of a fissure carved and impressed into the solid.



Since the 1950s Japanese architecture has developed a distinct language of geometric forms and simple spaces; concrete has become the principal construction material in this country that is so challenged by nature. Perhaps best represented by the work of Tadao Ando, the origins of this architecture are to be found in the influence of Corbusier and Louis Kahn. Today a new generation of architects are reinterpreting these themes and forms. EASTERN Design Office's MON House (p88) is an example of this. A subtle addition to the Kyoto streetscape, this live/work building interacts with its users and the environment to create a contemporary place for a traditional craft. Pure orthogonal forms are here pieced by a series of round openings.

The quality of concrete as a protective material is evident in a number of the projects. In Tanzania SPASM's powerful and serene office building (p178) combines the vernacular form of a giant sheltering roof with the structural properties of concrete, to provide a defended and environmentally responsive space in which to work. Here robust details and simple planning generate a modern architecture without redress to complex technologies. In a very different context concrete also provides a strong and secure envelope for storage. At the collection of the Bern Historisches Museum (p42) the architects have utilized the concrete walls like a metaphorical protective cloak that surrounds the precious objects stored within. Enclosing a small square the building composes a new urban environment that advocates potential interactions.

Often seen as a material close to stone, cast concrete easily communicates in its appearance and performance a relationship with rock formations. In PleskowRael's highway walls project (p166) concrete is placed in giant fractured planes, becoming a petrified illustration of California's lively geology.

Concrete's potential continues to be the propagator of great architecture. The projects selected for this book show that concrete remains a material full of latent possibility and surprise.

David Phillips  
Megumi Yamashita

## Notes

### US and Metric Measurements

Dimensions have been provided by the architects in metric and converted to US measurements except in the case of projects in the USA, which have been converted to metric.

### Terminology

An attempt has been made to standardize terminology to aid understanding across readerships, for example 'wood' is generally referred to as 'timber' and 'aluminum' as 'aluminium'. However materials or processes that are peculiar to a country, region or architectural practice that have no direct correspondence are presented in the original.

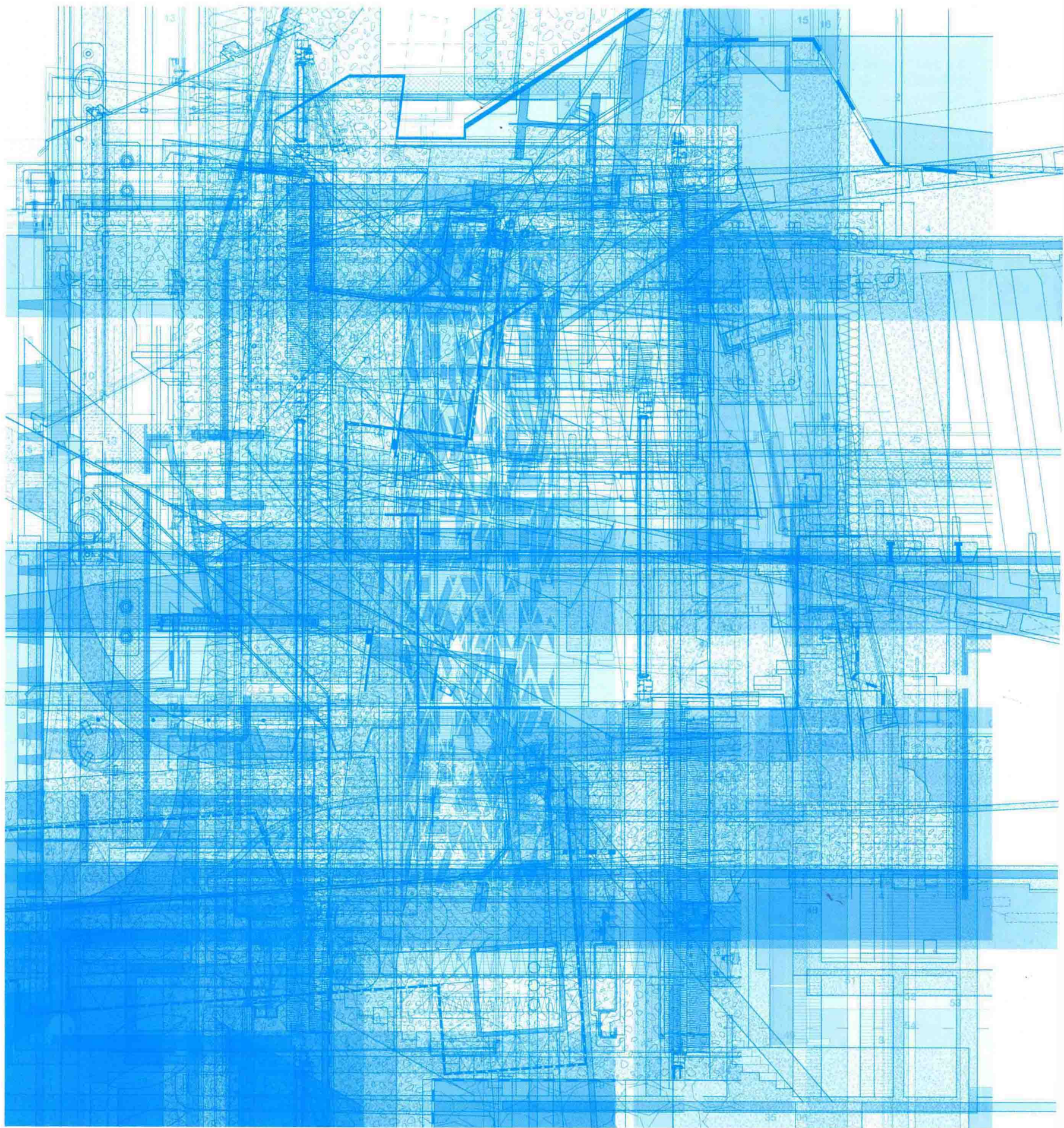
### Floor Plans

Throughout the book, the following convention of hierarchy has been used – ground floor, first floor, second floor, and so on. In certain contexts, terms such as basement level or upper level have been used for clarity.


### Scale

All floor plans, sections and elevations are presented at conventional architectural metric scales, typically 1:50, 1:100 or 1:200 as appropriate. An accurate graphic scale is included on the second page near the floor plans of every project to aid in the understanding of scale. Details are also presented at conventional architectural scales, typically 1:1, 1:5 and 1:10.









# Cultural Buildings 01-16



**BNKR Arquitectura**  
**Esteban Suárez (Founding Partner)**  
**and Sebastián Suárez (Partner)**

**Sunset Chapel**  
**Acapulco, Guerrero, Mexico**

Client  
 Private client

Project Team  
 Esteban Suárez, Sebastián Suárez,  
 Mario Gottfried, Javier González,  
 Roberto Ampudia, Mario Gottfried,  
 Rodrigo Gil, Roberto Ampudia, Javier  
 González, Óscar Flores, David  
 Sánchez, Diego Eumir, Guillermo  
 Bastian, Adrian Aguilar

Structural Engineer  
 Juan Felipe Heredia and José Ignacio  
 Báez

Main Contractor  
 Fermín Espinosa / Factor Eficiencia

Perched on top of a mountain near to Acapulco, this funeral chapel has the appearance of a giant boulder. The brief was very simple. Three things were required: the building must make the best of the site's grand sea views; the sun should set behind the altar; and there must be provision for crypts around the chapel. However, there was a problem achieving the first two demands. Large trees around the site and a massive boulder to the west obscured the view. There was no budget for overcoming these obstacles. The solution was to raise the chapel up by more than five metres (16 feet). To reduce the impact on the beautiful site, the building's overall footprint was reduced to nearly half that of the main floor.

You enter via a triangular cut. To reach the place of worship you climb a stair that hugs the internal walls, and then, in a single turn through the dark, you rise through the floor into the light. The chapel itself is like a cage; the concrete columns that form the walls mimic the trees around the site. The seating is banked in the manner of a lecture theatre; in the western wall a simple metal cross waits for the sun to go down. Sunset Chapel is a place to celebrate life.

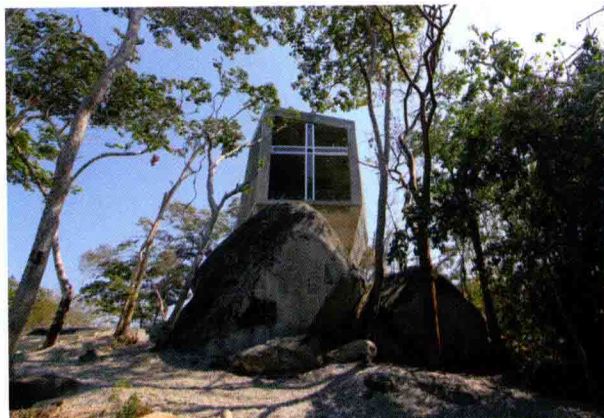


1 Sitting on top of a mountain, the chapel has a mysterious sense of wonder.  
 2 The chapel's respect for the environment around it is evident in every element. It seeks

to be a part of the place, not just in the place.  
 3 The dark of the stairway conditions the visitor for entry to the chapel.  
 4 The complex

geometry of the chapel and the vertical columns of the walls create a theatre of shadows.  
 5 The pews for the congregation are stepped up towards

the east like a natural hillside – a place to think and listen.

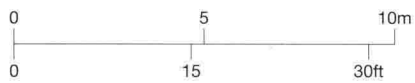
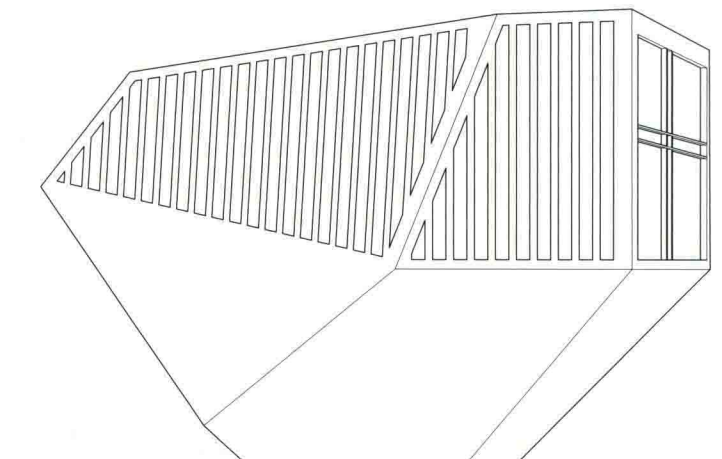
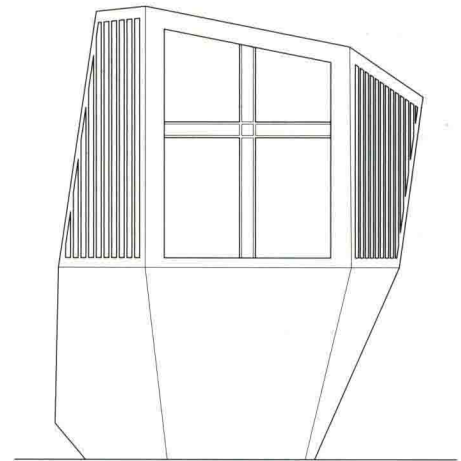
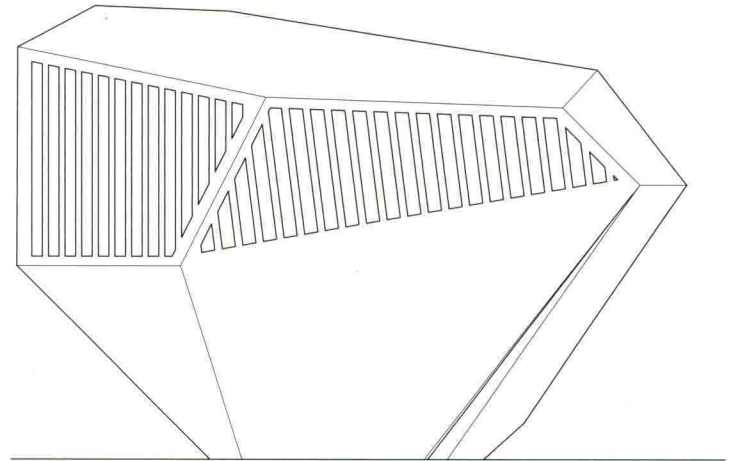
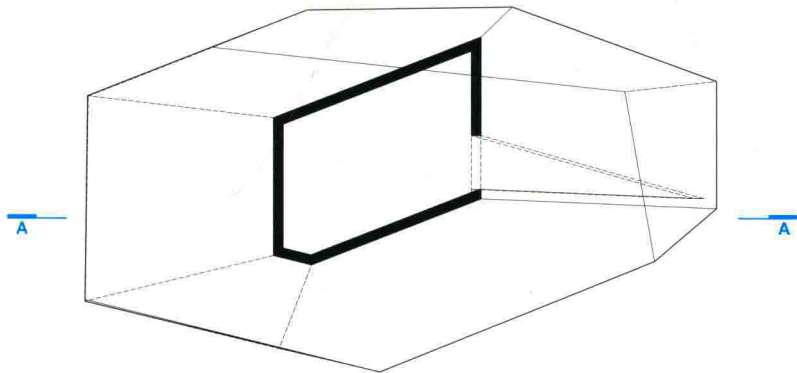
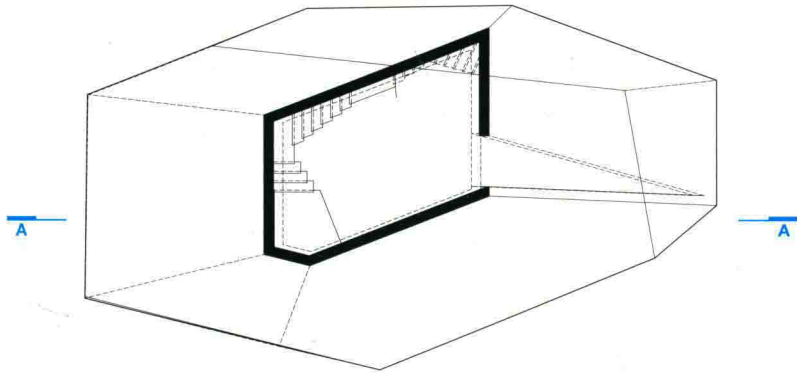
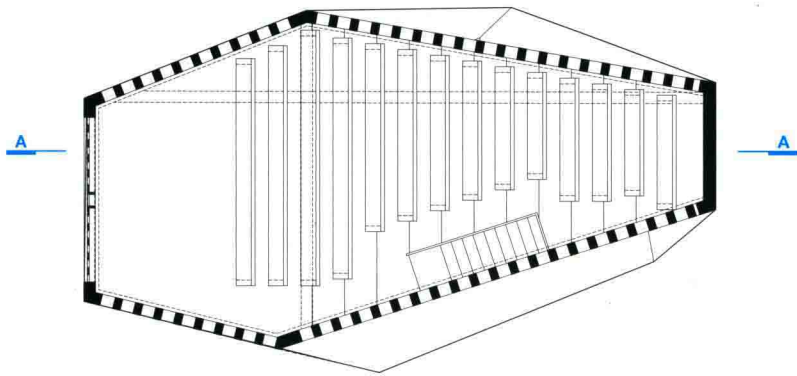




01.01  
South Facade  
1:200

01.02  
West Facade  
1:200

01.03  
North Facade  
1:200



01.04  
Upper Floor Plan  
1:200

01.05  
Access Level Floor  
Reverse Plan  
1:200

01.06  
Ground Floor  
Reverse Plan  
1:200

01.07  
Detail Section A-A  
1:50  
1 Concrete  
2 Pews  
3 Stair  
4 Drain  
5 Metal cross

