

WHITE  
unlimited

August 2007 / 02



THEME: Houses of worship - a true work of art, imaginative and symbolical



*THE NEXT CHAPTER: Aalborg Portland White Management Kickoff Conference*

# THE NEXT CHAPTER

## – of the White Cement World

Concrete and other cement based products are the most common construction materials of the world and global consumption is growing. For centuries the unlimited possibilities of these materials have been explored, mainly for structural uses. But with availability of white cement, aesthetical potentials are added to the structural potentials. Every day architects, engineers and manufacturers explore the potentials for new specific applications and general uses of white cement.

Many markets world wide now experience an accelerated growth in the utilisation of the opportunities of white cement. But along with possibilities come challenges and responsibilities.

We have committed ourselves to facilitate this positive global development. We will challenge ourselves and take responsibility for leading the way of pioneering the global white cement business.

### Pioneering white cement – is our mission

We will not only be pioneers in supplying premium quality products, but constantly focus on adapting our ways of doing business to facilitate networks, create synergies and added value in our business and communication with our customers and other important relations in our markets.

As one of our main challenges we are now preparing our global organization to better support our markets in the bright future in the next white cement chapter. In all our regions of the world and on all levels of our organization we will ensure that our markets will know us not only for what we say, but even more for what we do - and for the difference we make.

Please enjoy this second edition of White Unlimited - and start imagining how we all can be pioneers of white cement.

Welcome to the next chapter

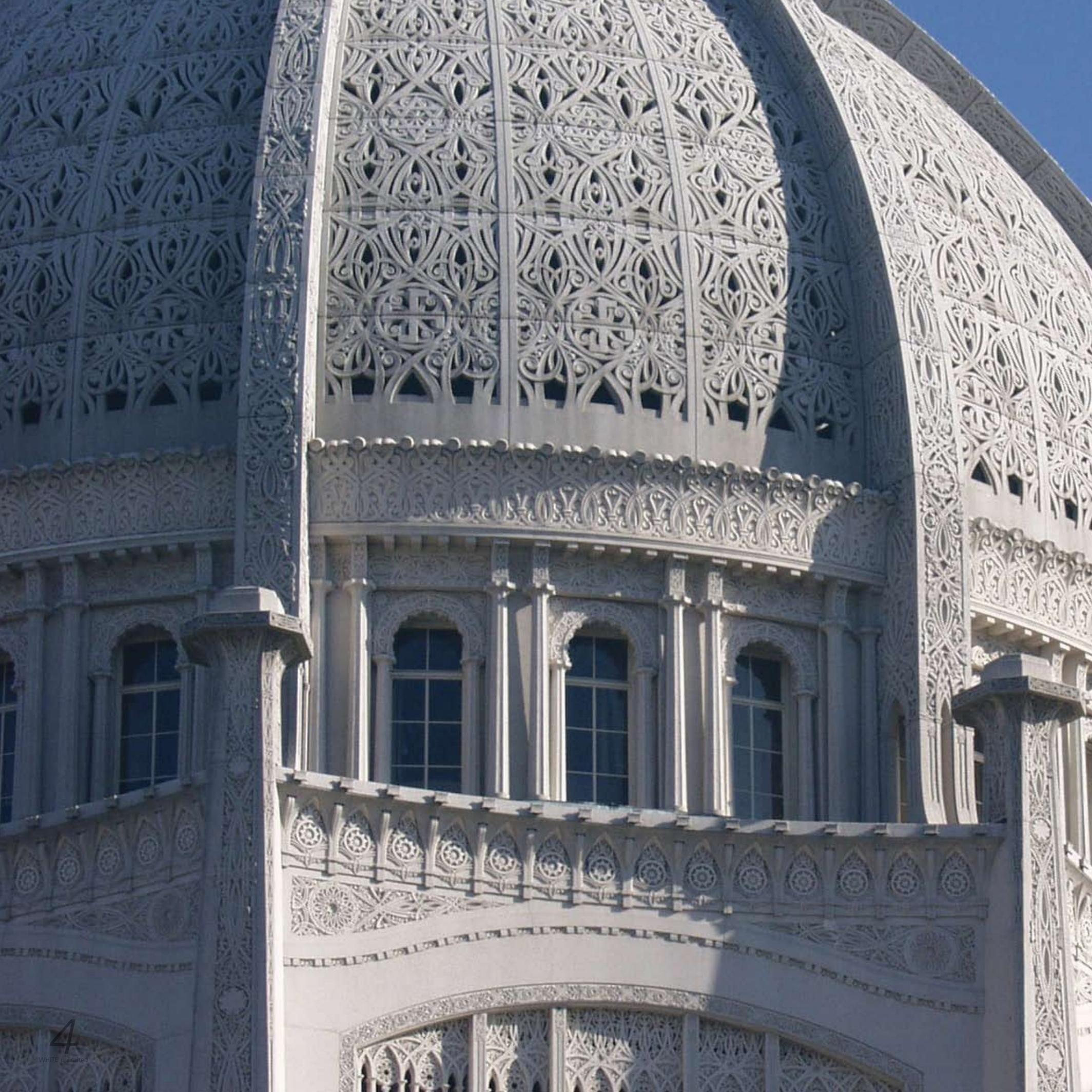


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# An impressive wonder

The Baha'i Temple, listed on the National Register of Historic Places, is regarded as one of the finest examples of architectural concrete in the world. Located near Wilmette Harbor, Illinois, USA this house of worship is a magnet to those visiting the Chicago area. The temple stands 167 feet high, surrounded by gardens on a bluff overlooking Lake Michigan.

Architect Louis Bourgeois was selected via a 1920 architectural competition to create the intricate design. His concept of a temple of light required a vast number of openings in highly carved ornamentation surfaces. When his design was selected, Louis Bourgeois was unsure which material could realize his dream. The architect however sadly passed away just two months after selecting exposed aggregate for his creation and John Earley Studio ultimately executed the design in brilliant white exposed aggregate concrete.





Earley Studios worked from Bourgeois' drawings and produced elaborate plaster moulds for both precast panels and cast-in-place components. The studio decided that no defects could be accepted in the dome panels and of the 387 pieces made, none were rejected. John Earley developed special methods for the intricate sculptural shapes that allowed concrete with very high water-to-cement ratios to be poured into the moulds but allowed excess water to be removed from the wet concrete to give a lower ratio for hydration. Water was drawn to the surface of the concrete by capillary action through precisely gap-grading large and fine aggregate. Earley was so demanding about the sizing and colour of the aggregate that he high graded railroad carloads of rock at his studio before crushing it there. (1)

The studio stripped the forms within 18 hours and scratched cement paste off the surface to expose the sparkling quartz aggregate which gives such vitality to the finished material. The craftsmen used one inch long small wire brushes to scrape the temple's surface, every square inch of it. The panels were finally cleaned with an acid and water rinse. All precast components were cured in moisture controlled chambers at the studio. (1)

Preservation of the structure has proven to be challenging. The problems of weathering, pollution, surface erosion, trapped moisture, joint deterioration and efflorescence means restoration must be a continuous and ongoing process. However, the exceptional workmanship and the materials that gave life to the architectural concrete of the Baha'i Temple have also endowed it with a durability that will preserve this unique house of worship for many generations to come.

(1) "Weathering of Architectural Concrete on the Baha'i House of Worship", Robert F. Armbruster, 11/ 1993.



*Architects: Louis Bourgeois,  
John Joseph Earley, Washington, DC*

*Contractor: Earley Studio, Rosslyn, Virginia*

*Construction was in four phases:*

*Phase 1: 1921 - Basement & foundation*

*Phase 2: 1930 - Structural and weather-tight shell added*

*Phase 3: 1931-1942 - Create exterior ornamental cladding*

*Phase 4: 1949-1951 - Interior architectural ornamentation completed*





# BOX BUILDING

"Light is used as the most important material in architecture. Our houses are boxes of light. These boxes aim to reflect light, control it, make it bounce off the walls and multiply so as to obtain an architectural luminosity which awakens the senses."

*Gonzalo Mardones Viviani*



## Well thought out architecture

This is a building that provides small office spaces for professionals and which is designed to optimize and use the full potential of services through the latest communications technology.

Sophisticated computer systems are utilized to provide offices with joint secretarial and messenger services and an efficient floor plan solution allows shared use of meeting rooms and service areas. The offices face east and west. The west façade is shielded by a shutter which controls the level of afternoon sun entering the building.

The building is entered through a six floor high cedar wood clad space. Moving from the hall to the lifts or stairs however reveals the surrounding coastal mountain range landscape. The corridors to the offices are arranged so that a straight line and a curve are confronted, to add tension to the circulation space. Transparency to the north and to the south allows both natural light and the surrounding landscape into the building.



## Matching the surrounding nature

The building is constructed of ochre colour pigmented exposed concrete. Phenolic boards of 4 ft x 8 ft were used as moulds. The idea was to try and match the colour of the concrete to the colour of the dry grass in the surrounding mountains. White windows were used.

"I value the relationship between architecture and nature. Architecture tries to acknowledge and reflect the qualities of a location – the soil, water, colours, gradients, sky. Through this relationship we can create spaces for the senses, for the present and for remembrance", says Gonzalo Mardones Viviani.

*More photos on the following pages.*









Øyvind Suul's artwork is a fusion of organic and industrial inspirations that aim to create as many associations as possible whilst at the same time opening for a wide range of individual interpretations.

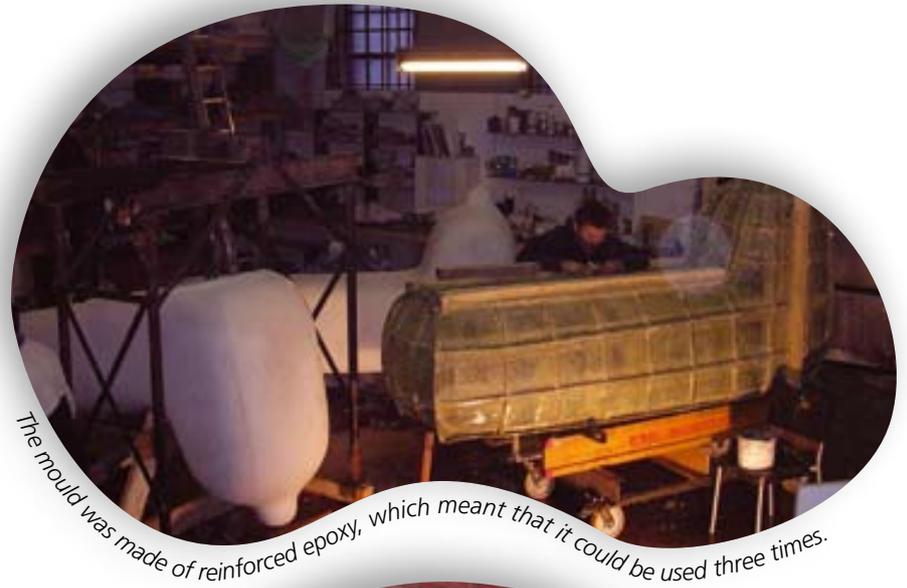
He considers all his work to be the product of an absurd combination of associations – always expressed in the form of a visual question and addressed to assumed elements of the public's cultural consciousness and experience. It is often both positively and negatively charged, capable of generating uncomfortable and macabre associations and humorous ones.

These white sculptures are located outside a new University of Oslo building (psychology) and are designed by the artist Øyvind Suul. The mould was made of reinforced epoxy, which meant that it could be used three times. The sculptures are of solid concrete and each weigh around 3 tons. The concrete consists of AALBORG WHITE® and Lysitt, which is a rock type from the west of Norway. Lysitt is a very light rock.

It has been crushed to the grades required to beautifully complement the concrete's fine, white expression.

The concrete is supplied by UNICON in Oslo, Norway.

For more information on the work of Øyvind Suul please see [www.suul.info](http://www.suul.info).



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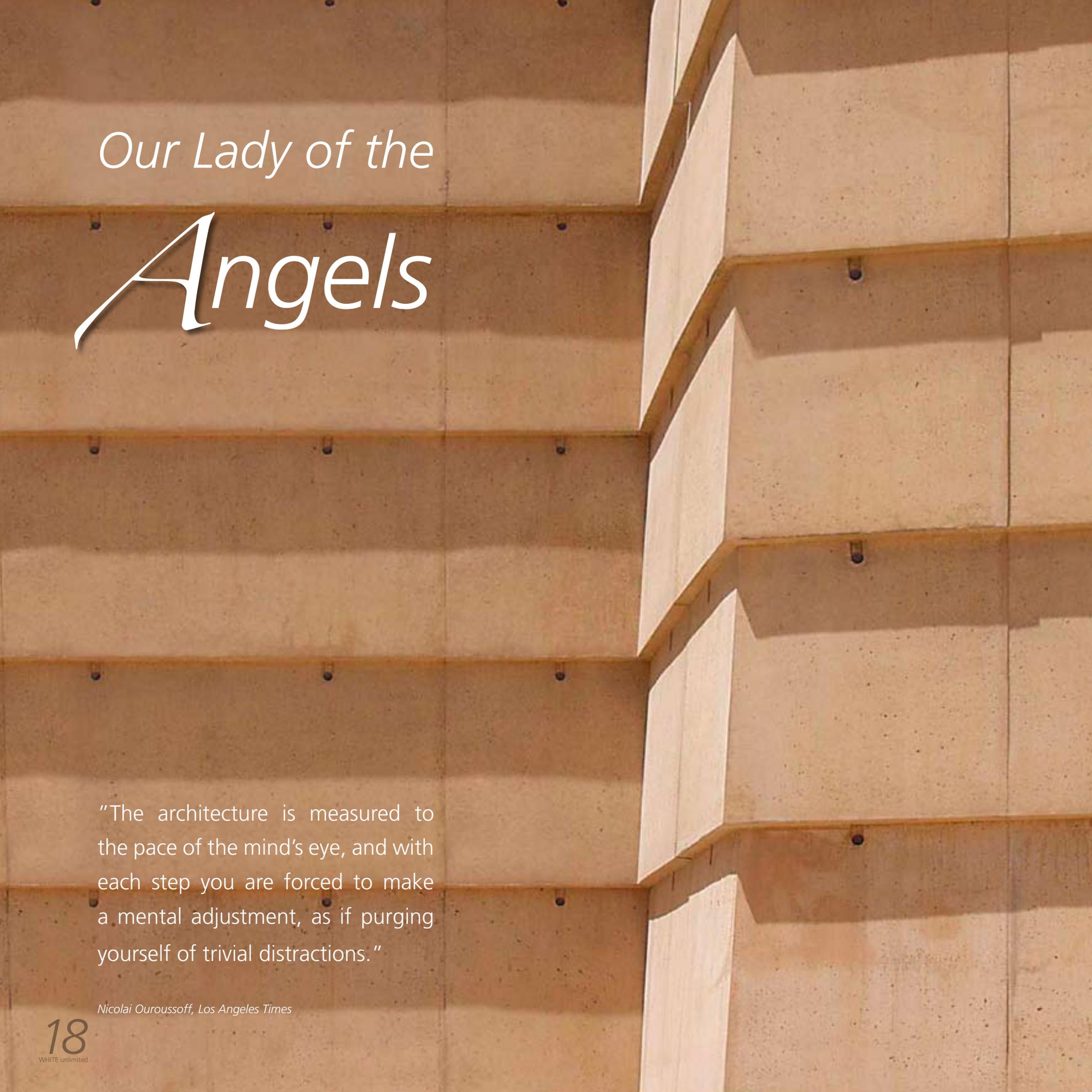
The sculptures are of solid concrete and each weigh around 3 tons.



The concrete consists of AALBORG WHITE® and Lysitt.

# ART À PART





*Our Lady of the*  
*Angels*

"The architecture is measured to the pace of the mind's eye, and with each step you are forced to make a mental adjustment, as if purging yourself of trivial distractions."

*Nicolai Ouroussoff, Los Angeles Times*





The Cathedral of Our Lady of the Angels is the third largest cathedral in the world and the first cathedral to be built in the United States in over a quarter of a century.

### **Sculpturing a Cathedral**

The cathedral is a study in striking in-situ concrete details which together form a harmonious whole in a contemporary design. A well balanced relationship between detail and entirety is found in both the exterior and interior of the building, so that the immense cathedral is perceived as light and in balance with its surroundings.

To break up the large plane surface elements of the cathedral exterior, they have been textured to give the appearance of smaller elements. These elements both add character to the exterior, and tend to hide the smaller variations in surface and colour that are inevitable for in-situ cast concrete. The colour has been selected in a warm golden hue, by using a golden sand type mixed with white cement.

The surfaces of the cathedral seem to have been carved from a single block of white concrete. To avoid a massive monolithic impression, there are few apparent right-angle joints in the structure. The result is dynamic and refreshingly novel.









*Architect: José Rafael Moneo*

*General contractor: Morley Construction Company*

*Concrete supplier: Catalina Pacific Concrete*

*Concrete volume: 24,000 cubic yards*

*Cement: 6,000 metric tonnes of AALBORG WHITE® cement*



The building has been designed to withstand an 8.4 point Richter scale earthquake (not yet experienced in Los Angeles). The entire building sits on base isolators which will allow the entire building to move around 24 inches in each direction during earthquakes. Isolator pad holes are covered by an overlapping site floor that will allow the building to move back and forwards during an earthquake.



# *Reflecting Riverside*

White cemented "béton-brute" construction slabs extend the existing white villa with a small pavilion. The inhabitants live and cook among contemporary art. Visitors are invited 9 times a year. Light and the marvellous view are ever present. The project this year will be completed up to the attic.



### **Gallery with a unique view**

The supporting concrete walls and roofs fold around the inner space like a protecting palm of the hand. The construction is only thermally and acoustically finished and made suitable for periodic exhibition changes on the inside. The waterproof concrete roof drains along the facade.

The roof of the old villa has large eaves and the transportation platform and canopy alongside the large light window likewise extend over the garden. The basement is oblique as it had to be built on the estate boundaries. The gallery therefore clearly reflects the shape of the plot of land. Like the villa, the extension is positioned orthogonally in the environment so reflecting the curve of the River Dommel in Holland.

The pavilion requirements were contradictory. Large walls to display works of art but whilst retaining the vista across the river and the grand polder. The first impression is that the view has been lost, but with a diaphragm at the end, you are enticed to walk further. New interior routes can be discovered to the left and to the right, to the basement, patio and sculpture garden.

Some walls seem to float - sensing the presence of the river. A magnificent window is oriented toward the medieval Hertogenbosch (Bois le Duc) to the north. In the other direction, the gallery reveals its presence to the city.

*More photos on the following pages.*







*Project:*  
*Architect: Thomas Kemme Architectenbureau*  
*Client: Jan van Hoof Gallery*  
*Landscaping: Henk Ovink, Den Haag*  
*Structural engineer: Kees Benders, Helmond*  
*Photos ©: Jan Derwig, Amsterdam a.o.*





# RELAX

"Oasis", the concrete artwork in the middle of Helsinki, provides a relaxing spot where busy people can unwind. The story behind these fascinating lions is as interesting as the sculpture itself.







Artist Ann Sundholm is a well known Finnish sculptor. She was invited to take part in the Arcada building sculpture art competition run by the Pro Artibus trust fund. Many very talented entries were submitted. However, it was Ann Sundholm's entry that was selected as the sculpture for the plaza in front of the Arcada building. Arcada is a vocational high school. On the other side of the plaza is the vocational Practikum institute. The Piazza is therefore mainly used by students. However, many other passers-by are now also enjoying this lively place.

The idea behind the sculpture was simple - an Oasis. A place for people to unwind and relax. The "Oasis" sculpture consists of three concrete lions around which running water from a fountain cascades. The lions are larger than real life lions. They weigh around eight tons each and all three are over four meters long. When interviewed by Sabina Westerholm after the statue was unveiled in September 2006, Ann Sundholm said of her lions,



"I have always wondered how cats can be so relaxed. Lions, the largest of the cat family, are completely relaxed and peaceful to the power of two. They are huge, warm and soothing".

### Golden yellow concrete

Ann Sundholm contacted the Finnsementti's technical services in 2005 to ask how a durable, golden yellow concrete could be made. Golden yellow was the colour needed to give the warm feeling she wanted to create. She was advised to use AALBORG WHITE® cement, yellow quartzite LK300 and some yellow pigment. She was also given some concrete recipes to ensure the concrete technical requirements were met. Ann Sundholm was searching for a vibrant surface for the lions. She was therefore advised to use a slightly exposed surface.

The next time we heard about the lions was in July 2006. Ann Sundholm had made the moulds and the concrete was about to be cast at Parma Oy's factory. Parma Oy is the largest pre-cast concrete producer in Finland. Both Parma Oy and Finnsementti Oy provided financial assistance to ensure the best quality of and conditions for the castings. Their efforts were not in vain. Each casting gave birth to a magnificent and perfect lion.

Using concrete was a very important factor, according to Ann Sundholm. "Concrete is a very good material for this kind of sculpture. The colour is even but remains alive because of the exposed surface. We are not talking about sterile grey concrete here".

*Each of the lions is unique. One lies on its left side, one on its right side and one is lying prone on the ground.*  
Photos ©: Heikki Savolainen and Pia Rämö



# Sizing up nature's colorants

Imagine a walk on a beach on a clear spring day: Steel grey waves peacefully caress the shoreline, washing and polishing millions of sand and stone particles in a never ending rhythm.

Breathe deeply. Clear your mind. And... think of *colorants*?!



## Natural colorants?

We don't normally think of stone and sand when thinking about pigments. Pigments are usually bought from a chemical supplier and are added to paints, concrete and other materials.

True. That is one type of pigment. However...

It is sometimes forgotten that nature provides us with the finest colorants imaginable. Easily available, abundant, durable, and relatively inexpensive. Natural fillers, sands and stones of many colours – ready to be used by the creative mind.



## Natural vs. artificial

But why look for a filler, sand or stone that can give you the right colour when you can just order pigments and mix as you would mix a paint?

Firstly, natural colorants provide an extra textural dimension. Acid washing and exposed aggregate surfaces add depth and character to the surface.

Secondly, natural colorants do not lose their colour intensity over time (they do not bleach).

Thirdly, natural colorants are continuously exposed by ageing. Traditional pigments are however removed with the erosion of the cement paste.

The expression of buildings that are coloured using sand and stone will endure for a very long time – ageing just exposes more of the aggregate that gives colour...



*The expression of buildings that are coloured using sand and stone will endure for a very long time – ageing just exposes more of the aggregate that gives colour...*

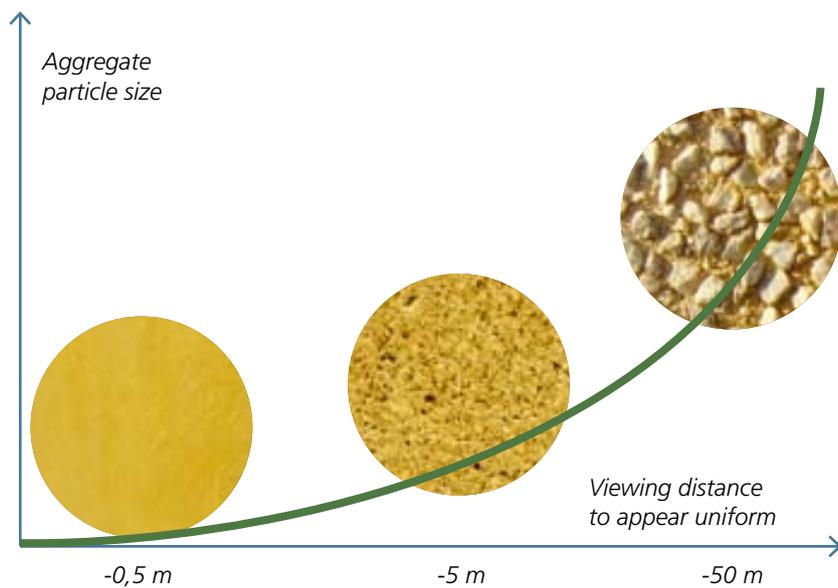
# Contrast vs. uniformity

Natural colorants can be used to create expressions of contrast or of uniformity. Contrasting colours can be consciously used in (for example) a terrazzo to create a specific effect. A uniform expression in other cases may be desirable.

Whether contrast or uniformity is best depends on the eye of the beholder, or more accurately, on the distance between the eye and the surface.

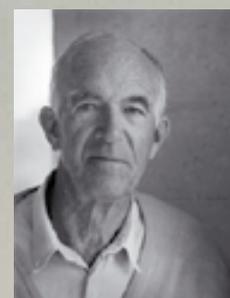
Viewed close up, only surfaces coloured with fillers or pigments exhibit uniform colouring.

Acid etched surfaces that use sand as colorant will also appear uniform from a distance. Exposed aggregate that uses stone as colorant have however to be viewed from even greater distances to appear uniform.





D R I F T I N G C L O U D S



*Architect – Jorn Utzon (1918)*

*Key Buildings:*

*Courtyard-Style Housing, Denmark 1956-58*

*Sydney Opera House, Australia 1957 - 1973*

*Bagsvaerd Kirke, Copenhagen 1974-76*

*Fredensborg Houses, Denmark 1962*

*Kuwait National Assembly 1982*

*Two Houses, Majorca*



The plain and rectilinear exterior contrasts with the sensuously curving soffits within – the interior creates a welcome surprise in Bagsværd Community Church.

The modest church in the wonderful blue colour of a Scandinavian sky, stands tall and proud between birch trees. Externally, walls are clad with white prefabricated concrete panels and with white glazed tiles that reflect the light. The aluminium roof gives the church an industrial, almost austere, appearance, whereas, the ambulatories and connecting paths covered with glass roofs, creates an impression of air and tranquility.

The main sanctuary dominates the tight plan geometry of three sections and a courtyard situated between two parallel corridors. The glass roofed walkways blur the transition between the outdoor nature and the church interior... but nothing prepares you for the sweeping cloudscape inside the sanctuary.

The sculptured concrete ceiling of the church is magnificent and is always in flux due to the blending of direct and reflected light that filters through the floating clouds. You can see from Utzon's early sketches and other buildings that his inspiration came from nature, the sky and drifting clouds.

Utzon's admiration for the smooth flow of the script of Islamic calligraphy is resembled in the profile of the church building ceilings.

*More photos on the following pages.*





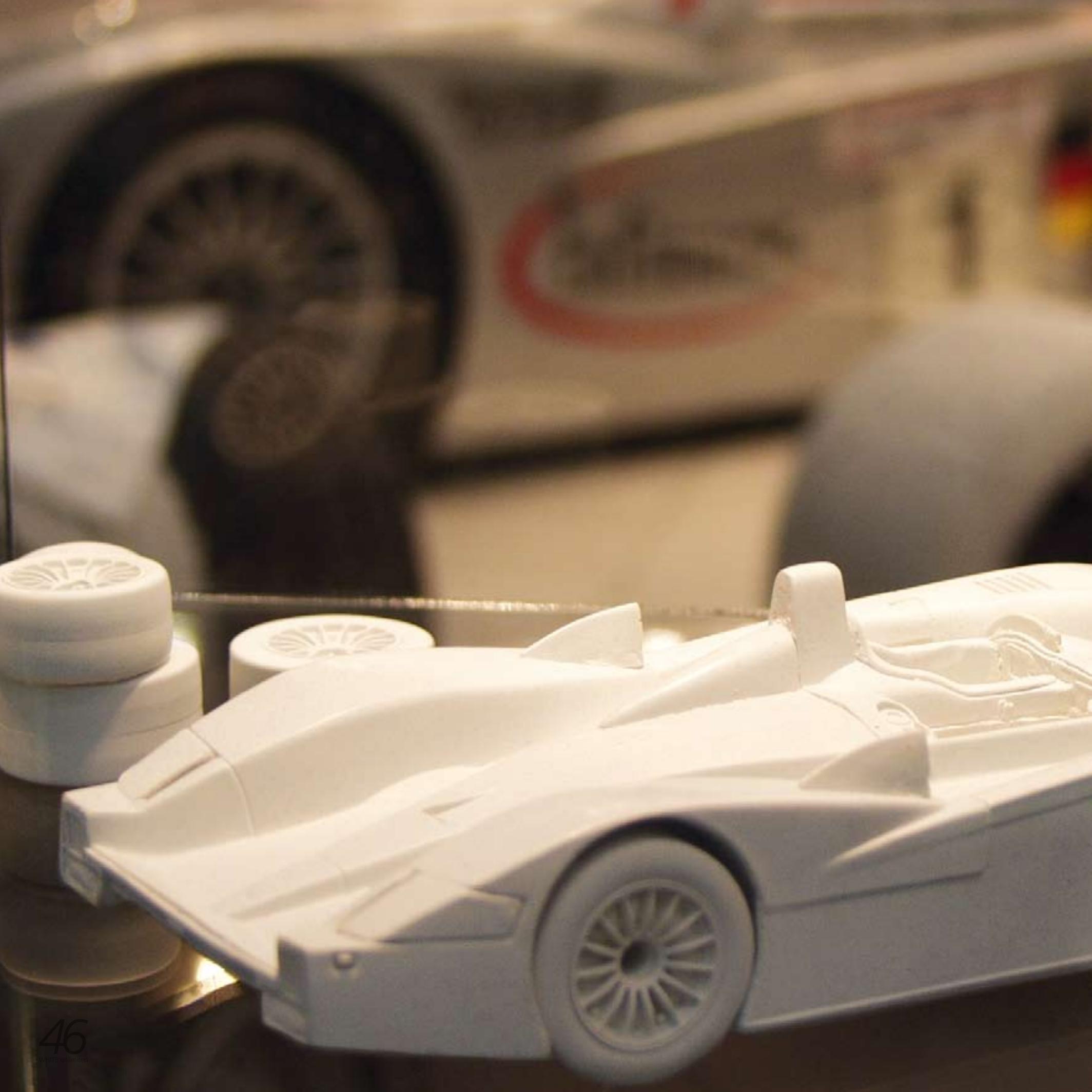
PRAEST

Gang  
11  
(Tore)  
←



*Utzon has designed a church without religious references that exalts and comforts with poetic purity.*





The BAU exhibition in Munich is one of the largest building industry trade shows. The theme of our trade show was...



*Dänischer Rohstoff –  
Deutsches Know How*



BOGNER



F. Biela



T. Kristensen



E. Pirro



AALBORG  
Weißz



On 15 - 20 January we participated in the BAU exhibition in Munich as part of the support we provide to our sales strategy for white cement in Germany. It is one of the largest building industry trade shows, with 2,000 exhibitors and 190,000 visitors. The theme of the trade show was "Dänischer Rohstoff - Deutsches Know How". This was symbolised by the Audi R8 which Tom Kristensen won the 2001 Le Mans in. Tom Kristensen, who is well known in the motor sports interested Germany, symbolized Danish raw materials and the Audi symbolized German machinery and know how. Combine these two and we can all achieve great results.

The impressive vehicle, which is normally on display at Audi's vehicle museum in Ingolstadt in Germany, was of course admired and photographed. Many dreamt of sitting in it, starting it up and driving away.... But we had promised Audi to take good care of their car. So, admirers could instead make their Le Mans dreams come true on the PlayStation2 game Gran Turismo 4. The fastest driver won two tickets to the 2007 Le Mans and a clock from Tom Kristensen's special edition.

SEE  
FEEL  
EXPERIENCE



Zeigen Sie uns,  
wie schnell Sie sind!




Wählen Sie ein virtuelles Rennstreckenszenario auf der Website der Audi Sport, um die virtuelle Rennstrecke zu wählen. Dann werden Sie in die virtuelle Welt der Audi Sport transportiert. Hier können Sie die virtuelle Welt der Audi Sport erleben. Hier können Sie die virtuelle Welt der Audi Sport erleben. Hier können Sie die virtuelle Welt der Audi Sport erleben.

Für uns erhält der Begriff „Speed to market“  
eine neue Dimension.

Wieder ein Produkt, das in weniger als 12 Wochen entwickelt, getestet, produziert und in den Markt gebracht werden konnte. Das ist die Geschwindigkeit der Audi Sport. Das ist die Geschwindigkeit der Audi Sport. Das ist die Geschwindigkeit der Audi Sport.

**Dänischer Rohstoff  
Deutsches Knowhow**

Besuchen Sie uns auf der BAU 2007,  
vom 13. bis zum 20. Januar in München






### Short path from idea to reality

We are always very keen to display glimpses of the many opportunities white cement can offer. The surfaces, the constructions, the expressions. This time concrete castings of racing tyres and wheels were produced in white and coloured concrete and displayed along with scale models of the Audi A8.

The stand was a success and our participation contributed to reinforcing our presence as a serious independent player in the German white cement market.



*The concrete sculpture placed in the Hotel Havnekontoret in Bergena, symbolizes Saint Sunniva.*

# *Expressing kindness and inner strength*

“When I was asked to create a sculpture which would be placed among the original and spectacular decoration of the famous Clarion Collection Hotel Havnekontoret in Bergen, Norway, I decided to go for a piece in white concrete”, says the artist Tove Veidung.

The concrete sculpture symbolizes Saint Sunniva. It is 270 cm high and made of AALBORG WHITE® based concrete. It was Tove Veidung's first work in white cement made from marble.

The process started with the clay and plaster coat moulding. Finding the right strength for the marble cement mass was very important. So several small scale samples were required. The concrete was specially designed to flawlessly reflect the high level of details of the surface.

The artist was very happy and pleased with the final result, which matches the intended expression. She did two more sculptures using this white cement, one of the composer Harald Sæverud and another of the violinist Ole Bull, both from Bergen.

For more information, please visit [www.veidung.no](http://www.veidung.no)

*Sculpture of the violinist  
Ole Bull, Bergen.*

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The next chapter**

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**Our Lady of the Angels**

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**Reflecting riverside**

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The logo consists of the word "WHITE" in a small, white, sans-serif font above the word "unlimited" in a larger, blue, sans-serif font. The text is set against a black rectangular background that is slightly tilted to the right.

*This is the magazine that brings life to the unlimited possibilities for products based on white cement.*

*The magazine is also a meeting place that ties our global organisation together with the world wide market of the AALBORG WHITE® products. We consider you to be our influencer and wish to inspire you to challenge the large, unlimited potential of white cement.*

*Everyone is welcome to participate in this global forum of knowledge about white cement.*

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Circulation: 2000

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