

# THE WHITE SITE

March 2005/1

The Danish National Opera House

"ARKADIA" - shopping mall, Poland

SEE - FEEL - EXPERIENCE

Experience based on tests

Study tour - focus on white cement



*Twelve internationally recognised artists were brought together on a two-week workshop with the object of exploring the artistic and aesthetic potentials in white and coloured concrete. Read more inside the Newsletter.*



AALBORG WHITE®

AALBORG WHITE® is white cement – made from nature's own raw materials, refined by supreme technology, and used for beautiful and functional solutions.

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## Contents:

Page 2

**The Danish National  
Opera House**

Page 8

**Inspiring and cutting-edge  
international workshop**

Page 14

**Handling and storage of  
AALBORG WHITE®**

**Experience based on  
thousands of tests**

Page 15

**"ARKADIA" in Warsaw  
– shopping mall in Poland**

Page 16

**An advertisement  
will never do...**

Page 17

**SEE – FEEL – EXPERIENCE**

Page 19

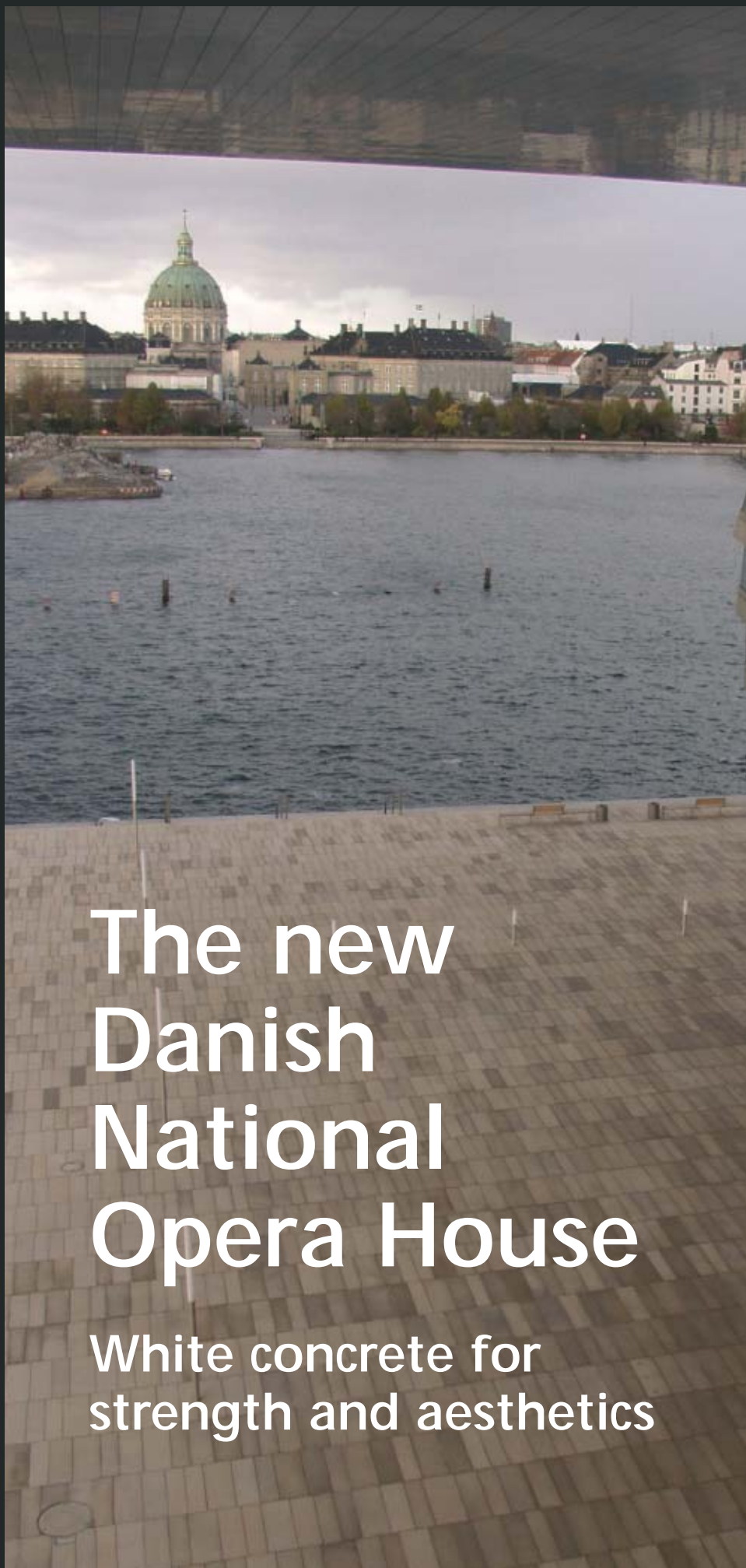
**Study tour with focus on  
inspiration and white cement**

Page 20

**Living the brand**

**Best Achievement Reward**

**The AALBORG WHITE®  
welcomes China**



The new  
Danish  
National  
Opera House

White concrete for  
strength and aesthetics

## Facts

<i>Floor area:</i>	<i>41,000 m<sup>2</sup> in 1,000 rooms and 14 storeys, five of which are below ground</i>
<i>Architect:</i>	<i>Henning Larsens Tegnestue A/S</i>
<i>Contractor:</i>	<i>Pihl &amp; Søn A/S</i>
<i>Engineers:</i>	<i>Rambøll A/S</i>
<i>Precast elements:</i>	<i>Spæncom A/S</i>
<i>Ready mix concrete:</i>	<i>4 K Beton A/S.</i>
<i>Contract price:</i>	<i>EUR 335 million</i>



The new opera house in Copenhagen has just been opened, and it was a major technical and aesthetic challenge for all parties involved. The building is a gift to the Danish people from the shipping magnate A. P. McKinney Møller and Chastine McKinney Møller.

The White Site's editors visited the opera house in December 2004 to experience this magnificent construction, which houses a stage with the world's best lighting and acoustics.

The building's exterior is dominated by the gigantic surface and 32-metre corbel roof, which appears light and floating with a total length of 158 metres. The building is located in an artificial lake in the middle of the heart of Copenhagen, directly opposite Amalienborg, where the Danish royal family lives, and it is thus a striking new point of reference for the city and the harbour.

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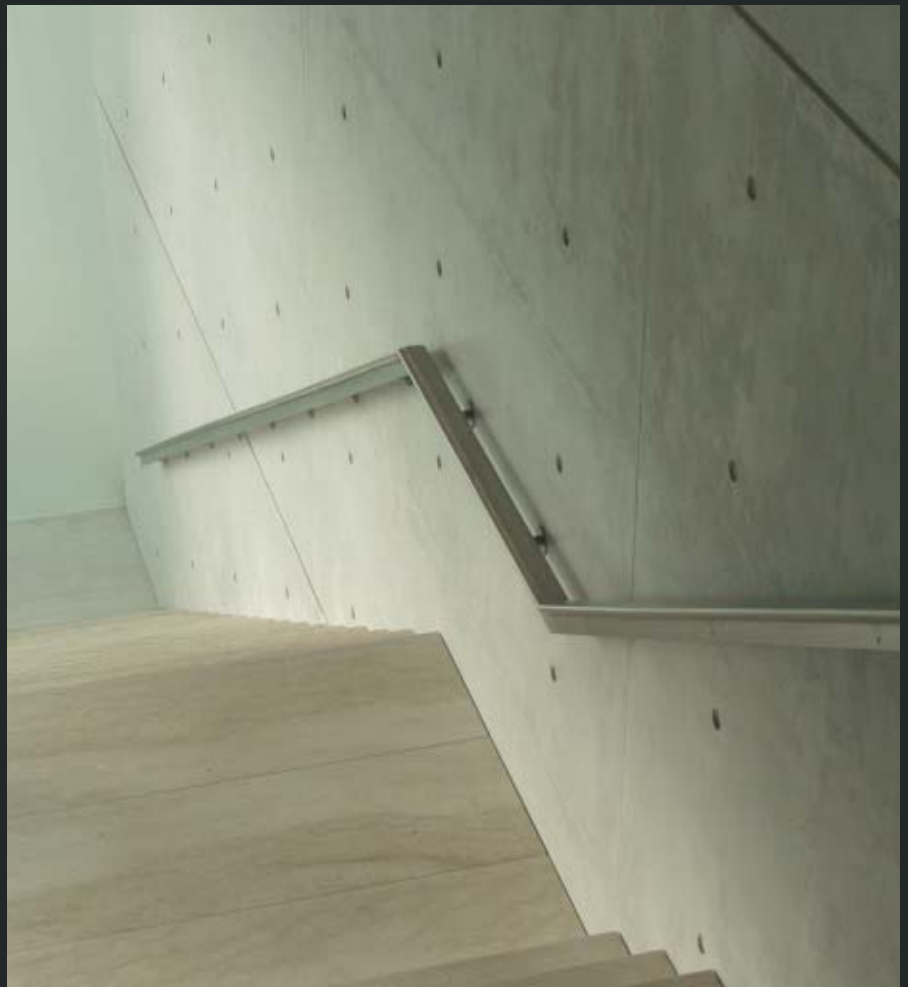
*The outer surfaces of this gigantic core were constructed as a careful combination of concrete poured in situ and modular concrete.*

# Respect to details of concrete surfaces

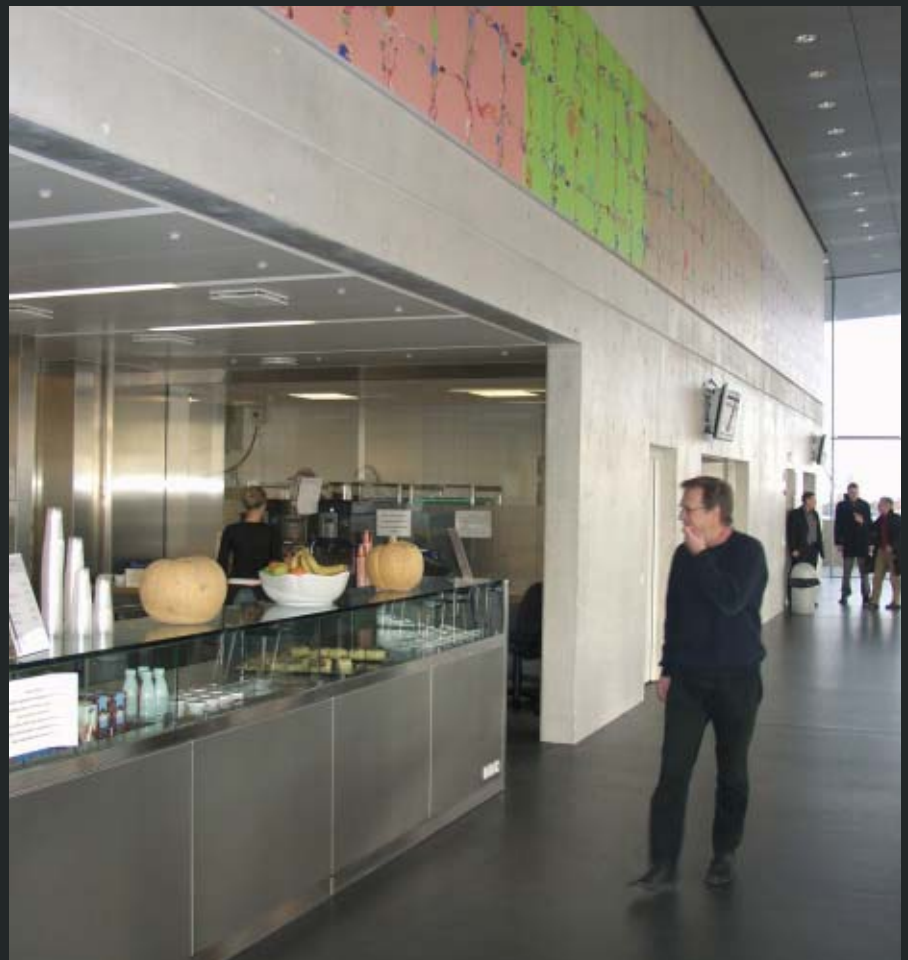
The building's interior is dominated primarily by two features. The first is the central foyer which, with its double-curved surfaces, balconies and bridges suspended from the ceiling, appears as a light and transparent room. In the middle of the room, the audience section of the main theatre with its curved surfaces faced with noble wood hangs like a gigantic cone. The second feature is the building's solid vertical white concrete spinal column, which spans all the building's 14 storeys and, both practically and aesthetically, unites the building's main functions. The outer surfaces of this gigantic core were constructed as a careful combination of concrete poured in situ and modular concrete, all using AALBORG WHITE® cement. Like everything else in the building, there were major requirements with respect to the details of the concrete surfaces. A lot of attention was paid to ensuring that the surfaces of the concrete elements appeared precisely like the parts poured in situ, with the special vibrant and varied white concrete surfaces, no two of which are exactly the same.

The white concrete in this building is seen in intelligent interplay with the other materials and with its own expression, emphasising the material's true nature and soul.

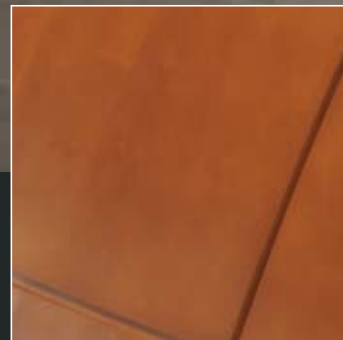
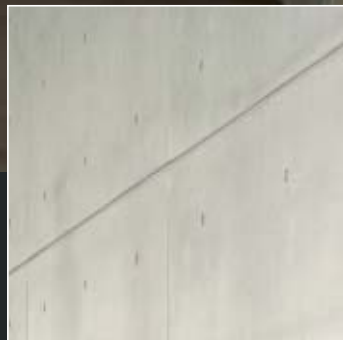
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*There were major requirements with respect to the details of the concrete surfaces.*



*The white concrete is seen in intelligent interplay with the other materials in this building.*







*The building's solid vertical white concrete spinal column, which spans all the building's 14 storeys and, both practically and aesthetically, unites the building's main functions.*



*A view over the royal castle Amalienborg, where the Danish royal family lives.*

# Inspiring and cutting-edge international workshop



*The object of the start-up was to give participants knowledge and a feeling of the nature of the material concrete.*





*During the two-week workshop the 12 artists stayed in a little and inspiring guesthouse on the island.*

Twelve internationally recognised artists were brought together at the end of September 2004 on the small Danish island of Samsø, where they took part in a two-week workshop with the object of exploring the artistic and aesthetic potentials in white and coloured concrete. Many of the artists had not previously worked with concrete, and they were thus not limited by predefined attitudes about what can and cannot be done with the material.

A local association – "The Concrete Laboratory Samsø 2004" – was formed for the occasion, and it looked after all the practical details, including providing accommodation and meals for the 12 artists in a little and inspiring guesthouse on the island. The framework for the artists' daily work was the island's picturesque little concrete factory situated right next to the beach: the perfect framework for creative development.

*Continues page 10*



*In cooperation with the island's tourist association, each artist's best work will be placed along a bicycle route around Samsø as a series of special attractions.*

# A cutting-edge experience for the participants

The AALBORG WHITE® Technical Team arranged the introduction of the workshop with practical advice, inspiration and a two-day start-up workshop. The task of the artists in this first mini-workshop was to produce "an object to sit on". The object of the start-up was to give participants knowledge and a feeling of the nature of the material concrete, and basic experience in the design and structure of moulds for concrete. The AALBORG WHITE® Technical Team assisted throughout with technical and practical advice on the use of concrete, which was of course based on AALBORG WHITE® cement.

After two weeks of work, an official exhibition was held with a private viewing and talks by the mayor and others. It was evident at the exhibition that the artists had succeeded in balancing on the edge of concrete's possibilities. Many of the artists had also moved their personal limits in the intensive work with concrete. A few comments from the participants on the final day:

"It's like a rebirth – the contact with concrete has opened a whole new world in artistic idiom, materiality and aesthetics."

"I'm completely worn out. We were already gripped by an inner fire and motivation during the start-up workshop, and it simply grew and grew over these two weeks. I had expected to work from nine to four, with reflection and discussion at night. Instead we got up early and worked right through to dinner at eight, and then went straight to bed, tired out. It was very strenuous, but the time simply flew, and it's been extremely exciting and stimulating. Where can I register for the next concrete workshop?"

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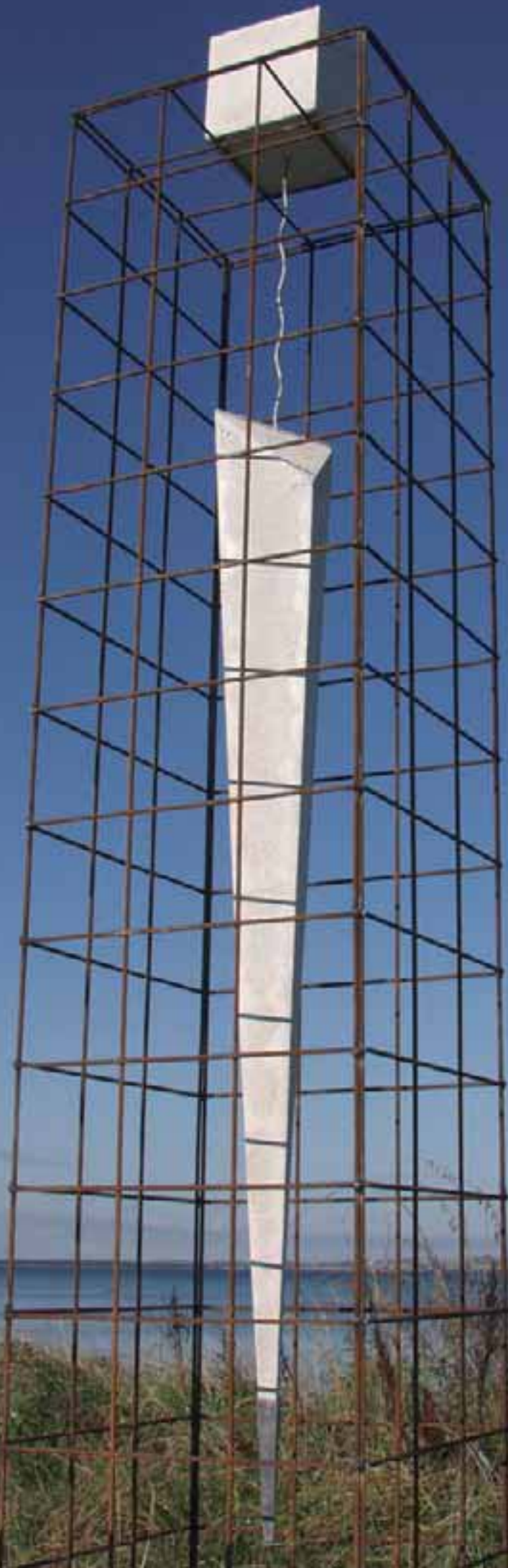


*It was not unexpected that the results of the workshop were highly exciting and innovative.*



So it was not unexpected that the results of the workshop were highly exciting and innovative, as the pictures show. Numerous good pictures of the entire workshop day by day can also be seen on the website [www.betonlaboratoriet.dk](http://www.betonlaboratoriet.dk).

In cooperation with the island's tourist association, each artist's best work will be placed along a bicycle route around Samsø as a series of special attractions. We will attempt to provide a summer portrait of the "Concrete Route" in a subsequent The White Site.





**The artists:**

- Bert Meinen, Holland*
- Carsten Langkilde, Denmark*
- Mary Judge, USA*
- Ulla Enevoldsen, Denmark*
- Bertine Bosch, Holland*
- Steen Rasmussen, Denmark*
- Salah Saouli, Germany*
- Ole F. Olsen, Denmark*
- Leena Kuutma, Estonia*
- Rie Toft, Denmark*
- Osamu Fujimori, Japan*
- Finn Have, Denmark*



## Handling and storage of AALBORG WHITE®

All water-based binders such as cements react spontaneously with moisture in the air. This is called moisture damage, prehydration or ageing of the cement.

The reaction products form a layer around the cement grains and reduce the cement's reactivity. The result is prolonged setting time, reduced strength and increased risk of false set.

To avoid these negative effects on the cement's properties, it is important to handle and store cement correctly. A research project was carried out at RDC in order to provide detailed knowledge on how to handle and store AALBORG WHITE®. The project is now almost completed, and the main conclusions are:

- AALBORG WHITE® in sacks should be kept on pallets with unbroken shrink wrapping until it is used, in order to reduce moisture uptake.
- AALBORG WHITE® big bags and sacks should be stored at some distance from walls or floor in order to reduce the risk of coming into direct contact with water.
- AALBORG WHITE® should always be handled in air which is as cold and dry as possible in order to reduce moisture uptake.

An AALBORG WHITE® folder with guidelines on handling and storage of AALBORG WHITE® will be available shortly.



## Experience based on thousands of tests

The Department of Physical Testing at RDC monitors the quality of AALBORG WHITE®. The department is equipped with modern semiautomatic equipment for determination of setting time and cement fineness. Mortars are prepared with semiautomatic mixers under ASTM and EN standards.

During one year of quality assurance testing, the department performs more than 7,000 tests of compression strength, 3,500 tests of setting time and 2,500 determinations of cement fineness. Six laboratory technicians, each with more than 10 years of experience, perform the quality testing. The department operates under ISO 9001 and ISO 17025 standards and is accredited by the Danish accreditation authority DANAK.



Cement from all of Aalborg Portland's cement plants is regularly tested in the Department of Physical

Testing. The results are used to ensure a uniform quality of all AALBORG WHITE® products.

# "ARKADIA" in Warsaw – the biggest shopping mall in Poland



– the hollow blocks and bricks in the facade are made of AALBORG WHITE® cement.

In the summer of 2003, investors in the project European Retail Enterprise, together with their associated company BEG Ingenierie Polska, were faced with a dilemma concerning which materials they should select for the Arkadia facade. After considering a number of other products, they finally selected hollow blocks and bricks based on AALBORG WHITE®, supplied by Polish manufacturer TeknoAmerBlok, for most of the facade.

## Unlimited possibilities in colour and texture

The project architects designed the hollow block facade with different surfaces. Some of the elements are split-faced, others are polished or smooth. The split-faced hollow blocks are characterised by uneven surfaces which, depending on light intensity, create a constantly changing, vivid facade, while the polished elements have a very distinctive elegance and a unique appearance. The project also includes elements in different colours such as yellow, brown, and red-pink – all in different special shades.

TeknoAmerBlok's products were chosen because their colours closely matched design specifications. The supplier carried out a series of trials to ensure that the products had the correct parameters, especially colours, stability and durability, as well as strength, water absorption and frost resistance, in order to fulfil the architects' expectations. These quality

requirements for the production of hollow blocks and bricks for Arkadia Shopping Mall could only be met with the help of the best raw materials and the highest technological expertise.

"AALBORG WHITE® cement was chosen because of the stability of its parameters", says Paweł Stupak from TeknoAmerBlok. "By using AALBORG WHITE®, we could be certain of the colour consistency of the finished products from different production series. The use of AALBORG WHITE® made it possible to achieve the required shades of colours, and also to fulfil other requirements such as strength and frost resistance," emphasises Paweł Stupak.

## Customised products eliminate adaptations and future maintenance

The dimensions of the bricks and hollow blocks were adapted to the needs of the project in order to limit cutting and adaptations on site. As a result, installation costs were extremely low. This solution enabled extremely rapid erection of the 17,000 m<sup>2</sup> of masonry walls of the facade. Product qualities, especially resistance to mechanical damage, ensure that this facade will not need any maintenance in the future, so costs will be lower than otherwise.

"As one of the biggest projects in Central-Eastern Europe, the close colla-

boration with Aalborg Portland Polska on this project has already resulted in more orders where the use of white cement has been specified. Using AALBORG WHITE® cement for our products enables us to obtain clear, distinct colours, which is not possible with other cements," says Paweł Stupak.

Aalborg Portland Polska is currently working with TeknoAmerBlok to supply AALBORG WHITE® cement in connection with a number of prestigious projects in Warsaw, Krakow and other cities. This will make the presence of all parties visible and lasting in these urban landscapes in Poland.



## Facts:

*Arkadia Shopping Mall in Warsaw,  
Investor: European Retail Enterprises  
together with BEG Ingenierie Polska,  
Total area: 287,000 m<sup>2</sup> – 180 shops and  
20 restaurants and cafés.*




# An advertisement will never do...

At least not alone. This is why our latest advertisements are as they are. When it comes to inspiration and communication, we recognise the limits of

a two-dimensional medium like an advertisement in a glossy magazine. We believe in the strength of our senses – especially senses other than

our sight. In the perfect situation, you have to feel a concrete surface with your own hands to fully understand the texture.



Run your  
fingertips  
over this ad  
and feel the  
texture

(If you do not feel anything,  
please go for a real life experience)

SEE  
FEEL  
EXPERIENCE

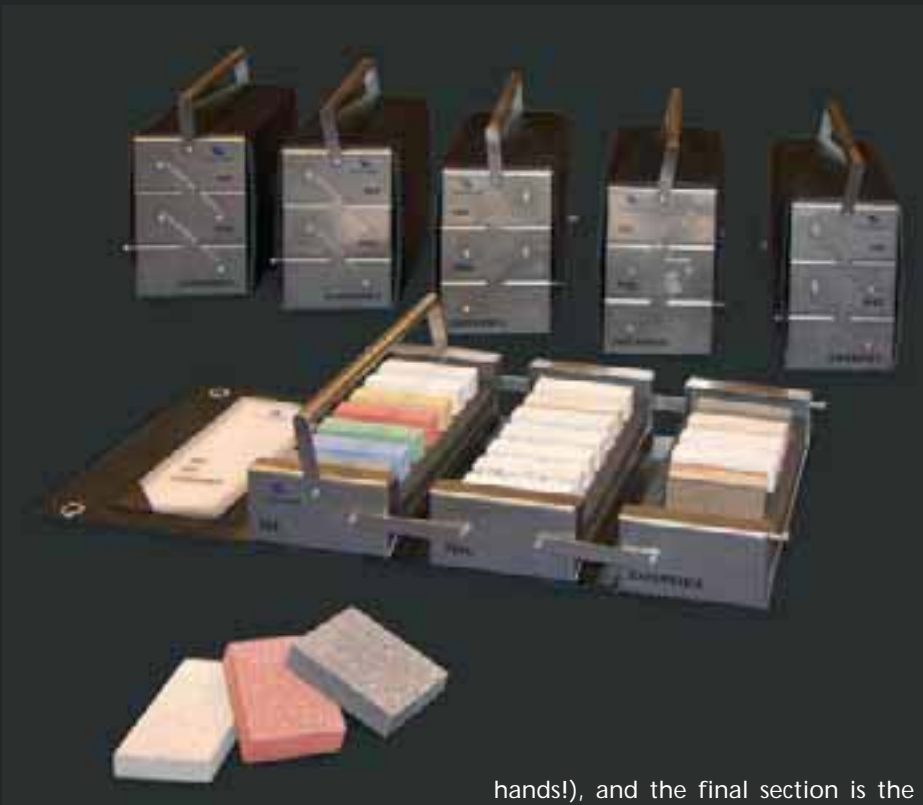
Words can seduce. Pictures may lie. Reality rules. If you want a specific concrete or cement surface, you should feel it with your own hands. If you want a unique material combination, you should experience the interplay in real life. Let us bring our senses forward in the process of physical planning. It makes it easier for you to challenge the known, break the routines and create new opportunities. For further information:

[www.AalborgWhite.com](http://www.AalborgWhite.com)



AALBORG WHITE





The AALBORG WHITE® communications universe SEE FEEL EXPERIENCE brings the personal experiences into focus, as we regard this as the most reliable form of communication. As such, SEE FEEL EXPERIENCE is not a slogan – it's a set of values expressing the way we wish to communicate.

A selection of tools supporting AALBORG WHITE® communications universe has already been developed: for example, a showroom, workshop concepts and grey versus white test samples. The last item in the SEE FEEL EXPERIENCE communications universe is a toolbox which is divided into three sections, each of which illustrates a range of white concrete's possibilities in its own way. The first section shows a selection of colours (see with your eyes!), the next section shows surfaces (feel with your

hands!), and the final section is the experience section which, apart from samples of concrete, contains a range of complementary building materials such as steel, aluminium, glass and wood. There's also a water bottle.

With the toolbox in your hands, only the imagination limits your experiences with concrete. How will yellow concrete look in wet weather? How will red terrazzo look with steel? How will a concrete surface feel after it has been acid-washed? And so on and on ...

It is of course intended that the contents of this toolbox can and must be adapted to the target group.

The plan is that the future focus will be primarily on means of communication which bring time, the senses, experiences and people into play. We will keep you updated on new initiatives and developments in the area.



## SEE

AALBORG WHITE® cement-based products have a large undiscovered potential that provides you with the opportunities to challenge the known and take aesthetics to new frontiers. We bring you the building material of the future: plastic mouldable properties, the true colours of the rainbow, or the plain white surface that emphasises the play of light and shadow, solids and voids. Your creative ambitions combined with the building material of the future will provide mankind with a more beautiful and individually expressive world.

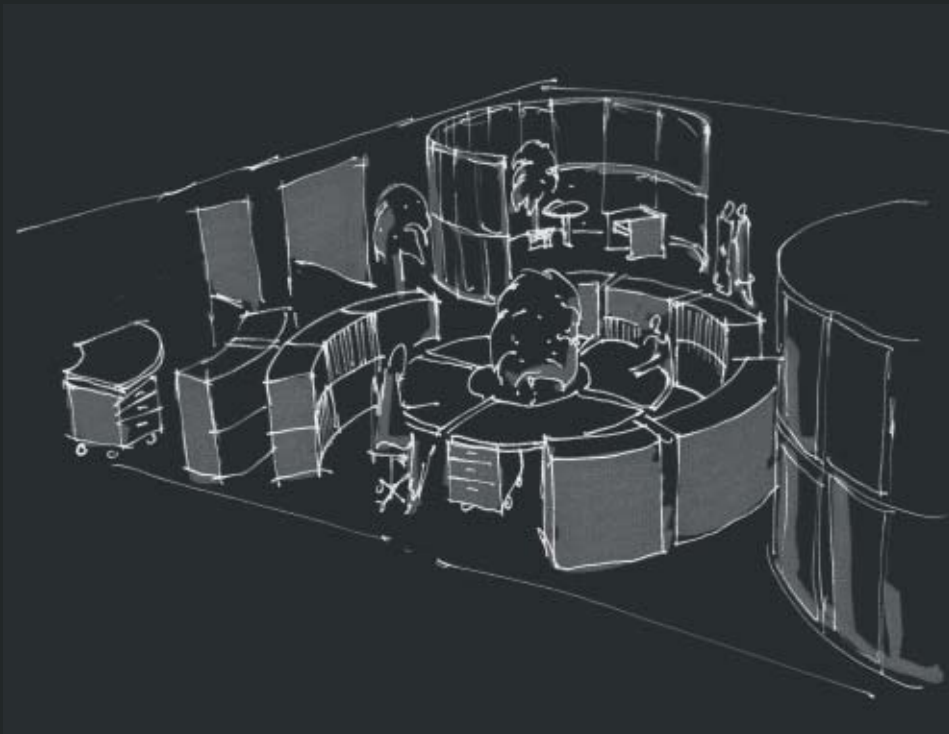
## FEEL

Only your imagination limits the various expressions and surface textures made possible by AALBORG WHITE® cement. We acknowledge the strong relationship between what you can see and what you can feel with your hands. "What you see is what you get" in relation to building materials, in particular in white and pigmented concrete, is a very honest and true property for future materials.

## EXPERIENCE

When we seek inspiration for creativity, we should experience the materials at play in real life, and preferably received by all our senses – visual, tactile, hearing, taste, aroma, and intuition. Time is also essential to appreciate the architecture and the nature of the materials that surround us. First hand perceptions of how construction materials interact with the environment, both short and long term, are a vital way of getting a comfortable feeling for the properties.

We bring the AALBORG WHITE® product into play to create a tactile dialogue between people.



*...the SEE FEEL EXPERIENCE communication universe also dominates the Aalborg Portland showroom, exhibitions and office landscapes. But remember that the world is the ultimate showroom!*



# Study tour with focus on inspiration and white cement

In cooperation with CEMENTA, the Swedish dealer of AALBORG WHITE® cement, Aalborg Portland arranged a study tour in autumn to St. Eriks, Sweden. St. Eriks, which dates back to the end of the 1800s, is a member of the Scandinavian Building Group, and makes and sells concrete products for traditional constructions. The company's products include paving stones, kerbstones, retaining walls and other types of concrete products.

To provide inspiration for expansion of the product range, and thus increased use of white cement, a study tour was arranged to Austria, where there are extensive opportunities to admire the broad range of concrete goods with exciting designs and colours which are found in central and southern Europe. The Nordic countries do not have the same tradition of making light-coloured and coloured concrete goods.

The study tour started at Aalborg Portland's customer of many years' standing, Semmelrock in Klagenfurt, which gave a warm welcome followed by a conducted tour of their factory and the big display grounds. Semmelrock is a part of the international "Stein and Design" marketing concept with high quality products.

From Klagenfurt, the tour proceeded to Vienna, where visits were paid to a number of attractive display grounds, including those at the firm Götzinger, which also issued an invitation to see their production. The last stop on the tour was Vienna Exhibition Centre – the new exhibition halls in Vienna, where the outdoor areas occupy an impressive 4,000 m<sup>2</sup> with size 130/85 paving stones made with AALBORG WHITE® cement.

It was a good and rewarding study tour which was blessed by bright autumn sunshine.



*Semmelrock in Klagenfurt, gave a conducted tour of their factory and the big display grounds.*



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## Living the brand...

### An example to follow

Denmark and in particular Northern Jutland where Aalborg is located is losing jobs due to Globalization. To turn focus on Globalization, the Confederation of Danish Industries asked Aalborg Portland to host an exhibition open to the public explaining Aalborg Portland's world wide presence, global competitiveness and showing its products in cement and end-user products in concrete.

Apart from the public interest created, the session was also used to inspire own colleagues in their daily work with AALBORG WHITE®. Hans Bruun Nissen, project manager, seized the opportunity to spread the message of "living your brand" by inviting all employees at Aalborg Portland



to visit the exhibition. It gave them the opportunity to see, feel and experience the end user products in concrete.

*A real life experience is better than 100 books.*

[khaledgamal@SinaiWhiteCement.com](mailto:khaledgamal@SinaiWhiteCement.com)

## Best Achievement Reward

This year's award went to Al-Mostafa co. for its outstanding performance over the year in following the agreed dispatch rate, and for showing a high degree of understanding of Sinai White Cement (SWC) policies. In the tile makers segment, the award went to Amon tile factory for its outstanding and mutually beneficial partnership with SWC.

Announcing these awards, SWC wishes to express its appreciation to its partners for their efforts to create win-win relationships.



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## The AALBORG WHITE® Family welcomes China

Aalborg Portland's new owner Cementir supports Aalborg Portland's continued growth within white cement. With the recent purchase of Anqing White Cement in China, Cementir further extends Aalborg Portland's leading position in white cement. The cement plant, which is located in Anhui province, is one of the three largest production facilities for white cement in China with an annual capacity of 0.1 million tonnes.

The investment will enable the gathering of substantial experience before deciding on any potential future investment. By entering the Chinese market in such a

way, Aalborg Portland A/S is minimising risk while accumulating enough experience to further investigate and decide upon any future expansion. Should the investigation indicate that it would be profitable to expand capacity, the expansion will come in the form of construction of a state-of-the-art white cement plant.

The Chinese market is the largest market in the world for white cement with a consumption of approx. 2.3 million tonnes annually, corresponding to approx. 20% of global consumption. 1 million tonnes are of the type "white Portland cement".

