

# THE WHITE SITE

September 2006/3



A new bright welcome  
in Aberdeen

Studying the potential of  
the material - r e s t

Exploring the Danish precast  
market

Evolving visual appearance



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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Frontpage picture: Polish concrete manufactures on a study trip in Denmark. Here at SCION-DTU A/S.

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# A new bright welcome in Aberdeen



Ships arriving and departing from Aberdeen port in Scotland, used to be welcomed by the old Navigation Control Centre built in 1803. However, a brand new Marine Operations Centre, completed in the spring of 2006, has now come into operation. The large steel framed glass structure faces the sea, providing the building users with an excellent view of the harbour and the approaches. The glass part of the building is supported by a white concrete structure that acts as a light and large white column.

The new centre is equipped with vessel traffic management equipment, a ship bridge training simulator and an integrated marine operations control facility. This new facility will provide traffic management to vessels carrying a total annual cargo of 4 million tonnes with a value of £1.5 billion. Aberdeen is also the offshore oil industry centre for the UK sector of the North Sea.

The project's main contractor was Sir Robert McAlpine and the white concrete panels were manufactured by Evans Concrete using AALBORG WHITE® cement.







## Studying the potential of the material

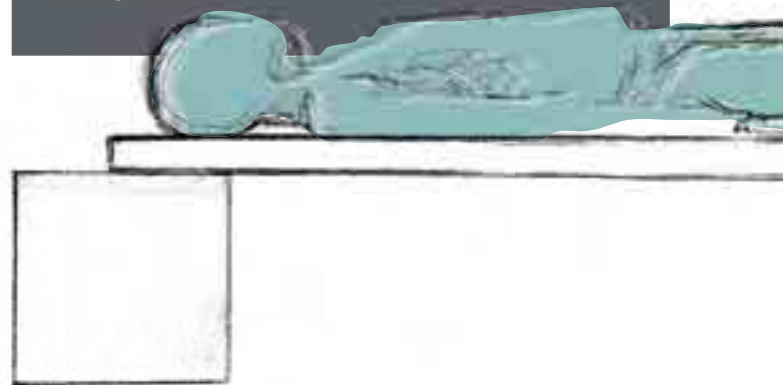
The aim of the student project that resulted in the *rest* bench, was to explore the limitations of reinforced concrete and to study the potential of the material to achieve qualities such as slimness, smoothness and precision.

The bench has two components. One is the surface on which you can lie and the other is the more massive structure on which this surface rests. This reflects the concept behind the bench of something light supported by something heavy. The reclined body lies on a surface which is as smooth as glass. It is actually a 6 mm thick glass sheet which is used as formwork. This creates a sharp interface where the two surfaces meet.

The word *rest* (*hvil*) etched on the surface reflects the idea of high precision encapsulated in this work. This high precision quality is however contrasted by rougher formwork used on other surfaces, achieved by using ordinary untreated wooden shuttering.

The bench is only 50 mm thick, but has a span of 1,200 mm. There are, inside, two layers of welded steel which forms a 3 mm untreated steel lattice of mesh size 30 mm.

Total weight of the two components is 200 kg. The materials were supplied by MaxitLeca, Elkem and Betong Oest.



# rest



t

# AALBORG WHITE® travels a long way with Buschbeck barbeques

AALBORG WHITE® is one of the main components of the masonry barbeques produced by Buschbeck in Waldbröl in Germany.

The Buschbeck barbeque story began in 1989 when Klaus Buschbeck started producing masonry barbeques in his one-man-company. Today the company in Waldbröl employs 22 people, including members of the next Buschbeck generation.

The company is the 4th largest in its field and exports products to many parts of the world including Scandinavia, central and southern Europe, the United Kingdom, the United States and even a small volume to Dubai! The barbeques are distributed in many countries through major building product chains. They are also exhibited at trade fairs, where you will be able to

see them in action and maybe even taste a small piece of meat prepared on the barbeque.

The barbeques weigh around 500 kg but are supplied in component form including mortar for assembling. They can therefore be easily assembled by two people. Buschbeck, besides marketing their in-house developed products, also manufactures pre-fabricated concrete components to customer specifications.

All production is carried out in Waldbröl, where there is a two shift operation. Klaus Buschbeck explains that both grey and white cement is used in the products. However, the amount of white cement used is increasing as the demand for high quality products is growing. Today Buschbeck produces around 40,000 barbeques a year.

An important feature of the barbeque fireplace is of course the fully finished surfaces that require no treatment or painting.

The unique design, which ensures air constantly circulates between the outer skin and the five part hearth, give a high level of safety.

Buschbeck is the only manufacturer of masonry barbecue fireplaces to have been awarded a TÜV/GS product safety standard.

We are very proud that AALBORG WHITE® contributes to keeping long warm summer patio evenings all over the world even warmer and enjoyable!

For more information, please visit [www.buschbeck.de](http://www.buschbeck.de)











# Exploring the Danish precast market



## Trip around Denmark

At the end of May 2006, Aalborg Portland White arranged a study trip to Denmark for 25 Polish potential customers from the concrete element sector.

Aalborg Portland Polska has just become a member of the Polish concrete element association. The visit therefore represents an important start to the co-operation between the two parties.

During the 2 day study trip there were visits to a Danish concrete element producer and cement factory in Aalborg and to buildings where concrete elements have been used. These include churches, factory buildings, schools, company head offices, metro stations, airports, libraries and other cultural buildings.

The participants showed great interest in the buildings and there was a constructive dialogue on the transfer of technical and product traditions from the Danish market to the large Polish domestic market.

Many valuable relationships were also formed, on which the growing consumption of white cement in the concrete element sector in Poland can be based.

*Continues next page*



*The guests showed great interest in Danish building traditions during the trip around the country.*



*SCION-DTU in Hørsholm, Denmark.*

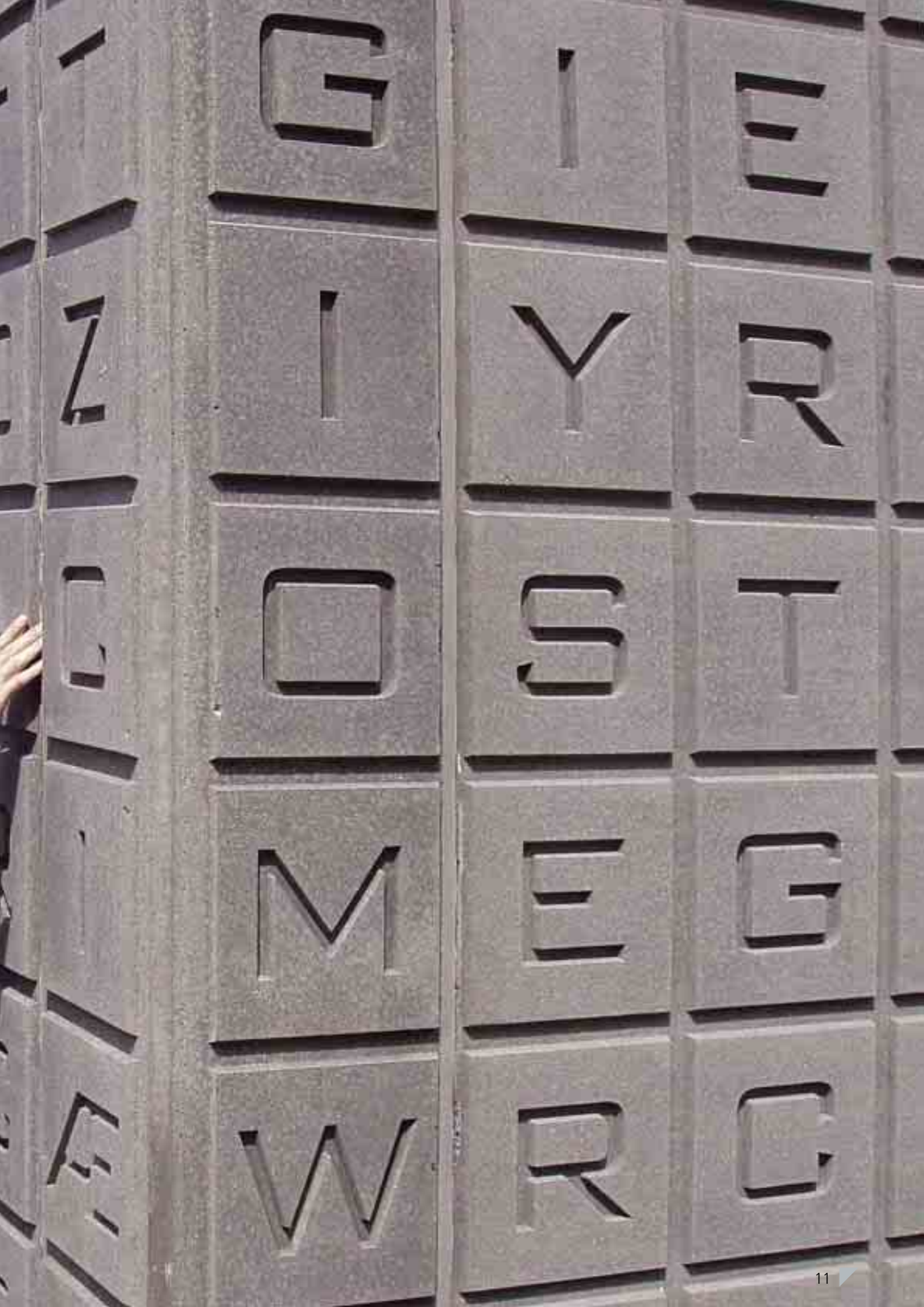


*Picture on left page: Roskilde Amtsgård, Denmark.*

*The study trip offered the participants a firsthand experience in the field of precast concrete.*







# Evolving visual appearance with AALBORG WHITE®

## - Exploring possible future expressions of concrete facades

A concrete surface appears to be a completely solid mass, an unyielding entity. However, in reality it is a bewildering three dimensional landscape of microscopic caverns and passages where crystals of many sizes and shapes form ever changing structures.

Moisture and soiling is stored in this microscopic universe, which in turn provides nutrition for organisms such as algae. It also allows soiling to stick to the concrete surface, so changing the surface appearance over time. These complex structures are themselves very slowly broken down by chemical and physical forces, so revealing the sand and stone glued together by this amazing material which is hydrated AALBORG WHITE®.

The structure and interaction with the surroundings is so complex that it is virtually impossible to predict how ageing of a surface will progress. That is, except for one agent:

**Water** – that miraculous substance which facilitates so many processes on this planet, including cement hydration and life itself.

The distribution of water across a concrete surface determines which areas will be cleaned of soiling, which will be covered with deposited soiling and where organic growth can occur.

Lena Signe Fjordvang has therefore carried out a student project to explore and understand the mechanisms of water transport over profiled concrete surfaces at RDC in collaboration with the Architecture and Design faculty at Aalborg University.

The ability of surface details to predictably direct water flow was evaluated in the project through intentional soiling of small sample surfaces. Some examples of the results are given below.

Organic concrete shapes, such as the surface of Danmarks Radio's new complex in Copenhagen, will both create and obscure minor differences in ageing across the surface, because the surface is infinitely varied.

The pre-cast concrete element was created using a rubber membrane randomly shaped upon a sand bed. The concrete shown is based on grey cement.

'The visible concrete surface' project will provide more results on the effects of design on ageing by the end of 2007. For more information, contact tbh@AalborgWhite.dk



This particular texture directs the water flow into concentrated straight vertical lines, instead of random flow across the surface. The surface will, in time, appear striped.



Very small extruding edges of a few cm in length and at an angle of 45° disperse water flow almost homogeneously across the surface



Recesses of several cm deep at an angle of 45° do not block water flow. The resulting flow pattern is completely unpredictable. The same result is achieved with vertical and horizontal recesses.





Two expressions from the same 10 year old building. Left, an almost clean surface and right a severely aged surface. The difference is not easy to miss ...

The example underlines the importance of ensuring that ageing accentuates rather than obscures the intended surface design expression.

The intricate patterning of the Baha'i temple in Chicago is regularly cleaned to avoid differential ageing obscuring details.

## Germany in focus

Aalborg Portland has for many years sold white cement to Germany and activities in this market are continuing to intensify.

To generate attention around the AALBORG WHITE® brand, advertisements have been inserted in relevant German trade publications during the summer and autumn and the first tanker truck with an AALBORG WHITE® logo has just started running on German motorways. A German web site [www.AalborgWhite.de](http://www.AalborgWhite.de) has now been set up, which provides the market with information and inspiration on our company, our products and our services.

In February 2007, we are participating in the 'Ulmer Betontage' trade show – the most important meeting point for concrete products and element manufacturers in Germany and the surrounding countries.

Co-operation with universities, architectural colleges and other institutes of higher education is highly valued. Several joint events have already been held in Germany to promote the use of white cement and challenge white concrete's potential usage. In co-operation with



Aarhus School of Architecture, a white concrete workshop will be held in the autumn of 2007 in Technische Universität Berlin's impressive Peter Behrens Halle.





# Wir verkürzen den Weg vom Weißzement zu neuen Produkten

(von der Idee bis zur Aufnahme der Produktion in Ihrem Werk)



Von Ihrer Idee zum Aalborg White Produkt: Wir werden Ihnen eine umfassende Unterstützung in der gesamten Phase und helfen, Lösungen für sich selbst und Ihren Kunden zu finden. Besuchen Sie [www.aalborgwhite.com](http://www.aalborgwhite.com) für die neuesten Informationen.

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Weißzement ist ein einzigartiger Baustoff. Aber es macht Leben Sie frei. Ihre Idee kann (auf) Sie haben die Möglichkeit, die Zukunft der Zukunft mitzugestalten. Zusammen mit AALBORG WHITE®.

## SEE FEEL EXPERIENCE

Wir helfen Ihnen dabei, den Weg von der Idee zur Produktion zu verkürzen. Schritt für Schritt. Wir helfen, danken Sie Ihre Adresse termingerecht und wirtschaftlich. Sie erhalten so eine umfassende technische Unterstützung. Wir unterstützen Sie bei der Betriebsnahme und während der laufenden Produktion. Sie profitieren von unserem umfassenden Know-how im Bereich der Betonproduktion. Wenn Sie mehr erfahren möchten, wenden Sie sich bitte an uns. Bewahren Sie die anliegende Karte auf. Es stehen einige wichtige technische Angaben darauf. Rufen Sie unter 0000 182 4906 an oder besuchen Sie unsere Internet-Adresse [www.aalborgwhite.com](http://www.aalborgwhite.com).



The German advertisements stay true to our experience-focused AALBORG WHITE® communication. The advertisements include a glued-on business card with the German sales representative contact details. On the back of the business card you will find basic technical information on our AALBORG WHITE® cement.

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# Safer infrastructure in Poland

Today, infrastructure is a big issue in Poland. By the end of the Communist era, Poland's infrastructure had become very run down, old fashioned and inefficient. There has since then been considerable investment in road development across the country, a process which was further accelerated by the entry of Poland into the EU.

Prefabet Kluczbork, who is the license holder of the Austrian system Delta Bloc, has produced the first white concrete crash barriers. The barriers were shown for the first time at the Road Construction Industry trade show in Kielce. The trade show provided an excellent opportunity to promote the safety benefits provided by using white concrete in the road and traffic sector. One of these is that white concrete in wet weather maintains its white colour, whereas grey concrete becomes very dark.

Hopefully we will see many miles of white concrete barriers along the Polish highways in the near future.



*Prefabet Kluczbork showed the barriers for the first time at the Road Construction Industry trade show in Kielce.*



*The white concrete crash barriers brightly separate the oncoming traffic. A functionality, which is maintained in dark and rainy weather. The above illustrates an example from a highway in Denmark.*