

THE WHITE SITE



AALBORG WHITE®

September 2004/3

Putrajaya Corporation Centre

New product in Scandinavia

Aesthetically durable
concrete surfaces

The Italians won the match

Pregnant Woman
Looking in the Mirror



Read more about the sculpture 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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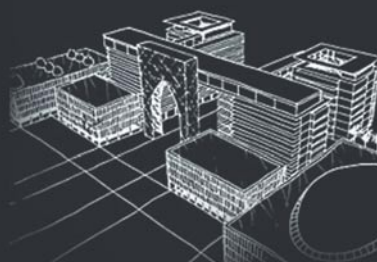
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Building facts

3G2 (Auditorium Block)

*Owner: Perbadanan Putrajaya Project Manager
Project Manager: Kuala Lumpur City Centre Bhd
Architect: Aqidea Architect
Main Contractor: Ahmad Zaki Sdn Bhd*

3G2 (Office Block)

*Owner: Perbadanan Putrajaya
Project Manager: Kuala Lumpur City Centre Bhd
Architect: Kump. Senireka Architect Sdn Bhd
Main Contractor: Contrail - Rb Consortium*

Putrajaya Corporation Centre, Malaysia

Putrajaya, Malaysia's new federal administrative city, is the home of yet another high-profile architectural landmark, the Perbadanan Putrajaya Centre or PPC. Designed to house the new city hall for Putrajaya, an auditorium and a conference hall, the PPC truly reflects the "Malaysia Boleh" or the progressive and "can-do" spirit of Malaysia.

Due to the scale and complex nature of the project, it was divided into three different stages which were constructed at the same time. The architectural concept design was undertaken by Zaini Dubuz Richez, a Malaysian / French consortium based in Paris. Kumpulan Senireka and aQuidea, two well-known Malaysian firms of architects, were engaged to carry out project administration.

Screen wall represents Malay weaving

An important architectural feature of this project is the screen wall. It consists of a series of five storey, free-standing vertical posts and beams which visually links four separate building structures. The vertical elements were intentionally designed in various sizes and profiles to reflect the rhythms of traditional Malay weaving.

As this screen wall forms the main facades of the buildings, it creates an imposing yet understated architectural presence. In order to manifest the solid stone expression, the architect chose

"Artstone", an architectural pre-cast stone made by LWC Precast Sdn Bhd.

Together with LWC Precast, the architect developed just the right colour and texture for the Artstone. The entire screen wall was constructed in pristine white Artstone, which is lightly acid-etched appearing like polished white Carrara marble. In order to ensure the best colour consistency, LWC chose **AALBORG WHITE®** cement that was mixed with finely crushed white marble chips from Ipoh, Malaysia.

Architects and manufacturers in close collaboration

As the screen wall was prefabricated at LWC's factory, the client could rely on rapid production and high quality. Although there were more than 20,000 columns and beams, LWC Precast managed to successfully complete the job in less than three months! The collaborative efforts between the designers and LWC Precast paid off by creating a truly stunning architectural work in Putrajaya. As such, the screen wall with the buildings behind it were selected as the background for the stage facing the VIP grandstand during the Merdeka, or Malaysian National Day Parade in 2003.



The vertical elements were intentionally designed in various sizes and profiles to reflect the rhythms of traditional Malay weaving.



Pregnant Woman Looking in the Mirror



So far the sculpture in front of the War Memorial in Canberra is only a digital image.

The sculpture, Pregnant Woman Looking in the Mirror, was created by Rae Bolotin, who was born in Uzbekistan and now lives in Australia. After experimenting with different materials, she is now well known for her beautiful concrete sculptures based on white cement as white cement helps her achieving just the right clarity of colours.

The sculpture Pregnant Woman Looking in the Mirror consists of two

parts: first – a pregnant woman's body that is represented solely by her stomach, as the essence of her current state, and second a "mirror" that reflects the universe inside her stomach. The sculpture illustrates the way a pregnant woman sees herself and what her thoughts are concentrated on.

"As a sculptor I have chosen concrete as my preferred medium and I use all sculptural techniques to achieve the

desired result. I cast concrete, work directly over metal mesh, or carve it. To create Pregnant Woman, I first cast large blocks of white cement mixed with brown (or blue) oxide and vermiculite and when it had set, I carved it. Vermiculite makes it a lot easier to carve." says Rae.

When she was making the "mirror" she added some fibre to the mixture. She usually does this for strength, but here it was for the visual effect, the visible fibre on the surface made it as unlike a mirror as could be. The idea that Rae wanted to communicate was that when a pregnant woman looks at herself in the mirror she does not see her reflection in its shiny surface, but the world of the child inside her.

The sculptures measure only about 30 x 25 x 45 cm. However, even though Rae Bolotin works on a relatively small scale, she dreams of realising her works on a larger scale sometime in the future.

For more information on Rae Bolotin and her works, please visit www.rae-bolotin.com.

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New tactile tool introduced at ViaNordica 2004

When Aalborg Portland this summer participated at ViaNordica – a congress and exhibition with the objective of communicating state-of-the-art expertise within the road and traffic sector in a professional, inspiring and creative manner – a new tactile tool was introduced.

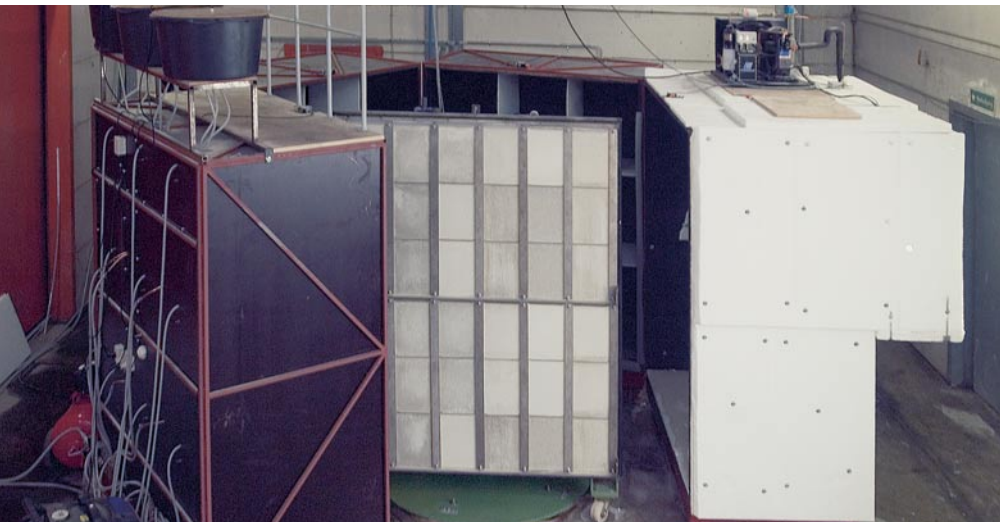
The objective was to promote the evident safety related advantages in using white concrete for infrastructural solutions as, opposed to grey concrete, white concrete preserves its high reflection in dark and wet weather. To illustrate this particular

feature, white and grey concrete samples, together with a small container of water, were used as giveaways. Opposed to words, these tactile samples gave the recipients the opportunity to see – feel – and exper-

ience the promise for themselves. The sample manifests a new era of tactile tools, which will be launched gradually from Aalborg Portland to promote aesthetical solutions based on AALBORG WHITE® cement.



Aesthetically durable concrete surfaces with AALBORG WHITE®



The apparatus makes it possible to compare the ageing of different concrete surfaces over time.

Aesthetic durability is the property of developing a desired expression over time – of ageing gracefully. The **AALBORG WHITE®** Research and Development Centre, RDC, is a leading research facility

within the field of ageing mechanisms of white concrete and constantly strives to provide better guidelines on how to obtain aesthetically durable structures. As part of this work, an apparatus that acce-

lerates the aesthetic ageing of concrete surfaces has recently been developed at RDC. The apparatus makes it possible to compare the ageing of different concrete surfaces over time, but accelerates the process more than ten times: Six months of exposure in the apparatus provides an equivalent ageing of approximately five years in an outdoor environment.

The apparatus is currently being used to evaluate different concrete compositions and curing conditions with the aim of improving the ageing resistance of white smooth-cast surfaces. - This provides architects with greater freedom of design and expression, and the costs of maintaining aesthetically pleasing surfaces can be reduced.

A new report that contains guidelines on how to obtain aesthetically durable **AALBORG WHITE®** based structures has been published. It includes results from the investigation, and is available at www.AalborgWhite.com.

Durability of white Portland cement to chemical attack



Marine environments, and roads and bridges sprayed with salts to prevent freezing, are some of the most severe environments that reinforced concrete structures can be exposed to. Such structures are attacked by chlorides, which penetrate the concrete. These will eventually reach the re-inforcement and lead to corrosion and structural failure if no action is taken.

Chloride binding and sulphate resistance are decisive parameters that influence the service life of reinforced concrete structures in aggressive environments. These properties depend on the composition of the Portland cement selected. **AALBORG WHITE®** cement produced in Denmark is unique in having a very low content of both aluminate ($C_3A \sim 4.5\%$) and alkalis ($Na_2O_{eq} \sim 0.23\%$) and will therefore enhance protection against sulphate attack, alkali-aggregate reaction, and delayed ettringite formation from heat curing.

AALBORG WHITE® Research and Development Centre's Erik Pram Nielsen has successfully completed his PhD project on "The durability of white Portland

cement to chemical attack". He defended his thesis at the Danish Technical University on July 2 2004. In their recommendation to the University Dean for awarding the PhD degree, the assessment committee described his work as a landmark for future research in the field. A different approach, which is based on thermodynamic principles, was adopted in order to study the reactions taking place in hydrated Portland cement.

Contrary to common belief, this study has proved that the aluminate content of cement only plays a minor role in chloride binding. It is the content of alkalis that is of paramount importance. A lower content of alkalis enhances chloride binding.

Low-alkali, low-aluminate Portland cements (such as **AALBORG WHITE®**) will enhance service life in aggressive marine environments, as external alkalis penetrate much slower than chlorides. White Portland cements are very suitable for chloride rich environments because of their low content of alkalis.



Densit, high-performance products are among other areas used in offshore wind turbine foundations.

The high strength is obtained due to particle density where AALBORG WHITE® is an essential component of the binding material.

The strength comes from AALBORG WHITE®

Danish Densit A/S, specialises in developing, manufacturing and supplying high-performance products for industrial reinforcement and repairs. All Densit, high-performance products are based on unique high-strength, fast curing and dense cement-based materials in which the main component is AALBORG WHITE®. Compressive strength ranges

from 110 to 260 Mpa (15,950 psi to 34,800 psi), which is five to ten times greater than that of conventional mortar and concrete. The high strength is obtained due to particle density where AALBORG WHITE® is an essential component of the binding material. Thanks to particle density only a small amount of water is needed, which means that 50% of

the final strength can be arrived at in just 24 hours (at 20° C). Densit, high-performance products are used in such different areas as industrial flooring, reinforcing oil and gas platforms, offshore wind turbine foundations, security barriers, and wear protection for process industry components. More information is available at www.densit.com.

Partners, not customers

About 75% of white cement consumption in Egypt is used in the tile industry, which is one of the more traditional industries in the country that includes hand-made tile workshops, semi-automated production, and fully-automated factories.

During the past decade competition in the ceramics industry has been keen. Staying in business is a great challenge that has forced the industry to look for new sales opportunities.

The Amoun Tile Factory is one of the companies that decided to meet the challenge. Today, its capacity ranges from 2000 m² to 2400 m² a day with four production lines, 70% of which are automated (only handling is manual), 30 different products, 350 tonnes of Sinai White Cement a month. Italian technology, high quality standards, a long list of reliable suppliers, and an aggressive export plan.

In May the Amoun Tile Factory began manufacturing an extremely thin tile

– which is made solely from white cement and, in this connection, Sinai White Cement Co. acted as a collaborative partner that provided the factory with the necessary technical assistance.

By the end of this year, another production line will have been started up to meet the anticipated demand in connection with exports. The new line will make the Amoun Tile Factory the number one tile manufacturer in Egypt.

Amoun is considered a main player with regard to direct sales, and Sinai White Cement Co. aims to enhance this partnership to secure a win-win relation for both parties.



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Growing sales – Growing fleet



Increased sales in Poland requires more transport in order to meet customers' demands.

glb@AalborgWhite.com.au

Aalborg White Cement Australia has a clean vision for the future



A brand new TV advertising campaign was presented at the Designbuild 2004 exhibition in Melbourne.

Aalborg White Cement Australia (AWCA) has a new vision, television that is! With a brand new TV advertising

jfn@AalborgWhite.dk

Syrian Building Material Expo 2004



Minister Mr. M.A. Mushanttuett visited the stand at Syrian Building Material Expo 2004 in Damascus.

After the first five months, sales in Poland have increased more than 70% compared to the same period last year.

In close co-operation with its transport partner in Poland, Aalborg Portland Polska offers the fastest and the best professional service. "Now, we can not only offer the best quality product but we are also present on the Polish roads", says Tomasz Stasiak, Managing Director in Poland. Four AALBORG WHITE® trucks have already been introduced and are very visible on the roads with their prominent logo. It is a great challenge to provide a high quality product and a high quality transport service at the same time. However Aalborg Portland is constantly working on improving both to satisfy customers' needs.

campaign that targets the universal decision maker in all new homes: The wife!

Australia is a huge continent with a population of 21 million who live mainly along its vast coastline, with 80% on the east coast. The local product for decorative brickwork is an off-white (antique white) cement. AWCA's new advertising campaign highlights the uniquely clean finish that Aalborg Bricklayers' White Cement provides, compared with the local off-white cement. The advertisement is being tried out in some regional areas before it is launched in the densely populated cities of Melbourne, Sydney, and Brisbane.

The first public airing of the advertise-

ment was at the Designbuild 2004 exhibition which was held recently at the Melbourne Exhibition Centre. Designbuild is a National exhibition attended by architects, builders, engineers, bricklayers and representatives from all the major hardware buying groups. The AWCA team is still following up the hundreds of leads from around Australia that were generated and some good results are now emerging. The Australian team was ably supported by Mr. Yeap Chin Seong who flew in from Aalborg White Asia to make his boundless knowledge of all things AALBORG WHITE® available. You can see the advertisement by logging onto: www.Aalborg-White.com.au.

Recently, Sinai White Portland Cement Co. and the AALBORG WHITE® agent in Syria, the Al Shelli Establishment, attended the Syrian Building Material Expo 2004 in Damascus. The exhibition was well organized and Al Shelli's attractive stand was visited by a large number of traders, distributors and engineers.

Among others, Housing and Building Minister Mr. M.A. Mushanttuett visited the stand and was extremely interested

in AALBORG WHITE® cement. As the photo shows, Managing Director Mr. Alaa Al Shelli had the chance to meet and discuss various topics with Mr. Mushanttuett and his delegation from the Housing and Building Ministry.

The Al Shelli Establishment distributes AALBORG WHITE® through more than 100 stores all over Syria.