Building Excellence in Precast

BRITISH PRECAST

Moving the Industry Forward 2008

CONTENTS

PRESIDENT'S INTRODUCTION

David Sarti
President

I am delighted to recognise the progress made by the member companies of British Precast over the last 18 months since the last issue of `Moving the Industry Forward'. The breadth and depth of the entries is a sign of the successful effort that is being made in many organisations to improve the industry's sustainability and safety record. To them the reward is an improved bottom line, better community and customer relations and a more committed and engaged workforce.

It is good also to record the innovations from manufacturers and some suppliers, and for the first time we record the project awards which in previous years have been absorbed within the Concrete Society awards scheme.

As I write we are in a deepening downturn in construction demand. As well as responsible actions in cost control, part of our collective response must be to maintain the progress in sustainable solutions to grow market share, to keep innovating in order to lower construction cost and increase value-added, and to maintain our drive for a safer industry in the interests of our colleagues. It is imperative that the industry does not allow standards and goals to slip in these harder times.

CHIEF EXECUTIVE'S COMMENT

Martin Clarke
Chief Executive

This new edition of 'Moving the Industry Forward' is much anticipated, having been re-scheduled to fit our awards timetable with our new regular Awards Dinner taking place every May. I would like to thank all of those who took the trouble to enter; we have some really excellent examples of successful company and plant-level initiatives. On behalf of all members I would also like to thank the sponsors.

To win is great but to take part is greater - again, every valid entry is included and has something positive to contribute. Inevitably space is limited, and so we encourage contact from readers to the entrants if they wish to find out more. Our sustainability award has been extended to our Associate members and later in 2008 we will be announcing the winners. For the 2008/9 awards we hope that all manufacturing members will enter at least one category - it can be a very rewarding process for companies both large and small.

Finally, I congratulate David Gilbert of Hanson Building Products on winning the Outstanding Contribution to Health & Safety Award, and thank him for his work as chairman of the Heath & Safety committee.

British Precast Sustainability Charter launched

In November 2007 the British Precast Sustainability Charter was launched by Paul King of the UK Green Building Council. Within eight months, twenty member companies signed this challenging pledge and are now starting to be assessed against it. All full members are being asked to support the Charter, a cornerstone of the Precast Sector Sustainability Strategy. Current signatories are listed at www.britishprecast.org. A further major advance is expected as the British Precast Responsibly Sourced Materials Scheme develops to its launch in coming months. The Scheme, being developed with the BRE, will allow members to claim credits under the Code for Sustainable Homes, the 2012 Olympics and a growing number of public and private sector projects where proof of responsible sourcing is a requirement.

Mark Oliver signs for H+H UK. During the year H+H became the first concrete product producer to gain accreditation to the Carbon Trust energy efficiency accreditation scheme across all their sites. H+H is a partner for the new Carbon Trust standard launched in June 2008. They also made The Sunday Times list of top 50 green companies in Britain.

We're building a sustainable future together, using modern innovative cementitious materials

Lafarge's cement is being used in the construction of the Glendoe Hydro-Electric scheme at Loch Ness – the biggest power station to be built in Scotland for more than 50 years.

www.lafargecement.co.uk

12 wind farms are being supplied by Lafarge Cement, one of which – Whitelee in Scotland – will become Europe's biggest onshore wind farm.

SUSTAINABLE PRODUCTS FOR SUSTAINABLE PROJECTS

Lafarge Cement – leading the quest for sustainability:

- Lafarge's Phoenix cement reduces the embodied CO_2 value of the cement by a third through the addition of recycled pulverised fly ash, a waste product of the power industry.
- Lafarge Cement received a Business in the Community Award for Excellence in Eco-efficiency, presented by former US Vice President Al Gore.

Business in the Community AWARDS 2007

- **Transport** – over 70,000 lorry trips saved by effective use of rail networks, and bio-diesel trials for delivery vehicles.
- **Energy and raw materials** – savings using alternative fuels including recycling 45 million scrap tyres, enough to stretch from the UK to Sydney and back.
- **Reduced waste** – process waste reduced by 80%, equating to 70,000 tonnes of material or the equivalent of every person in Oxford recycling their waste.
- **Portland House** – our new purpose-built headquarters, with sustainability at the heart of its construction.

The wind of change driving the cycle of sustainability!

LAFARGE

Lafarge Cement UK | *Technical helpline* 0845 812 6232 | *E-mail* info@lafargecement.co.uk | *Website* www.lafargecement.co.uk

Building Excellence in Precast

Intellectuals solve problems, geniuses prevent them.

Albert Einstein

HEALTH & SAFETY



WINNER: AGGREGATE INDUSTRIES

Project: ***Moving Goods Safely***
Site: ***Croft***

Problem
As part of the risk assessment process, the company identified that there was an excessive amount of vehicle activity within the factory. In addition to this, pedestrian routes were not clearly identified and the routes of mobile plant and pedestrians frequently crossed.

Solution
Following consultations with the site safety committee, safety meetings and the involvement of the company technical department, two developments were made. The first was the introduction of a new production process. Self-compacting concrete was introduced using hoppers transported by the gantry crane. This process replaced the hand filling of moulds and thus removed the need for front loader trucks on the floor. The second development was the identification of a pedestrian route around the perimeter of the factory, which incorporated handrails and chains across crossing points thus segregating visitors from mobile plant. The introductions have increased safety for both plant and pedestrians and had resulted in a 50% increase in production.

2nd PLACE: MARLEY ETERNIT

Project: ***Lorry Netting Station***
Site: ***Bishopsbriggs***

Problem
Every year there are instances of people falling from the backs of vehicles whilst undertaking netting or sheeting of loads. Many of the injuries can be classed as major, some even fatal.

Solution
A new lorry netting platform was designed, manufactured and installed, that virtually eliminates the likelihood of serious injury whilst carrying out netting and sheeting operations and has resulted in reduced fall accidents. Due to the success of this system, four more netting stations are being constructed at other Marley Eternit sites.

3rd PLACE: BISON CONCRETE PRODUCTS

Project: ***Bison H-Frame***
Site: ***Swadlincoate***

Problem
The securing of an order for a circular precast building threw up the challenge of safely delivering curved wall panels to site. The walls have a thin section with two large detail door openings in each unit, and this would have caused serious handling stresses if the unit had been transported flat. The company needed to develop a specialist delivery frame that eliminated the use of ladders and allowed safe access for operatives attaching lifting equipment to the precast wall panels.

Solution
The team developed a steel H-frame with built-in flexibility for differing radii of circular panels. It included ladders and walkways, all with handrails attached, for operative access, and so addressed the issue of safe working at height. All the frames are fully adjustable and can be carried on various types of trailers to which they are attached by the ISO twist lock system. The introduction of the H-frames also reduced delivery vehicle turnaround time, and the labour associated with slinging has been halved.

OTHER ENTRIES

AGGREGATE INDUSTRIES

Project: ***Pedestrian and Traffic Segregation***
Site: ***Ashington***

Problem
Following growth in production at the plant, vehicle movements had increased dramatically. Hand in hand with this was an increase in the workforce on site and the number of contractors/visitors also rose proportionately. Risk assessments highlighted the increased risk. It became apparent that there was a need to improve the site layout and upgrade the management of fork lift trucks and HGV movements on site.

Solution
The yard was extended to allow a single file, one-way traffic system to be implemented and to accommodate an HGV holding area. Pedestrian walkways were mapped out providing safe access and egress to all production facilities on site. A 10-mph site speed limited has been imposed and signage installed. A new leaflet with Health & Safety rules and information has been developed, which includes a map showing the one-way system.

AGGREGATE INDUSTRIES

Project: ***Control of Non-English Speaking Hauliers***
Site: ***North End Works***

Problem
North End currently exports product to six mainland European countries, and staff encountered a problem in maintaining the site health & safety standards, when dealing with hauliers who speak/read very little or no English. They arrive to collect product and need to navigate around a 50 acre site.

Solution
Safety literature was produced in both English and Polish to help increase safety awareness on the site. For those hauliers who do not read/speak either language a designated member of staff accompanies them across the site and thus reduces the potential risk to both staff and visitors.

AGGREGATE INDUSTRIES

Project: ***Managing Vehicle and Pedestrian Safety***
Site: ***Callow Rock, Somerset***

Problem
The high level of vehicle movements in the stock yard, coupled with inadequate pedestrian walkways and insufficient control of site visitors and lack of information for them, was identified as potential accident risk.

Solution
The company undertook a review of all arrangements for vehicle and pedestrian movements, from which the following improvements were made. Improved visitor parking was arranged at the site and better information provided, they are also supervised on site. Safer entrances and walkways were constructed. Staff training was improved to lower the risks and a dedicated safe netting area was established.

FORTICRETE

Project: ***Use of Vacuum Technology***
Site: ***Dewsbury***

Problem
Moving heavy goods of weights above 450kg had been carried out by fork lift trucks. However, units above 20kg and below 450kg in weight were difficult to handle and posed a significant manual handling risk.

Solution
A team was set up comprising maintenance and machine operators together with relevant suppliers in order to ascertain ways in which to reduce the risk. A vacuum lifting system was introduced, which substantially reduced manual handling, reduced waste due to handling damage and improved efficiency. The machine is able to lift all sizes and weight of product, reducing manual handling.

OTHER ENTRIES

H+H UK

Project: *Moving Goods Safely*
Site: *Pollington*

Problem
The removal of waste products in the production process required a great deal of manual intervention. This increased the risks to which site operatives are exposed.

Solution
It was decided to install a mechanised system to enable the waste products to pass through the process with the minimum of human intervention. This removed the risk and also had the added benefit of reducing the amount of lost production time.

HANSON BUILDING PRODUCTS

Project: *Site Traffic Improvement*
Site: *Milton Block Works*

Problem
During the past few years as production has increased, traffic movements in the entrance to the yard and aggregate storage area have become a major concern. At some busy periods loading shovel drivers have to negotiate their way between tipper lorries delivering aggregates and can block delivery lorries entering and leaving the yard. The works are currently sending out around 50 loads of blocks per day with 50 loads of aggregate being delivered.

Solution
To reduce the risk of vehicle collision and improve the flow of traffic in these restricted areas, a decision was made to create a new entrance into the yard. Once permission had been granted, an electrical barrier and CCTV camera were installed. This new gate forms part of the new one-way system, which has alleviated the need for delivery vehicles to queue in the aggregate storage area where the loading shovel normally is working. This has resulted in less traffic in one area and reduced risk.

HANSON BUILDING PRODUCTS

Project: *Removing Bogies from D & E Line*
Site: *Hams Hall*

Problem
Previously a capstan winch was used to remove a loaded bogie from the production line and pull it onto the transporter. There have been incidents when carrying out this task, as bogies can become stiff with wear on the bearings which can cause the rope to snatch and jump, posing a risk to the operative.

Solution
Several other solutions were tested but none were deemed practical. Then a pusher system was designed and manufactured, which would be placed alongside the rails on which the loaded bogies travelled. Once the line is full, the pusher moves the product onto the transporter. The new equipment eliminated the requirement to use the winch, thus removing the risk to the operative.

HANSON BUILDING PRODUCTS

Project: *Moving Goods Safely*
Site: *Thatcham*

Problem
The working area around the cross crane is a potential hazard to staff. The existing safety mechanism is not linked to the crane itself and thus any personnel unfamiliar with the area can be exposed to significant risk associated with the movement of the cross crane.

Solution
Following consultation with the section operatives and an external company it was decided to upgrade the existing cross crane safety system. The crane travel area has been fenced off, with an electronic entry access system to prevent unauthorised staff from entering the area. In addition, a new electrical system for safe isolation of the crane was added, providing compliance with latest standards.

OTHER ENTRIES

MARSHALLS LANDSCAPE PRODUCTS

Project: ***Transport & Emptying Waste Skips***
Site: ***Brookfoot Works***

Problem
There is a need to remove and transport 6,000 units of waste, of varying sizes, per week, to and from waste storage areas. Previously fork lift trucks transported conventional skips, resulting in a number of risks being identified. The system posed a high risk of spillage and could cause damage to the vehicle and possible injury for the driver.

Solution
With the introduction of side-emptying skips these problems were eliminated. Side-loaded skips are broader and make the load more stable to transport. There is no spring mechanism, as on front-loaded skips, and the fulcrum point for tipping is not a factor because the forks can rotate through 360° for awkward loads. This reduces the likelihood of any spillage and reduces the risk of damage to the vehicle and driver.

MARSHALLS LANDSCAPE PRODUCTS

Project: ***Machine Lay Tegula Block Paving***
Site: ***Sandy Works***

Problem
The company wished to reduce manual handling of elements in the manufacturing and installation processes for concrete block paving whilst improving productivity and profitability.

Solution
Marshalls reviewed the product design, all processes in the manufacturing, handing and installation process and identified areas where the introduction of new techniques and equipment could reduce manual handling. The redesign of the process has led to the majority of paving blocks being installed mechanically rather than manually, without compromising on cost, quality or speed of installation.

MARSHALLS LANDSCAPE PRODUCTS

Project: ***Flag Plant Transportation***
Site: ***Falkirk***

Problem
The operative responsible for moving product from the plant to the storage area was under undue stress and at risk of musculoskeletal problems in his daily role. Making up to 300 trips a day, using a 4 tonne truck, the operative struggled to keep up with the production and this had knock-on effects as the plant had to stop to allow products to be cleared. The problem was so bad that the plant was borrowing trucks from the logistics team to help with the backlog.

Solution
A case was put together for a new 8 tonne truck which could carry twice the amount of product and thus reduced vehicle movements by 50%. It also reduced the need for borrowed plant and extra staff as one operator could then cope with the workload. The products are now delivered to storage area more safely and there is less damage to them. The most important aspect is the reduced risk of musculoskeletal problems and of whole body vibration to the operative.

MARSHALLS LANDSCAPE PRODUCTS

Project: ***Reducing Exposure to Harm***
Site: ***St Ives***

Problem
Following incident reports in 2006, it was identified that labeling staff were at risk from fork lift trucks and HGVs in the stockyard. In addition, drivers often had to leave their vehicles to identify the correct stock to be moved as labelling was not clear. This had led to excessive vehicle manoeuvres and in incorrect stock being picked.

Solution
An automatic labelling system that was easily readable by all staff was introduced. The product label was redesigned so it contains a 'pick code' which is now the prominent feature, making the label is easier and clearer to read. These developments, alongside a new one-way system in the yard and new site loading procedures, have significantly reduced the risks to operatives and have increased efficiencies.

OTHER ENTRIES

MARSHALLS LANDSCAPE PRODUCTS

Project: ***Pallet Rationalisation Project***
Site: ***St Ives & Eaglescliffe***

Problem
The standard size racking available in customer yards could not easily accommodate the variety of pallet sizes supplied by Marshalls. This resulted in the product being stocked on the ground in yards, which was not ideal for busy branches with both pedestrian and vehicular activity and resulted in the product being damaged. There was also a health and safety risk created by overhanging pallets and there was wasted space within the racking which did allow for non-standard packs.

Solution
A cross-functional team developed a new pallet solution, that enabled product to be stacked on racking and leave the yard areas free for traffic. The quality and stability of the packs was improved, increasing the safety of stacking and the movement of goods. The new design has the added benefit of being more sustainable, as it uses significantly less timber than previously and is made from UK sourced timber.

TARMAC BUILDING PRODUCTS

Project: ***Lifting Equipment System***
Site: ***Company-wide***

Problem
Lifting plant equipment was spread across the site and was difficult to keep track of, resulting in items being missed from the statutory inspection. As a result some had fallen into disrepair, others were obsolete and no longer used and webbing slings were frayed. The system also meant it was very difficult to find the original test certificates for certain pieces of equipment. This often resulted in HSE Category A faults being detected during the inspections.

Solution
The plant now has its own lifting equipment store under the control of one person and equipment is maintained, checked, regularly inspected and controlled as required by LOLER 98. The system has been so successful it is to be adopted by two other precast factories and will be rolled out during 2008.

ROGER BULLIVANT

Project: ***Langendorf Specialist Trailer***
Site: ***Drakelow***

Problem
The transportation of various sized concrete wall panels can be hazardous. Movement of the load during transportation, due to heavy braking or evasive actions by the lorry driver, coupled with movement of screw jacks and timbers, can be a danger to the public and the driver.

Solution
A new transport trailer was purchased to improve safety on both public highways and site roads. With its high side panels and hydraulically operated side supports, the new trailer reduces the likelihood of product movement and virtually eliminates the possibility of product falling off. Added benefits have been the reduction in product damage, and a reduction in delivery costs as more panels can be transported on each load. Since the introduction of this trailer there have been no instances of product movement or damage.

TARMAC PRECAST CONCRETE

Project: ***Vehicle Management Plan***
Site: ***Tallington***

Problem
With a large fleet of mobile plant and hauliers, it was identified that there was a wide range of standards being applied to the specification of mobile plant, how the site was laid out for traffic flow/pedestrian segregation and in the information that hauliers received regarding their conduct on and off site.

Solution
Improvements were made across each company site to reduce the risks faced by staff. This was done by assessing all vehicle movements and pedestrian segregation. Hazards were identified using a standardised risk assessment questionnaire. A haulier guide for owner and contractor drivers has been updated and issued to each driver. All mobile plant used on site now has a consistent standard of safety features and improved all round visibility, thus reducing the risk of injury to pedestrians and drivers and damage to equipment.

BUILDSPAN®

The One Stop Shop for Precast Accessories

Established in 1990, Buildspan offers **Next Day Delivery** on a wide range of precast accessories. We constantly search for **innovative products** that will help make your life easier.

ISO 9001 certified; Buildspan has the experience to deliver what you want, when you need it.

Our extensive product range includes:

- **Spacers for reinforcement**
- **Lifting & fixing sockets**
- **Waterstops & waterproofing**
- **Formwork plywood**
- **Concrete admixtures**
- **Tying solutions**
- **Lifting anchors**
- **Formwork magnets**
- **Chemicals for formwork**
- **Concrete repair materials**

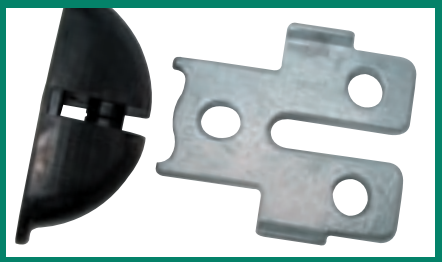
*3 examples of **innovative products** currently stocked by **Buildspan**® are:*

Formwork Magnets

Our range of Magfly® Formwork magnets, forms a system which offers the precaster a fully interchangeable formwork system, when used in conjunction with our multiform Formwork. Also available is flexible steel formwork which can be used on circular walls.

Buildspan Fast Strip

Gone are the days where water sealing strips are applied at site. With Buildspan fast strip, the sealer is pumped into the joint at the factory but can also be jointed on site at a later date and still form a waterproof seal. ***This product has to be seen to be believed!***



Edge Lift Anchors

Something totally new, an Edge Lift Anchor that requires no shear Bars. The design of the anchor eliminates the need for shear bars, although hanger bars are required to achieve rated lift capacities in tension.

Tel 0845 0254 321
www.buildspan-uk.com

BUILDSPAN®

Gold & Red Seal Award Winners

- Aggregate Industries
- Bison Concrete Products
- Brett Landscaping and Building Products
- Ennstone Concrete Products
- Forticrete
- Hanson Building Products
- Marley Eternit
- Stanton Bonna
- Tarmac Precast Concrete
- Tarmac TopBlock
- Tarmac TopFloor

Gold Award Winners

- ACP
- Buchan Concrete Solutions
- Trent Concrete

Silver & Red Seal Award Winners

- Marshalls Landscape Products

Silver Award Winners

- H+H UK
- Roger Bullivant

Aggregate Industries

Bison Concrete Products

Brett Landscaping and Building Products

Ennstone Concrete Products

Forticrete

Marley Eternit

Stanton Bonna

Tarmac Precast Concrete

Tarmac TopBlock

Tarmac TopFloor

Buchan Concrete Solutions

Trent Concrete

Marshalls Landscape Products

H+H UK

Roger Bullivant

Read this and reduce your carbon footprint.

Concrete made from a mix of cement and ground granulated blast furnace slag (ggbs) is widely acknowledged as having the best environmental profile.

And using cement from Castle and ggbs from Civil & Marine can further improve the rating of concrete.

Cement from Castle manufactured in the UK produces 5% less CO_2 per tonne than the industry average using the most energy-efficient dry-process kilns. These burn up to 60% recycled and non-fossil fuels and also use waste as a source of raw material – all of which would otherwise go to landfill or incineration. Imported cement can add around 10% CO_2 from shipping alone.

Concrete produced using ggbs from Civil and Marine, the only UK producer of ggbs from domestic iron production, can reduce greenhouse gases by 40% or more. Ggbs can also improve the long-term durability and performance of concrete.

Every tonne of cement from Castle and ggbs from Civil & Marine means an average of 500kg of landfill is saved.

For a copy of the Castle Cement Sustainability Report with steps towards environmentally responsible building go to: **www.lowcarboncement.co.uk**

Civil & Marine

CASTLE CEMENT®
HEIDELBERGCEMENT Group

We have not inherited the world from our forefathers.
We have borrowed it from our children.

Kashmiri Proverb

SUSTAINABILITY



SITE WINNER: AGGREGATE INDUSTRIES

Project: ***Working with the Community***
Site: ***Hulland Ward***

Aggregate Industries recognised that they had a duty of care to their local community, which had raised a number of issues, including the number and speed of lorries passing through the area and the lack of clear signage for lorry turnings, which created a problem on the local roads.

After a detailed survey, hauliers were asked to drive with more consideration through the village. The signage was also improved which allowed the lorries to follow the best routes, thus reducing disruption to the village.

At this site, Aggregate Industries has developed links with local schools and has organised educational site visits. These visits have brought about a greater understanding of what happens at the plant amongst the community.

Aggregate Industries has also donated to local charitable causes through a staff accident reduction incentive scheme. Every time a factory has an injury free month money is donated to a local charity. The scheme is designed to promote a "take less risk" and "think before you do" ethos amongst staff.

SITE 2nd PLACE: FORTICRETE

Project: *Innovative Use of Recycled Materials*
Site: *Dewsbury*

Over the past 12 years, Forticrete has reclaimed and re-used some 2 million tonnes of recycled materials, replacing 'primary' aggregates that would either require quarrying or manufacture, with massive resultant CO_2 emissions. This included the effective replacement of primary aggregates with lightweight aggregate from a sustainable source.

Although Forticrete was not the first company to use reclaimed ash, their commitment to its use for the volume production of concrete blockwork and innovative approach to the development and use of a wide range of different materials is unique.

Forticrete's investment in prototyping, third-party testing and proving the effectiveness of the use of recycled materials has set an example for other British Precast members to follow.

SITE 3rd PLACE: HANSON BUILDING PRODUCTS

Project: *Working Together to Reduce Waste*
Site: *Ipswich*

Hanson operates three different business lines at its Ipswich site, which all generate concrete waste material. The Premix plant and floors and precast plants waste is collected at the aggregate blocks plant holding area. Once there is enough waste, a concrete crusher attends the site to crush and screen all the waste. This process is carried out every eight to twelve months, which results in all of the waste material being processed back through the aggregate block batching plant, to produce the reclaimed aggregate Fenlite block. This operation has seen 100% of the concrete waste at the site being recycled.

OTHER ENTRIES

AGGREGATE INDUSTRIES

Project: ***Plastic Recycling***
Site: ***Bardon Hill***

Packaging and plastic waste was stored in skips to be taken to landfill, but this was not the ideal environmental solution. A company called Flexible Packaging/Recycling now provides cages to the site for the plastic waste. These cages are collected when full and the recycled plastic is reused as pellets for injection moulders. The reduction in landfill costs and skip hire saves £5,000 a year.

AGGREGATE INDUSTRIES

Project: ***Biodiversity & Cotswold Water Park***
Site: ***Cleveland Farm Works***

Quarrying can have a large impact on the sites surrounding area. To mitigate this, the team at Cleveland Farm have helped turn their mineral extraction into leisure facilities such as new lakes. In conjunction with The Cotswold Water Park Society, they received an ASLF grant towards a project to improve public access to the lakes and create vast new wildlife habitats at Cleveland's Lakes. This will be used to create a multi-lane paddle sport and triathlon course over the next few years. There is a hope to provide a lasting legacy of positive benefits arising from aggregate extraction in the area.

AGGREGATE INDUSTRIES

Project: ***Disposal of Wet Waste***
Site: ***Baston Fen***

Until recently, the Baston Fen site was able to dispose of wet and dry waste from its operations to an adjacent quarry. However the license of the quarry changed, which meant that the factory would be charged £40,000 a year for this facility. To overcome this, they developed a system where they place the waste in the bags and leave them on a drip tray for 24 hours, after which the concrete has dried. Following the success of the bags, a filter tray system was put into place, at a cost of £20,000, which resulted in savings of £100,000 over three years.

AGGREGATE INDUSTRIES

Project: ***Recycle Water, Silt & Energy Reduction***
Site: ***Kemnay***

Previously, the site used mains and quarry water for cooling of the saws and polishing machines and also faced flooding problems from settlement ponds during overflow in the adjacent field. Steps were taken to overcome the problems. A recycling water pond was built next to the settlement pond and interconnected to reduce any flooding problems which could arise. A recycle pump was built from the holding pond to the processing machines, thus eliminating the need to use the mains water supply, which in turn has saved £2,580 a month. The water cooling system was upgraded and also placed overhead to eliminate trip hazards.

OTHER ENTRIES

AGGREGATE INDUSTRIES

Project: ***Sustainability Through Recycling***
Site: ***North End Works***

The site recognised that plastic waste was becoming an increasing problem in terms of disposal, cost and impact on the local community and environment. The site introduced a baler to recycle waste plastic, which would otherwise be sent to a landfill. The introduction of this scheme has seen the number of skips being used on site cut by two thirds, saving over £19,000 a year and the elimination of 24 tonnes of plastic waste going to landfill. The recycled material is sold for manufacture of biodegradable refuse sacks or damp proof course membranes, the proceeds of which go to local charities. An additional benefit to the community has been a reduction in traffic at the site.

HANSON BUILDING PRODUCTS

Project: ***Boiler House***
Site: ***Purfleet***

Hanson Thermalite installed an effluent holding tank in order to control waste water which is generated through steam. The effluent tank eliminates the breach of discharge content by controlling the water to ensure it does not exceed 40°c, thus allowing it to be recycled back into the production process. The system has increased the amount of recovered water that is able to be recycled back into the process and has reduced the amount of mains water required to lower its temperature, leading to an approximate reduction of 5% in the site's overall water consumption.

H+H UK

Project: ***Compressors Project***
Site: ***Pollington***

The site has a compressed air system installed with a central governor which innovatively monitors, surveys and logs the compressed air network data; this is to ensure the system is working properly and to highlight any possible energy savings which could be benefited from. The governor has improved operating efficiency and reduced energy usage and associated annual emissions of CO_2 by 93 tonnes. There has also been an annual saving of £9,500 in reduced energy usage and £4,500 from the service contract due to reduced running hours.

MARLEY ETERNIT

Project: ***Energy Management & Employee Awareness***
Site: ***Branston***

The company aimed to reduce its electricity consumption per tonne of product by 10% by the end of 2007, in line with their ISO14001 accredited Environmental Management System. With advice from the Carbon Trust, the focus was to revamp factory lighting by introducing sensors, as large areas of production did not require lighting, as no staff were present. Lighting was also changed and replaced with low energy usage bulbs. The project cost £6,500, however the operational savings were over £9,000 per year. Improvements in the lighting regime resulted in a 50% reduction in the number of burning hours and an increase in lamp life from 8,000 hours to 20,000+ hours.

OTHER ENTRIES

MARLEY ETERNIT

Project: ***EcoLogic***
Site: ***Sevenoaks***

Marley Eternit has introduced EcoLogic, a new concrete roof tile that absorbs nitrogen pollutants from the air, through the action of a photocatalytic coating on the surface. The unique feature of EcoLogic is that the catalyst is incorporated into a high surface area, granular coating bonded to the substrate by a cement-based adhesive, that also contains the active component. In addition to the ability to absorb pollutants, the EcoLogic tile contains significantly higher levels of recycled materials, making it a highly sustainable building material.

MARSHALLS LANDSCAPE PRODUCTS

Project: ***Supporting Local People Experiencing Barriers to Employment***
Site: ***Elland***

Marshalls has been working with Lifeline Additions (part of the national charity, Lifeline Project) helping local people return to the labour market. The first project provided general work experience in manufacturing facilities. The second was certified fork lift truck training on site. This proved to be incredibly successful, with a 100% pass rate recorded to date. The schemes have been tracked and have seen 40% of participants securing full or part time work. The projects are now being rolled out across the company.

MARSHALLS LANDSCAPE PRODUCTS

Project: ***Compressed Air Management***
Site: ***Falkirk***

The compressor house was working at capacity and was not keeping up with the plants demand. Investigations revealed that that there was a colossal leakage in the system. To solve the problem, each air system was shut down and reinstated to locate the air leakages. These were rectified by the use of a sonic leak detector, rpms went down from 1725rpm to 1100rpm. This has resulted in a reduction in the carbon footprint of 22 tonnes per year and energy savings of £3,800.

MARSHALLS LANDSCAPE PRODUCTS

Project: ***Compressed Air Management at the Block Plant***
Site: ***Falkirk***

The plant installed a variable speed compressor in order to save on costs and also reduce carbon emissions. An ultrasonic leak detector eliminated all air leakages and then data loggers were fitted to the compressor and data was collected for the air demand. The compressor was located by a duct through which, in the summer months, the heat from the compressor would blow out of the building, and in the winter months would allow the heat to warm the factory. The cost of the compressed air system was £29,000, which was paid back in less than two and a half years.

MARSHALLS LANDSCAPE PRODUCTS

Project: ***Compressed Air Management at the Flag Plant***
Site: ***Falkirk***

Compressed air is relied on heavily at the plant, to create vacuum for wet presses. The true cost of this, when valued in line with the aim to reduce energy and carbon emissions, was a discharge of 48 tonnes of CO_2 and electricity costs of £8,422 per annum. Following best practice at other sites, the plant invested in using liquid ring pump systems for generating vacuum, which saves 10 tonnes of CO_2 per year and nearly £3,000 on electricity.

MARSHALLS LANDSCAPE PRODUCTS

Project: ***CSR Project***
Site: ***Sittingbourne***

Marshalls chose to increase its Corporate Social Responsibility commitment to a level that would create a long term partnership resulting in maximum benefits to all. A partnership was forged with Sittingbourne Community College. The partnership has seen Marshalls donating materials and specialist plant and labour to construct a new patio to encourage healthy eating. In return the college allows the use of training facilities for engineering and computer studies, adult learning and the use of media suites and skilled labour for producing training videos and presentations. This has given students real life work experience in manufacturing and media work.

OTHER ENTRIES

MARSHALLS LANDSCAPE PRODUCTS

Project: *Growing our own Achievers*
Site: *Southowram*

Marshalls, as part of the precast concrete industry, has realised that social sustainability should be at the heart of all decision making processes and sustainable progress. As a major employer within the region, Marshalls felt that they could offer increased job opportunities to the community. They achieved this by increasing staff development, thus offering more promotion opportunities, which in turn opened up new positions for the local community. The company's commitment to Investors in People has also enabled them to attract more business, which has in turn has led to the creation of 30 new jobs at the site.

TARMAC PRECAST CONCRETE

Project: *Recycling of Waste Materials*
Site: *Kirkby in Ashfield*

In 2007 the site reviewed its waste management system, following an increased demand for recycling and the increase in land fill taxes. The site identified the need to separate waste streams; wood and steel skips were introduced along with waste bins for plastics and printer cartridges. A baling machine was sourced which is capable of baling cardboard, office paper and plastic wrapping into 200kg bales which are sold to recycling mills. Polystyrene cups have been replaced by ceramic, alleviating this waste altogether. All this has benefited the site with a reduction in waste disposal costs with reduced numbers of skips per month being used.

MARSHALLS LANDSCAPE PRODUCTS

Project: *Waste Reduction*
Site: *St Ives*

Marshalls sustainability strategy acknowledges that they have a responsibility to minimise environmental impacts from the operational life cycle of their products. Ways of reducing the consumption of natural resources by creating less waste and recycling wherever possible was investigated. Eight waste streams were identified, which included plastics, paper and wood. There has been an overall reduction in waste produced by the site and a reduction of 8.7% in CO_2 emissions.

TARMAC PRECAST CONCRETE

Project: *Migrant Workers on Precast Sites*
Site: *Thornfalcon Works*

With an increasing number of Polish staff working at the site, measures were put in place to ensure that migrant workers are trained and work to the same safety standards as non-migrant employees. The site has employed a multilingual worker who is able to act as a translator for new starters on safety inductions, briefs and with documentation. Migrant workers are enrolled on a government-funded ESOL language course, and there is a buddy system for new starters. All safety and production information is translated at the factories and clearly displayed to ensure no one is compromised whilst working on site.

CORPORATE WINNER: TARMAC TOPBLOCK

***Project:** Takeback Scheme*

During 2007 Tarmac TopBlock launched a major initiative in conjunction with Hippobags to recycle site waste. Under the scheme customers can purchase 1m^3 heavy duty plastic bags into which broken and off-cut blocks can be sorted. The filled bags are then collected and transferred to the nearest Tarmac recycling depot or plant for processing into recycled aggregate.

This simple cost effective scheme facilitates and encourages the recycling of block waste, helps customers to manage on-site waste and reduces the amount of material sent to landfill. By offering traceability of the waste and collection by a fully certified waste handling company, Tarmac's scheme also directly assists with the audit trail for a site waste management plan, the subject of potential legislation in 2008.

The Tarmac Takeback Scheme has sustainability benefits for both customer and supplier and provides a valuable contribution to government waste, recycling and landfill reduction targets for 2012 and 2015.

CORPORATE 2nd PLACE: MARSHALLS LANDSCAPE PRODUCTS

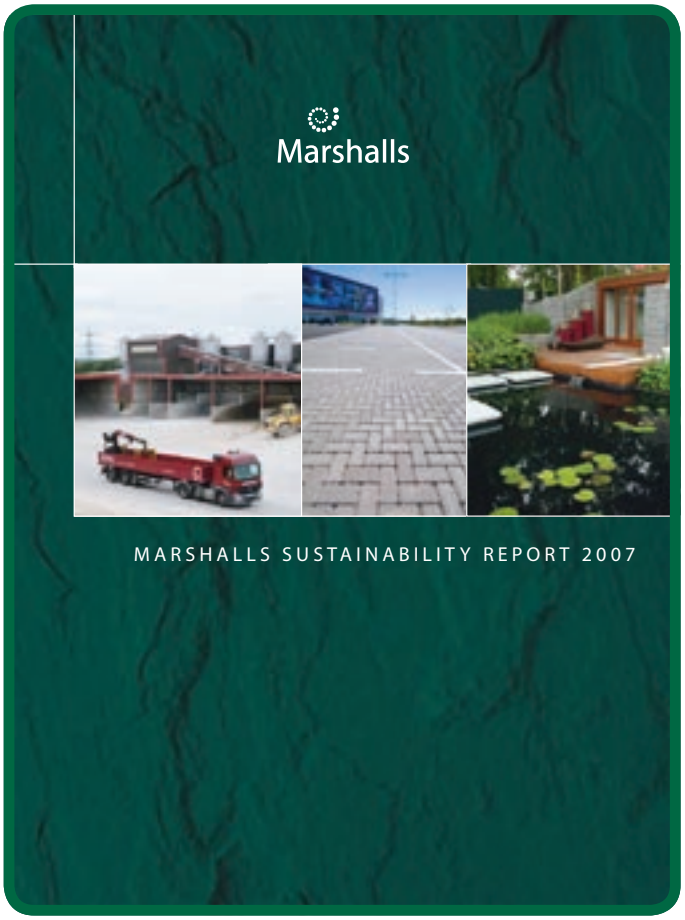
Carbon Calculator

***Project:** Sustainability & Carbon Impact Reduction*

Marshalls is committed to reducing the amount of carbon produced as a result of its operations. This involves researching, developing and implementing new, environmentally friendlier, innovative mix designs, plus concerted action in sourcing materials responsibly. The company is also committed to the reduction of greenhouse gases, which are carefully monitored and have shown a consistent reduction in kilograms of CO_2 produced per tonne of output in the period 2003 to 2007. A plan for good practice in energy reduction was devised and rolled out across Marshalls manufacturing sites.

Marshalls announced its partnership with the Carbon Trust to carbon label all its domestic products using the standard developed by the Trust to calculate the embodied carbon emissions. They also launched an online carbon calculator enabling users to measure the CO_2 impact of different Marshalls products.

CORPORATE 3rd PLACE: MARSHALLS LANDSCAPE PRODUCTS



***Project:** Committment to the Environment*

Marshalls is committed to achieving the highest standards of environmental performance, preventing pollution and minimising the impact of its operations. It aims to ensure that no lasting environmental damage occurs as a result of its activities, with policies being implemented to ensure that it meets or exceeds legislative requirements and applicable best practice. It does this through KPI analysis in areas such as energy, water use, transportation, waste reduction and packaging.

In 2007 Marshall won a Big Tick from Business in the Community awards for the eco-efficiency category for its work on biodiversity. This has been recognised by the Carbon Trust and The Wildlife Trust, and has led to coverage by the BBC's 'Working Lunch' and 'The One Show' programmes.

OTHER ENTRIES

BRADSTONE

Project:* *Rainwater Harvesting System

Bradstone has developed a rainwater harvesting system for use in domestic properties. It consists of four components: two sizes of storage cell modules, a soakaway module, a pump and sump unit, and a filter unit. Rainwater can be collected from various sources, including downpipes from household guttering, and hard landscaped areas such as patios and driveways. It is passed through the filtration chamber into the storage modules. These units consist of toughened load bearing cells made from 100% recycled polypropylene, and can store up to 300 litres of water. They are ready-wrapped and are easy to install as single or multiple cells, providing a versatile system that can be used for any size of property.

The 'grey' water has many uses such as watering the garden or flushing the toilet, so saving on water bills and conserving water. With the increasing episodes of severe rainfall, the harvesting system will reduce the risk of flash flooding which can occur when the drainage system is overwhelmed.

HANSON-FORMPAVE

Project:* *Water Recycling and Geothermal Heating

Hanson-Formpave has constructed a field site at BRE that incorporates the Aquaflow Geothermal system that includes rainwater recycling and a Ground Source Heat Pump (GSHP). The permeable paving system captures and stores rainwater in a tanked sub-base. The structure provides over 50% of the mains water for non-potable uses and, when full, can supply a family of four for 30 days without any extra rainfall. The stored water is linked to a GSHP that services an underfloor heating and cooling system and provides 6kW to moderate and maintain the temperature. With this combined system, 80% of domestic heating and cooling costs can be saved and payback on the system is usually achieved after 3 to 6 years. The house employs a solar collector and GSHP to help meet its energy needs.

ENNSTONE CONCRETE PRODUCTS

Project:* *Urban Search and Rescue Training Facility

Ennstone was approached by the Shropshire Fire and Rescue Services to use their facilities to practise with new, state-of-the-art search and rescue equipment in realistic settings. A small storage area was identified on the site which proved to be ideal for their equipment and caused no disruptions to Ennstone's operations. Fire crews practised cutting through large diameter concrete pipes and cover slabs in scenarios constructed to simulate rescuing victims trapped under rubble.

Ennstone believes that by supporting this type of activity they are helping to make their community safer by giving their local fire crews realistic training.

MARSHALLS LANDSCAPE PRODUCTS

Project:* *Biodiversity at Marshalls

The Marshall Biodiversity Action Plan was developed to ensure that its sites are properly managed to improve the wildlife amenity value in the long term. Actively involving site personnel, the project has now grown to include the local communities by arranging site visits for schools and developing partnerships. A new conservation area including a man-made island retreat has recently been created at its Maltby works. This included spreading 200 tonnes of soil, replacing reeds, planting 150 new trees and sowing areas with grass and wild flower seed to form a new wetland.

The company has been awarded The Wildlife Trusts' Biodiversity Benchmark for the sustained work it has carried out at Maltby. It was the first time in the history of the scheme that an active manufacturing site has received the rigorously audited accreditation in the UK.

OTHER ENTRIES

MARSHALLS LANDSCAPE PRODUCTS

***Project:* Ethics in the Supply Chain**

Marshalls is conscious of its corporate ethical responsibilities when trading with developing nations such as China and India. A rigorous screening process has been conducted to ensure imported natural stone is processed and supplied to the highest ethical standards. The company has also developed practical solutions to ethical trade that deliver real benefits for its suppliers' workers. The Ethical Trade Initiative, based on the International Labour Organisation's conventions, is committed to improving the lives of workers by ensuring:

- Freely chosen employment
- Respect for the freedom of association and the right to collective bargaining
- Safe and hygienic working conditions
- Child labour is not to be used
- Living wages are paid
- Working hours are not excessive
- No discrimination is practised

Marshalls works only with reputable and reliable suppliers that meet its own stringent requirements, in both the UK and abroad.

MARSHALLS LANDSCAPE PRODUCTS

***Project:* Innovative Paving Solutions**

Marshalls is currently progressing with research on new mix design technology that can be used with other concrete manufacturing techniques, such as wet pressing (for flag and kerb) and wet casting, at all its concrete block paving plants. The company is supplying many construction projects with new 'eco-friendly' concrete block paving (CBP) as well as providing consumers with permeable paving solutions. Building on established expertise they have started to manufacture CBP using innovative, more environmentally conscious and sustainable materials. Supported by independently approved data, initial calculations show this has reduced the CO_2e embodiment of the company's overall CBP portfolio by up to 39%. This is a step change in concrete mix designs with the benefit of reducing CO_2e embodiment whilst retaining all of the compliance properties required by BS1338.

MARSHALLS LANDSCAPE PRODUCTS

***Project:* Online Code for Sustainable Homes Seminar**

In response to the launch of the Code for Sustainable Homes, Tarmac TopBlock developed an online seminar. The seminar provided an opportunity to promote sustainable concrete construction and to elaborate on the benefits of thermal mass, which is generally poorly understood. The company was also able to obtain early feedback on the industry's understanding of the Code and practitioner's requirements for further advice.

The seminar provided an efficient way to communicate with a large number of people both on the day and via subsequent viewing on the website, with a minimal carbon footprint as participants are based in offices or at home.

Innovative Heating Systems for Enhanced Concrete Curing

Inditherm's patented flexible carbon polymer technology is revolutionising concrete curing processes, particularly in the pre-cast, mould and construction industries.

Key benefits include:

→ High thermal transfer characteristics
- optimum heating performance
- low running cost

→ Accelerated curing times
- earlier concrete strengthening
- reduced additive usage

→ Reduced cycle time
- quicker setting
- faster de-mould

→ Adaptable shape
- fits different mould sizes and shapes
- suits wide range of pre-cast products

→ Adaptable heating
- suits process and environmental conditions
- precise, digital temperature control.

Inditherm have a range of advanced heating systems to suit the widest scope of concrete applications and production processes.

For further information contact any of our Construction team on: +44 (0) 1709 761000
or email: info@indithermplc.com
Quote Ref: BPP0608

INDITHERM
Construction

Building Excellence in Precast

He who stops being better,
stops being good.

Oliver Cromwell

INNOVATION

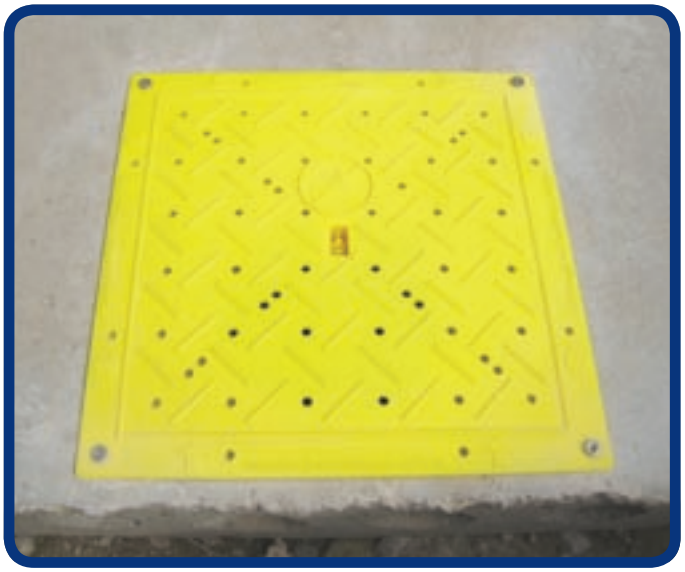


WINNER: MILTON PRECAST

Innovation: Quick-Change Moveable Barriers (QMB)

The QMB is a precast temporary barrier system designed to allow safe, rapid lane changes even at peak traffic flows. The units are moved in an unbroken chain by a bespoke vehicle at speeds of up to 10mph, thus allowing rapid alteration of the lanes in the work areas. The linked chain of precast concrete tension barrier units can be slightly raised from the road and moved across the carriageway by the transfer vehicle, allowing lane priority changes during road works and for traffic tidal flows.

2nd PLACE: BERESFORDS FLOORING



Both pre-formed and post-drilled service holes in flooring pose a significant hazard to site operatives. The traditional practice of cutting timber boarding to place over holes can be time consuming and creates a trip hazard due to the board thickness. After a relatively short period of exposure to the elements, the timber can grow algae on its surface, resulting in very slippery footings. The Beresfords hole cover provides a strong, thin, high visibility, anti-slip and cost effective solution to this problem that is quick to install. It is proving particularly popular on sites where they aim to remove the element of risk at the earliest possible opportunity by fitting hole covers at the time of precast flooring installation or upon post-drilling holes on site.

***Innovation:** Hole Cover*

3rd PLACE: PCE

SlingSafe is a safety platform and boom system devised for loading and offloading items from open delivery vehicles. It features two rotating booms which can be extended over any large, open delivery vehicle. Both booms can be adjusted for height and length to cater for all loads and situations. Site operatives are secured to the booms via a pulley system and fail-safe fall arrest device - much like an inertia reel seatbelt - which automatically locks and prevents a fall, should the wearer slip or stumble during loading or unloading operations. A secondary safety cord can be adjusted personally by the operative to ensure that the boom to which they are attached follows them as they move about the vehicle.

***Innovation:** SlingSafe*

OTHER ENTRIES

ABM PRECAST

***Innovation:* Matiere Arch**

The application of pre-engineered segmental arches in bridge construction is well established in Europe, as this form of construction can speed programme time substantially. As there were planning restrictions on the development of the site along with a self-imposed ethos to make operations more environmentally friendly, Renault decided to construct their new computing facility underground. Closed at one end and fitted with a panoramic glass curtain walling at the other, this solution not only met the area and volumetric requirement, but provided a dramatic working environment. Once completed, the building will have minimal visual impact and will also provide a stable thermal environment requiring less energy for cooling and heating than conventional structures. The new building is to house a world-class computing facility that will be used to perfect the aerodynamics of the 2009 series cars.

BERESFORDS FLOORING

***Innovation:* SLAPP Clamp**

Moving and unloading palletised products on site can be difficult due to load stability problems. The traditional answer to the problem is to use standard brick pallet forks. These are comparatively large and heavy, making them awkward in use and difficult to man-handle on site. In addition, the load can be relatively unstable due to the lack of upper load clamping. Following 18 months of development, the SLAPP clamp was launched earlier this year to address these issues. This clamp is lightweight, with a unique upper self-clamping mechanism to ensure the safe handling of palletised loads. Closing to just 15cm wide when not in use, the SLAPP clamp also offers significant ease of transportation and site storage compared with traditional alternatives.

BERESFORDS FLOORING

***Innovation:* Alimats™**

In accordance with BS7121, all crane operations require detailed consideration of ground-bearing capacities for the intended hardstanding areas. Alimats are a lightweight modular crane outrigger support system which increases the outrigger pad area by up to eight times compared with the standard crane outrigger mats provided by crane hire companies. This greatly reduces the imposed outrigger loading, for which the hardstanding must be proved adequate. Compared with traditional non-standard crane mats, Alimats are more easily man-handled into position and avoid the need for additional site plant and the associated risks. They are available on flexible cost-effective hire terms, ensuring the best possible solution to safe crane operations.

OTHER ENTRIES

FORTICRETE

Innovation: ***Ongoing Innovation of Gemini Roof Tile***

This is a patented interlocking tile with a carefully judged central groove and innovative double cambered design, that gives the appearance of two traditional plain tiles laid side by side. The original Gemini roof tile was developed in 1996 and now 12 years later, it has been redeveloped. The subtle, yet critical, changes in the product include a reduction in interlocking width while increasing its strength, which reduces the number of tiles needed per square metre. The final development is one that is reducing the CO_2 impact of the product by 40%. The installation of a new curing process, whereby vapour is absorbed by the product during the curing process, speeds up the hydration of the product. This enables the tiles to be handled sooner and 'locking in' some 40% of the CO_2 that would otherwise have been released.

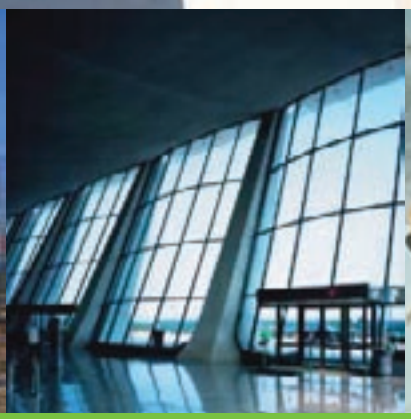
LAFARGE READYMIX

Innovation: ***Water Treatment Panels***

ABM Precon won a project to create a water treatment panel. They faced the risk of dislodging the filter jets when using traditional concrete which would require vibration to spread the material. The company approached Lafarge Readymix to help solve the problem. Agilia - an established self compacting concrete was selected as it requires no vibration and thus would not dislodge any water jets; the additional bonus was that it provided a superior finish to the end product.

Strengthen Enhance and Protect






Grace Construction Products

Grace is a worldwide leader in the construction industry, manufacturing and marketing a comprehensive range of products under the following product lines.

- **Concrete Admixtures**
- **Additives for Cement Processing**
- **Products for Light and Heavy Precast**
- **Products for Architectural Concrete**
- **Speciality Mortar Systems**
- **Waterproofing Systems and Membranes**
- **Fire Protection Products**

Grace has over 140 plants and offices around the world, making it a truly global business. It offers local solutions to customers, utilising technical expertise and market knowledge for the development of value-added products to meet the challenging demands of the construction industry.

www.graceconstruction.com

GRACE

When we build

let us think that we build for ever.

John Ruskin

PROJECTS



BUILDINGS CATEGORY WINNER: MALLING PRODUCTS

Project: *154 – 172 Tooley Street, London*

The exposed structure of this building showcases how high quality fair-faced concrete can be used in an internal environment. The thermal mass of the concrete moderates temperature swings within the building and is therefore an integral part of the low-energy ventilation strategy. To take advantage of these properties, the concrete must be exposed rather than covered with a finishing material, as this would insulate the concrete from the internal air mass and so reduce its efficacy.

Extensive use of precasting with self-compacting concrete ensured a consistent, high-quality finish on all visible elements. This was combined with post-tensioned floor slabs to create spacious floorplates with spans of up to 10.5m. All columns were precast, as was the external cladding which frames the glazing - this used secondary granite aggregates and cement with an etched finish. The post-tensioned floor slabs are faced with 3m², 50mm thick precast panels, used as permanent formwork.

CIVILS CATEGORY WINNER: SLP PRECAST

***Project:** Cleveleys Coastal Defences and Associated Promenade Works*

In conjunction with Birse Coastal, SLP designed and built an innovative sea defence scheme to protect 1.2km of sensitive coastline. The main objective was to protect over 8,700 properties and 219 industrial units from coastal flooding.

During the design stage SLP felt there was a compelling case for using precast concrete in the construction, not only for its practical advantages for the job, but also to provide the vital architectural features demanded. To enhance the concrete with colours and textures, SLP developed a new method, Colourtone, to using a colour conditioning admixture to provide superior, integrally coloured concrete and mortar. By blending the concrete structures with the surroundings and using acid etching designs in the wave walls, an outstanding aesthetic finished product was delivered.

MASONRY CATEGORY JOINT WINNER: BRADSTONE

Two large extensions to this historic hotel were required, taking into account the existing architectural style and the hotel surroundings. Items that required replication included natural stone walling, window and door surrounds and feature corbels. Traditional walling in Bradstone's Southwold shade was used, which has a squared and lightly dressed finish. It is created by moulds cast directly from hand-dressed natural stone masters, and is used successfully as an alternative to natural stone. It is produced at a fraction of the cost of natural stone, produces less waste and is aesthetically pleasing and sympathetic to its surroundings. The innovative use of precast architectural features allowed the faithful recreation of the old patterns of the surrounding buildings, at a fraction of the cost of traditional stone masonry methods.

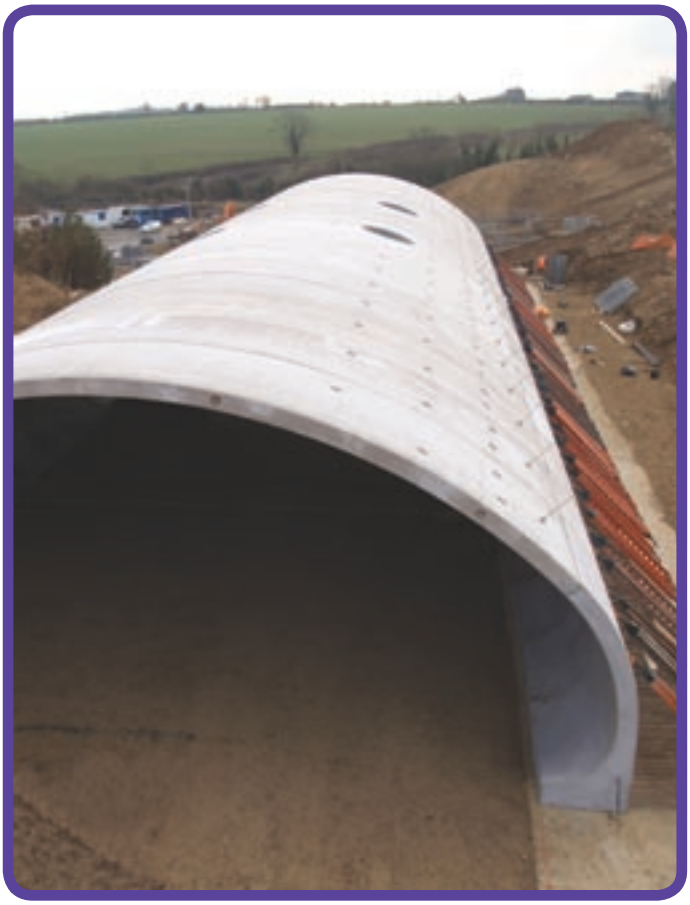
***Project:** South Lodge Hotel, Horsham*

MASONRY CATEGORY JOINT WINNER: FORTICRETE

Extensive use of complex cast stone elements has enabled three new buildings in the resort of Weston-Super-Mare to recapture the elegance of the town's architectural heritage and illustrates the ability of cast stone to replicate cost-effectively the aesthetic properties of natural stone. The project of two apartment blocks and a short-stay hostel for the Royal British Legion, called for detailing of the cast stone elements to be highly complex, with the majority being created from individually produced moulds. The variety of details was extensive with balustrades, corbels, copings to gables and boundary walls, piers, spheres, string courses, window sills, heads and jambs featuring strongly within the designs.

***Project:** Pegasus Court & Lodge, Weston-Super-Mare*

OTHER ENTRIES



ABM PRECAST

***Project:** Renault F1 CFD Centre, Chipping Norton*

The application of pre-engineered segmental arches in bridge construction is well established in Europe, as this form of construction can speed programme time substantially. However, application of these civil engineering structures as a green alternative to conventional buildings, is unique in the UK. As there were planning restrictions on the development of the site along with a self-imposed ethos to make operations more environmentally friendly, the conclusion was to bury the building. Closed at one end and fitted with a panoramic glass curtain walling at the other, this not only met the area and volumetric requirement, but provided a dramatic working environment. Once completed, the building will have minimal visual impact and will also provide a stable thermal environment requiring less energy input for cooling and heating than conventional structures. The new building is to house a world-class computing facility that will be used to perfect the aerodynamics of the 2009 series cars.

BISON CONCRETE PRODUCTS

***Project:** Sofitel T5 Hotel, Heathrow*

One of the largest luxury airport hotels in Europe, the £180 million, 605 bedroom hotel is attracting international interest and acclaim due to its sheer scale and striking design features, including five towering atriums, with a direct linking bridge to Heathrow's Terminal 5. This project successfully demonstrates the versatility and flexibility of precast concrete and also the quality and programme benefits due to speed of erection. Bison supplied 30,000m² of bespoke precast concrete products for the huge construction of six hotel blocks, including prestressed hollowcore and precast solid flooring, 32,000m² of wall panels and 300m³ of stairs.

OTHER ENTRIES

EVANS CONCRETE PRODUCTS

***Project:** Marine Operations Centre, Aberdeen*

The centre was designed to imitate a traditional Scottish lighthouse, supporting a ship's bow and bridge. The bow was created using curved glass which leans out towards the harbour, while the six-storey rounded structure that supports it is the lighthouse. The concept of two interlocking forms, solid and light, played a part in the design of this £3 million project. Evans Concrete Products supplied and installed a range of innovative precast concrete products to overcome numerous design, technical and environmental challenges.

A corrosion inhibitor was selected to improve durability in the exposed marine environment. This liquid-based admixture was incorporated within the concrete during the batching process. In addition, high strength C50 concrete was used, providing 50mm cover to reinforcement. The external panels weighed in at 12 tonnes and a total of 28 panels for the external tower were installed and erected over a two week period using mobile cranes.

HANSON BUILDING PRODUCTS

***Project:** Hanson EcoHouse II, Watford*

The Hanson Ecohouse at BRE's Offsite 2007 Innovation Park demonstrates how Code Level 4 can be achieved using masonry and precast concrete. Built off prepared foundations, the two-storey EcoHouse shell was erected in less than three days using Hanson's Quickbuild, a prefabricated, insulated, cavity wall panel system. The system consists of a stack-bonded brickwork outer leaf, with a Thermalite aircrete blockwork inner leaf. Hanson used their high performance mortar system to bond the traditional building materials into panels, thus significantly enhancing the structural stability and adding to the house's air tightness and sustainability credentials. The Quickwall system offers good thermal mass and air tightness thus giving significant energy savings, while concrete and masonry construction provides the added advantages of flexibility and adaptability.

OTHER ENTRIES

MALLING PRODUCTS

Project: ***Silverburn Retail Centre, Glasgow***

The commission was to produce an interpretation of a quarry face for a wall at the Silverburn Retail Centre. This required painstaking research, and used photographs, rock samples, colour swatches, trial panels and a full-scale mock up preceded final production. The result is a stunning architectural feature greeting the public as they arrive at the Centre. This interpretation of a quarry face demonstrates how the qualities of precast concrete can be used to best advantage and features the mouldability of concrete. The structural properties of precast concrete enabled the wall to be free standing and the exposed fine aggregate in the mix gave the wall a warm earthy colour. The wall appears as a naturally undulating, homogenous surface, as opposed to a series of repeating elements. This was achieved by jointing the panels along the geometric crease lines and detailing eight bespoke units that could be used in different combinations.

TRENT CONCRETE

Project: ***The Colonnade, Barton Square, Trafford Centre, Manchester***

This project demonstrates the flexible and adaptable nature of precast concrete, where it has been used in a variety of situations, both as cladding and as a structural material. The portico was designed to match the original colonnade and was cast in an identical buff coloured, reconstructed stone with terracotta feature bands. The concrete was acid etched to expose some of the fine aggregate and to produce an excellent imitation of natural stone. The unique portico design made the production process complex and required many different moulds, including some 'one offs'.

Innovation:
Andy Goring, Milton Precast collects his award from Nick Bettles, Inditherm.

Masonry Joint Winner:
Ged Smith, Forticrete collects his award from Graham Moorfield, Grace Construction Products.

Projects - Supreme Winner:
David Shillito, Malling Precast collects his award from Graham Moorfield, Grace Construction Products.

Sustainability Corporate Winner:
Neil Hawkins, Tarmac TopBlock collects his award from Stuart Crisp, Castle Cement.

Civils Winner:
John Edwards, SLP collects his award from Graham Moorfield, Grace Construction Products.

Sustainability Site Winner:
Chris Jennings, Aggregate Industries collects his award from Stuart Crisp, Castle Cement.

Masonry Joint Winner:
Rick Trindell, Bradstone collects his award from Graham Moorfield, Grace Construction Products.

Heath & Safety Winner:
Paul Saunders, Aggregate Industries collects his award from Andy Murphy, Lafarge Cement.

BRITISH PRECAST

THE BRITISH PRECAST CONCRETE FEDERATION LIMITED

60 Charles Street • Leicester • LE1 1FB
T 0116 253 6161 **F** 0116 251 4568 **E** info@britishprecast.org **W** www.britishprecast.org

Published July 2008.