

re:view



2009 A YEAR OF CHALLENGE
ADDED VALUE

TIME IS MONEY
SUSTAINABILITY

HEALTH AND SAFETY
BAR COMMITTEE REPORTS

REINFORCED INSURANCE

Welcome to Re:View 2009, an annual review of the activities of the British Association of Reinforcement (BAR) and a consideration of major issues affecting not just the reinforced concrete sector but the construction industry as a whole.

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The British Association of Reinforcement (BAR) is the trade association representing UK manufacturers and fabricators of steel reinforcement products, including cut and bent, coil, mesh and reinforcement accessories.

BAR aims to develop and add value to the concrete reinforcement industry through market development, product innovation, provision of technical support and the promotion of good industry practice, including health and safety and sustainability.

BAR is represented on CARES committees and all BAR members are CARES approved.

For further information visit: www.uk-bar.org

2009 - A YEAR OF CHALLENGE

2009 has been a year of unprecedented challenges. However, ongoing product and process innovation, added-value service and close working with other parts of the supply chain and contractors have allowed BAR members to meet these challenges with verve, flexibility and determination.

The downturn in the construction industry has triggered a major rationalisation of the reinforcement sector. This offers a positive foundation for the upturn. For the first time in many years all the major players are in the ownership of companies or families with long-term plans for their future. This will be manifested in further investment to improve efficiency and productivity and in new product development. This will prove beneficial for our customers and for the sector itself.

The downturn has focused the activities of BAR. It is an unfortunate sign of the times that the credit circle, established by our Business Development Group, has become such an important feature of the services that we offer to our members. In addition, the Group has initiated the collection of industry output statistics and is exploring the opportunity for best practice delivery arrangements. Our Marketing Committee has concentrated on increasing market share by highlighting the unrivalled benefits of reinforced concrete and emphasising the advantages of using a

BAR member whilst the adoption of good industry practice and awareness of latest issues have been promoted by our Technical and Health and Safety Committees.

The current downturn has been severe but the innate benefits of reinforced concrete over other construction materials coupled with the efficiency and added value products and services available from BAR members means that the reinforcement sector and its customers are well placed to take full advantage of the recovery.

Graham Mackenzie

Chairman of the British Association of Reinforcement

TIME IS MONEY

Never has the adage 'time is money' been more appropriate.



The fast lead times and built-in benefits of reinforced concrete allow reduced overall programme times. This means faster pay back of financing charges and faster revenue generation. The fast programme times of reinforced concrete have been proven by a number of cost model studies which have demonstrated that the cost advantages of reinforced concrete are compounded by an overall programme time that is considerably shorter than steel.

'Cost Model Study – Commercial Buildings' examined the cost and programme times of constructing three- and six storey office buildings using a variety of reinforced concrete and steel frame short and long-span options. The study was carried out by architects Allies and Morrison, structural engineers Arup and cost consultants Davis Langdon with programming by Mace. It found that when procurement, lead times and construction were all taken account of (based upon lead times of 4–6 weeks for the concrete frame options and 12–18 weeks for steel), for the

three-storey building the fastest reinforced concrete option came in at 64-65 weeks compared to 70 weeks for steel. For the six-storey building, reinforced concrete came in at 82-86 weeks compared to 91-93 weeks for steel.

Similar findings were found for schools and hospitals. 'Cost Model Study – School Buildings', carried out by architects Architecture plb, structural engineers Arup, cost consultants David Langdon and programming by Costain Construction, found that the fastest overall programme time for reinforced concrete was 83 weeks compared to 89 weeks for the steel frame option for the construction of a typical 1,400 place secondary school. For the construction of hospitals, 'Cost Model Study – Hospital Buildings' found a difference of up to 11 weeks between the overall programme times of reinforced concrete and steel. The study was carried out by architects Nightingale Associates, structural engineers Arup, cost consultants David Langdon and programming by Costain Construction.

What each of these studies demonstrate is that it is important to include the total programme time, including lead time, when carrying out cost analysis, Total programme time can have a significant impact on the bottom line.

HEALTH AND SAFETY MATTERS

Over 2 million people work in Britain's construction industry, making it the country's largest industry.



It is also the most dangerous. In the last 25 years, over 2,800 people have died from construction industry accidents. The industry accounts for nearly one third of all workplace fatalities in the UK. Many thousands more have been injured.

BAR and its members actively encourage good health and safety practice. Part of this commitment is the publication of health and safety industry guidance.

Last year, BAR published the Code for Safe Off-loading of Reinforcement Fabric. Endorsed by the Health and Safety Executive (HSE), the code is aimed at all those involved in the off-loading of reinforcement from delivery vehicles. It highlights potential hazards and provides guidance on safe working practice.

The code is to be followed by the forthcoming publication of the Safe Off-loading of Cut and Bent Reinforcement. The primary objective of this code is to provide information and guidance to ensure the safe removal of bundles of cut and bent reinforcement from delivery vehicles. It covers planning for safe off-loading via the development of a delivery plan and the preparation of the load for off-loading.

A further document currently being prepared is a BAR Shape Code leaflet. This will provide a risk assessment for the manufacture of each of the BS8666 shape codes and will inform designers and specifiers as to what constitutes a high risk shape. It will also prove useful for BAR members' production management teams.

Copies of the Code for Safe Off-loading of Reinforcement Fabric, Code for Safe Off-loading of Cut and Bent Reinforcement and the BAR Shape Code can be downloaded from BAR's website: www.uk-bar.org

REINFORCED INSURANCE

The inherent benefits of reinforced concrete construction offer a high level of insurance for both developers and building owners.

Top of the list is the material's built-in fire resistance and robustness. This provides structural fire resistance of up to 4 hours which far exceeds the 30 minutes occupancy escape time requirement of the Building Regulations.

Between 2006 and 2009 seven multi-storey residential timber structures were destroyed by fire whilst under construction. The most recent was in April 2009 when a fire destroyed a block of flats under construction in Blackpool. As a result of these fires two advisory groups, The Practitioner's Forum and the Business and Community Safety Forum, asked the Communities and Local Government department to review building regulations and guidance in order to reduce the incidence of rapid fire spread in timber frames under construction. Their report stated their belief that the volume of timber in the construction contributed to the fire hazards, to the risks to construction workers and fire-fighters and to the structural collapse of the building. Completed timber frame buildings were also of concern due to the fire risks posed by poor workmanship for cavity barriers and the fire stopping quality of finishes.

Fire is also a major insurance issue for commercial premises. Every year insurers pay out some £800 million in fire claims. Business interruption following fire damage adds a further cost of £220 million. Such considerable costs are of concern to building owners, occupiers and their insurers who wish to see a return to business as soon as possible after a fire rather than face demolition

and rebuild. An illustration of the impact that fires can have on businesses is the number of high profile warehouse fires. Every year there are some 2,500 warehouse fires in the UK. Warehouse fires often spread rapidly aided by the dense storage of flammable materials such as cardboard and plastic packaging.

The fire resistance offered by reinforced concrete significantly exceeds building regulation requirements and means that concrete buildings provide a high level of structural integrity during a fire. This has insurance consequences as the prime objective of fire-fighters is to save lives not property and contents. They may not venture into a building that becomes structurally unsound during a fire preferring to contain the fire from a distance.

The impact of fire can be considerable. This is especially true with school fires, which disrupts not only the pupils, staff and community of the school affected but also neighbouring schools to which the affected pupils may be relocated. On average, 20 schools a week suffer from arson attacks at a cost of £92 million per year. The robustness and fire resistance of reinforced concrete means that the impact of a fire can be minimised and the school buildings be repaired ready for the following term rather than have to demolished and rebuilt.

The fire resistance benefits of reinforced concrete are increasingly being appreciated by insurers who are translating this appreciation into lower premiums for concrete buildings.

ADDED VALUE



Its range of inherent benefits provides reinforced concrete with added value. Reinforced concrete provides high levels of sound insulation, fire resistance, vibration performance, flood resilience, robustness and minimum maintenance all built-in and at not extra cost. For most construction projects there is no need for additional materials and labour and a subsequent increase in programme times. This is real added value.

The experience and expertise of BAR members can ensure that the full added value of reinforced concrete is realised. There is a growing understanding that rebar is more than just a basic commodity but can, in fact, add real value to a construction

project. The increased availability and use of prefabricated reinforcement, such as pile cages and roll mats, provides the benefits of factory-controlled quality manufacture with reduced onsite labour, faster programme times and less waste. Many BAR members offer reinforcement detailing and computer-aided 3D modelling of reinforcement to increase design, manufacture and installation efficiency. In addition, there is also on-line management of the reinforcement order and delivery.

All of these services provide added value to the project. It is value comes from ensuring the involvement of the reinforcement fabricator with the project. In this way his expertise and experience can be fully utilised. In addition to this, customers of BAR member companies have the confidence that their supplier is CARES approved.

SUSTAINABILITY: THE WHOLE IS GREATER THAN THE PARTS

Real sustainable construction is about long-term solutions not short-term headlines. It is also disingenuous to only focus on one part of the sustainability agenda. Rather, it should be about the holistic whole and not nit-picked highlights.

Sustainability must provide a holistic approach that manages the impacts of a product's total supply chain from the raw materials, through its manufacturing and delivery to its use, re-use and recycling, until its final disposal as waste with no further value. It requires real 'cradle-to-grave' management of environmental, social and economic impacts, whole-life product stewardship and on-going process evaluation and development. In addition, sustainable construction must take full account of a building's long-term environmental performance since 90% of a building's environmental impact results from its day-to-day operation and not its initial construction. Take all of this into account and you realise that sustainability is about more than CO₂ emissions.

A wide range of inherent benefits gives reinforced concrete a head start over its rivals in terms of total sustainability. Inherent fire resistance of up to four hours negates the need for additional fire proofing finishes. It is flood resilient, does not rot and so does not require chemical preservatives or additional protective coatings. It offers long-term performance and minimum maintenance and left exposed it does not require any further decorative finishes. These inherent benefits means less additional finishes which means reduced environmental impact.

The operational CO₂ emissions resulting from the heating, cooling and lighting of our buildings far outweigh the embodied CO₂ of the production of the materials used to build them. When left exposed concrete provides a further inherent benefit: enhanced thermal mass. This acts as a built-in heat sink that, when used as part of Fabric Energy Storage and Passive Solar Design strategies, can significantly reduce the energy needed for heating and air-conditioning.

All the above environmental benefits are provided by a material that can be locally sourced from within the UK. There is no need to ship raw materials from thousands of miles away. Some 90% of timber used from construction is imported, often from as far away as Canada. Structural steel relies on the importation of raw materials notably from Brazil. This has serious environmental consequences. Some of cargo ships have engines so large that they emit the same amount of pollutants as 50 million cars in a year. The environmental and economic benefits of 'locally sourced' are being increasingly recognised for our food. The same considerations should be given to the importation of construction materials.

Reinforced concrete also meets the requirements of the mantra re-use and recycle. Reinforced concrete structures have the built-in structural integrity to allow them to be easily adapted for new use. Whilst, at the end of a building's life, the material can be 100% recycled as aggregate for new concrete and as scrap metal for new reinforcement.

This is real cradle-to-grave, whole life sustainability that addresses all aspects of a material's sourcing, manufacture, use and performance. The whole is greater than the parts.

BAR Signs Up to Industry Sustainability Vision

BAR has signed up to a pan-industry sustainability strategy that has been developed for the concrete industry by the Concrete Industry Sustainable Construction Forum in association with Forum for the Future.

The strategy calls for a commitment to a common vision, strategic objectives and indicators which will benchmark industry sustainability performance and demonstrate continuous improvement so that "by 2012, the UK concrete industry will be recognised as the leader in sustainable construction, by taking a dynamic role in delivering a sustainable built environment in a manner that is profitable, socially responsible and functions with environmental limits".

The benchmark indicators are wide ranging and include the implementation of environmental management systems, reduction of waste and carbon emissions, improved energy efficiency and the provision of locally sourced materials. In addition, there are commitments to enhance the environment and create sustainable communities. The indicators are to be benchmarked annually so that real improvements can be measured.

Commenting on the strategy, Graham Mackenzie, BAR Chairman said: "We are pleased to be part of this pan-industry vision that will see the concrete industry becoming a leader in sustainable construction".

For further information on the concrete industry sustainability strategy visit: www.sustainableconcrete.org.uk

Launch of Eco-Reinforcement Scheme

The reinforcement sector has welcomed the launch Eco-Reinforcement, a third party certification scheme for responsibly sourced reinforcement that fully meets the requirements of BRE Global Framework Standard for the Responsible Sourcing of Construction Products BES 6001 and the new British Standard BS8902. Its availability, together with guidance from the concrete industry on how to gain certification these standards, means that reinforced concrete has stolen a march over other construction material sectors yet to develop comparable responsible sourcing schemes.

Eco-reinforcement is one of several accreditation schemes that are being developed and implemented to enable the responsible sourcing of materials (RSM). RSM is a holistic approach to managing the impacts of a product's total supply chain from the raw materials, through its manufacturing and delivery to its use, re-use and recycling, until its final disposal as waste with no further value. These schemes will enable real 'cradle-to-grave' management of environmental, social and economic impacts, whole-life product stewardship and on-going process evaluation and development.

BAR COMMITTEE REPORTS

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BAR promotes the ongoing development and improvement of the UK reinforcement industry, via its industry committees, consisting of member representatives working closely with industry partners plus government and regulatory bodies.

Technical Committee

Representing the UK reinforcement industry at British Standards and European levels and working closely with CARES, during 2009 the BAR Technical Committee has been concerned with reducing the testing requirements for de-coiling of material below 16mm. This has now been accepted by BSi and the Committee are to make a formal proposal, backed by test data, for an amendment to BS4449.

Currently, the Committee is working on the provision of practical guidance to ISO 17660, the new European standard on welding. BSi has agreed to publish a new standard that will offer practical recommendations for the welding of steel reinforcement. It will address both technical and safety issues.

BAR has also expressed concern over the depth of stakeholder engagement required for the establishment of a sector sustainability certification scheme and over the make-up of the sector scheme council to ensure balanced representation. Consequently, elements of BS 8900, which focused specifically on stakeholder engagement, have been incorporated into BS 8902 to ensure that the process of stakeholder engagement and scheme council formation is fair.

The Technical Committee has also lobbied to ensure that the relevant reinforcement issues, particularly that of recycled content, are considered for the certification of companies against the requirements of BES 6001 and BS 8902 in order to allow companies to conform via just assessment process for dual certification under both standards.

Business Development Group

Established to improve the business environment for BAR members, the Business Development Group has had a busy year. The collection of industry output statistics that was introduced last year is now producing data on a quarterly basis for member companies to give quantitative indication of market trends.

The establishment of the Credit Circle and development of credit reporting software has proved to be particularly successful with participating BAR members now being regularly alerted to potential financial risk. This has seen them protected from a number of high profile customer company failures during 2009.

In addition the Business Development Group has produced a Delivery Charter for the reinforcing steel sector. This sets out industry best practice for the delivery of steel reinforcement and reinforcing steel to construction sites. The Charter is designed to be used as the basis for contractual relationships for reinforcement supply and delivery in the UK. In particular it sets out the buyer's health and safety responsibilities to provide safe and appropriate access to site and for compliance with current health and safety legislation. The Charter also outlines where additional delivery charges can be incurred for excessive waiting times and specific requirements such as part loads and deliveries outside normal working hours.

Reinforced in-situ concrete:
All the right answers

FAST AND EFFICIENT
INHERENT THERMAL MASS
FIRE RESISTANT
LOCALLY AND RESPONSIBLY SOURCED
ECONOMIC

Locally and responsibly sourced materials, an unrivalled range of inherent benefits, contractor added-value and expertise... reinforced in-situ concrete has all the right answers.

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www.uk-bar.org

CONSTRUCT
concrete structures group
www.construct.org.uk

mpa
essential materials
sustainable solutions
www.brmca.org.uk

PROVIDING OPTIMUM CONCRETE SOLUTIONS

Health and Safety Committee

Early in the year the Committee completed work on a Power Bender Training Manual for BAR members. This provides guidance and best practice for the safe operation of manual power benders and is designed to allow member companies to develop their own machine operation procedures incorporating their current risk assessments and method statements. This work for members is being followed up by a review of best practice in employee induction procedures.

Following the industry-wide welcome for the guidance document 'Safe Off-loading of Reinforcement Fabric', the Health & Safety Committee has produced guidance on the safe loading and off-loading of cut and bent. This covers the responsibilities and best practice for loading, delivery and unloading of cut and bent reinforcement.

The Committee is now working on the preparation of guidance to designers and specifiers of the risks associated with the manufacture of shape codes specified in BS8666. This will identify higher risk shapes and offer alternative approaches.

Marketing Committee

The work of the Marketing Committee to ensure a strong profile for BAR, BAR members and the benefits of reinforced concrete has continued with a highly targeted advertisement campaign focusing on the heavyweight benefits of reinforced concrete for thermal mass and on the benefits of specifying rebar from a BAR member. In addition, working with partners CONSTRUCT and MPA-BRMCA, BAR carried out an advertising campaign highlighting a range of reinforced concrete benefits under the tag line: Reinforced in-situ concrete – All the right answers. The advertisements continue the strong messaging and presence that has become synonymous with the BAR campaign. To view the archive of the acclaimed BAR advertising campaign visit: www.uk-bar.org

In May, BAR held its annual industry luncheon, which this year was held at the impressive Plaisterers' Hall in London. Despite the threat and the gloom of the oncoming recession, the event was well attended by construction industry figures, BAR members and their customers. Eddie Large was the speaker and he provided well-received comic relief.

The BAR website continues to provide an industry information resource that showcases the reinforcement sector and provides a valued forum for BAR members. It is planned to include a comprehensive range of member projects and case studies in order to highlight the range of expertise and achievements that BAR represents.

GIVE YOUR PROJECT A REINFORCED ADVANTAGE

THERMAL MASS:
HEAVYWEIGHT THINKING OR
LIGHTWEIGHT HEADLINES?

CONCRETE'S HIGH THERMAL MASS
By A. Fact

INCREASED DURABILITY, REDUCED CARBON FOOTPRINT
U.K. Other Benefits

HOLISTIC LONG-TERM SUSTAINABILITY
RE-AL SOLUTION

REINFORCED CONCRETE:
LOCALLY SOURCED
By LK Materials Group

CONCRETE DOUBLE SIDED EXPOSURE:
THE BARE TRUTH
Dr. N.O Spin

BAR
BRITISH
ASSOCIATION OF
REINFORCEMENT

www.uk-bar.org

REINFORCED CONCRETE
THE HEAVYWEIGHT SOLUTION

BAR MEMBERS

BAR members are focused on delivering innovative and cost effective solutions that fully support the demands of quality, customer service, health and safety and sustainability. All BAR members are CARES approved.

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