



Richard Ogden - Chairman

## Making Sense of Sustainability

I can recall a time – and it was not really that long ago – when few in the business community talked about sustainability, indeed hardly anyone talked about the subject. If the word existed then I guess it was not something that made it into the lexicon of common parlance.

We did of course talk about the environment and the impact that our construction orientated activities had on land, on water and on the atmosphere. I guess that we tended to see things from a personal perspective asking the questions about how this affected our business activities – or, more particularly, the costs and additional taxation that we were subject to as a consequence of various bits of legislation. Call this fiscal incentives if you like but the plain fact is that unless the financial cost of being bad is so significant as to put capital investment at risk then the various taxes are simply a pass-through cost which in the first instance is passed on to the client (no one else is going to pay) but which in turn the client passes through to customers in the form of higher rents and prices. So put simply we all pay and nothing positive has been achieved.

In addition to thinking about the environment some of us would also have questioned the cost and productivity implications of inefficient construction practices and the consequential waste (of all types) but I suspect that there would not have been any recognisable attempt to link all the issues together into a package that merited attention and action by business.

I can also recall the work of the Brundtland Commission and the simple message that it was plain wrong to cheat on our children and our children's children by consuming too much of the planet's resources. Heady stuff which in turn led to Kyoto and other gatherings of the good and the great and which by some chemistry morphed into a focus on carbon emissions and the rise of carbon trading. UK Government has played its part by setting targets and introducing new legislation such as building regulations on new works to ramp up

our lamentable standards of thermal insulation and air tightness. We continue to play the game of catch up although in fairness much progress has been made. Government has also set performance targets for the public estate – not just new buildings which is even more welcome although I for one can't quite get my head around the concept of a carbon zero hospital or school. I'm sure that all will come clear in due course.

Now don't get me wrong this is all good stuff.....but it reflects only part of the story. The focus on carbon reduction is clearly important but it accounts for only a slice of what needs to be tackled. When the Key Performance Indicators for Sustainability were being established the sub-text used was "the triple bottom line". Sustainability was being defined in terms of environmental impact, social impact and economic impact. It was about striking a proper balance between these potentially competing considerations. So what I ask has happened to this broader scope? Carbon reduction can not be a catch all for everything.

Within the Buildoffsite organisation we believe that a shift in favour of off-site solutions is not just an inevitable direction of travel in order to achieve the sort of step-change in client value and productivity that just about every other industry has achieved but we also believe that off-site solutions represent the most effective means available to the industry to make a meaningful difference and achieve continuous improvement in sustainability. The challenge for Buildoffsite is to enable a shift away from an anecdotally informed belief that off-site solutions are better solutions and to get to the point where the metrics exist to prove that in the great majority of cases this is indeed so.

I am delighted that an internal expert group has been set up within Buildoffsite to take a hard look at the contribution that off-site methods are playing in supporting the sustainability agenda. This expert group is being led by Cal Bailey of NG Bailey and John Miles of ARUP with support from senior industry figures. Our focus will be on the triple bottom line issues plus any additional considerations that are recognised as being relevant. With regard to the latter I am particularly interested in the impact that off-site utilisation has on productivity and process efficiency. These are not traditionally recognised as obviously embraced under the Economic heading but I would suggest that maximising site productivity is fundamental to achieving a more sustainable industry. Perhaps this will be highlighted as we slip into a recession and clients across the piece have to look that much harder at their investment decisions and have the information to convince themselves and their funders that they are getting a good deal.

The progress achieved so far will be presented at the Buildoffsite Stakeholders event which takes place on 3 December. I have no doubt that this will mark the start of a major contribution to achieving a better understanding of the positive impact that off-site methods and mindsets can make to the sustainability agenda.

## Buildoffsite Stakeholder Event

The latest Buildoffsite Event for Members and their guests takes place on Wednesday 3 December. Once again the Event is taking place at the Department for Business's Conference Centre at 1 Victoria Street, London.



The Stakeholder Events provide an opportunity for the Members and Supporters of Buildoffsite to meet up and to hear at first hand about Buildoffsite's current work-programme and to have an opportunity to give their views on the future direction of the programme.

In addition to the invaluable business to business networking that is a regular feature of all Buildoffsite Events we are this time hosting two Workshop Sessions which will take place immediately before the Stakeholder Event. Both Workshops and the Stakeholder Event itself are fully subscribed.

The Workshops will focus on just two of the work streams that Buildoffsite is progressing as part of its campaign to promote the increased take up of offsite construction solutions – because these provide better solutions for clients and constructors. One Workshop will address the latest progress with the registration scheme that Buildoffsite in partnership with Lloyds Register has developed in order to give confidence in the capability and competence of the off-site suppliers. This scheme has been successfully trialled and has now matured to the point where major clients including in

particular BAA have indicated that the Scheme is to become mandatory for their Tier 1 suppliers. The Workshop will include presentations from BAA.

The second workshop will focus on the application of Lean Project Management to construction projects for the Ministry of Justice – one of the UK's largest public sector clients. Buildoffsite has run a number of very well supported Breakfast Briefing on this subject but this Session will be different because the client will be taking part to share their ambitions for better value for money through a structured approach to project management which focuses on achieving continuous flow and the identification and elimination of processes that add cost but no value – at least to the client. These principles are commonly applied by our leading manufacturers but oddly are rarely applied within the construction sector. This Workshop has been very well received with a full house of approximately 100 delegates registered.

You might be wondering why the application of lean principles is something that Buildoffsite is actively supporting. Well the message is simple in that in almost all cases the application of lean will identify where value is being added and also where value is not being added...indeed quite the opposite through duplication of project management functions, failure to secure best value from trades on site, excessive downtime, reworking and waste to landfill. In those cases where lean principles have been applied the result has been not only much better control over project time and cost but significantly also a fundamental shift in favour of the on-site assembly of off-site components. In the case of the Ministry of Justice the client is on course to deliver 80% of project value through off-site solutions.

A full Report on the Buildoffsite Stakeholder Event and the Workshop Sessions will be reported in the next issue of the Buildoffsite Newsletter.



Buildoffsite is delighted to welcome into Membership the Ministry of Justice. The Ministry is one of the UK industry's most significant construction clients and is at the forefront of the drive to access off-site construction solutions in order to deliver improved project value and cost and time certainty."

## The Ministry of Justice (MoJ)

The Ministry of Justice was created on 9 May 2007 and is now the third largest central government department, providing services to 9 million people a year from over 900 locations across the UK.

The department has four main objectives:

1. Strengthen democracy, rights and responsibilities
2. Deliver fair and simple routes to civil and family justice
3. Protect the public and reduce re-offending
4. Ensure a more effective, transparent and responsive criminal justice system for victims and the public.

These objectives are underpinned by the department's fundamental aim of supporting and delivering a safe, just and democratic society.

## The National Offender Management Service (NOMS)

The National Offender Management Service is an executive agency of MoJ. The agency was established in 2004 to introduce offender management, a new case management approach designed to manage offenders seamlessly across community and custodial boundaries and reduce re-offending. The agency brings together the headquarters of the Probation Service and Prison Service. Both services ensure the sentences of the court are properly carried out and work with offenders to tackle the causes of their offending behaviour.

Providing appropriate accommodation that matches the size and mix of the prison population is one of the most difficult tasks facing NOMS. NOMS Custodial Property Unit - the property and estates management unit for NOMS custodial estate - is at the forefront of the drive to create new prison places under the capacity building programme launched in June 2006. The department is currently managing 799 projects at a cost of £3.6 billion and, to date, 3956 new prison places have been created - a remarkable achievement given the difficulties of undertaking construction projects at operational prisons.

The development of innovative and cost-efficient custodial solutions, involving the pre-fabrication of buildings offsite, has enabled Programme Managers working within the unit to deliver construction projects a great deal quicker than when conventional build techniques were used, and at a lower cost per prisoner place.

The team has delivered a range of accommodation solutions at new and existing prison sites across the country, including:

**A6-type houseblocks** at HMP Highdown in Surrey and HMP Lewes in Sussex. The different facades of these buildings, despite the fact they are of the same design, is an indication of the flexibility that pre-fabricated, modular construction allows.



*HMP Highdown*



*HMP Lewes*

An **A8 unit** – a 2-storey, extendable block built around a central corridor – at HMP Send in Surrey.



*A8 unit at HMP Send*



-An **A11 unit** – a very fast build accommodation block comprising 30 double cells– at HMP Erlestoke in Wiltshire.



**A11 at HMP Erlestoke**

An **A9 unit** – a single-cell version of the A11, which allows for an even greater amount of pre-fabrication offsite and can be adapted for different prisoner capacities – at HMP Rochester. (picture) This particular A9 unit was constructed as part of a larger project to build a full 'stand-alone' prison on spare land within the existing prison. The completed 'Rapid Build Prison' provides accommodation for 300 prisoners in three A11 buildings and a double A9 accommodation unit. Ancillary facilities were also provided.



**A11 (top left) and double A9 unit at HMP Rochester**

#### **Ancillary facilities:**

To support the increase in prison capacity across the estate, tailored packages of ancillaries are provided alongside new accommodation units, depending on the needs of a particular establishment. Ancillary facilities include:

**Education and workshop facilities**, to enable prisoners to acquire skills that they can use on their release, thus helping to break the cycle of re-offending.



*Inside the education block inside A8 unit*



*Workshop at HMPYOI Wetherby at HMP Haverigg*

**Kitchens** – which have to be able to provide hot food three times a day for hundreds of prisoners and cater for different dietary requirements.



*Kitchen at HMP Acklington*



### Healthcare facilities

*Inside new healthcare centre at HMP Liverpool*

#### Visits buildings

Visits building at HMP Lewes

MoJ aims to increase capacity sufficiently to create a sustainable margin which can absorb variations in the prison population without the need to employ short-term contingency measures. More construction projects are underway and planned for the future which, it is hoped, will lead innovation still further across the modular construction industry.



more information is available on the Buildoffsite website [www.buildoffsite.com](http://www.buildoffsite.com)



## University of Salford Launches New Masters Course in Advanced Manufacturing

The University of Salford has announced the launch a new approach to providing postgraduate education in construction manufacturing. A new master's programme "MSc Advanced Manufacturing" has been designed to address the increasing demand for off-site construction solutions.



The programme marks a shift away from contemporary "craft/resource-based construction" currently being offered by academia, and is the first course of its kind in the UK designed specifically to holistically engage the supply chain, from clients, developers and designers, through to contractors, manufacturers and suppliers.

It addresses demand from not only the National, European and International markets, but also engages with the need to provide new skill sets and competences (and to support opportunities and career advancement) in this area. Core modules include: Strategic Management of Off-site Construction, Production Technology and Systems, and ICT in Manufactured Construction; with electives in: Automation and Robotics, applications in off-site Manufacture, Product Development in off-site Manufacture, and Management and Entrepreneurship.

The development of this new Programme sends out the clearest possible message that off-site construction solutions have entered the mainstream of UK construction practice. It represents a coming of age for our industry and is hugely welcome.

Exit awards are also available at Diploma and Certificate level. For further information, please visit

[http://www.sobe.salford.ac.uk/studyatsobe/courses/acme\\_overview/](http://www.sobe.salford.ac.uk/studyatsobe/courses/acme_overview/)

## Yorkon publish Updated Design Guide for Offsite Construction



Yorkon has already received more than 1500 requests for its updated design guide which has been produced to help architects and contractors work with off-site construction.

The design tool is available in interactive pdf format

as a free down-load via the Yorkon website – [www.yorkon.com](http://www.yorkon.com). It is a comprehensive guide to steel-framed modular construction, including module sizes and options for staircases and lifts. For CAD users, there are easy-to-use files to help architects develop a building design for a specific project and produce fast and accurate project drawings.

In order to maximise the benefits of off-site construction, it is essential that specifiers develop a good understanding of the modular system and the process, and design for modular rather than site-based construction from the outset. The design guide tool and a series of design workshops are Yorkon initiatives to help address this requirement.



## Loughborough University Discovering Offsite Tour

Attendees at October's Loughborough University Discovering Offsite Tour had a mind-stretching experience. Many were challenged to rethink their preconceptions of 'academic' research as they realised the breadth of industry-facing work being done at the University.

### Rapid prototyping

Delegates were introduced to state of the art rapid prototyping and rapid manufacturing technologies currently at the forefront of manufacturing innovation. Whilst the main built environment applications of these, relatively small scale applications are in architectural models, there is much more potential still to be exploited.

The rapid prototyping tour provided the context for the freeform construction project being led by the Civil & Building Engineering team.

### Freeform construction

Freeform Construction combines high levels of automation and computer control with the design and construction process. It is based on an existing technology known as Rapid Manufacturing, which has revolutionised the way consumer goods are manufactured, by literally 'printing' three dimensional (3D) objects, designed on a computer, in much the same way that a printer produces two dimensional (2D) images on a piece of paper. The 3D CAD model is sliced as a thin layer set, and then the final 'piece' is printed layer by layer.

Although the 3D or 'layer by layer' printing method is revolutionary for the consumer goods industry, it is not much different from existing 'layer by layer' construction methods. However, printing 'one-off'



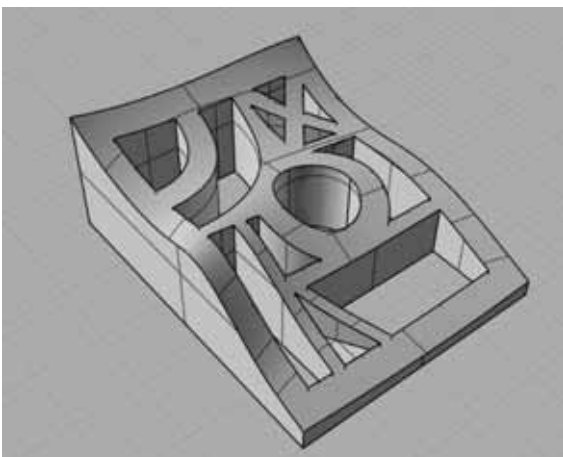


Loughborough's Freeform Rig

complex building components would significantly reduce mould manufacture labour and time, and hence cost far less money compared to existing methods for producing bespoke components.

Loughborough University's research team secured the £1.2m Integrated Project called "Mega-scale freeform surface construction", a joint venture between Civil and Building Engineering and Mechanical and Manufacturing Engineering departments. The final technology is still a considerable way off full realisation. Nevertheless, the team is developing a prototype system to evaluate the concept, and their preliminary results generated high interests from their industrial partners and Buildoffsite members.

The team believes that their concept will utilise computer-based 3D solid modelling to drive precise control of construction material deposition in an automated process which will offer numerous benefits over traditional approaches in terms of (i) increased geometrical freedom, (ii) structural optimisation, (iii) single material construction, (iv) function integration, and (v) reduction in assembly complexity.



3D image of Loughborough's Freeform sample panel



2D 'slice' through sample panel showing tool paths

#### Adaptable futures

The 'Buildoffsite tour' also introduced participants to other offsite-related research at Loughborough and, in particular, the current major research initiative, Adaptable Futures, which is working alongside industry teams including GSK & BWM with Newways and 3DReid & Buro Happold with Multispace.



#### "Offsite - On the Rise"



The rapid rise of Europe's tallest modular building

Fleming Developments working with Vision Modular Structures have started work on what will be Europe's tallest modular structure.

The project which is being constructed in Culwell Street, Wolverhampton will provide almost 800 student rooms and apartments. The project will include a 24 storey block.

Construction is well underway with the first of 805 modules lifted into place at the end of October. All modules will have been installed in just 27 weeks.

The entire project will be completed by next September ready for the start of next academic year.

The client for this £25 million scheme is Victoria Hall Ltd – a specialist provider of student accommodation. The scheme has been designed by O'Connell East Architects from their offices in Manchester.

A Buildoffsite Case Study on this landmark new building will be published early in 2009

For more information on this scheme contact Terry Wood of Vision Modular Structures on 07920 238594



## Update on ManuBuild

ManuBuild is an industry-led collaborative research project on Industrialised Construction, part-funded by the EU under Framework 6. Commencing in April 2005, it is a 4-year project involving 25 partners from 10 countries across Europe, co-ordinated by Corus.

The ManuBuild Project transpired in response to a need to transform the construction industry from a craft-based into a knowledge-base industry where new skills and solutions are essential. Supported by partial funding from the European Commission, ManuBuild responded with a very ambitious initiative leading to an era of unconstrained design with advanced manufacturing technologies and industrial-style construction to provide uplifting, sustainable and cost-effective customer-oriented housing resulting in improved quality of life and providing better value to the customer.

There are a number of tangible outputs that have been produced thus far, including the relocatable steel based walling unit as seen in the illustrations. This was exhibited earlier in the year at EcoBuild and will be demonstrated along with other RTD results of the project at Futurebuild in 2009.

The approach taken in the project has been to combine four key elements – building concepts, business processes, production technologies and ICT support.

As a result, ManuBuild is providing the industry with valuable knowledge for the next generation of building manufacturing systems. The outputs from the project include new methods of construction, greater control of the process and marrying good architectural practice with off-site construction. These are gradually maturing and finding their final shape also for industrial demonstrations and usage. For more information, please visit the website

[www.manubuild.org](http://www.manubuild.org)



*Sections of movable walls developed by Corus*



# OSC Awards



## The winners are...



The second OSC Magazine Awards, held during Interbuild08, saw the great and the good of the offsite construction world gather to celebrate the cream of the prefabricated crop. Nearly 300 people made it through a slightly surreal Birmingham snow storm to the National Motorcycle Museum for a night of food, drink and trophies. The judges made a few controversial choices this year - you will find a snapshot of all the winning schemes over the next few pages with a larger piece on the Gold Award Winner. A warm thanks to everybody that attended the evening and a huge shout out to all of our sponsors and supporters, without whom these kind of nights never happen. Only 12 months to the 2009 Awards, look out for the call for entries information soon.

Gary Ramsay, Editor

### Best Use of Concrete: Winner - Buchan Concrete Solutions



#### Medlock Primary School, Manchester



In replacing the original Victorian school building, the design of Medlock School aimed to deliver a bold contemporary design for the 21st century that demonstrates Manchester City Council's commitment to supporting and delivering education across the city. The design combines a Primary School and Sure Start Children's Centre. The three-storey educational facility has 12 classrooms and associated resource areas on upper ground and first floors.

Sponsored by: Premier Interlink

### Best Use of Steel: Winner - Bourne Off-Site



#### The Moor Car Park



Bourne Parking and its sister company Bourne Off-Site Solutions were selected to undertake this important project as the first part of a £700M scheme designed to regenerate The Moor area of Sheffield. Whilst the construction of the car park structure was a challenge in itself, the architectural design for the cladding solution was the most difficult aspect of this project to achieve. The project was architecturally designed to be an exemplar scheme for the area, which would signify the further development to come.

Sponsored by: Materials KTN

OFFSITECONSTRUCTIONMAGAZINE

# Awards Dinner 2009

Get ready for the future. Construction Awards will once again celebrate everything excellent, innovative and outstanding across this exciting and dynamic sector of the construction industry. The event will also offer a quality networking opportunity for the cream of the offsite world in a relaxed and enjoyable environment.

## Get Your Thinking Cap On Call for Award Entries.....

- Best Use of Concrete
- Best Use of Steel
- Best Use of Timber
- Best Office/Healthcare Project
- Best Office/Education Project
- Best Office/Housing Project
- Best Commercial/Retail/Industrial Project
- Best Multi-Occupancy Dwelling
- Best Demonstration of Sustainability
- Best Product or System
- Gold Award for Overall Offsite Excellence

Deadline for Entries:  
24 July 2009

ENTER ONLINE  
You can download an entry form by visiting [www.buildoffsite.com](http://www.buildoffsite.com).  
Please email or post your entry form and supporting information, including images to:  
Awards Manager, c/o The Offsite Park, Building 10,  
Hempage Industrial Estate, Huddersfield, West Yorkshire, H1 2  
Email: [awards@buildoffsite.com](mailto:awards@buildoffsite.com) Tel: 01484 511111

## Best Use of Timber: Winner – Modular UK



### Margam Park



Neath Port Talbot County Council wanted to build an educational Discovery Centre in the heart of Margam Park in Port Talbot, to fit into the surrounding landscape. The concept was to use a mix of traditional and modular construction techniques to deliver a timber building comprising accommodation, recreation and education facilities. Modular construction was earmarked for the classroom and kitchen blocks, with timber panel and traditional construction planned for the other areas.

Sponsored by: Comblift

## Best Housing Project: Winner – Proctor & Matthews Architects



### Newhall Homes



Proctor & Matthews Architects have designed 78 new homes at Newhall, Harlow in response to the challenge of building quality eco-friendly, cutting edge housing stock. The intention of the design team has been to develop an architectural vocabulary which combines a contemporary aesthetic and a response to 21st Century living patterns with sensitivity to local materials, colour and texture. Using the Spaceover modular system, the aim is to break the boundary between internal and external environments, increasing the amount of living space and integrating the home with the surrounding landscape.

Sponsored by: NorDan

## Best Health Project: Winner – Yorkon



### New Emergency Unit, North Tees



The new Emergency Assessment Unit, University Hospital of North Tees, has benefited from an innovative modular approach to construction. It was selected by Interserve and the Hospital Trust to meet a very tight project programme, whilst maintaining a high construction standard and interior quality. The project was handed over to the Trust defect-free, on-time and on-budget. Since completion, the Trust has achieved the highest level of activity of any ward accommodation in the hospital.

Sponsored by: Modern Built Environment KTN

## Best Education Project: Winner – Urban Salon Ltd



### Falmouth School



Falmouth School is an 11-18 co-educational comprehensive school of approximately 1,200 students and 70 teaching staff. The project is the extension and refurbishment of the school's existing 1960s design and technology block, adding a dedicated design studio for flexible teaching and creating a beacon for the school. The students worked with the structural engineers and architects to assess the environmental impact of a number of different structural systems. Timber was chosen because of its ecological benefits as well as being a renewable material.

Sponsored by: BRE

## Best Product: Winner – ModCell



### Straw & Hemp Structural Panels



This innovative, offsite-manufactured wall and roof cladding system, can be quickly and efficiently installed and is the first product to make large-scale, carbon-negative building a commercial reality. The ModCell system utilises the excellent thermal insulation qualities of straw bale and hemp construction to form prefabricated panels made in a local Flying Factory. ModCell allows super-insulated, high-performance, low energy 'passive' buildings to be built using renewable, locally sourced, carbon sequestering materials. ModCell is designed for use in a wide range of building sectors.

Sponsored by: Mtech Group



## Best Commercial/Retail/Industrial Project: Winner – BAA



### Heathrow Terminal 5



Terminal 5 was conceived and created to transform the experience of passengers at Heathrow Airport. Completed on-time and on-budget in 2008, the \$4.3bn complex programme included two major terminal buildings, an air traffic control tower plus many others side-schemes. Almost 60 per cent of manufacturing was done offsite. This enabled the team to manage risks effectively in terms of quality, timescale, cost and impact on the environment. The project also demonstrated a pioneering approach to the management of project data and construction logistics.

Sponsored by: OSC Magazine & Sustain'



## Best Multi-Occupancy Dwelling: Winner – Hanson Structherm



### Park Central



Park Central is a mixed-use development covering a 20.75 ha site located on a brownfield site in central Birmingham. The project consists of a combination of private and social housing, retail, commercial, leisure and open park land. The project's total duration is 13 years with completion planned for 2014. Working in partnership with Crest Nicholson and Optima Community Association, Structherm's Fastbuild will transform the outlook of the area by utilising the benefits achieved from recycling the waste material produced from the demolition of the previous buildings.

Sponsored by: Van Elle



## Best Demonstration of Sustainability: Winner – Gaunt Francis Architects



### Barratt Green House



The Barratt Green House is a family home designed to provide a solution to the need for low energy, high density volume housing of the future and is a direct response to the government's target for zero carbon housing. It is also the first home to be built by a mainstream housebuilder to be so environmentally friendly that it meets the criteria for zero stamp duty and is the first to achieve Level 6 of the Code for Sustainable Homes (CSH). *Collecting the Award on behalf of Gaunt Francis Architects - Philip Kitson of sponsors Ruukki*

Sponsored by: Ruukki





## Who are we?

### Buildoffsite is

- exclusively and uniquely focused on off-site construction solutions
- a network of members and associates
- a group that includes leading clients, designers, constructors, manufacturers and others
- supported by Government
- focused on a shared commitment to work for a better construction industry through the increased use of quality off-site solutions
- committed to continuous improvement
- committed to doing things that make a difference.

### Buildoffsite is not

- a trade association – but we do work with trade, research and other organisations who share our ambitions
- an apologist for off-site solutions
- opposed to traditional site based construction
- a “talking shop”
- creating Bureaucracies.

## What we are working to achieve

- a step-change in the take up of off-site solutions across all sectors of the UK construction industry
- an industry wide appreciation of the quality productivity and sustainability benefits as a result of the effective and intelligent use of off-site solution
- a robust business case for off-site solutions
- a ten-fold increase in the current size of the market for off-site solutions by 2020.

## What we do

### Four main streams

- challenging... the industry to improve quality and value
- promoting... excellence in off-site enabled construction solutions
- developing... the tools to demonstrate value
- connecting... clients and suppliers.

### Examples

- business-to-business networking
- ‘meet the client’ events
- virtual supply chain networking with clients
- technology awareness and promotional visits
- case studies
- tools to demonstrate the business value of off-site solutions
- facilitating collaboration on R&D
- workshops to focus on the construction needs of specific sectors
- market surveys
- product certification
- focus on major projects including the 2012 Olympics.

## Members

AcerMetric  
acumen 7  
Anglian Water  
Apex Wiring  
Armstrong  
Arup  
BAA  
Bau How  
BBA  
Black Architecture  
Bourne Steel  
Britspace  
Bryden Wood  
Buchan Concrete Solutions  
Caledonian  
Capita Symonds  
Chiltern Timber Structures  
CIRIA  
Construction Skills  
Corus  
Costain  
Crown House Technologies  
DeBoer  
Dept for Business, Enterprise & Regulatory Reform  
ERT for Construction  
Fleming Developments Ltd  
Framing Solutions  
Fusion Developments Ltd  
Gateway Bathroom Pods  
GlaxoSmithKline  
HM Prison Service  
Howick  
Innovare  
Kier Partnership Homes  
Laidlaw  
Laing O'Rourke  
Lloyd's Register EMEA  
Mike Jackson Associates  
Modar (Caledonian)  
Morgan Sindall plc  
NG Bailey  
Ormandy  
Portakabin  
Roger Bullivant  
Sandwood  
SEGRO (Slough Estates)  
Southern Housing Group  
Tarmac  
Teknologisk Institut  
Terrapin  
The Concrete Centre  
The Staircase Group  
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