

JUNE 2007

## Editorial

The UK's construction market is worth approximately £100 billion a year and is one of our largest and most significant industries. Collectively the public sector is the industries largest customer accounting for 40% of all construction activity. This £40 billion a year investment creates and sustains the buildings and infrastructure that support our public services including schools, hospitals, social housing, roads, and so on. These buildings and structures impact on all of our lives and play a vital part in supporting a sustainable economy. The level of this investment has grown substantially over recent years in response to increases in Government investment in public services.

In theory this sustained year on year investment should mean that public sector clients develop the expertise to achieve best practice in construction procurement and are able to work with suppliers to drive continuous improvement and value for money. Unfortunately for much of the public sector the theory breaks down because significant elements of the build programme are managed by decision takers who are in effect one off clients who are unlikely to have access to the same level of experience and expertise as those clients who regularly invest in construction. This "fragmentation" of public sector client responsibility is to a considerable extent a direct consequence of Government policy which is tending to distance Whitehall from the detailed decision taking process. This situation is unlikely to change.

In the private sector the demands of competition and in some cases "regulation" will tend to ensure that investment in new built assets will go ahead only if the business case stacks up. For those clients that invest regularly in built assets a decision to invest will be supported by a clear and precise project brief together with a finite budget and sustained pressure to freeze the

detail of the projects as soon as possible. It would also be conventional practice for clients to work with suppliers (both designers and constructors) to identify and then eliminate waste in all its forms and to achieve continuous improvement based on the learning and innovations from previous projects and also developments in industry best practices.

The circumstances of much of the public sector means that all too often year on year investments in new construction does not lead to the economies, increased value and continuous improvement that is considered normal for repeat clients. This difference is not a good thing either for the construction industry or for taxpayers. The challenge...and it is a big challenge... is what can be done to help bridge this gap and specifically what, if anything, Buildoffsite can do to help make a difference?

The reason I believe that Buildoffsite can play a part is because through our Membership we have access to some of the UK's most innovative construction clients. Clients that in seeking continuous improvement have increasingly turned to off-site solutions to achieve step-change in quality, productivity, sustainability and value for money. Clients that favour off-site solutions because they make business sense! These clients have accumulated hard won expertise that often means that year on year their buildings are delivered faster, constructed more productively, generate less waste and are often achieved at lower cost. If public sector clients were able to access and apply this knowledge we would all be better off.

### **Is this pure fantasy...perhaps not.**

On 28 March I chaired what I believe may have been a unique event. Hosted and enabled by DTI's Construction Sector Unit, senior construction client representatives from a dozen Whitehall Departments and Agencies

the Office of Government Commerce came together with opposite numbers from the private sector to exchange experiences on the use of off-site solutions to achieve better, more effective construction solutions. In itself this was a remarkable event but the challenge now is to see if it is possible to translate what was essentially a networking event focusing on investment programmes and the identification of best procurement practice into a structured knowledge transfer programme. The group is meeting again on 11 June when we will pick up the debate and take stock of how we might collectively progress the collaboration.

I am absolutely delighted that Buildoffsite was asked to take on the role of facilitating this debate and I am really very hopeful that something will emerge that will significantly benefit UK plc. Watch this space.....

*Richard Ogden, Chairman Buildoffsite*

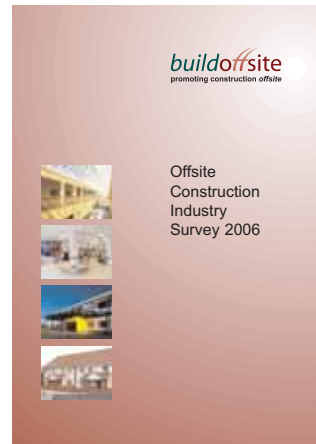
We are pleased to welcome Apex Wiring who have very recently joined Buildoffsite. Apex is the latest in a growing number of leading M & E suppliers within our Membership.



Durham based Apex Wiring Solutions manufacture all product in their purpose built 100,000 sq foot facility. They supply pre engineered wiring solutions into a number of market sectors including healthcare, education, commercial, hotels, residential and offsite manufacturing.

Apex have recently launched their eVo range of products which replace the traditional wiring of electrical sub circuits reducing installation time by up to 70%.

The current group turnover is £30 million sterling.



## OFFSITE CONSTRUCTION INDUSTRY SURVEY 2006

How many of the following questions can you answer?

- What is the annual value of the off-site construction market in the UK?
- What are the main areas of innovation within off-site construction?
- Who are the main suppliers to the UK off-site construction market and what do they supply?
- Who are the primary points of contact?

**If the answers to the above questions are relevant to your immediate business needs or to your future business strategy then you need the information contained in the OFF-SITE CONSTRUCTION INDUSTRY SURVEY 2006**

### BACKGROUND

The market for off-site construction solutions is growing rapidly as more and more clients and constructors discover that off-site solutions have the potential to achieve step-change improvements in terms of:

- Predictability of time and cost
- Productivity on site
- Significant reductions in construction waste and reliance on landfill

- Reduced impact on the local and wider environment
- Quality of construction
- Substantial improvements in health and safety
- Value for money

This is not to say that off-site solutions are always the right solution and they will not work for every client or for every project. Off-site solutions work best where the client is engaged in construction on a regular basis and where the design and construction team have the opportunity to build their expertise in the optimum use of off-site solutions through repetition. Exploitation of the benefits of off-site solutions requires something of a sea-change in design and construction processes in favour of integrated design and construction and in particular the adoption of principles involving “design for manufacture” and “construction as a manufacturing process”.

The supply side for off-site solutions is highly fragmented and having access to reliable information on the size, rate of growth and composition of the rapidly expanding off-site industry is an essential strategic and business requirement.

## THE SURVEY

With the off-site market growing so rapidly it can be a challenge for even well informed clients and constructors to keep up to date with product and system developments and also to track who is supplying what into the UK market. It is similarly difficult to assess the overall size of the UK market for off-site solutions.

During 2006 Buildoffsite commissioned an extensive survey of those companies supplying off-site construction products to the UK market. The survey is the second of a series of market reviews undertaken by Buildoffsite in the UK and involved gathering information from almost 350 suppliers and trade/research associations with particular emphasis on the current position of innovation within the off-site industry. At least 60 of these organisations have European or

International links. This research is unmatched by any other part of the industry and brought to you by Buildoffsite.

The survey was carried out by the Mtech Group with support from Loughborough University.

In commissioning the survey Buildoffsite, as the lead organisation for the promotion of quality and value for money off-site solutions, had set out a number of objectives:

- To arrive at the best possible estimate of the value of the overall off-site construction market in the UK
- To identify developments in innovative off-site applications including:
  - Identifying key sub-sectors of innovative applications
  - Identifying key suppliers for each of these sub-sectors
  - Identifying the estimated rates of growth in the value of the off-site market in the short term (2007)
  - Identifying the estimated value of key sectors of the off-site market place
- To establish base-line market data to be used by Buildoffsite to plan future surveys to track market growth and to help shape Buildoffsite’s strategy and work-programme. Over the next couple of months Buildoffsite, in discussion with its Members and Associate Members will undertake the preparatory work to establish how its 2007 Survey can be structured to provide more information on developments in the market place including, growth in off-site within individual market/client sectors, information on new investment in additional manufacturing capacity, and the determination of value on a consistent basis.

### Key Findings from the Survey:

- The total value of the UK off-site construction solutions is estimated at approximately £6 billion
- The value of innovative off-site solutions is estimated at approximately £1.5 billion with

approximately £4.5 billion of traditional forms of off-site construction.

- The Survey includes information on the following sub-sectors of innovative off-site construction:
  - complete volumetric modules
  - Foundation and substructures
  - Superstructure: Pre-cast Concrete
  - Superstructure: SIPs
  - Superstructure: Light Steel Frame
  - Superstructure: Timber Frame
  - Superstructure: Composites
  - Building Envelope
  - Building Services: Bathrooms and Kitchen Pods
  - Building Services: M&E and Plant Room
  - Special Structures
  
- Strong growth is taking place within all sub-sectors of innovative off-site construction. Depending on the particular sub-sectors levels of annual growth in sales is estimated in the range of 8% to 75%.
- Information on 346 companies has been included in the survey of innovative off-site solutions.

*This unique Report commissioned by Buildoffsite is now available , priced £400 plus VAT from: Buildoffsite, Classic House, 174-180 Old Street, London, EC1V 9BP, email [anna.whiting@buildoffsite.com](mailto:anna.whiting@buildoffsite.com)*



## **BUILDOFFSITE/LLOYDS CERTIFICATION SCHEME**

As previously reported Buildoffsite has teamed up with Lloyds Register EMEA to identify the certification requirements that need to be in place to ensure compliance with the totality of client requirements relating to the design, manufacture and installation of off-site solutions to satisfy client requirements.

In developing this scheme Lloyds are following the approach taken in relation to their schemes already developed and operating in the utilities market sectors.

At its highest management level it is a risk based competency assessment scheme for organisations involved in the provision of services within the offsite construction arena.

In practice the Buildoffsite Registration Scheme is a process based assessment scheme designed to benchmark offsite construction organisations against best practice in terms of competency, methodology and safety and will serve as a vehicle for the standardisation of best practice across the offsite sector of the construction industry.

A pilot is currently underway to trial the draft certification scheme involving Terrapin. This trial stage is likely to be completed by the Summer.

This scheme builds on Terrapin's compliance with ISO 9000 and our extensive range of product certificates. The trial stage has already delivered considerable benefits to Terrapin in identifying opportunities for innovation within our already robust procedures which will be invaluable in supporting our drive for continuous improvement in the products and services we provide to clients. I am convinced that the Buildoffsite/Lloyds certification scheme will represent a significant step forward for the successful take up of off –site construction methods by many more clients as it essentially demonstrates the management of risk and integrates product and process control.

Discussions on the scheme and the additional benefits it delivers are taking place with a number of leading clients and suppliers.

A description of the scheme together with FAQs is available from the Buildoffsite Website [www.buildoffsite.co](http://www.buildoffsite.co)

## **A date for your diary – Tuesday 12 June**

*A programme of short presentations and discussions on the scheme is being held at the offices of the British Board of Agrément, Bucknalls Lane, Garston, Watford WD25 9BA on Tuesday 12 June. Admission is free but places need to be booked in advance.*

*For more information and to make register your place contact: Emma Freeman at BBA on 01923 665300, email [efreeman@bba.star.co.uk](mailto:efreeman@bba.star.co.uk)*

## **SPOTLIGHT ON DISCOVERING OFFSITE**

### **Visit to Bailey Off-Site**



*prefabricated M&E for the NHS*

The ninth in Buildoffsite's series of Discovering Offsite visits took place at NG Bailey's new £5 million off-site manufacturing facility in Bradford on Wednesday 23 May. NG Bailey is one of the construction industry's leading M&E manufacturers and suppliers with an annual turnover in excess of £600million. The off-site manufacturing Division currently accounts for a modest proportion of overall turnover but volumes are growing rapidly with a particular focus on the health, education and residential markets. The visit was hosted by Gary Elliott and Steve Ainsworth.

The purpose of Discovering Offsite visits is to provide an opportunity for those wishing to learn more about innovations in off-site construction methods and also to experience at first hand how high technology manufacturing is setting new

benchmarks for quality, value added and sustainability of the UK construction industry.

These visits also provide an unmatched opportunity for networking and discussion on developments within the industry and on opportunities for additional innovation and collaboration.

Attendance at Discovering Offsite visits is free to Members of Buildoffsite with a modest charge applying to non-Members.

Wednesday's visit to NG Bailey provided a fascinating showcase of integrated design and manufacturing practices together with an overview of developments in the services being provided for customers. The visit also provided an opportunity for some invaluable business to business discussions and identified a number of opportunities for collaboration between those attending. Hopefully we will be able to report on the practical consequences of some of these collaborations in a future Newsletter.



## **FUTURE DISCOVERING OFFSITE EVENTS**

British Precast will be holding a Discovering off-site tour in collaboration with Roger Bullivant and Bison.

The British Precast day features visits to two leading edge companies Roger Bullivant and Bison Concrete Products – the two featured plants are within a close distance. In addition to factory tours there will be short updates on sector innovations and projects giving a rounded view of this £2.5 billion sector. The tour will run from Bison at Swadlincote with a coach trip to Bullivant.



*Bison at Swadlincote*

Bison's plant is the most advanced hollowcore flooring plant in the world featuring some remarkable innovations. Alongside the main building which is over 400 metres long are two lines for stairs and panels. Recent investment at the plant totals £35 million.

Roger Bullivant at Drakelow is a large site manufacturing precast piles, foundation systems and panels. Bullivant is renowned for its commitment to product innovation. In addition to some new product developments visitors will also be updated on the recent acquisition of Buchan Concrete Solutions from AMEC.

### **HOSTING FUTURE VISITS**

We are now planning the Autumn Programme of Discovering Offsite visits. If your company or organisation would like to host a visit then we would like to hear from you. In the first instance you should get in contact with Anna Whiting the Buildoffsite Administrator on 0207 549 3306 or email [anna.whiting@buildoffsite.com](mailto:anna.whiting@buildoffsite.com)



### **BEX**

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The third annual Building Exchange (BEX) will be held at the new Hilton Hotel in Valencia from the 17-20 June 2007. The event is an international residential summit bringing together the property and construction supply chain. It offers a unique opportunity to network with innovative specifiers who are at the leading edge of some of the world's largest construction projects with the programme now complete the highlights for buildoffsite members include:

Buildoffsite have a dedicated workshop at BEX. Sponsored by Apex Wiring Solutions, the workshop features a panel of Buildoffsite members, Martin Wood Bryden Wood Associates, Gary Sullivan Wilson James and Stuart Hylton Apex Wiring Solutions. The Session chaired by Richard Ogden will look at the global reality of offsite solutions & their industry potential.

Richard Ogden will also lead a session at BEX looking at International Procurement & Global Sourcing-The long term strategy to procure materials: Innovation & sustainability v cost and delivery. Guest Speakers in the session are Peter Horrix of House of Fraser and John Wheaton of Simons GPS.

Finally Dr. Behrokh Khoshnevis will be giving a presentation on a revolutionary robotic technology with the potential to transform the current thinking on modern methods of construction at BEX in Valencia on the 19 June 2007. Contour Crafting (CC) is a process that has been developed and patented by Professor Khoshnevis and his teams of researchers at the University of Southern California. It is a layered fabrication technology which has great potential for automating the construction of whole structures as well as sub-components. Using this process, a single house or a colony of houses, each with possibly a different design, may be automatically constructed in a single run, whilst embedding in each house all the conduits for electrical, plumbing and air-conditioning.



*The City of Arts and Sciences, Valencia - Designed by Santiago Calatrava*

To find out more about what will be happening at BEX in Valencia , please log onto the website at [www.b-e-x.com](http://www.b-e-x.com) or call Michelle Anthony on: 0207 4032773

## OFFSITE 2007

The OFFSITE 2007 Exhibition and Conference Event takes place at the Building Research Establishment's Garston Campus from 11 – 14 June inclusive. This is the third time that BRE has hosted this event with this year's exhibition the biggest ever.

Themed conferences take place on 12, 13 and 14 June focusing respectively on off-site solutions for the Housing, Education and Health Sectors.

The BRE Innovation Park is continuing to develop as one of the UK's leading Centres for the demonstration of innovative construction technologies. The Park now features 7 full size demonstration structures featuring innovative off-site construction techniques which also deliver low energy performance, renewable

energy systems and intelligent building systems. These structures represent a major resource for those who wish to experience the future of construction practice and is a "must see" for all who visit BRE.

Information on OFFSITE 2007 is available on: [www.offsite2007.com](http://www.offsite2007.com)

Buildoffsite will be exhibiting at OFFSITE 2007 and is also hosting a number of high level debates to promote the business case for offsite solutions among leading clients and stakeholders with a particular focus on key sectors including housing and health.



## Laing O'Rourke invests in precast

Laing O'Rourke is planning to transform a derelict colliery in Nottinghamshire into a £100 million precast concrete plant. The firm has submitted plans for the development as it looks to expand its off-site manufacturing division to offer a complete range of factory made building components.

Kemper Booher, Head of manufacturing business unit at O'Rourke said: *"We want our design partners to be more efficient. If they can take a standard column and or beam design from a component catalogue, it will speed up delivery. This is just the beginning. We are developing a complete pre-assembled building component set. If we are in control of our manufacturing, we can deliver more effectively as we are not open to elements beyond our control. Increasing efficiency means project costs will come down and so will lead times."*

The 84 ha site will eventually be home to the most technologically advanced precast factory in the UK. It will contain high-speed and bespoke carousels capable of producing 100,000 cu m of concrete a year to supply structural, architectural and civils precast for all Laing O'Rourke divisions. The firm also expects to supply other contractors.

Mr Booher said: *"A lot of companies rely on traditional methods that aren't always the best way. This plant will make us more efficient and lower production costs while also improving health and safety, not least because it will remove the need to have so much scaffolding on site."*

The firm expects to boost the turnover of its precast concrete arm from £20 million to £65 million when the facility is running at its peak in five years' time. The turnover of the manufacturing business unit, which includes stone products firm Vetter and Crown House Off-site M&E, will increase from £35 million to £100 million

*This article was written by Stuart Gannon and originally appeared in Construction News, 17 May 2007*



## Buildoffsite members

AcerMetric  
acumen 7  
Amec  
Anglian Water  
Apex Wiring Solutions  
Apollo Adhesives  
Armstrong  
Arup  
B&Q  
BAA  
Badekabiner  
BBA  
Black Architecture  
Bovis Lend Lease  
Bourne Steel  
Britspace  
Bryden Wood  
Caledonian  
Cartwright Pickard  
CIRIA

Corus  
Costain  
Crown House  
Dawkins & Co  
DTI  
Elliott  
Framing Solutions  
GlaxoSmithKline  
Kier Partnership Homes  
Laing O'Rourke  
Lloyd's Register EMEA  
Loughborough University  
Mansell  
Mike Jackson Associates  
MTech  
NG Bailey  
Ormandy  
Roger Bullivant  
Sandwood  
Siemens  
Slough Estates

Somerfield  
Southern Housing Group  
Tarmac  
Terrapin  
Tesco  
The Concrete Centre  
Van Elle  
White Young Green  
Wilson James  
Yorkon  
3DM Construction Technologies

### Associate Members

BRE  
British Precast  
BSRIA  
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HSE  
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