

## NEWSLETTER – MAY 2015

*Promoting construction offsite*



*Richard Ogden  
Chairman*

As you read this Newsletter, we will probably be just a day or so away from the 2015 General Election that takes place on Thursday 7 May.

You may also have seen the political manifestos which may or may not have things to say that will impact on the performance and fortunes of the construction market. I suspect that these indications of policy – I won't call them commitments – will be couched only in the most general and transitory terms. Later in this piece I am going to offer my own short construction prospectus for an incoming government.

We have had 5 years of coalition government and short of a political earthquake it looks very much as if the UK has now entered a period when the certainty of one or other of the two big political groups being in government is a thing of the past and coalition or coalitions of some form or another will become the new business as normal. We have witnessed a revolution but I suspect that few of us will have noted the sea change. In a real sense what has been the political reality for much of the democratic world for many years has now finally arrived in the UK. For some that may be a very uncomfortable situation requiring as it inevitably does a culture and mindset that embraces compromise, collaboration and working together rather than the pursuit of a single vision. The political and communication skills needed to operate effectively in this environment will be different and challenging.

Notwithstanding how the political parties perform I think we can be reasonably certain that the performance of the economy will still be the issue

that will dominate political and economic decision taking. This means that whoever happens to have the lease on Downing Street on 8 May will have no option but to continue with the struggle to hold back public spending whilst not doing anything that risks derailing a slowly recovering economy. Given the proportion of economic life represented by public spending that clearly makes for a challenging balancing act with scope for fresh initiatives inevitably constrained.

From a construction perspective perhaps business as usual is not a bad place to be. The construction economy is stronger than it was a couple of years ago and indeed in some parts of the UK and in particular in the South East demand is very strong – perhaps unsustainably strong.

Some of the factors that have been in play over recent years are likely to continue. The influx of capital into the UK reflects self-interested decision taking by sovereign wealth, pension funds and other international investors looking for a safe haven for their money in an increasingly uncertain world. Much of this capital is available to invest in UK infrastructure and built assets provided the long term returns are good enough. With the cost of money being so cheap acquiring built assets is looking to be a very smart long term investment.

The ongoing weaknesses in parts of the Euro zone is similarly encouraging capital to flow into the UK and as we know is being accompanied by a considerable influx of people looking to make their homes in the UK to pursue careers and make better lives for themselves. Inevitably it is London and the major Metropolitan Cities that are the main focus for this component of inward migration and in its own way this provides an additional engine of growth for parts of our economy with concomitant demand for additional homes and infrastructure. A classic case of success breeding success even if the environmental impact and sustainability implications seem to be running in a different direction.

Until the wider Eurozone economy improves this situation is unlikely to change. The collateral issue is

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that for the most part it will be young and very able people who will be making their homes in the UK which itself will sooner rather than later increase the demand for more homes, schools, hospitals, transport and so on. Wholly inevitable and totally predictable but a challenge that I am not aware any politician has started to engage with.

Clearly whatever Government is in place after the election will inherit a built environment which is in need of major investment driven in part by the very factors that are accountable for the relative strength of the UK economy. The shopping list is going to be substantial and the price tag will run into billions. A need for more homes at a level not seen since the late 1940s, a corresponding need for a matching increase in health spending and education, a massive increase in water supply and waste water handling, increased power generation and distribution capacity, an expansion in transport infrastructure and so on. This would be an incredible challenge if it was taking place within the context of entirely new communities but it isn't. It is taking place within the context of cities and communities where the infrastructure and services were laid out more than 100 years ago. Does this make a difference – you bet your life it does. Just look at the care, complexity and cost involved in delivering Crossrail. That is what it takes to develop the infrastructure needed to enable an old congested city to function as effectively as possible as a modern city.

OK let me offer some thoughts on a possible Government prospectus for a construction industry – the sort of big picture things that a Government could usefully do to significantly improve the way that the industry operates. As I see it the key point is that Government and hopefully the entire political class needs to understand that the construction industry is a vital, strategic industry. They need to understand that few if any of their policies will be achieved unless the industry is performing as effectively as possible. We need recognition that construction is an industry that merits being taken seriously and an industry that Government wants to engage with. I simply fail to understand why Governments have decided that it is entirely reasonable not to have a full time Construction Minister. I am not criticising those politicians who have been managing a mixed portfolio which

happens to include the construction brief - I just happen to believe that the industry will not recognise that it is really important with a nationally important job of work to do until Government demonstrably treats it with recognition and respect. It's a talismanic thing...

There is a national priority for the industry to become substantially more productive at a pace that small incremental improvements will never deliver. Simply looking for temporary sticking plaster measures such as importing labour to meet local shortages is not the answer. The answer needs to be a root and branch revolution in the UK's approach to construction driven by a client led determination that the industry must do better. Traditional methods of construction delivery are inherently wasteful with multiple layers of management with complicated and inefficient methods of working on site that ensure and perpetuate some of the lowest productivity figures in any industry. These performance figures will not – indeed cannot change – without challenging and changing the delivery processes. Curiously these are the very processes that arguably have been developed over decades to protect client interests and ensure competition in supply chains. The question that needs to be asked now is how to increase the productivity of the industry to the sort of levels achieved by other manufacturing sectors as a matter of course – not the exception.

Government whether it knows it or not has the vested interest in driving change – not in some academic sense – but because poor levels of productivity inevitably lead to excessive spending and therefore we as taxpayers all receive much less value than we deserve. Put simply this means that notwithstanding other factors the money available inevitably delivers fewer hospitals, fewer schools, fewer homes and much less in the way of essential infrastructure. The ongoing revenue implications of the excessive borrowing ensure that the cost implications of tolerating poor productivity and performance will be with us for generations to come. At a time of almost unmatched need for investment in construction simply sticking with the same old same old delivery methods makes no sense

Government has to show some real leadership in driving the pace and direction of change. Government can and should set out what it wants to

achieve and then should be working with suppliers to identify practical ways to improve productivity. The targets should be challenging and the supply side should be encouraged to ask why the targets cannot be met instead of seeking to defend the status quo.

Hand in glove with a truly radical programme is the need to deliver the real skills that a radicalised industry would need. These will not be the same skills that the traditional industry relies on. They will be the skills that a new industry needs. Again I am not claiming that this will be easy. I have been in this industry long enough to understand the power and influence of vested interest. Government and it really is only Government that has the power to do this job needs to challenge that vested interest. Government has to learn that it needs to be brave to help bring about a greater good.

Not surprisingly my vision of a modern productive construction industry anticipates a substantially increased role for the design and construction process to accept and indeed demand that the starting point in any new build project should involve the optimisation of offsite construction methods. I do not want this shift in practice to be driven by Government requirement. I do want it to be driven by the availability of offsite solutions that demonstrably offer better value, take cost and waste out of the construction process whilst enabling quality design and cost of ownership performance that is both honest and accurate.

Buildoffsite will continue to play its part in supporting awareness, knowledge transfer and challenging the supply side to do more and better. One General Election will not change our vision and plans but a Government that understands both why construction matters and also the need for a decisive programme of challenge would make for a very useful start.

### Additional appointments to the Buildoffsite Executive Group

We are delighted to announce the appointment of Andrew Dix, Bill Hughes and John Frankiewicz to the Buildoffsite Executive Group, whose biographies follow.

Welcoming the additional appointments, Buildoffsite Chairman Richard Ogden said that the appointment of individuals of exceptional talent and wide ranging experience would ensure that Buildoffsite develops its work programme to support the case for the increased use of offsite solutions in ways that engage with the emerging needs of the industry, its clients and its customers.

#### Andy Dix

Andy Dix is currently the Managing Director of Charcon Construction Solutions, which was established in June 2009 as a joint venture with Aggregate Industries Limited. He is also President of the British Precast Concrete Federation.



Andy Dix

Andy began his career with Marshall plc, enjoying 21 successful years working in commercial, sales, production and finance roles, before becoming Managing Director of its subsidiary companies. He then set up a paving and construction materials company before joining forces with Aggregate Industries in 2005.

He is actively involved in the UK precast concrete industry, as well as the wider construction and house building sector. Andy is also a supportive mentor to students entering the industry and a member of numerous construction related organisations: Fellow of the Chartered Institute of Purchasing and Supply (FCIPS), Board Member – Mineral Products Association (MPA); Board Member – BIBM (the European Federation of the Precast Concrete Industry).

#### Bill Hughes

Head of Real Assets, Legal & General Investment Management (LGIM)

In January 2015, Bill was promoted to Head of Real Assets – a new role, under which the company's direct investment capabilities in property and infrastructure have been brought together as one team for the very first time.



Bill Hughes

Joining the business at the end of 2007 as Managing Director of Legal & General Property (LGP), Bill has overseen the doubling of the company's real estate assets under management, growing to £15.5bn as at the end of 2014. He has also headed up the establishment of its lending arm, Commercial Lending Limited (CLL), which has concluded over £1bn of debt deals to date. In the past two years, LGIM's infrastructure team has concluded around £800m of loans.

Before joining L&G, Bill previously held the position of UK Head of Real Estate at RREEF, the Real Estate Fund Management business of Deutsche Bank. Prior to that, Bill was Deputy Managing Director and Head of Research at Schroder Property Investment Management.

In July 2014, Bill became President of the British Property Federation (BPF), a membership organisation devoted to representing the interests of all those involved in real estate ownership and investment in the UK. He is also a member of the UK Green Building Council's (UK-GBC) Board of Trustees.

In 2014, Bill was appointed by Sir Michael Lyons to the Lyons Housing Review panel, an independent review which drew up the road map of the changes to housing and planning policies and practice that are required to increase the housing supply to 200,000 homes a year by 2020.

Additionally, Bill attends both the Bank of England Commercial Property Forum and the Bank of England Residential Property Forum. He is a Member of the Edinburgh University Investment Committee, an Associate of the Society of Investment Professionals and an Honorary Fellow of the College of Estate Management.

### John Frankiewicz

John is currently working on wider issues in the property and construction sector. He expects to take up further NED roles during the course of the year and will lead a new consultancy in the sector. John sits on the editorial board of *Building* magazine and has been a trustee on the board of the UK Green Building Council since it was formed. In January 2016, John will be taking up the role of non-executive director of Willmott Dixon.

Formerly, John was the Divisional Chief Executive of Willmott Dixon Capital Works; the division within Willmott Dixon that is responsible for construction and infrastructure projects across many sectors including commercial, retail, education, leisure, health, housing and retirement accommodation.



John Frankiewicz

For over 25 years, John has played a key role in developing Willmott Dixon as one of the built environment's biggest brands, with a turnover of over £1bn and listed by *The Sunday Times* as the UK's 53rd largest private company. He is a big believer that R&D and innovation are vital to the industry's ability to continue adding value to clients' capital project needs. Under John, Willmott Dixon created a prototype 'health campus of the future' at BRE in Garston utilising the latest assisted living technology, and last year the company rolled out a suite of standardised designs called Sunesis to provide schools, leisure and care home accommodation at up to 30 per cent less cost than traditional design and build models. John oversaw Willmott Dixon's nationwide expansion as a house builder capable of delivering 2,000 units per year, aiming to use new technology to reduce the resource required to build new homes by 10 per cent. John's commitment to sustainable development resulted in Willmott Dixon becoming a carbon neutral business in 2012. Willmott Dixon remains the only major contractor to achieve the Carbon Trust Standard for year-on-year reduction in carbon emissions.

John regularly engages with local authorities to champion issues facing the property and housing sectors. His regional forums on LEPs and Localism saw business leaders join cabinet ministers and local authority CEOs in dialogue on how to create better public/private sector collaboration to generate more housing and inward investment opportunities. John remains a firm believer that local economies and their stakeholders must work together to drive their own growth, and met Lord Heseltine to discuss his 'No Stone Unturned' report on creating opportunities for regional economies.



## Launch of Offsite Management School

# OFFSITE MANAGEMENT SCHOOL

The Offsite Management School was formally launched on 24 March. The School is the output of a collaborative research effort supported with funding from the UK Commission for Employment and Skills. This was the first time that a Government funded innovation support scheme has focused on the use of offsite construction methods.



The School is being developed to support the UK construction industry in learning advanced techniques and management skills that will help the industry to meet the challenges set out in the UK Construction 2025 Strategy. This calls on the industry to construct infrastructure, buildings and homes that are delivered in half the time, cost 33 per cent less to construct and operate and emit 50 per cent less CO<sub>2</sub> and to achieve this step change in a period of just 10 years.

To meet these challenges will require the industry at large to implement fundamental changes in construction products and processes which in turn will require the wholesale adoption of new skills by the supply chain that is fast, effective and efficient.

### What next?

After the initial development phase supported by UKCES the implementation of the School is now being supported by a Partnership that includes Skanska, Carillion, Costain, Laing O'Rourke and Siemens together with knowledge partners Buildoffsite, CITB, Building Research Establishment, Exelin and Total Flow. The Delivery Partner for the School is Action Sustainability.

The School will develop an on-line learning environment that will help suppliers understand more about offsite construction techniques and the implications for design and construction processes, for logistics and long term asset maintenance. It is anticipated that more than 100 business will be engaged with new learning via the School by

September 2015. By the year end the plan is to have 10 major contractors and over 250 suppliers learning through the school, with members subscribing to a BIM training programme. By the end of 2016 it is anticipated that more than 500 suppliers will be learning through the school. A longer term objective is to have a 50 per cent increase in the offsite skills of suppliers by 2020.



The School's on-line resources, e-learning modules, workshops and events will be free of charge to users and will offer suppliers the chance to benchmark their current knowledge of advanced construction and manufacturing techniques and also assess their organisation's management skills. The School's 10 Partner organisations and delivery team are adding to the School's 351 selected web based resources with the aim of ensuring that the School establishes itself as the primary learning hub for offsite construction processes and competencies. Learning will not be limited to web based training. The School has an ambitious plan for 2015 with more than 20 free supplier innovation days and training workshops and a network of expert advisers available to interested companies.

The School plans to establish a network of expert advisers drawn from within the industry who can help Members with practical support. The network of expert advisers is currently under development with a target launch date of September 2015. As part of this development process a robust selection, matching and quality control process will be established to ensure that the adviser network will provide the knowledge and change management experience to help drive effective change in the supply chain.

### Participation in the School

Membership of the School will be open to clients,

contractors, employers and leading suppliers.

Organisations register for free and will complete a self-assessment survey to establish the level of knowledge in their organisation as a starting point. The survey will test the level of knowledge in 13 key areas. The self-assessment is likely to be led by a Director of the company and will include representatives from across the business – it is not testing the individual knowledge of a single person but the "institutional" knowledge of the business as a whole.



The output will be a 10 point Action Plan for the organisation to follow. When the Action Plan has been completed the organisation will be invited to undertake the survey again to track the progress made. It is intended that the Action Plans will provide a prioritised approach for learning for members allowing them to concentrate on learning where knowledge gaps have been identified and in areas which are seen as priorities for their particular area of supply. They are intended as a process of continued knowledge acquisition. Once a plan has been completed the diagnostic is re-taken and a new Action Plan is created. In this way the School is encouraging a process of continual improvement.

### For more information on the Offsite Management School:

The delivery partner for the Offsite Management School is Action Sustainability:  
[www.actionsustainability.com/](http://www.actionsustainability.com/)  
 For more information about Membership and the activities of the School contact David Noel, Action Sustainability: Tel: 0207 697 1963;  
 Email: [david@actionsustainability.co.uk](mailto:david@actionsustainability.co.uk)

### Comparator on the chocks

The UKCES-funded **Comparator** R&D project sponsored by Buildoffsite has now run its formal course and the prototype model that has been developed is now undergoing field testing and due diligence.

The project which was led by Professor Bernard Williams, MD of Buildoffsite member IFPI Ltd, set out to develop a web-enabled model which could assist consultants, suppliers and building employers to compare onsite and offsite alternatives for cost and sustainability at an early stage in the design process. The research team included Chartered QSs BWA, Oxford Brookes University, Lean BIM Strategies and NG Bailey as well as IFPI. The project started back in September 2014 and was completed on 31 March this year.

The IFPI team had already developed a web-enabled model for comparing the cost and sustainability of traditional construction solutions and they agreed to make this tool available for the UKCES project as a template for development of the offsite module.

This base model – called CombiCycle – is designed for use at feasibility stage before designers have become wedded to any one solution in terms of design detail and specification. Using cost analyses of buildings which have been built and analysed CombiCycle can predict in depth the whole-life cost and sustainability of a proposed new building built to the same specification. This Default analysis can then be interrogated to see how it was designed and specified and alternative solutions entered for comparison. A typical results screen is shown below:

Cost Centre	Default	Select Survey Survey_2_23.03.15
Viewing Result Totals	Minimum	Minimum
Quality	Minimum	Minimum
Cost Analysis Period	30 Years	30 Years
Capital	£ 1,602,787	£ 1,493,810
Life-cycle replacement	£ 354,602	£ 354,602
Maintenance	£ 957,726	£ 1,012,542
Cleaning	£ 343,280	£ 343,280
Energy (in occupation)	£ 437,049	£ 611,307
Waste Disposal		
Demolition		
Whole Life Total	£ 3,695,445	£ 3,815,540
Whole life sustainability factors (show/hide)		
Sustainability rating		
Initial sustainability	5.3	5.2
Sustainability Rating	B	B
Replacement sustainability		
Time on Site		
Time on Site (weeks)	55.8	54.1

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IFPI are building up a library of Default analyses for each category of building in each sector e.g. housing, retail and healthcare.

The *Comparator* project set out to expand the functionality of CombiCycle to facilitate comparison of offsite solutions with traditional construction. This involved a complete re-structuring of the original model allowing costed and sustainability-rated offsite assemblies of components to be used instead of selecting individual components as in the conventional solution.

Working with a Steering Group of industry professionals led by Richard Ogden and including representatives from RICS, CIOB and RIBA the research team has carried out a number of case studies using the developing prototype on generic offsite solutions including a housing development, a pharmaceutical building, a warehouse and a volumetric hospital ward; the latter was a particularly arduous task but now completed the model can use the template for any similar solution.

Apart from giving a prediction of the initial and running costs of both onsite and offsite design proposals the model has a wide range of other really useful functions including:

- Lifetime cash flow with DCF option
- Sustainability ratings of components and assemblies (including Green Guide ratings where available)
- Embodied carbon analysis
- Schedule of priced approximate quantities
- Programme time together with impact on preliminary costs
- Energy consumption allowing for usage, climate, controls and conductance of the fabric
- U-values of all enclosing fabric with a warning if selections are non-compliant
- Elemental analysis of cost and sustainability
- User override on all data and quantities

...and all this before “a line has been drawn on paper”!

The development of the model is continuing beyond the funded research stage and Bernard Williams and his team are keen to talk with users and suppliers who would like to test the model and/or provide additional data to make the generic

calibration more reliable.

They are particularly keen to find out more about the effects of volume on productivity where offsite solutions are applied. If all goes to plan the programme will be available commercially by late Summer 2015.

If you would like to help or just learn more about this exciting project Bernard can be contacted at [bernardw@int-fpi.com](mailto:bernardw@int-fpi.com).



*Bernard Williams  
MD of IPFI Ltd*

### Offsite Hub (Scotland)

Edinburgh Napier University was lead partner on the 7 month UK Commission for Employment and Skills (UKCES) funded offsite skills project in Scotland completed on 31 March 2015. The project was an industry and academic collaboration involving CCG (OSM), Stewart Milne Timber Systems (SMTS), Heriot Watt and Edinburgh Napier University to create a Scottish Offsite Construction HUB to act as a centre of expertise, responsible for defining and showcasing skills requirements and ensuring collaboration between professions.



*Robert Hairstans  
Edinburgh Napier  
University*

The project delivered in three key areas:

**Industry specific material:** The industry partners working with the academic partners have created the training material to meet their needs based on a skills audit. CCG have focused on training material for the factory environment to train operators on the factory processes and equipment. Stewart Milne Timber Systems have focused on training material for the site assembly processes to ensure that on-site erectors understand what is required for the safe and quality assured erection of both open and also enhanced closed panel systems. A range of techniques have been employed (animations, videography, written content, mock-up samples, etc)

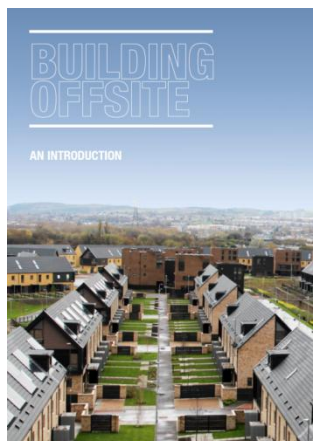


to create this material and consequently the end result comprises a blended learning approach. Significantly the material has been created with employee input via the skills audit process ensuring it is compatible with different skills set levels and approaches to learning. As a result of the approach taken the information created serves both the immediate needs of the industry partners and also a wider need as it can be used to train others within the organisations on topics such as “Design for Manufacture and Assembly” and also for wider outreach and marketing purposes.



Stewart Milne Timber Systems

**Generic training material:** The industry specific content has been repackaged for use as generic training for wider dissemination via the Construction Scotland Innovation Centre (CSIC) in partnership with Architectural Design Scotland (ADS). In a similar manner to the above this has been done via a blended learning approach. An event for the project was hosted by ADS “The Future of Construction in Scotland – Build Offsite” with contributions from the lead industry and academic partners of the project as well as Buildoffsite, Scottish Government and Homes for Scotland. Content from this event was filmed and has been spliced with the industry specific content to produce generic material. This generic film material explaining the “What”,



“Why” and “How” of Offsite has been used to supplement a publication “*Building Offsite: an introduction*”. The publication is a generic information piece which provides an overview of offsite including advantages and disadvantages as well as an explanation of what is meant by building in a factory environment (automation, DFMA, technical considerations, etc) with associated case study material from the industry partners to provide additional substance. The publication can be printed off or can be used as an active pdf document with embedded video and animation content explaining key concepts.

The publication produced will be formally launched at a CSIC Offsite event in June.

**Scaling the Scottish Offsite HUB:** The CSIC event to take place in June 2015 is part of the scaling process. CSIC, Scottish Enterprise and Scottish Development International as well as the wider Leadership Group for the project which includes CITB, Skills Development Scotland, and Colleges Scotland have been engaged throughout the project. As a result of this engagement SE and SDI funded an Offsite Workshop and invited key industry partners to set a future strategy for the CSIC Offsite HUB. The future strategy has now been agreed with the industry partners and through the Leadership Group has secured wider sector buy in. The offsite HUB has direction with good potential through the relevant funding organisation for future support. The event in June will act as a launch of the HUB and the publication of “Building Offsite: an introduction” will be released as an output from the UKCES project to coincide with this.





## Construction Scotland Innovation Centre



CSIC was launched last October and is one of 8 new Innovation Centres established to deliver transformational change across various key industry sectors in Scotland. CSIC is supported by Scottish Funding Council, Scottish Enterprise, Highlands and Islands Enterprise and 11 Scottish University partners. The launch of CSIC was timely and the UKCES project was seen as a way of making skills a key early agenda item. Additionally the remit of the proposal was always to scale the project activity via an Offsite HUB which on completion of the UKCES funded project sits within the CSIC.

The CSIC Offsite HUB will continue to develop practical and interactive learning material to share sector-wide – applying the processes developed through the UKCES project, upskilling the workforce and creating high level training on managing and delivering offsite construction.



*CSIC is based in C.R.Mackintosh's Herald building, Glasgow  
Photo © Finlay McWalter*

and stakeholder understanding and appreciation of the tangible benefits that the use of offsite solutions can deliver. The fundamental challenge for the Hub is to implement an action programme that will address the impediments that get in the way of effecting a step-change in the use of offsite systems to deliver quality homes quickly and at scale whilst offering quality and value superior to that offered by traditional construction methods.



*Dennis Seal*



*Nick Whitehouse*

It is well understood that for many years there has been a massive gap between the current rate of supply of new homes and the generally agreed need to build a minimum of 250,000 homes each year. This gap is most evident in London and the major Metropolitan Areas but not exclusively so. Currently across the UK the shortfall is around 120,000 homes a year and the inevitable consequences of inaction include overcrowding, homelessness, reliance on unfit accommodation, social problems, lack of mobility in the labour market and an inexorable increase in public expenditure.

In part finding a way through this long standing problem requires additional suppliers of homes to enter the market and the take up of new construction methods as an alternative to reliance on traditional means of construction and reliance on the traditional housebuilding industry.

Buildoffsite's role as centre-point for the Offsite Housing Hub initiative is recognised by the Department for Communities and Local Government and the Department for Business.

The Offsite Housing Hub is co-chaired by Dennis Seal and Nick Whitehouse and comprises client and supply side organisations who support the ambition and who wish to play an active part in promoting the increased use of offsite methods. The Hub has

## Update on Buildoffsite Offsite Housing Hub

The Buildoffsite Offsite Housing Hub was set up at the start of 2015 to focus on the advancement of offsite solutions in the UK new build housing market. This requires a sustained effort to improve both the performance and value offered by the offsite supply side and also action to improve client

moved quickly to establish 5 inter-locking work streams comprising:

**Connecting with Clients (and client advisers)** – working to achieve coordinated engagement, communication and relationship building with housing clients and funders to make the case for an increase in the take up of offsite construction methods.

**Knowledge Sharing** – creating knowledge transfer and awareness raising events with clients, offsite suppliers, constructors and other stakeholders.

**Awareness Raising** – developing promotional material to provide clients, professional advisers and others with reference material on what offsite construction covers, the range of solutions, the potential benefits of considering offsite and “how to” advice targeted at project stakeholders on how to get the best out of offsite solutions.

Assembling a set of case studies sourced from the Hub Membership that includes examples of new homes delivered through the use of offsite solutions and which demonstrate value (including whole life value) and quality (including design quality).

**Demonstrating value** – developing a methodology to be able to consistently demonstrate the client/customer value that offsite solutions can deliver/have delivered based on real world examples.

**Promoting the Buildoffsite Offsite Housing Hub** – promoting the role of the Buildoffsite Housing Hub as a focal point for authoritative information and debate on the role of offsite housing solutions in supporting the delivery of new homes at scale. Encouraging additional organisations to join the Buildoffsite Offsite Housing Hub

The work of the Buildoffsite Offsite Housing Hub will have a particular focus on knowledge transfer and awareness raising to promote the benefits of offsite construction methods. To be effective the commercial and project arguments need to be addressed and the supply side needs to play a full part in delivering the build solutions that clients, funders and other stakeholders require.

### Want to get involved?

Information on the work of the Hub is accessible through the Offsite Housing portal of the Buildoffsite website: [www.buildoffsite.com](http://www.buildoffsite.com).

If you want to discuss the opportunity for your company to get involved in the work of the Hub then contact: Carole Chandler at [carole.chandler@buildoffsite.com](mailto:carole.chandler@buildoffsite.com)

### Update on Buildoffsite Offsite Water Hub

The first Buildoffsite Water Hub event of 2015 took place at the Buildoffsite/Mott MacDonald Infrastructure event held at the Institution of Civil Engineers on 21 January this year. The strap-line for this event was “Engineering the Future Today” and this title is very much in tune with the transformation of products and processes that are either underway or planned within parts of the Water Sector.

Mark Enzer (Mott MacDonald) and Steve Fozard (Costain) outlined the role of the Buildoffsite Water Hub and its focus on creating a network of champions to facilitate significant change in the water sector in support of the Construction 2025 targets. This change includes a substantial increase in the use of offsite solutions to deliver increased project and asset value.

### The size of the opportunity

The water companies will spend an estimated £25 billion in the 5-year investment period which started in April 2015 and will have to do this against a background of pressure from the industry regulator to decrease bills to customers in real terms. To meet this challenge requires the water companies to drive significant efficiencies in the cost of delivery, renewal



*Mark Enzer (top) and Paul Jackson (bottom) are jointly chairing the Buildoffsite Water Hub*

and ownership of its asset base. Indeed, when procuring the contractors and consultants to deliver the AMP6 (5 year) investment programme, the requirements on the water companies includes meeting efficiency and commercial targets, delivering lowest possible whole life solutions, reducing carbon and water footprints and improving services for the ultimate customers.

### The work of the Water Hub

The Buildoffsite Water Hub has set out a strategy which addresses: vision; objectives; identification of the key challenges and activities; and the metrics against which the effectiveness of the Water Hub can be assessed.

The vision that is driving the priority activities for the Water Hub calls for a transformation in the delivery of built assets that will support the Construction 2025 targets:

- 33 per cent lower costs
- 50 per cent faster delivery
- 50 per cent lower emissions
- 50 per cent improvement in exports

The Buildoffsite Water Hub will operate in a way that is both collegiate and brandless. It will not represent any single stakeholder group but will seek to deliver additional value to the client/customer community. The general approach will be to create a network of champions to facilitate transformation within the sector. This approach is based on the premise that leadership and collaboration between influential cross-industry change agents is likely to be the most rapid and effective way to bring about and to sustain new ways of working including the exploitation of offsite solutions.

In order to grow the network of champions, the Buildoffsite Water Hub will be organising events to showcase best practice. A list of these events will be posted on the Buildoffsite website.

In addition the Hub will make the case at events organised by others such as British Water, targeting key influencers/leaders and exposing them to proven transformational solutions. We will work to promote the benefits of the sharing of information on innovative products and build solutions between water companies.

By working together, we hope to transform the industry in support of the requirements of AMP6 and also the Construction 2025 targets.

### Delivering value to the Buildoffsite membership

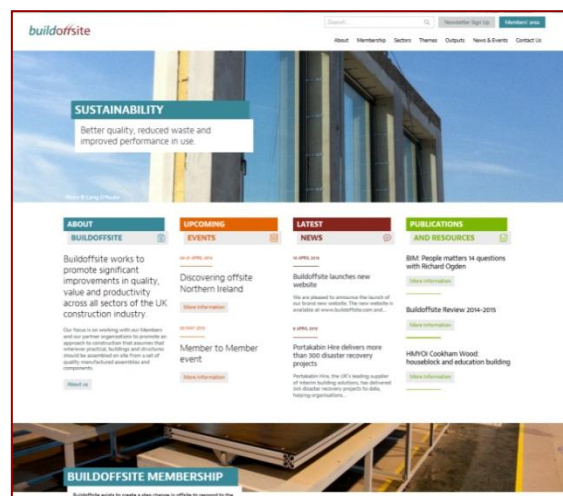
The Buildoffsite Water Hub is a mechanism by means of which Buildoffsite will deliver additional value to those of its members who have a commercial interest in doing sustained business with the water companies and are supportive of collaborating with others in the sector. It will also function as a mechanism to recruit additional clients and suppliers to join Buildoffsite.

For more information on the work of the Buildoffsite Water Hub contact Carole Chandler on:  
Email: [carole.chandler@buildoffsite.com](mailto:carole.chandler@buildoffsite.com)

### Buildoffsite launches new website

We are pleased to announce the launch of our new website.

The new website is available at <http://www.buildoffsite.com> and features a bright, uncluttered design with improved access to information and resources.



Our aim has been to achieve a contemporary website that is more user friendly and easy for us to update, as well as being more effective in raising awareness of offsite construction, in encouraging membership of Buildoffsite and providing existing Members with better access to information.

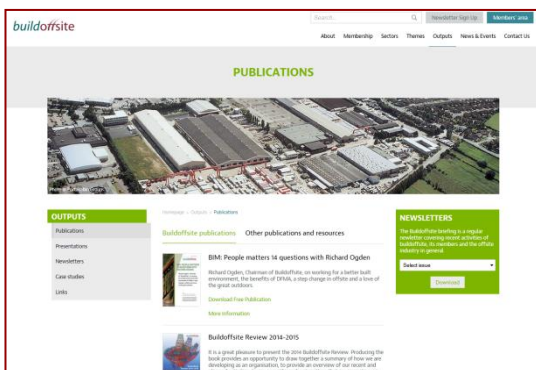


The new menu includes:

- About – more information about Buildoffsite and offsite manufacture
- Membership – sets out the benefits of Membership and includes the Member Directory
- Sectors – includes an overview of Buildoffsite's current work in Water, Retail and Housing with the possibility of more Hubs to follow
- Themes – information about H&S, BIM, DFMA, Education and BOPAS
- Outputs – where you'll find all the resources, including presentations, publications and case studies
- News & Events – the latest news and forthcoming events
- Members' Area – where Members can get access to Member only content, including contact details and resources.

The website also features improved functionality. It is responsive and automatically resizes to fit your screen – making it user friendly on PC, tablet or mobile. We are also able to embed video, such as outputs from events (you'll find these on the Presentations page).

We hope that you like the new website. Please check back regularly for the latest news, events and resources.



If you have any problems, or are experiencing any issues, please contact:  
[Roisin.Sweeney@buildoffsite.com](mailto:Roisin.Sweeney@buildoffsite.com).

## Advanced Manufacturing Award goes to Laing O'Rourke Consortium

The Department for Business Innovation and Skills

has awarded a £22.1 million grant to a consortium led by Laing O'Rourke, as part of its Advanced Manufacturing Supply Chain Initiative (AMSCI).



*Vince Cable, Secretary of State for BIS congratulates Ray O'Rourke and Apprentice Jagjeet Singh Panesar on the AMSCI award at the Elephant Road Project*

Administered by Finance Birmingham, the four year grant is towards a £104m project for the advanced manufacturing of homes, buildings and infrastructure, supporting research and development, investment in new manufacturing facilities and training. The project work streams will not only address research into modular design and manufacturing, but will also cover structured training initiatives, providing the existing workforce and new recruits with skills around digital engineering, the manufacturing process and installation.

The supply chain consortium of 22 partners integrates the design, manufacturing and assembly construction supply chain with leading research institutions to create a new platform for collaborative innovation. The consortium includes:

**Design:** Arup Associates, WSP, Hoare Lea, Fulcro.

**Manufacturing/Research:** University of Cambridge, the University Of Sheffield, BRE.

**Supply Chain:** Airedale, Armstrong, Beckhoff, Crane, Apex, Grundfos, Hamworthy, British Gypsum (part of the Saint-Gobain group), SIG and Thorn.

The AMSCI investment is seen as a positive development to help address the UK's housing capacity gap of more than 100,000 homes annually with advanced off-site manufacturing and digital engineering speeding up the provision of affordable, high quality accommodation.



May 2015

**The Offsite Construction Show, October 14-15 2015, Excel, London – All Set For Early Sell Out!**



The Offsite Construction Show 2015 (OSCS 2015) is all set for an early sell out. The Industry has decided that now is the time for the offsite construction Industry to have its very own, totally dedicated event bringing people together, providing focus, industry perspective and a launch-pad for new products and systems.

This exciting new event will be a must visit for anyone seriously involved in any aspect of the construction industry. All our exhibitors and partners are working with us, to ensure visitors get to see what is new in the market and to show why Offsite is the UK's fastest growing construction method.

We live and work in an increasingly remote and digital age but there is simply no substitute for meeting people face to face and networking at this new industry event.

Already many leading companies are enthusiastically supporting this brand new opportunity. Companies and organisations such as Tekla, Howick, FP McCann, Shay Murtagh Precast, Geologic Foundations, Ormandy Group, Modularize, NG Bailey, Willmott Dixon, Lloyds Register, Enterprise Ireland, UKCES, JJ Smith, Caledonian Modular, Apex Wiring Solutions, Morland, MPBA and RIBA have confirmed their presence.

The Show is supported by Buildoffsite and we are working with them to develop the seminar programmes. These programmes will reflect the scope of the exhibition and will include the following market sectors and cross-cutting themes:

- Housing (private and social)
- Infrastructure
- Retail
- Commercial
- Health
- Education
- BIM (in practice)

- Lean
- DFMA
- Skills

*The full programme will be announced shortly.*

The show starts now – get the Fully Featured Web based App for Smart Devices now – it's free! No download from app stores required, works with all operating systems.

If you are involved in the offsite sector, you cannot afford to miss this show, the first national event at a major venue supported by key industry figures. For more details, call 0203 086 9296 Eddie Milton ext. 2 or Paul Shelley ext 3.

**New Construction (Design and Management) Regulations (CDM 2015)**



The new regulations which came into effect on 6 April govern the management of health, safety and welfare for construction projects. Guidance is available from the HSE website as a free download: <http://www.hse.gov.uk/pubns/books/l153.htm>

For projects starting before 6 April 2015, where the construction phase has not yet started and the Client has not yet appointed a CDM coordinator, the client must appoint a Principal Designer as soon as it is practicable.

If the CDM co-ordinator has already been appointed, a Principal Designer must be appointed to replace the CDM coordinator by 6 October 2015, unless the project comes to an end before then.

**The Changes**

The Regulations introduce a number of significant changes including:

- Extending the scope of the regulations to include domestic clients
- Removing the role of the CDM coordinator

- Introducing a new duty holder – the principal designer
- Appointment of principal designer and principal contractor if two or more contractors are on site
- Changing the HSE project notification threshold

### Increased responsibilities for clients

Previously the CDM coordinator has been the client's key safety adviser. Removal of the role will have a significant impact on project safety governance. The removal of this role means that under the new Regulations the CDM client will be responsible for:

- Notifying the HSE of the project details
- Appointing a principal designer and principal contractor
- Ensuring duty holders comply with their duties
- Providing pre-construction information
- Ensuring that the minimum health and safety standards are maintained on site
- Ensuring that the construction phase health and safety plan is drawn up by the principal contractor
- Ensuring that a health and safety file is produced by the principal designer

## New members

iQhome



iQhome® is an innovative housing concept developed by Ballast Nedam.

### IQ: Intelligent Quality

The iQhome® is built off site using the same amenities and with the same 'look' of a traditionally-built house. About 80 per cent of the iQhome® is built in a factory, which provides substantial benefits such as lean production, and a short assembly time on the building site, all at high quality. The concept of the iQhome® is in its building process and innovative production.

The base of an iQhome® is formed using concrete

modules. Various configurations are possible, depending on the needs of the customer. In addition, the iQhome® is ready to be moved into within six weeks of its start on site.

### Advantages of an iQhome®

By building the iQhome® in the factory, there are many benefits including reduced engineering and construction time, and freedom of architectural design. The iQhome® is built in a sustainable way with high quality insulation and soundproofing. In addition the interior contains a CO<sup>2</sup>-driven ventilation system and energy-efficient floor heating.



Johan Postma



For more information, please contact Commercial Manager Johan Postma by email: [j.postma@iqwoning.nl](mailto:j.postma@iqwoning.nl) or visit the website: <http://www.iqwoning.nl/>.

## Kingspan



Kingspan Group, together with its subsidiaries, provides building products and solutions for the property and construction industry worldwide.

Kingspan operates through four segments:

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Insulated Panels, Insulation Boards, Environmental and Access Floors.

The Insulated Panels segment provides insulated roof and wall panels, integrated solar solutions, benchmark architectural façade systems, controlled environments structural products and systems, steel framing systems, height safety solutions and insulated door components. This segment serves property developers, building owners, designers, contractors, off-site and insurers.

The Insulation Boards segments offers insulation boards for roofs, walls, and floors; engineered timber systems; factory insulated timber frame systems; and HVAC, piping, and ductwork insulation systems. This segment's products are used in various applications in the domestic, non-domestic, new-build, off-site and refurbishment sectors.

The Environmental segment provides renewable energy solutions, air source heat pumps, hot water systems, pollution control solutions, rainwater harvesting and sustainable drainage, environmental containers, off-site and telemetry and management solutions.



Philip Heath

The Access Floors segment offers access floor systems, data centre products, underfloor air solutions, and underfloor wire and cable solutions. Kingspan Group plc is headquartered in Kingscourt, Ireland. For more information, please contact Philip Heath on 07768 745358 or 0870 733 0021, or email: [philip.heath@kingspan.com](mailto:philip.heath@kingspan.com).

LHC



LHC is the leading independent provider of technical product advice and procurement solutions

for the construction, refurbishment and maintenance of homes, schools and community buildings. Our mission is to serve the public sector by providing the best procurement solutions.

We achieve this by setting up LHC framework arrangements with suppliers ensuring high quality products are supplied at a competitive LHC rate.



Tony Woods

For more information, please contact Tony Woods, Technical Manager on tel: 01895 274811 or email: [tony.woods@lhc.gov.uk](mailto:tony.woods@lhc.gov.uk).

meps



meps is a Fully Integrated Joint Venture born through collaboration between the heritage brands of MWH Treatment and EPS Group – bringing over 150 years of service experience in support of the regulated and industrial Water Sector.

We create, through immersive design (BIM) and LEAN manufacturing, high quality prefabricated treatment solutions and Integration Structures. With one of the strongest technology portfolios in the market, meps provide support to every Regulated Water Company in the UK.

Our ability to capture and aggregate demand in the market place is a key differentiator, enabling us to actively participate in the shift from Asset Standards to a world of Standard Assets, where off site fabrication and assembly is embedded in the overarching delivery model. Our in-house design, LEAN



Adds Arshad

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manufacturing and installation capability enable meps to directly influence the journey to meet Client Outcomes through enhanced productive efficiency.

Our corporate parents bring significant experience of Service Delivery, operating a wide portfolio of water and wastewater treatment assets in both the regulated and industrial water markets. This valuable experience shapes the way we think as a manufacturer of prefabricated treatment solutions – our method of off-site fabrication and assembly is embedded in our design ethos, and our service delivery experience informs our component selection decisions.

As we enter the new Totex paradigm of AMP6, meps seek to deliver solutions that offer the optimal blend of safe and speedy installations, based on robust engineering and ease of operation, maintenance and refreshment.

For more information, visit: [www.mepswater.com](http://www.mepswater.com) or call 0800 901 2450.

## Moat



Moat is a housing association providing affordable homes in thriving communities for people in the South East of England. For over 40 years, Moat has delivered high quality general needs homes for affordable rent, retirement and independent living, and has a strong affordable home ownership offer.



Steve Nunn

Moat is one of the Homes and Communities Agency's development partners and employs over 350 people.

Moat's ambition to bring an end to housing need will be fulfilled through a development strategy to provide over 700 homes per year, and a service

offering including employment and training support, and financial wellbeing advice.

For more information call 0300 323 0011 or email [customer@moat.co.uk](mailto:customer@moat.co.uk).

## News

### Accio Group to manage HSS Hire roll out of new local centres



The Accio Group has been appointed by the HSS Hire Group as it prepares to open 60 new local hire centres during 2015. Accio will manage the new site openings, overseeing each project from newly acquired shell-scheme units, through to fully fitted stores, ready for opening. Acting as the main contractor to the HSS operations team, Accio will support the business case for each new store proposal with detailed survey work and site plans. Once a new site has been acquired, Accio will manage every aspect of the store fit-out from signage to shop-fitting, working to deliver enhanced value management and a consistent store quality across the entire new local hire centre estate.

HSS Hire is one of the largest providers of tool and equipment hire, related services, temporary power generation and powered access in the United Kingdom, based on revenue and fleet size, and has been operating across the UK for more than 50 years, primarily focusing on the business to business market, as well as the more publicly known trade market. A key part of the HSS expansion plans for 2015, the new local hire centres are designed to feel like a modern retail outlet, where customers are welcomed in and encouraged to browse the kit – a step away from the counter and catalogue models that traditionally dominate the hire industry. The new local hire centres provide local customers and passing trades



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with easy access to a wide range of tools and equipment, as well as offering hire related services.

Accio's CEO Stephen Casey said: "We have partnered with HSS on many occasions, often as a result of our work with Sainsbury's. I am delighted that the Board has chosen Accio and we look forward to helping HSS acquire further customer growth in their new localities."

John Overman, Managing Director of HSS added: "We continue to invest in more branches, more equipment and more support to ensure our customers can get exactly what they need, when they need it and we're confident that Accio is the right partner to help us ensure our local hire centres achieve this."

For further information, please contact Chris Ellis, Sales & Marketing Director on 01487 773905 or visit: [www.acciogroup.com](http://www.acciogroup.com).



Stephen Casey

that demonstrates the continued financial strength of our business and gives our customers and suppliers even greater confidence, peace of mind and continuity of supply when dealing with Portakabin. We believe it is vital that construction clients look very closely at financial stability when evaluating tenders and quotations, and are aware of the critical importance of dealing with a robust supply chain. We understand procurement teams have to look for least cost, but there are also cost implications of company failure when a project is on site. Our advice is to examine the varied credit worthiness of modular suppliers carefully when considering project risk."

In addition to the top Dun & Bradstreet rating, the Portakabin Group has the reassurance of other independent accreditations, which include Crown Commercial Service framework for public sector project procurement; Achilles Building Confidence auditing; ISO 9001 for quality assurance, ISO 14001 for environmental performance, as well as Zurich, BBA, LABC, and CE approvals for its modular buildings. The Portakabin Group also offers unrivalled commitments to customer service. Over the past 10 years, it has delivered an unprecedented 99.7 per cent of buildings on time and on budget.

### Portakabin Group achieves top rating for financial stability

The Portakabin Group has again achieved the highest possible rating from Dun & Bradstreet – the global specialist in business information and financial risk analysis. The coveted 'rating 1' status puts the Portakabin Group in the top 15 per cent of all companies in the UK and Ireland for financial stability, and is an independently-verified endorsement that the business is at low risk of failure and maintains high creditworthiness. It is also further recognition that the Group has performed at the highest level for another year.



### Portakabin Hire cranes final modules in at Royal Stoke University Hospital

Portakabin Hire has completed the first phase of construction of a major project to expand ward and theatre accommodation for orthopaedic services at the Royal Stoke University Hospital. The £13.5 million contract – the largest in Portakabin Hire's 52-year history – is for the provision of a complex



Derek Carter, Chief Executive of the Portakabin Group, said: "This is a fantastic accomplishment

4,200sqm, two-storey building. The scheme will be completed in less than four months to increase capacity at the hospital, to the benefit of patient care.

124 steel-framed modules were craned into position in a complex operation which involved a 350-tonne crane on a highly restricted site immediately adjacent to fully occupied wards and close to a busy road. The crane phase took just 18 days and involved working through three weekends to deliver the building in the shortest possible time.

During the craneage process, Portakabin managed and maintained access for 200 students to the adjacent Keele University Medical School and co-ordinated operations with West Midlands AirAmbulance for inbound emergency patients. The units up to 14m long and weighing up to 9 tonnes were installed complete with wall finishes, internal partitioning, M&E services and flooring already in place, further reducing work and disruption on this busy hospital site. The modules are built to permanent standards, comply with all current Building Regulations and have a design life of 60 years.

Due for completion in spring 2015, the building will provide 56 new in-patient beds, two large state-of-the-art, clean air theatres for all orthopaedic procedures, recovery room, 'dirty' and 'clean' utilities, single rooms with en-suite bathrooms, staff changing rooms, reception, kitchenette, offices, 33-person 'crash team' lift and an integral plant room.

John Simpson, Director of Corporate Services at the University Hospitals of North Midlands NHS Trust, said: *"This type of construction allows us to benefit from a much shorter delivery programme, so we can have the new facility up and running more quickly, meeting the increasing demand for services and enhancing patients' experience. Whilst the building is constructed to permanent standards, its modular construction gives us greater flexibility as the facilities can be dismantled and removed if service needs change. The use of a modular solution is also helping us to radically reduce disruption to patient care on a fully operational and highly constrained hospital site, and we have much greater assurance of delivery on time and on budget."*

Commenting on the craneage operation, Robert Snook, Director and General Manager of Portakabin Hire said: *"The craneage phase went very smoothly, despite working in the winter months. This was a highly complex operation in terms of scale, logistics, difficult access for vehicles and the extremely close proximity of the new building to existing hospital facilities which remained in use throughout."*

## Increased demand for off-site construction

Yorkon is seeing a significant increase in demand for its off-site construction solutions from the UK's leading building and civil engineering contractors. According to the Portakabin Group, the biggest issue for contractors is the reduction of risk – how to minimise the possibility of budget overruns and delays, and accidents on site, and mitigate the impact of a volatile labour market. Recent research from Aecom has shown that up to a third of bidding opportunities are turned down if projects are deemed to be too high risk.



Serious skills shortages are now being predicted for the construction industry. The loss of thousands of skilled jobs through the economic downturn has left the sector struggling to attract new talent to meet the recent surge in construction activity. The situation is set to worsen when construction work starts on HS2, which will need a monthly average total workforce estimated at more than 11,000 (source: University of Dundee/CITB/Experian).

A new report published by the London Chamber of Commerce and KPMG has also highlighted a labour and skills shortfall of up to 20 per cent for London and the South East to deliver projects

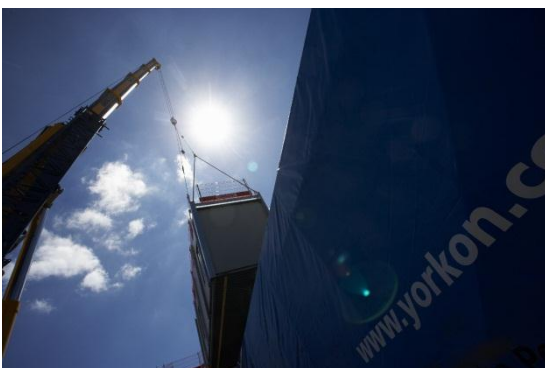
already planned for 2015-17.

Off-site construction can radically reduce risk for contractors on a number of levels:

- The approach has been proven to deliver much greater cost and contract certainty and consistent delivery on programme. The Portakabin Group, for example, has completed 99.7 per cent of its projects on time and on budget for more than a decade.
- The Portakabin Group has a retained and highly skilled workforce, significantly reducing the reliance on subcontracted labour, which helps to address the skills shortages and geographical volatility in the labour market that can impact on major contractors.
- By working in an engineering environment, maximising work off site and avoiding work at height, the Portakabin Group has had zero major injuries on Yorkon sites for the last five years.

Yorkon off-site building solutions reduce programme times by up to 50 per cent. This is an important benefit for contractors needing to achieve a watertight building envelope for earlier fitting out, thereby reducing time on site and all the associated costs.

These programme reductions and off-site working can also facilitate projects on the critical path of a much larger scheme. Recent applications of this approach include two healthcare buildings at Royal Sussex County Hospital which are crucial to unlocking the space for Laing O'Rourke to proceed with the main hospital redevelopment and a number of track-side buildings which formed part of the £54m Reading Train Care Depot for main contractor VolkerFitzpatrick.



Simon Ambler, Director of the Portakabin Group, said: *"We are experiencing a clear sea change across the construction industry. Off-site solutions are now being recognised as a mainstream method of building. And when clients and contractors visit our completed buildings, they are blown away with the build quality we are achieving on every project. There is now much better understanding across the industry of the benefits of off-site solutions and the concept of moving the construction process into a controlled factory environment holds considerable appeal to contractors and clients, particularly on constrained and challenging sites – whether track-side rail, high security nuclear or fully operational hospital and school sites. The advantages to contractors and the reductions in risk that off-site construction can bring are clear. We are able to offer much greater assurance of completion on time and on budget – and our unprecedented performance figures over the last 10 years, reaffirm this. As part of a privately-owned, financially-sound building group, we have a highly skilled, permanent workforce and a robust, long-established supply chain in place that is not affected by fluctuations in the labour market, particularly in London and the South East. We are also being appointed for more projects where there is a need to move elements and enabling works for a wider scheme off the critical path in order to start on site in other areas."*

Yorkon off-site solutions have been used extensively by Kier for health and education projects, by Interserve and other Procure21 supply chain partners on many NHS projects; by contractors involved in infrastructure such as in the rail, utility and nuclear sectors, and on multiple projects to expand teaching accommodation in primary and secondary schools.

Yorkon modular buildings use advanced off-site technology to offer unparalleled design flexibility and precision engineering in factory conditions for improved quality. The approach has strong sustainability credentials; the buildings are thermally efficient and are delivered with far less disruption on site.



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## Portakabin Group hands over state-of-the-art research facility

The Portakabin Group has handed over a highly sustainable, state-of-the-art research facility, constructed using a Yorkon off-site solution, for the new International Institute for Nanocomposites Manufacturing at WMG at the University of Warwick – the first institute of its kind in the world.



The off-site approach radically reduced the programme time to just 14 weeks on site, which is several months less than originally envisaged.

The new institute develops innovative manufacturing technologies to enable industry to make large-scale nanocomposite parts for products in sectors such as telecommunications, electronics, pharmaceuticals, aerospace, automotive, security and medicine. A team of 50 nanocomposite researchers works from the building on research projects with other academic groups and partners from industry, both in the UK and internationally.

Designed by Cullinan Studio, the two-storey £2.3m scheme was manufactured off site at the Portakabin Group's production centre in York and craned into position as 28 steel-framed Yorkon modules with fume cupboards and extraction system pre-installed for the laboratory areas. The exterior walls of the modules have been arranged to create a dust-free, clean and easy-to-maintain environment for nanocomposite testing.

The building houses advanced R&D facilities with highly complex M&E services and extensive use of renewable technologies to reduce energy

consumption and carbon emissions. It has three laboratories with factory-installed Yorkon high-performance concrete floors and full height uPVC hygienic wall linings. There is a 9m high central processing hall with an in-situ poured concrete floor to support specialist equipment; offices and an open plan research space. A swipe-card access control system has been installed to each room for security purposes.



Steve Walker, Senior Project Manager at the University of Warwick, said, *"Considering the extremely challenging timescale we were working to for this project, the whole process was made very straightforward for us. We needed the facility to be up and running as fast as possible and this was achieved."*

*"The laboratories are spacious and the performance of the building overall has exceeded our expectations. It is as good as any site-based building project. Off-site construction suits nanocomposite manufacturing very well and we would definitely recommend the Yorkon approach."*

Wen Quek, Project Architect at Cullinan Studio, said, *"The use of a Yorkon off-site solution was an ideal choice for this project because it is fast, efficient and cost effective. We were also impressed with the sustainability advantages of the approach, particularly the fact that it produces up to 90 per cent less waste to landfill than on-site building methods and uses less embodied energy."*

This highly sustainable facility benefits from a number of renewable technologies that generate 18.9 per cent of its annual energy requirement.



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These include:

- 100m<sup>2</sup> of photovoltaic roof panels which will produce around 11,400kWh per year and save in excess of 6,000kg of carbon emissions
- Very efficient low temperature hot water (LTHW) inverter-driven heat pumps to heat the process hall
- Highly efficient variable refrigerant flow (VRF) inverter-driven heat pumps to heat and cool the laboratories, offices and meeting rooms.

Other energy efficiency features include:

- Heat recovery ventilation (HRV) for all air supply systems to recover 80 per cent of the heat from extracted air and reduce heating requirements
- Daylight dimming of lighting with occupancy sensors to reduce the reliance on artificial lighting and maximise energy efficiency
- Gas and electricity meters linked to the building management system with 'out of range' reporting if consumption exceeds pre-determined limits
- Power factor control equipment to ensure that electrical consumption is as efficient as possible
- Automatic window ventilators in the process hall for cooling during the summer months to help maintain a controlled and comfortable internal environment.

Externally, the scheme has secondary perforated cladding for a high-tech appearance, and a feature mono-pitch roof. Portakabin provided a full service for this scheme including design and construction, module manufacture, fitting out, landscaping and car parking.

The Portakabin Group's Yorkon off-site building solutions offer unrivalled aesthetic flexibility and give building designers the benefit of thousands of module configurations and permutations to meet almost any design brief, site and building footprint. The approach is also highly sustainable because it reduces the number of vehicle movements to site by around 90 per cent, and there are fewer internal columns to facilitate space planning and any future reconfiguration required to meet the organisation's changing needs.

For further information, email [information@portakabin.co.uk](mailto:information@portakabin.co.uk) or call 0845 401 0010

## McAvoy Delivers New Primary School in Boston

The Boston Pioneers' Free School is a new build primary school for four to 11-year-olds which will eventually accommodate up to 420 pupils. The school is located on the intersection of High Street with Fydeil Crescent, Boston.



The new school site is approximately 1.45 acres and split level, bordered by Victoria Place to the west, High Street to the east, Fydeil Crescent to the north and the A16 (John Adams Way), to the south. The school is surrounded by a mix of commercial and residential properties, with part of the site falling within a Conservation Area.



### The Requirement

The school is located in the Witham Ward of Boston and has outgrown its current facility which was designed to accommodate 60 pupils. Due to the influx of people to the Boston area the school population had grown to 120 pupils in recent years, with greater demand for places year on year. Boston School needed new purpose-built premises which can provide a modern, stimulating learning environment for its increasing number of pupils.

## The Solution

McAvoy won the contract to design and build the new school funded by the Education Funding Agency (EFA), constructing a new two-storey 1983 sq metre facility over a six-month period. The school accommodation is a modular building construction which includes 21 new KS1 and KS2 classrooms, main hall, sports hall, kitchen/food technology areas, breakout space, toilets and showering facilities. There is also a 4D classroom which features interactive visuals – Boston Pioneers is the first school in Lincolnshire to have the technology.

The high specification building features the latest innovative building materials, and meets health, safety and fire requirements as well as the most demanding building regulations.

The modular building has high levels of insulation and is finished in the latest render wall cladding externally. The flooring is a mix of carpeting, vinyl and tiling allocated to the appropriate spaces for maximum safety and comfort. There are also vertical blinds to all the classrooms, offices and meetings rooms with painted and varnished finishes to internal walls.

The new school will increase its intake to 420 pupils by 2019 on the current site.

The spacious new build at Boston Pioneers School has enabled the school to pursue its ethos to teach children in smaller sized groups for key subjects such as Maths and English.

Jo Bland, School Principal, said: *“McAvoy’s commitment to the school and attention to detail was something else. One of the best elements of the new build school was that we got to work closely with the architect to ensure all of the school’s needs and wants are reflected in the finished building. Before we had cramped classrooms and we weren’t able to provide small teaching groups to really focus the children’s learning experience, but now we can.”*

## Commonweal School, Swindon – A McAvoy Project

Commonweal School is a secondary school with academy status, located in Swindon, Wiltshire. The school was awarded academy status in August 2011.

The decision was taken to add a purpose-built Sixth Form Centre to accommodate up to 300 students.

The McAvoy Group won the contract to build the new Sixth Form Centre as part of a wider bundle of contracts awarded by the Education Funding Authority (EFA) under the Crown Commercial Service framework which included a total of 12 schools. The McAvoy Group, which specialises in modern methods of construction, is one of the principal contractors for the EFA.

The high specification three-storey school facility was installed on site using 38 major components which were pre-built by McAvoy in Northern Ireland and assembled on the school campus.



The dedicated Sixth Form Centre is adjacent to the main school building which dates back to the Victorian era and is listed. It was unsuitable for extending. The separate modern new build Sixth Form has an autonomous feel to it without being detached from the wider school community.

Steel frameworks were delivered and erected at the Swindon site in February when the school’s pupils were off on half-term, thereby avoiding any impact on the schoolchildren’s learning time.

As well as the college building, McAvoy installed a

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sports hall and car park to the modern premises. Commonweal School also has Performing Arts Academy status so the interior of the new Centre has been finished to a substantially high standard with state of the art fixed furnishings, a sound recording studio and graphics to both walls and doors. The Sports Hall has been appointed to a high degree from the fixtures to the latest sports equipment.



Outside the associated landscaping work has been completed and an 83-space car park created, making this one of the most modern Sixth Form Centres in the country.

The school's Principal, Keith Defter praised The McAvoy Group's speed and efficiency in completing the Sixth Form College on time. He also claimed using off-site building techniques in the education sector has huge advantages for busy schools. Mr Defter said: *"The big attraction for us was how off-site build minimises disruption to learning as most of the construction process takes place away from the school premises. We have had other building projects on our site, and the disruption was relentless for months. Because McAvoy transports the building over in sections it gets a long way through the process very quickly."*

The nature of the build has also enabled the school to facilitate tours of the Sixth Form Centre before it was handed over: *"We have been able to have visitors coming to see the new centre prior to its completion, which we probably wouldn't have been able to do if it had been built using other methods."*

The school's Assistant Head Teacher, James Matcham added: *"The McAvoy Group has made all its deadlines – it's what they do."*

The school was involved with the design process from the beginning, and the innovative building is exactly what was required.

For more information on these projects contact: Orla Corr, Chair of the McAvoy Group  
Email: [orlacorr@mcavoygroup.com](mailto:orlacorr@mcavoygroup.com)

### Continued success in Greater London for Premier Interlink

Premier Interlink have been working closely with main contractor ISG to provide the London Borough of Brent with 3 new schools.

Preston Park Primary School is a 3 to 4 form entry community school where Premier Interlink have provided a two storey building which incorporates 8 classrooms, a dining hall and robotics room and a modular plant room. The buildings are finished with a mixture of brick slip and render to provide a traditional external appearance.

The development for Wembley High Technical College includes 4 buildings – 2 Key Stage 2 blocks offering 16 classrooms and 2 science labs per building; a main entrance block with an open terrace area housing 12 classrooms, 2 libraries, a specialist teaching unit and a small hall and a separate hall/dining area with a folding partition featuring store and WC facilities.



Harlesden Primary School have been provided with a two storey main building with additional modules for the stair core, plant room and fire escape stairs rising to the roof top. The roof will feature a specialist MUGA sports pitch complete with fencing.





As work on these 3 projects progresses on site Premier Interlink are also working with Westminster City Council to provide a new four storey Children's Community Centre. The new centre will accommodate up to three children's service providers at the heart of the City of Westminster and forms an essential part of the regeneration of the area. The Community Centre includes external play areas on the first and second floors. The building will be brick clad, whilst the exterior staircases will be clad with bespoke laser cut panels incorporating a latticework design.

Demolition works have already started on site with completion expected by November this year.

For more information email [sales@waco.co.uk](mailto:sales@waco.co.uk) or call 0800 3160888

## Events

### Fortcoming Buildoffsite events

- BOPAS Breakfast Briefing, 2 June, Birmingham,
- Retail Hub Meeting, 10 June, London
- Discovering Offsite Visit iQhomes, 11 June, Netherlands
- Discovering Offsite Visit, 17 June, Siemens (TBC)
- Offsite Housing Village, 23-25 June, CIH, Manchester
- Buildoffsite Member Business Dinner, 23 June
- Buildoffsite Direction Meeting, 24 June, Kingspan
- Buildoffsite Member Business Dinner, 25 August
- Buildoffsite Direction Meeting, 26 August

### Discovering Offsite Visit iQHomes

11 June, Netherlands

#### IQ: Intelligent Quality Home

Approximately 80 per cent of the iQhome® is being built offsite and looks like a traditionally built house. The concept and delivery of the iQhome® represents a process and a product innovation. The base of an iQhome® is formed by concrete modules. Various configurations of layout and facades are possible to meet the needs of customers and users. From start on site to completion the iQhome® is ready to move in within six weeks.

#### The advantages of iQhome®

Factory manufacture including the application of lean production methods ensures substantial benefits including consistently high quality and a short assembly time on site. The design and manufacturing processes deliver many benefits including a minimum of engineering and construction time, a high and consistent quality, flexibility of architectural design. The iQhome® delivers high levels of thermal insulation and soundproofing. The internal environment remains healthy because of a CO<sup>2</sup>-driven ventilation system and energy-efficient floor-heating.

#### Costs

The programme is being hosted by iQhome®.

Registration is free to Buildoffsite members, however those wishing to attend will be responsible for their own travel, accommodation and personal bills.

For non-members a £100+VAT administration fee will apply.

#### To book

For full day itinerary and to book your place please email [roisin.sweeney@buildoffsite.com](mailto:roisin.sweeney@buildoffsite.com).