

NEWSLETTER – AUGUST 2014

Promoting construction offsite



*Richard Ogden
Chairman*

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This autumn marks the 10th anniversary of the Buildoffsite organisation. A good time to reflect on the role of Buildoffsite within the wider construction industry, and to take stock of how best we should now organise and engage to promote the business and project case for the increased use of offsite solutions, whilst at the same time delivering value to our Members.

We need to review what we do and the way we work to take account of developments in the market and the increased acceptability of offsite solutions, but at the same time we still need to be mindful that there is a big job of work to be done to present offsite solutions as part of the solution to achieve increased productivity, enhanced quality, improved sustainability and cost in use, and also the need to deliver enhanced value to clients and customers. All of these highly desirable outcomes can benefit from the increased use of offsite solutions.

My concern is that with the strengthening of market demand for new construction and growing order books there is a risk that the importance of sustained action to drive increased efficiency and to control costs may slip from the spotlight. In my view it would be a great mistake if this was to happen as it would mean that an opportunity to invest in order to raise levels of productivity and industry performance better to service the needs of an expanding market at home and in increasingly competitive overseas markets may be frittered away in a bout of price inflation and short term profits without delivering any long term benefits to an industry that along with many of its clients seems to regard shockingly low levels of productivity as perfectly acceptable.

Getting to grips with Buildoffsite's future direction of travel in terms of priorities and working methods is something that the Executive Group is addressing and in that task we are receiving invaluable advice from the Members based on their everyday experiences in the market.

What is certain is that Buildoffsite needs to be clear sighted about those things that are a priority for us, and equally clear sighted about those things that we can do on our own and conscious of those things where it makes sense to seek to work with others or even to defer to others. There are no egos in play here and if other organisations can promote the key messages to key audiences more effectively that we can do – then that is just fine with me. What matters is that the case for the increased use of offsite construction solutions is increasingly heard, increasingly understood and increasingly credible to funders, clients, designers and constructors. The more organisations we want to work with and the more advocates and ambassadors we can engage with the more effectively we can do the job.

There is, of course, no free lunch and as I never tire of stressing, the offsite supply side needs to work hard to demonstrate that it can deliver competitive solutions. I appreciate that this is no easy task. It is unfortunately still the case that offsite solutions must often be able to do more than simply demonstrate more cost effective construction solutions compared to traditional construction practice. Other barriers can get in the way including the persistent problem that the possibility of an offsite solution as an alternative to a traditional solution is effectively and needlessly ruled out by early decisions taken by the design team supposedly working in the client's best interest. These and other practices which serve to get in the way of an unfettered competitive market for offsite solutions are matters that Buildoffsite will need to address as we move forward.

I am an eternal optimist and notwithstanding the problems that need to be tackled I am confident about the prospects for the extensive use of offsite solutions across all parts of the industry in order to help bring about better construction outcomes.

Change has already started to happen at the leading edge of our industry with a growing appreciation by clients and suppliers that the combination of an intelligent approach to Building Information Modelling, to the use of DFMA, to standardisation, to the use of Lean techniques and the use of offsite construction methods will collectively provide the toolkit that will enable the construction industry at large to make those changes that will allow the supply side to finally play catch up with the ways in which all other modern manufacturing industries operate. But why has this taken so long?

People still try and tell me that the ways of working that have demonstrably transformed the productivity, quality and competitiveness of other industries will not work in construction. Sorry, but I have spent my entire career being told that construction is in some inexplicable way different to other – often more creative, more complex, more competitive and more profitable industries – and I just don't buy the message. It sounds – as it has always sounded – as just so much special pleading from those who have a vested interest in protecting the status quo. It does not sound to me like an agenda for delivering the required improvements which I believe are far too rarely at the forefront of industry thinking and action.

Later in this issue you will see a piece from Colin Reynell, Operations Director at Costain. Colin describes with great passion and expertise the way in which Costain are bringing a Factory Thinking approach to their business and to their relationship with suppliers in order to take advantage of the new ways of working and to put positive client outcomes at the heart of their business. The intelligent application of offsite construction solutions is a key element of their approach. I greatly appreciate the confidence that Colin and his colleagues at Costain have in Buildoffsite and for their willingness to share their thinking in this way.

Similar thinking is being applied by other leading edge companies and this represents a great step forward for the industry. The challenge will be to encourage the industry at large to want to think and to act in a similar way.

A practical example of Buildoffsite working with others is represented by our collaboration with Marwood Events to deliver the **Offsite Construction Show** on 14-15 October 2015 at ExCeL, London. This will be the very first time that an exhibition and conference programme devoted to the use of offsite solutions in all construction markets will take place.

I am delighted that Buildoffsite has this opportunity to support and help steer the development of this Show. It is the clearest possible sign that the offsite sector is no longer a fringe activity but rather has become part of the mainstream construction industry – the part devoted to fresh thinking and progressing a radically different approach to the delivery of construction efficiency. In a very tangible way a coming of age for the offsite industry.

Companies who would like to talk to Marwood Events about participation at the **Offsite Construction Show** should contact either Paul Shelley or Eddie Milton using the contact details shown in the update piece that appears later in this newsletter.



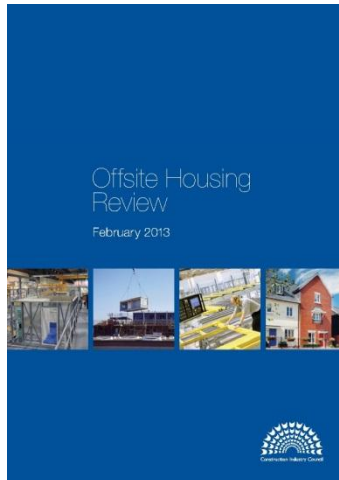
News

Offsite Solutions for New Build Housing – An Update

It is now almost 18 months since the Offsite Housing Review was presented to Ministers at the Department for Business, and the Department for Communities and Local Government. This Report had been jointly commissioned by the Departments and was written in record time by Professor John Miles and Professor Nick Whitehouse with fantastic support from a number of industry experts. John and Nick are both Executive Board Members of Buildoffsite.

The Report set out a detailed analysis of the housing challenge facing England (the remit of the sponsoring Departments does not extend to the rest of the UK) and identified the opportunities and challenges for offsite construction to make a significant contribution to increasing housing provision. A set of recommendations for action by industry and by Government were proposed.

The Report made clear that no one seriously doubts that homes assembled on site from a set of precision made components are inevitably going to deliver more consistent quality than is commercially viable through traditional construction. Similarly in terms of speed of construction, energy efficiency and cost in



use it is simply not possible for traditional forms of construction to match the performance of factory made homes. The one critical area where offsite currently loses out to traditional forms of construction is in terms of unit cost of production. Unless volumes of production are such that offsite manufacturers have the necessary throughput to generate the profits needed to fund the investment cost of setting up manufacturing facilities it will always be problematical for offsite manufacture to compete head on in a market which in many sectors of the housing market is still dominated by the price factor – not quality, not improved performance in use and not sustainability.

The Report fully recognises this reality in setting out a set of recommendations.

The Report was very well received by the housing industry and not a single aspect of the analysis has been publicly challenged. We know that the Report has been very useful for a number of significant house-builders in reviewing their business strategies in relation to the increased role for offsite solutions.

Until recently there had not been much of a reaction from Government to the Report and this was frustrating for those who had worked so hard on it. However, over the last few months the Department for Communities and Local Government has started to become much more positive about the role of offsite solutions to deliver new homes. The lead has come from Eric Pickles the Secretary of State at DCLG who has taken a personal interest in the

potential use of offsite solutions and has for example visited the Rainham development of more than 50 homes constructed by Buildoffsite Member Climate Energy Homes.

<http://www.climateenergyhomes.com/index.php/component/content/article/18-topmenu/news/73-cabinet-minister-praises-homes-ecotech-build-system-sparks-housing-revolution>

The Ministerial Team at DCLG have also taken part in two recent roundtable meetings with the housing industry at which the role of offsite solutions has occupied centre stage. Most recently it has been proposed that Buildoffsite should take the lead in managing a Hub for the offsite Housing Sector.

This is all good stuff – it is a sign that something is happening – and given that the shortage of decent homes for rent or for sale is, as predicted, worsening it is essential that whoever is in power at No10 has got to engage with this issue. It is not going to go away and the factors that drive demand are not going to slacken.

It is not just Central Government that seems to be waking up to the opportunities for a step-change in housing supply enabled by the use of offsite housing solutions. The housing situation in London is as challenging, and probably more challenging, than almost anywhere in the Country. The Mayor's Office is actively embracing the potential of the offsite solution and this is matched by the Labour Group which we know is actively researching offsite construction methods. Nationally the Labour Party has commissioned Sir Michael Lyons to look at housing and the role of offsite solutions will be included in this Review.

So the omens look promising but it is still the case that the conundrum of an assured market being necessary to give the confidence to suppliers to invest in additional manufacturing capacity will not simply go away. If Government wants to see rapid results (ie the rapid delivery of large numbers of new homes) – and this is the message coming out of DCLG – then Government will need to be imaginative in providing some tangible incentives.

Watch this space – the housing market for offsite solutions is, after many false dawns, starting to look very interesting.

BIM for Manufacturers and Manufacturing – How prepared are you?

There is no doubt that the increased application of BIM to project design, delivery and asset management will support the increased use of offsite components in both new build and refurbishment.

A new forum, called BIM for Manufacturers and Manufacturing (or BIM4M2), has recently been created to represent the needs of manufacturers as the industry moves towards the 2016 deadline for adoption of Building Information Modelling (BIM) and beyond. Manufacturers and suppliers have a vital role to play in improving information exchange that sits at the heart of BIM. This Forum is one of the community of BIM4 groups that have been set up to help support and promote the uptake of BIM. Steve Thompson of Buildoffsite Member TATA is chair of the Forum.

Manufacturers are being encouraged to share their current understanding of BIM and identify their support needs, by taking part in a short survey. All manufacturers and their staff, whether just starting out or experienced in BIM, are encouraged to participate in the survey. The survey can be completed via the following link:

<https://www.surveymonkey.com/s/2YZXQHP>

Further information about BIM4M2 can be found at www.bim4m2.co.uk

Manufacturers' feedback via the questionnaire will help to identify the challenges faced in gearing up for BIM as well as gaps in knowledge and understanding.

Introducing “the B1M”

For those who want to connect with a wider world of BIM activity involving people who are making a success of Information Modelling to support business and project development there is a great free on line newspaper which goes under the name ‘The B1M’. Access is via: theb1m.com

The site will also introduce you to a wide community of BIM users and video clips that tell the story of the use of BIM as a day to day business tool to drive

innovation and improvement.

In collaboration with Peter Foster of Buildoffsite Member Premier Interlink (Waco UK Ltd) we will be discussing the opportunities for collaboration with the editor.

Costain – Challenging the business to ‘Think and Deliver Different’

In this piece, Operations Director Colin Reynell revisits the presentation he delivered at the Buildoffsite Member to Member event in May. He describes the



approach Costain refer to as ‘Factory Thinking’. This transformational approach is how Costain will create a visionary, game changing construction business, with a clear focus on asset performance and on outcomes that matter to



Every day at Costain we are challenging our business to ‘Think and Deliver Different’, and we are looking forward to working with everyone at Buildoffsite to pioneer and transform our industry for tomorrow, today.

Industry Tipping Point

I was reading the recent *Times supplement* on the future of construction and what stood out to me was that the future of our industry needs ‘transformational players’. As we come out of recession, and with technology having an increasing impact on our everyday lives, the time for change is now. In the same way as the Japanese redefined the car industry in the 1960s, Microsoft made computers accessible to all, Apple changed mobile technology, the question posed was: “*Where is the transformational leader in construction?*” To me, the answer is simple: it’s us, all of us, we can choose to transform or not.

That’s why Costain has joined Buildoffsite, not only to challenge ourselves, but to join other like-minded companies with a desire to move our industry forward as pioneers in the ever-changing digital age.

Costain is passionate about Engineering Tomorrow, our strategy to support our customers in solving their most important and complex asset challenges, and I was asked by Richard Ogden to share at the recent Buildoffsite Member to Member event what Costain is calling 'Factory Thinking'. (Hopefully, those who attended found it interesting, or at least were not visibly asleep...)

Factory Thinking

I'm at pains to point out that Factory Thinking is about a mind-set and approach; the set of tools will continue to adapt as new best practices evolve. It includes offsite as one of these tools, but as important as that is the focus on the whole asset lifecycle, and delivering customer promises more effectively, efficiently and predictably. In other words, connecting the dots better for our customers, optimising asset performance and focusing on outcomes rather than traditional construction outputs... the things that matter to our customers.

Without repeating the presentation, Factory Thinking is harnessed around 3 core elements: Customer, Innovation and Integration, and works on the delivery principles of Systems Engineering used extensively by the aeronautical, automotive and technology industries (copy and tailor with pride!). You will often see this presented as the 'Engineering V'.

Customers

Costain is putting customer outcomes at the heart of its business. All of our efforts are about gaining a better understanding of what's important to our customers' businesses, their change drivers and giving them the confidence of a predictable outcome. An example of this is the AMP6 regulatory period for our water customers, moving to a TotEx regulatory return and needing 25%+ efficiency versus AMP5. At Costain, we are already helping our customers to batch and optimise their AMP6 programmes, which in turn will set the tone for us to achieve economies of scale through delivery innovation.

Innovation

With 25%+ efficiencies required, the burning platform exists and 'business as usual' delivery will no longer suffice. We are moving away from traditional construction approaches.

From bespoke to productise – in solutions design, we are leading a platform and product-based approach, challenging ourselves to effectively create a product catalogue and asset hierarchy based on reducing parts count and reusing as much as possible. The underlying mind-set is 'Fewer parts, used more = less cost, better quality'. Anyone who drives a modern Volkswagen is using products developed in this way.

From construction to assembly and productivity – moving away from bespoke, complex construction, towards creating repeatable products, simple onsite or offsite assembly, coupled with black belt performance in logistics to minimise waste. Once we have established the optimal assembly process, the aim is to then speed it up daily onsite. To achieve true productivity, we believe the mind-set needs to transform from month and weeks on Gantt charts to hours and minutes of measureable improvement every day.

Integration

As I mentioned earlier, I think we can only achieve transformation if we work together in an integrated way, and truly embrace the technologies available to us today and their possibilities for tomorrow. A programme mind-set giving the whole supply chain maximum visibility of future expenditure and the opportunity to fill factories will in turn offer efficiency through product rationalisation and factory economies of scale. It will also undoubtedly unlock further innovation and increase our collective commitment to future R&D. On the technology front, the adoption of BIM seems to be gathering pace, thanks in part to the Government BIM Level 2 objectives, however, we are merely scratching the surface of the efficiency opportunities if we look to parallel industries. Moving from thinking of BIM as a CAD tool towards a powerful common data environment unlocks endless possibilities for collaborative data intelligence to help our customers maximise asset performance across the whole of its life.

I have great confidence that we can collectively transform the way our industry works. We can all point to great examples of individual projects today. We now need to join the dots better and make Factory Thinking the muscle memory of how we go about our business each and every day. Costain look forward to being part of the Buildoffsite community, striving to make this a reality.

Stop Press: Legal & General Property join Buildoffsite

Legal & General Property, one of the largest institutional property fund managers in the UK, with assets under management of over £14 billion has joined Buildoffsite.



*Bill Hughes
Managing Director*

Legal & General continues to participate in a growing range of supply side housing activities including affordable housing, the house building sector, urban regeneration, student accommodation and care homes. As such it is currently involved in a pipeline of over 25,000 new homes across a range of tenures.

L&G will be represented on the Buildoffsite Executive Group.

A fuller report on L&G's ambitions for its membership of Buildoffsite will be included in the next newsletter.

Laing O'Rourke's Leadenhall Building included in London's Open House 2014

The iconic Cheesegrater building at 122 Leadenhall Street in the City of London has now been handed over by Laing O'Rourke to the client. At 224 metres, the Cheesegrater is the City of London's tallest building.



Those wishing to visit this amazing building will wish to note that the

Cheesegrater has been included in the 800 buildings in London to be open to the public as part of Open House 2014 which takes place over the weekend of 20/21 September 2104. In addition, a limited number of tickets (c50) will be available for a private viewing scheduled to take place on the evening of 20 September – the details will be included in the Open House Guide.

Further details of the full programme in 2014 will be published in the 2014 Guide, available from 15 August 2014.

For more details visit:

Website: www.openhouselondon.org.uk

Facebook: <http://www.facebook.com/pages/Open-House/57147807198>

Twitter: @openhouselondon

Elements Europe Manufactures 199 Student Room Pods in Just 11 Weeks

Elements Europe has successfully manufactured and delivered 199 student Room Pods for a new student accommodation scheme in Luton for client GolDev Ltd. Facing a tight deadline of just 11 weeks for manufacture and 7 weeks for installation, Elements Europe's Room Pod system has enabled the scheme to open in time for the September 2014 in-take.



Elements Europe's off-site building systems are frequently called upon to deliver accommodation solutions for restricted build programmes. Even the prototype needed to be designed and manufactured within a limited amount of time, so a process which can sometimes take weeks was completed in just five days.

Nigel Stockton, Production Manager at Elements Europe said: "This project came to fruition very

quickly and we did everything we could for the client to meet their short programme.”

Whilst the Room Pods were being manufactured, the prototype was delivered to site to provide the new accommodation scheme (named Hatbox) with a show flat to enable CRM, the largest student accommodation provider in the UK, to start marketing the scheme to students.

The developer, Wayne Gold of GoDev Ltd, commented: *“The new show flat is yet another reason why off-site construction is a great solution for a scheme on an expedited programme. Having the show flat delivered internally complete increased our marketing timescales. This will hopefully improve the number of pre-lettings prior to completion of the building.”*

The room types have been designed and manufactured including a studio apartment which encompasses a sleeping, study and kitchen area, and an en-suite bathroom; and an en-suite bedroom Pod, which features a study and bedroom area, with an en-suite bathroom. Elements Europe manufactured 151 studio Room Pods and 35 en-suite Bedroom Pods. In addition, communal kitchens were manufactured for all of those students living in en-suite Bedroom Pods as opposed to the Studio Apartments.

Elements Europe worked closely with the main contractor Healthcare Developments Ltd to ensure the seamless installation of the Room Pods. The Room Pods were installed at a rate of 13 per day, including associated corridor cassettes. Mast climbers were used during the installation process due to site constraints.

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Elements Europe delivers its largest scheme to date

Elements Europe has delivered phase 1 of its 779 bedroom student accommodation scheme in Colchester. The £37.7 million scheme is being delivered as a turnkey solution by The Pickstock Group, which has seen Elements Europe’s Room Pod system being installed at a rate of 14 per day.

Elements Europe’s in-house design team worked closely with architects Jefferson Sheard to ensure

the needs of every student were thought about. The accommodation comprises seven different room types, ranging from studio apartments to en-suite cluster rooms, enabling students to live together or on their own. The rooms have been carefully configured, ensuring the standard en-suite rooms are located next to studio apartments, allowing for greater integration between the students. Kitchen Room Pods, stair cores, floor and corridor cassettes have also been installed as part of the project.



Graham Haycox, Design Project Leader for Elements Europe, commented: *“This is the largest student accommodation scheme that Elements Europe has undertaken to date. The complexity of the room configuration in an irregular shaped building has been challenging, however the expertise within our department and the relationship with the architect has brought the project to fruition. We were pleased to see all Room Pods installed into Phase 1 and Phase 2 plans are now well underway.”*



This large student accommodation scheme is another example of how modular construction enables fast track build programmes to ensure student accommodation opens on-time for the start of term. Phase 1 will open for the September 2014 intake with a further 398 bedrooms being delivered in time for September 2015.

Kate Pickstock, Development Surveyor for The Pickstock Group commented: *“It’s wonderful to see Phase 1 close to completion, ready for the students to move in next month. This project has been executed in just 12 months, something that would not have been possible without the use of off-site modular construction.”*

Elements Europe Win Multi-Million Pound Off-site Contract for Berkeley Homes

Berkeley Homes has appointed Elements Europe to manufacture and install 461 student bedrooms comprising 604 modules over five storeys. The new student accommodation scheme is situated in the historic city of Bath, on a redevelopment site of a now derelict former residential care home. It is at a key gateway to Bath city centre and in a perfect location for student accommodation.

Neville Golding, Surveying Manager of Berkeley Homes (Oxford & Chiltern) Ltd added: *“This is an extremely exciting project in the centre of a historic city. We’re looking forward to working closely with Elements Europe to deliver a development of exceptional quality and functionality.”*



Working alongside architects Stride Treglown, Elements Europe’s design team has assisted in the design to ensure the highest level of specification.

Elements Europe will manufacture three types of bedrooms:

- A study bedroom offering students an en-suite bathroom with sleeping and study area, within a cluster flat environment, sharing a communal kitchen and dining area with up to 11 students
- A studio room, which features a kitchenette facility, study and sleeping area, as well as an en-suite bathroom, giving students their very own private facilities in one room
- A ‘twodio’ room, which is designed for double occupancy for friends or partners who wish to share one studio room.

All Room Pods will be manufactured with Georgian sash windows, to fit in with Bath’s local vernacular. The building will also replicate Bath’s architecture, achieved by the use of Bath stone on the external façade.

Entrance doors are at street level, with stone steps

and iron rails leading to the stone arched entrance doors. Stone columns feature on the entrance to the retail space, that will take up part of the ground floor and the building also incorporates fabricated chimneys to further replicate Bath’s historic buildings.

With Berkeley Homes now on site, Elements Europe will start manufacture during August. The first volumetric units will be installed in January 2015, with the accommodation set to open in time for the September 2016 intake.

Elements Europe’s Sales Director Kevin Arthur said: *“We are extremely excited to be involved in a project of this scale and importance, particularly working alongside a company of Berkeley Homes’ stature. This is an important redevelopment site for the city of Bath and will offer the highest quality of student accommodation.”*

For more information, please contact Kevin Arthur, Sales Director on 01691 656 591, or email info@elements-europe.com, or visit the website www.elements-europe.com.

NG Bailey helps propel care into a new era

NG Bailey has completed its role in a flagship project to create the NHS’s newest hospital – as a ground-breaking replacement for one of its very oldest. Following handover and a phased transfer of services, the £33m Bridgwater Community Hospital in Somerset has begun to treat the first of the 62,000 patients it will care for each year, ahead of its official opening later this summer.



NG Bailey’s engineering team worked in partnership with its specialist offsite manufacturing division to provide all mechanical, electrical and public health services for the new facilities, as part of its £4m contract. The new hospital houses 30 inpatients beds, a midwifery-led maternity unit, a minor injuries clinic, an x-ray centre, an outpatients’ department,

and therapy and rehabilitation services. It replaces a 200-year hospital based in Salmon Parade which was cramped, outdated and no longer fit-for-purpose for an ageing community that has grown by a third in just 20 years.

David Thomas, Operations Director for NG Bailey's Engineering Division, said: *"The benefits of offsite manufacture played an important part in ensuring our project partners were able to deliver the new hospital on time, below budget, safely and sustainably, and defect-free. The savings to taxpayers' money were so significant that we were able to work together on creating a new endoscopy unit over and above the original specification – without impacting on the cost or timescale of the main build. This has added a valuable extra dimension to the range of services the hospital is providing to the fast-growing community it serves. Being involved in the whole design process enabled us to seize an opportunity to influence and shape the best possible approach in bringing this building to life and contributing to its future success."*

In delivering the project for end client Somerset Partnership NHS Foundation Trust, NG Bailey worked in partnership with Integrated Health Projects (the P21+, Sir Robert McAlpine / VINCI Construction UK joint venture). The contract commenced in February last year.

For more information, please contact Milly Rose on 01943601933 or email: milly.rose@ngbailey.co.uk.

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Portakabin Group Publishes Guide to Procuring Teaching Accommodation

Schools across the UK are facing increased demand for places as a direct result of a steep increase in population and in the number of children reaching school age. As a result, many schools have an urgent requirement to expand existing accommodation or to upgrade or rebuild ageing school buildings to maintain educational standards.



Portakabin Group has recently published a Guide to help schools and academies procure teaching accommodation that provides long-lasting building solutions that are fast to construct and cost effective

in use, without compromising the quality of facilities for pupils. The scope of the Guide runs from self-contained



permanent classroom blocks to complete purpose-designed schools. This latest in a series of free to download Portakabin Guides aims to help schools and academies avoid some of the most common pitfalls when procuring new buildings whilst ensuring that the facilities meet both current and future requirements, and are delivered on time and on budget.

The new Guide entitled 'Get The Most From Your Next School Building Programme', provides a useful five step guide to procuring new buildings for schools. It considers:

- Planning
- Method of construction
- Design
- Project management
- Selecting a modular building specialist.

Modular construction is a fast and cost-effective way for schools to expand teaching facilities, particularly on constrained sites. Complete, fully-fitted buildings can be delivered in a fraction of the time of a site-based construction solution, sometimes just days from receipt of order and are built to permanent standards. Critically, modular buildings can be installed with the minimum disruption to staff and pupils and it is a much safer approach as the majority of fitting out is carried out off site. This is an important factor where a new building is required on an existing and operational school site.

The Portakabin Group has the resources to deliver both bespoke projects and standardised accommodation solutions for both permanent and interim applications, in the most challenging timescales, with programme times reduced by up to 50 per cent and much less impact on the environment.

To download a copy of the new Guide for schools and academies, visit www.portanews.co.uk/reports.

For further PRESS information, please contact Joanne Bridges or Lauren Dew on tel: 01489 570898 or email: jbridges@bridgescommunications.co.uk; ldew@bridgescommunications.co.uk.

Case studies

Enemetric – Ducane Road

Construction specialists Enemetric hit new heights during a complex housing association contract which saw the team add a fifth floor to an existing, major apartment block and constructed infill apartments on reclaimed land. Main contractors Apollo Group appointed Enemetric to design, supply and install a 44-flat new top storey for clients Ducane Housing Association, which provides homes for postgraduate students and key workers at its London development, situated near Shepherds Bush.

Enemetric built the bespoke units and associated infills, lift shafts and stairwells at its Scottish base using its patented volumetric technology. The pods were fitted with external thermal cladding provided by Enemetric's sister company Enewall, which supplies a range of renders and aggregates. The finished modular units were then transported by truck to the capital and craned into position at the narrow site, which stretches more than 400m along Du Cane Road.

Steve Kelly, Construction Director at Enemetric, said: *"This project presented a number of challenges which we were only capable of overcoming as a result of our patented volumetric technology. Firstly, the site is constrained by a railway line to the rear and a busy main road to the front, which had tight restrictions on access. By delivering the new flats in separate pods we were able to drastically reduce delivery and installation times, minimising disruption in the area. The timing of the build also presented us with difficulties. We were able to complete the contract in seven carefully planned phases in order to complement Ducane Housing Association's funding mechanism. Our volumetric technology affords us the opportunity to manage the build precisely, supplying and installing the new floor in individual, self-contained units. This technique cannot be replicated by traditional construction methods. Other challenges included achieving the highest possible levels of thermal insulation, air tightness and acoustic performance, all of which were managed and integrated from the company design office in Scotland."*

Mike Wilkins, Chief Executive of Ducane Housing Association, said: *"The Association committed to improve an estate of 112 existing homes and also to*



make best use of the land 'footprint' to construct 44 new homes, most as an added storey to our existing five blocks, and two new infill blocks. We think this may be the first time this has been done in the public sector and we could not have done this without the assistance of specialist volumetric build construction company, Enemetric. This efficient use of the land available was only possible with a rolling decant programme and off site manufacturing was the best solution. The site constraints and the disruption that would be caused by a traditional method of construction ruled this option out. Enemetric performed well, and delivered a good product, on time and on budget. The phased delivery of the new homes; which were driven to site, craned into position, then connected to services, achieved our objectives including a minimum disruption to residents."

To find out more about Enemetric, visit www.enemetric.co.uk

Enemetric – St Joseph's School

Enemetric had no need to stay after class after completing a London primary school's extension ahead of time and on budget. The construction specialists built modules of the new classroom and toilet block at its base in Wishaw, Scotland, using its patented off-site volumetric technology. This revolutionary technique saw the superstructure of the building arrive at St Joseph's Primary School, Barking, in 10 separate pods before being craned into position on prepared foundations.

Work on constructing the framework was carried out at the same time as groundworks were completed at the school, thereby cutting weeks off the overall build time. It is thought that constructing the extension using traditional techniques would have taken an additional two months on site.

The project was carried out in partnership with schools specialist HA Marks Construction. Adrian Crowe, Director at HA Marks Construction, said: *“As the construction programme was very tight, the most innovative solution was to design and build the project using Enemetric’s off-site volumetric technology. This technique reduces the time we spend on-site, which reduces the costs to the client. Another advantage is that the carbon footprint of the build process was substantially reduced as deliveries to the site were cut by 85 per cent. Site waste was also reduced by up to 90 per cent.”*



Paul McIntyre, Architectural Manager at Enemetric, added: *“Through utilising our patented volumetric technology we are able to design, supply and install buildings in record times, while also reducing the environmental, noise and traffic problems generated through traditional construction methods. In this case, the 10 pods were delivered and installed at St Joseph’s during the half-term holidays, ensuring the children returned to new classrooms rather than a building site.”*

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McAvoy – Grindon Hall Christian School, Sunderland, Tyne & Wear

Grindon Hall School was formerly Grindon Hall Hospital, but became the current school in 2000. The main house is a two storey light brick faced building with stone detailing to the windows dating from mid-19th century. Internally it possesses a mezzanine level, and steps down to a lower level at the back of the site. The original building was extended over the years to include a T-shaped extension, currently used for classrooms and changing. The school recently adapted a stable block to the northern boundary to provide further classroom spaces at two levels. Additionally the school has a number of outbuildings to the rear which have a variety of

functions including storage and a popular Nursery provision.

The site has a good mixture of mature trees and hedgerow within its boundary and a sports pitch to the West used primarily for rugby. A new accommodation block was part of the expansion to existing facilities at Grindon Hall.



The school made a successful bid to the Department of Education to achieve Free School status from September 2012. The school’s current capacity is now 560 pupils, having started the September 2012 school year with some 540 pupils catering for the high demand from the local community. Growing pupil numbers and the need for additional teaching meant the school premises had to expand. The teaching model at the school is to teach in year groups of up to 40 pupils split into two classes of 20. The school is a through school taking children from the age of 5 through to 18.

The new accommodation was planned so that, together with some reorganisation of the existing buildings, a coherent layout could be achieved that supports the smooth operation of the school. The ‘stable block’ is a standalone 6th form centre; the main building houses the secondary age pupils and the 14 new classrooms within the new build element accommodates the primary cohort of pupils.

In addition to the classrooms, the new building provides a multi-purpose hall, a kitchen, music classroom and changing facilities. Reorganisation of the existing campus included removal of temporary accommodation, and some non-original modifications and extensions to the existing historic building. The stable block is retained and redefined within the new hub configuration. The new building nestles in among the existing school facilities to define a series of external walk ways and play areas corresponding to the different teaching zones.

the new and existing buildings to encourage outside learning and interaction while providing a clear organisational structure to the campus-style hub.

The new building is a part single storey, part two storey L-shaped block that is carefully inserted among the existing buildings to not only provide a coherent layout for the school, but also to ensure that the existing main building remains the principal focus of the school campus. The new building sits lower than the existing historic building, and gently wraps around the rear and side elevations revealing the more significant historic frontages, and forming a series of interconnected external courtyards between the old and new.

- **Building type:** Primary School, with both modular and rapid build elements
- **Project budget:** £3,422,000.00 including all fees
- **Target CO² emission rate (TER),** Kg CO² /m² per annum 15.5
- **Building CO² emission rate (BER),** Kg CO² /m² per annum 15.1
- **Duration:** 24 weeks
- **Space heating demand:** 75.39Mj/m²
- **Heat load:** 8.28 kWh/m²
- **Primary energy demand:** 74.7kWh/m²
- **Ground floor construction:** Classrooms are McAvoy standard modular classroom construction with a 3kN/m² floor loading. Sports hall is a ground bearing concrete slab
- **External wall construction:** Internal leaf is standard timber frame 140 stud with frametherm 32 between studs. Cladding is combination of coloured render, brick slips and Western red cedar
- **Roof construction:** Flat roof throughout, single ply membrane min pitch, 1:80
- **Windows:** PPC aluminium
- **Doors:** Pre-finished hardwood veneered with vision panels
- **Curtain walls/roof lights:** PPC aluminium
- **Air permeability:** 7m³/(h.m³) at 50 Pa
- **Heating system:** Air source heat pumps, ventilation and heat recovery, gas fired boiler providing hot water for kitchen and underfloor heating for sports hall
- **Ventilation:** Mechanical ventilation (combined heating, cooling and heat recovery unit). Controlled by BMS with inbuilt CO² monitors activating fresh air when needed. Natural ventilation in sports hall with high level vents

McAvoy – NAS Thames Valley Free School, Reading, Berkshire

NAS Thames Valley Free School is a special needs school for 50 children and young people aged 5-16 with autism and Asperger syndrome, which opened in September 2013. The development comprised of the demolition of an existing dilapidated building, complete design and build of a new 1800m² off-site fabricated, permanent school building and associated external works and landscaping.



McAvoy were required to provide a complete design and build solution which included:

- Developing design options in consultation with the Free School Trust
- Developing design solutions that meet the EFA Requirements documents
- Co-ordinating and integrating M&E services with ICT and Specialist Sensory Equipment, and fixed and loose FF&E requirements
- Obtaining detailed planning consent
- Construction, commissioning and handover meeting the key milestones
- External works including making good to existing façades, provision of play spaces, car parking

The school is now a brand new high-tech permanent facility built on a brownfield site. An arrival plaza and drop off area form a new public realm off the local access road; with the secure line set back to enhance the sense of arrival. Internally the school is laid out to create hub style learning clusters for each of the year groups. These clusters are located around a central hub that includes an open plan dining/social space, a main hall, music and drama facilities, and a variety of specialist resource/SEN therapy facilities, including two 'rug room' teaching pods. The open plan nature of the central hub

creates a simplified circulation solution while facilitating and encouraging cross class learning; a key emphasis of the school ethos.

The first floor acts as a clearly delineated KS3/4 learning base and also includes provision of staff facilities. Circulation on this level provides direct stairwell access to external social space. External breakout spaces are provided for each class base 'cluster' to encourage outside learning and provide a clear organisational structure to the campus style hub. The new building, which is clad in a combination of white render and Siberian larch timber, is part single storey, part two storey block that is sympathetically located among the principal neighbouring structures. A flat roof, rectilinear form and respectful eaves level have been utilised to ensure the building sits comfortably within the existing context. The overall massing has also been designed for ease of external way-finding; with the building entrances/learning spaces clearly delineated by extrusions in the form.

The design philosophy is to provide the school with a unique identity; while sympathetically responding to the massing and materiality of the surrounding structures. This has been achieved primarily through the use of rectilinear massing and the deployment of a respectful eaves level across the majority of the elevations.

This was the first school to be handed over by McAvoy and was opened on 4 October 2013.

- **Building type:** Combination modular and rapid build elements. Modular was used for the classrooms and rapid build for the sports hall and adjacent accommodation
- **Project budget:** £4,003,000.00 including all fees
- **Target CO² emission rate (TER),** Kg CO² /m² PER ANNUM: 21.8
- **Building CO² emission rate (BER),** Kg CO² /m² PER ANNUM: 19.1
- **Energy performance certificate:** B(26-50) 32
- **Duration:** 24 weeks
- **Space heating demand:** 75.39 MJ/m²
- **Heat load:** 8.28 kWh/m²
- **Primary heating demand:** 74.7 kWh/m²
- **Ground floor construction:** McAvoy standard

modular classroom construction with a 3kN/m² floor loading. Sports hall is a ground bearing concrete slab

- **External wall construction:** Internal leaf standard timber frame 140 stud with frametherm 32 between studs. Coloured render, brick slips and western red cedar cladding
- **Roof construction:** Flat roof throughout, single ply membrane. Min pitch, 1:80
- **Windows:** PPC aluminium
- **Doors:** Pre-finished hardwood veneered with vision panels
- **Curtain walls/roof lights:** PPC aluminium
- **Air permeability:** 6.36m³/(h.m³) at 50 Pa
- **Heating system:** Air source heat pumps, ventilation and heat recovery, gas boiler providing hot water for kitchen and underfloor heating for sports hall
- **Ventilation:** Mechanical ventilation (combined heating, cooling and heat recovery unit). Controlled by BMS with inbuilt CO² monitors activating fresh air when needed. Natural ventilation in sports hall with high level vents
- **Gross internal floor area:** 1788.7 m²

Events

NG Bailey Discovering Offsite Tour

27 August 2014 | NG Bailey Offsite Manufacture, Park 26 Kingsmark Freeway, Oakenshaw, Bradford BD12 7HW

An interactive guided tour of NG Bailey's offsite manufacturing facility, where you will have the opportunity to see a number of offsite solutions being manufactured and assembled at close quarters.

The Programme:

- 12.30 - 13.00 **Arrival & refreshments**
- 13.00 - 13.15 **Introduction to NG Bailey**
Graham Cleland, General Manager
- 13.15 - 14.30 **Factory tours**
- 14.30 - 15.15 **Lean Construction: Engineering value for the customer**
Graeme Brady, Engineering Manager & Andy Charlesworth, Manufacturing Manager
- 15.15 - 15.45 **Wrap up & depart**

Attendance is free for Buildoffsite Members and £100 + VAT for non-members. For more information, please contact Anna Whiting by emailing: anna.whiting@buildoffsite.com.

Homes 2014

26-28 November 2014 | Olympia, London

Buildoffsite has teamed up with the Ocean Media Group, the organisation behind Inside Housing magazine and CIH annual conference and exhibition, to bring you the offsite construction zone at Homes 2014 which takes place at Olympia this Autumn. Buildoffsite will deliver a programme of presentations and discussion sessions to take place over the two days that will focus on the increasingly recognised role of offsite construction solutions to deliver new homes in the private and public sectors.

Details of the event will be circulated shortly.

In advance Ocean Media Group will be conducting a survey to collect information on experiences, intentions, and opportunities for the increased use of offsite solutions. This survey will provide valuable information for the event organisers and, of course, for Buildoffsite.

The survey will be promoted in "Inside Housing" magazine's 15 August and 22 August issues. The URL for the survey will be: <http://www.insidehousing.co.uk/offsite-construction-survey>

The UK Concrete Show

25-26 February 2015 | The NEC, Birmingham

Steven Callaghan, Event Director said: "Marwood Events specialises in organising niche, state of the art, B2B exhibitions for the Building and Construction industry. Our UK Concrete Show, held annually at the NEC in Birmingham and attracting over 6,000 people is now in its 5th year. Currently the event is over 70% sold.

"Since Marwood Events was created in 2009, we have also organised successful events for the roofing, landscaping and road repair sectors, with a management team that combines extensive

experience in the construction and exhibition sectors in both the UK and overseas."

The Offsite Construction Show

14-15 October 2015 | ExCeL, London



As announced in the last newsletter, Buildoffsite has teamed up with Marwood Events to deliver the Offsite Construction Show 2015 at ExCeL, London over two days on 14 and 15 October 2015. This will be the first time that an exhibition and conference programme has been organised specifically to present offsite construction solutions for all markets – new build and refurbishment.

The response to the show launch has been excellent, with a number of Buildoffsite Member Companies already signed up to take exhibition space. Modern Methods of Construction (MMC) have joined Construction News as media partners.

Buildoffsite will have a significant presence at the show, with a large exhibition stand and dedicated seminar theatre, as well as managing the in-hall conference programme.

It is anticipated that The Offsite Construction Show 2015 will attract leading suppliers, contractors, developers, design and engineering professionals, funders, government and private sector clients.

Buildoffsite Members will receive a 10% discount on the cost of their stands.

For more information on exhibiting at the Offsite Construction Show 2015, contact Paul Shelley on 020 3086 9296 extension 3, or Eddie Milton on extension 2, or visit the website: www.off-siteshow.co.uk.

New Members

Legal & General

A full report on this very recent announcement will be given in the next Newsletter.



ASDA

As an EDLC (Every Day Low Cost) business, ASDA is constantly seeking new ways to deliver construction solutions which will directly and indirectly benefit our customers, enhance equipment and construction life cycles, and deliver sustainable innovation. ASDA, being part of the world's largest retailer Walmart, is focused on global alignment opportunities, delivering leverage through scale, welcoming businesses which have the capacity to support and deliver big thinking.



The ASDA Model construction specifications and general requirements provide the wider business construction and engineering direction; key utilisers being implementation and procurement teams looking to deliver a wide variety of business formats at best value. From traditional food stores of varying sizes, petrol filling stations with convenience shopping, through to ecommerce online innovation like Home Shopping, and Click and Collect.

ASDA has a highly efficient and effective construction model team, which sees innovation and new thinking as a critical route to the delivery of current and future strategies, with compliance and safety being very much at the top of this delivery agenda.

Expectations are high, objectives are performance measured and target driven. Our mission is to become the UK's most trusted retailer. Our purpose is to save our customers money every day. We believe in 'Service to our customers', we 'Respect the individual' and we 'Strive for excellence'.

For more information, please contact Brian Churchyard, Sr Manager – Construction Model & Lifecycle on tel: 01132 435435 x63867, or email: brian.churchyard@asda.co.uk, or visit the website: www.asda.co.uk.

Climate Energy Homes



Working with Developers, Contractors, Local Authorities and Registered Providers throughout the UK, Climate Energy Homes take the risk out of delivering low energy homes, with price specification and delivery certainty, whilst providing warmer and more efficient homes that cost less than 50p per day to heat space and water.

The Climate Energy Homes ecoTECH CfSH Build System and the ecoTECH Passive Build System are high quality, factory engineered integrated build systems that deliver low energy homes at a cost equal to traditional build. As a turn-key or product and install delivery solution, the ecoTECH Build Systems take the risk out of the provision of low energy building, offering price, specification and delivery certainty. The systems are designed to maximise natural light and ventilation. The factory built closed timber frames are supplied to site complete with breather membranes, insulation and plasterboard with Secured by Design triple-glazed windows and doors, all pre-installed to ensure air tightness. Minimising energy demand in this way ensures that dwellings utilise energy sources in the most efficient manner by focusing efforts on the comparatively long-lived building fabric. Taking this 'future and climate-proofing' approach means that homes will be less likely to require difficult and expensive refurbishment upgrades at a later date.

Key benefits:

- delivers high quality lifestyle homes for private sale, shared ownership and public or private rent
- standard house types, dramatically reducing costs, and bespoke design service
- building approach saves approximately 50% from programme time and at least 7% off the build budget
- reduced project management and associated overheads, ie offsite waste, labour and carbon emissions
- cost equal to traditional build
- lower utility bills for homeowners / tenants



For more information, please contact Mark Bradbury, Development Consultant, on tel: 020 8633 9700, or email: mark.bradbury@climateenergyhomes.com, or visit the website: www.climateenergyhomes.com.

COMACO



COMACO is a construction company based in Argentina since 1957 with its expertise focused on off-site techniques for construction. In 1995, COMACO purchased the Intellectual Property rights for Britspace Modular Buildings and Gateway Pods, a company with a long history of delivering high quality buildings and pods, with a wealth of knowledge and expertise in the UK.

COMACO has developed and delivered to site the Modular Restaurants programme for McDonald's Restaurants in Argentina, Brazil and Chile, as well as producing modular and flat pack buildings for EXXON, REPSOL-YPF.

With operations throughout South America, new factory premises are being developed in Mexico, DF for the production of Toilet Pods via COMACO Off Site de Mexico.

COMACO is now established as a market leader in Modern Methods of Construction throughout the region and is able to provide a high quality product wherever the client needs it. As the continent is huge, the company has the capability to establish temporary premises to solve a particular demand for a client.

Our buildings are manufactured to provide exceptional levels of insulation and energy-efficiency, and include the latest environmental technologies. The first Gold Certificate green building McDonald's Restaurant in South America was made by COMACO.

For more information, please contact Executive Director George Aguero on tel: 0054 223 1553 61103, or email: jaguero@comaco.com.ar, or visit the website: www.comaco.com.ar.



George Aguero

University of Liverpool

As an elite Russell Group institution, the University of



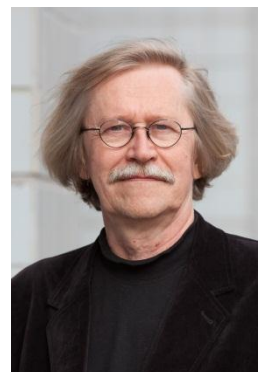
UNIVERSITY OF LIVERPOOL

Liverpool is one of the UK's leading academic institutions, with an annual turnover of £452 million, including £124 million for research. It is ranked in the top 1% of higher education institutions worldwide. The University of Liverpool's research has a tangible impact on people, places, policies and the planet by focusing academic efforts on the grand challenges – environmental and cultural change, security and conflict, sustainable energy, materials for the future, and global healthcare.

The Liverpool School of Architecture (LSA) is an internationally recognised centre for architectural and built environment research. The LSA was acknowledged as one of the top three research Schools of Architecture in the UK Government's 2008 Research Assessment Exercise. Since 2008, the LSA has continued to enhance the scope and depth of its research activities. Recent additions of senior researchers in the areas of BIM (Building Information Modelling), sustainable design and computer-mediated design have increased the emphasis on inter-disciplinarity, especially in linking the creative, collaborative and technological aspects of developing sustainable built environments.

The LSA has networks with some of the best European architectural and engineering practices, and is a key contributor to the new Design Institute at Liverpool, set up to foster collaborative initiatives across design and engineering, such as in the areas of rapid prototyping, digital fabrication and virtual engineering.

For more information, please contact Professor of Digital Architectural Design Arto Kiviniemi on tel: 0151 794 3575 email: a.kiviniemi@liverpool.ac.uk or visit the website: www.liv.ac.uk.



Arto Kiviniemi