

# buildoffsite



**New Year. New Start.** New Chairman Andy Dix shares his vision for the future of Buildoffsite and the challenges ahead for the construction industry.

**Are you ready for the digital revolution?** We are increasingly seeing new uses of digital technology, from the design studio to the construction site.

**The rise, fall and rise of Virtual Reality...?** Virtual Reality has exploded in the past year, signalled by the \$2 billion purchase of Oculus by Facebook, however what benefits will it offer the construction industry?

**Portakabin receives second award commendation for one of the UK's most complex interim healthcare schemes.** This 4,200sqm facility was completed in less than four months.

**Premier Modular delivers Springfield Hospital Cancer Care Centre.**

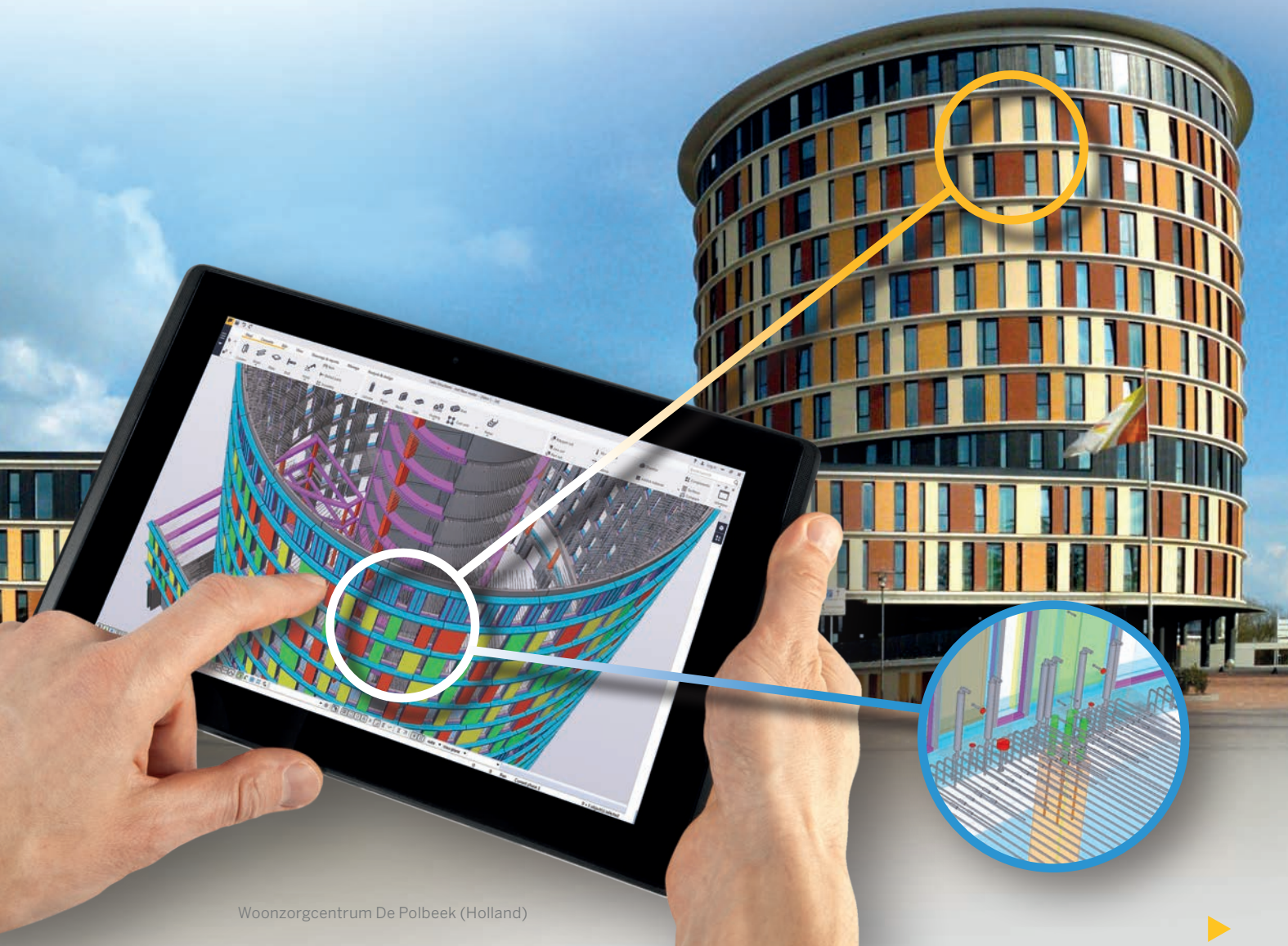
The new two-storey cancer care unit was constructed in just five weeks.

**New members.** Buildoffsite welcomes three new members; 24:7 Living UK, Crest Nicholson and METSEC plc.

**Next members meeting.** 22nd Feb Direction Group Meeting, Hosted by the Encon Group in Chorley



# From design to reality



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## Welcome

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**As we enter a new year, significant opportunities lie ahead and in my new role as Chairman I see great ambition, dedication and talent within our team and our Members, which I fully intend to utilise in shaping the future of Buildoffsite.**

In this Winter edition of our newsletter we see some of the outstanding achievements of our members in the final quarter of 2016 and a taster of the progressive technologies used in some remarkable construction projects such as a new high-complex ward at Royal Stoke University Hospital, a £2 million office support building at the University Hospital Southampton and the New Islington Free School in Manchester, part of a regeneration project which will accommodate 420 children.

Also at the end of last year we welcomed three new Members; 24:7 Living UK, Crest Nicholson and METSEC plc and we hope to see many case studies and news stories in future newsletter editions on offsite projects from each of them, plus all our Members who joined in 2016.

If you would like to contribute to our Spring newsletter please contact Roisin Sweeney on 0207 549 3306 or email [roisin.sweeney@buildoffsite.com](mailto:roisin.sweeney@buildoffsite.com)

**Andy Dix** Buildoffsite Chairman

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# Chairman Message



Andy Dix

## New year. New start.

**So here we are the start of a new year. By tradition the time for reflection on the year just gone and resolution setting for the year ahead. OK – a bit trite I know – but having just arrived as Chairman of Buildoffsite I am fired up about getting on with the job of further developing the organisation as a respected and authoritative agency for change and as a provider of exceptional value for our Members.**

Over the last few months I have had the pleasure of meeting many of our Members on a one to one basis and hearing at first-hand about their business needs, ambitions, developments and opportunities within their key market sectors. Plus – and this for me is really important – I have been able to get a sense of what Buildoffsite can do to best align with and support contemporary business needs. These conversations have been invaluable in helping me to get a handle on how Buildoffsite needs to adapt to the evolving needs of our Members and prospective Members.

I think the organisation is in reasonable shape and strategic developments such as the setting up of Hubs to allow Members to focus on developing priority market sectors have been good for our brand.

The organisation is still small, we will need to develop our internal systems so that we can work smarter and use our knowledge and network effectively. We will, of course, continue to develop collaborative arrangements with other organisations that share our ambitions and values including the Professional Institutions, Government Agencies and the HSE.

Before I was appointed Chairman I had already brought my own company into Membership of Buildoffsite. I did this because I saw an incredible opportunity to obtain value from being actively involved in the Buildoffsite Network. As Chairman I have the platform to share my experience and expectations with others.

Many of our Members were able to attend the Direction Group meeting on 15 December - this provided a great example of Buildoffsite at its very best. An informed and enthused group of 60 senior industry people who had come together to share information on innovative developments and to meet some kindred spirits. Open, honest and informed discussion between people and businesses who want to help bring about a new industry. An industry that grasps innovation including the innovative use of offsite construction.

It will I think be important that we do more networking events outside London to engage with regional infrastructure and investment opportunities. We also need to give careful consideration to how we can sensibly embrace the power of digital communications to engage with a wider audience. An increasingly significant proportion of the industry prefers to “meet” and share information through webinars, YouTube videos, pod casts, twitter and so on; Buildoffsite is already working on developing the capability to respond in an appropriate format.

*“A key challenge for Buildoffsite is to work with our Members and partner organisations to engage effectively with individuals who are just starting out on their careers in construction and those who are still thinking about a career choice and to help the industry attract the brightest and the best”*

Notwithstanding the platform, you may wonder why people share information. To get at the answer you really need to experience Buildoffsite and take part for yourself in our extensive programme of networking events. At one level it might simply be a recognition that no individual or business has all the right answers and offerings. If you accept this truism then it is not so much of a leap to recognise that the only way forward that makes any sense is for our most talented people and most effective businesses to work together and collectively grow in confidence and capability. At another level our events provide opportunities for observers to get a real insight into the future of the construction industry. An industry that will have much more in common with advanced manufacturing sectors that deliver quality products and solutions and enjoy levels of productivity and efficiency that the UK construction industry as it exists today can only gawp at.

### Our Members want to be part of that future.

I believe that Buildoffsite as a knowledge sharing and communication network has been doing a really good job, consistently punched above its weight. Proof of this success is in the way in which other organisations regularly plagiarise what we do for their narrow commercial gain, we take it as a compliment and it motivates us to consistently find better or new ways of working

### Question- is offsite still a disrupter?

I believe that we have already passed the point at which offsite methods have become mainstream across almost all parts of the industry. To some extent some in the industry will still see offsite methods as a direct alternative to traditional construction methods but this really misses the point. Adopting an approach to construction that looks to optimise the use of offsite alongside the smart use of information modelling plus the application of lean manufacturing to identify and eliminate waste in all its forms will deliver outcomes including outcomes over time that represent much more than an alternative construction technique. One of the ongoing challenges for Buildoffsite will be to continue to push this message.

Another challenge for Buildoffsite is to work with our Members and partner organisations to engage effectively with those individuals who are just starting out on their careers in construction and those who are still thinking about a career choice. It is clear enough that the construction industry needs to attract the brightest and the best. To achieve that ambition the industry will need to demonstrate that it can match working conditions, opportunities and respect for people, harnessing cutting edge technologies and ways of working that are more typical of the digital and gaming sectors.

I hope that this short overview gives you some insight into my thinking regarding the future development of Buildoffsite. As I said at the top of this piece we are talking about evolution not revolution. We have the support of an excellent and proven delivery team and an incredibly talented and experienced Executive Group. Above all we enjoy the support of a Membership that is enthusiastic for industry change and shares a commitment to help build a better industry. I hope that many more companies and organisations will want to join us and help us to constantly redefine what Buildoffsite is and what it can do to help bring about a better, safer industry.

*“Our events provide opportunities for Members to get a real insight into the future of the construction industry. An industry that will soon have much more in common with advanced manufacturing sectors that deliver quality products and solutions, whilst achieving advanced levels of productivity and efficiency.”*

# News



Chris Davis  
Director of Professional Excellence  
and Practices at Mott MacDonald

## Are you ready for the digital revolution?

**We have only to look at how the digital revolution has transformed sectors as diverse as health, finance, the media, travel and manufacturing to see what a disruptive effect it has had on the way we live and work.**

**In contrast, the take-up of digital solutions in the infrastructure industry has been more gradual and is still very much in the ‘growth’ phase. However, we are increasingly seeing new uses of digital technology, from the design studio to the construction site. Examining these changes provides a glimpse of where our industry is heading.**

### A world ripe for change

We live in a world of ‘digital abundance’. Computing hardware has never been cheaper and software continues to become more powerful. It’s hard to imagine, but in 1981 it cost US\$700,000 to store just 1GB of data. Today the cost is US\$0.04. Transmitting power has also increased. In 1998 the cost was US\$1200/MBps. That cost has fallen to just US\$0.06/MBps today. Money is simply no object when it comes to storing, processing and transmitting data.

This has been matched by exponential growth in information. Buckminster Fuller’s Knowledge Doubling Curve shows how the growth of total human knowledge has accelerated over time, and IBM predicts that the ‘internet of things’ will lead to a doubling of knowledge every 12 hours. This digital abundance – both the amount of data and the means to manipulate it – is a largely untapped resource. In any economy, when a resource shifts from being scarce to being abundant (or vice versa), a revolution of some sort occurs.

And the industry is ripe for a revolution. While many countries are still in a phase of ‘infrastructure growth’, several – predominantly the most developed economies – have reached a state of ‘infrastructure maturity’, where the value of infrastructure in use far exceeds the value of new assets built each year. In the UK for example, we add £1.8bn of new assets to the water sector each year; a very small amount compared to the £350bn of water assets that exist already. There simply isn’t the scope to meet growing demands by building more physical assets, so we need to find better ways of managing our assets instead.

The combination of digital abundance with infrastructure maturity leads inexorably to the rise of smart infrastructure.

### The anatomy of smart infrastructure

Smart infrastructure is the result of applying a digital nervous system to physical assets in order to realise new efficiencies and create added value. There are a number of striking examples out there already, from traffic management systems which use sensors and modelling software to reduce congestion, to water monitoring systems which enable leaks, blockages and other problems to be quickly identified and remedied.

Although smart infrastructure systems vary widely, they all share a common anatomy. A data management layer receives and sorts data from sensors, BIM, GIS, CCTV and other sources. This feeds into a sense-making layer which analyses data to create meaningful information. A decision-making stage uses this intelligence to define actions.

But the most important part of the system is the feedback loop in which actions are monitored to continuously refine asset performance. This allows countless small efficiencies to be realised, creating valuable new capacity from old assets.

### Benefits to the infrastructure industry

But it’s not just our clients and their customers who will benefit from better-performing assets. The digital revolution is also changing the way we work to develop existing and new infrastructure assets, from the design phase through to construction. Here are some new developments:

**Let drones do the work for you:** Drones are increasingly being used for site inspections, offering new, faster and safer ways of surveying large areas.

**Cut the work done by humans:** Automation takes work out of the hands of human operators, freeing them up to innovate in other areas. This enables us to direct our focus in design away from distracting process and production points towards the important value-adding decision points which drive safe, sustainable and economic design solutions. For example, we have developed CREATE – a design tool which, by automating the design process, dramatically cuts the time it takes to design a water pumping station.

**Take BIM to another level for better planning:** Use of 4D sequencing enables designers and constructors to work together to better plan project construction methodologies and schedules during the design phase. This enables us to drive efficiency, minimise unplanned change and waste, and to plan realistic, robust and safe working methods. Use of BIM in design also creates the ideal platform to maximise the application of design for manufacture and assembly (DfMA) methodologies.

### A smarter industry

However, all these positive developments will be accompanied by significant changes in the way we work, calling into question many basic principles.

### Less creation, more management:

In instances of mature infrastructure, the focus will fall on making better use of the assets we already have.

**New definitions of value:** A focus on capital costs is great for driving much-needed construction at a stage of ‘infrastructure growth’, but digital solutions shift the focus towards creating whole life value.

### The rise of the ultimate customer:

Clients will benefit in the long term from a focus on whole life costs, but the shift is really towards providing a better service for the end user.

### Low-build and no-build solutions:

The best solutions will cut the construction of new assets altogether, providing purely digital overlays to existing infrastructure. In fact, the very term ‘construction industry’ will increasingly be seen as a misnomer, where management and information-based solutions become the preferred option.

Perhaps the biggest change is in the emergence of information as the prime resource driving these exciting developments in our industry. Although our industry has always used knowledge to design infrastructure, digitally-enabled data can be stored, sorted, manipulated and refined in a way our analogue ancestors could never have imagined.

The technology we use is a key part of the picture, but it is an enabler. The real value is in information. Our job is to innovate with the data sources we have to improve service delivery. This might herald the biggest change of all, as we will see ourselves rewarded not on the basis of the time and materials we use to deliver solutions, but on the value we add. Some visionary companies have understood this and are beginning to innovate accordingly. Other companies will have to work hard to catch up as the change gains critical mass. But one thing is clear – in the infrastructure industry, information is the strategic resource of our time – whoever masters it will own the future.

*“Smart infrastructure is the result of applying a digital nervous system to physical assets in order to realise new efficiencies and create added value.”*



# News

## Become a part of things

Buildoffsite Members are actively encouraged to contribute material on projects and other activities for the Newsletter, which is emailed to thousands of subscribers.

Send your submissions to:  
[roisin.sweeney@buildoffsite.com](mailto:roisin.sweeney@buildoffsite.com)

Submission deadlines for the 2017 newsletters are as follows:

Spring edition:  
Friday 10th March

Summer edition:  
Friday 9th June

Autumn edition:  
Friday 8th September

Winter edition:  
Friday 8th December

Why not follow us on  
Twitter: @buildoffsite

## The rise, fall and rise of Virtual Reality...?

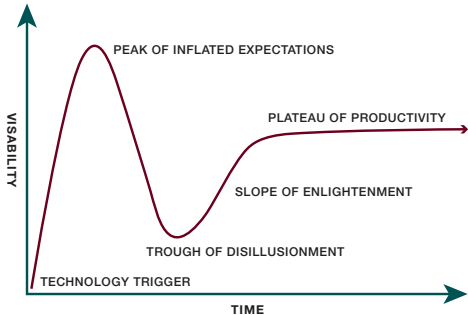


At the Buildoffsite event in August last year, Jamie Hillier presented a summary of new technology-based initiatives that Kier are driving forward to add value. The use of digitisation and Big Data were reinforced as key tools to enhance knowledge, understanding and communication. In conclusion, Jamie left a cautionary note regarding psychological biases and barriers to offsite adoption (and the potential use of behavioural science to overcome this) and Gartner's hype cycle of new tech.

Virtual Reality has exploded in the past year, signalled by the \$2 billion purchase of Oculus by Facebook, however, will it follow this cycle and what benefits will it offer the Construction Industry? In its maturity cycle, augmented reality remains emerging technology, however the quality of what it has to offer is much improved. Kier has already seen benefits in applying Oculus Rift to enhance the understanding of a project and to open a new opportunity of perception. Through VR, Kier has enabled clients and users to free roam on all floor levels, and review specific details – whether that be reviewing maintenance challenges above ceiling tiles, or viewing structural connections in great detail.

The ability to define what the occupier will see is significant. In the context of off-site, it is a further step to BIM in facilitating collaboration between end users, design team members and the Supply Chain – enabling teams to distinguish and de-mystify perception.

Is VR a happy bed-fellow to off-site? Certainly. It should be acknowledged that VR can be used beneficially to traditional build solutions, however themes of industrialisation, DfMA and off-site naturally align and marry with tech such as VR. BIM has the capacity to generate much of the data required to produce the VR environment, with cost and time for this value adding extra minimal.



Using this technology going forward will unlock a wide array of benefits, but to avoid the 'Peak of Inflated Expectations' let's remember:

***"It's a medium for progress, not the progress itself"***

For further information, please  
email: [john.handscomb@kier.co.uk](mailto:john.handscomb@kier.co.uk) or [james.franklin@kier.co.uk](mailto:james.franklin@kier.co.uk)

## Cadcoe's lowdown on apprenticeship reforms in 2017



Neil Meredith

Buildoffsite members who attended the annual Christmas lunch on 15th December will have heard from one of our Directors, Neil Meredith, who shared some really valuable information on the changes that are coming into force for apprenticeships from May 2017.

As Neil mentioned, the Government has a target to raise £3 billion to fund 3 million apprenticeship starts by 2020. At first glance, the new system may appear complex as to how you, as a business, are going to contribute to help the UK achieve this target. The Cadcoe team has been preparing for some time, and are therefore in a great position to impart information and support you in getting the most out of these changes, when considering your apprenticeship strategy. If you need a refresher from the presentation, or you weren't able to make the event, Neil has put together the key information below that you need to know right now about apprenticeships in 2017.

### 1. The apprenticeship reforms won't come into force until 1 May 2017

Up until this point, you can still recruit apprentices as previously and all funding will remain the same. Cadcoe will be starting a new cohort of apprentices on 3rd April, therefore please talk to us if you would be interested in providing a placement for one. We have an existing talent pool of young people seeking apprenticeship opportunities in computer aided design right now.

### 2. A levy will be introduced from 1 April 2017

This will just apply to employers with an annual wage bill that exceeds £3 million. The rate for the levy will be set at 0.5 per cent of an employer's wage bill where it exceeds £3 million and will be collected via PAYE. Employers affected by the levy will receive an allowance of £15,000, as well as a 10 per cent monthly top-up. The levy will only be payable on wage bills in excess of £3 million, which will affect less than 2 per cent of UK employers.

### 3. Levy paying companies will need to set up an account on the Digital Apprenticeship Service

This is a new online portal to select apprenticeship programmes and training providers, and to process payments. You can start registering your account from January 2017. Please let us know if we can support you with setting up your account. Non-levy paying companies will be able to access this service at a later date.

### 4. You will need to choose a training provider from the register of apprenticeship training providers

Again, this one is just for the levy paying employers.

### 5. Apprenticeship frameworks will move towards a new standard

This will take place over time, but eventually 'trailblazer' designed apprenticeship standards will take prominence. Developed by employers, the new standards will offer the opportunity for much greater flexibility in delivering apprenticeships tailored to your business needs.

### 6. Non-levy paying employers won't notice much change

Don't panic! Aside from the introduction of trailblazer apprenticeship standards, for businesses employing less than 50 employees, initially it will be very much business as usual. If your business employs 50+ staff and has a pay bill below £3 million, you will be expected to make a 10 per cent contribution towards training costs, with the Government paying the remaining 90 per cent.

### 7. Grants will be available when recruiting 16-18-year-olds

To continue to increase the uptake of 16-18-year-olds into apprenticeships, the Government will be issuing a £1,000 grant to employers that recruit someone within this age range

Sounds simple? It really is – we promise!  
Please contact Neil on tel: 01952 605549  
or email: [neil@cadcoe.com](mailto:neil@cadcoe.com) if you'd like to discuss this further.

# News

## Healthy Housing for Refugees in Extreme Climates

According to UNHCR, the world is currently witnessing the highest level of human displacement ever recorded and around the globe long term encampment is now seen as a central element of the humanitarian response to this mass movement of refugees.

Most refugee camps are sited in locations with extreme climates, from deserts to jungles. With the passage of time the dwellings initially provided by humanitarian agencies, such as tents or shacks made from lightweight un-insulated materials, have revealed their inherent limitations. Such basic dwellings inhibit domestic life, educational delivery to the young and the development of the social relations needed for community cohesion.

They also fail to protect against the harsh climate. Temporary shelters are ineffective against summer temperatures of 45°C and they require heating in desert winters when temperatures can plunge to -10°C.

The impacts upon health of exposure to such extremes of temperature are debilitating for all and life-threatening for some, particularly for babies and the elderly.

Even if heating can be provided, the fuel required is a major burden for humanitarian agencies and dangerous in terms of fire or toxic fumes to the refugees.

*“The project will combine anthropological insight with building physics and material science to create a series of tested designs and a set of building codes to protect the vulnerable”*

### Seeking the Solutions:

This interdisciplinary project led by a team at Bath with technical, socio-cultural and regional expertise seeks to develop a ground-breaking response to the challenges of refugee shelters globally. Achievement of this aim will entail research in several refugee camps, the erection and monitoring of instrumented test buildings: initially at The Hive, at Bath's Building Research Park in Swindon, and then in Jordan with support from local partners.

The project will combine anthropological insight with building physics and material science to create a series of tested designs and a set of building codes to protect the vulnerable. In addition, the science of the thermal modelling of lightweight and temporary structures will be much advanced and a new science of shelter design created.

The goal is to produce 50,000+ units at some point in the future and this is a golden opportunity for the UK construction industry or off-site manufacturing to develop the skills and supply chain for mass-housing. In brief, we need almost all the skills that lie behind Constructing Excellence. Bath University does not require any cash contributions, we are after in-kind help with skills that we, as a bunch of academics, do not have.

If you would like to discuss this in more detail, please contact Prof. David Coley at the address below. This is a very important project from a humanitarian angle, as the UN already has 62 million refugees to care for. In addition, it is an important opportunity for the UK construction industry, since developing housing for extreme climate conditions will improve the understanding for “Fabric First” approach to mass housing around the globe.

### Supporting Delivery:

We would welcome help with this life-changing project from organisations involved in construction, architecture, building physics, refugees or the media.

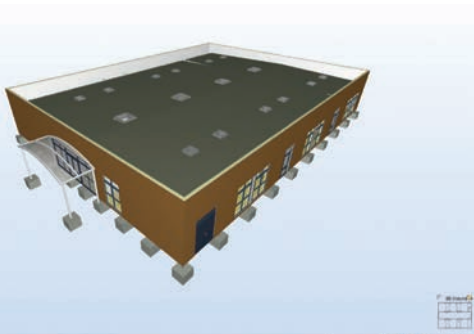
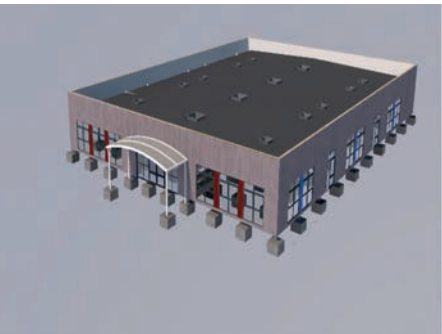
Help might be in the form of:

- attending management meetings,
- in-kind design and engineering services,
- building the demonstrators in Swindon.

### Contributed by David Coley,

Professor of Low Carbon Design  
Dept. of Architecture and Civil Engineering  
University of Bath

If you would like to get involved in this project please email: roisin.sweeney@buildoffsite.com



## McAvoy use of BIM in sustainable offsite construction

Building Information Modelling is a valuable tool for The McAvoy Group for working in sustainable offsite construction. It is essential to adhere to a short construction programme required by the nature of the offsite construction specialised by McAvoy, as it allows for better collaboration. In addition, BIM is essential to determine the building's impact and improve the energy efficiency of the buildings.

David Clark, Innovation Manager of the McAvoy Group, says: “The innovative use of BIM in our offsite manufacturing processes is key in allowing us to make faster and more informed decisions at our early design stages, which ultimately allows us to accelerate the design phase of the project with greater confidence in the overall design. We’re investigating further possibilities and really pushing forward to find innovative ways of using BIM to boost our current benefits of managing costs, and lifecycle assessment and management. Our on-going research and development to investigate BIM Level 3 possibilities after achieving Level 2 is giving us a chance to stay ahead, as we’re well placed to benefit from process development, and implement them within the business to improve our overall quality and service to our customers. We’ve also founded the BIM4Offsite industry group, which is part of the NI BIM Region steering group, with the aim of identifying the benefits of BIM for off-site and modular construction, and leading the industry’s transformation

in the way we work and think about construction with the latest technologies in the world of prefabrication.”

McAvoy is investing in two Knowledge Transfer Partnership (KTP) associates with Queen’s University Belfast, and researching BIM and Structural design development. Hadeel Saadoon, KTP Associate and BIM Coordinator, said: “McAvoy’s use of BIM during the initial planning stages alongside building performance simulation is informing design decisions and problem solving. We’re benefiting from IES (Thermal modelling) to provide an analysis of our buildings’ energy performance. Data is exchanged between BIM and Building Performance Simulation (BPS) tools, using data transfer schemas such as the Industry Foundation Classes (IFC) between our internal and external design teams. In this way, BIM is contributing positively to reducing the environmental impact of construction. Our buildings are designed with maximum sustainability in mind and we build off-site in controlled factory environments.”

Utilising offsite technology, McAvoy is able to construct permanent buildings that range from single to multi-storey options. They are the Principal Contractor for these all-inclusive buildings that are manufactured in stringent controlled factory environments. McAvoy works proactively to partner with the best designers, environmental engineers and architects to help streamline the entire Stay Put product offering – from concept to delivery. The use of BIM is enabling

better collaboration and better management of McAvoy’s offsite processes, and ensures that early advice and input is provided on lighting design, ICT, acoustic, fire engineering, landscape and access, to ensure optimum design and functional quality. The buildings are fabricated from wood or steel, with up to 70 per cent of the finished product completed in-house before being transported and assembled on the final building site.

McAvoy offers various bespoke solutions, including permanent buildings that can be fused with existing buildings or come as standalone turnkey solutions that represent a time efficient, quality controlled construction provision.

BIM inspired engineering at McAvoy can assist with reducing the overall programme, reduced onsite disruption, risk mitigation by clash prevention, which leads to waste reduction and competitive costs. BIM has been utilised at the company for over 10 years now and it is a great achievement to be the first Offsite Construction Company to achieve BIM Level 2 certification prior to the UK Government’s mandate in 2016.

For more information, please contact David Clark, Innovation Manager by email: DavidClark@mcavoygroup.com or Hadeel Saadoon, BIM Development Coordinator by email: HadeelSaadoon@mcavoygroup.com or call them on: 028 8774 0372



# Hub Updates



It's been another busy quarter for the Hubs. As well as taking part in the Offsite Construction Show in October, Hub members have been actively focussing on designing events that meet member needs. We have events scheduled for 2017 and are working on extending the programme across the year, which will include factory and site visits, workshops, a digital technology focus and inter-sector events. Let us know if you would like to be involved with any of the Hubs or would like to join the mailing lists by contacting Julie Fraser, the Hub Coordinator at [julie.fraser@buildoffsite.com](mailto:julie.fraser@buildoffsite.com).



### Rail Hub

The Rail Hub has been very active this quarter with the first of the Bridges and Viaducts DfMA Workshop held in September. Attendees included representatives of HS2, London Underground and Network Rail. We will be holding the second workshop in March, where we will be following up on the input from the first workshop. We held a Rail Hub Leaders Group meeting in Swindon on 27th October. The main focus of this meeting was to establish what members wanted from the Hub and to propose events, projects and meetings for 2017. Several of these are in the pipeline so watch this space. In November we visited the site of the TfL/LUL Northern Line Extension Project at the Battersea Power Station site where TfL presented us with an overview of the project and their use of digital technology in designing, communicating and planning this and other improvement projects. We were then taken to a viewing platform that allowed extensive views over the site and there were opportunities to ask questions.

The event was well attended and we look forward to working with TfL on future events. Earlier this month a small group of members met at the Palace of Westminster with Kelvin Hopkins MP and BWB Consulting to discuss the GB Freight Route project. The project is at the very early stages and this was a unique opportunity to meet with the group who are proposing a new look at this scheme. We are keen to maintain contact with this group and see where it goes. We have a visit to the exemplary Reading Station redevelopment project on the 21st February hosted by Hochtief, Network Rail and Costain and 2017 plans include several workshops and seminars, including data collection, design life, adaptability and funding, and the Lean Programme at Highways England. We're looking at developing guides and papers on relevant topics, and a possible visit to a European project.

*"Our most recent site visit was hosted in November by Nomenca, which showcased Virtual Reality Engineering, including a demonstration of 3D models and the manufacture process, virtual reality modelling, and a tour of their factory"*



### Water Hub

Our most recent site visit was hosted in November by Nomenca, which showcased Virtual Reality Engineering, including a demonstration of 3D models and the manufacture process, virtual reality modelling, and a tour of their factory near Warrington. The first part of the day was aimed at cross sector fertilisation and had a strong focus on the benefits of digital technology, its benefits for Health and Safety and an overview of the AMP environments, looking forward to AMP7 and AMP8. In the afternoon we visited Nomenca's factory where we explored current projects made using their SAFE (Skilled Assembly Factory Environment) methodology. Group Business Development Director, Mark Hanrahan, also gave us an overview of a recent £1.9million UV treatment project, where offsite and digital techniques had made savings of 34,000 man hours on site, a 5 month programme saving, a larger than 32% CAPEX saving, and 24 HGV deliveries negated, all while completing the project in 2 days from installation to commission. The event was well attended and feedback was positive, with attendees gaining insights and connections they will be able to utilise in future planning. For 2017 we have a Bison factory visit in February, a digital event in May, a Project 13 meeting in July and other events to come.



### Housing Hub

We are very pleased to welcome Crest Nicholson as new members to Buildoffsite and look forward to working with them. We have also been working closely with the Construction Leadership Council, and have helped to coordinate member feedback for the GLA's recent Review of the offsite housing market. We held a Housing Hub planning meeting in January, and have a site visit on 22nd March to watch the installation of the Enevale housing modules on the "Peacock Rise" development at Chatham, Kent, where guests will be able to watch the live installation of seven houses and 8 flats using a volumetric and modular delivery system.



### Refurbishment Hub

The Refurbishment Hub are looking at increasing their activities in 2017 with plans for a virtual reality event later in the year, a site visit to a completed refurbishment project is planned for the middle of the year, and we're planning a workshop on offsite solutions for retail stores for the spring. We're also looking at possible events with some of the UKs larger retailers and talking to members about hosting events. Dates will be available soon.



### Education Hub

We're currently focussing on groups that own academies, and at understanding the procurement process and how that might be influenced to provide more opportunities for offsite construction going forward. For the coming months Nigel Fraser has stepped in to lead the Hub and is putting the programme together for 2017; suggestions are welcome. We finalising details for a school site visit on 5th April which will be hosted by McAvoy and will include guest speakers.



### Pharma Hub

The Pharma Hub is in the process of being established, and is being led by John Dyson of GSK and John Hunt of Enterprise Ireland. The focus is being considered and interested parties identified. We will be developing a programme of events for 2017.



### Manufacturing Hub

The Manufacturing Hub Is actively developing a project in this area with a view to bringing together a consortium that will push offsite forward through collaboration. It aims to roll out the project in mid to late 2017.

# Case Study

## Portakabin receives second award commendation for one of the UK’s most complex interim healthcare schemes



Portakabin has received a second award commendation for its delivery of a highly complex ward and theatre building at Royal Stoke University Hospital. The 4,200sqm facility was completed in less than four months to help meet the increasing demand for orthopaedic services. In recognition of the success of the project, Portakabin has now been highly commended at the Offsite Awards in the Public Sector Project of the Year category. More than 200 industry leaders gathered to celebrate off-site construction at the NEC in Birmingham. With over 160 exemplary entries, these annual awards recognise pioneering and landmark projects, and manufacturing excellence.



Portakabin was also highly commended for the Constructing Excellence West Midlands Project of the Year Award. The highly serviced £13.5 million building at Royal Stoke accommodates clean air theatres for orthopaedic procedures, a recovery room, ward bays and single en-suite rooms. A video of the building can be viewed at: <http://www.portakabin.co.uk/royal-stoke-hospital-details.html>.

Robert Snook, Director & General Manager, said, “This tremendous accolade is a real credit to our whole team and to such an enlightened client. It is also hugely significant that an interim building solution can achieve such prestigious, national recognition. We’re delighted that the quality of the building and our service delivery at Royal Stoke has been recognised and that the project is helping to change perceptions of just what can be realised with modular construction. The success of this project allowed the

Trust to have its new orthopaedics unit up and running much more quickly, to meet the increasing demand for services and to enhance patients’ experience with a high quality, purpose-designed healthcare facility. It was extremely challenging in terms of scale, logistics, access, and the very close proximity of existing wards which had to remain fully operational throughout.”

The building was constructed to permanent standards and will be in use for five years, giving the Trust much greater flexibility as the facilities can be removed or adapted according to local needs. The structure was delivered as 124 modules which were installed in a carefully planned operation complete with wall finishes, internal partitioning, mechanical and electrical services and flooring already in place. This approach further reduced work and disruption to patient care on this busy hospital site.

Modular construction is a fast and flexible way for healthcare providers to expand or relocate services, particularly on constrained sites. The hiring of buildings allows projects to be funded cost effectively from revenue rather than capital budget streams, giving NHS trusts the flexibility to meet changing local needs.

*“We’re delighted that the quality of the building and our service delivery at Royal Stoke has been recognised and that the project is helping to change perceptions of just what can be realised with modular construction.”*



# Case Study

## Portakabin group hands over £2 million scheme at University Hospital Southampton



*“Portakabin worked on the project with Interserve Prime, which is in a joint venture Commercial Estates Development Partnership (CEDP) with the Trust to develop a programme of new hospital facilities”*

After less than five months on site, the Portakabin Group has handed over a £2 million, four-storey scheme for office support staff at the University Hospital Southampton and to create space for further development, to the benefit of the local community. The new building was required to provide purpose-designed, permanent business support offices and meeting space for around 85 staff from the Medical Physics and Dietetics teams who were relocating from outdated temporary facilities. That accommodation could then be demolished to allow construction work to start on a new seven-storey car park. The upper two floors of the office scheme will provide additional space for the Trust’s future expansion without any further impact on the hospital site.

Portakabin was the design and build contractor for the project, and manufactured the 1,300m2 facility using a Yorkon off-site solution. The site is in the centre of the hospital and was extremely constrained, fronting a busy road and next to a number of clinical buildings. Fast completion was essential so work could be started on the car park development as soon as possible. Portakabin had to undertake complex logistics and meticulous planning throughout to manage traffic flows and maintain access at all times for bus and ambulance routes and for around 800 deliveries each day along the road immediately adjacent to the site. Because of the severely restricted working area, the Yorkon building modules were craned into position around 70 per cent fitted out, with partitions, plumbing and electrics pre-installed in the factory to further reduce work on site.

Neil Haskell, Senior Project Manager at University Hospital Southampton NHS Foundation Trust, said: “The restricted time to build this scheme was the key driver for modular construction. Site-based building methods could not have delivered the

building in the time frame we had, and were not feasible on such a tight site. The space for the new facility was extremely limited and so lent itself well to moving as much of the construction into the factory as possible. The use of a Yorkon solution also resulted in much less disruption because most of the fitting out was done off site and we were able to maintain access 24/7.”

Portakabin worked on the project with Interserve Prime, which is in a joint venture Commercial Estates Development Partnership (CEDP) with the Trust to develop a programme of new hospital facilities. This will enhance the patient, visitor and staff experience and will generate an income that can be reinvested into frontline patient services.

Ben Gwilliam, Development Manager for Interserve Prime said: “This scheme was on the critical path for a wider project and so was very programme-driven. We needed to have the new offices fully operational as soon as possible for the relocation of staff from various departments. Portakabin

delivered the building on time, met all the requirements for functionality and layout, and in an extremely tight timescale. This allowed us to progress other essential development works for the hospital, to the benefit of patients and staff. We’ve been very impressed with the Portakabin team throughout. They provided the full range of construction services, including design, ground works and fitting out. We would certainly recommend Yorkon off-site solutions and the services and approach from Portakabin, to others.”

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





# Case Study

## Enevate Spur Road



**With their technical expertise, Enevate designed, pre-manufactured and craned in a gable end wall to a complicated 9-storey flatted development.**

Traditional on site construction methods could not be used, as the working distance between the neighbouring property and the new flats was only 183mm. The new gable wall consisted of 12 steel framed/light gauge steel panels at 140mm thick; the whole through wall make up from insulation to the 1.5m acrylic finish was completed off site. In total, Enevate were on site for six days, which included craning the panels into position and then installing them.

The developer had to find a bespoke solution to provide a finished gable within a 183mm void due to Party Wall issues, which meant that the panels provided and the work to be carried out on site could not infringe on the air space of the neighbouring building.

The through wall make up had to provide adequate performance specification for NHBC to insure. Therefore, Enevate provided a structural pre-finished panelled elevation which was truly vertical when craned into position, connected to the panels to the existing building structure and seamlessly connected all pre-finished panels together with movement joints to create a truly finished gable.

*“In total, Enevate were on site for six days, which included craning the panels into position and then installing them”*

## Enevate Princes Avenue



*“Planning permission would not be granted unless non-traditional methods of construction were being used”*



**Enevate are set to manufacture 15 units on a tricky site in Walderslade. The site is a new build development in Chatham, consisting of 15 architecturally designed houses – 5 link detached villas with three bedrooms, fitted wardrobes and en-suites – plus 5 two-bedroom and 5 one-bedroom flats. The development will provide a variety of properties to suit various needs and budgets.**

However, obtaining planning permission hasn't been plain sailing for Enevate. As the development is located within a private residential area, a building warrant would only be provided on the condition that time on site would be kept to a minimum. Consequently, planning permission would not be granted unless non-traditional methods of construction were being used. Therefore, using highly engineered structural steel, Enevate will manufacture all building components off site, thereby minimising disruption to the local area, whilst also avoiding delays usually encountered by winter working.

To find out more, contact Project Manager Darren Greenwell by email: [Darren.greenwell@enevate.co.uk](mailto:Darren.greenwell@enevate.co.uk) or call: 01698 479990 or visit [www.enevate.co.uk](http://www.enevate.co.uk)



# Case Study

## Premier Modular appointed to build accommodation project for Hinkley Point C



**Premier Modular Limited – now celebrating its 60th year in business – is pleased to announce its appointment as the contractor providing a series of modular building complexes at Hinkley Point C in Somerset, following EDF Energy’s Final Investment Decision.**

The complex will deliver offices and site welfare facilities required for the construction phase of the new nuclear power station. The 38,000 sq m of office space – the largest modular project awarded in the UK – will house all the management and technical personnel required during the construction stage of this much needed new nuclear power plant. Part of the buildings will be converted after the construction cycle to remain as high quality offices for the permanent site.

Almost 1,000 steel framed modules are being constructed off site at Premier’s state-of-the-art manufacturing facility in East Yorkshire, before being transported to the Hinkley Point C site for final assembly and fitting out – a process that will take only 16 months from manufacture to hand over.

Since its appointment as a preferred bidder back in July 2015, Premier has worked closely with EDF Energy to ensure that delivery of the complex could proceed as soon as the Final Investment Decision was made.

Hinkley Point C will provide reliable, low carbon electricity to meet 7 per cent of UK demand. During its 60 years of operation, it will avoid 9 million tonnes of CO2 emissions per year. EDF Energy envisages an estimated 25,000 job opportunities will be created over the construction of the new power station, including up to 1,000 apprenticeships. It is also Premier’s intention to contract

work, where practical, to companies local to the Hinkley Point C site, where it is anticipated that approximately 35 per cent of the work will be completed.

David Harris, Divisional Director at Premier, said: “This project is one of the most significant modular projects in history and will really put modular construction on the map. We foresee that this project is not only important for Premier, but will also be of significant benefit to the local economies in Yorkshire and Somerset in terms of both the sub-contractor and supplier opportunities required to support this major construction project. Premier will resource this project with the full scope of skills required to deliver the scheme to the excellent standard and quality of product that we and EDF Energy expect, and we anticipate taking on a number of apprentices throughout the delivery of the scheme.”

## Premier Modular New Islington Free School

**New Islington, Manchester (formerly the Cardroom Estate) was identified as a ‘Millennium Community’ to be rejuvenated and regenerated. Part of this regeneration included the provision of a new school, the New Islington Free School, to house 420 children in the September 2016 term. Premier Modular received the Highly Commended Award in the Best Use of Volumetric Technology Category at the Offsite Construction Awards 2016 for this project.**

Working with Conlon Construction as their preferred supply chain partner, Premier, with their architectural partners Vaughan Architecture, designed, manufactured and installed the visually stunning building with a feature entrance, over sailing roof, picture windows, a double height light well and a modern external cladding finish. The 59 modules were produced at Premier’s East Yorkshire manufacturing facility, whilst the site was prepared. The time savings offered by this method of construction were crucial in the contract being awarded due to the ongoing school place crisis in the Greater Manchester area.

The school includes a rooftop teaching space and wildlife features including bird and bat boxes and a Redstart habitat on the roof. The New Islington Free School’s values are Creative, Innovative and Unique - and they fit well with Premier’s own values and have certainly been captured in this new school building.

**Sector:** Education

**Value:** £2.4 million

**Site Programme:** 20 weeks



*“The 59 modules were produced at Premier’s East Yorkshire manufacturing facility, whilst the site was prepared”*



# Case Study

## Premier Modular Springfield Hospital Cancer Care Centre



**Project:** Ramsey Healthcare Springfield Hospital Cancer Care Centre  
**Sector:** Healthcare  
**Value:** £1.2m  
**Site Programme:** 8 weeks



Private healthcare providers Ramsay Healthcare were looking to increase their facilities at Springfield Hospital in Chelmsford, Essex as part of a £16m expansion programme. Premier Modular Limited was selected to construct a 2-storey cancer care unit for a number of key reasons, including their long standing track record of non-disruptive delivery into sensitive healthcare environments and their extremely high build quality.

The Cancer Care Centre was constructed to be integrated with and linked to a Linear Accelerator Building (LINAC). The ground floor of the building is used as a Radiotherapy Ward whilst the upper levels offer a day care treatment facility for chemotherapy with a seven bay patient treatment station. The remaining areas will provide consulting and utility service rooms and a nurse station.

The whole facility was manufactured in a period of only 5 weeks with a slick weekend install by the Company's experienced project management team. The site completion programme was deliberately aligned to tie in with the construction of the LINAC building, meaning reliable delivery was of real importance to the end client, a crucial deciding factor in Premier's appointment.

*"The whole facility was manufactured in a period of only 5 weeks with a slick weekend install by the Company's experienced project management team"*

For more information, email: [sales@premiermodular.co.uk](mailto:sales@premiermodular.co.uk) or call: 0800 3160888 or visit: [www.premiermodular.co.uk](http://www.premiermodular.co.uk) You can also find Premier on Twitter: @premier\_modular, or LinkedIn: [LinkedIn.com/company/premier-modular](https://www.linkedin.com/company/premier-modular)

## Midland steel benefits from Tekla's full package

As the fastest growing reinforcing steel fabricator in the UK, Midland Steel required 3D modelling software that could help to deliver a collaborative working approach and multiple business benefits. By choosing to use Trimble's Tekla software, the company has been able to make effective joint decisions, which in turn has condensed project schedules, improved efficiencies on site and ultimately reduced costs. In fact approximately £250,000-300,000 was saved on just one project alone recently, which equates to approximately 40% of steel by weight.

Midland Steel offers a diverse range of reinforcing steel products and accessories, including cut and bent reinforcement, standard and special fabric and prefabricated cages. Tony Woods, Managing Director at Midland Steel said: "From our experience within the construction industry and working on projects that include a BIM process, we have discovered that there are many business benefits that come with adopting an open and joint approach to a project. As such, we are currently trying to get to a stage in the business where we can collaboratively work with everybody to reduce delays and costs. The benefits of everyone involved in a project using 3D modelling is huge as it provides a greater understanding of how the building works during the construction - which ultimately results in a smooth process all round."

Capable of producing highly detailed schedules and drawings, combined with the ability to build and visualise large quantities of material precisely, Tekla software is ideal for projects that require accurate forecasting and project understanding for everyone involved.

In the initial stages of a project, Midland Steel reviews an engineer's 2D drawings before converting them into a 3D model using Tekla Structures, to detail every element against the design brief. The model is then submitted back to the engineers and the contractor for overview. Due to all the information being recreated in an actual 3D model rather than a static drawing, it is easier to adapt to any changes in design, highlight any possible errors and avoid any potential difficulties in the overall build. Through Tekla BIMsight viewer both parties are able to comment and make suggestions about the model, before sending it back to Midland Steel for approval.

As labour can be one of the most expensive elements of any job, the labour intensive processes such as formwork and reinforcement, can be addressed, planned and subsequently improved using the 3D model created in Tekla Structures. In fact, by effectively using a 3D Tekla model, Midland Steel has proven to reduce formwork labour cost by 20%, efficiency on rebar fixing on site 60% and costs overall by 25%.

What's more, as quantities can be extracted from Tekla Structures, contractors are able to keep track of the project in terms of what they have made or lost against a budget on a daily basis. Another benefit to the system is the ability to monitor progress on site wherever the contractor may be. By using videoing equipment, contractors can track the build's progress through a tablet device no matter their location.

Tony concluded: "By using Tekla software, we are able to help contractors make cost savings as it provides a full package: beginning with a model, rebar detailing and a collaborative discussion with the contractor regarding his program of works, through to the delivery sequence and finally, the elements delivered on site. The investment within the software is recognised the minute you start working with it, as you can instantly start reducing costs and time on projects. The software is fantastic and we're using it because we believe it is the best in the market."

*"The benefits of everyone involved in a project using 3D modelling is huge as it provides a greater understanding of how the building works during the construction."*

For more information please visit: [www.tekla.com/uk](http://www.tekla.com/uk)



# New Members



For more information,  
please contact:  
**Christine Hynes**  
CEO  
T: 07484 527 575  
E: Christine@247LivingUK.com  
Visit: www.247livinguk.com

24:7LivingUK are committed to delivering commercially viable stylish homes that are energy efficient and affordable for Housing Associations, Local Authorities, Contractors, Developers and PRS consortiums. We can deliver an end to end turnkey solution with a lead time of 12 weeks, supporting local supply chains, using the local labour force and collaborating with local colleges to provide apprenticeships and mentoring programs. We believe that everyone has the right to live in a well-designed, well built and well insulated home that doesn't cost the earth to heat and power.

Our BOPAS certified Modular Eco-Tech Construction Systems are high quality, factory engineered to delivery low energy homes at a cost equal to traditional build with up to 60% programme savings. The system has been tailored to achieve Passivhaus and Zero Carbon accreditation and is certified to demonstrate a 137% improvement on Part L1A (2014).

It includes pre-installed breather membranes, electrical ducting and back-boxes with 240mm of mineral wool insulation to achieve a U-value of 0.12W/m2K. The Advanced Panels are supplied to site complete with plasterboard and Secured by Design triple- glazed windows and doors; pre-installed in the factory to ensure air-tightness.

From receiving an order, the Modular Eco-Tech Construction System can be delivered to site within 12 - 16 weeks – often sooner. Once the site civils and groundworks have been completed, each property can be weather tight within one day. Assembly and build can take place at any time of year, in virtually any weather and in almost any accessible location.



For more information,  
please contact:  
**Richard Allen,**  
General Manager of Cable  
Management Division  
T: 44 (0) 121 601 6085  
E: rallen@metsec.com  
Visit: www.metsec.com

voestalpine Metsec plc is the UK's largest specialist cold roll-forming company, providing products for the construction and manufacturing industries. The company, based in Oldbury, West Midlands focuses on adding value through expert design, precision manufacturing and on-time, in-full product delivery.

Metsec has provided its products to projects including the Queensferry Crossing, Abu Dhabi airport, Resorts World, Wimbledon, the BBC Wales studios and the Glasgow Velodrome, along with a host of retail sites, sports stadia, hotels and student accommodation across the globe.

Metsec combines an excellent service and quality products to provide cost effective solutions for all its customers worldwide.

Established more than 80 years ago, Metsec is owned by the voestalpine group, one of Europe's leading specialist engineering companies. Metsec is part of voestalpine's Metal Forming division, the world's leading

provider of high-quality metal processing solutions, with production facilities all around the globe.

Comprised of multiple divisions, Metsec provides steel framing solutions, cable management, dry lining, engineering products, and purlins and side rails to a broad range of customers globally.

Metsec was recently announced as one of the first companies globally to achieve the new Kitemark for BIM from the British Standards Institution. This follows Metsec gaining BIM Level 2 accreditation, becoming the first cold roll steel forming company to be certified as such by the BSI, and the first Tier 2 designer and manufacturer to achieve the standard for design and construction in the UK.



For more information,  
please contact:  
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Visit: www.crestnicholson.com

Crest Nicholson is a leading developer with a history of creating well-designed sustainable communities for over 50 years. We are proud to hold a well-regarded capability for delivering schemes of varying size and scale, from small housing-led residential developments to larger urban regeneration schemes and Garden Villages.

We operate through 5 housebuilding divisions. Two further business units complement the regional divisions and provide specialist skills:

- **Crest Nicholson Regeneration** (Major Projects), which specialises in large-scale developments with public and private partners, incorporating residential and mixed use projects
- **Crest Strategic Projects (Strategic Land)**, which sources unallocated sites and secures valuable planning permissions over time for medium to long-term development to be delivered through our divisions

Crest Nicholson's driving ambition is to be the market leader in the design and delivery of sustainable housing and mixed use communities.

We aim to improve the quality of life for individuals and communities, both now and in the future, by providing better homes, work places, retail and leisure spaces within which they aspire to live, work and play.

For Crest Nicholson, sustainability is about balancing and supporting socio-economic and environmental considerations in what we build and how we build it. This includes creating long-lasting communities, providing sustainable transport links, delivering high-quality homes, responsible sourcing of materials, energy efficiency and supporting local economies.

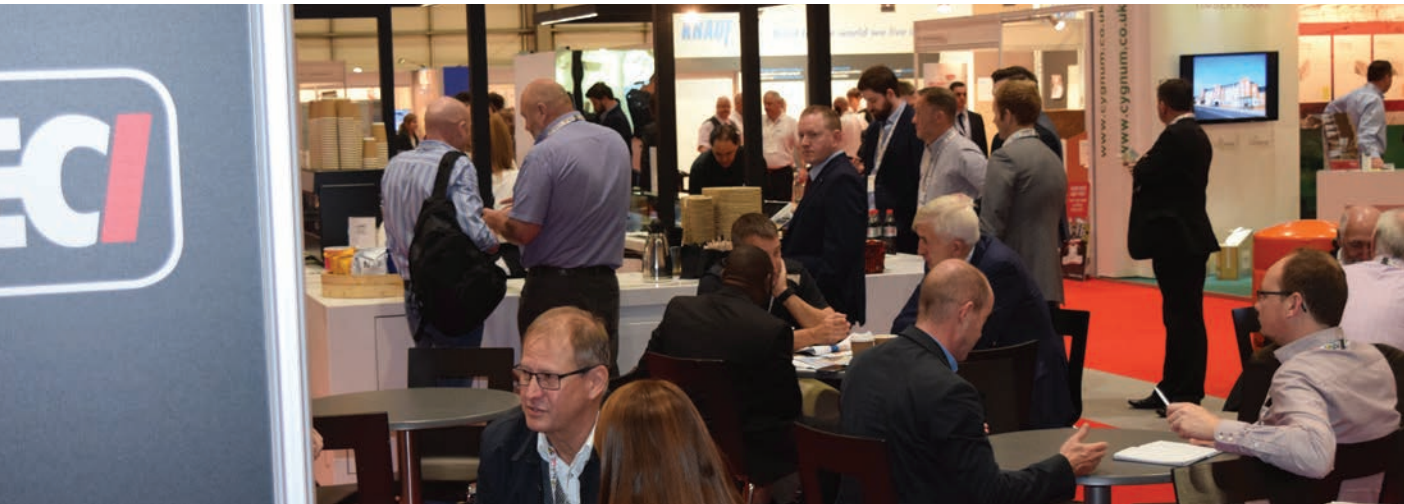
*"We aim to improve the quality of life for individuals and communities, both now and in the future, by providing better homes, work places, retail and leisure spaces within which they aspire to live, work and play."*

# Events



## All set to grow in 2017!

The Offsite Construction Show – 11-12 October 2017, ExCel, London



The Offsite Construction Show 2016 attracted over 2,000 visitors and nearly 90 exhibitors, and we ran over 30 high level seminar sessions and workshops. Every visitor was either involved in offsite construction or wanted to find out more about offsite construction methods and techniques. It has quickly become the biggest event of its kind in Europe and is ideally situated in a major London venue.

The exhibitors were incredibly positive and reported high levels of new business and contacts. This show is not only a showcase for the offsite supply chain, but also serves as a really effective and proven vehicle to promote the use of modern offsite methods, as well as educating those who are just starting to recognise and investigate the benefits of offsite and modular construction methods.

Exhibitors also reported that they opened up new channels of business with hundreds of potential clients. All stakeholders are working together to ensure that this important industry showcase will continue to be a must-attend event for anyone seriously involved in any aspect of the construction industry. We are working closely with our partners, sponsors and exhibitors to keep the concept fresh. This is to ensure that visitors can see what's new in the market, gain easy access to research and expert knowledge, and learn why offsite is the UK's fastest growing construction method and its associated benefits.

More than 60 per cent of the exhibition space has already been allocated for our next event, receiving fantastic support from companies such as Actavo Building Systems, Caledonian Modular, JJ Smith, Eurobond, FP McCann, Premier Modular, TDS, Tekla, Howick, Modulek, Progress Group and many others.

The Show is supported by and organised in partnership with Buildoffsite, and we are working together to develop the seminar programme and workshop sessions. The programme will continue to reflect the scope of the exhibition and will include the following market sectors:

- Housing (private and social)
- Other Residential
- Infrastructure, including Transport, Water and Power
- Retail
- Commercial
- Health

We would really welcome feedback from Buildoffsite members, as well as any ideas and initiatives to help us continue to develop this event.

For more information, or to give feedback call Eddie Milton on 020 3086 9296 (ext 2) or Paul Shelley on (ext 3)

To see the latest Show Video, visit: [www.youtube.com/watch?v=7MuTb70hhhY](http://www.youtube.com/watch?v=7MuTb70hhhY)

# Events

## Upcoming Buildoffsite Member Events

For full list of Buildoffsite events visit [www.buildoffsite.com/news-events/events/](http://www.buildoffsite.com/news-events/events/)

### February

8th February  
Water Hub Bison Factory Visit

22nd February  
Direction Group Meeting, Encon Chorley Academy

### March

9th March  
Exploring Innovative Offsite Solutions with the IStructE & Buildoffsite, IStructE London

10th March  
Rail Hub Client Group Meeting

22nd March  
Site visit to Enevale housing modules, Peacock Rise Chatham

### April

5th April  
Education Hub Lynch Hill site visit, McAvoy, Slough

6th April  
Refurb Hub Quarterly Meeting

26th April  
Direction Group Meeting, Saint Gobain Innovation Centre, London

### May

18th April  
'Lift in a box' new product launch & Golf day, Waycon, Newton Abbot Water Hub Digital event

Please contact [anna.whiting@buildoffsite.com](mailto:anna.whiting@buildoffsite.com) for more information

## DfMA and Innovation – Scotland



### Why attend?

The Farmer Review sets out a challenge to our industry to innovate or die. Attending this free conference of Design for Manufacture & Assembly will provide you with an excellent insight into why clients and major contractors are increasingly adopting the DfMA approach to drive improved sustainability performance, improved quality and certainty over time and budget.

### Delegates will:

- Understand the implications for the design team of a DfMA approach
- Learn from perspectives from the design team, client and contractors on some of Scotland's leading offsite projects
- Listen to speakers, including; AECOM, a DfMA case study, Construction Scotland
- Engage in discussions with clients, contractors and architects
- Network with other industry professionals
- Appreciate how the recent DfMA Overlay to the RIBA Plan of Work can help
- Network over a free lunch

### Who should attend?

This supplier day is jointly staged by Construction Scotland Innovation Centre and the Offsite Management School and is aimed at architects and design teams including those in contractors, manufacturers and specialist sub-contractors.

### To register, visit:

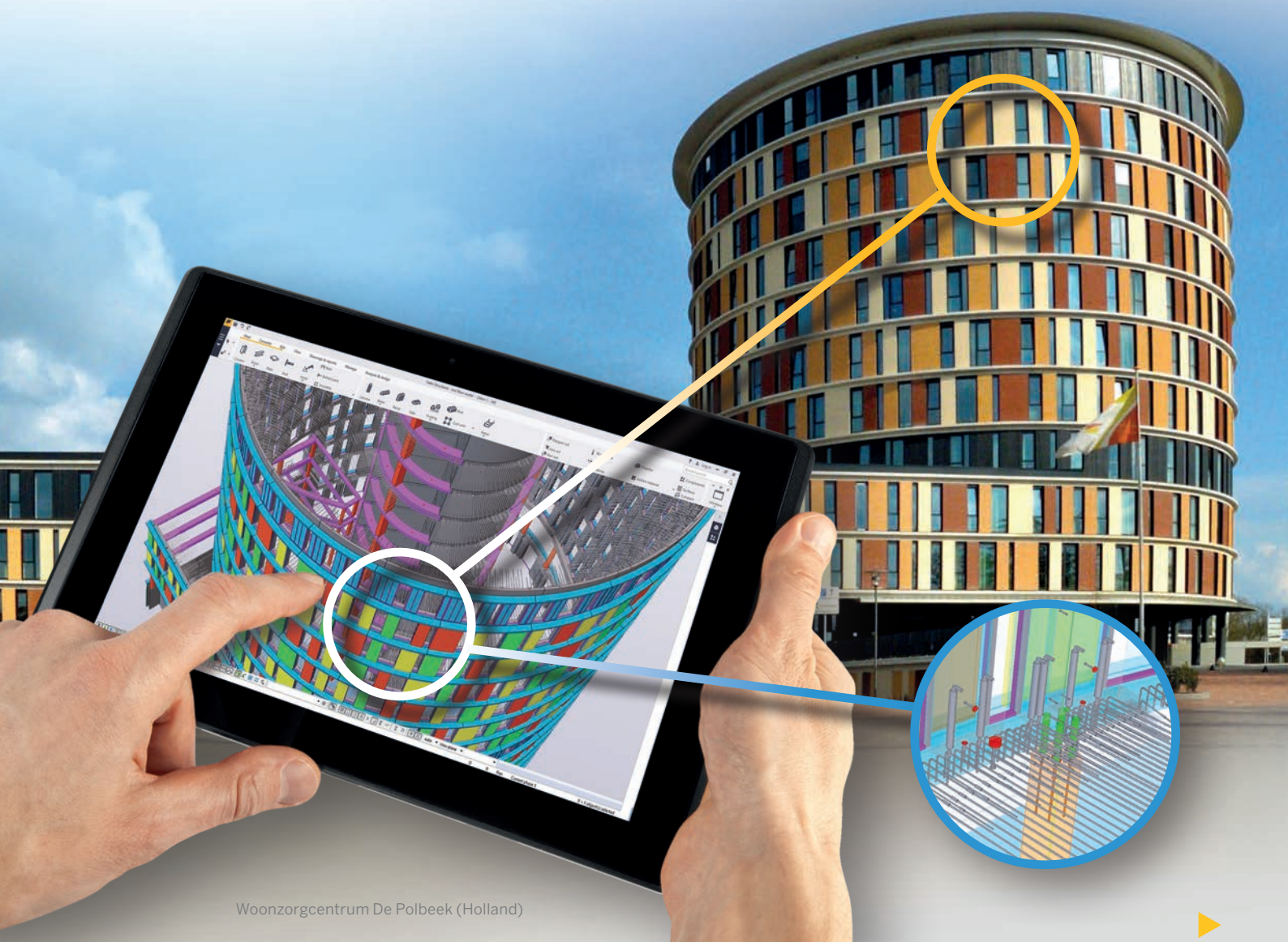
<https://www.offsiteschool.com/support/bookings.aspx?ID=52>

If you have any questions, please email: [ursula@supplychainschool.co.uk](mailto:ursula@supplychainschool.co.uk), or call 020 7697 1977

Date: Friday 24 February 2017  
Time: 09:00 - 16:30  
Location: Emirates Arena, 1000 London Road, Glasgow, G40 3HG



# From design to reality



Woonzorgcentrum De Polbeek (Holland)

Tekla Structures is intelligent 3D modelling software designed to help you deliver all types of precast concrete elements at the right time to the right place. Integrating design and detailing with manufacture, project management and efficient information sharing Tekla Structures can do it all.

Together we are shaping a smarter future for construction.

[www.tekla.com/uk/solutions](http://www.tekla.com/uk/solutions)

 **Tekla**<sup>®</sup>  
Structures

 **Trimble**<sup>®</sup>

TRANSFORMING THE WAY THE WORLD WORKS