

JCTNEWS

THE JCT CONTRACTS UPDATE FOR THE CONSTRUCTION PROFESSIONAL

HASTINGS PIER

A devastating fire in 2010 destroyed 90% of the super-structure of Hastings Pier, leaving only the western pavilion building salvageable. With funding from the Heritage Lottery Fund and the local community, the opportunity was taken to redefine the role of a pier for the 21st Century. The fabulous result – which won the RIBA Stirling Prize in 2017 – was built on a JCT Minor Works Building Contract.

Hastings Pier's history goes back to 1872 as a classic, Victorian style, pier designed by Eugenius Birch and built for a cost of £23,250. Numerous additions and features were added to the original construction, including a building housing a shooting gallery, 'animated pictures', slot machine, and rifle range/bowling alley. This was sold to Hastings Council in 1913 to fund a new arcade, shops and tea room. The fire in 2010 was not the pier's first: a blaze in 1917 destroyed the pavilion, which was replaced in 1922 by a less elaborate building. A shoreward end pavilion was built in the 1920s, with an art deco façade added in the 1930s.

During the Second World War, the pier was sectioned and taken over by the armed forces. It suffered bomb damage but was repaired by 1946, with the east view and west view solarium added in the early 1950s. In 1966, Hastings Council built the 'Triodome' to celebrate the 900th anniversary of the Battle of Hastings. By 1969 this was converted to an amusement arcade and the bandstand shelter became kiosks and shops. From the 1980s, the pier

fell into a state of disrepair, as piers across the country became generally less fashionable. The pier was closed in 2008. Throughout this period, the local community campaigned for the Grade II listed structure to be saved, but plans were changed dramatically when the fire in 2010 devastated so much of the structure.

In 2012 a compulsory purchase order obtained by Hastings Council allowed ownership of

the pier project to pass to the Hastings Pier Charity. A development plan was submitted to the Heritage Lottery Fund, who granted £11.4m towards the total £15m project cost. The remaining funds were raised through a community scheme, which raised over £600,000, and a number of donations. London-based architect dRMM won the competition to design the project and made the decision



Photograph: Alex de Pijlke

Hastings Pier

Continues on page 2 >>

3
Chairman's Letter:
The Sector Deal

4
Incompatible
Provisions
Peter Hilberd

5
Procure for better value,
be more transparent,
and get the basics right

6
Reassuringly Expensive
Christopher Miers –
Probyn Miers

8
Is Offsite Construction
the answer?
Richard Saxon CBE

10
JCT Interviews...
Nigel Davies

JCTNEWS

2

to place community involvement at the heart of the project – a decision that has reaped rewards in terms of design, function, sense of ownership, and as a catalyst for further community-based redevelopment in the area.

The areas of work on the project broke down into three major sections:

- Demolition and removal of existing damaged structure: removal and disposal of decking, balustrades, damaged ironwork, old ballroom, and all remaining buildings with the exception of the Pavilion.
- New structural elements: raw materials, a completely new deck, replacing 70% of the sub-structure and ironwork, new balustrades, new utilities down the length of the pier.
- New buildings: a new visitor centre and roof terrace, plus refurbishment of the existing pavilion.

It was clear from the outset of the project that none of the parties involved wanted to recreate a 'standard' pier. There was desire from both sides to reflect what the function of a 21st century pier could be, and to inspire local ownership. From dRMM's initial consultations it was apparent that it would be essential for the new pier to function as a multi-use space and support a diverse range of activities. dRMM's master-stroke was to create an essentially blank canvas – a well serviced, beautifully designed platform that could support a potentially limitless range of uses, be it big top circus, major music events, local fishing markets, or international markets. The space has been designed with a 'plug-in and play' theme, where users can bring their own architecture and adapt it to the space to suit their needs.

The funding from Heritage Lottery Fund has enabled most of the extensive demolition and structural work – which was the most challenging part of the project – to take place. 3,000 tonnes of steel, equivalent to 400 double decker buses, replace the existing structure. The new deck is comprised of 50 miles of durable West African marine-grade Ekki hardwood, sourced from certified sustainably managed forestry.

Additional funding helped to cover the pier's two buildings, the first of which, the existing derelict pavilion, has been converted into an open-plan fully glazed restaurant. The brand new visitor centre is a cross-laminated timber structure, clad in the timber decking that survived the fire. The structure also functions as the internal finish, avoiding the need for plaster board or paints. It replaces the weakest central section of the damaged pier and is adaptable for events, exhibitions and educational purposes, and also sports and elevated rooftop terrace.

The feeling of open space – walking on water, or perhaps being on a ship is highlighted by the pier's lowered balustrade design and the quality of the timber deck. The fact that the buildings are concentrated at the shoreward end also gives the feeling of openness and projection out to sea, providing uninterrupted views of the natural surroundings.

The project has sustainability at its core – not only in its design and construction, but also socially. The constrained nature of the budget didn't allow for a formal BREAAAM rating, but the guidelines were followed as far as possible. The project takes a long-term approach to sustaining its ongoing repair, rebuild and transformation. Reclaimed deck furniture was designed by dRMM and Hastings and Bexhill Wood Recycling as part of a local employment initiative. Perhaps more importantly, it has been a galvanizing force for the community – promoting volunteering, investment, employment, civic pride, and inspiring the regeneration of other derelict buildings in the area. The use of the JCT Minor Works Building Contract, with its clear and concise provisions, provides flexibility and enables clients and contractors to work together to allow Hastings to create a new focal point for regeneration in the community.



Photograph: Alex de Rijke

HASTINGS PIER – KEY STATS

- Total cost: £15m, £11.4m Heritage Lottery Grant, £2.5m other funding source, £600,000 raised by community
- Pier size: 11,720 sqm, visitor centre – 407 sqm, pavilion – 245 sqm
- Generates more than 300,000 extra visitors a year (according to Hastings Pier Charity)
- Created 40 new jobs

AWARDS

- RIBA Stirling Prize
- RIBA South East Award – Project of the Year
- RIBA South East Award – Client of the Year
- RIBA South East Award – Architect of the Year
- Galvanizers association GAGA Award

PROJECT TEAM (ABRIDGED)

- dRMM (architect)
- Hastings Pier Charity (client)
- Best Demolition (demolition of the burnt out ballroom on the pier head)
- Foundation Piling (piling for The Deck)
- FPE Global Holdings Ltd (structural steelwork to form the main structure)
- KLH (The Deck – building structure)
- Konform UK Ltd (The Deck – concrete slab)
- Mather and Smith (cast iron balustrade refurbishment and construction of services access crawlway)
- Ramboll (heritage assessment, conservation and structural engineering, marine engineering, environmental and ecology consulting, facades and building services engineering)
- TimberCraft UK (lift, repair and re-lay existing timber decking and lay new timber decking)

3

THE SECTOR DEAL

Chairman's Letter



Richard Saxon CBE

The Construction Leadership Council is an innovation set up by Government in 2016 to provide a successor to the concept of the Chief Construction Adviser and to provide an expert body to guide government in its approach to the industry. The concept was to select a group of chief executives or chairmen from leading firms across the supplier landscape, co-chaired by the construction minister and a major client, Andrew Wolstenholme of Crossrail. Government disdains the bodies set up across the industry to represent sectors as special pleaders and prefers to talk with 'big fish'. This works well for industries with dominant companies which lead their sector, like automotive and aerospace, but is a stretch in our highly fragmented world. The CLC has no budget to speak of, leaning on the time and support made available by the big fish and their firms. Quarterly meetings and regular changes of minister set a leisurely pace in the first year.

By the end of 2017 however, a broad policy had crystalized, and substantial work was done to enable construction to bid for funds from the Industrial Strategy Challenge Fund announced by government at the start of the year. The Green Paper offered funds to sectors which could offer a clear advantage to the economy and the public purse by implementing changes. It was a competition and not all sectors could win a 'Sector Deal' from the Fund. The 2017 budget did however award R&D and training money to CLC, as well as announcing major building commitments.

The essence of the deal made is that Construction will meet the 2025 goals set out in the Industry Strategy of 2013 if government plays its part as a funder and client and industry adopts a set of radical new approaches. Those goals are to cut capital and whole life costs by 33%, and to reduce project time taken, CO₂ emissions and the trade gap for construction by 50%. The CLC sees these goals as eminently deliverable, given a move to a strategy for clients and suppliers which is based on a series of powerful ideas.

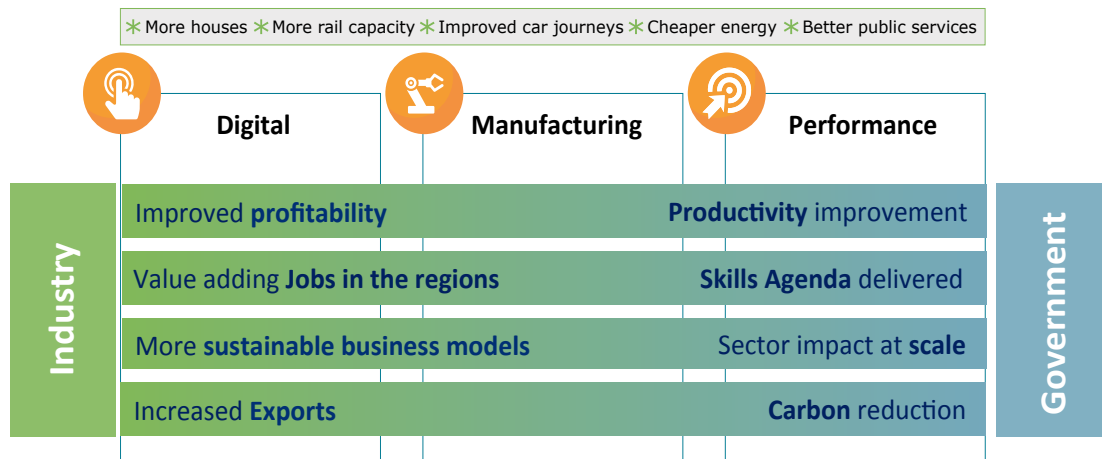
The industry faces a huge challenge in delivering its known forward programme of infrastructure and housing projects, given its static productivity and falling native labour force. Productivity is at the core of the challenge. We are well behind the economy as a whole in productivity growth and would have been able to deliver £15Bn more construction annually if we were not, equivalent to a Crossrail every year. Productivity must rise by nearly a quarter to fulfil the pipeline programme. The three key initiatives needed by the industry are:

1. To go **digital**, delivering more certain outcomes
2. To **manufacture** more offsite
3. To optimise through-life **performance** by using smart technology.

These three: Digital, Manufacturing and Performance, all need new skills which must be invested in. That will be one of three key enablers. The others are government and

Continues on page 7 >>

A deal which works for both industry and government..



"The Sector Deal benefits the public and the industry, unlocking capacity to create more and better built environment."
Image from Andrew Wolstenholme, chair of CLC.



INCOMPATIBLE PROVISIONS

PETER HIBBERD

Contract interpretation and litigation, it is said, are not exact sciences: this is no better illustrated than by the recent case of *MT Hojgaard vs E.ON Climate & Renewables UK Robin Rigg East Ltd*, which went all the way to the Supreme Court. At the heart of that case was the tension between different provisions within the various documents that constituted a design and build contract for the design, fabrication and installation of foundations for 60 wind turbines.

In essence the problem was whether, upon interpretation of the different wordings within diffuse documents, the contractor had a fitness for purpose obligation or one of reasonable skill and care. If it were fitness for purpose, then any defect in the foundations became the responsibility of the contractor, notwithstanding that it had complied with the specification and adhered to the appropriate code of practice (and regardless that the latter contained a significant error). Fitness for purpose is a heavy obligation. Reasonable skill and care is less onerous: just because the foundations failed did not make the contractor responsible. It might have been, but not inevitably - negligence on the part of the contractor would need to be proven.

A properly drafted building contract should avoid any incompatible provisions. It should, among other things, make clear whether the contractor has any design responsibility and, if so, the nature of that obligation. That is what JCT standard form building contracts accomplish: but remember that the contract is more than just one such form.

The JCT suite of contracts reflects the differing nature of building projects and the types of parties to the contract. So selection of the appropriate contract - whether, for example, it is design and build, the standard form of building contract, the major projects contract or minor works with contractor's design - is fundamental. The selection must reflect the desired extent of contractor's design.

Notwithstanding the title of a contract, it is always necessary to establish whether there is any design by the contractor. For example the standard form building contract contains a contractor's designed portion that becomes operative when the recitals are completed accordingly. The minor works contract has a separate version for use with contractor's design but is still dependent on completion of the appropriate recital. But in addition to the general nature of the work and whether it includes design, there is the matter of extent of any such design. This is where other documents come into play.

The 2016 design and build form, for instance, refers to the contractor's design being comprised partly in the contractor's proposals and employer's requirements. Other JCT contracts do too, and it is those technical documents that prescribe the extent of design - and sometimes much more.

Liability for any such design is generally that of an architect or other designer, in other words, a duty of reasonable skill and care. This also applies to the major projects contract, but its contract guide provides an alternative provision, if required, for a "fitness for purpose" obligation. Such a provision is not referred to in other JCT contracts because it is believed that only major contractors should ever be asked to take on such an onerous obligation. Although JCT forms of contract go a long way towards avoiding problems on pinning down the extent of the design and the nature of the design liability, potential problems remain. For instance:

- Choosing the wrong contract for the extent of design required
- Erroneous completion of the contract form
- Including in the other contract documents obligations that are additional to or incompatible with those in the contract conditions (such as by expressly or implicitly requiring a warranty).

Such a problem arose in the case of *Hojgaard*. The Supreme Court said: "There have been a number of cases where courts have been called on to consider a contract which includes two terms, one requiring the contractor to provide an article which is produced in accordance with a specified design, the other requiring the article to satisfy specified performance criteria; and where those criteria cannot be achieved by complying with the design." It went on to quote Hudson's Building and Engineering Contracts: "generally the express obligation to construct a work capable of carrying out the duty in question overrides the obligation to comply with the plans and specifications, and the contractor will be liable for the failure of the work notwithstanding that it is carried out in accordance with the plans and specification..."

The case law summarised by the Supreme Court shows how onerous an express obligation upon a contractor to construct a work capable of carrying out a specific duty can be, and how such an obligation may arise inadvertently. Ultimately reconciliation is decided by reference to ordinary principles of contractual interpretation.

As well as using the appropriate contract to reflect one's intentions, it is equally important to take care in drafting the technical requirements that will become contract documents. Those relating to design issues must ensure, for example, that where a performance obligation is included it is compatible with the contract provision on liability. If a difference is intended, the contract conditions must make this clear. The subsequent need for reconciling provisions should be avoided.

None of this is an easy task - especially where there is multiple authorship of documents - but overlooking its importance may prove expensive.

This article first appeared in the 27 October edition of **Building**.

5

“PROCURE FOR BETTER VALUE, BE MORE TRANSPARENT, AND GET THE BASICS RIGHT”

ANN BENTLEY GIVES THE JCT POVEY LECTURE 2017:



Smarter procurement, including expanding the definition of ‘value’, being more transparent in terms of best practice, and getting key basics right – particularly in regard to Fair Payment – were the key messages given to JCT delegates in a presentation by Ann Bentley, at the JCT Povey Lecture held at The Building Centre, London, on Wednesday 8th November.

The subject of Ann Bentley’s lecture was to describe the work she has been doing in her role on the Construction Leadership Council (CLC) – a body which draws together business leaders from across the construction industry in order to drive improvement in productivity, and meet the targets set out in the government’s 2013 Construction Strategy.

It has been identified that the gap between productivity in the construction sector vs the average productivity across all sectors in the UK is costing £15bn a year. The CLC is working to draw the industry and government closer together to make improvements digitally, in manufacturing, and in whole life

performance, by addressing procurement, innovation, and skills.

Ann’s work with the CLC has focused primarily on the procurement aspect of its strategy – ‘Procure for better value’, which aims to:

- Use outcome-based procurement to drive capital delivery and lifetime performance.
- Increase transparency on the performance of suppliers and assets.
- Improve procurement efficiency and get the basics right.

Expanding on these key aims, Ann outlined three recommendations in her presentation:

“To capture the maximum benefit that projects or programmes can achieve, the definition of Value must be expanded to include elements [among others] such as: whole-life value, digital effectiveness, BIM and data capture, and capital and operational carbon emissions.

“To build on best practice and to eradicate the worst practice, public comparisons must

be available. Therefore, government must put in place a framework to collect and publish cost and performance benchmark data for publically funded construction and infrastructure projects.

“With the support of BEIS industry representative groups should work together with the CLC to agree a common approach on Fair Payment, retentions and standardised pre-qualification.”

The full video of Ann Bentley’s lecture can be viewed here: <https://corporate.jctltd.co.uk/jct-povey-lecture-2017-hitting-the-sweet-spot-value-for-clients-delivered-by-valued-suppliers/>

With over 35 years’ experience in the property and construction industry, working with commercial, public, and third sector clients, Ann Bentley has been a member of Rider Levett Bucknall’s (RLB) Global Board since 2012 and was the immediate past Global Chair.

The JCT Povey Lecture is an annual event at which an eminent person is invited to give their thoughts on significant matters that are relevant to the construction and property industry. The purpose of the lecture is to stimulate thought and encourage ways of continuing to improve the quality and value of construction output.

The event was inaugurated in 2003 to acknowledge and pay tribute to Philip Povey, who served JCT for fifty years. More information is at: <https://corporate.jctltd.co.uk/category/jct-povey-lecture/>



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THOMSON REUTERS

“REASSURINGLY EXPENSIVE”?

CHRISTOPHER MIERS – PROBYN MIERS



You may remember an advertising campaign which captured the slogan “*reassuringly expensive*”, along with a series of short films such as ‘*Jacques de Florette*’ (think French countryside, bouquets of flowers, and ... cold beer), suggestive of the idea that price was not the only factor to consider when buying a product, and that a higher price may be an indicator of a higher quality (in this case, of beer). Deciding on your choice of beer, or any other product, is a matter which brings in to play individual preferences and interests.

A construction project introduces a far more complex evaluation for decision making on procurement, but as with the “*reassuringly expensive*” campaign, it still requires an evaluation of the client preferences and interests which are unique to that project. The evaluation will drive the procurement strategy and cover high level strategic issues such as selection of owner or contractor design responsibilities and the form of contract, early contractor involvement, and two-stage or single-stage tendering, through to the required level of advancement of design for

tender purposes, defining specialist design packages, and the timing of issue and return of tenders and dealing with tender clarifications, amongst other matters.

Tendering remains a key part of successful project procurement. Disputes are common arising from tender documentation, tender clarifications, and questions (principally on design-construct projects) as to whether the tender period and process was adequate for a tendering contractor reasonably to assess and price project risk, and in particular whether the tender period and process was adequate to allow tenderers to detect unknown conflicts within the Employer’s Requirements.

The annual review by Arcadis in their Global Construction Disputes Report for 2017, reports that, as with previous years, two of the top five causes of construction disputes relate to tender stage issues: errors or omissions in the contract documents; and incomplete design information or employer’s requirements for Design and Build and D&C¹.

JCT has recently updated its Practice Note on Tendering, which is now published as ‘*Tendering 2017 – Practice Note*’ (“the updated/2017 Practice Note”). It was previously last updated in 2012, and I wrote at the time² of a high profile public project where the tendering process went awry, on Portcullis House in London³.

It is good to remember that JCT reflects a consensus across the construction industry, with representatives from public and private sector, consultants, contractors and subcontractors all present and with involvement in the drafting of contracts and guidance. We can read the Practice Note in that context.

The updated Practice Note is intended for use by both the public and private sectors. Public sector procurement is subject to the Public Contracts Regulations 2015, introduced since the previous JCT Practice Note, to replace

the 2006 Public Contracts Regulations. In relation to the public sector, the 2017 Practice Note indicates some of the key areas where EU public procurement rules impact on aspects of tendering procedure. However the Practice Note does not seek to be a guide to every aspect of these latest regulations, and the commentary on aspects of tendering is stated to apply to private sector procurement unless specifically referenced in the document to the public sector.

JCT and its drafting team have provided a structured approach through three stages in relation to tendering:

- the Preliminary Enquiry;
- the Invitation to Tender and Tender; and
- the assessment and award.

The Practice Note provides “Model Forms” for the Preliminary Enquiry and the Invitation to Tender and Form of Tender, as well as comprehensive notes of guidance.

The Preliminary Enquiry model form provides a helpfully structured pro forma, with a model form of enquiry letter, a project information schedule and – particularly importantly – a questionnaire checklist for specific project adaptation. The Practice Note gives guidance as to how this preliminary enquiry should be made, a reasonable timing for responses, and notes on the use of the questionnaire. Cross-reference is made also to relevant British Standards which will assist further by way of checking for compliance with good practice.

The model form of Invitation to Tender and model form of Tender also are set out, in a standard format ready for adaptation to the specific project. These helpfully ensure that key matters are addressed, such as the method for managing the discovery of errors in pricing or errors in arithmetic before acceptance of the offer.

Assessment and award is covered, including post-tender discussions (keep in mind my mention above of the Portcullis House tender)

¹ <https://www.arcadis.com/en/united-states/our-perspectives/global-construction-disputes-report-avoiding-the-same-pitfalls/>

² Review in conjunction with Bart Kavanagh in JCT News, February 2013.

³ Harmon CFEM Facades (UK) Ltd v The Corporate Officer of the House of Commons [1999] EWHC Tech 199

and, for public sector contracts, a reminder of the post-tender 'Standstill Period', and cross-referencing to the specific information required for the notice of decision to award a contract or conclude a framework agreement.

It is my view that construction consultants and contractors preparing tenders and responding to tender enquiries will be well advised to take a fresh look at this latest 2017 Tendering Practice Note, and to crosscheck standard procedures already in place against

this latest guidance. At least, if then the tenders returned are "*reassuringly expensive*", you will be satisfied that you comply with best practice and that the procedure provides a proper basis for moving the project forward to the construction phase.

Continued from page 3 >>

other clients buying for whole-life outcomes, with increased transparency and good payment mechanisms, and industry rolling out standard digital and offsite platforms for everyone to use. Cambridge University and Coventry's Advanced Manufacturing research Centre will be the focus of work under the Sector Deal. Five major government departments have already committed to a presumption to build offsite by 2019.

Digital technology is at the heart of all three initiative areas. It includes making Level 2 BIM business-as-usual, introducing robotic augmentation to human workers to work offsite and on, and transforming building management by using the Internet of Things and Artificial Intelligence. There is a step change potential in performance from this last, as is already being shown by clients like Deloitte and WeWork who are driving up staff wellbeing and productivity and driving down building costs-in-use per capita.

Wolstenholme expresses the future process as one of setting digital protocols, creating digital models and delivering digital assets. Work by

McKinsey suggests that the productivity gains for design and construction could arise across all steps in the process and lift productivity 40-60%.

Ann Bentley of the CLC set out her part of the picture in the excellent 2017 JCT Povey Lecture, which you can access via: <https://corporate.jcttd.co.uk/jct-povey-lecture-2017-hitting-the-sweet-spot-value-for-clients-delivered-by-valued-suppliers/>. Ann focussed on the need to deliver value to clients, expressed in social and environmental terms and in whole-life economics. Judged in this way, lowest-price tendering fails the test by driving out the investment and innovation needed to deliver required value. Clients also need to value their suppliers as well as their assets, forming and keeping relationships. Client capability is a key area for skill building.

The CLC is making a difference, 25 years after the review by the late, great Sir Michael Latham. Let us hope that we can now move more swiftly to re-create our industry on a sustainable basis.



JCT Student Competition

WHAT INSPIRES YOU ABOUT CONSTRUCTION?
Enter JCT's Student Competition and use your creative skills – whether it's an essay, article, video or photography – to tell us what inspires you about construction and why.

You could win £1000!

#JCTStudentCompetition



Withdrawal of JCT 2011: Information for JCT users

Following the successful release of the JCT 2016 edition of contracts, the JCT 2011 contracts will be withdrawn as follows:

JCT CONTRACTS DIGITAL SERVICE (CD) USERS

After the end of April 2018, JCT 2011 contracts will be archived.

HARD-COPY USERS

JCT 2011 contracts will remain available in hard-copy until the end of April 2018, to allow users as much time to transition and complete ongoing projects using JCT 2011 as possible.



8

IS OFFSITE CONSTRUCTION THE ANSWER?

RICHARD SAXON CBE – JCT Chairman



The construction industry is heading for the buffers. Capacity is draining out as skilled tradesmen retire and few enter as apprentices. The go-to supply of EU migrant tradesmen is likely to be restricted soon and is already less interested as the pound falls. Construction quality is declining in the housebuilding world. Mark Farmer's message: Modernise or Die, is clear that a major move to offsite construction is needed to keep the industry from decline. The core problem is low productivity growth in construction, globally under 1% per annum when manufacturing achieves 3.6%. There are many causes of this, but the making of buildings on site, in all weathers, is one of them.

The proponents of offsite construction see it as meeting several needs simultaneously. Firstly, industrialised fabrication raises capacity by enabling machines to join the workforce and

less-skilled people to work with them. Secondly, the factories provide steady work in fixed locations, with social hours and better health and safety. This will enable employers to attract a wider and more diverse workforce who would not or could not consider sitework. Thirdly, the offsite-fabricated elements are made to a higher quality than the site-fabricated equivalent, given the better working conditions and the contribution of automation in the factory. Productivity, the great weakness of construction, is dramatically improved by all of this. Costs should fall as productivity rises. Fourthly, machine-assisted construction must be done in a digital working environment, providing work of the type attractive to millennials. Design must be done in digital media to remove errors and to drive tools. Tagging components with codes and chips further empowers fault-free assembly and later operation and maintenance.

Already a rising percentage of any building is being fabricated offsite. Even traditionally built homes have a 10-15% offsite content. Construction products (other than raw materials) make up an increasing part of specifications. Non-residential buildings are ‘ecosystems’ of several layers of elements: substructure, super-structure, skin, systems, fit-out and furnishing and equipment. Most of the latter elements are fabricated offsite now. Mechanical and electrical systems are being assembled into large riser and distribution modules offsite. Bathrooms and kitchens come as pods. Envelopes are delivered as unitised panels, sometimes several storeys tall. Steel frames are all factory made and pre-casting is increasing for concrete elements. Fully fitted modules of accommodation such as hotel and student rooms and apartments are routinely ordered now, whilst Cross Laminated Timber (CLT) is becoming the new concrete: able to provide complete structures or modules made accurately and quickly offsite to bespoke designs for many building types.

So, is the Offsite construction future a self-fulfilling prophesy? Will it become the norm without any further effort? The evidence so far suggests not. Specialist firms making offsite elements are proving just as prone to business failure as on-site builders. Costs are usually higher because of the capital required and the sporadic flow of orders, causing traditional methods to undercut offsite. Supply chains remain fragmented. On-site assembly of parts is fraught with risk of damage. Skills are not there. The struggles of pioneer Laing O’Rourke are there for all to see.

Construction has always been a low-capital-intensity business, making entry easy and survival dependent on cash flow. Overcapacity keeps margins low. Small, privately-held firms can prosper in the low-margin environment because the return on their modest capital is good. However, R&D, innovation and training are all costly and are driven out by the low margins. Subcontracting, to give flexibility during the inevitable and exaggerated business cycles which construction suffers, further depresses the capacity to train or to do research and development. Recessions strip the industry of future talent and make the trades poor lifetime investments. Offsite raises the ante, needing more capital, a steady flow of orders and no downturns. A factory to produce housing modules cost tens of millions; not an attraction to housebuilders who build at the rate of sales.

Toyota’s housebuilding operation in Japan is often pointed to as a model. It could not be more different from UK businesses. Toyota specialises in replacing aging homes on existing plots.

Homeowners, often with 100-year mortgages passed down the family, replace the actual building at generation intervals; the site holds most of the mortgaged value. They have a customised design made within Toyota’s options, are moved into a hotel for a week and return to a new home with the latest specification. Toyota manages the sales process to keep the production lines flowing at optimum pace. The supply chain is a long-term one with capacity to keep innovating. A European equivalent is Barcelona Housing Systems, offering four-story blocks of flats.

UK construction is at a tipping point. It will need to become much more integrated, both internally and with its clients, to prosper in an offsite world. Production flow stability must be a high priority, with demand managed to achieve it and planning permission risk reduced. It’s hard to see how this can happen without pro-active local and central government facilitation to support demand for a variety of technologies. The public sector also needs to support Research and Development, training (The CITB has published a daunting shopping list of training needs across the whole process¹), the use of BIM and of the BOPAS quality mark for offsite systems. The myriad of competing methods on offer, like in the car industry of 1929, needs to be weeded down to some strong, insurable options. Digitally-enabled design for manufacture and assembly, known as DfMA, must become normal in professional offices, so that the decision to build offsite is made at the start, with contractor involvement, and not after a conventionally designed building has got planning permission. Site assembly approaches also need to be considered at the concept stage and Building Regulations need to be updated for Offsite processes, ideally checked online through BIM technology.

The best hope of progress may lie in the emerging market for institutionally funded ‘Build to Rent’ homes, now finally endorsed by the Housing White Paper. One institution, Legal and General, is investing in its own factories. Its new Yorkshire plant will deliver 1000 homes a year, but cost £55 million to set up. They will be utilising it fully. Other such disrupters are arriving too, from China. Some UK Build-to-Rent clients are considering buying from existing or planned factory capacity. This sector is far less likely to suffer recessions and it values the speed of build and the lifetime quality which can be achieved offsite. Higher density development, which carries the construction costs better, will form the backbone for the sector.

So, offsite remains a good theoretical solution, but a long road lies ahead before it can deliver on its practical promise.

This article is based on a paper delivered at a ‘Lunch with BLP’ event in 2017.

¹ Faster, Smarter, More Efficient; Building Skills for Offsite Construction. CITB, April 2017.



JCT INTERVIEWS...



**NIGEL
DAVIES**

In this series we shed some light on some of the key people who are involved with or give their time to support JCT, to ensure that all areas of the construction industry are represented and can contribute to the development of our contracts. We will look at how our interviewees contribute to JCT specifically, and gain their views on JCT's wider role within the industry.

Member of the JCT Council Facilities Management Contracts Working Group Construction Dispute Resolution Group

Nigel Davies BSc (Hons) (Q.Surv), PGCert.Psych, GDipLaw, PGDipLP, DipArb, MSc (*Merit*), LL.M (*Distinction*), FRICS, FCIQB, FCInstCES, FCIArb, is a Chartered Surveyor, Chartered Builder, Chartered Construction Manager, Chartered Arbitrator, Solicitor-Advocate, Panel Registered Adjudicator, Author, Mediator and Mediation Advocate.

Nigel is presently studying for an MSc in Mechanical and Electrical Surveying at Salford University.

Nigel has over 25 years' experience in the construction industry, originally gained working as a quantity surveyor working on a variety of building projects, then latterly as a consultant and a solicitor specialising in commercial and contractual management and construction law. During this period Nigel has worked and acted for employers, architects, main contractors, and specialist sub-contractors in providing quantity surveying, legal, and commercial services on a wide range of construction projects, operating under a variety of standard and non-standard contracts and sub-contracts. These have included shopping centres, commercial offices, leisure centres, underground stations, industrial facilities, refurbishment, prestige residential developments and social housing.

He predominantly acts as a Mediator, Chartered Arbitrator, and Adjudicator in regards to a broad spectrum of construction and property disputes being registered with the RICS, TeCSA, CIARB, CIC and Ireland.

Nigel regularly provides in-house seminars and courses to large publicly-owned organisations on a wide variety of construction and engineering contracts through the RICS and his business Davies & Davies Associates Ltd, which he founded in 2005.

JCT: Nigel, how did you first come to be involved with JCT? Why do you think it is important to be involved?

ND: I was introduced by the RICS's Contracts Panel who were looking for members to sit on its panel and to represent the RICS within the Consultants' College at the JCT Council meetings some eleven years ago. I now represent the Chartered Institution of Civil Engineering Surveyors within the Consultants' College.

I saw it as an exciting opportunity to constructively contribute towards the work of the JCT in developing contracts upon which the construction industry relies. I was also proud to be contributing towards the representation of consultants and, in particular, the CICES membership within the Consultants' College.

JCT: Can you tell us about any specific work you're currently doing with JCT – through the Construction Dispute Resolution Group, or the Facilities Management Contracts Working Group, for example?

ND: In terms of the CDRG we are developing exciting new contractual provisions which shall provide users with the opportunity to use a Construction Act compliant standing 'dispute board'. Presently, ad-hoc dispute resolution is enormously stressful for the Parties in terms of time and cost. There is also an inevitable loss of an enormous amount of context, all of which causes an irreparable loss of trust and confidence between the parties. A standing 'dispute board' seeks to address such issues by maintaining context and understanding through close contact with the project and being ready to answer issues as they arise.

The FMCWG is looking into developing a family of JCT Facilities Management Contract(s) and/or a Design, Build and Operate JCT form based on the current JCT DB Form. The development of such contracts would represent an exciting new development in the contracts that JCT is able to offer the built environment industry.

JCT: Do you have any personal career highlights? What are you most proud of about the construction industry as a whole and where do you think it most needs to improve?

ND: If I measure career highlight by the length of time I felt its impact, then it must be the setting up of my own business back in 2005. I am still enjoying the freedom it granted me to grow and develop.

I love the industry, especially the scale of what it can achieve, and the longevity of what it creates, through an astonishing elastic mosaic of individuals and companies collaborating. Whether it's modest or spectacular, it's an industry that bears the capacity to enrich our lives in innumerable ways, not only in terms of product; its very existence can usher in change and social development where previously there was little. It is an essential life-blood to any successful economy, be that micro or macro, local, regional or national. I'm also grateful that the media has been increasingly able to capture why it is so special in the programmes and documentaries it has been producing over the past 10 years.

Harnessing the advantages of technological developments at a consistent pace across the industry, bearing in mind the speed with which technology develops and the costs associated with it, shall always present the industry with challenges. However, these differences can be mitigated if the industry continues to develop even better methods of working that continue to deliver greater alignment of the Parties' interests. Fortunately there is an increasing use of relational contractual arrangements such as framework agreements based upon contracts produced by the JCT. It is the use of frameworks that arguably offer the greatest opportunity to Employers to bring about economic and social change to the grassroots of not only the industry but also the area in which the investment is being made.

JCT: What do you see as the main challenges for the construction industry over the next five years?

ND: Obvious external economic factors such as Brexit aside, the industry is inherently evolutionary but I believe that in certain respects there is need for revolution. Whilst payment practices have unquestionably improved, led by the government's example in the Construction Supply Chain Payment Charter, I would like to see the end of retention which seems to me only to place an archaic choke-hold on cash flow, but I appreciate that for some at least, it is a step too far.

The main challenge will be to fully harness BIM throughout the supply chain and to persuade Employers of the value it can bring on projects worth between £1m and £5m. The difficulty is that embracing change requires the confidence to risk and invest.

JCT: Does JCT have a wider role to play in the industry beyond producing contracts?

ND: Clearly, JCT has an enormous amount to offer and this is never more simply demonstrated by its long standing record of educational, training, support and guidance roles that it has provided and continues to play within the industry. Its role is not simply a purveyor of good, solid, reliable, trusted contracts to the industry based upon cross-industry consensus. Instead, JCT is a leader in good practice and its working groups serve as an excellent example of JCT's tireless drive help the industry develop.





JCT

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