

Construction Journal

Editor's choice

DECEMBER 2021 –
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RICS JOURNALS

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(Dec 2021–Feb 2022)

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Construction materials: the current state of play

CONSTRUCTION JOURNAL

First published 21 December 2022



A perfect storm of demand, delivery delays and the pandemic is having a significant impact on the construction supply chain. In the UK, the situation is only worsened by Brexit

By Brian Ward

The construction industry currently faces growing materials and labour shortages, rising costs and delays. But while Brexit has exacerbated problems in the UK, factors such as increased demand, the impact of COVID-19 and logistics issues are having a global impact.

Product availability is currently undependable, said John Newcomb of the Builders Merchants Federation (BMF) at a Construction Alliance Northeast summit in October.

Timber and metals see price hikes

Timber stock levels are at their lowest in more than 20 years, while supply continues to be tight following summer shutdowns in Sweden. This will only exacerbate the situation in coming months, said Newcomb.

In November, the [UK Department for Business, Energy & Industrial Strategy](#) identified imported sawn or planed wood and particle board among the materials with the greatest price change in the 12 months to September.

Steel has seen a 77.4% price rise this year. British Steel's decision to add a temporary surcharge of £30 per tonne due to rising energy costs will mean prices continue to increase.

Newcomb also noted the increasing cost of copper, shipping delays in China and a global shortage of semiconductors. All this is putting significant pressure on electronic component production.

Brick prices set to rise further

Since February, IHS Markit and the Chartered Institute of Procurement & Supply have reported increased prices and supply shortages of bricks. Brick deliveries in the UK are also subject to lengthy delays.

Newcomb also reported that manufacturers are yet to increase prices in response to current and future cost inflation. Although brick price movements have been relatively modest compared to timber, both BCIS and BMF suggest that price rises may be imminent.

The BCIS General Building Cost Index indicates a rise of 10.2% in September compared to the same period a year ago. Materials represent the largest contribution to this increase, with the overall cost of those in the BCIS Materials Cost Index rising around 19.7% during this period.

BCIS director James Fiske comments: 'The cost of materials to construct a three-bedroom, semi-detached house has increased by 14% or around £7,300 between January and September. It is expected to grow by further 1% or £600 by the end of this year.'

"

The cost of materials to construct a three-bedroom, semi-detached house has increased by 14% or around £7,300 between January and September."

James Fiske

Driver demand delays road freight

Harry John, senior research analyst for professional community Procurement Leaders, writes that demands on road freight have been steadily increasing. He notes that the US has been more heavily disrupted than EMEA or Asia-Pacific.

Brexit has exacerbated the issue in the UK. However, Politico reports that even in 2019 the 24% figure for unfilled trucker positions in the UK was comparable with the Czech Republic, Poland and Spain.

The international shortage is one reason why there has been almost no interest in short-term visas from drivers abroad. However, the fact that it takes around three weeks to process applications for such visas is a delay unique to Brexit.

The impending end of a 12-month grace period agreed by the EU and UK on 'rules of origin' paperwork in January is likely to mean even more difficulty for British imports and exports.

Businesses are working hard to understand the logistical requirements they will face after 2 January. They are liaising with DHL and other couriers to explore the possibility of consolidating shipments. Others are considering removing the UK from their supply chain altogether, taking a short-term hit to relocate to Belgium to ensure long-term flexibility.

Switch from air to sea freight clogging ports

John also reports that exporters are switching from air to sea freight seeking lower prices or more dependable journeys. Ironically, however, this has led to increased disruption, inefficiencies and record costs for marine transport.

Many ports have been clogged for months at a time, with ships that need to be unloaded but cannot access the docks. Newcomb observed that ports are dealing with a backlog due to volatility in arrivals, a lack of empty containers, and the relatively small number of ports that can handle 12m (40ft) containers.

Alan Murphy of research analysts Sea-Intelligence reported that in August, 12.5% of global shipping capacity was unavailable due to delays. Based on previous disruptions, he expects that it will take at least six months to resolve this issue, but warned it could even take 18–30 months for rates to normalise.

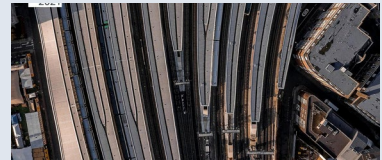
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Contracting for the UK's materials shortage

By Christopher James



Drafting contracts to cope with the unknown

By Shy Jackson



How can construction overcome its dependence on plastic?

By Stephen Cousins

Because of extensive delays and increased shipping costs, manufacturers and wholesalers in the US have started to expand inventory holdings. However, the increase is already starting to cause warehousing shortages.

The UK warehouse sector faces a similar issue. The increased cost of building materials and supply chain disruption has itself slowed development of more warehouses. Cushman's reported recently that the UK may run out of space within a year.

Pandemic keeps crews out at sea

In September 2020, the International Maritime Organization reported that these delays had led to a humanitarian crisis. Around 400,000 seafarers were stuck on ships around the world and required to keep working until they returned to home port.

Standard contracts for such workers generally require six months on board and six months off. However, since the outbreak of COVID-19 hundreds of thousands of seafarers have been forced to work more than 17 months without a break, far in excess of the Maritime Labour Convention's 11-month limit.

In addition, many if not most of these 400,000 were not likely to be paid until their ships reach their home port. This also meant an equal number of relief crew could not leave port and were also going without pay.

Although the number of seafarers stuck at sea has fallen from the high of January 2021, as recently as June AP news reported that tens of thousands were still affected.

Any new travel restrictions introduced as a result of the Omicron variant or future new strains of COVID-19 could push this number higher.

BCIS reports that timber supply remains under pressure in the UK due to increasing reliance on imports to fulfil domestic demand. Some timber-producing countries have also banned log exports.

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ICMS 3 can help standardise carbon reporting

CONSTRUCTION JOURNAL

First published 11 February 2022



The new International Cost Management Standard offers a way of assessing the carbon associated with construction in a way that is compatible with a range of existing measurement practices

By Alan Muse

If cement were a country, it would be the third largest emitter of carbon in the world. So it is vital that the construction industry gets to grips with measuring carbon in all forms.

The International Cost Management Standard (ICMS 3) was published in November. A high-level international standard, it brings together a standardised reporting format for carbon metrics – a first for the industry globally.

ICMS 3 comes out of a collaborative endeavour that has been ongoing for seven years. Meeting at the International Monetary Fund building in Washington DC in June 2015, 49 professional bodies from around the world formed a coalition and standard-setting committee, which I now chair, to develop the first edition of ICMS.

Expanding range of costs considered

ICMS 1 was published in November 2017 and essentially covered capital construction costs. This was a first in terms of standardising a reporting system for cost management around the world.

There are of course detailed measurement methods in different markets around the world for quantity surveying and cost engineering. The idea was the ICMS would bridge those different methods of measurement rather than replacing them. In other words, it's never been a method of measurement in terms of its detail; it's always been a high-level cost reporting system, which can help predict benchmarking costs for projects in buildings and civil engineering alike.

We then extended that concept in ICMS 2, published in November 2019, to incorporate life-cycle costing using the standard taxonomy of construction, renewal, operation, maintenance and end-of-life costs (CROME), criteria globally recognised worldwide.

CROME encompasses the life cycle costs of a project. But we also include acquisition costs, because these are often important for a client and there needs to be a systemised reporting structure for them as well.

Establishing a carbon measurement method

The third edition takes us into sustainability. This is not just a construction matter, as can be seen from the worldwide initiatives discussed at COP26 in November. It is a major issue in terms of corporate balance sheet reporting around the world.

The accountancy profession is also trying to standardise methods that factor carbon emissions and sustainability into balance sheet reporting. Around the world, many other NGOs and bodies, such as the World Green Building Council, have also been considering this problem. The latter published a report on embodied carbon that laid bare the issues with the carbon inherent in the production of materials for use in construction. But in terms of construction, ICMS 3 marks the first attempt to devise a common, standardised system for measuring carbon on construction projects.

ICMS 3 marks the first attempt to devise a common, standardised system for measuring carbon on construction projects

The information generated by the standard will allow the trade-offs that occur between cost and embodied carbon in project development and initiation to be considered and optimum decisions to be made. A lot of efforts to date to account for embodied carbon, though, have only been concerned with design decisions. Generating quantities to calculate the carbon from a material element can only be done when you've got a full design.

As well as embodied carbon, carbon is generated in building operations and on site (for example, by diesel plant and machinery) as well.

Another high-level aim for ICMS 3, therefore, was to try to get the data that would allow construction projects to be benchmarked at an earlier stage than full design. So, it made sense to put the carbon metrics in the same taxonomy as those for cost.

How benchmarking enables timely decisions

To do so, however, end users will have to make tough decisions about how much they're spending on projects compared with the amounts they pay for sustainability and reducing carbon. Such decisions, of course, need to be taken at the early stage of construction, alongside those about, perhaps, building nothing, building less, or building smarter by reducing the amount of carbon in the early design process.

This is another reason to use a high-level benchmarking system for carbon reporting. At the moment, it tends instead to be a bottom-up process, based on the amount and kind of material using suppliers' product declarations. This is why quantity surveyors are sometimes asked by architects to generate material quantities from a full design, so the client can be advised on embodied carbon calculations.

ICMS is instead a top-down method of benchmarking. Therefore, we need to be able to put these two approaches together, so we get data sophisticated enough to let us look at projects at the early stage. This will allow us to assess whether the building's orientation or morphology is correct, for instance, to achieve the biggest carbon reduction.

The standard also allows you to look at the common trade-offs in early design decisions with the correct management information. For example, double and triple glazing.

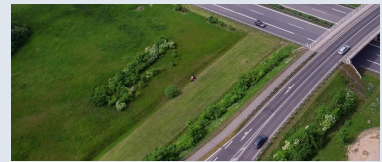
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NRM update launched

By Steven Thompson



Part one: How do we improve cost estimating?

By Various



Getting value management right

By Keith Owen

We know that triple glazing is the most energy-efficient, but it also has the highest carbon content. While double glazing contains less carbon it is not as energy-efficient; but it is also much cheaper. Deciding which to use is quite difficult without the right carbon and cost management information, which ICMS aims to provide.

If you start measuring embodied carbon, embodied carbon, operational carbon, and making decisions at early stages in this way, this will encourage innovation in materials. While we've seen a lot of innovation in terms of low-carbon concrete and steel, when you measure something and take decisions at the early stage of projects that affect material selection, this will promote an even greater degree of innovation.

Common standard for comparison and compatibility

Another important point about ICMS is that it bridges the artificial division between cost management for buildings and for infrastructure.

We found that in some markets, people like to use ICMS as a common method for comparing different entities in the same as well as different sectors. If for example you wanted to compare the cost of a bridge on a road scheme with a bridge on a railway scheme, ICMS is the perfect system for doing so. Otherwise, in the UK at least, you would probably be using the different standards and so making comparison difficult, so making that comparison would not be possible.

ICMS can also interface with more detailed measurement methods, such as RICS' New Rules of Measurement (NRM), or other comprehensive approaches such as the Civil Engineering Standard Method of Measurement. NRM has recently been updated and now includes mapping to ICMS.

ICMS itself is not as detailed as these, but it does allow mapping between them. Similarly, it has also been mapped to design classifications such as Uniclass, among others. The idea is that clients can have a report that shows them not only the cost breakdowns in accordance with ICMS but also the associated carbon breakdowns.

When we decided to extend ICMS into carbon measurement and metrics, we were aware that a lot of work has already been undertaken in terms of carbon assessment standards.

ICMS ... bridges
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In particular, some of you will be aware of BS EN 15978: 2011 Sustainability of construction works. Assessment of environmental performance of buildings. Calculation method, which the RICS *Whole life carbon assessment for the built environment* professional statement uses to show how to perform carbon calculations.

As ICMS is a reporting system, it does not cover how you calculate carbon, because we expect this to be dealt with in slightly different ways from market to market. However, RICS is going to update its professional statement in carbon assessment this year to align with ICMS 3. This will help the chartered surveying profession calculate and then report carbon in a structured way.

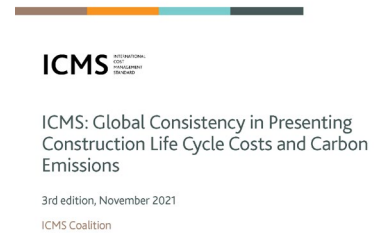
The BECD carbon database will also be relaunched in February in collaboration with RIBA, CIOB and other bodies. We hope that this will provide a repository for data that comes from ICMS and other reporting in a single place, making it available by all professionals. This will be a useful resource when making those early design decisions as well.

Ongoing opportunities

As ICMS carbon metrics are going into an existing market, we need to show how the standard works in that market. But it's also important to take thinking about carbon assessment away from the design process, because it's an opportunity for cost managers and surveyors to become more involved. RICS research shows that carbon assessment is generally performed by designers at present, in many cases using pro forma calculation tools that are tied to building information models.

ICMS 3 offers various templates that can be used by professionals to present the carbon calculations as well as cost calculations. These can be put alongside each other to show the trade-offs between them. The standard also provides template spreadsheets for download. Once a professional has read and understood ICMS 3, it should be relatively easy for them to offer such carbon measurement services to clients.

The standard is an opportunity for surveyors and cost engineers to become more involved in the effort to achieve net-zero carbon. To make progress with this and some of the construction industry's carbon commitments, we need more engagement from the mainstream surveying professions (building surveying, quantity surveying and project management) rather than having it seen as some kind of niche activity.



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Becoming lean from first principles

CONSTRUCTION JOURNAL
First published 8 December 2021



Lean construction can shape the corporate vision and continuously improve relationships on projects, as one company's experience shows

By Dr Ritu Ahuja

Construction Journal: What does lean construction mean, and how does it differ from regular construction?

Ritu Ahuja: Lean construction is an approach to production management oriented towards relationships. It helps foster a culture of respect and continuous improvement, reducing waste, increasing workflow efficiency, and creating value for the customer.

Lean project delivery differs from traditional approaches because it is built on five big ideas:

- collaboration
- optimising the project and not the piece
- increase relatedness
- connecting action with learning
- acknowledging that projects are a network of commitments.

As an early adopter of lean principles and practices, my company Kinetic encourages a culture of continuous improvement. It fosters collaboration, transparency and reliable scheduling, optimising resource use and generating value for the client.

CJ: Would you say it focuses more on soft skills – the relations between people?

RA: Yes: one of the pillars of lean construction is respect for people. This means empowering and engaging those closest to the work to assess the current condition, respond to problems, document lessons and standardise best practices.

How do you foster a culture where people can say no without damaging relationships? This is achieved by training in lean principles, creative thinking and team-building activities. If we spend time identifying and understanding constraints early on in the project, we can resolve those sooner as a team.

CJ: How does a company start to implement lean construction? How can you begin to change the culture?

RA: Lean principles should drive business strategy. Lean integration should also be a part of the company culture. Understanding the current state of a business and why lean principles are being implemented is key to making the change.

Another important factor is support and belief from top management. Although lean construction is implemented from the bottom up, it is sustained from the top down.

CJ: It sounds positive, relating to so many things that different people in construction are trying to connect. What is the focus of your role as lean integration leader? Is that common to the industry? Or is it just what you have found works best for Kinetic?

RA: I mentor and coach project and senior leadership teams on various lean construction tools and techniques. I create procedures, standards and strategy to enable lean construction at various levels of the organisation.

As the industry is becoming more aware of the advantages of lean construction, we do see roles like mine becoming more important in Canada.

Lean principles should drive business strategy. Lean integration should also be a part of the company culture.

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By Terry Hopper



Why SMEs can benefit from business analysis

By Terry Hopper

CJ: It sounds as though this would offer plenty of job satisfaction.

RA: Yes, definitely. Who doesn't want to see things improve? I am happy to be the go-to person when we need to improve a process.

In my role, I am always meeting new teams and working with colleagues at different levels of the organisation. It is indeed satisfying to work and celebrate together as a team!

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The advertisement features a circular logo for 'isurv' with the tagline 'has the answers'. The logo is surrounded by various icons representing different aspects of construction and business. Below the logo, the text reads 'Access reliable knowledge'. At the bottom, there are two buttons: 'Log in' and 'Start your free 7-day trial'. The background is a grid of light blue and green squares, overlaid on a bookshelf filled with colorful books.



The advertisement features a photograph of several hands clasped together in a supportive gesture. The text reads 'LionHeart Support for RICS professionals and their families'. At the bottom, there is the LionHeart logo and the website address 'lionheart.org.uk'. The background is a warm, wooden floor.

Why you should prepare now for the Building Safety Act

CONSTRUCTION JOURNAL
First published 19 January 2022



While the Building Safety Bill is still likely to change before it is enacted in 2023, the construction industry needs to understand how the proposed regime will affect the procurement process

By Christine Worthington

The Building Safety Bill, part of the legislative response to the Grenfell Tower fire in 2017, is set to introduce a new regulatory system. This will involve new administrative processes, reporting requirements, oversight and enforcement.

However, the real purpose of the legislation is to shift attitudes and change the behaviour of developers, freeholders and building managers, to ensure tangible, lasting improvements in residents' safety.

The proposed regime

As the bill is still progressing through Parliament, the current requirements may still be revised. However, it makes sense to start planning now for its eventual implementation. The Building Safety Act is likely to come into effect by the end of next year, so any building project due for completion around then should proceed with this in mind.

In the first instance, the measures will apply only to higher-risk buildings, namely those at least 18m or seven storeys high, and which contain at least two residential units.

The bill introduces requirements to submit safety information to the new building safety regulator, maintain a golden thread of such information throughout a building's life cycle, and appoint an accountable person and a building safety manager.

Developers will need to ensure that:

- staff understand and comply with the new requirements and are competent to be dutyholders
- suppliers provide compliant materials
- software is in place to maintain and access the golden thread easily
- clear and robust communication protocols are in place between the building safety regulator, the dutyholders, the design team, the suppliers, the contractors and the occupiers.

Through secondary legislation and amendments to the Building Act 1984, the bill will establish three gateways during the design and construction of higher-risk buildings. These will require dutyholders to submit key information to the regulator at the following stages.

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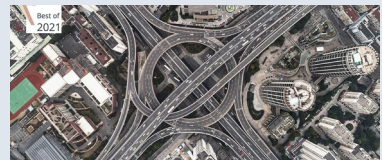
Weaving the golden thread for building safety

By Andrew Thomas



How to manage the risk of construction claims

By Merryn Stoyle



How to make collaborative procurement work

By Andrew Dixon

1	Planning: to ensure applicants have considered fire safety issues, planning applications for higher-risk buildings must include a fire statement.
2	Pre-construction: construction cannot begin on a higher-risk building until the regulator is satisfied that the planning proposals comply with the Building Regulations, and do not contain any unrealistic safety management expectations.
3	Completion: once a higher-risk building is constructed, the regulator will assess whether the work has been carried out in accordance with the Building Regulations, undertake final inspections of the completed work, and issue a certificate once approved. This gateway is, like gateway two, a hard stop: the regulator can only register the new building once it has satisfied all requirements. All golden thread documentation must also be handed over to the new building owner.

Contracting under the new regime

It is likely that complying with the new system will affect the choice of construction procurement route.

Construction parties are used to dealing with gateways, such as those related to gaining planning permission. Introducing a stop-go process comes with programme risk and cost implications, however. Which procurement method will suit these best?

Under a traditional route, the client would appoint the design team to seek planning approval and pass gateways one and two. Once through gateway two, the client would appoint the contractor.

This would mean the contractor would not price in the risk or delays relating to gateways one or two, though, as it only has a role after they have been passed. So, the client would need to manage the programme tightly so it can be ready to build quickly after gateway two, and deal with the fact that the contractor will only confirm prices only at this stage.

It is likely that complying with the new system will affect the choice of construction procurement route

Alternatively, a single-stage design-and-build contract would be possible, so long as there was a gateway process built into the contract. Typically, this would use a provision to issue a notice to proceed. It would set out that the design-and-build contractor works up to a certain stage and value but does not proceed beyond that unless given a notice to proceed by the client which notice would be given only when the agreed stage is reached, e.g. gateway two is achieved.

The contract still needs to address what happens during the period that work is on hold, and the way this affects price and programme. It also needs to cover what happens in the event that the contract does not proceed to the next stage.

The two-stage design-and-build model, however – where the client appoints the contractor under a pre-construction services or an early works agreement before moving forward with a full design-and-build contract – would fit the proposed gateway process well.

The client would appoint the design team to take the design to gateway two. At the same time, the contractor would have an input into design and be confirming prices. Once gateway two approval is received and design and pricing are certain, the client can instruct the design-and-build contractor to move forward to construction.

While these procurement options focus on gateways one and two, developers also need to understand and address the risks arising at gateway three. As the building cannot come into use until the regulator has issued a completion statement, this will have a substantial impact on the process, with close scrutiny from funders and tenants.

It seems inevitable that gateway three approval will become a condition for practical completion under a building contract. If so, contracts will need to address which party bears the risk of delay by the building safety regulator, and the effect of the gateway three certificate not being given.

Further changes to the bill

While further changes to the current bill are expected, these are most likely to be around the more controversial elements of extension and retrospective periods of liability.

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The current drafting proposes that anyone suffering damage due to a breach of the Defective Premises Act 1972 could bring a claim up to 15 years after completion. This would enable, for example, a tenant to claim for a home that is unfit for habitation and was built within the past 15 years. Given that this could apply retrospectively as far back as 2008, the construction industry and insurers are still seeking ways to protect themselves.

In terms of changes to the gateway process, it will be interesting to see whether the secondary legislation introduces more detailed requirements for the form of information applicants must submit, and whether the building safety regulator will be subject to set timeframes for responses to have been given to a gateway application. It will also help to understand whether the government intends to expand the rules to apply beyond higher-risk buildings.

But as the Building Safety Bill moves towards law, the industry as a whole needs to respond to the proposed changes – and begin to make the substantial cultural shift.

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Implementing a common data environment improves efficiency

CONSTRUCTION JOURNAL
First published 2 February 2022



The Highland Council has adopted a common data environment to make it easier to manage construction documentation and meet its regulatory obligations

By Benedict Wallbank

The Highland Council invests around £100m per year in projects from modernising schools and houses to energy efficiency and improvement works. The council serves a third of the land area of Scotland, including the most remote and sparsely populated parts of the United Kingdom.

To manage those investments successfully, it depends on having an efficient and accessible means of managing information for both design and construction activities – not least for health and safety.

Disparate methods of data and documentation became impetus for change

The council previously relied on paper and CD document storage, in combination with limited cloud-hosted health and safety documentation.

But the system was not widely adopted by the design and construction team. Only a small portion of staff became users, and others passed data and documents to them for uploading to The Highland Council's digital document management system.

Staff continued to create their own documents, templates and storage folders on their individual devices. The lack of central document management also meant there was a poor-quality audit trail of drawings, mark-ups and overall project paperwork. The issue was compounded by staff retirements.

After several years, the council was left with no staff who knew how to run the system or decipher document-naming conventions.

Beginning the digital transition

As information management using building information modelling (BIM) began gaining traction, thanks in part to a government mandate for its use across construction in Scotland by 2017, the council decided to adopt some of the technologies that support the mandated information management approach and procure a common data environment (CDE) for its projects.

CDE was seen as key to help the council meet its legal obligation to share construction information with project stakeholders (i.e. developers, engineers, subcontractors). By putting this information online, it was much more readily available to those who need it.

The council decided to implement a CDE. This would support the management of all design and construction information across both its domestic and non-domestic property portfolios more effectively. The initiative aimed to:

- meet or exceed mandated Information management standards such as BS EN ISO 19650
- procure a cloud-hosted platform, to help the council meet its obligations under the Construction (Design and Management) Regulations 2015 to make health and safety files and pre-construction information available to designers, contractors and other stakeholders

CDE was seen as key to help the council meet its legal obligation to share construction information with project stakeholders

- meet the required security standards for information and communication technology used by local authorities and the public sector
- implement a user-friendly, accurate document and information storage and management system for all projects and all staff, ensuring a single point of access to data and information
- resolve issues that affect day-to-day work on construction projects, such as lack of data storage or information being unavailable to those that need it such as contractors and consultants.

A small project team was set up, including staff with various backgrounds and skill sets. The council researched information management processes and CDEs, developed a business case, and had it approved by senior leadership. A tender specification for the CDE was then prepared.

The council shared a prior information notice on the Public Contracts Scotland procurement portal to gauge interest from potential CDE providers. After confirming sufficient interest, the council moved to a full tender exercise. Bidders were asked to complete a tender submission form, and also demonstrate their products to the council.

Trial implementation of software

After a tender evaluation process the Highland Council chose Viewpoint for Projects (VFP) as the software for its digital transformation.

The council began with a trial of the application programming interface (API), uploading an estimated 15 documents. Once the trial was successfully completed, the council uploaded 40,000 documents using Viewpoint's API, which made a seemingly insurmountable task achievable. The API automated the process: it re-named the files, uploaded them to the correct sites on Viewpoint for Projects, as well as added the correct meta data to each file. By using the API rather than uploading them all manually the council saved hundreds of labour hours of time.

When the council first procured Viewpoint for Projects in 2016, the guidance standards were British Standards BS 1192. In 2021, the Highland Council implemented the International Standards ISO 19650.

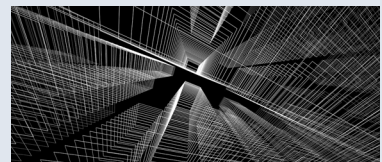
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By Steven Thompson

The implementation of Viewpoint for Projects allowed the council to meet the document management and information security requirements of BIM and the British Standards, rather than implement BIM as a whole (i.e. BIM straight out of the box).

It was not just a case of fine-tuning the software, but also gaining the most value from it.

Streamlined data and workflows

In addition, VFP enabled the following.

- The software helps manage non-domestic and domestic property portfolios and construction projects, and allows the council to comply with legislation on health and safety files.
- The council customised VFP to create around 1,200 individual sites for each of its non-domestic assets. A high-level folder stores key asset information for all projects. Information is then organised into individual project containers that hold health and safety files, operational and maintenance files, drawings, specifications, certificates and warranties.
- Project teams now work with documents in a collaborative and efficient work environment.
- The council can simply and effectively collect all relevant construction information and effectively manage data with internal and external clients, customers and partners. For example, the council uses VFP to manage individual construction projects, and also uses the application to manage asset information. So, once a project is complete, the council stores detail to assist in managing assets on an on-going basis.
- The council typically manages 300–500 projects annually, from new school developments to refurbishments and fit-outs. Each project is run through VFP.
- The CDE allows external contractors and consultants to collaborate with the council on construction projects, ensuring a single access point for information.

The council also relies on the VFP comprehensive user support website, with its tutorial videos and user guides, as well as its support desk.

The Highland Council was the first local authority in Scotland to implement a CDE throughout its organisation.

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