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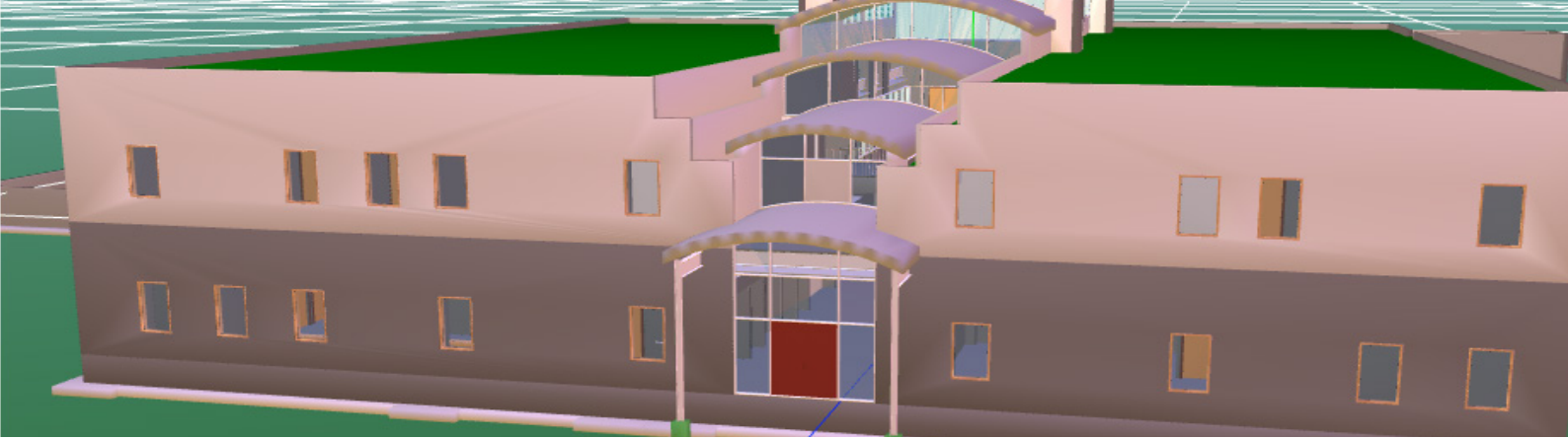
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NBS: Helping to move BIM forward

Since the UK Government released its Building Information Modelling (BIM) Strategy in May 2011, the construction industry has worked strenuously to ensure that Level 2 BIM is achieved by 2016.

The programme was embarked upon to modernise the sector by reducing capital cost and the carbon burden from the construction and operation of the built environment by 20%.

Adopting BIM technologies, processes and collaborative behaviours is key to making a project efficient through its whole lifecycle.

NBS fits nicely into this and is committed to offering information solutions to construction industry professionals.

Given that the 'I' in BIM stands for information, and ensures projects gain structured information, NBS is well placed to help because structured, trusted, digital information is key to the Company.

BIM is one of the most significant developments within the industry but it is certainly nothing new, as Dr Stephen Hamil told UK Construction Media.

Stephen is the Director of Design and Innovation at RIBA Enterprises and has played a huge part in developing innovative digital products including NBS Building, NBS Create and the National BIM Library. These were developed by the in-house software team who can combine expertise with quality technical information.

He is Head of BIM at NBS and explained why the move towards BIM is happening.

"BIM is not new: my PhD in the 1990s was on the subject of digitally modelling buildings so BIM has been around in some form or another since earlier than that."

"However, when the UK Government decided in 2011 that the mandatory use of BIM on public sector construction projects would be an integral part of achieving objectives set out in its construction strategy, the industry had to really take notice and realise that digital construction was here to stay."

"Since then, the awareness and use of BIM has grown exponentially, something we've been tracking through our annual NBS National BIM Survey."

This is a survey that has been released each year since 2010. A comprehensive report, the survey looks at how building professionals are using BIM.

The latest survey, published last year, is showing that BIM is moving away from its previous status as a niche practice and into a process adopted for projects by a majority. Key findings back this up, as the majority of active BIM users say they have already reached BIM Level 2, and that the Government's 2016 deadline is achievable.

Statistical analysis of BIM use and awareness over time shows that the numbers are rapidly increasing. In 2010, only 13% of professionals were both aware of and using BIM. That figure is now at 54% - an increase of 15% since the year before.



The number of respondents who are only aware of BIM is also on the fall after two years of increase. From 54%, the figure recorded in 2013 was 41%.

Significantly, those in the industry neither aware nor using BIM has fallen rapidly. In 2010, this figure was 43%. Now it is at 5%. As the report suggests, BIM is now at a tipping point.

The report then asked those who were aware of BIM about their future usage of it. Those unaware or unsure were excluded from the results, which showed that by 2016 - the year of the Government's target - 93% would be using BIM. This figure rises to 95% when the same businesses are asked whether they will use BIM in five years' time.

Significantly, those who believe they will use BIM in 2015 is 81% - 12% less than those who say they will in 2016. It suggests that the deadline set out by the Government is a deciding factor in mobilising some of those in the industry. The latest report also showed that BIM Level 2 was achieved by 51% of organisations on a project, with 31% achieving Level 1, 11% at Level 0 and 7% at Level 3.

Of those surveyed, 59% said they were likely to turn to NBS for information about BIM, and the Company's experts are members of influential groups within BSI, BIM Task Group, and buildingSMART.

The more that companies and organisations become acquainted with and up to speed with the different levels of BIM, the more the projects will flourish, and Stephen spoke about the way it will make companies collaborate through the whole lifecycle of a project.

He said: "While the advantages in terms of building cheaper, faster and more sustainably are the outputs, BIM will enable this by really pushing collaborative working throughout the construction industry."

"It's important to remember that BIM is primarily about cultural change and all the technology, products and processes that are being developed and talked about are

aimed at enabling and promoting that change.

“The construction industry has been talking about closer collaboration between disciplines for many years: BIM is the initiative that should finally make it happen.”

NBS is one of a number of organisations who look to provide industry professionals with the information they need to move forward with BIM.

Valuable resources including the BIM Object Standard and the digital toolkit currently being worked on are two such areas.

The digital toolkit will help to bring standards up to BIM Level 2 by developing a free classification system and digital plan of work.

It is possible as BIM Task Group and an NBS-led team were awarded £1M of funding from Innovative UK.

NBS is the main organisation developing this classification and digital plan of work aspects of the BIM Level 2 package for BIM Task Group/Innovate UK.

Funding for this came about after a six-week feasibility study undertaken by NBS into the development of a digital tool for BIM.

Stephen explains: *“Then, alongside our world class partners BIM Academy, BDP, Laing O’Rourke, Mott MacDonald, Microsoft and Newcastle University, we demonstrated that we had the capabilities to deliver and were fortunate enough to win the main contract to take forward the development of this free-to-use toolkit, which will help give the UK construction industry ‘first mover’ advantage in the global marketplace.”*

With the potential to transform the procurement of buildings and infrastructure, this web portal is easy to use and guides users through the construction process.

A ‘vital part of the jigsaw’ in the quest to reach Level 2 BIM by 2016, it will make available a digital plan of work and classification system that incorporates definitions for over 5,000 construction objects at each delivery stage throughout the lifecycle of a built environment asset.

There will be well-defined levels of graphical detail and information for each stage of a project as well as a comprehensive set of product information templates.

The thousands of definitions provided by the classification system - which will be an improved version of Uniclass - will, according to Stephen at NBS: *“allow collaborative project teams to define quickly and clearly who is doing what and when”.*

By creating this collaboration with a process that encourages and results in cheaper, quicker and more sustainable projects, BIM is clearly the future for the construction industry and NBS is helping the process by making sure the industry continues to be pushed towards high quality, trusted information that is well structured while also aligned to the Government Strategy.

As much as anything, the cultural change that BIM is causing cannot be underestimated. Traditional methods such as information being recorded on paper are quickly being replaced by a digital process. This in itself promotes efficiency because information required is clearly defined.

Stephen envisages this move away from paper transactions as a key change that BIM will enable in the construction industry.

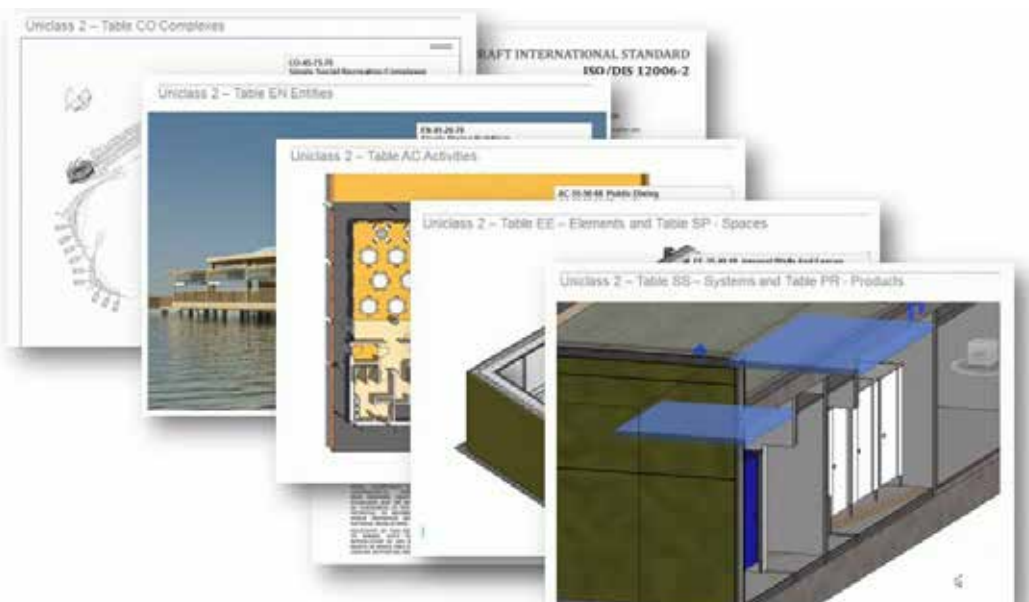
He said: *“I think the two big changes we will see will be, firstly, to do with digital transactions instead of paper transactions and secondly, through digital collaborations through the cloud. “In the late 1980s, I learned to draw on a drawing board and type on a typewriter. Young professionals today learn to model using the 3D objects and link this to structured digital data.”*

The effects of the importance of BIM do not stop there. Wide reaching is how the use of software in construction is becoming more relevant and as efficiency and coordinated information improves, the move to cloud computing will be more likely. With this, software won’t need to be installed, nor will data have to be stored locally.

Stephen described this as a ‘game changer’ because of the fact users will be able to license software and storage as a service.

It reflects BIM’s significance, which is helping other software and technology to advance at ‘a rapid pace’, and hardware will move forward with it.

More information about BIM and the digital toolkit being developed by NBS can be found at www.BIMTaskGroup.org and www.theNBS.com/BIM.





DELIVERING A NEW DATA RICH ENVIRONMENT

The concept of BIM is remarkably straight forward; build a 3D model of what you plan to construct, review and check the model to make sure it works in a virtual environment and then construct it. In addition, this new found medium of communication extends to facilitate the downstream operation and management of the asset by providing access to essential information at the point of use.

For all parties, improved communication, surety of the outcome through 3D, 4D and 5D processes, a single source of truth in the information which can then be shared with all, the opportunity for offsite manufacture and pre-fabrication and the ability to recognise what needs to be done in maintenance before you get to the job site, can easily be recognised from many everyday experiences to be a simpler and more efficient way to work.

Our opportunity through BIM remains; to **reduce the waste in what we do by rationalising the process of achieving the outcome**, as well as finding new opportunity from a better understanding and alignment of the end product with the initial requirements. This ideal remains at the heart of the BIM journey.

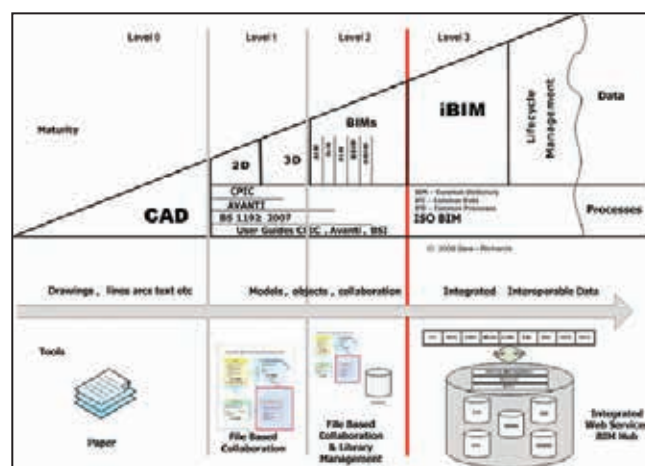
Many saw the opportunity, but it commendably took Government to lead the charge and their action has now delivered the well-known route map and ingredients necessary to reach the first milestone, level 2 BIM by 2016. As we enter 2015 and see the scale of change taking place around us, it is clear that this journey is well underway. In many areas of

the industry there are significant gains being made, coupled with extended enthusiasm of the opportunity in front of us to re-engineer our industry, level 2 BIM is only the start of the end game.

For anyone who has grown up in construction, the opportunity is significant, even obvious, and inevitably game changing but it does;

- Involve technology – to fundamentally **enable the opportunity**.
- Cause us to change our processes – to **realise the opportunity** and, most importantly of all
- Involve the engagement of people – to **embrace and deliver** a new outcome.

Extract from Bew-Richard 2008



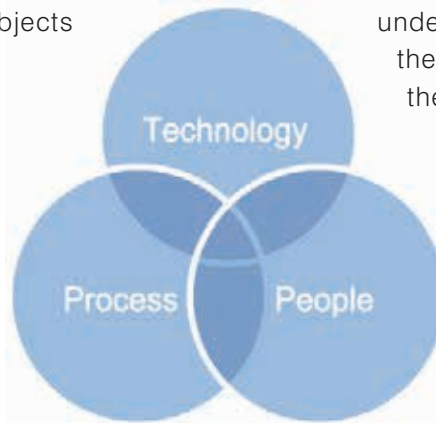
If only it were that simple, given the variety and complexity of the procurement routes we use to deliver our asset base, it is not difficult to appreciate the complexity this simplicity needs to fit within.

Needless to say these changes should not be restricted to visual representation alone.

Leveraging the intelligence of the objects that we use to create the 3D virtual model allows us to count, measure, attach information and link to associated data which ultimately leads **BIM to participate in the "internet of things"**.

With all this information connected through a virtual model of our assets in which information and knowledge can be displayed in many different forms to support our decision making, we start to replicate the simplicity and access we now see in many aspects of everyday life, some refer to this "gamification".

Whilst the use of technology and the internet have become part of our everyday lives it has also become an influencing factor in the way that we work. BIM and the Cloud are starting to do the same, but there is a way to go until we repeat the same physical and behavioural impact that has happened in our daily lives. What we know is that the change is inevitable, is getting faster and as we cross the chasm of acceptance to new ways of working, the inevitable split between leaders, followers and the



undecided will be quickly swept through by the pace of change and the scale of the outcomes.

So what needs to change to this people, process and technology infusion to reach the sweet spot of real success and make this happen?

We know **real success will need to come from open easy sharing of transferrable information.** At

Clearbox, we believe the initial stepping stone comes from how easily we can access and manage the information to allow our teams to work together, this is the true simplicity of the common data environment (CDE) referred to in PAS 1192 Pt2.

What are Clearbox doing to support this transformation?

At Clearbox, we see this issue wrapped up in **the difference between a model centric approach to BIM and a data centric approach.** Ultimately, our issue is to ensure that our ease of sharing and access to common data is delivered through a visual interface that allows us to see the outcomes we need at the required level of definition to suit the type of device we are using.

For us, **the architecture of the product is key.**

When we search on Google Earth, we don't load the detailed model of the



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world as a multitude of small models, the world is loaded at a level of detail and information pertinent to the view we need and the view is then refined and the data we have access to updated as we proceed. When we access a retail website on our smartphone, the view is tailored to suit the device and the information we need, and while that view is rarely fully customisable, it is inevitably likely to be pre-customised to suit the view we require while providing access to other information should we need more.

The better the suitability of the view to the information we need, the more likely we are to have success and want to continue to use the website. Just look at the speed of adoption and growth of Google Earth, the iPad, and Amazon and the simplicity of their user interface to recall just what the last 10 years have shown us.

In all these successes we see that the **management of the data** is the mechanism to control the visual interface. While we at Clearbox have made best use of existing industry tools, our opportunity to step up our offering for users has been rate limited by the products currently on the market. Needless to say, in a space where the technology and its simplicity are key to the wider use and adoption of BIM, we have long recognised that we require a simpler, faster, more robust and scalable viewer that connects to the data environment contained in our core product BIMXtra.

We have also recognised that such a viewer needs to be supported by the data as opposed to being completely standalone in order to manage very large projects. Previously we have used a well-known viewer to enable users



to access data and information in the visual environment. This is no longer sufficient to meet the needs and in order to future-proof the technology solution and deliver a better experience across common market information standards, we have now built an exciting new viewer, based around the type of technology that powers

gaming, while providing the simplicity of the interfaces and access arrangements we see in everyday life.

Our approach is to make best use of and connect to, best in class tools, wherever they exist, and where they don't, develop our own to allow the sharing of intelligent data and information based around industry standards. This is a fast evolving environment but we know from the world around us that **data is the new oil**, and that a data centric approach to managing BIM is critical to the simplicity, scalability and future-proofing of our BIM solutions, **just look at the road map... level 3 is next.**

Graeme Forbes is the Managing Director of Clearbox, a specialist digital information solution provider that is focussed on bringing game changing solutions to the construction industry and other asset intensive industries based around BIM based processes.

Access to Clearbox website can be found at www.clearboxbim.com

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The Chartered Institution of Building Services Engineers (CIBSE)



CIBSE is the prime source of expertise in the building services industry, giving advice to its 21,000 members.

UK Construction Media spoke to Professor Tim Dwyer, Teaching Fellow at UCL Institute for Environmental Design and Engineering and member of CIBSE BIM Steering Group, and Michelle Perry, Key Account Manager for TROX UK Ltd, member of CIBSE BIM Steering Group and Vice Chair of the Product Data Templates Breakout Group. They shared their thoughts on the work CIBSE is undertaking to raise BIM awareness and the importance of Product Data Templates (PDTs) for the industry.



The Chartered Institution of Building Services Engineers (CIBSE) is a membership-based organisation whose history reaches back over 115 years. In its current form, CIBSE has existed since 1976 and has more than 21,000 members comprising of not only traditional building services engineers, but also specialists from a range of associated disciplines such as lighting or facilities management.

Members belong to a global network of professional support and expertise, with a full programme of meetings and events each year offering hundreds of opportunities for members to meet and learn from colleagues and experts to explore new ideas. A further 20,000 non-members are also involved in CIBSE's specialist interest groups.

The Institution represents key aspects of the supply chain whose input and engagement will be vital if BIM is to live up to its potential to transform the construction industry. A key priority has also been to collaborate with other bodies, the Government, other institutions and trade associations. The collaboration is crucial because so many different companies in different sectors need the information.

Tim explained: *"Building services is very much a multi-disciplinary activity that relies on being inter-disciplinary so there's a need for the management of information."*

CIBSE BIM Steering Group

Informally, CIBSE has been involved in BIM for many years through the discipline of information, which is core to all its activities. This was formalised by the formation of the BIM Steering Group four years ago. In that time the Group has produced a number of important outputs – notably the BIMTalk website and PDTs, an important tool to streamline the input of data into BIM models.

The Group meets once a month and consists of members such as consultants, commissioning/FM companies,

manufacturers and main contractors so that the level of information is spread across a variety of sectors. The Group has subcommittees that meet on an informal basis, with break-out groups also sitting in to review various issues such as current industry standards. Tim said it was important that the mix of people involved in this group was varied and eclectic enough to represent the whole industry.

He said: *"It truly is a cross-industry group of people on the BIM Group, moving through the ideas that will help solve future problems of information management, as well as meeting the needs of the Government and various standards. The Group has acted as a great catalyst for action within CIBSE."*

The Group has run annual surveys to canvass the opinion of members in order to give an idea of what the industry wants from BIM and where it is going.

The results of the latest survey, which was conducted last year, showed that BIM in the building services sector is moving forward faster than others as reported in specific sector surveys. Those who took the survey felt that information they have been given has continued to improve when compared to previous years.

These are particularly encouraging results given that of those that responded, approximately 75% have been involved in BIM projects.

Distributed through CIBSE Journal and Twitter, the two groups who responded in the greatest numbers to the CIBSE BIM Survey were consultants and manufacturers, and it is the latter group that is looking to the Institution for help. Michelle explained the reason for this is the fact that they are "always at the bottom of the trail."

She said: *"Clients, projects and the Government drive things from the top through main contractors and consultants, who have to gear themselves up a lot sooner. Manufacturers are holding back because they won't get paid for doing this, so they wait to see which way the industry is going, instead of implementing things and having to change them later. Obviously with the recession and the way industry has been for a while, money and resources have been tight so it's about getting our message to the manufacturers and removing the fear factor."*

Two key initiatives which the Group is taking to strip away this fear factor are the development of PDTs and the creation of www.BIMTalk.co.uk - a non-partisan, impartial website that allows people to find out about BIM.

BIMTalk.co.uk

Created three years ago, this popular website is widely used in the industry and boasts a full glossary, allowing people to find out what all terms used actually mean.

The glossary is an invaluable tool as understanding the BIM



language can be a minefield, this website is key in making sure that CIBSE members, as well as other users from the building industry are up-to-date with the latest BIM development. All the results from the CIBSE BIM Group's annual surveys are published on the website, which also includes other useful information such as website links, case study examples, as well as sections about BIM standards and processes.

More importantly, the CIBSE BIM Group created BIMTalk because there was a need for a site with the sole purpose of enriching the knowledge of its members.

Tim explained: *"The reason we created BIMTalk.co.uk is that there are many of BIM pages on the web, however, the information is often partial, which is frustrating."*

"We are dedicated to keeping this website up to date, allowing visitors to read about the current state of the developments. We will also continually update links to other sites, directing them towards other useful information. If we find case studies that would help people to move through the jungle of BIM, we will upload them, saving people the hassle of trawling through journal sites. We believe it's an important resource and have had a great feedback so far."

Product Data Templates (PDTs)

Along with the BIMTalk website, PDTs form a major part of CIBSE activity around BIM.

It is a result of the industry wanting to move BIM forward and provide quality product information into the chain from the beginning of a project.

Initially a CIBSE BIM Object Library was discussed, however PDTs as an open standard were seen as critical to help manufacturers.

Formats such as COBie digital information, as well as German formats were investigated to make sure that the best suggestions could be distilled into a format that could answer product-specific questions required by COBie.

PDTs are adopted as a standard product questionnaire that manufacturers have to complete for each of their products once, serving the requirements of all people involved, products and services.

Michelle explained the benefits of the PDTs, saying that as well as ensuring manufacturers only have to input data once, inputting into Excel spreadsheets allows for "consistent transfer of information."

She said: *"We're promoting PDTs as one common format for all stakeholders meaning they don't have to keep producing the information in different formats for different companies or project teams, or to suit different software platforms. The Excel format is readily usable and adaptable into every type of software."*

"The software industry needs to adapt to the construction industry requirements - and not vice versa - regarding interoperability of models and data, including the capability to deal with large amounts of data without making the model unusable."

The definition of the individual PDTs only require updating if there is an attribute that needs adding to this generic product template; this is controlled to ensure that PDTs remain a universal standard.

Once the PDTs are completed, a Product Data Sheet (PDS), which is essentially the answer to the questionnaire, can be produced. The PDTs allow manufacturers to introduce their products to BIM, providing lifelong access to information. This gives a digital description of everybody's product, and

Layout of product data template

A	B	C	D	E
1	2	3	4	5
6	7	8		

Columns

- (A) Information category
- (B) The parameter (question to be answered)
- (C) The value (answer to the question)
- (D) The unit for the value
- (E) Guidance notes

Horizontal categories

- Header section
- Information category
- Construction information
- Dimensions and weight
- Performance data
- Electrical data
- Sustainability data
- Maintenance information

as a project evolves, it allows for the PDS to be developed in order to add more information to get to the project specific stages.

As a result, the project and industry don't have to tie themselves to a specific manufacturer from the beginning of the process, and instead can compare several manufacturers' products at various stages throughout the process. This allows the project to flow and evolve naturally. The PDT/PDS provides a mechanism for describing a manufacturer's product in one place on a spreadsheet, with links that will take the prospective user to the manufacturer's website.

Currently, this information is available in many different sources and formats, which need to be deciphered before you can compare between different manufacturers' data for similar products. Now, it will be readily available in a simplified format so a user can compare different types of a similar product effortlessly as they are in the same format and data is presented consistently. This is much more convenient than having to look at several different forms of data.

Michelle explains how this encourages people to work in the same format: "It is vital to be able to compare data and PDTs/PDSs are a great aid for that. It will simplify the different ways that information is currently presented in manufacturers' literature and consultants' schedules."

"For some reason every company presents the data in a slightly different way, yet exactly the same information is presented – the PDTs make the process more efficient."

PDTs also show their value by ensuring that accurate information is available throughout the lifecycle of the building. In addition, the smoother transfer of information will not only benefit facility management, but will also encourage the design team to consider facilities management

requirements much earlier in the design process.

The PDTs can answer all requirements about standards and what the industry wants to achieve. The fact that the information has to be produced only once rather than for every aspect of a project, is a major benefit to everyone.

Tim said that the need to meet the Government's Level 2 BIM standard was also a driver behind the PDTs, which addressed "a gap in BIM provision."

He said: "It was really a case of seeing where there's a real gap in the BIM provision and that's what created the impetus and project for the PDTs."

CIBSE is working closely with trade associations creating a route in for manufacturers, whose input into the initiatives such as PDTs is absolutely crucial for them being successful. Fundamentally, the PDTs are a way of the industry shaping what it needs according to its own requirements, rather than other sectors or software providers dictating these.

Future challenges

BIM is an emerging technology that is not going to stop at Level 2 - the 2016 requirement. Software and demand will develop, and BIM is critical to the future profitability of companies all over the country, which will be enabled through good quality information, readily generated. The PDTs are designed to enable information to be shared quickly and readily, benefiting the likes of manufacturers in the process.

But despite the positives, Tim and Michelle appreciate that more can be done to improve the process.

Collaboration is crucial, because BIM has to work across the whole supply chain and lifecycle of a building. Therefore it is vital for everybody across a project, from architects and



engineers to operators, to be communicating and feeding in the information.

At CIBSE's annual conference in November, RIBA President, Stephen Hodder, used collaboration within BIM as his key theme and said the institutions needed to embrace this approach and find out what members need in order to feed this information downwards and show where the industry and BIM are going.

It is a view that Tim echoed, saying: *"We need people to be more open - it has been a real challenge in some parts of the world to get the information shared because people have concerns about their intellectual property."*

Another reoccurring theme is the pace at which software is developing and the way it can and possibly should be used to bring about savings.

The latter point is not an easy one to find a solution for, as many companies use different software for each stage of a project.

For example, an architect will produce a model of a building for a project, but when the model goes to the engineers, information will be re-inputted and another model created. This process can happen many times throughout the project, which increases the chances of mistakes being made.

BIM should eventually tie this together, however there is a need for collaboration and for software houses to provide a solution where data is interchangeable between models, especially when using different software packages.

Michelle said: *"Going forward, that's where the biggest financial savings will be in the industry. If we can have a model that is adopted by the entire team from inception, right*

through the full life of the project without having to re-draw at every step, it will make the process a lot smoother instead of starting from scratch each time. That will save a lot of time and a lot of money."

Finding software that can handle this much information being put into one model is another hurdle. As it stands, the level of detail required by each discipline cannot be put into one model without it 'falling over'.

Tim and Michelle have both spoken to various software houses and feel this is caused not only by a lack of money to invest as the industry has been hit hard by the downturn in economy, but also by the companies possibly getting too comfortable as they have dominated the market for many years.

It is a challenge to keep moving forward and pushing the attitudes, without doubt. But CIBSE is committed to raise awareness of these issues with the likes of BIMTalk, its surveys, and PDTs. Going forward, it will undoubtedly lead to more knowledge for the betterment of the building services.

CIBSE would welcome input from those who would like to either create or test PDTs – visit www.cibse.org/bim to find out more.

CONQUEST

ESTIMATING & VALUATION SOFTWARE

ConQuest have spent 30 years working on one product. This focused approach has made the system easier to use and functionally richer than any other. ConQuest always strive to make the estimating process quicker and give the end users a pleasurable experience. ConQuest work with most of the big main contractors in the U.K. and are proud of the working relationships they have with their customers. Keeping in touch with end users ensures that its offering to clients remains the best in the industry.



Neil Harvey
John Sisk & Son Ltd
(Hertfordshire)

Neil Harvey has been using ConQuest since the late 1990's. He is pricing tenders between 10m and 90m. Earlier this year the entire John Sisk Group moved over to ConQuest from a system they had been using for 10 years. We asked how the transition had been and what the general feeling was about the move to ConQuest.

'Everything from ConQuest was great during the move over, since the original demonstration when everyone got to see ConQuest, the reaction was get ConQuest in, now'

We discussed changes in technology and features as Neil has used ConQuest since it was an MS DOS based system so he has seen it all. We are really proud that ConQuest is the most technologically advanced system on the market but still traditional in its approach.

"ConQuest has always been the closest to old fashioned estimating. That's what makes it so user friendly. One of the best features is the flagging system, it is heads and shoulders above the competition as you can instantly see how much work you have left to do. With other systems you can't check if you have missed anything, in ConQuest there are so many ways of checking it just gives you confidence"

We couldn't believe to hear from Neil that this year was the first time he had visited the ConQuest training centre at our offices.



ConQuest have a dedicated training facility which provides the best possible environment for effective learning away from everyday office distractions.

"That is how easy it is to use, although coming on the training course really did help a lot, I learned an awful lot of things that I didn't know which is helping me to get even more out of the system"

With Neil pricing some big projects for John Sisk we asked him if he felt confident submitting such big tenders:

"Now we have ConQuest, yes"



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**THE ESTIMATING
SOFTWARE PEOPLE**



Asta Development

Asta Development specialises in developing project management software, providing solutions for resource management, portfolio management, project management and BIM.

The Company spoke to UK Construction Media about how software is shaping the construction industry.

Tell us a little bit about Asta Development. What do you offer to the construction industry?

Asta has been developing project management software for more than 28 years. Since its launch in 1988, Asta Powerproject has evolved and improved driven by regular feedback from users and using the latest technologies available. We listen carefully to our customers and their feedback plays a key role in shaping how we continuously develop and improve our products and services

From its initial conception which had the business founders working evenings and weekends from home while holding down full time jobs, Asta has evolved into a full international operation. We now operate across the world through a network of distribution partners and resellers and are always looking for new organisations to work with us in order to expand our presence.

Asta Powerproject can provide any size of company – from the smallest planning consultancy to the largest global contractor – with a firm foundation for project management achievement and future growth. Available in stand-alone and enterprise versions, it is the preferred software of thousands of construction professionals throughout the world because it combines easy to use drag and drop functionality with powerful feature rich capability.

Please explain how your project management software works and examples of developments where this has been used?

Asta Powerproject, is a comprehensive product suite with the flexibility to meet the varying needs of everyone involved in running projects including those who rely on project performance.

It is widely used to plan and manage all aspects of the construction lifecycle – from simple tasks through to some of the world's most complex construction projects such as Europe's tallest building, The London Shard; Jumeirah Park, Dubai; The Reichstag, Berlin; Petronas Towers, Malaysia; and Durban International Airport and for house building projects of all sizes.

How does this benefit a customer in ways that traditional measures could not?

Asta Powerproject was designed to support the way construction planners work and has evolved with their input specifically to meet the requirements of the industry. It is flexible enough in both the scalability of the software and the flexibility of licensing to suit any business, whether small or large and from a single user working in isolation to a large team sharing real-time access on a complex project.

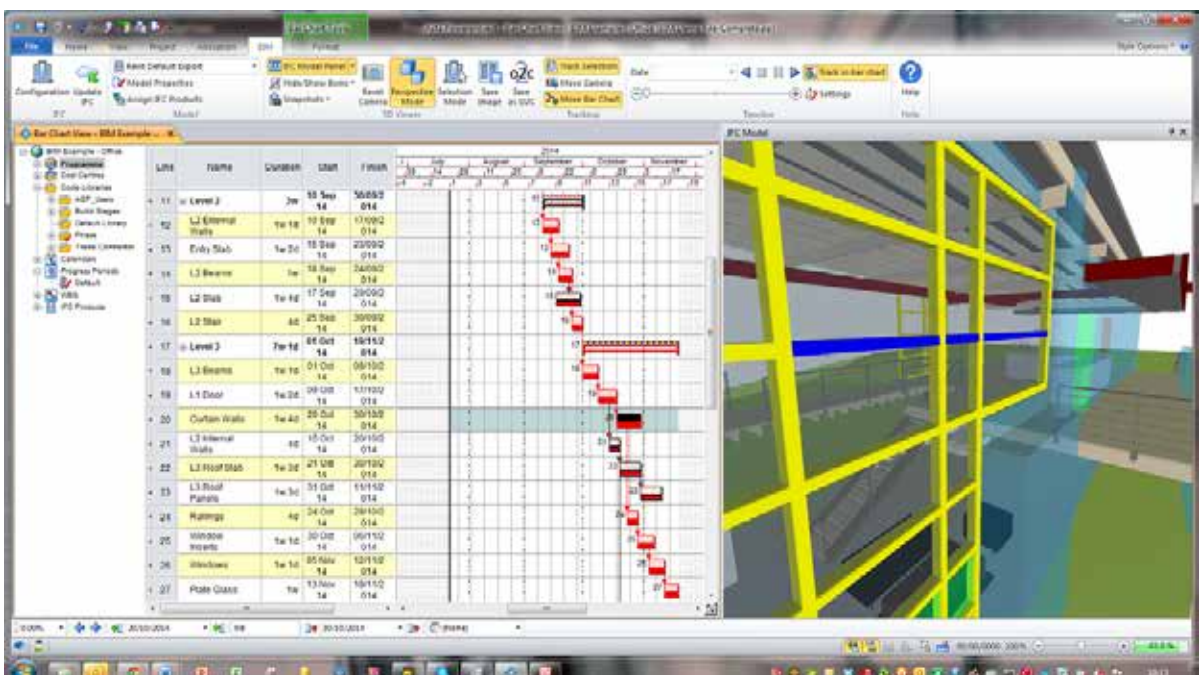
In what way is the use of construction software changing the industry? Are there any drawbacks?

The most notable change is the increasing move towards adoption of BIM and increasing collaboration. There is a clear understanding on what BIM can and is delivering within the sector which has been clearly defined through the Government strategy on BIM and this change will continue to move the industry forward.

We are also seeing a growing use of mobile devices to increase efficiency on site.

How are you developing BIM software?

Asta Powerproject BIM enables you to drag and drop objects between the 3D view and the Gantt chart



Working with input from our customers we have recently released Asta Powerproject BIM which brings 4D planning within affordable reach by combining 3D planning and scheduling in one application. Asta Powerproject BIM incorporates features that enable 4D planning, drive greater collaboration, and deliver communication, time and efficiency benefits.

We are continuing to improve Asta Powerproject BIM drawing on feedback from users and will be releasing enhanced versions during 2015.

Do you feel that companies are embracing this collectively, or are there still too many times during a project life cycle where software is inputted?

Main contractors and architects have been very much the early adopters with house builders following close behind. Everyone can see that BIM can help reduce costs and improve efficiency on all project sizes due to the nature of sharing data; if the right data goes in then the information is easily accessible for all project members and also for the full building life cycle.

Are you developing any other software packages for the use of the construction industry?

We have recently introduced a mobile app, Site Progress Mobile which enables progress to be easily updated from site on phones and tablets.

We are also introducing an estimation tool which will link with Asta Powerproject BIM through our BIM Cloud to improve cross-functional collaboration

What do you do to make sure companies are well informed about the benefits of construction software?

We hold regular roadshow events around the country and attend a range of exhibitions. We also communicate directly with our customers on a frequent basis through newsletters and hold a National User Forum which is well attended. Interaction with the industry for two-way communication is very important to us to keep our customers informed of our plans and to receive their feedback on the issues they face and their changing requirements.

Are you happy with the speed of development of software, and if not, what more could be done?

As we talk regularly to customers we have a constant programme of improvement and before we issue a new software release we are already planning well ahead on the next development.

Any other points of interest?

This is an exciting time for us in providing software solutions to the construction industry as we see a real desire from our customers to embrace technological development to help them continually improve in an economic situation that is improving and offering opportunities, but is increasingly competitive.



Turnaround view of Site Progress Mobile on iPhone



Ticksheet view of Site Progress Mobile on Android



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trouble. And
so could your
business.

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Proud BIM software vendor to UK Ministry of Justice

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- Terry Stocks, Head of Programme & Project Delivery,
Estate Directorate, Ministry of Justice

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Firm foundations – the role of procurement and technology within construction businesses

Alex Kleiner, General Manager of Coupa, talks about technology and procurement in construction.

All businesses have to buy and sell in order to create profits and companies in the construction sector are no different. Procurement, in fact, plays an especially vital role in ensuring that construction companies are successful – from large-scale initiatives and capital investments that are essential to delivering finished building projects, through to the day-to-day purchasing that the company needs to keep things running smoothly.

However, many companies in the construction sector are not able to make the most of their spend. This is not due to a lack of effort or intent, but the complexity of dealing with potentially hundreds or thousands of suppliers alongside strict building and commercial regulations. The mix here is a challenge for procurement teams – however, this Gordian Knot can be cut open with the right approach.

A lot of the challenge here is due to perception. Managing procurement across thousands of suppliers can be difficult – particularly when many of those suppliers can be small businesses or not used to interacting with procurement technology. However, this is not so complex that new approaches to procurement can't work, and work well.

The aim for procurement is to improve spend under management – covering everything from planned purchases that have invoices and purchase orders attached, through to unplanned spending that gets reconciled later or simply put on expense accounts. For the central procurement team, there can also be lots of smaller discretionary purchases taking place that meet needs at remote sites around products or additional services.

However, not properly capturing information on that spend means that then procurement teams can't get the right discounts.

Let's take an example. Imagine a housing development project where homes are being completed. In-house systems like plumbing and electrics have to be considered, so specialist staff may have to be brought in. Equally, specific parts may be required that come in and go out of stock. These products and services may have to be bought and paid for at short notice to ensure that schedules are met.

Purchasing work in this instance may not be planned, but it will still be necessary; much of it may be done on paper-based systems. Staff can either follow the rules, wait for their requests to be approved, and potentially be idle during that time. Alternatively, they can go around the rules and either expense materials or create unplanned purchase orders. This second approach will help staff to do their jobs,





but it can lead to spend that does not get the right level of discount, visibility, or compliance applied to it. This creates more complexity for the central team sorting things out. Many procurement professionals seek to improve the level of spend under management by making the rules tighter. While this approach can improve things from a financial perspective, it makes staff on the ground frustrated and unhappy. Instead, it is advisable to take a more holistic approach that makes following the rules so simple and easy, that it's actually far more pleasant than dealing with the hassle of getting invoices approved or adding more expense reports to the list.

This is where technology implementations such as cloud computing and mobile access can help. Any approach to procurement technology should be based on getting tools into the hands of everyone across the business, rather than only looking at the needs of the central office around process and managing costs.

What does this mean in practice? Rather than making procurement something that can only be done from a site office and a desktop computer, think about allowing requisitioning to take place from mobile or tablet devices instead. These can be connected over mobile network coverage for most locations, while remote sites may need a combination of WiFi and satellite connections. These Internet links should be in use as part of large construction projects in any case, so look to make more use of them.

The next consideration is the user experience. Can people check inventory on a specialist part from a mobile phone, and order one through a portal if needed? Can they call up a product catalogue and search for something they need as easily as they can on Google or Amazon? Can the sign-off process be as simple as answering a text message?

If not, then it's time to think about how to make that happen. It does require Internet access and more integration between inventory, finance and procurement teams around processes and approvals; however, the results should be an improvement in how people buy in the goods that they need to complete projects.

As part of this, it's important to consider how purchases are approved too. Can things be signed off on mobile devices

as easily as they would now be purchased or requested? If not, then it only shifts the burden along the chain one step, rather than making the whole process more productive. Instead, the whole procurement system can look at being more efficient and help to reduce unnecessary costs.

By improving the user experience from "user friendly" through to "user appealing", it's possible to encourage people to follow the right processes, rather than trying to work around them.

So what should be the impact of taking this new approach to procurement? It's about two things. The first is the improved user experience for everyone, where using company IT is more of a pleasure than a chore. The second is that the procurement team will automatically get more spend going through the company's approved channels.

The result of this is that more discount should be applied to all those purchases, leading to more savings being created. At the same time, this should also provide more data back to the procurement team, helping them spot new trends and bargain for better discount levels in the future.

New technologies like cloud computing can help to improve how things run within a business. However, the impact is not just about delivering services; instead, it looks at how to improve the whole result of procurement for everyone within the business, from the back-end procurement team through to those that will be requesting services and products every day. By making the whole experience better, the opportunity is there to both save money and improve how people work.

Alex Kleiner



Interview with Paul Houghton, Product Manager for Business Collaborator Ltd

Paul Houghton is a product manager for Business Collaborator Ltd - a document management, BIM, project extranet and project control software provider to the industry.

Here, he tells UK Construction Media the importance of software to the industry and gives an insight into the different types available.

Please tell us about your company and what you do?
Business Collaborator Ltd is a software solutions provider to Architecture, Engineering, Construction and Owner-operated (AECO) organisations.

We have been working with our customers since 1998 to deliver web based solutions that help improve efficiency and reduce risk across projects and programmes.

Has your company always been associated with construction software?

Yes.

In the UK, assets (buildings, bridges, roads, utilities, etc.) are built by tens/hundreds of different subcontractors. When we first came into the market in 1998 with a fully web-based, document management, project extranet solution it became clear that we had something that solved the problem of getting those organisations with many different IT solutions working together quickly and efficiently.

How important is software within the construction industry? What are the benefits when compared with traditional methods?

Software to manage documents and projects is vital to achieving efficient delivery in the construction industry. Without such software, projects such as the London

Olympics could not have been delivered in time for the opening ceremony in 2012.

Communication - clear, rapid and formal communication between all parties is critical in any successfully run construction project.

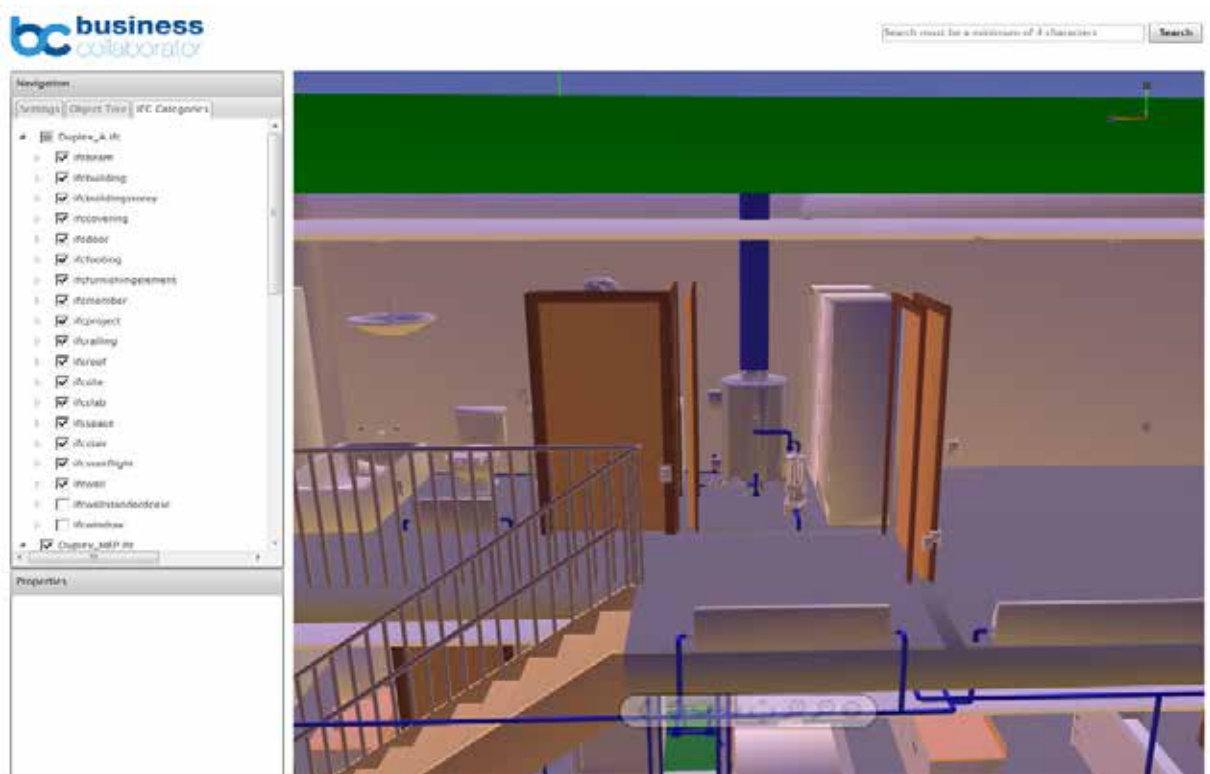
Version control - ensuring that the right version of the document or drawing is reviewed and approved is fundamental. You need to be working from the correct plans at all times to ensure that costly mistakes aren't made.
Audit - accountability to an individual and their company is important for contractual reasons. Having a clear audit trail of every action within a project reduces costly mistakes at every stage.

Single source of truth - if each sub contractor has their own document management system for the project it is not possible to know definitively that everyone is working from the correct information. A solution that is accessible to all at any time in the project is essential.

Ultimately, the return on investment comes from reducing costly errors, ensuring that formal communications are efficient and giving everyone the latest view of the project without significant manual overhead.

Tell us about your different types of software. What do things like document management, project collaboration and project control software do?

Document management software ensures that everyone has access to the latest versions of documents at any time, for the duration of a project and beyond. When projects are large (100,000s of documents) it is important to tag each document with the correct information to allow everyone to be able to find it quickly and simply - depending upon a file name is not an option.



Project collaboration software ensures that the whole team is working together with the same information and is able to communicate formally and informally as required. Forms and workflows are the basis for this, allowing the capture and processing of snags, outstanding work, requests for information, etc. Project collaboration and document management are inextricably linked.

Project control software helps to ensure that each project goes through the correct process, ensuring that key deliverables are provided by allocated roles in good time. Essentially, project control software helps ensure that projects run to time, meet budget, are of sufficient quality, and complete in scope.

What would your advice be to companies looking to move from traditional construction methods to construction software?

This is a difficult question to answer because most companies today are probably using software of some sort to enable their construction process. The maturity curve for construction software (document management, project collaboration, project control, etc.) looks like this:

Level 1. Email and Shared Folders

- Information is exchanged via email internally or externally
- Information is sent externally via email
- No single source of truth
- Hard to find information
- No audit trail

Level 2. Internal electronic Document Management System (eDMS)

- Collaborating internally with colleagues
- Information sent externally via email
- Audit trail within company but no tracking once information leaves the LAN/WAN

Level 3. Project Collaboration in The Cloud

- Collaborating internally and externally with the project team
- Single source of truth for information
- Auditable, reports give a clear overview of where the project is
- Workflow helps drive processes within the project
- Document centric, information is delivered within documents and drawings

Level 4. Data centric Project Collaboration – e.g. Building Information Modelling (BIM)

- Data is captured and can be interrogated
- Data can be visualised in many ways
- External systems can interface and update the data according to workflow and access permissions
- Collaboration is highly granular with people working on sets of data rather than a monolithic document
- Moved from 2D plans to 3D Models with data

Many companies are somewhere between level 2 and level 3 and starting to really invest in level 4 with BIM initiatives. For companies looking to move up the maturity curve I'd say the key thing is to look for a company who you can work with to deliver a solution for your business needs with experience in the industry.

How has the type of software you provide changed the way that the industry works?

The industry has become increasingly collaborative over the years. Efficiency has also grown steadily. The successful delivery of projects such as the London Olympics that used good practice throughout design and build is testament to

the improvements brought by the right solutions.

How do you see the industry developing further in the future with further advances in software and technology?

The biggest change in the next few years will be the push into BIM. In a nutshell, BIM is about building an accurate, virtual representation of an asset. In a 2D plan an air conditioning unit is a rectangle. In BIM, an air conditioning unit is a 3D object with details of make, model, performance specification, supplier, cost, maintenance warranty, etc.

BIM is required as part of a 2016 Government mandate with an aim to save 20% costs over the lifetime of an asset. How will BIM help achieve these cost savings?

Maintenance - Reducing the cost of maintenance throughout the lifetime of an asset.

Imagine an air conditioning unit has been reported as broken in a building your company manages. The engineer might need to drive to the site only to discover that they did not bring a big enough ladder to access the unit. They return the next day with a suitable ladder and can assess the problem, determine the make model and order the parts. They return on the third day with the parts and fix the unit. This is inefficient. With BIM, the location of the air conditioning unit can be inspected in 3D and the correct ladder brought along saving one journey. With BIM the make and model is documented in the model. Common problems can be cross referenced and parts pre-ordered, potentially saving another journey. Across portfolios of assets, these savings could become significant.

Repurpose/refurbish - reduce the cost to repurpose or refurbish an asset.

With a full, virtual representation of the asset, significant savings can be made up front when planning the repurpose/refurbish of an asset. The requirement for extensive surveys of what is already installed are vastly reduced. With BIM the entire make-up of the building is known and any maintenance over the years is captured in the model so there are no surprises.

Estimating - link in with external supplier data to produce accurate estimates of cost.

With a virtual model built at the design stage you can link the model to external supplier data for each element of the asset to accurately understand the cost of the design. Change the model and re-calculating the cost happens for free. Owner/operators can make better, more informed decisions based upon more accurate estimates of cost.

Are there any further changes you would like to see in that respect?

Open linked data

With an accurate, virtual representation of an asset there is tremendous scope for linking that information to external data sources for further analysis. As noted previously, estimating costs could be made more efficient using such techniques. In addition you could envisage design being simplified simply by pulling in objects from third party sources. E.g. A supplier can provide you with an accurate object model and the associated data that you can simply drop into the asset model. This is just the tip of the iceberg.

Augmented reality

With portable devices becoming powerful and ubiquitous the age of augmented reality on a building site is closing in. Imagine being able to look at a building and visually overlay the design - snagging could be made significantly more efficient. Maintenance could push the boundaries even further with Google Glass style devices allowing engineers to look at objects in an asset and immediately recall the information necessary for the task at hand.

CLiP IT Solutions

Carl Purbrick of CLiP IT Solutions spoke to UK Construction Media about the importance of accountancy and job costing software.

CLiP IT Solutions was formed 13 years ago because there was a belief that there was a gap in the market to create an accounts and job costing software package to help the industry's smaller to mid-range companies.

Although we wanted to produce software to meet the needs of these companies, it was important to the directors to also provide customer support unrivalled anywhere else. Therefore, customers could trust that the support line was always available, and any queries would be answered quickly and efficiently.

Now that companies are getting busier, the likes of job costing has become even more important because it is crucial to making sure that projects are managed properly and ultimately, make profit.

The way in which it's useful is that rather than people within a project having to wait to know what is being spent on a job, the integrated accounts and job costing system means information only needs to be entered once, updating everything in the process. Extra spreadsheets are not required.

In the old days, people would have to wait for information to be collated and entered before knowing the cost of each part of a job. With this system, that is no longer an issue because everything is up to date and relevant.

This is also beneficial because it allows issues to be spotted early and where necessary, customers can be charged for work earlier than what was once possible.

Things like retentions can be claimed when due, invoices and applications produced quickly and accurately, which all helps the contract manager to stay on top of the project.

The benefits to the systems provided by CLiP IT Solutions are obvious but we still find a general reluctance within the industry to embrace this type of technology.

Reasons for this are varied and encompass the cost of the software, the re-training of staff but what I've found is that many of these small and mid-range companies simply aren't aware of what we do and what we can offer the industry. Part of this comes from the fact our services aren't aimed at the larger companies and we're under no illusions how difficult it is to change this awareness issue but it is a challenge we are very much looking forward to.

One of the ways we have tried to address this is by offering free software to our customers' accountants so they can reload the data of their own clients.

This is beneficial to all because when an accountant is aware of Construction Industry Accounts (CIA), they often recommend us to their other construction clients, so we are getting our name out into the public domain in that way.

What we have found is that when clients have used and benefited from our software, it is something they wish they knew about previously because of how it helps them.

CIA software is a brilliant tool for the industry because only



one entry is needed to update everything necessary.

So for example, if a customer was to enter a purchase invoice, this and the accounts and VAT are updated, but the invoice is also allocated to any of the jobs involved.

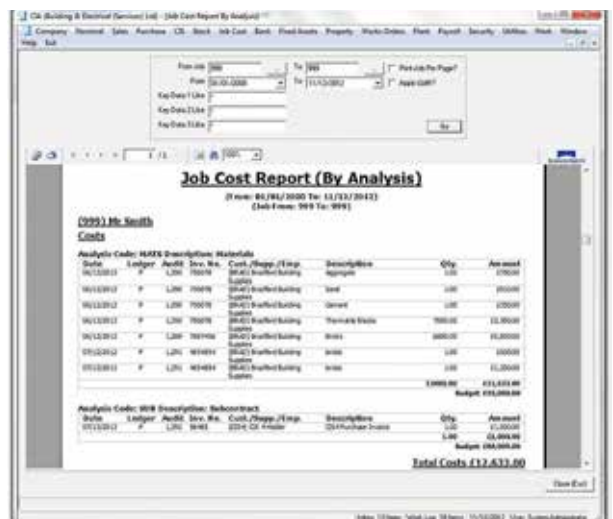
Each job is set up when a contract is won, which can be broken down into any number of subdivisions, build phases, labour, materials. After this, the user can decide the level of detail needed in accordance with their requirements. The job costing part of CIA is the biggest reason people choose CLiP IT Solutions, as it is more important to the majority of customers. This is the key to many companies making or losing money.

Customers need to see information that is right up to date with one click of a button, in order to see how a contract is progressing.

But alongside the likes of our job costing software, we believe our other systems are invaluable to the industry. We have retentions diaries that allow customers to know how much retention is outstanding and when it's due to be released.

There have been many occasions when myself or somebody else at the company has demonstrated this software to a customer and their records of which retentions are due are filed away without any organisation whatsoever. This is extremely time consuming but with our retentions diaries, this problem can be removed, as the diary automatically updates when certificate of payments are recorded and invoices paid.

We are confident that our software represents the direction that the construction industry is going in. Therefore, CLiP IT Solutions is well placed to help construction companies and software to become more productive.



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