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Beta3 Update & Need

45th Edition

BIM TASK GROUP NEWSLETTER

July 17th, 2015



Building Information Modelling (BIM) Task Group

View the latest Round the Parish News

PAS 1192-5

Security Minded BIM



1192-5:2015

Read Headline STORY ★★★



DEPARTMENTAL ENGAGEMENT AND SUPPORT OFFICER ACTIVITIES

Highways Agency (HA) Homes and Communities Agency (HCA)

HA BIM Page

The Highways Agency have recently launched a BIM page on their Supply Chain Portal. It's been designed to host a range of guides and information aimed at Agency staff and their supply chain.

Working with Local Authority Partners

The Highways Agency have been working closely with the Yorkshire and Humber traffic management group, with representatives from 10 councils and the Highways Agency. Two workshops have already been held to identify how the local authorities and the Highways Agency can work collaboratively towards the implementation of BIM, driving consistency and sharing best practice. A collaborative strategy has been developed and the group are currently identifying trial areas, along with a strategy to widen the engagement.

BIM Maturity Assessment

The Agency are developing a BIM Maturity Assessment tool which will allow projects to assess and categorise how they are performing in respect of BIM maturity against the relevant standards and processes. The scoring will identify areas of potential improvement and opportunities for up-skilling. The maturity assessment will be initially piloted on the Agency BIM early adopter projects before being rolled out across all projects.

BIM Execution Plan

The Highways Agency are producing a BIM Execution Plan template in consultation with their supply chain. This is due to be ready for the first SMART Motorway in March.

Cyber Security

The HA BIM Working Group were given a presentation by the PAS1192-5 team this month, providing an overview of security risks, the new security standard and how it affects the Highways Agency and roads sectors.

Richard Lane



Fiona Moore



Graeme Tappenden



Philip Isgar



Phil Jackson



Peter Vale



DEPARTMENTAL ENGAGEMENT AND SUPPORT OFFICER ACTIVITIES

Defence Infrastructure Organisation (DIO)

- DIO's BIM Implementation team are developing a detailed implementation plan for 2015
- Attended a BIM planning meeting with DIO on 23 January

Education Funding Agency (EFA)

- Work continues to finalise the template EIR document

Department of Health & ProCure 21+ (P21+)

- Template EIR completed. Trial projects being identified to test the template

Training

- Work continues on the BIM Learning Outcomes Framework (LOF) and Supporting Documentation.
- Presented a draft LOF to the BIM Academic Forum, CIC BIM Forum and CIC E4BE group

Richard Lane



Fiona Moore



Graeme Tappenden



Philip Isgar



Phil Jackson



Peter Vale



DEPARTMENTAL ENGAGEMENT AND SUPPORT OFFICER ACTIVITIES

Ministry of Justice (MoJ)

Ministry of Justice continue their advanced implementation of the Government's BIM Level 2 mandate, by:

- increasing the use of their BIM Technical Standards Library
- By incorporating BIM into the Project Performance Indicator (PPI) and KPI processes, to help measure BIM implementation at both project level and by individual suppliers
- By undertaking a Case Study of 10 of their BIM projects in order to measure BIM adoption to date

Richard Lane



Fiona Moore



Graeme Tappenden



Philip Isgar



Phil Jackson



Peter Vale



DEPARTMENTAL ENGAGEMENT AND SUPPORT OFFICER ACTIVITIES

Environment Agency

- The Environment Agency is continuing to engage with its supply chain in readying for the introduction of Level 2 BIM on all new framework projects from 2Q2015. Many of its supply chain partners are well on the path to being fully BIM ready having introduced Project CDE capability and the ability to handle fully digital working delivering files and data to the Environment Agency Employers Information Requirements and Information Delivery Plan.
- Work is also well underway to upgrade the Environment Agency internal technology capability to handle federated information models and to validate and extract BIM files and COBie data to integrate with internal and stakeholder systems. Its BIM preparation has included the development of a BIM eLearning suite to upskill internal, stakeholder and supply chain personnel.
- Environment Agency are also introducing BIM and GSL KPI which will measure the level of maturity being applied on an individual projects. When brought together it will aid the understanding of both supplier maturity and our appetite for progressively adopting technology and integrated data ways of working

Local Government

- Recent increased support through the LGA from the National Association of Construction Frameworks has brought additional resource to facilitate the further uptake of BIM with Local Government organisations across the UK. There remains strong interest from a broad section of LG in gaining the benefits of BIM.
- The NACF BIM sub-group is now meeting with developing representation regionally across England, Scotland, Wales and Northern Ireland, and directly from some of the major Authorities. The goal is to establish partnerships with all Local Authority and regional BIM Hubs across the UK to deliver a standards based approach to Level 2 BIM that individual Local Government organisations and their partners can easily pick up and run with.
- The standards based approach looks to cover Contractual Requirements, Plain Language Questions, Employers Information Requirements, Information Delivery Planning, BIM Execution Planning, Common Data Environment & Information Management, Information & COBie Data Delivery.
- This increased network will build on the previous legacy relationships and expand and update the existing Local Government community website - BIM4LG.

Richard Lane



Fiona Moore



Graeme Tappenden



Philip Isgar



Phil Jackson



Peter Vale



DEPARTMENTAL ENGAGEMENT AND SUPPORT OFFICER ACTIVITIES

Nuclear

- North West Nuclear Forum Presentations- UKTI Presentation, SME & Supply Chain
- Maintaining dialogue with New Build Developers, discussions with NuGen
- Supply Chain meetings with Cavendish, Laing O'Rourke, Capita, Gleeds, Costain, Nuvia, MWH and Autodesk
- Attended Constructing Excellence meetings, BIM and Manchester groups
- Presented on 'Collaboration / BIM Nuclear Strategy' at Constructing Excellent Nuclear Theme Group
- PAS 1192 Pt 5 an objective review with NNL and feedback to BSI
- Attended IStructE event on Sustainability, the NIA/NI Annual Dinner and Mott Mac event on Engineering the future
- Attended ICE NW Events 'BIM Legal Points' and 'Future of Nuclear Technology - ITER'
- Positive BIM Strategy meeting with Dame Sue Ion DECC Chair of Nuclear Innovations Research Advisory Board (NIRAB)
- NNL / NDA ongoing discussions on BIM for the future and benchmarking
- NIA, Cost Reduction Group and Nuclear Industry Council have embraced BIM for Nuclear Strategy
- Supporting ICE in the development of 'ICE - Nuclear July 2015'
- Attending the UKTI Nuclear Showcase 2015 in London
- Maintaining contact with AWE Aldermaston '
- Invited to present at a joint Bolton University / I Struct E NW showcase event and Cardiff University Masters course
- Constructing Excellence Nuclear Theme Group, London. Collaboration - Aligning Client and Supply Chain.

Richard Lane



Fiona Moore



Graeme Tappenden



Philip Isgar



Phil Jackson



Peter Vale



CORE TEAM MEMBER ACTIVITIES



Mark Bew
BIM Task Group – Chair

- PAS 1192/X Packaging
- Legacy Planning
- BIM for Parliament
- Queensland Government
- Canary Wharf
- Level 3 Launch
- BIM Toolkit Board Meetings
- HS2/XRail/Network Rail CDE Design for the Future
- Green Construction Board
- Reading & Salford Universities
- EU Commission Task Group
- BIM(3) Core Team development
- Technology Vendors Working Groups
- Government Construction Board
- Alignment review with the digital railways team to understand the relationships between Level 3 and Digital Rail
- Level 2 Legacy Planning
- Building Smart International Strategy planning
- Specialist Engineering Contractors BIM
- PAS1192/5 Steering Group
- B/555 BSi Steering Group
- CPNI Security Reviews
- Level 3 – IFC alignment workshops
- BIM for Local Authorities
- BIM Toolkit Board Meeting

CORE TEAM MEMBER ACTIVITIES



David Philp
BIM Task Group – Head of BIM

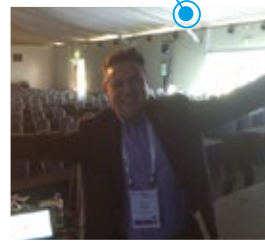
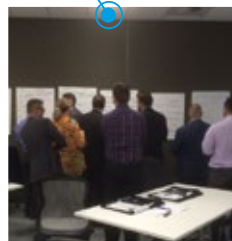
- Presented at Steering group meeting
- Core BIM Team Meeting
- Chaired BIM4 Clients meeting
- Met and presented to CIDB Malaysia
- WORKSHOP: Intelligent & Operational Clientship, Milan
- Update at London Construction Week, O2
- Chaired – Govt Today and RICS BIM Conferences
- Chaired BIM Show Live 2015
- Keynote at RTC – Gold Coast
- Updates with New Zealand Public Departments in Wellington
- Keynote at the “When social science meets BIM and lean” Liverpool University
- Keynote at BuildingSMART BIM Conference
- Update at BIMnet
- PAS1192-5 Meetings
- DPoW Webinar
- DBB Scoping Meeting
- Judged BCA awards

Public sector workshops
in Wellington

Presenting at RTC,
Gold Coast



Meeting Malaysian Delegates



Bim4clients

CORE TEAM MEMBER ACTIVITIES



Terry Stocks
BIM Task Group – Delivery Director for Level 2 BIM

- Presented at the institute of Civil Engineering Surveyors, the North West Construction Hub, Build Off Site event and to A staff session at the Dept of Business Innovation and Skills.
- Attended the Govt BIM Today Conference and was a member of the afternoon question panel.
- Chaired the June BIM stewardship meeting for all govt depts.

CORE TEAM MEMBER ACTIVITIES



Rob Manning
BIM Task Group - Core Team

As the BIM Task Group representative this has been a time to focus upon the project for a “Digital tool for building information modelling” which is being delivered as the “BIM Toolkit” by RIBA Enterprises and was “soft launched” on 8th April at BIM Show Live. The toolkit is currently available as Version Beta 3. [\[LINK\]](#)

Concurrently the draft of BS 8536-1:2015 Briefing for design and construction – Part 1: Code of Practice for facilities management has been delivered for review following the joint contributions of the technical author and steering group. Public Review closed at the end of April 2015 and it is expected that the document will be published by early August 2015.

Three CIC BIM Forum sessions have been chaired discussing;

BS 1192-4:2014 “Collaborative Production of Information - COBie” - Nick Nisbet

“BIM and GSL Learning Outcomes Framework” - Richard Lane

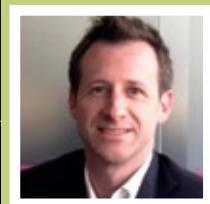
PAS 1192-5:2015 “Specification for security-minded BIM, digital built environments and smart asset management” - Alex Luck

BS 8536-1:2015 Briefing for design and construction- Part 1 : Code of practice for facilities management - Brian Atkin

“Digital Tool for building information modelling – BIM Toolkit” - Stephen Hamil

Many thanks to the presenters.

CORE TEAM MEMBER ACTIVITIES



Adam Matthews
Head of EU & International Relations

EU & International Update

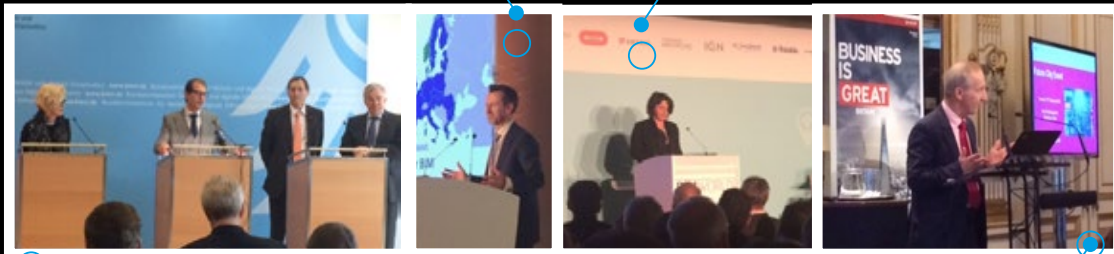
From Brussels to France, Germany and more recently Spain, the start of the 2015 has seen a dramatic rise in the European national level support for BIM as part of digitisation strategies for the construction and operation of public buildings and infrastructure. Our UK Task Group focus has been to develop closer working relations with our European colleagues, sharing best practices and aligning on the common introduction of BIM across Europe's public procurers. We have positive news to report on the formation of the EU BIM Task Group which is gathering momentum with fifteen member states involved and support from the European Commission. We are continuing the EU BIM effort through 2015 and look forward to greater international collaboration on support for common use of BIM to foster greater value for public funds and stimulate growth and jobs in the sector. We are currently planning our next EU BIM Task Group meeting in Brussels for June.

January 20th: Berlin, Minister Dobrindt, Germany's Ministry for Transport and Digital Infrastructure announced formation of German BIM Working Group "plan Bauen 4.0". Ilka May, Director for Arup is recently appointed co-Chair of the group.

February 10th Paris: Attended the British Embassy in Paris for Future Cities seminar, Fiona Clark of DMA also participated in support of the Task Group's message of UK BIM capability. France's interest and uptake of BIM has leaped forward recently to the call for BIM in its National Digital Transition plan announced by the Ministry for Housing and Territories.

Adam Matthews sets out the EU BIM Task Group agenda

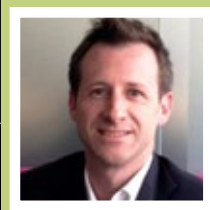
France's Minister Sylvia Pinel (Ministry of Housing & Territories) announces her commitment for the French National Digital Plan and support for BIM (& Maquette numerique)



Minister Dobrindt (centre) describes the importance of BIM to enable a digital transformation of the industry.

British Ambassador Sir Peter Ricketts opens Future Cities

CORE TEAM MEMBER ACTIVITIES



Adam Matthews
Head of EU & International Relations

EU & International Update

February 24th-25th: Brussels Co-chaired the EU BIM Task Group workshop in Brussels with attendees from 15 member states – from public estate owners, procurers of public works and policy makers. Held at the European Commission’s conference centre the general assembly meeting and following day working meeting developed the focus work areas of the group and its purpose.

March 12th: Cannes, MIPIM– Adam presented the EU BIM Task Group at the European Commission’s reception at MIPIM for ‘Digitisation of Construction’

March 25th-26th: Paris BIM World 2015 – over 2,500 visitors attended France’s first major BIM conference – was this the largest BIM event in the world? Mark and Adam presented the UK programme and EU BIM Task Group alongside our EU colleagues Diderik Haug (Norway) Benno Koehorst (Netherlands) Ilka May (Germany) and Souheil Soubra (France). An impressive international gathering and major announcement from Minister Sylvia Pinel of the French National Digitisation Plan. Our thanks to the French team including Bertrand Delcambre, Alain Sevanche and Souheil Soubra for inviting and hosting us all.



EU BIM Task Group



European Commission’s DG Grow - Digitising Construction with members of EU BIM and UK BIM scene



British Ambassador Sir Peter Ricketts opens Future Cities



**BIM:
PEOPLE
MATTERS**

Karen Alford



BIM: PEOPLE MATTERS

15 Questions to Karen Alford

BIM PROJECT EXECUTIVE AT ENVIRONMENT AGENCY
a qualified accountant, a traveller and a trainee pilot, **Karen Alford** shares her vision for 2016, talks about lessons learned from Early Adopter projects, WEM Framework, the use of visualisation tools. She offers her key points advise for clients to start their BIM journey.

01

Can you tell us all little about yourself and you background?

I am a qualified accountant and predominantly have worked within the capital side of the profession. I have studied computing so by combining the two I naturally fell into systems development and support. I worked within the private sector, spent some time in Australia before starting with the National Rivers Authority which later became the Environment Agency. I spent 10 years within the Project and Programme Management team before moving into the Flood and Coastal Risk Management Directorate last November because we recognised the benefits of BIM, data and information management extends beyond the project environment.

02

Can you give us a little background on the purpose of the Environment Agency (EA)?

The Environment Agency was created in 1996 and has two main responsibilities. Regulating environmental legislation including water abstraction, waste and water licensing and monitoring, and flood and coastal risk management. This includes creating new schemes to reduce flood and coastal risk, managing and operating existing defences on main rivers, and providing services related to flood warning and mapping. Across England we have just under 10,000 employees.

03

How's is the EA journey towards level 2 BIM maturity progressing?

It took some time to understand how we operated and once the standards for BIM protocol, Employers Information Requirements (EIR) and PAS1192 family were released we were able to firm up our approach. Our emphasis is about making it business as usual on a range of projects so our approach is very much about taking small manageable steps as we have about 1500 staff and about 3000 supply chain partners who will contribute or benefit at some stage of the asset life. Alongside our Early Adopter projects I initiated a Suppliers Working Group which brought together the BIM expertise across our WEM Framework. The enthusiasm of the members to work together to solve issues, consider and develop new working practices has been exceptional and we have seen true collaborative working, openness and a willingness to share experience. Contracts let from April 2015 on our WEM Framework for new projects or detailed planning will have BIM requirements included.

To support the teams we have developed some E-learning but will be supporting them further through workshops and dedicated implementation leads. We are also looking for our suppliers to contribute to developing the competency of project teams to support the new ways of delivering as this is new to the majority of the staff within the supply chain too.

04

Any benefits realised yet?

It is still early days for our Early Adopters but using visualisation tools to assess options, understand risks and help with engagement with stakeholders has proved to be invaluable. We have done this on an ad-hoc basis in the past. We want to be in a place where we are managing the data creation process in a joined up considered way so our supply chain partners can develop the toolkits and competencies to make it business as usual not an added extra. Testing the EIR and our early prototype of the digital plan of works is proving to be beneficial for all parties and once embedded will make it easier for our suppliers to do business with us.

05

What lessons have you gleaned from you early adopter projects?

The role of the Employer is essential. Traditional tools such as the scope of works result in the requirements being described and therefore open to interpretation. The EIR and digital plan of works prescribes our requirements and from feedback we are getting suggests this is reducing ambiguity within the supply chain. With a Government Soft Landings hat on, being more specific about our longer term asset requirements and having supporting processes to gather these at the beginning and test through the project gateways will be beneficial. With the pressure to deliver efficiencies during the construction phase it can be too easy for project teams to focus on short-term benefits. Having operated a project workspace environment and adopting file exchange processes for a few years now, applying the PAS standards will create better transparency and legal ownership around the digital exchange of data and normalises the approach for the whole industry.

06

How relevant was BIM in the early project stages?

It is very relevant to Environment Agency projects as our first task is to understand the problems we are trying to solve. Many of our projects require some partnership funding so being able to integrate and model existing data to understand the issues and present some potential options is priceless.

07

Have you used data to support your decision making?

Data has always been important to our decision making and hydraulic modelling and economic benefits are key data sets that contribute to a scheme going ahead. BIM and GIS related technologies are allowing us to combine data and present in ways that make it easier to understand and analyse.

08

How easy was it to get to grips with COBie?

Obviously the original building ontology didn't work for us. We used the structure and applied a geographic thinking to it and now have a schema we can work with. IFC data structure is still immature for infrastructure and we working with BRE to explore how this can be developed for our type of assets.

09

Are graphical and non-graphical data equally important in your projects?

Yes very much so. We need to rely on both throughout the project and across the asset life time. Understanding the natural environment and natural processes is fundamental to our whole approach and the decisions we make.

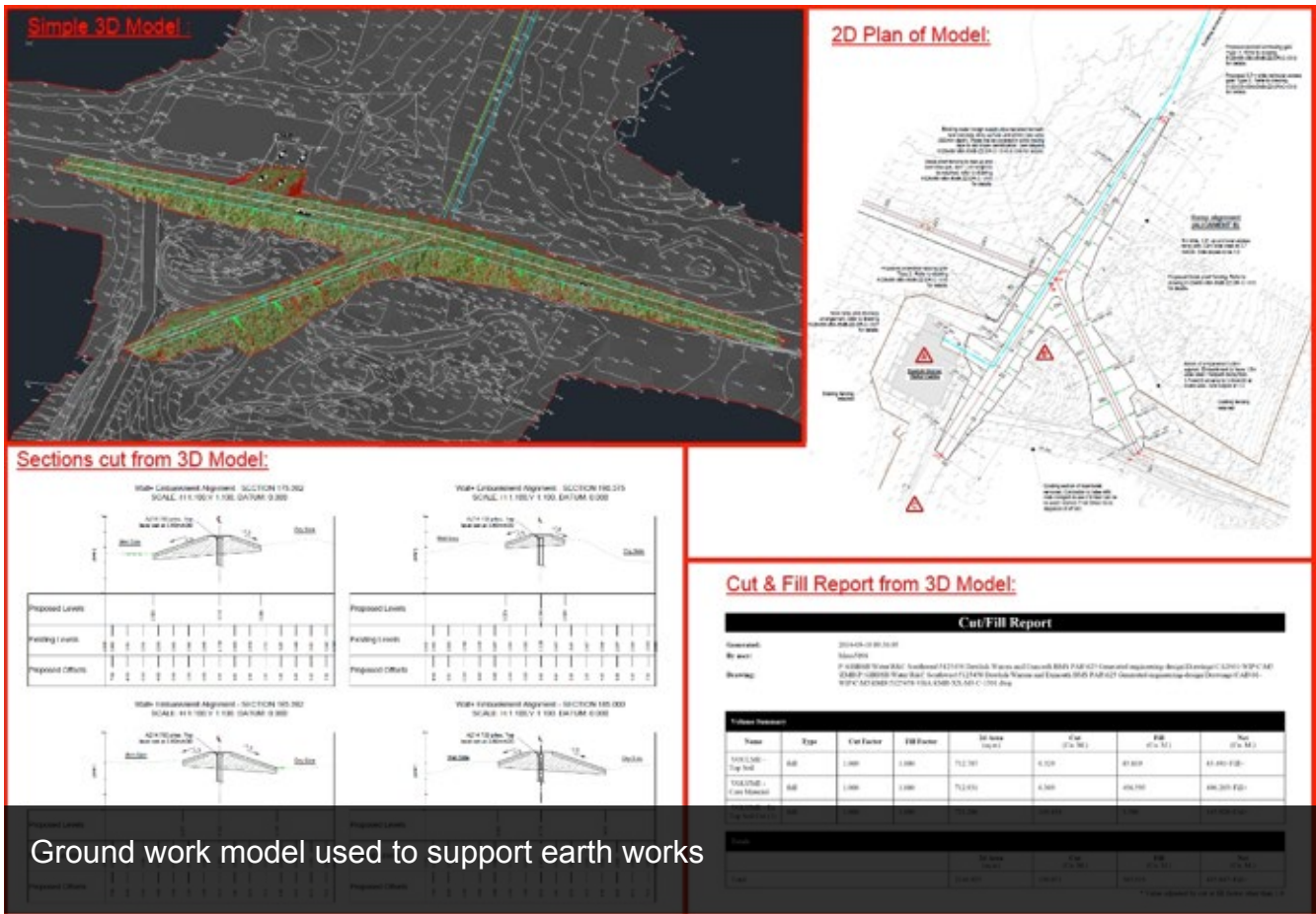


Model to plan a concrete pour within a river

10

How does GIS fit into your BIM strategy?

We already use GIS technologies across our business so this is not something new for us. Using GIS platforms as a way of managing and using data across the business offers a whole range of opportunities to overcome some of the obstacles we have with traditional systems and delivering access to data.



11

How have your framework teams taken to your BIM requirements?

We developed a BIM Maturity Matrix to focus one to one discussions with our WEM Framework suppliers. This gave us the opportunity to explore aspects such as their organisational approach, skill development across their business, progress in applying PAS 1192, experience so far and their plans to cascade our requirements through their supply chain. There is no one supplier who has expertise across the board at the moment but all have plans to develop and expand their competency. The WEM Suppliers Working Group has proved to be invaluable. Together we have explored barriers and developed approaches and the tools we need for our businesses to work together. For example developing a standard BEP based on our EIR. I see some of the BIM benefits being derived from simply being clearer and consistent in what we need and giving our suppliers opportunity to improve their deliverables and reduce their commercial risks.

12

How has the BIM Task Group supported your journey?

We have called upon the expertise of most of the members of the group at one time or another and the range of skills have been invaluable. I believe without the task group working with industry to develop the standards and reducing the barriers the whole industry BIM aspiration would have been just that an aspiration. Having access to some of the best skills in the business and using Government funded projects to push the modernisation of an industry has proved to be the recipe for success.

13

What's your vision for 2016?

BIM and GSL will be become business and usual. Our suppliers will be growing their expertise and able to apply some modelling techniques on all projects where there is a benefit. Most importantly we will have a consistent approach to procuring data and be able to make better use of the information and reduce our burden in transferring data for our business use.

14

What lessons could you share with other clients about to start their BIM journey?

Recognise that models work with data and the clients primary objective is to understand their data and information requirements and make it easier for suppliers to do business.

Check that the data, technical and engineering standards are appropriate to support your requirements otherwise you will receive what your suppliers wish to give you. This could hinder your ability to operate and manage your assets in the future.

Are you making best use of the data and information you're procuring and do you have gaps? PLQs can help with this.

Explore how data, BIM and GIS modelling tools might bring more benefit to your business and be willing to explore and learn. Before commissioning, work with your suppliers to outline your expectations and assess their capability. We want this to be business as usual but everyone is still learning.

15

Back to you? Any interesting hobbies outside of BIM?

My husband and I own a light aircraft and I have had some flying lessons but getting the right weather and working around my availability has been challenging. We enjoy visiting islands such as the Isles of Scilly and Lundy Island in the Bristol Channel. At Lundy there is a landing strip close to the old Lighthouse and we usually have to do a couple of low passes to get the sheep out of the way first which is a bit hair raising but once safely on the ground, the island is peaceful and has one good pub that serves excellent food.



The landing strip at Lundy taken from the lighthouse

PAS 1192-5

SECURITY-MINDED BIM: PROTECTING BUILT ASSETS AND ASSET INFORMATION

The BIM Task Group are delighted to report the publication of PAS 1192-5: 2015, Specification for security-minded building information modelling, digital built environments and smart asset management. PAS 1192-5 is a crucial component in Level 2 BIM and its publication marks a key milestone in the programme. It will enable BIM to be mobilised and implemented in a security-minded way whilst still realising the benefits of collaborative and digital working.



In the autumn of 2014, the Centre for the Protection of National Infrastructure **(1)** working in collaboration with the BIM Task Group, commissioned a specification which would detail the need for, and application of, a security-minded approach in projects utilising digital technologies and ongoing asset management. This has now been published by **BSI (British Standards Institution)** as **PAS 1192-5:2015** (copies may be obtained in soft and hardcopy from BSI shop **[LINK]**) and is a companion document to **PAS 1192-2**, **PAS 1192-3** and **BS 1192-4**.

THE NEED FOR A SECURITY-MINDED APPROACH

The adoption of Building Information Modelling (BIM) and the increasing use of digital technologies in the design, construction and operation of buildings and infrastructure are transforming the way that architecture, construction and engineering industries work. Organisations will need to embrace the concept of collaborative working, not only through greater openness and transparency but also through the sharing and use of detailed models and large amounts of digital information. These changes will be required in projects developing new assets or solutions, or modifying or disposing of existing ones, and also in the long-term management of assets where lifecycle management will evolve through the increasing capture and analysis of real-time use and condition data.

These advances offer significant and exciting opportunities to asset owners and supply chains to seek innovative solutions to deliver future fiscal, functional, sustainability and growth objectives. However, to successfully take full advantage of these, there is a need for organisations to recognise that the increasing use of, and dependence on, information and communications technologies does create some vulnerability issues.

Being security-minded is not about inhibiting collaboration, but instead adopting an appropriate, proportionate, need-to-know approach to the sharing and publication of data and information in order to deter and/or disrupt hostile, malicious, fraudulent and criminal behaviours and activities. In so doing in the fields of architecture, construction and engineering, the industry is better able to deliver the trustworthiness, safety and security of digital built assets.

THE SECURITY-MINDED APPROACH

PAS 1192-5 sets out a series of processes, shown in *Figure 1*, to enable the development of an approach which will assist an asset owner, and its supply chain, in reducing the risk of the misuse, loss, unintentional disclosure or theft of information which could impact on the safety and security of:

- personnel and other occupants or users of the built asset and its services;
- the built asset itself;
- asset information; and/or
- the benefits the built asset exists to deliver.

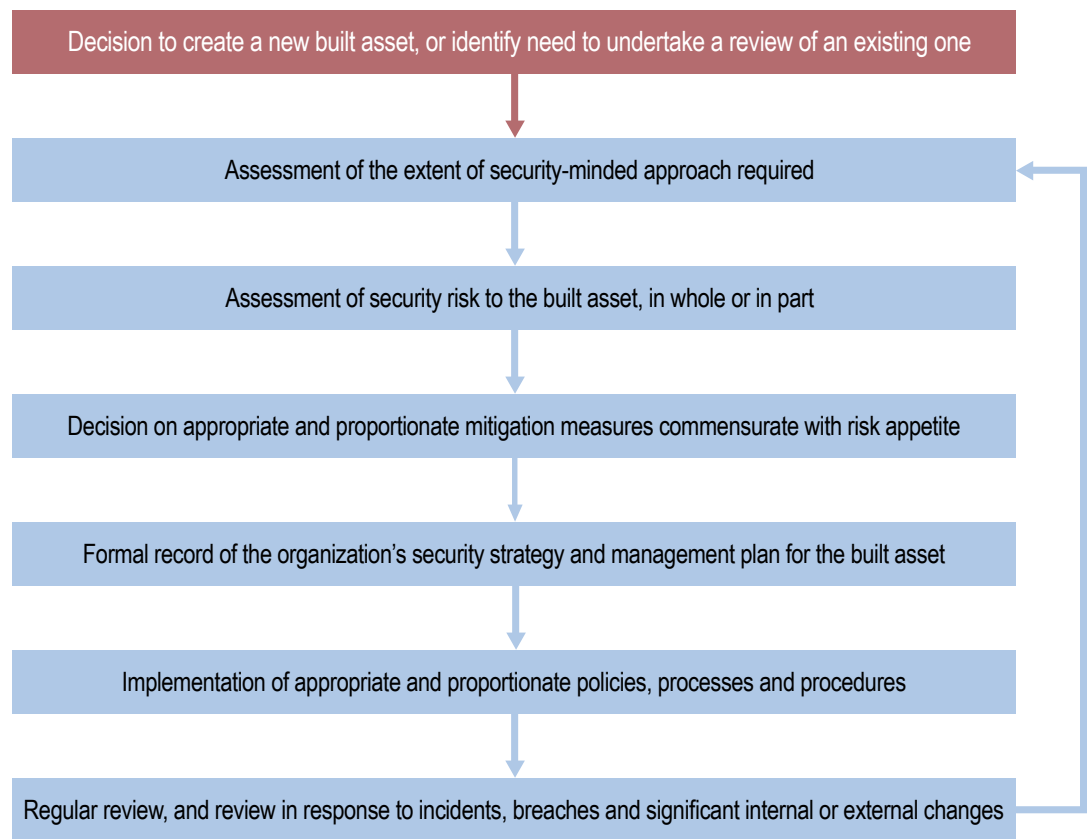


Figure 1: Summary of the PAS 1192-5 process © Crown copyright 2015

The same processes can also be applied by organisations who wish to protect against the loss, theft or disclosure of valuable commercial information and intellectual property.

In order to be truly effective, security needs to be embedded into organisations at both the strategic and delivery ends of the business. It is also important that the approach is implemented throughout the supply chain, including in those parts not directly contracted by the asset owner. *Figure 2* shows how a security-minded approach should be integrated with other organisational policies, strategies and plans, and vitally, with the longer term asset management requirements of the built asset or assets. It also demonstrates the path by which security requirements should influence the formation and delivery of a project which is utilising BIM.

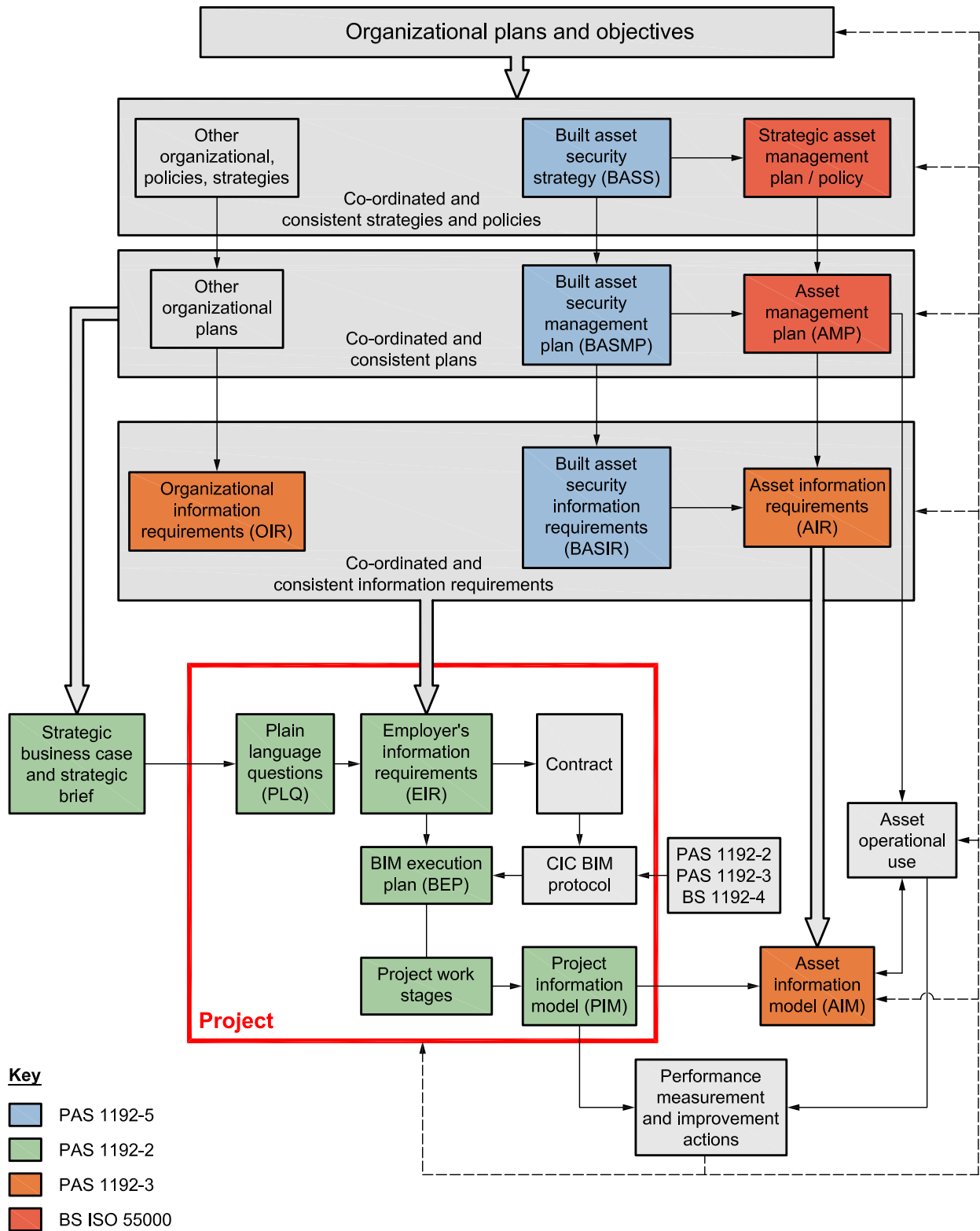


Figure 2: Integration of the security-minded approach © British Standards Institution 2015

WHEN DOES IT COMMENCE?

It is important that the procedure for determining whether a security-minded approach is required is applied to new built assets at, or before, project initiation or, where a project has already commenced, as a matter of priority.

However, it is recognised that in the majority of the construction industry the bulk of built assets are pre-existing, and are therefore already being managed or modified. Under these circumstances, as a minimum, the process should be carried out prior to:

- the commencement of a programme of asset data collection;
- a change in the operating or contracting arrangements, for example, a change in the asset management system, facilities or asset management/maintenance contract;
- the integration of asset control/management systems with other asset management systems; or
- a significant change in the use/occupation.

A built asset constitutes a building, multiple buildings or built infrastructure, and may comprise a portfolio or network of assets. It may also include associated land or water, for example, the catchment area for a water company or the navigation channels for a dock.



1192-5:2015

In particular when constructing a new asset, it is not advisable to postpone the adoption of a security-minded approach, as the later in the asset's lifecycle the initial assessment is undertaken, the greater the risk that sensitive information may have already been distributed too widely or found its way onto the internet. Once this has happened it is virtually impossible to delete, destroy, remove or secure all copies of that which has been released, and this will need to be taken into account when undertaking the subsequent risk assessment process.

EXTENT OF THE SECURITY-MINDED APPROACH REQUIRED

A fully integrated, holistic approach will be essential where a built asset, whether in whole or in part, is deemed sensitive: in other words, one which may be of interest to a threat agent for hostile, malicious, fraudulent and criminal behaviours or activities.

However, even when a built asset does not fall into this category, there may be business benefits from applying a security-minded approach to its management. Embedding of good security can give competitive advantage to commercial enterprises by protecting their key assets and building trust with their stakeholders and customers in the services and products they provide. For those involved in the design and delivery of new or modified assets, it can also enhance global positioning in the international construction market, particularly for high profile and sensitive projects.

When a security-minded approach is to be adopted, it will be essential for the asset owner to appoint an appropriately qualified individual, either from within the organisation, or reporting directly to it, to fulfil the role of Built Asset Security Manager. This role will be key in the success of the approach going forwards: providing a holistic view of the security issues and threats relevant to the asset(s) in question; being accountable for the security decisions made; owning, managing and assisting in the development of the necessary built asset security plans, policies, processes and procedures; and promoting a security-minded culture and mind-set.

THE SECURITY RISK MANAGEMENT PROCESS

One of the first key stages in developing a security-minded approach is to identify and understand the risks to the asset in question, and to decide how these will be managed. The risk management process which is shown in *Figure 3*, can be divided into three key stages: risk assessment; risk mitigation; and review.

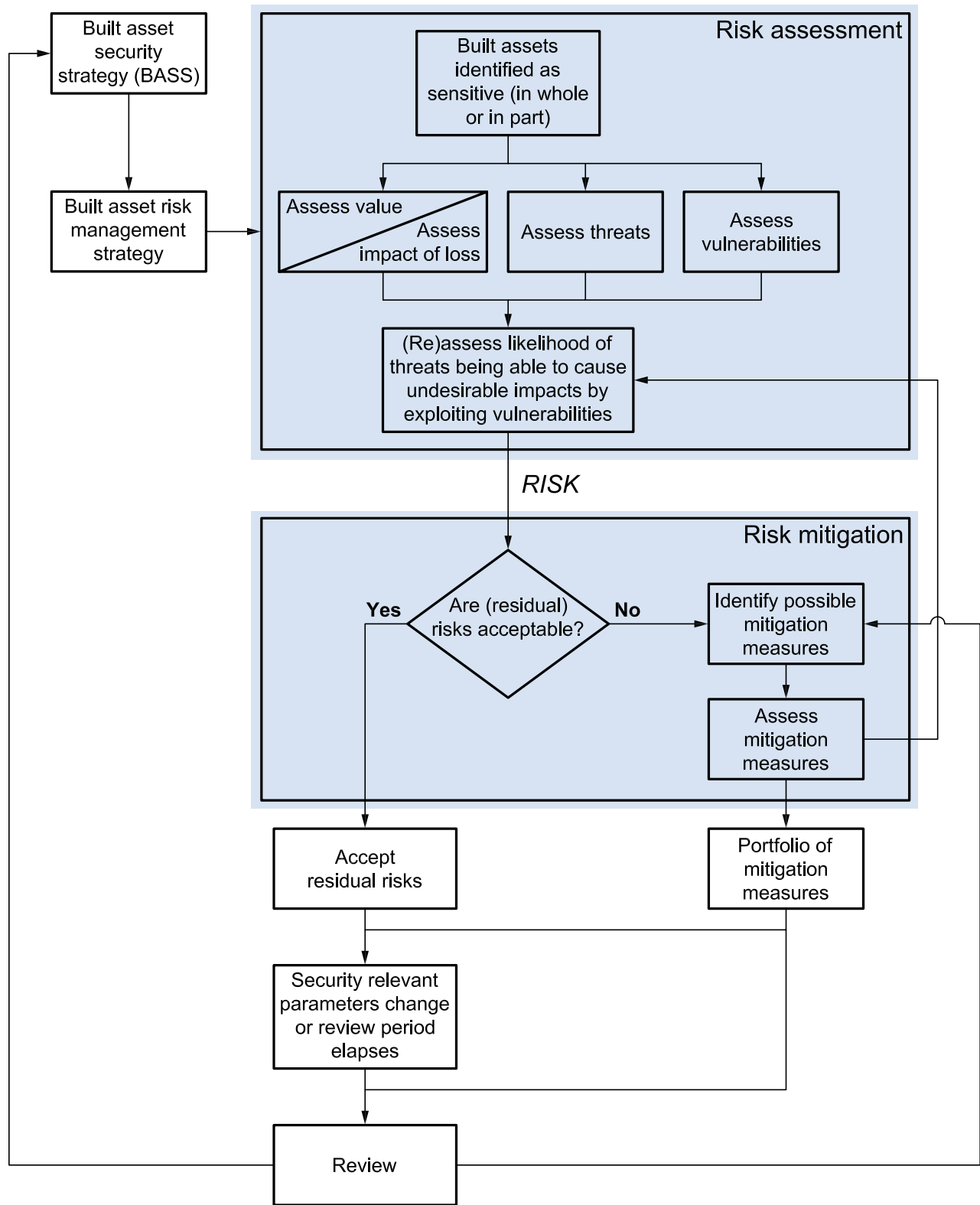


Figure 3: The built asset risk management strategy © British Standards Institution

RISK ASSESSMENT

The risk assessment must consider the potential threats and vulnerabilities in combination with an assessment of the nature of the harm which could be caused. The likelihood that a threat is able to exploit the vulnerabilities to cause harm, along with the severity of the potential outcome should this occur, determines the risk of that particular type of incident.

Security operates at a number of levels, ranging from national security issues such as the prevention of terrorism, to tackling organised crime, handling privacy issues, and preserving the value, longevity and ongoing use of built assets and associated information. The key security issues relate to: hostile reconnaissance regarding the asset or its users; malicious acts (such as damage caused by malware, hackers or disaffected personnel); and loss or disclosure of intellectual property, commercially sensitive information and personally identifiable information. These issues comprise the main threats which should be considered as part of the risk assessment process. The relative importance of each will depend on the nature of the asset and the environmental, social, economic or political issues related to it.

Vulnerabilities can arise around the aspects of people and business process, as well as physical and technical aspects of security, either individually or in combination. For example, data aggregation, which may arise from accumulation, association, or from both, has the potential to provide an external party with greater understanding of the built asset and the relationship of individual assets within it, to each other. It is therefore important that such vulnerabilities are fully understood and action taken to remove or minimise them, or where neither is possible, to manage the resultant risks.

The harm that may be caused to an organisation or an asset from a vulnerability combined with a relevant threat could be physical, financial, economic or reputational. From a cyber-security perspective, there is a risk that a breach could result in data or information being compromised, disclosed, copied, transmitted, accessed, stolen or used by unauthorized individuals. Further, an incident is likely to lead to the diversion of resources to handle investigation, resolution and media activities, as well as disruption of, and delay to, day-to-day operational activities. It also has the potential to impact on an organisation's future opportunities.

RISK MITIGATION

An organisation can either decide to accept each of the identified risks on an individual basis, or, as is more likely to be the case for the majority of risks, will need to go through the process of identifying possible mitigation measures. In deciding whether a potential measure is proportionate to the risk it is intended to manage, it will be necessary to assess:

- the cost of the measure and its implementation;
- the achievable risk reduction;
- the potential cost saving;
- the measure's impact on the asset usability, efficiency and appearance;
- the potential for the measure to create further vulnerabilities; and
- whether the measure delivers any other business benefits, for example, reduction in overall business risk and ensuring the value of assets and information.

Through conducting this exercise it is possible to assemble a portfolio of mitigation measures which are pragmatic, appropriate, cost effective and commensurate with the organisation's risk appetite.

REVIEW

In order to maintain its relevance and validity, the risk management process cannot be static. It is essential to have a programme of monitoring which assesses the effectiveness of the risk mitigation measures in place, as well as identifying and evaluating any risks that impact on assets and/or asset information, and which have changed for political, economic, social, technological, legal or environmental reasons.

DEVELOPMENT OF A STRATEGY AND MANAGEMENT PLAN

The record of the risk management process undertaken, along with the detail of the need for a security-minded approach for the built asset in question, should be contained within the Built Asset Security Strategy (BASS). This is a high level document on a par with the organisation's other strategic policies and plans. It is the basis from which all other security management and information requirements should flow.

The Built Asset Security Management Plan (BASMP) sits underneath the BASS and serves to ensure that the risks or combinations of risks identified are addressed in a consistent and holistic manner. In order to do this it will need to contain a number of key elements and importantly, each of these must bridge four areas - people, business process, physical and technological security.

It will need to contain a suite of policies derived from the BASS, setting out the security-related business rules for the management of risk. Each policy will need to be supported by processes which allow the policy to be implemented consistently throughout the supply chain, and procedures comprising the detailed works instructions for their operational delivery.

In addition, the BASMP will need to include:

- the project logistical security requirements such as the protection around the design offices, depots and construction site;
- the process and procedures for the provision of information to third parties;
- requirements for data and information storage;
- monitoring, auditing and review arrangements;
- a plan for handling security breaches and incidents; and
- an outline of the contractual measures to ensure the adoption of the security-minded approach throughout the supply chain.

When a project is being contemplated, the BASS and BASMP should, along with the organisation's other policies, strategies and plans with which they sit, contribute to the development of its strategic business case and strategic brief.

INFORMATION REQUIREMENTS

In order to ensure that the secure capture, handling, dissemination, storage, access and use of information in relation to sensitive assets and systems are delivered, it will be necessary to take relevant requirements set out in the BASMP and collate them within the Built Asset Security Information Requirements (BASIR).

Within a project it is this document which will convey these requirements to the supply chain through the Employer's Information Requirements (EIR), with the BIM Protocol, which is currently being amended to incorporate the specifications set out of PAS 1192-5, enabling them to be contractually enforced.

The BASIR should also be used to determine the set-up of asset management databases which need to be ready on completion of a project, as well as the ongoing management of new and existing databases, to ensure that the security of information is maintained throughout the asset's operational life.

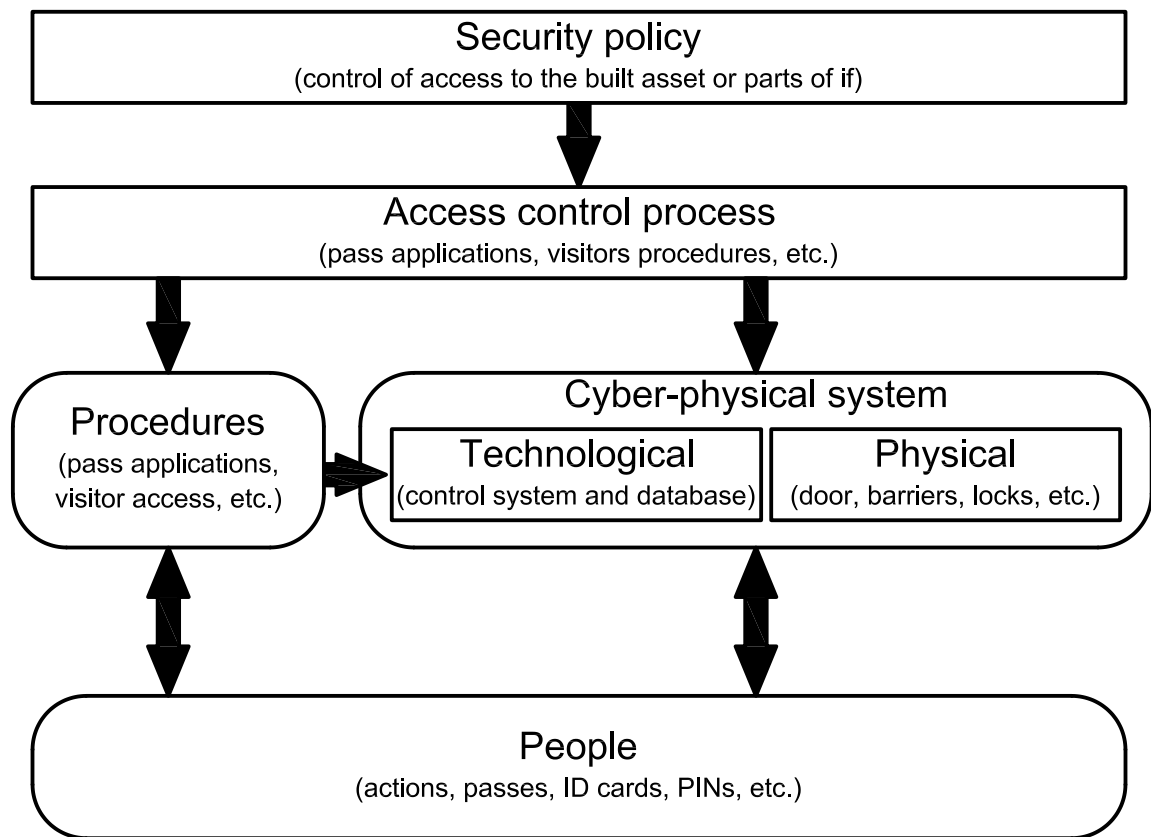
IMPLEMENTATION

It is vital that the policies, processes and procedures implement a holistic approach which addresses security around the aspects of people and process, as well as physical and technological security throughout the lifecycle of the asset. As is demonstrated in the example shown in *Figure 4*, which shows the interaction of security aspects to provide access control to a building, only through the implementation and operation of appropriate measures addressing all four aspects can physical access to an entire site, or a particular area of it, be assured.

People need to be aware of, and understand, the security policies in place. Alongside this, the security processes and measures, be they physical or technological, need to be effective and efficient. Without any one of these elements the effectiveness of the overall security regime will be reduced and there is real risk that the measures in place will be ignored or circumvented.

It is equally important that, in combination, each of the four aspects form a security approach which delivers:

- safety - preventing the creation of harmful states which may lead to injury or loss of life or unintentional environmental damage;
- authenticity - ensuring that inputs and outputs are genuine and have not been tampered with;
- availability (including reliability) - ensuring accessibility and usability in an appropriate and timely fashion;
- confidentiality - ensuring control of access and prevention of unauthorised access to both physical and information assets;



NOTE Developed from source material provided by CPNI, Alexandra Luck and Hugh Boyes

Figure 4: Example of interaction of security aspects to provide access control to a building
© British Standards Institution 2015

- integrity - maintaining consistency, coherence and configuration;
- possession - preventing unauthorised control, manipulation or interference;
- resilience - ensuring the ability to transform, renew and recover in a timely fashion in response to adverse events; and
- utility - ensuring usability and usefulness over time, of data, information and systems.

REVIEW

Continuing good security throughout the lifetime of the asset can only be assured if appropriate and proportionate monitoring and auditing procedures are introduced and, vitally, maintained. This should allow any inconsistencies or issues of non-compliance to be identified and where necessary, amendments to be made to policies, processes and procedures. It will also be essential to monitor and assess changing risks and where these impact on the built asset in question, ensure that the appropriate actions are cascaded down through the BASS to the BASMP and BASIR.

Should a security breach or incident, which includes near-misses, occur, it will be important that once a resolution has been reached, a formal evaluation of its handling is undertaken to understand the cause, assess the effectiveness of the response, and determine whether any existing measures need to be altered or new measures introduced. Again, any changes will need to be reflected through the suite of built asset security documentation.

SUPPORTING ADOPTION

The PAS covers the processes required for the full spectrum of security need, from the most to the least sensitive assets, where no more than baseline security measures, which relate to personal and commercial information, are legally and contractually required. Therefore, to support the roll-out and adoption of the processes described, additional supporting advice is being developed, including templates and more specific guidance, which will be released by CPNI over the course of the next few months.

CONCLUDING REMARKS

Effective security is good for all organisations – and embedding it can give competitive advantages to commercial enterprises, both in the construction market and beyond. By employing the processes set out in PAS 1192-5, commercial enterprises can protect key assets and maintain the trust of customers and stakeholders, reducing the risk of reputational damage, the impact of lost opportunities and the diversion of resource that would result from a security breach. This is particularly important for enterprises competing in the international construction market where good cyber security can deliver real competitive advantage.

PAS 1192-5

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* CPNI is the government authority that provides protective security advice to organisations of the national infrastructure. www.cpni.gov.uk

**Digital Built Britain**

Digital Built Britain-launch

The Digital Built Britain (DBB) programme launched on the 26/2/15 will build a digital economy for the construction industry in support of dramatically improving delivery, operations and services provided to citizens.

by: David Philp, BIM Task Group – Head of BIM & Mark Bew, BIM Task Group – Chair

The programme will build on the standards and savings delivered by the BIM level 2 initiative which has been central to the £840M savings achieved on central public spend in 2013/14.

Digital built Britain - Level 3 Building Information Modelling - Strategic Plan was written by Mark Bew, UK BIM Task Group.

[View full document \[LINK\]](#)



The Digital Built Britain strategy describes how we intend taking the next steps in defining advanced standards, creating new commercial models and identifying technologies to transform our approach to social infrastructure development and construction.

With level 2 there is limited functionality for delivery of operational data sets and integration of telemetry. Digital Built Britain and its Level 3 ambitions will address these in sector delivery and operational stages, with a focus on enabling total cost and carbon outputs.

Level 3 will enable the interconnected digital design of different elements in a built environment and will extend BIM into the operation of assets over their lifetimes – where the lion's share of cost arises. It will support the accelerated delivery of smart cities, services and grids. Owners and operators will be able to better manage assets and services as they track their real-time efficiency, maximising utilisation and minimising energy use.

The programme which was announced by Dr Vince Cable will continue to prioritise facilitating access and take-up, as well as addressing challenges associated with interaction of data from different elements of the built environment, notably security - generating the data to maximise social and commercial benefits, while ensuring the controlled exposure of open data that this requires does not present security risks.

“



*We need to have a culture
which can deliver
capability at a capacity*

- Mark Bew
Chair of BIM Task Group

The launch of the Digital Built Britain strategy marks the beginning of the digitisation of the construction sector. The shape and content of the report has been carefully developed by a large team drawn from the construction, operation, technology and legal sectors to articulate what needs to be done to face the future with a fit and competitive industry.

The Level 2 project hands back to industry in April 2016, this programme has been about developing awareness of data and driving efficiencies in the delivery side of the market, but this was always the beginning. We need to address the challenges of whole life cost and value, the skills deficit and the ongoing challenges of urbanisation and social welfare that will continue to cost more than we can afford for the rest of our lives....we have to do something different....and dramatically better.

Level 3 is broken into three sections: technical, commercial and cultural. All three areas need dramatic re-design to ensure we remain viable and competitive. The technical debate includes the need to improve security, enable commercial transactions, deal with objects and integrate with the Smart City and Internet of Things agendas. Commercial plans need to see the types of change seen in retail with the advent of Electronic Point of Sale (EPOS) technologies, which enabled the entire value chain to be reversed with control coming to big retailers rather than farmers, imagine the impact on this for main contractors and trade contractors, but all in a completely open transparent way with payments and costs all open to scrutiny.....

But the key and most challenging task is people; the culture we all enjoy will need to change to ensure the rate of adoption can keep up with demand. The one thing we have learnt with Level 2 has been the fact that the best businesses working hard with their best resources can achieve big things with BIM, savings of 20% and projects delivered on time. The challenge is the tail, the tail that thinks it's ok to not train their staff and rely on poaching from others and giving up when poor preparation and capability has failed to deliver results. We have to create a culture where this just isn't acceptable, the Government has started with its latest apprentice initiatives but there is much more to do with this shared responsibility.

We look forward to working with you in delivering Digital Built Britain for further information please visit <http://digital-built-britain.com>



BIM Toolkit

Further enhancements to BIM Toolkit in Beta 3 release

Following an Innovate UK competition last year NBS has launched the BIM Toolkit. This delivers two essential parts of the level-2 BIM package - *“Information Classification”* and a free-to-use online tool to help procure and project manage information on all projects, known as the *“Digital Plan of Work”*.



The BIM Toolkit delivers two essential parts of the level-2 BIM package - Classification and a free-to-use online tool to produce a digital plan of work. NBS launched this following a six month Innovate UK funding period in April. Since this funding period ended, there have been a further two releases with additional content and functionality. Beta 3 is released in July and this article gives an overview of this latest release.

Key functions of the Toolkit include:

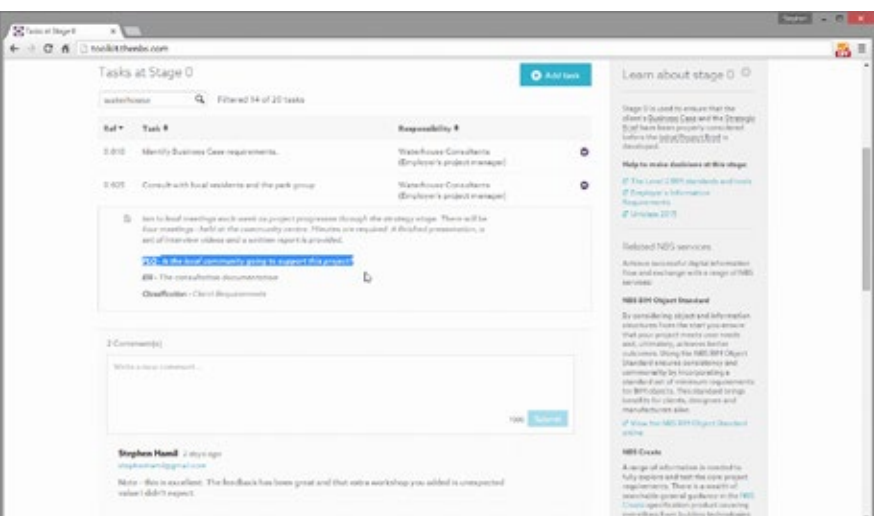
1. The ability for clients and client advisors to develop Employer’s Information Requirements (EIRs) at an early stage of the project prior to appointing the project team.
2. The ability for the collaborative project team to agree responsibilities and deliverables through the project timeline to ensure each participant knows who is doing what and when.

NEW FEATURES

Thousands of projects have been created using the BIM Toolkit since its initial launch in April. As part of these initial few months, early adopters have been suggesting enhancements to NBS on how the tool can be improved further. This user testing and continuous improvement will result in a fantastic piece of online software that will prove to be vital to the industry.

One of the most important functions which is now implemented is the ability to define specific employer's information requirements at each stage of a project and refer these back to the original 'plain language questions'. This assists the process of defining EIRs and generating a task information delivery plan by the client or client advisor in line with PAS 1192:2.

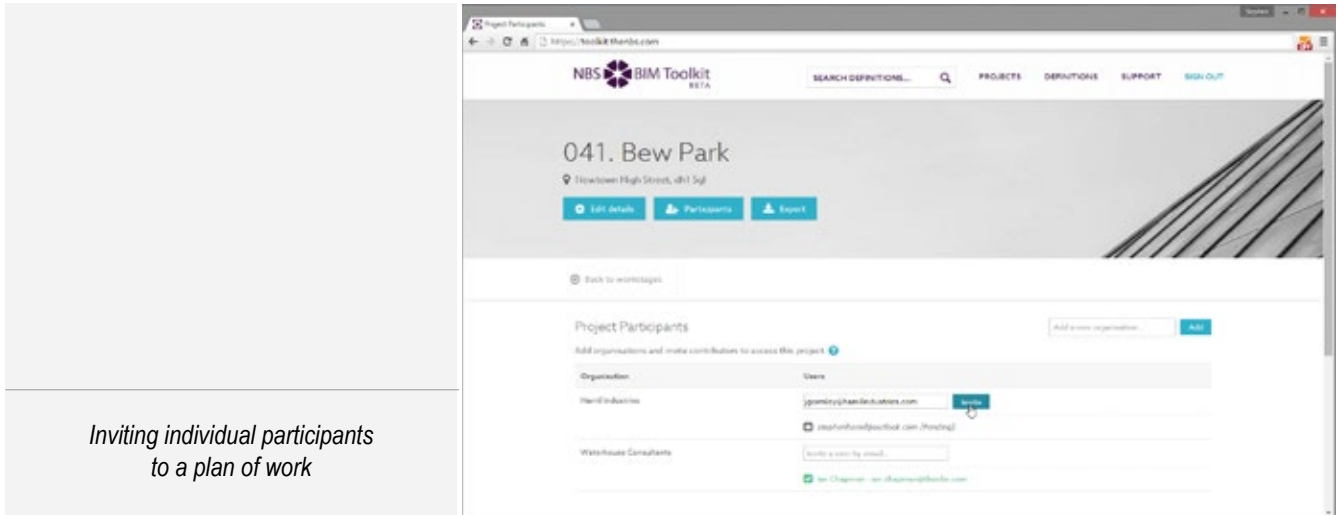
*Specifying EIRs, PLQs
and creating a TIDP*



The screenshot shows a web browser window displaying the 'Tasks at Stage 0' section of the BIM Toolkit. The interface includes a search bar, a table of tasks, and a sidebar with additional information. The table lists tasks such as 'Identify Business Case requirements' and 'Consult with local residents and the park group', both assigned to 'Watehouse Consultants (Employee's project manager)'. Below the table, there is a 'Comments' section with a text input field and a 'Post' button. A user comment from 'Stephen Hamill' is visible, mentioning a feedback survey. The sidebar on the right contains 'Learn about stage 0' information, 'Help to make decisions at this stage', and 'Related NBS services'.

The biggest single request from early adopters of the Toolkit was for the ability to invite users to access the project. This was a significant item of work, but it is now complete for the Beta 3 release. The owner of a digital plan of work can invite named users from the organisations that form part of the project team. These individuals can then access the project via their PC, Mac or mobile device.

It is of course extremely important to have clear ownership of the data, as tasks and responsibilities must be clearly defined. With this in mind, invited individuals only have read-only access, however they can post comments and updates on the tasks and deliverables within the plan of work to help with communication and create a collaborative team.

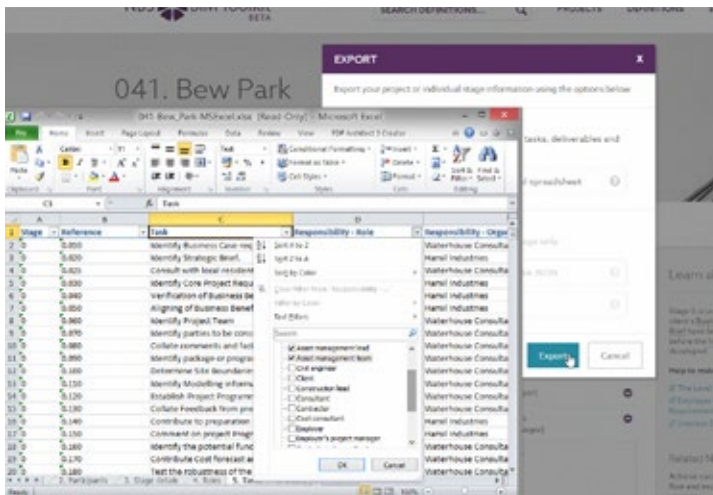


Inviting individual participants to a plan of work

One other feature that was requested many times by users of the tool was enhanced export features. All information from the plan of work may now be exported to a user-friendly Microsoft Excel format. This includes all project and stage details, all tasks and deliverables and all associated comments. This is an ideal format for then manipulating the information into a PDF or a printed output.

In addition, more IFC and COBie export options have been added to generate stage requirement data-sets for those working digitally with BIM data.

Having simple export options in addition to the more advanced BIM options is crucial when producing a tool that is for the entire industry and not just those at the vanguard of BIM.



Further export options

To create your first BIM Toolkit project or for a full list of features please see the Toolkit website: <https://toolkit.theNBS.com>

1

CASE STUDY:

- BIM Toolkit - practical application
- In the context of: Mott MacDonald on 'The Core, Newcastle' project
- Presented at: Institution of Structural Engineers BIM conference
- The Speaker: Chris Jolley, Technical Director at Mott MacDonald



2

Having a worked example showing how the BIM Toolkit could actually be used on a real-world project is one way of introducing the benefits.

At the recent Institution of Structural Engineers BIM conference, Chris Jolley - Technical Director at Mott MacDonald demonstrated the BIM Toolkit in the context of a recent award winning project.



3

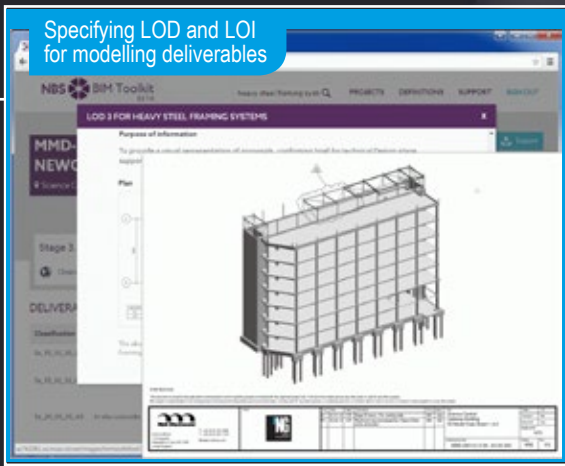
The presentation looks at the BIM Toolkit in the context of the recently completed 'The Core, Newcastle' project.

1. Chris starts by looking at how tasks and responsibilities were agreed and how this related to procurement.

Mott MacDonald were originally part of the FaulknerBrown consultant led project and then were novated across to work for Sir Robert McAlpine as the project progressed.

Having clear agreement of the tasks, responsibilities and the information delivery plan is crucial to any project.

4



2. Chris then went on to look at the design phases of the project and in particular the building's frame.

At a concept stage options were firstly explored, the level of detail and information was then refined as the project developed.

The concepts of level of detail (LOD) and level of information (LOI) within the Toolkit are discussed through this project.



COMMENT

All in all, the delivery of the BIM Toolkit has been a big achievement in such a short period of time. NBS deserve credit for their work both within the funding period, but furthermore by producing further enhancements over recent months in an effort to make the tool something that will be used by all UK projects working to level-2 BIM.



The BIM Toolkit is the final piece of jigsaw to complete the Governments BIM Task Group Level 2 programme. It makes available the tools needed to complete the level-2 BIM package and as such is an important part of the world leading programme of cross sector productivity improvement. Both clients and supply chain have long called for collaboration and co-working and this project is an excellent example of Government innovation funding providing a platform for the entire industry to share common process and knowledge. The BIM Toolkit is now in its beta phase and is developing well. User feedback during this phase is resulting in real enhancement to the functions and content of the digital plan of work tool, the Uniclass 2015 classification system and the verification tool.

The complete level-2 BIM package of documentation and tools will enable the industry to greatly improve the procurement process through the use of data and data verification. This will assist the UK construction and operation industry to operate more efficiently increasing productivity and reducing waste. Transparency of data need and data delivered will drive improved behaviours and collaborative methods and it will enable more informed decisions to be made in terms of environmental, economic and social sustainability and it will put the UK in an excellent position in terms growth through exports of construction and operation services in the world economy.

To enable this international growth and encourage domestic SME use of the system all parts of the Level 2 Toolkits and standards are made available totally free of charge, we seek to encourage adoption at all levels including education and academia to ensure we portray a modern image and are able to recruit the best resources to sustain the industry's future.

An industry that is skilled in the digital management of information at BIM Level 2 will ultimately move readily into Level 3 BIM which is designed to enable to UK to lead the challenges of urbanisation and population growth. This will enable the interconnected digital design of different elements in a built environment and will extend BIM into the operation of assets over their lifetimes and across the Smart City social infrastructure. We look forward to hearing your feedback and comments.

Mark Bew MBE

Chairman of the UK BIM Task Group



What was achieved in such a short time was only possible thanks to firstly such a clear brief from the clients, and secondly, the support from our expert partners at BDP, Mott MacDonald, Laing O'Rourke, BIM Academy, Newcastle University and Microsoft.



A big thank you must also go out the eight construction institutions that formed our monthly steering panel (APM, BIFM, CIBSE, CIOB, ICE, IStructE, RIBA and RICS). And finally the support of the wider industry through workshops and user testing is evident in terms of the initial developments and recent enhancements.

These have been driven by what will be the real users of the tool.

- Dr Stephen Hamil
NBS Project Lead – BIM Toolkit

The BIM Toolkit is a free-to-use online tool for those working to level-2 BIM, create your first project now at:

<https://toolkit.theNBS.com>

BIM Toolkit

The Digital Plan of Work in the BIM Toolkit

**by: Rob Manning, Engineering Construction Strategies Ltd
and BIM Task Group**

WHY IS A DIGITAL PLAN OF WORK NEEDED?

The requirement for Task Information Delivery Plans and for a Master Information Delivery Plan is specified in PAS 1192-2:2013. There is need for a consistent method of creating those plans and for identifying what Level of Definition should be provided at each work stage.

The availability of a digital plan of work that provides all users with the opportunity to adopt consistent work stages across all market sectors and assists the Employer to define the Level of Definition required from each party at each work stage may well prove to be the keystone to enabling the practical implementation of UK Level 2 BIM.

Knowing who delivers exactly what data and when is one of the keys to achieving improved levels of collaboration, trust, understanding and certainty of payment.

Knowing that the data provided is at the required level of definition and can be verified to enable decisions and on-going progress is one of the keys to reducing waste through under-delivery, over-delivery, wrong decisions and delayed decisions.

Knowing how the data delivered relates to the successful achievement of the social, environmental and economic outcomes required from the asset is one of the keys to better performing assets.

“Level of Definition required” templates have the potential to be a very significant part of enabling Level 2 information management adoption not just at the leading edge but at all levels.

THE STORY BEHIND THE BIM TOOLKIT

Back in 2011 the Government Construction Strategy outlined a target that by 2016 government would seek to be good at buying data (as well as buying assets and services) with “all project and asset information, documentation and data being electronic”. The hypothesis was that “Government as a client can derive significant improvements in cost, value and carbon performance through the use of open sharable asset information”. Three of the principles supporting that hypothesis were that data would have to be open, compliant and verifiable.

COBie was chosen as the open format for data delivery and compliance would then be tested against that standard. With a standard data format and a clear specification of what data should be delivered, by whom and by when it would then become possible to verify the data delivered at each work stage.

So there was a clear requirement for infrastructure practitioners to be able to define what data should be delivered, by whom and by when. That was the primary objective of creating the digital plan of work in what is currently known as the BIM Toolkit.

This brought together the BIM Task Group and a group of institutions meeting under the umbrella of the Construction Industry Council – APM, BIFM, BSRIA, CIBSE, ICE, IStructE, RIBA and RICS. The CIC group were seeking to better define the activities or tasks to be undertaken by each discipline at each work stage and the BIM Task Group were seeking to better define the data deliverables at each work stage.

There was clearly a need for research and development by the infrastructure industry for the industry and Innovate UK (formerly the Technology Strategy Board) agreed to invest to support *“the development of a free-to-use tool that can exploit the standards being made publicly available for building information modelling (BIM)”*.

The story from that point in December 2013 is available in previous editions **35, 36, 41 and 43 (LINKS)** of the BIM Task Group newsletter.

Industry practitioners from a wide spread of locations and roles were invited with academics and representatives of institutions to attend a series of three workshops in January 2014. The first two workshops were to identify what was currently available in the market and then to establish the needs of practitioners. A functional specification was drafted to brief the requirements for a digital plan of work, a classification system and a verification tool and the third meeting was to ask if the functional specification reasonably reflected the need.

The Innovate UK open competition process started in February 2014 with invitations for bidders. Three teams were selected to proceed through to Phase 1 of the competition. Following the standard process of review by a panel of assessors and a presentation to an interview panel, RIBA Enterprises were awarded the contract in September 2014 with the target of launching the prototype in April 2015 and then taking the research and development work to market.

The BIM Toolkit is currently released as public Beta 3 for use and feedback. There are plans being discussed to formally launch to the market in October 2015.

INTENDED PURPOSE OF THE DIGITAL PLAN OF WORK IN BIM TOOLKIT

The BIM Toolkit seeks to assist employers to procure digital data. This could be a client as employer forming the project team or a designer or contractor as employer leading the team as the project progresses.

The concept of the digital plan of work is embedded in the BIM Toolkit and evolved to enable employers to define what data they require at each work stage.

To support collaboration it was considered necessary to start by adopting a unified set of work stages against which digital deliverables could be defined.

To support employers it was considered necessary to provide editable templates to assist in the creation of their Plain Language Questions (PLQ) and Employer's Information Requirements (EIR).

Across industry sectors it was required to provide default listings of the geometry and information for the deliverables required at each work stage.

As a starting point the listings would address the classification categories for complexes, entities, spaces systems, elements and products.

The above content was to be delivered via the function of an editable tool that enables the employer to customise their requirements.

WORK STAGES

In 2012 the BIM Task Group looked at a multitude of “plans of work/scopes of service” most of which focused on tasks not deliverables, most of which focused on design activities, some of which did not address strategy and operation, several of which did not align in terms of purpose and none of which addressed digital deliverables.

In 2012, seeking to align all market sectors, the BIM Task Group working with a Construction Industry Council group of professional institutions (APM, BIFM, BSRIA, CIBSE, ICE, IStructE, RIBA and RICS) agreed to adopt a set of work stages as the basis for a “digital plan of work”. The selected stages and names were adapted from work in the Association of Project Management Body of Knowledge and are Strategy, Brief, Concept, Definition, Design, Build and Commission, Handover and Close-out and Operation and End of life. These stages were rapidly introduced to the buildings infrastructure market by the RIBA publication of the RIBA Plan of Work 2013 in which the stages are named differently in order to be meaningful to the architectural profession. None the less the intention was to align with all other sectors in terms of the level of definition to be delivered at each work stage. These consistent work stages are gradually being introduced to government department procurement processes across all infrastructure types and just as with the RIBA Plan of Work they are using stage names that are meaningful to each infrastructure sector.

To assist collaboration between all disciplines and roles it is certainly the hope, if not expectation that all Employers will feel able to adopt the proposed unified work stages.

ALIGNMENT OF THE INFORMATION EXCHANGES TO THE WORK STAGES

The Employer is called upon to decide at which work stages they wish to receive an information exchange.

The information exchanges will align with a particular decision making purpose eg the decision to start a project (capital expenditure approval), the decision to procure a project (supplier selection), the decision to start design and construction (target cost), the decision to accept hand back of the asset (handover and operation and maintenance information).

Employers might if they wish, identify purposes that require an information exchange at every work stage.

SPECIFIC INFORMATION REQUIREMENTS TO ANSWER THE PLAIN LANGUAGE QUESTIONS

Using the editable templates in the BIM Toolkit the Employer can identify the plain language questions (PLQ) that need to be answered as they proceed through the work stages from Strategy to Operation and End of Life. For example not least among the questions will be – is the construction affordable, is it likely to receive statutory approval, can it be constructed in time for a particular business objective?

Not all PLQ are related to capital delivery phase; some PLQ will need to refer to future operational decisions, eg is the on-going maintenance cost affordable, what is the associated long-term asset investment plan, is it safe to operate and use? PAS 1192-3:2014 sets out how an Employer can go about documenting the high level information requirements that will support their business operational decisions – these are called Organisation Information Requirements (OIR) in PAS 1192-3:2014.

Many of the high level OIR (eg an asset investment plan) will need to be answered by more detailed information about assets (AIR in PAS 1192-3:2014) eg life expectancy, replacement cost, business criticality and some of those pieces of asset information will have to be required as EIR from the construction phase of an asset (eg life expectancy and replacement cost). In other words some pieces of asset information (AIR) become EIR when a construction project is being considered.

PLAIN LANGUAGE QUESTIONS (PLQ) AND SPECIFIC EMPLOYERS INFORMATION REQUIREMENTS (EIR)

The end user employer and/or advisor can use editable templates in the BIM Toolkit to consider and produce their own project specific PLQ and EIR.

As a starting point the Employer needs to be able to produce a set of PLQ that can be used during a construction project and amended and saved for future use if required. The PLQ might not form a part of the Contract but will be the reference point to test how appropriately the deliverables from the supply chain answer the important questions at each work stage.

Specific Employers Information Requirements set out in the EIR will form part of the Contract and should require enough information to answer the PLQ at a particular stage, at an appropriate level of detail and certainty.

Documents, graphical data and non-graphical data that will answer the PLQ are called the specific Employers Information Requirements. These can all form part of the EIR document.

In producing Specific Employers Information Requirements the minimum objective is to produce a list of required deliverables and the work stage at which the deliverable is required.

The Employer should have the opportunity to introduce a task description, the deliverable, a reference for the deliverable, the format required, a classification reference and responsibility for providing the deliverable. End user employers eg a government department may not wish to define responsibility for delivery, leaving that instead for the supply chain lead (design company or construction company) to identify in their role as employer when they seek Task Information Delivery Plans (TIDP) from their supply team.

The list of deliverables in the EIR could include correspondence, drawings, schedules, specifications, calculations, spreadsheets, models, reports, surveys etc. The content could cover such information as cost models, cost estimates, contract sum analyses, area schedules, linear schedules, project planning models, construction sequencing models, phasing proposals, approvals schedules, site/welfare planning, enabling works, logistics etc

Presentation of the above content forms what might be labelled an Employers Information Delivery Plan.

Using the BIM Toolkit the completed EIR can be exported to COBie.

1 >

Scenario One (an end user employer producing EIR)

In producing the Specific Employers Information Requirements, some employers may not know what Spaces/Features, Systems, Elements and Products will be required as part of the design and construction process. Employers may not wish to address Spaces, Systems, Elements and Products either for contractual reasons or because they do not wish to prescribe solutions and limit innovation. In such cases the Employer needs to be able to identify document requirements and then reference to an industry standard for default Level of Detail and Level of Information with a procurement clause such as:

“As the design and construction evolves and Spaces/Features, systems, Elements and Products become known, the default Level of Information (LOI) shall be as defined in the Industry Standard. The default Level of Detail (LOD) shall be generally in accordance with the drawing views identified in the Industry Standard.” Of course such a clause has to be subject to legal and commercial review and agreement.

The BIM Toolkit seeks to offers the function and content to be adopted by practitioners as the industry standard.

Having identified the deliverables (mainly documents in this case) required by the Employers Specific Information Requirements are exportable using the BIM Toolkit to create a COBie required against which the supply chain can produce a COBie delivered.

2 >>

Scenario Two (an end user employer producing EIR or a lead design company or lead construction company producing a BIM Execution Plan)

Some employers as well as wishing to identify document deliverables required might also know exactly what Spaces/Features, Systems, Elements and Products are required at each work stage. In this case the Employer needs to be able to refer directly to LOI and LOD for Products, Elements, Systems etc in an Industry Standard. They might wish also wish to edit LOD and LOI template content in order to add a deliverable, to add/remove attributes and to break the default alignment of LOI and LOD with a work stage ie Work stage 3 might require LOD 2 and LOD 4. In such cases the use of edited LOD and LOI might become a procurement standard for that particular employer.

In this case the documents required by the Employers Specific Information Requirements can be exported using the BIM Toolkit to create a COBie required against which the supply chain can produce a COBie delivered. Also the LOI for Spaces/Features, Systems, Elements and Products can be exported to a COBie required and the LOD have to be reflected in the graphical data that will be provided.

THE ROLE OF THE SUPPLY CHAIN - TASK INFORMATION DELIVERY PLAN, MASTER INFORMATION DELIVERY PLAN AND WORKING TO DEFINED LOD AND LOI IN THE BIM TOOLKIT

Having received the Employers Specific Information Requirements from the end-user employer, the Lead Designer or Lead Constructor will in turn become an employer and will be required to consider if they need to adopt the same process options as described here to convey their Specific Employers Information Requirements to the tiers of their supply chain.

To form part of the BIM Execution Plan each member of the supply chain is required to produce a Task Information Delivery Plan listing deliverables first to answer the Employers Specific Information Required list and second to enable design, construction, commissioning and handover of the physical asset. For each supply chain member the TIDP will include each deliverable, format, duration, delivery date and responsibility for delivery.

In producing the TIDP the supply chain members might need to adopt the increased granularity of tasks and deliverables adopted by their particular discipline. An example would be use of BSRIA BG6/2014 A Design Framework for Building Services 4th Edition.

The Lead Designer or the Lead Constructor has the role of preparing a Master Information Delivery Plan which is a primary plan (programme) incorporating all the Task Information Delivery Plans to identify when information is to be prepared, when information is to be delivered, who is to deliver information and what protocols and procedures are to be used.

Note. It has been good practice for both the TIDP and MIDP to be created for any project regardless of whether or not Level 2 Government BIM is applied.

DELIVERY

When appointed or contracted the supply chain apply themselves to the processes of design, supply, construction, commissioning and handover working in accordance with the Level of Detail and Level and Information identified by either the default version or the employer's modified version of the digital plan of work in the BIM Toolkit. This is a short statement but is quite profound in its implications to practitioners.

THE BIM TOOLKIT AND THE SCHEDULE OF WORK STAGES, ALIGNMENT OF INFORMATION EXCHANGES TO WORK STAGES AND SPECIFIC INFORMATION REQUIREMENTS FROM INFORMATION EXCHANGES AS PART OF RESPONSE TO THE PLAIN LANGUAGE QUESTIONS

The Digital Plan of Work part of the BIM Toolkit has been created as a reference point to offer an Industry Standard.

The developing BIM Toolkit of work includes the tools and content to produce a digital plan of work. It provides an editable framework to enable the employer to identify their Plain Language Questions, the Schedule of Work Stages, identify the alignment of information exchanges to work stages and create Specific Information Requirements as part of a response to the Plain Language Questions.

Every sector and project is slightly different in needs and terminology however the BIM Toolkit includes a number of cross-sector templates that can be used as a starting point for a project. The completion of a digital plan of work must take into consideration the specific requirements of the Employer.

THE DIGITAL PLAN OF WORK AND “LEVEL OF DEFINITION REQUIRED” TEMPLATES

Over 5,700 “*Level of Definition Required*” templates have been published by NBS. Classification tables “Uniclass 2015” have been produced concurrently with on-going mapping to other existing classifications and methods of measurement in the industry.

The “*Level of Definition required*” templates address spaces, systems and elements as well as products. The templates span the construction and operation sectors, addressing the output of architecture, landscape, engineering services, structural and civil engineering disciplines for different types of infrastructure. These templates are free-to-use and are tailored to UK standards and practice. **Level of Definition is the combination of a Level of Detail (graphical data) and a Level of Information (non-graphical data).*

The templates have been formed using properties required by COBie (BS 1192-4) and also specific properties as researched, authored and maintained by the NBS Technical Team and supporting partners.

In seeking to identify current practice with regard to information delivery, NBS has worked with supporting partners to define the scope of graphical and non-graphical data typically delivered. NBS are working to enable the templates to be authored and defined by the Employer for each stage of the plan of work.

Each set of “*Level of Definition required*” properties is aligned to a typical project stage such that the Level of Definition required is appropriate to the decisions normally made at that work stage. Examples might be the properties required for Concept (Stage 2) and the properties required for Handover and Close-out (Stage 6). Every effort has been made to provide relevant Level of Definition requirements but the default templates can be edited by the Employer to refine the Level of Definition that the responsible party in the supply chain is to deliver.

In the digital plan of work tool there is the facility to allocate responsibility for delivery of information.

In delivering the required Level of Definition the responsible party eg designer, constructor, cost advisor etc will create much of the graphical and non-graphical data themselves eg about spaces, systems, required performance.

The task of supplying information in response to these templates is one for the competitive market. Designers, constructors and operators may complete these using any software package. Manufacturers who supply digital information to the industry are encouraged to make their information freely available in the form of a product data sheet which as a minimum should respond to the NBS “data required” template and/or (where appropriate) parametric 3D BIM objects aligned to this template. Manufacturers and product data templates are not limited by the “data required templates” in the BIM Toolkit and manufacturers can add further information to identify their key selling points eg to support analysis etc. The production and distribution of this data is for the competitive market.

The user of the digital plan of work tool will have the facility to author and deliver “Level of Definition required” templates. The on-going beta development offers a free tool that is available to assist users to address the processes specified in PAS 1192-2:2013 and PAS 1192-3:2014. In particular the digital plan of work tool seeks to assist the end user Employer to define Specific Information Requirements and will then assist the employer of the supply chain team* to create the Master and Task Information Delivery Plans. **An employer can be an end-user client, a developer client, a construction company, a design company etc.*

As part of the continuous improvement and ongoing maintenance of the templates, NBS is seeking industry feedback and engagement to ensure that the content of the data required templates evolve, grow in number and continue to support the needs of the asset operation industry, the asset construction industry and the UK Level 2- BIM package.

CONCLUSION

The development of function and content is an on-going process and the latest version of the BIM Toolkit is the Beta 3 release.

NBS are supporting user acceptance tests and continue to seek feedback from users.

Completion of the Uniclass 2015 classification tables is being prioritised in response to user comment – classification of documents and classification of aids for construction and operation are prominent in requests from users.

Software functions and Level of Detail/Level of Information required templates are being added/amended in line with user feedback.

A digital plan of work is a requirement of PAS 1192-2:2013 and that digital plan of work can be produced in any way chosen by the Level 2 BIM user. However it is hoped that with the on-going industry effort given to the BIM Toolkit it will win a high level of credibility with leading organisations, achieve widespread user acceptance and provide a consistent, unified basis for information production and management.

Continued critique by end-users and adoption of the BIM Toolkit has the potential to create positive change in the construction and operation of our infrastructure assets.



The BIM Toolkit is a free-to-use online tool for those working to level-2 BIM, create your first project now at:

<https://toolkit.theNBS.com>



EU BIM Task Group

plans 'convergence' programme

Fifteen European countries were represented at a meeting in Brussels on 24th February of the EU BIM Task Group, a group working towards Europe-wide convergence on national BIM strategies

By: Elaine Knutt, Editor of Construction Manager [LINK]

The UK, Italy, Portugal, Norway, Ireland, Denmark, Sweden, Finland, Estonia, Slovakia, Austria, Germany, the Netherlands, France and Iceland all sent representatives of public sector client organisations to the meeting, held at the European Commission conference centre.





The meeting was co-chaired by **Adam Matthews**, a member of the UK government's BIM Task Group, who told BIM+: "We're looking to collaborate, align and converge best practice for the introduction of BIM to achieve better value for public money – that's the central premise of the group."

He explained that the group has previously met three times on a voluntary basis, but this time it was facilitated by the European Commission, which provided the conference room and interpreters. Further meetings are planned later this year and up to the middle of 2016.

The UK was also represented by **Mark Bew**, chair of the UK BIM Task Group, and Task Group member Barry Blackwell from the Department of Business, Innovation and Skills.

Germany was represented by Arup's **Ilka May**, recently appointed as chief executive of its industry-led Planen-Bauen 4.0 BIM task group.

Matthews added: "*The group is putting together a strategy and working groups on how to converge on BIM, and how to share best practice on the adoption of BIM into public estates.*"

He identified three areas of focus: technical best practice; client leadership; and cultural and people issues, such as skills development and change management.

Two delegates from Hong Kong were also present as observers, representing the Ministry of Housing and the local Construction Industry Council. "*It shows the level of interest from the Asia Pacific region to collaborate and help create a global common market - it's becoming a global conversation,*" Matthews said.

BIM Learning Outcomes Framework

Driving Level2 BIM Capability through consistent learning standards

by: Richard Lane

BACKGROUND

The BIM Level 2 Training Strategy (2012) recommended the development of a learning outcomes framework that encouraged the industry's procurement and delivery of training and education courses in order to grow strong capacity and capability of BIM Level 2 in the UK market, underpinned by a consistent learning outcomes definition.

In early 2013 the BIM Task Group developed, with the support of the BIM Academic Forum and other key industry stakeholders, an initial version of the Learning Outcomes Framework (LOF). This 'beta' version of the LOF v1 was developed before the main foundation documents of BIM Level 2, which were put in place between May 2013 and October 2014.

The 2015 version of the LOF now accommodates the BIM Level 2 (L2) foundation documents and includes academic and industry feedback on its applicability, presentation format, structure and content.

PURPOSE

The purpose of the LOF is to promote growth of BIM Level 2 capability in the UK domestic market. The LOF describes Level 2 BIM as learning outcomes to encourage individual responses by training and education providers to a common and consistent goal; and for the procurers of BIM capability.

AUDIENCE

The Learning Outcomes Framework is a useful reference for anyone with an interest in Level 2 BIM and is specifically aimed at the following:

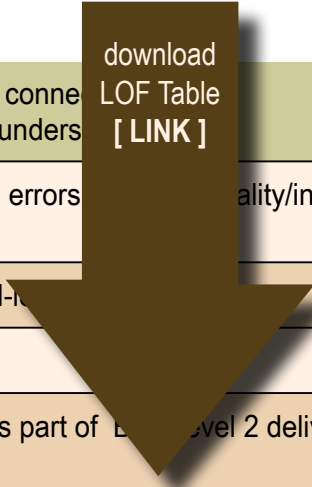
- Construction Clients
- Professional Institutions
- Sector Skills i.e. CIC, CITB
- Professional Training & Certification Providers
- Higher and Further Education Providers
- Technology vendors and service providers

USERS

The 2015 version of the Learning Outcomes Framework enables:

- The consistent development of academic education and professional training courses with associated assessment tools
- The specification and evaluation of BIM Level 2 capability by procurers
- The development of formal accreditation and certification solutions
- The education of the next-generation of industry professionals
- The alignment of BIM skills with Institutional development and membership criteria

The LOF does not provide training or course content. Instead, it identifies the subject areas that should be considered for L2. The level and breadth to which the outcomes are addressed will be dependent on the course or education level being taught. The manner in which they are delivered will be dependent on the facilitator.

<p>1. Understand what BIM is, the contextual requirement for BIM Level 2 and its connection to the Government Construction Strategy and Industrial Strategy 2025; including an understanding of the role of BIM in the construction industry.</p>		<p>download LOF Table [LINK]</p> 
1.01	* Background and the need for collaborative working (removing waste, errors and rework) and the need for complete information	
1.02	* The value of whole life and whole estate approach rather than capital-first	
1.03	* The concept of Soft Landings / Government Soft Landings (GSL)	
1.04	* Roles and responsibilities of the supply chain members and clients as part of Level 2 delivery (cultural / behavioural)	



The benefits of keeping BIM simple

ProCure21+ development manager **Julian Colaco** on a new tool to help NHS clients to specify BIM requirements clearly and efficiently

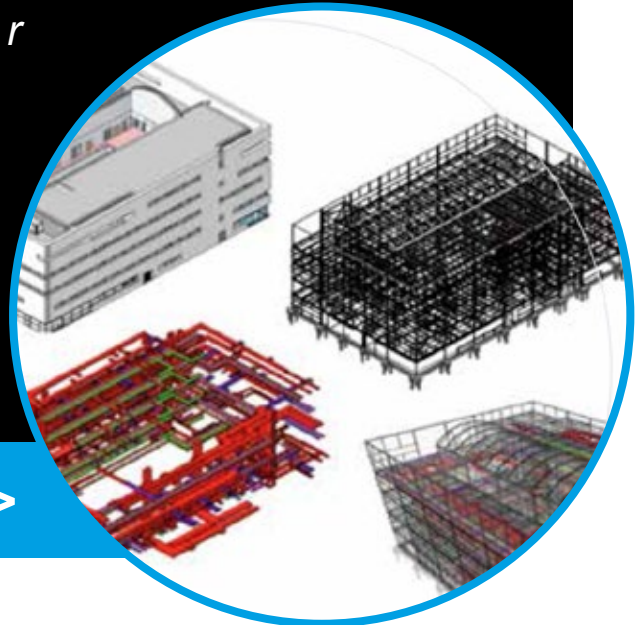
by: Karen Charlesworth

Building Information Modelling (BIM) – mandated by Government for use in all public sector projects – has become *'business as usual'* for the **ProCure21+ Principal Supply Chain Partners (PSCPs)** and supply chains. But how can NHS clients get the best from it? In a drive to *'keep BIM simple'*, and in preparation for the **ProCure22** framework in which BIM will be fully embedded, the ProCure21+ team will be releasing a new **Employers' Information Requirements (EIR)** template. This helps NHS clients consider the benefits of BIM at an early stage – and to specify what, exactly, they want to get out of it.

The EIR works in conjunction with the ProCure21+ BIM Benefits Matrix, which sets out 10 of the most significant benefits that BIM can provide on a ProCure21+ scheme. *"So for instance, if a client wants to use BIM for visualising the layout of a building and its clinical adjacencies, the Benefits Matrix will tell them what benefits this will achieve and gives them the ability to contractually require that benefit,"* explains ProCure21+ development manager Julian Colaco. *"The EIR then helps them to specify the detail of exactly what they want – to ask the right questions, and to understand their role as a client, without them having to get involved in the detail."*

Building Information Modelling (BIM) – mandated by Government for use in all public sector projects – has become ‘business as usual’ for the ProCure21+ Principal Supply Chain Partners (PSCPs) and supply chains.

A set of BIM models for a single building, showing external views, M&E and infrastructure



For instance, taking the example of visualisation, the Benefits Matrix indicates that using a BIM-enabled 3D model of the building is faster, easier and more cost-effective than constructing a full-scale mock-up as done previously. A model represents exact geometric relationships, so stakeholder meetings are shorter and have less impact on business-as-usual; alterations can be made live in real-time during stakeholder engagement; all contract documentation is premised on a single, agreed model and is therefore more accurate and timely; and clashes are easier to detect, track and rectify.



EXTRACT REQUIREMENTS

Working from the Benefits Matrix, the EIR document helps NHS clients to specify their exact requirements for visualisation, including how a model will be built, what software will be used, how it will be shared (and how often), and other stipulations. *“This then becomes part of the Works Information Template in the NEC Option C contract – and therefore a contractual requirement for the supply chain to deliver”* says Colaco.

The EIR also helps the ProCure21+ supply chain by defining the specification early in the scheme and thereby avoiding unnecessary work. *“For instance, if a client doesn’t want whole life costing asset data – in other words, if they don’t want to run their building in the operational phase using BIM – the PSCP can avoid spending time developing this,”* says Colaco.

BIM Level 2 will be a core element of the forthcoming ProCure22 framework, and NHS clients are strongly encouraged to develop inhouse familiarity and skills in BIM processes and practice as soon as possible. *“The supply chain is well acquainted with the benefits of BIM, but NHS clients are less so,”* says Colaco. *“Public money spent on a scheme is increasingly expected to achieve certain standards, and BIM Level 2 is one of those. In releasing the EIR document, and simplifying BIM for easier use, we’re helping the NHS to be BIM-compliant and get the benefits, but without having to be BIM experts.”*

For more ProCure21+ news view view their December newsletter [\[LINK\]](#)



BIM4 Health

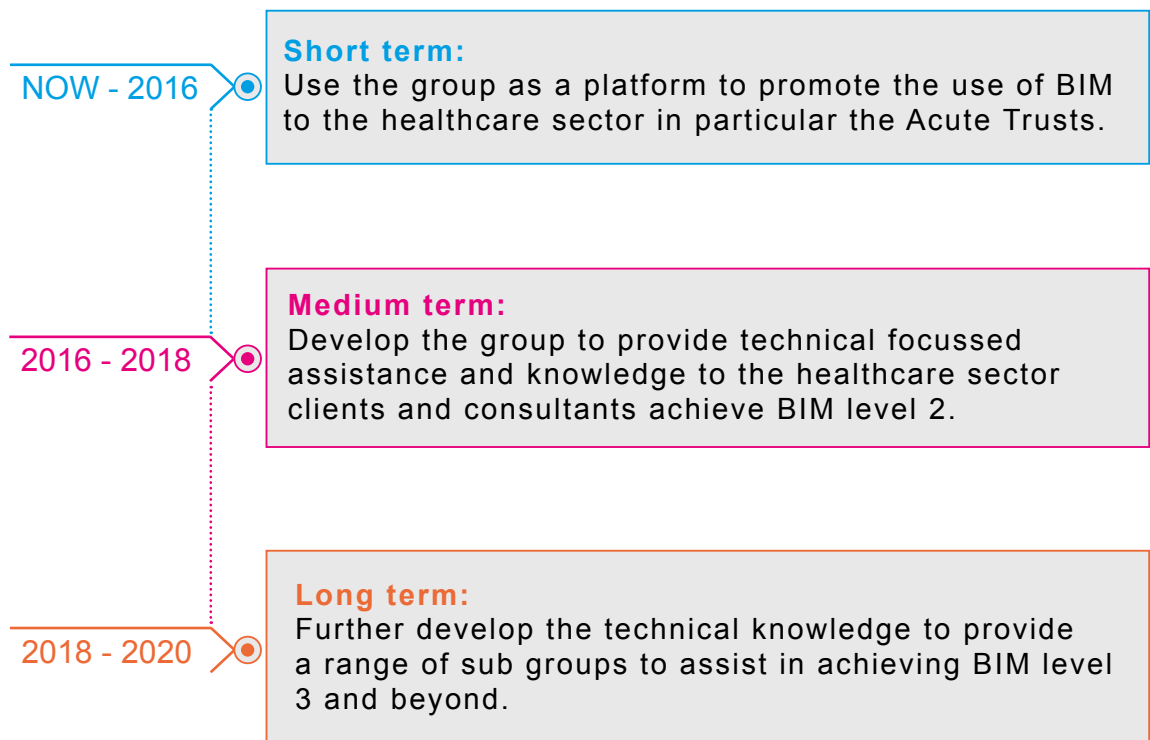
W e l c o m i n g o u r
n e w e s t B I M 4 g r o u p

A spotlight on the BIM4Health working group who are helping drive awareness and share knowledge of BIM across the healthcare sector

by: **BIM4Health Board**

The National Health Service (NHS) has a responsibility to account for the stewardship of its publically funded assets. This includes the provision, management and operation of an efficient, safe estate that supports clinical services and patient care. With a book value estimated at c£33billion (Foundation Trust and Trust Financial Accounts 2012/13), the NHS estate has important contributions to make in delivering savings and reducing costs. These are to be undertaken to help meet the Governments drive to increase efficiency of the public sector estate and new / refurbishment build programs. Accordingly, a significant step change in the way the local and national strategic asset and estate plans are achieved is required.

The vision set out in the NHS 'Five Year Forward View' report, published in October 2014, captures the drivers and needs of the NHS now and going forward. It highlights the need to capitalise on the opportunities the information revolution presents. A dynamic Building Information Modelling (BIM) process and its inclusive approach, captures vital and valuable information, enhances and supports the NHS aims and objectives, delivers tangible benefits and can significantly influence all future decision making relating to any and all asset/estates strategies. The BIM process, through understanding, collaboration and culture change, can aid the broader NHS agenda by introducing a diverse solution combined with local and national leadership, facilitated and coordinated via the BIM4Health group and its core members.



MILESTONE OBJECTIVES ARE AS FOLLOWS:

> Short term (now until 2016): Use the group as a platform to promote the use of BIM to the healthcare sector in particular the Acute Trusts.

>> Medium term (2016 until 2018): Develop the group to provide technical focussed assistance and knowledge to the healthcare sector clients and consultants achieve BIM level 2.

>>> Long Term (2018 until 2020): Further develop the technical knowledge to provide a range of sub groups to assist in achieving BIM level 3 and beyond.

The Core Group is to be led by the Institute of Healthcare Engineering and Estate Management (IHEEM - an International Professional Engineering Institute, a specialist Institute for the Healthcare Estates Sector) in affiliation with other representatives from organisations within the healthcare sector with a background in either healthcare estates, design, manufacturing, contracting, FM or consultancy within the UK.

The Core Group is to represent all the various healthcare sectors and disciplines which makes up the healthcare community in the UK that have contributed significantly and regularly to the development of the BIM4HEALTH cause and are helping shape its longer term strategy.

CORE MEMBERS OF THE BIM4HEALTH GROUP INCLUDE;

Steve Batson – (BIM4Health CHAIR PERSON), IHEEM Director/Trustee & Council Representative, Yorkshire & Humber branch.

Janet Beckett – CIBSE Representative.

Gary Allen – RICS Regional representative Yorkshire & Humber.

Julian Colaco – (BIM4Health Vice CHAIR PERSON) representing Department of Health/ P21+

Jonathan Stewart – National HEFMA representative.

John Orrell – BIM Deputy Chair for RIBA Yorkshire & Humber /BIM4FM.

David Philp – Head of BIM UK BIM Task Group.

Dr Richard Pope – Academic Health Science Network (AHSN) - Clinical Lead for Tele-Healthcare.

Karl Redmond – BIM4SME Representative & Director of Bowman Riley Innovate.

David Kershaw – P21+ PSCP Representative.



As we head towards an efficient digitised built environment it is important that communities of practice come together such as BIM4Health to help raise awareness, build capacity and capability both with the client and supply chain populations. Health is an area that can particularly benefit from BIM where model data can be used to inform and optimise the clinical planning process and healthcare estate. The BIM4Health group will be a key player in the wider BIM4 communities where their work will be mutually supportive and collaborative; sharing instances of best practice to benefit the greater good. We look forward to working with the group and would encourage industry to support their efforts

- David Philp
Head of BIM Task Group

BIM4HEALTH welcomes all organisations who operate within the healthcare sectors with an interest in the activity of structuring a governable, sustainable non-restrictive and open Health BIM conduit. It is proposed to create active BIM4HEALTH subgroups around the AHSN designated regions and to focus on particular issues relating to Health BIM. In particular the group encourages ways to engage with, adopt and embed Health BIM into business and how Health BIM can assist in the wider Government's objectives for an integrated Health Information Model that assists in the goals and objectives as set out in the Transformational for Change agenda. As such membership is open and free to all organisations in return for which BIM4HEALTH would welcome donations and constructive contributions that progress the BIM4Health care agenda.

Anyone interested in becoming involved, supporting or requiring further information regarding BIM4Health activities should initially contact **Karl Redmond** on

0113 391 7570 or email karl.redmond@bowmanriley.com



RICS BIM 2015 Conference

280 delegates gathered in London for the fourth annual RICS BIM Conference. Alan Muse, RICS noted: BIM is a collaborative process, so it was fantastic to see such a range of professions in the audience assessing where the real benefits of BIM lie and how the quantity surveying, facilities management and operational sectors can seize the opportunities it presents.

by: **Monika Orzeszak, BIM Task Group**

The conference was chaired by **David Philp**, Head of BIM Task Group and BIM Director of AECOM.

The first session - **The QS and BIM related workflows** presented delegates with the chance to explore various models to extract, validate and utilise data sets that were relevant to the surveying community from digital quantity take off to 4D cash flow simulations in real time. They were demonstrated live by **Cathy Moly** of Austin Reddy and **Trevor Woods** of DPW Group.

“

It appears that UK Quantity Surveyors are at various levels of readiness for level 2 BIM. Some companies have fully embraced BIM and are currently working on a number of projects to level 2 BIM already. However my impression is that the vast majority of companies are still only thinking about embracing BIM. They may have invested in the software and are still a little unsure of the process or they may be fearful of investing in software and training as they have not yet experienced demand for BIM.



Whatever stage QSs are at I think the most important message is that QS companies should engage with BIM designers and get involved in the process because when the 2016 mandate comes into effect, QSs operating outside the BIM space will be left in the shadows.

- **Cathy Moly**, Austin Reddy



Trevor Woods & Cathy Moly



Terry Stocks giving keynote presentation on Delivery of Level 2 BIM

Next, **Delivery of Level 2 BIM** a keynote followed, presented by **Terry Stocks**, Deputy Head of the Estates Department, Ministry of Justice & Delivery Director for Level 2 BIM, UK BIM Task Group.

He spoke of the success of BIM Level 2 implementation in context of 2016, lessons learned from current projects, the importance of early engagement with the supply chain and the importance of embedding best practice.



Vasileios Vernikos, Head of BIM Development, Transportation- Europe, CH2M Hill proceeded with giving his international perspective of implementing BIM in infrastructure projects. He presented the strategy, adoption, processes and international collaboration. Case study presentation followed.



Q: How mature is BIM in the civil and infrastructure sector?

There are pockets of excellence which both the supply chain and client organisations are working hard to expand. The BIM task group has done a tremendous job in reaching out, not only on major programmes but also tier 2 contractors and SMEs. There is still a lot of work to be done in raising BIM awareness levels and the responsibility lies with all of us. The industry is maturing rapidly and I can see a great focus on BIM for asset management in 2015.



Q: What are the main differences between vertical and horizontal BIM practices?

Vertical construction was traditionally seen as more relevant for BIM as one may argue that it can have instant gratification from BIM and it is less challenging compared to horizontal infrastructure where segmenting the model is a more complex process. I think that the perception is changing and major infrastructure programmes have proven that BIM can benefit linear infrastructure equally, if not more than vertical.

Q: Have major rail programmes helped raise awareness and capacity for BIM in your sector?

We have some great examples of excellence in linear infrastructure, especially in the rail sector, some of which are in construction and others are just about to start. Major programmes are of great importance in raising awareness and motivating young engineers to develop their understanding of BIM and helps with the knowledge sharing throughout the construction industry.

Vasileios Vernikos is implementing BIM in infrastructure projects

The following presenter, **Gary Ross**, Principal Consultant, Excitech spoke about strategic business planning and the business case for BIM



Gary Ross is presenting business case for BIM



David Philp, Will Hackney, Prof. Tim Broyd & Alex Bywaters in panel discussion about client's perspective

After networking refreshments **Tim Broyd**, Professor of Built Environment Foresight, University College London facilitated a panel discussion focused on client's perspective. Other panelist were: **John Kerbey**, Head of BIM, HS2 and **Will Hackney**, Head of BIM Strategy, Transport for London & London Underground.

The topics discussed included: expected minimum requirements of BIM, how the models or the data from the models are being used, where clients see the value in BIM.



James Fiske, Director of Product Delivery and Operations, Information Product Group, RICS followed with BIM Vendor Showcase presentation.

James Friske is presenting BIM Vendors Showcase



After lunch the audience split into two break-out sessions. The first focused on BIM in current practice, looking at practical application from a quantity surveying perspective, how BIM supports the operation of an asset, and overcoming challenges associated with BIM processes in-house.

The second looked at the future evolution of BIM, including next-generation software, using BIM for space visualization and asset management, and the management of big data.

The audience regrouped in the main room for the closing plenary sessions. They got an update on the Digital BIM Toolkit from Stefan Mordue of NBS and Paul Burrows of RICS, and Terry and Cathy gave the final instalment of their live digital take-off.



The conference closed with a panel including speakers from the day plus **Simon Rawlinson**, Head of Strategic Research and Insight at EC Harris and Dr Andy Ainsworth, Associate Director at Project Five to examine the crucial question: **Are we BIM-ready now?**

The annual RICS BIM conference again provided delegates with much needed inspiration, practical help, and was a great success.





Press Release

RICS BIM4 SME Awards 2015

INAGURAL AWARDS. To recognise the SMEs (Small medium Enterprise) and their efforts in the adoption of digital technologies in construction, BIM4SME (bim4sme.org) in association with The RICS (Royal Institute of Surveyors) launched an awards ceremony.

Friday, June 26, 2015

The Governments mandate to use BIM on all centrally procured projects by 2016 has been the catalyst to ensure that the whole industry participates and becomes immersed in the formation of a digital built Britain. Since 99% of the industry is made up of small and medium enterprises and is the engine of this sector, its graduation and attitude towards the digital age needed recognition.



BIM4 SME Oscar

The small businesses usually get forgotten in any disruptive frenzy. BIM (Building Information Modelling) has been that frenzy that is a buzz in the AECO (Architectural, Engineering, Construction and Operations) sector.

The awards demonstrated the agility and the receptiveness of the small and medium enterprise, with readiness to evolve around difficult challenges that are incumbent in preparing for this digital transformation.

It is evident that a movement is emerging and the SMEs are shouting from their roof tops that they are better, quicker and responsive than the preferred tier one participants and are seeking equal opportunities in providing low risk and efficient services to government at all levels without arduous frameworks and pre-qualifications processes. This dynamism can only be celebrated and the winners of the awards exemplify this.

The awards could not have been possible without the help of the RICS and their forward thinking in engaging with BIM4SME. Alan Muse of the RICS commented; *“These awards were created to recognise and promote SME achievements and the great benefits of BIM in the industry today. BIM will drive the future skills agenda, something which RICS fully supports and hopes to continue to support through the BIM focused products and services it offers. For smaller companies, investment in technical skills such as BIM provide an opportunity to differentiate their business offering. This also continues our close association with the BIM4SME working group and our mutual undertaking to ensure that the SME sector is properly represented. Congratulations to all of the winners and a big thank you to everyone who participated in the awards.”*

This is a robust relationship and we look forward to this partnership blossoming into RICS BIM4SME Awards 2016.

ON THE NIGHT

On the night, Su Butcher of Just Practicing promoted the awards ceremony



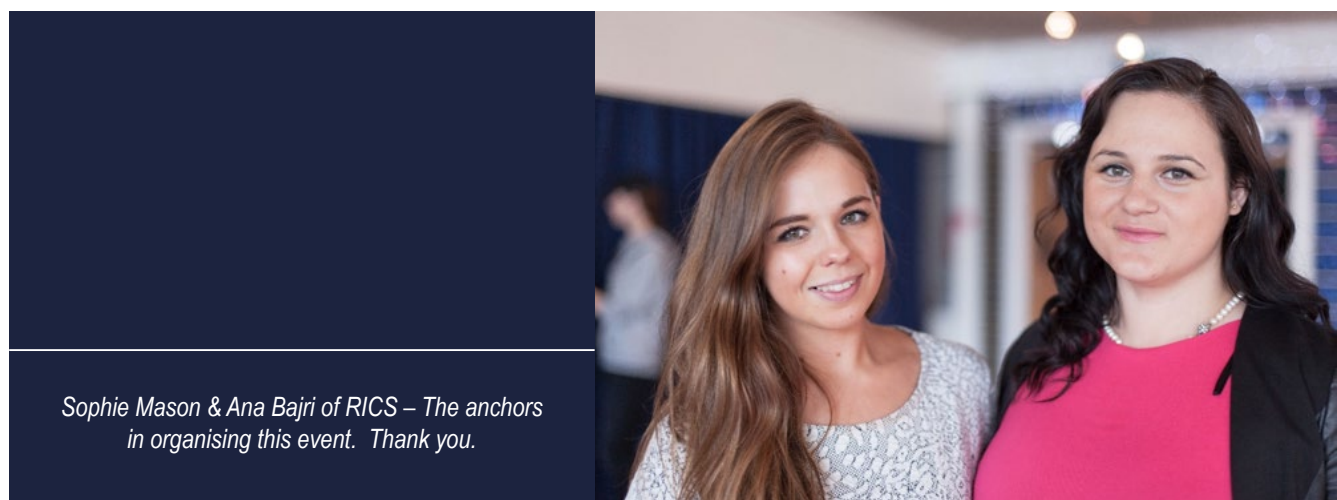
*Su Butcher of Just practicing with
Gail Williams of Michael Aubrey Partnership*

through social media tweeting and blogging as proceeding unfolded. This is an example of a SME that is empowering the sector by dove tailing social media with construction and is having a profound effect. This medium is proving highly significant in the sector and is starting to attest as a key tool in the formation of Digital Built Britain.



The venue for the RICS BIM4SME Awards 2015 has to be one of London's best kept secrets. The Westminster Boating Base sits on the North side of the river close to Pimlico Gardens, and opposite Embassy Gardens, one of the capitals largest current construction sites.

It was a perfect choice on a beautiful sunny evening to re-make old acquaintances and meet new connections. The proceedings began with Ana Bajri and Sophie Mason of the RICS hard at work providing finishes touches and being the anchors in organising this event.





*Stefan Mordue of the NBS -
The Master of Ceremonies*

Stefan Mordue from the NBS, and a dead ringer for a young Richard E Grant, would be our MC for the evening.

Stefan Mordue of the NBS - The Master of Ceremonies

The room filled, the Pimms, Fizz and the beer flowed with the buzz of voices. It was great to have the support of significant industry figures including Richard Saxon CBE, Chris Chivers, Vice President of CIOB, Damon Stevenson from Exactal the headline sponsor. The awards began with short speeches by several of our guests and sponsors and then we got down to the business of announcing our winners.

First were two awards for best BIM project presented by Damon Stevenson. The category had been split into two with awards for both small and medium sized enterprises. Bond Bryan were the winner for the medium sized practice with their Bradford College project. The small company award went to Howard Russell Construction for their Mash Purveyors project in Park Royal.



*Damon Stevenson from Exactal
the headline sponsor*

*Tim Platts of TPPS and Chair of
BIM4SME with Rob Jackson of
Bond Bryan Architects*



*Elaine Knutt and Co. of Atom Publishing
with Raj Chawla of nunelah and Vice
Chair of BIM4SME*



A popular choice for the best BIM blog was presented by our chairman Tim Platts, once again Bond Bryan Architects won. Rob Jackson's excellent, highly researched and tested pieces are probably some of the most read pieces about OpenBIM, COBie and IFC.

The next award was for the Best BIM Website and had a split of entries both from industry and journalism. The award was won by Atom Publishing for their BIM+ website and present by our very own Raj Chawla.

The Best BIM Newcomer sponsored by Middlesex University was presented by Dr Noha Saleeb from the university. First steps on your BIM journey are always tough and so Baxall Construction must be commended for their success in this category using KPIs on their Sussex Cluster Framework projects.

Innovation in BIM can be so overhyped so this next is, without doubt, a high accolade. The award for Best Innovation in BIM presented by Alan Preger of Newforma went to SpecifyIT for their innovations in structured product data.

Alan Preger of Newforma presenting to Darren Lester of SpecifiedBy
The award for Best SME Training Strategy was presented by Robert Klaschka, Comms officer for BIM4SME and went to Coombs Canterbury. They used a live project for training and adapted existing process as part of the BIM training.

Andrew Jenkins from Autodesk presenting to Imarati



Richard Saxon CBE closing the ceremony

The final award was for Best SME Engagement and Support Programme and was presented by Andrew Jenkins from Autodesk and was won by Imarati Engineering & Consultants working in the United Arab Emirates (UAE) and the surrounding region. The judges commented that their project was, *'a well articulated report that captures the holistic use of BIM on projects and not just in design.'*

Richard Saxon CBE brought the ceremony to a close with a lucid speech about the place of SMEs in the industry before Stefan invited everyone to have a few more drinks and then move to the dance floor bringing a great end to a very successful first BIM4SME Awards which year on year will only get better.

BIM4 SME Press Release
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www.bim4sme.org

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BIM Community Announcements

NORTHERN IRELAND BIM HUB WEB UPDATE

Northern Ireland BIM Hub have updated their pages

Northern Ireland BIM Hub published:

- NI BIM Hub Steering Group Directory
- full list of Hub Steering Group Current Members
- the summary of Steering Group Up-Coming Events
- Notification for the implementation of Building Information Modelling in Northern Ireland Government construction contracts
- BIM Collaboration in Northern Ireland chart
- Photos from our Award Winning 'Build Newcastle Live' team submission on 20th March.



www.bimtaskgroup.org/bim-regional-hub-northern-ireland

Obituary



The Task Group were sad to hear of the death of our dear friend, David Bucknall.

David was former chair of Rider Levett Bucknall, chair of the RICS QS professional board, and a real supporter for industry change. Our thoughts are with his family at this sad time. We are sure David is smiling down on us all.



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