

Spotlight On: David Miller Architects

BIM 2050 Building our Future

p33 arup BIG Bang BIM

#### 43rd Edition BIM TASK GROUP NEWSLETTER

September 26th, 2014



View the latest Round the Parish News



Winner: RIBA Enterprises

## RIBA 姆 Enterprises









#### DEPARTMENTAL ENGAGEMENT AND SUPPORT OFFICER ACTIVITIES

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

#### Peter Vale has joined to support HA and HCA - WELCOME!

#### **Recent Highway Agency (HA) activities**

- A very positive meeting held with HA Sponsor
- Attended the BIM Programme Board Meeting
- Reviewed and commented on the HA BIM Blueprint document which aligns BIM with their Asset Capability Strategy
- Site meeting with the Asset Management Office at an early adopter BIM project to review what they have done, and see how they can support each other to deliver coordinated information from Major Projects to Network Delivery and Development
- Meetings with HA and Bentley to develop COBie workshops

#### Recent Homes and Communities Agency (HCA) activities

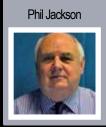
- A very positive meeting held with HCA representatives
- Development of questionnaires to assess providers BIM Maturity and requirements which will be used to support the creation of a BIM Strategy for HCA













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#### DEPARTMENTAL ENGAGEMENT AND SUPPORT OFFICER ACTIVITIES

#### Defence Infrastructure Organisation (DIO)

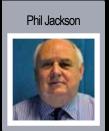
- DIO's first Supplier BIM Special Interests Group meeting takes place on 22nd September
- A number of DIO BIM Trial Projects are well under way
- DIO's Preliminary EIR is starting to be used on projects













#### DEPARTMENTAL ENGAGEMENT AND SUPPORT OFFICER ACTIVITIES

#### **Nuclear**

#### Philip Attended:

- MPA Prestige Lecture Sir Neville Simms Chairman Thames Tideway
- ICE Fellows Breakfast Briefing Ailie MacAdam Bechtel
- ICE State of the Nation Launch at City Hall London
- Excellent presentation by John McNamara Nu-Gen at the North West Nuclear Forum
- Meeting with:

Hargreaves (M + W Group) re BIM and Nuclear Industry Council - Cost Reduction Group

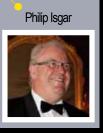
Constructing Excellence BIM Group and Manchester Construction Group Laing O'Rourke in support of Cost Reduction Report Sellafield Ltd and NNL on BIM through Innovations Framework

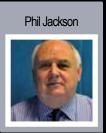
- Supply Chain discussions with Capita, NNL, Waldeck, Amtech and MACE
- Positive support from BIS, NNL, NIA and Core Team during the period.
- Attended North West Nuclear Forum
- Gave a presentation on BIM for Nuclear to NuGen in London















Mark Bew BIM Task Group – Chair

- Met with a number of Technical Systems vendors
- Reviewed Houses of Parliament BIM Strategy
- Discussed DBB with Network Rail, Arup, Laing O Rourke and other stakeholders
- Various BIM Security meetings and initiatives
- Met with UCL Computer Science Lead
- BIM4Regs Workshop
- BTG Website update
- BIM4MANU Workshop
- TSB Project Reviews
- Level 3 Strategy and Business Case Development
- BS1192:4 Review
- PAS for Smart Cities development
- dPow project procurement process, final winners are RIBA Enterprises



## David Philp BIM Task Group – Head of BIM

- Chaired BIM4 Steering group meeting web link to the BIM Communities page and charter can be found [LINK]
- Chaired MSBF working group
- BIM2050 report launch and Fast Forward 2050 event [LINK]
- Task Group received "Highly Commended" at the Construction News 2014
   Awards for BIM Initiative of the Year award congrats to the worth winner DMA.
- Chaired BIM4Clients working group
- Keynote at a fantastic "BIM Show live Scotland"
- Level 2 Core Team and Support Officer meeting
- Update and Trimble / Tekla working group
- Various meetings with BIM4 communities of practice
- · Various student, academia outreach activities



Keynote at the ICT for Construction: Politecnico di Milano



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

- Met with members of the BIM Task Group and Support Officers, as a group and 1-2-1 to update on department BIM activities and progress
- Attended the Government Construction Summit as part of the BIM TG, also presented during the day.
- Held a meeting with UKAS to discuss Accreditation
- Chaired the 3rd meeting of the BIM Stewardship Group, which had good attendance from the Departments
- Attended a BIM knowledge sharing meeting with Houses of Parliament and Manchester City Council.
- Met to discuss new BIM Task Group website development and launch date.
- Presented a Level 2 BIM update to BIM4 Clients working Group at BIS
- Hosted a workshop to discuss Learning Outcomes Framework (LOF)
- Met with Civil Service Learning to discuss training
- Met with BIM leads from Highways Agency, Education Funding Agency and HS2 to update on progress
- Monthly departmental review with Cabinet Office to prepare a report for the next PEX-ER.



#### Rob Manning BIM Task Group

- Presented on the content of PAS 1192-3:2014 to the CIC East Midlands BIM Hub
- Posted draft GSL Procurement documents on the Task Group Labs of the BIM Task Group website. Documents identified to the GSL Stewardship Group for carefully considered adoption and trial/review with framework suppliers.
- A digital tool for building information modelling TSB Assessors received bids from RIBA Enterprises and BRE on 31stJuly. Scores were returned from TSB Assessors on 12thAugust. Provided the assessor's feedback to the applicants, received responses from applicants and prepared for interviews with the bidders on 4thSeptember. Interview results were forwarded to the Innovate UK funder's panel for the decision to enable notification of the successful bidder by 12th September. Notification of the successful bidder has been delayed by political circumstances until 19th September but thereafter we are aiming to finalise contract signature to enable the contract to start by at least 13th October as planned.
- bsi consultation on the BIM Learning Outcomes Framework v2 the link was e-mailed on 29th August to Education for the Built Environment (E4BE), Engineering Council, Royal Academy of Engineering, CIC BIM Forum, BIM Stewardship Group, BIM Technology Alliance and the BIM Task Group. bsi had started the consultation with their B/555 group. Social media also used on 4th September to publicise the consultation which closes on 23rd September.
- Presented on the content and purpose of the BIM Learning Outcomes Framework
   v2 to E4BE and requested input to the bsi consultation process.
- Met with Mr Brian Atkin who is the technical author selected by bsi competition to produce an update of BS8536:2010 Briefing for Facility Management – Code of practice to include briefing to design and construction teams for the provision Government Soft Landings, Performance Evaluation and Building Information Modelling. Discussion covered preparation for the first Steering Group Meeting on 26th September 2014. Update is scheduled for publication in June 2015



### MAdam Matthews EU & International Relations

- Developed two week tour of Australia for Mark to showcase the UK BIM programme (9-18th Sept) with buildingSmart Australia, UKTI, federal and state level public client and policy meetings plus private sector briefings.
- Planning for Singapore trip to an Asia region conference and international government meetings 13th-14th October
- Produced draft work programme and budget for review with EU BIM Network
- Attend ISO PAS1192 Part 2 working groups.
- Chaired development of Learning Outcomes Framework version 2 (consultation closes 23rd September)



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## BIM: PEOPLE MATTERS

David Miller Architects w i n s a 2014 Construction News Award

CONGRATULATIONS TO DAVID AND HIS TEAM! In this edition we visit David Miller Architects (DMA) in their London office, discussing how BIM has helped transform their practice and stimulate growth.

01

Congratulations on winning the Construction News (CN) BIM Initiative of the year award. Can you tell us a bit more about your entry?

Thank you, we were very surprised, but absolutely delighted!

In the entry we described our office and how we have structured it around a customised BIM workflow, both physically with the studio environment and virtually with the systems and processes we have put in place. BIM has been at the heart of the decisions we have made as we have been growing the practice. It may have been that which caught the judges' eye, the ordinariness of our approach, business as usual, but enabled by BIM.



David Miller, Practice Director and Principal Architect and Fiona Clark, Practice Director discuss efficiency and reform in their digitally enabled practice

#### Has BIM made you more efficient as a practice?

We saw anecdotal efficiencies from our early 'lonely BIM' days. However we decided to measure improvements against costs in order to really understand the ROI. We used metrics from our audited accounts and found that business improvements included; higher levels of efficiency demonstrated by a year on year increase in turnover of 24% and higher value, more complex projects being won and delivered. Probably most importantly for us is that 88.5% of our business comes from repeat clients demonstrating high customer satisfaction levels. We believe this is due to the more accurate and complete information that we are able to supply. We are absolutely sure that the numbers show that the Government's targets for 2016 are not only achievable, but make economic sense.



#### Do you think BIM is helping clients realise their strategic outcomes?

Yes but it has taken a little time. Our early efforts were going into coordinated production information, so it was us and the contractor who were enjoying the benefits. Sure the projects were being de-risked, but for the client we were just doing what they thought we should be doing all along. More recently our clients have been seeing real benefits at the beginning and the end of the project. In particular, we have found that rapid 3d feasibility studies that generate information to populate the cost model have really caught people's imagination. The ability to test the capacity of a site and see the cost model change in real time is very powerful and is enabling rapid decision making.

## 04

#### As an early adopter of BIM has BIM helped enable business growth?

We started our journey at the beginning of the recession and we were a team of four over a tanning shop, we are now twenty two people and we are over a camera shop, so we feel we have definitely gone up in the world! BIM has driven that growth, firstly by ensuring our product; that is the information we produce; is more complete, coordinated and accurate. This is particularly important to a young practice if they are to be taken seriously. Especially when we were competing against much larger and more established practices. It's also allowed us to offer additional and enhanced services that have helped differentiate us in a difficult trading environment.

#### What have been the challenges in your journey?

The same as everyone else, 'change management'. However we were very lucky to be a small practice growing, and that allowed us to upskill the whole office in one go then build on it incrementally as the practice has grown. We are aware that this is a luxury not everyone has had. Investing in the tools, technology and training isn't difficult, but ensuring that you are going in the right direction and that you are taking everyone with you is. The clear direction set by the Task Group gave us a clear roadmap and the website has been an invaluable resource throughout. Monitoring and measuring improvement has been important to us and this is where having 'critical friends' has been invaluable. We have had great advice and guidance from people like David Philp, Tom Taylor and Charles Rich, people with enormous experience who have challenged us and helped us find our direction. Similarly external measurement and accreditation has been important. We have undertaken an external BIM audit which allowed us to identify gaps in our capability and allowed us to put an action plan into place. In the last year we merged our ISO 9001, ISO 14001 and project checklists and trackers into a single Best Practice Management System with our BIM workflow at its heart. This took a real effort, but we believe it will have been worthwhile.

## 06

#### Are you perceived differently as a business through your digital capabilities?

Possibly, and that can be good and bad. It's important to us to be seen primarily as capable, creative architects, who are enabled by technology. Sometimes with the current enthusiasm for BIM it can be difficult to get that balance right. We are finding that with the current lift in the economy our design led clients are coming back to life and that's allowing us to share BIM with a new audience.

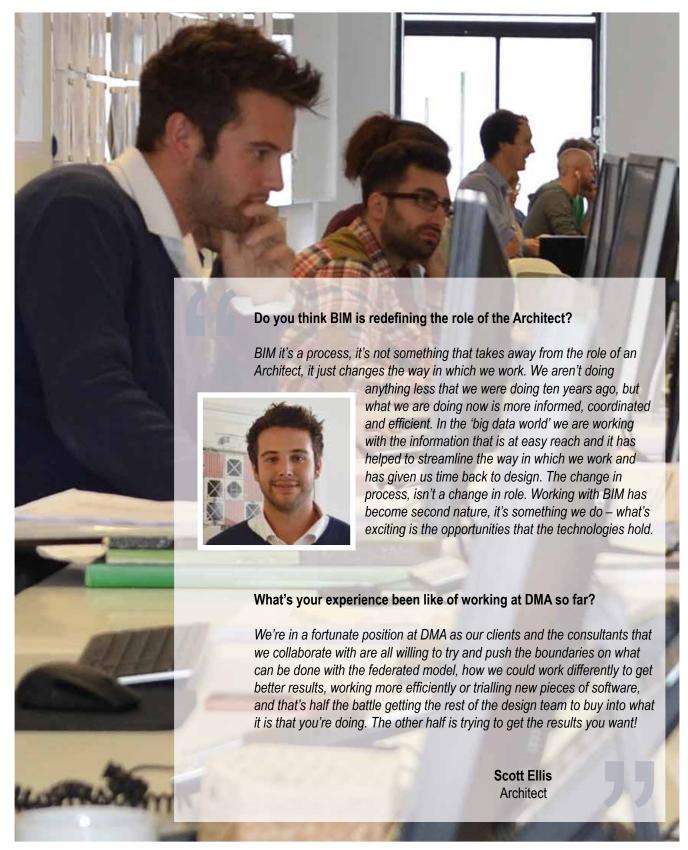
#### Has this journey changed the culture in your office?

BIM has been a catalyst for us to put a number of initiatives in place that have become part of our DNA. The structured approach of BIM and the quality control it has given us has allowed our young, talented team to take more responsibility earlier in their careers. All of them are client facing and this has empowered them and been great for team morale. The shared model approach to all our projects has created a collaborative spirit within the team both at a project and office level. The team is very supportive of each other and much of the upskilling is through informal peer to peer learning. Someone will champion a different part of the process then share their knowledge, the team really understands that the office is greater than the sum of its parts.



- 1. Anna Davies Assistant Director
- 2. David Miller Practice Director and Principal
- $3. \ \ Kristofer\, Adelaide Senior\, Architect$
- 4. Fiona Clark Practice Director
- 5. Katie Wood Architectural Assistant
- 6. Katy van Geffen Architectural Assistant
- 7. Oz Nwachukwu Architectural Assistant
- 8. Andrew De Silva Assistant Director
- 9. David Burke Architectural Assistant
- 10. Lucy Dickson Architectural Assistant
- 11. Lauren Westpfel Architectural Assistant
- 12. Adam Atraktzi Architectural Assistant

- 13. Tom Murphy Architect
- 14. Keji Majekodunmi Architect
- 15. Rachel Stevenson Senior Architect
- 16. Andy Wood Architectural Assistant
- 17. Jessica Moore Practice Administrator
- 18. Scott Ellis Architect
- 19. Hiten Gandhi Assistant Director
- 19. Hiteri Gariurii Assistanti Director
- 20. Haroula Aletra Davidson Architect21. David Mimran Architectural Assistant
- 22. Edwina Collins Business Development Manager
- 23. Baffie the other short Scotsman in our life





#### Your time at DMA

Developing a fully shared building information model with professionals from a wide range of disciplines has stood out to me as the most exciting



thing about working at DMA. Seeing how a fully coordinated BIM can translate into information on site where the design connects and seamlessly fits together has furthered my interest in how BIM has the power to manage complexity, and better prepare a team for the challenges of a construction site.

> **David Mimran Architectural Assistant**



#### Your time at DMA

For me, working at DMA represents a refreshing step forward. Having been fortunate to work for many different types of companies (big, small, local,



international), it's great to be somewhere that has actually just pulled the future towards themselves instead of just permanently preparing for it. Most other places treat Building Information Modelling like 'the new Sustainability'. The funny thing is that they are right. Both involve working in a smart way, both involve thinking about the building as more than just a list of drawings and both involve a holistic approach to feasibility, analysis, design, detailing, construction, cost, life cycle, etc. All in the name of an efficient and beautifully built environment.

> Adam Atraktzi **Architectural Assistant**

#### Your time at DMA

I started off at DMA a year ago doing an Apprenticeship as the Practice Administration Assistant and have progressed within my role to become



more involved with the management of the BIM licences and IT infrastructure within the company. I'm still progressing, but having known nothing of what BIM was and what it involved when I started, I have now gained an understanding and hope to learn more of what BIM can do in the future.

Jessica Moore
Practice Administrator

#### As an early adopter of BIM has BIM helped enable business growth?

Definitely, after the initial period of investment and steep learning curve, the quality of the output at all stages of the process has meant that 88.5%



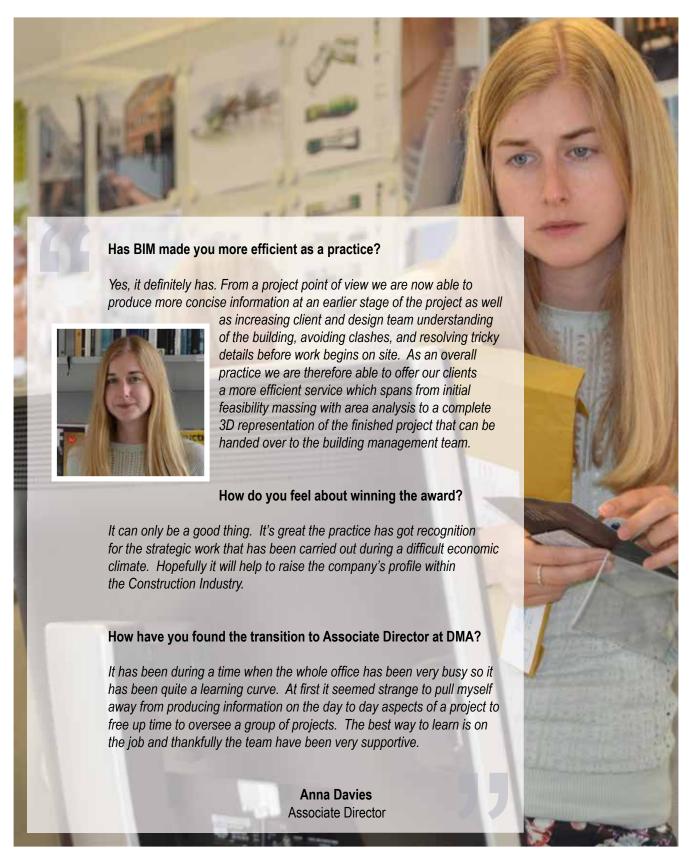
of work is repeat business which has allowed us to invest further in the business which has therefore led to its growth.

#### What is particularly challenging about your role?

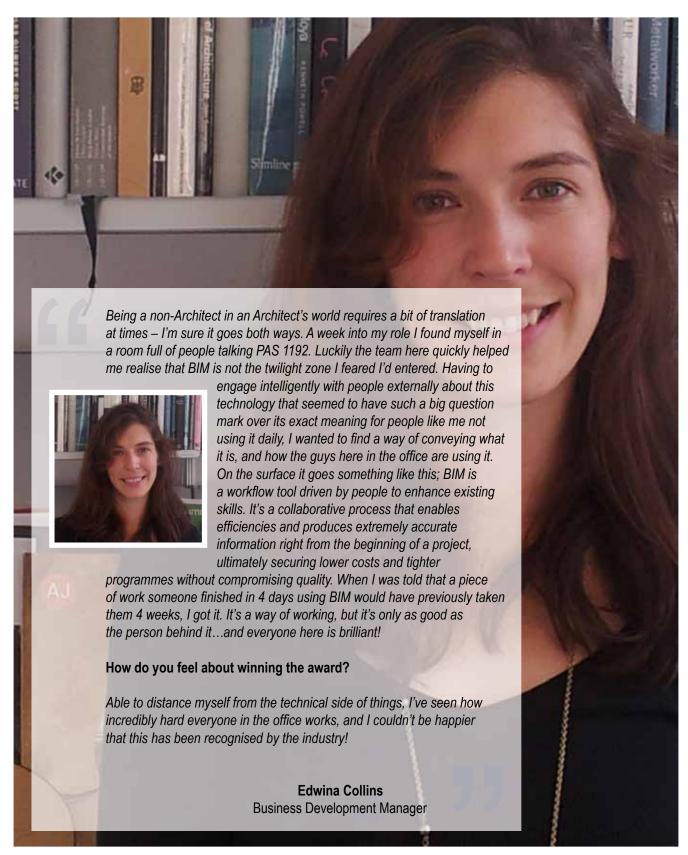
Managing a number of projects, as well as being involved in business growth and mentoring in the office can sometimes mean that you end up being the bottleneck. Managing the team so that you avoid

this happening is key to both keeping the projects moving forward, whilst also sharing valuable experience with the team.

Das Associate Director









#### Do you think BIM is redefining the role of the architect?

Hopefully it will and I think the profession currently has a great opportunity, but it needs to move more quickly. On the sort of projects that we work on, the architect has traditionally been the co-ordinating consultant. In a BIM environment the architect is still well placed to take that role, so long as they have the BIM skills, as the project budgets can't support too many layers of consultants. It is also possible to imagine a three tier profession developing. With a further polarisation of the concept architect and delivery architect, but with a much stronger middle ground of full service architects who are BIM enabled with excellent design skills, offering a client a more joined up and better value service. That is where we want DMA to be.

## 09

#### How difficult did you find level 2 to implement?

We are, of course only at Level 1.9 until the last few pieces fall into place. However we believe we are 'Level 2 ready'. We have been through a lot of experiences over the last few years, gone forwards and backwards and made mistakes. Consequently we probably understand our business much better. However I wish we were starting out now with the guidance and clarity now available. With a little effort it would be possible to collapse the last few years' learning into a few weeks.

#### Did the BIM Task Group help in terms of making it happen?

We all need clarity and we all need to be going in the same direction, the Task Group has without question made that possible, it has been absolutely invaluable. The BIM Task Group web site has been the 'single source of truth' for us during our evolution.

11

#### So where is the trophy taking pride of place?

On the front desk (next to the toilet key, so a prime position!)

## 12

#### What's next in the DMA journey?

We are seeing a real lift in our work load at the moment with some exiting new clients and much bigger projects coming through. We have also just won a place on a Government backed Growth Accelerator programme, so our intention is to continue controlled and managed growth while maintaining the vibrant collegiate atmosphere that we are currently enjoying in the office.

more of David Miller Architects:

WEB www.david-miller.co.uk

TWITTER @DMA\_Architects

PREZZI [LINK]



## 1m £ Innovate UK C o n t r a c t

To help digitise Government construction projects

Innovate UK has awarded a £1m contract to **RIBA Enterprises** to develop a prototype digital tool that is set to transform the procurement of buildings and infrastructure at home and abroad.

#### INNOVATE UK TSB PRESS RELEASE

22 September 2014

Free to use, the tool will exploit the standards being made publicly available for **Building Information Modelling (BIM)**. Regarded as a *'game-chang-er'*.

BIM involves the sharing of three-dimensional data and associated asset information by all responsible for the design, construction and operation of buildings and infrastructure.

**RIBA Enterprises** has been awarded the contract following an open competition launched in February 2014 and run in partnership with **the Department for Business (BIS)** and the joint industry-government **BIM Task Group**.

**Building Information Modelling (BIM)** involves generating a visual model of a building or piece of infrastructure which also manages data about it during its entire lifecycle. Typically BIM uses dynamic building modelling

By developing this digital tool, procurement of construction



projects here in the UK and – eventually – across the world will be

transformed, both in terms of quality and price

- Iain Gray Chief Executive of Innovate UK

the completion of the Digital Plan of Works (DPow) and



Classification
System will
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2 BIM suite
but help drive
the take-up of

BIM, support exploitation of the standards and ensure that the UK remains at the vanguard of a digital transformation in the built environment

> - David Philp Head of BIM UK BIM Task Group

software working in 3D, 4D (time) and, increasingly, 5D (cost) to increase productivity and efficiency, provide better value for money design, procurement and construction stages, and to reduce running costs after completion.

'By developing this digital tool, procurement of construction

projects here in the UK and – eventually – across the world will be transformed, both in terms of quality and price,' said lain Gray, Chief Executive of Innovate UK.

'This will place the UK in a global leadership position and provide overseas growth opportunities for the industry.

The competition was of a very high standard, and while RIBA Enterprises has been awarded the contract we would like to thank and congratulate all participants for their efforts.'

**RIBA Enterprises** will now develop a tool which will be subsequently developed as free-to-use, open-source product to be adopted on all central government construction from 2016.

David Philp, Head of BIM with the UK BIM Task Group commented that "the completion of the Digital Plan of Works (DPow) and Classification System will not only complete the Level 2 BIM suite but help drive the take-up of BIM, support exploitation of the standards and ensure that the UK remains at the vanguard of a digital transformation in the built environment."

The competition took place as part of the government's SBRI programme which encourages SMEs or other organisations that can help find solutions to government procurement challenges.

RIBA Enterprises will complete the final two aspects of the government's Level 2 BIM package, namely the digital Plan of Work (dPoW) and also Classification.

The above article is a reprint of Innovate UK news, published on their website on 22 Sept 2014 [LINK]



## CIC BIM 2050 Group A Report on our Digital Future

## CIC BIM2050 Group publishes Built Environment 2050: A Report on our Digital Future

#### CONSTRUCTION INDUSTRY COUNCIL PRESS RELEASE

1 September 2014

**The BIM2050 Group**, which was formed by **the Construction Industry Council (CIC)** in September 2012 and comprises 18 young construction professionals under the Chairmanship of **David Philp**, **Head of BIM**, **HM Government UK BIM Task Group**, has today published its much anticipated Built Environment 2050: A Report on our Digital Future.

The report, a compilation of essays authored by BIM2050 work stream leads, is the result of the group's research into what an interdisciplinary scope of work may look like as construction technology develops to BIM Level 3 and beyond, towards 2050. It provides an assessment of the current situation and makes proposals for future development. The focus of the report rests on three key areas – education and skills, technology and process and the culture of integration. It highlights the risks and challenges, and the opportunities and benefits that come with large scale innovation and game changing new technologies.

Speaking on publication, **David Philp, BIM2050 Chair** said: "The digital economy is fundamentally transforming the way we live and work and the UK construction industry will not be immune. It is essential therefore that organisations, academia and individuals are prepared to adjust to potentially radical changes, they must question if they are moving quickly enough to make the necessary adaptations, which are often complex. This report envisions what the construction industry may be like come 2050 against the backdrop of a digitised built environment and what interventions should be considered if they are to be future-wise and seize the opportunity that an innovative and technologically advanced future offers."

**Neil Thompson, BIM2050 Vice Chair** added: "The economic environment is rapidly shifting, and whatever the outcome, the construction of social and economic infrastructure will remain a core activity for firms and governments. This report looks at the role of digital and integrated technology, and its impact on the built environment. Future leaders in construction need to be ready to adapt to the turbulent and disruptive nature of innovation. The prediction of the future is not a feasible subject to report on, but combining emerging technologies with the economic impact of past, now mature technologies, we can highlight what industry and academia need to be aware of when thinking about the future of their respective organisations."



## BIM 2050 KPMG CIC BIM2050 / KPMG Building our Future Conference

The Construction Industry Council (CIC) BIM2050 working group **[LINK]** and KMPG "Fast Forward 2050" hosted a "Building Our Future Industry Conference" on the 2nd September timed to accord with the launch of the group's report **[LINK]** 

Over 150 professionals who characterized every aspect of the construction sector attended the launch event including many senior members of industry and key academic figures.

**Tony Burton, CIC Chairman** who opened the conference noted that "*Today's* event is a chance to share and debate the views of sector leaders and experts on the future skills requirements for the industry. We have yet to unlock the true potential of our sector and make it a place of choice for future talent. We must achieve that aim."

Speaking on behalf of the **BIM2050 Group**, **David Philp**, **Chair** said that "The digital economy is fundamentally transforming the way we live and work and the UK construction industry will not be immune. It is essential that organisations, academia and individuals are prepared to adjust to potentially radical changes. They must question if they are moving quickly enough to make the necessary adaptations, which are often complex."

## **BIM2050**

**Philp** says that the report has been well received and has been shared across the globe with especial interest from academia who were interested in the "feedback cycle wave" concept. He also noted that the report had already served one of its primary purpose "to kick-start an examination on a future-wise digitised sector beyond the often near sighted deliberations"

**BIM 2050's vice chair Neil Thompson** highlighted the disparity between the outlooks of the data-sharing generation entering the industry, and the highly territorial sector they find themselves in.

"Young people today habitually use the digital space and share information, but the danger is they come in and they're alienated – the industry is still tribal and defensive. The industry needs to recognise that danger," he said. He also signposted a dangerous gap between academia and industry practice. "The edge between academia and the industry needs to blur," he reasoned.

The KMPG team undertook a future gazing exercise, testing a series of "I believe" future assertions that looked at themes such as nano-corporate. Scott-James Ely, Skills & Employment Strategy Manager for HS2 and Andrew Wolstenholme, Chief Executive of Crossrail provided key note speeches. Wolstenholme stated "It's really important that the industry indulges in opportunities like this to think about where we need to get to" "How do the different parts of the industry, many of whom are world class, leverage output as an industry, not just the individual companies?



A selection of the BIM2050 Team "What we're trying to do at Crossrail is to link the vertical-ness of our supply chains, right across from government funding departments to universities, in order to contribute to this industry issue of going towards a digital economy."

A panel session chaired by Professor Tim Broyd (UCL), with Mike Putnam (Skanska), Alan Muse (RICS), Simon Rawlinson (EC Harris), Rachael Atkinson (BIM2050, Mace) emphasised the challenges and opportunities of a digitized sector and closed out a successful conference.



Andrew Wolstenholme, CEO Crossrail, helping launch the report



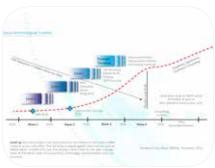
Full house at the BIM2050 / KPMG conference















#### Introduction

"The construction industry contributes almost £90bn to the UK economy (6.7% of the total) and its value comprises of 280,000 firms employing 2.93 million people, most of that employment is skilled labour. What will happen when we only need half of that labour?"

Professor David Philp - BIM2050 Group Chair

What do you envision the construction industry will be like come 2050, against the backdrop of a digitised built environment? This was the challenge set to the BIM2050 Group, an initiative formed via the Construction Industry Council, and made up of eighteen early professionals representing eleven institutes.

The group launched their mission to a full-house on the 16 of January 2013 at the Building Centre in London and announced that they were "seeking to develop a culture which enables a digitally integrated approach to positively impact our built environment".

The group is also a vehicle to pass the baton of digital reform to the next generation of young construction professionals, providing them with a voice to challenge existing ways of working and to deliver better results for the public and UK plc.

A starting point for the group was contributing to the Industrial Strategy for Construction: 2025, and the report announced that we are going to be "an industry that is

efficient and technologically advanced". Mark Bew, Chair of the BIM Task Group notes that "construction is the last bastion of the analogue world"; the group saw the Level 2 BIM programme as a key enabling strategy, not only as a good basis from which to start, but also to look towards Level 3, and beyond.

We want to challenge those reading this report to be intentionally disruptive; to help them see what a digitally integrated future could look like; to enable them to shape the opportunity and avoid the risks of doing nothing. Ultimately, it is hoped that it could become a framework for industry to create a pathway to future, more desirable outcomes. Hopefully we might even create a new innovative industry, whilst turning the traditional social image of construction on its head!

Future gazing is notoriously difficult, however there are trends emerging that we can use to help predict change over the next couple of decades. The construction sector is undergoing a tremendous technology-led revolution, and is moving towards the world of digital transactions and queries. This transformation of the construction industry to a digital and innovation based sector will have profound changes, as explored in this report.

"Economists have estimated that the UK market for BIMrelated services will be an annual £30bn by 2020 in a global context"

Organisations will need to adapt quickly to radical changes, and must question if they are moving quickly enough to make the necessary adaptations, which are often complex.

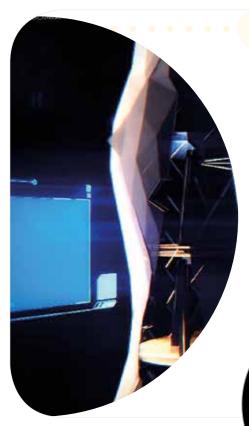


need to manage our future digital construction sector more effectively.

We also need to assess what these technology-based interventions will mean to process; and the impact on the construction professions, especially the next workforce, generation Y

Despite a mild dose of culture shock, the prognosis for data-led construction, based upon the Level 2 programme, is shaping up to be a very healthy one. We hope you enjoy the report and that it will help you discover a future vision of the built environment and a basis to create a sound strategy to help get you there.

If we aim for a performance based predictive data industry based on telemetry and social interactions — our future digital built environment will have unbounded potential.



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#### Background

It was against this backdrop that the BIM2050 Group was launched, with the aim of enabling early construction industry professionals to make a contribution to the pressing issues of today. Their ambition is to lead an industry that is fit for purpose in a fast paced, digital and technologically advanced global economy. The group is hungry for changes in cultural collaboration, and aims to set itself apart from the current construction industry climate and focus its research outside of the sector, to see what is in store post-2016 and leading towards 2050.

Over the last 20 months the group's main focus has been to drive an open approach to collaboration and technology, while remaining informed and aligned to the key individuals and industry bodies, which are linked to the Government's objective of achieving Level 2 BIM, on all centrally procured projects, by 2016.

One of the group's main drivers is to ensure that we promote construction as the industry of choice for future talent. Therefore it is crucial we remain active at industry events and closely connected to those leading these processes. We have attended both national and international events to ensure this message is heard.

To download a free copy of the 2050 Report visit
BIM Task Group website [LINK]

The group's ambition is for an industry which positively embraces technology and the potential of data transaction, in order to help improve performance of our assets and meet client expectations. We want to build on the work of the BIM Task Group and develop it further, looking into the future to 2025 and onwards to 2050.

We have categorised the industry and its operation into three work-streams:



The aim was to focus on these three areas to achieve the outcomes identified above.

Initially we needed to understand where the industry stood in this context. We began by researching where the lack of knowledge or innovation existed, and established that an awareness of potential future impacts was quite dispersed. This led us to focus on particular groups and associations. In 2013 we were involved in a series of events connected to Higher Education including UCL and MIT and we had close ties to the BIM Academic Forum. This linked back into some of the work we were doing downstream into junior and secondary schools.

## **ARUP**

# BIM Tool at CERN Arup develops BIM tool for future particle accelerator at CERN

**Arup** has been appointed by **CERN** to undertake conceptual design studies for both the tunnel engineering and geotechnical aspects in the scope of the **Future Circular Collider (FCC)** study **[LINK]**.



As a response to the recommendation made in the European Strategy for Particle Physics in 2013, **CERN Director General, Dr Rolf Heuer,** announced the launch of a study in a global context, with an emphasis on next-generation proton-proton and electron-positron high-energy frontier particle accelerators.

To provide an efficient and cost effective decision aid for the feasibility assessments of the particle accelerator infrastructure, **Arup** has been working closely with **CERN** and project partners **Géotechnique Appliquée Dériaz S.A. (GADZ)**, to deliver the first phase of the conceptual design study.

A key element of this stage has been the development of an early stage Building Information Modelling (BIM) tool to inform performance, risk and cost optimized options for a 100 km long, circular particle-accelerator tunnel.

www.bimtaskgroup.org | @BIMgcs



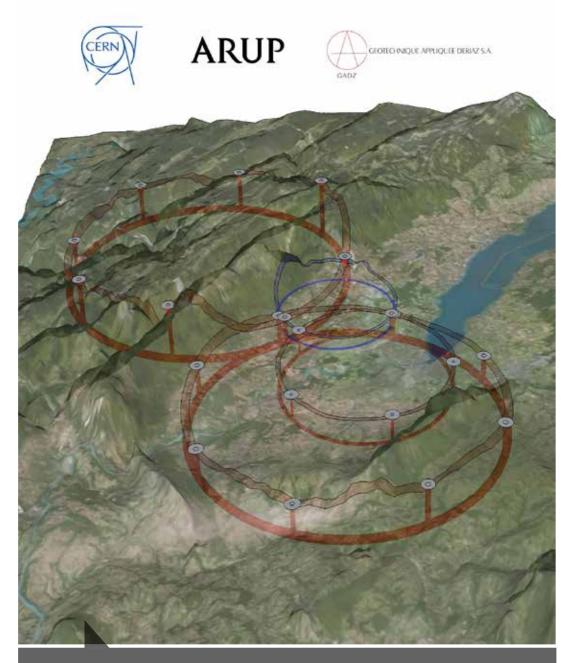
environment incorporating multiple 3D datasets and key decision aid tools.



**Arup** has developed a dynamic Web-based GIS application, which integrates numerous existing geological data sources, incorporating the geological, tunnelling and particle collider system constraints in a user-friendly digital environment.

Example screenshot of the BIM tool dashboard. A user-friendly digital

The new accelerator tunnel would be nearly four times the size of the present Large Hadron Collider (LHC). The studied infrastructure would be able to host frontier particle colliders delivering unprecedented intensities and energies to the worldwide particle physics research community throughout the twenty-first century.





Geospatial mapping of proposed tunnel layout.

View intractive PDF (LINK)







The above article is a reprint of Arup news, published on their website on 09 Sept 2014 [LINK]





BIM4SME continues its relentless work to reach out to the thousands of SMEs that will be impacted by BIM. One new initiative is its BIM Clinics which now run regularly to coincide with each Core Group meeting and have now been held at Newcastle, Leeds and Manchester with the next Clinic due to be held in London in conjunction with the SE BIM Hub.

At the most recent event in Manchester the following was produced by one of the attendees and, purely unadulterated, wanted to share this with the community to illustrate that at least some of the efforts of the countless volunteers and advocates in each of the BIM4 groups are appreciated! Tim Platts, chair BIM4SME:

#### Behind the scenes at BIM4SME

I recently attended an event organised by BIM4SME at Manchester Town Hall, the event hosted by members of the BIM4SME core team, invited companies to attend a 'BIM Clinic' to come along and ask questions and seek help and advice around implementing BIM within their organisation.

The event itself was mainly dominated by discussions around how BIM would affect a small Building Services design and build contractor. With the contractor outlining their position and the BIM4SME members and other attendees offering advice and support.

A very useful event for both people new to BIM to find out more and for others to build connections with peers and businesses.

Following the BIM Clinic the BIM4SME core team were kind enough to invite me to attend and contribute to their quarterly steering group meeting. This meeting was mainly an organisational meeting setting out where the group are going, future events, and generally outlining how they provide support to the growing number of SME businesses adopting BIM across the construction industry. What struck me following this meeting was that, although I like to think I keep my finger on the pulse with regards to activities in the BIM world, the good work being done by BIM4SME and other groups in the BIM4Communities seems to be going largely unnoticed (by me at least).

What was refreshing about this event, and subsequent meeting, was that in a world dominated by software and service providers all trying to sell you their 'BOX of BIM' to satisfy all your BIM needs, here was a group of people drawn from different parts of the industry, giving up their time to help and support the industry in their adoption of BIM. All this on a voluntary basis, with no hidden agenda and no sales pitch for the latest and greatest BIM toy at the end.

#### So Who are BIM4SME?

Following the release of the Government Construction strategy in 2011 which first mentioned the governments ambitions to have BIM implemented on their projects, the cabinet office formed the BIM Task Group. Together with the Department of Business, Innovation and Skills and the Construction Industry Council set about a program of helping the construction industry achieve this goal. In their own words:

'The Building Information Modelling (BIM) Task Group are supporting and helping deliver the objectives of the Government Construction Strategy and the requirement to strengthen the public sector's capability in BIM implementation with the aim that all central government departments will be adopting, as a minimum, collaborative Level 2 BIM by 2016'

Part of the work done by the BIM Task group was to set up the BIM4Communities, these separate sub groups are tasked with guiding and supporting certain areas of the construction industry. There are many different BIM4 groups in this community and you will probably find at least one group that relates to your particular interest in the construction Industry, be it surveying, water, infrastructure etc.



Still to be added: BIM4Health and BIM4Collaboration

The BIM4SME group is chaired by Tim Platts and the core team is made up of representatives from many different sectors of the construction industry including Architects, Engineers, Manufacturers, QS and project management, contractors etc. All from Small and Medium enterprises working in the construction industry and all with practical experience implementing and delivering projects using BIM. Inspired by the Open and Collaborative ethos of BIM these people aim to provide assistance and guide the SME community as the wider construction industry embraces BIM. Their core goals are outlined on the BIM task group website **[LINK]** 

#### What BIM4SMEs want to help with:

- Raise awareness of BIM within the SME marketplace
- Ensure SMEs understand the requirements of Level 2 BIM relevant to their role in the supply chain and relative to the Govt data drops
- Demonstrate the value proposition / business benefits to the SME: better efficiency, better information and better decision making
- Make sure the SMEs understand the risks of doing nothing with regards BIM implementation
- Help SMEs get ready for the Level 2 switch over: where they are and what next?
- Produce simple guidance around the BIM process (PAS1992-2 and CO-Bie Uk)
- Ensure that guidance is in simple English and suitable to their business lens

From seeing first-hand the hard work that goes into developing these communities and providing resource and a focal point, I would urge people within the industry to engage and interact with these groups to help further your own understanding and the understanding of the industry as a whole, around how BIM is affecting you and your sector.

The success of any project no matter how big or small relies on good communication. After meeting the guys and girls behind BIM4SME, if your project is implementing BIM the help is out there, all you need to do is ask.

Jon Frost
Associate, BIM & Digital Engineering | BWB Consulting Limited
web www.bwbconsulting.com [LINK]

## BIM Notice BOARD

Community Announcements from around BIM World

## Thames Valley BIM Hub BIM Technology Showcase at the University of Reading





Hosted by University of Reading, Design Innovation Research Centre, School of Construction Management and Engineering | Whitenights Campus | Reading



A number of technology providers including Autodesk, Bentley, Graphisoft, Solibri, Tekla and Trimble will deliver short presentations to provide you with a general overview of BIM related software.

Visit the BIM CAVE: Dr Maxwell Mallia-Parfitt, University of Reading

Our hosts, the University of Reading, are also offering the chance to experience total immersion within a BIM model. In the BIM CAVE (Collaborative Automatic Virtual Environment) graphics are projected in stereo onto three walls and the floor and viewed with active stereo glasses equipped with a location sensor.

#### **Itinerary**

4.45–5.15pm | Registration and networking

5.15 – 5.35pm | Welcome & Introduction

5.35 – 7.20pm | Vendor Presentations & BIM Cave Tours

7:20 - 7.45pm | Vendor Q&A & Networking

7.45 (latest) | Close

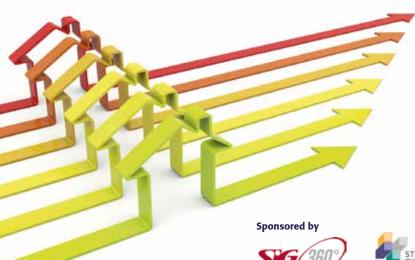
To book your place contact: tina@secbe.org.uk

www.bimtaskgroup.org | @BIMgcs



## HOUSING BIM4Housing Conference

Events across the UK







Leeds 15 Oct
Bristol 16 Oct
St Albans 23 Oct
Birmingham 30 Oct
London 12 Nov
Edinburgh 8 Dec

#### Time

constructingexcellence

9.30am – 3.30pm each day

#### Cost

£50+VAT to members of any of the organisations listed, otherwise £100+VAT

#### **Book your place at**

constructingexcellencesw.org.uk/events

#### Supported by





#### Welcome and introduction to the 'benefits matrix'

- Andrew Carpenter, Chairman, BIM4Housing

#### BIM: from the sell to substance

Challenges, opportunities and return on investment – Scott Sanderson, Director, PRPArchitects

**Wates case study** – Chris Barker, Regional BIM Manager, Wates

#### Redefined responsibilities and ownership?

-Speaker to be announced

**Telford Homes case study** – *Mark Duffield* 

#### BIM and the supply chain challenge

- Andrew Orris, Head of Business Development, SIG360

#### Better managing of the build process and how to use intelligence sensibly

- Alistair Challans, Marketing Manager, Excitech

#### The BIM process and what to look out for

- Bobby Chakravarthy, Arcus Itinerary subject to change









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