“BIM in the UK: Past, Present & Future.”
Executive Summary

The UK BIM Alliance (hereafter “UKBIMA”) is a cross-industry alliance formed to lead BIM Level 2 and the digital transformation of the construction and infrastructure sectors.

The UK Government has called for the wider industry to adopt BIM Level 2 from spring 2016. In response we have formed an industry alliance to fulfil this role and ask for your support.

Following the success of the UK BIM Task Group over the past four years in defining and implementing BIM Level 2 within Government Departments, the Government has stated that it should now be the responsibility of industry to lead the transition to BIM Level 2 as ‘business as usual’ – not just for centrally procured public sector projects.

Upon its launch in October 2016, the UK BIM Alliance will provide clear guidance for the industry. This includes identifying and realising the actual benefits: cost and waste reductions, increased productivity and competitiveness – and making sure that these are easily understandable and obtainable for all. Our focus will be the implementation of BIM Level 2 across the wider industry over the next 4 years to 2020, which will establish the essential foundations for BIM Level 3 and digital transformation as we move to 2025.

The UKBIMA is emerging from the BIM4 Communities (bimtaskgroup/Partners) and Regions (bimregions.co.uk) originally set up by the UK BIM Task Group (www.bimtaskgroup.org).

The Transition Team is shaping the objectives, structure and governance of the Alliance, with collaboration and inclusivity at the heart of its approach. Coordination, common messaging and understanding are key across a growing coalition of over 50 organisations.
We are working towards an official launch in October 2016, spanning the ICE BIM Conference and Digital Construction Week – and we are already realising the benefits of shared innovation, planning and commitment. Below is a link with more details of the UK BIM Alliance launch event at the Digital Construction Week 2016.

www.digitalconstructionweek/BIMVillage
Anne Kemp, Chair for the UK BIM Alliance

A Message of Welcome

“BIM Level 2: Collaborative 3D BIM – not just for buildings, not just for design and construct. But for the whole of the built environment – for whole life, and for integrated operation and use.

A big ask? Not if we work together, and build on what has already been done. It is widely acknowledged now that our industry – variously referred to as AEC, construction, infrastructure, built environment – must undergo digital transformation to survive in the global market. And across our industry, elements of this transformation already exist.

The UK Government has made great efforts to provide unified leadership to drive a consistent approach across the industry, but in moving on to future steps to realise BIM Level 3, there is a danger that the drive to focus on the here and now, and the industry’s immediate pragmatic requirements, will be lost. This is why the Alliance has been formed, and this is why it is so important that as an industry we come together to drive this change.

So, if BIM is about collaborative working, managing information and 3D geometry, which bit is causing the problems? Well, the 3D bit is easy - the technology looks after that. Managing information – well, the processes and tools should be well on the way to resolving that. But the collaborative bit? Maybe not. We need strong leadership in demonstrating collaboration. Our industry needs to transform in our ways of working, by becoming less adversarial and more cooperative. We must meet the challenge together whilst respecting commercial interests, so that our industry can benefit from this digital transformation, rather than it being a burden. The Alliance is the opportunity to do that, and it’s a joy to see this collaborative spirit unfolding. It has been a real pleasure to work with so many people to get us to this point. But please - join with us, and be an active part of this digital transformation.”

Dr. Anne Kemp. October 2016.
Richard Saxon CBE, Chairman of Joint Contracts Tribunal

Author of 'BIM for Construction Clients'

A Message of Support

"Now that the Government has turned its attention to developing Level 3 BIM, the UK industry needs to take control of the rollout and use of Level 2. The UK BIM Alliance is the obvious way to do this and everyone involved in using BIM should join. It's essential that we stick together and keep UK BIM Level 2 consistent and effective. We must collaborate to compete."

Richard Saxon CBE. October 2016.
Contents

Executive Summary ........................................................................................................................................... i
Anne Kemp, Chair for the UK BIM Alliance .................................................................................................... iii
Richard Saxon CBE, Chairman of Joint Contracts Tribunal ........................................................................ iv

Contents ............................................................................................................................................................ 1

1. Background ..................................................................................................................................................... 2
   1.1 Introduction ............................................................................................................................................... 2
   1.2 Meet the Transition Team ....................................................................................................................... 5

2. The Past ......................................................................................................................................................... 6
   2.1 The UK Context – Government’s drive for BIM Level 2 mandate ......................................................... 6

3. The Present .................................................................................................................................................... 10
   3.1 The Response of Industry up until April 2016 ......................................................................................... 10
   3.2 The Current and On-going Response of Industry .................................................................................. 14
   3.3 Global Context ....................................................................................................................................... 18

4. The Future .................................................................................................................................................... 20
   4.1 Embedding BIM Level 2 - Plans & Milestones ....................................................................................... 20
   4.2 Exploiting BIM Level 2 - The Needs of Industry beyond BIM Level 2 ................................................. 22
   4.3 The vision for Digital Built Britain / UK BIM Level 3 ........................................................................... 25

5. A Call to Arms ............................................................................................................................................... 26

6. Contact Us. Get Involved ............................................................................................................................. 27

Appendices ....................................................................................................................................................... 28
   Appendix 1 - List of Signatories ................................................................................................................... 28
   Appendix 2 - Team Members ......................................................................................................................... 31
   Appendix 3 - UK case study. The Ministry of Justice – an early adopter of BIM ........................................ 33
1. Background

1.1 Introduction

Prior to the 2011 Government Construction Strategy (GCS2011) the industry was in dire need of a performance improvement revolution. While other industries were delivering a step change in productivity and performance, construction was being left behind. Although larger than the automotive, energy and aerospace industries combined, the construction industry failed to deliver growth and efficiency or use available technology to transform the industry (EC Harris ONS 2014). Yet the Government cites (parliament.uk-Briefing paper Oct 2015) that construction contributes nearly £90bn to the UK economy, accounting for 2.0 million jobs - circa 8% in over 956,000 businesses. The diagram below shows the comparative drop in the economic output of the construction sector.

![Economic output (Gross value added)](image)

Construction industry: statistics and policy. October 2015

The UK Government mandate for Building Information Modelling (BIM) was formed out of the GCS 2011 to try and change the way that the construction industry produces, exchanges, uses and manages information. The Strategy outlined a vision for an industry that would serve the UK’s overall needs for a better environment, economy and society. One of the enablers
identified to achieve this vision was improved processes to manage and deliver better
information to support design, construction, operation and maintenance of the UK’s buildings
and infrastructure.

These principles were collectively referred to as Building Information Modelling. However, BIM
and “BIM Level 2”, the collaboration and digital exchange of information and 3D geometry are
not merely about 3D modelling, nor the building or construction phase within the life cycle, but
encompass the whole asset lifecycle.

So broadly defined, “Building Information Modelling (BIM) is a collaborative way of working,
underpinned by the digital technologies which unlock more efficient methods of designing,
delivering and maintaining physical built assets”

HMG. Digital Built Britain Level 3 Building Information Modelling - Strategic Plan. February 2015. www.gov.uk-
digital-built-Britain

We believe that BIM Level 2 is a key stepping stone towards what could be an efficient, smarter
and more digitally-enabled future for the construction industry and wider Built Environment. The
UK BIM Alliance has been formed to continue the stewardship of BIM Level 2 and to help
enable our industry to realise the true benefits of a Digital Revolution for the UK Built Environment.

This document presents the opening chapter of the newly formed UK BIM Alliance. It does not intend to be all things to all people as this would be futile. Instead this document aims to provide a brief overview of the complex landscape through which the UK BIM journey has occurred over the last five years: the industry’s progress, angst and needs, the requirements of dispersed practitioners and sectors, the government strategy and the progress made abroad by other countries.

The Alliance does not intend to provide a prescriptive roadmap of solutions and techniques. Rather it aims to foster, facilitate and nurture the collegiate that makes up the powerful DNA of the Built Environment and Infrastructure groups and practitioners, and progressively builds on and complement the roadmap already established through the UK Government initiative.

This Summary Report forms the introduction to its sister document “The UKBIMA Strategic Plan”, which needs to be read in conjunction with this document. The Strategic Plan sets out the structural framework of the Alliance and the key areas where it will focus and engage with Industry and clients. The Strategy itself will evolve with time and through industry engagement form an important part of the BIM journey and growth of the Alliance.

If you want to help the industry and get involved, please do get in touch. You can find our contact details at the end of the document.

The UKBIMA Transition Team. October 2016.
1.2 Meet the Transition Team

The UK BIM Alliance is an organisation set up by volunteers from the BIM4 Groups, the BIM Regions, professional institutions and wider industry.

The Transition Team was created to setup and establish the initial governance of the Alliance, ahead of a consultation process which will lead to the longer term structure and governance of the Alliance. This will be put into place by October 2017, but in the meantime, the Alliance will push ahead with the first 12 months of prioritised activity identified in consultation with industry, to drive forward the mission of the Alliance.

Many people have been involved in this project since its beginning and Appendix 2 contains a current snapshot list of those who have been involved; largely in roles such as BIM4 Chairs, Vice-Chairs and other representatives. The list is ever growing and changing so is not meant to be definitive and we have done our best to ensure that everyone is listed.

Finally, a word of thanks firstly to the authors and many contributors for their voluminous inputs and suggestions which have made this review possible, it really has made us think! Also the numerous organisations such as Atkins, whose support, encouragement and guidance to us volunteers have helped make this project a reality.
2. The Past

In this chapter we outline the context of the BIM movement and what lies ahead, now that the April 2016 mandate for public sector BIM Level 2 adoption for England and Wales has passed.

Historically, the UK construction industry has been adverse to change. A myriad of government commissioned reports such as Constructing the Team (Latham, 1994), Rethinking Construction (Egan 1998), and Accelerating Change (Egan 2002), all highlighted the need for improvement. Reports such as these led to the commission of the Avanti programme (constructingexcellence) which through a number of case studies demonstrated how better planning, communication, and rigour can lead to consistent improvements, and a number of benefits for all project stakeholders. Many of the principles implemented within the Avanti programme are the same ones now being mandated as part of BIM Level 2.

2.1 The UK Context – Government’s drive for BIM Level 2 mandate

Following the vision outlined in the GCS2011 report, the UK Government invested in a programme led by the BIM Task Group. The UK Government’s BIM Task Group worked to define what was meant by BIM and the associated BIM levels of maturity. The important principle is that these levels build upon each other consecutively as seen in the classic Bew-Richards Maturity model below.
The end of this phase resulted in a mandate for adoption of BIM Level 2 for all publicly procured projects by April 2016 in England and Wales. A suite of standards provides the base for BIM Level 2, now hosted by the British Standards Institution (BSI) at www.bim-level2.org, along with the formal definition and other elements required to deliver BIM Level 2.

As well as the development of these standards, the UK BIM Task Group undertook the following activities:

- Preparing key Government Departments for delivery of projects using BIM Level 2,
● Defining the learning requirements to prepare industry for BIM Level 2, and
● Setting up industry facing support communities (the BIM 4 Groups and BIM Regions).

The outcome of these activities is that the UK is acknowledged as showing leadership globally in the process of digital transformation of the industry, with significant savings shown on projects due to BIM Level 2 implementation.

“We have enjoyed dramatic success in the UK with the Level 2 programme, taking a significant part in the recorded savings of £840M this year [2015] for construction spend and much international profile.”


We are now at a pivotal point in the construction industry’s evolution from being analogue and outputs based to a more digital focus and outcomes based Industry. The BIM standards are in place (bim-level2.org) and the processes are now being used by a proportion of the public sector. However, the remainder of that sector as well as most of the private industry remain some way behind.
The UK BIM Task Group has now shifted its focus to defining what BIM Level 3 should be. There is therefore a danger that a vacuum will develop in the drive to implement BIM Level 2 across the industry and to facilitate a maturing and shift to BIM Level 3. It is for this reason that the Alliance has been established.
3. The Present

This chapter is an update on BIM adoption in the UK, in the context of the significant economic downturn in 2008 onwards and an uncertain supply chain post the EU referendum in mid-2016. We look at the intent of the BIM Level 2 mandate in industry, how this has embedded in an increasingly digital society and how the built environment community, along with our international colleagues, view the potential advantages of digital sequencing and standards.

In the years preceding the global financial crisis (GFC) in 2008, the industry prospered despite a lack of innovation, largely due to the positive effects of a healthy economy. However, following the GFC, the industry no longer had the confidence or momentum in the economy and as such could not sustain its existing inefficient and arguably adversarial practices. In 2009 Constructing Excellence (ConstExc) published Never Waste a Good Crisis (Wolstenholme, 2009) which reviewed our industry in light of the GFC and the previous targets set out by Latham and Egan (1998). This concluded that despite available publications, resources, and case studies, the industry had yet to achieve key targets on cost, programme, and predictability; many of the key benefits that BIM brings to a capital infrastructure investment programme.

3.1 The Response of Industry up until April 2016

In some areas the industry has not responded as enthusiastically to the BIM mandate. Some question the benefits which could be delivered by BIM.

At a time when the industry is still recovering from the worst recession in living memory, the Level 2 Mandate has kept BIM on many people’s agendas when it might otherwise have been shelved for the future. Some designers, suppliers and contractors are early adopters of BIM, experiencing the benefits and confidently looking forward to the coming challenges of BIM Level 3. Many others remain sceptical and aloof to the benefits and long term draw of BIM and digital collaboration.

At the same time we have seen digital revolution in our lives, society and communities. For example, Facebook is now the largest digital engagement platform in the world which has
arguably helped to completely transform the likes of the music and entertainment industry, its products, processes and consumer experiences.

Consider also the concept of “Smart Cities” and the Internet of Things which gathers vast data from all forms of sensors, such as internet usage and feedback along with crowd sourced information and geospatial data from the Built Environment to fuel their Big Data machines and applications.

The BIM4 Communities, Groups and Regions for their part have had some positive impact. However, this has not achieved the necessary impact required for industry transformation. Surveys on take-up of BIM Level 2 vary from survey to survey and according to the weighting of the questions. Indications are that circa 10-20% of respondents were successfully embedding the key compliance areas of what have been identified by some as the “8 Pillars of BIM Level 2” (www.theb1m.com). It should be noted however, that these 8 Pillars are not universally accepted and some have subsequently been updated or added to, by other standards. (The reference to PAS 1192-5 in the diagram below should refer to Security, not cyber security.)

CIOB published findings of Construction Managers’ Pre-Mandate BIM Survey. April 2016.
Other survey estimates vary, but in an industry of circa 2 million people, with over 95% employed in SMEs, we need to reach, influence, and train and support over 1.5 million people by 2020 to achieve our goal.
Clearly this is a significant challenge, however knowledge and awareness of BIM is growing but is inconsistent and in some cases, diverging. This is why the UK BIM Alliance is needed: To help lead and facilitate the wider and consistent understanding, adoption and implementation of collaborative BIM.

The UK BIM Alliance Survey

An early initiative of the UK BIM Alliance has been to conduct a survey asking all BIM4 Community and Regional Groups what factors they feel are the challenges to their groups and members in adopting BIM best practice.

The results are published in the graph below and highlight resourcing, staff and funding as key concerns, followed by client and supply chain buy-in. These results will help shape the UK BIM Alliance Strategy to help address the challenges which has been highlighted by the BIM4 Community and Regional Groups.
3.2 The Current and On-going Response of Industry

Currently, within the context of the UK Government’s BIM Level 2 mandate, asset owners and clients in the built environment sectors are trying to converge in how they define their information requirements. Market forces and competition focus the supply chain for its part on improving processes whilst reducing waste. By trying to standardise on tooling and technology in order to deliver on those requirements, suppliers aim to remain cost competitive and sustainable.

However, the supply chain has low profit margins (www.constructionnews- Sept-2015) and not all parties can justify investment in new technology and tooling for BIM - unless they can see a steady pipeline of work.
In general, up until now BIM has largely been delivered as part of the design by engineering consultants, but not as a broader data and information management approach. BIM has been bolted onto existing practices and not optimised through an effective digital transformation strategy.

Over the next few years, as the industry adopts BIM, it is likely that the manufacturers of physical assets will understand the need for the creation of a digital representation of the asset as standard. These digital versions of the assets will have more and more attributes describing their form and fabric including; physical dimensions and geometry, costs, components, hierarchies, assembly sequencing, energy use, capability, performance and so forth. BIM specific object standards may see further significant uptake by manufacturers with pre-fabrication off site, and continue to drive benefits for manufacturers, contractors and asset owners.
The increased availability of object libraries for all infrastructure assets, combined with cheaper and easy to deploy common data environment technologies, will drive the use of federated models by multiple designers and contractors during the planning, design and construction phase.

It is likely that these building information models will be integrated with GIS systems and linked with planning software to provide construction sequencing information and temporal views. In addition, the maturing of virtual reality technologies will allow asset owners and stewards to review the assets during the design phase to understand access and other constraints.

Increasingly, the use of the Internet of Things, drones, mobile devices and sensors will directly integrate with the BIM model as it provides feedback in real time of how the construction programme is progressing against plan.

There will be a greater need by the asset owners for the information generated in the project information model to be exchanged to the asset information model. This will therefore see a
further uptake in the use of COBie (Construction Operations Building information exchange) to test its ability to exchange large amount of inter-related datasets.

Further data integrity, geospatial appropriateness, interoperability and a cross-sector, full lifecycle classification system will be identified by the industry as essential for the successful implementation of BIM Level 2.

Asset Owners will then continue to use the BIM model integrated with GIS systems and Enterprise Resource Planning software for facilities management, asset tagging and mobile device interrogation of data tags from operators in the field.
3.3 Global Context

As a result of the UK Government's mandate for BIM Level 2, the UK is seen to be leading the world in its delivery. Governments across the world are experiencing increased pressures on the public purse and are under pressure to use public funds more effectively. They also recognise that infrastructure investment can be a long term catalyst for positive economic and social reform.

During 2014/2015, the UK government saved £840m on existing public sector infrastructure schemes attributed in part to BIM. This outcome makes BIM an attractive proposition for public and private clients across the globe. (HoC Library: Construction industry: statistics and policy. Briefing paper October 2015 www.parliament.uk)

Globally governments, private clients and investors are eager to see how the UK (and Europe) develops and responds to the challenges regarding digital technologies, especially vendor software development; how the UK is addressing BIM and digital working skills shortages and how academia responds to these challenges. And how this can be achieved without asking too much of SME's?

The UK is one of the few countries that has applied its BIM policy focus to horizontal and vertical infrastructure. Others focus more upon buildings and specifically upon the interaction between architecture, structures and building services.

The drivers for adoption change by balancing the need to adopt BIM against the cost of the change process required to implement it. Singapore implemented a building-specific BIM policy, where projects that met a certain criteria were eligible to recoup training and technical costs from a budget set aside by the government. This was so long as the projects could prove to a state assessor that they have met the criteria set down by the government.
The USA has mandates (www.aia.org) based upon individual authorities with the result that a unified national mandate does not exist, whilst 3D modelling is only a requirement in the design stage.

Governments around the world are exploring the implementation of their own BIM mandates into policy. The ease of integration depends upon the unique aspects of each country including economic and governance concerns. Each country has to balance the digital maturity of its supply chain against its ambition and the pragmatic imperative of project delivery.

The United Kingdom remains one of the leaders in BIM policy, as it is the only BIM policy in existence that includes digital standards for information management, information exchange, lifecycle management, and client engagement and information security.

With our focus on the adoption of BIM Level 2, the UK has a unique opportunity to provide a global lead on how to address these challenging topics.
4. The Future

This Chapter focuses on the forward view of what embedding BIM Level 2 across the whole Built Environment means and what it will entail - it is a tough challenge. However, by adopting the guidance and standards of digital collaboration there are potentially tangible gains to be made across all UK infrastructure sectors and similarly risks for non-adoption.

4.1 Embedding BIM Level 2 - Plans & Milestones

The UK Government BIM Task Group has been leading the UK national process of change by creating the BIM standards and promoting their use in the UK construction industry. The bridge to clients and the ongoing operational maintenance of assets was set up as the Government Soft Landing program and supported by BS 8536-1-2015. These will need revitalising to ensure that Facility Management remains at the heart of early asset lifecycle design and build considerations.

Post October 2016 the BIM Task Group will have completed their task of BIM level 2 adoption amongst public sector projects and will move on to defining what BIM Level 3 will look like, while maintaining the drive to embed best practice across the Government Departments. At the ICE BIM Conference and Digital Construction Week in October 2016, the UK BIM Alliance will take on the leadership and stewardship of BIM Level 2 across the wider industry, encouraging and supporting adoption and implementation.
Once formally launched, the mission of the UK BIM Alliance will be to make BIM Level 2 business as usual for the whole of the UK private sector construction industry by 2020. In order to achieve this mission, the UK BIM Alliance will rely on the infrastructure already in place, as established by UK Government but also with the different BIM4 groups, BIM regions and other organisations in this sphere in order to:

- Give these organisations a supporting network,
- Speak and lobby with the same powerful voice, and
- Shape the strategies to be used to achieve our common mission.

Over the next 12 months, the UK BIM Alliance will facilitate a process of identifying and enabling priority projects.

The UK BIM Alliance has been consulting with the industry to formulate its long term strategies. This document, in conjunction with our Strategy document, presents the plan of action which sets out how we intend to carry out our mission.

These two documents provide the mandate on which the Alliance will progress, with endorsement and on-going scrutiny from our signatories, strategic advisors and the leadership team. We regard our Strategy as requiring continuous review and update to respond in an agile manner to the fast changes which characterise the world in which we live and work.
4.2 Exploiting BIM Level 2 - The Needs of Industry beyond BIM Level 2

BIM level 2 is the starting point for the digital construction policy in the UK and there is a need both to continue the development and implementation of BIM level 2 and to ensure that the industry is enabled to export this expertise internationally.

Part of the Construction Strategy 2025 (CS2025) requires that a BIM Maturity test be established. This will enable a more robust assessment of BIM. The test needs to deliver to the industry a target that clearly identifies the path of least resistance for the supply chain and client teams alike, to enhance their BIM implementation process.

The needs for industry for Level 2 are:

- Clear concise consistent guidance,
- Strong leadership and drive,
- Support, mentoring, training and education,
- Some practical and pragmatic support as we navigate our way from analogue to digital,
- Dissemination of lessons learned and guidance,
- “Go-to” destinations for everything that organisations, businesses and individuals need to learn and upskill.

Over the last 5 years effort has been made to provide the above but the impact has been limited and the degree of influence on the industry has been disappointing.

However, the programme with the central Government departments has shown success and tangible benefits and it is now time for industry energies to be channelled through the UK BIM Alliance and BIM Communities to achieve similar results in the private sector and across industry in general.
An example of this best practice in action is outlined in the UK case study of the Ministry of Justice (MoJ), an early adopter of BIM (case-study-cookham-wood-prison) (refer Appendix 3). The MoJ has been issuing Employer's Information Requirements (EIRs) since 2012 and has developed a standardised BIM component library to build virtual designs and models of any building requirement in any part of the MoJ estates family.

BIM2AIM, the MoJ Special Interest Group, has launched a suite of documents that aims to provide clear and concise instruction and guidance on how to define, procure and deliver BIM Level 2 for its projects.

The guides for employers are currently being reviewed by the government’s BIM Task Group. They will then be shared with other government departments to allow them all to create more clearly defined briefs for asset information on projects they procure.

The Alliance will build on and complement the activities of the UK BIM Task Group and Digital Built Britain.

Moving towards what is likely to be BIM Level 3 we need to address some new factors:

- Change and acceleration – technology is evolving on a daily basis. Organisations and individuals must keep up to date in order to maintain relevance and competitiveness
- Change management - organisations must continue to adapt to evolving markets to remain sustainable in the long term. For individuals this is just the same, except it is careers and the best jobs at stake
- Generational change is also in full swing and demographics are shifting. Generations who grew up with digital technologies are moving through into management and leadership positions.

We need to provide the “go-to’ places for information, training and support. We can expect that as we work our way through full BIM Level 2 adoption, then the mechanisms and infrastructure that support our journey will mature and develop towards BIM Level 3.

The lessons learned from BIM Level 2 will provide us with good practice on how to handle digital information and prepare for BIM Level 3, starting from 2020.
Reproduced with permission- Jon Kerbey, HS2
4.3 The vision for Digital Built Britain / UK BIM Level 3

“This Digital Built Britain strategy takes the next step in integrating these (digital) technologies, transforming our approaches to infrastructure development and construction and consolidating the UK’s position as a world leader in these sectors.”

“We want to make fully computerised construction the norm and ensure that the benefits of these technologies are felt across the UK and support the export of these technologies and the services based on them.”

“We want to sell our expertise and our cutting edge technologies across the world and seize a share of the $15trillion global construction market forecast by 2025.”

(Quotations from p5, Digital Built Britain, 2015) (Digital-built-britain.com)

The Digital Built Britain vision, as the first BIM Level 3 strategic statement by the UK BIM Task Group, moves us into a joined up connected digital world, where as an industry we can play a leading role in the digital and information economy on a global stage. The Internet of Things is already a reality and provides us with a tangible and developing picture of things to come. BIM Level 2 is staging post on a much longer journey to a digital environment, connected global communities and also a digitally transformed built environment.

If we do not achieve BIM Level 2 business as usual across our industry by 2020 then the move through to BIM Level 3 and beyond will be problematic and in jeopardy. This brings into sharp focus the immediate objectives of the UK BIM Alliance formation to provide leadership around BIM Level 2 implementation and adoption.

Ultimately, the outcome of a digitally transformed construction and built environment should enable the improved efficiency and integration of public and private services and infrastructure, ensuring greater return on investment and value for money, enhanced business opportunities, increased resilience for our infrastructure, our environment and our economy. This will lead to a better quality of life for society as a whole.
5. A Call to Arms

Stephen Race. Lecturer, Author, BIM Consultant,
- A Message of Support

“What a difference an acronym makes.

The past five years since Paul Morrel’s declaration have seen the three letters ‘B’, ‘I’ and ‘M’ provoke an unprecedented conversation within the UK Construction industry.

The acronym started life as a relatively modest idea about creating a model of a building in a computer. Debate, exploration and implementation of what the acronym means have seen its impact spectacularly widen now to embrace ideas of asset information, an information asset and last but most significantly not least, culture change which encompasses, behaviours, the legal landscape and process re-engineering in every nook and cranny of the industry.

That modest acronym can now be interpreted as a Better Industry Movement where UK Construction is thinking hard about its performance on the global stage.

From 2010 many enthusiastic individuals and groups have got behind the movement for change. Different industry sectors, different scales of operation and the education sector have all reacted magnificently to the BIM call.

The Alliance Strategy will strengthen and progress the energy expressed by all parties by creating a central, focal and co-ordinated point for concerted initiatives towards a better industry, organisation and project performance.

The Alliance Strategy is both timely and appropriate. The time is right to bring these initiatives together so that they can have the most effective and far reaching benefit for everyone and without us creating ‘waste’. Appropriate in that the Alliance represents both practically and symbolically what is trying to be achieved, in other words a complex and challenging change in culture.”

6. Contact Us. Get Involved

Thank you for taking the time to read our document.

If you would like to drop us a line with some suggestions then we would love to hear from you. Similarly if you want to get involved then we can advise you how best to do this and how to find the right BIM4 Community for you.

The Transition Team.

For more information

Chair - Anne Kemp
anne.kemp@atkinsglobal.com

PR/Comms lead – Chris Witte
info@ukbimalliance.org

BIM Regions Chair - John Eynon
johneynon@me.com

ukbimalliance.org
@ukbimalliance
Appendices

Appendix 1 - List of Signatories

Below, we present a list of confirmed signatories and supporting organisations to date (14th October, 2016), with a further 30 in process. Please note it is possible that we have missed some of the organisations who have already signed up or expressed interest, and for this we apologise. However, a list of current signatories will be continually updated on the UK BIM Alliance website being launched shortly, and we will welcome you reaching out to us and letting us know if you would like to join. www.ukbimalliance.org

Following the launch, we will continue to reach out to potential organisations and signatories, and we recognise that so far we have only reached the tip of the iceberg. We will continually seek to extend this outreach.

We would like to thank the following organisations and signatories who have confirmed their support for the setting up of, and the need for, the Alliance:

<table>
<thead>
<tr>
<th>Supporting Organisation</th>
<th>Signatory</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arup</td>
<td>Tristam Carfrae</td>
<td>Deputy Chair</td>
</tr>
<tr>
<td>Atkins</td>
<td>Nick Roberts</td>
<td>UK CEO</td>
</tr>
<tr>
<td>Bentley Systems</td>
<td>Greg Bentley</td>
<td>CEO</td>
</tr>
<tr>
<td>Bouygues UK</td>
<td>Fabienne Viala</td>
<td>Chairman</td>
</tr>
<tr>
<td>BRE</td>
<td>Peter Bonfield</td>
<td>CEO</td>
</tr>
<tr>
<td>BuildingSmart International &amp; HOK</td>
<td>Patrick McCleamy</td>
<td>Chairman</td>
</tr>
<tr>
<td>Buro Happold</td>
<td>TBC</td>
<td></td>
</tr>
<tr>
<td>CIAT</td>
<td>TBC</td>
<td></td>
</tr>
<tr>
<td>CIBSE</td>
<td>The Executive</td>
<td></td>
</tr>
<tr>
<td>Supporting Organisation</td>
<td>Signatory</td>
<td>Position</td>
</tr>
<tr>
<td>----------------------------------------------------</td>
<td>----------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Construction Leadership Council</td>
<td>Graham Watts</td>
<td>CEO</td>
</tr>
<tr>
<td>CITB</td>
<td>Adrian Belton</td>
<td>CEO</td>
</tr>
<tr>
<td>Constructing Excellence</td>
<td>Don Ward</td>
<td>Chief Executive</td>
</tr>
<tr>
<td>Construction Leadership Council</td>
<td>Andrew Wolstenholme</td>
<td>Co-Chair</td>
</tr>
<tr>
<td>Costain</td>
<td>Tim Bowen</td>
<td>Innovation &amp; Technology Exec.</td>
</tr>
<tr>
<td>Ernst &amp; Young</td>
<td>Malcolm Bairstow</td>
<td>Partner</td>
</tr>
<tr>
<td>Ferrovial Agroman</td>
<td>Teodoro Alvarez-Fadon</td>
<td>Global Head of Innovation</td>
</tr>
<tr>
<td>Heathrow Airports Ltd.</td>
<td>Phil Wilbraham</td>
<td>Development Director</td>
</tr>
<tr>
<td>ICE</td>
<td>Tim Broyd</td>
<td>President Elect</td>
</tr>
<tr>
<td>ICES</td>
<td>Bill Pryke</td>
<td>CEO</td>
</tr>
<tr>
<td>IET</td>
<td>Jeremy Watson</td>
<td>President</td>
</tr>
<tr>
<td>Jacobs</td>
<td>Liam Gallagher</td>
<td>Exec Director for IM</td>
</tr>
<tr>
<td>JCT</td>
<td>Richard Saxon</td>
<td>Chairman</td>
</tr>
<tr>
<td>Knauf Insulation</td>
<td>John Sinfield</td>
<td>Managing Director</td>
</tr>
<tr>
<td>Mace</td>
<td>Mark Reynolds</td>
<td>CEO</td>
</tr>
<tr>
<td>Map Action</td>
<td>Nigel Press</td>
<td>Chair</td>
</tr>
<tr>
<td>National Infrastructure Council</td>
<td>John Armitt</td>
<td>Co-Chair</td>
</tr>
<tr>
<td>Network Rail / APM</td>
<td>David Waboso</td>
<td>Managing Director / President</td>
</tr>
<tr>
<td>Ordnance Survey</td>
<td>Nigel Clifford</td>
<td>CEO</td>
</tr>
<tr>
<td>RIBA</td>
<td>Dale Sinclair</td>
<td>RIBA Ambassador</td>
</tr>
<tr>
<td>Supporting Organisation</td>
<td>Signatory</td>
<td>Position</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>----------------------</td>
<td>----------</td>
</tr>
<tr>
<td>RIBA Enterprises/ NBS</td>
<td>Richard Waterhouse</td>
<td>CEO</td>
</tr>
<tr>
<td>RICS / Ernst &amp; Young</td>
<td>Amanda Clack</td>
<td>President</td>
</tr>
<tr>
<td>The Survey Association</td>
<td>Mark Combes</td>
<td>President</td>
</tr>
</tbody>
</table>
Appendix 2 - Team Members

This is a list of the current volunteers involved with the setting up and running of the UKBIMA. It is an ever growing list and shows the passion and commitment of members of the built environment to pull together and make things happen. We thank these individuals – and the organisations supporting them - for their significant contribution to the industry.

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adrien Guillemet</td>
<td>Transition Team</td>
<td>Henry Riley LLP</td>
</tr>
<tr>
<td>Andrew Cowell</td>
<td>Leadership Group</td>
<td>MHW Global</td>
</tr>
<tr>
<td>Anita Soni</td>
<td>Transition Team</td>
<td>Skanska Construction</td>
</tr>
<tr>
<td>Anne Kemp</td>
<td>Chair of UKBIMA</td>
<td>Atkins Global</td>
</tr>
<tr>
<td>Bill Healy</td>
<td>Transition Team</td>
<td>CIRIA</td>
</tr>
<tr>
<td>Chloe Obi</td>
<td>Transition Team</td>
<td>Bouygues UK</td>
</tr>
<tr>
<td>Chris Witte</td>
<td>Transition Team</td>
<td>Consultant</td>
</tr>
<tr>
<td>Dan Rossiter</td>
<td>Leadership Group</td>
<td>BRE</td>
</tr>
<tr>
<td>David Churcher</td>
<td>Leadership Group</td>
<td>Hitherwood Consulting</td>
</tr>
<tr>
<td>Fred Mills</td>
<td>Leadership Group</td>
<td>The B1M</td>
</tr>
<tr>
<td>Henry Fenby-Taylor</td>
<td>Transition Team</td>
<td>WYG</td>
</tr>
<tr>
<td>Ian Bush</td>
<td>Leadership Group</td>
<td>Black &amp; Veatch</td>
</tr>
<tr>
<td>Ivan Hurst</td>
<td>Leadership Group</td>
<td>Ivan Hurst Consulting</td>
</tr>
<tr>
<td>Jason Underwood</td>
<td>Leadership Group</td>
<td>University of Salford</td>
</tr>
<tr>
<td>John Eynon</td>
<td>Transition Team</td>
<td>Open Water Consulting Ltd.</td>
</tr>
<tr>
<td>Name</td>
<td>Position</td>
<td>Company</td>
</tr>
<tr>
<td>-----------------</td>
<td>----------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>John van Rooyen</td>
<td>Transition Team</td>
<td>Ernest &amp; Young</td>
</tr>
<tr>
<td>Martin Penney</td>
<td>Transition Team</td>
<td>Technics Group Ltd.</td>
</tr>
<tr>
<td>Martin Simpson</td>
<td>Leadership Group</td>
<td>Arup</td>
</tr>
<tr>
<td>Matthew Watchorn</td>
<td>Leadership Group</td>
<td>Mace</td>
</tr>
<tr>
<td>Mervyn Richards</td>
<td>Leadership Group</td>
<td>MR1 Consulting</td>
</tr>
<tr>
<td>Mobeen Minai</td>
<td>Leadership Team</td>
<td>Mace</td>
</tr>
<tr>
<td>Neil Thompson</td>
<td>Transition Team</td>
<td>Balfour Beatty</td>
</tr>
<tr>
<td>Nick Nisbet</td>
<td>Leadership Group</td>
<td>AEC³</td>
</tr>
<tr>
<td>Nick Tune</td>
<td>Leadership Group</td>
<td>CoBuilder UK Ltd.</td>
</tr>
<tr>
<td>Patrick Wilson</td>
<td>Transition Team</td>
<td>Patrick Wilson Architects</td>
</tr>
<tr>
<td>Paul Surin</td>
<td>Leadership Group</td>
<td>Wienerberger UK</td>
</tr>
<tr>
<td>Raj Chawla</td>
<td>Transition Team</td>
<td>Nunelah Consulting</td>
</tr>
<tr>
<td>Richard Ogden</td>
<td>Leadership Group</td>
<td>Stokewood</td>
</tr>
<tr>
<td>Simon Kerr</td>
<td>Leadership Group</td>
<td>Mott Macdonald</td>
</tr>
<tr>
<td>Stefan Mordue</td>
<td>Leadership Group</td>
<td>RIBA Enterprises Ltd.</td>
</tr>
<tr>
<td>Steven Eglinton</td>
<td>Leadership Group</td>
<td>Geo Enable</td>
</tr>
</tbody>
</table>

Note: This is an evolving list and does not reflect everyone who is contributing.
Appendix 3 - UK case study. The Ministry of Justice – an early adopter of BIM

(Published with the permission of Mathew Watchorn from Ministry of Justice).

Developing a standardised BIM component library

Well known for being an early adopter of BIM, the MoJ has been issuing Employer’s Information Requirements (EIRs) since 2012 and has developed a standardised BIM component library to build virtual designs and models of any building requirement in any part of the MoJ estates family.

BIM2AIM, the Ministry of Justice (MoJ) special interest group, has launched a suite of documents that aim to provide clear and concise instruction and guidance on how to define, procure and deliver Level 2 BIM for its projects.

The guides for employers are currently being reviewed by the government’s BIM Task Group. They will then be shared with other government departments to allow them all to create more clearly defined briefs for asset information on projects they procure.

It is hoped that the redefined documents will assist the MoJ’s supply chain by outlining a clear digital brief from tender and provide sufficient detail to enable data requirements to be packaged, procured and technically assessed on projects.

Working alongside the supply chain

The MoJ recognized the need to work alongside its supply chain in developing advanced and practical solutions moving forward that more closely meet the needs of industry.

The suite of BIM-focused policies, procedures and standards are the culmination of six months’ work and were compiled collaboratively with input provided by a large number of supply chain partners, including the contractor Wates Group, architect Stride Treglown and consultants Arcadis, WYG, Mace and CoBuilder,
Making BIM a reality

Matthew Watchorn, MoJ head of BIM, said: “I have been impressed and delighted with the response of the volunteers participating in the BIM2AIM Special Interest Group, the success has been beyond our expectations. A genuine client-industry endeavour developing new policy, technical specification and know-how.

“Dismantling, examining and jointly rebuilding the EIR suite of standards from the bottom up was a fundamental moment in the MoJ BIM story and will stand us and other government departments in good stead in making the next phase of BIM a reality for projects going forward. Special thanks is extended to Chris Barker [BIM manager at Wates Construction] for his sterling work as industry lead and his supporting SIG leads.”

Collaboration ensures knowledge share and best practice

Chris Barker said: “Our collaborative approach and willingness to share knowledge and best practice garnered from within our respective roles and organisations was key to us being able to provide the MoJ with a workable much clearer solution to BIM implementation.

“Having worked closely with the MoJ for a number of years, and knowing their appetite and commitment to deliver BIM, we were delighted to be asked to co-chair this special interest group.

“The group is aware that projects now need to utilize and land the documentation in order to help inform future refinements and iterations, but we believe we have been able to help fill a critical gap in current industry literature, and believe we have provided some much-needed clarity on the subject of requesting and procuring asset information models.”

Cont'd./…
Infographic – BIM Asset Management Workflow

.../cont’d.