



European public sector aims for world class construction sector

Ilka May
Head of Delivery
EU BIM Task Group
24 November 2016



Co-funded
by the
European Union



European Construction Market – Key Figures

- € 1.2 trillion & 9.9% GDP
- 14.9 million jobs
- 3.1 million organizations
(>95% SMEs)



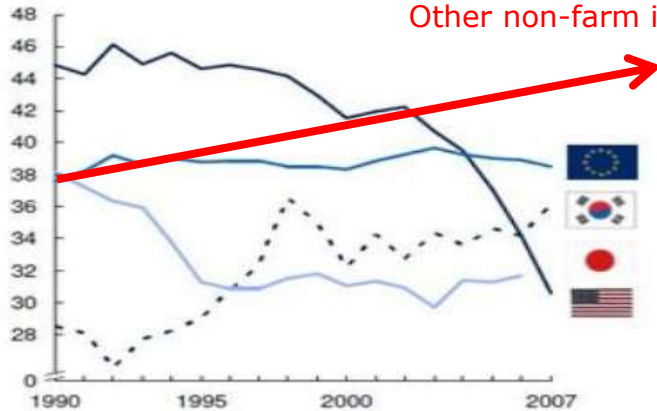
35%

- Misunderstanding of client needs
- Miscommunication
- Rework and recreation of data
- Poor or no information management

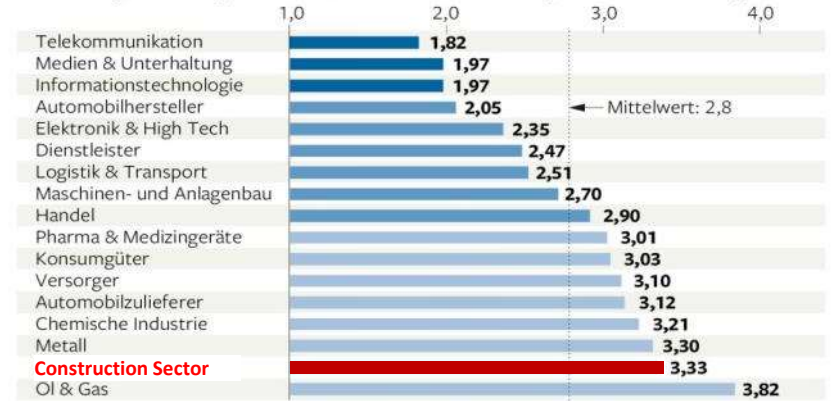
Construction: declining productivity and low digitalisation

Digitalisation

Construction productivity
GVA per hour worked in 2007 PPP \$



Bewertungsskala 1 = größtenteils, 2 = teilweise, 3 = wenig, 4 = ansatzweise digitalisiert



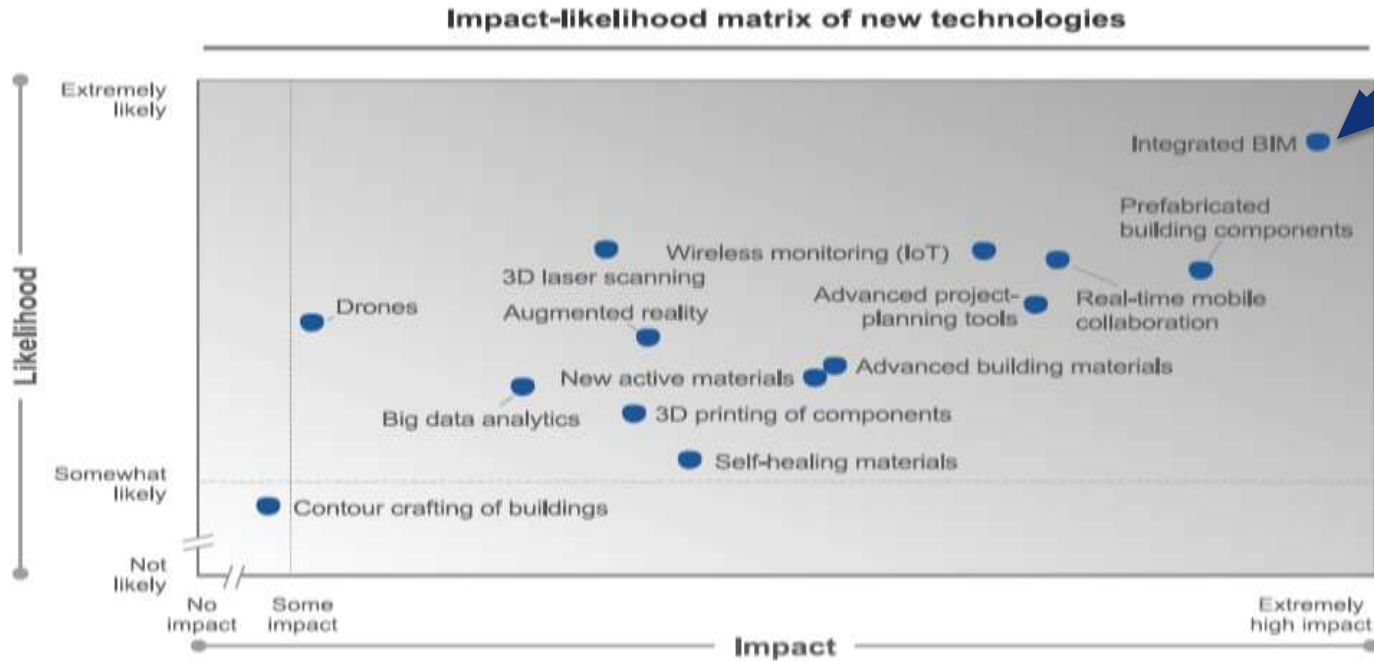
SOURCE: EUKLEMS; Associated General Contractors of America, 2011; U.S. Bureau of Labor Statist

QUELLE: TOP 500 STUDIE 2014 | 

Paper based silos



BIM: likely and with a high impact



May 2016
WORLD ECONOMIC FORUM

The Boston Consulting Group

Source: Future of Construction Survey

Data: 30 Steering & Advisory Committee Members and industry experts completed the survey, mainly from organizations with a global footprint.

The public sector: driver for change

→ Only widely adopted, will BIM deliver sector economic value



- Government to create a fertile environment
- Public procurement > 30% of total construction



E-procurement: a game changer

The use of electronic communications by the public sector when buying supplies/services or tendering public works.

- Simplification of the value chain
- Public authorities which adopted e-procurement: 5-20% savings
- Savings for European taxpayers. 5% savings could save €100 bln
- provide a new source of economic growth and jobs
- facilitate access to public procurement contracts by SMEs

What does the Public Procurement Directive say?

DIRECTIVE 2014/24/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 26 February 2014
on public procurement and repealing Directive 2004/18/EC
(Text with EEA relevance)
(OJ L 94, 28.3.2014, p. 65)

Article 22

Rules applicable to communication

- (1) Member States shall ensure that all communication and **information exchange** under this Directive, in particular **electronic submission**, are performed **using electronic means of communication** [...].

BIM in the PP Directive

- (4) For public works contracts and design contests, Member States **may require the use of specific electronic tools, such as of *building information electronic modelling tools*** or similar.
- In such cases the contracting authorities **shall offer alternative means of access, [...], until such time as those tools become *generally available* [...]**.

Rapidly evolving national digital programmes



Germany



Norway



Finland



Spain



France



UK



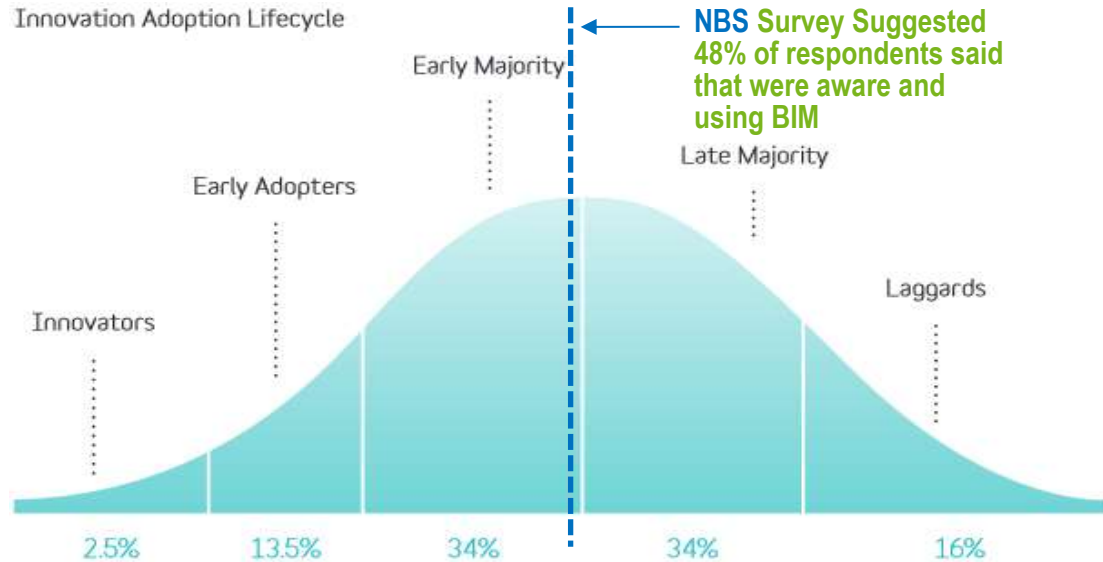
Netherlands



Denmark



Industry adoption increasing



New Building Magazine Survey Now States c54% using BIM



'Diffusion of Innovation' - Everett Rogers

<http://sphweb.bumc.bu.edu/otit/MPH-Modules/SB/SB721-Models/SB721-Models4.html>

Everett Rogers' standard adoption curve. This follows a normal distribution curve where the 'Innovators', 'Early Adopters' and 'Early Majority' rapidly move to a new innovative technology to a point where its use is found within half of the population. Adoption then slows for a while as the 'Late Majority' join, followed by the 'Laggards'.

Risks of not collaborating

- Adding cost burden
- Slowing economic growth
- Confusing the market
- Closing markets



EU BIM Task Group



- Deliver greater value for public money
- Increased openness, fairness, competitiveness and productivity
- Stimulating innovation and growth in the construction and digital economies



The EU BIM Task Group

Deliverables and Planning

- 2-year program co-funded by the EU Commission, started Feb 2016
- Create a Common Framework for BIM in public works
- Handbook, Video, Website and Materials
- Launch and Closeout Conference

Procurement



Technical

Skills

Target Groups

- EU Public estate owners
- EU Public procurers
- EU Policy makers and



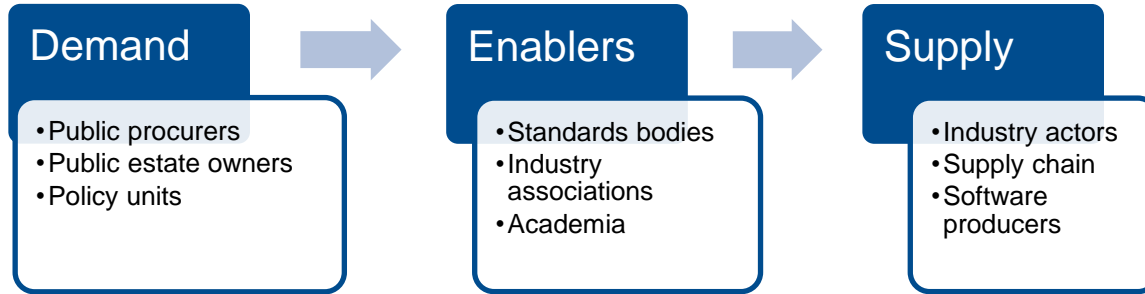
Austria
Belgium
Czech Republic
Germany
Denmark
Estonia
Spain
Finland
France
Ireland



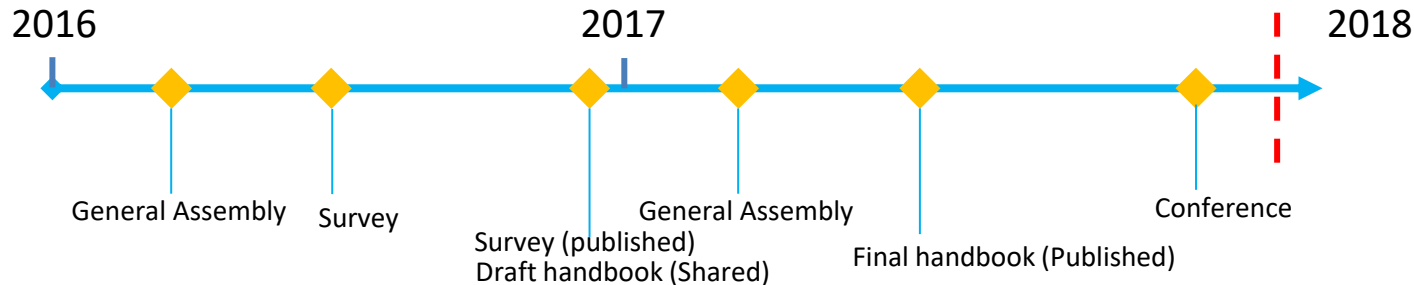
Iceland
Italy
Lithuania
Netherlands
Norway
Poland
Portugal
Slovakia
Slovenia
Sweden
UK



Engagement



Timeline



Establish a Common Framework / Handbook



The 'why' –

key incentives for acting now :

- The value proposition of digitalization and BIM
- The value proposition for EU Alignment on BIM

The 'what' –

key principles required by public clients

- Development of a common EU performance level
- Focus on procurement / technical / skills / processes
- NOT re-writing standards!

The 'how' –

guidance for introducing BIM at national level

- Understand needs, requirements and constraints
- Understand status quo, consensus and current activities
- Develop and align framework
- Share and communicate framework

Survey of current European public sector best practices for the encouragement and introduction of BIM (into public estate and policy)

A questionnaire with 33 questions was circulated to the 21 members of the EU BIM Task Group. It was requested that **one coordinated response per country** between the national body, public stakeholders or infrastructure /estate owners should be returned.

The purpose of the survey was to establish a better understanding of the current status and practices of the member states regarding BIM implementation programs.

The image shows a survey questionnaire from the EU BIM Task Group. At the top left is the logo for EU BIM TASK GROUP, which includes a globe icon. To the right of the logo is the text: "Bringing together national efforts into a common and digital European approach to develop a www.eubim-taskgroup.eu". At the top right is a small map of Europe. Below the header, the text reads: "If you please continue with Q20:". The questionnaire contains 13 numbered questions (Q20 to Q32) related to BIM implementation in the public sector. At the bottom left is the European Union flag logo. At the bottom right, it says: "Please return to info@eubim.eu by Friday, 10th June 2016".

EU BIM TASK GROUP

Bringing together national efforts into a common and digital European approach to develop a www.eubim-taskgroup.eu

If you please continue with Q20:

Q20: What are your key drivers for using it?

Q21: Who owns it (national sector/public authority)?

Q24: Does it specify or define BIM or different levels of BIM?

Q26: Does it apply to all asset types?

Q27: How is it funded?

Q28: Do you measure progress, if yes, how?

Q29: Do you have a dedicated "champions group" (task force, department) to drive the implementation of BIM?

Q30: Do you have standard contracts or agreements that require BIM to be used?

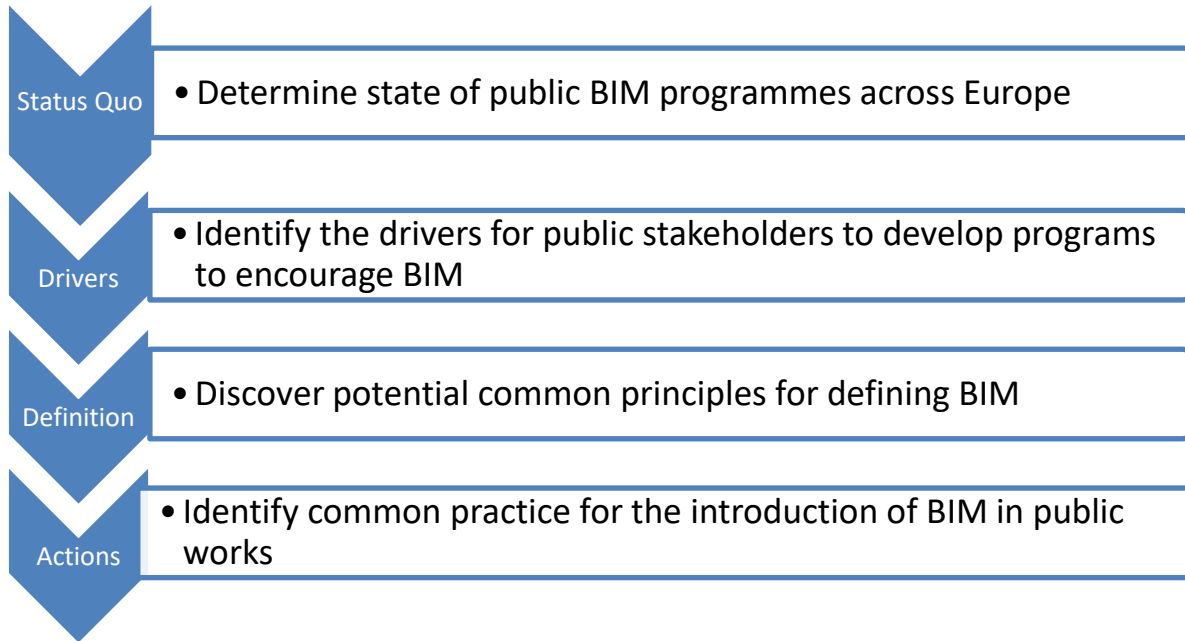
Q31: Do you use procedures or policies to encourage industry's adoption of BIM?

Q32: Provide an estimate (in Euros) of the annual spend of your organisation (public estate owner or national policy group) in construction or operations projects (or influence if a policy or procurement rules apply).

Please return to info@eubim.eu by Friday, 10th June 2016

Survey of current European public sector best practices for the encouragement and introduction of BIM (into public estate and policy)

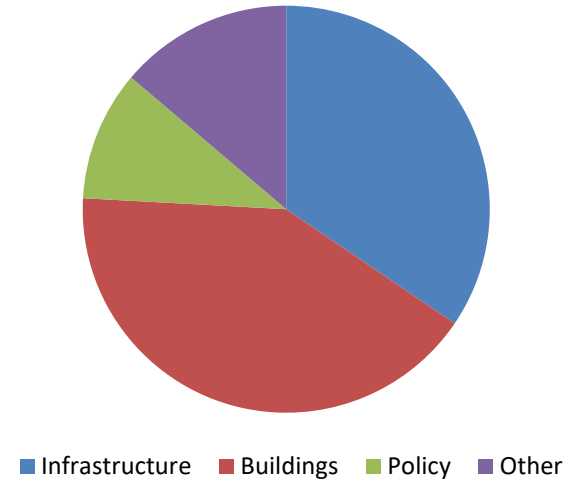
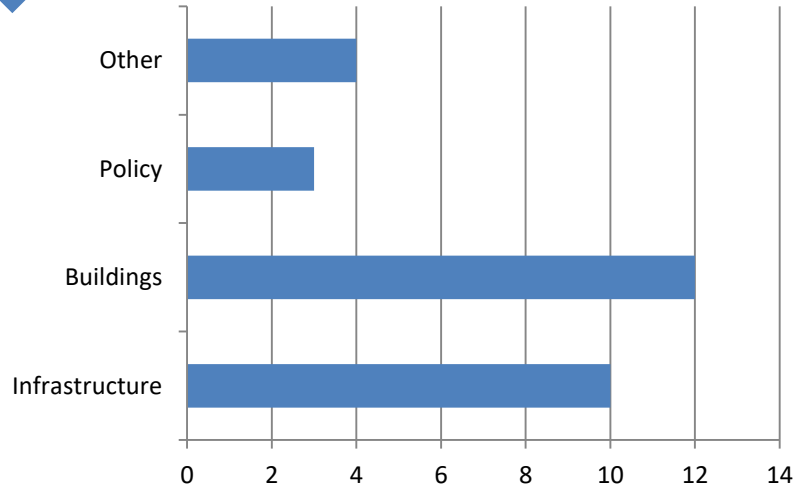
The survey was designed to collect information about the current situation in these four areas:



Survey of current European public sector best practices for the encouragement and introduction of BIM (into public estate and policy)

Status Quo

- Determine state of public BIM programmes across Europe



Survey of current European public sector best practices for the encouragement and introduction of BIM (into public estate and policy)



Status Quo

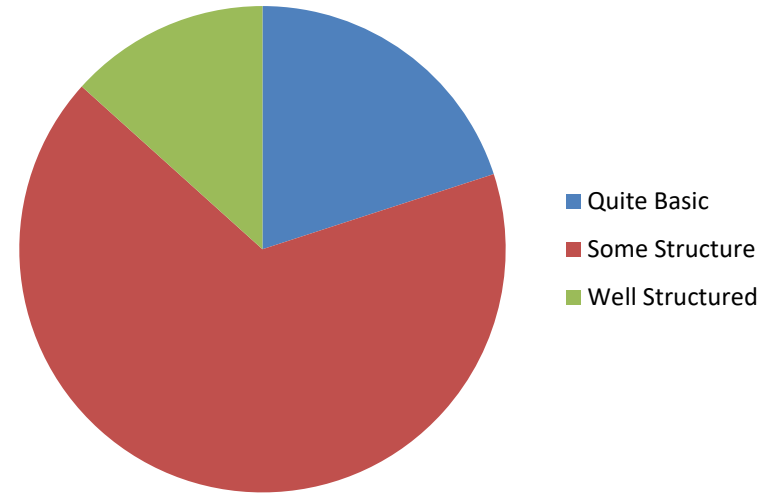
- Determine state of public BIM programmes across Europe

Are you aware of BIM use in your country?

100% surveys said 'Yes' (16 responses)

Has the use of BIM grown over the past two years?

100% surveys said 'Yes' (16 responses)



General level of market capability with BIM

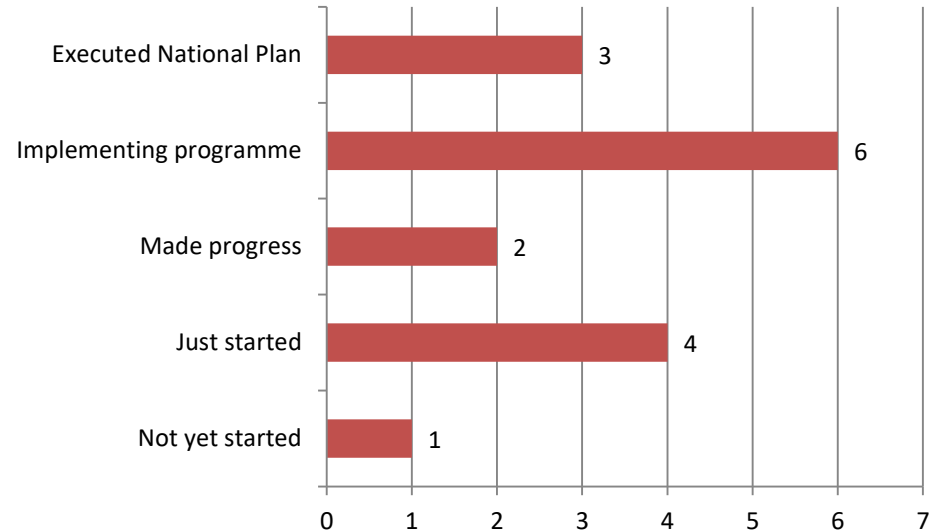
Survey of current European public sector best practices for the encouragement and introduction of BIM (into public estate and policy)



Status Quo

- Determine state of public BIM programmes across Europe

11 active programmes in progress
(out of 16 responses)



Status of public sector led BIM programmes

Strategic Framework for Public Sector BIM Programs

Grow Industry Capacity

- Early wins, pilot projects, training
- Increasing use of strategic lever to grow capacity
- Measure and monitor, case studies, embed change

Communicate Vision & Foster Communities

- Engage industry stakeholders
- Create regional and focus networks
- Events, media, web, social media

Build a Common Collaborative Framework

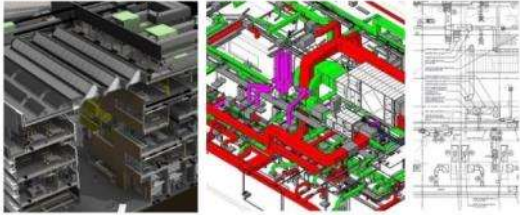
- Legal and regulatory framework
- Data and process standards
- Skills, tools, guidance

Foundation of Public Leadership

- Compelling drivers, vision and goals
- Aligned value proposition and strategy
- Sponsor, funded programme, stewardship team

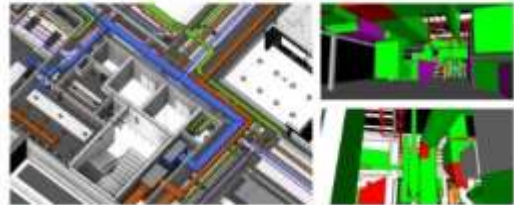
What is a BIM Project?

A BIM project | Design & documentation



- 3D object modelling software
- Agreed methodology and standards
- Embedded information generates tags and datasheets
- Creation of 2D and 3D output

A BIM project | Coordination



- Use of shared setting-out and coordinate data
- Direct referencing of other disciplines 3D information
- Coordination of discipline zones
- Virtual design reviews and clash detection workshops



A BIM project | Clash avoidance



- Course - Clashing between different building zones or spaces
- Medium - Clashing between building components
- Fine - Soft clashing for buildervork and maintenance access

A BIM project | Operation



- Facilities and operations management model
- Equipment lists, specifications and maintenance information
- Monitoring and feedback systems
- Portable hardware

A BIM project | Build



- Virtual construction and coordination
- Data driven setting out and monitoring
- Improved understanding of models over drawings

A BIM project | 4D Modelling



- Linking the construction programme to the project model
- Overall site phasing
- Detailed construction sequencing

Impacts & Opportunity

- Public leadership growing
- Accelerating national adoption
- Private sector work
- Common standards emerging
- Growth of global digital construction sector





EU BIM
T A S K G R O U P

Bringing together national efforts into a common and aligned European approach to develop a world-class digital construction sector

EU BIM Task Group

www.eubim.eu

info@eubim.eu

Dr. Ilka May

Head of Delivery



Co-funded
by the
European Union

