BIM – Government Construction Strategy

**Lower costs**
33%
reduction in the initial cost of construction and the whole life cost of built assets

**Faster delivery**
50%
reduction in the overall time, from inception to completion, for newbuild and refurbished assets

**Lower emissions**
50%
reduction in greenhouse gas emissions in the built environment

**Improvement in exports**
50%
reduction in the trade gap between total exports and total imports for construction products and materials

#BIMToolkit
Completing “Level-2” BIM Suite
The Missing Pieces

Classification

Digital Plan of Work
The Project

Clients

- Department for Business Innovation & Skills
- Innovate UK
- BiM

Brief

- A digital tool for building information modelling
- SBRI competition for contracts
- February 2014

Team

- BIM
- BDP
- Mott MacDonald
- Newcastle University
- Microsoft
- Ibimac
- ICIO
- ice
- CIBSE
- CIOB
- RICS
- RIBA

Industry

- apm
- BIFM
- CIBSE
- CIOB
- ICIO
- ice
- CIBSE
- CIOB
- RICS
- RIBA

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2014

Scope

- Brief

Phase 1 - Define

2015

Scope

- Brief

Phase 2 - Deliver

#BIMToolkit
How will the BIM Toolkit benefit those working within the level-2 BIM process?

Standards are freely available at - [http://shop.bsigroup.com/BIM](http://shop.bsigroup.com/BIM)
Assessment and need

Post-contract award and mobilisation

Production

Maintenance and use

Figure taken from PAS1192-2:2013 – Copyright Mervyn Richards
Assessment and need
Assessment and need
Assessment and need

- Client determines their *plain language questions* (determines the need)
- Client produces their *employer’s information requirements* (Required information to meet the needs)
- Information requirements aligned to the project stages
- This is part of the tender documentation
Welcome to the NBS BIM Toolkit

Logged in as chris.dunn@thenbs.com

4 active projects

003 - MORNING SUN COUNTRY PARK
Last modified 25/02/2015
Landscaping and drainage work to the external areas and an extension to the visitor centre. Client has high...

004 - LAKESIDE RESTAURANT
Last modified 25/02/2015
Sample project - demonstrating how to use the BIM Toolkit - have a play!

007 - NEWTOWN HIGH SCHOOL
Last modified 25/02/2015
New high school for 2,500 children aged 11-18. Must have community aspirations...

011 - A169 HIGHWAY EXTENSION
Last modified 25/02/2015
Highway extension to link Newtown with Oldtown through the Newtown conservation area.

A collection of projects
Assessment and need – BIM Toolkit

Information at a project level
Information at a stage level

- **Stage deadline**: 1 February 2015
- **Construction start**: 1 September 2015
- **Construction end**: 18 December 2015
- **Construction cost**: £2,200,000
- **Environmental assessment rating**: BREEAM: Excellent

Working together to define the brief with the client advisor and cost consultant. Key tasks include assembling the project team - agreeing the tasks and deliverables as far as possible.
At the start of the project the client has not assembled their team.
At strategy/brief stage it is possible to determine information needs.
Template tasks can be modified, removed and added to.
Assessment and need – BIM Toolkit

Tasks and deliverables are assigned to roles prior to the team being assembled.

This information may be exported.
Assessment and need

Export to MS Excel for inclusion within the EIR document (PDF)

...and export to IFC/COBie for digital re-use
Procurement
Procurement

- Bidders respond with their *pre-contract BIM execution plan*
- Proposed responsibility of bidders supply-chain is provided
- The client can compare these against their original information requirements
- Selection can take place
The proposed roles have been assigned.

The proposed project team has been added.

Each item, at each stage has a party responsible.

The bidder.
**Procurement**

Export to MS Excel for inclusion within the BEP document (PDF)

...and export to IFC/COBie for digital re-use
Post-contract award and mobilisation
Post-contract award and mobilisation
Production
Production

From design suppliers to construction suppliers:

- The federated *Project Information* Model begins to grow
- dPOW defines the *what*, the *when* and *who*
- Information exchanges between supply-chain
- Information delivery to the client as agreed in EIR
- Documented classification and data structure allows for verification
Moving into the design phases the team is now assembled and the information requirements grow.
Level of detail guidance can be defined for each deliverable.
Level of information guidance can be defined for each deliverable.
A definitions library of 6,000 items across all construction disciplines will be provided.
At concept stage – the operations phase may be considered.
At the technical design stage more geometric detail is required.
The level of information grows through the bandings too.
LOI-6 contains the standard COBie properties for transfer to the asset management systems.
The definitions library covers infrastructure in addition to buildings.
Solar heating systems

A solar heating system typically comprises items such as heat source, mounting of solar modules and expansion.

Classification mappings

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<tr>
<th>NBS Code</th>
<th>Uniclass2015</th>
<th>NRM1</th>
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<tr>
<td>60-45-40/140 Solar heating system</td>
<td>Ss-60-40-37-81 Solar heating systems</td>
<td>5.5.1 Heat source</td>
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RICS have joined the core team and have provided classification mappings to NRM1.
A number of new Uniclass classification tables will be published.
At an early stage space requirements may be specified.
New Uniclass – the Core Classification
Advanced search technology is used to take the complexity away from classification.
Production

What has been asked for by the project lead

What is provided by the project team
A dPOW in IFC – every deliverable represented as a coloured cube
Following hand-over then “In use”
More Information

- BIMTaskGroup.org
- theNBS.com/BIMToolkit
- Social Media - #BIMToolkit