

Results of competition: A digital tool for building information modelling - SBRI

Total available funding for this competition was £1.5m from the Technology Strategy Board.

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
RIBA Enterprises Limited	A digital tool for building information modelling	£50,000	£50,000
Project description - provided by applicants			
<p>NBS will lead an exceptional project team to produce a fully costed, scheduled and de-risked proposal to deliver the outcomes described in the competition's functional specification. The project team will include, BIM Academy, BDP, Laing O'Rourke, Microsoft and Newcastle University.</p> <p>NBS will build on their 6,000 object definitions that currently exist and are in-use within the UK construction industry through the NBS Create and NBS National BIM Library initiatives. With BDP and Laing O'Rourke, the team will prove and test our proposals within both the design and construction stages of a project, giving invaluable multi-disciplinary knowledge from the design, construction, manufacture and operation points of view.</p> <p>BIM Academy have experience working as Information Managers on leading UK and international construction projects and will also bring their open-source xBIM software toolkit to the bid. The Digital Institute at Newcastle University is a world leader in cloud computing research, addressing issues including, scalability and reliability of distributed cloud architectures, security and provenance of data and the processing and analysis of very large datasets. Microsoft will provide consultancy throughout the project and the technology will be built on the Microsoft Windows Azure platform.</p> <p>We envisage delivering phase 2 as a fully cloud-based solution, scalable both within the UK and internationally. The Digital Presentation Tool (DPT) will be delivered both as a set of intuitive end-user tools and via API functionality to support third-party developers. The DPT will allow end users to search and browse digital object definitions and their associated LOD guidance, generate a project-specific digital Plan of Work (dPoW) and verify stage deliverable information in COBie format against the project-specific dPoW. Functionality will be built on the fundamental digital object definitions, their associated LOD guidelines and a unified classification system.</p>			

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The phase 1 work will deliver:

- A fully documented report detailing the primary functions and workflow of the application, the software and content development strategies and an analysis of delivery against the functional specification.
- A working prototype of the Digital Presentation Tool demonstrating the creation of a subset of a digital Plan of Work and the verification of this against a COBie/IFC dataset.
- A fully costed phase 2 project plan detailing schedule, project management approach and all significant milestones.

This work will be verified by the wider industry through technical investigation and a number of user experience workshops. These workshops will involve a wide range of contacts within industry, including invited guest organisations.

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BRE Global Limited	planBIM	£50,000	£50,000
Project description - provided by applicants			
<p>“planBIM” Overview</p> <p>“planBIM” brings together a series of technology innovations under a common solution to support the UK Level 2 BIM strategy. It delivers the digital plan of works for the UK sector for five years whilst building up its international and UK customisation capability. "planBIM" provides a freely accessible web-based resource that manages the supply and demand of shared structured asset information. “planBIM” builds on existing world class implementations and will be delivered by developers with an international track record.</p> <p>Governance</p> <p>"planBIM" is administered as part of the BRE charitable trust activities and supervised by "buildingSMART UKI" whose charters binds it to supporting open, interoperable and inclusive process improvement in the facilities sector. The service is backed by the reputation, neutrality and care for its position in the sector. The selected sub-contracted organisations have an equity stake managed through the collaboration agreements to complement the contractual relationship and ensure a sustainable business model.</p> <p>Standards</p> <p>BRE’s long standing involvement with buildingSMART UKI, buildingSMART International, ISO, CEN and BSI ensures that the service is a fully compliant implementation of standards and best practices. By implementing ISO 16739 (buildingSMART IFC) ISO 12006 part 3 (buildingSMART IFD) and ISO 27645 (buildingSMART IDM/MVD) it supports the process, structure and data of any BIM based process including those advocated by the UK BIM Strategy.</p>			

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Content

"planBIM" holds the relevant UK and international best practice content. The content is in two parts. The dictionary part holds all the relevant processes, roles, objects and properties including industry classifications. The requirements part then groups these to define what properties are expected on what objects for which process stages provided from (or to) which roles. The dictionary part ensures that the interface presents only familiar terms and expressions; the requirements part then captures the formal expectations in these terms.

Implementation

The implementation is based on technology that is already in use to deliver the buildingSMART Data Dictionary (bsDD), the buildingSMART Data Model (IFC), the buildingSMART Process management (IDM and MVD) and buildingSMART Certification service (IABI). Specifically "planBIM" exploits AEC3's "Requirements Management Database" as implemented in established European projects.

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Chartered Institution of Building Services Engineers	id3 by C8	£50,000	£50,000
Project description - provided by applicants			
<p>id3 (eye-dee-cubed) will provide a web-based tool to deliver the digital Plan of Work and classification system to enable widespread adoption of Level 2 BIM across all infrastructure sectors and the built environment.</p> <p>This initiative will be delivered through C8 - a collaboration of eight leading professional bodies involved in the construction and operation of the built environment and infrastructure in the UK and overseas. The eight bodies are the: Association for Project Management (APM), British Institute of Facilities Management, (BIFM) Chartered Institution of Building Services Engineers (CIBSE - the lead applicant), Chartered Institute of Building (CIOB), Institution of Civil Engineers (ICE), Institution of Structural Engineers (IStructE), Royal Institute of British Architects (RIBA) and Royal Institution of Chartered Surveyors (RICS).</p> <p>C8 brings engagement with the widest range of senior industry specialists actively engaged in the development of the digital plan of work, classification and the other elements of the Level 2 BIM delivery framework. The C8 approach involves wide contacts and connections with all aspects of the infrastructure, built environment and operational industries, with groups, organisations and individuals across the whole supply chain, as well as the members of the C8 institutions as key stakeholders and as customers for the data cube and associated products and services.</p> <p>id3 aims to deliver a clear, holistic definition of the “digital data cube”, defining ‘what needs doing’, to what level of detail, by whom and when for all stages of projects and operation, providing a coherent integrated approach for the whole built environment, covering the whole life of the infrastructure asset or building.</p> <p>This will enable application to organisations with single assets or portfolios, to asset management programmes and individual projects of all sizes – while maintaining and respecting the disciplines and directions of Level 2 BIM. C8 specifically aims to enable cross-sectoral, multi-</p>			

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professional, industry-wide collaboration to support the transition of construction, infrastructure and built environment sectors in the UK to a digital, data driven economy and to give their 450,000 members and other stakeholders in the UK and approximately 100 other countries the knowledge, guidance and professional recognition and development needed to operate in this new business environment.

Phase 1 will deliver a detailed specification for the Digital Plan of Work (dPoW) and classification system (CS) and their integration with the existing elements of the level 2 framework. It will also provide a clear business plan and specification for the platform required to deliver the dPoW and the full id3 vision through Phase 2.

Phase 2 will coordinate and consolidate the seven elements making up BIM Level 2, including the BS 1192 series, contract protocols and Government Soft Landings (GSL), as well as the newly developed definitive digital Plan of Work and Classification System. This will be delivered through the web, available free of charge and maintained and developed over a 5 year period, on a stable, resilient platform.