Creative Industries KTN Case Study

RIBA

RIBA, Central St Martins University of the Arts London
Semantically-enabled Building Informaton Models to benefit the construction industry

About the Project

In late 2010, Alisdair Aldous of University of the Arts London met Stuart Chalmers from the Royal Institute of British Architects' Technical Research department at a CIKTN 'Partnering For Innovation' event. Stuart had been exploring the use of semantic web technologies and how these might be applied in the built environment and in Building Information Modelling (BIM). Consequently, the seeds of a project idea emerged between UAL and RIBA.

Alisdair then contacted Geoffrey Makstutis, Course Director for BA 'Architecture: Spaces and Objects' at Central Saint Martins, UAL. With his programming knowledge, Geoffrey immediately grasped the concept of creating a semantic web infrastructure for the built environment sector which could link resources through the whole construction lifecycle, and so a new collaborative research and development proposal quickly took shape.

BIM is a methodology for representation of physical and functional characteristics of a building, creating not just a 3D model, but a shared knowledge resource about that building, forming a reliable basis for decisions during the building's life cycle, from conception to demolition. Managing data using a Building Information Model can lead to substantial design and construction cost savings; time is saved by removing unnecessary coordination checks, and waste on site can be substantially reduced because information generated from the model will lead to fewer errors due to inaccurate or uncoordinated information.

Fast Facts

Sector: Architecture, Software

Funding Source: TSB 'Metadata Production Tools' Fast-track

Total Project Value: £67k

Duration: Dec 2011- Dec 2012

Sector Impact: 30% of architects currently use BIM, 90% believe they will be using it within 5 years

Creative Industries KTN input: As part of CIKTN's consortium group, RIBA and UAL felt inspired to engage with the work of the KTN; our events were crucial for the partners to meet.

The Building Information Modelling (BIM) Gateway tool the team are creating will build on established industry protocols to create a linked data initiative within the construction industry, connecting supplier and contractor information directly into the model using semantic web and linked data principles.

The project will enable previously hard-to-access data resources to become part of the BIM process, with the potential to add huge value across the construction sector. A key driver in this is the Government's recent announcement that within 5 years virtually all public sector construction projects over £5 million must use BIM to enable integration and collaboration.

Benefits of Funding

The TSB Fast-track funding will enable a small project team – two at the University of the Arts, London and four at the RIBA - to create a prototype which will demonstrate the potential application and value of the BIM Gateway tool to the construction sector. The team realised the tremendous industry benefit, and as part of a consortium decided to share the IP generated from the project equally. The project also provides a new research direction within Central Saint Martins, further expanding the already broad scope of its spatial practices investigations, and builds on the RIBA Technical Research Department's ongoing initiatives on BIM and collaborative working.

Results

By the end of 2012, the prototype application will demonstrate the benefits of the semantic infrastructure created by the consortium, providing an effective method for integrating existing data into BIM models, as well as a platform for creating a wide array of other value added applications for the global construction sector.

"The Partnering for Innovation event was absolutely crucial for us in indentifying and forming our project partnership."

Alisdair Aldous, Research & Enterprise Collaborations Development Manager, University of the Arts London

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