



# buildingSMART

UK Chapter No 14 Summer 2006

## Enterprise Interoperability Centre

### New centre chaired by Nick Terry

*The Enterprise Interoperability Centre was launched in Brussels on 27 April, with the goal of promoting seamless interoperability in industry. Nick Terry, BDP and chairman of BuildingSMART UK, was elected chairman of the EIC.*



*'We strongly support the use of networks' – Nick Terry*

including aerospace, automotive, and telecoms, providing an exchange of insights across industries.

'Interoperability is a catalyst for growth and a key requirement is open standards,' Nick explains. BuildingSMART not only advances standards but is a catalyst for change.'

'At BuildingSMART, we have solid experience of developing IFC standards and encouraging take-up,' says Nick. 'We believe that we can make a contribution to EIC by bringing to it our ten years of experience of interoperability in the global design and construction sector.'

The ability to share information with customers and suppliers is expected to be a key factor for success across all industries in the next years, and BuildingSMART's participation in EIC will ensure that it remains at the leading edge of developments.

Contact: Christopher Groome ([cbris.groome@b-r-t.co.uk](mailto:cbris.groome@b-r-t.co.uk))  
Visit [www.eic-community.org](http://www.eic-community.org) and [www.athenaonline.co.uk](http://www.athenaonline.co.uk)

ATHENA (Advanced Technologies for Interoperability of Heterogeneous Enterprise Networks and their Applications) is an EU-funded programme, with the vision of seamless interoperability between enterprises by 2010. EIC has been created under the ATHENA programme.

### STAND-INN project launches

A three-year project, funded by the EU and known as STAND-INN, starts in summer 2006 with the aim of promoting innovation, sustainability and the adoption of standards. A strong pan European consortium of 31 members from 11 European countries has come together to implement the project.

IAI/BuildingSMART will be a major player, and chapters from Norway, UK, France, Italy and Germany are taking part. The project aims at integrating open (mainly IFC) standards into real-world business processes.

There is a strong emphasis on developing sustainable buildings, including housing.

The project spans the creation of European innovation networks, best practice on innovation and the application of standards, practical guidance and input into European construction policy. With its experience as a standards-setter, BuildingSMART has much to offer and will play a leading part in disseminating the results of the project and encouraging wide take-up.

Contact: Christopher Groome ([cbris.groome@b-r-t.co.uk](mailto:cbris.groome@b-r-t.co.uk))

*The full title of the project is: Integration of performance-based standards into business processes using IFC standards to enhance innovation and sustainable development.*

### Co-location, co-location!

Co-location of the project team can greatly improve mutual understanding, dramatically speed up decision-making and lead directly to lower costs and more timely delivery.

These are among the findings of a new report on co-location from the Business Round Table, *Making a success of co-located design and construction teams*, published in July.

The study, based on interviews and workshops, involved project professionals from different disciplines and clients from a range of sectors. Practical how-to advice is balanced by case studies of projects: expansion at Stansted, Heathrow T5, the Bank of England refurbishment, GlaxoSmithKline's new HQ and the Royal Bank of Scotland's World HQ.

According to Christopher Groome, who led the co-location research project: 'What emerged from the study was the flexibility of co-location. Not only can it be used successfully on both larger and smaller projects, it can also be used to drive the client's specific priorities.'

'We were struck by the enthusiastic support for co-location that we uncovered during the research and workshops.'

Available from The Business Round Table Ltd, 2 Church Rd, Kenley, Surrey CR8 5DU at £25.00, post free.

Or contact [beryl.garcka@b-r-t.co.uk](mailto:beryl.garcka@b-r-t.co.uk)

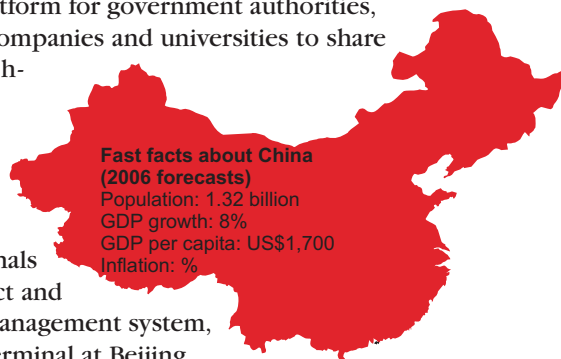


## China launches IFCs

China, which joined BuildingSMART only last year, is moving swiftly to encourage take up of IFCs. The national launch of IFCs took place on 3 June 2006 in Beijing. BuildingSMART/IAI China joined forces with the Chinese Ministry of Construction for an industry day in the form of a conference, '3D Collaborative Building Design Practice', with speakers from Europe, North America and China.

The aim of the conference was to introduce the international IFC standard and related best practices to the Chinese AEC industry,' explained Aaron Cui Lu, IAI China. 'The event provided a platform for government authorities, design practices, construction companies and universities to share their experience of the technologies involved.'

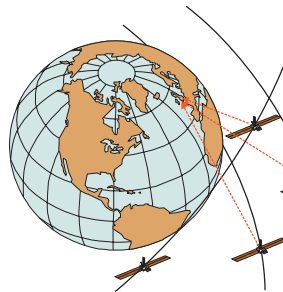
The European, American and Singaporean speakers contributed the lessons learned from their own experiences. Chinese academics and design professionals talked about the Olympic project and its IFC-based 4D construction management system, a state stadium project, a new terminal at Beijing airport and IFC R&D in progress.



## Common ground and a common understanding

### IAI International links up with geospatial organisation

On 1 March, a Memorandum of Understanding with the US-based Open Geospatial Consortium was signed to collaborate in promoting open standards and interoperability.



Areas of co-operation will have both a technical slant (a joint model) and a practical impact (outreach materials such as journal articles and white papers, workshops and seminars).  
 'An initial focus will be to assess member interest in advancing the creation, testing and implementation of an ifcXML-IFC/GML model,' said Patrick MacLeamy, chair of the International Council. 'This should allow us to improve the ability of IFC building models to be shared between the AEC and geospatial technologies and the user communities.'

'With the increasing need to integrate the as-built and broader geo-spatial environments, more effective standards solutions can only come from closer, more formal co-ordination between relevant standards-setting bodies,' said Mark Reichardt, OGC president.

'The alliance between IAI International and the OGC is a major step in addressing a co-ordinated standards solution.'

A report is being prepared, defining areas of prospective collaboration.

Contact: Christopher Groome ([cbris.groome@b-r-t.co.uk](mailto:cbris.groome@b-r-t.co.uk))

The Open Geospatial Consortium is an international industry consortium of more than 300 companies, government agencies, research organisations and universities.

### Future of BuildingSMART

In just ten years IAI has had a lasting impact on the industry. Its future impact is likely to be even stronger as IFC adoption increases. Rebranding as BuildingSMART reflected the shift towards a more practical emphasis and talks are in progress on how best to support implementation and use and how best to augment IAI capability internationally and regionally to meet new needs.

A 'thinkpiece' - listing options and areas for discussion - has been drafted for consideration by IAI International and the chapters, covering activities and capabilities, the volunteering tradition and alternative models, the mobilising of resources for projects, the IAI structure and funding.

Contact: Christopher Groome ([cbris.groome@b-r-t.co.uk](mailto:cbris.groome@b-r-t.co.uk))

## Clubbing together

### Learning clubs launched to share experience at the leading edge

The learning clubs series, held under the *Avanti* Connections programme, is now under way, with an evening of presentations at the University of Salford on 21 February. And on 16 May a learning club meeting was held in Edinburgh on the topic of co-location.

The learning club meetings look at the business benefits of collaborative working and how it functions in practice.

At the Salford meeting, leading speaker, David Kerr of Taylor Woodrow Construction, explained how collaborative working is being implemented on the St Helens and Knowsley PFI hospitals redevelopment project, with the different disciplines sharing design information through a common data environment (see case study, page 4).

Contact: Christopher Groome ([cbris.groome@b-r-t.co.uk](mailto:cbris.groome@b-r-t.co.uk))

### ISO standard

Work has begun to get the IFC model accredited as a full ISO. The model, which is publicly available as PAS 16739, is already recognised by ISO, and the next step is to achieve the status of an ISO standard.

Contact: Jeffrey Wix ([jdw@aec3.com](mailto:jdw@aec3.com))

### Extending the BuildingSMART concept

How do the BuildingSMART goals sit with the aims of other organisations? Can they be jointly harnessed to the benefit of the wider AEC industry? IFCs and other standards are not necessarily mutually exclusive, and offered in combination they can strengthen the offering.

At the international meeting in Munich in April, a decision was reached to explore the possibilities of combining IFCs with other standards that define areas not within IAI's sphere. Earlier this year, the US National Institute of Building Sciences (NIBS) joined forces with IAI North America to bring certain NIBS activities within a co-ordinated BuildingSMART programme.

'We may be seeing more collaboration on BuildingSMART ventures in the future,' says Christopher Groome, business manager, BuildingSMART UK.

## IAI Members Forum

### BSRIA

An event to promote the sharing of information in building services was held at BSRIA, Bracknell, on 9 February, with a second event on 18 May.

Both events were well attended, and two further events will be held on 19 September and 5 December.

Contact: Tony Matthews

(Tony.matthews@bsria.co.uk)

### Libraries

The IAI International meeting in Munich in April agreed on the need to harmonise terms in the various library projects around the world. Libraries – databases of building elements and components – are an essential part of the procurement and costing side of the IFC model and represent an opportunity for growth. The Norwegian and Benelux chapters are leading the library development, with strong input from Netherlands-based member company Stabu – LexiCon which provides standards and specification. The next meeting will be held in Lisbon on 26–27 September.

Contact: Jeffrey Wix (jdw@aec3.com)

### IFCEL

The IFCEL project to develop an interface between the IFC model and Microsoft Office Excel (ie IFC + Excel) was completed at the end of 2005, with demonstrations in London and Glasgow. The tool allows quantities and cost information to be combined from IFC building models. AEC3 and other parties are looking at developing it as a commercial product.

Contact: Nick Nisbet (nn@aec3.com)

## Benelux

A Benelux chapter of BuildingSMART was launched on 6 April. 'The Benelux AEC industry is entering a new era, where interoperability will be the prime focus,' says Maarten van Hezik, Stabu – LexiCon, and chairman of the new chapter. The first reactions have been very positive and around 40 companies have pledged their membership. 'We want to create a platform with broad industry support that will help our industry to adapt this standard forthwith and make an input into the wider IAI community, reflecting the particular concerns of the



Benelux countries,' adds Mik van Leeuwen, Cadvisual, and business manager for Benelux.

*The Benelux initiative is fully supported by the Department of Economic Affairs through its Platform for Systems Innovation in the construction industry (PSI Bouw).*



### Construction Industry Trading Electronically

Our associated organisation CITE is coming under the BuildingSMART banner but retains its own identity. Recent activities include the joint IAI/CITE project to examine the new CITE e-tendering XML schema, a format based on UN/CEFACT e-Business standards, and investigate the relationship between building models and costing processes. Member company Shepherd Construction has contributed a review of cost-planning processes. AEC3 has investigated the automatic generation of an e-tendering message from any building model. The project has reached the point where it can be demonstrated and the concept evaluated. The results will be shown for the first time at the Summer Event on 22 June.

*More information on CITE in the CITE newsletter: Jeff Stephens*

(jeff.stephens@uk.taylorwoodrow.com)

*eTrading Standards Development and XML eTendering Standard: Kevin Smith*

(kevin.smith@kjs.biz)

*Mapping BIM to the eTendering XML Standard:*

Nick Nisbet (nn@aec3.com)

Under the *Avanti* Community programme, quarterly meetings are being held at BSRIA in Bracknell.

Contact: Tony Matthews

(Tony.matthews@bsria.co.uk)



Under the *Avanti* Connections programme, the Learning Club series has begun (see 'Clubbing together').

### Projects in progress

#### King Alfred Centre, Hove

A cost information project is taking place at the King Alfred Centre in Sussex, a sophisticated multi-use building designed by architect Frank Gehry. With collaboration from Davis Langdon, the project is looking at the

problems of measuring complex geometric shapes and assessing the relative accuracy and efficiency of automatic and manual take-off.

Contact: Nick Nisbet (nn@aec3.com)

### Benchmarking at Bovis

A goal of BuildingSMART is to allow project information to be accumulated accurately during the design process for later FM operations. Under a Bovis Lend Lease project, new tools are being used during design and procurement to acquire and store the handover information. A recently completed building, Plantation Place in the City, is being used as the benchmark against which improvements realised at York House, Marble Arch, are being compared.

Contact: Nick Nisbet (nn@aec3.com)

### Multidisciplinary design

A project at Building Design Partnership is looking at how the practice is introducing building modelling into its design process. Two specimen projects, known simply as Projects A and B, are being assessed to help understand where the real efforts and efficiencies lie, and the likely benefits as the team and model cover more activities.

Contact: Nick Nisbet (nn@aec3.com)

### New members

Oracle, ETL Solutions and Christoph Morbitzer have joined since the last newsletter. Welcome! Jeffrey Wix Consulting is now known as AEC3 UK Ltd.

### Future events – 2006

22 June AGMs (IAI UK and CITE) and Summer Event, London

30 Oct–3 Nov International Technical and Council meetings, Washington, DC

7–10 Nov Meetings of EIC and the Value Chain Forum, a St Gallen membership organization, Friedrichshafen, Germany



### And in 2007...

The BuildingSMART international conference and meetings will be held in London in the week commencing 16 April 2007. To include high-profile open conference and learning events, plus technical and internal meetings. Expert submissions from members will be complemented by presentations from eminent external speakers, covering both hands-on practicalities and wider strategic issues.

## An Avanti case study

### St Helens Hospital: Highlights from a project in progress

Poor design co-ordination between the design disciplines, together with late delivery of design information and incorrect CAD design data, can increase project costs by over 2% according to the National Institute of Standards and Technology (NIST) report *Cost Analysis of Inadequate Interoperability in the U.S. Capital Facilities Industry*, Report No NIST GCR 04867.

To avoid the unnecessary costs caused by poorly co-ordinated information the new PFI hospital for the St Helens and Knowsley Hospitals NHS Trust in Merseyside is being designed using collaborative working and a shared data environment. The project has adopted the 'Standard Method and Procedure' (SMP) developed by the DTI-sponsored *Avanti* programme. SMP controls the development of design information.

The St Helens and Whiston Hospitals Redevelopment project is a six-year, £338 million project. The multidisciplinary project team, led by Taylor Woodrow Construction, is benefiting from a common data environment or CDE.

The parties to the project have agreed to SMP and understood their roles within it. A layer naming standard is being applied to the shared 2D CADD models and the published 2D drawings. Compatible 2D CADD modelling software was specified by Taylor Woodrow to allow seamless data sharing between disciplines. Software products in use on the project include Autodesk's AutoCad 2006. A project extranet has been set up to both share the native CAD files, and to publish the DWF-formatted resultant co-ordinated drawings in the standard drawing template.

At the heart of the project is the common data environment, which has four sections: work in progress, shared information, documentation and the archive. The work in progress part of the model allows project team members to carry out their own work on their own systems, with shared information - available to the whole team - being rigorously checked and peer-reviewed before sharing commences.

'The design team is already reporting on the benefits as a reduction in time needed to find shared data and then produce co-ordinated designs,' says David Kerr, project modelling and collaborative working manager, Taylor Woodrow Construction.

'Using the *Avanti* SMP and the St Helens project extranet has significantly reduced the time to access both the architect's and the structural engineer's designs, ensuring we obtain the correct reference files in the correct format,' adds Ian Cowlard, CAD manager of consulting engineers RW Gregory, who are participants in the project. 'This has improved design co-ordination.'

The benefits of this common data environment and collaborative working are expected to continue throughout the life cycle of the project, with fewer RFIs (requests for information) and site instructions during construction - and even into the later operation of the hospital, with reliable, robust information passed on to the FM operators.

Contacts: David Kerr ([david.kerr@uk.taylorwoodrow.com](mailto:david.kerr@uk.taylorwoodrow.com)); Jeff Stephens ([jeff.stephens@uk.taylorwoodrow.com](mailto:jeff.stephens@uk.taylorwoodrow.com))

**'The design team are already reporting on the benefits as a reduction in time needed to find shared data and then produce co-ordinated designs,' says David Kerr, Taylor Woodrow Construction.**

## BuildingSMART in practice

### Professionals unite at Tromsø Uni - IFCs all the way

A new building at Tromsø University College, above the Arctic circle in Norway, is bringing together designers across all disciplines to share information through a 3D project model.

The use of an IFC-based project model began at the R&D stage. A 'sketch design model' - representing the outline conceptual design stage - has been prepared, with the full conceptual design following in summer 2006.

Norway's state property agency, Statsbygg, has put its support firmly behind the principle of the shared IFC model and the Tromsø building was selected as a pilot.

All the design and building disciplines are involved, including the contractor Skansa whose input is expected to help improve buildability. Geospatial tools - IFC for GIS - are being used to situate the building in the terrain, with a 3D terrain model based on local council maps.

Planning permission will use the Norwegian eSubmission system, developed by the Norwegian Byggsøk organisation. And, further down the road, an 'as-built' IFC information model will be handed over to the FM operators - so it is a case of IFCs all the way.

'IFC and related standards will be important building blocks in new and revised business processes, producing more efficient buildings - and not just in cold climate colleges under the midnight sun and northern lights,' says Frode Mohus, discipline co-ordinator.

*BuildingSMART News will follow the Tromsø project as it progresses.*

BuildingSMART News was compiled by Betzy Dinesen (tel 020 8767 1372), who will be pleased to receive ideas for stories. Production editor: Jane Thompson

## IAI UK

Administration: 2 Church Road, Kenley, Surrey, CR8 5DU. Tel: 020 8660 1631.

Contacts: Christopher Groome, [chris.groome@b-r-t.co.uk](mailto:chris.groome@b-r-t.co.uk).

Beryl Garcka, [beryl.garcka@b-r-t.co.uk](mailto:beryl.garcka@b-r-t.co.uk)

### Planning with IFCs

So far, only two countries have put in place a system for automatic, web-enabled planning application. Both have been made possible by the IFC standards and technology. Singapore led the way with its Corenet project, followed by Norway with its Byggsøk project for building and zoning applications.

Contact Beryl Garcka for a copy of the Corenet case study and the BuildingSMART case studies, which include Byggsøk ([beryl.garcka@b-r-t.co.uk](mailto:beryl.garcka@b-r-t.co.uk)).

### The Corenet Systems

