



National BIM strategy launched in Spain

Spanish chapter to play a part

A strategy to introduce mandatory BIM working in public sector projects was launched in Spain in July. This marks a step-change in Spain's approach to BIM, where up till now BIM use has been patchy, with just a few enlightened regional governments acting as beacons and far-sighted companies leading adoption.

The strategy was announced at a meeting convened by the Ministry of Public Works (Ministerio de Fomento), where the minister, Ana Pastor, emphasised that the switch to BIM working would represent both a culture shock and an opportunity for the industry.

A steering committee – the Comisión para la implantación de la metodología BIM – has been set up to promote the implementation of BIM in the Spanish construction sector, life-cycle use of BIM and the development of national standards to facilitate BIM practices. And importantly, the strategy will require the mandatory use of open BIM.

'There is a strong support for this move, among clients and larger companies,' says Sergio

Muñoz, president of the Spanish chapter, which is on the steering committee.

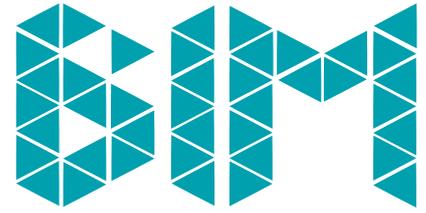
'However, it may be hard for some of the SMEs.

At buildingSMART Spain, we have

working groups in the areas of dissemination and training, and we intend to help ease the way for the smaller players.' The BIM steering committee is creating five task groups, covering international liaison, strategies, technologies, people and processes. International liaison will aim both to align Spain's work on BIM with that of other European countries and to share its experiences with countries in Latin America to encourage BIM roll-out on the continent. Pilot projects are planned.

A provisional timetable has been set, with recommended use of BIM in public sector projects by March 2018, mandatory use in public construction projects by December 2018 and mandatory use in infrastructure projects by July 2019.

'As a chapter, buildingSMART Spain is actively involved in the national BIM strategy and we aim to lead one of the task groups,' says Sergio. 'And as a country, Spain will be better placed to participate in the world AEC industry as a result of the strategy.'

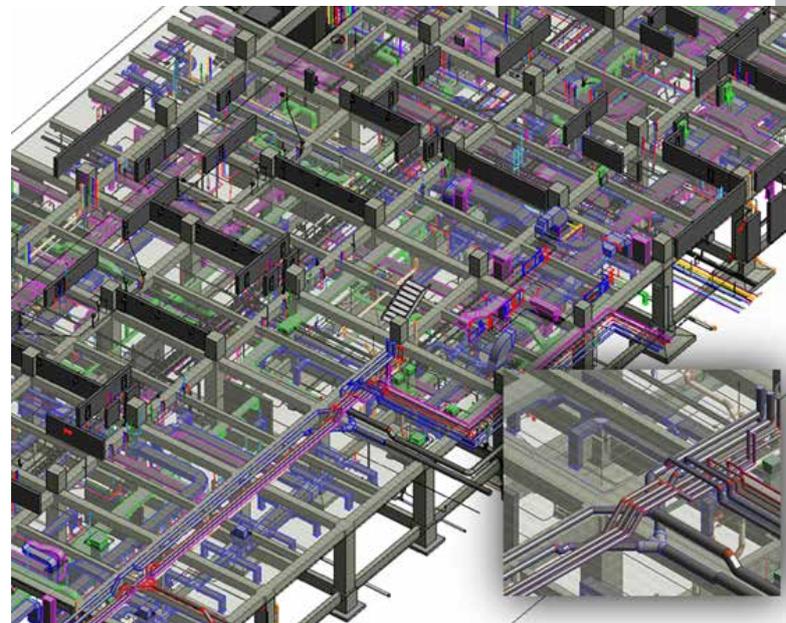


Who are the early adopters?

Spanish engineering firm Ineco is convinced of the many advantages of BIM and has used it on a number of international projects. These include a new passenger terminal at Odessa, Ukraine, where major design changes requested by the client – requiring extra floors – were made without delaying the schedule, something that could not have been done with traditional systems.

Also among the early adopters is Acciona Infraestructuras, one of Spain's leading construction companies who has been using BIM since 2008 and has now launched a global implementation plan to introduce it in all of its business units. In Nogales, Mexico, the company is using detailed discipline and coordination models to improve the management and control of the design and construction processes in a new hospital development owned by the Mexican Social Security Institute (IMMS).

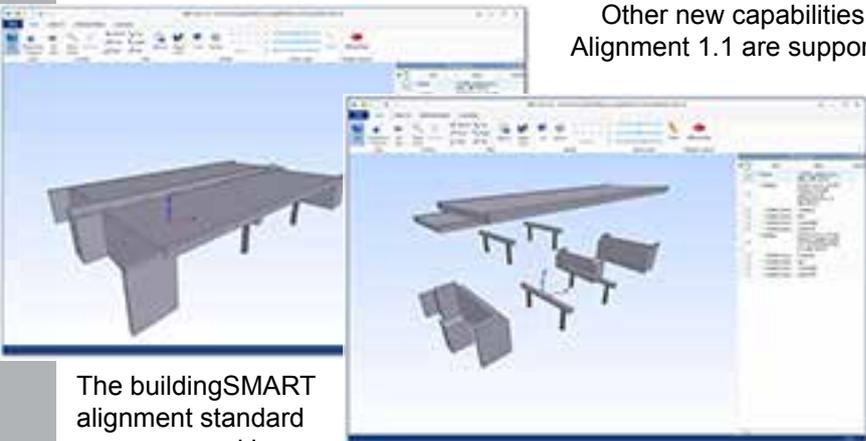
(Left) Ana Pastor, Minister of Public Works, at the launch in July; (below left) Odessa airport in construction in February 2015; (below right) Model used by Acciona for a new hospital development in Mexico



Creating standards for infrastructure

Alignment, roads, railways and more

The buildingSMART alignment standard was approved earlier this year – the first infrastructure standard from bSI to be released. The development of buildingSMART standards for infrastructure is widely seen as one of the most important areas of our work. It falls within the Infrastructure Room, led by Henk Schaap, with multiple activities in progress.



The buildingSMART alignment standard was approved in May 2015 after a year of fast-track development. It was well received but it has not so far had any practical impact.

Source: Rijkswaterstaat

Alignment deployment

'We were pleased at the positive response but realised that we had to do something to encourage implementation,' says Henk. The result has been to develop an Alignment Deployment project. The project will create a number of pilots and trial the exchange of alignment information between two parties. The partners in the pilot will require suitable software interfaces and representatives of the software industry ready to develop these. There is strong interest in the pilot in the Netherlands, Korea, Japan, Sweden and France.

Extending the alignment standard

Meanwhile, work on Alignment 1.1 is underway in a project funded by the Netherlands and Sweden and led by Thomas Liebich. The extension will provide the ability to define alignments running parallel to a 'master' alignment. A rail track, for example, might describe the master alignment as running down the centre of the track bed, with parallel alignments right and left for the two rails. Or a motorway might need separate alignments for each of the lanes. The extension standard will provide the ability to describe these alignments.

Other new capabilities of Alignment 1.1 are support for linear referencing – in which the locations of features are described in terms of measurements along a road (or rail track)

– allowing the road to be divided into sections for maintenance purposes.

Together with the Open Geospatial Consortium, the Infra Room is developing a single conceptual model, using UML (Unified Modelling Language) that will be used by OGC in InfraGML and by buildingSMART in Alignment 1.1.

IFC Bridge

A number of countries with buildingSMART chapters have bridge research programmes in place. Significant work has been done by the MINnD programme in France, as well as by Germany, Japan and the US. The aim is to create a formal bSI project to develop a standard, drawing on the strong contributions already made and widening the input. Funding of €200,000 is required and project participants are being sought.

Roads project expanding its coverage

As development of IFC Roads continues, with work going on in Korea, Japan, France, Sweden, Germany and the US, it has become clear that this ambitious programme was not ambitious enough. What about railways? Should they be brought into the IFC fold? The Infra Room has decided they should and has renamed the project work as Roads & Railways.

A plan to structure IFC Roads & Railways as a formal buildingSMART

project is being developed as an essential step before securing funds – and considerable funding will be needed – and bringing the many strands of activity together under the bSI umbrella. The IFC Roads model, developed by the Korea Institute of Construction Technology, will provide a major input into a roads standard.

Infra asset management

'Up until now, asset databases have generally lacked 3D geometry,' continues Henk. 'But that will grow in the coming years and we want that information to be in IFC.' There is strong demand among clients for a buildingSMART standard on asset management for infrastructure, and Sweden, Finland and the Netherlands have committed to funding a project. It is at an early stage and the requirements first need to be explored and defined to understand what will be required of new standards.

Overall architecture

Roads often have bridges; so too do railways. So where do the separate models for roads, rail and bridges start and end? To clarify how our standards will interweave and overlap, a project to define the overall architecture of Infra Room activities has been suggested. 'The goal here won't be easy to achieve but it will help us all as we move forward – and it will help end-users of the standards eventually,' he says.

A vision for the future

Henk has long experience of BIM, buildingSMART and standards development. But even with such

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Henk Schaap



Introducing Chapter Services

As a result of internal changes within bSI after the June Council meeting, the buildingSMART chapter programme has been split into Chapter Services and the User programme. Chris Groome, bSI company secretary and business manager, talks to Betzy Dinesen, editor, about the division of activities.

BD: Why has the chapter programme been split into two?

CG: As we worked through the ideas we had for the chapter programme, it became apparent that there were two very different jobs to be done. The first was helping chapters or would-be chapters to do their job better; the second was the recognition that the chapters were the main channel to users.

What is the background to the User Group?

We set up the International User Group (IUG) about five years ago to provide a market discipline on the aspirations of the International Technical Management Committee (ITM). Getting it recognised and populated was an uphill task. Now the new standards process has imposed market discipline on buildingSMART, with introduction of the 'pay to play' principle for projects, but the IUG still has a role to play as a clearing house for promising projects with potential muscle.

The designation 'Chapter Services' is new? What does it cover?

Although official recognition is new, there has been a wish to provide such services over several years. A shortage of resources at the centre made it difficult. Now, with the appointment of a CEO and operations director, I am better placed to help provide the chapter services, alongside my full-time colleagues. For existing chapters this means more frequent communication, help and advice in the event of problems, drawing attention to opportunities, for example in the standards programme, and the sharing of ideas and experience. For prospective chapters, it means piloting them through the formation and affiliation process.

What is new in the setting up of Chapter Services and the User programme, and what is a continuation?

In Chapter Services, some activities have been happening intermittently, but they are to become formally part of the 'deal' between International and the chapters with hard deliverables. In the User programme, we want to maximise the participation by chapters and users in the projects underpinning standards development and deployment, including certification.

In practice, what can chapters expect to receive from these services?

There are some very definite existing and planned deliverables. For example, we plan a more formalised 'help desk' function – we are getting a variety of questions, such as IPR or practical matters, like has any other chapter found a way of tapping academic resources. Other deliverables are an online community workspace, an international membership incentive/rebate scheme to support innovation at the grass roots, a bSI operations manual and formal visits. [See also box above right.]

Creating standards for infrastructure

(continued from page 2)...

sound experience, he admits there are sometimes frustrations in his role as Infra Room leader. 'Some of the projects are long term and getting funding for development is always hard.

'But there are rewards – when we delivered Alignment 1.0, it felt fantastic,' he says.

He sticks to his vision of what the Infra Room can do. 'We can enable process integration based on open standards while providing flexibility to all partners in choosing the right software tools for their job,' he adds. 'We can help the industry become more efficient and avoid classic errors of wrong versioning, ignorance of what the asset actually consists of and poor communication.'



Global standards for openBIM

What can you expect?

Chapter Services at a glance...

- our standards process for developing international data standards and associated compliance
- an online community workspace, currently being set up
- an international membership incentive/rebate scheme to support innovation at the grass roots
- our future bSI operations manual – a simple 'how to' guide for setting up, leading and running chapters
- quarterly online meetings between bSI and chapter leaders to discuss current issues (two each quarter to suit time zones)
- formal visits to existing chapters by a senior bSI officer – the stance will be that of a critical friend
- a more formalised and more visible 'help desk' function

organisation. And the main principle of bSI's organisational membership was agreed and implemented, but there is an outstanding issue around the financial consequences for chapters of International membership. A small task group is looking at this in the context of the Chapter Agreement.

You are suggesting a vision of a well-knit community of members who share the same aims and collaborate – through best practice, projects and summits – to achieve those aims. How close to this are we in reality?

The organisational model of IAI, subsequently bSI, was based on strong chapters and a minimal centre. The changes we are going through at the moment are based on the hypothesis that success depends on a partnership between strong chapters and a strong centre. Strong chapters depend on a strong centre and vice versa. My guess is that we are half way along that path.

New customised BIM guide from Norway chapter

BuildingSMART Norway is encouraging the industry to adopt open BIM by making a guide and associated database available on its website.

The bSN Guide is a flexible tool that can be used by project owners who want to set open BIM requirements in their projects, even if they lack expertise in BIM or IFC.

'The guide is the result of a project that ran for 30 months,' explains Steen Sunesen, managing director of the chapter who led the project. 'We wanted to create a guide that would offer value to each and every project that uses it. At the same time, we believed that consistent, standardised requirements would encourage more and more companies to adopt open BIM.'

Different working groups were set up at the start of the project to cover the various elements of the guide, including user interface, BIM requirements and guidelines. A set of BIM requirements can be adapted by individual projects across all phases of the projects. The project was developed together with AEC3 Deutschland and paid assistance from Norwegian multidisciplinary

consultancy Norconsult and software firm Rendra.

The BIM guide is available to both members and non-members of buildingSMART, though it is free to members. A project is registered online with the guide and the user specifies the phases and BIM processes within the project. A customised specification is then generated for the user to download.

The guide offers four optional elements. First is the overview report without a detailed specification of objects but suitable for tenders and a checklist for architects and consultants. Second is the detailed report, with objects described in detail so that they are compatible with the IFC model and suitable for setting up IFC export and object libraries. Third is the BIM Manual – common guidelines that will be used across the project. And lastly mvdXML, a machine-readable format for communicating BIM requirements to the checking software – allowing



the software to automatically check that the model deliverables match the requirements set out in the specific project.

Also available on the bS Norge website is a section on definitions, covering roles, phases and processes. The bSN Guide is based on a framework of definitions. These definitions are also used in other products and standards in Norway and are shared openly with the industry.

The bSN guide is in Norwegian and intended for the local market. 'But we think that our approach and solution can benefit others and would be glad to share our experience with chapters who are thinking about developing or refining their own guides,' adds Steen.

What will the next round of 'Heroes' look like? Heroes of Interoperability 2015/16

Early adopters of BIM have come a long way, as the bSI 2014 Heroes of Interoperability competition showed. Progress was often the result of clients' requiring the use of open BIM, as in the case of the overall winner, the Østfold Hospital project. But what would Jan Karlshøj, competition coordinator, like to see in the 2015/16 contest, launching in the autumn?

'The next step is for us to see richer models, containing more than just geometry,' he says. 'I'd also like this time to see models relating the manufacturing, site work and FM.'

For the 2015/16 competition the prospective heroes will be asked to provide performance indicators and new criteria have been added. 'Ideally, we would like to see cost savings, but we recognise that this information may be sensitive,' he adds. 'In that case, time savings may be cited, and we would like to see proof that the use of open technology has helped the project to come in ahead of schedule. We would be looking for evidence of the planned and actual timetables.'

Another innovation is a student category. Involving students could bring benefits all round. Students who are being taught BIM techniques will be able to add their competition activities to their CVs and potentially be more employable. Companies look to young people for their facility with technology, so open BIM could spread this way, with graduates acting as BIM ambassadors.

Competition entries came largely from Europe last time. How can more chapters get involved? 'Post launch, I would like to see chapters using their information channels, social media and industry contacts to encourage people to enter,' says Jan. 'Countries like Korea and China which have their own awards could encourage local firms and clients to enter their projects at bSI level.'

Success in the Heroes competition resonates widely, with chapters and winners promoting the successes. It reflects well on the country and the chapter. Multiple entries from a single country are testament to the strength

Standards Summit in Singapore

The Standards Summit runs from 12 to 15 October 2015 at the Genting Hotel Jurong in Singapore.

The five rooms – Building, Infrastructure, Product, Regulatory and Technical – will hold meetings and workshops, with plenary sessions on 12 and 15 October. ISO Technical Committee 59, Sub-Committee 13 meets during the same week, and Singapore's Build Smart Conference 2015 will be held on 13 and 14 October, with BIM featuring on 14 October.

Visit <http://www.buildingsmart.org/event/standards-summit-singapore-2/>



of local chapters – 'chapters that promote open BIM are themselves doing a hero's job in getting their industry on board and local projects into the competition,' he concludes.

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