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European Federation of Engineering Consultancy Associations

Representing FIDIC in Europe



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Anticipating the publication of ISO standard 19650 on information management using building information modelling in December last year, the EFCA BIM Task Force elaborated guidance for the EFCA member associations for introducing the standard and highlighting its far-reaching benefits. Today in Europe most of the biggest projects are designed under a BIM process. For engineers, BIM under the ISO 19650 concepts represents unprecedented opportunities for improving their added value during the construction process. This EFCA booklet can be regarded as the voice of engineers, explaining the use of ISO 19650 to colleagues and other partners in the construction process.



Thinking forward and in order to acquaint our members with new developments, EFCA has published a "Future Trends" report for the second year in a row.

Commenting on the report, EFCA President Kevin Rudden explained that "To be successful in today's world it's no longer sufficient to imitate past models. We must innovate and concentrate

New building standards boost productivity and innovation – climate change goals are two steps nearer



Christophe Castaing

Government progress towards low-carbon buildings and transport networks, increasingly urgent goals for addressing climate change, received another boost recently with the launch of some unifying international standards being published by ISO and guidance on their use by the European Federation of Engineering Consultancy Associations (EFCA). "The standards are not only making the construction sector more competitive but they are making us more effective," says Christophe Castaing, Chair of the EFCA BIM Task Force and Director of Digital Engineering at Egis (France). "We needed a set of standards to bring stakeholders together within a project. Actually, they are also bringing the whole industry together."

Consulting engineers and others in the construction sector have been moving rapidly towards 3D computer design in recent years, reducing errors and financial losses by improving efficiency and being able to test designs and innovations before committing them to real life. About 90% of new projects in Europe use this 'building information modelling' (BIM) approach, according to Daan Alsem, BIM Project Manager at Royal HaskoningDHV and member of the EFCA Task Force and the data load has been increasing 10-fold every two to four years.

Longer term thinking

BIM is a team approach to construction and its beauty is in the efficient use of data. Project partners provide their data to a 'digital twin' of the hospital or road network under construction, and all decisions can be made on this single source of 'truth'. The data is also available to be re-used for developing a new service or re-purposing a building well into the future. Sharing and storing data in this way encourages longer-term thinking – great for containing costs and essential for innovatively reaching climate change goals.

"There is an enormous appetite for BIM," says Mr Alsem, "I wouldn't say we were in the stone age 10 years ago, but the changes have been so fast that sometimes it feels like it. BIM has moved on-line; it uses the cloud – every 2-4 years we are using 10 times the amount of data – and it is a lot faster."

Mr Castaing agrees. He has seen a doubling of BIM-enabled projects within one year at EGIS (France). "Last year we had €200 million worth of projects in BIM, this year we expect €400 million," he says.



our efforts on what our competitors are not yet doing.”

The second annual EFCA Future Trends Booklet is further exploring the trends that will disrupt the global AEC (architectural & engineering consultancy) Industry. It is irrelevant whether we as a Federation support, embrace or encourage these trends; the future is inevitable. The only constant is change and the rate of that change is increasingly uncontrollable. Our goal is to expose the European AEC Community to the possibilities and opportunities that new technologies and new forms of organisation will create and the consequence of ignoring it.

These new forms of organisation structure place more trust on the integrity of all those involved in the journey. They can only succeed with the preservation of the core ethical principles which lie at the heart of our profession. Without these, failure is inevitable.

EFCA challenges our industry to have the courage to transform ourselves, to abandon preconceived frameworks, to embrace new models and try new experiences that will allow us to truly evolve as an industry and society.

The transformation won't be easy. There will be many challenges and obstacles as we try to reconcile these future trends with the legal, regulatory and liability precedents which have both constrained and protected us for many years. Shattering the status quo is always disruptive.

The EFCA Future Trends report and the booklet on ISO 19650 on information management using building information modelling are available from the homepage on the EFCA website at www.efcanet.org.



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Speaking the same language

The burgeoning data and systems, however, brought their problems. “I deal with many stakeholders,” says Mr Alsem, “in projects and also in asset management. We really needed to enhance our inter-operability. We needed a better way of collaboration, to manage the assets effectively. Everyone had their own system, their own way to work, and their own standards, which made it difficult to talk to each other. We have all been speaking different languages. We are finding a very big need to try to come together. You can only work with these new techniques if you have agreed information about standards – that’s why we needed an ISO for BIM.”



Daan Alsem

“ISO 19650¹ is still very young,” declares Mr Alsem, “just six months old, but a lot of companies are using it already. It has become a sort of Bible for project managers. The framework it gives us means we can now speak the same language.”

Improving productivity

BIM is already recognised for improving the efficient use of resources and Mr Castaing is excited about the added productivity ISO 19650 can bring to a BIM project. But he is also concerned about some outstanding issues around the use of data. “We sometimes feel a little out of control,” he says. “The data is in the cloud. Software we used several years ago may not be available now. Where is that data? Who owns it? The situation we have now with cloud computing costs always rising is expensive and not sustainable. EFCA addresses these issues in its guidance because we need to consider them now.”

The guidance focuses on data structure, data need and data exchange at a technical and at a contractual level. Although it is particularly useful for project managers, the Task Force would like all stakeholders to read it to get a better grasp on this new way of working.

The ISO standards will make a difference at the global level. “Maybe not so much in countries like the USA but certainly in Europe where we work much more closely with national and local authorities,” says Mr Alsem. “We have ‘BIM mature’ countries like the Netherlands, the UK, places in Eastern Europe, but it is growing everywhere.”

According to Mr Castaing, the Chinese have strategically adopted ISO 19650 and ‘openBIM’ in their extensive Belt and Road Initiative (buildings and infrastructure for their new ‘silk road’) that runs from China to Western Europe. “The projects they are developing are being made more accessible to us by using IFC (International Foundation Classes) for rail and ISO for harbours and waterways,” he says. “It is also a political decision.”

With changes being so rapid, both men agree the acquisition of skills is crucial and managing a BIM project is very attractive for younger staff. “They already have many of the digital skills,” explains Mr Castaing, “and good BIM skills are commanding a 25 % premium in salaries. We might have been under-estimating the readiness of the young.”

¹ *Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) -- Information management using building information modelling*

EFCA has member associations in 28 countries, and is the sole European federation lobbying on behalf of engineering consultancy and related services, a sector that employs around one million staff in Europe. EFCA contributes with a strong and cohesive input to legislative actions of its national associations on issues affecting market conditions. Furthermore, the organisation works as a Europe-wide platform for national associations and their member firms to gather relevant facts and discuss issues with their counterparts.