

# The Cloud in Construction

**Nowadays, digitalisation of the construction sector is highly advanced. Cloud-based technologies are now mainstream. New research from Sage indicates that over half (59%) of the construction businesses it surveyed in 2016 said they already used cloud-based software or planned to do so. Only four years previously, 45% of respondents to a similar survey had said they weren't even familiar with the concept of the cloud.**

Amongst reasons that Cloud is more and more popular are costs cuts and increased collaboration of all parties involved in the construction process. Cloud saves construction businesses money. In Sage's research, companies were most likely to point to the ability to access information anytime and from any location as the main reason they had moved to a cloud approach. Cloud offer more than that. Leading construction companies have been using cloud tools for a variety of reasons. Below are three examples of leading construction companies moving towards a cloud-based approach to IT

## **Skanska focuses on competition**

Peter Bjork, vice president of information systems strategies, says that Skanska has now

moved to a "cloud first" strategy. Cloud technologies are helping the organisation to:

- compete more strongly when bidding for work
- attract new talent
- improve employee safety.

The cloud-based business intelligence software allows the company to manage key information about its business and ongoing projects, including the cost and availability of components, energy efficiency and pollution production, and the total cost of ownership for contractors throughout the bidding process. Again, the analytics software helps Skanska to incorporate more energy-efficient building materials during the construction process. This helps to generate costs savings in construction.

Moreover, Cloud allows for more efficient collaboration. Skanska highlights the importance of the close relationship with the client and constant dialogue to understand goals and influence the design process.

Skanska is also using cloud-based analytics to power its growth. It is able to incorporate a very broad range of indicators, both internal and external, into the research it does before expanding into new territories or market segments.

## **Costain pushes BIM advances**

Costain is a leading player in Clouds for Coordination (C4C), a project to develop Building Information Modelling processes to support "level 3" BIM. This requires extensive collaboration between all parties in planning, construction,

design and other disciplines, with a single, shared project model held in a central repository. All parties have access to the model and can modify it as required.

BIM represents a huge opportunity for construction companies as they seek to overcome traditional challenges, including stringent budgets, tight deadlines and conflicts between suppliers, contractors and other parties. By enhancing collaboration with engineers, designers and others right from the beginning of any project, BIM strips out any scope for uncertainty and unpredictability and increases the potential for cost savings in construction. These benefits then continue as the building becomes operational. However, level 3 BIM requires all parties to share data via cloud-based technologies – and to develop protocols around who owns the data and who is liable for any errors in the model. Costain design and BIM manager David Owens says the C4C project has made substantial advances towards overcoming such challenges.

## **Balfour Beatty boosts communication**

Global infrastructure company Balfour Beatty launched a five-year IT rationalisation project in 2012, standardising its end-user computing and hosting environments. The company has rolled out a completely new communications platform to allow 14,000 staff across 900 sites to talk to one another more easily, and continues to add new functionality to this system. So far, the company's cloud computing adoption has been based on private solutions, though it has increas-

ingly begun looking at public cloud options. Balfour Beatty's ambitions include greater use of big data and analytics tools, including predictive technologies, with employee safety one example of where it sees potential applications.

Above all, Balfour Beatty stresses the need for a change of mindset – a move away from a closed IT function to an environment of partnerships, with IT providers offering skills and capabilities that

businesses can tap into as and when they need them. This requires a cloud-based approach, with an “ecosystem of capability” involving every part of the business as well as partners and the extended supply chain.

The construction industry is starting to explore the benefits of cloud-based solutions after seeing how effective BIM has been in dramatically improving collaboration and reducing costs. BIM (Building Information Modelling) has been particularly successful in bringing together technology and teams to reduce waste, automate processes and improve collaboration in the design and build of new buildings. Now some are starting to see how the use of cloud services in construction can help find similar efficiencies in the production phase of projects.

### How can Cloud help your business?

1. Cloud-based technologies support mobile working. Workers from different companies or on different sites can share and communicate information securely using mobile devices.
2. Construction cloud services benefit building projects with improved visibility of project progress and costs as information is brought together in one central location.
3. Cloud reduces the number of time-consuming processes like for instance paper-based applications for payment, reducing the number of errors, queries and amount of administration involved.
4. Cloud can be accessed from any location at any time on laptop, tablet or smartphone with an internet connection.
5. Standardised and automated processes that are clear and accessible to all parties can help to build strong collaborative relationships with suppliers.



# Interoperability in BIM

**We hear everywhere that construction industry is going digital. Building Information Modelling (BIM) is the standard for public projects, but more and more SMEs are implementing it for residential projects too. BIM is more than technology; it is a collaborative way of working. Failing to adopt BIM might result in smaller chances to win the successful projects.**

The construction of the building is a complicated process as it involves work of many professionals- from architects, designers, structural engineers, surveyors, cost estimators to contractors. The cooperation between all of them is essential to eliminate errors and control risks. Each work influences the project cycle and its result. The information flows during the construction project and can be accessed and amended as required

by all parties involved. Interoperability allows for that information to be transferred and opened between various software. Level 3 BIM requires all parties to share data via cloud-based solutions and to have policies on who owns the data or who is liable for any errors. Successful project delivery is all about efficient collaboration.

NBS issued recently the NBS National BIM Report 2017, and amongst its key findings, we read that 41% of respondents use Autodesk Revit, just 14% AutoCAD. Indeed, Autodesk dominates the UK market with 66% using an Autodesk product, which said Graphisoft, Nemetschek and Bentley have a significant user base. 35% manage specification references digitally using a free plug-in from NBS.

Long BIM implementation cycles and investment in software are costly for smaller firms. Interoperability is important so such companies can invest in cheaper solutions knowing that they will be compatible with others. Interoperability is the ability of computer systems or software to exchange and open files and data. It allows for more efficient, more collaborative and more successful project delivery. Technology is the powerful tool in the construction business. Optimal results can be achieved with the advanced software and cloud-

based storage. It allows for faster project delivery, lower communication costs, reduced errors, greater reliability and transparency of data. However, the number of data exchanged is increasing. Such complexity requires a single format. Within building industry, there are two well-established data standards: Green Building XML (gbXML) and Industry Foundation Classes (IFC).

What is IFC? IFC is the data format that is neutral and non-proprietary. It is a standard that allows to describe, share and exchange construction information. This open standard is supported by numbers of various software worldwide. The data format that is widely used in the sector enables for better outputs as others may be using the same tool or convert files quickly to another format. The exchange of digital data is easier and quicker. Also, taking into account how quickly the technology in the industry is progressing opting for a standard format gives more certainty that it could be accessed in the future. What is openBIM? It involves open and documented data format for easy data exchange and the ability to import data into the tool(s) of your choice.

SOURCE: NBS

