THE FUTURE IS BIM

Building information modelling or BIM is a technology that brings with it a new way of working. Companies that adopt BIM can benefit from its streamlined approach in which data is shared in a collaborative environment.

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The technologies that underpin BIM have their roots in shared, structured information that, once created, can be used up and down the value chain. If data is to be interoperable, standards need to be observed. New technology can often be seen as a threat, but as the industry incrementally adopts the technologies and processes, it will move from a basic CAD approach to higher levels of seamless working and data management.

The 7 Ds of BIM
Each aspect of BIM – its dimensions or Ds – can have many uses in the construction industry.

2D
The 2D of BIM is something that has two dimensions, which means height and length. From these aspects, we can get a flat drawing of a construction project.

3D
3D adds the dimension of width and provides a more real-time image of the construction. This 3D aspect of BIM provides less risk, rework and delay and more accuracy, predictability and confidence. Clashes can be detected and mitigated, which helps to create better constructability and to get an idea about the cost, schedule and coordination. With the help of BIM, data on construction analysis and fabrication can be obtained throughout the project.

The software allows easy aggregation of existing design data to visualise the whole project, simulate scheduling and identify interferences to help gain insight and predictability while improving productivity and quality.

4D
The 4D is the factor of time. In the context of BIM, 4D has been used to describe a model with all the information from the project schedule, enabling alternative sequencing, construction coordination and actual progress.

It is also used to visualise the construction assembly. The entire delivery team of owners, engineers, architects, operators, constructors, subcontractors, manufacturers and materials suppliers can share one virtual vision of the project in real time.

BIM provides an estimate of time and proper scheduling of the work. This is a very important aspect for the bidding process as the estimated time is valuable for building owners. It is also very helpful in synchronising the design, proper planning and scheduling, supply chain management, risk management and earned value management.

5D
5D represents the cost aspect of a construction project. BIM can bring out accurate estimations of the expenditure of the construction project. With the help of BIM, the quantity of materials, amount of labour required and number of days to deliver projects can be worked out. As a result, BIM can reduce the cost of the project and the number of change orders.

For each project stage, starting from business development through preconstruction to actual construction, BIM delivers an end-to-end integrated construction service. These comprehensive deliverables and analyses help to plan ahead. This enables informed decision-making that leads to better building investment.

BIM is the best tool to get the ‘what if’ situation. A variety of design and material options can be chosen without the need for much investment.

6D
The 6D constitutes the life cycle of the building, which is also known as BIM-after construction. 6D process facilities solutions aim to transfer all prevalent BIM documents and electronic files to the owner and facilities team responsible for managing their newly constructed facility. The 6D is dictated entirely by technologies used during the construction of the project. BIM records the as-built documentation for 3D modelling.

7D
And how about 7D of BIM? This last aspect adds safety, both in terms of construction delivery and throughout the life of the asset.

Gradual uptake of BIM
A very small minority is voicing concerns about the legal issues raised by BIM. If the potential legalities of BIM practice are not properly managed (preventively) within the industry, there is a risk that legal issues may be dealt with through the Court system.

We currently have the opportunity to develop a contractual management system as BIM is gradually implemented into mainstream practice.

Rich potential from cradle to grave
BIM has the power to encompass numerous functions, from checking planning regulations, design, fabrication and construction, to operations, decommissioning and demolition, and if need be, it can serve a project from cradle to grave. Its core strength is that all the parties contribute to the central model and draw from it. Completed projects confirm its rich potential.

Benefits to companies and the wider industry are incremental. As a BIM-aware and practised supply chain emerges, so a better coordinated industry can reap the benefits. Clients and industry leaders are encouraged to show the way, allowing all the parties to experience cost certainty, reduced risk and higher quality. It brings value and facilitates teamwork, collaboration and project delivery, but above all, it demands clarity of intention. Clients and supply chains need to have clear goals and then use the power of BIM to achieve them.