

The Ultimate Guide

Why you should incorporate BIM design in your tender document

What is BIM design?

Limitations to other tendering methods

How can BIM improve your tender document?

Benefits that contractors derive from the BIM model during the tender period

Conclusion







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What is BIM Design?

BIM is the process of integrating 3D models of the various disciplines of architectural, structural, energy, electrical etc. into a centralized model to ensure consistency is upheld throughout planning, design and construction of a commercial project. A new approach to design and construction, BIM helps contractors to improve cost estimates, basing their projections on the actual elements that will be used in the building process. BIM also facilities better designs and greater interaction with the client from the initial design stage.

Adopting BIM offers contractors multiple benefits in comparison to the traditional 2D approach to tendering, design and construction.

- BIM improves project coordination and communication, enabling easy alterations to the design and construction stages from the various project members.
- BIM models generate valuable data for contractors to better project cost estimates, for easier planning and to improve the overall management and upkeep of the building.
- With many errors detected before construction begins, BIM reduces the amount of time needed for rework. Virtual designs highlight clashes, allowing problems to be rectified early on and save time onsite during the construction stage. This cut down on rework should also allow contractors to save money on expensive professional fees.

BIM innovations mean that information on building elements and design and construction processes no longer have to be stored individually in multiple files, but instead can exist in a single "virtual building". BIM captures a building in its entirety, comprising information on each of the building assets, geographic info and sites. BIM is often called a "rich model", with each component represented, offering valuable information as the model is formed. This data can then benefit contractors throughout the entire project journey, from cost estimations, planning processes, project management, and finally in efficient operations and upkeep of the facility.





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When contractors are given the invitation to tender, the difference in the design quality and data incorporated in the tender varies massively between projects. When designs are uncoordinated or certain design elements are absent, the initial risk assigned by the contractor and considered acceptable by the client is impacted. This vagueness in the design stage can increase the original cost estimate, affecting the reputation of both the designer and the contractor. This approach to tendering leads to sloppiness in design, a lack of consistency between design and construction and an increased chance of conflict between project members and the client. With these issues increasing the likelihood of project delays and added costs, tension will be heightened between the contractor, the client and the design team.

Traditional approach

In the traditional "design and build" approach to tendering, the end-users typically set out the building project requirements and relevant information, to which contractors create a design and reach a price to be included in their tender document. This method can often cause confusion and mistakes, with unclear communication between the client and their designers, inadequate documents and poor explanation of the scope and project requirements, often with vital elements absent.

This inevitably often resulted in one of two scenarios: the contractor carrying out a fixed project where a client's expectations aren't met, or the contractor having to make multiple changes throughout the project, leading to increased time, costs and delays in completion. Both results could have been easily avoided had more attention and clearer outlines been offered from the outset.



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Why you should incorporate

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The advantage gained from using BIM in the tender process is different to its purpose for the design team. BIM enables tenderers to confidently reach a fixed price for their project work, while assuring clients that the finished construction will be similar to that of the initial tender. BIM allows contractors to include a more consistent, inclusive solution in their tender documents.

BIM can successfully rectify some of the shortcomings of older tendering methods. Traditionally, it was expected that clients should understand 2D drawings regardless of their construction knowledge, which was often limited. With BIM models, enhanced visualization and simulation tools enable clients to walk through the entire project in 3D to capture a "close to reality" impression of what the final project will look like. This provides the opportunity for any misunderstandings in client requirements to be highlighted and corrected before construction work begins, solving the issue before it becomes a much greater cost.



Information is clearly understood

When the contractor first receives the BIM model, they are presented with a clear, comprehensive outline of the value proposition. At this point, the model holds a complete data set, having already gone through the opening project stages with problems investigated, simulated and solved and potential risks eliminated along the way. Troublesome areas that are detected through BIM models avoids the added time and costs that traditional tendering would fail to discover until the construction process begins.

During the design phase and as the project progresses, valuable information can be incorporated into the BIM model. In the past, this information was stored inefficiently, making it difficult to access and alter when necessary. With BIM, all data on the building elements is included in the model throughout the building's entire life cycle, from project commencement right through to completion, occupancy and even demolition. This wealth of information can be easily accessed, modified and added to at any stage during the job.



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Benefits that contractors derive from the BIM model during the tender period:

- Better understanding contractors can get the project proposal underway much quicker under tight timescales and competitive tendering processes.
- **Greater scope capture** increased visibility to the project scope reduces the risk of missing elements, decreasing the likelihood of problems surfacing as construction gets underway.
- **Proposal communication** Contractors can effectively demonstrate their proposals to the various project members and to the client.
- **Improved planning** the opportunity to plan the project within a 3D model helps contractors to implement plans in a manner in which risks are minimized.





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BIM technology has undoubtedly demonstrated its value in recent years and its popularity is sure to evolve even further. BIM is more than merely using 3D models to walk clients through their building projects, it plays a vital role in a buildings lifecycle, from the tendering process right through to completion and thereafter. The benefits incurred by contractors investing in BIM technology are vast, particularly during the tender period. Contractors can effectively demonstrate their proposal and illustrate their value at each stage in the project journey.



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