

E-BOOK PRAGMATIC BIM

Quick wins for architects looking to embrace the digital revolution







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The UK government mandate for BIM Level 2 has been instrumental in bringing digital transformation to the forefront of design and construction. However, while many are benefiting from new ways of working, some architecture practices are still to take the leap. The UK BIM alliance calls this the 'long tail of industry' and is working to help bridge the gap.

While BIM continues to add value to many projects, the truth is that only a very small proportion of all projects are fully BIM Level 2. But that's not to say that architects, engineers, contractors, clients and facilities teams cannot benefit from many of the principles of this approach.

If you're just starting on your journey, you'll be faced with a mountain of acronyms to decipher, standards to adhere to, documents to prepare, and processes to understand. Embracing change within any organisation is never without its challenges. With this in mind, one way to make this journey more fun and profitable is to take a pragmatic approach.

So, with rising costs and a squeeze on fees, where should you concentrate your efforts and resources in the first instance to see the best results?

We've compiled six elements of the BIM Level 2 approach that you can start to adopt at your practice today:

- Embrace 3D collaborative working <u>Go to page</u>
- 2 Choose the right elements to model Go to page
- 3 Generate better information Go to page
- 4 Understand the principles of 3D collaboration Go to page
- 5 Adopt the right file naming protocols Go to page
 - Have an open attitude <u>Go to page</u>

6



1 EMBRACE 3D COLLABORATIVE WORKING

Firstly, don't wait to land a BIM Level 2 project before you begin. Instead, by making 3D collaborative working your initial goal, your business will become more efficient.



"On a university project, we designed a highly bespoke, prefabricated facade. For us to draw that in 2D is nigh-on impossible. Instead, we modelled it in 3D, which took three of us just a couple of weeks. ARCHICAD automatically gave us all the drawings, schedules, quantities and all the information that the other project stakeholders needed, too. It probably saved us at least another few weeks' work."

> Karl Brown HLM Architects

The most value you will reap from making these changes is from producing 3D models which can be shared among the design team and other stakeholders, improving understanding and communication. By implementing 3D collaborative working in a thoughtful way, you'll not only open your practice up to a host of immediate quality improvements and efficiency gains, but you'll also be in a strong position to run a BIM Level 2 project if required in the future. So, let's concentrate on how best to approach this. Firstly, use a 3D authoring tool to generate your information. If you're still working in 2D, it's time to prioritise an investment in 3D software. If you're already designing in 3D, but aren't yet sharing or importing information from clients, engineers, suppliers or contractors, take the time over the coming months to move towards full collaboration in 3D.



Image courtesy of HLM Architects



2 CHOOSE THE RIGHT ELEMENTS TO MODEL

If you're just starting to design in 3D, remember: you don't need to model every brick. Instead (if you really want to) you can calculate how many bricks you need with a simple sum.

That said, if you follow the other pointers in this e-book you may find that the amount you model increases to around 1:20. Generally, if it's quicker to model something rather than draw it, you should model it.

If something appears on more than one piece of documentation (for example, plan and elevation or section and schedule) then it should be modelled. This will improve the quality of your output and will speed up any future edits. Model everything that needs to be scheduled, such as doors and windows, again to take advantage of using the computer for those calculations.

Finally, if something is difficult to explain in plan, section or elevation, model it in 3D.







3 GENERATE BETTER INFORMATION

BIM is all about information management. The processes are in place to help deliver better quality and less ambiguous information. And by generating data directly from your 3D model, you will remove many laborious and time-consuming tasks, improve accuracy and save money.

Think about the information you already provide as part of your normal service. Now document it. Architects are prone to scope creep, so listing at a granular level what information you plan to provide helps to avoid this. For a BIM Level 2 process, this will feed into your Task Information Delivery Plan (TIDP).

All information must be checked, reviewed and approved before sharing. Again, think about how you

currently check your information and document it, to establish a consistent process. Information should be shared for a specific purpose and you should be clear about what that purpose is.

This checking and sharing process will need to be nailed down as part of the Common Data Environment (CDE) within BIM Level 2.



4 UNDERSTAND THE PRINCIPLES OF 3D COLLABORATION

Effective collaboration requires working in 3D, using ARCHICAD or a similar tool. It also requires a desire to work together. Not only does 3D collaboration enable you to work faster, deliver better quality outcomes and communicate better with your customers, it's also a lot more fun.

Industry Foundation Classes (IFC) is a very robust and usable standard. Practise sharing IFC files between team members a few times. Once you are clear on the process, you'll find that sharing information in this way becomes second nature.

Use IFC for sharing and importing information. That way, you can choose the tool that suits your workflow, rather than having to use the same tool as other organisations involved in the project. Whether you're using ARCHICAD, Tekla or Revit, choose the one that's right for your job.

Remember that IFC is proven and guaranteed to always be backwards compatible. This means that in years to come, the IFC viewer will always be able to read historical IFC files.



Image courtesy of Penoyre & Prasad



"I would suggest starting with the basics and using your BIM software for its three dimensional merits and its modelling capacities. Then begin to share that with other disciplines to make the most of the model as a whole, and to take advantage of the added speed it can bring to your work."

> Michael Fostiropoulos Penoyre & Prasad





5 ADOPT THE RIGHT FILE NAMING PROTOCOLS

Adopt the naming protocols within the BIM Level 2 standard and be strict about this within your team, even if you think you have different or better naming conventions.

The task of locating information from multiple authors and understanding how it relates to a project can be very time-consuming. The problem is compounded when working with large estates that have many buildings, possibly over multiple sites.

If your team names their files as per the standard, you'll build a much richer data set, where the files can be more easily searched, saving you a lot of time. What's more, taking this simple step to amend your file naming convention will put you well on the way to meeting one of the key requirements of BIM Level 2.

At first glance the naming convention may seem unwieldy, and you may get some resistance from the wider team. But once people understand the structure and the syntax, it really is an easy win.



6 HAVE AN OPEN ATTITUDE

Finally, and perhaps most importantly, keep an open mind. If you resolve to work together with a positive attitude, you'll quickly reap the benefits of collaborative 3D working.

Adopting this approach will help you to improve the quality of your output, while driving efficiency, productivity and profitability for your practice.

Above all, remember that BIM is *your* journey and, as with all journeys, it starts with the first step. If you're

feeling daunted by the prospect and you're stuck on where to start, follow these pragmatic principles and you'll be well on your way to success.



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