Tech Insights

How small firms should prepare for the BIM 2016 mandate

Technology in practice, with CASE and HP

The Government construction strategy

The Government Construction Strategy is a policy paper issued by the UK Government that sets the target of reducing the cost of government construction projects by 15-20 percent "by the end of the current Parliament." One of the key initiatives is to mandate "fully collaborative 3d BIM [Building Information Modeling] by 2016."

This means that in two years, anyone involved with a government project in the UK will be contractually obligated to use BIM. While the policy only pertains to publicly procured projects, it is expected to catalyze similar requirements from the private sector. So whether or not you do governmental work, collaborative BIM is likely to become a prerequisite for most medium to large projects in the UK within the next couple of years.

Collaborative BIM

There are many ways to use BIM. At its most basic, BIM can be used inside a firm to produce design documentation. This is sometimes called "Level 1 BIM" or "lonely BIM" because the model is only used internally and not shared with external partners. Communication with partners still happens using traditional drawings sets.

The UK government has mandated a more sophisticated form of BIM called "collaborative BIM," also known as "Level 2 BIM" or "social BIM." In this scenario, the model is developed by multiple companies. The architect, MEP engineer, and other consultants all create a model. These models are then shared so that project participants can check things, such as whether the duct from the MEP engineer clashes with the column designed by the structural engineer. Data extracted from these models are shared in a similar way. Rather than just producing traditional drawings, the architect might give a fabricator geometric data for a CNC machine or they might generate a COBie spreadsheet of all the assets in the building for the building owner.

Could this harm small businesses?

Some in the industry are concerned that small firms might be disadvantaged by the 2016 BIM requirements since small firms are much less likely to be using BIM. The 2014 NBS National BIM Report shows that BIM is used by only 35 percent of small firms with up to five employees. Firms with more than five employees are almost twice as likely to be using BIM, with 61 percent of them having already undertaken the adoption.

The differences of scale make sense historically. Large firms working on large projects have had the most to gain from the benefits BIM offers in terms of systematically organizing and sharing building information. Large firms have also benefited from having dedicated IT staff to guide the transition, as well as the resources to absorb potential disruptions. In contrast, small firms have had less flexibility and less financial incentive to undertake the change.

These differences in scale are becoming less pronounced. Small firms have more reasons than ever to adopt BIM, and many are already racing to undergo the adoption before 2016. Fortunately, this is easier than ever. The pioneering work has already been done by other firms. The best practices are established, many of the contractors and owners are primed to accept BIM, and the technology is mature. It is a perfect time for small firms to make the change.

Adopting BIM before 2016

A common misconception is that your firm can adopt BIM just by purchasing the right software. This is an easy mistake to make. Unfortunately, it's a mistake that leaves a lot of firms in trouble.

Many of the difficulties associated with adopting BIM can be avoided if a firm realizes that BIM isn't about the software, it's about change management. Your employees don't just have to learn a new software, they have to learn a new way of delivering projects.

Small firms adopting BIM benefit from a lack of institutional bureaucracy that could hinder adoption. Change may be easier to initiate, but it still requires leadership. For a successful adoption, it is paramount that someone within the firm takes responsibility for the adoption. So identifying the BIM leader is the first step. The leader must be technical, ideally with experience in delivering BIM projects. If this person doesn't exist within your organization, consider hiring them or employing a consultancy.

Once the BIM leader is in place, the next steps are to begin making the switch. At a small firm, it's practical to make the switch in unison. Select a project that everyone can be involved with – preferably one that's not too difficult or time constrained. Staff training should begin as close to the project kickoff as possible to ensure there isn't a significant gap between training and application. Once the first project starts, someone experienced in BIM should guide the project so that modeling mistakes are proactively addressed before they become serious problems down the line.

For the first project, you will probably use BIM just internally to generate design documents. This isn't a particularly ground-breaking application of BIM, but it's a safe place to start. As you grow more confident, you will be well positioned to start working towards the collaborative BIM requirements for 2016.

An infrastructure for adoption

It's important that your infrastructure is designed to support the expected workload. BIM places new demands on your infrastructure. Most obviously, if you want to undertake collaborative BIM, you must have the network to support the exchange of data internally and externally. This will typically involve having a reliable internet connection, robust internal networking, and an internal server. For a small office, the server doesn't have to be especially powerful. At a minimum, we recommend 16GB of memory, a 2.6GHz four-core Intel® Xeon® processor, and a couple of terabytes of storage. HP sells a range of servers targeted at small to medium businesses. The HP ProLiant ML350e is a great choice because it doesn't require any special cooling or housing. You can just set it up in the corner of your office and have it serve the BIM files.

Resources:

For more information, access the following sites:

Organization implementing the government construction strategy
http://www.bimtaskgroup.org/

Government construction strategy
**https://www.gov.uk/government/publications/
government-construction-strategy**

NBS National Building Report 2014 showing the rate of BIM adoption in the UK
**http://www.thenbs.com/pdfs/NBS-Nation-
al-BIM-Report-2014.pdf**

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