



BIM in Practice

April 2

2009

What is BIM and why is BIM important for your company?
Learn the benefits of building a BIM practice within your
company and how to get started with BIM today! Key results
from independent BIM surveys are revealed as to how BIM is
being viewed and utilized today!

Developing a “BIM
Practice” for your
company

Contents

Why BIM..... 3

BIM and Sustainable Design Demand 3

U.S. CAD BIM Survey Results 6

Be more efficient as a “BIM company” 7

“Outsourcing” your BIM Production (Growing in a down economy) 7

Your fast-track to a “BIM competitive edge” 8

Is your company a “BIM company”?..... 9

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Why BIM

The demand for BIM (Building Information Modeling) is growing fast in the AECO industry. BIM delivers better design, faster, and the ability to perform sustainable design analysis to meet current sustainability design goals. Industry trends such as sustainability create a much higher demand for BIM technology. The need to be competitive in today's market also increases the demand for BIM technology. Building BIM expertise within your company is not only important, but it is within your reach! U.S. CAD will not only help you build a long-term plan for BIM within your firm but will provide you with options where you can start offering BIM services today!

BIM and Sustainable Design Demand

BIM is not just a fancy marketing term as some may have first thought. BIM is real and it is here to stay. Similar to what we saw 15-20 years ago when companies were moving from manual drafting to CAD (even though CAD had been around for several years); the same is happening today, only the shift is from CAD to BIM. BIM technology has been around for several years, but it is not until now that a major shift is happening somewhat exacerbated by the recession of 2008-2009. We also experienced a recession 15 years ago when the first shift happened. Today, companies need to find new ways of generating revenue and doing it in the most efficient manner in order to set themselves apart from their competition. BIM is one of the ways that architects and engineers are setting themselves apart.

Figure 1 shows the percentage of Architects, Engineers, and Contractors using BIM on more than 60% of their projects in 2008 and what they expect for 2009

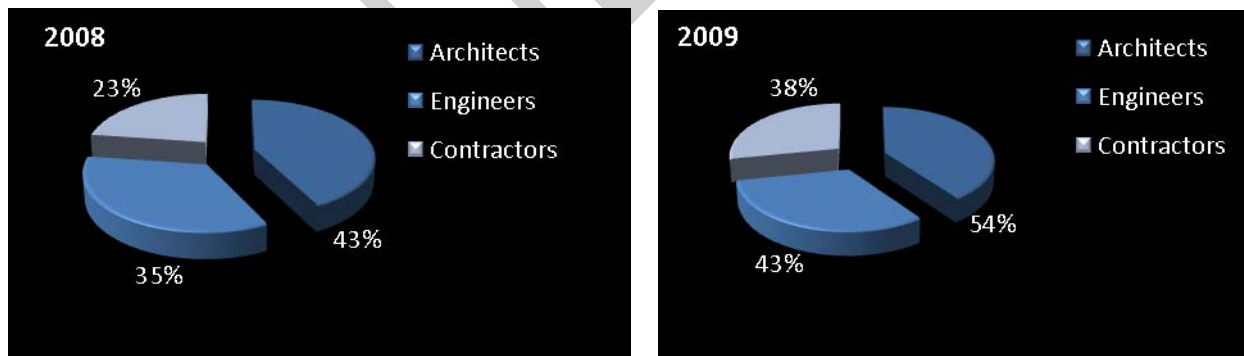


Figure 1

BIM is becoming more utilized because it shifts the largest effort forward during the project lifecycle. In traditional design, you spend the largest effort during construction documents and construction, not to mention the dreaded change orders. Additionally with traditional design, the area where the largest effort is made is also where you have little ability to control costs and the costs of design changes are great. Utilizing BIM, you move the largest effort forward into schematic design and design development phases of the project. During this phase of the project, you have more ability to control costs while the

costs of design changes are relatively low. Figure 2 shows the impact of using BIM technology compared to using traditional design technology.

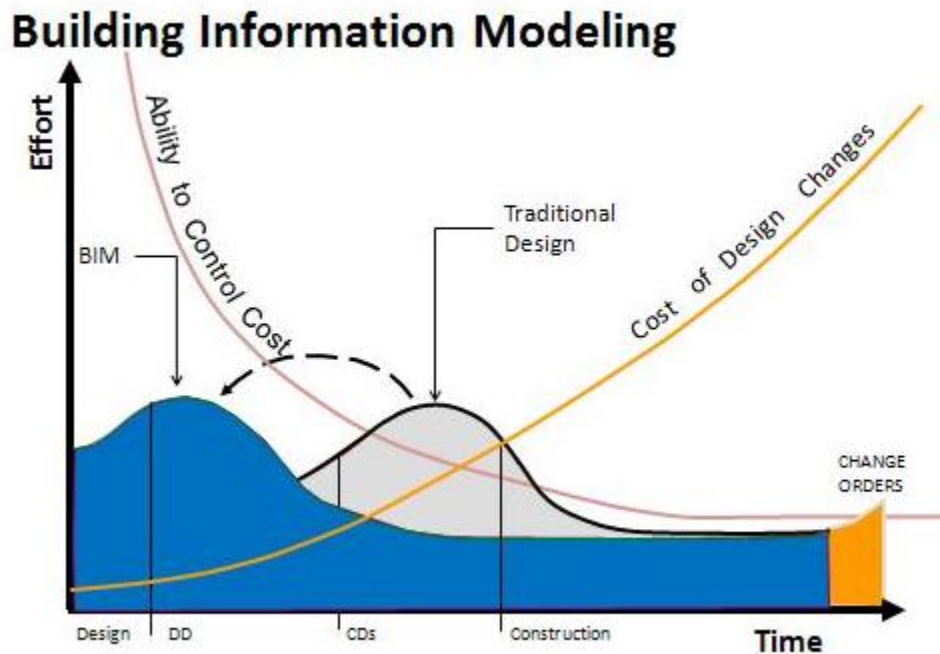


Figure 2

According to the BIM report authored by McGraw-Hill Construction in 2008, 35% of Architects, Engineers, Contractors, and Owners, used BIM on greater than 65% of their projects. This is expected to rise to 45% in 2009. Conversely, in 2008 38% of these firms used BIM on less than 15% of their projects and this 38% expected to drop to 18% in 2009 as the shift continues of more and more companies utilizing BIM tools in order to compete effectively.

To tie this in with sustainable design, 73% of BIM users are moderately involved in sustainable or green building projects according to the McGraw Hill survey. In order to create more sustainable designs, it is critically important to utilize BIM technology. It is quite easy to understand why it would be difficult to do sustainable analysis for energy efficiency or analysis for efficient water usage with 2D CAD files. BIM technology allows for quick design iteration to create better design and a higher quality product plus it provides the ability for architects and engineers to perform sustainable design analysis.

There is a growing demand in our industry for green building design which incorporates smart site selection, site analysis, etc. As this demand increases, there will be a growing demand for companies that can provide these services and companies that have the qualifications, credentials, and experience. More and more owners will require different levels of LEED certified projects so it will be important for architects and engineers to not only encourage their staff to obtain LEED accreditation, but also for

these same companies to be able to quantify different aspects of their design against LEED criteria. By leveraging BIM technology, you will be able to determine whether your design meets certain LEED criteria categories and quantify the amount of points within that area.

United States buildings and infrastructure account for a significant percentage of water use, CO₂ emissions, Waste Output, and Electricity Consumption. As a result, there is a legitimate need to make buildings and infrastructure more sustainable in order to conserve key resources and reduce waste. Figure 3 shows the percentage of how much electricity and water buildings consume of the total amount consumed. Figure 3 also shows the percentage of waste and CO₂ emissions buildings create based of the total amount created.

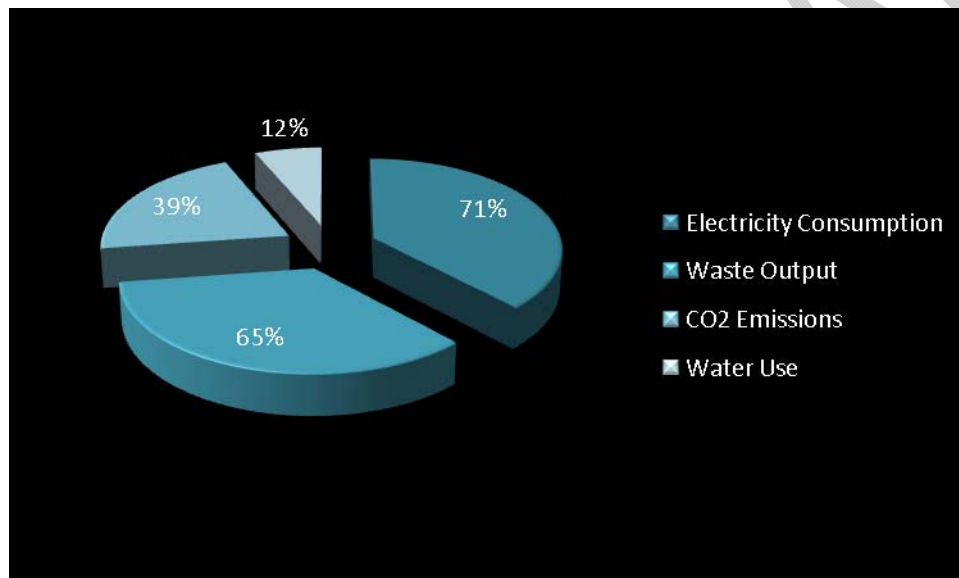


Figure 3

Most would assume that the largest “polluter” comes from tail pipe emissions caused by transportation methods. Figure 4 shows the largest polluter is actually buildings. Once again, this underscores the need to make buildings more energy efficient whether it is green-retrofitting existing buildings or using good design principles and energy efficient technologies for new and existing buildings.

It should therefore be no surprise to understand that retrofitting existing buildings to make them Lean, Green, and Clean will be an important initiative for our country’s future and aligns with President Obama’s sustainability goals. Additionally, applying good design principals along with applying low and carbon neutral technologies and renewable technologies for new construction is equally important and can be quickly analyzed when utilizing BIM technology.

There exists several different types of BIM technologies that address items such as energy efficiency, efficient water usage, etc. BIM tools are available today for Civil Engineers, Architects, Structural

Engineers, MEP Engineers, Manufacturers as well as there are tools available where you can coordinate all of these design disciplines together.

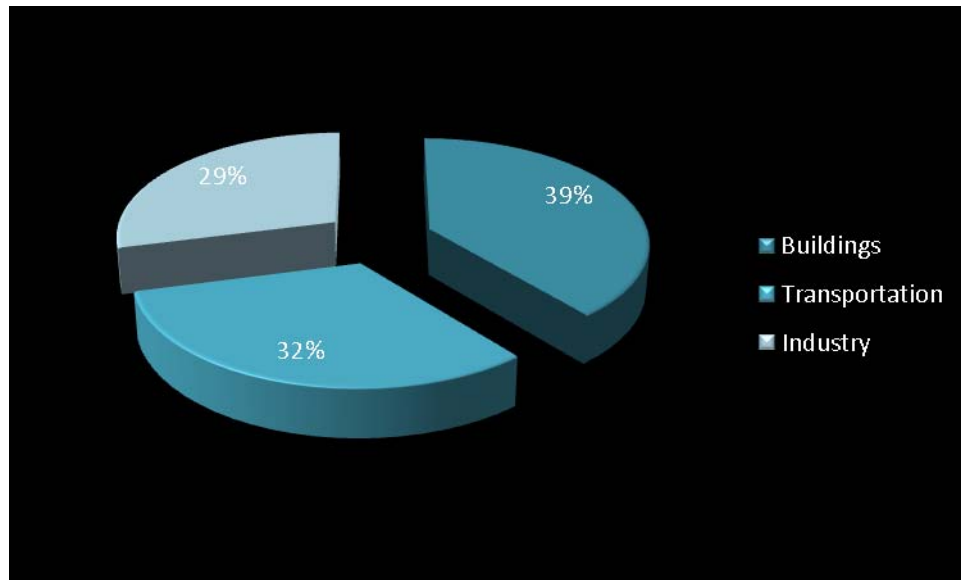


Figure 4

U.S. CAD BIM Survey Results

U.S. CAD sent out a BIM survey to our customers in order to provide information to the market on what companies like yours are saying about BIM. Here are some key results from the U.S. CAD BIM Survey...

1. Of the firms surveyed, 63% of companies used BIM in the last 12 months
2. The competitive advantage that BIM offers and owner requests are leading the way as to why companies are developing their BIM expertise
3. 72% of companies expect 25% or more of their projects to use BIM in 2009
4. 76% of companies believe they must build BIM expertise in order to compete effectively
5. 67% of firms say they will NOT wait until their client demands BIM in order to develop their BIM expertise
6. Availability of trained staff and implementation costs are identified as the largest obstacles to incorporating BIM within companies. in using BIM

Be more efficient as a “BIM company”

With the economic headwinds we are experiencing, business owners appreciate the idea of being more efficient. The less time we spend on non revenue generating activity the better. There are many things that create productivity losses when outdated and inefficient technologies are used. When utilizing BIM technology, drafting becomes somewhat of a byproduct of the design. With BIM technology, you create a more efficient environment of trying different design scenarios to create a more sustainable design.

BIM technologies utilize intelligent objects that understand what they are and their relationship to the objects and the world around them. This creates a mechanism where the objects and the design know how to react when something changes, and you will see the impact of a simple design change throughout the model because of the dynamic environment. Most importantly, you alleviate many of the errors and omissions because the design updates automatically and it is not as prone to user errors.

With the proper implementation and training of BIM technology within your company; your company will become more efficient, more productive, more profitable, and more competitive!

“Outsourcing” your BIM Production (Growing in a down economy)

As the use of BIM is expanding rapidly in our industry while companies are still learning what it means and how to implement BIM within their environments, there will be a greater need for outsourcing in 2009 to meet the demand according to the 2008 report from McGraw-Hill Construction. Eventually, in-house expertise will become more of a reality but until then it will be important for architects, engineers, contractors and owners to leverage BIM expertise where it exists so they can compete effectively in today’s market.

For 2009, a certain percentage of architects, engineers, contractors and owners expect their outsourcing of BIM work to increase as a result of BIM becoming more commonplace and in some cases required. Figure 5 shows how this breaks down amongst architects, engineers, contractors and owners.

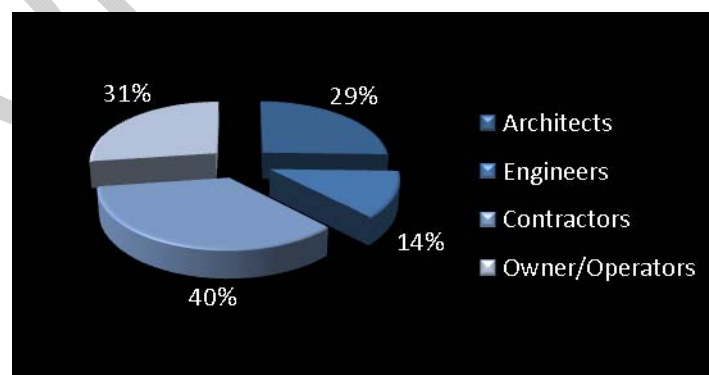


Figure 5

On average, 63% of architects, engineers, contractors, and owners expect their outsourcing of BIM to remain steady with very few expecting it to decrease. It is expected that BIM outsourcing will increase as BIM becomes more commonplace. It is also expected that the recession of 2008-2009 will increase the outsourcing of BIM all the more.

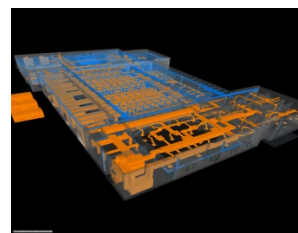
The main drivers for the increase of BIM work being outsourced are the following:

- The need to become more competitive
- The necessity to find new revenue sources
- The need to operate more efficiently
- The lack of qualified staff

Your fast-track to a “BIM competitive edge”

If you are looking at BIM as a way to be more competitive, U.S. CAD has a unique way to help fast-track your company to being a “BIM company” and a company that can provide BIM deliverables to help you win projects. Here are a few ways we can help you...

- Companies demonstrate their BIM expertise by leveraging U.S. CAD in many ways to help them win jobs. This includes sample models, technology forums, and BIM presentations!
- U.S. CAD can help you message and market your company as a BIM expert with sustainable design capabilities. Let us help you define some positioning statements to better position your company!
- U.S. CAD has a BIM Production team with BIM managers for QA/QC. If you do not have the capability of producing coordinated BIM models today, we can produce them for you!
- U.S. CAD will help you create a BIM implementation plan for your company so you can become a “BIM Company”!



If your ultimate goal is to build a BIM practice within your firm and develop your staff as BIM experts, we can help you build a plan for the future. However, you can start providing BIM services to your clients right away because of your partnership with U.S. CAD.

Is your company a “BIM company”?

Every day we see companies messaging their expertise in BIM and sustainable design on their websites and we also see companies positioning themselves as BIM experts in order to win jobs. This is great to see and U.S. CAD can help you make this a reality right now by leveraging BIM technology and our BIM Production capabilities! All companies need to find new value propositions they can provide to their customers and they also need to figure out ways to differentiate their company from the competition; BIM is your opportunity to do so! There is still time for you to be at the front end of this shift and U.S. CAD will help you make the transition.

We also hear from some customers that they will wait until their clients demand BIM deliverables before they invest in BIM technology and implementation. However, the survey results indicate your competition is investing and building their BIM expertise TODAY and you need to consider this as well or risk losing business. An important question to ask yourself is “how many projects might you be losing or have no chance of winning as a result of not being a BIM company?” You may not know the answer to this question which means you may not know how many projects you could be winning. We know that more and more owner/operators are demanding BIM and sustainable design expertise and working with companies that can provide this.

Utilizing BIM technology, you are able to provide your customers a better quality product as well. In fact, you can use this as a competitive marketing tactic. Once you know all the value and benefit a BIM model provides, you will want to use this to help you win jobs. Not only can you do the work faster, create a more sustainable design, but the product you are providing has many uses that a 2D CAD file or set of files cannot provide. BIM Technology is here to stay. Companies that embrace and invest in BIM technology, build their BIM expertise, and leverage available BIM resources to get started today, are the same companies that will be more viable and sustainable for the future.