Building Information Modeling (BIM) is a concept. A common misconception is that it is a specific brand of software, while in fact there are a number of design and project management software companies producing BIM programs. The idea is to:

- build a 3D model that will streamline building production from start to finish and beyond
- eliminate potential clashes before they happen
- give accurate information on what materials are needed for production
- improve productivity
- reduce waste
- avoid obvious errors in take-offs

The capacity now exists to allow mason contractors to import digital floor plans (JPEG, Tiff, PDF, etc) directly into Tradesmen’s Master Estimator™ software and utilize their monitor and mouse to do a 3D take-off. Saving time and resources, plans can be emailed or downloaded from a plan room rather than mailed or copied. The 3D model generated allows one to see the masonry structure of the building in detail before construction begins. Take a virtual tour through and around the structure to see if any details are missing. This will help you visualize and make sure that everything you thought you took off was, in reality, taken off. Generate reports for each individual wall or the entire project and see exactly what materials and quantities make up the structure. For those already intimate with the BIM concept, this should sound familiar.

If masonry is to keep pace, it needs to integrate with current BIM technology.

The concept has been around for over a decade, but practical software applications for the entire construction industry are still in their infancy.

Request from Mason Contractors

It wasn’t until 2010 that mason contractors began asking Tradesmen’s Software for a way to bring their 3D take-off into their general contractor’s BIM model. More than several general contractors and construction managers have entered the BIM arena, incorporating it into their processes and having gone so far as to have specifically hired highly trained personnel to operate their new computer equipment and software. This eventuality was a given, since several federal organizations, states – including Wisconsin – and universities now require the use of BIM applications for large projects. Typically today, a model is started by an owner, architect or engineer, but it is the general contractor/construction manager who is responsible for seeing the project through. General contractors/construction managers embrace the decreased risk and liability, as well as potential budget and schedule enhancements, better coordination and quality control resulting from 3D imaging prior to construction. Increased reliance on this technology means more is expected of subcontractors to provide their share of applicable information to fit within the BIM framework.

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Trade Integration

Mechanical, electrical and plumbing may have been first to the BIM table, but all engineers and all trades need to integrate data in order to be most effective. Finding a duct ending behind a brick wall before it is built is favorable to teardowns, rebuilds and astronomical cost overruns caused by discovering it after the fact. As a mason, I learned that first hand and realized the necessity of one inclusive system detecting issues by integrating all trades prior to construction. The BIM concept is here to stay. If masonry is to keep pace, it needs to integrate with current BIM technology.
A 3D model created by an estimator’s take-off provides the tool. A problem arises when numerous software applications work with the BIM concept, but take different paths to yield the same end result.

**IFC Transfers Data**

Competition in a market place breeds innovation, but will inherently create diverse formats. Monopolization of a marketplace breeds stagnation, but will typically generate a common format. The ideal world would have a competitive software market with a common format or language. This would make it easier to transfer a data set, from one brand/type of software into another.

Enter the IFC file format. The IFC (Industry Foundation Class) file format was established by the IAI (International Alliance of Inter-operability) as a way to ease the transfer of data from one software program to another. Seeing the need for integration, our programmers were already hard at work writing the necessary code that would allow Tradesmen’s Master Estimator software to export relevant data into an IFC file format. What does this mean for the masonry industry?

**3D masonry data models can be viewed by BIM modeling software applications that can import IFC files.** It may be a simple black and white line drawing in one and a vibrantly colored display in another, but it will be there. Walls with openings appear in scale so that clashes can be detected and errors can be corrected.

**Ahead of the Curve**

The ability to provide the 3D IFC file with the bid gives the mason contractor an edge. BIM is a process that starts at the top, at the early stages, and moves along to affected parties as the project progresses. Contractors who can show they are ready, willing and able to step up to meet and contribute to the building information model will be sought after. The industry is always changing and improving. Expectations are high and rising all the time. Our contribution to assist mason contractors in meeting expectations is making sure Tradesmen’s masonry estimating software is ahead of the curve. Progression of estimating technology over the years has gone from simple spreadsheets with manual entries to digitizer boards that provide linear footage to basic 3D images to fully detailed BIM modeling. Working to streamline masonry practices and to integrate systems with other trades shows leadership. These leaders are the ones keeping the masonry industry on track for the digital revolution of construction. There are numerous questions concerning BIM and its potential. Not all of the questions surrounding it can be answered at this time. There is one thing that can be said: BIM is a beneficial technology to the entire construction industry. Much like the transition from hand-drafting blueprints to CAD, BIM promises to take advantage of today’s tools and to help the construction professional concentrate on what’s important.

You are not messing with kids in the alley. Technology is here for the mason contractor to play on the team with the big boys; the general contractors/construction managers.

**Bill Pacetti Sr, founder and CEO of Tradesmen’s Software, is a fifth generation mason from a long line of stone masons who originated in Italy in the mid 1800s. He came up through the ranks, eventually striking out on his own and forming his own mason contracting company. The long nights of doing take-offs by hand and triple checking work was taking a toll. He knew there had to be an easier and faster way of getting a bid in on time. In the late 80s he purchased a computer and started hunting for some masonry estimating software. None of the software had the detail he felt necessary to produce an accurate masonry bid. Pacetti had a vision of what this software should look like and what its capabilities would be. Tradesmen’s Software was born. 800.667.9409 | bill@tradesmens.com**

**Christian Kott, operations manager at Tradesmen’s Software, is responsible for marketing, human resources and financial management. Before returning to the family business, Kott excelled in sales and team management at a national retailer. His success led to his making company-wide presentations on product marketing and employee/customer interaction. While a student, Kott also worked in the field at Pacetti Brothers Construction. He holds a degree from Moraine Valley Community College. 800.667.9409 | chris@tradesmens.com**

**Linda Pacetti, Account Manager**  
**Bill Pacetti Sr, President & CEO**  
**Bill Pacetti Jr, Sales & Development Manager**

**Digital floor plans imported directly into Tradesmen’s Master Estimator, saving time and resources, can be transformed into a 3D take-off.**
Competitive Advantage of BIM Interface