THE BAY DIMENSION

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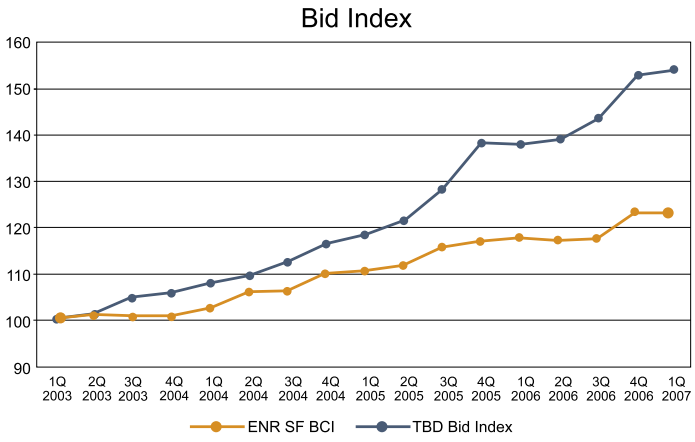
In this Edition:

Greed, Fear & Reality

Updating our TBD Bid Index for the first quarter of this year indicates a leveling off of the price increases, at least for the present. At the same time, we have been experiencing "corrections" in the stock market, with some substantive drops in the Dow and the Nasdaq, as well as other stock market indices around the world. This got us wondering how the pricing in the stock market and the construction market compare.

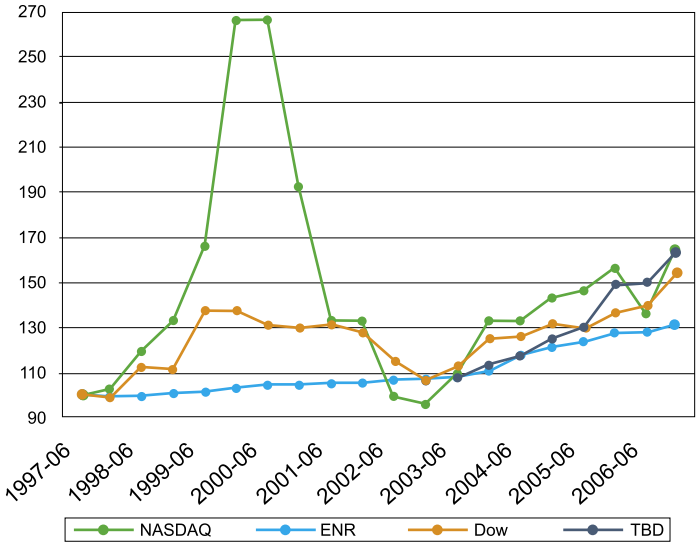
It has been said that the stock market is driven by greed and fear, with investors often in that market for the sole reason of making a quick buck, and all too willing to pull out of the market when it looks as if they are, or are likely to be losing money. The people in the construction market are there either because it is their profession, or because they have a need for a building, so we can expect less dramatic swings in the construction market, because it is less speculative.



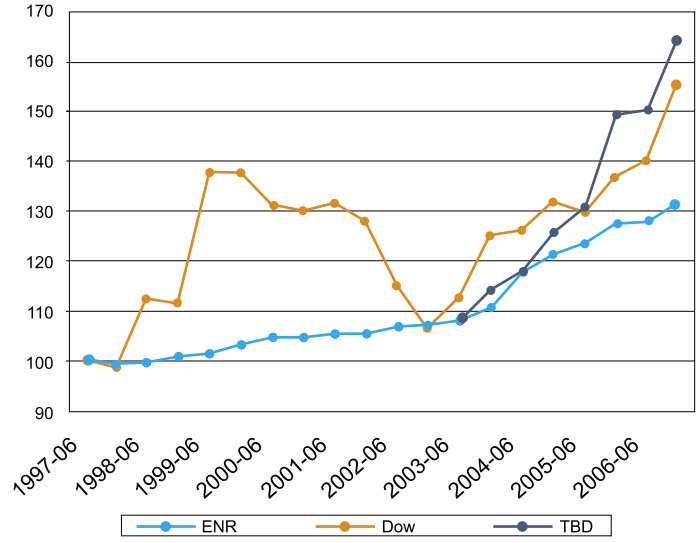
2004	2005	2006	2007
1Q: 107.62	1Q: 118.39	1Q: 137.80	1Q: 153.88
2Q: 109.17	2Q: 121.04	2Q: 138.93	
3Q: 112.33	3Q: 128.06	3Q: 143.36	
4Q: 116.33	4Q: 138.09	4Q: 152.65	

To check these ideas out we looked at the indices for the Dow, Nasdaq and the ENR Building Cost Index going back ten years (taking the June and December points each year), and adjusted all indices to start at 100 for June 1996. Then we added in our Bid Index, which only starts in 2003, and we set that so that it started out in mid 2003 at the same point that the ENR BCI was at.

The following chart shows the dramatic jump in the stock market (most dramatically indicated with the Nasdaq) where the Dot Com boom and bust occurred.



Removing the Nasdaq from the equation still shows the effect of the Dot Com era on the Dow, but allows a bit of finer detail to emerge.



The interesting thing is that the stock market falls back, after the Dot Com bust, to just about where it would have been expected to be if it had followed the same trend as the ENR BCI. Since that time it has followed a similar path to the TBD Bid Index.

The question is whether these correlations are just coincidences or have any meaningful significance. Ten years might seem a long time, but it is fairly short for comparisons like this. So, it is a trend we will be watching, but currently we do NOT suggest that you base your investment strategy on the ENR BCI, the TBD Bid Index, or any combination of the two ;-)

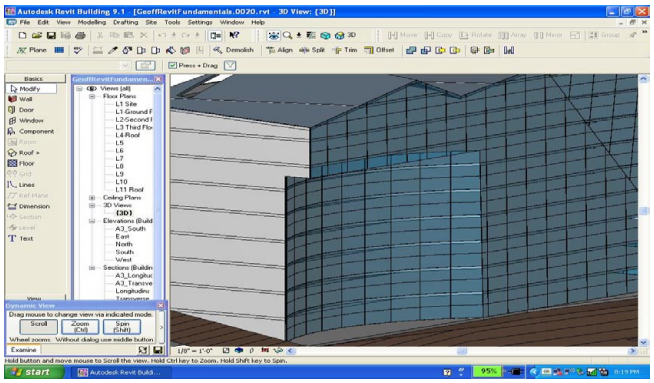
BIM – Building Information Modeling

Geoff Canham

BIM is a new name for something that has been around for decades, but is now becoming an economical, practical and feasible option for construction projects. It goes beyond 3-D imaging, although it provides such imaging as a natural part of its structure. In fact it can go into 4-D (time) and 5-D (cost), allowing users to step though the construction process and identify constructability issues, and to prepare financial models based on the construction schedule.

At the center of such a model is a database holding the information about the construction project, and the information may be input into that database by such methods as drawing plans or elevation, by working with 3-D views, or by preparing schedules. But, unlike traditional drawing, if preparing the outline of a building on a plan, the exterior walls (for instance) would be specifically identified (and subsequently entered in the database) as an exterior wall object, rather than just lines on a drawing with a label saying what the lines are meant to represent. Initially an exterior wall may simply be identified as a generic wall, and later, as the design develops, be identified as the specific wall type the designer requires.

While information can be put into the model through different methods, it can also be output in different forms, allowing for reuse of the data. In this way, plans, elevations, 3-D images and schedules are all simply views into the database, so they are always consistent with one another.



So a change in a window schedule will automatically be carried through to the appropriate plan and elevation,

because the schedule change is a change to the database, and the plan and elevation are simply views of that database. In that way there can never be inconsistencies between drawings, because all the drawings are views of the same data. Even the drawing title and scale is an object on a drawing, so the displayed scale can never be wrong.

As previously mentioned, the database information is not necessarily just design information, but can contain detailed information on such things as materials (that can later be useful to facility managers maintaining the building in use), scheduling information (assisting the construction of the building), and cost information (assisting in the financial planning of the project).

Ideally, the work from all design disciplines will be included in the model, and the model can then be used to identify conflicts. It has been suggested that up to around 40% of change orders can be avoided in this way, by identifying conflicts between structural members, mechanical ductwork, conduit, and like items, before they become an issue on site.

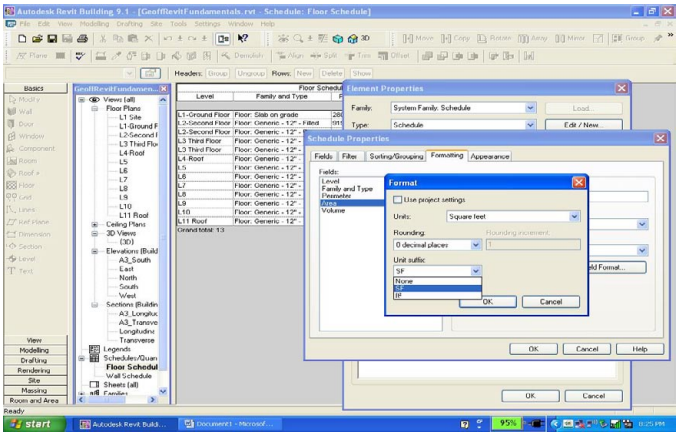
With these kinds of advantages, why hasn't BIM become mainstream before now? One issue has been that it has been a developing technology, and to a large extent still is, but the software has now been developed to the stage where its use has been streamlined, and the learning curve is not too steep. Also, computers have developed to the point where a regular desktop PC can handle the modeling software, rather than requiring a costly workstation to run it. BIM has been germinating for a few decades, but it looks as though it is about to burst out into full blossom.

Revit

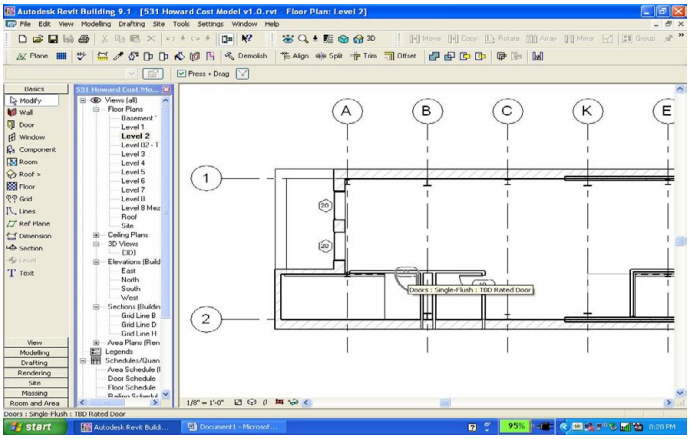
Revit is one of Autodesk's BIM offerings, but while Autodesk is the originator of the term BIM, they are not the originators of such modeling techniques, nor are they actually the originators of Revit. Autodesk bought Revit Technology Corporation in 2002, and since then have overseen its development, which at time of writing is in version 9.1.

Revit may not be the most standards-compliant BIM software on the market (ArchiCAD might claim to hold that distinction), but Autodesk is responding to user requests and increasing such compliance, which will further aid interoperability with other software. It has been said that Revit is the nearest thing to an ideal BIM system currently available, with its use of a single database forming each model.

It is also very easy to use. While designers who are use to CAD will need to change their thinking in regard to things such as layers when using Revit, they can still build up the model using plans and elevations, or can feed information into a model from CAD or other design software. As an alternative, you could start by creating the mass of the building, and then automatically generate the floors, roof, and exterior walls.



Revit does have some scheduling ability, but this is more a case of setting up phases of construction rather than full critical path scheduling. It also has the ability to hold cost information, but is not ready to automatically generate estimates. But its ability to generate schedules of rooms, walls, etc., is a great assistance to the cost estimator.



It is seldom that only one designer will be working on a project, and Revit allows a team of designers to work on the same model. It does this by locking the specific objects that one person is working on, but allowing other people to

work on other sections of the model. In the current version of Revit this collaboration will work well in a specific office over a local area network, but not over the Internet. When different offices are working on the same project they can each work on their own copy of the model, and then use Revit to check for conflicts between the different copies. Future versions of the software will almost certainly increase the collaboration abilities.

Lease-Leaseback

When the construction market is hot and bid prices are constantly rising, there is an incentive to look for alternative procurement methods. Recently lease-leaseback has started to be a popular option for school development, promising lower final costs or at least ensuring fewer surprises where costs are concerned.

With lease-leaseback there are two leases, the first being a Site Lease. Under the site lease the school district leases the site to a contractor (or to a private developer who employs a contractor) for a fee of $1 a year. The site lease is terminated when the final payment is made under the second lease.

That second lease is called the Facilities Lease. The facilities lease is a sublease that allows the school district to lease back the site and the project as it progresses. This second lease also sets out the price for the construction work, which is to be a fixed price. This is probably the main advantage to the school district, in that they are spared the cost, time and hassle of settling claims (there is, of course, the task of agreeing the Guaranteed Maximum Price before construction begins).

Another benefit derives from bringing the contractor onto the team earlier than normal with a traditional contract, because now the contractor can provide constructability reviews and value engineering suggestions. Subcontractors can also be encouraged to provide VE suggestions at the time they are bidding.

Normally (and especially if there is no private developer involved) the payments from the school district to the contractor will be very similar to what would have been paid under the traditional bid-build process. The main difference is that the total payment is a known value from the start of construction. And, as the payments are made, the school district obtains rights to the project being developed, and since these payments are related directly to the progress of the construction the contractor has an incentive to complete as early as possible.

Lease-leaseback does not remove the need for DSA approval on a school project, nor does it remove the prevailing wage requirement on contractors and subcontractors. It does remove the requirement for public open bidding, but that gives pause for concern to many people. While this procurement method will allow a school district to select a specific contractor over all others, that may not be the best idea, unless the district wants to generate claims of favoritism. So districts would normally issue an RFP to a number of selected contractors and ensure that the evaluation procedure is clearly defined.

Technically there is nothing to stop school districts using this process for alteration and renovation projects, but the system obviously works far easier with new construction projects, and that is where we have been seeing it being used. So far it has proved to be an effective private-public partnership, bringing a collaborative teamwork atmosphere to the development process during the construction period, and adding the contractor's expertise to the design process.