

THE BROAD DIMENSION

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of 'chicken' I was thinking of saying 'brinksmanship', but that sounded too mature. The S&P tries to lecture the politicians into behaving sensibly, and when that fails they throw a hissy-fit and downgrade the US from AAA to AA+. Since that is a downgrade of US Treasuries and has no bearing on stocks, the public immediately starts selling stocks and buying US Treasuries. From that we can gather that the general public is just as capable of acting illogically as politicians and rating agencies are.



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LOGIC NEED NOT APPLY

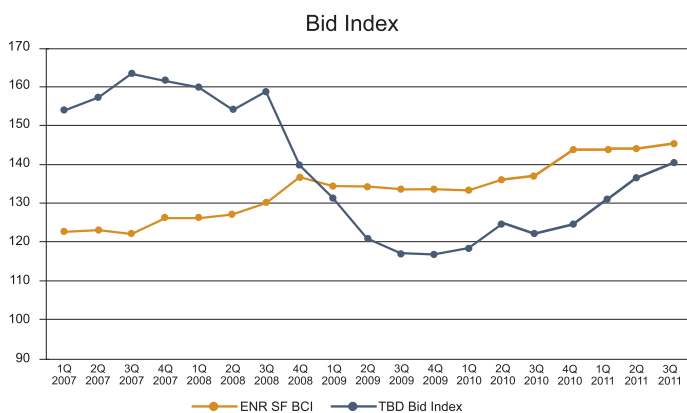
Geoff Canham, Editor

So, the politicians play their usual game of chicken with the debt limit, finally reaching a compromise settlement at the last minute, as everyone knew they would. Instead

Not that there are no serious problems with the economy worldwide. Yes, there are substantial national debt problems in Europe, but the acronym PIIGS has been around for a long time and yet it seems that it is only recently that some people have cottoned on to the fact that the S stands for Spain and one of the Is stands for Italy. And yes, the US has serious debt problems and growth is anemic. If you were to deliberately reduce your income and then start throwing money around as if it grew on trees, then you would soon have a serious debt problem. That is basically what the government has been doing (with the best of intentions), so the debt problem shouldn't be surprising to anyone. And if you have been noticing how the employment situation has been stubbornly refusing to improve, you probably have not been surprised to find that the economy is scarcely growing.

What about all the talk of a double-dip recession? Some people have enough problems believing we have, at least technically, emerged from the last recession. The popular definition of a recession is “two consecutive down quarters of GDP”, and with GDP running at minimal levels anyway, it would certainly be easy to have it drop into negative territory for a time. But that doesn’t mean we have to be in for another round of what we went through in 2008. Certainly the banks have not been lending money to anyone that asks, as they were doing before the Recession with a capital-R; in recent years it has been hard enough to get them to lend money to you, even if you could prove that you don’t need it. It is sad to say, but even if we do have a double-dip to the recession many people will not notice because we haven’t risen far enough for a fall to have much effect. The stock market will play its volatile games, of course, but we expect that as much as we expect politicians to not compromise without a metaphorical gun to their heads.

All this may sound rather gloomy, especially when you add in the effects of the debt deal, which means that the Federal and local governments will be forced to cut back on spending. However, there are still positive signs from the private sector, and that is where any long-term growth has to come from. Company reserves are high, employment is edging up, even if it is painfully slow, and consumers are still consuming, and by last count increasing that consumption.



But where does that leave the construction industry? We are seeing some signs of a pick-up, but as with the employment situation, it is only a small improvement. The measures to reduce the debt are certainly going to mean reductions in government-funded projects, especially with the stimulus money being used up. In our 4th Quarter

2009 edition of the newsletter we plotted the timeline of the recession of the early 90’s against the Great Recession, and that showed the construction industry getting back on track around mid-2013. By coincidence, that is the date until which Ben Bernanke promises to keep interest rates low. Of course, this recession was deeper and has had a lot more worrying overtones, and the recent roller-coaster ride certainly hasn’t boosted anyone’s confidence, but things are still moving in the right direction, so that timeline might yet prove reasonable.

Washington, DC, does have a substantial influence on the economy. The Federal government is the authority under the constitution that can print money, and they have, up to this point, been good at spending it. But this nation has a capitalist economy, and that is supposed to depend on the private sector, and with governments of all creeds having dug themselves into a giant debt-hole, the private sector is going to have to take up the slack.

As we move forward, however, don’t expect it to be a logical progression.

LEEDing and Governing

To date, green-building has mainly been a voluntary movement, and it has thrived in that environment. The LEED rating system, introduced by the US Green Building Council in 2000, has produced a dramatic shift in the design and use of buildings in a remarkably short period of time. That shift has certainly been needed. The effects of climate change are being felt worldwide, and the evidence tying these changes to human influence, largely through the emission of greenhouse gasses (GHGs), has been all but confirmed. And when we acknowledge that buildings in North America are responsible for more than a third of the continent’s GHGs (even more than results from the transport sector) then the need for building green becomes clear.

The rising cost of oil has been another incentive for building owners to implement the energy saving aspects of building green. Add to that the fact that building green has proved to

add very little cost initially, and often gives back substantial savings in the long run, then it becomes a very attractive option; indeed it has been said that this is the most cost effective way to slow global warming and do something for the environment and mankind's future.



While governments, including federal, state and local jurisdictions, have not been slow in getting involved either, they have been slow in laying down the law regarding green building. That might be changing, however. Up to this point, governments have been mainly active in the green-build movement by setting an example (requiring that government buildings meet green goals) and in providing incentives to encourage private developers to build green.

The GSA is the country's largest facilities manager, looking after most of the federal government's three billion square feet of real estate, and they have a goal of delivering a Zero Environmental Footprint. To do that, their official policy is to "seek out green technologies, practices, and ideas, test them, and weave them into the agency's processes, relationships, and culture". The Energy Policy Act of 2005 requires federal buildings to be at least 30% more energy efficient than IECC or ASHRAE standards, and Executive Order 13423 requires federal agencies to reduce GHG emissions by 3% annually through 2015. State and city authorities have also been leaders in their respective regions, by requiring that their buildings are built to meet specific green-building goals, often requiring them to meet a specific LEED rating (frequently Silver).

The ARRA stimulus legislation contained \$5 billion specifically directed for green-build projects (that figure having been reduced from the original proposal of \$7

billion). That is one example of government incentives in relation to green building, but federal, state and local governments provide other incentives as well. Tax incentives is a popular method that is often used, such as Howard County in Maryland that offers real property tax credits varying on the LEED rating that a building achieves. Grants and loans are also methods used as incentives to build green, along with expedited permitting.

A few cities and counties have required certain types of new, privately-owned buildings to meet a specific LEED rating, such as Anne Arundel County in Maryland which requires achievement of a LEED rating before a final certificate of use is issued. States had initially veered away from legislating green-building requirements, but California now has its CalGreen building requirements. Other states are likely to follow suit. The federal government traditionally has not laid down mandatory building requirements, leaving that for the states to do, and this trend is not likely to change. However, building standards that states can adopt or adapt have been prepared, and that is also true for green-building standards. Standard 189.1 for the Design of High-Performance Green Buildings has been developed by ASHRAE, the USGBC and IESNA, and is related to all commercial buildings (excluding low-rise residential), both new-build and existing buildings. ICC 700 National Green Building Standard has been developed by NAHB and ICC to cover residential buildings, both new-build and renovation work.

As government legislation moves into the green-building arena, will this result in the demise of voluntary rating systems such as LEED? We suspect not. A major incentive

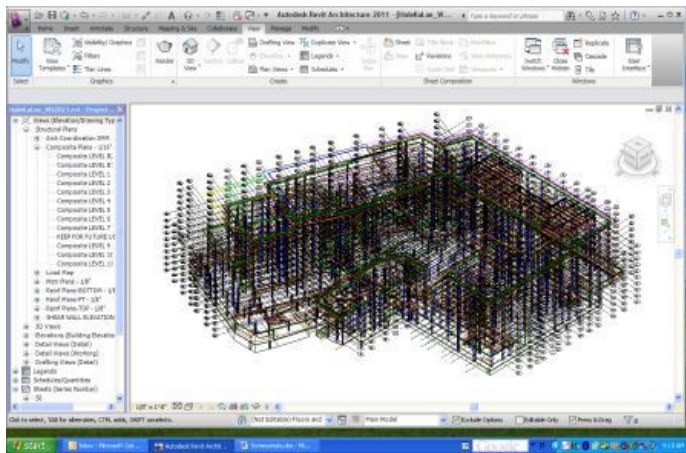


for building owners going after a LEED certification has been to show that their building, and by implication their company culture, is more ecologically responsible than others. Simply being in conformity with the law does not achieve that result. So, government laws will not replace rating systems like LEED. They will merely raise the bar.

GSA and BIM

The GSA (General Services Agency) is committed to the adoption of BIM (Building Information Modeling). The National 3D-4D-BIM Program was established through the GSA's PBS (Public Buildings Service) OCA (Office of Chief Architect) in 2003, and the GSA has issued a series of guides related to the use of BIM on GSA projects, with these guides also identifying areas where development in the technology is needed.

The GSA requires information to be submitted using the IFC (Industry Foundation Classes) format, which is essentially a text file detailing the model, but the accuracy of the IFC export depends on its implementation by a particular application. If you do a Web search for 'IFC Revit 2012' you will find that that accuracy is sometimes questionable.



The buildings that the GSA manage often have multiple tenants, so the accurate calculation of rentable area, and allocation of costs between tenants is very important. Consequently the GSA places a strong emphasis on spatial information. For instance, space information (say for a room) is required to include the following:

- GSA BIM area: the area inside the surrounding walls, but excluding the area of full height columns within the space (unless they are exposed steel columns).
- Space Name: uses GSA PBS established space descriptors (e.g. STAIR).
- Space Number: using existing space numbers, if they exist.
- Occupant Organization Name: using project-specific approved Occupant Organization Names obtained from the GSA project team.
- GSA STAR Space Type: a three-character code that defines the type of room, etc.

The Full Building Floor Space is also required, which is the building's floor area measured to the outer faces of exterior walls.

This same information can be useful for energy modeling, and the GSA has the goal of improving the energy performance of its building inventory. However, some adjustment to the spatial data is normally needed when used for energy modeling. For instance, the GSA does not require that areas less than 9 SF in a BIM be assigned the spatial information, but in energy modeling that could lead to those spaces being considered as being outside the building, resulting in errors.

The GSA recognizes that current BIM tools do not meet all the requirements of the perceived uses of the technology, but they are working with vendors to develop these capabilities.

The GSA BIM Guide Series (www.gsa.gov/bim) currently includes:

- Series 01 – 3D-4D-BIM Overview
- Series 02 – Spatial Program Validation
- Series 03 - 3D Laser Scanning
- Series 04 - 4D Phasing
- Series 05 - Energy Performance and Operations

The following guides are planned:

- Series 06 - Circulation and Security Validation
- Series 07 - Building Elements
- Series 08 - Facility Management