

# THE INNOVATOR NEWSLETTER

A TOM GREEN & COMPANY ENGINEERS, INC. PUBLICATION

3701 Executive Center Drive | Suite 258 | Austin, Texas 78731 | 512.345.7793

## Engineering Strategy for “Close Quarters” Design



(See page 3)

### TGCE Establishes HUB Alliance



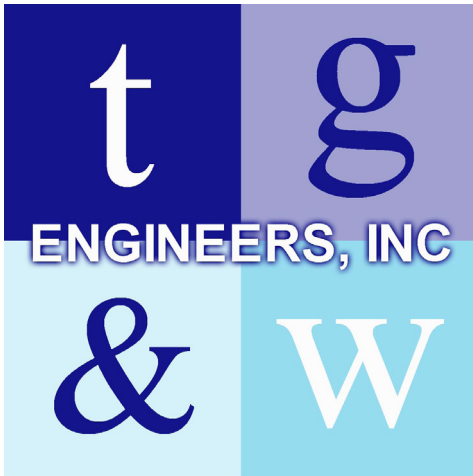
As a part of TGCE’s support for diversity in the engineering field, TGCE has established a HUB alliance through a mentor-protégé relationship with TG&W Engineers, Inc. With nearly four hundred years of combined experience, the alliance is able to offer a level of expertise in engineering that is typically unavailable from start-up firms. *(continued on page2)*



### TGCE Celebrates Birthday

Suite 258 at the Austin Oaks Business Park has been the growing home for our firm since its inception in 1985.

Remember how things use to operate? Drafting boards, working drawings, tracings, sticky-back films, leroy kits, pin bars, roll vacuum printers, and sepias. If you laughed because you knew what a leroy kit was...welcome to a thing called old age my friend. Nonetheless, wiser, of course. *(continued on page 3)*



3701 Executive Center Drive | Suite 257

Austin, Texas 78731

P: 512.345.1099 | F: 512.346.3212

Website: [www.tgengineers.com](http://www.tgengineers.com)

## TG&W Engineers, Inc.

(from page 1) TG&W Engineers, Inc. opened for business in January 2010. The firm offers a complete array of traditional (and not so traditional) engineering services to the private and public sectors. These services include planning, analysis, design, commissioning, energy modeling, sustainable design, energy audits, systems troubleshooting, quality control/peer review, value engineering, and conceptual costs estimating.

Certified by the State of Texas as a Historically Underutilized Business (HUB), TG&W founders bring over fifty-five years of business operations management, with more than half of that experience in engineering firm management. TG&W's engineering directors have over seventy years of combined engineering experience.

Already a part of several teams' project pursuits, TG&W is actively seeking additional partnerships with owners and other professional service teams in providing quality engineering service to the building industry. For more information about TG&W please call Wendy Thompson, President or Michael Wong, Operations Manager, at (512)345-1099 or visit our website (shown at left) for additional contact information. - *Mike Wong, Operations Manager.*

## Revit MEP Update

While Architects and Structural Engineers continue to shoot birdies and eagles with their respective Revit software, MEP Engineers are buried in the sand, waiting for the software to deliver the sand wedge.

The facts have shown us that the current release of Revit MEP has great promise for the future. Can it be used now? Of course. Can it be used for every project type? In our and several of our colleague's opinions, no. At the immediate time, a hybrid workflow environment (using both AutoCAD MEP and Revit MEP) seems to be the only logical path of execution due to Revit MEP's limited design capabilities. And even this approach has its caviats.

The Revit difficulties exist not only in the software design capabilities, but also with the industry's compensation system. As Revit beta testers, TGCE has been closely monitoring the progress of the software, and it does show great promise. Currently, it is our opinion that the software can be used with some economic reasonableness for relatively simple projects such as tenant work, offices, etc. without extensive struggle. In order for the software to be used in everyday MEP applications or more intense design project types such as hospitals, laboratories, etc., many man-hours must be devoted to creating families and quite frankly, tricking the software to do what it is supposed to do (i.e. special mechanical system definitions, defined NEC calculation methods, and plumbing a building the way it will actually be installed). This time/effort spent is not understood or not recognized by many facilities groups and clients that are in some cases requiring the use of Revit software. The confusion may be understandable, as the good word spread about the architectural and structural realms has mistakenly included the assumption that MEP is similar.

It is our opinion that proper compensation must be given to the significantly higher effort MEP Engineers inevitably experience when using the current release of Revit.

Our opinions are not offered without an experience and knowledge base in 3D/BIM. We have designed projects in 3D for over six years, including MEP intensive building types such as hospitals, research laboratories, and central plants. AutoCAD MEP (formerly known as Autodesk Building Systems) has been the backbone of this extensive experience.

If anyone reading this article would like to share success stories, horror stories, or their own opinions, we welcome them. - *Greg Maxwell, Designer - CAD/IT*

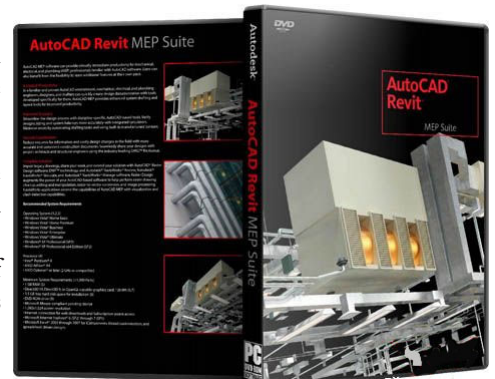


image courtesy of Autodesk

“Revit MEP is just not there yet.”

Matt Dillon (DC CADD - VP Technical Services and long time Autodesk University Instructor)



## Engineering Strategy for “Close Quarters” Design *(cover story)*

Check another project type off the list for TGCE...submarine. Within the past few months, we had the pleasure of designing replacement systems for two small mechanical rooms at the Jester Dormitory at The University of Texas at Austin. This project threw several new hurdles our way. Since each air handler took up approximately 75-80% of their respective mechanical rooms, it was almost if we were designing a submarine.

These design conditions prescribed the use of AutoCAD MEP’s 3D capabilities. Space requirements for every valve access, coil access/pull, VAV box access, duct and pipe maintenance, electrical and mechanical controls panels were just the beginning. These custom built air handlers also required an external axial fan mounted on its own trolley and rail system with bridge crane to allow for maintenance/replacement while eliminating long shut-downs. With our addition of a mezzanine, custom structural pieces, and the use of 3D, TGCE was able to realistically view a necessarily complex engineering design, check for conflicts, respect maintenance needs, and also appeal the eye.

We have had great success using 3D, and these photorealistic renderings helped us and our client visualize the finished product. It is not often people see renderings of the heart and soul of a building (the mechanical systems). - *Greg Maxwell, Designer - CAD/IT*

---

## TGCE Celebrates Birthday

*(from page 1)* Twenty-five years stimulates some uncertainty and has a lot of us saying “has it been that long?”

One thing for certain is that these twenty-five years have been a fantastic journey for the TGCE team. We want to extend great gratitude to all those we have worked with in the past, those who we are currently working with, and also those who have yet to work along side us.

As industry trends develop and the current market fluctuates, TGCE is determined to continue our habit of excellence. We have been dedicated in producing some of the most in-depth and accurate MEP documents to expedite construction and provide our clients with a dependable product. - *Greg Maxwell, Designer - CAD/IT*

For more information about our team and our services, please visit our website at [www.tgce.com](http://www.tgce.com).

**CELEBRATING  
OUR  
25<sup>TH</sup>  
YEAR  
OF QUALITY  
MEP ENGINEERING**

**INNOVATORS AT WORK. INNOVATIONS THAT WORK.**



# TGCE Lifestyles

## PICKS OF THE SEASON

### TOP 10 AUSTIN BURGER JOINTS



1. Sandy's
2. Dirty Martin's
3. Hut's
4. Top Notch
5. Geaux Burger
6. Burger Tex
7. Five Guys
8. Cover 3
9. Casino El Camino
10. Mighty Fine



### IPHONE APPS

#### Lose it! - FREE

Succeed at weight loss with Lose It! Set goals and establish a daily calorie budget that enables you to meet them. Stay on track each day by recording your food and exercise and staying within your budget.



Enter food and exercise easily using a searchable database. Quickly re-enter foods and meals you've had in the past. Lose It! is the most complete and streamlined weight loss application available for the iPhone.

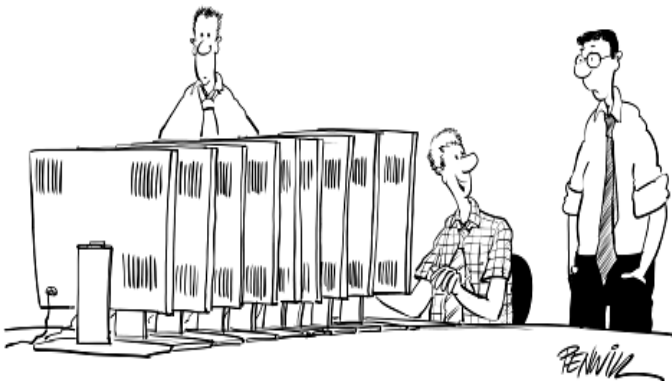
#### Knocking Live Video - FREE

Knocking is like having a live mobile phone web cam. Works on all 3G and 3GS iPhones. Ipad Touches can even receive a "knock".



"Steve Jobs approves Knocking Live Video App personally" (Gizmodo, December 2, 2009).

### DEREK'S COMIC CORNER



"SINCE WE SWITCHED TO FLAT SCREEN MONITORS I'VE REALLY GRASPED THE CONCEPT OF LAYERS"

cartoon by Roger Penwill

### TOM'S TRIVIA

Okay. This one is a 3 part: two questions and one opinion.

1. On average, about how many pounds of processed sugars do U.S. residents consume in one year?
2. 2000 years ago, how long did it take to consume that same amount?
3. What might be concluded? (okay to also have fun with this one.)

\* All "close to correct" responses will be pooled, with a winner drawn and awarded a \$25 gift card to The Home Depot.

Reply to [newsletter@tgce.com](mailto:newsletter@tgce.com).

Check our website at [www.tgce.com/index\\_files/newsletter](http://www.tgce.com/index_files/newsletter) for results.