

GUEST COLUMN: 3-D Modeling Stars in UD Facility Design

BY TEVEBAUGH ASSOCIATES

» Building Information Modeling, or BIM, is the 3-D representation of a building's physical and functional characteristics. It is a process that varies from the preparation of 2D drawings traditionally used by architects and engineers for construction drawings.

This new technology is being used by Tevebaugh Associates Architects and Planners for the College of Health Sciences complex at the entrance of the STAR Campus at the University of Delaware in Newark.

Planning and design with BIM begins with a 3-D architectural model of the building. As the design progresses, a single central model is developed, by combining each discipline's (structural, mechanical, plumbing, electrical) data-rich model onto the original architectural model. The process reduces information loss and ensures accurate and efficient coordination between team members. The design is then carried through typical design and construction phases.

Design of the Annex building went through many options to investigate the building's relation to the site, parking layouts, green space, visibility from DE-896, and material selections. The concepts were assessed on their energy performance assuring the final design would exceed Newark's energy performance code requirements.

Using a single model to generate perspective renderings and construction documents ensures an accurate final representation of the building's look,



3-D Building Information Modeling helped Tevebaugh Associates map out UD's STAR campus.



feel and character. Tevebaugh Associates worked with CHS and The University's Media Services Department using the model to produce a narrated virtual walkthrough of the new facility. The renderings and animations for CHS are utilized as the basis of a fundraising campaign.

"The video will be an invaluable tool for recruitment of future students and an efficient way to distribute information to alumni sponsors to assist our fundraising

effort," says Kathleen Matt, Dean of the College of Health Sciences.

Construction is underway, but prior to its start, pre-construction meetings were held with the Construction Manager, Bancroft Construction Company. The meetings utilized BIM to coordinate construction sequencing between foundations, steel and masonry. The meetings



focused on the unique areas of the building and solve potential problems in the construction trailer rather than on the site.

Managing the 175,000-square-foot complex, scheduled for an early 2014 completion, will be the task of developers Delle Donne and Associates. The developers can exploit BIM's Facility Management capabilities. The information stored in the model can be integrated into Facility Management software to track work orders, leases, assets, inventory, and building performance.

BIM is here to stay. Organizations like the General Services Administration, U.S. Army Corps of Engineers, U.S. Air Force, and the Department of Veteran Affairs (VA) have experienced the benefits of BIM. The GSA began enforcing BIM in 2003 and the VA has followed suit. As of 2009 all VA projects valued over \$10 million must meet the standards of the VA BIM Guide.

What's My Business Worth? continued from 23

rate is 20 percent and expected growth rate is 3 percent, the capitalization rate is 17 percent. Accordingly, a company with calculated single period cash flows of \$1 million and a capitalization rate of 17 percent has a calculated value of \$5.882 million (\$1 million/17 percent) without regard to any adjustments that might be required based on the requirements of the valuation calculation.

Transition Planning

One common situation encountered in the privately-owned company operating environment is the failure to properly plan for a change in ownership. This is crucial because the value of a business is normally the business owner's

also execute such an agreement to avoid possible estate tax issues). More importantly, the buyout provisions of the agreement should contain as much specificity as possible, such as a formula value calculation, in order to limit judgments necessary by the individual performing the valuation.

The current value of a business is tied to its expected future net cash flows. However, the process of valuing those cash flows is subject to many judgments including evaluating the risks associated with achieving the anticipated future operating results. The interaction of such judgments and risk assessments can lead to a range of values for a business. Therefore, a business owner with a

There are many reasons for the valuation of a company and the specific reason and circumstances will drive the value calculation.

single, largest asset. Yet, it is estimated that well over half of the privately-held companies are sold or liquidated as the result of an unforeseen event such as the death of the owner. Further, it is not unusual for business partners to wage a bitter legal battle over the buyout of one of the partners or have a partner requiring a valuation of the business due to a marital dissolution. As noted above, the application of business valuation theory can result in a wide-range of values and failure to plan for an orderly transition can result in an adverse valuation. Therefore, consideration should be given to executing a buy-sell agreement among owners of a business to avoid possible valuation problems upon the transfer of ownership interests (a single owner can

working knowledge of business valuation theory and the ability to minimize perceived operating risks is well-positioned to achieve a business valuation in line with expectations.

Paul Seitz is the founder and Managing Director of Seitz Consulting, LLC which provides emerging business and valuation advisory services as well as profitability and performance strategy consulting. In addition to providing fraud and forensic accounting investigative services, the firm assists clients with working capital management and debt restructuring matters and provides litigation support, expert witness and individual tax services. He can be contacted by email at paulseitz@seitzconsultingllc.com.