

# New Software Improves Collaboration for Disney Property

By Jonathon Schuchmann, P.E., LEED AP

As the first collaborative, web-based software application designed specifically for the tilt-up industry rolls out, users are finding it improves efficiency and reduces construction errors. Steinbicker and Associates, a full-service structural engineering firm specializing in tilt-up design, is now using this collaborative, web-based software, known as Tilt-Werks®, exclusively and has had immediate success with high-profile projects such as the Jostens Center in Disney's Wide World of Sports Complex.

## THE JOSTENS CENTER PROJECT

Like other Disney properties, the Jostens Center located in Lake Buena Vista, Florida, is built for entertainment. This state-of-the-art multisport facility opened in the fall of 2008, providing more than 44,800 square feet of competition space for a wide variety of sports such as basketball, volleyball, or inline hockey.

Tilt-up was chosen as the building method of choice for the project, not only to enclose the building but also as the lateral load-resisting system, transferring the roof diaphragm loads through the tilt-up panels to the foundations. In addition, freestanding cantilevered tilt-up wall panels were utilized for the mechanical courtyards. In total, the Jostens Center required 81 tilt-up panels with a gross panel area of 54,000 square feet.

For the Jostens Center project, Steinbicker & Associates was retained as the specialty engineer for the tilt-up wall panels. As the

specialty engineer, the firm's scope of work included preliminary consulting, tilt-up panel engineering, and preparation of panel shop drawings and reinforcing drawings. With this in mind, the software is the only package on the market that allows its users to complete all of these tasks simultaneously.

Steinbicker has used other software packages, but not one was as comprehensive. Using the software allows Steinbicker to gain efficiency with its projects and produce more complete and accurate construction documents in less time. These results translate into earlier start times and faster construction schedules due to the greatly reduced field coordination efforts for the contractor.

## IMPROVING EFFICIENCY AND COLLABORATION

On the Jostens Center project, the software allowed Steinbicker to shorten the design period and increase the accuracy of design through the input of wall geometry and design requirements of entire wall elevations at once rather than designing a panel at a time. This feature allowed the firm to provide accurate and detailed design of an entire wall in the amount of time it would take to design a single panel in other programs. As such, the contractor realizes a cost savings in many cases, since the reinforcing is specifically designed at each location rather than generalized throughout the project. In addition, the contractor can view wall elevations in their entirety or as individual panels within the software, which allows for real-time coordination.

## ABOUT the AUTHOR

Jonathon Schuchmann, P.E., LEED AP is the managing principal of the Orlando office of Steinbicker & Associates, Consulting Engineers. Founded in 1982, Steinbicker & Associates is a full-service structural engineering firm with broad experience serving clients throughout the United States, Canada, Mexico, and the Caribbean. Steinbicker & Associates' experience varies in scope from large international distribution centers, complex retail centers, and multistory office buildings to industrial and institutional facilities. For more information, call 407.829.4461, ext. 207, or visit [www.sai-engineers.com](http://www.sai-engineers.com).

What's more, the software eliminated duplicate efforts when going from design to preparation of field use drawings for the Jostens Center project. The program's ability to export DXF files to any drafting program based on the engineering model eliminates nearly all of the drafting efforts typically encountered. Using this feature can save weeks of time, which can become critical when working toward a contractor's construction timeline.

In addition to saving time during the engineering and drafting phase, the software improved efficiency during the contractor's bidding of the Jostens Center project. Preliminary panel design through the software allowed the contractor to get a quick and accurate estimating take-off for the project so that the project could be bid with a high degree of certainty. Once Steinbicker completed the panel design, the firm exported the file to the Meadow Burke Company of Tampa, Florida, to be used as the basis of design for the lifting and bracing. This has proven to dramatically reduce the turnaround time for the lifting and bracing, as the model does not have to be recreated from a hard set of drawings. What's more, the potential for errors occurring when the basic parameters have to be recreated multiple times is eliminated.

### EARLY INVOLVEMENT CRITICAL

For the Jostens Center project, Steinbicker & Associates was consulted early on the by the architect and contractor to successfully implement tilt-up into the overall design of the building. Being very familiar with the software, Steinbicker was able to lay out the project quickly to establish panel joint locations, panel thicknesses and panel layout drawings. Steinbicker's quick layout of the project allowed the architect to move forward with a more accurate building layout, thereby simplifying the coordination

efforts among the architect, engineer and contractor. The software allowed the firm to reduce design and production time to meet the demands of the project schedule. Being involved early in the process, allowed Steinbicker to move quickly into the final design stage, preparation of shop drawings and reinforcing design drawings.

The Jostens Center project reinforces the concept that it is always advantageous to retain an engineering firm that specializes in tilt-up construction early on in the design development to aid in the building layout and planning process. Doing so has shown to be a key to successful tilt-up projects. ■

### Editor's Note: Tilt-Werks Meets Need to Streamline

*The collaborative, web-based software Steinbicker used for the Jostens Center project is known as Tilt-Werks®. Tilt-Werks, developed by Tilt-Up Design Systems, LLC, can be used by all parties—architects, engineers, material suppliers and contractors—to design, track, and access project data. With Tilt-Werks, project information can be communicated more efficiently, resulting in expedited construction schedules.*

*According to Charles Reber, VP, sales & marketing for Tilt-Up Design Systems, the software was created in response to a growing desire to streamline the tilt-up design and construction process. "The schedule—from design to construction—is significantly shortened due to both the collaborative nature of the web-based application and a single common set of details and drawings that do not require error-prone duplication," says Reber.*

*Tilt-Werks is unique in that it creates engineered design drawings instead of just model rendering, Reber adds. Engineering data and building geometry are input to generate a complete tilt-up design and construction package.*

*With Tilt-Werks to bridge the needs of the building team's need for accurate, real-time project information, projects such as the Jostens Center now can benefit from the highest degree of efficiency. For more information about the software, visit <http://www.tilt-werks.com>.*

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