



### EdgeWise MEP Delivers a 75% Workflow Savings + A More Accurate Model

#### Tackling 3D Modeling Challenges in an NFL Football Stadium

When the contracts were awarded for the design and construction of upgrades to Ralph Wilson Stadium, home to the NFL's Buffalo Bills, two firms in Western New York saw the project as a challenge and an opportunity. The challenge was the complexity of the interior Mechanical Electrical and Plumbing (MEP) infrastructure, and the opportunity was the chance to try new technology.

For Edge-GTS, a 3D modeling solutions provider in Rochester, the maze of pipes in the stadium was like nothing they had seen before. "I was looking for a solution so I wouldn't have to model tens of thousands of pipes. It was a no brainer that EdgeWise MEP was the perfect fit for this project."

#### First-Time EdgeWise Users

Although Edge-GTS is an experienced user and reseller of FARO scanners, Autodesk products and

#### Edge-GTS/Ciminelli Workflow



FARO Focus 3D



FARO SCENE



EdgeWise MEP



Autodesk Revit

ClearEdge3D software, this was their first time using the new EdgeWise MEP automated extraction and modeling software. And their partner in the modeling work, LP Ciminelli who was contracted to manage the stadium construction, was taking part for the first time in the actual scanning process.

*"With the cost of scanners coming down and the savings in labor time, it's easy to justify the cost of the software."*

- CJ Sondgerath, BIM Specialist, LP Ciminelli

The Ralph Wilson project calls for significant renovation, relocation and reconfiguration of the concession booths, bathrooms and other facilities in the stadium's concourse. The upgrades will include running thousands of new utilities into the ceiling spaces in the concourse, which rings the interior of the stadium.

"We used the 3D models to make sure the addition designs would accommodate our construction phasing plan," said CJ Sondgerath, a Ciminelli BIM Specialist.

The shape of the interior concourse was a primary challenge in the scanning phase. Because the concourse curves almost continually around the stadium, line of sight was limited and would require

numerous scans. Edge-GTS decided the easiest way to divide the concourse was by its 'bays' or spaces between support columns. Each bay is about 35-feet wide and most contain single concession booths.

## 237 FARO Scans of the Concourse in Five Days

"We set up a FARO Focus 3D laser scanner at two points in each bay of the concourse area bounded by the columns," said Greg Hale, Edge-GTS CTO. "We captured 237 concourse scans and then took one at midfield for perspective." Even with Edge-GTS training the Ciminelli crew in how to set up and use the laser scanner, the scanning took only five days.

Once the scans were captured, the crews headed back to the office where they were prepared to use the EdgeWise MEP software for the first time. As a ClearEdge3D reseller, Hale had taken a few online training sessions to learn the automated extraction and modeling application. "The learning curve is very short for the software," said Hale. "Once you understand the workflow, it's pretty easy."

Hale and Sondgerath set up the EdgeWise MEP software to extract the geometry of every pipe, duct or conduit with a diameter greater than one-half inch. The software then analyzed each scan to automatically locate and measure the length of each MEP segment and angle of elbows. As Hale

predicted, there were tens of thousands of MEP lines extracted from the laser point cloud.

"Without EdgeWise MEP, we would have tried extracting the geometries manually in Revit, which would have taken four weeks or more," said Hale. "With EdgeWise software, extraction and modeling together took just over a week...and 90 percent of MEP was extracted automatically."



EdgeWise MEP pulled 90-95% of pipes accurately - lengths, elbow angles, and sags in long pipe runs included.

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The Edge-GTS and Ciminelli technicians agree the 75 percent time savings was significant, but the most impressive benefit of using the ClearEdge3D software may have been the superior accuracy of the extraction and modeling compared with what would have been

achieved manually in Revit. "EdgeWise MEP was pulling 90 to 95 percent of the pipes accurately," said Hale, adding that not only were the lengths measured accurately, but so were the elbow angles and sags in long pipe runs.

"The amount of detail we got from the scans was impressive," said Sondgerath. "With the cost of scanners coming down and the savings in labor time, it's easy to justify the cost of the software." For construction and design companies just now considering 3D scanning for as-built modeling, the EdgeWise MEP software is a "game changer" according to Hale.

To learn more or request a software demonstration, visit [clearedge3d.com](http://clearedge3d.com) or contact us at [sales@clearedge3d.com](mailto:sales@clearedge3d.com) or +1 866.944.8210.



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