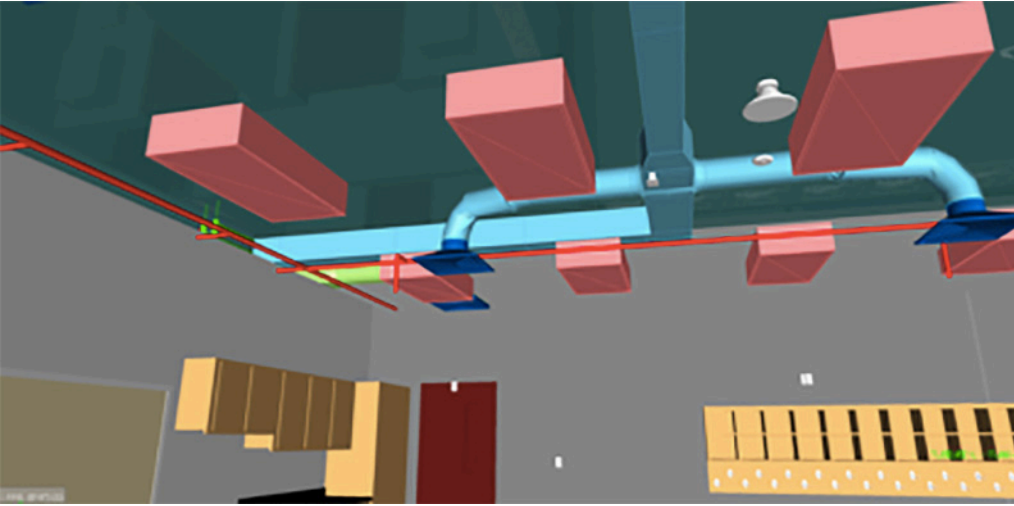


# Leica Geosystems **TruStory**

## HA Sack innovates building project coordination using BIM



A full-service MEP (Mechanical, Electrical & Plumbing) contracting company based in Georgia, HA Sack has been serving customers throughout the U.S. and overseas since 1945. Modeling and layout technology is nothing new to HA Sack; they have been using it on an as-needed basis. But its most recent project – a two-story elementary school near Savannah, Georgia – is the first in which everyone is using the BIM process from start to finish.

The firm is working in coordination with the general contractor for the Isle of Hope Elementary School, using BIM to recreate 2 dimensional designs provided by architects and engineers in the 3D world. Not only does the BIM process allow them to perform clash detection and create more accurate estimations, they can also “check” their designs in a 3D environment, avoiding costly rework.

“If you let the technology do its job, it saves a lot of time and money,” said Brandon Spainhour, HA Sack’s BIM/CAD coordinator. “We can visu-

ally capture any potential problem areas so that they can be redesigned before construction begins. It also allows us to build things offsite and ship them to the jobsite, which limits the need for storage and also saves time and money.”

### **Digital layout improves accuracy and efficiency**

Shortly before the Isle of Hope school broke ground last Fall, HA Sack purchased a Leica iCON robot 60 and CC66 tablet. To try out the technology, they used it to backcheck what had already been laid out by hand with string and tape.

Once the work was checked with the total station, several errors were found that were fixed before the concrete slab was poured.

The current Savannah school project is the first time the firm has used the equipment and BIM process from the beginning, primarily to verify underground work and floor penetrations.

“Once we receive the designs from

### ■ **Company**

H.A. Sack Co., Inc. and SCM Inc., a full-service MEP (Mechanical, Electrical & Plumbing) contracting company <http://www.hasack.com>

### ■ **Challenge**

Using BIM to recreate 2D designs provided by architects and engineers, in the 3D world

### ■ **Location**

Georgia, USA



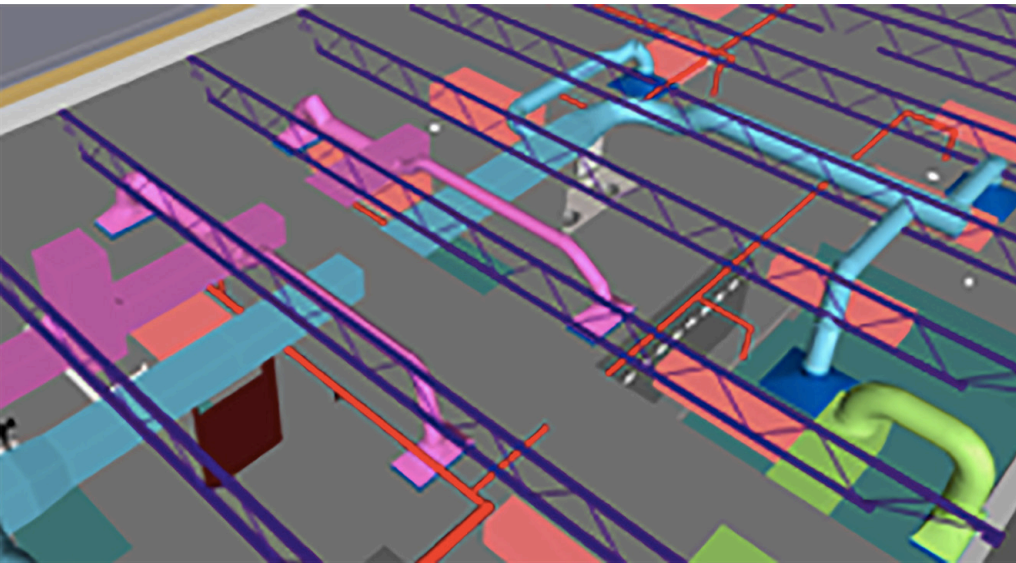
### ■ **Equipment**

#### **Hardware**

- Leica iCON robot 60
- Leica iCON CC66 tablet
- Leica Geosystems Original Accessories

#### **Software**

- Leica iCON on-board software
- MicroSurvey Layout field software



■ **Benefits:**

- Cost and time savings
- Create more accurate estimates
- Check designs in a 3D environment for clashes
- Clash corrections and adjustments can be made in-house then transferred to the tablet in the field

the architects and engineers, I use MicroSurvey Layout field software to input the points of interest that need to be marked in the field," said Spainhour. "We then export that out to the field crews who will layout those areas."

If clashes are found, Spainhour said, changes and adjustments can easily be made in-house and e-mailed to the field crews, who upload the changes to a thumb drive that can then be transferred to the tablet. So far, crews in the field – most still very new to the Leica iCON robot-like what they see.

"It's quicker and more efficient and doesn't require as many people to use it," said Spainhour. "Right now, we have one person dedicated to the total station and he does it all, from plumbing to electrical, so it doesn't take away from crews doing their jobs."

**BIM provides savings, reduces risk**

Spainhour said that as more and more general contractors are requiring subcontractors to work in BIM,

having the technology and capabilities to build in a BIM environment will help the firm win jobs. That said, there has been a little resistance from those in the field who have not yet had an opportunity to see the advantages of the technology.

"It's more work upfront to follow a BIM process and not all of our project managers and guys in the field have seen what Leica Geosystems solution can do," said Spainhour "But at our quarterly meetings, those who have seen the benefits firsthand are raving. Word of mouth is spreading and that's a good thing."

The firm plans to use the new iCON total station and tablet on its next project, a hotel expansion on Sea Island, Georgia. They will use the tools for underground plumbing

and penetrations as each level of the building is put together. "We probably won't use BIM to its fullest extent on the hotel project because of the simple nature of the building itself – hotel rooms are very similar

and don't require as much coordination," said Spainhour. "But for projects like schools – where we have seen architects creating fancier designs and there is limited space, duct work and tight fits – having everything in a 3D environment and using the BIM process to make sure it will work once it's built is invaluable."

Spainhour concludes by saying "Using the robotic total station tied together with a BIM process saves us time, money, and reduces overall project risks," he said. "Seeing things in a 3D environment makes it easier to understand. You can ask better questions, rather than going through hundreds of pages of design documents, you can open a single model. It makes everyone's job easier."