

Foundation Companies Had **A GOOD 2015** and Look Ahead to **A STRONG 2016**

STRONG DOLLAR MAY IMPACT OVERSEAS PROJECTS

By Larry Kahaner

In a solid market for foundation services, companies are ramping up new products and services to keep pace with demand. “Because foundations are the first step in construction, this industry tends to experience trends a little bit before the rest of the construction market. By analyzing economic trends, I suspect we’ll continue to see the American market recover and yield good results for the foundation industry,” says Gina Beim, Senior Consulting Engineer and Marketing Director at Pile Dynamics, Inc. (www.pile.com). For her own company, she notes: “Business has been good, but the strong dollar is affecting sales in some international markets, particularly in Asia. In the United States, however, sales increased in 2015 when compared to the previous year.”

For 2016, Pile Dynamics will launch a new product called SQUID. Beim says, “SQUID is a large device that attaches to the end of the Kelly bar used in foundation drilling, and assesses the quality of the bottom surface of the bored pile or drilled shaft hole. It is a disruptive technology, in that this assessment is currently made qualitatively only – visually, by means of a video camera lowered down the hole. The SQUID instead measures stuff – it’s a quantitative assessment, which, of course, engineers prefer. The device measures the thickness of any soft material or debris still to be cleaned from the bottom of the hole. It can also take some measurements that evaluate the strength of the bearing layer, which is the layer at the bottom of the hole where the shaft is supposed to rest.”

At Geopier Foundation Company (www.geopier.com), President Kord Wissmann says that the ground improvement industry as a whole is changing rapidly and interfacing with the structure engineering community in lots of ways. “It seems that this part of the whole ground-support-for-structures segment is expanding rapidly. Within our company we have two new things that SEs might like to know about. One is within the rigid inclusion realm of things. We have developed something called a GeoConcrete Column that is being used to support fairly heavy loads on very, very soft soil. Most of that work is being done on the East coast, New England

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and the mid-Atlantic regions,” Wissmann says. “GeoConcrete Columns are a form of rigid inclusions which are becoming quite popular to support structures. These are foundation, systems that are neither deep foundations nor are they shallow foundations, but something in between. Sometimes, when traditional forms of ground improvement don’t quite do the trick, then rigid inclusion is being used, a ground improvement element that’s constructed with cement.”

He adds: “The second item is improvements to our Rammed Aggregate Pier systems. We have a hybrid called the X1 system. It’s a way of constructing a Rammed Aggregate Pier where we can partially drill a hole and then use our tool to displace the remainder of the hole. This particular type of compaction device does a good job of compacting the Rammed Aggregate Pier in place. The advantage to SEs is that it’s a more efficient way of building Rammed Aggregate Piers, saving time and money on projects.”

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Wissmann sees a trend towards increased use of ground improvement and more methods for SEs to choose from. “Business is up this year versus last year. Last year was a tremendous year for us, and this year is still better.” (See ad on page 32.)

Eric Droof, President of Hayward Baker (www.haywardbaker.com) says that some engineers are still not familiar with all the ground improvement services that are available. “I think these things are still not well understood by consulting geotechnical engineers. Consulting geotechnical engineers

typically don’t have the knowledge or skills to design these solutions. Some of the solutions include products like soil mixing, earthquake drains, jet grouting, aggregate piers and rigid inclusions.”

He says these methods are typically replacements for deep foundations, or solutions for very soft or difficult soil conditions. “They offer lower cost, reduced time for construction, reduced cost for foundation construction, and they also offer seismic mitigation in conjunction with foundation support.”

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Says Droof: "Business is pretty good. The commercial markets in major urban areas have come back nicely. Places like New York, Miami, Atlanta and Los Angeles are all busy with the commercial sort of residential construction, as well as educational and hospital." He says that the company is excited about a new project in lower Manhattan. "It's a 55-story residential tower. We've just completed the jet grouting for it." He says that the alternative would have been 190-foot deep drift shafts. "We believe it will be the first high rise building in lower Manhattan that is not supported by a deep foundation."

At Adapt Corporation (www.adaptsoft.com), President Florian Aalami says: "We have made major advancements in our ADAPT-Builder software platform for integrated design of concrete

buildings, in particular for the design of foundations using the ADAPT-MAT module. Structural engineers can now model a complete building, including all details of the foundation system. Global gravity and lateral analysis results are available for detailed foundation design, all within the same model, without requiring the need to first export/import the solution between programs. This saves time and reduces errors often introduced when translating global building analysis results into separate foundation design programs. ADAPT-MAT can be used to design any type of foundation system."

Aalami notes that he sees a continuing trend towards BIM even though many practitioners are not completely clear about their BIM requirements. "We also continuously hear complaints about how it is

much more efficient to design and detail steel buildings, compared to what is possible for concrete structures. The potential to deliver ever more efficient, complete concrete design solutions is what keeps us motivated."

As for business, Aalami says, "The U.S. market has been very strong this year, but we are seeing some softening in international markets. We largely attribute this to the slowdown in their economies and the weakening of many international currencies against the U.S. Dollar." (See ad on page 28.)

The company Subsurface Constructors (www.subsurfaceconstructors.com) has had a busy year, according to Lyle Simonton, Director of Business Development. "In addition to it just being an extremely busy year, Subsurface Constructors has had some exciting new experiences in 2015," he says. "We completed Aggregate Pier ground improvement projects in several new states, including Washington, Alabama, and New Hampshire. We had some huge news with the opening of our New England office, just outside of Boston. Having a physical presence in this region will help us to remain competitive on bid day and provide better support to the engineering community."

Simonton adds: "More than ever before, we are working directly with structural engineers during the design phase of projects to help develop the optimum foundation plan using Aggregate Pier ground improvement. We are providing them with specific project information regarding bearing pressures, which can be achieved with Aggregate Piers."

He says that Subsurface Constructors was fortunate to have been involved with several high profile St. Louis area projects in 2015, including a large earth retention project at the Gateway Arch and completing the ground improvement work for the St. Louis IKEA store. ■



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