

CONSTRUCTION & ENGINEERING

CTL Thompson helps set engineering standards

Firm tests everything from helical piers to pervious pavement

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FORT COLLINS — When there's a new idea in the world of geotechnical engineering, the world comes to Northern Colorado to see if it works.

The Fort Collins division of the Denver-based firm CTL Thompson Inc. has become a pioneer in the field. The site is home to a testing lab for helical piers — the only lab of its kind in the world — as well as an experimental parking lot researching the benefits of pervious pavement.

Two years ago, at the urging of CTL Thompson, the International Code Council decided on building criteria for helical foundation systems, and the company subsequently became the only testing facility for the products accredited by the International Accreditation Service. Helical piers, explained Chip Leadbetter, Northern Colorado division manager, are a form of foundation support that screws deep into the earth.

"They were used in the past a lot for fixing buildings that needed foundation support," he said. "Now they're getting used more and more in initial construction. The prices keep coming down. The nice thing about them is they don't require any hole so you don't have to remove soil."

Helical pier manufacturers all over the world are sending their product to the Fort Collins lab for testing and accreditation. Timiry Krieger, business development coordinator for the 35-person office in Fort Collins, says the tests are conducted with a massive torsion machine — also one of a kind — purchased from a car manufacturer.

Krieger said builders are finding that helical piers work especially well at supporting foundations built over Colorado clay, which tends to expand and cause heaving without extra support.



Courtesy CTL Thompson Inc.

POUR-OUTS — Kiefer Concrete employees place pervious pavement at CTL Thompson Inc.'s back parking lot on April 13 in Fort Collins using the chute-pour method. The pervious lot - part of a partnership between the company, Colorado State University and the city of Fort Collins - will act as a test site for the material and the methods used to place it.

"If you're going to use this material, you want to make sure it's going to hold," she said. "Using something that's not accredited is like using a drug that's not approved by the FDA."

Pervious pavement parking lot

At the same time, CTL Thompson has turned its parking lot into a testing ground for pervious pavement. Pervious pavement is a mix of coarse aggregate, cement, water and little or no sand that creates an open-cell structure, allowing rainwater to filter through to the underlying soil. The result is natural stormwater management.

Leadbetter said that the firm became interested in using pervious pavement because its site northeast of Old Town was too small for both a parking lot and stormwater treatment.

"You can put in this kind of parking and use the parking lot itself to store the

stormwater underground," he said. "It looks like Swiss cheese. It's porous." And because the water drains into soil instead of drainage ponds, the soil is supposed to collect the impurities, leaving the water cleaner.

At the same time CTL Thompson was considering this project, the city of Fort Collins was looking for businesses pursuing low-impact development projects that the city might want to implement on a more widespread basis, according to Basil Hamdan, the city's stormwater quality engineer. Thus, a partnership was formed between CTL Thompson and the city, which subsequently recruited Colorado State University to test the project.

"We thought it would be a good idea to partner with CSU to do some leading-edge research," Hamdan said.

CSU is going to be studying the lot not only from a durability and infiltration standpoint, but also sampling the

water runoff, he explained.

Hamdan added that the pavement will also prevent the parking lot from having a heat-island effect, because evaporation will cool the surface down.

Krieger acknowledged that pervious paving has failed in other projects, and the firm hopes their parking lot will become an example of how to build and maintain one correctly. A pervious concrete parking lot was installed last month at a fire station in Georgetown, Ky., where soil and precipitation conditions are radically different from Northern Colorado, with funding from the Environmental Protection Agency.

"We're not promoting the product," she said. "We want to become the experts so when people are considering it, they can come to us and we can tell them if there's good ground conditions. We're trying to come up with some standards for testing this."

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