



Owner: St. Gobain Containers | Jack Creviston, P.E. (765) 741-7123
EOR: Smith Engineering, Inc. | Brian Smith (318) 741-1088
Completed Date: January, 2010 | Contract Amount: \$874,000
Maximum Column Load: 210 kips

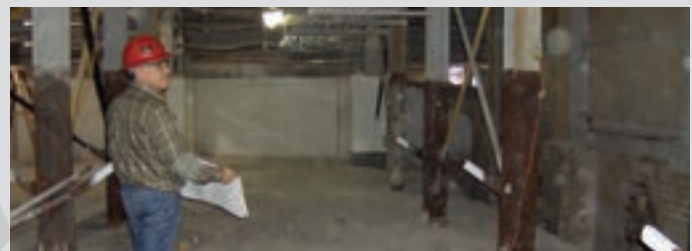
PROJECT SUMMARY

Ruston Furnance –St. Gobain Containers

Project Description: The St. Gobain Containers facility in Ruston, LA was established in the 1950's. In 1965, an additional furnace was added to increase production. Furnace #2 was supported on a 3' thick conventionally reinforced mat foundation. The furnace and foundation weighed in excess of 2-1/2 million pounds. Movement of the furnace had been observed for some time, but accelerated in the months leading up to repair.

Subsurface Conditions: Smith Engineering Co. Inc., was contacted to investigate the situation. As part of their investigation, multiple soil borings were taken around the site. Moisture accumulated in all borings and retrieved

samples revealed water temperature of more than 100 degrees. Furthermore, the upper 10' of the soil mass was found to be saturated. As large volumes of water were utilized in the manufacturing process, it was determined that leakage of below-grade drainage systems had allowed water infiltration into the soil mass reducing the soil's capacity, thus prompting





PROJECT SUMMARY — RUSTON FURNANCE (CONTINUED)

settlement of the mat foundation.

Design Details: Due to the lack of access below the furnace and low overhead clearance, repair methods were very limited. This was compounded by the massive loads present to be re-supported. Bryan Smith, P.E., called upon Power Lift for repair recommendations. After considering the situation, driven steel piles were the selected repair option. 7" diameter .408 wall steel piles were advanced 30' below grade and founded in the shale formation. Specially designed anchorage assemblies were manufactured and installed by Power Lift to transmit the load of the mat and furnace onto the piles. The piles were installed in sections 8' in length and connected with full penetration welds. The piles were jacked to an ultimate capacity of 320 kips. After the piles were installed to the proper depth and capacity,

the mat elevation was adjusted and secured to the anchorage assembly via welding the piles to the anchor plates. The site was fully restored and returned to operation while the plant was shut down between Christmas and New Year, with construction taking only 7 days to complete.

