



Owner: Texas A&M University | General Contractor: Alpha Building Corp.
Chris Jennings (979) 846-0100 | EOR: Cutler-Gallaway Services, Inc.
Earl Cutler (210) 496-3326 | Completion Date: September, 2004
Contract Amount: \$194,960.00 | Maximum Column Load: 384 kips

PROJECT SUMMARY

Renovations To TAMU BLDG. #457

Project Description: This concrete framed building was built in 1934 as the original Animal Husbandry building on the campus of Texas A&M University. Founded on spot footings 10' - 12' below grade vertical columns supported the grade beams which were also isolated from the soil. The footings ranged in size from 6' x 6' to 8' - 6' x 8' - 6". The columns ranged from 18" x 24" to 30" x 30". With time, the building was converted to offices and remodeled. Throughout the years, settlement progressed causing cracks throughout the building to the point that remediation was required.

Subsurface Conditions: Highly plastic clays were present to depths of more than 30' to the underlying rock formation. Testing revealed the soils were very





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desiccated to depths beyond the footing depths. As the site was covered with mature Live Oak trees, it was clear the moisture removal by the trees had brought on significant long-term soil shrinkage, causing settlement of the footings.

Design Details: As the college did not wish to remove the trees, a deep foundation system was needed. When contacted to evaluate the problem, Power Lift recommended the engineering services of Cutler-Galloway be retained. CGS, Inc. was recommended due to their vast experience in designing remedial foundation solutions, intimate knowledge of the local soil conditions, construction methods utilized in the area, and their unsurpassed reputation for quality, integrity, and attention to detail.

From early on, it was clear the high column loads would be the greatest challenge of the project. This was compounded by the fact the top of the footings were 8' - 10' below grade. Power Lift worked closely





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with CGS in developing the most economical repair approach. It was determined that casting concrete collars around the columns would be necessary for the foundation re-support. Sleeves were driven down to the top of the original footings and the footings were cored. Depending on the column load, a series of piles ranging from 2 to 6 per collar, were driven through the sleeves and down to the rock strata at +35' below grade. Each pile was proof loaded to more than 100 kips each so that an appropriate factor of safety was achieved. In the areas where settlement was greatest, the column was severed below the collar and the structure raised as needed utilizing Power Lift's synchronized lifting system. Final support of the structure was left on Power Lift's piles.

