CASE HISTORY

ECP HELICAL TORQUE ANCHORS™ AND ECP STEEL PIERS™

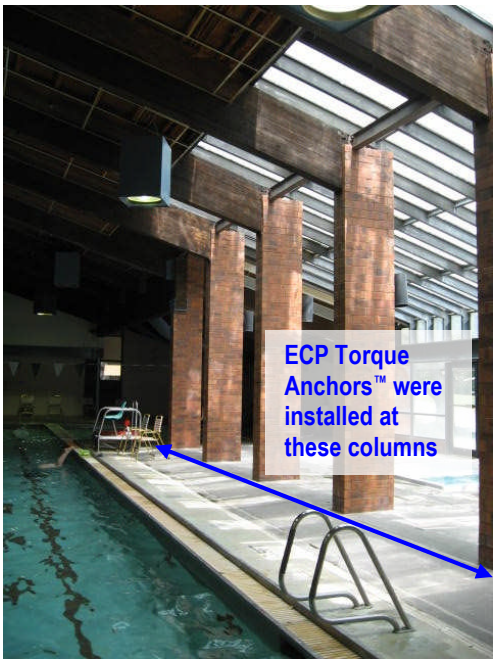
Stabilization of Recreation Center Walls During Renovation

Rangely, CO

The Western Rio Blanco Metropolitan Recreation and Park District needed to completely renovate the Recreation Center in Rangely, Colorado after years of distress, wear and tear. The engineers were concerned for the stability of the walls once the pool was drained and removed. The bottom elevation of the pool was approximately five feet below the bottom elevation of the wall footings. The twelve foot deep diving area of the pool was situated only eight feet from a thirty foot tall masonry exterior wall.

The renovation would also add new loads to the existing footings, so supplementary deep foundation support was required to accommodate these new loads on the perimeter footings.

Soil analysis revealed soft soils existed on the site to eight feet below grade. This soil overlaid approximately eight feet of gravelly soil situated over the claystone bedrock. Mays Construction Specialties, Inc. was selected for underpinning this project. Previously Mays had successfully installed underpinning to restore and stabilize localized settling on other parts of the building.



This project called for the installation of helical screw piles to support the new column loads. Steel resistance piers were required under the existing tall masonry walls and the large footing support for the center beam of the roof.

After the ECP Steel Resistance Piers™ and the ECP Helical

Torque Anchors™ were installed and the specified loads were applied, the project was ready for the general contractor to begin the next phase of construction.

Project Summary			
Project:	Rangely Recreation Center Renovation		
Installing Contractor	Mays Construction Specialties, Inc. Grand Junction , CO		
Helical Piles Installed:	2-7/8" Dia. x 0.262" Wall Tubular Shaft Piles with 10" & 14" Diameter Helical Plates		
Number of Piles:	17	Depth to Bearing:	10 to 15 ft
Ultimate Capacity:	64,000 lb	Service Load:	10,000 lb
Factor of Safety:	6.4 : 1 Ultimate To Service Load		
Steel Resistance Piers Installed:	Model 350 ECP Steel Resistance Pier 3-1/2" Dia. x 0.165" Wall Pier Pipe		
Number of Piers:	19	Depth to Bearing:	11 to 52 ft
Avg. Proof Test:	62,350 lb	Avg. Service Load:	39,700 lb
Factor of Safety:	2.6 : 1 Ultimate to Service Load 1.6 : 1 Proof Test to Service Load		

The photograph above shows the construction area prior to installation of the underpinning supports and renovation of the swimming pool.

An ECP Steel Pier™ is shown above left installed under the footing of the 30 foot tall masonry wall. The adjacent ECP Steel Pier™ is providing supplemental support to the footing that supports the center roof beam. Above right, photograph shows the Torque Anchor™ termination brackets attached to the footing for supplemental support of the columns near the pool.

Once the underpinning was in place, the technicians transferred the required loads using hydraulic rams as shown at left. A view of a completed Torque Anchor™ system is shown in the small photo at right.

The project was completed on time and within budget