Residential

CASE STUDY

Push Piers, Helical Piers, Helical Tiebacks

Project:The Davis ResidenceLocation:Colorado Springs, CODate:November 2009

Problem:

The Davis Residence, built in 1999, is a two-story home with an unfinished walkout basement. When the Davis family considered purchasing the home in February 2008, they observed hairline drywall cracks in the living room and significant displacement in the basement slab floor. The Davis family decided to purchase the repossessed property at a significant discount due to the foundation concerns. In March 2008 repairs were attempted, but the cracks continued to reappear. Additionally, several new cracks became apparent in the second story bedrooms. After speaking with an engineer, the Davis family learned that their home was moving in response to underlying swelling soils and a marginal amount of hillside creep.



Dried, cracked soil observed beneath the basement floor slab



Push piers installed from the interior of the basement

Solution:

Peak Basement Systems worked closely with RMG Engineering to design a foundation solution that would take the weight of the home off of the unstable soil and place it onto competent strata. Twenty-one (21) Foundation Supportworks Push Piers were installed from the interior of the unfinished basement to depths ranging from 38' to 41'. The foundation was lifted 1/2", closing the cracks in the second story bedrooms. Five (5) helical piers were advanced from the inside of the basement along the interior load bearing columns to depths of 18' to 20'. Six (6) additional helical piers were advanced from outside the home along the garage walls. Two (2) helical tiebacks were utilized to stabilize the bowed southwest corner of the basement. The solution permanently stabilized the home and restored property value of the Davis home.



Helical tiebacks installed to stabilize the foundation wall

Project Summary_____

Installing Contractor:	Peak Basement Systems, Colorado Springs, CO
Certified Inspector:	Paul Sutton & Chris Como, Peak Basement Systems
Engineering:	John Clarke, P.E., RMG Engineering
Products installed:	(21) Foundation Supportworks™ Model 288 Push Piers, (11) Foundation Supportworks™ Model 288 Helical Piers, (2) Foundation Supportworks™ Model 150 Helical Tiebacks



Installation of helical tiebacks

