



## PROJECT CASE STUDY

**Location:** Hartford City, Indiana  
**Engineer:** n/a (in-house design)  
**Completed:** January 2014

### *Description*

Built in 1898, this historical home became home to the Blackford County Historical Society in 1976. Construction includes large fieldstone boulders, CMU block, and solid brick exterior. The home rests almost entirely on limited crawlspace with a storm shelter type basement on the Southeast side of the home. Over the period of several decades, plaster and brick mortar cracks began appearing, eventually exacerbated by drought conditions during the summer of 2012.

### *Requirements & Challenges*

The initial inspection by 3D Structural found that two main areas of settlement had occurred, both of which were spans where the main foundation winged out on the North and South sides. The degree of settlement was less than ~2". As a result of the foundation construction, the challenge would be to stabilizing these areas as a solid span. Also, extreme

caution would need to be used to prevent undermining a very old foundation, and putting access stress on very old interior wood framing, joists, and rafters.

In addition, the funding for the project took almost a year to fully commit to the project.

### *Solution*

3D Structural designed a plan including 14 A.B. Chance helical piers installed at 5' o.c. with angle iron spanning between piers and attached to the helical lifting brackets to ensure a continuous lift and stabilize and prevent point loading in areas within direct contact of the piers. Downspouts in the areas of installation were buried and extended away from the foundation with release to independent drain basins.

### *Results*

The piers and angle irons were installed during a cold snap in early winter; even still, the respective walls did recover some of the settlement. In fact, an exterior door that had not opened for more than 5 years is now fully functional!

3D STRUCTURAL

20115 Jackson Rd.  
South Bend, IN 46614  
574-291-0771  
888-321-7522

3dstructural.com

CHANCE Atlas Copco ATLAS

CARBON FREE Hydroway