

# University of Notre Dame Old Bowl Stadium Rehabilitation

Notre Dame, IN

Submitted by Simpson Gumpertz & Heger, Inc.



The University of Notre Dame Old Bowl Stadium is a classical cast-in-place concrete college stadium built in 1929 to seat approximately 59,000 spectators. It consists of a thin, folded-plate tread-and-riser deck supported by sloping concrete raker beams. After expanding the stadium in 1997, the University wanted to ensure that the Old Bowl Stadium would have a service life commensurate with the newly expanded portions. The structure exhibited numerous areas of concrete deterioration, waterproofing failure, and isolated structural concerns.

In 2006, an investigation, load testing, and analysis showed that while the concrete in the Old Bowl Stadium was deteriorated, it was still capable of carrying the applied loads and proudly serving the University as a venue experienced by generations of Notre Dame fans. However, the structure needed to be stabilized and protected from further deterioration to maintain the history and character of the iconic stadium. With the primary cause of the deterioration identified as cyclic freezing and thawing, protecting the concrete became critical to extending the useful service life of the structure. By selecting a moderately aggressive repair and long-term protection program, a majority of the existing concrete could remain in place. The rehabilitation program included concrete repair, application of a new waterproofing membrane, and repair of the joints.

Since the project could not interrupt the football schedule, the repair window was limited to the

5-month period between April and August over a 5-year period, followed by an additional “touch-up” phase in 2013. The work provided the University with a safe, affordable path that kept the structure in service while avoiding an expensive reconstruction campaign. In the end, the University has a serviceable structure with a rehabilitated life commensurate with that of the expansion section of the stadium.

## University of Notre Dame Old Bowl Stadium

### OWNER

**University of Notre Dame**  
*Notre Dame, IN*

### PROJECT ENGINEER/DESIGNER

**Simpson Gumpertz & Heger, Inc.**  
*Waltham, MA*

### REPAIR CONTRACTOR

**Quinn Construction**  
*Lester, PA*

### MATERIAL SUPPLIERS/ MANUFACTURERS

**Sika Corporation**  
*Lyndhurst, NJ*

**Neogard**  
*Dallas, TX*

2015 Award of Merit