

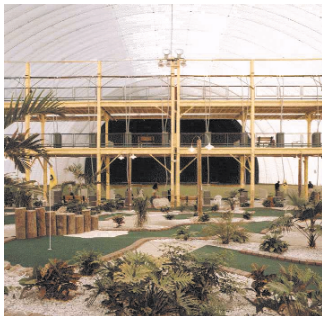


Mulligan's Golf Dome

Tee'd Up on 50 Feet of Waste

A closed landfill located north of Joslyn Road and west of I-75 in Oakland County stood as a barrier to commercial and residential growth in the area. Potential developers and their design-build partners had an impressive vision for the site:

- Construct an 82,000-square-foot golf dome with elevated tee boxes and an indoor miniature golf course, 15,000 square feet of retail space; a 3,000-square-foot clubhouse; an outdoor driving range and miniature golf course; and associated parking and maintenance facilities.



NTH'S VALUE ADDED

Designed an Innovative foundation to accommodate up to 1 foot settlement

Developed design parameters on the fly, as site settlement data became available

Designed a passive methane management system to mitigate the explosion hazards

NTH Consultants was retained by Olympia Design/Build to evaluate available data and design foundations and gas protection facilities for the project. NTH provided the unique combination of geotechnical and environmental engineering services that allowed the adaptive re-use of the closed Joslyn Road Landfill. The result: the largest indoor golf dome in the world - and the first with a three story tee line - rated one of the top ten practice facilities in the country!

Construction of facilities on closed landfills presents two major challenges to engineering professionals: design of a foundation that can move as the decomposing waste below settles and management of the methane generated by the decomposing waste to prevent a hazardous situation. The design and construction of the Mulligan's facility demonstrates that facilities can be built on landfills provided that appropriate engineering designs are developed.

NTH won the top engineering award in 2001 from ACEC Michigan and MSPE for our involvement in this project.