KEYSTONE RETAINING WALL SYSTEMS

CASE STUDY: HOUSING DEVELOPMENT

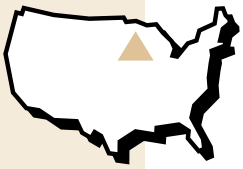
Keystone Walls Conquer Hillside

Developers continually face the problem of finding desirable land to build new homes. They search for new and innovative ways to develop the small and difficult sites that remain within major metropolitan areas.

The Vernon Hills area of Edina, Minnesota, located in an affluent suburb within ten minutes of downtown Minneapolis, seemed an ideal location for a housing development. The problem was that a large steep sloped embankment covered half the site, making the proposed building development almost impossible. The developer and general contractor, David Carlson Companies, turned to their retaining wall contractor Meadowood, Inc., for advice.

At the developer's request, Meadowood, Inc., an experienced Keystone® Wall System builder, worked with site engineers, Schoell & Madson to propose a design which called for excavating away the toe of an embankment and building a retaining wall. This was no small task since the embankment required a 30 foot (9 meter) wall to make the site usable. After considering stone boulders, cast-in-place concrete, and timber crib walls, the Keystone Retaining Wall System of concrete structural units, reinforced fiberglass pins and soil reinforcing geogrids proved the best structural and cost effective solution.

Building such a critical wall required a carefully engineered, geogrid reinforced soil design. Meadowood, Inc.



PROJECT:	Vernon Hills
LOCATION:	Edina, Minnesota
PRODUCT:	Keystone Compac Units
SQUARE FOOTAGE:	15,200 s.f.
CONTRACTOR:	Meadowood Inc. Plymouth, Minnesota
SPECIFIER:	Schoell & Madson Minnetonka, Minnesota
KEYSTONE REPRESENTATIVE:	Aggregate Industries Eagan, Minnesota

30' (9m) high Keystone Wall in Edina, Minnesota creates space for housing development

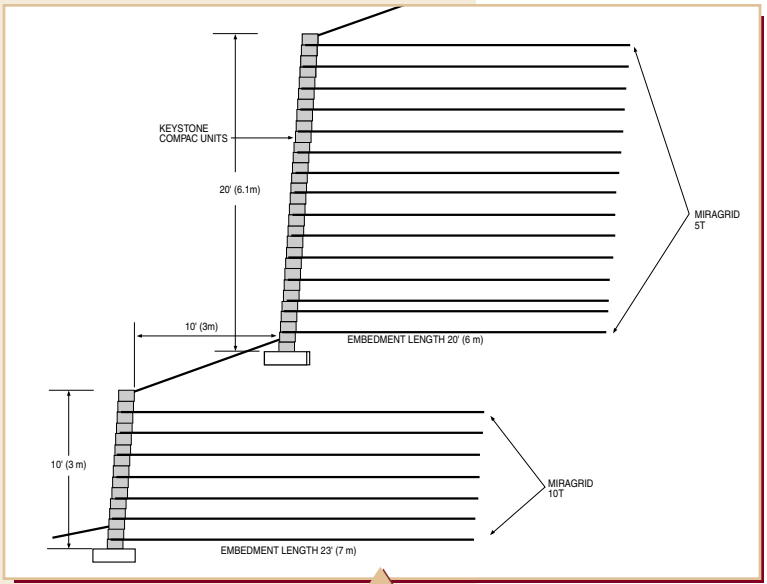
looked to Keystone Corporation's engineering services for the final design. The two walls, constructed with Compac Units, were over 700 feet (213 meters) in length. The height of the two walls varied, with the minimum standing at four feet (1.2m), and the maximum topping out at over thirty feet (9m). Mirafi's Miragrid 5T and 10T geogrid, with embedment lengths of up to 23 feet (7m), reinforced the soil zone behind the wall. The reinforced soil zone consisted of on-site granular, sandy soil with an internal friction coefficient of PHI = 32º.

The result was an attractive, structural, economical Keystone retaining wall, allowing the developer to use an ideal location as a new development site. Keystone turned a problem into a great looking solution!

Cut site before construction.

Keystone Compac units installed with geogrid.

30 foot high terraced Keystone wall with a sloped top elevation.



Vernon Hills cross section at 30' (9.1m) wall.

KEYSTONE® RETAINING WALL SYSTEMS
A CONTECH COMPANY

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