



*Retaining Excellence™*

## Private Residence

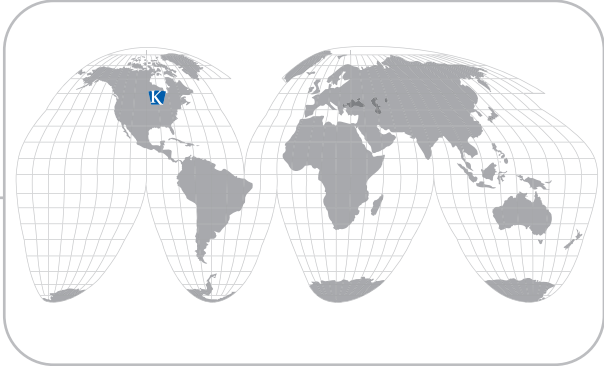
### Hartland, Wisconsin

Today's residential landscaping involves a lot more than shrubs and plants. A private residence in Hartland, WI wanting to create recreational and parking areas needed a design solution to overcome significant elevation changes, limited accessibility and city building restrictions.

Retaining walls were soon established as a main design element to accomplish project needs and overcome the difficult site conditions. To complement the new home's exterior, aesthetics were equally important. The structural integrity and pleasing aesthetics of the Keystone Century Wall™ and Keystone Country Manor® provided the best solution for this residence.

The Hartland, WI residence is located on approximately half an acre, however the home covers nearly all the suitable building area. Brian Zimmerman, Landscape Architect for LIED's Nursery Co. Inc. was presented with the challenge of creating areas for guest parking, an in-ground swimming pool, ample patio space for entertaining and a hot tub. Also, screening from an adjacent golf course and neighbors was to be established.

Several areas designed to be altered by landscaping, varied significantly in elevation. The driveway was eleven feet higher than the adjoining property. A double dug basement set the first floor's elevation at eight feet higher than the road grade and its lower level walkout below the existing grade. Both the front and back yards were impacted by a 20' wide sewer easement that ran the entire length of the west property line. Grade within the easement could not be altered and no structures were allowed to be constructed. City ordinances further regulated where retaining walls could be built along with several other building restrictions.



**Project:** *Private Residence*

**Location:** *Hartland, Wisconsin*

**Keystone Product:** *Keystone Century Wall™  
Keystone Country Manor®*

**Keystone Supplier:** *Best Block Company*

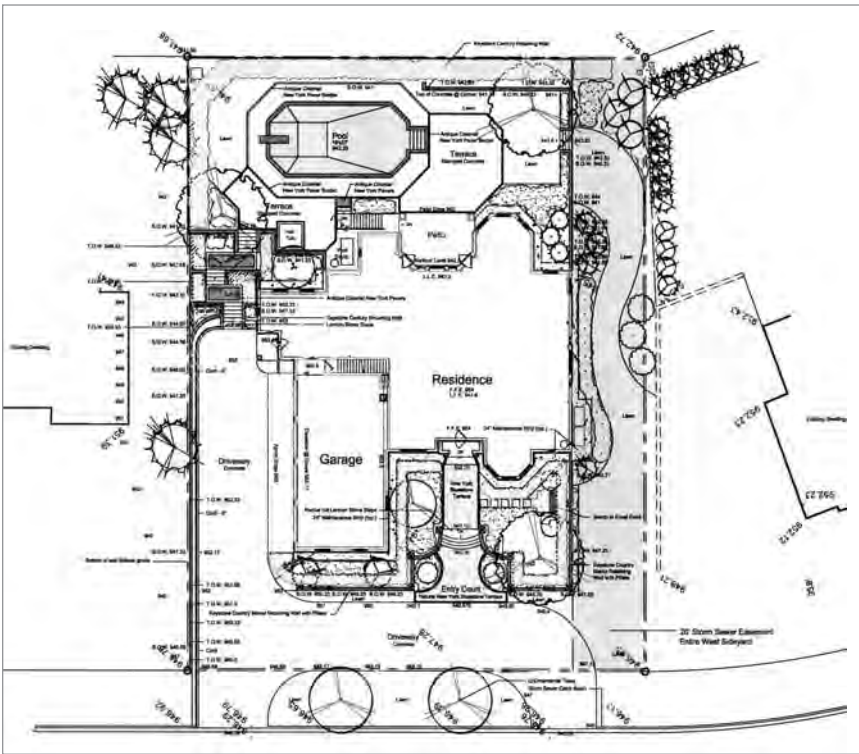
**Wall Area:** *1,900 sq. ft.--Total  
1,300 sq. ft.--Keystone Century Wall  
600 sq. ft.--Keystone Country Manor*

**Architect & Installer:** *LIED's Nursery Co. Inc.*



CASE STUDY





An underground drainage system that empties into the southwest corner of the backyard handles storm water runoff. The critical needs were to prevent water from backing-up into the lower level walkout and prevent surface water running into the pool. The underground network of collection pipes empty into a catch basin. The catch basin empties into a 10'x 10' French Drain. The French drain is located below the freezing line to an approximate depth of 14'. The area is backfilled with clear stone.

“The hope was to tap into the storm water sewer lateral along the west side of the property, but it had a higher invert elevation than the proposed finished grade in the back yard. What we had to do was select our own low points for catch basins and create our own drainage system,” said Zimmerman.

“We couldn’t change the elevation of the house, so we had to find solutions that were functional as well as acceptable to the client,” said Brian Zimmerman, Landscape Architect, LIED’s Nursery Co. Inc.

### Working within a Limited Area

The guest parking area and driveway presented the project’s most restricted working area. An 11’ grade difference between the driveway and adjoining property required a retaining wall to be built. According to a city ordinance, retaining walls had to be built at least six feet away from a property line. This restriction resulted in a less than 20’ area remaining from the garage to the driveway’s edge.

Permission to build the retaining wall closer to the property line was gained. However, the driveway still had to be located a minimum of three feet from the property line. This left approximately 26’ from the garage to the driveway’s edge. A wall constructed at a near vertical setback was dictated by the limited space.

A Keystone Century Wall was built along the driveway and all down the property’s east side to overcome the 11’ difference. According to Zimmerman, the wall was stepped down at various points to meet the step up points on the house. All foundation backfill around the garage and under the driveway was removed down to undisturbed soil. The wall was built at a near vertical setback and constructed with gravel and reinforced with grid. The wall continues down a series of landings and steps and makes a smooth transition to the lower backyard.

### When You Can’t Make Water Go Uphill

Elevation variations and a 20’ sewer easement along the property’s west side greatly affected both the front and back yards. The sewer easement restricted installation of structures or altering grade on that portion of the site. To maintain the grade of the easement, a “sunken garden” using Keystone Century Wall was created in the backyard.

The sewer easement also dictated a raised courtyard effect to the main entry. Keystone Century Manor was selected for the main entry walls because its design flexibility allowed for corner columns to project higher than the wall. The finished floor’s elevation of eight feet higher than the road required steps to be installed along the front walk. These steps allowed for a manageable transition from the driveway.

“It worked perfectly from both a visual and structural standpoint to use Keystone Century Wall and Keystone Country Manor because of the varied aesthetic and construction needs,” said Zimmerman.

The Hartland, WI Residence presented significant site challenges that required structurally sound solutions that would also be aesthetically appealing. The structural integrity, design flexibility and aesthetics of both the Keystone Century Wall and Keystone Country Manor allowed a beautiful and welcoming landscape to be created on this challenging site.

For more information on Keystone Century Wall™, Keystone Country Manor® or other innovative Keystone products, please visit [www.keystonewalls.com](http://www.keystonewalls.com) or call 800-747-8971. Keystone Retaining Wall Systems, Inc. is a subsidiary of CONTECH Earth Stabilization Solutions Inc. ([www.contechess.com](http://www.contechess.com)).

