



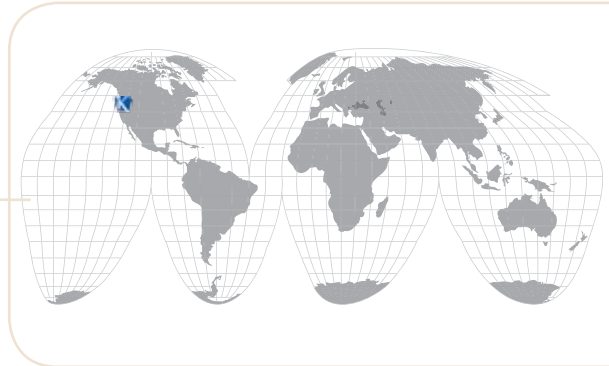
Valley Medical Center

Renton, Washington

When a savvy contractor suggested using Keystone walls instead of the cast-in-place (CIP) walls originally proposed at a Washington hospital, the change resulted in considerable savings, speedier construction and a big step up in aesthetic appeal.

A major expansion project at Valley Medical Center in Renton, Washington, included changing the campus grade to allow for a new access road. The project called for a series of retaining walls, including one that would encase the entrance of a 15' high pedestrian tunnel. The tunnel was already in place and included a cast concrete collar. The new wall would surround the entrance and extend to another concrete wall adjacent to a highway underpass. An additional three-tiered wall was also included in the project.

While original plans specified CIP construction for the walls, Roger Coates, Castle Walls, LLC, Issaquah, Washington, thought a different approach would better serve the hospital. "I saw this as a good candidate for a modular wall system," says Coates. "It would be more attractive and had the potential to save a significant amount of money."



Project:	<i>Valley Medical Center</i>
Location:	<i>Renton, Washington</i>
Keystone Product:	<i>Keystone 133Elite™</i>
Licensed Manufacturer:	<i>Basalite Concrete Products</i>
Total Wall Area:	<i>4300 square feet</i>
Wall Contractor/Installer:	<i>Castle Walls</i>
Wall Engineer:	<i>Terracon Consultants</i>





With approval of the general contractor, Coates asked engineer Rob Ross, of Terracon Consultants, Inc., Mount Lake Terrace, Washington, to determine the feasibility of substituting a modular wall system. Ross worked with the hospital, architect, and civil engineers to demonstrate that a Keystone wall would not only be more cost effective; it would offer other advantages as well.

“The retaining wall is immediately adjacent to our main campus road,” says Todd Thomas, Vice President for Facilities at Valley Medical Center. “Building a CIP wall would have required shutting down the road for an extended period of time. With this plan, we were able to significantly shorten construction time.”

A Money-Saving Modification

Substituting a segmental retaining wall for the CIP wall required a slight change in design for the wall adjacent to the tunnel. The original plan included a section of soldier pile wall at the juncture between the new wall and the existing concrete wall. Instead of a parallel join as originally specified, Ross designed the Keystone wall to abut the existing concrete wall in a perpendicular fashion. This allowed room behind the wall for the necessary geogrid reinforcement and eliminated the need for the soldier pile.

“One of the biggest challenges with the design was getting all the parties involved in one room to show how a slight modification in design could save time and money,” says Ross. “Segmental retaining walls have been around for a long time but people don’t always realize how they can be utilized to achieve great heights with results that are much less costly than alternative construction methods.”

To further increase efficiency, Coates asked Ross to design the wall using the new Keystone 133Elite units. With a thirty-three percent larger face dimension than typical units, the block offers a scale that’s especially attractive for larger walls. It also means less product and fewer labor hours to complete the job. “Using 133Elite increases productivity,” says Coates. “With every block you put in, you’re getting 33 percent more coverage.”

The project required 4300 square feet of Keystone product, which was supplied by Basalite Concrete Products. The tunnel wall was 150’ long

and the tiered sections, which were about 4 feet high, ranged from 150’ to 300’ feet long.

For the 20’ high wall, geogrid reinforcement was included in lengths up to 13’ approximately every two feet. Stratagrid SG500 was used in the bottom portions of the wall. This transitioned to SG300 toward the top. Due to saturated soils on site, it was necessary to import backfill to meet the strength and compaction requirements.

With many years of experience designing Keystone walls, Ross was confident using the system for a critical facility like the hospital “One reason we prefer to use Keystone is because of the product’s use of high-strength pultruded fiberglass pins to create a positive mechanical connection between the geogrid and the facing units,” says Ross. “That’s a preferred system for areas with high potential for earthquakes.”

Ross also appreciates the endless opportunities for enhancing aesthetics with the different colors and face designs Keystone offers. Keystone 133Elite is available in several different styles including the hewnstone design that was chosen for this project.

“The hewnstone look is a definite step-up from a smooth concrete CIP wall,” says Thomas. “We’re very happy with the finished product. It looks great and has performed as it’s supposed to.”

For more information on the Keystone 133Elite™ unit or other innovative Keystone products, please visit www.keystonewalls.com or call 800-747-8971. Keystone Retaining Wall Systems, Inc. is a subsidiary of CONTECH Construction Products Inc.



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