

case study:  
Meadowglen Park

SonomaStone®



project details

wall system	owner	design	manufacturer	installer
SonomaStone with Stratagrid 200 Geogrid Reinforcement	Town of Halton Hills, Ontario	Wall Designer: Risi Stone Systems, Thornhill, ON  Civil Engineer: Trafalgar Engineering, Oakville, ON  Landscape Architect: Consolati Consultants  Certifying/Geotechnical Engineer: Terraprobe Engineering, Brampton, ON	Unilock Ltd Georgetown, ON	Coulson Contracting Norval, ON

>> Municipal Project



RisiStone®  
retaining wall systems

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Developed for two residential subdivisions, the site is located in picturesque Glen Williams, Ontario, in the Town of Halton Hills. Typical to this area, the natural topography of the site was hilly with grade differences of up to 18m (60ft) from the lower east side up to the west property line.

To avoid excessive cutting or filling on the site, the natural contouring was used as a basis to divide the property into two distinct areas: an upper and a lower subdivision. One of the requirements imposed by the Town of Halton Hills was to develop a multi-use community park at the center of the development. As the park was to incorporate a soccer field and a baseball diamond, this large area had to be practically flat, with only minor grading for drainage. The Town also required that a pedestrian link be established between the upper and lower subdivisions. The Civil Engineer decided that the park would be located at the foot of the natural hill between the upper and lower subdivision.

Various options were considered to deal with the grade difference, including steepened slopes, natural rock walls, and precast segmental retaining walls. In the end, the space requirements of the steepened slopes resulted in the developer losing a number of lots in the upper subdivision. Based on this, they decided that it would be more cost-effective to use a near-vertical segmental retaining wall, thereby minimizing the horizontal space required to achieve the grade difference, and maximizing the number of lots available for sale. To soften the look of the proposed wall, a double-terraced retaining wall system was chosen.

The positioning of the park relative to the wall required that the horizontal alignment be varied along its length to accommodate the outer boundaries of the playing fields. As such, the Landscape Architect designed a flowing, curved alignment to accommodate these boundary points. This alignment also softened the overall look of the wall and created a more natural, smoother feel, blending it into the surrounding forested hillside. To create the pedestrian link to the park, the upper and lower walls were connected at the North end with a large staircase.

The resulting plan imposed a number of requirements on the precast wall system to be used: it had to be capable of achieving the structural stability required to maintain the specified grade separation; able to create convex and concave curves with a minimum radius of 14.0m (45.93ft); and the walls had to be constructed vertically to ensure that the steps did not widen as they descended. In the Contractor's experience, using a machine-placed system increased installation efficiencies substantially over hand-placed systems. Also, as the machine-placed systems do not rely on the physical capacity of the workers to place the block, the installation rate was maintained at the same level throughout the day.



SonomaStone met all of the requirements for the project; it is a machine-placed system that provides the benefits of a large block system with the flexibility and aesthetics traditionally associated with a hand-placed block. Its relatively large per-unit face area allows for increased installation rates relative to hand-placed blocks. The standard unit has been designed with vertical chamfers in the face, creating the appearance of variably sized smaller blocks, rather than a single monolithic slab. One of the benefits of this approach is the ability to combine smaller, tapered half units seamlessly with the standard units, to create curved alignments.

Wall construction commenced in December 2005. Due to poor weather conditions and freezing temperatures, construction halted in January and resumed in mid-March 2006, and was completed by the first week of June. Now that the wall has been completed and the surrounding area landscaped, construction of the second phase of houses has begun. Current residents of the lower subdivision can look forward to making use of the new sports field this summer and autumn, and this beautifully developed landscape will surely attract homebuyers to the upper subdivision.