

Permeable Interlocking Concrete Pavement Fits University Master Plan

Home to over 18,000 students and 4,000 staff, The University of Victoria follows an integrated campus plan that incorporates sustainable practices in construction and operation of all new buildings and facilities. A natural fit was permeable interlocking concrete pavements at a new pedestrian drop off and short-term parking for the expanding Engineering/Computer Science building. Completed in March 2004, University officials asked the design engineer to create the 8,000 sf (743 m²) parking that exceeded LEED® (Leadership in Energy and Environmental Design) criteria, specifically reducing the rate and quantity of runoff by 25% from a 2-year, 24 hour design storm. The open joints and notches in the paver surface enabled full infiltration of commonly occurring storms through a clean crushed jointing and bedding material.

The herringbone paving pattern achieved a welcoming entrance while creating six parking spaces for disabled persons and six standard parking spaces. The pavement and subgrade slope gently to one end of the site where perforated pipe at the bottom of the subbase allow the base to drain within 24 hours. The existing catch basins handle overflows from extreme storm events.



An 8,000 sf (743 m²) entrance drop-off and parking lot creates a detention and infiltration for stormwater at the University of Victoria, British Columbia. The fine stone-filled joints infiltrate water from most commonly occurring storms.



A three-layer base provides ample storage and holding time for the water to soak into the clay subgrade and for excess water to filter through the base and drain into a catch basin. These layers include 10 in. (250 mm) of 3 in. (75 mm) open-graded crushed stone, 6 in. (150 mm) of 3/4 in. (19 mm) open-graded crushed stone, and a 2 in. (50 mm) bedding layer with aggregate ranging from 1/2 in. to 1/16 in. (12.5 mm to 1.16 mm). The soil subgrade is clay.

The project was designed by Bruce DeMaere, A. Sc. T with Bullock Bauer Associates of Victoria, British Columbia. Excel Construction from Victoria was the General Contractor. The pavers were supplied and installed by ICPI members.

According to Sarah Webb, the University's Sustainability Coordinator, "The paving stones have exceeded our expectations. Students, faculty and staff have commented on how aesthetically pleasing the drop off is, we have had no problems with wheelchair access, and the stones have continued to perform under our heaviest west coast rains." Maintenance has been minimal and deicers kept ice from the surface during the occasional winter freeze, nor have there been any problems from freeze-thaw cycles. Ms. Webb also noted that, "Paving stones, and other permeable products, will continue to be used on the University of Victoria campus as a part of our green building program and our commitment in our Integrated Stormwater Management Plan to reduce water run off and improve water quality." ❖



The project specifications called for crushed, open-graded base compaction with initial passes of a roller compactor in vibratory mode, then final passes in static mode.