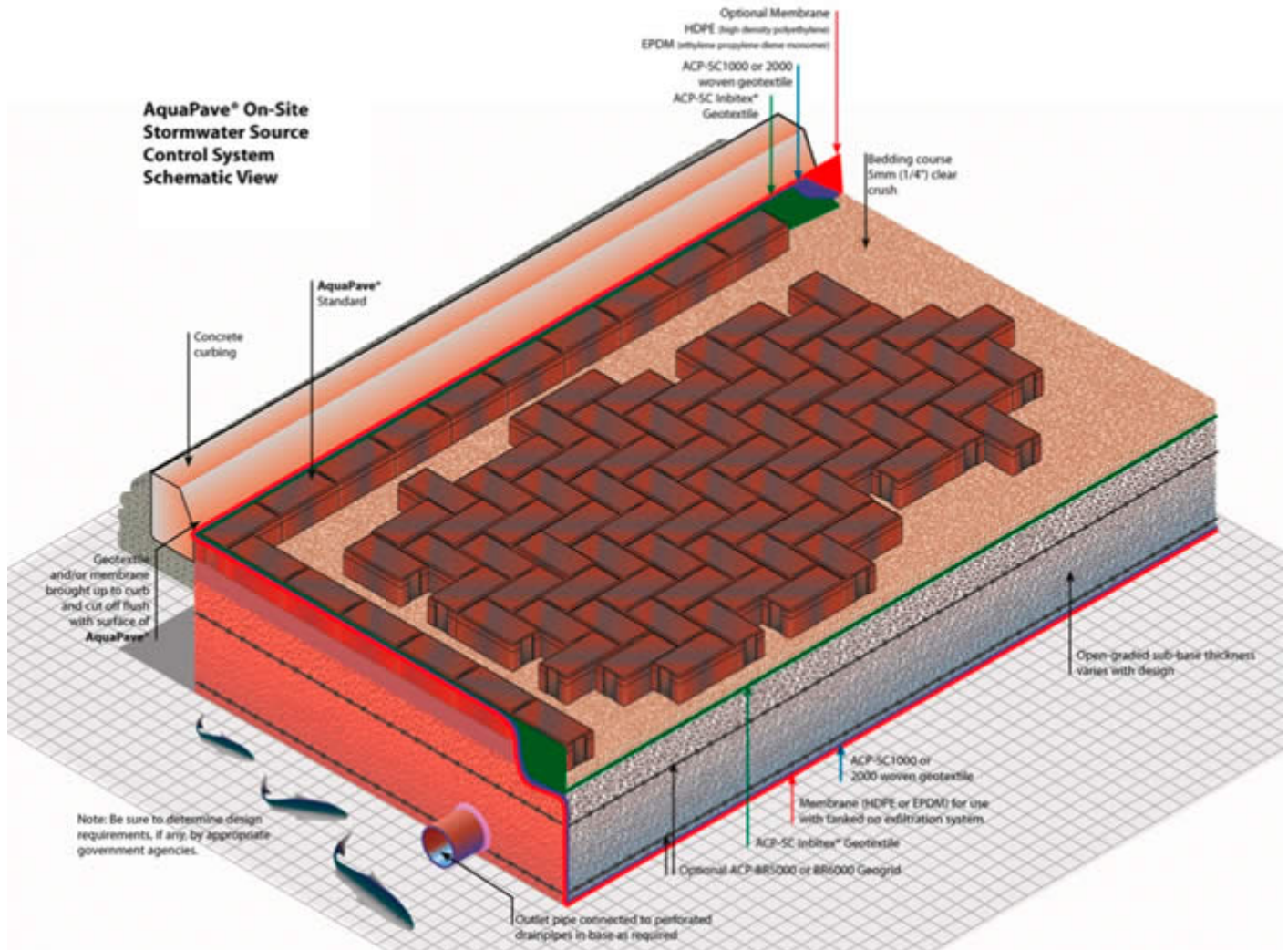


AquaPave™ Permeable Onsite Stormwater Source Control System

The AquaPave™ Permeable Onsite Stormwater Source Control System is a proven method of reducing, if not eliminating, runoff quantities from a site and improving the quality of the water discharged back to the environment. In simplest terms, the AquaPave system allows commonly recurring rainstorms to infiltrate through the permeable concrete paving stone surface into a clear crushed open graded aggregate base. Depending on the type of native soil, the water then infiltrates back into the local groundwater table and/or slowly drains (in a controlled method) into a storm sewer or watercourse.



Benefits of the AquaPave System include:

For the Developer

1. **PROVEN TECHNOLOGY.** The AquaPave system has been successfully used in over 500 projects throughout the world.
2. **LONG DESIGN LIFE.** AquaPave pavers have a design life equivalent to that of standard pavers, typically 30 to 40 years. When outside sources of sediment (topsoil from flower beds, etc) are kept from the system, a minimum of 20 to 25 year life can be expected for the entire system; this is based on actual research conducted at the Urban Resource Centre - University of South Australia. Should outflow become significantly diminished, a vacuum truck can be used to clean out the joints; if the problem goes beyond the surface, the pavers can be pulled up, the bedding layer and Inbitex geotextile replaced, and the stones reinstated.

3. **POTENTIAL REDUCTION IN CONSTRUCTION COSTS.** Although the square foot (surface) cost to install AquaPave can be more expensive than other recognized surfacing approaches, cost savings are realized through the reduction or elimination of typical stormwater management infrastructure including collection works, water retention ponds, treatment systems (e.g. oil/water separator) and associated appurtenances.
4. **INCREASE IN USABLE SPACE ONSITE.** Because parking, infiltration and detention facilities are all in one location, the traditional stormwater retention pond is no longer required and more surface space is made available for use by the developer.
5. **COMPLIANCE WITH THE NEW STORMWATER MANAGEMENT GUIDELINES.** AquaPave is an important first attempt at complying with new stormwater guidelines being introduced by several municipalities (such as the City of Toronto's Wet Weather Flow Management Guidelines).

For the Designer

1. **DESIGN OPTIONS AVAILABLE FOR ALL TYPES OF NATIVE SOILS.** Design details are available for all types of native soil conditions, ranging from Full Exfiltration (all water is recharged back into the local groundwater) to No Exfiltration (water is stored within the sub-base layer of the AquaPave System prior to release or reuse).
2. **ELIGIBLE FOR EARNING POINTS THROUGH LEED.** Initial points are available through SS Credit 6.1 (Stormwater Management - Rate and Quantity) and SS Credit 6.2 (Stormwater Management - Treatment). Depending on the final preproject details, additional points can be obtained through SS Credit 7.1 (Heat Island Effect - Non Roof), SS Credit 7.2 (Heat Island Effect - Roof), MR Credit 2.1 (Construction Waste Management), MR Credit 3.1 (Resource Reuse), MR Credit 4.1 (Recycled Content), MR Credit 5.1 (Manufactured Regionally), and MR Credit 5.2 (Extracted Regionally) .
3. **THE PATENDED VERTICAL CHANNEL DESIGN CAN BE MODIFIED TO WORK WITH ANY STYLE OF PAVER.** Although we presently only manufacture the AquaPave in a traditional 4x8 size, the patented design can be modified to work with any size and shape of paver - that gives us the ability to accomodate the request of Landscape Architects for an "aesthetically appealing" and "versatile" permeable paver.
4. **ONSITE ROOF WATER CAN BE DIRECTED TO THE SYSTEM.**
5. **SYSTEM CAN BE USED FOR WATER HARVESTING.** Water stored within the AquaPave system can be re-used for non-potable uses such as domestic or commercial irrigation, or flushing of lavatories.
6. **SYSTEM CAN BE USED WITHIN TREE ROOT BOUNDARY.** When AquaPave is used over load bearing tree soils, air and water is allowed to reach the roots. This allows hard surfaces to be used right up to the border of the tree pit.
7. **GEOTHERMAL SYSTEM DESIGN DRAWINGS ARE AVAILABLE .**

For the Environment

1. **REDUCTION OF RUNOFF.** The opening of the AquaPave can accomodate up to 354 mm/hr (9000 mm/hr or 9000 litres/square metre/hr). Even using a conservative 90% reduction in efficiency (to account for the potential buildup of sediments over the years), this greatly exceeds commonly recurring storms.
2. **DIGESTION OF HYDROCARBON CONTAMINANTS.** The runoff from parking lots represents the biggest single source of oil going into the ocean; that is why the AquaPave system incorporates Inbitex geotextile, which has been proven to bioremediate high levels of oil contaminates (70 grams of oil per square metre per year).
3. **PROVIDES FILTRATION AND TREATMENT OF POLLUTANTS.** Studies of permeable pavers have shown substantial reduction of non-point source pollution in runoff, including nickel (96% reduction), copper (93%), cadmium (97%), lead (96%), palladium (91%) and platinum (82%)..
4. **RECHARGE THE GROUNDWATER TABLE.** Where the native soils are condusive, the surface water can be recharged back into the groundwater. Groundwater is not only the primary source of drinking water, but it also maintains the base flow characteristics of our watercourses between precipitation events.

For the end user

1. **NO LOOSE AGGREGATES ON THE SURFACE .** Unlike other permeable pavements, the AquaPave system does not incorporate loose aggregates on its surface, making it safer and more comfortable to walk on, especially for those wearing high heels or using canes/wheelchairs.
2. **VOIDS ADA COMPLIANT.** The voids between the individual stones are less than 13 mm wide, which meet the recommendations of the Americans with Disabilities Act Accesibility Guidelines(ADAAG).

3. **CAPABILITY TO CREATE FLAT SURFACES.** Because the stormwater infiltrates between the stones, the surface does not need to be sloped; parking lots and walkways can be constructed perfectly flat, making it easier to navigate.
4. **NOT PRONE TO SURFACE WATER ACCUMULATIONS (PONDING).** Surface water flows through the stones, rather than over the surface; this prevents accumulations from occurring at low spots or where surface flow is impeded.
5. **SLIP AND SKID RESISTANCE.** Vehicular skid resistance tests have demonstrated that stopping distances are shorter at speeds up to 40 MPH than either asphalt or concrete surfaces.
6. **SNOW PLOW SAFE.** The small joints in the AquaPave are not prone to snagging by the snow plow blade.

If you desire more information on the AquaPave Permeable Onsite Stormwater Management System, please contact North Idaho Masonry & Hardscape Center Inc. (208) 762-8480 or email nimhc@nimasonry.com