

GreenStone™

COLLECTION Eco-Friendly
Permeable Pavers



OldcastleCoastal™

Florida has so much to offer—sun, surf, resort living. But as these features attract greater growth and development, more and more stress is put on resources. As more land is developed, stormwater runoff—clogged with motor oil and other contaminants—can pollute the coastline, lakes, rivers and groundwater, instead of being naturally filtered by the soil. Fortunately, there is an alternative.



Driveway made with Aqua-Bric



Patio made with Subterra

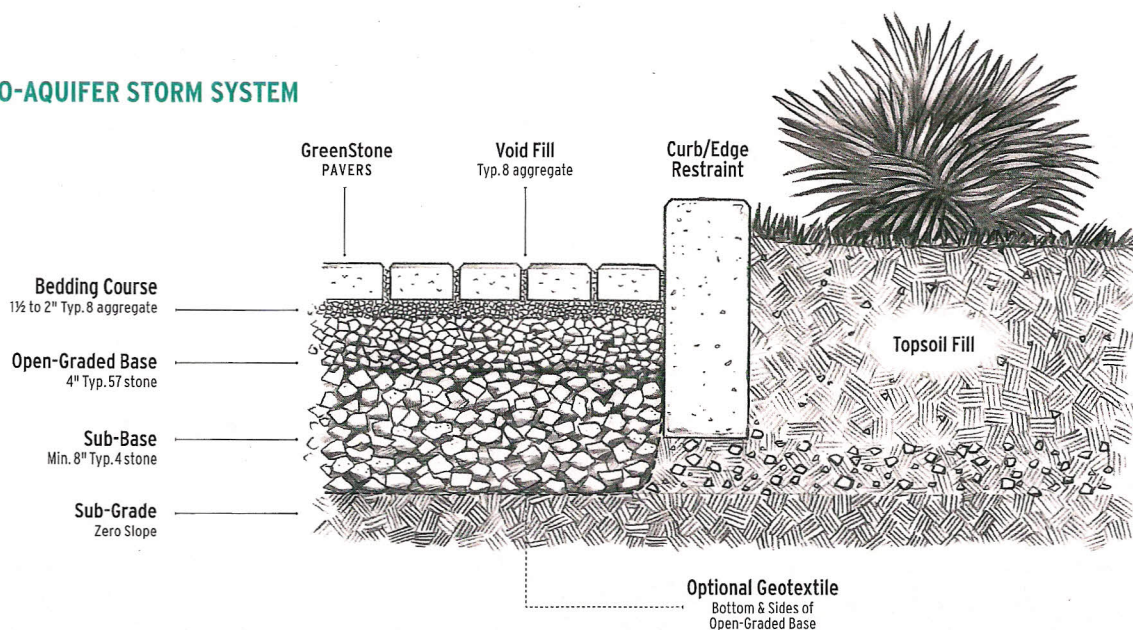
The GreenStone collection of permeable pavers offers attractive alternatives to traditional paving materials for residential and commercial development. They're an environmentally and economically friendly choice. And since they may eliminate or reduce the need for dedicated water detention ponds, they help you, as a developer, maximize your usable land space.

To improve sustainable development, U.S. federal law, through the National Pollution Discharge Elimination Systems (NPDES), mandates that states control non-point source water pollution. Best Management Practices (BMPs) are techniques identified by state authorities to achieve this goal.

Low Impact Development (LID) is a leading BMP design strategy used to reduce the negative impacts of traditional development on watershed areas and receiving waters. The goal of LID is to mimic a site's predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate and detain runoff close to its source.



BIO-AQUIFER STORM SYSTEM



Sustainable development is meeting the needs of the present without compromising the ability of future generations to meet their own needs.

SOURCE: Our Common Future, 1987, World Commission on Environment and Development, Oxford, UK. Oxford University Press

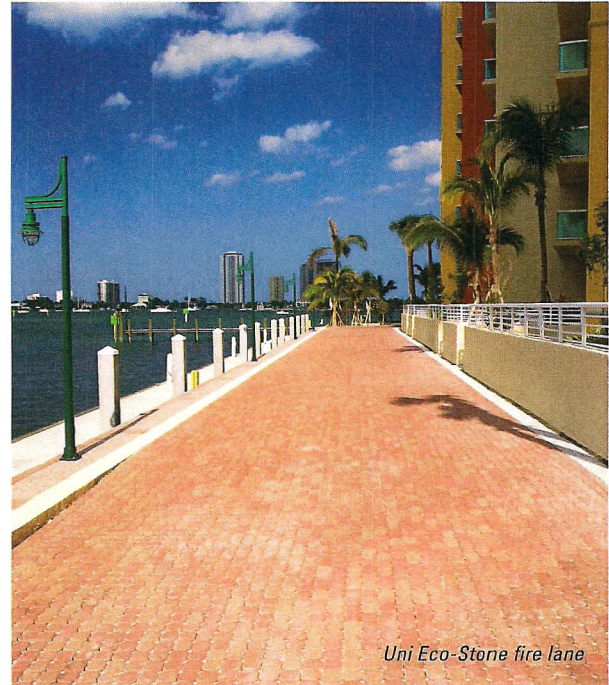
GreenStone Permeable Paving Stone Systems

- Meet the U.S. Environmental Protection Agency's (EPA) menu of structural BMPs
- Contribute to LEED points in seven categories
- Capture and treat the first flush (0.5 to 1.5 inches)
- Reduce runoff by 100% for low intensity storms
- Reduce Heat Island Effect
- Can reduce drainage and detention requirements
- Can be designed for full, partial or no exfiltration
- Are ADA compliant
- Offer a variety of options for design aesthetics

LEED and GreenStone Pavers

Leadership in Energy and Environmental Design (LEED) was developed by the U.S. Department of Energy to recognize sustainable site and building design, and is administered by the U.S. Green Building Council (www.usgbc.org). Many municipal projects mandate LEED point objectives, and more and more private sector projects pursue LEED credits as evidence of environmental stewardship.

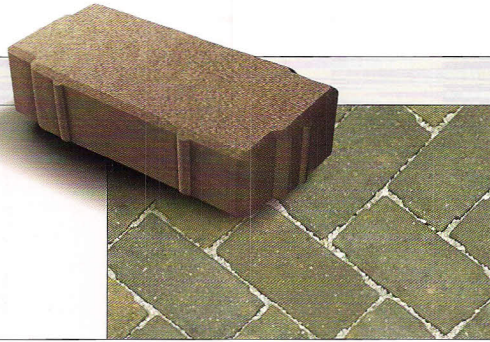
These LEED credit summaries represent possible point contributions you can earn with GreenStone permeable concrete paving stone systems. For more information, please reference the ICPI Tech Spec Number 16 at www.icpi.org.



			LEED CREDIT SUMMARY
		POINTS ↴	
MATERIALS & RESOURCES	MR Credit 4.1	①	Recycled Content 10% post-consumer & ½ pre-consumer
	MR Credit 4.2	①	Recycled Content (Credit 4.1 + 1 point) 20% post-consumer & ½ pre-consumer Use materials with recycled content such that the sum of post-consumer recycled content plus one-half of the pre-consumer content constitutes at least 10% of the cost. Credit 4.1 of the total value of the materials in the project and 20% of the cost. Credit 4.2 of the total value of the materials in the product.
	MR Credit 5.1	①	Regional Materials 10% extracted, processed & manufactured regionally
	MR Credit 5.2	①	Regional Materials (Credit 5.1 + 1 point) 20% extracted, processed & manufactured regionally Use building materials or products that have been extracted, harvested or recovered, as well as manufactured within 500 miles of the project site for a minimum of 10% of the cost. Credit 5.1 of the total value of the materials and 20% of the cost.
SUSTAINABLE SITES	SS Credit 6.1	①	Storm Water Design: Quality Control Storm water management of a building site where the existing impervious area is greater than 50" and the runoff rate and quantity is reduced by at least 25%. GreenStone permeable concrete paving stone systems can reduce runoff to zero for the most frequent storms.
	SS Credit 6.2	①	Storm Water Design: Quality Control A treatment system designed to remove 80% of the average annual post-development Total Suspended Solids (TSS), and 10% of the average annual post-development Total Phosphates (TP).
	SS Credit 7.1	①	Heat Island Effect Non-roof landscape and exterior designs that reduce heat island effect would entail the use of light colored/high albedo materials with a reflectance of at least 0.3 for 30% of the site's non-roof impervious surfaces, i.e., pavements. Manufacturing permeable concrete paving stones in light or natural colors can register and albedo of at least 0.3 will meet this requirement.

Aqua-Bric[®]

Eco-Friendly Interlocking
Concrete Paver



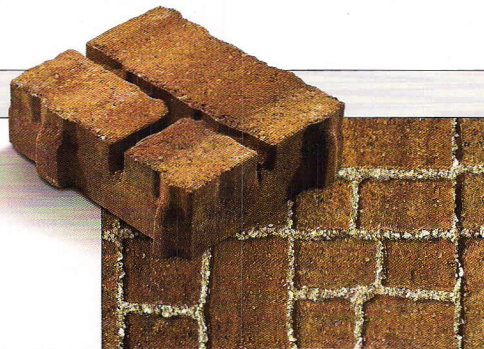
DIMENSIONS
5.0 × 10.0 inches
(100 × 200mm)
3.125 inches (80mm) thick
Approx. 2.88 pavers/ft ²

A residential look that stands up to even the heaviest industrial traffic. Environmentally and economically sound, Aqua-Bric permeable pavers are comfortable underfoot, meeting Americans with Disabilities Act architectural guidelines, but they're strong enough for vehicle traffic. Use for plazas, driveways, entrances and parking lots to eliminate standing water, allow natural drainage and recharge groundwater. Minimal openings, an interlocking design and exceptional color allow maximum design flexibility.

Our Aqua-Bric pavers can even be antiqued to lend European charm to any project.

Subterra[®]

Eco-Friendly Interlocking
Concrete Paver

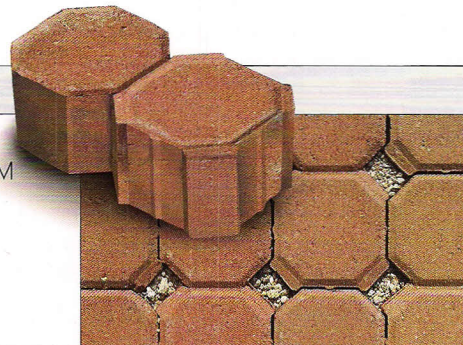


DIMENSIONS
11.875 × 8.125 inches
(302 × 206mm)
3.125 inches (80mm) thick
Approx. 1.5 pavers/ft ²

Subterra Stone brings the most attractive, natural looking permeable paver to the market. With its false joint structure, Subterra Stone offers the elegant look of natural chiseled stone, yet it is easy to install. Combined with its unsurpassed environmental benefits, Subterra Stone is ideal for homeowners who want green stewardship without compromising beauty and style. Subterra Stone. Sustainable thinking for a better future.

Uni-EcoStone[™]

Eco-Friendly Interlocking
Concrete Paver



DIMENSIONS
4.5 × 9.0 inches
(115 × 230mm)
3.125 inches (80mm) thick
Approx. 3.55 pavers/ft ²

You can let stormwater retention regulations and impervious-area limits get in your way, or incorporate them into your materials strategy. Heavy-duty Uni Eco-Stone permeable pavers help you develop land under even the strictest controls, minimizing paved areas' impact on the environment. Providing the same strength, durability and range of aesthetic opportunities as solid concrete pavers, Uni Eco-Stone is a natural way to handle stormwater runoff, ultimately improving water quality and reducing pollution in surface waters.



StormPave driveway

StormPave™

Eco-Friendly
Clay Brick Paver

RainPave™

Eco-Friendly Antique
Clay Brick Paver

STORMPAVE

4.0 × 8.0 inches

(102 × 204mm)

2.25 inches (57mm) thick

ALSO AVAILABLE IN

2.75 inches (70mm) thick

8½% void area

RAINPAVE

4.0 × 8.0 inches

(102 × 204mm)

2.75 inches (70mm) thick

8½% void area

StormPAVE™

RainPAVE™

StormPave™ and RainPave™ are registered trademarks of Pine Hall Brick, Inc.

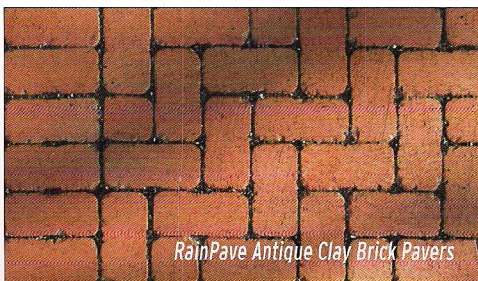
StormPave and RainPave clay brick pavers provide an environmentally friendly option for preserving natural water drainage through a classic segmental pavement.

StormPave is ideally suited to preserve natural water drainage in a smooth segmental pavement. With large spacers for open joint drainage and a maximum opening of less than ½", this clay paver meets ADA requirements making it perfect for plazas, pathways, parking lots—particularly at college & university settings where onsite LID storm water management techniques employed.

Rumbled for the look of a traditional, antique clay pavement, RainPave is perfect for residential driveways where pervious surface restrictions exist or where onsite retention/infiltration is mandated.

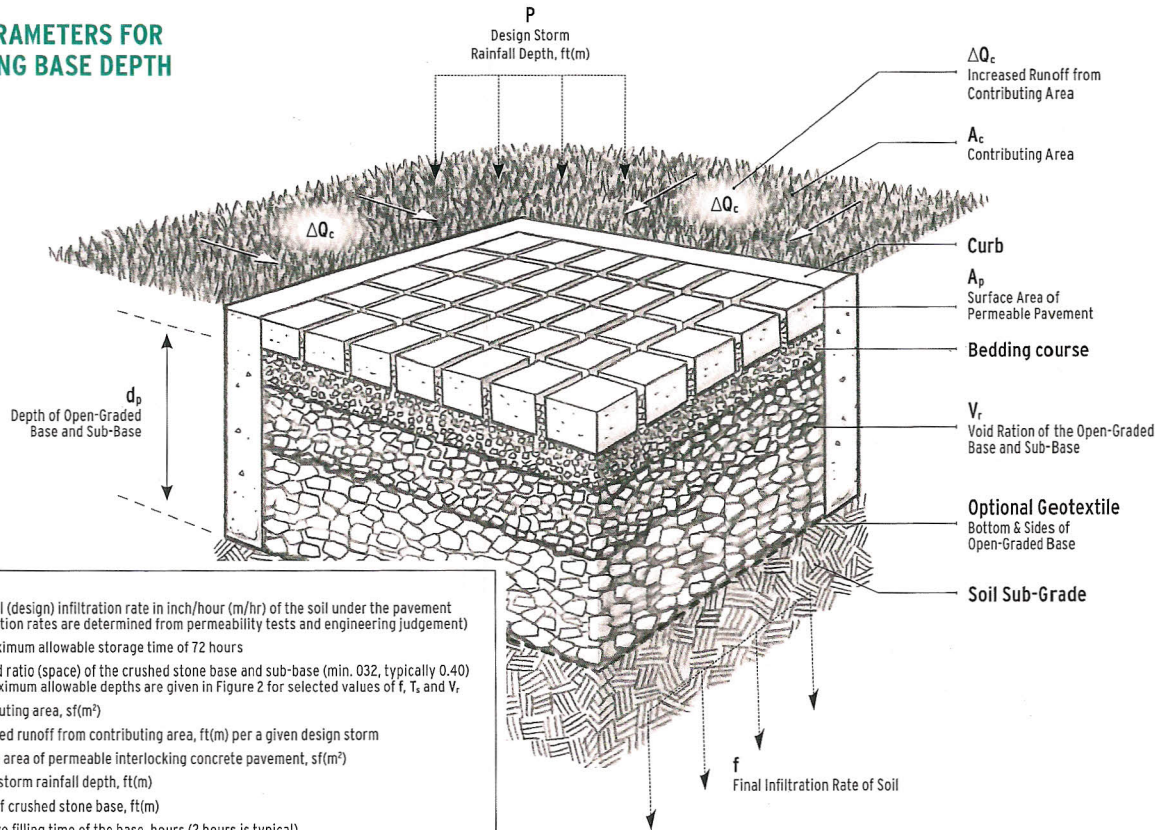


StormPave Clay Brick Pavers





RainPave Antique Clay Brick Pavers

DESIGN PARAMETERS FOR CALCULATING BASE DEPTH



- f** = the final (design) infiltration rate in inch/hour (m/hr) of the soil under the pavement (infiltration rates are determined from permeability tests and engineering judgement)
- T_s** = the maximum allowable storage time of 72 hours
- V_r** = the void ratio (space) of the crushed stone base and sub-base (min. 0.32, typically 0.40) The maximum allowable depths are given in Figure 2 for selected values of f, T_s and V_r.
- A_c** = contributing area, sf(m²)
- ΔQ_c** = increased runoff from contributing area, ft(m) per a given design storm
- A_p** = surface area of permeable interlocking concrete pavement, sf(m²)
- P** = design storm rainfall depth, ft(m)
- d_p** = depth of crushed stone base, ft(m)
- T** = effective filling time of the base, hours (2 hours is typical)

<p>COLOR</p> <p>Pavers are manufactured from mined materials and colors will vary from batch to batch. Colors printed here are reproduced as accurately as possible; however, every paver is unique and may not exactly match what you see. For the best idea of actual color and texture, ask your installer for samples of your favorite pavers.</p>	<p>THE OLDCASTLE COASTAL QUALITY ASSURANCE™</p> <p>Our pavers are designed to the highest standards for durability, color and texture. Aqua-Bric® Uni Eco-Stone™ and Subterra® pavers comply with or surpass ASTM C-936-01 standards. Oldcastle Coastal is a member of ICPI and meets or exceeds the standards of the Interlocking Concrete Paver Institute®</p>
<p>This brochure is printed on 10% post consumer waste paper and is FSI certified.</p>	 



OldcastleCoastal™
Build On Us

www.greenstonepavers.com

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