SAFEGUARD CORAL REEFS

Reducing Runoff with Pervious Paving Options

Problem

Every time a house is built or a parking lot is paved, more impervious surface is created. Impervious surfaces like concrete or asphalt mean that stormwater cannot be absorbed into the soil. Instead, stormwater "runs off" the landscape, usually into gutters or storm drains, which eventually lead to the ocean. Stormwater runoff picks up harmful pollutants like nitrogen, phosphorous, sediment, heavy metals and petroleum residue as it makes its way across the landscape and eventually to the ocean. In Hawai'i, stormwater runoff regularly causes the Department of Health to issue "Brown Water Advisories". These warnings advise the public to "stay out of flood waters and storm water runoff due to possible overflowing cesspools, sewer manholes, pesticides, animal fecal matter, dead animals, pathogens, chemicals and associated flood debris". In addition to being a hazard to human health, stormwater pollution harms coral reefs and other marine life.

Photo by www.rockmolds.com

Solution

Permeable paving options allow stormwater to drain through surfaces where it can safely sink into the ground instead of running off and polluting waterways. Below are just a few of the many permeable paving options that can be substituted for standard paving.

Permeable Paving Blocks

These are pavers of all styles, shapes, sizes and colors that are specially designed to allow water to pass through. Available from a number of manufacturers and retail outlets, they can match most any desired landscape design aesthetic.

Semi-permeable Paving

This paving option uses impervious pavers; however, space is left between each paver (and filled with gravel or grass), thus allowing water to pass through and get absorbed. 'Stepping stones' are an example of semi-permeable paving.

Pervious Concrete

This is a special mixture of concrete that can be poured and leveled the same as conventional concrete. It can be used just about anywhere, including parking lots, roadways and sidewalks.

Recycled Concrete Pieces

This is a semi-permeable option that pieces together fragments of concrete slabs (available free from construction or demolition job sites) in creative ways. The spaces in between the slabs allows for permeability.

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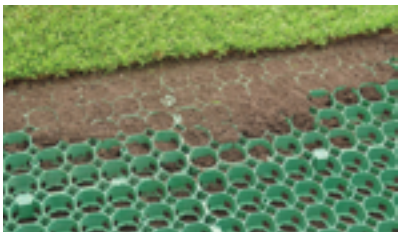
Grass Paving Cells



This option generally consists of a grid or hexagonal plastic framework laid out over the ground, filled with soil and planted with grass. Grass paving cells are available from a number of manufacturers. These systems look identical to a regular turf lawn but can support the weight of a vehicle and are especially effective in areas where vehicles regularly drive over grass (e.g. high-traffic golf cart areas on a resort property).

General Guidelines

To successfully employ pervious pavement options, you will need to:

1. Use a sufficient gravel or stone base material under the pervious paving option. Underlying soil cannot be too compacted (by heavy equipment or tamping).
2. Protect pervious paving from the introduction of sediment as this can cause clogging and reduced performance.

THANK YOU!

Thank You!

You can make a real difference in protecting Hawai'i's unique marine resources by using pervious paving options.

Additional Resources

Learn more about design considerations, review specifications, read FAQs and find local contractors certified to install pervious paving options:

Interlocking Concrete Paver Institute
www.icpi.org/paving-systems/permeable-pavers

National Ready Mixed Concrete Association's pervious concrete site
www.perviouspavement.org

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The Coral Reef Alliance (CORAL) is an international nonprofit that unites communities to save coral reefs. In Hawai'i, CORAL is working with local partners to improve water quality for reefs and people through its Clean Water for Reefs Initiative.

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coral.org
@CoralReefAlliance
@Coral-Reef-Alliance
maui@coral.org
@coral_org
@coral_org