The driveway's not the end of the road

Permeable alternatives minimize runoff from hard surfaces

By Dana Slowiak

Most of us don't think much about our driveways until they're buried under a half foot of snow. But traditional driveways, along with sidewalks and patios – hard surfaces (or hardscaping) that we harbor in our yards – are impermeable. They don't absorb water when it comes down in warmer weather as rain.

That's a lot of water rushing away from your own yard and down the storm drain. Rain gardens have become a popular strategy for absorbing some runoff, but you can't drive on a rain garden.

Various hardscape alternatives for driveways, paths and patios are entering the mainstream, sometimes with high-tech new materials, but also utilizing elements as old-fashioned as gravel. And speaking of fashion – new options for hardscaping are more attractive than standard asphalt, too.

Permeable (or pervious) hardscaping is really an old, simple concept that's making a comeback. Remember racing your bicycle down a gravel drive? That was a permeable surface before permeable was hip.

Permeable surfaces have spaces for water to move through and into. Water is diverted into the ground instead of rushing into the nearest storm drain or lake. Permeable surfaces are made from natural elements like gravel and stone, so they look more integrated in their surroundings.

Another creative option is to create a path with tracks and turf. Two tracks, or strips, are installed, out of any permeable paving material, for tires to follow. In between is turf – anything green, like grasses or moss.

Bringing back these old "paving" methods, such as crushed gravel, stones and bricks, is gaining favor as we increasingly understand the harmful effects of stormwater on our lakes.

With any permeable surface, it's extremely important that the base construction under what you see on the surface be well constructed. This is important for all permeable paving, often requiring several layers of crushed gravel for proper water management. You can't just plop down a load of gravel or lay some bricks. You must consider the use of the area. For driveways, consider the weight of your vehicles, how often you use the driveway and your soil type. For patios, also consider the location of the patio relative to your house. You want to ensure water flows away from your foundation and not into your basement.

Wendel Chamberlin was intrigued by the old-fashioned-looking approach. His goal was to create zero stormwater runoff from his west-side home. This spring, he and his wife, Carol, had a track-like driveway installed by Masseys, a company focused on integrated landscape design. Chamberlin wanted a permeable driveway that mixed brick with grass, and his goal was 100% grass where possible.

"As an architect, I understand what it means to have zero runoff," he says. With the help of a product called Grasspave2, he achieved his goal. Grasspave2 is a plastic ring-and-grid structure installed into the ground, over a crushed gravel base, and finished with grass. As the grass grows, the Grasspave2 becomes invisible and handles the wear and tear a driveway requires with ease.

The result for the Chamberlins was a beautiful driveway that created a harmonious front yard while honoring his zero-runoff goals. And it's okay, even encouraged, to drive on the grass!

The Grasspave2 product and this particular driveway concept was new to Masseys, but Garrett Erickson, operations manager, believes this type of driveway will appeal to many, both for its esthetic appeal and permeable qualities.

Erickson does not recommend using snowplows on the surface, but snow blowers and shoveling are fine. Summer maintenance simply requires mowing and perhaps a little weeding.

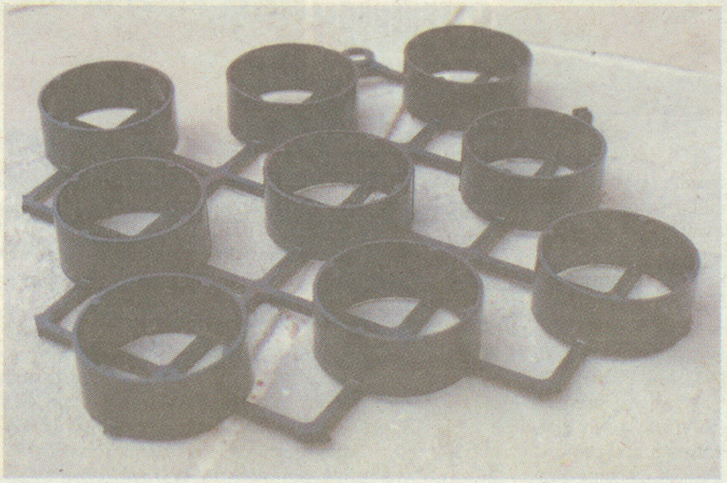
Creating landscapes with locally quar-ried stone and native plants is the cornerstone for Formecology, a landscaping company based in Evansville, Wis., that strives to create sustainable and regionally inspired outdoor living environments. Instead of cement, why not try crushed gravel? Instead of a sidewalk, why not design a stepping-stone path? These are elements that don't have to travel far, either, thereby increasing the overall sustainability of the project.

"We look to fulfill the needs of the homeowner while enhancing the environment at the same time," says John Gishnock III, an ecological designer and owner of Formecology.

"In designing a landscape we often ask, 'How much hard surface is truly necessary in this landscape?' and, 'How can we keep any stormwater on-site?'" adds Eric Jacobsen, project manager and ecological designer. Formecology blends stormwater-management principles seamlessly into landscape designs, utilizing rain gardens, bioswales and rain barrels with permeable hardscaping techniques.

One simple solution for permeable driveways is crushed gravel. Jacobsen suggests an angular stone that locks together much better than rounded stone. "In general, angular stone will provide a walking surface with less maintenance needs and with a safer, more firm walking surface," he says.

You can also utilize permeable paving for elements such as walking paths and patios. Stepping stones, bricks and pavers are



The GrassPave 2: It's a design element, it's a driveway base, it's a permeable miracle! Wendel Chamberlin holds the grid, far right, on his low-runoff driveway.

PHOTOS BY TIMOTHY HUGHES

Hard promises

Porous concrete, also known as pervious paving, is another way to go. Traditional concrete is a mixture of cement, course aggregates, water and sand. Porous concrete uses little or no sand, creating voids that allow water to flow through. At a glance, it looks like regular concrete, but close examination reveals a more granular look.

After last year's harsh winter, Ken Schreibman and his wife, Lynn, realized visitors were challenged backing out of their steep driveway. They decided to replace it with a circular driveway, but "I felt guilty about eliminating turf," says Schreibman.

To control runoff on his Shorewood property, Schreibman will have a porous concrete driveway installed this fall by Tri-North Builders. (The company also has a porous concrete parking lot at their Fitchburg location.)

Porous concrete does require some maintenance. Over time, dirt, leaves and other natural muck can fill in the porous areas, and water can't flow through. About once a year, it's necessary to clean the porous concrete with a commercial vacuum or power washer.

But for Schreibman, personal responsibility is the crucial factor. "Everybody understands that runoff ends up in the lake. It's not just a municipality's responsibility to control it. Individuals also have a responsibility to deal with it and do what they can to control it within their own property," he says.

— D.S.

Who to call

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options for different esthetics and budget considerations. Again, the concept isn't new, but the use and intent is shifting.

Picking your stone is part of the fun. Consider the area you are paving, what look you desire and how much stone your path requires. Wisconsin offers plenty of local stone options, and local conditions – over centuries – have imbued the stone with unique characteristics.

"Our region has a great variety of natural stone options that can enhance most any landscape," Jacobsen notes. Local flagstone quarried near Madison is a softer stone with a warm, buttery color and a deep texture. Dolomitic limestone quarried east of Madison is one of the hardest stones and is more whitish to grayish with a smoother texture. Limestone from the Chilton and Door County Peninsula areas often possesses more color flair from mineral deposits.

Prefabricated bricks and pavers offer other choices, colors and patterns. Install bricks in a variety of patterns over a crushed stone layer. Stormwater runs through the sand between bricks, down through the stone layer, and into the ground. You can pick your brick color and even add a personal stamp, if your budget allows.

When Mary Lamon-Smith and her husband, Stevens Smith, also Formecology clients, bought their house in 2000, they weren't thrilled with their concrete slab patio. That summer brought torrential rains, and, with a few steep slopes in their west-side yard, an unexpected river flowed behind their house. They decided prevention was key and installed a rain garden, rain barrels, stone terracing and a new patio. For the patio, they chose a durable brick herringbone pattern. The brick blended well with the new stone terraces and the brick on their home, and provided a permeable surface to direct water away from their basement.

"I really like the moss that grows in between," says Lamon-Smith; they haven't experienced any problems with stormwater since, and maintenance is minimal. She sweeps the patio, and every few years she replaces the inexpensive fine-grain sand between bricks. She also notes that they were able to afford their entire project while fixing their challenges, creating a beautiful solution and respecting the environment.

Before you begin any landscaping project with sustainability and functionality in mind, ask yourself a few questions.

- What am I asking of my surface?
- Am I parking my car on it or walking on it?
- How functional is my surface?
- What do I want it to look like and feel like?
- What maintenance am I willing to perform?

There are additional benefits that can save money and your environment. Permeable surfaces don't require sealcoating the way asphalt does. They are also less likely to heave or crack due to weather, if properly installed. The same spacing that allows water movement also allows for adjustments to seasonal elements.

"It's really about balancing the design of the total project," Gishnock says. Adding environmentally conscious perks to your permeable paving does not force you to decide between beauty and benefits.

"After all, can a landscape be considered sustainable if it needs continual maintenance and repair, or if it is torn out and replaced within a short period of time?" asks Jacobsen.◆