



# Building with Nature on a Waterlogged Site

BY TOM SPRINGER    PHOTOS BY MARK BUGNASKI

Homeowners can never be certain what they'll find when they prepare the building site for a new house. For Susan Yun and her family, the big underground reveal was a "perched water table." Basically, it's a geologic feature that traps accumulated water above the usual water table. For anyone who wants a dry basement, dealing with trapped water creates a quandary.

Unless, like the Yuns, you have a University of Michigan-trained landscape architect in the family. They've made the perched water table the source of life for a thriving, native plant landscape.

"I knew this would be a sensitive site to develop," said son Michael Yun, from Portland, Oregon. "The conventional way to handle excess runoff would be with detention

ponds or tanks. But we wanted to use low-impact principles and keep runoff to pre-development levels."

This comprehensive approach makes the Yun's project unusual. While many home owners hire native landscapers to plant beds and gardens, the Yuns did so with a new house on undeveloped land. During construction in 2017, the entire property was sculpted and





plumbed with an eye toward native habitat and wetland restoration.

The Yun's home occupies a pie-shaped parcel on a suburban lake. The wide end faces the road, and the narrow end points towards the lake. In a high-growth area where vacant lake property is nearly unheard of, the land had sat idle for 60 years. Then one morning, Susan saw a new For Sale sign there. She called the owner posthaste and made an offer that day on the one-acre lot.

"It was empty for so long that everyone thought the township owned it," said Susan, an oncology

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nurse. "The last thing here was a little stand where the farmer across the street sold milk and ice cream from his cows."

The cows are gone, but a walking tour of the property shows a bounty of native plants that a 19th century farmer might recognize. Bright daisies, vervain and purple coneflowers, abuzz with bumblebees, grow on a new berm by the driveway. On the other berm, hemlock and poplar saplings

promise more shade in the years to come. The berms create a sound and privacy barrier between the house and busy nearby road.

"We built the berms with fill from the basement to keep the soil on site," Michael said. "The berms also stop runoff from the road which would otherwise run to the lake."

To collect yard runoff, Michael designed swales that run along each side of the lot. They act as drain fields that collect water





and direct it to the backyard via underground PVC pipes. The swales have cobblestone bottoms, lined with native plants to promote water absorption. But as Michael explains, not just any wetland natives will do here.

“You need plants with thin stems at ground level, such as sedges, that can take inundation,” he said. “Plants with hummocks can channelize water flow and cause erosion.”



The outdoor seating area behind the house also does its share to manage runoff. Instead of a solid concrete patio, Michael had flagstones set in the ground without mortar. The grass between the flagstones soaks up rain and gives the lawn a more natural feel.

Yet if one feature symbolizes the project’s sustainable spirit, it would have to be the new backyard wetland. This is where a drain pipe brings excess water from the perched water table down to the lake.





## KEY TAKEAWAYS

On most lake properties, the drain pipe would run straight into the lake. The Yuns, however, wanted their water delivered in a less intrusive fashion. The pipe empties into a weir that Michael built 40 feet back from the lake. It slows the water and spreads it out, like a miniature river delta. Wetland plants grow along its length to form a wild, dense corridor by the shore.

The weir cost more to design and build than a length of pipe would. But for the Yuns, it was a crucial opportunity to work with their contractors on eco-friendly practices.

"I love birds and nature, and this is all about creating habitat," Susan said. "I saw a Baltimore Oriole in a tree this morning, and that tells me we're doing something right."

- Address drainage problems by building them into your landscape design
- Look beyond the waterfront for other places that native plants might add beauty, privacy and habitat to your property
- Native trees, along with native plants, play a major role in restoring habitat. Species such as Bradford Pear provide little in the way of natural benefits.
- Don't discourage a child who wants to study landscape architecture!