Low Impact Development

By Valerie Jean Rose

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Creating gardens using less water and more native plants

OK gardeners, time for a quick quiz. Very quick, in fact, since there's only one question: What do living walls, vegetated roofs and bioretention solutions have in common? They're some of the systems used in Low Impact Design (LID.) These principles are used to create buildings and landscapes while minimizing damage to the surrounding environment and habitats. A LID design draws on observation of ecosystems, native plants, drainage and other elements, seeking harmony with its environment.

Arborist, LID consultant and designer Zsofia Pasztor teaches horticulture at Edmonds Community College. For September's Master Gardener 'Know and Grow' class, Pasztor will share ideas for using LID principles in the garden (see sidebar.) Pasztor says, "Low Impact Design means exactly that: low level of negative impact on the environment. Remember, only already developed and disturbed areas can be improved when it comes to natural function. Undisturbed nature functions as it was meant to function, no need and no room for improvement."

LID principles can also be used to retrofit existing sites. On the website for her company, Innovative Landscape Technologies, Pasztor says, "We strive to create naturally functioning sites that support the needs of the people and area wildlife that lives there, as well as for the new and existing vegetation. We design the sites to feed the soil in the long run… We usually recommend limiting lawns… using alternatives such as meadows, pastures in some cases, groundcovers, or pervious hardscaping.

Slowing Down Rainwater

Pasztor's award-winning designs often use pervious pavers & concrete. She says, "In our natural environment, soil and other natural surfaces allows rain to infiltrate into the ground where it falls. This allows the water to recharge aquifers, sustaining subsurface water flows that slowly and continuously feed natural water bodies without erosion and seasonal extreme peak flows. By using pervious pavements in a site design, we can imitate nature and restore or preserve the natural hydraulic function of the site."

Rooftops are another area where innovative design turns an impervious surface into one that slows the flow of rainwater. "Green roofs are vegetated roof surfaces," Pasztor says. "They can be extensive roofs with shallow growing medium and plants that grow well in it, or intensive roofs with deep soil mixes sustaining large plant material. The building structures must be designed with the added weight in mind."

Above left: Both edible and ornamental plants can be integrated in a 'living wall' garden. This vertical garden was featured at the Northwestern Flower and Garden Show in 2010. **Above Right:** Foliage planted on moveable trays created this "green" roof. The foliage grows to cover the black trays, which are easy to maintain, clean and repair. Pervious pavers on the ground below allow rain to slowly infiltrate back into the ground. **Photos by Szofia Pasztor.**

These creative solutions can be expensive. Thankfully, some LID ideas are less costly, such as the inexpensive rainbarrels offered by Skagit County's PUD. Pasztor says, "Rain gardens and bog gardens can help too. But the simplest solution is good organic soil management, using compost instead of fertilizers, place the right plant in the right place rather than spraying it all the time. Use native plants that are resistant to our weather as well as pests, and diseases. Then there's the big thing: stop maintaining the artificial look of gardens, let nature be natural."

Lawns vs Nature

Lawns are one of the most unnatural garden elements, says Pasztor. "Lawns cost money non-stop in order to look great...alternative solutions need less water, no fertilizers, no pesticides, no moving, etc. My favorite is to turn it into native or at least creatively planted areas. Forests and meadows are the natural habitats around here. Moss is our natural groundcover, and meadow flowers with clover provide nice colorful spaces with little need for mowing."

Pasztor says LID principles put plants to work, slowing and filtering rainwater, providing wildlife habitat and preventing erosion on hillsides. But LID is not an excuse for putting buildings in the wrong places, says Pasztor. "Areas where despite the good intentions, we really should not be building: extreme steep slopes, wet areas, right next to buffer zones. LID can help greatly reduce the impact of a development, but we must ask ourselves about the ethics of development in such critical areas. However, LID can be used to retrofit sites, helping to stabilize areas that are negatively affected by existing development."

Learn more about LID by visiting local sites where these principles are used (see Resources.) You can also ask see pictures of some of Szofia Pasztor's designs at this month's Know and Grow class (see sidebar.) Learn about using LID ideas for creating a

garden that requires less water and provides more wildlife habitat and native plants. Less watering, less mowing, more wildlife to enjoy – sounds like a great recipe for a sustainable garden.

WSU Skagit County Extension Master Gardener's
Know and Grow Workshop: LID (Low Impact Design)

Topic:	LID (Low Impact Design) Local landscape designer Zsofia Pasztor explains how to design a landscape that uses less water, while incorporating native plants into your yard or garden.
When:	Tuesday - September 13th
Time:	1 PM – 2:30 PM
Where:	WSU Mount Vernon Northwestern Research & Extension Center 16650 State Route 536 (Memorial Hwy.)
Contact:	Call 360-428-4270, ext. 0 for more details

RESOURCES:

- 'Learn About Low Impact Development,' Oregon State University Extension: http://extension.oregonstate.edu/stormwater/learn-about-low-impact-development
- LID Island County: www.islandcounty.net/planning/LID.htm
- National LID Atlas: http://clear.uconn.edu/tools/lidmap/
- LID – Puget Sound Partnership: www.psparchives.com/our_work/stormwater/lid.htm