

PLACES SPACES EXPERIENCES

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senga landscape architecture

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Let It Rain!

A Green Roof Design for Stormwater Management

Last month we told you about the many options for, and benefits of, green roofs. We'd like to tell you about a creative S.L.A. Inc. project at UBC that integrates stormwater management with a green roof.

UBC's Sustainable Development

Development of University Town at UBC is based on sustainability principles which will provide social, environmental, and economic benefits.

These principles include landscape design strategies to integrate rain water detention and distribution with green roofs, rain gardens, pedestrian and cyclist pathways called "Green Streets", and ponds within park spaces. Landscape strategies also call for maximum retention of existing trees, the use of native



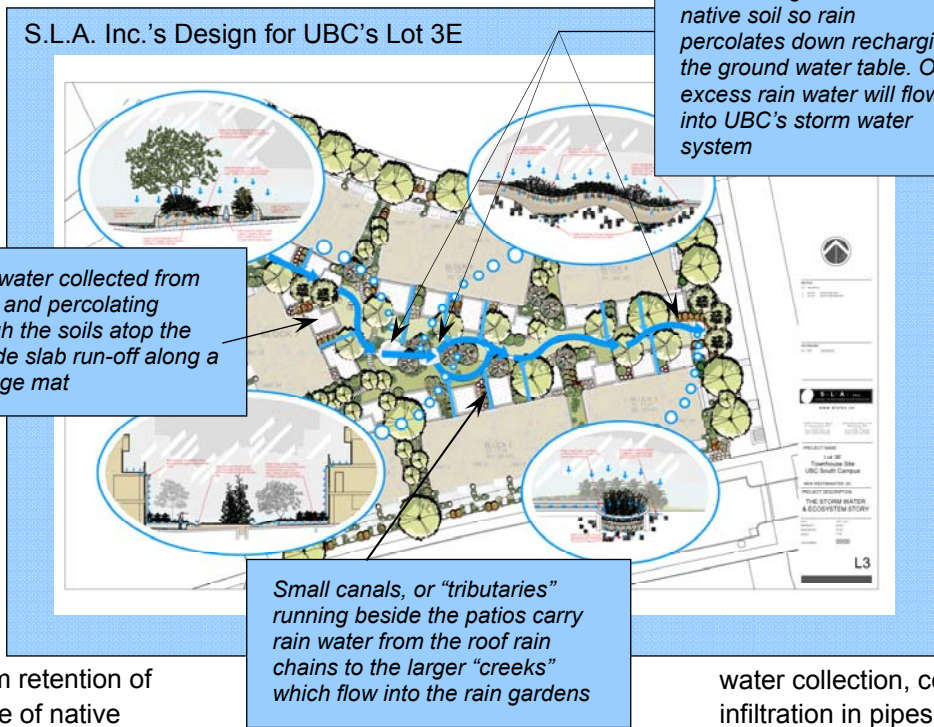
Vine maple
Acer circinatum

plants and permeable surfaces, creation of wildlife corridors and habitat spaces, and emphasis on creating compact, walkable neighborhoods which encourage social interaction.

Wesbrook Place Neighbourhood— An Urban Village in the Woods

Our landscape design for a 24-unit townhouse development in Wesbrook Place has been called "innovative" by the UBC Urban Design Panel. The property is located in the South Campus area at the corner of Wesbrook Mall and Gray Avenue and is bordered to the north by Smith Park and to the east by a section of the "Green Streets" pathways called Scholar's Greenway.

Since a large part of the green



forest", as well as its sustainability strategies, in several ways.



Rain channels run along side the patios

"Day Lighting" Stormwater Flow

We're illustrating – in an abstract

way – how storm-water naturally falls, runs-off and infiltrates

by using rain chains to direct stormwater from the roofs into a system of concrete "tributaries" and "creeks" which flow into a series of rain gardens.

Instead of burying storm-

water collection, conveyance, and infiltration in pipes and other underground systems, we're bringing it to the surface so residents can see how it works. And by using rain gardens, our design will help to recharge the ground water table.

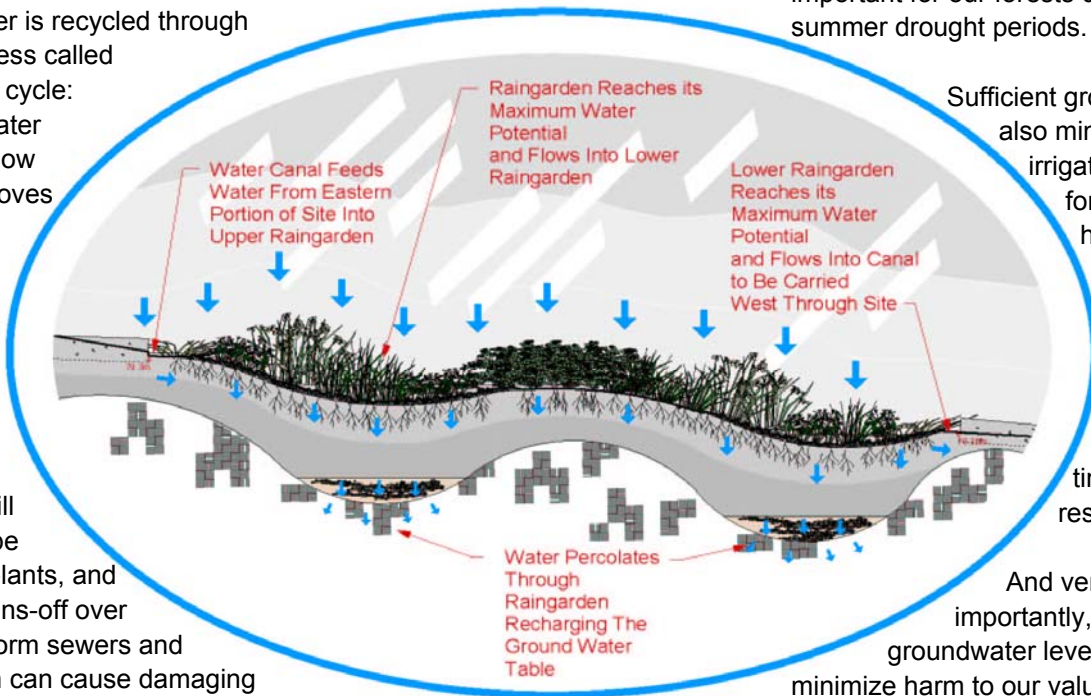
Native Planting and Soil Amendment

Plant materials will include many native species like, western sword
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Rain Gardens

Recharging groundwater

In nature, water is recycled through a natural process called the hydrologic cycle: Some stormwater infiltrates shallow ground and moves downhill to streams and rivers. Some will percolate farther into the soil recharging the groundwater table, some will evaporate or be absorbed by plants, and the balance runs-off over ground into storm sewers and streams which can cause damaging erosion. In rain gardens, like the ones in our UBC design, water is directed to an area filled with rock or porous soil designed to retain water long enough for it to percolate into



the deeper native soils to recharge the groundwater table. Excess water can also be temporarily detained

maintain a base level of soil moisture helps to keep trees, shrubs, and plants healthy. This is especially important for our forests during summer drought periods.

Sufficient groundwater also minimizes irrigation needs for crops and home gardens – an important objective in this day of summer-time water restrictions.

And very importantly, adequate groundwater levels help to minimize harm to our valued salmon streams by reducing erosion caused by run off.

before it overflows into the storm-water system.

Groundwater is Very Important

Having enough groundwater to

water logging.

UBC Green Roof Design

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fern, vine maples, and flowering dogwoods to enhance the wild-life habitat. Bog rosemary and iris that like wet conditions, but are tolerant of drier summer periods, have been selected for the rain gardens. Other ornamental plants, like grasses and perennial flowers, will add color and have been selected for their ability to tolerate the wet and dry conditions in the green roof and rain garden zones.



Bog Rosemary
Andromeda polifolia
'Blue Ice'



Water Iris
Iris ensata 'Variegata'



Western Sword Fern
Polystichum munitum

like they're living in an urban forest.

And with the stands of existing conifers in the neighbouring park and Green Street, plus those we've included in our design, residents will truly feel

Also, our green roof will use a light, new soil blend by Stream Organics Management including Zeba, a super-absorbent polymer, to increase water holding capacity without damaging

Related Links

UBC Properties Trust Lot 3E Townhomes
http://www.ubcproperties.com/3E_townhomes.html

Wesbrook Place
<http://wesbrookplace.ubc.ca/living/index.php>

Stream Organics Management
<http://www.streamorganics.com/>

In Our Next Issue

- ▶ More stormwater management
- ▶ Permeable surface materials

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