# Project Name:Perkins Green Student Housing Complex InfrastructureProject Location:Rochester Institute of Technology, Rochester, NY

#### Project Purpose:

To develop the streetscape and parking infrastructure of a peripheral suburban-style student housing complex. The project was manifested on various levels: safe and efficient circulation of vehicles and pedestrians; ecologically sensitive stormwater management within a floodplain context; layering of landscape structures and features to segregate and transition from roadway to housing access points.





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#### Role of Landscape Architect:

The Landscape Architect served as subcontractor to the Project Architect, and developed all parking, drainage, planting and lighting; the Project Architect designed and developed the bus shelter and collaborated with the Landscape Architect on the spatial and structural aspects of the pedestrian/bicycle concourse. This work was coordinated with the University's resident Landscape Architect.









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#### Special Factors:

The most notable feature of the project's contextual landscape is its highly articulated hydrologic structure, which was seen as a driving element of the design, especially with respect to stormwater management and water quality enhancement.

From a formal standpoint, the project represents a transition from a suburban commuter campus to a national-level residential University. RIT has made a commitment to both aggressive growth and sustainable practices, and the project has adhered to these goals through the development of alternative transportation infrastructure, bioremediation of stormwater, and an overall structure that supports health and wellness.





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This context map shows the complex network of of wetlands (green) in the watershed of the West Branch of Red Creek, a tributary of the Genesee River. Most of the campus is within the Genesee River floodplain; the River itself is located along East River Road along the western edge of the map.



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 Built Design

The design is composed of a series of linear elements transitioning from the access road to the north and the residence units:

- bioswale
- parking
- spatial barrier
- concourse
- residence access







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The development and coordination of the nodes and corridors of the design were studied in collaboration with the Project Architect.

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cobbles or river g replicate areas o deposition. Wetland plant ma interact with stream edge. Directional Stone: Material can vary, bu should be layed in a pattern that emphasizes the direction of flow.

> Asymetrical groupings of plants and boulders.







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ECO SWALE PLAN DETAIL

The unpaved areas were modeled to create edges, shed water and detain runoff.



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Visualization of intended effect is essential to demonstrate the aesthetic potential of bioswales and other constructed water detention or retention features.





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Boulders were collected from the spoils pile of a local golf course expansion, located less than 10 miles from the project site.





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Various sizes of gravel and cobbles were combined to suggest natural processes of erosion and deposition in stream channels on the ground plane, and to enhance trapping of particulates.





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Design of the plantings within the Eco-swale was based on observation of established ecological communities in the woodlots and wetlands that surround Perkins Green.





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Selection of emergent and wetland vegetation supports the different life-cycle stages of dragonflies, butterflies, and pollinating insects. Consideration was given to the mechanisms of phytoremediation, including uptake and neutralization of pollutants commonly found in urban storm water run-off.





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Storm water flows into the Eco-swale from the re-built parking lot and the roof tops of the student residences, for a total impervious surface area of 94,920 square feet.

The Eco-swale captures runoff from these surfaces, detaining and treating over 1.2 million gallons of storm water run-off each year. Three outflow points allow treated water to move from the Eco-swale into the natural wetland areas north of Perkins Road.



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The Southern Tier Fieldstone used for the walls edging the concourse is a locally available material.

Bosnian masons who have settled in in the area provided an unusual level of old-world craftsmanship for the site improvements at Perkins Green.





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The fieldstone on the seat walls and the boulders and cobbles in the swale are derived from the same geologic parent material.

Working together, the stone materials form a strong visual relationship across the Perkins Green site.



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The Concourse at Perkins Green has become a model for multi-modal alternative transportation on Campus.





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The off-grid Perkins Green bus shelter will be modified to provide covered bicycle parking at strategic locations around the campus. The structure utilizes solarpowered LED lighting and two rain gardens for stormwater.



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Lighting utilizes standard campus fixtures specified by RIT, but with lower than standard wattage to reduce energy use and soften the night landscape, while still meeting the requirements of campus safety.



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Layering of landscape structures and features segregates activities and makes a formal transition from the roadway to the housing access points.



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The landscape architects are currently under contract with RIT to produce planning and design for an improved bicycle transportation network on the campus. The Perkins Green Concourse will be an important bicycle route between the campus core and three student housing areas totaling nearly 2500 residents.





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## Honor Award

to

Environmental Design & Research, P.C.

For excellence in the category of **Built Design** for:

#### **<u><b>RIT Perkins Green Site**</u>

#### **Improvements**

Douglas C. McCord Chapter President November 2009

Date

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