

# The GREEN ROOF INFRASTRUCTURE MONITOR

Vol. 2, No. 2, Summer 2000

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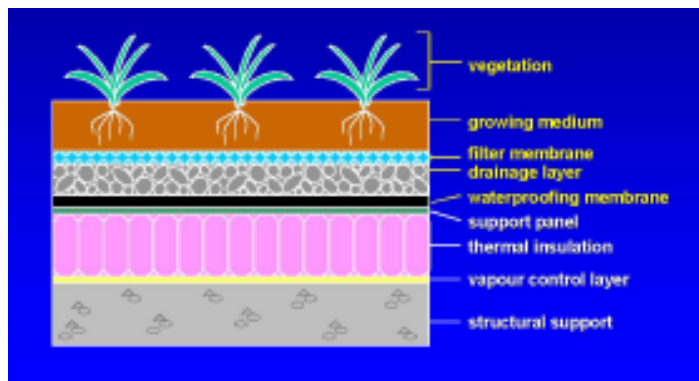
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## COALITION NEWS

### About Green Roof Infrastructure and our Business Coalition

Green roof infrastructure provides a wide range of public and private benefits. These extend from improved stormwater management and smog reduction to energy efficiency, cost savings and new amenity space for building occupants. **Green Roofs for Healthy Cities** is a business coalition founded in March 1999 to foster the development of a market for green roof infrastructure. Green roof development involves the creation of 'contained' green space on top of a human-made structure. This green space can be below, at, or above grade, but in all cases the plants are not planted in the 'ground'. A green roof is an extension of the existing roof, which involves a special root repelling membrane, a drainage system, a lightweight growing medium and plants. The members of the Coalition are **Kaaren Pearce**, De Boer Environmental Concepts; **Doug Flynn** and **John McManus**, Flynn Canada Ltd.; **William Bean** and **Brian Lambert**, Garland Canada; **Al Duwyn**, IRC Buildings Sciences Group Inc.; **Bill Stensson** and **Manuel Sobrinho**, Sheridan Nurseries; and **George Challies** and **Colin Donaldson**, Soprema Inc. Please visit our website at: [www.peck.ca/grhcc/main.htm](http://www.peck.ca/grhcc/main.htm) for information about these firms and e-mail **Steven Peck**, Executive Director, Green Roofs for Healthy Cities at [speck@peck.ca](mailto:speck@peck.ca) for membership information.



Major Elements of a Green Roof Infrastructure System



Welcome to Vol.2, No. 2 of the *Green Roof Infrastructure Monitor*, a quarterly report on current and emerging green roof events and opportunities.

### Toronto Green Roof Demonstration Projects - Implementation Has Begun

**Green Roofs for Healthy Cities'** members and **City of Toronto** staff are moving forward with the implementation of both sites of the Green Roof Infrastructure Demonstration Project: the Eastview Neighbourhood Community Centre and a portion of the Podium Roof at Toronto City Hall. This summer, City Council approved bringing \$165,000 from the 2004 Capital Works budget in support of the project and the **Toronto At-**

**mospheric Fund** also approved \$30,000 in funding. The members of **Green Roofs for Healthy Cities** have contributed over \$100,000 in materials and labour towards the project. We are awaiting the final decision on funding from the Federal Government's Technology for Early Action Measures program

which will allow the **National Research Council's Institute for Research in Construction and Environment Canada** to conduct much needed detailed site and aggregate technical research on green roof benefits.

The planting of the 7,000 square foot extensive green roof at Eastview will be conducted in the Spring of 2001 in order to maximize plant survivability and facilitate the implementation of monitoring equipment. The Podium Roof at City Hall will be completed this fall.



**Eastview Neighbourhood Community Centre  
Green Roof Demonstration Project - Phase I**

The Podium green roof will include eight separate plots which demonstrate a range of intensive, semi-intensive and extensive green roof applications. Green roof plots featured will include an industrial application, traditional garden, butterfly garden, food production and the re-establishment of plant communities from the rare black oak savanna prairie ecosystem. The official launch of the Podium Green Roof is being planned for late October 2000. Additional information will be posted on-line at our web site: [www.peck.ca/grhcc/main.htm](http://www.peck.ca/grhcc/main.htm). Thanks again to all the people involved whose many efforts made these demonstration projects possible.

### **First Green Roof Workshop on Establishing Common Protocols for Building and Aggregate Level Green Roof Benefits Research**

On Tuesday June 13<sup>th</sup>, the City of Toronto's Public Works & Emergency Services, Environment Canada's Adaptation & Impacts Research Group, the Toronto and Region Conservation Authority, the University of Toronto's Institute for Environmental Studies and Green Roofs for Healthy Cities hosted an international workshop. Over fifty researchers from across North America came together for the day to begin to develop a common protocol for conducting green roof benefits research at the building level and to begin exploring macro or city-wide level benefits analysis. The workshop provided an important opportunity to share information and ideas on how best to carry out green roof research at sites in Ottawa, Chicago, Portland and Toronto.

Building-scale research efforts are critical to developing design guidelines for a variety of industry representatives and validating benefits for end users. Aggregate-level research on the urban heat island and stormwater

management benefits is important for understanding the design and cost-benefits of future public investment in green roof infrastructure in different urban contexts. Proceedings from the workshop will be posted online in the fall of 2000 at: [www.peck.ca/grhcc/main.htm](http://www.peck.ca/grhcc/main.htm).

### **Green Roofs for Healthy Cities Launches "Researchers Corner"**

Green Roofs for Healthy Cities has expanded its web site to include two new features. The *Researchers' Corner* will facilitate the sharing of information among green roof researchers and profile new and ongoing research projects. Links to current and planned green roof infrastructure projects and contact information for green roof researchers in North America is currently online. The second addition is our *City of Toronto Demonstration Project Updates*. This information will be online October 15, 2000 and will include detailed project descriptions and photos of the two green roof demonstration sites in the City of Toronto: the Eastview Neighbourhood Community Centre and the Podium Roof at Toronto City Hall. The project updates will include information such as site location, technical specifications, proposed research and research findings. If you would like to make changes to your research project description or contact information, or submit information about a new green roof research project, please contact Stephanie Tencer, tel: (416) 971-4484 or email: [stencer@peck.ca](mailto:stencer@peck.ca).

### **LOCAL NEWS**

#### **City of Toronto Endorses Green Roofs in Planning Report**

*Toronto at the Crossroads: Shaping Our Future* sets out the directions for the new Official Plan. It is the result of over a year of consultations and contains descriptions of five proposed campaigns that are designed to unite vision, policy and action. Under the *Campaign to Green Toronto* the report states, "One of the greatest opportunities for greening the City is the promotion of 'green roofs' which involves layering contained soil and planting gardens on the flat roofs dominating the landscape of many districts in Toronto. Green roofs do much more than improve the view from downtown skyscrapers. They also: absorb stormwater and reduce off-site flows; absorb carbon dioxide and work against the greenhouse effect; conserve energy for the building below them; and, can be made into beautiful flower gardens or bountiful food gardens for occupants. The City is leading by example by creating green roofs on

civic buildings. We also need to encourage the construction of green roofs in new flat-topped buildings undergoing development review." To download *Toronto at the Crossroads: Shaping Our Future* in PDF file format, visit: [www.city.toronto.on.ca/torontoplan/crossroads\\_change.htm](http://www.city.toronto.on.ca/torontoplan/crossroads_change.htm).

## Toronto Atmospheric Fund and Toronto Public Health Plan Heat Island Conference

In order to develop strategies to reduce health risk from severe summer heat, the **Toronto Atmospheric Fund** and **Toronto Public Health** have obtained funding from **Natural Resources Canada** and the **Climate Change Action Fund** to hold a major conference on this subject in Toronto in the Fall of 2001. The \$122,000 grant includes funding to conduct research on heat and health issues in Toronto and to develop long term adaptation strategies. Green roofs hold significant potential as an adaptation strategy for reducing the urban heat island effect. For more information please contact Phil Jessup, (416) 392 0253 or email: [taf@city.toronto.on.ca](mailto:taf@city.toronto.on.ca).

## New Condo Green Roof Installed in Toronto

High atop the 12<sup>th</sup> floor rooftop of the former Sears building a garden is growing. The newly renovated Merchandise lofts needed a green space and there was nowhere to go but up. Landscape designer Terry McGlade's plan includes a 150' prairie meadow of perennials and a wetland garden with walkways and decking areas leading throughout. McGlade's company **Perennial Gardens** has planted over 8,000 plants of 45 different varieties, including roses, native grasses, dogwoods, and birch trees. Working with **Soprema's** 'Sopraflor' as the growing medium and installing an in-ground irrigation system ensured a hospitable environment on an otherwise windy and barren area. This is the first large scale 'green roof' designed specifically for a condo development in Canada. Residents will be able to enjoy the view of the lake and Toronto skyline while swimming and sunning in one of the city's most exclusive and unusual gardens.

## Seneca College Research Update

**Seneca College** has partnered with the **Toronto and Region Conservation Authority**, **York University**, **Greenland International and Sustainable Development and Monitoring Inc.** to develop a 'comprehensive' green roof system. This system will include a planted rooftop garden, a rooftop greenhouse, a rooftop catchment area, a rooftop control area, and an internal living wall system.

The expected benefits from this system, which will be monitored include: runoff volume reduction, improved water quality, increased energy efficiency and improved indoor and outdoor air quality. Initial funding for the project has been secured and preliminary design is currently underway. It is proposed to implement this system at Seneca College as a component of the SuperBuild renovations which are currently being developed. Construction is scheduled for 2001-2003. This green roof system will function as a living lab for research and educational purposes. For more information, contact Christine Doody-Hamilton at Seneca College (416) 491-5050.



Mountain Equipment Co-op Green Roof, Toronto, Canada

## INTERNATIONAL NEWS

### Update on Chicago City Hall Green Roof Demonstration

On September 19<sup>th</sup>, the **City of Chicago** will begin planting on top of their City Hall building. The 38,000 square foot green roof demonstration project will include a range of intensive and extensive green roof applications with soils as much as 18 inches deep in some locations. Over 20,000 herbaceous plants will be planted and technical research conducted on air quality, water, and biodiversity benefits. For more detailed information please visit the *Researchers' Corner* on the Green Roofs for Healthy Cities web site: [www.peck.ca/grhcc/main.htm](http://www.peck.ca/grhcc/main.htm).

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## Chicago Funds Green Roofs to Reduce the Urban Heat Island

The City of Chicago Department of Environment will be issuing green roof grants under its *1999 Urban Heat Island Reduction Initiative*. The mission of the Initiative is to utilize, develop and expand upon 'green' technologies that will mitigate the urban heat island effect, beautify Chicago and educate the public. The goal of the program is to provide an opportunity for Chicagoans to reduce urban air temperatures, lower electricity usage, reduce air pollution, and increase green space. Specifically, the initiative will include projects such as installing green roofs, painting or installing light coloured roofs and breaking up asphalt parking lots through the use of plants and alternative planting. For more information about grant eligibility, please visit: [w4.ci.chi.il.us./env/AirToxPollution/UrbanIslands.html](http://w4.ci.chi.il.us/env/AirToxPollution/UrbanIslands.html) or contact: John Beaudry, (312) 744 5917.



*Hamilton Apartment Building Green Roof, Portland, Oregon*

## Portland 'EcoRoof' Reaches First Year of Maturity

The Hamilton Apartment Building 'ecorooft' in Portland, Oregon has reached its first year of maturity and has weathered Portland's dry summer months successfully. The ecorooft has been irrigated to assure vegetation establishment during the first year. **Garland Company, Housing Authority of Portland, and City of Portland Bureau of Environmental Services** representatives met recently to address any issues pertaining to the ecorooft. A few minor corrections were identified and the **Garland Company** is once again responding in a timely and professional manner. The city has installed flow metres and a rain gauge to measure stormwater flows and precipitation. The ecorooft has been visited by hundreds

of people: architects, landscape architects, developers, city officials, and out-of-state and international guests. Almost everyone enjoys the beauty and appreciates the functions the green roofscape has to offer. At least four other projects are currently being designed, including a 20,000 square foot portion of the Oregon Convention Center expansion. For more information, contact Tom Liptan at: [toml@bes.ci.portland.or.us](mailto:toml@bes.ci.portland.or.us).

## OPPORTUNITIES & EVENTS

### Singapore Delegation Coming - October 16-17

On October 16<sup>th</sup> and 17<sup>th</sup>, the **City of Toronto** will be hosting a delegation of senior officials from the **Government of Singapore**. The officials are coming to Toronto for two days to learn about the City's efforts to implement green roof infrastructure. They will be visiting several sites and meeting with City officials and representatives of **Green Roofs for Healthy Cities**, the **University of Toronto** and the **Rooftop Gardens Resource Group**. For more information, please contact Sean Cosgrove, tel: (416) 392-1107 email: [scosgrov@city.toronto.on.ca](mailto:scosgrov@city.toronto.on.ca).

### Toronto Green Roof Demonstration Launch Planned for Late October

A launch is being planned for the Toronto Green Roof Demonstration Projects for late October at the City of Toronto. Details will be available online in late September.

*This issue of the Green Roof Infrastructure Monitor was prepared by Steven Peck and Stephanie Tencer with contributions from John Beaudry, City of Chicago; Christine Doody-Hamilton, Seneca College; Tom Liptan, City of Portland; and, Candy Venning, Perennial Gardens.*

*For a complimentary subscription to the Green Roof Infrastructure Monitor or to forward green roof industry developments, please contact Stephanie Tencer: Tel: (416) 971-4484, Email: [stencer@peck.ca](mailto:stencer@peck.ca).*