

## LIVING ROOF FACT SHEET

### What is a Living Roof?

The term “living roof” is used to describe building roofs that are partially or completely covered with living materials. Living roof layers include waterproofing membrane, root barrier, drainage and irrigation system. There are two types of living roofs. Intensive living roofs are thicker with a larger variety of plants and require more maintenance. Extensive living roofs have a lighter layer of vegetation and require less maintenance. The primary reason living roofs are installed is to increase environmental benefits for humans, buildings and surroundings.

### What are the Benefits of Living Roofs?

- Prevents the roof from heating up through evaporative cooling loads, reducing the need to cool the building.
- Prevents urban island heat effect (buildings block surface heat radiating back into the surroundings, increasing city temperatures), while reducing temperatures during the summer.
- Studies have shown living roofs can reduce heat loss and energy consumption in winter conditions.
- Helps to insulate a building for sound; the soil helps to block lower frequencies and the plants block higher frequencies.
- Absorbing rainwater reduces storm water run-off onto non-pervious surfaces and reduces the need for treatment of run-off.
- Filters pollutants and heavy metals out of rainwater.
- Acts as a filter for pollutants and carbon dioxide in the air, which helps lower disease rates such as asthma.



- Increases agricultural space and areas for landscaping
- Increases roof life span, as the living roof layers protect the roof membrane and increase the real estate value of the building

### Quick Facts on the TD Bank Living Roof Project

- The TD Living Roof is a low maintenance, extensive system with plant material growing in an aluminum structured grid to keep the heritage aspect of the Mies van der Rohe pattern.
- The City of Toronto does not treat its storm water, instead the storm sewers are drained directly into Lake Ontario. The living roof serves as a treatment method improving the quality of water that goes back into the lake and reducing the amount of water being deposited into the lake by holding water and allowing it to evaporate back into the air.
- The TD Pavilion roof was in need of replacement and upgrading to a living roof costs only an additional 25% more than a conventional roof.
- Upgrading to a green roof did not require any structural upgrades due to the original design and loading capacity of the existing roof, allowing the historical integrity of the pavilion to be preserved while improving the environmental performance.
- Living Roof layers and additional insulation installed as part of the re-roofing doubles the R-value of the original roof to R-20.
- The Creek Sedge Grass being used on the roof is a hardy evergreen native plant that has been selected for planting through the entire green roof. It is a very adaptive plant that is tolerant to the shade conditions of the TD Pavilion Roof.