Commission Bioretention Cell

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New Technology to Improve Drainage and Filter Runoff

A new type of drainage technology, called a Bioretention Cell, is being tested at the Turnpike Administration building adjacent to the east parking lot. Bioretention Cells are landscaped areas that facilitate drainage by collecting and filtering runoff. This specific cell was installed to eliminate issues caused by flooding and black ice in the area near the access gate. The issues occurred after plowed winter snow melted and refroze on the access road on both sides of the access gate. Redirecting the drainage into the bioretention cell has solved the problem.

The bioretention cell is composed of plant beds to absorb and filter pollutants, rock beds to channel the water, and an underground pipe to release filtered runoff into a nearby catch basin. The filter is necessary because the bioretention cell is surrounded by pavement that often receives snowmelt that contains dissolved materials from snow and ice treatment chemicals. Therefore, all the plants utilized in the cell must be tolerant to snow and ice treatment materials such as salt. The plants were chosen based on recommendations in the articles “Salt Tolerant Plants” by Bruce Zimmerman and “Salt Tolerant Trees and Shrubs” by The Morton Arboretum. The plants utilized in the cell are Lilac, Endless Summer Hydrangea, and Japanese Sedge.

From top left to bottom left: Japanese Sedge, Lilac, Endless Summer Hydrangea

Even the soil had to be carefully chosen to allow for proper filtration and prevention of erosion. From the bottom up, the bioretention cell is comprised of a layer of coarse stone, a layer of sand, a layer of a engineered soil mixture and a thick layer of course, shredded, hardwood mulch on top.

The bioretention cell will continue to be monitored and maintained as needed so that it can be used as an educational and training tool for future Commission projects.

Source: National Gardening Association: Plants Database*, gardens.org.*

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