

# Mount Tabor Middle School Rain Garden

Portland, Oregon, U.S.A.

The Mount Tabor Middle School Rain Garden is regarded as one of Portland's most successful examples of sustainable stormwater management. This project transformed an underutilized asphalt parking area into an innovative rain garden that melds the concepts of art, education, and ecological function. Built in the summer of 2006, the Mount Tabor Middle School Rain Garden has not only turned a "gray space" into a "green space," but it is also helping solve the local neighborhood's combined sewer infrastructure problems.

The Mount Tabor Middle School Rain Garden project is unique to Portland and the United States — the schoolyard has been transformed to sustainably manage stormwater runoff. The project demonstrates the City of Portland's commitment to promote a more natural approach to stormwater management, and many regard this "urban rain garden" project as one of Portland's most successful stormwater management retrofit projects to date. In a collaborative effort between the City of Portland and Portland Public Schools, the Mount Tabor Middle School Rain Garden project converts what was previously 4,000 square feet of underutilized asphalt parking area abutting the school's courtyard entrance into an innovative rain garden designed to capture, slow, cleanse, and infiltrate nearly an acre of the school's runoff.

The Mount Tabor Middle School Rain Garden project essentially disconnects a portion of the school's stormwater runoff from the neighborhood's combined sewer system and manages it on-site using a landscape approach. Approximately 30,000 square feet of impervious area runoff generated by the school's asphalt play area, parking lot, and rooftops, is elegantly captured and conveyed into the rain garden via a series of trench drains and concrete runnels. Once inside the landscape space, the water is allowed to interact with both plants and soil while soaking into the ground. Depending on how intense a particular

storm event is, runoff will rise within the rain garden until it has reached the 8-inch design depth. Once exceeding capacity, the water exits the landscape system and enters the combined sewer system.

The rain garden's infiltration rate varies from 2–4 inches per hour, meaning that any runoff that is retained in the rain garden is completely gone within a couple of hours. Since its completion in September 2006, the Mount Tabor Middle School Rain Garden's performance has been impressive. All of the rainfall captured within the rain garden has infiltrated without ever overflowing into the combined sewer system. As a result, approximately 500,000 gallons of stormwater runoff has been infiltrated on-site. For illustration purposes, the amount of runoff infiltrated equates to a volume of water that would stand 36 feet tall within the footprint of the rain garden. It is also estimated that the successful performance of the rain garden, along with the other stormwater improvements planned for the school, will ultimately save \$100,000 in future sewer infrastructure replacement costs within the neighborhood.

## Project Resources

**Kevin Robert Perry, ASLA**

**City of Portland Environmental Services**  
Brandon Wilson

### CLIENT

**City of Portland, Sustainable  
Stormwater Management Program**