

# THE INSIDE STORY



## **Green Roof on County Office Building & Rain Gardens in Courthouse Courtyard**

In May 2009, County Executive Onorato announced the construction of a green roof on the County Office Building – the first green roof on a public building in Allegheny County – and the conversion of the planters in the Courthouse Courtyard into rain gardens.

The projects will save energy, reduce stormwater runoff, and cut down on the amount of pollution reaching the four rivers in Allegheny County. They will also demonstrate that green infrastructure works, and will be used to show residents and businesses how they can employ green roofs and rain gardens to benefit the environment and be energy efficient as well.

Half of the County Office Building's roof, an area of 8400 square feet, will be converted to a green roof. This entails covering the roof with waterproof fabric, adding soil, and planting the area with native plants. The roof will increase the building's insulation, saving on heating and cooling costs. It will also absorb rainwater that would normally drain into storm sewers, reducing runoff and pollution. In addition, the green roof will reduce air and noise pollution, decrease the "urban heat island" effect, lessen flooding events and sewer overflows, provide urban habitat for birds and butterflies, and increase roof life at least two to three times.

The County will install measuring equipment on the unconverted portion of the roof to measure the difference in stormwater runoff between the two halves. The information will be used to demonstrate the benefits of green roofs to residents and businesses in cooperation with 3 Rivers Wet Weather and the Penn State Center-Pittsburgh.

In the Courthouse Courtyard, the four existing planters will be retrofitted and converted into rain gardens. Four downspouts that currently drain into the city's sewer system will be diverted into the planting beds. The planters will be filled with new soil and drainage material, and they will be planted with drought tolerant native plants.

The Three Rivers Rain Garden Alliance, 3 Rivers Wet Weather, and Penn State Center-Pittsburgh will work with the County to educate residents and businesses on developing additional rain gardens.

In Southwestern Pennsylvania, an average rain storm can produce two inches of rain in a 24-hour period. Even two inches of rain falling on a roof can result in more than 600 gallons of water rushing through downspouts and into sewer systems. As little as 1/10 inch of rain can cause combined sewers to overflow.

As rain travels over hard surfaces, it picks up and carries pollutants. The large amount of impervious surfaces in urban areas does not allow rainwater to permeate into the soil. Instead,

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rainwater flows into storm and sanitary sewers, as well as local streams, which are often unable to handle the higher water volumes, causing back up and eventual flooding.

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