Of all the innovations coming out of the Rouge revitalization, nothing has attracted more interest than the living roof growing on top of the Dearborn Truck Plant (DTP) final assembly building. At 454,000 square feet, it is the world’s largest living roof, creating in effect a 10.4-acre garden.

Cleaner runoff
The living roof collects and filters rain as part of an extensive, natural storm water management system that includes porous pavement with underground storage basins, natural treatment wetlands, and vegetated swales. The system significantly reduces the amount of storm water runoff flowing into the Rouge River Watershed, and improves water quality.

Cooler surroundings
The living roof is planted with sedum, a drought-resistant perennial ground-cover also known as stonecrop. The living roof reduces the urban heat effect created by acres of tarred and paved surfaces. It insulates the building, reducing heating and cooling costs by up to five percent. It traps airborne dust, absorbs carbon dioxide, and creates oxygen. The world’s largest living roof also provides habitat for birds, butterflies and insects.

Longer roof life
The living roof protects the underlying roof materials from ultraviolet radiation and thermal shock (the expansion and contraction caused by warm days and cool nights). The living roof is expected to last at least twice as long as a conventional tar roof, which could save millions of dollars in roof replacement costs.

Lighter weight design
Sedum on the living roof is planted in a thin, four-layer, mat-like system instead of loose soil. Even when soaked with water, this innovative vegetation blanket weighs less than 15 pounds per square foot.

Where to view it
At the Rouge Visitor Center, which is part of the Ford Rouge Factory Tour, an elevator ride up to an 80-foot observation deck opens on a panoramic view of the living roof.

“DTP is an outstanding place to work, a model of flexible manufacturing and environmentally intelligent design. The living roof provides insulation, cleans the air and rainwater, and reduces the urban heat effect. Giant rooftop skylights called monitors bring daylight into the plant—modern day versions of the skylights Henry Ford put in the original Rouge buildings.”

Jay Richardson
Heritage Project Manager
Vehicle Operations

The living roof is planted with several varieties of sedum, including Diffusum and Fulda Glow.
Does a living roof need mowing?
One of the common misconceptions about a living roof is that it needs to be trimmed and weeded, like a lawn. But sedum grows only six inches tall (see inset photo) and spreads horizontally, crowding out weeds and other plants. Plus, the thin, semi-organic material used for soil simply won’t support taller plants and trees.

Will the living roof dry out without rain?
No. Sedum is drought-resistant, and the mat underneath it retains moisture. As an added precaution, the living roof includes an irrigation system.

How heavy is the soil on the roof?
No loose soil has been put on the roof. Instead, the sedum grows in a four-layer vegetation blanket (see illustration). Called Xero flor™, this thin, semi-organic material contains a mixture of nutrients such as peat and compost. Under this growth layer is an absorbent, fleece-like mat made from recycled materials, and a drainage layer that carries excess water from the roof. Beneath those three layers is a root-resistant membrane that protects the roof.

How was the living roof installed?
Before installation, sedum for the roof was planted and grown on a large field at the Allen Park Clay Mine Landfill. It was harvested in square flats, then hoisted onto the roof in pallets. Once on the roof, the sedum squares were installed in a grid pattern (see inset photo on front).

What else is on the roof?
Also on the roof of the DTP final assembly building are ten giant window boxes called monitors that flood the factory with natural light. These huge skylights use energy-efficient glass that reduces glare. Research shows that an abundance of natural light improves color perception, reduces eyestrain, and helps improve mood in a workplace.

The ten monitors, along with 36 smaller skylights, lower energy costs by reducing the need for artificial light. On a sunny day, the monitors and skylights allow up to half the lights to be turned off inside the Dearborn Truck Plant final assembly building.

It’s huge...
The 10.4-acre living roof on DTP Final Assembly is big enough to hold eight football fields. It has been recognized by the Guinness Book of World Records™ as the largest vegetated roof in the world. As seasons change, the roof changes color from green in the spring to bronze in the fall. In the summer, it flowers.

It’s absorbent...
Based on an average annual rainfall of 31 inches, the living roof can hold up to 4.5 million gallons of runoff water, enough to fill nearly six Olympic-sized swimming pools.

It’s protective...
By moderating extremely hot and cold temperatures, the living roof reduces the expansion and contraction of other roof materials. The sedum groundcover protects against UV radiation and winter storms. As a result, the living roof is expected to last at least twice as long as a conventional tar roof.