

2006 Harley-Davidson F-150 Environment



"The living roof at the Rouge is living proof of Ford's ongoing commitment to being an environmentally conscientious corporate citizen."

– Tim O'Brien, Vice President, Corporate Relations

The 2006 Ford Harley-Davidson™ F-150 will be produced at the Dearborn Truck Plant, part of the historic Rouge Center in Dearborn, Mich. The world-famous plant also happens to be the award-winning home of "sustainable manufacturing." Boasting a "living roof" and the ability to turn paint fumes into fuel, the Dearborn Truck Plant symbolizes the Ford approach to maintaining environmental quality.

Raising Groundcover to the Roof

The 10.4-acre roof of Dearborn Truck Plant's final assembly building has been designated as The World's Largest Living Roof by Guinness World Records™.

Composed of a drought-resistant perennial groundcover, sedum, the "garden" is planted in a specially layered bed. It requires virtually no maintenance. Among its functions, the bed of sedum is part of a storm-water management system that can absorb up to four million gallons of rainwater annually that otherwise would drain through the manufacturing campus and into the nearby River Rouge. The sedum also serves to absorb carbon dioxide.

In addition, the sedum produces oxygen and provides natural overhead insulation for the final assembly building, thereby reducing energy costs. It also is expected to last twice as long as a traditionally constructed roof.

"Ford has taken a progressive stance on environmental issues," says Tim O'Brien, vice president, Corporate Relations, "and with our redevelopment of the Rouge Center, we are putting our words into action. In addition, the roof and other environmental initiatives we're implementing are cost effective. Year after year, they will save us money, as well as conserve resources."



Officials of Ford's Dearborn Truck Plant – part of the historic Rouge Center complex – reveal layers of the perennial groundcover atop the roof of the facility that produces the 2006 Ford Harley-Davidson™ F-150

While the sedum required watering during its early growth, the living roof requires no mowing, trimming or further watering. On average, sedum grows to a height of just six inches and spreads horizontally, crowding out weeds and other undesirable plants. When fully developed, the roof will resemble a meadow with varying lengths of growth and small

red, white, yellow and purple flowers.



Ground-level plants and filtering rock beds support the Dearborn Truck Plant's unique storm water management system.

The sedum is not planted in loose soil. The rooftop bed consists of a four-layer, mat-like system only 3 inch thick. The bottom layer is a root-resistant membrane. Above that is a drainage layer, followed by a fleece mat. The top layer is a vegetation blanket of semi-organic material in which the sedum roots.

Rainfall is filtered through the plant roots and soil bed. Runoff, the excess water, is managed by an intricate system composed of filtering rock beds and ground-level plantings; ditches filled with greenery, called swales; porous pavement installations; retention ponds; and underground storage

basins.

Clearing the Air, Creating Electricity

The paint shop of the Dearborn Truck Plant can use better quality, better adhering paint because of its revolutionary fumes-to-fuel process. Instead of using non-renewable natural gas to burn paint fumes, the paint shop captures the volatile organic compounds found in paint fumes and concentrates them into a rich mixture of hydrocarbons, which are a source of fuel. The mixture then is fed into a reformer that turns it into a hydrogen-rich gas. From there, the gas is fed into a stack of solid oxide fuel cells, where a chemical reaction between hydrogen and oxygen creates electricity, water vapor and a trace amount of carbon dioxide.

At full capacity, the process will be able to generate more than 100,000 watts, enough to operate 200 average homes.

"When fully developed, this system has the potential to save Ford millions of dollars by reducing the cost of incinerating paint fumes in natural gas-fired furnaces, as we do now," explains Mark Wherrett, Fumes-to-Fuel project leader and principal environmental engineer, Ford Environmental Quality Office. "It also costs much less to install and maintain, virtually eliminates carbon dioxide emissions and enables us to continue using solvent-based paints which produce a better quality finish than powder- or water-based paints."