

HCC STEM Building Green Roof Systems

Green roof systems are located on the roof of the 3rd and 5th floor of the STEM Building. These systems are not only attractive, but are also very beneficial to the environment. The system is planted in sections called modules. Each module weighs around 28 lbs per square foot when the vegetation is saturated with water. For example, a roof that measured 15 ft x 20 ft (300 sq. ft.) would weigh a total of 8400 lbs or 4.2 tons.

The plants are carefully selected so that they will absorb water like a sponge and reduce the rainwater runoff from the roof. This saves money because less storm sewer capacity is needed. The plants on the HCC green roofs are succulent ground cover plants like *Sedum, sp.* They are drought CAM plants, which minimize the need for supplemental irrigation. These plants are not allowed to go dormant and shrink during periods of drought because that would expose bare soil to weed growth and would also increase maintenance costs. The plants do not grow tall like grass so there is no need for mowing.

A green roof offers many advantages over the conventional roof:

- Significant energy savings because plants lose water by evaporation and transpiration, which liberates 8000 BTU of heat energy that would otherwise need to be removed by air conditioning.
- Paved surfaces and conventional roofing are impervious to water, which means that water flows into the sewer systems, risking the overflow of untreated sewage into lakes and streams. Green roof surfaces absorb up to 99 percent of a one inch rainfall and filter the water as it percolates through the green roof system.
- Green roof systems also act as a protective umbrella above the roof which shades and insulates buildings. This avoids creating a large temperature difference between urban areas with lots of pavement and traditional roofing and rural areas with more land covered with vegetation. Without the large temperature difference between rural and urban areas, there are fewer air currents created by the rising hot air. Drought, high winds, and electrical storms are more common in urban areas than rural areas. Green roof systems reduce this tendency.
- Green roof systems are attractive and create a habitat for butterflies, insects, and songbirds.

