CON EDISON'S GREEN AND WHITE ROOFS BOTH SAVE ENERGY

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Ever heard the term "cool roof" and wondered what it meant? The term can refer to any roof that's not a traditional dark color – which tend to absorb heat and raise energy bills.

Cool roofs, however, are usually green or white. The Con Edison Training and Conference Center in Long Island City, Queens, has both kinds and a recent study [pdf] has highlighted the benefits of each.

To facilitate comparisons among the different kinds of roofs, Con Edison (a subsidiary of Consolidated Edison, Inc. [NYSE: ED]), divided the training center's roof into three parts: a traditional dark roof section, a section painted white, and a green section with plants growing on it. A recent energy-efficiency study by Columbia University is helping researchers understand how each kind of roof performs.

The green and white roofs perform equally well in preventing the "heat island effect," in which conventional dark roofs absorb sunlight during the day and radiate heat back into the atmosphere at night—resulting in warmer urban temperatures.

The green roof, home to 21,000 plants on a quarter-acre section, keeps heat in the building during the winter, reducing the need for heating, and keeps heat out during the summer, reducing the need for air conditioning. Green roofs also reduce rainwater run-off and absorb pollution, cutting down on the amount of urban sewer overflow.

The green roof reduces summer heat gains by up to 84% and winter heat losses by up to 37% compared to a black roof. The white roof reduces summer heat gains by up to 67%.

These figures represent only the reduced amount of heat flowing through the roof, rather than the building's energy consumption – which is affected by the building's insulation, energy generation system, and other factors.