

ARE BALLASTED ROOF SYSTEMS COOL?

PRESENTED BY ANDRÉ DESJARLAIS • REPORTED BY WILLIAM WOODRING

André Desjarlais reported on the results of a three-year study to determine if ballasted roofs perform as well as white membranes with regard to energy savings. The study, which was cosponsored by SPRI, was conducted on the Roof Thermal Research Apparatus at Oak Ridge National Laboratory in East Tennessee.

Three different weightings of stone-ballasted roofs (10, 17, and 24 lbs/ft²) were installed next to a 24 lbs/ft² paver system, a black EPDM membrane, and a white TPO membrane. Data collection included continuous monitoring of temperatures, heat flows, and weather conditions, as well as periodic verification of solar reflectance and infrared emittance.

The white membrane gradually lost some of its reflectivity due to weathering, basically stabilizing by the start of the second year. All the

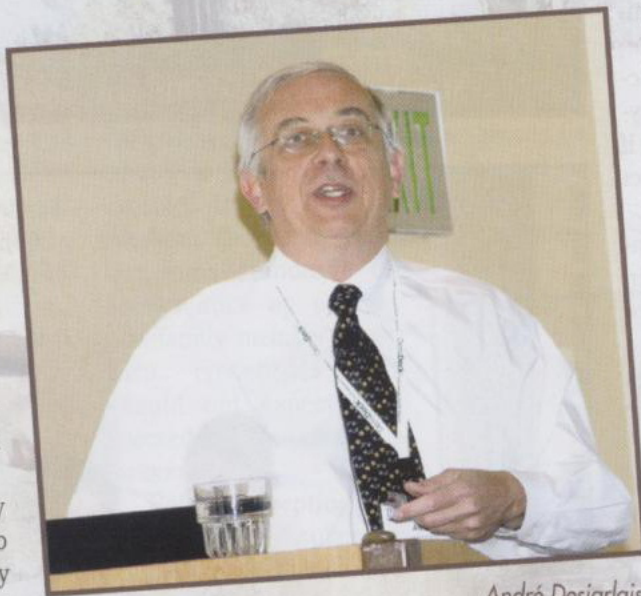
other systems did not show significant effects of weathering during the three-year period.

The cooling loads for the 24 lbs/ft² stone-ballasted and the 24 lbs/ft²

paver systems were approximately the same as the white membrane. The cooling loads for 10 and 17 lbs/ft² stone-ballasted systems were slightly larger than those for the white membrane. All the ballasted and paver systems performed significantly better than the black membrane in reducing cooling loads, and because of their thermal mass, they shifted the peak energy demand for cooling to later in the day.

The initial attempts to use the data collected to validate numeric models so that the performance of the ballasted and paver systems could be extended to other climates and roofing configurations were not successful, and further work in this area is planned.

Desjarlais also indicated that a reflective ballasted roof section was added 1-1/2 years after the study was started. A report on this may be available at the 2009 RCI convention.



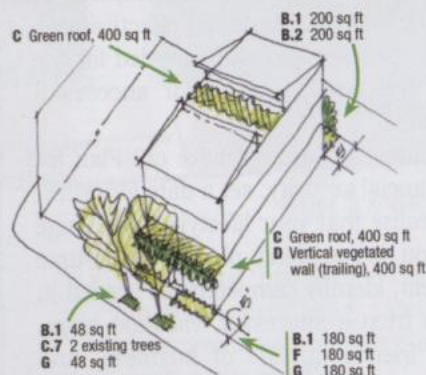
André Desjarlais

Seattle Adopts New Green-Factor Initiative

Seattle, Washington, has become the first U.S. city to adopt a “green area ratio” requiring developers and designers to incorporate green elements into their site designs. The Seattle Green Factor is modeled after similar programs in Berlin, Germany, and Malmö, Sweden. The initiative provides designers and developers with a “buffet” of landscaping options to use on their sites to reach a target set by the city. Options include such elements as vegetative walls, permeable paving, green roofs, and rain-collection systems.

The rules apply to residential buildings with more than four units and commercial structures of more than 4,000 square feet. Developers seeking permits must demonstrate that they will reach landscaping targets using the menu of “green” options before receiving their permits. A worksheet provided by the city calculates the value of each option.

The program is meant to “encourage builders to construct green roofs, vegetative walls, and other features that clean the air, insulate buildings, and ease the burden of Seattle’s wet climate on the city’s drains and creek beds,” a city official announced.



— seattlepi.com, ENR, and other sources