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Survey Looks at Green Roof Benefits

In an earlier issue of *The LINK*, the folks at GreenGrid® Green Roofs, a business of Weston Solutions®, asked our subscribers to participate in a brief questionnaire about Green roof systems. The answers to some of the questions indicate that most of the respondents had a pretty good understanding of Green roofs. However, in other cases, there was less certainty or, in a few situations, the respondents' answers were simply not correct.

For instance, when asked what impact the vegetation on a Green roof has on air quality, nearly 70 percent indicated that "it helps filter dust and trap dust particulates," which is correct. However, 21 percent indicated the improvements to air quality are only derived on very large installations, and about 7 percent believed Green roofs actually harm air quality by releasing pollens that can cause allergic reactions into the air.

"The plants, no matter the size of the installation, absorb contaminants and release oxygen," says Jim Lindell, market development associate with GreenGrid® Green Roofs, a business of Weston Solutions®. "And most of the plant species used on Green roofs, like sedums and delosperma, are generally not known to be allergens or allergen producers."

When asked what effect Green roofs have on outdoor air temperatures and the environment, 17 percent of the respondents said they have "little or no effect." But nearly 77 percent said "they can cool air temperatures and cool the environment," which is the correct answer.

According to Lindell, one of the main reasons cities like Tokyo are requiring the installation of Green roofs on some buildings is to minimize the "urban heat island effect" common in large urban areas, which makes central cities warmer than the surrounding countryside. Reducing the urban heat island effect helps reduce air-conditioning needs and cuts energy costs in summer months.

The survey also asked the respondents about the most significant benefit of a Green roof. Here, 41 percent reported it was energy savings. Although Green roofs can lower energy costs, as mentioned earlier, this is not the correct answer. Instead, the correct answer is water retention, which was selected by only a quarter of the respondents.

After a rainfall event, storm water runoff can overburden a city's sewer system. Indeed, it is believed that as much as 30 percent of the runoff after a major rain storm in New York City goes directly into the Hudson River.

"This is a potential environmental hazard because storm water becomes quickly contaminated as it runs off buildings and flows through streets and gutters," Lindell says.

As to other questions, the survey revealed that:

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- Nearly 60 percent of the respondents believed a Green roof increases the value of a property, whereas about 40 percent believed the technology is too new to affect property values. Green roofs are recognized as a property improvement and can increase property values.
- Similarly, only 30 percent believed a Green roof increases the life cycle of the existing roof, while the other respondents believed it has little impact. In actuality, studies find that Green roofs can double the life expectancy of the existing roof.
- Finally, less than a third of the respondents knew that a Green roof can contribute as many as seven points or more toward LEED certification. Most of the other respondents believed it was five points or less or that it was not part of the LEED accreditation evaluation.

Green Roof Mechanicals and Economics

Most of the remaining questions on the survey dealt with the "mechanicals" and economics of a Green roof, such as the types of plants most commonly used, the types of Green roofs, and the costs to install a Green roof system. And here there was considerable confusion about Green roof terminology.

For instance, most of the respondents confused the terms *intensive* and *extensive* when referring to a Green roof. To clarify, an *intensive* Green roof is similar to a backyard garden with several inches or feet of soil and traditional tress and shrubs. An *extensive* Green roof involves the placement of just a few inches of soil with low-lying plants.

As to costs, more than 70 percent of the respondents were aware that a *modular* Green roof system is less expensive and less time-consuming to install than a *built-in-place* Green roof, which is landscaped and constructed right on top of the existing roof. This is because with a modular system, the soil and vegetation are planted into recycled plastic modules in an assembly line fashion at a local nursery. They are then transported to the rooftop, where they are laid out, one next to the other.

"The modular system tends to be faster and less labor intensive," says Lindell. "This is what makes it more cost-effective."

Finally, the survey asked what city in America has the most Green roofs. It appears Chicago, which does have the most Green roofs, may have to work harder to promote itself as *the* Green roof city. Most people were sure it was either Portland or Seattle.

"But overall, I think the survey shows that most people are getting well acquainted with Green roofs, the technology and its benefits," says Lindell. "If we asked these questions just five years ago, I think we would have had a lot of head scratching and blank stares!"

For more information on Green roofs, visit www.greengridroofs.com.

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