

USU display roofs educate on science of water runoff

By Kevin Opsahl staff writer Aug 16, 2017



Cole Patton adjusts a sprinkler on a display that shows how water runoff is different for a roof with shingles vs. plants on Tuesday at USU.

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When McKenna Drew was a student at Utah State University, she was actively involved in educating members of the public about water through USU Extension. She remembers using a cookie sheet to show youth how materials like asphalt can't effectively let water infiltrate into the ground.

It was experiences like that which led Drew to collaborate with her USU professors and secure funding for a display of two different demonstration rooftops. Now a USU alumna and intern with the Bureau of Land Management, Drew's display still sits outside the Quinney College of Natural Resources building for everyone to see.

"I hope people ... can learn about what impervious surfaces are or they can learn about green infrastructure, best management practices, just different ways we can all work toward smart development," she said.

The display of two roof types offers a sign explaining how when water soaks into the ground, it flows back to rivers and streams naturally. Whereas when water touches an impervious surface — like a shingled roof or roadway — it quickly runs off into streams and rivers, leading to flooding and polluted water ways.

The display on USU campus emulates these two kinds of water runoff: half is a shingled roof and half is a garden roof. The display automatically sprays out water, which runs down the roof types and into two containers so USU students and professors can measure the amount of water runoff.

Nancy Mesner, USU professor and a specialist with the Water Quality Extension, calls the roof display “a great opportunity to pique people’s interest and sort of show them with real data how effective this (a green roof) could be.”

Green rooftops can be an effective tool to prevent disastrous water runoff, Mesner said.

“The idea is not only that green roofs can slow down the flow of water coming off of a roof and protect streams from get too-intense flows too fast, they also cool buildings,” Mesner said. “They don’t heat up as fast as a standard roof does.”

Just because green roofs are more common in urban areas than rural doesn’t mean the Cache Valley population can’t learn something about the harmful potential impacts of storm water runoff, she said.

“We’re hoping that people will think about how we waste water by letting it rush off rather than soaking in in areas that are developing — and I think you’ll agree Cache Valley is developing quite fast,” Mesner said. “We are in a perfect position here in Cache Valley to avoid some of the problems seen in other areas.”

In building the half-shingle, half-garden roof display, Drew, Mesner and Mark Brunson, USU professor of environment and society, seek to use it as an educational tool.

Earlier this year, middle school students and teachers from the USU STARS! GEAR UP program viewed the display.

Brunson said iUTAH (innovative Urban Transitions and Aridregion Hydro-sustainability) played some role in making the display possible.

“iUTAH has helped create water education facilities and programs from Logan to Cedar City and Monticello in an effort to help adults and children learn more what they can do to sustain Utah’s water future,” he wrote in an email. “The green roof demonstration display is one of those.”

Kevin Opsahl

Kevin Opsahl is the USU reporter for The Herald Journal. He can be reached at kopsahl@hjnews.com or 435-792-7231.