



The green roof in bloom during its first spring.

# Sky's the Limit

A vegetative roof garden  
Story and photos by Andrea Wilson Mueller

Green roof. Vegetative roof. Eco-roof. Living roof. Call it what you want. After being introduced to the concept at Bernheim Arboretum in Louisville, Inside Out Design, LLC, wanted to incorporate a green roof into the design of our new offices. Because we work in the green industry and are committed to sustainability, we knew a green roof was the only way to go. Vegetative roofs are environmentally beneficial in many ways — they provide additional insulation, reduce water runoff, create wildlife habitat and reduce the heat-island effect.

Much thought and many components go into a green roof, starting with the structure. Since this was new construction, beefing up the footers and installing proper support beams was a breeze — this can be challenging on an existing roof. Our biggest challenge was finding a professional in our area who could handle the complete package, from waterproofing to green roof component installation. We eventually chose Tecta America, a company

out of Louisville, to install the waterproof layer as well as the seven additional layers of our green roof, including structural support (in our case, regular plywood sheets), roof membrane, waterproof membrane, insulation, drainage/storage layer, growing media and plants. We chose to install the roof media and plants ourselves.

With a depth of 4 inches, our green roof is considered an extensive roof, because it is covered in shallow soil media and planted with smaller, ground cover plants. Intensive green roofs are more than 6 inches deep and can support a larger variety of plants, but they are much heavier. The soil media we used, crushed shale from Rooflite® that came in 2-ton pallets, was scooped onto the roof until it was full. The completed roof required about 6 tons — with almost 12,000 pounds of weight on the roof, you can see why structural engineering is so important. Metal edging was added to keep the soil media in place and provide a defined edge, and a pea gravel perimeter was



*Allium schoenoprasum*. Two additional allium varieties were planted, including native nodding onion (*Allium cernuum*).



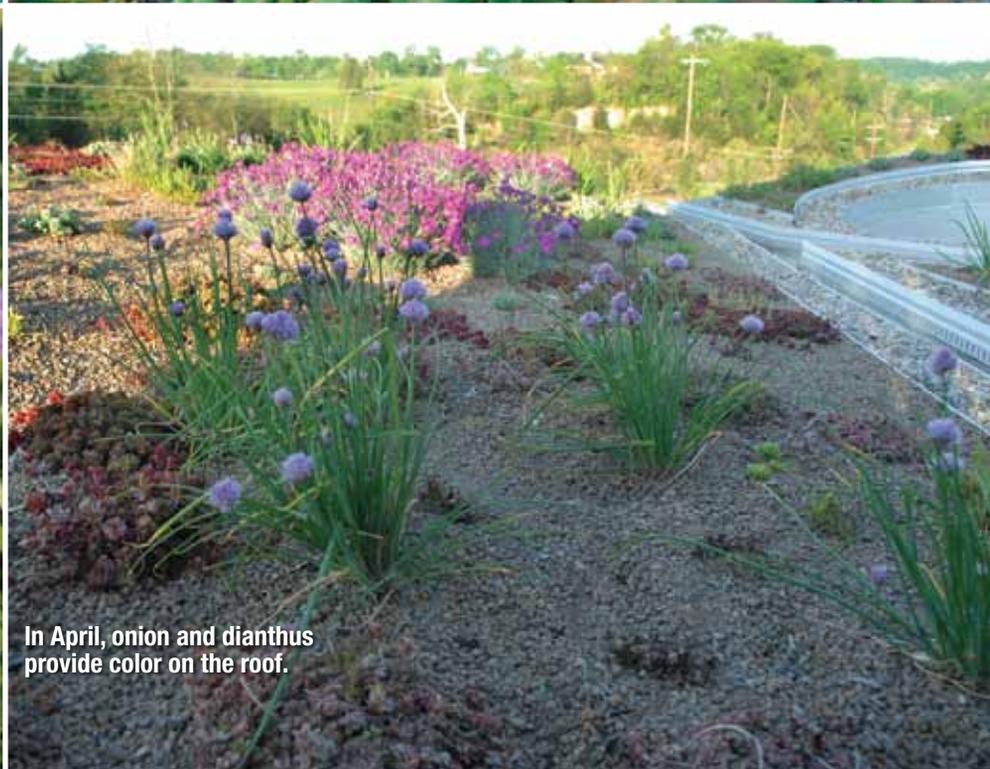
The view from this rooftop garden fits perfectly into its countryside surrounding.



Purple ice plant (*Delosperma cooperi*)



*Scabiosa* 'Blue Mist'



In April, onion and dianthus provide color on the roof.

**Landscape**Design

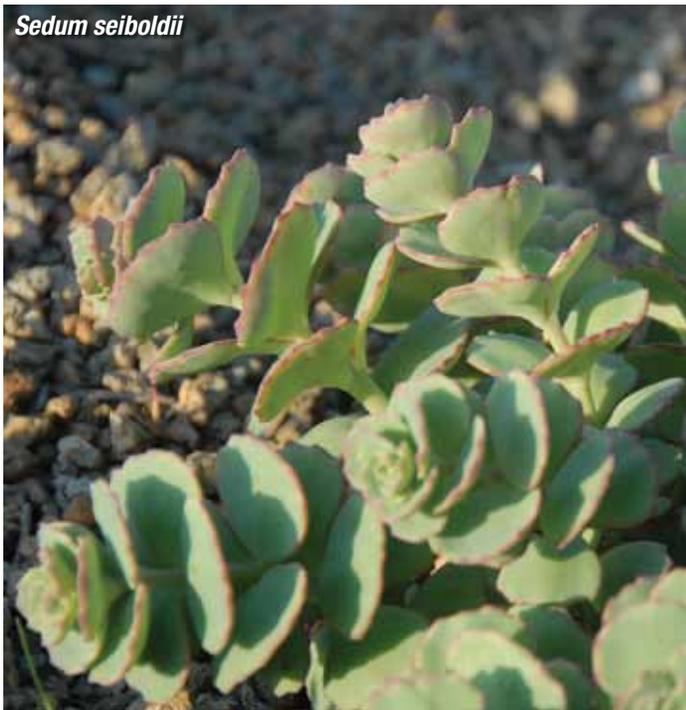
Jane Harrod (left) and  
Andrea Wilson Mueller  
(right) plant the roof.







*Sedum seiboldii*



installed to provide a root barrier that will prevent roots from growing into the building's siding or flashing.

Then, finally, the fun part — plants! Even though the roof area is small, diversity was our goal. There are multiple species of ice plant, sedum, dianthus and allium — most are standard green roof species (sedum and allium are known to work well for green roof applications), but some were more experimental. The design included massed plantings, but we sprinkled smaller plantings over the entire roof again and again to create a cohesive, yet diverse, design.

The roof and plantings were completed and installed in August of 2011. Today, the roof isn't quite filled in yet, but it will be within a few growing seasons. During last fall's growing season, new sedum and ice plant sprouts made an appearance, and the light lavender and pink allium blooms lasted for months, well into November, and provided color and interest.

We enjoy climbing on top of the roof to water — who else gets to climb on their roof to take care of the garden? Thankfully, more and more people will be able to experience this as green roofs gain popularity. Watering is important, but the most important maintenance task is weeding and making sure all of the weeds are eradicated, preferably by hand. Like any landscape, the most common reason why a green roof will fail is due to lack of proper maintenance, especially lack of weeding.

The garden on the roof is the first of its kind in our town and is leading the way to a more sustainable community in the heart of Kentucky. Replacing a traditional roof with a vegetative roof is a fun and practical way to garden. More on this green roof and the building can be found by visiting [www.state-journal.com/news/simple\\_article/5091849](http://www.state-journal.com/news/simple_article/5091849).

*Andrea Wilson Mueller is a landscape designer and owner of Inside Out Design, LLC (Frankfort, KY), a landscape and hardscape design-build firm committed to sustainability and creativity in outdoor spaces.*

For more information contact  
**888.265.3600**  
or [sales@statebystategardening.com](mailto:sales@statebystategardening.com)

