



## NATIONAL ARCHIVES & RECORDS ADMINISTRATION

The William J. Clinton Presidential Library



Almost anything can inspire—art, family, memory. For the Clinton Foundation and former President William J. Clinton, the inspiration for a vegetated roof on his Presidential Library in Little Rock, Arkansas, came from different places. From the Arkansas River flowing just below the library. A desire to help the environment by reducing energy use and better managing storm water. Aspiring to move from an existing LEED NC Silver rating to a LEED EB Platinum certification.

By spring 2007, plans for the vegetated roof were blooming. After a national, multiphase interview process, representatives of Tremco's Roofing and Building Maintenance Division and three other companies were invited to Little Rock to meet with the Clinton Foundation, the Leonardo Academy, and the National Archives and Records Administration (NARA), which would all influence the final decision. Tremco made it into this round by offering a complete roofing solution, from waterproofing upgrades to high-end landscape design and, uniquely, assuming all the liability for the roof.

After this one opportunity to visit the library and to discuss the project face-to-face with the clients, the Clinton Foundation challenged the groups to submit a 30% complete design, with documentation to meet NARA's stringent design standards, within four short weeks. (NARA required a vegetated roof that was fully waterproof and would reduce risk from fire or pests that could damage the library's priceless contents.)

With their team of landscape architects Heidi Natura and Bruce Dvorak of Living Habitats; landscape contractor Mike Burke of Growild; and local Good Earth Garden Center owner Gregg Curtis, who would help install and maintain the plants, Tremco's project management group of Mark Anderson, Joanne Rodriguez, Mary Ann Uhlmann, Ralph Velasquez and Kyle Crawford of Crawford Roofing jumped into the abbreviated design process.

Natura, of Living Habitats, created three designs, all distinct but united by an artistry that recognized the river's dominance and the strong context of the building's architecture. As she put it, "Bringing the Arkansas River metaphorically onto the roof further strengthens the integration of building and site, and greatly supports the Clinton Foundation's complete commitment to honoring its Arkansas home, as it also actively reaches out to the broader world to create better conditions for our collective future." The designs' plant palette emphasized native perennials and grasses.



Existing Condition, North Roof, Looking North



Photo Simulation of Currents Garden

THE WILLIAM J. CLINTON PRESIDENTIAL CENTER — ROOF GARDEN CONCEPTUAL DESIGNS Presented by the Tremco Team

May 18, 2007

## CURRENTS GARDEN



# TREMCO

ROOFING AND BUILDING MAINTENANCE DIVISION

The Clinton Foundation and NARA embraced the Tremco team's vision, and commitment to sustainable building practices. They selected one of its designs, impressed by the functional and aesthetic aspects and also by a warranty that assumed complete responsibility for the roof's performance. The design featured a lawn and perennial gardens on the south side of the roof and an elaborate, semi-intensive vegetated roof on north side with a boardwalk, trellises, artwork and exceptional plant diversity.

From the time of the award, the team had four months to complete the design. That timeframe was almost a luxury compared to what came next. There would be just six weeks during the design period for pre-construction, permitting and fabrication; five weeks for construction; and an inflexible deadline. In November, C-SPAN would film the roof as part of a show about the Clinton Library (for the finale of its series on Presidential libraries). As Tremco's project manager, Anderson, a Sustainable Design Architect, brought a single-minded focus to making the roof a reality.

Working again with roofing contractor Kyle Crawford of Crawford Roofing, the 10,000 square foot roof separated by the President's living quarters was dismantled. The existing fluid membrane, EPS insulation and concrete pavers were all reused, minimizing the amount of material bound for a landfill. Installing a new, fully adhered waterproofing system, root barrier membrane, and flashings ensured a leak-proof assembly in less than 14 days. The drainage system was redesigned to improve water flow. A "smart" subsurface capillary irrigation system designed to use 80% less water than an overhead system was installed by the owners of Sustainable Engineering Solutions



In addition, the latest in non-destructive, low vector mapping leak detection technology was employed. Low-vector mapping locates deficiencies in the membrane and was used before the vegetated roof components were installed. Components embedded in the roofing system will help greatly simplify future leak detection tests. While these features are critical, they're "the bottom of the iceberg," hidden beneath the growing medium. The north and south gardens themselves are gorgeous examples of forward-thinking design and environmental stewardship

The railing surrounding the roof consists of 380 linear feet of glass panels set in a framework that actually reuses the original railing. New photovoltaic solar lighting was installed. Ipe wood benches were reused. In the north garden, a sinuous, custom designed and fabricated Ipe wood boardwalk flows directly off the existing deck and gives the feeling of being in a "wet" environment. The boardwalk's design emulates the river, its width varying much like a river widens and narrows; an "oxbow" in the boardwalk furthers the river metaphor. The boardwalk ends at the overlook deck area, which offers spectacular views of the Arkansas River and Little Rock. Along the boardwalk are unique, multi-purpose trellis structures made of recycled steel. According to Tremco's Rodriguez, "While the trellises are designed as seating areas, their real purpose is to act as wind breaks and provide some shade. It gets windy on the roof. Without the wind breaks, it would not be as enjoyable an area to visit, not to mention distressing the plants." One benefit of the wind is the music it will make blowing through the custom chimes that Living Habitats designed. Tremco's Uhlmann, possibly the only environmental horticulturalist employed by a roofing manufacturer who is actually involved in roofing design, was charged not only with incorporating as many native plants as possible but also with meeting the President's preferences, such as including yellow roses in honor of his mother. The end result included over 9,280 plants representing 80 species; 35 of those species are native perennials and grasses. Over 4,500 succulents representing 20 species were installed in drift patterns to reflect river currents. More than 230 ornamental evergreen and blooming shrubs and vines were planted, as well.

"This project took extraordinary efforts and coordination between Debbie Shock of the Clinton Foundation (and all of her staff), NARA, Living Habitats and all 22 subcontractors and material suppliers," stated Anderson. "Crawford Roofing started this project off at a record pace and with unsurpassed quality and excellence. Mueller Fabricated Products provided all structural steel components within two weeks of order. Bryan Hebert, President of MSBI, had up to three crews of talented carpenters working by flood lights well into the night to assemble the very complicated boardwalk. ItSaul Natural moved heaven and earth to get us the intensive growing media. Everyone who worked on this project should be exceptionally proud.



I would like to formally say ‘thank you’ to them all. Normally, roofing does not get a lot of attention. It was an honor for Tremco and a success for the sustainable industry to watch former President Clinton show this project on C-SPAN.”

As the only vegetated roof installed on a Presidential Library in the U.S., it reigns as one of the premier projects in the history of vegetated roofing in America. The library is now LEED EB Platinum certified and an outstanding example of a sustainable building initiative.

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