

Green Acres

Construction Services, a Tecta America company, installs a vegetative roof system on the Birmingham SSA Center

The new Birmingham Social Security Administration (SSA) Center, Birmingham, Ala., is a \$100 million facility built through a 20-year lease agreement between Opus South Corp., Atlanta, and the U.S. General Services Administration. The 587,000-square-foot building was built to replace the existing building that had housed the SSA since the 1970s.

The building, which has an eight-story tower rising above its second story, required installation of several roof systems. In November 2005, Opus South contacted Chris Pinkston, vice president of Construction Services, Atlanta, a Tecta America company, to discuss installation of a vegetative roof system.



by Ashley St. John

A joint effort

Opus South wanted 83,000 square feet—or nearly 2 acres—of vegetative roofing materials installed on the building's exposed second-floor rooftop, as well as a polymer-modified bitumen system installed on the eighth-floor rooftop.

Pinkston consulted with Mark Gaulin, Tecta America Corp.'s chief operating officer, who at the time was president of Magco Inc., Jessup, Md., a Tecta America company, which has installed many vegetative roof systems. Gaulin and Pinkston developed some options, which they presented to Opus South.

"Mark did a presentation for Opus South about vegetative roofing,

estimator, and Angie Durhman, Tecta America's corporate green roof specialist, and decided to use an extensive design (instead of heavier options, such as semi-intensive or intensive designs) for the vegetative roof system portions to not exceed Opus South's maximum roof load requirements.

The team also discussed Birmingham's climate. Because of the city's average summer temperatures of more than 90 F and unpredictable rainfall, they selected sedum plants for use on the building's vegetative roof portions. After the roof system's basic

of the sedum plants," Pinkston says. "We notified the greenhouse about three months in advance, and it grew the plants until they were ready for shipment."

Steady installation

Construction Services began installing the SSA Center's roof system in March 2007.

For the vegetative roof system, Construction Services' 14-person crew began by priming the concrete deck and covering it with American HydroTech Inc.'s 215-mil-thick hot-fluid-applied polymer-modified



Photo courtesy of Sky-Shots Aerial Photography Inc., Atlanta

Project name: Birmingham Social Security Administration Center
Project location: Birmingham, Ala.
Project duration: March 2007-January 2008

Roof system types: Vegetative with hot-fluid-applied polymer-modified asphalt; polymer-modified bitumen; and standing-seam metal

Roofing contractor: Construction Services, Atlanta, a Tecta America company

Roofing materials manufacturers: Colbond Inc., Enka, N.C.; Johns Manville, Denver; Peterson Aluminum Corp., Chicago; and American Hydro-Tech Inc., Chicago

More than 1,000 cubic yards of growing medium and more than 160,000 sedum plants were installed on the building's second-floor rooftop.

and we discussed the different products that could be specified," Pinkston says. "This all happened a year before the project even came out for bid."

But Construction Services eventually was awarded the \$2.2 million contract in November 2006.

Because of the roof's size, load capacities were an immediate concern.

Pinkston and Gaulin collaborated with Mike Yellott, Construction Services'

design was agreed upon, Williamson & Associates Inc., Atlanta, a building envelope consulting firm, drafted the roof system specifications.

Because of the large quantity of sedum plants needed to cover the roof area, Construction Services had the plants specially grown by ItSaul Natural LLC and Saul Nurseries, Alpharetta, Ga., which has extensive experience with the vegetative roof industry.

"We had to plan ahead for the growth

asphalt membrane. The fabric-reinforced membrane installation was complete by May 2007. However, installation of the remaining roof layers and vegetation was postponed until the fall to take advantage of better growing conditions and avoid planting the new sedum plants in the summer heat.

Construction Services resumed work on the roof in late September 2007. Construction Services installed a protection board, root barrier and 3-inch-thick

Photo courtesy of Colbond Inc., Enka, N.C.



Photo courtesy of Opus South Corp., Atlanta



Top: Before installing the overburden, Construction Services loose-laid a polypropylene composite with a drainage core and a water-retention fabric on one side on the waterproofed deck. Bottom: The completed Birmingham Social Security Administration Center has achieved LEED® Silver Certification.

Styrofoam™ Plazamate insulation. The crew then loose-laid Colbond Inc.’s EnkaRetain & Drain, a post-industrial recycled polypropylene composite with a drainage core and a water-retention fabric on one side, on the waterproofed deck.

“One of the things we did prior to installing the overburden was install an electronic field vector mapping (EFVM) system to pinpoint any leaks in the

membrane,” Pinkston says. “We used the EFVM method to verify the membrane was leak-free before installing additional components. And we left the system in place so if the owner ever has any problems, we can pinpoint where there is water penetration.”

Next, more than 1,000 cubic yards of growing medium and more than 160,000 sedum plants were hoisted to the roof and installed.

And on the eighth-floor rooftop, Construction Services installed more than 70,000 square feet of Johns Manville polymer-modified bitumen roof membrane. This included one layer of 2½-inch-thick Energy 3 polyisocyanurate roof insulation and a ½-inch-thick perlite roof insulation adhered with Type III asphalt. Johns Manville DynaBase® was installed using Type III asphalt and a torch-applied DynaCap Weld FR cap sheet.

Additionally, 30,000 square feet of Peterson Aluminum Corp.’s 24-gauge Kynar®-coated silver metallic 16-inch standing-seam metal roofing was installed over a W.R. Grace Vycor® Ultra underlayment.

Construction Services took safety precautions during the project, as well.

“A majority of the building had a 40-inch parapet around it, so we didn’t need to use warning lines,” Pinkston says. “We used warning lines for areas where workers were exposed to the edge, and we also had 100 percent tie-off outside the warning lines.”

Meeting a goal

Work on the Birmingham SSA Center’s roof system, the city’s first vegetative roof system, was completed in January 2008. The finished building now houses more than 2,200 SSA employees and includes regional payment and training centers, a childcare center, credit union, cafeteria, fitness center and auditorium.

And the finished roof system has helped the building achieve Silver Certification from the U.S. Green Building Council’s Leadership in Energy and Environmental Design® Green Building Rating System.™

“This is the largest vegetative roof system in the Southeast that I am aware of,” Pinkston says. “The project went smoothly, and we worked for a good client.”

Ashley St. John is *Professional Roofing’s* associate editor.



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