



Fossil Fuel-Free Project

Showcases the Future
Of Construction

BY LAUREN PINCH

A Green



Destiny USA, envisioned to become a 75-million-square-foot hotel, conference and entertainment complex surrounding the Carousel Center mall in Syracuse, N.Y., will be a living laboratory for green construction.

The Great Lakes region used to mean blue-collar business. But as blue-collar jobs have faded, leaving some industrial eyesores along the shorelines, the great producers of cars, steel and beer have adapted to incorporate new profit centers: retail, tourism and mixed-use development.

Along with these new urban developments comes a new industry mindset about building them. These days, traditional blue-collar construction requires some green- and white-collar know-how. And as environmental research and design advances, construction techniques and materials will continue to adapt.

According to a 2007 American Institute of Architects study, the number of cities with a green building program has risen from 22 to 92, an increase of 418 percent since 2003.

This bodes well for green sector economic growth, as forecasts predict five million new green-collar jobs ranging from solar panel installation to wind farm operation will be created in the years ahead.

THINKING BIG, THINKING GREEN

One construction project incorporates the best of everything green construction can offer: adaptive reuse, job creation and training, wireless and paperless technology, biofuel power and minimal environmental impact. And, it pledges to create 120,000 new jobs in upstate New York.

Destiny USA, an impressive vision rising from the shores of Onondaga Lake in Syracuse, N.Y., broke ground last summer after years of planning.

Developer Robert Congel of the Pyramid Companies shot for the stars when he envisioned Destiny USA to include 75 million

square feet of entertainment, research and development space—all to be built as the world's most sustainable project, powered entirely by renewable resources. He plans to create a living laboratory in which the entire project team learns green building techniques and promotes these for the public as the project evolves.

The project uses a \$540 million financing package that includes \$228 million in federal, tax-exempt green bonds. At no cost to local taxpayers, the development model converts property tax payments into bond payments. Despite delays resulting from a legal battle with the city of Syracuse over tax abatements, all financing issues were resolved, and the city gave the green light to move forward in February 2007.

Because the overall vision is vast, the project will be built in phases.

Last July, Cianbro Corporation, based in Pittsfield, Maine, broke ground on the first phase: the \$300 million, 1.3 million-square-foot expansion of the Carousel Center mall in the lakefront district.

What began as a pile-driving subcontract evolved into a consulting role, and once funding was approved, Cianbro began heading up the project as construction manager and general contractor. The company recently completed the pile driving portion of the job, placing 1,133 steel columns into bedrock to support the new mall.

CIANBRO CORPORATION

Destiny



BEFORE
In the 1980s, the shores of Onondaga Lake were known as "Oil City."

Cianbro is overseeing Baker Concrete, the subcontractor in charge of pouring 45,000 cubic yards of concrete to complete the foundation work. As a green measure, 30 percent fly ash will be used in place of portland cement.

Cianbro also will perform demolition work to remove former parking lots and connect the existing mall to the new facility, as well as erect more than 10,000 tons of structural steel.

"It's like an ant farm right now," says Cianbro Project Manager Brian Watson,

who has been involved in planning Destiny USA for more than three years. "We have 200 people onsite, and at peak we'll have 800 people."

GREEN-COLLAR JOBS

As a major player in the green jobs initiative, the project could create 120,000 new jobs and bring millions of tourists to the region.

"One of the accomplishments we're most proud of on the Destiny USA project is the workforce model Bob Congel put into place," Watson says. "We're giving

people opportunities that they wouldn't have had otherwise."

Congel's workforce model recruits new construction employees who, once the project is complete, have the opportunity to manage hospitality at the mixed-use facility. This method builds employee ownership and creates a sense of empowerment for all stakeholders.

"The hiring is not based on past experience, but on willingness to try a new career," Watson says. At least 80 percent of Cianbro's staff is local, and many are learning

AFTER
Currently, Cianbro's pile driving and foundation work is nearly complete as the existing mall remains open for business.



CIANBRO CORPORATION (2)



Equipment to build Destiny USA is entirely powered by biodiesel fuel.

CIANBRO CORPORATION (2)

on the job as truck drivers, certified welders and carpenters, and helpers tying rebar and running jackhammers.

Safety training also has been a large component of the workforce model. Cianbro already has completed nearly half a million manhours of work with no injuries, all on a brownfield site adjacent to an operating retail center that currently sees 60 million visitors each year.

“We have a lot of people here working outside their areas of expertise,” Watson says. “As we’ve put new challenges in front of this team of people, they have responded and produced outstanding results. We are very proud of our team and our partners.”

These individuals will have not only construction experience, but also “green” experience they can take with them to future careers in sustainable management.



Destiny USA

RECYCLING, BIOFUEL AND GPS

Although the Carousel Center expansion is one of Cianbro’s first large-scale LEED projects, Watson and his team dove into the challenge as a site and logistics planning partner with Destiny USA.

“One of Cianbro’s deepest traditions is being innovative,” Watson says. “We helped our client select the right partners, and we asked to be put in a position to have some influence over green building initiatives.”

Cianbro is leading the waste stream recycling process, with more than 95 percent of all construction materials, including asphalt, tires, wood, glass and pipe, being separated and shipped out for reuse. (LEED certification requires only a minimum of 50 percent of materials to be recycled.)

“We have a recycling center onsite that handles more materials than most small cities,” Watson says.

In addition, the entire site is paperless, using software to maintain all project documentation and schedules. The project is running along smoothly with no printers or copiers, and only one scanner.

All construction equipment uses biofuels exclusively, making this element of the project entirely fossil-fuel free. “While the delivered price is higher than diesel, the benefits are pretty cool,” Watson says. “The emissions are dramatically different, with no smoke, no smell and no headaches.”

The project burns 10,000 gallons of biofuel each month, with a total of nearly 200,000 gallons of biofuel burned so far. This fuel is supplied locally, along with the majority of building materials.

Cianbro, site work subcontractor A.P. Reale, Ticonderoga, N.Y., and several project stakeholders signed a memorandum of understanding in September 2006 with the Environmental Protection Agency to measure equipment idle times and monitor the air quality of the jobsite.

In addition to adapting to biofuel usage, A.P. Reale is incorporating GPS technology that indicates to equipment operators whether they are working on the correct grade and automatically balances the machinery.

While a cost exists in terms of training employees on the new green technologies and making time to recycle materials, Watson doesn’t call this a challenge.

“It really isn’t that much more work to build green,” Watson says. “It’s not extra work, just a different kind of work.”

When the entire team operates looking through a “green filter,” he says, eventually no one considers the changes to be unusual or time-consuming, and environmental protection becomes second nature.

For example, when individuals recycle trash in a kitchen, they are doing no more work than if they threw the trash in the old receptacle. The quantity of work is the same; it’s simply executed in a different manner.



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A Cianbro crew member grinds pile ends on the Carousel Center mall expansion jobsite, where 95 percent of construction materials are being recycled.

Green Hospitality On the Rise

Just a few of the nation's green hotel projects include:

- The Fairmont Hotel in Washington, D.C.
- Aquarius Tower in Atlanta.
- "1" Hotels and Residences in Seattle; Mammoth Mountain, Calif.; Scottsdale, Ariz.; and Fort Lauderdale, Fla.

"How are we really determining cost?" Watson asks. "Are we talking in terms of dollars and cents, or in terms of carbon footprint and long-term savings? The benefits most often outweigh any perceived expense of building green."

DESTINY HOTEL

The second phase of the project will create another impressive green facility: the 1,300-room LEED Platinum Destiny Hotel. The project will emerge from a brownfield site once known as "Oil City," where oil storage tanks have been removed along the lakefront and soil remediation is under way.

The hotel will be as green as a project can get. The façade will be clad with solar panels creating savings of more than \$250,000 a year in energy costs. Photovoltaic panels on the hotel roof will generate additional energy, along with a freestanding biomass gasification plant utilizing agricultural and solid waste from the hotel to power the entire facility.

Stormwater capture systems will provide gray water for toilets, cooling,

irrigation and laundry. And, small hydroelectric turbines will generate electricity from stormwater runoff.

Rooms will include individual heating and cooling control, with high-output ultraviolet light to control mold and mildew growth, while low-flow fixtures will reduce water demands.

Materials will be made from recycled sources and acquired locally to reduce greenhouse gases from transporting and shipping. All new wood will be Forest Stewardship Council certified.

And, because the site is a former brownfield, the project encourages redevelopment of blight and preserves Greenfield habitat elsewhere in the region.

Within the next seven years, the

developer also will create the new Emerald 5 ShowTel and Conference Center, to become the cornerstone of a future entertainment complex including an indoor aquarium and water park, a stadium and performing arts center, and a glass-enclosed indoor park and lake.

Plans include 1 million square feet of research and development space in a technology park north of the Carousel Center. Long-term proposals also include construction of a \$750 million monorail connecting Destiny USA to Syracuse's airport, Syracuse University and downtown.

Well into the future, an offsite wind farm could power Destiny's fleet of electric vehicles, and effluent from the city's sewage treatment plant could supplement gray water demands.

These green concepts offer an environmental preservation model to the entire construction industry as green solar-powered hotels sprout nationwide, bringing thousands of green-collar jobs with them.

Lauren Pinch is assistant editor of *Construction Executive*.