



Fostering Regional Development, Design &amp; Construction

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# Two ugly ducklings can make a swan

This pollution control firm hoped to honor its green focus & save on costs. Collaboration helped them do it—and on a fast track—while having a blast



When you make a product that serves an important and sought after need, you have to figure you are going to grow, and, like a first-grader, to grow bigger than your current outfit. That was the case for Neundorfer, Inc. in late 2003. The Willoughby, Ohio-based firm, which supplies electrostatic precipitators and fabric filtration equipment and technologies to reduce air pollution emissions for coal-fired utilities and selected manufacturing plants, had to expand out of its dated home.

The company could have built elsewhere, but it loved its hometown and wanted to stay there. And then there was the green issue. According to company president Mike Neundorfer, “We didn’t want to contribute to urban sprawl and to deal with issues of new construction and extended traffic—stuff that comes with starting from scratch rather than reconfiguring and reusing what you have. We’re in the business of saving energy and minimizing environmental impact—we wanted a solution that honored that focus.” The company had that chance when a neighboring concern, a machine shop that had housed a furniture maker, became available. It purchased the property, planning to unify both structures into one.

## Collaboration was key

Neundorfer formed a collaboration with Doty & Miller Architects and Jordan Construction, Inc. Doty & Miller are specialists in adaptive re-use and green



design, and their own headquarters is a prime example of their work (See *BXM* October, 2003 for more). “Mike Neundorfer is a prince,” says Bill Doty, D&M principal. “He really is into this. We actually met through David Beach, at EcoCity Cleveland. We literally met early in the morning at the West Side Market over brats, which we both love.”

The architectural firm has worked on other green projects with Jordan Construction. Also a supporter was the City of Willoughby, with economic development director Janice Lipscomb contributing valuable input. “Neundorfer had a concept for the building on paper,” says Dave Winston, co-owner of Jordan and project manager on this job. “But we said that we would do the bid process to help them afford it. So we all sat down and found ways to meet their needs. We had meetings pre-bid and post-contract, weekly, sometimes even daily.”

He adds, “We used a lot of value engineering to keep the project

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Bill Doty, D&M principal

cost effective, so we could meet his budget while keeping green. Green can sometimes be more costly, with things that just do cost more, but there are ways around that.

Says Neundorfer, “From early on we wanted to avoid the typical bid process and develop instead a team of partners. We decided on the subs and developed ideas together, in a spirit of trust and cooperation, and that made this project a blast.”

Employees also provided input throughout the process, much of which resulted in changes and improvements to the reconstruction.

While employees wanted doors. Neundorfer’s culture of openness worked against them, but they did get the natural light that was their second request, as well as many other suggestions.”

#### **The green list**

“From the beginning, we were united in our commitment to a sustainable redevelopment that minimized environmental impact and created pleasing aesthetic design, with a responsibility to quality and costs as well,” says Bill Doty, president of the architectural firm. Rich Carnevale, co-owner of Jordan Construction, adds,

“We completely supported Neundorfer in their commitment to the idea of using and disposing of building products with sensitivity to the environment.”

The two very different mid-century buildings, “ugly ducklings,” says Doty, became one white swan, with a whole new face, using masonry infill and metal panels, with a blue vinyl awning used in the Neundorfer brand color to unify the structure, shade windows and create a presence. The space between was landscaped, with the help of Neundorfer’s bother, a landscape architect. A new employee lunchroom now overlooks the outdoor area, which includes a patio and gas grill.

According to Jordan’s Winston, “Mike had his idea for his business flow, but we were able to readjust some of the wall configurations, and that, along with recycled products, gave him a green project and met his business needs. And we did a lot of energy costing, using recycled paper for insulation.” Green principles drove every decision made in the project, from the broad and visionary





**Top:** The original area between buildings was an impermeable surface that led to runoff.

**Above:** Not only does the new landscaping better manage stormwater, it gives lunchroom visitors a better view.

**Right:** Foam insulation makes the new building more energy efficient.

right down to every construction detail. The results are tallied below:

#### Preservation of existing buildings and infrastructure

- Both existing buildings were preserved and joined. A new front canopy, common lunchroom and additional shop floor were added.
- Existing trees and landscaping were kept. Asphalt was removed at the center of the combined buildings to create a natural, permeable courtyard.
- A fire door salvaged from the former furniture factory was reused for a main training room.

#### Use of natural lighting

- Large operational windows were installed, improving indoor air quality and adding daylight.
- Daylighting systems and skylights were added throughout, using prismatic lenses that diffuse natural light and eliminate direct glare.
- Where possible, windows were oriented toward more ambient northern lighting, less tiring than high contrast direct southern lighting.

#### Recycling of construction waste

- Demolished cinderblock and asphalt, and unused aluminum and steel, were recycled
- Drywall and furniture from the original building but not used were found new homes
- All other construction waste was sorted and recycled when possible.

#### Use of rapidly renewable, recycled content and durable natural materials

- Overruns and overstock tile and “green label” carpet were purchased at reduced rates, saving money and materials otherwise headed for a landfill. One coup: blue leather chairs acquired at a fraction of the price of new.
- Another: décor including big US and world maps plus framed photos taken by employees.
- Low-VOC paint was used
- Furniture was all either recycled or floor models

#### Improved insulation for reduced energy consumption

- Thermal foam was added to the roof deck; cellulose was added over the top for fireproofing in addition to foam and cellulose on the underside of the roof to improve thermal efficiency and sound absorption.
- A mixture of cellulose and recycled paper was applied to ceilings for sound insulation and weather insulation.

- Outside walls were insulated and double-glazed windows added.

#### Fast-track

According to Jordan’s Winston, to add to the challenge, the project was a fast-track one, with a firm completion date. Work had to be done while the building was in full operation, a daunting task. “They still had to maintain operations, so we had to keep a close edge,” says Winston. But the task was so well performed that move in in 2005 took only an hour and a half, with just carrying their computers and phones along to plug in.

Neundorfer has since completed the second phase of the renovation, revamping the original building with state-of-the-art training and meeting facilities, including a fitness center—



again using green building practices. Dark wood panels were saved from demolition but covered with 1/4 in. drywall and painted in lighter colors, and the ceiling was covered with insulating foam and recycled cellulose for fire and soundproofing. Again, seconds were used to save money and resources. The company will use these facilities and make them available to their customers and area businesses.

By preserving and renovating these two existing structures using sustainable building and design practices, Neundorfer has created a working environment that not only conserves resources and money but provides a healthier environment inside as well as out.

“This was a series of little decisions that all added up to an incredible partnership, as well as an environmentally sound building, both now and for the future,” says Neundorfer. “If every

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The new team area will have skylights and other daylighting to give workers a more attractive and efficient place to work.

company made similar choices—even smaller companies like ours—the world would be a better place.”

“This approach to building is the wave of the future,” said Carnevale. “Awareness and sensitivity to environmental impact in the building process is definitely increasing.” Adds Winston, “We constantly worked at it, to be efficient, effective and environmentally safe. We stay

close to our customers, so we were able to understand Mike’s needs.”

Doty adds, “One business at a time consciously working to reduce its carbon footprint is all it takes to make a significant difference for our environment. When you have the vision and passion of the owner, you can create ways to use the embodied energy of existing buildings.” **BXM**

## Project specs: Neundorfer, Inc.

**Owner:** Neundorfer Inc.

**Architect:** Doty & Miller

**General contractor:** Jordan Construction

**Size:** 20,000-sf addition purchased revamped and revamp of existing

**Cost:** \$1.6 million for construction, totalling \$2.3 million including the purchase of the other building

**Timeline:** Phase I, 8 months

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