



A four-story addition (left, in photo) provides a modern entry to the office space inside the existing structures (right, in photo).

# Renovation Innovation

By Joe Jun and Andy Johnson



In their original configuration, the industrial buildings featured tall, open bays with bridge cranes.



New steel framing added multiple levels of office space to the tall bays. Two of the buildings used wide-flange beams and the third building (shown) used steel joists.

In a creative renovation and re-use project, several vintage steel-framed industrial structures in West Allis, WI became unique and inviting office space, saving money and natural resources.

Three deserted manufacturing buildings in West Allis, WI, gained a new lease on life through a creative renovation project. Built in the early 1900s, the buildings were part of the Allis-Chalmers Manufacturing Company until the company closed its doors in 1987.

While much of the West Allis Plant was demolished (and much of the existing steel was recycled), approximately 900,000 sq. ft of office and industrial facilities remained. By the late 1990s the buildings were in a state of disrepair.

## Money Matters

Richard G. Carlson, principal of Whittall-Summit developers, and an ex-Allis-Chalmers executive, believed that some of the West Allis Plant could be re-developed. Taking advantage of a \$300,000 grant for environmental remediation from the Wisconsin Department of Nat-

ural Resources, Carlson began working with a design team in 2002 to develop a proposal to convert three of the remaining buildings into an office complex called Summit Place.

To further support the redevelopment, the City of West Allis established a \$4.425 million Tax Increment Financing (TIF) District that encompassed Summit Place. Designed to provide incentives to accelerate project development, the TIF district provides a seven year tax-free loan to help with significant development costs such as escalators, elevators and a three story 450 space parking garage.

The team determined that reusing the existing buildings was less costly than building new on a "green-field" site. "Cost is a significant factor here," noted Carlson. "Buying the buildings, as well as the associated land, cost \$2 to \$4 dollars per square foot of building floor space. For new construction the number,

can be as high as \$35 dollars per square foot. Realistically, when considering the savings due to the existing frame, façade, and various other components, going forward with a 'green-field' project will cost anywhere from \$30 to \$50 dollars a square foot more than a select 'brown-field' project."

Carlson continued, "This provides a significant cost advantage over buying and building new or having to tear down a building, ship everything to a landfill, and then build anew. This upfront savings will significantly reduce leasing rates, making the renovated office space with Class A amenities readily more competitive with even Class B offices."

## Supporting Role

The structural steel frames of the 70-year-old industrial buildings formed the "backbone" of the development plans. Originally home to 300-ton

capacity bridge cranes, the high, open bays were key to the success of the project—to increase usable office space, three new steel-framed floors could be constructed inside the building under the existing roof.

To support the new floors, existing crane beams were reused and relocated onto new steel plate haunches welded to the existing columns. Although it would have been easy to reinforce the existing steel structure to support the new floor levels, no reinforcement was required because office loads (on the order of 50 psf) are much lower than the original industrial load requirements (300 psf to 400 psf). To accommodate new mechanical ductwork, web openings in existing girders were field fabricated and reinforced. Existing roof framing was left exposed and existing skylights were also repaired and upgraded to provide natural light and increase office productivity.

Two floor framing systems were used for the inserted floors. In two of the existing structures, the new floor system consists of open web bar joists supporting a composite metal deck and concrete slab. In the third structure, the floor system uses wide-flange steel beams with a pre-cast hollow core concrete deck. Both floor systems allowed maximum flexibility for locating mechanical, electrical, and plumbing systems.

### Looking Good

The design team chose to capitalize on the “industrial aesthetic” of the complex, which features exposed structural steel frames, 65'-long steel roof trusses, 9' to

26' ceiling heights, windows as tall as 17', 500'-long skylights, large column-free floor plates, and exposed brick walls.

The existing roof framing, and much of the rest of the structure, was left exposed as a clear expression of the buildings' “bones.” Exposed steel was painted to give the structure a renewed look. The addition of new windows and mechanical systems brought the building up to modern day standards.

To tie the complex together, a four-story addition with a four-story atrium provides circulation space and a modern entry to the converted office space. A 220'-long “skywalk,” supported by caissons, was constructed to connect the complex to a new three-story parking garage.

### It's a Wrap

According to Carlson, the renovation provided a significant cost advantage over tearing the buildings down, shipping them to a landfill, and building anew.

“In their unaltered state, these buildings would have continued to deteriorate, bringing down property value for the surrounding neighborhood and acting as a magnet for crime activity,” Carlson said. “The newly renovated complex will benefit the city with increased property values and increased tax revenues for many years to come.” ★

*Joe Jun is the National Project Director for AISC Marketing LLC. Andy Johnson is a former Vice President of AISC Marketing LLC.*



Haunches fabricated from steel plate were welded to the existing steel columns to support the re-used (and repositioned) crane rails.

### Developer

Whitnall Summit, LLC, Milwaukee

### Architect

Renner Architects, Milwaukee

### Structural Engineer

SRI Design, Inc., Verona, WI

### Fabricators and Detailers

ACE Iron & Steel Corporation (AISC member), Milwaukee  
Construction Supply & Erection, Inc. (AISC member), Germantown, WI

### Detailing Software

SteelCAD

### Steel Erector

Danny's Construction Company, Inc. (AISC member), Milwaukee

### General Contractor

Selzer-Ornst Company, Inc., Milwaukee