

# Insight

SUMMER 2003

**Architect:**  
Loebl Schlossman & Hackl,  
Chicago  
**Contractor:**  
Power Construction Co.,  
Schaumburg, Ill.  
**Precaster:**  
Concrete Technology Inc.,  
Chicago



## Resurrection Medical Center Parking Structure, Paxton, Ill.

Precast concrete was chosen for the architectural façade of this four-level, 278-car parking structure due to its crisp visual appearance, designers say. Spandrel panels include feature bands created in form liners, which help to visually tie together the entire structure.

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## Designing Parking Structures

offers significant challenges for architects because owners' goals are expanding while timetables are tightening. To meet both the range of needs and the deadlines, designers are turning to all-precast concrete structures.

"We're seeing more precast concrete parking structures being built today," says Gary Koch, vice president at Walker Parking Consultants in Elgin, Ill. "Where once the split was 50-50 with other materials, it's now shifted to 60-40 precast." The key reasons, designers say, include precast's speed, design flexibility, aesthetic options and long durability.

"Precast goes up very quickly," says Bill McWilliams, senior structural engineer with Flad & Associates in Madison, Wis. "There isn't a lot of waiting between floors to continue construction." The fast erection of the building's shell allows other trades to enter quicker. And precast's ability to erect through harsh winter weather ensures the structure maintains the needed schedule. The precaster also can begin fabrication while permits are approved and the site is prepped, ensuring construction starts quickly.

The long spans precast can create open interiors, notes Koch. That provides better design flexibility to maximize usage, eliminates columns to reduce material costs and opens the interior to reassure users and increase security. "Precasters are giving us more shear-wall options today with more openness in them, too. Open vistas are important for owners." Some also are painting the interiors white to boost brightness. "It's money well spent to produce a better interior."

Aesthetic flexibility is allowing designers to meet tighter standards, says Jib Chapman, a principal at Loebl Schlossman & Hackl in Chicago. "Cities in the planning and review stages are encouraging designers to make parking structures resemble buildings more. More masonry is being used on the façades along with precast, often as inset bricks. There is economy to that approach versus laid-up bricks, and it expands the service of the precaster, eliminating the need for a second trade."

**Architect:** Wood & Zapata, Inc. & Lohan Associates, Chicago  
**Contractor:** Turner/Batton Malow/Kenny, a joint venture, Chicago  
**Precaster:** The Spancrete Group, Waukesha, Wis.



## Soldier Field Parking Structure Chicago

The Waldron parking structure adjacent to Soldier Field is being constructed in conjunction with the stadium's renovation, to be completed for this fall's football season. The two-story oval parking structure will park 2,000 cars in its nearly 500,000 square feet. It includes more than 1,000 pieces of architectural and structural precast beams, columns, panels and planks.

**CALUMET FLEXICORE CORP.,**  
Hammond, IN; (219) 932-3340

**CONCRETE TECHNOLOGY, INC.,**  
Paxton, IL; (800) 788-2370

**COUNTY PRESTRESS CORP.,**  
Eau Claire, WI; (715) 984-7701

**EGYPTIAN CONCRETE COMPANY,**  
Salem, IL; (618) 548-1190

**ILLINOIS CONCRETE CO., INC.,**  
Champaign, IL; (217) 352-4181

**LOMBARD ARCHITECTURAL  
PRECAST PRODUCTS,**  
Alsip, IL; (708) 389-1060

**MID-STATES CONCRETE  
PRODUCTS, CO.,**  
Beloit, WI; (800) 236-1072

**PBM CONCRETE, INC.,**  
Rochelle, IL; (815) 562-4136

**J.W. PETERS, INC.,**  
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**PRECAST CONCRETE  
SPECIALTIES, INC.,**  
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## PBM Concrete Inc.

Rochelle, Ill.

### Gateway Center Parking Structure, Palatine, Ill.

The 389,440-square-foot parking structure features an all-precast concrete structure and was designed to alleviate the city's growing need for parking to service its downtown center and nearby train station. It serves as part of an ensemble of buildings that create a signature entrance to the suburban village.

The exterior precast system incorporates deep reveals, arches, cornices and detailing similar to the nearby office and retail buildings. Once erected, the panels were stained to emulate the exposed-aggregate precast panels on adjacent buildings. Durability of all components was optimized with low water/cement-ratio concrete mix designs and corrosion-inhibiting admixtures.

**Architect / Engineer:**  
*Walker Parking  
Consultants,  
Elgin, Ill.*

**Construction Manager:**  
*Alter Design Builders,  
Skokie, Ill.*



## J.W. Peters & Sons

Burlington, Wis.

### Key Components:

- 83 inverted tee beams
- 84 spandrel panels
- 33 columns
- 40 ramp walls
- 6 shear walls
- 167 exterior walls
- 24 wall panels
- 768 double tees

**Architect:**  
*Flad & Associates Inc.,  
Madison, Wis.*

**Contractor:**  
*M.A. Mortenson Co.,  
Minneapolis, Minn.*

**Engineer:**  
*Flad Structural Engineers,  
Madison, Wis.*

### American Family Insurance Parking Structure, Madison, Wis.

This seven-level, 1,725-car parking structure serves a six-story, 506,000-square-foot office addition to the insurance company's national headquarters. An all-precast concrete structure was designed, featuring panels with "punched" openings similar in proportion to the office building. The panels also serve as backup for the field-laid brick facing that is identical to that used on the office. Plant-placed embedded anchorages to receive shelf angles and embedded dovetail slots to receive brick ties helped secure the facing.

Precast concrete spandrel panels, integrally colored, support the double tees at the structure's two sides that did not relate as directly to the office building. To tie the design together, the upper-level panels above the brick-faced punched openings were built with specially designed panels set back and supported off the wall panels, matching in appearance and tone the all-spandrel condition on adjacent sides.



# regional precast News



## Precast-Palooza: Precast Plant Open Houses

September 9 – October 8, 2003

Members of the Precast/Prestressed Producers of Illinois & Wisconsin are opening their doors to the building and design community. You may attend one or more of the plant tours listed. Bring a carload of colleagues and have a lunch on us.

Most tours run from 10 a.m. – 2 p.m. as an open house. You may arrive any time during the stated hours. The plant tour plus lunch will take about 1½ hours. Tours are free – but we request that you register at least 3 days in advance of the tours you wish to attend.

To register, visit the PPPI&W website at [pppiw.org](http://pppiw.org).



## Regional Precast Design Awards

The **PPPI&W Excellence in Precast Design Awards** recognizes and honors the professional responsible for the design, manufacturing and installation of top quality precast projects. The program also provides an educational arena for architects, engineers and other design professionals to view and learn from winning projects.

Two categories of awards will be recognized, aesthetic appeal and Structural Achievement.

**Entries will be due October 1.** Get a *Call For Entries* on the PPPI&W website, [pppiw.org](http://pppiw.org) or call **(708) 386-3715** for more information.

## Lombard Architectural Precast

Alsip, Ill.

### Key Components:

- 200 architectural panels (39,000 square feet)
- 221 pre-topped double tees
- 13 inverted tee beams
- 8 L-beams
- 16 L-shaped load-bearing spandrels
- 28 exterior columns
- 4 interior columns
- 45 solid flat wall panels
- 12 flat slabs

**Prime designer, parking functional design (striping and signage) and structural engineer:**  
Carl Walker Inc.,  
Glendale Heights, Ill.

**Architecture, mechanical, electrical and plumbing design:**  
Philips Swager Associates

**Contractor:**  
A.J. Maggio, Mount Prospect, Ill.

### Van Buren Parking Structure, Naperville, Ill.

Located in the city's thriving central business district, this 175,000-square-foot parking structure provides employee and customer parking for nearby shops and restaurants. Sensitive architectural treatments for the ground-level storefront facades complement the downtown area.

The structure features a pre-topped precast concrete structural system provided by J.W. Peters & Sons in Burlington, Wis. Enhanced durability features include epoxy-coated reinforcement and corrosion-inhibiting concrete admixtures.

The precast concrete spandrel panels were provided on a subcontracted basis by Lombard Architectural Precast and featured laid-up brick on their face. The city specified the masonry look and decided against inset brick because it looked "too perfect" to blend with surrounding buildings, notes Tom Delaney, vice president and regional manager with Carl Walker Inc.

Precast was a major help in working in the congested downtown area, Delaney notes.



## CORRECTION:

The credit listing in last issue's *Insight* newsletter for the **John H. Stroger Jr. Hospital of Cook County, Ill.**, was incorrect.

The design team comprised:

### Architect:

CCH Design Group (a joint venture headed by Loebel Schlossman & Hackl and including McDonough Associates Inc., Globetrotters Engineering Corp. and HDR Inc.)

### Contractor:

Walsh/Riteway, a joint venture

### Engineer:

McDonough Associates Inc., Chicago

For more information on these and other precast projects, visit our website at [www.pppiw.org](http://www.pppiw.org)

# INSIGHT

## TECHNOTES

### **Q: How does self-compacting concrete aid a precast concrete design?**

**A:** Self-compacting concrete (SCC) features a concrete mixture that incorporates high-range water-reducing admixtures that significantly increase the material's workability and fluidity. As a result, it flows quickly into place, fills every corner of a form and surrounds even densely packed reinforcement. It works best with vertical components that include obstructions to the form near the top, such as tall columns with block-outs. These pieces often can be fabricated much quicker with SCC because of its workability.

Because it flows into place so quickly, SCC can speed the casting, allowing projects to be fabricated quicker and reducing the number of forms used on repetitive designs. It also offers increased strength, higher freeze/thaw durability, improved bond strength and strong aesthetic characteristics, say manufacturers.

It produces high-quality components because it readily fills any gaps, eliminating voids or "bug holes." This also reduces inspection time, reducing time and costs. The smooth finish produced by this fast-flowing material creates an aesthetically pleasing component with a light color and reduced discoloration. The admixtures provide higher compressive strengths than traditional concrete, making it substantially stronger. It also offers less permeability due to the high consolidation of material, allowing it to resist chemical attack. These characteristics improve its durability over other materials.

## Certification Facts

The Precast/Prestressed Concrete Institute offers three types of certification programs that benefit owners, specifiers and contractors:



- Plant Certification includes four general product types: Architectural, Bridges, Commercial, and GFRC. Each has several sub-categories of products.
- Plant Quality Control Personnel certifies three levels of quality-control personnel for plants. Each of the three levels builds on previous educational programs. A separate program certifies inspectors to audit field erectors.
- Field Qualification certifies field erectors in three categories: Simple Structural Systems, Complex Structural Systems and Architectural Systems.

To learn which products members of PPPI&W are certified to produce, see our website at [www.ppiw.org](http://www.ppiw.org) or call (708) 386-3715.

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