



CONCRETE

INNOVATIONS & ANSWERS

News from The High Concrete Group Companies

Issue number 6



Winning Design for Condell Medical Center

This award winning project (PPPIW Excellence in Precast Design) consists of 200,000 square feet of new space, plus 60,000 square feet of renovated space. Included in the newly expanded facility is a 14,000 square foot emergency and intensive care unit, a 14,000 square foot birthing center, a 30,000 square foot surgery department, a renovated radiology department, 20,000 square feet of administrative space, as well as space for a host of other functions.

Three hundred and forty acid etched, exterior architectural precast concrete panels (over 31,000 square feet) are used to enclose the medical facility's exterior. The off-white panels included Lehigh White Cement. In addition, many of the uniquely articulated precast panels are self-supporting, meaning that the precast vertical loads are supported directly by the foundation walls rather than by the structural framework itself - lowering the structural framing cost. Early

collaboration with the design team allowed the designer to develop the most economical panelization without compromising design.

According to Bob Pratt, principal at Pratt Design Studio Ltd., another benefit of designing the precast concrete exterior of the Condell Medical Center is precast's ability to maintain the exterior enclosure construction schedule no matter what the weather. "Using precast panels ensured we could do it in any weather", he says. "If you can generate repetition or have to build in winter conditions, precast makes a lot of sense." A similar structure constructed of masonry would have taken about 5 times longer to complete!

Condell Medical Center

Location:
Libertyville, IL
Design Architect:
Pratt Design Studio Ltd.
Architect:
HDR Architects
Contractor:
Power Construction Co., LLC
Engineer:
Thornton-Tomasetti Engineers



Good Shepherd Hospital

Location:
Allentown, PA
Architect:
Cope Linder Architects
Engineer:
Walker Parking Consultants
Construction Manager:
Alvin H. Butz, Inc.
Owner:
Good Shepherd Hospital

Recent Projects



New Carrollton Parking Garage

Location:
Hyattsville, MD
Architect & Engineer:
Walker Parking Consultants
Construction Manager:
Hensel Phelps Construction Co.
Owner:
Washington Metropolitan Area
Transit Authority



Tyson's Corner Center Parking Garage

Location:
McLean, VA
Architect & Engineer:
Walker Parking Consultants
Construction Manager:
The Pike Company, Inc.
Owner:
WilMorite, Inc.

PRECAST NEWS



Concrete Innovations and Answers® is our advertising tagline and a central theme of our business strategy. We want to deliver innovative products, such as CarbonCast™

insulated high-performance wall and architectural panels, and 15' or 16' wide Double Tees; products that help you design better-performing, more cost-effective buildings. We also want to give you the information you need for your current precast jobs or show you how using precast can give you new design options—or help solve problems on future jobs.

It is in the spirit of providing concrete answers about precast that I recommend the following seminar programs, run by PCI (Precast Concrete Institute), the High Concrete Group, and AltusGroup, Inc. (the company that we helped found to develop CarbonCast):

1. **PCI Design Handbook—6th ed. Seminars (7.5 PDHs/LUs). Full day seminars to review key parts of the newly updated handbook.**
 - a. NYC—March 14
 - b. Philadelphia—March 22
 - c. Washington, DC—March 23

Call 312-786-0300 to reserve your seat.

2. **PCI/ACI Parking Garage Seminars (7.5 PDHs/LUs)**
 - a. Philadelphia—May 4
 - b. Chicago—June 13

Call 312-786-0300 to reserve your seat.

3. **High's "Concrete Innovations & Answers" seminars (8.0 HSW LUs)**
 - a. Springboro, Ohio – April 27
 - b. Paxton, IL – May 3 (full)
 - c. Paxton, IL – May 4 (full)
 - d. Denver, PA – May 11

Call 1-800-Precast NOW to reserve your seat. These seminars are filling up fast!

4. **AltusGroup's "Precast on a Diet" seminars on sustainable building (7.5 LUs) to be held in the first 3 weeks of May in:**

- a. NYC/New Jersey
- b. Philadelphia
- c. Baltimore/Washington
- d. Cincinnati
- e. Indianapolis
- f. St. Louis
- g. Chicago

Call us at 1-866-GO-ALTUS for more details.

We look forward to these seminars not only as a way to exchange information with you, but to say thank you for all you've done, and all you do, to help us grow.

Best Regards,

Tom McEvoy
Tom McEvoy
President

Prentice Women's Hospital

This Chicago, IL hospital is a companion health care facility to the main Northwestern replacement hospital complex located just a few blocks east of Michigan Avenue's "Magnificent Mile" shopping district.

The Prentice Women's Hospital is High Concrete Technology's fifth project for Northwestern Medical Center. All five projects feature limestone-like, buff-colored architectural precast concrete exteriors with light sandblast finishes. This limestone "look" was created to blend with the nearby Northwestern Hospital and medical office building and the Lurie Research Center.

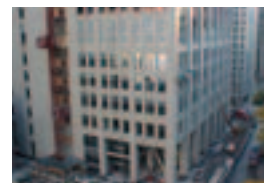
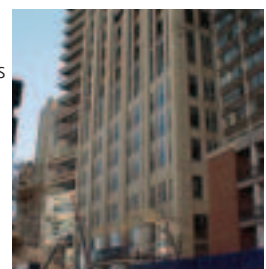
The architects, VOA Associates and OWP&P (V+O) created 1500 pieces of precast spandrels, column covers, and insulated wall panels (totaling 187,000 sq. ft.) as cladding for the 17 story plus penthouse structure.

As with the huge Northwestern replacement hospital/medical office building project, two tower

cranes and two erection crews were employed to erect the architectural precast concrete cladding, because of the construction manager's (Power/Jacob's) aggressive enclosure schedule.

Important reasons for using precast cladding were:

1. Fast all-weather construction
2. Limestone look
3. Very cost competitive in comparison to other systems.



Concrete Innovations & Answers

1.800.PRECAST www.highconcrete.com

A Seminar: Precast Concrete—a Highly Sustainable Building Material

Earn up to 8.0 AIA credits while you learn how precast concrete is the premier sustainable building material for the 21st Century—including innovations that enable lighter weight, greener, and even higher performing products.

- April 27 Springboro, OH
- May 3 Paxton, IL— Full!
- May 4 Paxton, IL— Full!
- May 11 Denver, PA

7:30–8:00am:	Registration and Continental Breakfast
8:00–9:00am:	Sustainable Building with Precast and LEED New! Credits pending
9:00–10:00am:	Thermal and Moisture Protection in Wall Assemblies New! Credits pending Break
10:00–10:15am:	Architectural Precast High Performance Wall System 1.5 HSW LU
10:15am–11:45pm:	Plant Tour and Lunch 1.0 HSW LU
11:45–1:30pm:	Self Consolidating Concrete—Sponsor Program (Sika) 1.0 HSW LU
1:30–2:30pm:	TBD 1.0 LU
2:30–3:30m:	Break
3:30–3:45pm:	Break
3:45–5:15pm:	Parking Garage Design and Construction (1.5) HSW LU
5:15–6:15pm:	Reception

To sign up:

Register online at www.concrete-answers.com or call 1.800.PRECAST.

Cost:

\$50 reservation fee refunded at seminar

Sponsored by The High Concrete Group: High Concrete Structures, Inc., High Concrete Innovations, LLC, and High Concrete Technology, LLC. Co-sponsored by Sika



Wire & Cable Specialties

Location:
Valley Township, PA
Architect:
Greenfield Architects, Ltd.
Engineer:
Baker Ingram & Associates
Construction Manager:
High Construction
Owner:
4CSB Group, LLC



Community Medical Center ER Garage

Location:
Toms River, NJ
Architect & Engineer:
Desman Associates
Construction Manager:
Barr & Barr, Inc.
Owner:
Community Medical Center

MARKETING AND INNOVATION

Gary Graziano, AIA—Vice President of Planning, Product and Promotion



What do the Indianapolis Children's Museum, the Center of Science and Industry (COSI) in Columbus, OH, the newest addition to Varsity Village at the University of Cincinnati, in Cincinnati, OH, and the 31-story Symphony House project in Philadelphia, PA with upscale housing, hotel, and parking have in common?

They all use precast cladding, and in each case, the design and construction team involved the precaster early on to ensure that they could achieve their aesthetic, cost, performance and schedule objectives.

Breakthrough thinking in panelization helped the design team cement its decision to use precast for the Children's Museum. Innovation in structural and mix design made all-precast construction the ideal choice for the industrial-age look of COSI. Creative engineering and design—coupled with innovative forming and installation techniques developed during the design phase—made Varsity Village a reality. And, finally, early-stage design and engineering involvement in the Symphony House project helped the design team achieve the architectural aesthetic they desired with a lightweight cladding while reducing the foundation and seismic loads.

Considering a natural stone or brick veneer? Need a lightweight cladding system or a thermally-efficient, load bearing architectural enclosure system? Want really open plans and fire-safe designs? Maybe precast is the answer.

Precast mixes can be designed, cast in a variety of shapes, and finished to closely match virtually any cut stone—from polished granite to limestone to marble. Stone or tile insets can even be used for special accents. Or, stone or thin brick veneers can be cast in to save time and money in the field. All-precast fire-rated structural wall or framing systems can eliminate steel framing or masonry walls, and when combined with fire-rated precast floors can create safe, flexible, wide-open plans. CarbonCast insulated architectural panels can be used where weight is an issue, or could become an issue due to the depth or shape of the panel—because they weigh less than most other cladding systems. And, CarbonCast high performance wall panels are the best choice for a thermally-efficient structural enclosure that does not harbor mold.

Involving High Concrete early in the design phase gives you access to the engineering, construction and cost advice that will help you choose the right structural system, connections, thermal protection and moisture management systems, panel designs,

materials, colors, finishes, and architectural details to cost-effectively achieve your aesthetic and performance objectives, and beat your schedule and maybe even your budget. We can even help you model your design with our 3-D Tekla software, which will enable you and the rest of your building team to share a common vision, spot problems early, and make the changes needed so that the job meets everyone's expectations.

So, whether your next project requires precast cladding, or an all-precast structure, contact High Concrete for help with the Concrete Innovations and Answers™ you need to deliver your project on scope, on time, and on budget.

StructureCare™

Want to know all about the long-term maintenance benefits of precast before you specify—or how to take care of your precast structure? Call 1.800.PRECAST and ask for the PCI Parking Maintenance Brochure. This brochure will give you the information you need to effectively care for your parking garage for years to come.

Dr. Yoo-Jae Kim, Ph. D—Project Engineer



High Engineer Develops Concrete Answers for FALC

In expanding its Engineering Department to deliver more *Concrete Innovations and Answers*, High Concrete has hired Dr. Yoo-Jae Kim, Ph.D. Dr. Kim has a Doctorate of Science in Structural Engineering from Washington University, in St. Louis, MO, where he studied under the direction of Dr. Tom Harmon, a co-developer of C-GRID™ and CarbonCast™ technology.

As a member of High Concrete's engineering staff Dr. Kim is continuing his research on the mechanical properties of Fiber-reinforced Aerated Lightweight Concrete (FALC) while also working with AltusGroup, Inc. and High Concrete's Ken Baur, PE to advance CarbonCast technology.

One of Dr. Kim's recently published papers provides basic information on FALC's mechanical properties as compared to conventional fiber reinforced lightweight concrete and introduces a predictive stress-strain model for FALC. Lightweight, fiber reinforced concretes are gaining popularity because they can reduce hauling, handling and superstructure costs. Among the conclusions

presented in Dr. Kim's most recent paper are that:

- Highly workable FALC mixes can be achieved by using self-compaction additives and air.
- The amount of air has a greater effect on FALC's structural properties (i.e., compressive strength and modulus of elasticity) than the amount of fiber.
- Higher amounts of fiber increase FALC's toughness index even though fiber has an insignificant effect on the toughness of conventional concrete.

For a complete copy of Dr. Kim's engineering research, call 1.800.PRECAST or email us at concrete.answers@high.net.

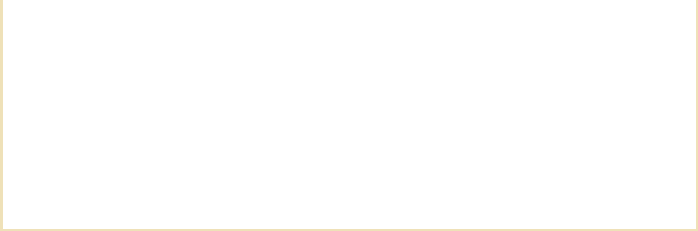


PCI-Certified Precasters

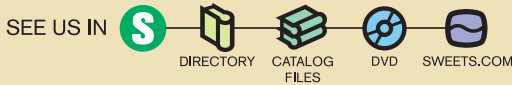
High Concrete Structures, Inc.
High Concrete Innovations, LLC
High Concrete Technology, LLC
c/o 125 Denver Road
Denver, PA 17517

Concrete Innovations & Answers™
1.800.PRECAST (800.773.2278)
concrete.answers@high.net
www.highconcrete.com

PRESORTED
FIRST CLASS MAIL
U.S. POSTAGE
PAID
NEW YORK, N.Y.
PERMIT NO. 4666
FIRST CLASS MAIL



See us in the 2006
Sweets Catalog 03540/HIG



CONCRETE ANSWERS

Dave Schneider—PE, Senior Director of Engineering



Thin brick systems, available in an ever-broadening range of colors, shapes, and sizes, are increasing in popularity. As a result, over the past year, High has completed more than a dozen large projects using thin brick. Some of the advantages of thin brick are:

- **Greatly reduced structural loads:** Traditional brick weighs about 40 psf. Thin brick is 90% lighter, weighing only 5 psf and, in fact, may add zero weight to a structure because it can displace the precast concrete backer—even on ultra-lightweight CarbonCast™ panels.
- **Increased usable interior space:** Since thin brick generally does not add to the overall thickness of

a member, the exterior wall thickness is reduced by 5" to 6", thus adding additional interior space, or allowing a smaller footprint.

- **Reduced cost:** The labor cost to place thin brick during the casting process is only a fraction of the labor cost of field laid brick.
- **Improved safety:** There is no need to scaffold the structure or provide temporary heat. This reduces costs and improves on-site safety.
- **Speed:** Thin bricks are installed in our plants as the precast product is cast so, when erection—which can take place in virtually any weather—is completed, the brick is already in place, reducing construction time by weeks and usually months. Because thin bricks and joints are engineered to

be modular and have tighter tolerances than full bricks, care must be taken in sizing and detailing precast panels and openings so that they work efficiently and aesthetically with face brick modules and corner returns. Good design practices will minimize cutting and incorporate full courses with uniform joint thicknesses. For more information on how to use thin brick in your next project, call Gary Reed at 1.800.PRECAST or send an e-mail to concrete.answers@high.net.

