



HIGH Standards

News From High Concrete Structures, Inc.

SUMMER 2004

NEW! 18" Deep Double Tees and Open Girders for MEGA-Span Total Precast Buildings

Queens Center Mall Parking Garage



In the urban neighborhood of Queens, New York, a seven-level parking garage has just been completed, which services the new Queens Center Mall Retail Center. The new parking structure has added 785 parking spaces, and serves as a link between an existing eight-level garage and a newly expanded section of the mall through the use of vehicular bridges. A brick façade was incorporated on the two sides of the garage that adjoin the residential part of the neighborhood, as required by the City Planning Department. However, for the owner, the most important requirement was to reach completion in time for the busy Christmas shopping season.

Project Team

Owner: The Macerich Co.
Architect: Gilligan & Bubnowski Architects
Engineer: Desman Associates
Construction Manager: Barney Skanska, Inc.
Precast Concrete Manufacturer:
High Concrete Structures, Inc.

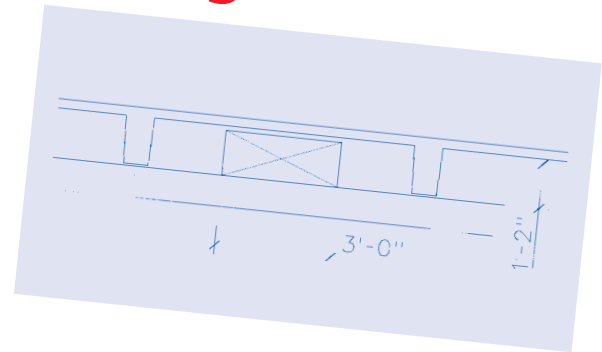
The recent increase in steel prices, coupled with an improved commercial construction market, has created a renewed interest in quiet, thermally efficient and inherently fire-resistant total precast structures for offices, schools and institutions. To better serve the needs of these applications, we have developed a shorter and shallower 15' wide double tee that is ideal for 45'x45" bays. The new tee, with stems spaced at 7'-6", is cast to a depth of only 18" which enables a very generous plenum space for mechanical, electrical, plumbing, communication, fire protection, and security systems. As an example, a floor to floor height of 13'-0" and ceiling height of 9'-0" can provide a plenum space of almost 2'-6" below the tee stems.

The space between the stems can also be used as a plenum area for ducts running in the long direction of the tee. And, when equipped with High Concrete Accessories double tee stem blockouts, can also accommodate piping and conduit fastened to the flange and running in the short direction of the tee.

With a span length of 45', this low-camber, mini version of the MEGA-TEE™ is able to handle code-required live loads of 80 pounds per square foot. Or, with a span length of 40', this tee can handle live loads of up to 115 pounds per square foot. 18" deep tees can be cast with a one-hour rated 3/4" thick flange for direct application of carpet, or they can be field topped for additional fire protection or leveling if required.

The solid girders used to support double tees are normally cast in depths of 24"-34", depending upon span lengths.

In another new development, High has supported research that proves it is possible to cast openings of 8"-14" in depth x 24"-30"



in length through the girder stems to allow passage of mechanical and other systems. And, multiple openings can be cast at regular intervals into each girder if required.

High Concrete's new shallow tee and open girder additions to the MEGA-Span Building System have many benefits which include low initial cost, reduced on-site construction time, faster occupancy and the built-in flexibility to meet the current and future needs of nearly any end-use.

Please call us at 1.800.PRECAST if you have questions, or would like to learn more about how these concrete innovations can provide the answers you need to deliver your projects on time and on budget.

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Letter from the President



Maybe it is the increased price of steel, or maybe it is the impact of the Precast Concrete Institute's (PCI) promotion of the benefits of Total

Precast Systems, but our Mega-Span Total Precast business is stronger than ever. Recent examples of Total Precast buildings include a new dormitory at Cornell University, designed by Ewing Cole, and the Highmark Data Center in Harrisburg, designed by RTKL.

Let us know if you would like a representative to explain the cost, schedule, and performance benefits of precast concrete when you design your next office, school, or apartment building.

One consequence of the strong business at our Denver, PA plant is that we need to expand into a new plant for our growing CarbonCast™ Architectural and Wall Panel business. This plant will focus on CarbonCast, allowing us to dedicate the Denver plant to structural products. We will have more information about the new CarbonCast plant in the next newsletter. As for now, please accept our thanks in making our expansion necessary and possible. Stay tuned.

Sincerely,

Tom McEvoy
President

P.S. If you visited the AIA convention in Chicago, please give us your opinion of the CarbonCast presentation at the AltusGroup booth. You can email me at tmcevoy@high.net.

High Concrete Offers Continuing Education Seminar

High Concrete held its second Innovations and Answers seminar on May 6th. 70 Architects and Engineers from Pennsylvania and beyond traveled to Denver, PA to learn about the latest innovations in precast concrete technology. Architects could earn up to 8.0 Health Safety and Wellness credits to further their education and maintain AIA certification. Courses on designing with architectural precast, total precast systems, and joints and sealants were held all day at the Holiday Inn beginning at 8 a.m., and the day included a tour of High Concrete's facilities. Speakers were Kirk Harmon of Cagley and Harmon, Kevin Collins of Sika Corporation, and Mike Achilles and AJ Sassaman of High Concrete Structures.

Here's what some of the guests had to say about the day:

"Will recommend tour and seminar to colleagues. Tour of plant is a valuable experience, seeing panel samples opens up design possibilities more than any slide presentation can convey...Plant tour guides were very knowledgeable. You have a great crew!"

"Good understanding of precast. Plant tour gave us a good understanding of construction and erection of panels."

"Good job, good seminar. Enjoyable and informative."

"This is a great opportunity to allow architects/draftsmen to see how products that they use in their designs are manufactured. Also it helps them realize the valuable possibilities."

High Concrete is already preparing for our November 9th Seminar at High Concrete which will be a part of PCI's (Precast/Prestressed Concrete Institute) 50th Anniversary Celebration and will showcase the new CarbonCast™ commercial and multi-unit residential precast systems offered by AltusGroup, the nation's first partnership of precast manufacturers. Speakers will include AltusGroup partner Oldcastle Precast and Sika Corporation, and will afford participants a possible 8.0 credits. For more information or to RSVP, call 1.800.PRECAST.

Maintenance Corner

The sun is shining, the birds are singing, and it seems that everyone is either on vacation or dreaming of one. But did you know that this is also the best time of year to think about repairing or maintaining your precast structure?

With summer's extended daylight hours and warm temperatures, maintenance crews can work longer—and concrete repairs cure better with more predictability. It's also

easier to conduct maintenance projects at this time of year because with employees and customers away enjoying some well-deserved R&R, traffic management logistics are easier.

Since summer doesn't last forever and autumn leaves will soon fall, make sure your structure is ready to handle the harsh weather conditions and road salt by arranging for maintenance work now. Call us at 1.800.PRECAST to learn how we can help.

Awards

High Concrete was delighted to be a part of the PP&L project team! The PP&L Plaza was recently named one of the Top 10 Green Buildings for 2004 by *Architectural Record*. Congratulations to the entire team!

PP&L Parking Garage Team
Owner: PP&L
Architect: Edward Farr Architects
Structural Engineer: Thornton-Tomasetti Engineers
Construction Manager: LF Driscoll Co.
Precast Concrete Manufacturer: High Concrete Structures, Inc.



Congratulations to the entire building team for the Merck North Wales project, which just received the top award for Precast Concrete Building Systems by the Delaware Chapter of the American Concrete Institute!

Merck North Wales Project
Owner: Merck Pharmaceuticals
Architect: Ballinger Co.
Engineer: Ballinger Co.
Construction Manager: Turner Construction Co.
Precast Concrete Manufacturer: High Concrete Structures, Inc.



The Portland Cement Association (PCA) is honoring the Continental Airlines Parking Garage with the Association's Concrete in Transit Award for 2004. Congratulations to the team for an excellent job!

Continental Airlines Parking Garage
Owner: Continental Airlines
Architect: Clark Caton Hintz
Engineer: Consulting Engineers Group (CEG)
Construction Manager: Prismatic Development Group
Precast Concrete Manufacturer: High Concrete Structures, Inc.





Gary Graziano, AIA
Sr. Director,
Marketing & Planning

Focusing on Target Markets & Customers

? In our Winter newsletter, we wrote about “a marketing mindset” and how it can help you pick the best economic “waves” to ride by focusing on the one or two things you can do really well, defining your target markets and customer group(s), developing unique, valuable, branded offers for target markets and customers, helping your customers understand how you can help them, and checking up on your customers regularly.

In our last issue, we wrote about “the power of focus” and how if your firm is unfocused, and tries to be everything to everyone, it will be of no interest or value to anyone. We suggested that in finding your focus, it is important to remember that no company has to be the leader at everything and that you can succeed if you are the leader in just one area.

This time we’ll cover how to apply your capability focus (e.g., knowledge, cost or service position) to target profitable geographic, product/service or end-use markets and customers. The best way to find profitable targets is through marketing research. Once you have determined a capability on which you can focus and with which you can lead, the next step is to figure out who needs it and is willing to pay for it. You can learn this either through trial and error—which is usually expensive—or through research.

To identify profitable targets, the kinds of research you can conduct include:

1. Profitability analysis—a review of the work you do based on geography, job type, and customer type. You may be surprised to learn that your best, i.e., most profitable customers, are not who you think they are.
2. Secondary research—a review of published articles, reports, surveys, websites and databases to learn about market and customer size and organization, as well as needs, trends, etc. What you think you know about the market may surprise you.
3. Homespun primary research—a systematic approach to gathering information from people you know through phone calls and surveys. Done right, you may hear things that can help—but that you’d prefer not to hear.

4. Independent primary research – conducted by an outside firm that specializes in marketing research.

Sometimes the best research is the least expensive—because you quickly learn what not to spend any more time or money doing. Profitability analysis is probably the first, best and least expensive research you can do—if you have good records. Secondary research, aided by the Internet, is also very inexpensive. Done properly, it can produce mountains of information which you will then have to reduce to insight by preparing a written report citing the sources and outlining your findings and conclusions.

Homespun primary research can also be very inexpensive, but only if conducted carefully. Done the wrong way, it can lead to some very expensive, wrong conclusions. When doing your own primary research, that is, asking people questions of your own invention, it is important that they are answered honestly, and that they do not lead the respondent or cause them to provide answers to questions that are outside of their experience. Open-ended, reflective questions and responses, i.e., “What do you think about...?”, or “Why did you say that?”, are usually best instead of questions that ask for a Yes/No response. Also, for primary research to provide directionally reliable information, it must be statistically projectable. That is, you should have 30-40 responses to any question you ask. Otherwise, you have only anecdotal information that might not represent how a broader audience is likely to respond.

Independent primary research is the most objective, and also the most expensive research you can perform. The benefits of hiring a firm to conduct research for you are that:

- Sometimes they can get to people you can’t
- You can be sure that it will get done
- You know that the right research protocols will be followed and that the results are factual and unbiased.

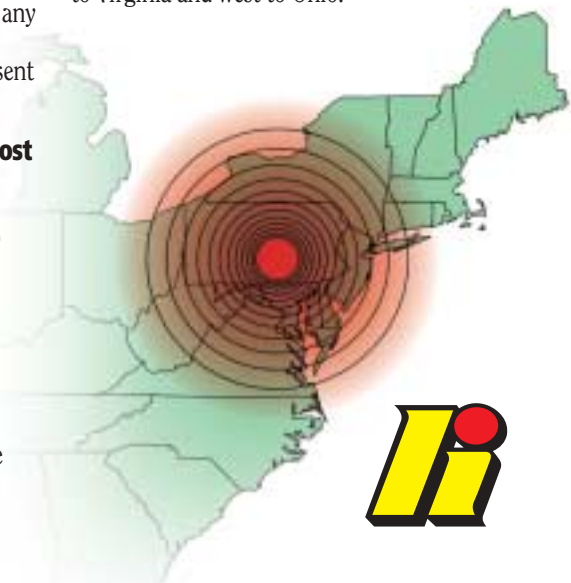
After conducting your research you can pick your target markets and customers—prospects who will appreciate, and pay for what you do. If you can’t find enough prospects within the target that you’ve defined, you will have to develop a secondary focus and other targets—because you can’t give away services to people who don’t need or appreciate them. This desperate practice is expensive, time-consuming and frustrating for everyone involved.

At High Concrete, our focus on innovation is applied to a few targeted product markets:

- Total precast structures made with double tees (parking structures and MEGA-Span buildings), and
- Architectural cladding.

Because we are focused on only a few things, we can afford to stay on top of the market and technology developments that affect them. This intense focus has led to several recent advancements including the new joint-reducing 16’-wide MEGA-TEE™, space-saving 18” deep tees and voided girders for MEGA-Span™ buildings, cost- and time-saving monolithic column and spandrel components for parking structures and MEGA-Span buildings, and the new line of super-lightweight, insulating CarbonCast™ Architectural, Hardwall, Sandwich Wall, and Multi-unit Residential panels.

Our end-use target markets are all of the construction segments that need these products—because any one segment would not provide enough volume to keep our plant busy. For growth, rather than add new product categories that might dilute our focus, we are expanding our geographic target markets instead. As a result, we now serve all states from Connecticut to Virginia and west to Ohio.



If you’d like to learn more about “concrete innovations and answers,” please call 1.800.PRECAST, or send an e-mail to: concrete.answers@high.net.

If you’d like one of our new High Concrete or CarbonCast™ brochures, call 1.800.PRECAST or send us an e-mail at concrete.answers@high.net

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ENGINEER'S CORNER

Post-Tensioned Shearwalls

by Dave Schneider
Chief Engineer



Selecting the system to stabilize a precast concrete structure so that it can resist lateral forces such as earthquake and wind loads, is an important decision in the design process. As such, a thorough review of the advantages and disadvantages of each type of lateral resisting system is one of the keys to a successful construction project.

Often, after careful review, shearwalls are the system of choice for lateral stability in precast construction. Shearwalls are economical to produce and easy to erect, which results in fast construction and occupancy. A common method of constructing precast shearwalls involves stacking discrete horizontal panels on top of each other and connecting the panels together using a series of grouted dowel or welded connections. This system has performed very well over

a number of decades and has matured into a reliable lateral building system.

So, can a proven system be made even better? After a few years of research, it appears that the answer is, "Yes." Under the guidance of the Precast Seismic Structural Systems (PRESSSS) Research Program conducted at Lehigh University, the concept of using unbonded post-tensioning to improve the performance of precast shearwalls was formulated. This system uses vertical runs of unbonded post-tensioning strands to provide the overturning restraint for the shearwall and greatly enhance its dynamic response. The post-tensioning strands are anchored to the foundation and run vertically through conduits to the top of the shearwall. The strands are anchored and stressed at this top location.

How does unbonded post-tensioning make a shearwall perform better in a lateral event?

Because they are unbonded, post-tensioning strands are allowed to elongate as the panel is loaded. Elongation allows the panel to undergo large non-linear lateral displacements without yielding the post-tensioning steel and without a significant loss in self-centering capability. This maximizes the energy dissipation of the system for lateral loading, and thus the dynamic response characteristics of the building. And, as an added benefit, because mechanical connections are eliminated, the new system can cost less.

HCSI is currently constructing a precast parking garage using post-tensioned shear walls and expects to use them in an increasing number of structures in the future as one of the many Concrete Innovations and Answers that help reduce costs and deliver better performing buildings.