

THE STANDARD

FALL / WINTER 2010

BAKER
CONCRETE CONSTRUCTION



INITIATIVES



From the President

Dan Baker, President / C.E.O.

Greetings from Baker Concrete! We hope you enjoy the enclosed update with news from Baker. You've been a part of our success over the last 42 years, and we wanted to stay in touch with you and keep you posted on our progress.

Rest assured we won't overload your mailbox with new issues, and we won't bore you with details. But we do want to share some of our successes and some of our challenges. And we'll limit that to the things we think you're most interested in.

A slow economy has everyone looking for opportunities, and we've managed to get a few new projects that we wanted you to know about, including the University of Texas MD Anderson Cancer Center Mid-Campus Building 1 in Houston. That project included what could be the second-largest mat pour in U.S. history! More details are in this issue on page 4 and page 5. We're also proud of our new work at the Waste Solidification project at Savannah River, and the Inner Harbor Navigation Canal Surge Barrier at Lake Borgne, Louisiana.

But we're also excited about a project that we've assigned to ourselves. The safety of our people has always been our highest concern. And to that end, we embarked on a journey a few years ago to create an exceptional culture of safety at Baker. A culture that would permeate our co-workers and even extend to our fellow contractors, customers, and family. That journey is called Incident and Injury Free, and we are proud to report that the results so far are dramatic and favorable. Some of our results are found on page 6.

Above all, we want to keep this communication simple and to the point. If you have suggestions or comments, please let me know. As always, you can expect a partner with Baker. Thanks for your time, and we look forward to future successes together! ◀



NQA-1 AND MORE



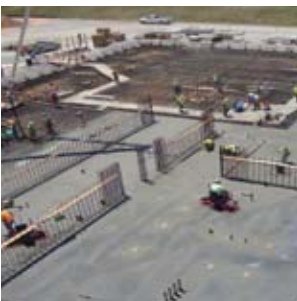
GREAT AMERICAN TOWER

Cincinnati, Ohio

LEED, LEAN and
BIM Project

Baker provides a full-scope of concrete construction and related services including core construction, preconstruction, project management, and specialty construction. We are always seeking to improve our capabilities and meet the needs of our clients. Some of our current initiatives include the following:

- **LEAN:** Baker has been involved with CM/GC-led Lean projects for roughly seven years, and has actively pursued Lean and the Last Planner® System since 2005.
- **BIM:** In 2007, Baker began exploring BIM in the coordination of cast-in-place concrete work and lift drawings with our clients. The process has the potential to greatly improve accuracy in pricing, scheduling and materials. We are continually improving our methods to provide the most accurate cost projections possible, and BIM is big factor in our engineering and estimating departments.
- **LEED:** Since 2003, Baker has completed or is in the process of completing work on 60 LEED® (Leadership in Energy and Environmental Design) Green Building Rating System registered or certified projects. Baker is a member of the U.S. Green Building Council and has multiple LEED APs on staff.
- **NQA-1:** Baker's experience in the nuclear industry dates back several years. Beginning in 1997, Baker began working on several sites under the direction of an NQA-1 program implemented by other contractors. In 2008, Baker embarked on producing its own NQA-1 program, and by mid 2009, Baker had an audited NQA-1 program in place. That NQA-1 program has been fully implemented at the Savannah River Nuclear Solutions site, under the guidance of an SRNS Compensatory Action Plan as prescribed in DOE 414.1.C. Audits to date have been successfully closed.



WASTE SOLIDIFICATION BUILDING

Aiken, South Carolina

NQA-1 Implemented

Baker can be flexible in our packages, services, and scope of work to provide the right solution for you. <



MIAMI INTERNATIONAL AIRPORT MOVER

Miami, Florida

BIM Utilized



University of Texas, MD Anderson Cancer Center Mid-Campus Building 1

*The University of Texas, MD Anderson
Cancer Center Mid-Campus*

*Building 1 (MDACC) is comprised of
three different structures incorporated
into one project. Located in Houston's
Medical Center, those three structures
stretch to 26 stories, 21 stories, and 5
stories respectively. Once completed,
it will house office staff, IT systems,
records and archives. This project
highlights the value and efficiency
of the design/build process, where
Baker worked closely with the general
contractor, Vaughn Construction, and
the architecture/engineering firms,
Watkins, Hamilton Ross (WHR), and
Haynes Whaley & Associates.*

CONCRETE EXPERTISE

The University of Texas, M.D. Anderson Cancer Center Mid-Campus Building 1 (MDACC) project is a shining icon of the strength of American cancer treatment. Consistently ranked one of the best cancer treatment centers in the country, the MDACC will soon house the administrative staff and systems for this world class healthcare facility.

Utilizing Technology

Baker is proud to have taken a role in this technologically advanced project. Appropriately for this project, Baker implemented the IntelliRock™ system that provides real-time monitoring and logging of concrete maturity (strength), temperatures, and temperature gradients.

“Using the IntelliRock™ system allowed the wrecking crew to gain half a day on almost every pour, which is significant when there are three pours per floor and 26 floors. Baker brought the project in three weeks ahead of our original schedule even after an additional floor was added to our scope,” said Garret Benson, Baker Project Manager.

The IntelliRock™ system served two main functions on the project. The first is the more traditional function that consists of monitoring the temperature of concrete over a period of time. The second function is to measure the strength of concrete based on a calculated curve that is determined for a specific concrete mix design.

Mat Foundation

The first function was used within the construction of the mat foundation to help better understand the temperature dynamic within the mass of concrete after it was placed. With massive concrete structures such as this, the concrete cures at different rates throughout the mass. The concrete in the center will get to a much higher temperature, resulting in a higher strength gain, while the concrete at the edges will reach a much lower temperature due to the cooler ground or air coming in contact with the concrete. This variance in temperature may result in detrimental “thermal cracks” within the concrete mass.

To prevent this from occurring, IntelliRock™ sensors were placed at various depths at predetermined locations throughout the mat. The temperature variance from the middle of the mat to both the bottom 3” and top 3” of the mat could not differ by more than 40 degrees Fahrenheit. The pour occurred in December and the air temperature at the conclusion of the pour was at 34 degrees while the center of

the mass of concrete was reaching temperatures close to 130-140 degrees. The slab had to be wet-cured, so thermal blankets had to be utilized over the 60,000+ square feet of mat surface to ensure the concrete temperature at the surface of the mat did not get below the 40 degree variance. IntelliRock™ sensors were recorded twice a day for 30 days to evaluate the temperature dynamic in the mat. Blankets had to be moved during this time to allow for the vertical construction elements and the sensors had to be closely monitored while the blankets were removed.

Horizontal Decks

The second function was utilized within the construction of the horizontal decks. The IntelliRock™ system doesn't measure strength itself, but measures the Temperature (by) Time of the concrete. These two variables are the two main components of the formula that determine the strength of concrete.

In general terms, concrete strength is a function of temperature over a period of time. This relationship creates a unique temperature-time curve for each individual concrete mix design. By running a sample batch of each mix design, creating test cylinders in which IntelliRock™ sensors monitor the temp versus the time relationship, and breaking these cylinders at set times throughout the curing process, a specific curve can be established for that mix design. On a deck that requires the strength of the concrete to be 5,000 psi and requires 75 percent maturity of the concrete before stripping can occur, sensors will be placed throughout the critical components of the deck that can be recorded throughout the day to determine when the deck is ready for formwork to be removed. It reduces the wait time for information to come back from testing labs and the additional time required if breaks come back below the strength requirements. Using this technology on the MDACC eliminated weeks from the schedule.

Time and again, Baker proves that it has the ability to complete the work safely, timely, and with great quality. ◀

Baker Placed Mat Pour

On December 19, Baker placed a total of 17,500 cubic yards (cy) for the MDACC foundation that was completed in less than 24 hours at a rate of 730 cy per hour.

It is second only to the Venetian Hotel in Las Vegas, Nevada as the largest mat pour placed in the United States. ◀



OUR INCIDENT AND INJURY FREE JOURNEY



Jane Beaudry, Director of Safety

Safety, simply, is Baker's way of life. We are committed to creating an injury free and healthy life for our co-workers, clients, and partners. To that end, we have been working toward achieving a greater level of excellence in safety by embracing a concept called Incident and Injury Free (IIF). IIF is a personal and organizational commitment to creating an environment free from injury. It is our on-going journey where we hold ourselves and each other accountable for the safety and well-being of not only Baker co-workers, but also our clients, partners, families, and friends. Moreover, we recognize that safety should not end with the closing of the workday, but must extend to all aspects of our lives.

It must permeate our entire company. Baker's senior management demonstrates their commitment in a number of ways, sometimes by the stroke of a pen or from a chair behind a conference table, but most effectively in person. They walk the jobs. They talk about how important co-worker safety is to them personally. And they actively acknowledge safe work and effort when they see it.

IIF has not only helped make significant life changes for our co-workers and families, but also at our project sites. Statistically speaking, Baker has seen positive progress in our safety numbers that are in direct correlation with implementing the IIF program. Since the program was first adopted, Baker's accident rate and lost case rate have steadily declined. Cost of claims per man-hour, and Baker's experience modification rate have also significantly improved.

These results are encouraging, and help us realize the effects of creating a cultural shift, a new way of looking at ourselves and our ultimate responsibilities. But the IIF journey is far from over. As Baker's projects take our teams to ever-changing circumstances and complexities, our commitment to our co-workers, our clients, and our families is even more pronounced.

In the competitive world of construction contracting, safety is a common cause, a core commitment that Baker is proud to uphold and to share with our fellow contractors. We adopt the very best principles from our colleagues and offer our assistance wherever possible. And Baker is proudly committed to that cause. ◀

PROTECTING THE ENVIRONMENT

In April 2009, the U.S. Army Corps of Engineers awarded its biggest ever civil project to Shaw Environmental and Infrastructure, the Inner Harbor Navigation Canal (IHNC) at Lake Borgne. The 2.4 mile long floodwall will help protect the City of New Orleans from future catastrophic storm surges.

Last September, Shaw awarded Baker the bid package for the construction of the 190-foot-long floating “concrete swing gate” (CSG) structure that is integral to the floodwall project. Today, Baker is building the CSG roughly 200 miles to the west of New Orleans along the Calcasieu River.

Construction

Tasked with constructing and installing a fully operational swing gate system, Baker elected to precast the CSG at an off-site facility and then float the completed structure into place. In addition to its normal concrete scope, Baker is also charged with installing the CSG’s mechanical, electrical, windlass, and ballast systems.

The CSG is divided into three levels – keel, mid-deck and top-deck. Below mid-deck is a network of exterior and interior supporting walls creating water tight ballast tanks. Above mid-deck is the control room and the top-deck creates a continuous road surface when the CSG is in its closed position. All together the CSG will require approximately 3,000 cubic-yards of structural lightweight concrete, 701 tons of carbon steel reinforcing and 113 tons of marine grade stainless steel.

Weighing in at over 10-million pounds, the three-story CSG is much larger than conventional concrete barges, which eliminated many potential construction site locations. Fortunately,

Baker was able to locate and lease a 135’ x 570’, 20,000-ton floating dry dock at Bollinger’s Calcasieu facility located in Sulphur, Louisiana.

Construction within the dry dock began with the erection of a free-standing, 125’ tower crane on the floating working deck. With numerous mock-ups approved, Baker began working in early 2010 on the CSG while the overall design was finalized. All construction tolerances on the CSG are exacting, from wall thickness and their impacts on the collective weight, to setting four 21,000 pound pintle embed assemblies, and creating water tight seals at all construction joints. Throughout the entire process, Baker’s Management and Quality Control Team has worked hand-in-hand with designers INCA Engineers and Ben C. Gerwick, Shaw, and the Corps of Engineers.

Transportation

The CSG superstructure is projected to complete in late October 2010. At which time, Baker will remove all materials and equipment from the floating work platform and strategically place ballast inside the dry dock to offset and balance the weight of the CSG. The dry dock and CSG will be slowly submerged into the Calcasieu River and with the assistance of four large tug boats the CSG will float free from the dry dock. The CSG will then be moored at Bollinger’s facility where it will be outfitted with the required finishes and prepared for towing to the job site.

In early 2011, once the CSG is complete and ready for transport it will be towed by six tugs down the Calcasieu River, across the Gulf of Mexico to New Orleans, and up the Intracoastal Waterway to the IHNC Project site. Once on site, the CSG will be attached to the pivot assembly, moored in the open position, and turned over to Shaw and the Corps in time for the 2011 hurricane season. ◀



Concrete Swing Gate, Inner Harbor Navigation Canal Surge Barrier - Under Construction



NUCLEAR LEVEL PERFORMANCE

First-Rate Quality

In mid 2009, Baker was awarded the Waste Solidification Building (WSB) at the Savannah River Site in Aiken, South Carolina. The 9-acre building site will process liquid waste for the disposal of weapons grade plutonium as part of the government's plan to cut levels of nuclear weapons material. With a 35-month schedule including sixteen divisions of work, Baker is in the process of pouring 17,000 cubic yards of concrete for concentration equipment, an analytical laboratory, a control room, and additional support facilities. The project comes amid a strong push by Baker to perform its work to some of the world's most stringent quality standards.

Baker is performing WSB under the ASME NQA-1 standard, which is more commonly understood as the flagship quality management system used in the

nuclear industry. It governs the organization, management, and procedures of all activities on nuclear rated projects. As part of the WSB requirement, Baker developed and is implementing its own extensive quality program under the NQA-1 standard. The company's program recently achieved industry credibility by passing program audits by both the U.S. Department of Energy and National Nuclear Security Administration.

"The general feeling on the project is one of excitement. We all are grateful and proud to be a part of a revitalization of an industry that has been more or less dormant for many years," said Jamie Piazza, Baker's WSB Project Executive. "We have prided ourselves in being a quality leader in the concrete industry and will persevere to become a leader in this industry as well."

WSB is scheduled to begin processing nuclear materials in 2012. <



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