Excitement Abounds as New Arena Breaks Ground

It’s always exciting when a new arena breaks ground. Big or small; arena projects are a catalyst for new development in the neighborhood where they are built. The new INTRUST Bank Arena in Wichita, Kansas is no exception. Dubbed the Sedgwick County Arena before naming rights were awarded, the INTRUST Bank Arena will revitalize and transform downtown Wichita.

Prestressed Concrete Inc. of Newton Kansas was awarded the project. Howard Schmidt, VP of Production at Prestressed Concrete worked with Ed Baer, Hamilton Form’s VP of Sales on the project. Although the arena seats only 12,000, planning and designing the forms is as complex as a much larger stadium. “Smaller stadiums typically have as many different products as a larger stadium, but not the quantity. When working on a smaller stadium it’s critical that the forms are designed to cast a number of different products.” says Ed.

Fifty and sixty foot self-stressing double L riser forms were designed with a number of different tread fillers and risers. Each form will cast about a dozen different cross sections. Two double hammerhead forms are used for eleven more set-ups. A single 34’ form will be used to cast both the upper and lower tub units.

Howard Schmidt of Prestress Concrete seems pleased with the results and had this comment; “Although it’s been several years since we’ve produced stadia products, our crews had no trouble setting up the forms, finishing and stripping. Hamilton Form designed forms that are easy to work with and set-up for different products. I couldn’t imagine a better partner to work with on this project.”
When Creativity Needs a Push…

Brainstorming

So you’ve identified a process in the plant that needs improvement. Maybe it’s an area where it seems that a normal day involves putting out multiple fires. Maybe it’s an area where the workflow is constantly interrupted. Most likely it’s an area that involves a fair amount of frustration.

You’ve put together a process improvement team. They met, discussed the problem and produced a workflow chart to identify each step in the process. Now it’s time for the team to generate a list of brilliant ideas to eliminate the bottlenecks and solve the problem. The only problem is the “list” of ideas is a whole lot shorter than the list of problems. Now is a great time to engage the group in a brainstorming session.

Brainstorming is particularly helpful when you want to break out of stale, established views so that you can develop new ways of looking at things. Brainstorming not only encourages creativity, it’s a great team building exercise. Plus, studies have shown that there is a direct correlation between the number of ideas generated and the number of “good” ideas.

Here are some tips on how to run a brainstorming session:

- First, review the rules: No criticism, no discussion and no evaluation of the ideas during the brainstorming session. Criticism includes laughing, groaning, praise, raising an eyebrow and other cues that show judgment.
- Encourage participants to break out of the box; the crazier the better. Don’t hold back. Crazy ideas often lead to unique solutions.
- Hitchhike or piggyback on someone else’s idea. Ideas can spark more imagination. This is a team exercise; it’s OK to build on each other’s ideas.
- Next, review the problem to be discussed. Give the group a few moments to reflect and think about the problem.
- Now, take a turn around the room and have each person call out an idea. Anyone can skip their turn and can call out an idea on their next turn.
- When you record the ideas, use the words of the idea generator – don’t try to paraphrase.
- Record the ideas on a flip chart.
- If one piece of paper fills up, start a new piece and make sure you post each piece of paper on the wall so that all the ideas are visible to everyone in the room.
- Keep going until all ideas are recorded.

Now that you’ve generated lists of solutions through brainstorming; the team’s next challenge will be evaluating which ideas have the most merit; that challenge is a bit easier now that you have a list of ideas to choose from.
Pre-Tensioning Steel Forms

Although a great deal has been written about detensioning steel forms, less attention has been given to the tensioning process. Recently, Hamilton Form has taken several calls inquiring about recommended procedures for tensioning strands in self-stressing steel forms. Here are some thoughts.

First, let’s think about what happens when strand is tensioned in a vessel type self-stressing form. Self-stressing steel forms are designed to withstand the hydrostatic force of concrete in the form as well as the compressive force introduced through prestressing. When strand is tensioned in a self-stressing bed, the compressive force from prestressing causes the bed to shorten. When this happens, it is important to measure the amount of bed movement in order to properly calculate strand elongation.

Customers often call to ask how much their bed will shorten under load. This is not an easy question to answer. Many variables can affect the amount of movement involved. A few of the variables you must take into consideration are:

- How the bed is anchored. Beds should be anchored at the center point and then tacked down toward each end to allow free movement. If the bed is anchored or welded in place, movement will be restricted. An anchored form can also cause the form to buckle under load.

- If the bed is anchored to a smooth surface where it can move freely or if movement is restricted by a rough or bumpy surface.

- If there is debris around the base of the form that may restrict movement.

- The amount of stress being applied to the bed.

- Thermal effects. Heat will expand a steel bed, tensioning shortens the bed. You need to know how each is influencing the movement of the bed.

Under many circumstances, a bed will move about an inch for every 100 feet, but the only sure method of knowing how much your bed is shortening is to measure it. Put a reference mark on something stationary at the end of the bed. Tension the bed and measure the difference between the reference mark and the end of the bed. Record the change, and do it every time you tension. Keeping a log book with history will help you understand variables such as temperature, bed set-up and other factors that affect bed shortening.

As far as the process of tensioning, the same methods used in detensioning should be applied when tensioning:

- Ease the bed into tension to prevent stress or warping the form due to eccentric loading. Your goal is to balance the load that is being applied to the form.

- Tension strands in a symmetrical pattern. Move from side to side so that the form is tensioned in a balanced manner. When tensioning a double tee, partially tension one stem; then, move to the other stem, partially tension it and then move back and forth again until the tensioning is complete. This procedure helps balance the stress you’re applying to the form.

- When tensioning a dual, triple or quad pile form, use the same logic. Partially tension one side, then move to the other and back again.

- Another tip is to never pour one side of a dual form and not the other. If you have a triple pile form and need to pour only one pile, use the center, not one of the ends.

- In general, you should tension the lower strands first, then, move up.

- Think about the compressive force that tensioning puts on an empty form. Don’t put unnecessary stress on your forms.

Finally, check with your form manufacturer before you modify the stress envelope of a form. They know how your form is designed and can let you know the safe amount of stress it can handle. It’s also not safe to assume that you can move from 1/2” to .6 strand without checking with your form manufacturer first.

Remember; the only way to know how much your form will shorten under tension is to measure. It’s not something that can be predicted with a formula. Your form, your conditions and your processes are unique and the only way to know how much movement is taking place is to measure it.
The Quality Edge  “Simplicity is the Ultimate Sophistication”  
— Leonardo DaVinci...painter, sculptor, architect, engineer

Magnetic chamfer lays tight against the pallet and side rail for a crisp finished edge.

The finished product reveals the difference: wood chamfer was used on the left, magnetic chamfer on the right.

W hat’s easy to use; provides excellent results and can be used over and over again? Magnetic steel chamfer. Magnetic chamfer holds firm and lays flat on steel surfaces. It reduces set up time and labor versus steel and wood chamfer. It protects your steel forms by eliminating the need to weld on the form. It produces an excellent quality edge and can be used over and over again. What could be easier?

Concrete Industries in Lincoln Nebraska has been using Hamilton Form’s magnetic chamfer for several years with excellent results. “The magnetic chamfer sets nice and tight.” says Barry Richards, CI’s production foreman. “A small amount of caulk is applied to the magnetic chamfer after it is set in place giving the product a nice crisp edge.

Wood or even welded steel chamfer never sets tight from the side rail to the pallet and usually produces oversized or even spalled out edges.” When asked about the added expense for magnetic steel vs. plain steel, Barry adds “It costs more but saves us set-up time, however; the quality of the edge is the main reason we use it. We’ve been using Hamilton Form’s magnetic chamfer for years, and frankly, I wouldn’t go back to steel or wood.”

Hamilton Form’s magnetic steel chamfer comes in 10-foot lengths and is available in 1/2” or 3/4”. 1/2” and 3/4” magnetic reveal strips are also available. Magnetic chamfer is usually in stock and can ship UPS, often the next day.

Piling Form Cleaner

Form cleaning is one of the most difficult and labor intensive operations in a precast plant. Save time and effort when cleaning forms with a form Cleaner Machine. Designed expressly for use in precast plants; Hamilton Form Cleaner Machines clean steel forms quickly and easily. Daily cleaning of forms will prevent heavy build-up from developing and help keep forms in good shape.

Three different machines are available; the Double Tee, Flat Deck and Piling Form Cleaner. The Piling Cleaner has standard roller wheels that allow the machine to roll on 10” to 24” piling forms. Longer rollers are available for wider forms.

The machine features a self contained 13hp electric start gas engine. A handle bail controls engine speed. Engage the clutch to start the brush spinning. The engine goes to idle and power to the brush is disengaged when the handle bail is released.

Brushes are custom made to fit individual form size and shape. Different brushes can be used on the same machine for different size pile forms. The brush assembly is easy to attach and remove. Lifting lugs are located on each side of the engine and can be used to lift the machine.

Proper maintenance is always a good investment. Invest in maintaining your forms with a form Cleaner Machine from Hamilton Form.

For more information call 817 590-2111 or visit www.hamiltonform.com
The University of Texas at Austin and the Texas Department of Transportation (TxDOT) are working together to reduce costs and improve the speed of bridge construction in Texas. A current concern for TxDOT is the simplification of the details used in the end regions of prestressed concrete U-beams and box beams with end blocks.

In response to this concern, the Ferguson Laboratory at the University under the direction of Dr. Oguzhan (Ozzie) Bayrak is conducting a comprehensive study of the bursting and shear behavior of prestressed concrete beams with end blocks. Beams with skewed and non-skewed interior voids with various skewed ends will be studied at release and under shear load. Knowledge gained will be used to design and test beams with simplified end details. These end details will also be tested at release and under shear load to ensure satisfactory performance.

Using skewed voids at the ends of the beams reduces the volume of concrete used in the beams. In addition to the cost savings from using less material, an improvement in durability is gained by keeping end block curing temperatures below the DEF threshold of 160°F. Simplified details at the end regions of the beams will help ease and expedite fabrication.

Hamilton Form recently built a 54" U-beam form with skewed voids and skewed headers for the University of Texas at Austin. The University will study beams cast with these forms in an effort to reduce costs, simplify product details and improve the speed of bridge construction in Texas.

Hamilton Form supplied a complete form package to the University including 54" U-beam sideforms and the soffit they bolt down to, a void assembly that can be set up with 0°, 20°, or 45° skewed ends, and beam end headers for 0°, 20°, and 45° skews. Also included were void hangers, hold downs, and top ties. This package gives the University the ability to cast a variety of different beam end configurations for its research.
A Clean Sweep

Hamilton Form’s new Hydraulic Flat Deck Cleaner removes debris and dirt from steel beds and other flat deck surfaces. The machine is easy to operate and maneuver. Both the speed of the machine and the brush rotation speed can be independently adjusted. The 58” wide polypropylene brush can be dropped as it wears for longer use.

Keep your casting surfaces in good condition by using the Cleaner after every pour. It’s quick, it’s easy and helps maintain your beds for a quality finished product.

Benny Solis - Shipping and Traffic

The shipping and traffic department at Hamilton Form is fast paced, diverse and demanding. It requires a manager that is calm, relaxed and easy going; and that’s Benny Solis. If you have ever been to Hamilton Form’s plant, you know that as a project is completed, it needs to ship to the customer the same day. There is no storage area and most of our customers are anxious to get their new forms and equipment in their plant as quickly as possible. Benny makes that happen.

Benny negotiates rates and coordinates shipping schedules with the production department. He arranges permits and escorts when necessary. He makes sure that the trucks arrive on time and are promptly and correctly loaded. Most orders require multiple shipments and Benny makes sure that each order is shipped complete.

Benny has been with Hamilton Form for 8 years. He enjoys working with his internal customers at Hamilton Form and has developed excellent relationships with a number of suppliers. Benny’s coordination and negotiating skills have saved Hamilton Form and our customers a considerable amount of money over the years.

Sometimes Benny needs a break from the fast pace at Hamilton Form. He very much enjoys quiet time at home with his wife, Mari and Sarah his 2-year old daughter. He likes movies and enjoys an active social life with his extended family and the many friends he has in the area.