

Specifiers & CSDA Contractors Make a Perfect Team

By George Seegebrecht

Specifiers Corner was created to connect CSDA's network of concrete cutting professionals with global specifiers in the industry. The goal is to continue CSDA's efforts to promote the sawing and drilling industry by highlighting the benefits of working with contractors who use diamond tools. The architecture and engineering industries can benefit greatly with diamond sawing and drilling as a resource, and this column aims to showcase just that!

As a friend of Concrete Sawing & Drilling Association (CSDA) for well over 20 years, it is a pleasure to tell you how CSDA has helped me with project work through the years. It all started with Pat O'Brien, Executive Director of CSDA. In fact, I grew to know Pat for about 10 years before meeting face to face.

For 25 years I worked for the Portland Cement Association (PCA) and its consulting subsidiary, Construction Technology Laboratories (CTLGroup). This work required field trips to evaluate concrete problems in different parts of the country. Concrete problems varied widely from low strength, discoloration, cracking, scaling and other symptoms of premature distress or loss of durability. Coring for sampling, examination and testing could be considered routine but there were other projects like examination of fire damaged concrete structures, waste water treatment plants, spillways and sampling the lining of smoke stacks or pedestal water tanks. So, "routine" is a relative description that varies for everyone.

These investigations commonly required obtaining samples of various concrete structures. Our lab had excellent people and equipment, but some jobs didn't economically justify traveling with a crew and equipment to cut a small number of samples for part of the evaluation. Conversely, sometimes the size or complexity were beyond our capability.

We typically searched for test labs or coring companies near project locations who could secure sawn or cored concrete samples intended for examination and testing in our laboratories. This worked fine most of the time but then I found CSDA and I began to develop my relationship with Pat O'Brien. CSDA referred me to member companies that were equipped, skilled and experienced to handle difficult or unique jobs. They did a safe and efficient job of obtaining samples in difficult access conditions.

As time went on, I would call CSDA and request if they had members in Anchorage, Alaska, Port St. Lucie, Florida or Portland, Oregon. They were able to provide me with concrete cutting contractors throughout the county and were frequently able to accommodate different parameters.

Initially Pat would recommend the members that were reasonably close to my next project. After a few years, the CSDA developed a Member Directory, listing members by state.

I bet Pat had the Directory printed to reduce the number of times I called and bothered him!

This helped because other engineers in our office would stop by and ask for my CSDA directory or coring company suggestions when they traveled to different cities. Today it's even easier with member contacts available online. I frequently refer colleagues and clients to the CSDA website which has a search request function.

Let me share a few projects with CSDA members that were made easier due to their skill, availability and experience.

EAST COAST VIADUCT

An evaluation of a 100-year old viaduct on the east coast required core samples to be included from the underside of the in-service viaduct. Coring upside down is much more challenging and it's typically only experienced core drillers who know how to properly perform this type of cutting safely and correctly. First, operators need to safely and securely bolt their core machine to the ceiling to avoid it detaching and injuring operators.

Additionally, operators must be careful of cooling water draining onto the machine from the core hole. It's best to use a hydraulic rig, as they're specifically designed to protect against electric shock when water is involved. If this option isn't possible, operators should be extremely careful and use things like water collection rings, water vacuums and plastic wrapping materials that don't cover vent holes. The contractor for the viaduct job performed their work using some of these techniques and kept the cutting safe and efficient, while also reducing our estimated time in the field. This allowed more time for surveying the overall structure in the field for our report. Cores were extracted in our requested location, without damage due to coring, producing samples that were representative of the condition of this approximately 100-year-old concrete.

RCC DURABILITY STUDY

A study was conducted by PCA to evaluate the durability of newly placed roller compacted concrete (RCC) in various locations around the U.S. that included intermodal yards, military tank hardstands on the west coast, refineries, sea ports and airports. This project called for straightforward coring, but we needed about 30 six-inch diameter cores from each location. Additionally, all core holes needed to be patched so the owner was not left with holes all over his pavement that were subjected to severe and abrasive service conditions. The selected coring contractor had all the tools in one vehicle along with replacement parts in case of a breakdown. The coring contractor even had a concrete mixing drum inside their UPS-type vehicle with batching materials to repair each of the core holes after they were drilled and photographed. Cores were typically taken in one day and included cutting, cataloging, packaging for shipment and repairing of all core holes.

CORE CONDITIONING STUDY

A joint study by PCA and the National Ready Mixed Concrete Association (NRMCA) was conducted to compare the effects of various curing methods on strength of cores and cast cylinders. When testing samples taken from concrete, the standard to follow is ASTM C 42-Standard Test Method for Obtaining and Testing

Drilled Cores and Sawed Beams of Concrete. Questions were raised in the industry about the effect of moisture conditioning of cut cores or beams in terms of their indicated strengths.

CSDA members were engaged to help with a study. For comparison, cores were obtained to assess the influence of curing a sawn specimen prior to strength determinations and compared to cast cores all cured in various



Casting 4" x 8" Cylinders.



4" x 8" drilled cores.

curing conditions. Slabs were cast for the study and then cored to compare eight-inch long cores that were moist cured, air dried and placed in plastic bags. The core values were then compared to results obtained by standard cast cylinders. Cores had to be taken in a timely manner for an accurate comparison. The CSDA member company understood what needed to be accomplished and helped make it happen.

FIRE DAMAGED STRUCTURES

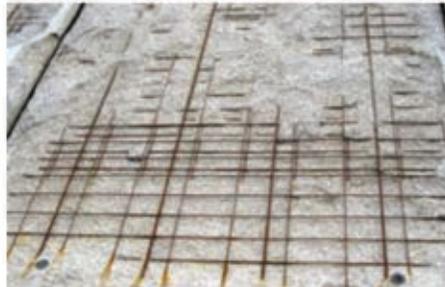
Concrete exposed to fire does better than most materials. Finding out the extent of damage requires examination. Visually a structure may look severely damaged but obtaining samples can provide information on the extent and severity of fire related damage. More significant damage may occur during firefighting efforts, as cold water impinges on the elevated temperature concrete.



Spalling in manufacturing facility exposed to fire.



Closer inspection typically finds only superficial slab damage in most areas and repair of the structure is a viable option.



Spalling of new precast panels exposed to fire. Determining the depth to sound concrete helped direct a repair that removed damaged materials and restored panels with a well bonded shotcrete overlay.

Finally, for engineers and architects doing similar work where concrete samples must be obtained, penetrations must be created through concrete structures, or large sections of concrete are required to be removed as part of repairs or structure modifications, here are a few reasons to explore CSDA as a resource to help with such projects no matter what the size or complexity. Most CSDA members do more than just coring and their individual capabilities are presented in the CSDA directory. Services include: coring of various size core diameters, flat sawing of both flatwork and walls, diamond-wire rope cutting of large or unique shapes, demolition and others.

On that note, just talking to some of the experienced veteran members like Tim Beckman of Cutting Edge Services in Ohio has been so helpful and educational in the

past that it was one of the deciding factors of always calling CSDA first.

WHY SPECIFIERS SHOULD WORK WITH A CSDA CONTRACTOR

Experience

CSDA members cut concrete as their main business line in most cases. They have worked on difficult projects before. Their experience is invaluable. They know the safety issues and most potential problems that could be encountered. If they can't do the job, they will most likely know who can and how a previous job turned out. Chances are, if it was a high visibility project, you might even find an article showcasing such a project in the official magazine of CSDA, *Concrete Openings*.

Location

CSDA's member companies are likely close to a project under consideration. The CSDA member directory found online at www.csda.org lists member companies by state within the United States. Multiple members can be contacted to request bids on work under consideration. Additionally, CSDA currently has 44 international members in 18 different countries, with new members joining each year!

Training

CSDA provides its members with certification and training programs to help provide a consistent level of expertise and professionalism on all projects. This is a reason I am comfortable starting my search with an association member. CSDA members are up to date on equipment use, safety procedures, core hole patching, rebar and utility detection and so much more.

As an engineer who has used the services of many CSDA members all over the United States and Canada, I recommend a visit to the CSDA website at www.csda.org to become familiar with the resources of the association. If you are planning on attending the World of Concrete in Las Vegas, stop by the CSDA booth in the Central Hall and speak face to face with CSDA staff about the training and resources they provide. It could make your next project easier, safer and more cost effective.

In closing, many years ago I was manning a booth at a convention and during some down time looked through the booth directory and was excited to notice that CSDA was exhibiting right down our aisle. I walked over and saw the name tag of Pat O'Brien. I stuck out my hand to say, "We've never met but I have known you for at least 10 years." We've been friends ever since.