



One of the best parts of my job is helping a client solve a problem. A customer will come to me with a challenge; and together with our compa-

ny team, we can usually offer a solution. This is the case when I was first introduced to self consolidating concrete (SCC) in this twenty first century.

As defined by the National Ready Mixed Concrete Association, self consolidating concrete is a high flowing, non segregating concrete mix that can spread into place, fill formwork, and encapsulate reinforcement without mechanical vibrating.

My first project was a control tower at Wright Patterson Air Force Base, Ohio. There were seven floors with a W14x90 column at each corner. The columns were required to have eight, each #9, reinforcing bars – with horizontal stirrups -- surrounded and encased in concrete (24"x24"). The concrete had a drop of 15 feet, and the opening for placement was a tight three inches. To top it off, this project involved the U.S. Army Corps of Engineers (COE). They had never heard of SCC, and they did not want to be a guinea pig.

I'll never forget the day we demonstrated the process. There were three people working on the mix – a concrete plant manager, myself, and an admixture rep -- and over 100 eyes watching. And no, we were nowhere near the infamous, Hanger 51.

Without any vibration, the mock-up -- 24-inch square, 8 feet high columns -- were cored after two days and showed superb consolidation.

Hello... Women at Work!

By Lisa Weaver



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In addition, the compressive strength data was impressive. Test cylinders, broken in one day, averaged 4800 p.s.i. in one day, 6000 p.s.i. in three days, 6800 p.s.i. in seven days, and 7800 p.s.i. in 28 days.

My customer told me that using SCC for this project provided the owner a better product than what was required. Problem solved.

Six months later, this same customer was faced with another

challenge.

This time it was a sound testing, cast-in-place, cone-shaped beast.

The cone was square-shaped at the top and bottom, hollow in the middle, and about 20' long. The walls were 1' thick. The top outside dimension was 8', and the bottom outside dimension was 3'. There were also # 4 and #5 bars at 12" each direction and corner bars. The concrete was placed with the cone standing up. The 8' dimension was on top. Due to the inclined walls and all the reinforcing, conventional vibration was impossible.

Again, SCC came to the rescue of this 45,000 pound monster. Again, the COE was impressed. In this case, the only one who wasn't impressed was the poor worker who tossed his pay stub receipt into the form before placement. His boss wasn't pleased when the paper – complete with his name – was creased perfectly near an outside corner after the forms were stripped.

Then there was the project with the diamond columns and carpet roll. It was only fitting that the Contemporary Art Center in



Concrete Column Form

Cincinnati would demand contemporary concrete.

The concrete columns were an oblong diamond shape encasing a steel column which was more towards one side of the diamond. The steel framework of the building was built first, and then the concrete was poured around the steel columns. The difficulty was that the columns were approximately 16'-18' high and you could only pour into the side of the column without the steel column in it -- obviously. The columns came out so well; the corners were so sharp they were dangerous.

The carpet roll was about 8' high and about 8' wide on the bottom. At the top of the roll was a concrete wall that went straight up 4 floors. The thickness of the roll was nearly 8" at the ends. It was poured in 8'-10' long sections into a form. To make it even trickier, the concrete had to be pumped in from the backside through a 4" hole in the form. The



Stripping Concrete Column Form

back was next to a building just two feet away. This is where the skinniest worker pulled the short straw and had to climb between the buildings for placement.

Yes, the carpet roll -- more like a gigantic genie boot -- had no purpose except to look like "art."

These projects were all grand and did win praise from my customers' peers. However, my most memorable SCC pour was not a spotlighted project.

A college art professor called me. He wanted a nice wall to display pottery, and he had no experience and very little manpower. We agreed to give SCC a try. After it was calculated that the forms would hold the weight, the concrete was placed into one end of the V-shaped wall and flowed with minor help 16-feet to the other end.

There was nothing grand about this project, yet it still means a lot to me to this day.

The reason being, this wall was placed on September 11, 2001.

I visit this project from time to time, just to check on this very special wall in its park-like setting. I remember the past, yet look forward to the future.

Concrete is the second most consumed material on the planet -- water is the first. It can't save all of the world's problems, but it's nice to be able to help solve a few.



About the Author

Lisa Weaver is a sales representative for Ernst Concrete in Dayton, OH. She has been in the industry since 1997. Lisa is currently on the board of directors for American Concrete Institute/Greater Miami Valley Chapter; Ohio Ready Mixed Concrete Association's (ORMCA) Concrete Futures and ORMCA's L.E.A.R.N. (Ladies Educational and Ready Mix Network) in which she is a founder. She is certified in ACI Field Testing and as an ACI Flatwork Technician. She is also a certified Concrete Technician and Sales Certified through ORMCA. Lisa can be reached at lweaver@ernstconcrete.com