

Restoring a Civil War Monument

By Ted Sofis

We're all in business to make money. We bid on projects by offering a plan, production rates, and a schedule and hope to bring things in under the estimated cost. However, every so often a project comes along that we want to do, not for the typical reasons, but we do it because we're part of a community. There is an old Greek proverb that states, "A society grows great when old men plant trees, in whose shade they know, they will never sit." To many of us, it is important to preserve our history and traditions.

Last year, Martin Neaman saw a shotcrete presentation at the Association for Bridge Construction Design meeting given by Bill Sofis, of Sofis Company, Inc. Neaman immediately recognized the advantages of a shotcrete repair and approached us about restoring the concrete foundation around the podium of an old Civil War monument. He realized that shotcrete would provide a practical and cost-effective way to perform the work. Neaman is a retired engineer from Penn DOT's Bridge Unit and Joe Hoesch is

a retired General Electric service representative. They are both involved with raising money and restoring the headstones of Civil War veterans. The two men are members of Company A, 9th PA Reserves, a Civil War reenactment group based at the Andrew Carnegie Free Library in Carnegie, PA.

Their involvement began when they saw the poor condition of the veterans' headstones; and, unlike most of us, they decided to do something about it. In November of 2010, Hoesch and Neaman undertook the project to restore the GAR burial plot at the Chartiers Cemetery and, along with it, the monument's reviewing podium (Fig. 1). The Chartiers burial plot contains 133 Civil War veterans, two of whom are recipients of the Congressional Medal of Honor. The cemetery project can be viewed online on the website of the 9th PA: www.9thpareerves.org.

For this project at Chartiers Cemetery in Carnegie, PA, Neaman and Hoesch began raising money to reset many of the old veterans' headstones that had sunken into the ground. Many of the original headstone memorials were supplied by the county of Allegheny for the burial of indigent Civil War veterans. Some of the headstones happened to be placed over the old wooden coffins. Over time, as the coffins deteriorated, the headstones would sink into the ground, often tilting one way or the other. The donations received are used to remove and reset the sunken headstones on a concrete base, so they don't sink again. The stones are cleaned, soil is brought in to level the graves, flowers are planted, and memorial services are conducted. Neaman and Hoesch selflessly dedicate their time and efforts to this historic restoration work. On Memorial Day weekend every year, their Civil War reenactment group performs a ceremony at the Chartiers Cemetery. During one of these occasions, the poor condition of the monument's reviewing podium became apparent to them. With Memorial Day approaching, Martin contacted me and put the ball in motion (Fig. 2)

When we scheduled the shotcrete repair work, Martin mentioned that he was going to have a troop of Boy Scouts come in beforehand to do some general cleanup in the cemetery. Looking to facilitate the work and pass off some of the



Fig. 1: The Civil War monument at Chartiers Cemetery in Carnegie, PA, with the Civil War veteran headstones in the foreground

labor, I asked about having the scouts dig a 1 ft (0.3 m) deep trench around the perimeter of the monument wall. Before performing shotcrete work on a bridge pier, abutment, or an existing wall, we typically excavate around the base of the wall so the shotcrete continues below the ground level. I figured this would be a good public service project for energetic young men. When we arrived on site, the trench had been dug and we were ready to go. Little did I know, the scouts had rescheduled to come at a later date and the most difficult part of the work was performed by Neaman and Hoesch. They hand-dug the trench and fought the tree roots of the two trees planted at the front of the monument. That brings us back to the Greek proverb about planting trees. It's a good thing there were a couple of reliable old guys around.

With the excavation work already behind us, the adjacent tree trunks and monument's railings were then covered with plastic to shield the granite monument from shotcrete over-spray. Then, the deteriorated concrete was removed. Removing all deteriorated concrete to expose a solid concrete substrate is essential to produce a durable shotcrete repair. After the surface preparation work was completed, galvanized 3 x 3 in. No. 11 gauge (76 x 76 MW5.6/5.6) mesh was installed and anchored in place with J-hook expansion bolts. A prepackaged microsilica-enhanced repair mortar, Shotcrete MS manufactured by Quikrete, was used for the repairs and gunned in place using the dry process. The areas where deteriorated concrete had been removed were filled. Shotcrete, approximately 3 in. (76 mm) thick, was gunned over the entire podium wall area to create a uniform final appearance (Fig. 3 and 4). From start to finish, everything was easily completed in 1 day—a very



Fig. 3: Overview of the site with the dry-mix rig in the foreground



Fig. 4: After the deteriorated concrete was chipped out, the surface was prepared and meshed and the shotcrete was gunned in place



Fig. 2: The foundation wall of the Civil War monument's review stand at the Chartiers Cemetery was badly deteriorated



Fig. 5: Completed shotcrete placement on the monument review stand



Fig. 6: A side view of the Civil War monument after the completion of the shotcrete work



Fig. 7: Company A 9th PA Reserves Civil War reenactment group at Chartiers Cemetery during Memorial Day festivities



Fig. 8: Chartiers Monument completed

short time for concrete restoration work. The dry-process shotcrete used in installation allowed the nozzleman greater flexibility and control to make subtle adjustments in his/her spray pattern and provided an extremely efficient method for repairing concrete structures (Fig. 5 and 6).

The American Civil War ended in 1865 at Appomattox Court House in Virginia approximately 147 years ago, when Confederate General Robert E. Lee surrendered to Union General Ulysses S. Grant. More Americans died in the Civil War than any other war in United States history. The Civil War, to a large degree, defines who we are as Americans and what we have become as a nation. Preserving this history, along with the monuments and memorials of the veterans who served in the conflict, is an important legacy that we should pass on to future generations. Hopefully, this restored monument will be there for many decades to come (Fig. 7 and 8).

Acknowledgments

9th PA Reserves, c/o Andrew Carnegie Free Library, 300 Beachwood Avenue, Carnegie, PA 15106 www.9thpareserves.org.

Martin Neaman is a retired PennDOT Engineer from the District 11 Bridge Unit in Pittsburgh, PA. Neaman was responsible for bridge inspection, bridge maintenance work orders, programming, and bridge inspection contracts. He served in active duty with the U.S. Army Corps of Engineers from 1971 to 1973.

Joe Hoesch is a retired General Electric service representative, who provided repair and calibration services for GE manufactured electronic equipment. He served in the U.S. Navy from 1961 to 1964.



Ted Sofis and his brother, William J. Sofis Jr., are the Principal Owners of Sofis Company, Inc. After graduating from Muskingum College, New Concord, OH, with his BA in 1975, Ted began working full time as a shotcrete nozzleman and operator servicing the steel industry. He began managing Sofis Company, Inc., in 1984, and has over 34 years of experience in the shotcrete industry. He is the Treasurer for ASA, Chair of the ASA Publications Committee, and a member of multiple ASA committees. Over the years, Sofis Company, Inc., has been involved in bridge, dam, and slope projects using shotcrete and refractory installations in power plants and steel mills. Sofis Company, Inc., is a member of the Pittsburgh Section of the American Society of Highway Engineers (ASHE) and ASA.