

Mobile CIPP System Heads to Arizona State Campus

By Michele Brier

If the ground could talk, it would likely say, "Look below the surface and help!"

Like so many other established areas, cracks, holes and other defects occupied the 1950s vintage concrete and vitrified clay pipe sewer lines that lie beneath the pristine 814-acre, suburban campus of Arizona State University (ASU) in Tempe, Ariz.

Other maintenance issues were regularly addressed. In December 2006, ASU established an annual contract with \$35,000 to perform CCTV inspection of more than 10,000 lf of sewer pipe and minor sewer repair maintenance. Despite these preventive measures over the years, a growing structural problem of cracked and defective pipes significantly impacted flow and capacity.

Pro Pipe was tasked with cleaning and video inspecting all sewer lines, and conducting pipe relining and point repairs where needed. Using RS Lining Systems' CityLiner technology, a mobile cured-in-place pipeline (CIPP) rehabilitation system, Pro Pipe overcame challenges such as extreme heat that exceeded 140 F while protecting the campus grounds. Highly engineered to meet growing environmental challenges, CityLiner is a CIPP sewer repair technology designed specifically for repairing deteriorated municipal, residential and industrial pipelines, as well as storm drains, sewers, gas lines and ventilation ducts. Cary, N.C.-based RS Lining Systems is the exclusive distributor of CityLiner in North, South and Central America.

Inside Pro Pipe's specially designed truck was everything that was needed for a traditional CIPP rehabilitation project such as on-board holding tanks for resin and hardener, a mixing unit and a calibration roller assembly.

"This CityLiner truck is amazing," says Pro Pipe regional manager Dean Monk. "Being able to perform all the steps for relining right here inside our truck gives us tremendous flexibility and superior logistical advantages."

The self-contained CIPP impregnation and installation unit on wheels enables jobs to be conducted in a timely manner and specific to the most stringent requirements. Every step of the traditional CIPP process — such as measuring, setting the liner under vacuum and establishing an inversion tower — is handled inside the truck at the jobsite. The results are much cleaner and the potential for hazardous spills or accidents is significantly reduced.

For example, chemicals are mixed onsite using self-contained, high-tech machines. Contractors alter the mix between the epoxy resin and hardener to adjust to changing temperatures



Pro Pipe's specially designed truck is a self-contained CIPP impregnation and installation unit on wheels that enables jobs to be conducted in a timely manner and specific to the most stringent requirements.

"The sewer system was in really bad shape," says Bob Granillo, ASU plumbing department supervisor. "Given that we have the largest student population of any U.S. university, we would have been in big trouble if any part of our system had to be shut off."

But these problems weren't new. ASU's mainline structure was established more than a century ago when it was founded in 1885. Since then, pipe replacements, clean-outs, repairs and

"You don't want to wait until a problem happens before you fix it," Granillo says. "We made the decision to devote the half a million dollars it would cost to repair our sewer lines, fix manholes and a few other immediate needs to avoid what could have been a crisis."

In May 2006, ASU hired Professional Pipe Services (Pro Pipe) of Phoenix for its knowledge, previous experience working with ASU and forward-thinking solutions for pipe repairs.

PIPE RELINING

or time constraints. The epoxy and resin are taken from separate, temperature-controlled tanks through a mass meter to the mixing chamber, guaranteeing an exact dosage of resin and hardener will be placed into the liners. These liners are supplied exclusively by Applied Felts Inc., a CIPP industry leader and world-leading felt liner manufacturer.

About the Project

After the CCTV inspection was completed, GLHN Architects & Engineers Inc. reviewed the video and prepared a condition assessment of the CCTV footage to prioritize work efforts. A complete survey of the entire campus sewer system was made and individual work groups were established to help with multiple problems (i.e., back-to-back reaches of sewer that needed to be lined).

Once the work group scope was finalized, the engineers finalized coordination with ASU staff. The majority of the project consisted

of relining 3,200 lf of mostly 8-in. diameter sewer pipe using the CIPP method. Additionally, 10 manholes were rehabilitated, five new manholes were installed and two manhole benches were rebuilt. Other work included sewer cleaning, electrical upgrades and other minor sewer repairs.

To comply with regulations and ADA requirements, the crew set up security fencing and signage. Additionally, bypass pumping was established to maintain service to many of the buildings.

Overcoming Challenges

Every sewer rehabilitation project has its share of challenges and this project was no exception. Because the campus is heavily populated, the project was conducted during the summer months with fewer people around. But summer months in Arizona meant 100-plus-degree weather. As a result, the majority of the work was conducted during the

evening. The crew worked late into the night to meet the required 90-day deadline. Pipe diameter changes and turns without manholes were other challenges the crew discovered on the job.

These challenges were successfully overcome largely due to effectiveness of the mobile CIPP system, which reduced the entire project time by nearly half. Relining the damaged sewer pipes instead of replacing them saved time, protected the campus grounds and created only a minimal disruption to students and staff.

"We're very pleased with how successful this project was," Granillo says. "We will definitely choose the CityLiner solution again for future sewer repairs — our grounds look great, we saved time and money and most importantly we prevented problems."

Michele Brier is a freelance writer who frequently writes about the trenchless technology industry.



RS LINING SYSTEMS IS ON THE *MOVE.*

We have brought Europe's premiere CIPP technology to America via CityLiner®, the most portable, high quality system available for trenchless pipeline rehabilitation. The exclusive CityLiner® System provides everything you need for a successful CIPP project including the ability to prepare and install epoxy-impregnated liners right on the job site. CityLiner® is on the move and ready to go when you are.

www.rsliningsystems.com • 105 Woodwinds Industrial Ct. Cary, NC 27511 • (919) 481-1977