



By Jeff Boschert

A POSITIVE OUTLOOK FOR THE CLAY PIPE INDUSTRY

We've all seen the prophets of doom and gloom citing the latest ASCE Report Card and attempting to call attention to what is a critical failure in long-term infrastructure planning nationwide. They have a point, but I'd like to present something of an alternative view. A historical view that the clay pipe industry is uniquely qualified to present.

Alternative methods and materials have come and gone in the last 200 years. From large brick and wooden barrel type constructions to Orangeburg, tar and paper, ABS and asbestos cement pipe (to mention only the most common) we've learned much from the shortcomings of past products.

In the early 1800s, when clay pipe was first used in U.S. sewers, there were no manufacturing standards, no design for trench load and bedding class, no such thing as a trench box or air test and infiltration was an intentional part of the design. A rain event was how the sewers would be cleaned.

According to the 1930 Metcalf and Eddy study that became part of the American Sewerage Practice text, 85 years ago 99.3 percent of the population in large cities relied on infiltration to "treat" sewage. Today, infiltration is costly to treat and we realize its effect to the structural integrity of pipelines. As a result, ASTM standards now require that pipe joints SHALL NOT leak.

In a world where the design life of a project is measured in centuries, the trenchless industry is still in its infancy, but it is a cause for great hope for the future. There are strong pockets of expertise in the industry, with more contractors gaining experience every day.

Vitrified Clay Pipe (VCP) — with more than 5 billion ft installed — has been one of the few constants throughout the history of sewerage in the United States. Clay jacking pipe, introduced to the U.S. market in 1990, has become the material of choice for pilot tube or slurry microtunneling projects in 8- to

36-in. sizes. VCP is frequently used in pipe bursting projects and has recently been used to slipline an existing sewer. The impressive compressive strength, superior abrasion resistance and the longest lifecycle available make VCP the choice of trenchless specifiers and installers alike.

Guided tunneling systems, such as pilot tube or slurry microtunneling produce greater accuracy, greater lengths and larger diameters than the early pioneers of the techniques could have ever imagined. Just 15 years ago, the pilot tube method was most commonly used for house connections at drive lengths up to 250 ft. This technology has now grown to install pipes up to 48-in. outside diameter with common drive lengths ranging from 350 to 400 lf. Multiple pilot tube installations with single drives of more than 600 lf have been completed successfully.

Static pipe bursting, using segmented jacking pipe, keeps the shaft sizes relatively small and eliminates the need for a long lay-down area on the project site. This is highly beneficial in high-traffic urban settings where long strings of joined pipe can be problematic. Minimizing inhibited traffic flow, blocked driveway access and local business disruption before and during the bursting operation is another important benefit for communities as they rehabilitate their sewers.

The growth of clay pipe products in trenchless installations is mirrored by the resurgence of clay pipe in open trenches. As the body of knowledge and experience in both installation methods grows and is shared, the unmatched non-corrodible and everlasting ceramic properties of VCP are driving the return to clay pipe around the country.

Once, green was just a color, but today most manufacturers make some claim to being environmentally friendly. Do not be fooled. Only the manufacturers of National Clay Pipe Institute (NCPI) and Ductile Iron Pipe Research Association (DIPRA) have been independently cer-

tified as environmentally friendly. Some other manufacturers attempt to claim some level of green credentials by conveniently omitting the impact their manufacturing has on human health.

There are clay sewer lines in service in the United States today that are nearly 200 years old. These pipelines perform and continue to serve their communities, despite having been manufactured and installed with outdated construction practices and little or no accepted standards governing the materials or installation practices.

We all know that challenges are coming. Alternative materials installed in the 1960s, with a 50-year design life have reached the end of their intended service life. Financing will always be a challenge for a service that most citizens never see and don't really want to think about. Today, many leaders in the industry are adopting an asset management approach, evaluating lifecycle costs and opting to design for the longest, most sustainable service life possible.

Yes, there are many challenges to be addressed, but the engineers are better educated and more qualified than ever. Asset management is now part of the financing and management philosophy of many systems. VCP pipe materials, jointing and installation methods are all vastly improved from even just 50 years ago. Newer construction practices, more sophisticated machinery and exacting production standards are all positive developments. The trenchless industry is still in its infancy, but some contractors and equipment manufacturers have developed significant expertise in the field that makes them important partners in every step of the process. While there is reason for great concern about the future of infrastructure in the United States, there is also reason for great hope.

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