



Malcolm Drilling installed 5-ft secant piles for the TBM launch pit at SR 99 in Seattle.

PHOTO: MALCOLM DRILLING

Underground I

Digging Deep

Innovative technologies and products drive an increasingly busy foundation sector

By Karin Tetlow

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Specialty Foundations Make Sense in The Healthcare Industry

Despite projections that the type of healthcare facilities will change in the years ahead, state-of-the-art medical centers will always be in demand. The evolution of hospital campuses over the last 50-plus years has resulted in an over-constructed situation. Adding current state-of-the-art facilities into an already full campus lends itself well to many of the specialty foundation techniques. Hayward Baker routinely provides solutions for projects where a new MRI or other testing facility, new pedestrian walkway, or even a new medical office building is being constructed on top of or directly adjacent to an existing structure. In these cases, micropiles have been utilized as they can be constructed without disruptive vibration and little noise—qualities that are critical in an operational hospital. Other specialty techniques such as chemical and jet grouting have allowed

underpinning and groundwater control, again without disruptive vibration and little noise, that safely allow structures to be built on top of, beneath or directly adjacent to existing buildings.

In other areas where there is ample space for a new parking garage or perhaps a new medical office building, ground improvement techniques such as VibroPiers™ (aggregate piers) provide a much more economical solution than conventional deep foundations. In areas with high seismic risks, Hayward Baker has utilized soil mixing to prevent liquefaction and to provide a solid foundation for new patient towers. Soil mixing can be designed to keep the critical structures functional after even multiple seismic events.

Healthcare providers face ongoing challenges, including providing safe and economical patient care. Funds are often strained due to demands of aging



For the Florida Hospital in Orlando, Hayward Baker constructed a jet grout secant pile wall and sister company HJ Foundations constructed auger cast deep foundations.

infrastructures, facility operations, expansions on already over-constructed sites and regulatory compliance. Geotechnical construction firms like Hayward Baker provide economical geotechnical solutions for planned and existing healthcare facilities to help ensure the safety and best treatment of patients and faculty. ■

Engineered Solutions for Underground Work

Malcolm Drilling Co. Inc. has been in the specialty foundation business for more than 50 years. John Malcolm established his company on a strong foundation of hard work, dedication and an unwavering commitment to clients and to the pursuit of new technologies. The company has experienced tremendous growth while still operating as a family-owned business and is now recognized as one of the country's foremost practitioners and authorities in deep foundation, retention systems and ground improvement work, operating the largest fleet of drilling equipment in the country (valued at over \$200 million). Malcolm is committed to reinvesting capital back into the company in the form of state-of-the-practice equipment and cutting-edge technology. This allows the company to serve client needs on a broad geographic basis, taking on a diversified



Malcolm Drilling installs large-diameter oscillator shafts in San Francisco.

portfolio of challenges and successful projects, from modest size to those exceeding \$50 million.

To facilitate its far reach, San Francisco-based Malcolm has operating offices in Hayward, Seattle, Salt Lake City and Los Angeles, with one currently in development in Florida. These offices are able to operate autonomously but will join forces whenever the project requires an overall company effort.

By combining its deep understanding of engineering along with new

technologies Malcolm has positioned itself in the forefront of innovation. Twenty-five years ago, Malcolm introduced modern double rotary anchor drilling technology. Fifteen years ago, Malcolm was the first to bring fully cased drilled shaft technology to North America and five years ago, Malcolm extended the limits of ground improvement technology with unique cutter soil mixing (CSM) and single point mixing applications.

Malcolm's experience and large pool of well-experienced and talented engineers as well as skilled field personnel facilitate a design-build approach to projects that allows for timely collaboration with owners and contractors. With several very large design-build projects successfully completed, Malcolm continues to stay apprised of the industry while developing new means and methods generated from ongoing equipment innovations. Evolving management structure will continue to support and expand growth and afford more opportunities to better serve customers. ■