

THE CONNECTION

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F&R Plays Key Role in Redevelopment of the Richmond Riverfront

More than ten years after the \$52 million Richmond Canal Walk project was completed, the potential tourist destination was a seldom used locale. Why? A former Reynolds Metals plant located in the middle of the Walk has formed a barrier to access that requires visitors to navigate a labyrinth of stairs and footbridges to access the Canal Walk.

Developers have now begun moving forward with a \$40 million renovation of the site which will result in both easy access to the Canal Walk as well as create new shopping and residential space.

This multi-building, six-acre site will be converted (via restoration, demolition, and new construction) into a mixed-use facility with more than 170 apartments.

Froehling & Robertson, Inc. is a member of the redevelopment team and recently performed a hazardous materials survey at the site. This investigation involved the identification of asbestos containing materials, lead-based paint, other potential concerns (mercury contain-

ing thermostats, PCB containing light ballasts, etc.).

A Virginia Licensed Asbestos Inspector conducted a survey for asbestos containing materi-



als. The survey was conducted in general accordance with National Emission Standards for Hazardous Air Pollutants regulations, and samples of suspect asbestos containing materials will be analyzed by a trained asbestos analyst using polarized light microscopy with dispersion staining techniques.

F&R also has Virginia Licensed Lead Inspectors on staff that performed lead based paint surveys in general accordance with the U.S. Department of Housing and Urban Development Guidelines for the Evaluation and Control of Lead-Based Paint Hazard in Housing." A Niton X-ray Fluorescence Lead

Paint Analyzer is being used to screen surface coatings that may contain lead.

Furthermore, a survey was performed to identify other potential hazardous materials such as mercury containing thermostats and lamps and polychlorinated biphenyls (PCB) containing light ballasts.

It should also be noted that most of the reviews were performed under

particularly trying conditions. These included requiring F&R technicians to collect material samples on the roof of the existing structures in high winds and in temperatures well below freezing.

All of the work performed by F&R's professionals had to be completed under an accelerated deadline, with all field testing needing to be completed in roughly half of the time such projects normally take.

F&R is proud to be part of this important project which has the potential to reshape Richmond's entire downtown landscape.

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SINCE



1881[®]

Utilizing Pile Driving Analysis to Assess Deep Foundations

The Pile Driving Analyzer (PDA)[®] is the world's most widely employed, state-of-the-art method (ASTM D4945) for assessing the quality of deep foundations by dynamic load testing and pile driving monitoring. For driven, cast-in-place, or bored piles, dynamic methods can be applied to assess the capacity of a substantial number of service piles in a single day for less than the cost of a static load test. The PDA is a fast and economical alternative to static load testing.

During the pile driving process, the PDA gives additional information about driving stresses in the pile, hammer performance and the integrity of the pile. It calculates its results from velocity and force signals obtained by accelerometers and strain transducers attached to the foundation element during initial pile driving, pile restrike or as a drilled shaft or auger cast pile is impacted by a drop weight.

A CAse Pile Wave Analysis Program (CAPWAP) analysis of the PDA data is essential for a dynamic load test. By precisely modeling the soil response to impact, CAPWAP calculates the static bearing capacity of the deep foundation and its distribu-

tion along the shaft and end bearing. In addition to the



resistance distribution, the CAPWAP analysis provides a static load test simulation that correlates with actual static load tests. Extensive correlations between CAPWAP simulated and actual static load tests have proven the reliability of this method of determining foundation capacity.

Logical site specific driving criteria can be developed utilizing hammer and driving information provided by end-of-drive and restrike dynamic testing performed over the project site. Due to its proven effectiveness and economy,

dynamic load testing has replaced the static load test as the most utilized method for determining the capacity of a pile foundation.

Why Utilize a PDA-Capable Consultant?

Assessing foundation integrity and bearing capacity utilizing the PDA in conjunction with CAPWAP analysis can save you considerable time and money. By utilizing this approach, a qualified consultant can quickly provide:

- Constructability reviews.
- Value engineering recommendations.
- Testing of several piles (onshore or offshore) in one day at less than half the cost of a static load tests that typically require several days.
- Additional pile and hammer information, not provided by static load tests, which can be used to increase productivity during pile installation operations.
- Accelerated job schedules.

Christy Slaw Promoted to Environmental Services Manager

F&R is pleased to announce that Christy Slaw has been promoted to the position of Environmental Services Manager for our Richmond Office.

In this position, Ms. Slaw will have oversight responsibility for all environmental projects undertaken by the Richmond environmental staff.



Ms. Slaw has been with the company since 1997 and has been a valuable asset to F&R since

that time.

She is a Senior Environmental Professional with technical and field experience in the areas of Environmental Site Assessments and Impact Reviews, as well as industrial hygiene, environmental compliance, and safety issues.