



... leader in the foundation engineering field

Projects in Cambridge, MA





geotechnical & foundation specialist

TREVIICOS is the North American subsidiary of TREVI, established in 1997 when the group's underground engineering and tunneling division acquired Icos Boston, a company with a 40 year history of success and innovation in the U.S.

As a full service ground engineering company, TREVIICOS provides advanced applications, a broad range of techniques, and the highest levels of expertise to guarantee safety, quality and on-time project delivery.

Our goal is to become the geotechnical contractor of choice in the Northeast and for dam and levee rehabilitation projects throughout North America, as well as the showcase for TREVIGROUP around the world. Excellence in safety and quality, and partnering with our clients are our cornerstones.



... taking ground engineering
to a deeper level



Fogg Museum
Harvard Law School
Hasty Pudding
BCG Riverside Housing
Northwest Labs
90 Mt Auburn Street
60 Oxford Street
Oxford Street Garage
Western Avenue Harvard Graduate Housing
Harvard Life Sciences Bldg

Being a service company, our success is based on our ability to exceed our clients' expectations. To that end, we demand professionalism and a shared vision from our team, while providing them with the necessary tools to put their skills into practice.

We can only be as effective, authoritative and resourceful as our team; our aim is to create a work environment in which all individuals can grow to their maximum potential. Working as a team and adopting a collaborative approach to efforts and problem-solving is one of our trademarks. This, combined with the knowledge, experience and the ability to offer the best services in underground construction, poises us as an industry leader in the North American market.

Harvard / Fogg Museum Art Museums



Located on Broadway between Quincy Street and Prescott Street in Cambridge, Massachusetts, the building will be a five-story addition to the original museum with two levels of below grade space. The foundation work consisted of the construction of SPTC (*Soldier Piles Tremie Concrete*) slurry wall that serves as a bulkhead to retain the surrounding soil for the site improvements during and after construction.

In addition to the renovation of 104,000 square feet of museum space, the museum will be expanded by 100,000 square feet. The new facility will centralize the collections, galleries, and curatorial staff of the Fogg, Bush-Reisinger Museum, and Arthur M Sackler Museums in one state-of-the-art facility.

FOGG MUSEUM | Harvard University - Cambridge, MA



The 750 foot slurry wall was constructed as SPTC (Soldier Piles Tremie Concrete), with thickness of 36" and ran an average depth of 50 feet to accommodate the foundation layout and the particular design. More than 300 tons of steel and 3000 cubic yards of concrete were used in the construction of the SPTC Wall.

Harvard Life Sciences Bldg Cambridge, MA



HARVARD
Life Science

The challenge on this construction site was to design and build an architecturally distinctive building symbolically expressive of its cutting edge research. The building provides environments that are pragmatically supportive, architecturally inspiring and welcoming to researchers, the Harvard community and the visiting public.

TREVIICOS was part of the construction team, building 900 LF of soil mix wall for the support of the excavation of the building foundation within a few feet of active classrooms and science laboratories.





Oxford Street Parking Garage

Oxford Street Parking Facility Cambridge, MA

Oxford Street Parking Facility is a two level office space with five underground levels. It is located on a 70,000 SF area bordered by public streets to the North and East and Harvard University research and laboratory buildings on the South and West. An 835 foot cast-in-place reinforced concrete slurry wall was constructed to serve as both the temporary earth support system and the permanent foundation wall. The slurry wall surrounded the site from the North, East and South. The building was constructed using the top-down construction method where 44 LBEs were used to support the individual building columns prior to site mass excavation. The lateral bracing of the excavation is provided by the permanent floor slabs. The slurry walls were installed to a minimum of 15 foot below the bottom of mass excavation, both for lateral stability and to act as a groundwater seepage cutoff.



60 Oxford Street Cambridge, MA

This building is home to Harvard University's Information Systems and Division of Engineering and Applied Sciences. The LEED Certified building accommodates a large program of classrooms, academic offices and laboratories. TREVIICOS constructed the basement for this building in 2001, three sides of the basement building (approximately 500 LF), were soil mix walls and the fourth side was built with traditional slurry wall. The fourth side became a common wall between the basement of this building and the Oxford Street Garage, which was built the following year.



90 Mt Auburn Street Cambridge, MA

90 Mt. Auburn Street is a Harvard University four story library with two levels of below grade space. The site occupied a 6,000 SF area bordered by a public street to the North, and residential buildings to the East, West and South. The reinforced concrete diaphragm wall serves as both the temporary earth support system and the permanent foundation wall. TREVIICOS installed 14,000 SF of reinforced concrete diaphragm wall. The slurry wall was installed to a minimum depth of 15 feet below bottom of excavation to act as a groundwater seepage cutoff.

The footprint of the building occupied the majority of a very small and restrictive site. TREVIICOS used one crane that was used to excavate the panels and service the site and the concrete pours. Because of time restrictions imposed to appease the residential abutters, removable end stops were used. Given the proximity of the adjacent structures and the heavy vehicular and pedestrian traffic, careful planning and a commitment to executing safe work practices was critical, especially when hoisting and placing the reinforcing cages.



HARVARD LAW SCHOOL - NW Corner Cambridge, MA



HARVARD
LAW SCHOOL

Located at the corner of Massachusetts Avenue and Everett Street in Cambridge, Massachusetts, the Law School building is a six-story academic student center. The foundation work consisted of the construction of a 36" thick slurry wall and load bearing elements (LBEs) for top-down construction of the structure, which includes a basement level plus four levels of underground parking. The 1000 foot long, 80 foot deep slurry wall serves as support of excavation and permanent foundation wall.

The slurry wall and LBEs were constructed through layers of fill, organic deposits, marine deposits of sand and clay and glacial till. The glacial till in that area is known to be very hard with numerous areas of nested boulders.



The slurry wall and LBEs were constructed in a close proximity to the MBTA Red Line tunnel and to Harvard University's Harkness Building, which houses many students and academic activities. This dictated a very low tolerance for noise and vibrations during construction of the slurry wall and LBEs. Considering the nature of the soil, TREVIICOS elected to use a SOILMEC SC-120 Hydromill in order to minimize the noise and vibrations through the till and, giving the sensitivity of the location, reduce the desanding time.



BCG - Riverside Housing Cambridge, MA



HARVARD
Campus Service

The Banks, Cowperthwaite Grant Residences were built for Harvard Graduate students in 2005 / 2006. TREVIICOS built the two and half level underground parking garage for this building which included more than 900 LF of slurry wall, 50 feet deep through dense till with many large cobbles and nested boulders. TREVIICOS' work also included installation of an internal bracing system with tiebacks.

The project was completed in August, 2007 and achieved LEED Gold certification in December, 2007.

Western Avenue Harvard Graduate Housing Cambridge, MA



HARVARD
Campus Service

This high rise building for graduate student housing opened in 2003 and has an LEED silver rating. TREVIICOS constructed the 1200 LF slurry wall 55 ft deep, for the three level underground parking garage, which houses 625 cars. TREVIICOS' work also included the mass excavation, 610 tons of internal bracing and 170 tiebacks.



Harvard University: Hasty Pudding Theatre Cambridge, MA



The New College Theatre project is the renovation and expansion of the famous and historic Hasty Pudding Theatre in Harvard Square. The expansion occupies an area of approximately 6,400 square feet. The site is located on an extremely congested and narrow street. The vehicular entrance to the site fronted Holyoke Street, a narrow, one-way, heavily trafficked street in Harvard Square. The entrance consisted of an alleyway approximately 15' wide that was created by demolishing the west porch of the existing theater.

As such, it could not accommodate travel of the assembled service / excavation crane. The logistical and spatial problems extended into the site as well. Careful coordination and clear communication was crucial to the successful completion of any task, from the delivery of small items to the delivery of panel reinforcement and concrete pours. Because the site entrance fronted part of the slurry wall and mass excavation, a temporary deck was installed in the southwest corner of the site. The deck was designed to support a CAT 345 excavator and a fully loaded spoil truck. The temporary deck was supported on the slurry wall and a load bearing element installed by TREVIICOS.

The 30" wide, 300 foot cast-in-place reinforced concrete diaphragm wall served as both the temporary earth support system and the permanent foundation wall. Excavation was performed by cable suspended clamshells to a depth of 52 feet. The reinforcing cages were fabricated on site. Cages were congested with rebar added for the bracing, bracing plates and permanent plates for the structural members, and utility penetrations. Excavation, pouring and cage fabrication had to be carefully coordinated to minimize any downtime or interferences. Prior to mobilizing the slurry wall equipment onsite, the remaining portion of the Hasty Pudding Theatre fronting the new construction required underpinning and the soil needed to be stabilized or improved. TREVIICOS installed 7' diameter jet grout columns centered along the alignment of the slurry wall.

The jet grout columns extended from the sand at grade and penetrated into the underlying marine clay approximately 20 feet below. The jet grout material served as the base for the guide-walls.

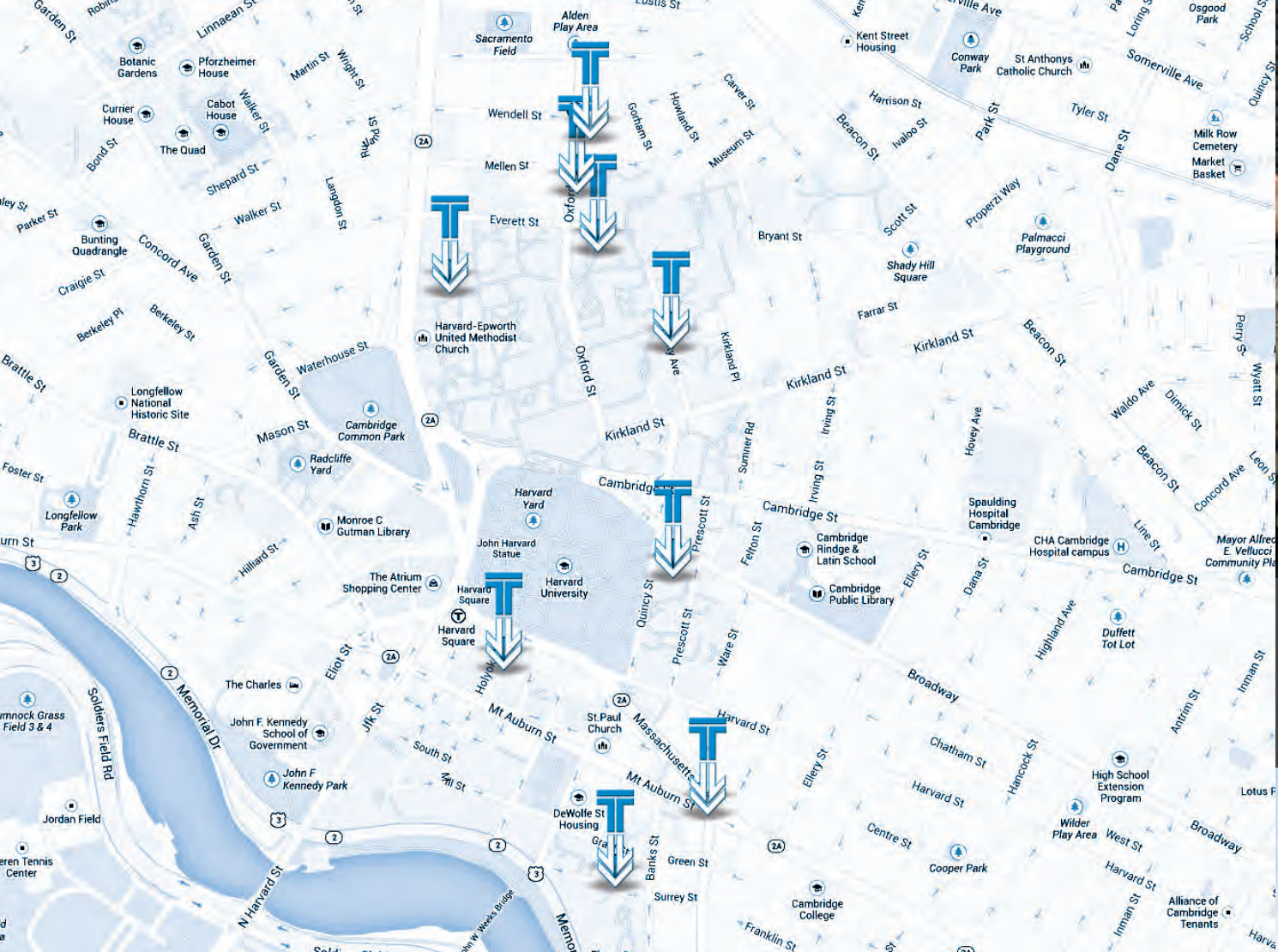


Northwest Science Building Cambridge, MA



This is an award winning multi-disciplinary research center for neurosciences, bioengineering, systems biology and compensational analyses. The building houses laboratories and nine classrooms, managing facilities, and research collections. 60% of the usable space is located in the four level underground spaces which were created inside the 1400 LF slurry walls built by TREVIICOS and a Joint Venture partner in 2007.

This project is one of the largest privately owned slurry wall foundation projects to have been constructed in New England in several years.



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