



Project Spotlight

University of Massachusetts, Boston MA



Owner: University of Massachusetts
Installer: inTerra Innovation, Inc.

Designer: GZA Geoenvironmental, Inc.
General Contractor: J. Derenzo Company

Background Information

Situated on Boston Harbor, UMass Boston is the city's only public research university, and attracts a diverse population of more than 13,000 students each year. Because of its unique location on the harbor, the university grounds require careful engineering and maintenance to minimize the settlement of soft, saturated soils and maintain the structural integrity of both old and newly constructed roads, parking lots and sidewalks. In the summer of 2018, the university decided to complete a renovation project on a number of areas to address these potential issues.



Project Details



In order to address the concerns of soil remediation and reduce the load imposed by changes in surface grades across campus, engineering firm GZA GeoEnvironmental, Inc. chose to use a permeable, low-density cellular concrete (PLDCC) manufactured by inTerra Innovation, Inc. ("inTerra") utilizing AQUAERIX™ liquid foaming agent specially engineered by Aerix Industries. Because of its high level of permeability (e.g., $<10^{-2}$ cm/s), PLDCC is ideal for subgrade applications like this that require high drainage capacities. In addition, because it is lightweight (e.g., 25-35 PCF) and features a relatively high compressive strength (e.g., 60-210 psi), using AQUAERIX PLDCC in place of soil in fill areas did not add any overburden weight to the underlying soils, further reducing the potential for future settlement.



The manufacturing and installation firm inTerra installed a total of 6,000 cubic yards of Aerix's AQUAERIX PLDCC across the UMass campus to remediate soft soils and enhance the structural stability of multiple facilities. Because it is highly flowable, AQUAERIX provided a quick and easy application, enabling this project to be completed during the summer months before the influx of new and returning students in the fall semester.

Aerix Added Value

Because of its high compressive strength and enhanced permeability, Aerix's AQUAERIX, when combined with cement slurry, creates a low-density cellular concrete that is ideal for applications with close proximity to water and where soil settlement is a concern. With this application of AQUAERIX, the buildings and grounds of UMass Boston will enjoy long-term stability and resilience against the waters of the Boston Harbor.

