

Bomanite Pervious Concrete Systems

PROJECT PROFILE

PLUM WAY II COMMERCIAL BUILDING



PROJECT INFORMATION

The Lake Carmel, NY, project is an example of an end-user desiring to develop a piece of property in a riparian zone. In order to proceed with construction, the local building department required that there be no runoff and that all storm water be contained on the site. This would have required the use of retaining areas with the capacity such that they would restrict access to the building required by large commercial vehicles weighing up to 40,000 pounds, as well as conventional access for staff and visitors. The community of Lake Carmel proposed the use of Grasscrete, a pervious concrete system designed to allow water to pass freely through while maintaining a structural integrity adequate to support the required vehicles. A design was tabled and received approval from all parties. The local Bomanite Franchise Partner, Rok-Built Construction, Inc., performed all the site work, constructed the building and installed the Grasscrete System. A 12" deep bed of clear, crushed stone was installed under the 38,000 square-foot Grasscrete System to act as a reservoir, providing capacity to retain storm water and allow it to percolate to the sub-base over time. Additionally, three small retaining ponds were incorporated into the design to handle any runoff water in the event that catastrophic rainfall would not reach the sensitive habitat area. The retaining ponds were designed as landscaped feature areas to add greenery at the perimeter of the site and improve the project aesthetics. These ponds were connected with three traditional inlet points that would function only after the Grasscrete System reached capacity. In this way the retaining ponds are kept artificially low at all times. The concrete was a 4,000 psi mix design developed and provided by Brewster Transit Mix which was reinforced by 8x8 w8.0x8.0 epoxy-coated welded wire mesh. The Grasscrete was cast 5 1/2" thick and due to the finish requirements had to be hand floated and broomed. Once the former tops were removed, the voids were filled with locally sourced decomposed granite. The entry, walkways, handicap parking and visitor parking were finished traditionally as hard surfaces that drained to the Grasscrete System. **Goals Achieved/Added Benefits** • All storm water was contained, eliminating warmed first flush and contaminants entering habitat. • No fears of clogging or freeze thaw degradation of the aggregate interface. • Portion of cement content was replaced with fly ash, thus consuming a by-product and lessening CO2 emissions. • Load bearing capacity to handle loaded trucks with trailers met by system. • More robust than precast or plastic ring pervious products and therefore more sustainable. • Once through its service life, the product can be reclaimed and utilized as base material for future Grasscrete applications.

PROJECT DETAILS

LOCATION

Carmel, NY

CLIENT

Community of Lake Carmel, NY

INSTALL COMPLETED

2006

SQUARE FEET

38,000

BOMANITE SYSTEMS

Grasscrete - Single Use Formers

NAME OF BUSINESS

Build in riparian habitat without placing burden on surrounding environment.

Bomanite Pervious Concrete Systems

PROJECT PROFILE

PLUMWAY II COMMERCIAL BUILDING



Plumway II Building Parking Lot - Stone Filled Grasscrete



Plumway II Building Parking Lot - Stone Filled Grasscrete



Plumway II Building Parking Lot - Stone Filled Grasscrete



Plumway II Building Parking Lot - Stone Filled Grasscrete



Plumway II Building Parking Lot - Stone Filled Grasscrete



Plumway II Building Parking Lot - Stone Filled Grasscrete



Plumway II Building Parking Lot - Stone Filled Grasscrete



Plumway II Building Parking Lot - Stone Filled Grasscrete