

## Waterfront Housing Burlington, Vermont

**Owner:** Housing Vermont & Burlington Community Land Trust

**Services Provided:** Civil, geotechnical and structural engineering, plus construction inspection & testing.

**Problem:** Build a 40-unit apartment building on a Brownfield site with marginally stable slopes, no adjacent stormwater system, and limited municipal sewer capacity. Additional constraints involved numerous old foundations and the goal of making the project LEED certifiable.



**MSE Wall at Parking Lot (Southeast)**

**Concept Design:** Site grading concepts had to incorporate slope stability concerns with the findings of the Phase 2 Environmental Assessment Report. Site stormwater treatment needed to result in 80% removal of TSS and 40% removal of phosphorus for LEED certification. The limited shape and size of the lot did not permit the use of aboveground treatment ponds or ditches. It was also found desirable for the LEED certification to leave most of the old foundations intact. Sanitary sewage was to be disposed of by means of a new gravity sewer and pump station.

**Design Approach:** In order to improve slope stability and reduce the chance of contact with the soil contaminants, the site was capped with 4 to 10 feet of soil. Reinforced slopes were used east of the proposed building and a soil-reinforced masonry wall was used east of the parking lot. An additional block retaining wall was required to separate the project from existing railroad tracks along the western portion of the site. Site access was provided by a 400-foot long extension of Lake Street. Stormwater treatment was achieved by means of an off-site sand filter connected to the new stormwater outfall for Lake Street Extension. The new sanitary pump station required a radio link to the receiving College Street pump station to prevent operation during any shutdowns of that station.



**Sand Filter for Stormwater**

**Construction:** The project was constructed between the summer of 2003 and the fall of 2004.