



## **Case Study - Condemned Building to be Demolished**

### **Project Description: County Community Development Preparation of Demolition Specifications and Project Management**

AET was contracted by a Redevelopment Authority to provide engineering services including professional representation during the demolition of a 4-story condemned brick structure to facilitate redevelopment. AET's services included technical advice, site inspection, HAZMAT survey, development of Technical Specifications for Environmental Remediation and Building Demolition, bid coordination, contract award, and project management/oversight. This project was funded through the HUD Approved County Community Development Program.

### **Extreme Site Conditions**

1. The building was structurally unsound and in danger of imminent collapse. The structure was covered with vegetation inhibiting an evaluation of structural integrity of the building. Roof collapse halted entry into the interior of the structure to evaluate any potential hazardous materials within.
2. The 4-story brick structure was constructed on an extreme slope. The north, east and west walls were constructed on grade but the south wall/foundation extended approximately 40 feet below into a ravine (almost a 90° slope).
3. At the southeast corner of the building, the foundation adjoined a pedestrian/traffic bridge. The front sidewalk of the building also abutted the building and the bridge.
4. Removal of several tall trees along with demolition and subsequent regrading had to be performed in close proximity to an occupied home which was located below the structure in the ravine.



### **Problems Engineered/Demolition Plan Implemented**

1. Demolition specifications required the construction of a 6' high temporary construction fence around the perimeter of the property. Warning lights and other controls were implemented to restrict access to the site.
2. An asbestos NESHAP inspection was postponed until safe access was achieved during demolition. Suspect ACM uncovered during demolition was isolated from other construction debris and kept wet (until asbestos content was confirmed/denied).

3. Vegetation was removed from the brick exterior in order to perform visual inspection of the brick exterior and poured concrete foundation walls. Trees were cut throughout the site in order to gain access by large mechanical equipment necessary to complete the project.

4. The brick veneer from the structure was removed by hand demolition techniques exposing the wood superstructure. Removal was performed on the north, east, west walls slowly progressing down to grade while leaving the south ravine side for last.



5. The wood superstructure was then removed and the wood stacked separately from the bricks. The wood was hauled to a landfill or reduced off site. The bricks were crushed and used as clean fill on the site.

6. The contents of the foundation were removed and asbestos materials identified. Asbestos removal work was completed by a PA licensed asbestos contractor.

7. Professional Engineer evaluation of the foundation walls revealed a large vertical structural crack. A structural steel plate was installed to provide support to this section of the foundation wall planned to remain.

8. A Professional Engineer evaluation was performed on the transitions between the building, the bridge and the sidewalk. Each transition was determined to be a cold joint and hence structures stand independently.

9. Professional Engineer decision-making required a 50' x 8' section of the foundation to remain in-place to assist in preserving the 2-1 slope as required by the specifications.

10. Clean fill was added where necessary and the site seeded for later development.



When you need professional help or advice, email Alan Sutherland, CIH, CHMM at [a.sutherland@aetinc.biz](mailto:a.sutherland@aetinc.biz) or call 610-891-0114. We provide nationwide services; phone consultations are free. Check out the full range of environmental contracting/consulting services we provide at our website [www.aetinc.biz](http://www.aetinc.biz).