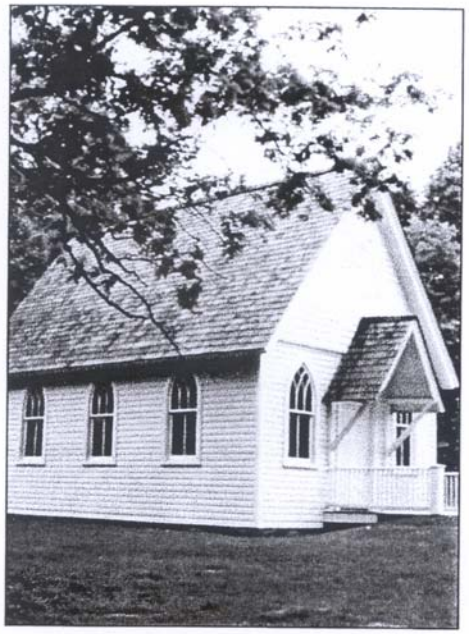
# APPENDIX H: SAMPLE COST ESTIMATE ON REHABILITATION FROM PRINCE GEORGE'S COUNTY



*Report to the Prince George's County Council on the*

# Historic Sites

*of*

*The Maryland-National Capital Park and Planning Commission in Prince George's County*

**Sept. 1 1997**

# Crandell-Rothstein House

This two story combination saltbox and gable-roofed house was built in the 1840's as a single family residence. Several later additions to incorporate a bakery shop have left a building with a multisectional arrangement.[1] Unfortunately, the structure of this house is unsound and some floors are beginning to collapse. Masonry foundation walls are crumbling and wood floor joists are eaten away by termites. The cost to stabilize and restore this building may exceed the cost to save the front facade and rebuild the remainder of the house as new construction. Stabilization and restoration requirements are provided for information, but careful consideration of the cost estimate should be made before considering these options.

**Stabilization:**

**Architectural Stabilization:** A collapsing structure, severe insect and water damage, and substantial decay of the exterior will make stabilization of this structure a difficult and costly task. Major sections of the foundation, exterior walls, and roof will have to be rebuilt. Many rooms will have to be gutted and all finishes replaced because of substantial water damage. The structural section of this report will contain more information regarding these repairs.

**Exterior:** The masonry foundations have large areas that are caving in as a result of inadequate support and construction. Some floors will have to be removed and replaced while new foundations are constructed. Many wood joists are falling because of the lack of support from below and severe insect damage. Previous repairs of sagging floor joists were made by stacking logs in the dirt crawl space for support. The logs offered an unimpeded path for termites to the wood structure above. Repairs to these members should be conducted as required by the structural section of this report.

The exterior walls and roof are in poor condition and will require extensive repair for stabilization. The wood siding is rotting and has many holes and broken boards. Significant portions will require replacement. While the exterior siding is removed, inspection of the wood framing will lead to replacement of many of the wood studs. Some windows are presently boarded incorrectly and do not allow ventilation. Many wood sills need to be replaced and the windows boarded through appropriate stabilization methods. The rear screened porch is collapsing and should be documented and removed for later reconstruction. The front porches have rotten floors that must be removed, and temporary support must be provided for the columns. Most of the wood roof soffit and fascia board will require replacement to insure water tight enclosure at the roof eaves. The roof structure is sagging and will require repairs as indicated in the structural section of this report. After structural repairs, the asphalt shingle roof should be replaced. Metal down spouts and gutters should be replaced so that water is moved a minimum of five feet from the building foundation. An exterior water heater and oil tank should be drained and disposed of in the appropriate manner to avoid future hazards. To complete the exterior stabilization, the wood siding and trim must be cleaned and painted.

**Interior:** Substantial water damage and structural failure have left the interior in poor

condition. The floors are sagging or falling as a result of foundation collapse and insect damage. After foundation repairs, the perimeter soil and basement framing must be treated to prevent further damage from termites. Appropriate insulation and vapor barriers should be installed in the basement and crawl spaces. Large sections of the floors will have to be removed and rebuilt or barricaded and replaced during restoration. Proper safety and egress must be maintained. Finished wood floors will need to be repaired or replaced as a part of restoration. Some rooms have collapsing ceilings as a result of water damage. These ceilings and sections of the surrounding wall will have to be removed to prevent further collapse. The ceiling, walls, and floors surrounding these sections must be protected or braced during and after demolition to prevent damage. As described in previous sections of this report, appropriate stabilization ventilation must be provided on all floors. The structural and mechanical sections of this report contain additional stabilization requirements.

**Structural Stabilization:** The Crandell-Rothstein House is a two-story house with a brick foundation and wood framed floors, roof and walls. The building is in poor condition and is unsafe in many areas inside. The foundation is failing. The wood siding is rotting and sections are missing. There are settlement problems and extensive roof leaks. Portions of the first floor have partially collapsed, and the remaining floor gives under a person's weight. There were significant portions of the structural framing system that were inaccessible and may contain damaged members requiring repair.

In order to stabilize this structure, the deficiencies discussed in the above paragraph need to be corrected. The repairs of these deficiencies are as follows:

- All perimeter foundation walls are cracked and crumbling. Mortar is cracked, loose and missing in places. Walls require significant repointing, crack repair, and in several places the walls need to be rebuilt. The section of foundation wall at the rear of the house will have to be rebuilt. It has moved inward several inches. Many interior brick bearing walls in the basement are crumbling and require complete replacement.
- Completely replace the floor framing for both front porches. Repair or replace both porch foundations. Replace columns. Replace damaged areas of porch roof sheathing as required.
- The roof over room number one and the kitchen is in poor condition. Soffit boards are rotted away and the roof sags. The framing is not visible, but heavy damage to sheathing and rafters is suspected. Replace damaged sheathing and rafters.
- The shed roof over room number six and the bathroom is in poor condition. The rafters and sheathing are heavily stained and wet. Nearly complete replacement of framing should be anticipated.
- The main roof sheathing and rafters are heavily stained and wet. Complete replacement of sheathing and partial replacement of rafters is expected to be necessary.
- Remove rear screened-in porch. Note construction for future reconstruction.
- Remove rear open porch. Note construction for future reconstruction.
- The entire first floor will have to be reinforced with new framing. New beams with posts and footings will have to be provided. New sill plates for joist bearing are required. If existing framing is left in place, treat for insects.
- Replace damaged exterior wall studs and bottom plates as required.

**Mechanical, Electrical and Plumbing Stabilization:** In order to stabilize the mechanical, plumbing and electrical elements, major repairs are needed. Heavy water damage in the building has affected the existing mechanical, electrical and plumbing systems.

- Heating is achieved by two floor mounted oil fired furnaces. These floor mounted heaters may need to be removed due to the poor condition of the floor, which serves as support for these units.

• The above ground fuel oil storage tank (275 gallons) is heavily corroded and needs to be removed and properly disposed of.

• The electrical system does not conform to current codes and is in poor condition due to water damage and age. The electrical system can remain only for stabilization purposes. However, the entire wiring system, including the electrical panel board and main breaker needs to be replaced, before the service is restored.

• All electrical outlets and light switches are in fair to poor condition and should be replaced for restoration.

• The plumbing system needs to be repaired. Due to the age of the piping and high humidity of the space, the pipes are showing signs of premature corrosion. Thorough cleaning and one coat of corrosion inhibiting paint can stabilize this corrosion. The existing oil fired water heater needs to be removed to avoid further corrosion, and to allow other repairs to be performed.

**Restoration for Partial Use:** *Assumed to be limited office use .*

**Architectural Restoration for Partial Use:** Restoration of this facility for office use will involve replacement of floors, walls, and ceilings as indicated in the stabilization section, as well as substantial renovation to meet accessibility, structural, mechanical, and building code requirements. This analysis is based on office use on the first and second floor with limited public access on the first floor. Handicapped accessibility will only be on the first floor. Current building codes require fire separations and egress requirements which may force improvements to stairs and corridors. The change of occupancy from residential to business may force compliance with all of these code requirements.

**Accessibility:** If used by a local government agency, this facility will be required to meet federal accessibility requirements under the ADA and the local Prince Georges County Accessibility Code. An accessible route must lead from accessible parking to an accessible entrance as defined by these codes. An accessible ramp leading to the entry must be provided. With the first floor near grade, this requirement can easily be met. An accessible route must lead to all accessible spaces within the building. Limited interior doors will need to be widened in order to meet this requirement. In areas that are used only as work areas by employees, a handicapped person must be able to enter, turn around, and exit. Many doors will need lever handles in order to meet the door handle grasping requirements. Since this building is not served by an elevator, the stair must comply with accessibility codes. The stair will need new handrails with extensions at the top and bottom. An accessible toilet room must be provided that complies with the clearances and fixture requirements of these codes. This toilet room can be installed at the current hall toilet location, but the room size will have to be substantially enlarged. New plumbing fixtures and grab bars must be installed. If provided, the kitchen must have an accessible sink and cabinet storage. The sink must meet knee clearance requirements as specified by the codes. Many of these requirements are also supported by the building code.

**Building Code:** If renovated for office use, the building will have to meet the requirements of BOCA, 1993 edition; NFPA 101, 1994 edition; and mechanical, electrical, and plumbing codes as identified in the following sections. The structure is defined by BOCA as type 5B construction and is limited to two stories of business occupancy at 7,200 sq. ft. per floor. The building is currently approximately 2,020 sq. ft. in total area. The major impact of the building code on this structure deals with fire ratings and egress requirements. The egress stair must be enclosed in one hour rated construction separating it from other building elements. The existing walls probably meet this requirement; however, doors entering the stair do not. The stair can easily be separated by providing approved fire rated doors at these openings.