

BRECKNOCK MANOR CONDITION ASSESSMENT EXECUTIVE SUMMARY

Facility Description

The JAED Facilities Solutions was tasked by Kent County Department of Planning Services to perform a facility conditions assessment of Brecknock Manor House. The manor house, primary residence of a lower Delaware plantation, that was constructed and renovated in multiple phases over a period identified as approximately 150 years. Included below is a brief summary of the type of construction and major architectural elements of each building phase as identified by our on-site assessment team.

Phase one, the southern quadrant, is a 2 story and attic post and beam wood frame structure over a brick cellar. The typical interior finish is plaster on walls and ceilings. The exterior finish is horizontal clapboard. A freestanding masonry structure with fireplaces and chimneys rises from the basement through the roof. The wood framing surrounds the masonry but is not supported by it. It appears that this wing had a gabled roof in its original configuration.

Phase two, the western quadrant, is a 2 story and attic brick structure over a brick basement. The typical interior finish is plaster on ceilings and walls. The exterior is exposed brick. The masonry chimney and fireplace structure is engaged with the exterior walls. The east wall of this wing is tight against the west wall of phase 1, but is a separate brick wall. The floor levels of this wing are 14" lower than phase 1.

It appears that this wing originally had a shed roof with a high point under the eaves of the phase 1 building. This was replaced with a gabled roof that also spans phase 1 as a single roof, it is conceivable that this roof was constructed during the construction of phase 4. The roof is composition shingles installed over wood shingles.

A room on the second floor of this wing had extensive renovation at some point in the mid 20th century to create a bathroom. The renovations included finish and window changes.

Phase three, the northern quadrant, is a 1½-story structure with a crawl space. The typical interior wall finish is plaster with a large brick fireplace dominating the west wall. The ceilings are exposed wood structure. A step shed roof covers this building. The floor levels of this wing are 6" lower than phase 2, or 20" lower than phase 1. The wooden portions of the first floor and crawl space were reconstructed in the recent past with new materials. An enlarged hearth of brick pavers is installed on earth fill and extends the width of the room by 4' from the face of the fireplace. The roof is composition shingles installed over wood shingles.



A brick-flashing shelf on the exterior face of west wall at the approximate level of the attic floor indicates that an addition might have existed in the past. It is recommended that archeological excavations be performed in this area to further understand the history of the building.

Phase four, the east quadrant, is a two story and attic balloon framed wood structure over a brick crawl space. The typical interior finish is plaster on walls and ceilings. A gabled roof that shares the lines of the roof over phases 1 and 2 is covered with composition shingles installed over wood shingles. A brick chimney is constructed in the exterior wall and covered with clapboard. There are no fireplaces in this wing but evidence of thimbles that were the connection points for stoves.

This wing has the most evidence of settlement/ movement including the north corner of the north room on the second floor. It appears that this wood frame wall bears on the sloping brick wall of phase three rather than extending to the foundation and that there is movement at the outer end.

A room on the first floor of this wing had extensive renovations at some point in the mid 20th century to install a modern kitchen. The changes include installation of a false wood floor to level the existing due to settlement, change of finishes, installation of cabinetry and appliances.

Assumptions

A series of assumptions have been made regarding the corrections required to address the deficiencies noted in Brecknock Manor House. These assumptions relate to planned building uses being considered by Kent County Department of Planning Services and determine the need for the specific work to be performed. Types of building uses under consideration include Protect House, Resident Curator, and Public Occupancy.

Building Uses

Protect house – This work is required to stabilize the structure until renovations/ upgrades are performed. It will repair certain existing damage and prevent further deterioration. Some of this work will be lost when renovations are done.

Recommended scope of work includes:

1. Make watertight
 - Repair roof leaks
 - Repair windows
 - Divert rainwater from basement
2. Establish structural integrity

- Repair roof framing (from roof leak)
 - Wood wall framing over brick wall
 - Wall/ foundation settlement
 - Floor framing and shoring
 - Entry and rear porches
3. Provide ventilation
 - Replace attic windows with louvers
 - Remove interior doors, or secure open, to allow airflow
 - Cut wall to open for airflow, phase 2 to 3 and phase 3 to 4.
 4. Heating
 - Drain complete system
 - Remove traps
 5. Plumbing
 - Drain complete system
 - Remove traps
 - Plug sanitary drains to eliminate sewer gas intrusion
 6. Electrical
 - De-activate (disconnect) old circuits
 - Install fire and security alarm systems with dial out signal
 7. Insects
 - Treat interior and adjacent exterior areas to prevent insect infestation (termites, carpenter ants, powder post beetles, etc.).
 - Establish program to continue this annually.

General improvements – This is the work required to upgrade the structure and systems for occupancy and extended use. This work will be required regardless of the intended use.

Recommended scope of work includes:

1. Exterior shell
 - Repaint / repair exterior brick walls
 - Replace roof of 1,2 & 4
2. Interior finishes first floor and 203 & 204 on second
 - Refinish windows
 - Repair/ refinish floor, wall and ceiling finishes
3. Plumbing
 - Upgrade water piping
 - Upgrade sanitary piping
 - Replace gas piping
4. Heating
 - Replace boiler
 - Replace steam piping
 - Refinish/upgrade radiators

- Install air conditioning system for first floor
- 5. Electrical
 - Upgrade electrical service to building
 - Replace /upgrade wiring throughout house
 - Upgrade switches, outlets, and lighting throughout house
 - Repair/ upgrade lightning protection system.

Resident Curator – This is the work required to complete the upgrades started as General Improvements to prepare the building for use as a residence by a select tenant. The costs associated with this use must be combined with costs for General improvements. This use does not include any improvements to provide accessibility or ADA compliance.

Recommended scope of work includes:

1. Kitchen
 - Reconstruct existing kitchen (room 108) to provide modern facility
2. Bathroom
 - Reconstruct existing bathroom (room 204) on second floor to provide modern facility
3. Second floor (rooms 203, 208, 210, 211 & 212)
 - Repair/ refinish floor, wall and ceiling finishes.
 - Refinish windows
 - Install air conditioning
 - Complete electrical upgrades

Public occupancy – This is the work required to complete the upgrades started as General Improvements to prepare the building for a use to accommodate the public. The public uses could include development as a museum, housing educational or recreational programs offered by the park or housing a department or branch office of a county division. The costs associated with this use must be combined with the costs for General improvements. It is assumed that the public will be restricted to the first floor with only one room and the bathroom on the second floor available for use by staff because of accessibility and fire exiting issues.

Recommended scope of work includes:

1. Accessibility
 - Provide ramps to the front entry, rear porch and rear entry. (Internal access throughout the first floor will not possible without major changes)
 - No public toilets will be provided; therefore no accessible toilets will be available.
2. Structural reinforcement
 - Provide supplemental framing and shoring as determined by a structural engineering study to meet floor-loading requirements established by code.

3. Powder room
 - Renovate existing bathroom on second floor to provide a powder room for staff.
4. Break room
 - Renovate existing kitchen to provide kitchenette accommodations for coffee prep. Etc.
5. Alarms
 - Provide a fire alarm system with pull stations, visual and audible alarms per code for public occupied spaces.
 - Upgrade security alarm system as required if use is to be as a museum and collections are housed.

Methodology

JAED Facilities Solutions has reviewed the Brecknock Manor to determine physical conditions and to identify corrections needed to resolve identified issues. This review was accomplished by reviewing existing documentation supplied by Kent County; site visits to observe current actual conditions and interviews with staff that have been maintaining the building.

Levels of improvement (uses) to be used in preparing the assessment were determined in a meeting with Kent County.

The findings of the assessment, the corrections required to address identified deficiencies, are noted in the Assessment Report. Corrections are categorized using the Unifomat system, subsystem, and component classification standards. Building Use, Reason, and Priority fields are also assigned to each correction.

Included in the assessment report are estimated costs to complete the identified work. For any renovation project, "soft" costs such as Construction Contingency, A/E fees, Additional Services, Permits / Fees, Inspection, and Legal (Audit Costs) are included within each individual correction cost total. The cost displayed in the assessment report is the net result of the construction cost (based on regional data published by R.S. Means) and the soft costs added.

This report is intended to be used as a whole and not as a listing of individual projects that can be performed separately. A unified overall design should be prepared for a selected use and treated as a total project that integrates architectural, mechanical, electrical and plumbing work with building improvements.