



## Pleasant View Church & Quince Orchard Schoolhouse

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*Pleasant View Historical Association*  
*North Potomac, Maryland*  
Structural Condition Assessment

Prepared For:  
Preservation Maryland

3600 Clipper Mill Road, Suite 248  
Baltimore, Maryland 21211

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## **1.0 General Overview and Purpose of Assessment**

Keast & Hood was retained by Preservation Maryland (PM) to perform the following tasks to facilitate restoration efforts for the Historic Pleasant View Site located in North Potomac, Maryland:

- Structural condition assessment survey related to the restoration and structural integrity of the Historic Pleasant View Site and associated church, schoolhouse and outhouse buildings.
- Provide short term repair, stabilization, and general safety recommendations, and
- Evaluate and comment upon potential long-term structural recommendations.

A collaborative site visit between Reverend Green, Margaret DeArcangellis (PM) and K&H engineers, Matthew Daw and Laura Burgess was conducted of the historic Pleasant View Site and associated site buildings on Monday, 14 March 2016.

The recommendations and comments herein are based on K&H's visual observations during site assessment and the professional judgment and experience of K&H engineers. The review was focused upon overall structural condition of the building as obtained through visual observation. The following documents Keast & Hood's site observations and lists recommendations to address noted areas of concern.

## **2.0 Existing Documentation**

K&H reviewed the following documents and reports in part or in their entirety:

- Maryland Historic Trust Inventory Form for State Historic Site Survey dated 1976 and M-NCPPC ACHS Summary Form dated 1979, Maryland State Archives, and
- Community Cornerstone, A selection of Historic African American Churches in Montgomery Country, Maryland. By Heritage Maryland 2012.

K&H understands existing drawings do not exist for the church, schoolhouse and outhouse buildings located on the Historic Pleasant View Site.

## **3.0 Description of Assessment Methods**

Matthew J Daw (principal) and Laura M Burgess (structural designer) from Keast & Hood visited the Historic Pleasant View Site to conduct a site visit and structural condition assessment of the existing building condition and its surrounding area Monday, 14 March 2016. K&H engineers were escorted by Rev. Green and Margaret DeArcangelis (PM).

An interior and exterior survey of the entire building was conducted by K&H engineers and respective escorts.

When visible, the building's structural system was observed for signs of distress, impaired structural integrity, and other non-structural related concerns. Where the building's structural system was covered by finishes, K&H examined finishes for evidence of distress.

Exploratory probe work (removal of finishes at select locations) was NOT conducted at the time of K&H's visit.

Photographs were taken with a digital camera to record existing conditions and areas of concern and descriptive information was recorded in field notes for each of the historic buildings. No materials were removed for testing.

A description of noted areas of concern with photographs and recommendations is presented in Section 5.0 of this report.

#### **4.0 General Description and Discussion of Building Structure**

The 3 acre property was purchased in 1868 shortly after the Civil War. Approximately 20 years later the original Pleasant View Church was constructed 1888. The Church was later reconstructed in 1914 in the Gothic Revival tradition. A rear addition was added to the church in the 1950's. The church currently serves a congregational population of approximately 10 people.

The 1914 church consists of a fieldstone / concrete foundation with a below grade basement. The 1950's addition consists of concrete masonry walls below the main floor. Walls above the main floor are wood framed. The main floor, attic and roof are also wood framed. The three tier bell tower sits on concrete piers below the main floor. Walls above the main floor are timber framed. The skirt roof between the first and second tier, the bell tower framing, and the tower top roof are all wood framed.

The Quince Orchard School served the community between 1874 and 1951. Originally a one room schoolhouse for white students located to the north of Darnestown Road, the one room building was later abandoned. The school was subsequently moved to the Pleasant View property between 1901 and 1902 to serve the African American community. The school was expanded to the southwest with two room additions in the 1940s following consolidation of the Quince Orchard, Tobytown, and Seneca Colored Schools (MNCPPC ACHS Summary Form, 1979). The far southwest addition later burned down. Today the two room schoolhouse functions as a meeting space for the local congregation.

The school appears to sit on a shallow concrete and rubble stone foundation wall. It is important to note the existing foundation does not extend to frost depth. As such, the wall has experienced significant deformation as a result of frost heave and foundation settlement. In addition the existing timber walls and floor framing appears to be in contact with the ground in most locations allowing runoff water to be wicked through the walls and floor framing. As such the existing timber framing has deteriorated from moisture infiltration.

The origin of the existing outhouse building is unknown; however, the building appears to have been constructed between the late 1920's and 1940s. The structure sits on a concrete foundation with a below grade cellar. The cellar is covered by a concrete slab with concrete masonry unit walls. The roof is framed with timber protected by a metal roof. Cracking in the joints of the concrete masonry walls were observed on the south

elevation. The building was locked and interior access to the building was not available at the time of the site visit.

Figure 1 illustrates the layout of the existing buildings on the Historic Pleasant View Site.

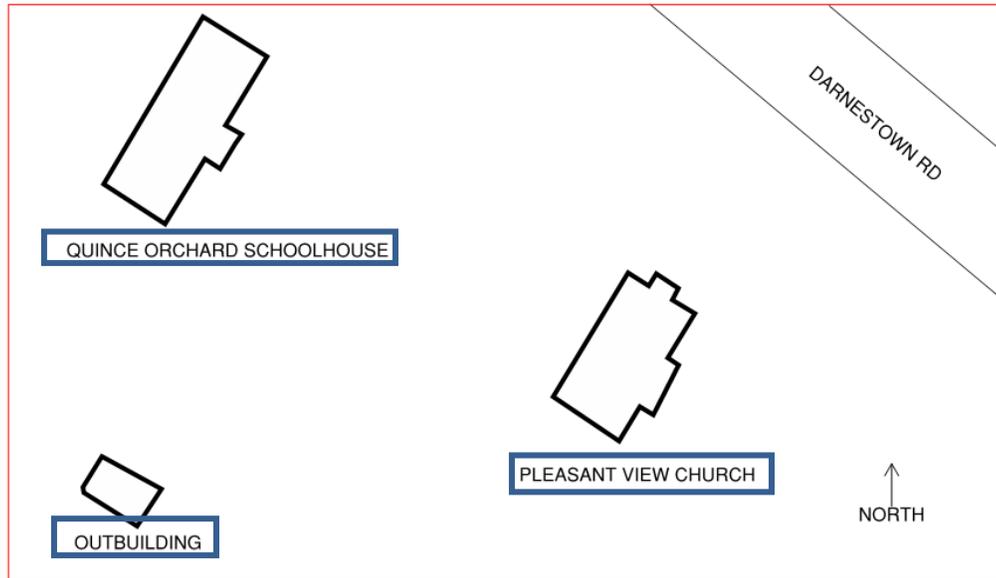


Figure 1: Site Plan – Historic Pleasant View Site

## **5.0 Discussion of Observations and Recommendations for Repairs**

The following highlights areas of notable concern observed during Keast & Hood's structural investigation and condition assessment with respect to the three structures located on the Historic Pleasant View Site.

- 5.1 – 1914 Pleasant View Church,
- 5.2 – Quince Orchard School
- 5.3 – Outhouse Building

## 5.1 – Pleasant View Church

### 5.1.1 – Exterior Conditions



Figure 2: Main Church and Bell Tower Separation.



Figure 3: Concrete Pier Settlement



#### Observations:

The bell tower structure and main entrance concrete steps have settled and pulled away from the main church structure (Figure 2). Settlement cracks are visible in the concrete piers supporting the north elevation of the bell tower structure (Figure 3).

Significant concrete deterioration and settlement was observed at the main entrance steps (Figure 4).

The existing roofing and gutter system is in disrepair thereby allowing water to infiltrate the building at the roof elevation and perimeter walls (Figure 5). Existing down spouts were observed to deposit water at the base of the exterior walls (Figure 6). Furthermore the site has negative slope (site slopes towards the building walls) allowing site runoff to accumulate at the base of the exterior walls.

An unprotected opening in the 1940's concrete masonry foundation wall was observed allowing debris accumulation and easy access for vermin (Figure 7).

The 1940's east elevation railing attachment was observed to be unconnected to the supporting structure due to rust jacking and spalled concrete (Figure 8).

Insect growth was observed at the underside of the east elevation shed and basement access stairs. Moisture distress was observed

Figure 4: Concrete Distress @ Main Entrance Steps.



Figure 5: Roof and Gutter Distress.



Figure 6: Unattached Downspout.



Figure 7: 1940's Foundation Unprotected Opening.

at existing wood shed roof framing. Distress was observed at the east elevation side walk in the form of settlement, concrete spalls and cracks (Figure 9).

Mortar loss was observed at the existing chimney stack located on the west elevation of the building (Figure 10). A chimney vent cap was not observed.

**Recommendations:**

*K&H recommends the following to address exterior wall and foundation distress:*

- *Remove clapboard siding for review of the bell tower structural framing. Framing shall be reevaluated for review when opened and rebuilt as required to reestablish connection of bell tower to main building structure.*
- *Provide new concrete piers to lift and level bell tower floor framing. Piers shall extend below frost depth.*
- *Provide new concrete main entrance steps and sidewalks. Alternatively, the existing deteriorated concrete may be removed. Following removal, all existing concrete shall be cleaned and patched as required.*
- *Regrading the site to provide positive drainage away from the building exterior walls.*
- *Reroof the main church and bell tower structures to ensure a watertight system. Reevaluate bell tower framing when opened for review. Provide an*



Figure 8: Spalled Railing Attachment.



Figure 9: East Elevation Sidewalk Distress.



Figure 10: Deteriorated Mortar Joints @ Existing Chimney

*allowance for replacement of a limited extent of roof sheathing.*

- *Secure all downspout extensions to lead well away from the building foundations. As part of a later phase downspouts may lead into a new perimeter foundation drainage system. Parge exterior perimeter walls below grade. Please note a new perimeter drainage system would require excavation around the entire building perimeter.*
- *Review of the functional capacity of the existing gutter and drainage system for building size. The existing system shall be modified/cleaned as required to adequately conduct rainwater away from the building foundations.*
- *Provide louver cover at all foundation wall openings to deter critter access and debris accumulation.*
- *Clean and paint existing railing system with corrosive resistant paint. Provide concrete patch repair to reestablish sufficient railing attachment connection to concrete slab and supporting concrete masonry walls at east elevation 1940's access stairs.*
- *Remove all existing insect nests and deteriorated timber framing. Reroof the east elevation access stair shed as needed.*
- *Repoint existing chimney mortar joints with compatible mortar.*

5.1.2 – Interior Conditions



**Figure 11: Rising Damp @ Interior Basement Walls.**



**Figure 12: Standing Water and Moisture Staining @ Basement slab.**

**Observations:**

Significant moisture distress was observed within the main church basement. Interior walls exhibited signs of rising damp (Figure 11). Moisture staining and standing water was present on the existing concrete basement slab (Figure 12).

Moisture infiltration is apparent at window surrounds within the basement (Figure 13).

Existing termite distress was apparent at existing floor joists. Supplemental support in the form of a timber girder supported on timber posts was provided at midspan to support existing joists (Figure 14). The base of the timber frame posts rests directly on top of the existing concrete slab and is exposed to standing water (Figure 15).

The interior basement access stair guardrail is missing in one location and the remaining guardrails are insufficient to provide code required restraint (Figure 16). K&H understands the existing interior basement access stairs are to be removed and the floor infilled as part of future building repairs.

Cracking of the existing window panes was observed (Figure 17).

Moisture distress was observed at interior wall finishes.

Moisture staining and structural member deterioration was evident within the bell tower timber framing. Moisture staining was apparent at the bell tower drop ceiling panels



Figure 13: Moisture Distress @ Basement Window Surrounds.



Figure 14: Existing Termite Distress @ Floor Joists



Figure 15: Timber Frame Post Bearing @ Basement Slab.

(Figure 18). Daylight was visible between the bell tower roof structure and the main church structure.

The existing main church roof structure appears to be in good condition. Moisture staining was observed at select members near the roof eave and gable walls. Split skip roof sheathing was observed in one location.

**Recommendations:**

*K&H recommends the following to address exterior wall and foundation distress:*

- *Repairs to the roof, gutter, and drainage system will further reduce the extent of moisture infiltration within the basement. Furthermore, as part of a future phase (low priority), provision of perimeter foundation drainage system and parging exterior walls below grade will help reduce the extent of moisture infiltration within the basement.*
- *Engagement of a pest control expert to determine presence of termites while establishing a maintenance control contract for long-term pest control.*
- *Provide corrosive resistant post base at base of timber posts to elevate posts above standing water.*
- *Infill interior basement stair opening to eliminate current fall risk.*
- *Window surrounds shall be evaluated, resealed and calked as required to reestablish building envelope. Replace cracked window pains and repair interior wall finishes as required.*



Figure 16: Interior Basement Access Stairs.



Figure 17: Cracked Window Panes.



Figure 18: Bell Tower Framing Deterioration.

- Evaluate existing interior bell tower framing when opened for review. Provide positive anchorage of existing bell tower frame back to main church structure through use of Simpson strap anchors similar. Provide allowance for limited wood framing repairs at the bell and roof framing levels.
- Sister in kind deteriorated wood roof framing within the main church structure. Provide allowance for limited wood replacement in kind primarily located along roof eave conditions.
- Remove insect nests within main church attic and bell tower structures.

## 5.2 – Quince Orchard School House

### 5.2.1 – Exterior Conditions

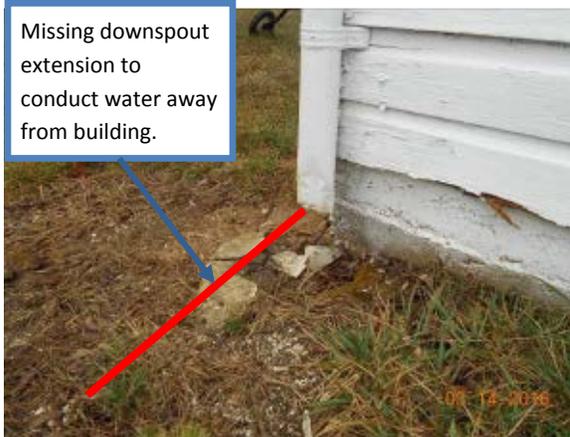


Figure 19: Inadequate downspout termination at base of wall.



Figure 20: West Elevation Missing Gutter.

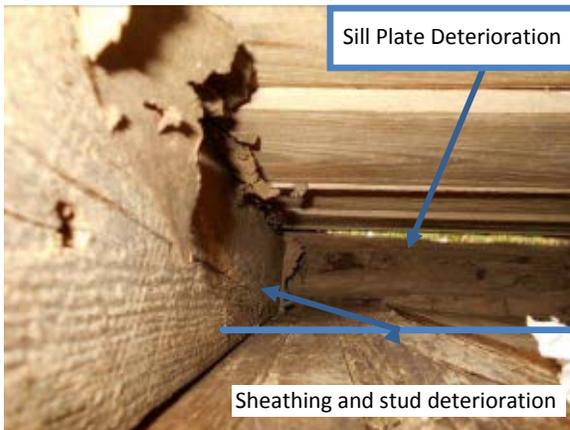


Figure 21: Deteriorated Wood Framing @ Base of Exterior Wall.

#### Observations:

The existing gutter system is in disrepair allowing runoff from the roof to settle adjacent to exterior walls. Existing down spouts were observed to deposit water at the base of the exterior walls (Figure 19). Furthermore the site has negative slope (site slopes towards the building walls) allowing site runoff to accumulate at the base of the exterior walls (Figure 20).

The existing concrete foundation, where present does not extend to frost depth. Bowing of the exterior walls was observed along each elevation. As such, the exterior walls have experienced significant deformation as a result of frost heave and foundation settlement (Figure 22).

Moisture staining was evident at the base of the exterior wood framed walls. The existing timber walls and floor framing appear to be in contact with the ground in most locations allowing runoff water to be wicked through the walls and floor framing. As such the existing timber framing has deteriorated from moisture infiltration (Figure 21). Additional moisture staining was observed at window surrounds.

Distress as a result of termites was also observed within the exterior wood walls.

The shallow foundations have allowed for vermin to burrow and nest beneath the school house (Figure 23).



Figure 22: West Elevation Wall Displacement.



Figure 23: Undermined existing foundation wall.

The existing chimneys appeared to be in good condition at the roof level with minor mortar loss.

*Recommendations:*

*K&H recommends the following to address exterior wall and foundation distress:*

- *Regrading the site to provide positive drainage away from the building exterior walls.*
  - *Secure all downspout extensions to lead well away from the building walls.*
  - *Review of the functional capacity of the existing gutter and drainage system for building size be conducted. The existing system shall be modified/cleaned as required to adequately conduct rainwater away from the building foundations.*
  - *Installation of new concrete piers at routine spacing (approximately 10 feet on center) to extend foundation to frost depth (2'-6" below top of grade). Installation of intermediate piers will prevent excavation around South, East and West Elevations.*
- *Underpin full length of north elevation rubble stone wall.*
  - *Existing wall framing shall be opened for review. All deteriorated framing shall be sistered or replaced in kind. Install vapor barrier where existing clapboard siding is removed to evaluate sill plate.*
  - *Engagement of a pest control expert to relocate existing vermin while establishing a maintenance control contract for long-term pest control.*
  - *Repoint existing chimney above roof elevation with compatible mortar.*

### 5.2.2 – Interior Conditions



Figure 24: Crawl Space & Abandoned Pipe.



Figure 25: Moisture Distress @ Interior Walls.

#### Observations:

A floor access hatch located adjacent to the north exterior wall was opened for review of the foundation and floor framing elements. An abandoned pipe was observed within the space (Figure 24).

In addition, the existing structure has settled such that areas of existing floor framing rest directly on grade.

Ventilation of the existing crawl space was not observed.

Moisture distress was observed at interior wall finishes and at window surrounds (Figure 25). In addition biological growth was observed on the interior face of the west exterior wall in the north classroom. The existing roof framing was observed at one location in the men's restroom and appeared to be in good condition.

#### Recommendations:

*K&H recommends the following to address interior distress:*

- *Excavate and remove soil minimum of 6" below all existing floor framing where existing floor framing is in contact with grade.*

*Repairs as noted in Section 5.2.1 shall help address noted moisture distress observed at the interior walls. Interior finishes may be repaired as needed.*

- *Provide crawl space ventilation through floor vents or louvers in the perimeter foundation wall.*
- *At areas where moisture distress is observed at wall finishes, remove existing finishes to evaluate structural framing.*
- *Window surrounds shall be evaluated, resealed and calked as required to reestablish building envelope.*

## 5.3 – Outhouse Building

### 5.3.1 – Exterior Conditions



Figure 26: Outhouse Building.



Figure 27: South Elevation Settlement Cracks.

#### Observations:

Overall the structure appears to be in good condition with minor settlement cracks at the south concrete masonry wall (Figure 27).

A below grade vault was observed to be filled with debris and water.

Please note interior conditions were not observed at the time of Keast & Hood's site visit.

#### Recommendations:

*K&H recommends*

- *Repointing existing cracked mortar joints with a compatible mortar.*
  - *Removal of debris and water from vault space for inspection. Evaluate underside of existing slab following debris removal. Furthermore, K&H recommends a vented cover for the vault be provided to eliminate a potential fall hazard.*
- *Crack repair of the existing concrete slab may be required following review of existing interior building conditions.*
  - *Provide bird screening at roof to deter nesting and interior access to the building.*

## 6.0 Conclusion

Overall, the Pleasant View Historic Site and respective buildings exhibit significant signs of moisture infiltration.

In order to facilitate future restoration efforts within the structure, K&H has listed repair priorities below. Please reference preceding sections 5.1 through 5.3 for detailed observations and recommendations.

- Priorities:
  - I. Pleasant View Church (*Please reference Sections 5.1.1 and 5.1.2*)
    1. Provide new concrete piers at bell tower to level framing. Provide new concrete entrance steps and east elevation side walk.
    2. Reestablish connection of bell tower to main church structure.
    3. Reroof main church and bell tower structures.
    4. Regrade site to provide positive drainage away from building exterior walls.
    5. Modify/clean existing gutter and drainage system as required. Secure all downspouts to lead well away from the building.
    6. Repoint existing chimney mortar joints.
    7. Remove insect nests within and around entire building perimeter.
    8. Engagement of pest control expert.
    9. Provide corrosive resistant post base at basement timber posts.
    10. Sister or replace interior floor and roof framing as required.
    11. Evaluate interior window surrounds, reseal and caulk.
    12. Replace interior wall finishes.
    13. Infill interior basement stair opening.

- II. Pleasant View Church (*Please reference Sections 5.2.1 and 5.2.2*)
  - 1. Install new concrete piers at South, East, and West exterior walls.
  - 2. Underpin full length of North exterior rubble wall.
  - 3. Regrade site to provide positive drainage away from building exterior walls.
  - 4. Modify/clean existing gutter and drainage system as required. Secure all downspouts to lead well away from the building.
  - 5. Repoint existing chimney mortar joints.
  - 6. Engagement of pest control expert.
  - 7. Sister or replace wall, floor and roof framing as required. Provide vapor barrier where clapboard siding is removed to evaluate exterior sill plate.
  - 8. Evaluate interior window surrounds, reseal and caulk.
  - 9. Remove interior wall finishes where moisture distress is evident to evaluate structural framing.
  
- III. Pleasant View Church (*Please reference Sections 5.3.1*)
  - 1. Repoint existing cracked mortar joints with a compatible mortar.
  - 2. Remove debris and water from vault space for inspection. Evaluate underside of existing slab following debris and water removal. Provide crack repair of existing slab as required.
  - 3. Provide vented cap for vault space.
  - 4. Provide bird screening.

The recommendations and comments contained herein are based on K&H's visual observations during site assessment of the existing conditions and the professional judgment and experience of K&H engineers. This report represents the extent of Keast & Hood's review.

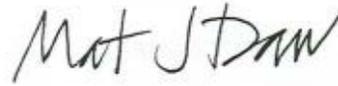
Please do not hesitate to contact the undersigned if we can be of continued assistance or if we may answer any questions regarding K&H's observations and recommendations.

Very Truly Yours,

KEAST & HOOD



Laura M Burgess, EIT



Matthew J Daw, P.E., LEED® AP