



architects + engineers

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June 8, 2017

Mr. Charles Mackie
President
Massapequa Historical Society
4755 Merrick Road
Massapequa, N.Y. 11758

**Re: Structural Conditions Inspection
Old Grace Church & Servants Cottage
4755 Merrick Road Massapequa, N.Y.
H2M Project No.: MAHS 1701**

Dear President Mackie,

Per your request and authorization, Mr. Steven M. McEvoy, P.E. of H2M architects + engineers, (H2M) visited the Massapequa Historical Society site at the above location on Friday June 2, 2017. The purpose of H2M's visit was to perform an inspection of the existing church and cottage on the property. (Refer to Photos No. 1 & 2.) The following is the results of H2M's inspection.

FINDINGS AND OBSERVATIONS

The Old Grace Church (Circa 1844) is a one-story wood framed cathedral style church with raised steeple. The structure is bearing on a brick masonry foundation.

EXTERIOR

Roof The roof material is cedar perfection shingles.

Main Gable Roof

- The main gable roof shingles and two rear (north) gable roof shingles are in poor condition.
- Most surface areas are severely worn and weathered. (Refer to Photo No. 3.)
- Deterioration is evident along the exposed edges.
- Material shrinkage has occurred over time.
- Most shingle pieces have cupping and lifting. (Refer to Photo No. 4.)
- Moss and Lichens have developed across the surface of each surface of each side of these gable roofs.
- The ridge boards are not tight to each other and the roof surface. This will allow for water infiltration.

- There are a few missing cedar shingles pieces.
- The brick masonry chimney appears to be in good condition. The top bricks need to be repointed and the top mortar or capping may need repair.

The cedar roof needs to be replaced. The existing roof may last 1-2 years further if leaking has not begun to occur.

Front Entrance Gable Roof & The Two Side Shed Roofs

- The front entrance gable roof and two side shed roofs are in poor condition. (Refer to Photo No. 5.)
- Most surface areas are severely worn and weathered.
- Deterioration is evident along the exposed edges.
- Material shrinkage has occurred over time.
- Most shingle pieces have cupping and lifting.
- Moss and Lichens have developed across the surface of each surface of each side of these gable roofs.
- The ridge boards are not tight to each other and the roof surface. This will allow for water infiltration. (Refer to Photo No. 6.)
- There are a few missing cedar shingles pieces.
- There is a separation that has developed between the cedar roof shingles and the cedar siding shingles. This may be an avenue for water infiltration and decay.

The cedar roof needs to be replaced. The existing roof is deteriorating. Leaking may be occurring already. Repair should be immediate to avoid damage to the structural members.

Steeple Roof

- The steeple roof is in fair condition.
- Most surface areas are severely worn and weathered.
- Deterioration is evident along the exposed edges.
- Material shrinkage has occurred over time.
- Most shingle pieces have cupping and lifting.
- There are a few missing cedar shingles pieces.
- There is a separation that has developed between the cedar roof shingles and the cedar siding shingles. This may be an avenue for water infiltration and decay.
- The hip edges are separated along the upper main steeple.
- The hip edges are separated and missing along the lower roof of the steeple.
- Rodent infiltration is apparent.

The cedar roof needs to be replaced. The existing roof may last 2-3 years further if leaking has not begun to occur. Missing shingles should be repaired immediately to avoid damage to the structural members.

Siding

- The cedar shingle siding is in fair condition slightly weathered.
- Some shingles are lifting.
- The corner edges are separated. Some corners edges are missing.
- There is a slight material shrinkage causing joints to separate.
- The trim is in fair to good condition. the molding corners need repair from insects and rodents. (Refer to Photo No. 7.)

Immediate maintenance is recommended to avoid further damage or decay.

Side Porches

- The wood decking is in poor condition. The wood is decayed and is potentially dangerous due to its weakened condition. (Refer to Photo No. 8.)
- The stone steps have settlement. Repointing of the masonry joints is recommended. (Refer to Photo No. 9.)

The cedar roof needs to be replaced. The existing roof is deteriorating. Leaking may be occurring already. Repair should be immediate to avoid damage to the structural members.

Front Steps & Entrance Vestibule

- The brick supporting the stone steps need repointing. (Refer to Photo No. 10.)
- Several walkway bricks are displaced downward causing a tripping hazard. Immediate repair is recommended. (Refer to Photo No. 11.)
- Brick surface repointing is recommended.
- The brick support walls for the roof over are deteriorated. Repair/replacement is recommended.
- The lower brick is severely decayed. Replacement is recommended. (Refer to Photo No. 12.)

The brick masonry along the walkways should be reset/replaced immediately. The damaged brick along the lower walls should be repaired within the next 4-6 months.

Brick Foundation

- The lower brick courses have severe deterioration. Repair/replacement is recommended.
- Prior repair is apparent and have failed. (Refer to Photo No. 13.)
- Repointing is needed in several areas. (Refer to Photo No. 14.)
- There is minor overall cracking.
- The foundation shows no signs of settlement or displacement.

- Moss, surface discoloring and deterioration from water infiltration and absorption exists in some areas.

The damaged brick along the lower walls should be repaired within the next 4-6 months. Repointing of the foundation is recommended in the next 1-2 years.

INTERIOR

- Plaster walls and arch ways are in good condition.
- Minor surface cracking with prior repair apparent.
- Cosmetic repairs are needed.
- Wood lower wall panels and wood cathedral ceiling appear to be in good condition. No indication of movement or deflection.
- The wood floors appear to be mostly level.
- The main arch over the alter area has a crack at the peak that runs vertically upward toward the ridge. This should be patched and monitored overtime. (Refer to Photo No. 15.)
- Several plaster cracks and water staining are apparent at and around the alter area. Repair of the cracking and monitoring is recommended. (Refer to Photo No. 16.)

The existing cracks should be repaired and monitored to determine if there is any further movement.

Roof Structure

- The wood framing is in fair condition.
- No apparent water infiltration apparent from this limited viewing location.
- Prior leaking and decayed wood exists around chimney penetration.

Occasional inspections by the owners are recommended.

Basement

Foundation:

Most of the basement has just crawl space depth. The rear area has a full basement depth.

- A brick masonry foundation exists around the perimeter of the church structure.
- Brick patching and infill and prior repairs are apparent.
- Prior repointing is apparent in several locations along the perimeter.
- Older mortar is breaking down and missing in several surface areas of the perimeter foundation. (Refer to Photo No. 17.)
- The rear full depth brick masonry foundation area has some missing and loose brick. (Refer to Photo No. 18.)

- Repointing is needed on the curved interior brick walls.
- Several floor beams have been installed to support the original floor joists.
- Steel beams on concrete footings previously installed under the rear alter area are in good condition.
- The middle wood beams under the alter area supported by several adjustable columns. These columns are in close intervals and have decay at their bases. These are not stable and should be replaced with a permanent member. (Refer to Photo No. 19.)
- The original steel fixed columns are rusted. New support columns may be needed in the future. Monitor over time. (Refer to Photo No. 20.)
- The main wood support beam has concrete footings with posts added at close intervals. These are all in good condition.
- Wood floor joist have minor checking and splitting. All of them appear to be in fair condition.
- The front floor joist under the entrance way span the full width of the floor. A center support beam is recommended to be installed to prevent deflection and downward settlement.

Repointing of the entire interior masonry walls is recommended in the next 1-2 years. The severely deteriorated areas should be addressed immediately. The adjustable columns should be replaced with permanent columns on proper footings.

The Floyd-Jones Cottage (Circa 1870) is a two-story wood framed dwelling with an attached one story framed kitchen area. The structure is bearing on a newer concrete block foundation.

EXTERIOR

- Wide plank wood clapboard siding is in good condition.
- Some siding boards are split and have bubbled painted areas. Repair may be needed soon. (Refer to Photo No. 21.)
- Some boards are loose and need to be fastened. (Refer to Photo No. 22.)
- The vertical wood corners need caulking along the edges where they meet the siding.
- The vertical joints between the siding boards need caulking.
- The displaced siding board on the rear wall needs to be reinstalled. (Refer to Photo No. 23.)
- The cedar roof is in fair condition.
- The flashing around the back of the chimney needs to be repaired. Poor initial installation is apparent.
- The brick façade along the foundation is in fair condition.
- The main dwelling, one story section and front porch appear to be plumb and in good condition.

Repair and replace any damaged wood siding boards as needed. Decayed and displaced boards should be addressed immediately to prevent damage to the material behind the siding.

INTERIOR

First Level

- The floors are level and in good condition.
- The finished walls and ceiling are in good condition.
- The doors and windows are plumb.
- The stairway is plumb and in good condition.

Second Level

- The floors are level and in good condition.
- The walls and ceiling are in fair condition. Cosmetic repairs may be needed.
- Doors and windows appear plumb.

FOUNDATION


- The foundation is a newer concrete block structure in good condition with no apparent cracking.
- The southern wall and the south end of the western wall has water infiltration. (Refer to Photo No. 24.)
- Water infiltration is also occurring at the Bilco door area.
- This door system is in poor condition. replacement is recommended. (Refer to Photo No. 25.)
- The newer floor joists are in good condition.
- Prior rodent infestation is apparent.
- The floor drain was installed in an ineffective location. (Refer to Photo No. 26.)

The foundation walls with the water infiltration should be cleaned and repainted with a water resistive sealant in the next 2-4 months and monitored over time. The grade along the exterior on this south foundation wall and south end of the west foundation wall should be regraded to create a better pitch away from the structure for drainage or run-off.

The existing basement door should be replaced with new properly installed Bilco door. The floor drain should be relocated to the lower slab area to be most effective.

If you have any further questions regarding the above reported conditions, please contact the undersigned at (631) 756-8000 ext. 1309.

Very truly yours,
H2M architects + engineers



Steven M. McEvoy, P.E.
Structural and Forensic Engineer



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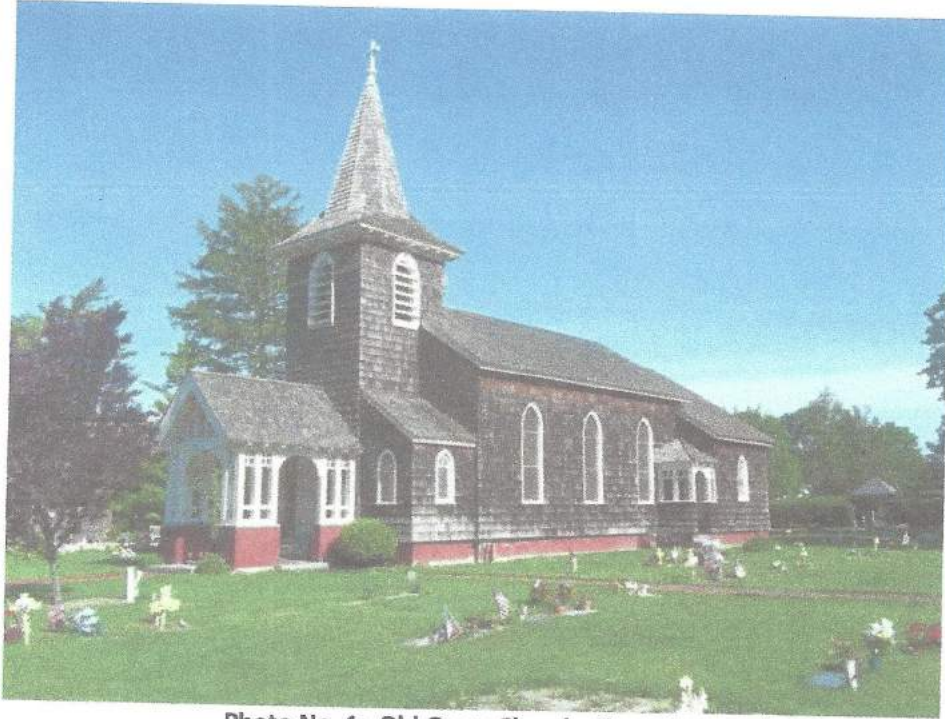


Photo No. 1: Old Grace Church, Circa 1844.



Photo No. 2: Floyd-Jones Cottage, Circa 1870.



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Photo No. 3: Cedar roof is worn and weathered.



Photo No. 4: Cedar shingles lifting and cupping.



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Photo No. 5: Front entrance gable roof in poor condition.



Photo No. 6: Ridge boards displaced from roof.



Photo No. 7: Moldings damaged from insects and rodents.



Photo No. 8: Decayed wood decking.



Photo No. 9: Stone steps for the side porch.



Photo No. 10: Front entrance steps need repointing.



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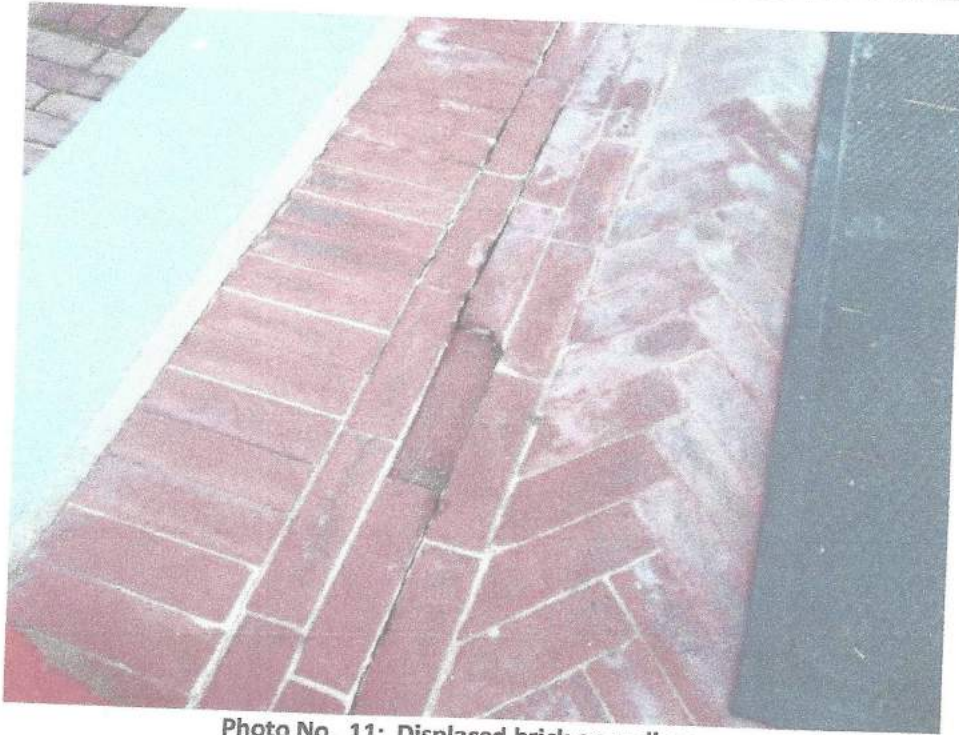


Photo No. 11: Displaced brick on walkway.



Photo No. 12: Lower brick around front entrance.



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Photo No. 13: Prior repair attempt has failed.



Photo No. 14: Repointing needed at several areas around the foundation.



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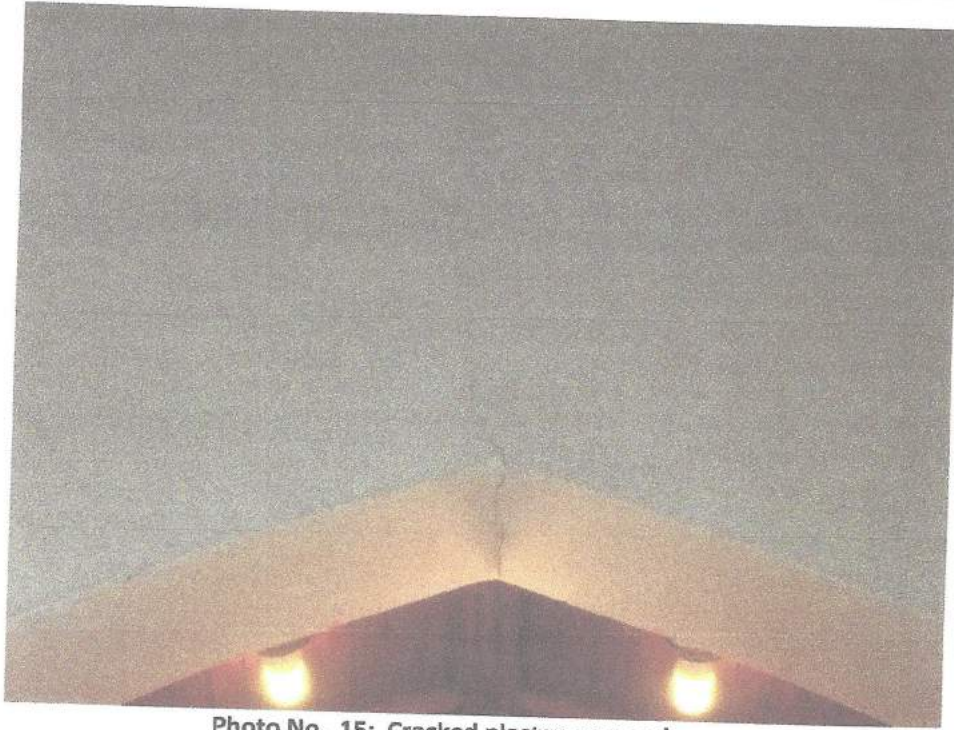


Photo No. 15: Cracked plaster over archway.

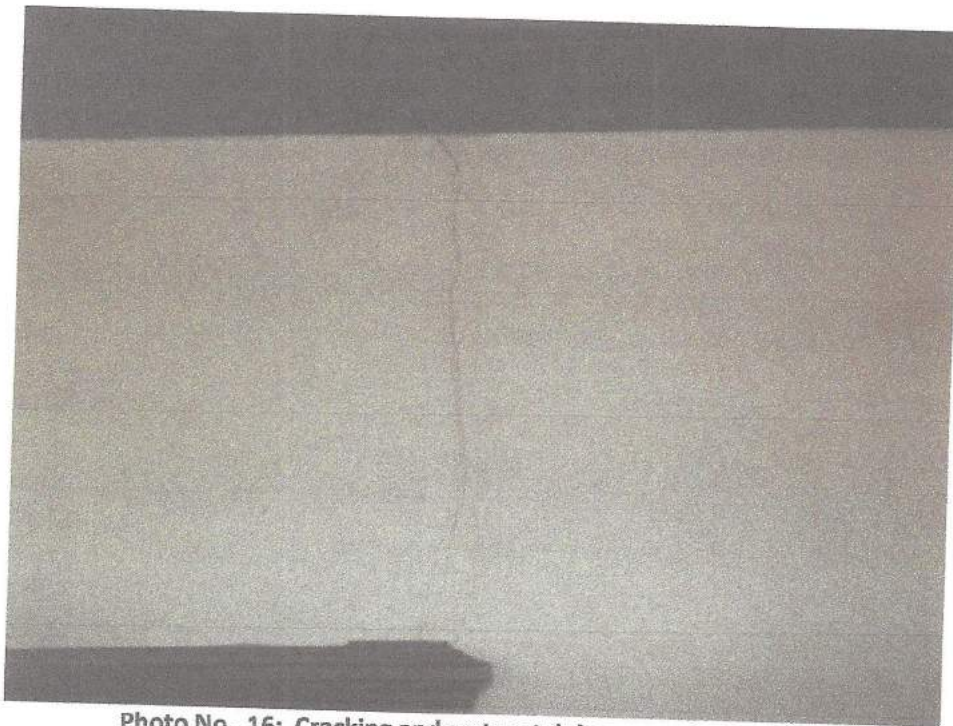


Photo No. 16: Cracking and water staining around alter area.



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Photo No. 17: Mortar breaking down and missing.



Photo No. 18: Missing and loose brick.



Photo No. 19: Adjustable steel columns supporting wood beam.



Photo No. 20: Base of columns have rust and decay.



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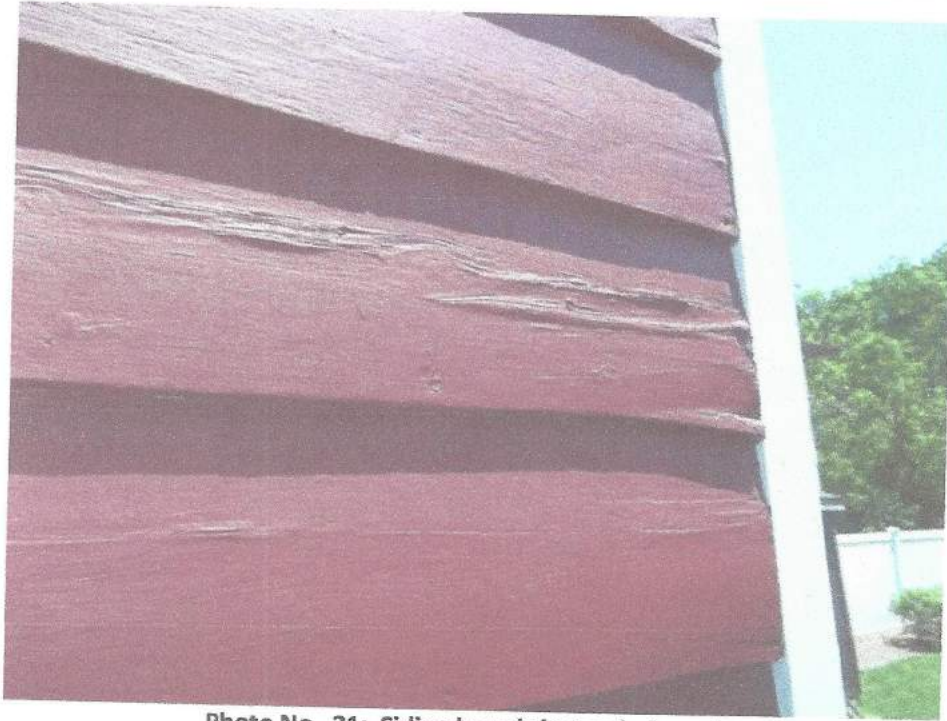


Photo No. 21: Siding boards in need of repair.



Photo No. 22: Loose siding board.



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Photo No. 23: Displaced siding board.



Photo No. 24: Foundation walls have water infiltration.



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Photo No. 25: Bilco door is in poor condition.



Photo No. 2610: Floor drain in concrete step.