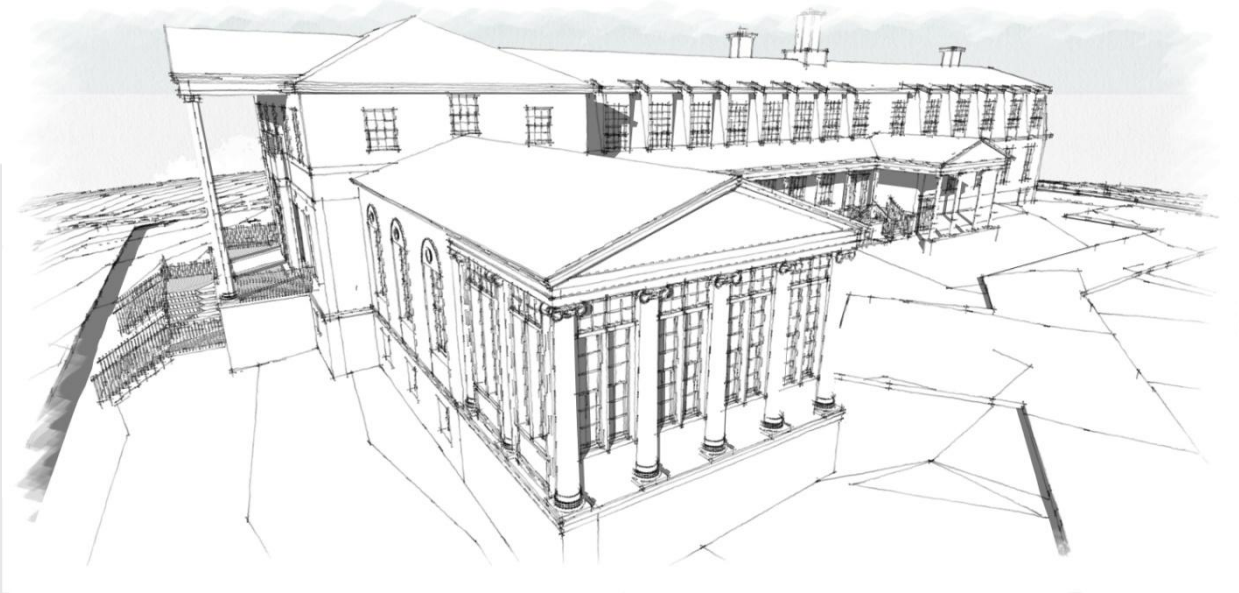




**beardsley**

architects + engineers



# FIELD HOME FINAL REPORT

## Yorktown Heights Field Home

(Yorktown, NY)

30 December 2025

## 1. Building Condition Assessment (BCA)

### a. Structural

#### Existing Condition Assessment

The Field House consisted of three sections constructed with battered concrete exterior walls, ranging from 10 to 24 inches thick at the base. The structural system incorporated both wood and steel beams, along with vertical tie bolts, varying by construction era. The original construction began in 1887 and concluded in 1924.

Due to its historic age, the concrete is unreinforced, as reinforcement standards were not codified in the U.S. until the 1920s. Evaluating such unreinforced historic concrete required a specialized approach, considering its age, material variability, and lack of reinforcement. Historic concrete often differed from modern mixes, potentially containing natural cements, lime, or pozzolanic materials, with widely varying strength and durability depending on the era and local practices.

Common deterioration issues included:

- Cracking from shrinkage or thermal movement
- Chemical degradation (e.g., sulfate attack)
- Freeze-thaw damage
- Poor bonding between layers or inclusions

The concrete evaluation included a visual inspection to identify signs of distress such as cracks, spalls, discoloration, moisture intrusion, deflections, and any evidence of past seismic damage. Additional non-destructive testing (NDT) may be necessary to assess internal conditions, along with material sampling to determine concrete properties.

In addition to assessing the concrete, further investigation is needed to map the layout of wood and steel beams to ensure the original structural system can support new design loads. This cannot be done at this stage because selective removal of the ceilings is required.

#### Second Floor and Attic Framing

The second floor and attic space of the existing building consisted of timber framing throughout. Neither the species nor the grade of the timber framing was able to be determined.

The building's second floor and attic were primarily framed together with a gambrel-style roof, with dormers present at the high-slope sections to provide windows.

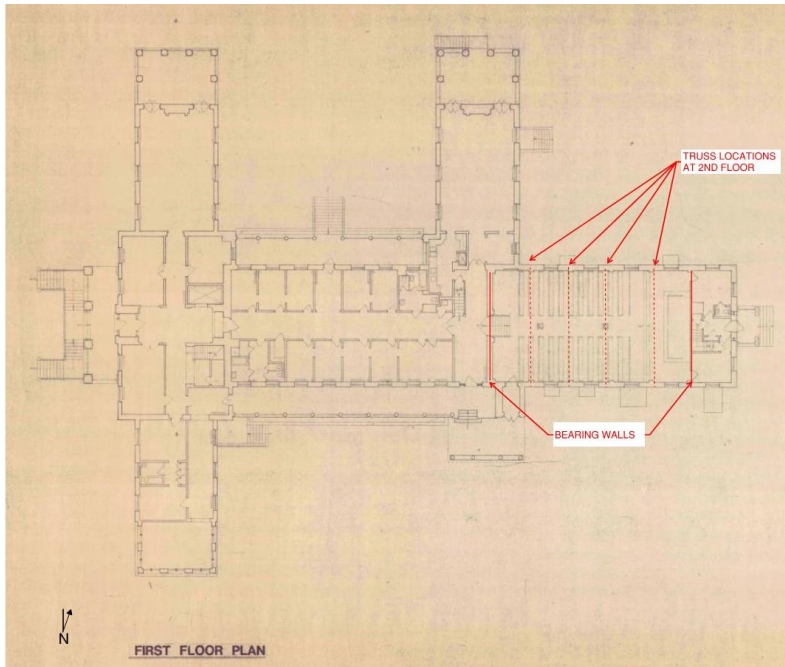
Most of the building showed little structural deterioration, except for the chapel. The timber framing of the second floor above the chapel space had undergone significant deflection, leading to the development of large cracks in the plaster finishes above.

No destructive investigations were performed. The existing framing of the second floor was assumed based on conditions observed from within the attic space. The second floor and attic were comprised of a gambrel roof. The framing of the second floor was assumed as follows, based on observations made from the attic space.

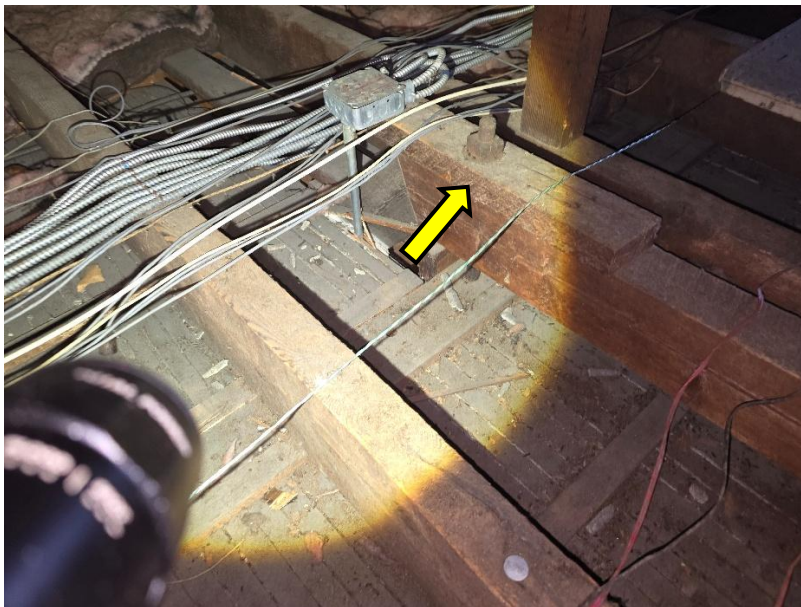
### **Structural Observations and Assumptions**

The corridor walls of the second floor were bearing walls supporting the low-slope portion of the gambrel roof and the second-floor ceiling joists, based on IMAGE 20250827\_112811. Studs supporting the low-slope roof were spaced at every other ceiling joist. Ceiling joists measured 8 ½ inches by 2 ¾ inches and were spaced approximately 24 inches apart. No walls or columns were present in the chapel space beneath the corridor walls above to continue the load path, nor was there evidence to suggest such structural elements ever existed, given the intended use of the space.





In the attic, what appeared to be hanger rods and diagonal chords were encountered intermittently, aligned with transverse walls below, based on IMAGE 20250827\_113051. It was assumed that trusses were buried in the transverse walls to support the corridor walls at the second floor. Chord members observed were measured to consist of 4x6 timber. A sketch was provided to depict the assumption made of the intermittent trusses.



The first-floor ceiling clear-spanned from exterior wall to exterior wall. This span was too great to be made of typical timber framing available at the time of original construction. It was assumed that the second-floor joists were oriented in either of the two options:

- Option 1: Joists were longitudinally parallel and spanned between the intermittent trusses.
- Option 2: Joists were transversely parallel and spanned between girders below the second-floor corridor walls, hung from the intermittent trusses.

Sketches are provided for each of these assumed conditions.

### **Structural Remediation Narrative:**

The existing building structure at the chapel has been determined to consist of a timber framed second floor and attic, supported by unreinforced concrete walls on the first floor. Visible deflections were present on the second floor significantly large to cause cracking through the existing lath & plaster finishes.

No destructive investigations were performed the existing framing of the second floor has been assumed based on conditions observed from within the attic space. The existing second floor and attic are comprised of a gambrel roof. The framing of the second floor has been assumed as the following base on observations made from the attic space.

The corridor walls of the second floor are bearing walls supporting the low slope portion of the gambrel roof and the second-floor ceiling joists, based on IMAGE 20250827\_112811. Studs supporting the low slope roof are spaced at every other ceiling joist. Ceiling joists are 8 1/2 in x 2 3/4 in spaced at approximately 24-inches apart. There were no walls or columns observed in the chapel space below the corridor walls above to continue the load path, no is it believed there ever was due to the spaces occupancy.

In the attic, what appeared to be hanger rods and diagonal chords were encountered intermittently, aligned with transverse walls below, based on IMAGE 20250827\_113051. It is our assumption that trusses were buried in the transverse walls to support the corridor walls at the second floor. Chord members observed were measured to consist of 4x6 timber. A sketch has been provided to depict the assumption made of the intermittent trusses.

The first-floor ceiling clear spans from exterior wall to exterior wall. This span is too great to be made of typical timber framing available at the time of original construction. It is our assumption that the second-floor joists are oriented in either of the two options. Option 1, the second-floor joists are longitudinally parallel and spanning between the intermittent trusses. Option 2, the second-floor joists are transversely parallel and spanning between girders below

the second-floor corridor walls hung from the intermittent trusses. Sketches have been provided for each of these assumed conditions.

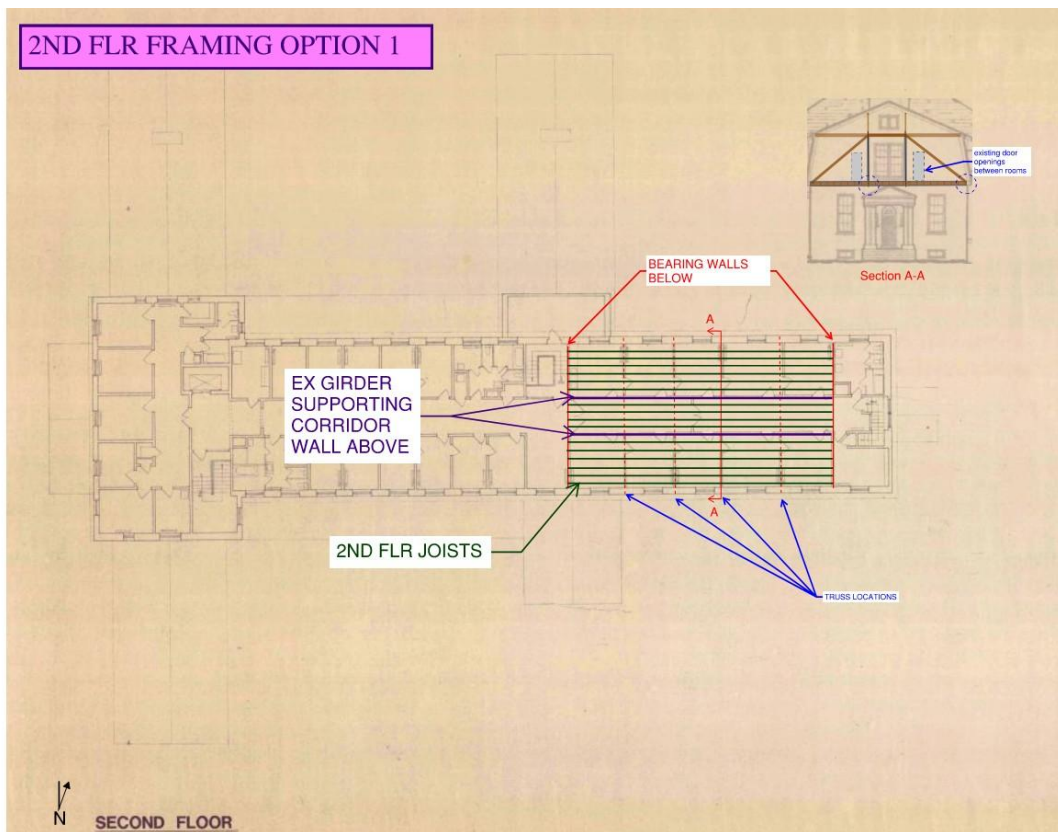
### Proposed Remediations

In both options for the second floor the critical point appeared to be the intermittent trusses. There is no other readily observable load path, without performing destructive observations. The observed distress in the second-floor walls leads us to believe that the deflection is primarily occurring within the transverse direction in the intermittent trusses.

The proposed remediation would include jacking of the existing trusses back into position and supporting with secondary framing. A few options have been put together for further consideration. Sketches have been provided for each option. In each option, additional columns should be provided to support the supplemental framing.

#### Option 1:

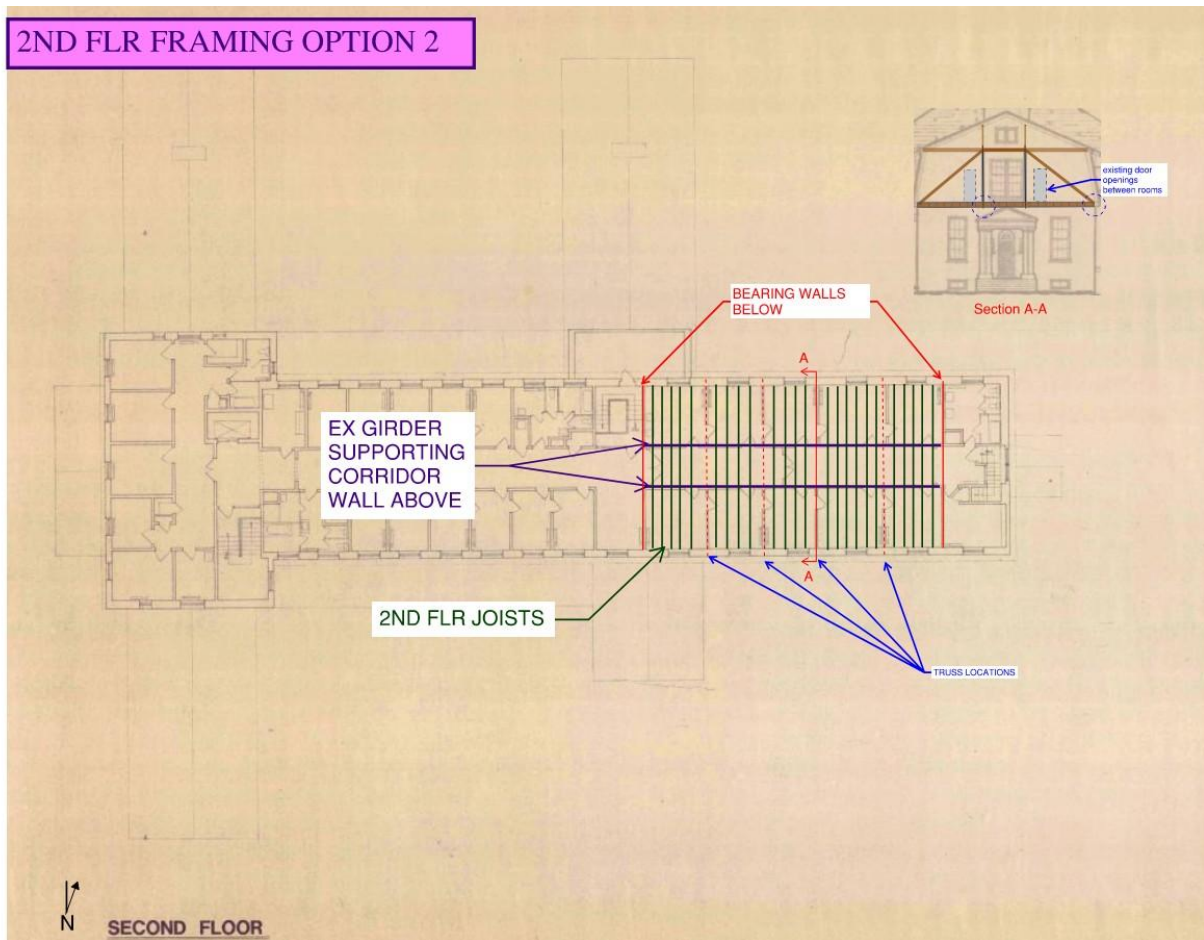
A post tensioning system used to jack the second floor to back to level and left in place. The tensioning system would span between additional columns at the exterior walls aligned below the intermittent trusses above.



**Option 2:**

Supplemental girders framed below the intermittent trusses spanning between columns at the exterior walls. The girder would likely need to be placed in segments due to span and weight. Once installed the girders would be jacked to the point the second floor is level. Additional bracing would then be installed to lock the supplemental girder into its final position.

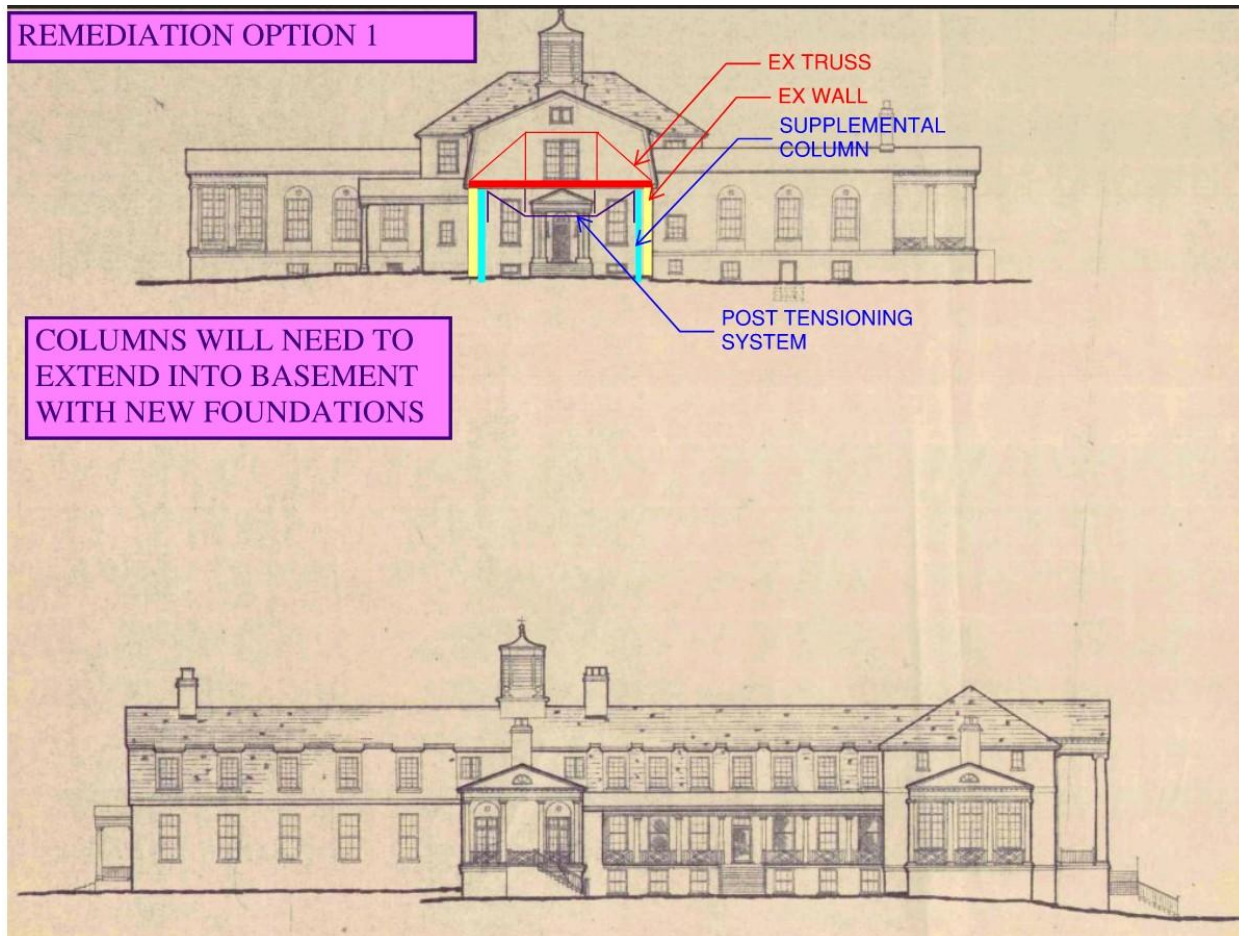
Jacking procedures performed with jacking posts and temporary shoring would need to be supported down to the basement floor. It is not believed that the first floor would be able to support the induced loads caused by construction procedures.



**Option 3:**

Remove and reframe the second floor over the chapel space in its entirety.

In both Options 1 & 2, allowances should be carried to address repairs to the second-floor joists as determined necessary as they become observable. Jacking procedures may induce damage to the existing structure above that would require remediation, as such, allowances should be carried to account for reseating joists, replacing fasteners, etc.



In all options based on the level of alterations performed additional supplemental structure would be required to retrofit the lateral system to meet modern seismic and wind design codes. Additional allowances should be carried to address retrofit to be performed.

**Note:** A full photographic survey of existing structural conditions can be found in Appendix I - Site / Building Photographs

## b. MEP / Building Systems

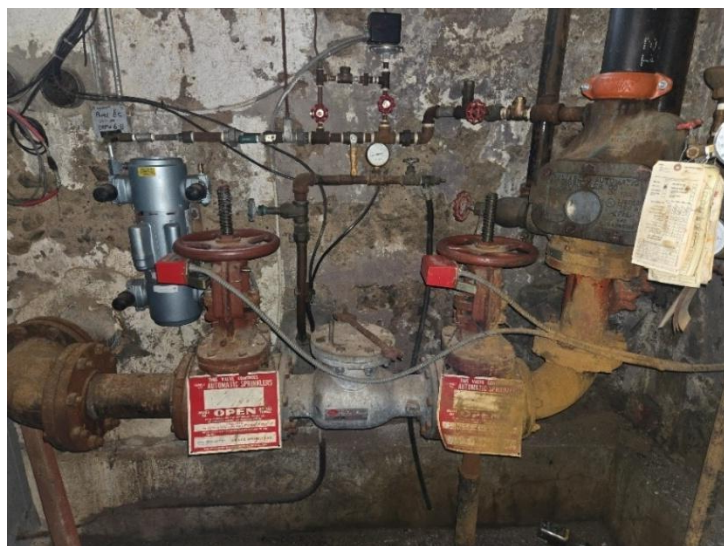
Overall, the MEP / Building systems observed appeared to be consistent with a building of its age that has been continuously occupied and at least minimally heated. Moderate upgrades and repairs appear to have occurred over the life of the building several systems are still operational, if not nearing the end of their useful life.

### Mechanical Systems

While a new boiler was installed 3 years ago, it is not known if the existing heating and radiator is operational in its entirety. There is an older high pressure steam system that has been decommissioned and largely left in place.

There is no central cooling system. Individual window air conditioners and a small number of mini-splits have been utilized on a limited basis. There is no independent or centralized ventilation system and the building relies on largely passive ventilation measures.

For the purposes of planning for a new adaptive re-use of the building, it is the conclusion of the Beardsley team that entirely new Heating and Cooling systems are required, from major source equipment to all distribution systems and point-of-delivery ceiling and floor devices.



## **Plumbing Systems**

The original building wastewater system utilized a conventional leach field septic system to the north of the building in the area that will be transferred to the new Toll Brothers residential development. This has been abandoned and appears to have been removed. The building is currently served by the municipal sewer system.

Domestic water is served by two tanks in the basement. The exact age of the distribution piping is unknown. Plumbing fixtures, flush valves, valve panels, and general plumbing accessories appear to be mostly functional however are considered to be advanced in age and candidates for replacement.

## **Fire Protection**

There is currently a full building sprinkler system in place with exposed black steel pipe and exposed sprinkler heads in the spaces served. The system was installed in the mid 1980's. While the current condition and degree of NFPA 13 compliance for the existing sprinkler heads is questionable, there is the potential for re-use of at least some of the larger sprinkler distribution piping. However, given the unknown condition and age of the overall system, newer NFPA 13 requirements for fully automatic systems, and likely new sprinkler locations and distribution branches associated with adaptive re-use, the Beardsley team recommends complete removal and replacement with a new fully certified system.

## **Electrical Systems**

The electrical system in general is operational and appears to have been upgraded over the years. There are no indications of older, non-compliant wiring and panels still in use. All vintage-and-tube wiring appears to have been removed and replaced with romex and armor cable wiring.

The electric service appears to have been upgraded and increased over the past 10 to 20 years and features multiple points of service. An exterior diesel emergency generator on the northeast corner of the building is not functional.

For the purposes of planning for a new adaptive re-use of the building, it is the conclusion of the Beardsley team that entirely new electrical wiring is required, from major source equipment to all distribution wiring, panels and outlets. A new emergency power generator will be required dependent on the final new building use.

With the exception of several decorative chandeliers and wall sconces, there are few lighting fixtures that are considered salvagable.



**Note:** A full photographic survey of existing MEP / Building Systems can be found in Appendix I - Site / Building Photographs

### c. Architecture

In general, the principal architectural systems including walls, doors, windows, and roofs, are considered to be in reasonable condition given their age. There are isolated instances of deterioration or limited failure due to localized water damage but nothing on a significant or systemic scale. Nearly all finishes, wall and floor coverings, and other surface treatments require scraping, patching, repair and refinishing / repainting. In general, nearly every space requires cosmetic refinishing and, in some cases, repair and restoration.

#### **Walls**

Exterior walls are original unreinforced concrete that varies in thickness from 18” to 24”. In general, the walls are in good condition and show no signs of structural cracking or failure. The interior finishes are in good condition with the exception of a few limited areas of water damage. The interior walls in the Chapel require significant repairs. The exterior plaster/stucco finishes are showing signs of cracking and require a moderate amount of repair.

The site visits and inspections did not allow for a clear determination of the complete wall assemblies and it is suspected that there is limited insulation in the exterior walls. It is likely that an adaptive re-use will require additional insulation to achieve compliant R-values for current NY energy code.



## Flooring

The majority of interior flooring is original hardwood flooring over wood sheathing and floor joists. The visible wood flooring is in good to excellent condition. In some areas, new wall-to-wall carpeting has been installed. Basement flooring is primarily exposed concrete. It is recommended that the wood floors are refinished and that the concrete floors are power-washed, sealed or painted. All floors require minor spot repair as required.



## Ceilings

The majority of the existing ceilings are hard plaster or gypsum on underlying lath or wood slats. Most are in good condition and only require cosmetic repair. There are a limited number of ceiling lights, mostly decorative chandeliers.

There are some lay-in acoustic ceiling tile (ACT) ceilings in back of house areas that, with some possible exceptions, require full replacement. Most of the 2x2 and 2x4 fluorescent troffer lights are also candidates for replacement.



### Doors / Windows / Skylights

The majority of interior and exterior doors appear to be original and in good condition with some in need of minor repair. All require cosmetic upgrade and re-finishing or re-painting.

With the exception of the Chapel, nearly all of the original windows have been replaced with newer replacement aluminum windows equipped with storm windows and screens. They are not true divided light windows and would not be eligible for historic restoration (they have faux muntins sandwiched between two glass panes). It is unclear how old the windows are. The expected life of new double pane thermal windows is approximately 25 years. Based on appearance and workmanship, they appear to be lower end to moderate grade replacement windows with thin aluminum profiles. The seals and air gaps may be compromised and not as energy efficient as new windows. Given the unknown age and performance of the windows and the overall aesthetic incompatibility with the buildings historic character, it is recommended that be replaced.



## Interior Stairs

There are two main open stairs at the west end and center of the building and one smaller closed stair at the east end of the building connecting to the Chapel. The stairs are wood construction and are in good condition. Note: the two main open stairs are not fire rated and will likely require a rated separation to meet new code requirements for adaptive re-use.



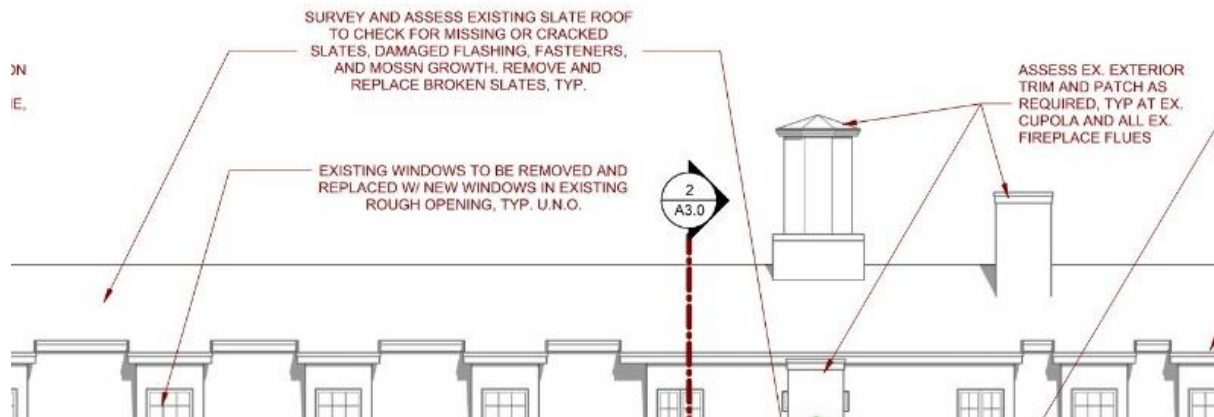
## Interior Trim and Ornamentation

Interior wood trim including crown molding, chair and picture rail, dentils, etc. is generally in good condition and requires minor repairs and cosmetic upgrades. The majority is located on the first floor. Note: The trim and ornamentation in the Chapel require significant repair.



## Roofing

The building roofs are slate and standing seam metal extending to the time of construction with some more recent asphalt roofing added. They are functioning but in need of detailed inspection and repairs as required. The pitched and gambrel roofs feature accessible roof attics which are uninsulated and ventilated by gable end wall louvers and several large roof monitor ventilators.



## Exterior Porches

All exterior porches are showing significant weathering and minor degradation. Minor to moderate repairs and repainting and refinishing is required.



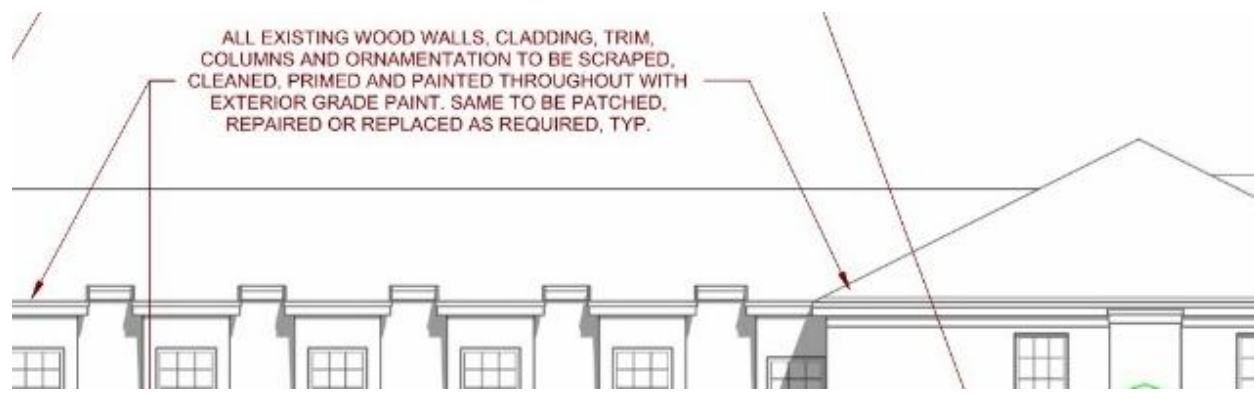
### Exterior Railings / Iron Work

The original exterior iron railings show significant rust and deterioration. Handrails, balustrades, and base plates require major repairs or complete replacement. Wood railings require minor repairs and refinishing.



### Exterior Trim and Ornamentation

Exterior wood trim including cornices, pediments, columns, fascias, etc. is generally in good condition and requires minor repairs and cosmetic upgrades. There are some areas, typically at the porches, that require moderate to major repairs.



## Vertical Circulation

There is an existing 3-stop passenger elevator that is currently in use, however it is at least 50 years old. While the shaft and available space for elevator equipment are re-useable, any adaptive re-use of the building would require a new elevator cab, lifting mechanisms, and controls. Re-use of existing elevator rails, hoist beams and other structural elements would require further inspection for potential re-use. There is also a non-functioning dumb waiter lift from the basement to the first floor.

With the exception of the exterior open handicapped platform lift, there is little in the building to accommodate accessible use. The platform lift has reached the end of its useful life and should be demolished. A new and fully comprehensive strategy for accessibility is required for any adaptive re-use scenario.



**Note:** A full photographic survey of existing architectural conditions can be found in Appendix I - Site / Building Photographs