Jacob Riis Houses

Existing Conditions Report

January 29, 2025, Final Draft

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Appendices

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1. Introduction

1.1. Background and Purpose

To allow Riis Residents to make an informed decision on whether or not to enter into the PACT program, NW and its consultants have prepared this report detailing the existing conditions of the buildings, systems, and grounds at Riis Houses.

1.2. A Brief Description of Riis Houses

Riis Houses is an early NYCHA development constructed in the late 1940s. The complex was completed on January 17, 1949, and the first tenants moved into the complex in 1947. The 1938 NYC Building Code would have been used for design and construction. Riis Houses is located in Manhattan's Lower East Side, bounded by Avenue D to the West, the FDR Drive to the East, 6th Street to the South and 13th Street to the North.

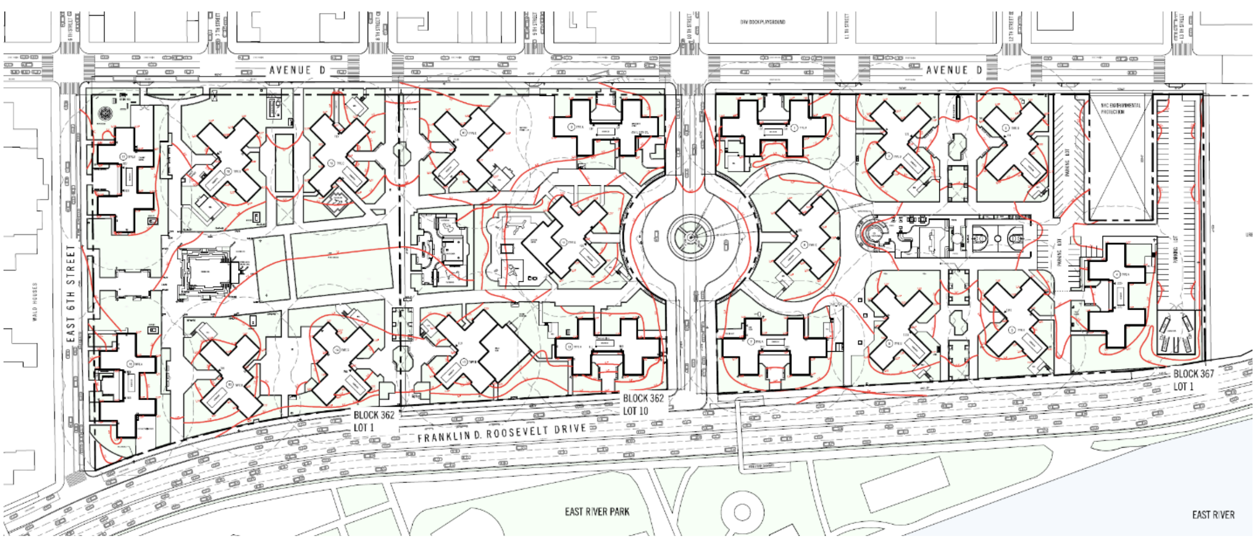
Riis was constructed in two developments, Riis Houses I and Riis Houses II. It is comprised of three zoning lots. Riis I consists of two of these zoning lots, to the North, Block 367, Lot No. 1, and to the South Block 362, Lot No. 10. These two lots are bisected by East 10th Street which has a traffic circle mid-block. Riis II is comprised of one zoning lot, Block 362 Lot No. 1. The two lots on Block 362, No. 1 (Riis II) and No. 10 (Riis I South of East 10th Street) share a lot line.

The area of Block 367, Lot No. 1 is 318,329 SF (7.307 acres).

The area of Block 362, Lot No. 10 is 192, 597 SF (4.421 acres).

The area of Block 362, Lot No. 1 is 258,120 SF (5.926 acres).

The total property area is <u>769,046 SF</u> for a total of <u>17.655 acres</u>.



Riis Houses I and II Site Plan

Please refer to Appendix A for Riis Houses – Site Location.

At Riis Houses (I and II) there are a total of (19) buildings of three different building types. These types are:

1.2.1. Type A+AR includes all the low-rise buildings (6 stories + Basement) made of a Unit A and a symmetrical Unit AR (R for reflected) combined. There is a total of (7) Type A+AR buildings; (5) located in Riis I (Buildings 1, 4, 7, 9, and 12) and (2) located in Riis II (Buildings 16 and 17). The A half of the building has a separate address from the AR half of the building which includes a separate entry, elevator, and stair. The second means of egress is provided by taking a stair up to the roof and crossing the roof to the stair on the other half of the building. This conforms with the 1938 NYC Building Code, but not subsequent building codes. Buildings Type A+AR each originally, typically had a total of (48) 3-bedroom dwelling units for a total of 336 3-bedroom dwelling units and up to 2,016 residents based upon NYCHA's expectation of (2) residents per bedroom. The typical floor plans for type A+AR have a total square footage of 8,022 SF. The gross square footage is 56,154 SF each, and 393,078 SF for all (7) buildings. Note, some of the spaces in the basements are identified as "Pipe Space" and may not have adequate ceiling height or finishes to qualify as gross floor area. This gross floor area does not include the recent electric and gas room additions.

Building 1: Basement, 1st- 6th Floors, Roof, and Bulkheads
Building 4: Basement, 1st- 6th Floors, Roof, and Bulkheads
Building 7: Basement, 1st- 6th Floors, Roof, and Bulkheads
Building 9: Basement, 1st- 6th Floors, Roof, and Bulkheads
Building 12: Basement, 1st- 6th Floors, Roof, and Bulkheads
Building 16: Basement, 1st- 6th Floors, Roof, and Bulkheads
Building 17: Basement, 1st- 6th Floors, Roof, and Bulkheads

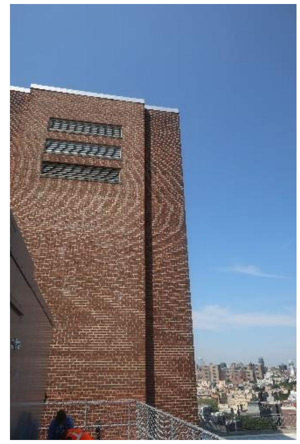
1.2.2. Type B includes mid-rise buildings (14 stories + crawl spaces). There are a total of (7) Unit B buildings, (5) in Riis I (Buildings 2, 3, 5, 6, and 13) and (2) located in Riis II (Buildings 15 and 18). Each building has a single residential address, a single hall with (2) elevators and (2) stairs in a scissor-stair configuration. Each Building Type B has (13) 1-bedroom apartments, (82) 2-bedroom apartments, (28) 3-bedroom apartments and (1) 4-bedroom apartments for a total of 124 apartments. The (7) type B buildings have 868 apartments and total of 6,076 bedrooms, and up to 12,152 residents at (2) residents per bedroom. The gross floor area of type B buildings, excluding crawl spaces, roof bulkheads, ground floor extensions unique to specific buildings, and gas and electric additions is 99,190 SF and 694,330 for all (7) Type B buildings together.

Building 2: Basement, 2nd -14th Floors, Roof, and Bulkhead
Building 3: Pipe Access Space, 1st-14th Floors, Roof, and Bulkhead
Building 5: Pipe Access Space, 1st-14th Floors, Roof, and Bulkhead
Building 6: Pipe Access Space, Basement, 2nd -14th Floors, Roof, and Bulkhead
Building 13: Basement (For the boiler room), 2nd -14th Floors, Roof, and Bulkhead
Building 15: Pipe Access Space, 1st-14th Floors, Roof, and Bulkhead
Building 18: Pipe Access Space, 1st-14th Floors, Roof, and Bulkhead

1.2.3. Type C includes mid-rise buildings (13 stories + basement). There are a total of (5) Unit C buildings, three in three in Riis I (Buildings 8, 10, and 11) and two located in Riis II (Buildings 14 and 19). Each building has a single address for residents, a single hall with two elevators and (2) stairs in a scissor-stair configuration. Each building Unit C has a total of 117 2-bedroom apartments. The (5) Unit C buildings have 585 apartments and a total of 1,170 bedrooms, and up to 2,340 residents when calculated at (2) residents per bedroom.

The gross floor area of Unit C a building, excluding crawl spaces, roof bulkheads, ground floor additions specific to each buildings, and gas and electric additions is 92,302 SF and 461,510 SF for all (5) Type C buildings together.

Building 8: Basement, 1st-13th Floors, Roof, and Bulkhead with Water Tower
Building 10: Basement, 1st-13th Floors, Roof, and Bulkhead
Building 11: Basement, 1st-13th Floors, Roof, and Bulkhead with Water Tower
Building 14: Basement, 1st-13th Floors, Roof, and Bulkhead
Building 19: Basement, 1st-13th Floors, Roof, and Bulkhead



Water Tower at Building 11

1.2.4. Gas and Electric Additions have been added at the ground level of each of the buildings with standby generators installed on the roof as part of the Hurricane Sandy R+R work. As one would expect, the gas rooms include gas meters and the electric rooms include switch gears and automatic transfer switches. These are built above the base flood elevation. Buildings with a Gas and Electric Addition and Generator include:

Building 1
Building 2
Building 3
Building 4
Building 5
Building 6
Building 7
Building 8
Building 10
Building 11
Building 12
Building 13
Building 14
Building 15
Building 18
Building 19

ATS at Building 4

Buildings 9, 17, and 18 do not have standby electric generators and hence do not have gas and electric additions.

In all (19) buildings, there were originally 1,789 apartments with a total of 5,216 bedrooms, capable of housing 10,432 residents at two persons per bedroom. Over the years, NYCHA has combined apartments reducing the total apartment count to 1,769 apartments according to records. The official population according to NYCHA is 3,852 persons.

1.2.5. The Support and Community facilities for Riis I and II are located on the ground floor of various buildings.

Building 8: (Type C) originally housed a laundry facility. This is currently occupied for NYCHA's Caretaker X shop.
Building 10: (Type C) has an extension for a garage, storage areas, and office-related spaces such as the lunch area, locker rooms, bathrooms, and maintenance shop. This is currently occupied for NYCHA's Assistant Superintendent's Office, Security Operations Center, Maintenance Shop, and caretaker locker rooms.
Building 9: (Type A + AR) contains the management office.
Building 11: (Type C) housed a nursery for childcare. This is currently an unoccupied daycare center. It has been reported that a senior medical facility is taking over this space for use.
Building 12: Housed a nursery and kitchen, that apparently are no longer in use.
Building 13: (Type B) has an extension for the boiler room serving the campus. This still provides heat and is the central distribution point for heat on the campus.
Buildings 14: (Type C) originally housed a laundry facility. This is currently occupied by the Elevator Division and the Heater Plant Technician Plumber.
Building 16: (Type A + AR) accommodates offices and additional storage areas.
Building 17: The ground floor is now occupied by Henry Street settlement (a social services organization focused on the Lower East Side).
Building 18: Unoccupied former daycare center.
Building 19: (Type C) is designated for other support spaces i.e. "craft rooms". Currently this space is occupied by the Chinese-American Planning Council, Inc.

1.3. Methodology

To determine the existing conditions of the building NW and its consultant team researched available documentation, made extensive observations on site, including detailed photographic surveys of two representative buildings' facades, observed boiler room, tank rooms, gas rooms, electrical rooms, performed structural analyses, conducted exploratory probes, and performed laboratory testing and computer simulations of the building masonry assemblies.

The budget and schedule restraints of this project demand the development of a methodology that allowed NW to submit findings to the residents without having to evaluate every existing condition.

This required NW to strike a balance between being thorough and being exhaustive. As a result, our methodology has been to prepare in-depth analyses of a representative sample of existing conditions. We have extrapolated those findings and applied them to the development as a whole to guide our recommendations.

Our process has included the following:

1.3.1. Research

As a first step, NW gathered as much pertinent information as possible about the development. At Riis, this included preconstruction surveys and site information, the original construction documents, construction documents for projects on site after the original construction including the Hurricane Sandy R+R work, Environmental Testing, Local Law 11 reports, DOB violation reports, SHPO Eligibility reports, Field Reports, PNA and CNA reports, and other pertinent reference information. Notably, NW also obtained roof warrantees/guarantees for the (12) buildings where the roofs were replaced during the last decade. At Riis II NW has determined that the (6) buildings should still be under a roof warrantee/guarantee but as of writing this report have not received a copy of these. Repeated attempts with Johns Manville, the roof manufacturer, have only yielded warranties for the bulkheads. Because of NW's limited schedule and budget, NW has been obliged to rely upon the accuracy of these various sources of information, except where there is obvious contradiction with its own observations.

1.3.2. Observation and Mapping

In-depth observation and mapping was performed at two building facades that NW believed would be representative of the development as a whole. This included on a mid-rise building, Building 5 (a 14-story Type B building) and one low-rise building, Building 12 (a 6-story Type A+AR building). NW observed all the roofs and roof structures, and select building interiors including (7) apartments (Building 3 - 14F and 2H, Building 14- 13A and 3B, Building 15 - 14F and 12I, and Building 18 - 14D), and the entry lobbies, hallway and stair interiors of Buildings 5 and 14. NW engineers observed the boiler plant and individual equipment spaces in several buildings to determine the capacity and condition of the various systems. NW's landscape architect observed and documented site features.

Please refer to Appendix C for the Base Drawings and Appendix D for the Damage Mapping.

1.3.3. Non-Destructive Testing

Non-destructive testing was performed to determine the adhesion of a liquid-applied water/air barrier at the face brick to determine the feasibility of this application.

Post-installed adhesive anchor tests were performed to confirm the structural capacity of the existing masonry as part of a potential rehabilitation strategy.

Masonry probe at Building 5

1.3.4. Exploratory Probes

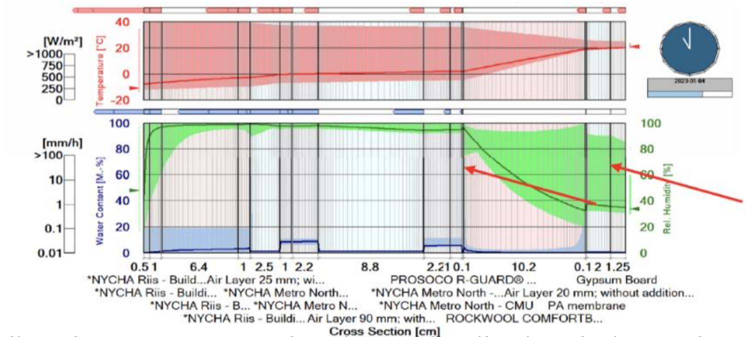
Bricks were removed at two locations, one Building 5 and one at Building 17, to provide sample bricks for laboratory testing and to allow NW to observe the conditions at two different buildings. Building 5 was selected as a mid-rise building located along the FDR and exposure to the river exhibiting a lot of physical deterioration. Building 17 was selected as a low-rise building located along Avenue D which exhibits the least physical deterioration.

1.3.5. Materials Testing

The bricks removed from Building 5 and Building 17 were sent to RDH Building Science to perform laboratory tests to determine the properties of the bricks removed. Specifically, it was intended to determine if the physical deterioration observed at the two buildings was a result of different material properties, or of the location, and orientation of the different buildings on site.

1.3.6. Computer Simulations

RDH Building Science performed a hygro-thermal simulation of the building enclosures at both Buildings 5 and 17 using the material properties derived from the brick laboratory testing. These simulations tested the susceptibility to freeze/thaw failure and mold in the existing construction, where the existing masonry has (or does not have) a coating, if the existing construction were insulated at the interior, and if the existing construction were insulated and overclad at the exterior to determine the feasibility of various rehabilitation strategies.



Predicted temperature and moisture distribution during early Winter. Computer Simulation graphic for Building 17

1.3.7. Structural Analyses

Gedeon Engineering performed structural analyses of the columns, spandrel beams, backup masonry, and face masonry to determine the feasibility of various rehabilitation strategies.

1.3.8. Regulatory Analyses

Building Valuation for Substantial Improvement (greater than 50% of the value) will be determined once cost estimates are prepared to determine if accessibility and Appendix G compliance is required in the rehabilitation of these buildings. Likewise, if the cost is greater than 60% of the value, the building shall be mode compliant with the fire protection requirements of the 2022 NYC Building Code.

1.3.9. Accessibility Analysis

Accessibility Analysis of the existing buildings was performed to determine if it is possible to comply with HUD Section 504 accessibility targets in the existing buildings.

2. Findings

2.1. <u>Potentially Hazardous Conditions</u>

2.1.1. <u>Deterioration in Crawlspace columns:</u> NW's surveying has identified and learned of potentially hazardous conditions at Riis Houses. These include the deterioration of concrete columns, beams, and slabs in the crawl spaces and basements of (12) of the (19) buildings as reported to NYCHA in the Hurricane Sandy R+R project by YAS Structural Engineers. (7) of the buildings were identified as having "Priority 1" conditions that require immediate attention. These are Buildings 5, 9, 11, 13, 14, 15, and 18. Of these, emergency shoring has been installed in (4) of the buildings, Buildings 9, 11, 15, and 18, with work planned for the remainder of the high priority buildings.

Temporary shoring should be put in place at deteriorated concrete structural conditions for the balance of Priority 1 conditions (Buildings 5, 13, and 14). All buildings with Priority 1 conditions have had their respective filings approved by the NYC DOB to perform the work

(Buildings 5, 9, 11, 13, 14, 15, and 18). Permits have been issued for and work has commenced in Buildings 15 and 18.

Please refer to Appendix F for the YAS report.

2.1.2. Exterior Masonry: bricks that absorb excess water are subject to spalling, a condition where water in the brick expands as it freezes, causing the saturated portion to fail and break off. NW has observed significant areas of spalling brick located at the buildings, particularly the buildings located adjacent to the FDR Drive.

Spalling at Building 4

NW identified vertical cracks at corners where probes have shown that original masonry ties have corroded away, leaving these corners at risk of failure.

The probe (please refer to *2.3.2.3.1. Probes* later in the report for more on this) at Building 5, Elevation 11 (see key plan) there is a crack that aligns exactly with the joint between the concrete column and the backup masonry. At the concrete columns, originally there were galvanized wire ties that have were to tie the brick to structure of the building. These have corroded all the way through. Thus, where cracks occur at both sides of an outside corner, such as the corner between Elevations 10 and 11, the corner masonry is not attached to the column or to the backup masonry and is an additional potentially hazardous condition.

Deteriorated concrete at Building 9 crawlspace – photo by YAS

Measures should be taken at these conditions to protect the public, such as the installation of temporary netting to restrain the masonry at the corners or areas of spalling, or erection of temporary fencing or sidewalk sheds to keep pedestrians away from potential falling masonry. As of the date of this report, sidewalk shed and fence have been installed at Building #5.

2.2. Building Superstructure

2.2.1. Deterioration of Concrete Superstructure at Crawl Spaces:
Please refer to 2.1. "Potentially Hazardous Conditions".

2.2.2. Additional Likely Deterioration of Concrete Superstructure
Despite the observed deterioration of the concrete superstructure in crawl spaces, which NYCHA is currently addressing, and suspected localized deterioration of the superstructure throughout the development, most likely at roof slabs and spandrels, NW believes the basic integrity of the buildings' structures to be intact. Repair of this is a mature technology that

has been employed at many buildings, including in many NYCHA rehabilitation projects designed by NW.

2.2.3. Capacity of Existing Superstructure to Accommodate New Gravity Loads

When this building was designed in 1946, the code in place at that time, the 1938 NYC Building Code did not require consideration of lateral loads (wind and seismic loads) in the design of the structure. This requirement was not incorporated into the code until the 1968 Building Code was published for wind loads, and until Local Law 17/95 was published to amend the 1968 Code in 1995 for seismic loads.

The buildings' performance for the last (77) plus years demonstrates their basic structural integrity.

To determine the feasibility of different rehabilitation strategies, NW has retained structural engineering firm Gedeon GRC Consulting to analyze the building and the various potential rehabilitation strategies for their structural feasibility.

Gedeon was charged with the following Questions:

Q1.) What is the capacity of the existing concrete spandrel beams, to accept additional deadload from over-cladding the existing building with a brick cavity wall assembly (or a lighter type of rainscreen assembly)?

Q2.) What is the capacity of the existing perimeter columns, and can they accept the cumulative additional deadload that would be imposed by over-cladding the existing masonry with either 1-wythe of new a rainscreen assembly?

Q3.) Does the existing un-reinforced brick and block masonry enclosure have the capacity to resist current code wind loads (or 1968 code wind loads to be more precise) without additional reinforcement?

Q4.) If we need to remove the face brick for any reason, does the existing CMU backup have adequate capacity to resist 1968 code wind loads without additional reinforcement? If not, what kind of reinforcement and at what spacing is required?

Gedeon's Responses, in abbreviated form, are:

R1.) Gedeon's evaluation shows that the worst-case spandrel beam is at 85% capacity with existing loading of 1,597 PLF (Pounds per Linear Foot), therefore the spandrel beam has a capacity of 1,878 PLF. The excess capacity of the spandrel beam is 281 PLF. With a floor-to-floor height of (8.5) feet, this divides out to (33) PSF (Pounds per Square Foot). The weight of (1) wythe of brick over-clad with insulation on the existing brick is approximately (40) PSF. This exceeds the excess capacity of the spandrels. Therefore, brick over-cladding is not practically feasible. The square foot weight of a typical rainscreen cladding is between (12) and (15) PSF: Over-cladding with a rainscreen should be structurally possible.

R2.) Gedeon's calculations show that the existing columns have adequate excess capacity to accommodate the additional deadload of (1) wythe of new brick or a rainscreen assembly.

R3.) Gedeon's evaluation shows that the existing composite brick and block masonry wall have adequate capacity to resist wind loads without additional reinforcing.

R4.) Gedeon's evaluation shows that the existing backup concrete masonry also has adequate capacity to resist wind loads without additional reinforcing, even when the face brick is removed.

Please refer to Appendix G for the detailed report.

2.3. Building Enclosure

2.3.1. Roofs

The original roofs were zero-slope built-up coal tar roof assemblies with slag ballast. The scope for work for the Hurricane Sandy Recovery+Resilience project, designed by LiRo included a full roof replacement at Riis I which to NW research has occurred on all roofs except for Building 9.

The scope of this work at Riis I was to remove the existing roof assembly, to repair the existing concrete roof slab, to install a torch-down membrane vapor barrier, a minimum of (4) inch polyisocyanurate insulation (R25 min to comply with 2016 NYC ECC), tapered to provide a minimum slope of 1/8" per foot for drainage, ½"cementitious cover board, and SBS Base and a fully reinforced liquid applied roofing membrane.

NW was advised by NYCHA R+R that only part of the roof was installed, namely under the new standby generators. This contradicts both our own observations and the copy of the Roof Guarantee NW has received from Siplast, the roofing manufacturer.

At Riis I, NW has obtained 30-year guarantees from the roofing manufacturer Siplast for (12) buildings (Numbers: 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, and 13).

This guarantee (*refer to Appendix H*) was issued December 29, 2020 and will expire December 29, 2050; it is a 30-year guarantee. It is a Siplast Parapro Roof Membrane /System Guarantee, Guarantee No. 59861, and it covers both materials and labor (with typical exclusions) in the event of a roof failure.

At Riis I NW noted NYCHA placards identify roof warrantee, number 1201136, dated to expire 6/2/34. These placards are for a Johns-Manville (JM) roof at the roof bulkhead doors. JM has stated they do not have active roof warranties at Riis I.

The roofs appear to be largely in good condition; however, deficiencies were observed, particularly at the base flashing and counter flashing around the roof bulkhead. The counterflashing does not appear to be installed in accordance with the contract documents at Riis I and is often less than 8" above the roof which is standard good practice. NW observed a crack in the membrane itself adjacent to one bulkhead door of Building 5. During NW's observations in April, it was raining and ponding was observed on the roof. NW has not determined if this ponding lasts in-excess of (48) hours after precipitation, which would make it a violation of BCC Section 1501.1 which defines "Positive Drainage":

POSITIVE ROOF DRAINAGE. The drainage condition in which consideration has been made for all loading deflections of the roof deck, including ponding instability, and additional slope has been provided to ensure drainage of the roof within (48) hours of precipitation.

While the roofs at Riis I do not comply with the most recent Energy Conservation Code (2020) for the insulation R-value, these are robust well-insulated roof systems. Deficiencies in the system should be addressed by enforcing the provisions of the (30) year Guarantee.

The roof at Building 9 has not been replaced but should be replaced in the near future.

At Riis II, NYCHA placards identify roof warrantee number 1402906, dated to expire 5/16/2036. These placards too are for a Johns-Manville roof at the bulkhead doors.

The roofs at Riis II are a hot-applied mod-bitumen ballasted roof assembly over tapered insulation. From NW's observations, all these roofs appear to be in good condition. Roof work according to as-built drawings for Hurricane Sandy R+R work was limited to immediately around where new penetrations were created to install the generators.

Roofs Riis II, were designed by Superstructures Engineers + Architects. STV was the Construction Manager, P&K was the General Contractor, and Champion was the roofer. Johns Manville was the manufacturer of the roof assembly. At the time of writing, NW is pursuing copies of the guarantees from the roof manufacturer. They are (20) year guarantees that if what the placards on the doors is correct, are warranted until 5/16/2036 (as per above).

Any future work that may be done should be performed in consultation with the manufacturer to ensure that the existing guarantee will be maintained.

There have been many leaks reported by the residents on the top floor below the roof, NW believes the leaks are not related to the roof assemblies (except at building 9) and are, in fact, related to the parapets. *Please refer to 2.3.2.2. Parapets and Railings, below.*

On the lower floors, the leaks are related to infiltration through the cavity wall, and plumbing leaks.

Please refer to Appendix H for Roof Assembly and Guarantees.

Building 14 roof (Riis II)

2.3.2 Roof Structures

The Roof structure includes the stair and elevator bulkheads, the elevator machine room, and the incinerator flue.

According to the original drawings the roof bulkheads have a cast-in-place concrete frame, and a wall assembly consisting of face brick, a CMU backup, metal lathe and interior plaster in the stairwell. The original drawings indicate that the enclosure was to be constructed as a cavity wall with "non-corroding metal ties, one for every (4) SF of wall". This is a very early cavity wall installation and weeps are not shown on the drawings, however they were observed on site.

The incinerator stacks are shown as solid brick, but the inner wythe is undoubtedly constructed of refractory brick.

2.3.2.1 At 1141 FDR Drive / Building 5 (Type B) the bulkhead masonry shows areas where face brick has been replaced, and evidence of repointing. There are significant areas of brick exhibiting erosion and spalling. The bulkhead roof has stainless steel fascia.

The bulkhead has (3) hollow metal doors, (1) for the elevator machine room, and (1) for each of the two stairs (the two stairs are in a fire-separated 'scissor stair' arrangement).

The railings at the stairs to the elevator machine room are in poor condition.

The two stair bulkhead doors and frames appear to have been replaced.

The interior of the stair bulkhead appears to be clean, dry, and recently repainted.

The elevator bulkhead door also appears to have been replaced – but the frame is older and heavily rusted. The sealant around the door frame is dried, cracked and peeling away from both the frame and masonry.

The windows at each stair have been replaced with louvers. The louvers appear to be galvanized and painted and the paint has mostly peeled off.

There are two penetrations into the elevator machine room. The lower penetration is a wall-sleeve air conditioning unit. Directly above this is a wall-mounted exhaust fan.

The interior of the elevator machine room is relatively clean. One of the exterior walls shows evidence of water penetration. This is directly below the A/C sleeve penetration, which may be the source of water penetration. No evidence of water penetration was visible at the underside of the roof slab. The motorized damper at the interior of the fan appears to be new and in good condition.

Building 5 Elevator Machine Room

The underside of the landing for the elevator machine room shows water staining and a loss of cement paste at the exposed surface as would be expected after 77+ years exposure. However, neither cracks nor other signs of impending failure were observed.

2.3.2.2 At 911 and 919 FDR Drive / Building 12 (Type A + AR) has two separate staircase bulkheads, the elevator bulkheads, the elevator machine rooms, and the incinerator flues. The bulkhead masonry shows areas where face brick has been replaced, and evidence of repointing. There are significant areas of brick exhibiting erosion and spalling. The bulkhead roof has stainless steel gravel stop/fascia and a copper fabric base flashing.

Each bulkhead has (2) hollow metal doors, (1) for the elevator machine room and (1) for the stair.

The railings at the stairs to the elevator machine room are in poor condition.

The stair bulkhead doors and frames appear to have been replaced.

The interior of the stair bulkhead appears to be clean, dry, and recently repainted.

The elevator bulkhead door also appears to have been replaced–but the frame is older and heavily rusted. The sealant around the door frame is dried, cracked and peeled away from both the frame and masonry.

The windows at each stair have been replaced with louvers. The louvers appear to be galvanized and painted and the paint has mostly peeled off.

There are (3) penetrations into each of the elevator machine rooms. (1) penetration is a wall-sleeve air conditioning with dampers above that are designed to be operable but missing an actuator. Adjacent and opposite penetrations are additional fixed louvers.

The interior of the elevator machine room is relatively clean for an elevator machine room. The exterior walls show spalling and cracks at both the bulkheads. No evidence of water penetration was visible at the underside of the roof slab.

2.3.3. Exterior Walls

2.3.3.1. Local Law 11 Status

Local Law 11 (LL11) requires inspection of the exteriors of buildings every (5) years to identify and remediate potentially hazardous conditions, like those identified above. The current LL 11 cycle is Cycle 9. The (13) buildings in Riis I and two of the buildings of Riis II were last inspected over (5) years ago under Cycle 8. The remaining (4) buildings at Riis II were last inspected over (10) years ago under Cycle 7. There are violations placed on each of the buildings by the DOB for these failures to perform these safety inspections. Many of the buildings have potential safety hazards that NW observed that would cause them to receive an UNSAFE LL 11 designation.

1.) The last LL11 report for **Building 1** was filed under Cycle 8 as SWARMP, or Safe, With A Repair and Maintenance Program, prepared and submitted by Ronette Riley Architect and filed on 02/22/2017. Six SWARMP conditions were identified as part of this report. Repairs for Cycle 8 are shown to have been addressed 12/05/2019 on DOB NOW Safety. No Cycle 9 filing is on record. There are two active violations for failure to file a Façade Inspection Safety Program (FISP) Cycle 9 LL 11 reports.

2.) The last LL11 report for **Building 2** was filed under Cycle 8 prepared and submitted by Ronette Riley Architect filed on 02/23/2017. Five SWARMP conditions were identified as part of this report. Repairs for Cycle 8 are shown to have been addressed 12/15/2019 on DOB NOW Safety. No Cycle 9 filing is on record. There are two open violations for the failure to file Cycle 9 LL 11 reports. The current status for Building 2 is SWARMP according to DOB.

3.) The last LL11 report for **Building 3** was filed under Cycle 8 as SWARMP, prepared and submitted by Ronette Riley Architect filed on 02/23/2017. Six SWARMP conditions were identified as part of this report. Repairs for Cycle 8 are shown to have been addressed 12/21/2019 on DOB NOW Safety. No Cycle 9 filing is on record. There are three open violations for the failure to file Cycle 9 LL 11 reports.

4.) The last LL11 report for **Building 4** was filed under Cycle 8 as SWARMP prepared and submitted by Ronette Riley Architect on 0/23/2017. Seven SWARMP conditions were identified as part of this report. Repairs for Cycle 8 are shown to have been addressed 12/05/2019 on DOB NOW Safety. No Cycle 9 filing is on record. There are two open violations for the failure to file Cycle 9 LL 11 reports.

5.) The last LL11 report for **Building 5** was filed under Cycle 8 as SWARMP prepared and submitted by Ronette Riley Architect on 08/21/2017. Seven SWARMP conditions were identified as part of this report. Repairs for Cycle 8 are shown to have been addressed 12/31/2019 on DOB NOW Safety. No Cycle 9 filing is on record. There are two open violations for the failure to file Cycle 9 LL 11 reports.

6.) The last LL11 report for **Building 6** was filed under Cycle 8 as SWARMP prepared and submitted by Ronette Riley Architect on 02/28/2017. Four SWARMP conditions were identified as part of this report. Repairs for Cycle 8 are shown to have been addressed 12/14/2019 on DOB NOW Safety. No Cycle 9 filing is on record. There are three open violations for the failure to file Cycle 9 LL 11 reports.

7.) The last LL11 report for **Building 7** was filed under Cycle 8 as SWARMP prepared and submitted by Ronette Riley Architect on March 20, 2017. Four SWARMP conditions were identified as part of this report. Repairs for Cycle 8 are shown to have been addressed 01/01/2019 on DOB NOW Safety. No Cycle 9 filing is on record. There are two open violations for the failure to file Cycle 9 LL 11 reports.

8.) The last LL11 report for **Building 8** was filed under Cycle 8 as SWARMP prepared and submitted by Ronette Riley Architect02/24/2017. Three SWARMP conditions were identified as part of this report. Repairs for Cycle 8 are shown to have been addressed 08/31/2021 on DOB NOW Safety. No Cycle 9 filing is on record. There are three open violations for the failure to file Cycle 9 LL 11 reports.

9.) The last LL11 report for **Building 9** was filed under Cycle 8 as SWARMP prepared and submitted by Ronette Riley Architect on 02/22/2017. Three SWARMP conditions were identified as part of this report. NW has no current records of repairs or maintenance performed. Repairs for Cycle 8 are shown to have been addressed 12/31/2019 on DOB NOW Safety. No Cycle 9 filing is on record. There are three open violations for the failure to file Cycle 9 LL 11 reports.

10.) The last LL11 report for **Building 10** was filed under Cycle 8 as SWARMP prepared and submitted by Ronette Riley Architect on 02/22/2017. Three SWARMP conditions were identified as part of this report. Repairs for Cycle 8 are shown to have been addressed 12/21/2019 on DOB NOW Safety. No Cycle 9 filing is on record. There are three open violations for the failure to file Cycle 9 LL 11 reports.

11.) The last LL11 report for **Building 11** was filed under Cycle 8 as SWARMP prepared and submitted by Ronette Riley Architect on 02/22/2017. Two SWARMP conditions were identified as part of this report. Repairs for Cycle 8 are shown to have been addressed 12/31/2019 on DOB NOW Safety. No Cycle 9 filing is on record. There are two open violations for the failure to file Cycle 9 LL 11 reports.

12.) The last LL11 report for **Building 12** was filed under Cycle 8 as SWARMP prepared and submitted by Ronette Riley Architect on 02/22/2017. Two SWARMP conditions were identified as part of this report. Repairs for Cycle 8 are shown to have been addressed 12/31/2019 on DOB NOW Safety. No Cycle 9 filing is on record. There are two open violations for the failure to file Cycle 9 LL 11 reports.

13.) The last LL11 report for **Building 13** was filed under Cycle 8 as SWARMP by Ronette Riley Architect on 02/22/2017. Seven SWARMP conditions were identified as part of this report. Repairs for Cycle 8 are shown to have been addressed 12/31/2019 on DOB NOW Safety. No Cycle 9 filing is on record. There are two open violations for the failure to file Cycle 9 LL 11 reports.

14.) The last LL11 report for **Building 14** was filed under Cycle 6 as "Safe" prepared and submitted by Ronette Riley Architect on 09/09/2013. No SWARMP conditions were identified as part of this report. No subsequent cycle of filing is on record. There are two open violations for the failure to file Cycle 8 LL 11 reports.

15.) The last LL11 report for **Building 15** was filed under Cycle 7 as "Safe"09/09/2013. No SWARMP conditions were identified as part of this report. No SWARMP conditions were identified as part of this report. No subsequent cycle of filing is on record. There are two open violations for the failure to file Cycle 8 LL 11 reports.

16.) The last LL11 report for **Building 16** was filed under Cycle 6 as "Safe" by Ronette Riley Architect on 09/09/2013. No SWARMP conditions were identified as part of this report. No subsequent cycle of filing is on record. There are three open violations for the failure to file Cycle 8 LL 11 reports.

17.) The last LL11 report for **Building 17** was filed under Cycle 8 as SWARMP prepared and submitted by George Oundjian on 09/02/2019. SWARMP conditions cited in the report appear to be the result of weathering, freeze-thaw cycles, water infiltration, and wind occurring over a period of time. Repairs for Cycle 8 are shown to have been addressed 06/26/2021 on DOB NOW Safety. No Cycle 9 filing is on record. There are no open violations for the failure to file Cycle 9 LL 11 reports.

18.) The last LL11 report for **Building 18** was filed under Cycle 8 as SWARMP prepared and submitted by George Oundjian on August 2, 2019. SWARMP conditions were discovered and consist of the following: cracked and/or spalled Brick, eroded mortar joints. No subsequent cycle of filing is on record. Repairs for Cycle 8 are shown to have been addressed 07/30/2021 on DOB NOW Safety. There are no open violations for the failure to file Cycle 9 LL 11 reports as of now.

19.) The last LL11 report for **Building 19** was filed under Cycle 7 as "Safe" prepared and submitted by Ronette Riley Architect on 08/09/2013. No subsequent cycle of filing is on record. There are three open violations for the failure to file Cycle 8 LL 11 reports.

Please refer to Appendix I for LL 11 reports.

2.3.3.2. Parapets and Railings

Parapets and roof railings were replaced, over a decade ago by NYCHA. Parapets were eliminated and replaced with galvanized steel railings supported on a low masonry curb at the perimeter of each building. Galvanized steel railings were replaced again under the Hurricane Sandy R+R project, but only adjacent to the new rooftop generator platforms to provide generator access.

At Riis I and II, previous work designed by Superstructures extended the guardrails to meet the minimum code height of (42) inches. These guardrail extensions remain where the generators were not replaced.

Within the Jacob Riis Houses Community Planning Process, residents reported that leaks at the top floor apartments in all the buildings increased notably when the parapets were replaced.

NW anticipates that parapets and railings will have to be replaced yet again to eliminate these ongoing problems.

Guardrail extension

NW notes that parapet replacement will require removal of the perimeter of the roof assembly. It will be necessary to work with the existing roof manufacturer to maintain the existing guarantee and obtain a guarantee for the new roof perimeter.

At Buildings 5 and 12, most or all of the masonry opening lintels at the 14th and 6th floors were replaced along with this work. The brick masonry from the head of the window openings to the coping appears to be installed as brick cavity wall construction. NW has observed vertical expansion joints and weeps, which are characteristic of that kind of construction. NW has not obtained drawings for this work that would identify the date and details of construction.

The galvanized roof railings are secured at posts, into the roof curb at spacings between (5) and (6) feet on center. The posts, top, and bottom rails appear to be 1-1/2" diameter. Between the posts are vertical pickets, approximately 1" diameter. Except where the railings have been replaced near the generators, a top rail was typically added to meet the code minimum height requirement of (42) inches above the roof surface as part of work designed by Superstructures. Where railings were not replaced adjacent to the generators, the openings between all of the pickets exceeds the maximum of 4" allowed per section BC1013.3 of the 2014 Building Code. These railings do not meet the definition of a Guard per BC1013 which is required for roof top spaces accessible to the public. They do meet the requirements of a Mechanical Rail for access by building maintenance personnel only.

2.3.3.3. Brick and Concrete Masonry

The buildings at Riis I and Riis II have solid unreinforced brick and concrete masonry unit (CMU) (i.e. concrete block) enclosures. The CMU backup sits upon the spandrel/slab. The face brick is bonded to the backup CMU with a header course every (6) vertical courses. The face brick is tied back to concrete columns with wire dovetail ties set into dovetail slots cast into the face of the columns.

New crack at a previously repaired corner

Three significant problems have been observed in the brick masonry:

A.) Extensive spalling of the face brick;

B.) Vertical cracking in the face brick near outside corners;

C.) Cracking of brick due to rust jacking of lintels at window openings in the masonry, and:

Significant leaking has occurred and continues to occur through the masonry assembly. This leaking has caused damage to interior plaster and paint, leaking onto the floors, damaging the interior contents of the apartments and promoting the growth of mold, with its associated health hazards. Leaking through the building enclosure is reaching a critical point and will ultimately make the buildings or portions of the buildings uninhabitable, unless remediation is undertaken soon. Detailed observations were made of (2) buildings, Building 5, a mid-rise (14)-story building, and Building 12, a low-rise (6)-story building to evaluate a representative sample of the conditions on site. These observations were drawn on the elevations of these buildings creating detailed maps of the existing conditions including damage.

The observations give cause for serious concern about the condition of the face brick. Extensive spalling was observed, comprising over (10) percent of the surface area of the face brick at Building 5, for example and at Building 12 (5) percent. At Building 5 approximately (9) percent of the brick has been replaced, and at Building 12, approximately (14) percent has been replaced. Vertical cracks were observed near the corners of the buildings. These cracks have occurred, without doubt, because these buildings were not designed with vertical expansion joints in the face brick, necessary to accommodate the irreversible expansion of brick, and typical in modern brick construction.

Previous repairs to the face brick are evident at all of the buildings at Riis. Their locations make it obvious that these repairs were made to address both the spalling of brick and vertical cracking near corners. The presence of new spalling and cracking indicates that this process is ongoing and that the underlying causes of the problems have not been addressed.

It is important to note that the level of damage seen varies from building to building. Generally, the buildings along the FDR Drive (with exposure to the East River), and the taller buildings exhibit greater levels of failure.

2.3.3.3.1. Probes

NW worked with NYCHA to perform probes by removing bricks from two locations in the development, at Building 5 where there is an existing crack, spalling, and exposure to the river; and at Building 17 facing Avenue D where there was relatively little visible distress in the masonry. Notably, the bricks removed from these two locations bore manufacturer's marks indicating that they came from different brickyards. The bricks were sent to RDH Building Science for analysis including material testing and hygrothermal computer simulations.

The tests performed include:

Dry Density	(ASTM C20)
Porosity	(ASTM C20)
Compressive Strength	(ASTM C67)
Water Absorption Coefficient	(ASTM C 1794)
Thermal Conductivity	(ASHRAE)
Heat Capacity	(ASHRAE)
Vapor Permeance	(ASTM E96)
Reference Water Content	(ASTM C1498)
Free Water Saturation	(DIN 12087)
Critical Freeze/Thaw	(by frost dilatometry method as adapted by RDH for masonry materials) [1, 2]

1. DIN 52617, Fagerlund, G., "The critical degree of saturation method of assessing the freeze/thaw resistance of concrete", Journal of Structures and Materials, 10.58, pp 217-229, 1977. Mensinga, P., Straube, J., Schumacher, C., "Assessing the Freeze-Thaw Resistance of Clay Brick for Interior Insulation
2. Retrofit Projects" Thermal Performance of the Exterior Envelopes of Whole Building XI International Conference, Clearwater, Florida, 2010)

Probe Observations

The joint between the face brick and the CMU backup, called the collar joint, should have been filled solid with mortar, but was observed to be mostly open at the two probes. Additionally, many of the vertical head joints in the backup concrete block were observed to be open, without mortar. This combination has made the enclosure likely to leak, particularly during a wind driven rain event, and explains why campaigns to repoint the face brick and apply water resistant coatings have been ineffective.

Corroded tie at Building 17

At both probes, the galvanized ties that connect the face brick back to the concrete columns at the corner were observed to be rusted away entirely. NW anticipates that this is the case for all the ties between the brick and the columns. Where vertical cracks occur, particularly at both sides of a corner, this creates a potentially hazardous condition, described above under *Potentially Hazardous Conditions, 2.1.2.*

2.3.3.3.2. Masonry Physical Properties Testing Results

The physical properties of the bricks used in the construction of buildings at Riis Houses makes them susceptible to freeze/thaw spalling failure over time. However, analysis and computer modeling showed that failure of brick was location-specific. For example, at Building 5, where the weather conditions are more severe by exposure to the saltwater of the East River, spalling should be expected and bricks replaced. At Building 17, farthest away from the East River and more protected from the physical environment, computer simulations showed that the brick would not typically be subject to harsh enough conditions that it would make it spall.

2.3.3.3.3. Hygrothermal Analysis of Exterior Wall Assembly Results

A.) The simulations modeled different rehabilitation strategies, all of which include installing insulation as part of the building enclosure assembly. Alterations to the enclosure must be made to comply with the current (2020) with the Energy Conservation Code.

B.) The first strategy assumed that the existing exterior brick could be repaired in its existing configuration and insulation could only be installed at the interior. Insulation at this location will accelerate the spalling of the exterior brick—it would be three times more likely—and would encourage the growth of mold, failing the ASHRAE 160 acceptance criteria for mold. This rehabilitation strategy also does not and cannot address the water penetration issues caused by the void collar joint and open head joints in the backup concrete block masonry.

Testing revealed that the brick is a poor quality and may be susceptible to spalling depending on where it is located. At Building 5 (adjacent to the East River), in line with NW's observations, the testing predicted that the brick will continue to spall. However, at Building 17 (farther away from the East River) the brick per computer simulations is not predicted to spall because of the more moderate microclimate unless the building is insulated at the interior.

C.) Other rehabilitation strategies were evaluated: First, allowing the existing face brick to remain with limited repairs and overcladding with an assembly comprised of an air/water membrane applied, mineral wool insulation, composite girts and a light rainscreen cladding. Alternatively, the face brick could be removed, and the concrete block backup could be repointed and parged so that an air/water membrane could be applied. Two assemblies were considered over this membrane, mineral wool insulation and new face brick installed in a cavity wall configuration, or mineral wool insulation, composite girts and a light rainscreen cladding. The rainscreen cladding could simulate brick if that proves necessary to obtain historic preservation tax credits.

All three of these alternates eliminated both the freeze/thaw spalling hazard and passed the ASHRAE 160 acceptance criteria for mold.

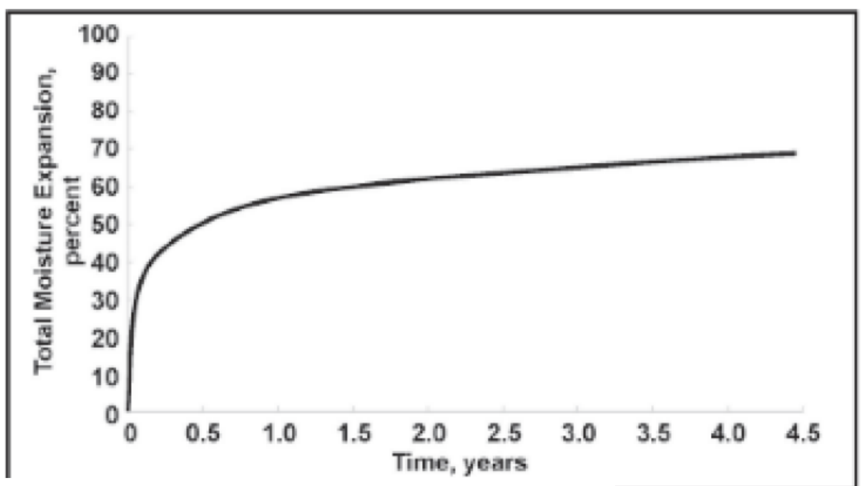
NW's recommendations will conclude that all face brick be removed or repaired and then overclad. Making selective repairs, as has been done in the past will only provide a temporary solution to these problems, which by themselves create a **potential life-safety hazard**. Many of the repairs done to date have actually accelerated the ongoing failure of the brick masonry enclosure. To satisfy the State Historic Preservation Office (SHPO), a material that visually appears to be brick may be required. This would be of "No Adverse Effect" allowing the project to be eligible for significant federal funding.

At Building 5, Vertical cracking was observed at (5) facades near (4) of the (12) outside corners, as illustrated in our damage mapping. Significantly, previous repair of brick near outside corners was observed at (5) facades including (3) that have subsequently failed immediately adjacent to previous repairs. This observation excludes the parapet which were replaced in their entirety and likely had additional vertical cracks near the corners.

At Building 12, vertical cracking was observed at (9) facades near (4) of the (12) outside corners, as illustrated in our damage mapping. Significantly, previous repair of brick near outside corners was observed at (6) corners including (3) locations that have subsequently failed immediately adjacent to previous repairs. This observation excludes the parapets which were replaced in their entirety and likely had additional vertical cracks near the corners.

This kind of failure is typical of solid masonry facades because the material science that determines the behavior of buildings (now referred to as "Building Science") was poorly understood at the time these buildings were designed and constructed. This behavior has been ignored consistently when subsequent repairs have been made even though this building science is well understood now. These ill-conceived repairs have caused the failures to occur again, either at or immediately adjacent to the previous repairs. The industry refers to these conditions as "repair induced failures".

The following two diagrams, from the BIA Technical Notes explain the mechanism:



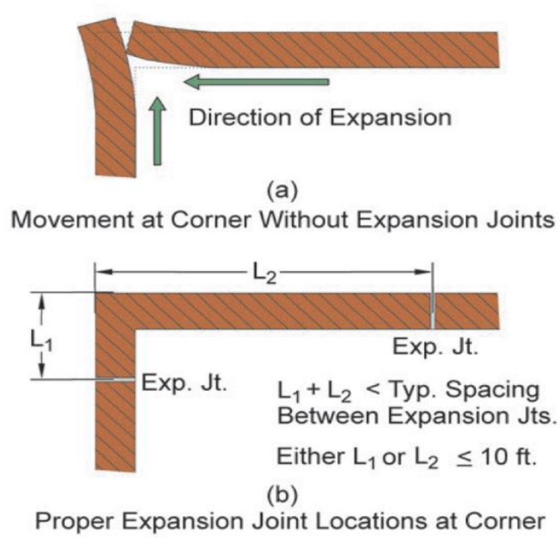
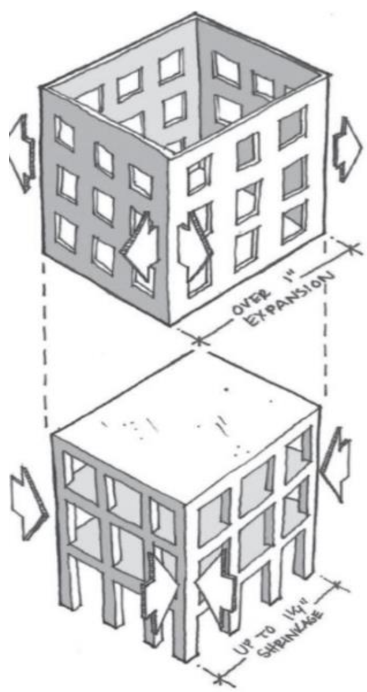


Figure 2
Vertical Expansion Joints at Corners

New brick expands after it is put into service, cumulatively a little less than (1) inch per 100 feet. This expansion typically generates failures at outside corners.

In modern design, vertical expansion joints are installed at a spacing of approximately (20) feet. Such a joint, typically ½" wide can accommodate expansion of about half its width, or ¼".

On old buildings, like those at Riis Houses, the original brick has already completed most of its irreversible expansion. Thus, if new brick is put into an existing exterior wall, the new brick will expand, while the old brick no longer does, causing repair-induced failures like those NW has observed at Riis Building 5. This makes "in-kind" repairs, like those performed in the past at Riis so problematic. Only a systemic repair designed to allow for expansion of the exterior brick masonry, and restoring attachment of the face brick to the columns and backup masonry will effectively address these problems for the long term.



Differential movement as explained by the above illustration.

Please refer to Appendix J for the Masonry Probe Report.

Please refer to Appendix K for the Masonry Test Report

Please refer to Appendix L for the Hygrothermal Analysis Report

2.3.3.3.4. Membrane Adhesion Testing

It was determined through laboratory testing that the existing face brick will likely continue spalling because of inherent deficiencies. Insulating the interior of the masonry wall will aggravate this problem. Our recommendation would be to either replace the face brick, or to overclad the face brick. In the case where over-cladding is recommended, then the new assembly would include the application of a water-proof membrane that will also serve as an air barrier to the face of the existing brick, followed by at least (4) inches of mineral wool insulation and some form of rainscreen cladding.

Waterproofing membrane installation for Adhesion Testing

To determine the feasibility of this potential solution, test installations of a fluid-applied membrane air barrier were made at (7) locations. The product applied was the Henry Air-Block STPE, a product well-suited for this application because it can weather UV exposure for up to (12) months (during construction) without degradation. In the test, the membrane passed in (5) of the (7) locations, an indication that the overclad strategy will be feasible.

Refer to Appendix M for the detailed report.

2.3.3.3.5. Post Installed Anchor Pull-Out Test Results

Exterior rehabilitation strategies include partial or full replacement of existing face brick with new brick masonry in a cavity wall configuration; partial or full over-cladding of the face brick with brick cavity wall; and partial or full over-cladding with a light rainscreen assembly. In each case, structural attachments will be required to secure the new construction to the existing masonry and concrete superstructure. These attachments will need to be adequate to accommodate both the gravity loads and the wind loads imposed by the new system(s). In this kind of rehabilitation work, the new structural attachments are typically made utilizing adhesive anchors. These are designated by the Department of Buildings as a kind of *post-installed anchor*, because they are not set into the structure during construction but installed after the original construction. Specified were adhesive anchors which are stainless steel 300 series threaded rods set into the brick, CMU, and concrete because they perform well. Stainless steel is highly resistant to corrosion and will have a long service life compared to other techniques. NW has observed galvanized anchors used in the original construction of these buildings has corroded away where probes were performed. Galvanized components like this typically have a (50) EUL (Expected Useful Life). This is not a surprise after (77) years of service.

To determine the feasibility of using adhesive anchors pullout tests were performed using post-installed anchors in the brick, concrete block backup, concrete foundation, and a hybrid of brick and concrete block.

Adhesive anchor test results are summarized as follows:

In consultation with Gedeon structural engineers and Hilti (a company that provides post-installed anchors, including their components of mesh screens and adhesive, and beyond to such as testing data for typical building assemblies).

(22) post-installed anchor tests were performed, for the scenarios described above to a pullout strength of 300 PSI (Pounds per Square Inch) as recommended by the structural engineers. This strength took into account the anticipated loads (including the safety factor) of a rainscreen assembly were installed over the brick or attached to the CMU backup. All scenarios passed this test.

Please refer to Appendix N for the detailed report.

2.3.3.4. Exposed Concrete and Stucco Surfaces

Exposed concrete and stucco at building facades is limited to stucco-covered foundation walls at the base of the buildings, the concrete entry canopies, the entry landing, and the exposed underside of the landing entry to the elevator machine room at the roof bulkheads.

New stucco at the foundation walls was installed at select locations as part of the Hurricane Sandy Recovery + Resilience work designed by LiRo, construction management by STV, and construction by General Contractors WDF at Riis I and DMD at Riis II. LiRo Drawings indicate that the stucco is reinforced with carbon fiber in some locations and is intended to provide structural resistance to hydrostatic loads during future flood events, like Hurricane Sandy, which flooded most of the site to an approximate elevation of 11.0’ NAVD88.

Carbon fiber reinforced cement plaster

Note: At Building 5 in the LiRo documents, the floor elevation at the compactor room is identified as +8.55’ NAVD88 and the floor elevation at the elevator lobby is identified as 10.15’ NAVD88 in the LiRo documents. Grade at the of Building 5 is between 8.05’ NAVD88 and 10.15’ NAVD88. The Design Flood Elevation (DFE) identified in the LiRo documents for Building No. 5 is 14.19’ NAVD88. During our field observations, NW observed one spall in the stucco at the base of the electric and gas addition. While this would not have a measurable effect on the performance of this barrier, the spalling indicates there may be deficiencies in this work. Stainless steel inserts for an ‘Aquafence’ deployable type barrier were also observed at the ground, protecting the entry lobbies and around window openings that begin below the building DFE.

Not all the concrete flood barriers included in the LiRo documents have been constructed. NW observed that the stainless inserts for an Aquafence barrier have been placed into the concrete paving around the entry, instead of a rigid flood barrier shown in the contract documents. In either case, both systems are must be manually installed by personnel to secure a building against flooding. The panels for the Aquafence appear to be typically stored in containers next to the building entries.

At Building 12 according to the LiRo documents, the floor elevation at the compactor room is identified as +7.70’ NAVD88 and the floor elevation at the elevator lobby is identified as 8.95’ NAVD88. Grade at the entry of Building 12 is 8.45’ NAVD88. The Design Flood Elevation (DFE) identified in the LiRo documents for Building No. 12 is 13.19’ NAVD88. All the stucco at the foundation appears to be original with subsequent coatings of red paint. The only floodproofing that appears to be replacing doors to the tank room and gas meter room. There are no apartments at ground floor (basement) of this building.

2.3.3.5. Windows

The original windows at Riis Houses were steel casement windows. At Building 5 there are 787 masonry window openings and at Building 12 there are 411. The windows at Riis Houses are replacement windows. NW has reviewed drawings for window replacement at Riis which show the original steel sashes were to be removed and that aluminum replacement windows were to be installed over the remaining steel casement. These drawings are dated October 23, 1981 and appear to accurately reflect the current as-built condition. Assuming that the windows were installed in 1982, they would now be (42) years old, well past a normal Expected Useful Life (EUL) of (20) years for good-quality replacement windows. NW has observed that many of the windows appear to have broken spring balances and have received resident reports that the windows leak both air and rainwater. In other projects where replacement windows have been installed over the original steel casements, NW has found ACM (Asbestos Containing Material) in the sealant or other materials used to bed the original casements, which has required abatement during rehabilitation. It may be necessary to visually match the character of the historic windows to satisfy SHPO.

2.3.3.5.1. Window Lintel Conditions

At Building 5, based upon our field observations, of the 787 masonry openings, (82) openings (10.4% of the total) have lintels that exhibit corrosion and deformation and damaged masonry due to this deformation, commonly referred to as ‘rust-jacking’. Most or all the lintels at the 14th floor window openings appear to have been replaced when the parapets were replaced, and NW suspects that these lintels were in the worst condition because of their greater exposure at the top of the building. The distribution of the lintels that currently exhibit distress shows no recognizable pattern. In addition to the masonry openings at the 14th floor, other window lintels have been replaced in recent years. Paint failure and rusting was observed at most of the lintels that have not been recently replaced.

Similarly, at Building 12, of the 411 masonry openings, 39 openings (9.5% of the total) have lintels that exhibit corrosion and deformation and damaged masonry due to rust-jacking. The lintels at the 6th floor window openings do not appear to have been replaced when the parapets were replaced, and these lintels were in the worst condition because of their greater exposure at the top of the building. Some window lintels have been replaced in recent years, particularly those facing the East River and FDR Drive.

2.3.3.5.2. Sealant Conditions

Sealant (caulking) at the perimeter of the windows generally appears to be in fair condition at Buildings 5 and 12. The sealant appears in photographs to be a replacement made since the 1982 installation of the windows and may have been performed as part of the various masonry repair campaigns in the last years. The sealant installed at this building is likely to be a 1-part urethane-based sealant (like Masterseal NP-1). This type of sealant is susceptible to breakdown from UV light exposure. In new applications, a single part silicone-based sealant is recommended.

2.4. <u>Building Interiors</u>

2.4.1. Building Lobby Interiors

Building 5 Lobby

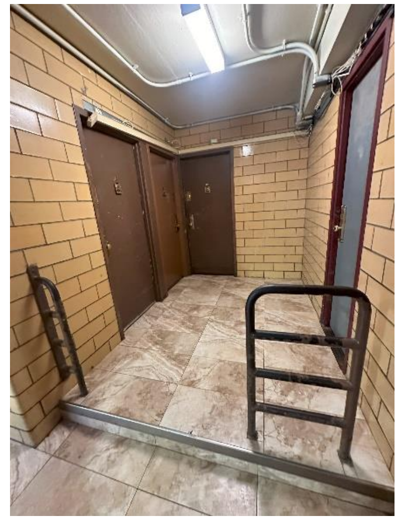
The building entries and lobbies are typical of older NYCHA developments. The entries themselves are a robust stainless steel and glass assembly with layered access; though, in NW's observation and experience, the doors are often left open, negating the benefit of a controlled access system. While some residents have reported broken locks, it has been NW's observation that the locks were in working order. The interiors of Buildings 5 and 12 walls are finished with beige structural facing tiles. The floor finish appears to be faux-marble porcelain tile recently installed. The ceiling appears to be the painted underside of the structural concrete slab. Lights, conduit and security cameras are mounted to the underside of the slabs. The mailboxes do comply with current US Postal Service STD-4B+, but do not comply with current accessibility requirements (NYC Building Code, ADA/ICC A117.1 2009). Heat is provided via radiators hung from the ceilings.

2.4.2. Building Hallway Interiors and Stairs

Building hallway Interiors and Stairs are in relatively good condition. Low-voltage telecommunications have been installed subsequent to the original construction are in fair condition. Pull boxes (used when new cable is installed) are below the minimum headroom required for the stairs. (That is lower than 80 inches and projecting more than 4" from the face of the wall which is not code-compliant and poses a risk of impact.)

A.) Mid-rise buildings have elevators that open up to an "L"-shaped corridor to access apartments. There is a pair of scissor stairs; one egresses to the lobbies and the second egresses to the exterior of the buildings.

B.) Low-rise buildings have two separate cores with individual access and separate addresses from outside. If the stairs were to be used for a second means of egress, one must go up to the roof and pass across the roof to reach the second means of egress. At buildings where generators were installed, gas and electrical conduits were installed interrupting this path creating an approximately (10) inches tall obstruction.



Building 5 Ground floor hallway

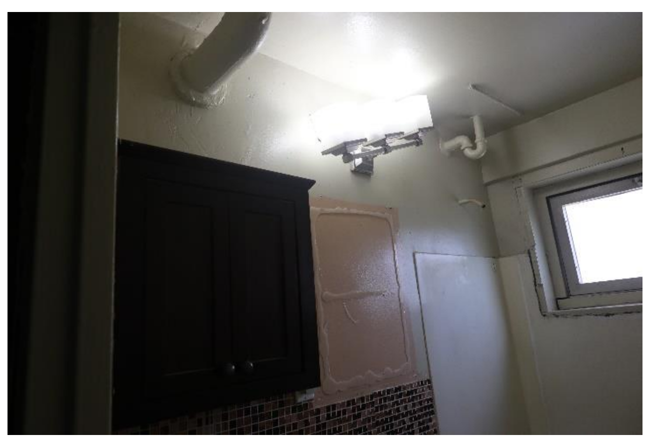
2.4.3. Apartment Interiors

According to NYCHA records, Riis I and II combined have (19) studio units, (80) one-bedroom units, (1,133) two-bedroom units, (525) three-bedroom units, and (12) four-bedroom units on the campus totaling 1,769 dwelling units.

The apartments below the roof typically are subjected to leaks that are purported to have started with parapet work. Exterior walls, windows, and plumbing chases are a common source of water infiltration for units throughout the building.

The exterior walls of the apartments are 10 ½" masonry (face brick +concrete block) walls without insulation. According to the original drawings, the interior partitions of the apartments are 1 hour fire rated 2 ¼" thick made up of steel channel studs (black iron) with metal lath and plaster on both sides. Ceiling heights are typically slightly over 8'-0" tall. The walls between apartments are 1 hour fire rated 2 ½" thick.

The bathrooms are basic, with a vanity, bathtub and toilet. They do not meet current accessibility requirements. Traps for the bathtubs and toilets extend through the floor slab and are visible in the apartment below. The floor in the bathrooms observed have ceramic tile of varying sizes depending on the unit (e.g. a 12" x 12" square or small ceramic tiles). The walls are typically painted, though in some units they have tile on select walls. The bathtub surrounds observed are a continuous fiberglass reinforced plastic. The sinks are wall mounted and there is a mirrored medicine cabinet above. There are often leaks from the floor above and from the exterior walls causing a significant amount of finish damage in the bathrooms.



Building 7 bathroom with exposed traps.

Kitchen cabinets were replaced around 1983 and are typically in poor condition with a laminated plastic counter. The sinks are stainless steel. The gas stoves are typically 24” wide and provided gas from an exposed riser behind the stove. The refrigerators are narrow, at about 24” wide. The kitchens floor is usually vinyl composite tile; but some appear to be ceramic tile.

Building 18 apartment interior.

Typically, the apartments appear to have vinyl composite tile throughout. There was no asbestos tile observed in the apartments. The plaster walls show their age with buildup of paint and an uneven surface. Ceilings are plaster applied directly to the concrete slab above. Interior apartment doors typically do not appear to be original and to have been replaced with hollow-core wood doors.

2.4.4. Elevators

All buildings have elevator cabs that are too small to meet the 2009 ICC / ADA accessibility minimum requirements used in New York City. *Please refer to Appendix O.* Likewise, shafts are too small to allow the elevators to be replaced meeting current standards. Elevators have an out-swinging door into the lobbies and an automatic door in the cabs. The cabs appear to have been retrofitted in the last approximately (20) years with stainless steel finishes. Elevators are reported by residents to often be broken. The NYC Department of Buildings records show there are 184 elevator violations for (38) elevators. There is no elevator recall.

In the low-rise buildings (Types A and AR) inside of elevator cabs are 4’-8” x 3’-1”; the door is 2’-7” wide.

In high-rise buildings Type B inside elevator cabs are 5’-11” x 3’-11”; the door is 2’-8” wide.

In high-rise buildings Type C inside elevator cabs are 5’-11” x 3’-1”; the door is 2’-8” wide.

2009 International Code Council (ICC) has minimum cab dimensions of 5’-8” x 4’-6”; the door must open 3’-0” clear.

2.4.5. Accessibility

Based upon the United States Department of Housing and Urban Development’s (HUD) current requirement for 504 compliance is to have 5% of units be mobility-accessible for this would be (90) dwelling units for both Riss I and Riis II. However, if the development is converted to Section 8, NYCHA’s agreement with HUD is that to have 7% mobility-accessible units, which translates to 1,769 x (7) percent = 124 mobility-accessible units. Beyond this, 4% of units or (89) units must be made communications-accessible units. Further evaluation for accessibility is in-progress.

Bathrooms and (apartments) do not meet current mobility accessibility requirements. The 2020 NYCHA VCA database indicates there are no units that have been converted.

As noted above, the existing elevators are not accessible, and cannot be modernized or replaced within the existing elevator shafts to make them so. This means that no apartments other than those at ground level can conceivably be made accessible without considerable changes to the egress of the building. Our preliminary analysis identified a total of (28) apartments at ground level. Of these, (4) ground-floor units could potentially be converted without major reconfiguration. These are located in Buildings 3, 5, 15, and 18.

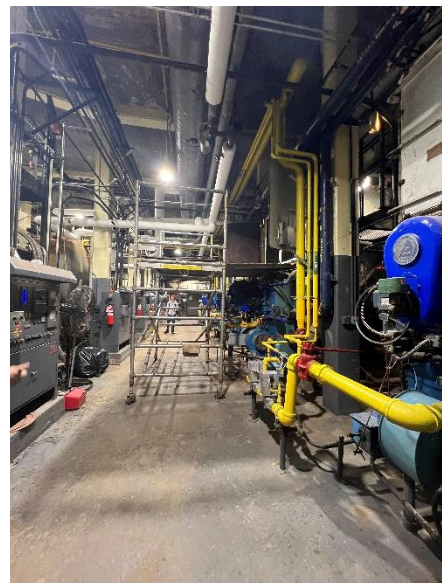
Please refer to Appendix O for the Elevator Accessibility Diagram.

The site is relatively flat and generally wheelchair accessible. However, there is an amphitheater on the south of the site that is not currently wheelchair accessible.

2.5. Mechanical - Heating, Ventilation, and Cooling Systems – *please refer to Appendix P for MEP report*

2.5.1. Heating Systems

2.5.1.1. The Central Boiler Plant Steam provides steam throughout the campus for heating and domestic hot water. It is served by the boiler plant consisting of the original (6) dual-fuel (gas/oil) boilers, and it is located in Building 13 (819 FDR Drive). A temporary boiler is present on the site given (5) out of the (6) boilers were not operating. The boiler plant is more than (70) years old and beyond its useful service life.



Boiler Room at Building 13

2.5.1.2. Tank Rooms with heat exchangers are located on the ground floor of each building. Tank rooms have a vacuum pump TVD-2020 at the tank room level with a Skidmore XC3D151 condensate pump within lower pits to collect and discharge the condensate into the express underground condensate lines. Several of these pits were observed to have water accumulation and heavily rusted piping and equipment. Condensate was being drained through open valves and strainers at low points within the pit. Condensate pump seals were observed to be leaking. The operational condition of the pumps could not be confirmed.

2.5.1.3. Typical Apartments have sectional cast iron radiators under the window sills with shut off valves and traps for heating control and isolation. The steam and condensate piping was found exposed and uninsulated. There is no apartment level control for heating.

2.5.1.4. Steam and Condensate Risers are within corridors. The ground-floor utility areas were found to have missing insulation. No active leaks were observed in Buildings 5 and 12. There were steam leaks observed at Buildings 4 and 10 in the crawlspaces.

2.5.1.5. Cooling Systems are not provided throughout the campus with the exception of window air conditioning units. Mini-splits were not observed.

2.5.2. Ventilation

2.5.2.1. Tank Rooms at Buildings 5 and 12 have sidewall exhaust fans continuously operating to exhaust the steam and heat within the rooms.

2.5.2.2. Hallways and apartments (including the bathrooms and kitchens) have windows for natural ventilation.

2.5.2.3. Electric and Gas Rooms Additions are elevated to standby power are served by inline Loren Cook exhaust fans controlled by wall-mounted thermostats.

2.5.2.4. Elevator Machine Rooms are located at the roof have (2) 17"x17" smoke vents. The room is served by Greenheck CW-101-A-X upblast fan in horizontal orientation. At Building 5 there is a wall-sleeve air conditioning unit. Directly above this is a wall-mounted exhaust fan which was not in operation at the time of survey. Both are intended to keep the elevator machinery from overheating. At Building 12 is a wall-sleeve air conditioner with dampers above that are designed to be operable but missing an actuator. Adjacent and opposite penetrations are additional fixed louvers. Effectively, cooling from the air conditioner would blow out of the open louvers rendering the effects of mechanically cooling the elevator machinery moot.

The fan was not being operated at the time of survey.

2.5.3. Plumbing

2.5.3.1. Tank rooms at the first floors of each building have a combination of new steam to hot water instantaneous domestic water heaters and original tank type steam to hot water heaters with associated recirculating pumps. Domestic water heating tank system appeared to be old and original at Building 5.

2.5.3.2. Each building is served by low natural pressure gas with dual CONED meters serving the apartment kitchens. Separate high-pressure natural gas service runs up to the generator on the roof with a local regulator (Photo P04). No gas meter was observed on these generator gas connections.

2.5.3.3. Per drawings, roof tanks at Building 8 and 11 are served by 6 inch water services that are pumped to roof tank by the house pumps. These tanks serve fire standpipe and domestic cold water to all the 14 story buildings. The 7 story buildings have 3 inch water services with duplex booster pump model Alyan VSPH-15070-2, 300 gpm 7.5 HP that distribute the domestic water. No backflow prevention devices were observed at the main water service at Building 5 and 12, during the survey. Tank room and Boiler room 1-1/2" make up water connections are provided with secondary backflow prevention devices.

2.5.3.4. Boiler room blowdown is piped underground to a Federal submersible sump pump. Pump and discharge piping appeared to be in good condition.

2.5.3.5. Typical apartments have water and sanitary connections to the bathroom fixtures including tub, water closet and lavatory. Hot/Cold water, sanitary and gas connections were observed in the kitchen for the four burner gas range and kitchen sink. ¾" gas piping was observed to be exposed in the kitchen however risers are enclosed within shafts and could not be observed. Water piping at fixtures was not insulated.

2.5.4. Fire Protection

Roof tanks, one each at Building 8 and 11 are served by (6)-inch water services that are pumped to roof tank of 26,000 gallons each with 5,000 gallon fire reserve served by duplex house pumps (330 and 240 GPM). These tanks serve fire standpipe water to all the high rise buildings. Drawings indicate these were replaced circa 1989. Buildings were observed to have limited sprinklers in the first floor utility rooms. There are no sprinklers in the apartments. NW and its consultants have found no records of sprinklers installed in the trash chutes or other locations subsequent to the original construction. Not all apartments observed had a carbon monoxide/smoke detector—though this may be attributed to these apartments were undergoing renovation.

2.6. Electrical – *please refer to Appendix P for MEP report*

2.6.1. Power

The 7-story buildings are provided with a 1200A service. The 14-story buildings are provided with a 1600A service. See below for the electrical distribution system information.

Electrical panel Room at Building 12

Typical feeder sizes serving the apartments (vertical risers) is #1AWG (rated at 110A per NEC 310.16). Each riser feeds about (5) apartments. The vertical risers are typically served by a 100A switch fused at 100A. Some risers are fed by 60A switches, but they serve fewer apartments.

Each apartment is provided with a dedicated power panel. The vertical risers are tapped with #6 (rated at 55A per NEC 310.16) conductors to provide power to the apartment panels.

The panels in the apartments surveyed had no identification of their rating. The panels surveyed are old and past their useful life expectancy. It is not feasible to modify these panels for electrification work.

Each apartment has a dedicated power panel that is beyond its useful life that typically supplies the living rooms with 4 duplex receptacles, bathrooms with 1 GFI receptacle, each bedroom with 2 duplex receptacles, and 1 duplex receptacle for the stove and 1 quad receptacle for the refrigerator and other equipment. Residents have reported to NW that in some apartments the electric panel is accessed from the bathroom which would be a noncompliant code condition beyond putting the occupant at risk.

Based on the above findings, the existing power distribution infrastructure cannot support the installation of window heat pumps in each unit.

Buildings 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 18, and 19 are provided with a generator located on the roof. (Buildings 9, 16, and 17 do not have generators.) The generators serving Type A+AR buildings are rated at 200 KW and the generator serving Type B building is rated at 350KW. The generators are natural gas-fired and provide 100% back-up for all the loads in their respective buildings. See below for the emergency electrical distribution system information.

The electrical rooms for buildings with a generator installed were upgraded during the NYCHA Hurricane Sandy R+R Project and are located above grade level. New feeders were provided between the new electrical room and pull boxes serving the apartment risers as well as all the mechanical/house loads. However, neither the apartment risers nor the house load feeders were replaced as part of the Sandy project.

2.6.2. Lighting

2.6.2.1. Exterior and Site Lighting

The building is provided with a combination of exterior wall packs and flood lights. All exterior lighting is LED and is fed via the existing house panels. All exterior lights are controlled via a lighting contactor and time clock connected to house panels. The existing lighting fixtures were found working and are in good condition.

2.6.2.2. Interior Lighting – Common Areas

The Buildings 5 and 12 are provided with LED lighting fixtures in the corridors,

Roof generator at Building 14

common spaces and new utility spaces and are fed via the existing house panels. Interior lights are not provided with any automatic control and are at the "on" position at all times. The existing lighting fixtures were found working and are in good condition.

2.6.2.3. All apartments are typically provided with wall lights, it was observed during the site survey that the lamps are mix of LED and fluorescent lighting. Lighting in the apartments are controlled via a toggle switches and are fed by the panel in their respective apartments.

2.6.3. Low Voltage Systems

2.6.3.1. Layered Access

Layered Access System Each building is provided with a layered access system. The main control panel is typically located in the utility spaces. The main entrance is provided with the keypad/keyfob entrance system. The layered access system was found in working condition and seems to be in fair condition. *Refer to appendix E for more information.*

2.6.3.2. CCTV System

Each building is provided with a CCTV system. The CCTV is connected to NYCHA central monitoring system. While existing cameras are functioning, they are in fair condition.

2.6.3.3. Voice/Data Systems

The incoming Verizon lines terminate at the optical fiber termination box located in one of the utility spaces within each building. (1) wall mounted rack is provided for the FO cable distribution in each building.

At Buildings 5 and 12, it was observed that the 4" risers and associated pull boxes serving the apartments for the low voltage systems are running in the stairwells. This is in **violation with current NYC Building Code**. Stairwells shall not have conduits or penetrations that are not serving devices or equipment in the stairwell.

The voice/data distribution system is in fair condition and is recommended for replacement by Shenoy Engineering.

Refer to Appendix P for the Mechanical, Plumbing and Electrical report.

2.7. Landscape and Site Conditions

2.7.1. Site Landscape Conditions

The open space and landscaping at Riis are significant. Of the entire site area of 769,046 SF (17.7 acres), 607,188 SF (13.9 acres) or 78.95% of the site is open. This open space has a meaningful historic character.

Central "Mall" – The site has a vast open space between the buildings along Avenue D and the FDR Drive, starting above 6th Street. However, it is not being used to its full potential. Paul Friedberg's 1960 plan of central space at Riis was hailed as a great success in the 1960s, but, unfortunately, only Friedberg's original amphitheater and sculptures by artist William Tarr survive. The continuous playground was replaced by lawns and most of the open green spaces are fenced off. There is a basketball court currently under reconstruction and playgrounds that did not appear to be used often at the times of NWs' site visits.

Along FDR Drive – The length of the site along the FDR Drive is almost neglected because of the proximity to the highway. The tree cover is sparse, seating areas are minimal, and the lighting is insufficient. This area could be better utilized given there is a pedestrian bridge that connects the development to the John V Lindsay Park across the highway. The site presents a unique opportunity for upgrades to its landscape, however, at 13.9 acres, the rehabilitation of the open area of the site will only be achieved at a substantial cost.

Refer to Appendix Q for the Landscape Report.

2.7.2. Site Civil and Subgrade Conditions

There is a major sewer pump station at the northwest corner of the Riis Houses complex. Based on the available information, major trunk lines leading to the pump station are as follows:

Existing sewer main trunks along 8th and 11th Streets. There are two main sewer trunks crossing the Riis Houses complex in an east-west direction that service large catchment areas around the neighborhood of the site. The sewer main trunk running along 11th Street is (9) feet x (5) feet. (5) Buildings 1, 2, 6, 7, and 8 are directly serviced by this main trunk. The sewer main trunk running along 8th Street (unknown size) directly services Buildings 14 and 19.

On-going public construction works within the project site along 10th Street and at the roundabout was identified. Koysman believes this construction is likely related to New York City stormwater resiliency projects.

Existing NYCDEP (9) foot diameter interceptor sewer runs underneath Avenue D, adjacent to the Riis housing complex to the pumping station with approximately (30) feet of cover.

Other critical infrastructure may be located underground in the vicinity of this facility. A subsurface survey was not available at the time of writing this report to determine other underground infrastructure that may exist.

As part of Civil evaluation a sub-surface survey should be performed. At the time of writing NW has not been able to obtain copies of a recent subsurface survey that may exist as an Appendix G requirement for recent work done.

Please refer to Appendix R for the Site Assessment Report.

2.8. <u>Other Reports</u>

2.8.1. Work Orders

There are 6,642 work order requests open from, the earliest from 04/27/2018 and the most recent according data NW has received of 08/31/2024. "Painting" had the most open work orders with 2,242, "Needs Plastering" 467, "Floortile Damage" 329, "Lead" 242, "Needs Cabinet" 117, "Ceiling Damaged" 111, and "Mildew" 1036.

There are 27,824 closed work orders from 05/09/2018 to 06/05/2024 for an average of 4,574 closed annually. "Painting" had the most, with 2,000 work orders closed. "Stoppage" 1,885, "Needs Plastering" 1,132, "No Heat" 1,112, "No Hot Water" 878, "Rats" 733, "Roaches" 723, "Elevator Out of Order" 576, and "Window Glass Cracked" 568, all are failure codes that are highly noted due to the high quantity of work orders reported.

It is also important to note that issues related to flooding have been reported 410 times ([1] incident is shown to be open), issues with pipes have been reported 781 times (101 remain open), issues with heat have been reported 1,583 times (27 remain open), and issues with water has been reported 1,870 times (219 remain open).

The number of closed vandalism work orders submitted is (43).

The average time of completion (from the initial report date to the completion of activity date) is (84.8) days.

For the work orders were said to have been closed, there is no way to determine whether all work was completed or the work order simply "closed" on the database.

Work orders per Building:		Open	Closed
1.)	Building 1 (A+AR): –	170	733
2.)	Building 2 (B):	378	1,197
3.)	Building 3 (B):	514	1,117
4.)	Building 4 (A+AR):	267	967

5.)	Building 5 (B):	405	1,905
6.)	Building 6 (B):	460	1,770
7.)	Building 7 (A+AR):	228	822
8.)	Building 8 (C):	393	1,910
9.)	Building 9 (A+AR):	194	873
10.)	Building 10 (C):	423	1,800
11.)	Building 11 (C):	444	1,641
12.)	Building 12 (A+AR):	235	1,067
13.)	Building 13 (B):	458	2,318
14.)	Building 14 (C):	426	1,874
15.)	Building 15 (B):	486	1,886
16.)	Building 16 (A+AR):	184	729
17.)	Building 17 (A+AR):	184	872
18.)	Building 18 (B):	386	1,741
19.)	Building 19 (C):	403	1,851
20.)	Development and Grounds:	2	92

Please refer to Appendix S for the Work Orders.

2.8.2. PNA Reports

The 2023 PNA worksheet identifies 402 deficiencies without specific locations. *Refer to Appendix M.*

For Riis II, the PNA summary identifies a (5) year capital need of $421 million and a (20) year need of an additional $638 million.

Please refer to Appendix T for the PNA Report.

2.8.3. CNA Reports

The CNA Reports identified $29,595,350.00 worth of what it deemed Critical Repairs. The total cost to perform all non-critical repairs is $170,130,664.63 totaling just under $200 million combined. The cost to replace all of the buildings is cited at $424,196,701.30 using metrics from Marshall and Swift for the estimate which is significantly low for the New York City area.

Please refer to Appendix U for the CNA Reports.

2.8.4. Obsolescence Report

According to the Obsolescence Report produced by AEI Consultants using HUD standards Estimated Cost of Substantial Rehabilitation for Riis I and Riis II is $501,010,573.00. It should be noted, that the estimated value for rehabilitation using HUD standards may or will likely not embody the same repairs and work that NW will recommend. The estimated value for Riis I and II is $799,403,848.00. The cost of rehabilitation is estimated to be 62.67% of the value of the property. It is important to note that if the value of work meets or exceeds 62.5% of the value of the property (based on HUD's published numbers), the project will qualify for Obsolescence, and be eligible for a 90%/10% Section 18/RAD blend. The 90%/10% Section 18/RAD blend assumption enables 1.) the RAD resident protections to be provided to all units in a Project, while 2.) maximizing the higher rent levels available through Section 18 conversions.

For DOB filing purposes, different estimates may be considered for this calculation; for example, NYC Department of Finance, which has a much lower Market Assessment value including land totaling $254,146,000.00. This estimate can be broken down 1.) Block 367, Lot 1 (Riis I above 10th Steet or Buildings 1, 2, 3, 4, 5, 6, 7, and 8): $83,618,000.00; 2.) Block

362, Lot 10 (Riis I below 10th Steet or Buildings 9, 10, 11, 12, and 13): $74,774,000.00; and Block 362, Lot 1 (Riis II or Buildings 14, 15, 16, 17, 18, and 19): $95,754,000.00.
A re-appraisal will most likely be required in order not to trigger mandatory compliance with Appendix G.

Please refer to Appendix V for the Obsolescence Report.

2.8.5. BFJ Summary of Resident Comments Report
During workshop meetings held on May 22nd and June 13th, residents provided feedback on their particular buildings. 218 comments were provided, with a majority mentioning leaks and mold, heating problems, bad windows, and elevator breakdowns.

(9) comments were submitted for Building 5. (3) comments, all on the 11th floor stated there were leaks that occurred during precipitation. (2) comments identified steam leaks from the 'basement' and from the ground. (1) comment each about heat (too much or too little), environmental concerns, and rat and cockroach infestations, and hallway doors that are difficult to open.

(16) comments were submitted for Building 12. (8) comments related to leaks when it rains, mold, and bubbling paint, (3) comments on broken entry doors and intercom, (2) related elevator breakdowns, (1) on residents paying for repairs, (1) about scaffolding, and (1) on urination in the elevators.

Please refer to Appendix W for the BFJ Summary Report.

2.9. Hazardous Materials Concerns

2.9.1. Asbestos – Asbestos Containing Materials (ACM) have been identified in various locations on site. Whenever work has been done, ACMs have been abated when they are encountered. NW anticipates that rehabilitation associated with a potential PACT conversion will encounter and abate additional ACMs.

2.9.2. Lead-Based Paint (LBP) – Lead-based paint was used in paint applications of the original structure and in paint until its use was banned in NYC in 1960. In testing 249 out 934 (25.8%) of units tested thus far tested positive for lead at greater than 0.5 mg/cm2. It is NYCHA's policy that all LBP should be abated via removal and not encapsulation. NW anticipates this will require abatement at painted concrete and removal and replacement of plaster surfaces within the development.

2.9.3. Soil Contamination at Site of Former Manufactured Gas Plant – At the site of the former Manufactured Gas Plant, from 11th Street to 13th Street on the Riis campus, NYC Department of Environment Protection (DEP) and Con Edison have made public their plan to remove 5,000 cubic yards of contaminated soil and to install (12) wells for the removal of sub-grade coal tar. It is our understanding that this work is scheduled to begin once the NYCHA Hurricane Sandy R+R Project contracts are closed out, i.e. in the near future.

Please refer to Appendix X for the Hazardous Materials Concerns Reports.

2.10. Other Ongoing Work and Violations

2.10.1. Sidewalk Sheds
It has been reported that sidewalk shed and fence have been installed at Building 5 only.

2.10.2. DOB Violations

Building 5:

Open Complaints:	None
Open Violations-DOB:	One
Violation Type:	FISPNRF- No Report and/or Late Filing (Façade)
Violation Number:	01878
Open Violations ECB (DOB):	One
ECB Violation Number:	ECB 37027192Y (No Cycle 9B report for Facade)

Building 12:

Open Complaints:	None
Open Violations-DOB:	One
Violation Type:	FISPNRF- No Report and/or Late Filing (Façade)
Violation Number:	01880
Open Violations ECB (DOB):	One
ECB Violation Number:	ECB 37027185X (No Cycle 9B report for Facade)

Please refer to Appendix Y for the DOB Violations.

2.10.3. DOB Active Jobs

Building 5

There are currently (3) active jobs for Building 5 at 1141 FDR Drive, with filing dates in 1995, 1996, and 2016. These projects are classified as type Alt. 2 (work done on a building that does change the Occupancy or egress) and Permit Renewals. They involve plumbing and electrical work, including the replacement of the hot water circulation pump, installation of gas risers, and installation of underground utilities for electrical and plumbing systems. The only Certificate of Occupancy that NW has record of for Building 5 is a temporary C of O dated September 23rd, 1948. It shows there are (7) apartments on the 1st Floor and (9) apartments on the 2nd through 14th stories for a total of 124 apartments. The is consistent with the latest records NW has received from NYCHA.

Building 12

There are currently (3) active jobs for Building 12 at 919 FDR Drive, with filing dates in 1995, 1996, and 2016. These projects are classified as type Alt. 2 and Permit Renewals. They involve plumbing and electrical work, including the replacement of the hot water circulation pump, gas piping, and installation of underground utilities for electrical and plumbing systems. The most recent C of O in NW's possession for Building 12 is an amended C of O dated February 9th, 1972 for change of use of the Basement for " storage, locker room, service room, and Virginia Day Nursery, kitchen, toilet, and slop sink". 1st through 6th stories have (8) apartments per story for a total of (48) apartments. This is consistent with the latest records NW has received from NYCHA.

Please refer to Appendix Z for the DOB Violations and Certificates of Occupancy.