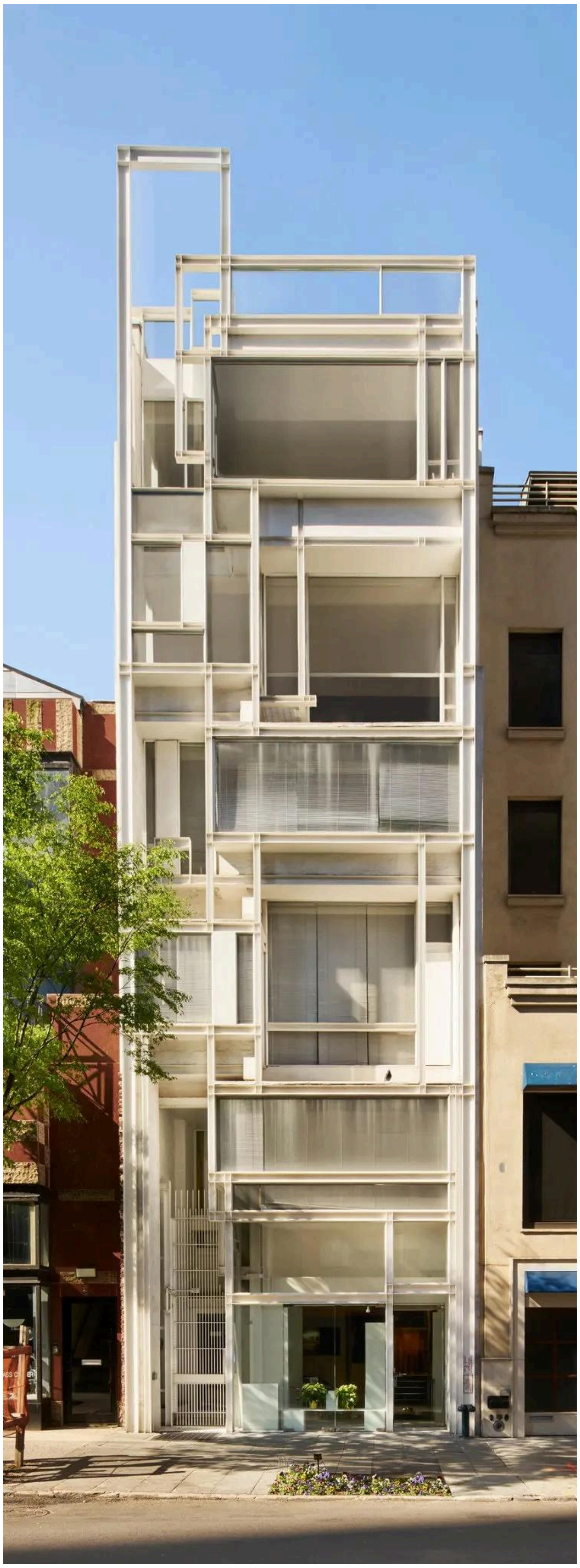

Paul Rudloph's **Modulightor Building**

Building Conditions Assessment

Phase 1: Research and Investigation Results and Preliminary Conservation Proposals

Prepared by Cecelia Halle
March 4, 2024

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Introduction

Project Background

This conditions assessment was undertaken as coursework for Columbia University's Historic Preservation Building Conditions Assessment Course taught by adjunct Professor Kyle Normandin in the Spring of 2024. The visual survey that underpins this assessment was conducted on February 4, 2024, as part of a team from Columbia University also working to produce a 3D digital scan of the Modulighter Building for the Historic Preservation Program's Digital Heritage Documentation Course.

Scope and Methodology

The scope of this report covers the original structure of the Modulighter Building, designed by Paul Rudolph and built between 1989 and 1993, and will examine the building through visual surveying techniques. The original structure of the Modulighter building includes the North and South elevations of the building from floors one through four (designated by the Landmarks Preservation Commission in 2023) and the interior third and fourth-floor structure (eligible for designation in 2032), all of which the survey covers. While many of the conditions identified in the following report are endemic to the structure, the report's focus on the original elevation and floors completed during the second phase of the building's construction help to highlight the iterative, highly crafted design process of Paul Rudolph and to assess the conditions underlying the original structure.

Background

Historic Background

The Modulighter building is a significant later work of Paul Rudolph, a second-generation modernist best known for works such as the Yale School of Architecture, where he served as dean between 1958 and 1964. The site of the Modulighter building, 246 East 58th St, was purchased by Paul Rudolph and his longtime partner and collaborator, Ernst Wagner, for 1.5 million dollars in 1988. The original intent of the purchase was to create a new showroom location for the Modulighter Lighting Company, which Rudolph founded with Wagner in 1976 to better light and compliment the uniquely modular design of Rudolph's buildings. The

Modulightor showroom and fabrication fixture workshop remain on site to this day. During the first phase of construction (approximately 1989-93), Rudolph also moved his architecture studio to the premises.

While initial proposals for the building featured a nine-story design, the first phase of the building's construction was four stories. The top two stories were completed as an apartment duplex in 1996, intended to provide surplus income for Rudolph and Wagner, four years before Rudolph's passing in 1997. In 2002, architect Donald Luckenbill was hired to combine the duplex into a single apartment. In 2010, Mark Squeo, who worked for Rudolph between 1990-91, was hired on to complete the construction of the fifth and sixth floors.

Architectural critics consider the building a small-scale interpretation of the skyscrapers Rudolph designed in Asia and an exemplary work of late modernism. As described by Commissioner Micheal Goldblum, the Modulightor is Rudolph's "Taliesin in a way, he wanted it to kind of be this little idealized expression of his ideology and methodology built in a mid-block site of Manhattan of all places."[1]

[1] Dickinson, Kelvin. "Modulightor Is Made A Landmark and Gifted to The Paul Rudolph Institute for Modern Architecture." Paul Rudolph Institute for Modern Architecture, February 1, 2024.

Building Description and Development History

Context of Site

The primary street facade of the Modulighter building is located at 246 East 58th St, on the edge of Midtown East, and within Manhattan's Design District.

Current Designation Status

In December 2023, the Modulightor building was unanimously voted to be designated as a landmark by the Landmarks Preservation Commission. The interior third and fourth floors are also significant but have yet to meet the minimum age requirement for designation. They will become eligible for designation in 2032.

Building Description and Materials

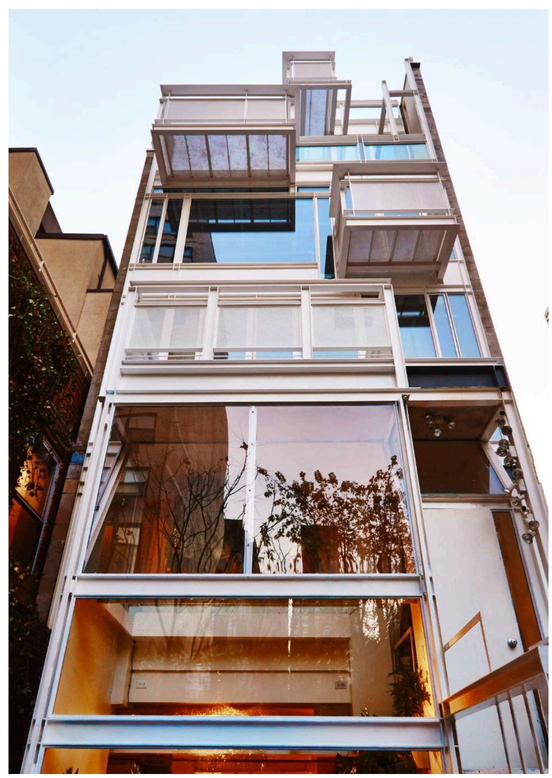
North Facade | The Modulightor Building is most recognizable for its north, street-facing facade characterized by overlapping horizontal and vertical steel rectangles of varying projection and size. As described in the LPC designation report, "painted steel I-beams and glass panels form jigsaw-like screens that reference the De Stijl movement, Russian Constructivism, and Mies van der Rohe."[2] The rectilinear facade is constructed out of I-beams of three sizes, "horizontal I-beams are six ¼ inches, the vertical I-beams are four ¼ inches, and the vertical I-beams that run up the east and west edges are eight ¼ inches wide."[3] The steel beams form rectangular shapes, most filled with single-pane plate glass.

Modulightor, Inc., 246 East 58th St., New York City.
Photo Of Building Exterior Taken April 24, 2019. © Joe Polowczuk

[2] Landmarks Preservation Commission Designation Report, Modulightor Building, (New York, NY: Landmarks Preservation Commission, 2023), 12.
[3] Ibid.

With this design scheme in mind, the ground floor hosts three entrances. At the far left of the structure, a bespoke gate made of white-painted subway grate covers a two-story entranceway, the formal entrance to the duplexes on the third through sixth stories of the building. A setback is intended for a window box within the entranceway, though it is not currently in use. The gate, made by Rudolph, spans the height of the first story of the building and is cut to accentuate the angular projections of the rectangular steel frames that make up the facades of the first floor. The second entrance, at the far right of the building, features a simple plate glass door set back into the building and serves as the primary entrance to the Modulughtor showroom on the first floor. Between the two entrances are three glass panels that comprise a large showroom window. The center and far left panels open outward and were designed to allow large light fixtures made inside the workroom of the Modulightor building to be transported out.

Looking upwards, the third and fourth stories of the building introduce three aspects to the facade: one, setbacks intended to house window boxes; two, exposed, steel framed and white-painted concrete behind/supporting the setbacks; and three, white-painted plywood doors designed to allow access to maintain the setbacks.

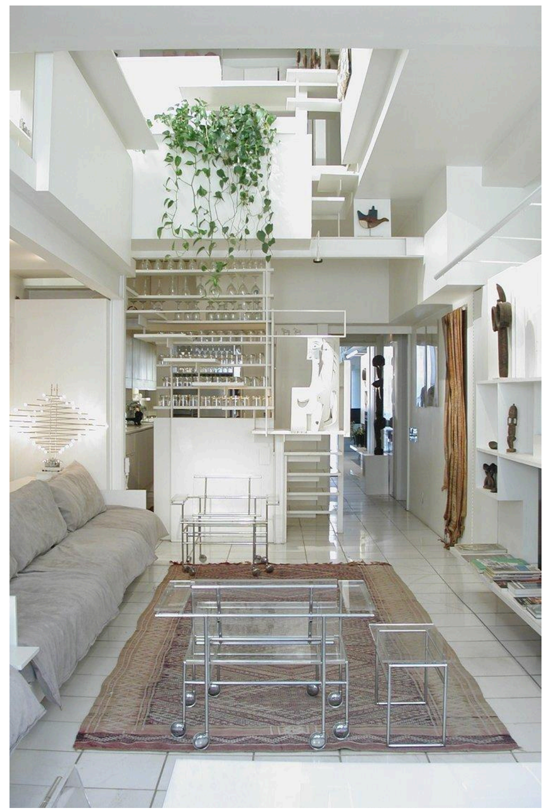


South Facade of the building. © The Estate of Paul Rudolph, The Paul Rudolph Institute for Modern Architecture.

East and West Facades | The east and west facades of the fourth through fifth stories are visible from street level. The walls are made up of white-painted concrete blocks and stuccoed brick and are occasionally interrupted by narrow, rectangular slot windows.

South Facade | The south facade of the Modulightor building continues the design scheme articulated on its street-facing elevation. The first and second floors take up nearly the entire lot, with the second floor featuring an array of pyramidal skylights. Above the skylights sit a deck of white-painted subway grates extending almost to the back of the lot. The deck features a small in-ground hot tub, now used as a planter. To its right, a staircase with risers made of subway grate extends from the third to the fourth story, greeted by a wooden door adjacent to a slot window of the same height. Above the door is a glazed transom, set back at an angle and framed by steel decorated with a vertical arrangement of flood lights on its right side. Below the staircase is a small door that opens into the third floor.

The third and fourth stories are primarily characterized by a two-story greenhouse consisting of three panels of rectangular glass, all framed in steel. The fifth, sixth, and roof levels—the Mark Squeo addition to the building—incorporate balconies of various projections, alternating on the west and east sides of the structure per floor. The fourth-story balcony sits atop the double-height greenhouse.



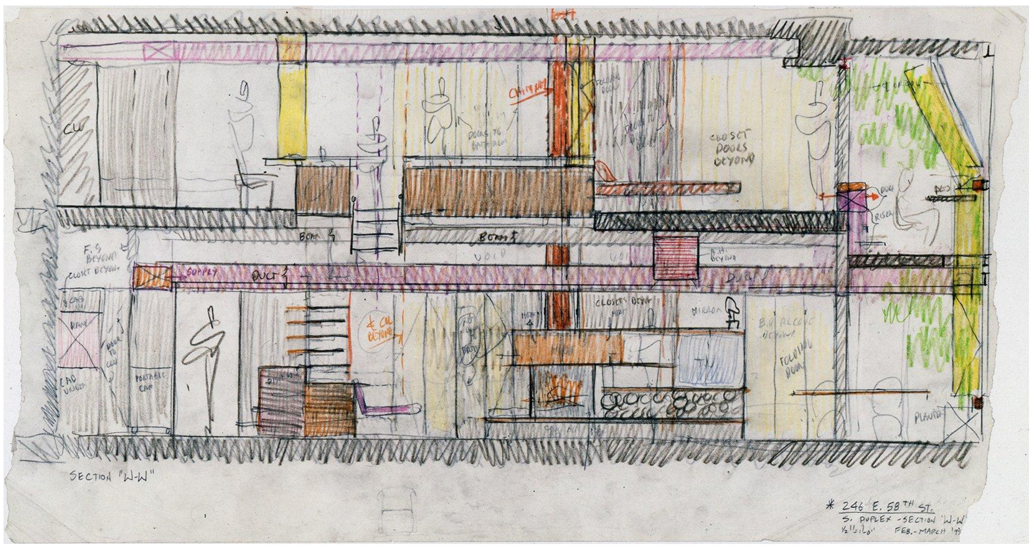
View of the third floor interior looking North.
Photo courtesy of CultureZohn.

Interior Levels | Arriving at the third floor from the elevator or stairs, one enters a small hallway with four rectangular openings into the kitchen. The top three openings are smaller and used to store knick knacks. Moving to the North (what was originally the front duplex prior to the units being combined in 2001), the hall opens up to a double-height space with various projecting, right-angled interior surfaces that guide the eye upward. The west side of the room features a bookshelf that visually extends to the fourth story, just interrupted by a small catwalk to get to the bedroom space above. The bedroom on the fourth story projects into the open space and creates a one-story overhang under which a piano is placed. The projecting volumes in the space pinwheel around, moving upward and creating a lively, active space.

The southern side of the property (originally the rear duplex) opens out to a rear setback featuring a two-story greenhouse. Like the northern side of the building, the center of the room is a swirling, double-height space, though with the addition of a modular staircase, obscured by rectangular open-shelving units, that wind upwards to the fourth level.

The fourth story features balcony-like spaces tucked away on the north and southern edges of the building where the original bedrooms were. The pathways to navigate the fourth story are circuitous and narrow, accentuating the open, airy nature of the double-height spaces on both sides of the apartment.

The interior finishes are almost all made of white-painted, ¾” plywood. The flooring, now painted white, was an interior-grade marble tile.



Modulightor, Inc., 246 East 58th St., New York City. Section Sketch Thru Duplex Apartment.
© The Estate of Paul Rudolph, The Paul Rudolph Institute for Modern Architecture.

History of Building Condition, Renovations, and Repair Work

Per an approximate timeline of building development provided on the Paul Rudolph Institute for Modern Architecture’s (PRIMA) website, this is a brief overview of the history of renovations and repair work of the building. This timeline has been supplemented by alterations and job filings provided by the Department of Buildings, as well as the construction phases outlined in the Landmarks Preservation Commission Report.

As a result of the iterative construction of the building, driven by Rudolph and carried out by skilled tradesmen and day laborers, much of the work on the building between 1989-97 was done without permitting and thus lacks comprehensive documentation in the Department of Buildings. This timeline is incomplete and will require follow-up with PRIMA director Kelvin

Dickinson to ensure accuracy, especially regarding repairs and maintenance of the building.

Modulighter, Inc., 246 East 58th St., New York City. Construction Photo, 1988. © The Estate of Paul Rudolph, The Paul Rudolph Institute for Modern Architecture.

First Phase of Construction (Stories One through Four)

- **February 1989** - Paul Rudolph and Ernst Wagner purchase 246 East 48th Street

- **1989 -** 246 East 58th Street is converted into a multi-purpose building for the Modulightor Lighting Company, including a "showroom on the ground floor, fixture fabrication workshop and storage in the three cellar levels, and Paul Rudolph's architectural office on the second floor," and a residential duplex on floors three and four.

- **1989 - August 21, 1990** - Richard Potofsky is hired as the project expediter.

- **July 16th, 1990 - 1992** - William Vitacco is hired as the project expediter.
- **August 1992** - Front and rear facades are under construction. Glass and plywood panels are installed in the facade frames throughout the following year.

- **February 1993** - By 1993, the steel I-Beams that comprise the Modulightor facade were painted white.

- **May 3, 1993** - The Modulightor Building receives a temporary certificate of occupancy. Modulightor moves into the building while construction of the 3rd and 4th floors is ongoing.

- **July 1996** - Construction of the third and fourth floor duplex apartments is completed and is classified as "Duplex Class-A Apartments." Rudolph begins leasing the upper floors.

Second Phase of Construction (Stories Five and Six)

- **April 11, 1997** - Rudolph gifts the Modulightor building to Ernst Wagner by a handwritten note on April 11, 1997, while Rudolph is in the hospital.

- **August 8, 1997** - Rudolph passes away.

- **June 11, 2001** - Ernst Wagner creates the Paul Rudolph Foundation. Chris Northrup, the group's director, helps Mr. Wagner coordinate the apartment renovation so it can be used for tours and events to fund the organization's mission.

- **February 2002** - Architect Donald Luckenbill was hired to design and build shelves in the duplex apartment units modeled after those at 23 Beekman Place. The shelves hold Rudolph's books and personal items not donated to the Library of Congress.

Modulightor, Inc., 246 East 58th St., New York City. Photo Of Exterior Building Facade Taken August 27, 1992. © The Estate of Paul Rudolph, The Paul Rudolph Institute for Modern Architecture.

- **September 2002** - Under Donald Luckenbill, the two duplex apartments are merged into one unit. Renovations include a door cut between the kitchens on the third floor, and cabinets are modified and relocated. Doors to the public corridor on the third and fourth floors are removed, and some are replaced with plywood panels that can close when privacy is required.

- **October 2007** - Architect Mark Squeo, a Rudolph employee between 1990-91, initiates design planning for the fifth and sixth floors using Rudolph's preliminary sketches for the original unbuilt 9-story design.

- **November 2010** - The Department of Buildings issues an alteration permit.

- **June 2010** - Revisions to the alteration permit are submitted to the Department of Buildings.

- **2010-2011** - Construction on the fifth and sixth stories begins.

- **2016** - Construction on the upper-level additions is largely completed.

Third Phase of Construction (PRIMA Maintenance and Ownership)

- **July 2022** - Rust jacking on the frame of the right showroom door results in a glass panel being displaced from its frame. Repairs take place, but the front lock on the doorframe of the building is no longer made and thus is replaced with a non-matching part.

- **December 19, 2023** - The Landmarks Preservation Commission votes unanimously to designate the Modulightor Building as a New York City landmark.

- **January 2023** - Ernst Wagner donates the Modulightor Building to PRIMA.

List of Available Architectural Documentation

Following his death in 1997, Paul Rudolph left his collection of architectural drawings and photographs. and other documentation to the Library of Congress (LOC), collectively the “Paul Rudolph Works.”[4] In 2001, the Paul Rudolph Estate transferred all items it “determined suitable for its collection” to the Library of Congress. The complete collection of the Paul Rudolph Archive comprises some 90,000 items, with approximately 13,996 items digitized and available through the Library of Congress Prints and Photographs Online Catalog (PPOC). Within the PPOC are 68 digitized images with metadata referring to Modulightor, INC. Of particular relevance to this assessment are the following items:

- Modulightor, Inc., 246 East 58th St., New York City. Façade details. Sketch.
- Modulightor, Inc., 246 East 58th St., New York City. Façade study. Sketch.
- Modulightor, Inc., 246 East 58th St., New York City]. Elevation sketch.
- Modulightor, Inc., and Rudolph Foundation, 246 East 58th Street, New York City. Perspective. Rendering.

[4] Kelvin Dickinson. “The Paul Rudolph Estate And The Paul Rudolph Institute For Modern Architecture Announce Settlement With The Paul Rudolph Foundation.” Paul Rudolph Institute for Modern Architecture, July 21, 2023.

In addition to these sketches and renderings, the LOC holds thirty-five photos documenting building conditions in 1998.

The Paul Rudolph Institute for Modern Architecture also has a significant amount of digitized archival holdings on its website. Digitized items are organized into several categories: drawings (Design Drawings/Renderings, Construction Drawings, and Shop Drawings) and photos (Project Model, During Construction, Completed Project, and Current Conditions). Of particular relevance to this assessment are the following items:

Drawings

Construction Drawings

- Item Nos.: 1988.01-01.01.0016, 1988.01-01.02.0014, 1988.01-01.02.0016, 1988.01-01.02.0032, 1988.01-01.02.0061, 1988.01-01.02.0072, 1988.01-01.03.0001, 1988.01-01.03.0002

Shop Drawings

- Modulightor, Inc., 246 East 58th St., New York City. Existing (Lower) North Elevation. (1988.01-01.03.0001)
- Modulightor, Inc., 246 East 58th St., New York City. Window Panels On North And South Elevation. Take-Off Glazing Record Dated 8/10/1991. (1988.01-01.03.0002),
- 1988.01-01.03.0005
- 1988.01-01.03.0026

Design Drawings/Renderings

- Item Nos.: 1988.01-01.01.0003, 1988.01-01.01.0008, 1988.01-01.01.0014

Photos

Construction Photos

- All items (45 photos) dates 1988-1993, Item Nos.: 1988.01-02.02.0021-1988.01-02.02.0028

Completed Project

- All items (21 photos) dates 1993-1996, Item Nos: 1988.01-02.03.0007 - 1988.01-02.03.0017

Observation of Conditions

Summary of Conditions

The following documentation of existing conditions at the Modulightor Building is a representative survey of conditions observed on the exterior north and south elevations between the first and fourth floors. The documentation also covers the third and fourth interior spaces eligible for designation in 2032. All documentation was conducted on February 3, 2024. The conditions in this visual survey were documented on drawings, found in Appendix B of this report, and are further described in the following text.

Conditions Log

Code	Legend of Conditions	North Facade	South Facade	3rd Floor	4thFloor	TOTALS
C	Corrosion	7	10	1	1	19
D	Displacement of material	0	0	2	0	2
P	Paint found over original material	0	0	2	2	4
RJ	Rust jacking	1	1	0	0	2
S	Soiling (Air pollution, pigeon excrement)	10	4	1	0	15
SL	Surface Loss (Breakage, Delamination)	11	2	3	3	19
WI	Water infiltration and moisture staining	1	0	2	4	7
WP	Weather Proofing (missing or degraded sealants, loose glazing)	1	0	3	3	7
	Total Data Points Recorded	31	17	14	13	75

Existing Conditions and Observations

Corrosion

When surveying ferrous metals like steel used as an exposed structural element, corrosion is common. On the Modulightor building, corrosion and surface loss are the most persistent conditions found throughout the building's north and south elevations. Because the exterior steel structure is non-permeable, rainwater flows down the exterior surface and can be "wicked in at flaws such as narrow cracks or joints, that are not well sealed."[5] As seen at the Modulightor building, water wicked into pinpoints in the metal's paint coating has led to patterns of corrosion along the upper lips of the steel I beams, an issue documented in historical photos and that persists today (North Facade: C-2, C-2, C-6, C-5, C-9). The surface corrosion found through the exterior has likely been further exacerbated by an aging paint

[5] Godfraind et al., *Practical Building Conservation: Metals / Edition 1*, 32.

system, which, while attempts have been made to maintain, does not address or mitigate the underlying causes of corrosion endemic to the structure.

Significant corrosion is also found at grade level, where exterior steel structures come into direct contact with the sidewalk. The lack of a plinth or any sort of barrier at ground level has led to severe corrosion on the north elevation (North Elevation: RJ-1, C-4) and has similarly manifested on the third-floor raised porch on the south elevation (South Elevation: C-1, C5, C-9). Though relatively little corrosion is found throughout the third and fourth stories of the South elevation, there are early iterations of soiling patterns that resemble the North Facade.

Furthermore, corrosion from standing water on the fifth-floor balcony (located on the roof of the double-height greenhouse) is indicative of a flawed installation: the balcony floor, made of a metal grate, was intended to be removable, though on installation, it was welded to the exterior frame. Thus, detritus has collected under the grate and fails to drain out the balcony base, causing surface corrosion and significant water infiltration on the ceiling below, which will be discussed in a following section.

Corrosion patterning on the ground floor exterior.
Photo by Cecelia Hall

Rust Jacking

Rust jacking is the most severe form of corrosion found on the Modulightor Building and has its own condition category, given its significant structural implications. Rust jacking occurs when a structural metal such as steel oxidizes and expands, often displacing surface material. In the case of the Modulightor Building, the glazing stops' design directly positions the large, plate-glass windows within the steel frame, which are endangered by rust jacking, potentially causing glass pinching, breaking, or displacement of entire panels.

In the summer of 2022, rust jacking resulted in the displacement of the right-most of the three glass panels that comprise the ground floor showroom entryway (North elevation: RJ-1). While other instances of rust jacking that directly affect the glass panels have yet to occur, the displacement of glass panels is a persistent safety concern of PRIMA.

On the South elevation, rust jacking has also led to the displacement of a steel roofing panel below the exterior case and above the third-story entrance onto the porch. This open glass between the exterior steel framing and the metal roofing material has allowed for further water infiltration into the structure, likely contributing to further corrosion on the interior of the steel panel.

In the summer of 2022, rust jacking led to the displacement of a window pane on the entry of the Modulightor building.
Google Maps, June 2022

Surface Loss

Surface loss refers to the breakage or delamination of surface material found throughout the Modulightor building and its front walkway. On the North and South Elevations of the building, surface loss most directly relates to the deterioration and delamination of roofing material found on the setbacks throughout the facade, which, either through water infiltration or pigeon excrement, have begun to expand and break apart North elevation: (SL-5, SL-6, SL-7). Given its expansive definition, the displacement of the steel roofing panel on the South elevation has also been keyed as surface loss, illustrating that these two conditions are interrelated (South elevation: RJ-1).

Surface loss on the street-facing facade also prominently highlights the deterioration and breakage of the front walkway of the building, which is entirely of interior-grade slate. Significantly, the slate is broken at the street's curb, where delivery trucks pull over, and on the center of the walkway, where an entire tile is missing (North elevation: SL-1, SL-2). In the front entranceway, the marble flooring is also damaged, with the front three tiles broken and missing pieces (North elevation (SL-3-2). On the interior, surface loss largely refers to chipped or peeling paint (SL-1, SL-2) or other interior finishes that may have deteriorated or need maintenance.

The interior grade slate that has been used to pave the sidewalk has begun to break.

Photo by Cecelia Halle

Soiling

Soiling is found most prominently on the Modulightor building's North elevation–its street-facing facade. Due to the building's proximity to the street and infrequent cleaning, soiling occurs most significantly on the range of the setbacks of the exterior. It is most prominent on the second, third, and fourth stories surrounding the positioning of the setbacks (North elevation: SL-7, SL-8, SL-9, SL-10). The setbacks are particularly affected by air pollution and pigeons who perch on the structure throughout the day. Soiling is also significant on the gated entrance alcove on the left side of the building's north elevation. Its height and depth make it difficult for routine cleaning and optimal for accumulating dust, dirt, and pollution (North elevation: S-1).

The South elevation hosts relatively minor soiling, save for the angled transom above the fourth-story doorway, which has collected a significant amount of pollutants on its upper half.

Significant patterns of soiling resulting in the displacement of roofing material occur on the setbacks found throughout the facade. This is further exacerbated by the presence of pigeons, who like to perch along the exterior. Photos by Cecelia Halle

Weather Proofing

The interactive design of the Modulightor building, wherein doors on piano hinges were designed to utilize the exterior setbacks of the building as planters, came with a fundamental design flaw: their lack of weather stripping. These doors feature a 1" to ¼" reveal around them, with no weathering stripping, sealants, or caulking, allowing for direct exposure and water infiltration to permeate the interior of the building (Third floor: WP-1, WP-2, WP-3). Due to the inactivity of these doors, attempts have been made to partially seal them with white tape, though this solution is relatively ineffective and has led to the chipping of the white paint on the plywood doors (Fourth floor: WP-3).

Due to a lack of weather proofing, the walls immediately adjacent to the exterior have experienced water infiltration resulting in the displacement of material. Photos by Cecelia Halle

Water Infiltration

In conjunction with the lack of weatherproofing throughout the building's interactive facade, water infiltration has occurred at key junctions close to these openings. On the third floor, water damage on the lower right-hand wall appears to extend inward from the exterior door placement throughout the wall (Third floor WI-2). However, as mentioned above, the fourth-floor greenhouse ceiling has the most significant water infiltration caused by standing water on the balcony above (Fourth floor: WI-1, SL-1). This damage has led to substantial deterioration in the ceiling material (likely gypsum board) and the shorting of a socket on the ceiling. The water infiltration on the greenhouse roof is the most significant instance of interior damage found within the eligible floors and may contribute to other cases of water infiltration found throughout the fourth-floor ceiling (Fourth floor: WI-2).

Furthermore, the minimal steel and single pane-steel glass structure was designed without thermal breaks and fails to effectively weep or repel water, likely exacerbating interior water infiltration and humidity and exterior corrosion.

Water infiltration from the roof of the greenhouse balcony has contributed to significant surface loss, water damage, and corrosion.
Photos by Cecelia Halle

Painted Over Original Material

Within the third and fourth story floors, the original marble flooring has been painted with white paint, detracting from the original character of the flooring and potentially damaging the white marble (Third floor: P-1). This paint has begun to chip in several locations, indicating its relatively thin coating (Fourth floor: P-1).

Overpainting of the flooring is also a fundamental issue throughout the interior.
Photos by Cecelia Halle

Discussion

The initial visual documentation survey at the Modulightor Building was partly guided by concerns voiced by Kelvin Dickinson, the president of PRIMA. During the tour of the building, Dickinson highlighted two primary concerns about the conditions of the building's envelope and its operations: one, that the steel that comprises the facade was not adequately coated and thus does not have thermal breaks, and two, that the single-paned window panels, showroom doors, and wooden doors that comprise the north and south facades were not properly weather-stripped, which has resulted in water infiltration and difficulty regulating interior temperatures. This difficulty regulating internal temperatures is further exacerbated by a north/south metering system throughout the building, resulting from the building's initial design as a duplex.

In many ways, the interior conditions highlighted by Dickinson identify issues endemic to the design of the building and that are further exacerbated by both a lack of proper water management on the building's exterior and historical difficulties with upkeep on building maintenance. The conditions in the visual survey have several key takeaways, outlined below, and help guide the preliminary recommendations outlined at the end of this report.

1. The **highly crafted aesthetic** of the Modulightor building **resulted in a difficult-to-maintain structure** with many oversights compromising its longevity.

   The unique and iterative design process that underpinned the construction development of the original four stories of the Modulightor building, in part driven by a slow accumulation of capital to fund the construction process, resulted in a structure primarily designed at the moment with little thought to long term maintenance and preservation. Accordingly, central issues with water infiltration, thermal insulation, and deterioration result directly from the design of the building, introducing a significant question about ongoing maintenance processes on the now-designated building.

2. **Above-grade water infiltration is a significant cause of deterioration**, whether corrosion, surface loss, or water infiltration, on both the exterior and interior.

   The failure of the structural design to properly manage rainwater downflows is exacerbated both by the design of the building, which does not account for water mitigation or management, and the building's lack of waterproofing, which perpetuates water infiltration throughout the facade of the building. Recurrent downflows on the exterior have led to recurrent corrosion patterns, as indicated in the conditions survey, and will continue to perpetuate corrosion if not addressed.

3. **Historical photos can guide our understanding of water flows** on the structure's interior and exterior and may highlight continual areas of concern.

   As demonstrated by documentation in the PRIMA archive, patterns of soiling and corrosion in historical photos can help us to identify water pathways and critical condition areas. Furthermore, they provide testament to the longevity and persistence of soiling and corrosion found throughout the structure and may indicate the need for both significant preservation intervention and maintenance needed to upkeep the lifecycle of the building.

4. Due to varying ownership and lack of funds, **there has not been routine maintenance on the structure**, further exacerbating its deterioration.

   The condition issues highlighted in the visual survey of the Modulightor Building result, in part, from the difficulty of varied ownership to maintain the high degree of upkeep and maintenance required of an exposed steel structure. As such, conditions, particularly corrosion found on the exterior, have likely worsened beyond the degree that a visual survey can observe and will require a probe to properly assess the degree of deterioration the building has incurred–which may be significant given the building's material and age.

Conclusion

The 2023 designation of the Modulightor Building by the Landmarks Preservation Commission, enshrining the building's significance and establishing it as a New York City Landmark, has elevated the profile of the building. Alongside the recent acquisition of the building by PRIMA, the building is well positioned for a significant restoration process, in part initiated by this assessment.

With the significance of the building affirmed by the recent landmark designation, the urgency of restoring the Modulightor building cannot be understated. As life cycles of modern buildings with exposed steel structures vary between twenty to thirty years, and with the Modulightor's lack of routine maintenance, the building's iconic and now designated steel frame –ridden with corrosion–is in desperate need of restoration. The process of restoring an exposed steel structure of this kind is not insignificant. However, with significant investment in the field towards the preservation of modernist structures, there are case studies one can look to interpret the degree of restoration likely required by the Modulightor building. These include Mark Sexton's Restoration of Crown Hall for the Illinois Institute of Technology, Thornton and Tomasetti's Feasibility Study for the Edith Farnsworth House, and the Getty Conservation Institute's Eames House Conservation Management Plan, among others. While not identical, these studies resemble significant restoration or conservation interventions into the structures of modernist buildings that employ building materials similar to those found at the Modulightor Building.

While, as it stands, funds for a restoration project of the scale previously mentioned are limited, the recently elevated profile of the building, alongside high-level public interest from passersby, position PRIMA to initiate a significant capital-raising campaign. Furthermore, with recommendations outlined below, this report intends to serve as a first step towards thoroughly understanding the building's complete conditions, hopefully initiating further study by PRIMA.

Preliminary Treatment Recommendations

Site Drainage and Water Management

1. Based on the observations found during the visual survey of conditions, above-grade water infiltration is a recurrent issue throughout the site. Further study is recommended to comprehensively assess pathways of rainwater downflow on the building and exterior and to detect key infiltration sites on the interior. The study may include long-term observation, periodic documentation of damp or stain patterns, and a probe to monitor changes in conditions.

2. Once further investigation is completed, the results of the water observation study will guide critical decisions regarding interior water infiltration prevention and mitigation of water pathways on the steel exterior.

3. If water downflow and mitigation issues stem from the design of the building's exterior structure, it may be recommended to consider the redesign of glazing stops to encourage runoff and prevent standing water. A noteworthy precedent for this significant design intervention comes from Mark Sexton's 2005 restoration of Mies Van Der Rohe's Crown Hall, which conducted comprehensive studies on mitigating standing water and managing water downflow without disrupting the aesthetic significance of the structure.[6]

Structural Steel Framing

1. As observable, historical corrosion patterns have been found throughout the steel frame; further study is recommended to document all instances of corrosion comprehensively and to analyze their origins, be it water flow or persistent soiling.

2. Once the occurrences of corrosion throughout the frame are thoroughly documented, a complete assessment of the degree of corrosion on the facade must be performed. It will likely require a thorough probe of each observed site of corrosion and may require the complete stripping of paint from the exterior structure to assess the extent

[6] Mark Sexton. "Restoration of Crown Hall." *Docomomo Journal*, no. 56 (April 1, 2017): 69.

of the corrosion found on the steel frame.

3. As outlined in the discussion portion of the assessment, a full-scale restoration of the frame, precipitated by the relatively short life cycle of exposed steel frame structures, will likely be needed within the next five years. It will be directed by the result of the steel probe, which should reveal the degree of corrosion found throughout the frame and may indicate if the steel can be cleaned and repainted with an anti-corrosive paint system or if it may need replacement.

4. Depending on the degree of corrosion plan, a complete cycle of maintenance and restoration should be developed. Steelwork and glazing stops should be inspected, cleaned, repaired, and secured continuously to ensure water tightness and effective management.

Interior, Windows, and Doors

1. Given the necessary study procedures outlined above, remedial treatments for water infiltration on the interior should be delayed until the water study is completed and infiltration sites diagnosed.

2. Steps should be taken to address water infiltration on the interior, eliminating cracks or open joints, caulking or repointing around doors or steps, repairing or resetting weatherstripping, checking flashing, and repainting, as necessary.

3. Depending on the degree of restoration assessed for the steel frame, consideration should be given as to how to improve the thermal quality of windows and doors, with careful consideration of how changes may compromise historic and aesthetic value.

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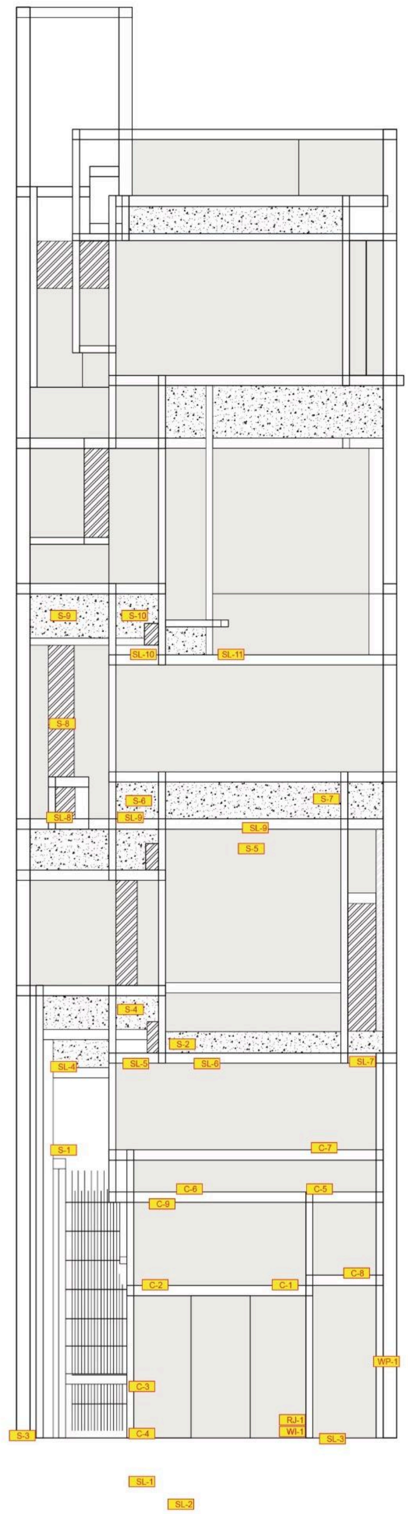
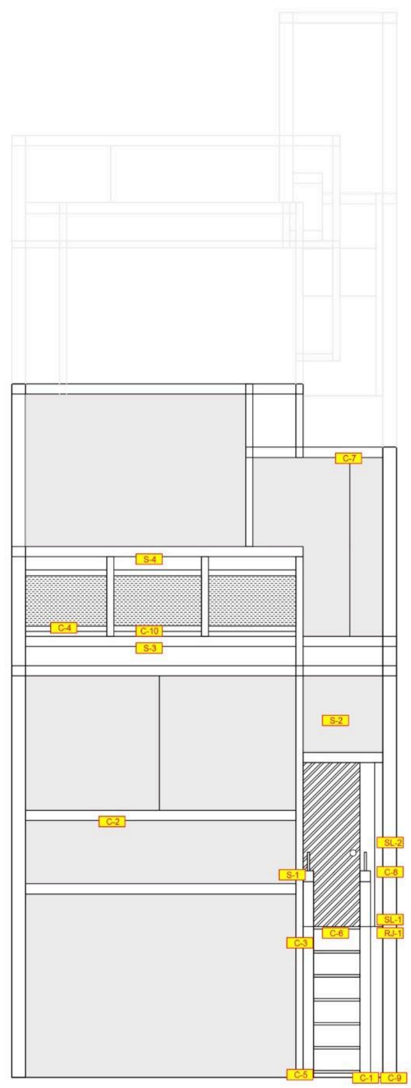
Appendix A: Conditions Maps

Modulightor Building
CONDITIONS MAP
North Elevation



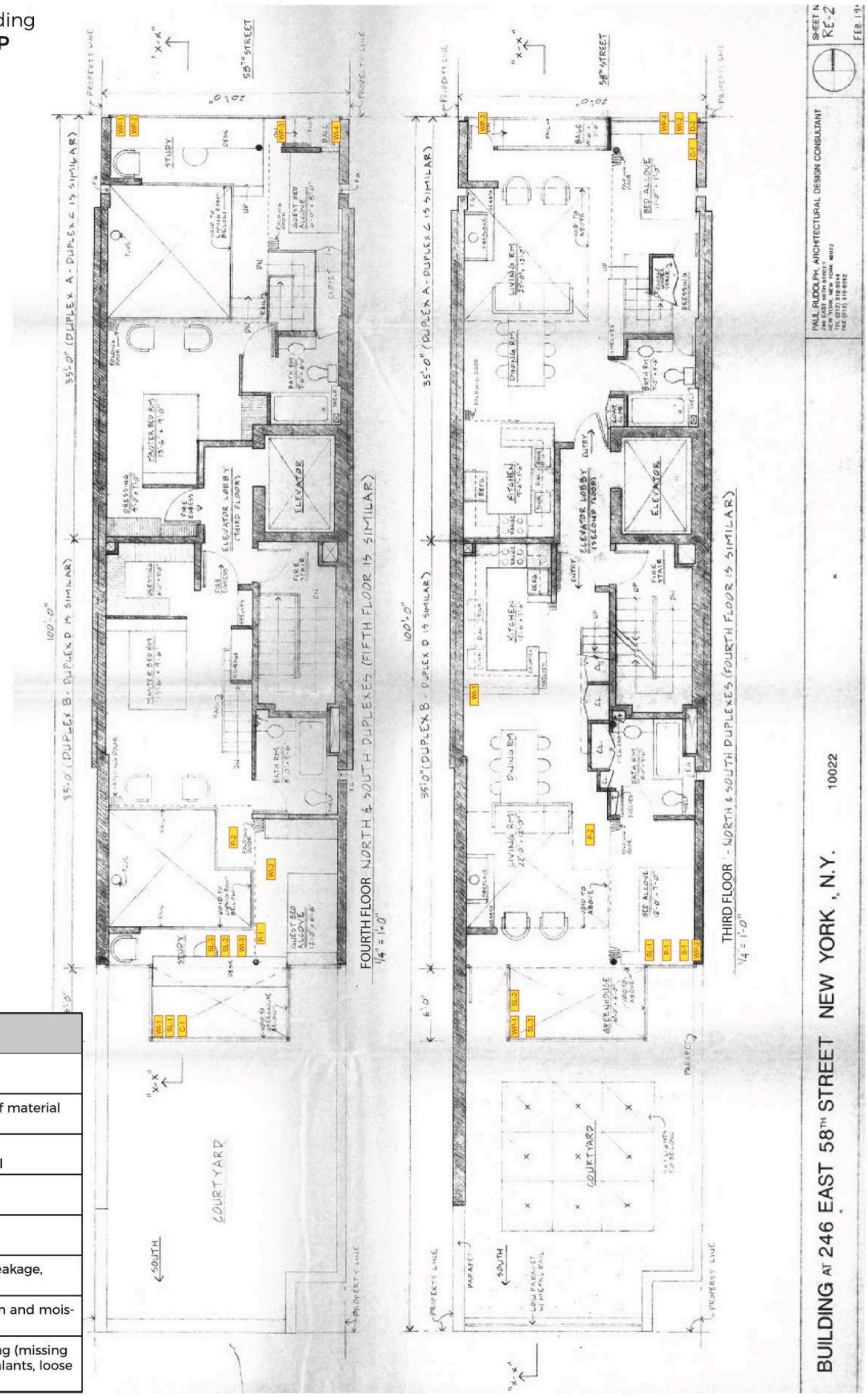
Code	Legend of Conditions
C	Corrosion
D	Displacement of material
P	Paint over original material
RJ	Rust jacking
S	Soiling
SL	Surface loss (breakage, delamination)
WI	Water infiltration and moisture staining
WP	Weather Proofing (missing or degraded sealants, loose glazing)

Modulightor Building
CONDITIONS MAP
South Elevation



Code	Legend of Conditions
C	Corrosion
D	Displacement of material
P	Paint over original material
RJ	Rust jacking
S	Soiling
SL	Surface loss (breakage, delamination)
WI	Water infiltration and moisture staining
WP	Weather Proofing (missing or degraded sealants, loose glazing)

Modulightor Building
CONDITIONS MAP
Interior

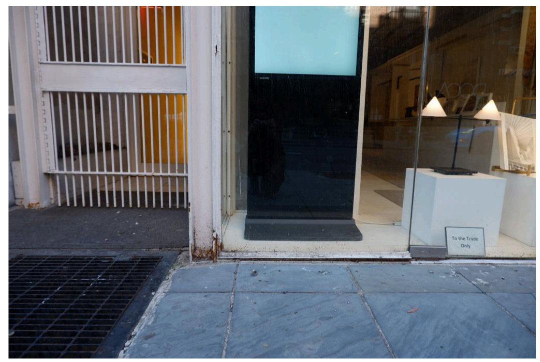
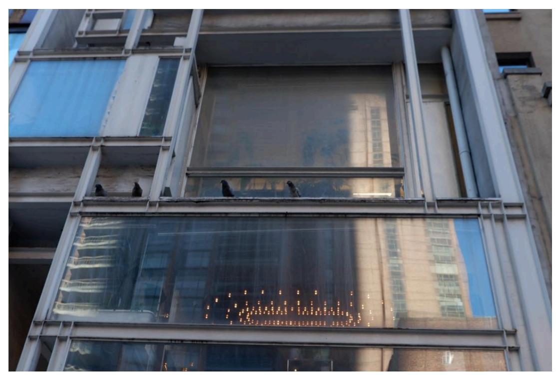


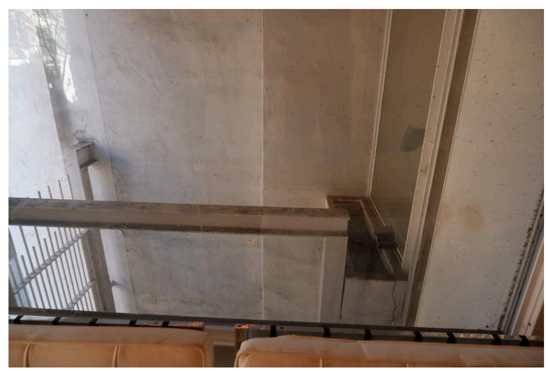
Code	Legend of Conditions
C	Corrosion
D	Displacement of material
P	Paint over original material
RJ	Rust jacking
S	Soiling
SL	Surface loss (breakage, delamination)
WI	Water infiltration and moisture staining
WP	Weather Proofing (missing or degraded sealants, loose glazing)

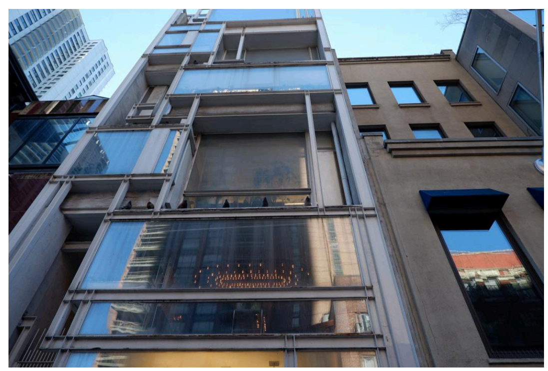
Appendix B: Conditions Log and Images

North Elevation

Code	Legend of Conditions	Documentation
C-1	Corrosion	 
C-2	Corrosion	 

C-3	Corrosion	
C-4	Corrosion	 
C-5, C-6, C-7	Corrosion	

C-8, C-9	Corrosion	
RJ-1	Rust Jacking	 
S-1	Soiling (Air pollution, pigeon excrement)	 

<table>
<tr>
<td>S-2</td>
<td>Soiling (Air pollution, pigeon excrement)</td>
<td> </td>
</tr>
<tr>
<td>S-3</td>
<td>Soiling (Air pollution, pigeon excrement)</td>
<td>
</td>
</tr>
<tr>
<td>S-4, S-5, S-6. S-7, S-8</td>
<td>Soiling (Air pollution, pigeon excrement)</td>
<td></td>
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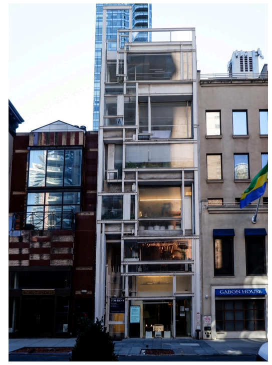
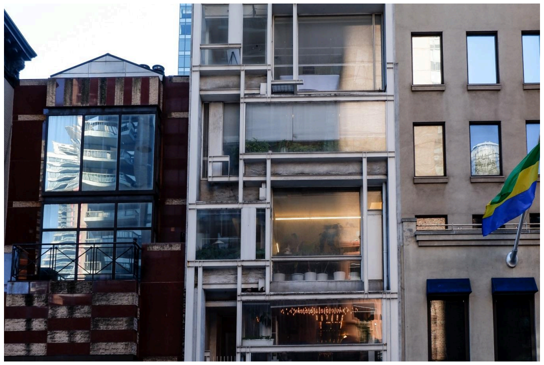
S-9, S-10	Soiling (Air pollution, pigeon excrement)	
SL-1	Surface Loss (Breakage, Delamination)	
SL-2	Surface Loss (Breakage, Delamination)	

SL-3	Surface Loss (Breakage, Delamination)	 
SL-4	Surface Loss (Breakage, Delamination)	
SL-5, S-6, SL-7, SL-8, SL-9	Surface Loss (Breakage, Delamination)	

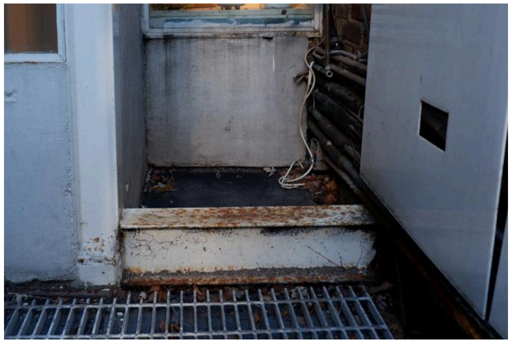
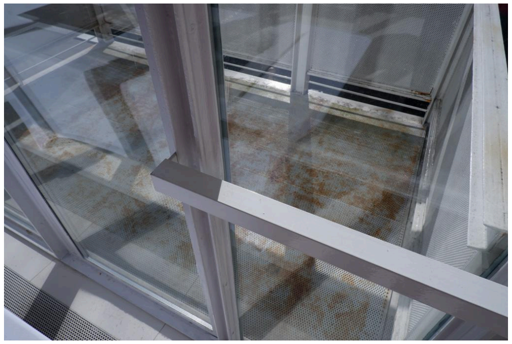
SL-10, SL-11	Surface Loss (Breakage, Delamination)	
WI-1	Water infiltration and moisture staining	
WP-1	Weather Proofing (missing or degraded sealants, loose glazing)	

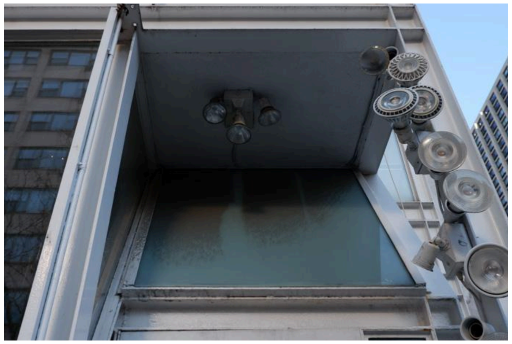
South Elevation

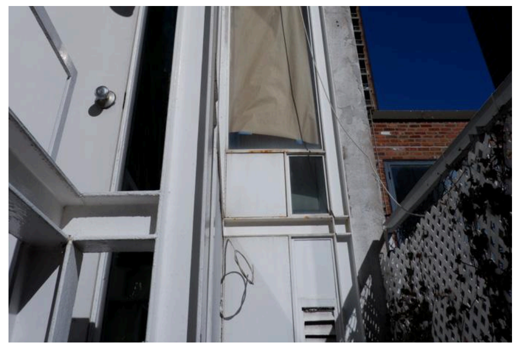
Code	Legend of Conditions	Documentation
C-1	Corrosion	
C-2	Corrosion	

C-3	Corrosion	
C-4	Corrosion	
C-5	Corrosion	

C-6	Corrosion	 
C-7	Corrosion	
C-8	Corrosion	

C-9	Corrosion	
C-10	Corrosion	
RJ-1	Rust Jacking	 

S-1	Soiling (Air pollution, pigeon excrement)	
S-2	Soiling (Air pollution, pigeon excrement)	
S-3, S-4	Soiling (Air pollution, pigeon excrement)	

SL-1	Surface Loss (Breakage, Delamination)	
SL-2	Surface Loss (Breakage, Delamination)	

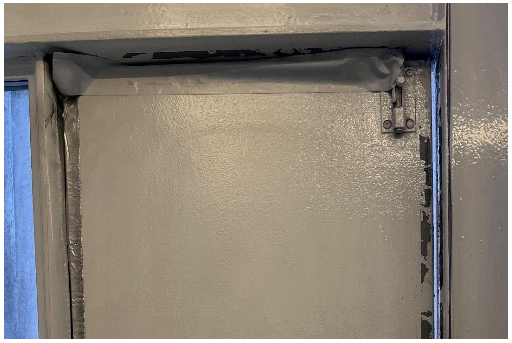
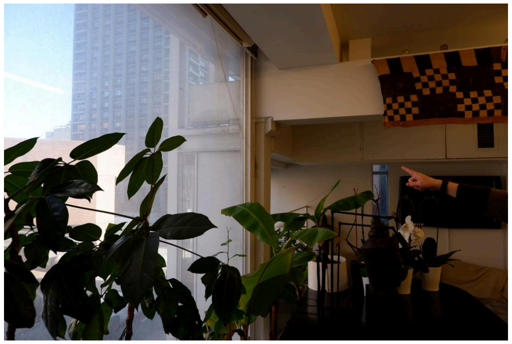
Third Floor

Code	Legend of Conditions	Documentation
C-1	Corrosion	
P-1	Paint found over original material	

P-2	Paint found over original material	
S-1	Soiling (Air pollution, pigeon excrement)	
SL-1	Surface Loss (Breakage, Delamination)	

SL-2	Surface Loss (Breakage, Delamination)	
SL-3	Surface Loss (Breakage, Delamination)	
WI-1	Water infiltration and moisture staining	 

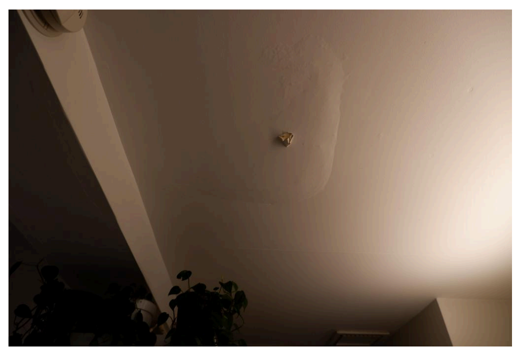
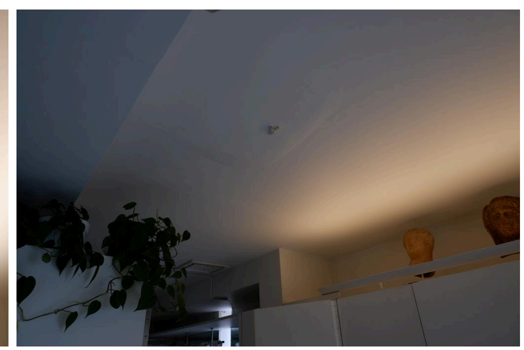
WI-2	Water infiltration and moisture staining	
WP-1	Weather Proofing (missing or degraded sealants, loose glazing)	 
WP-2	Weather Proofing (missing or degraded sealants, loose glazing)	

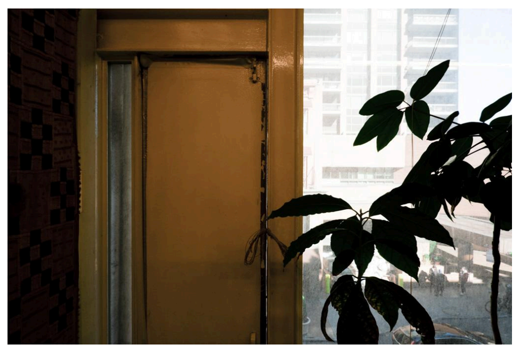
WP-3	Weather Proofing (missing or degraded sealants, loose glazing)	
WP-4	Weather Proofing (missing or degraded sealants, loose glazing)	 

Fourth Floor

Code	Legend of Conditions	Documentation
C-1	Corrosion	 
P-1	Paint found over original material	

P-2	Paint found over original material	
SL-1	Surface Loss (Breakage, Delamination)	
SL-2	Surface Loss (Breakage, Delamination)	

SL-3	Surface Loss (Breakage, Delamination)	 
WI-1	Water infiltration and moisture staining	 
WI-2	Water infiltration and moisture staining	 

WI-3	Water infiltration and moisture staining	 
WI-4	Water infiltration and moisture staining	
WP-1	Weather Proofing (missing or degraded sealants, loose glazing)	

WP-2	Weather Proofing (missing or degraded sealants, loose glazing)	
WP-3	Weather Proofing (missing or degraded sealants, loose glazing)