

THE MET

THE METROPOLITAN MUSEUM OF ART

RESTORATION OF THE 83RD STREET
ENTRANCE AND NORTH SIDE CHILLER
PLANT REPLACEMENT

SUBMISSION TO THE NEW YORK CITY
LANDMARKS PRESERVATION COMMISSION

BEYER
BLINDER
BELLE

PETERSON
RICH
OFFICE

DECEMBER 11, 2024

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- Historical Information and Context
- Restoring the 83rd Street Entrance
- Replacing the North Side Chiller Plant

PROJECT GOALS:

The Metropolitan Museum of Art is proposing these projects to further their mission to 'conserve and present significant works of art across times and cultures in order to connect all people to creativity, knowledge, ideas, and one another'.

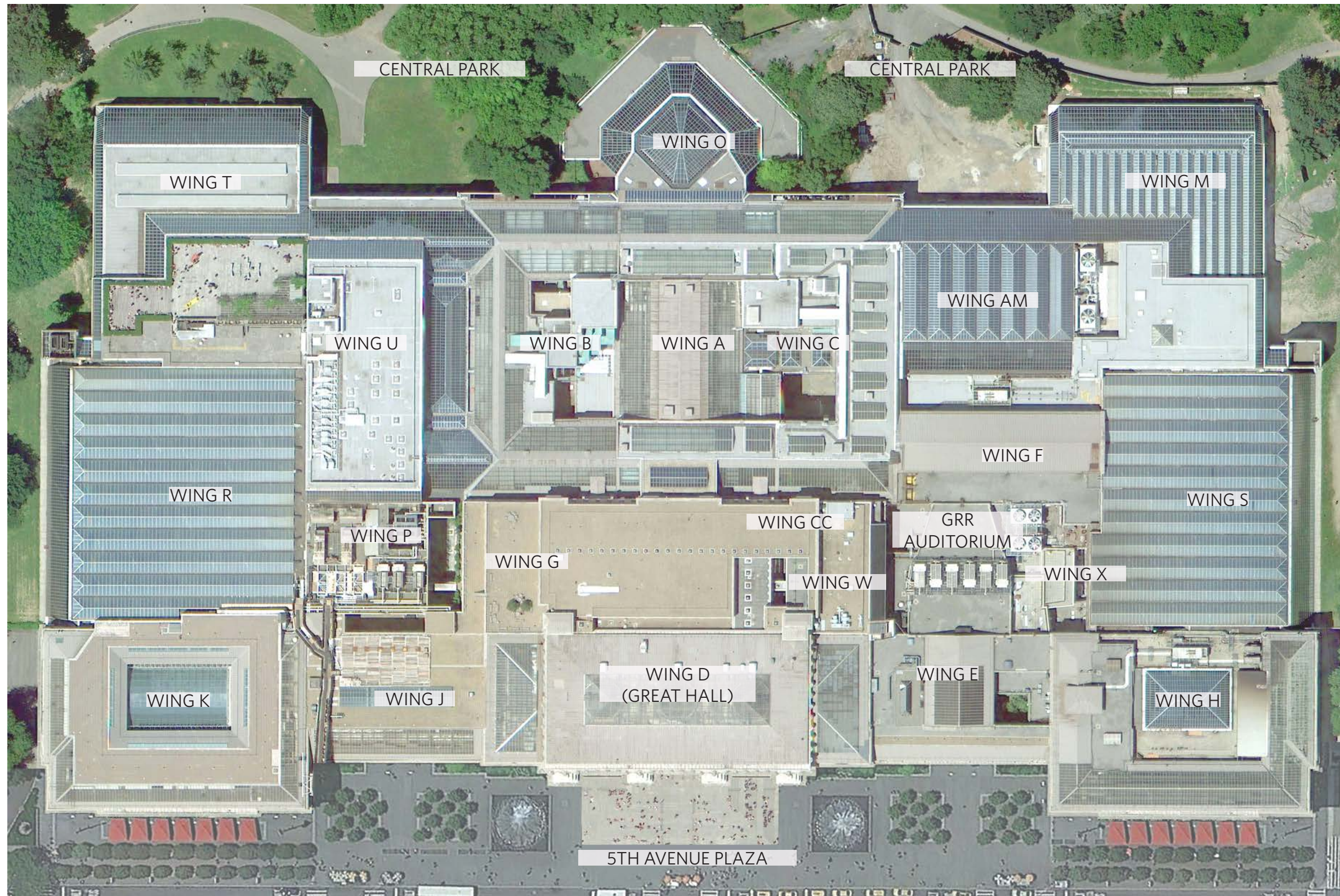
The restoration of the 83rd street entrance will:

- Provide a fully accessible entrance from the plaza level with a direct connection to the ticketing and visitor services in the Great Hall.
- Reduce congestion at the 81st and 82nd street entrances.

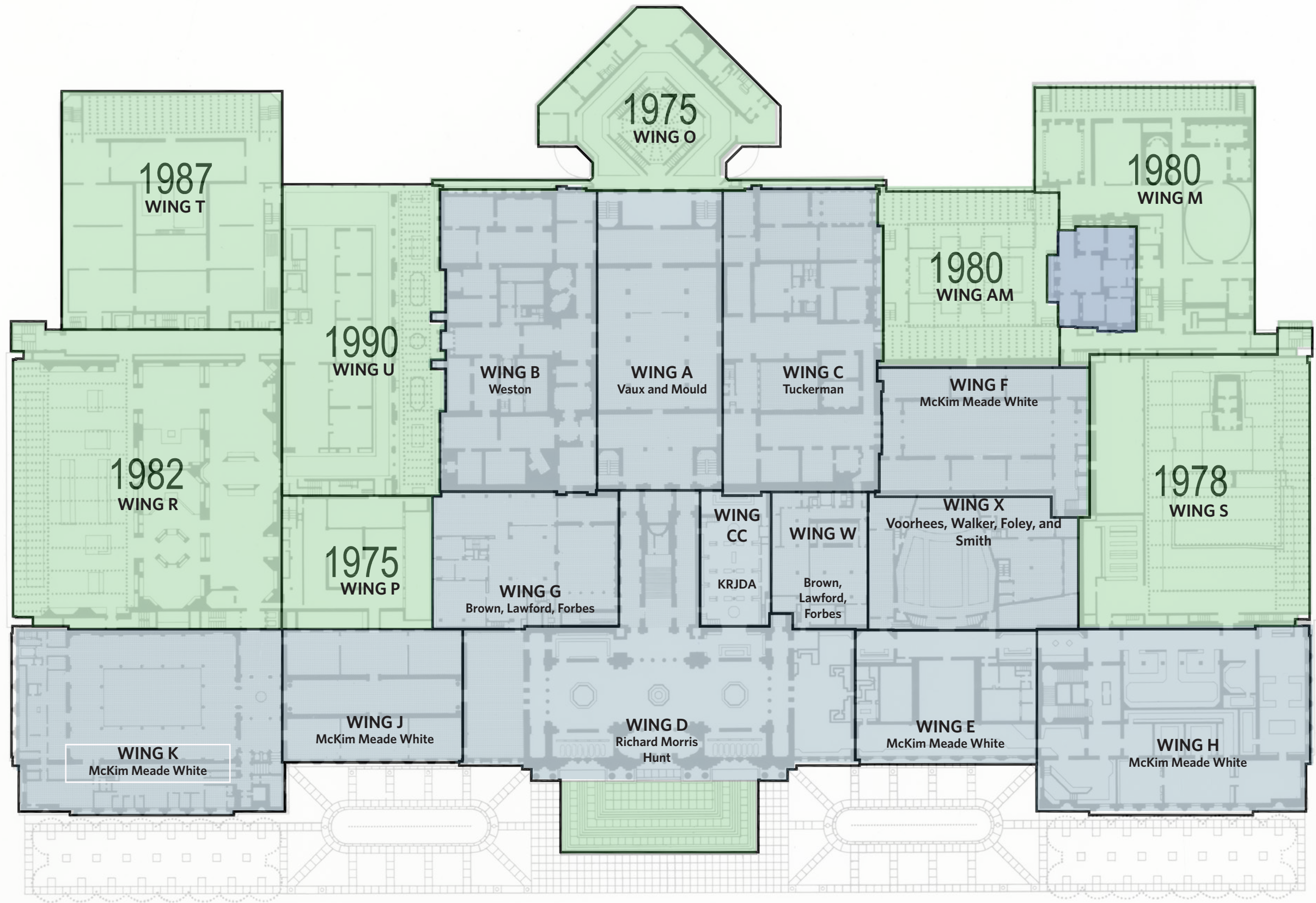
The replacement of the north side chiller plant will:

- Reduce electrical energy consumption of the equipment by 54%.
- Increase resiliency of critical infrastructure by moving art storage and gallery conditioning equipment above the level of recent flooding.

**HISTORICAL INFORMATION
AND CONTEXT**



AERIAL PHOTO



Landmark Status

The New York City Landmarks Preservation Commission designated The Metropolitan Museum of Art as an individual landmark in 1967.

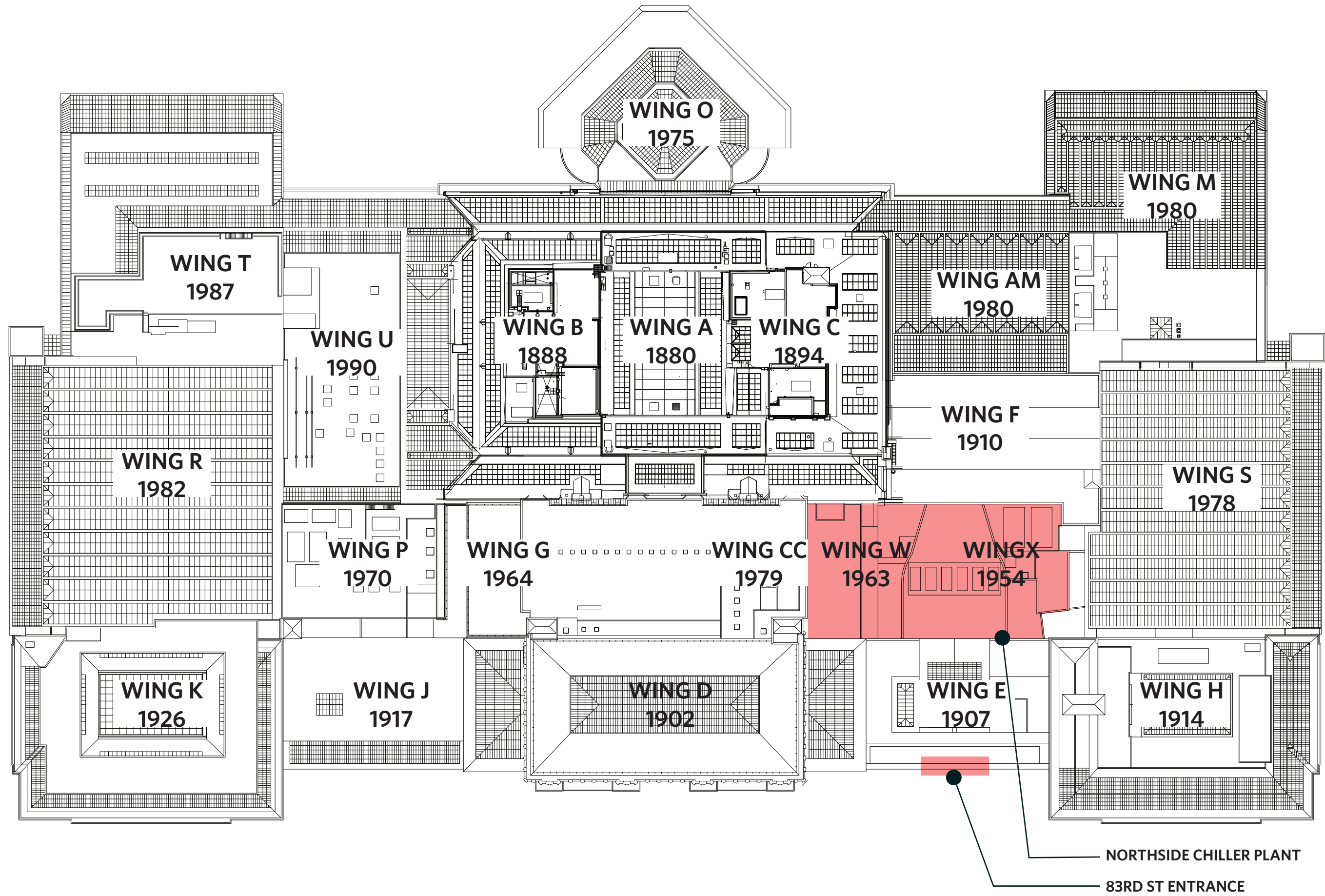
In 1974, the Met was included within the boundary of the Central Park Scenic Landmark.

The Great Hall and the Grand Stairway were designated as an interior landmark in 1977, while additions and alterations designed by Roche Dinkeloo were under construction.

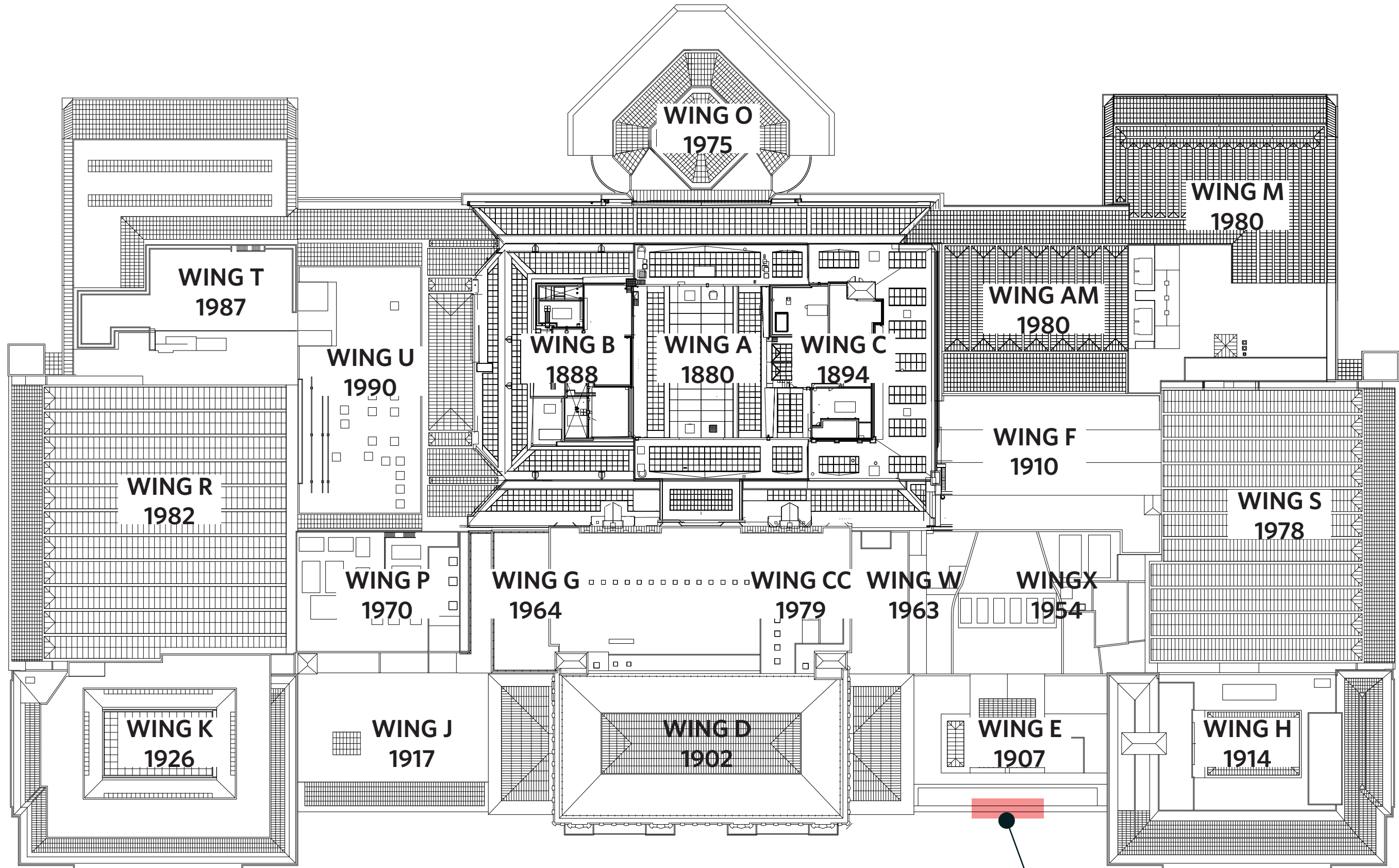
The Met was placed on the National Register of Historic Places in 1986, and was designated a National Historic Landmark in the same year.

WING DIAGRAM SHOWING DATES OF CONSTRUCTION

EXTENT OF 1967 LANDMARK
 AREAS ADDED BY KRJDA PER 1970 MASTER PLAN



**RESTORATION OF THE 83RD
STREET ENTRANCE**



83RD ST ENTRANCE



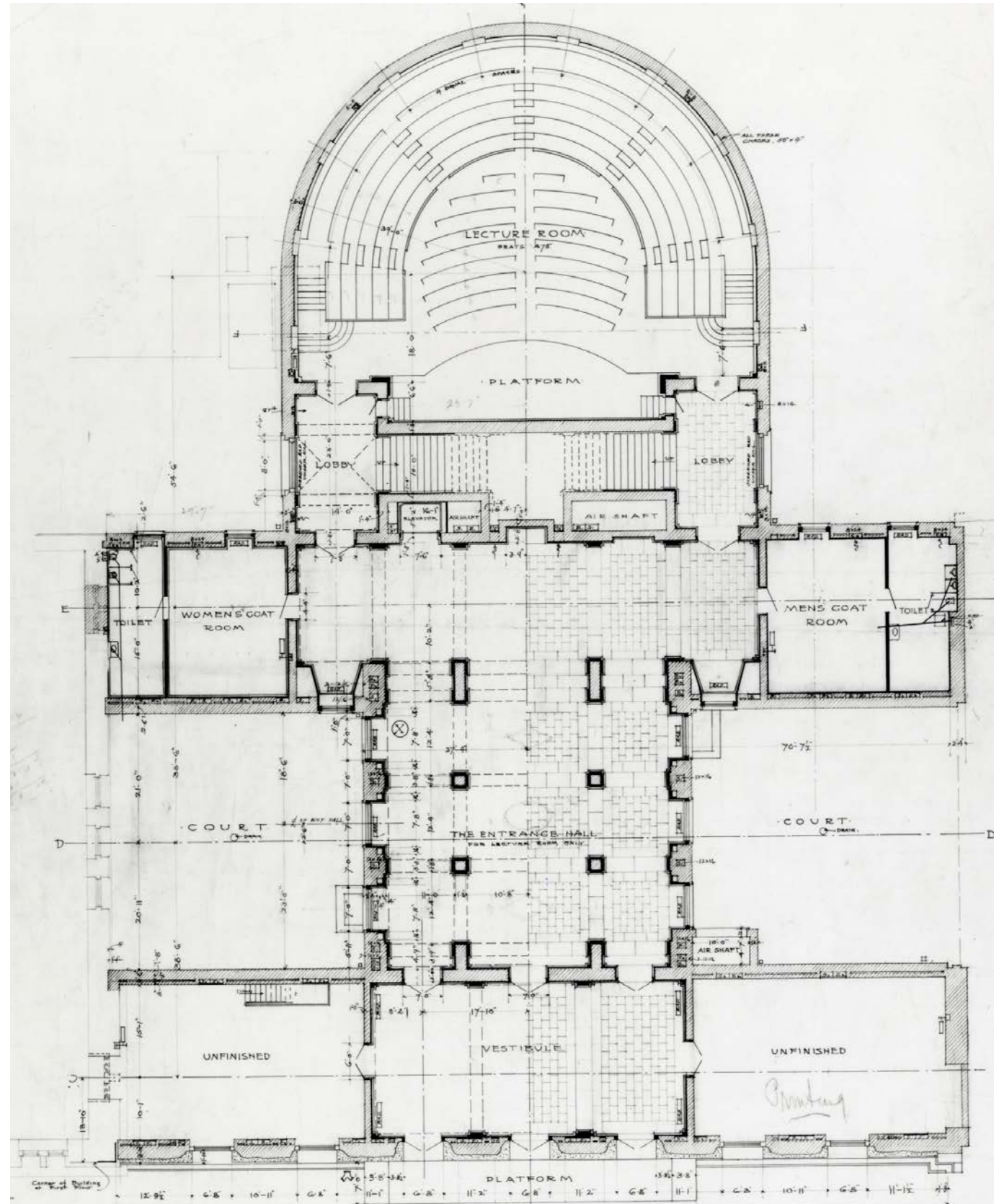
Existing Access Points to the Museum from the Fifth Avenue Plaza



Proposed Access Points to the Museum from the Fifth Avenue Plaza

PROJECT GOALS FOR THE RESTORED 83RD STREET ENTRANCE:

- Restore previous three-door public entrance on the Plaza at 83rd Street in order to reduce entry congestion at the 81st and 82nd Street entrances.
- Provide a fully accessible entrance from the Plaza level with a direct connection to ticketing and visitor services in the Great Hall.
- Improve access to the Met’s visitor amenities including food service, retail and restrooms.

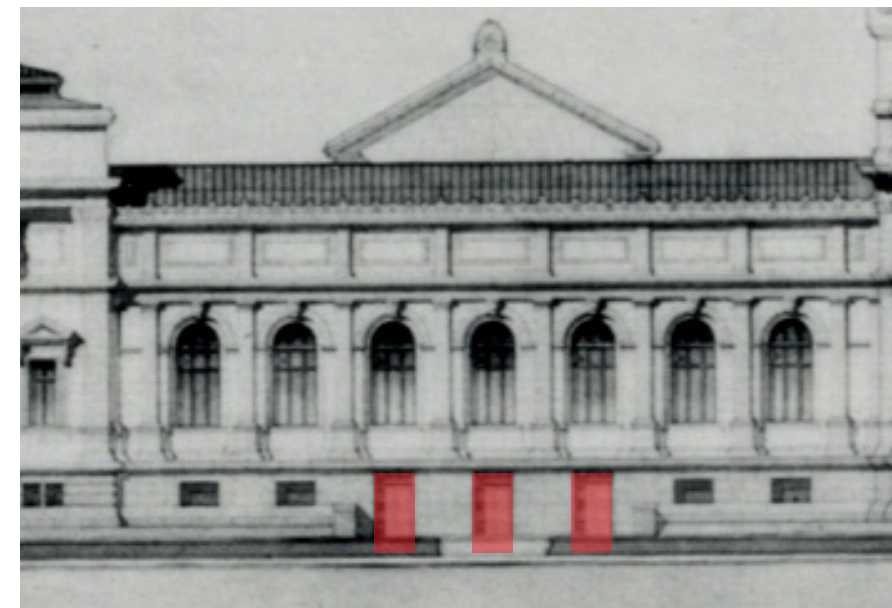


Three Original Doors at 83rd Street

WING E GROUND FLOOR PLAN 1906 - MCKIM MEADE AND WHITE



Note: original design did not include an entrance at 81st



DETAIL OF WING E EAST ELEVATION SHOWING ORIGINAL DOORS

1904 MASTER PLAN RENDERING OF 5TH AVENUE FACADE - MCKIM MEADE AND WHITE



PHOTO 1 - LOOKING SOUTH WEST SHOWING ORIGINAL MARQUEE AT WING E - 83RD ST ENTRANCE

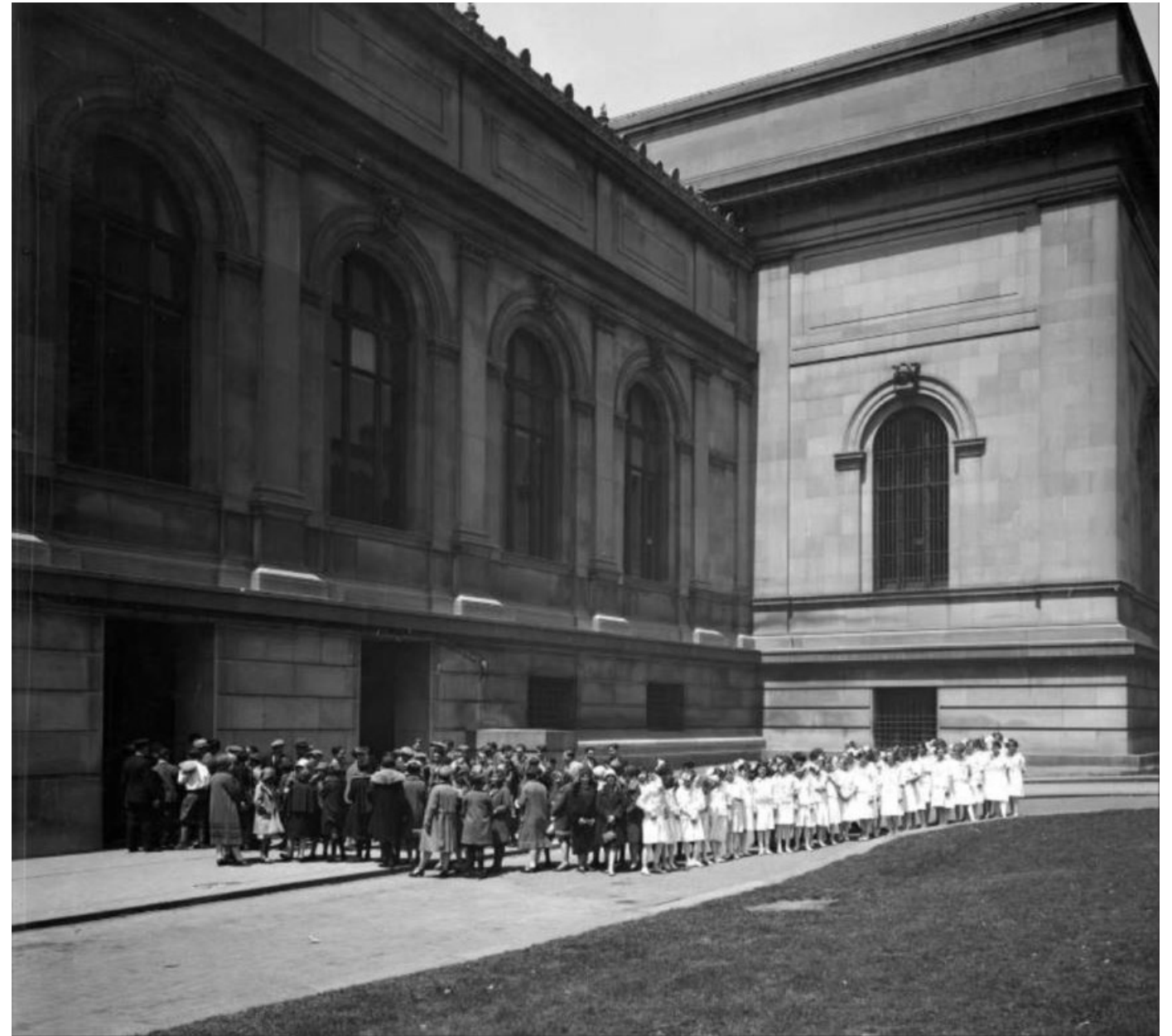
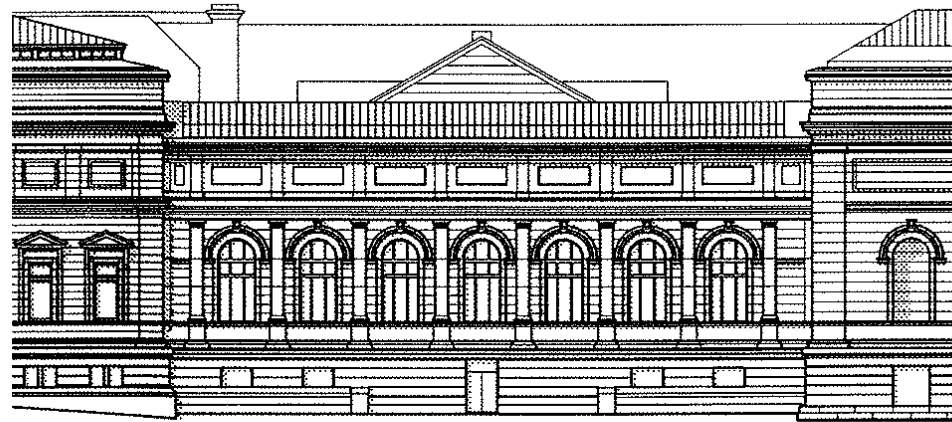
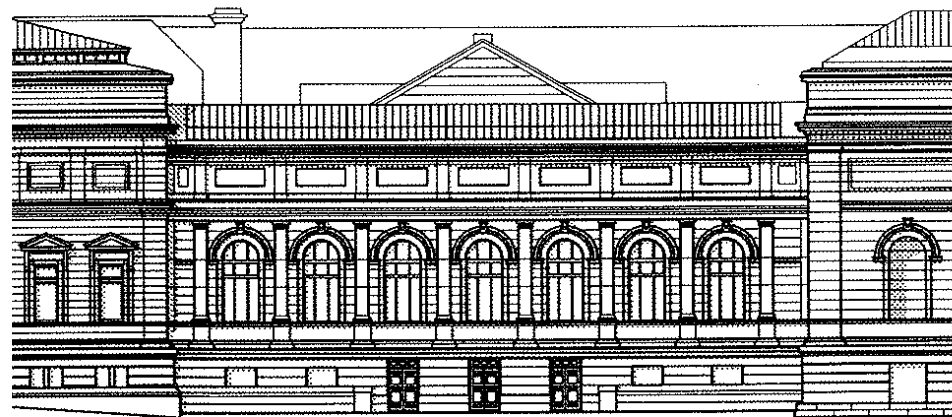


PHOTO 2 - LOOKING NORTHWEST SHOWING ORIGINAL DOORS AT 83RD ST AND MARQUEE REMOVED

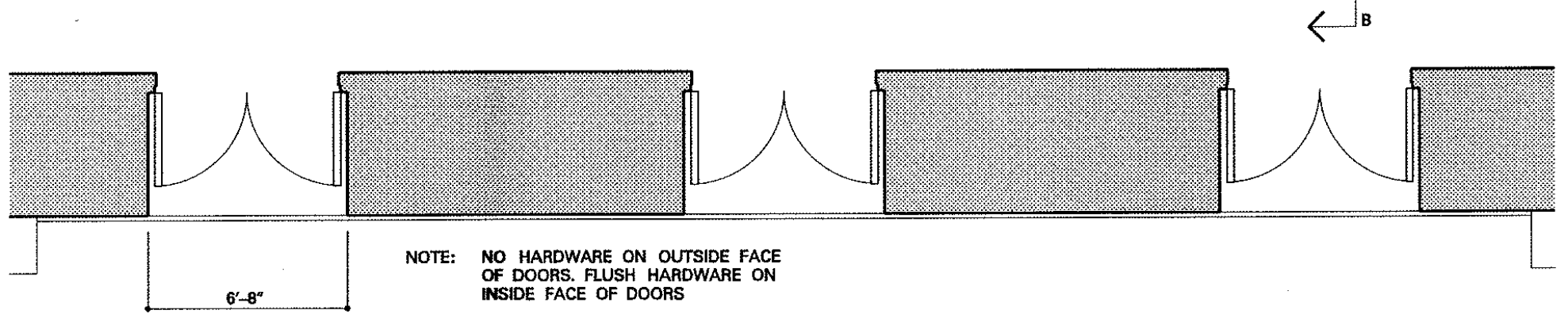
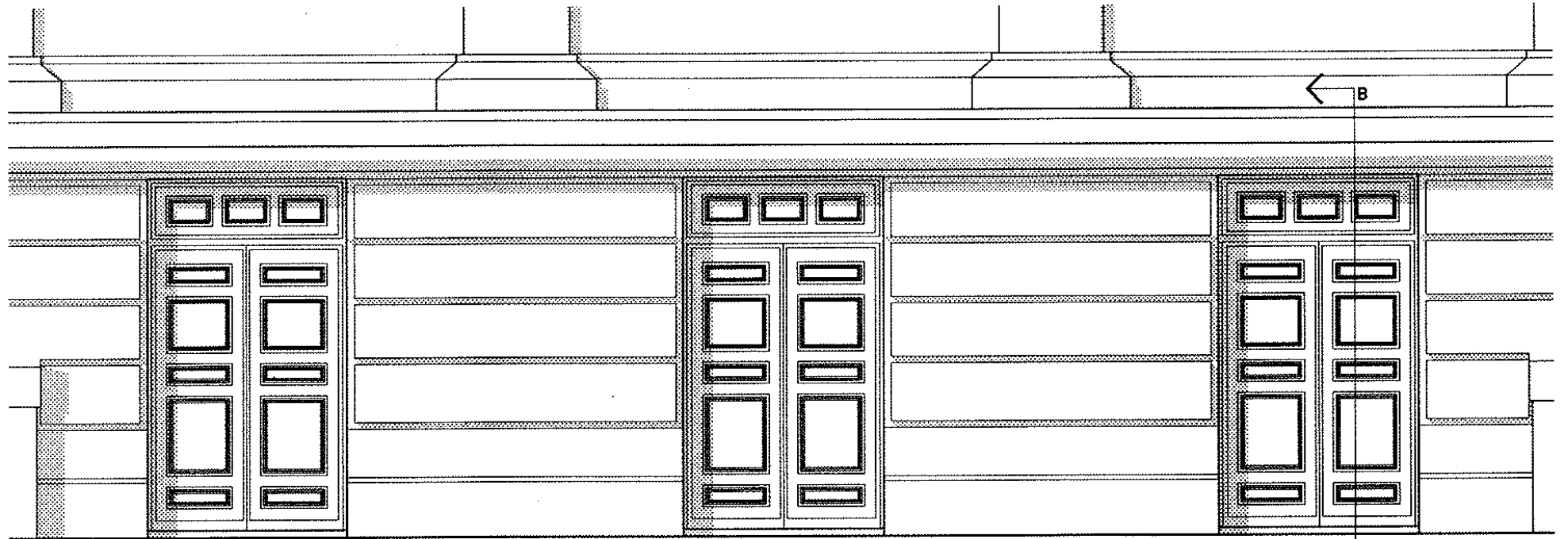
HISTORIC PHOTOS OF 83RD ST ENTRANCE



EXISTING WING E EAST ELEVATION - 2001



PROPOSED WING E EAST ELEVATION - 2001



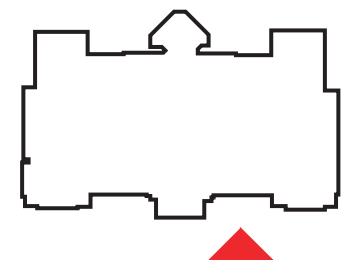
NOTE: NO HARDWARE ON OUTSIDE FACE OF DOORS. FLUSH HARDWARE ON INSIDE FACE OF DOORS

NOTE: 83RD STREET ENTRANCE DOORS WHERE LPC PREVIOUSLY APPROVED THIS RESTORATION OF THE ORIGINAL DOOR CONFIGURATION

PREVIOUSLY PROPOSED RESTORATION OF 83RD ST ENTRANCE DOORS BY KRJDA (APPROVED BY LPC 2001)



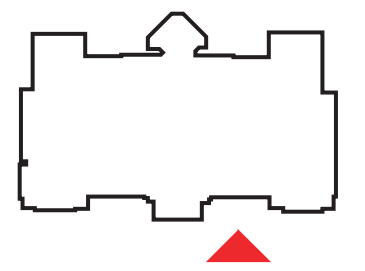
WING E (83RD STREET ENTRY) EAST ELEVATION - EXISTING CONDITIONS





Non-original infill
Indiana limestone

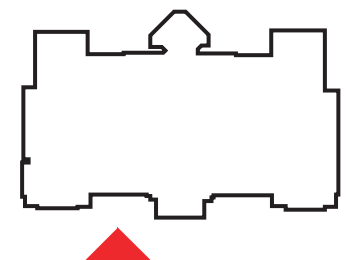
Non-original infill
Deer Isle granite base



WING E (83RD STREET ENTRY) EAST ELEVATION - EXISTING CONDITIONS



WING J (81ST STREET ENTRY) EAST ELEVATION - EXISTING CONDITIONS





WING D (82ND STREET ENTRY) EAST ELEVATION - EXISTING CONDITIONS

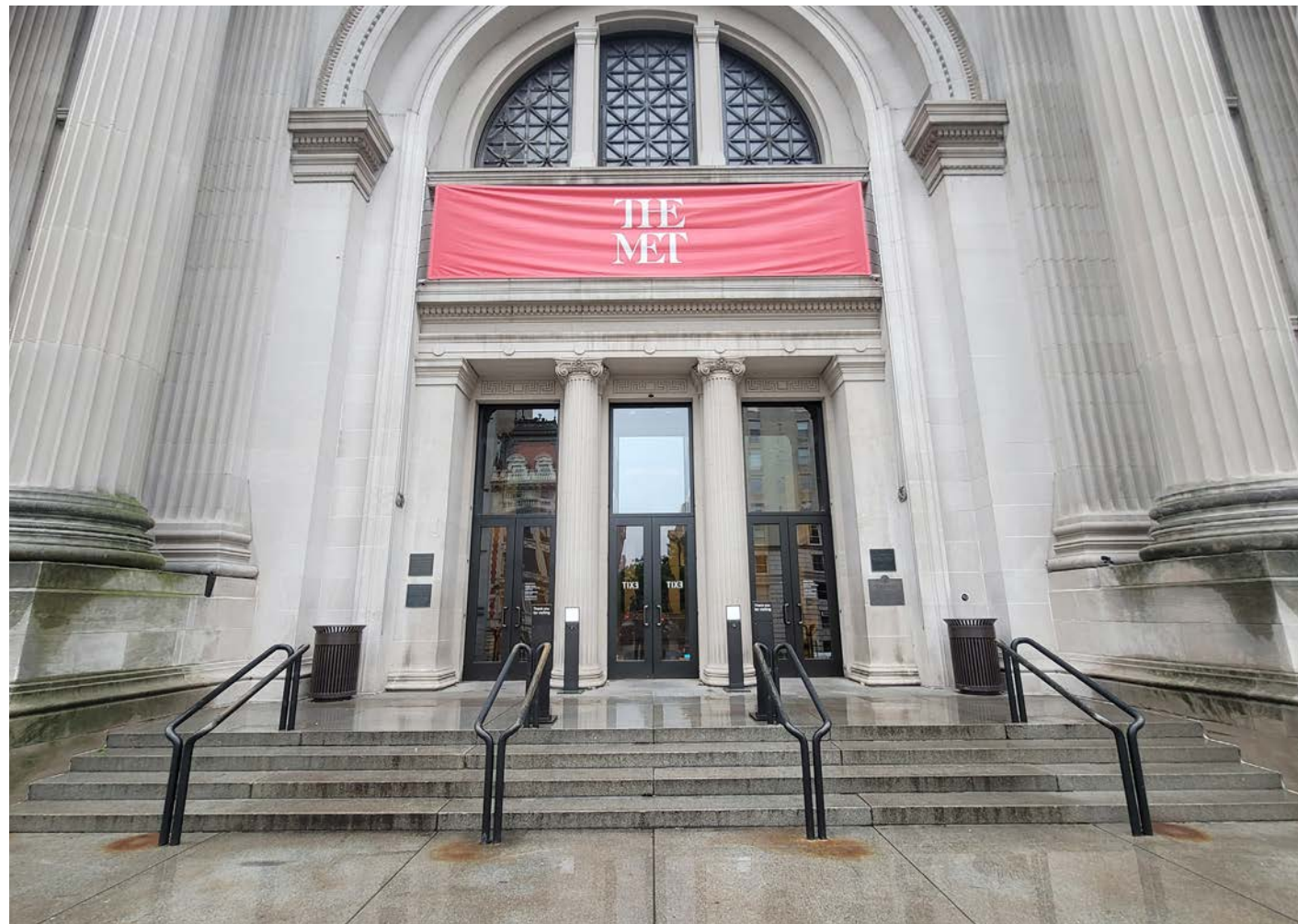
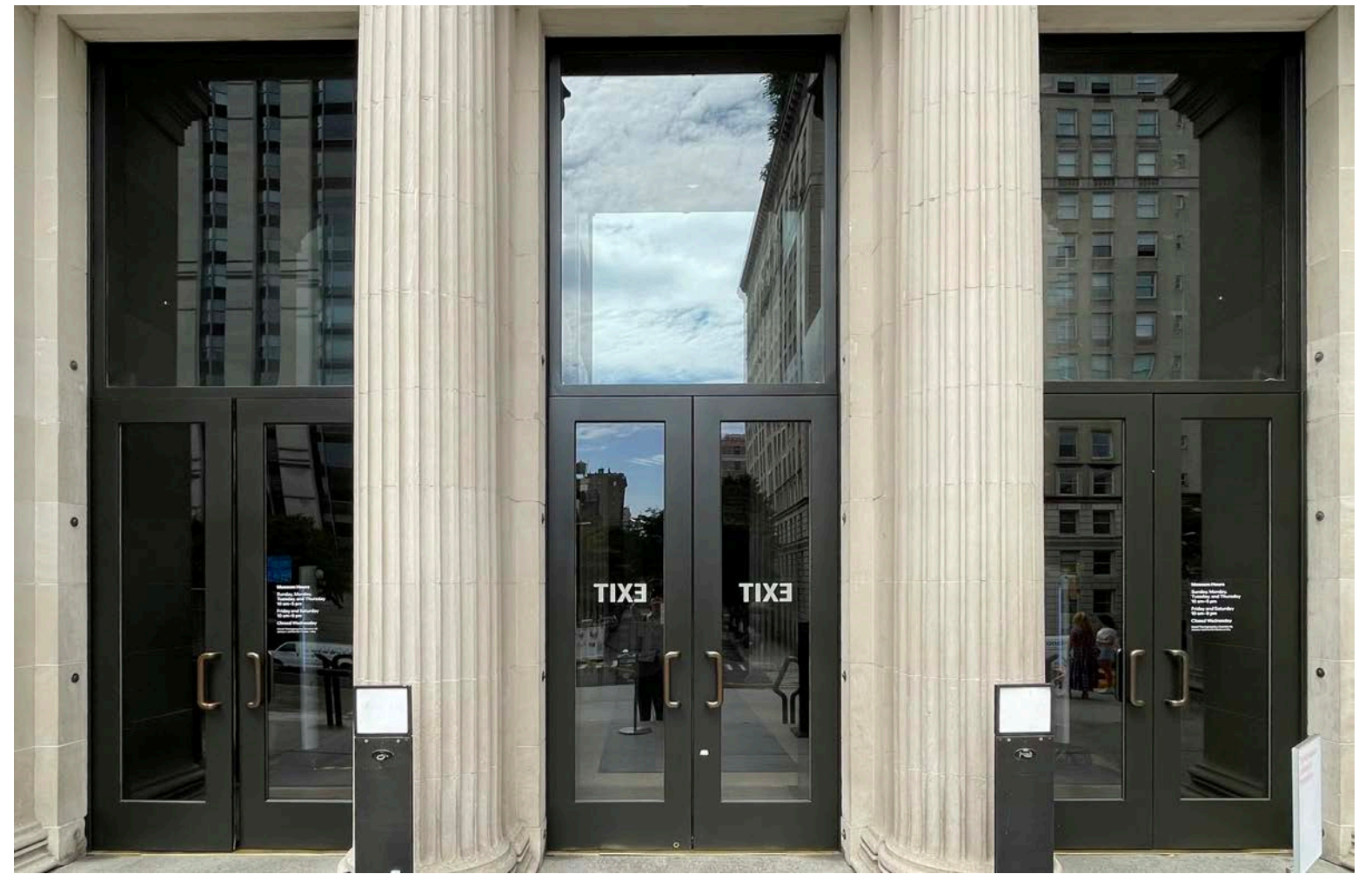
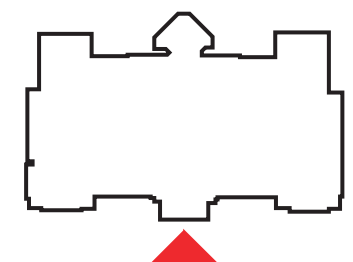


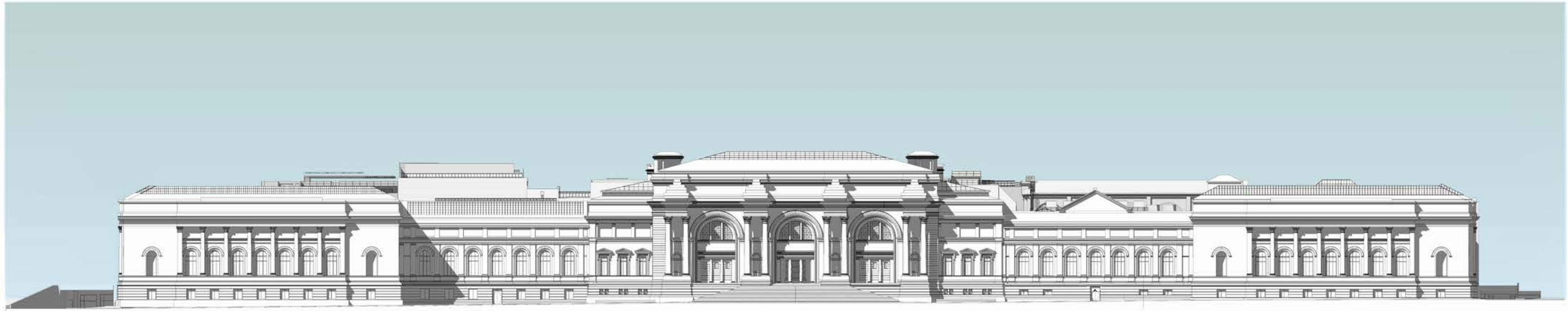
PHOTO OF EXISTING CONDITIONS AT 82ND STREET ENTRANCE



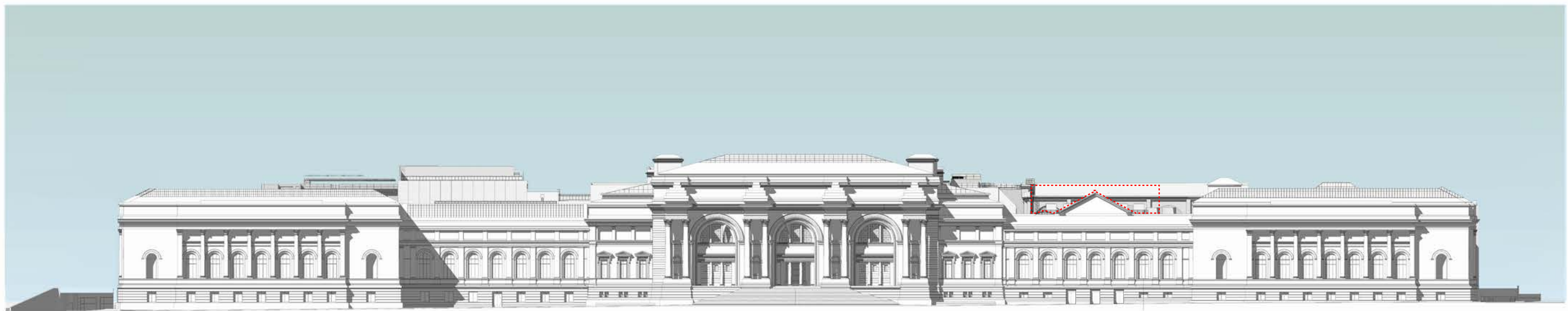
EXISTING BRONZE DOORS AT 82ND ST

WING D (82ND STREET ENTRY) EAST ELEVATION - EXISTING CONDITIONS



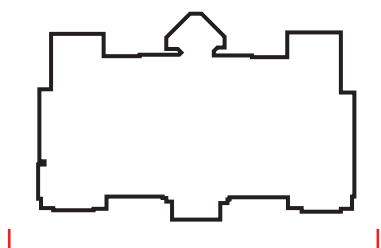


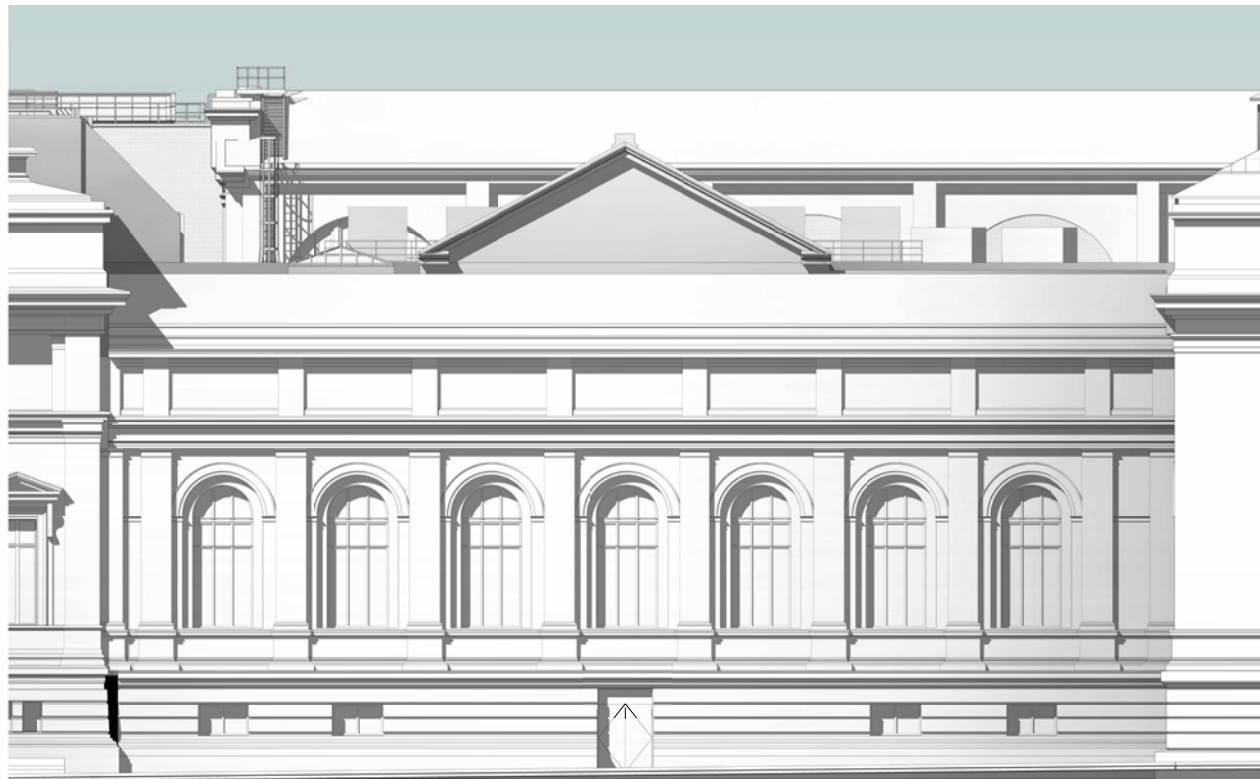
EXISTING



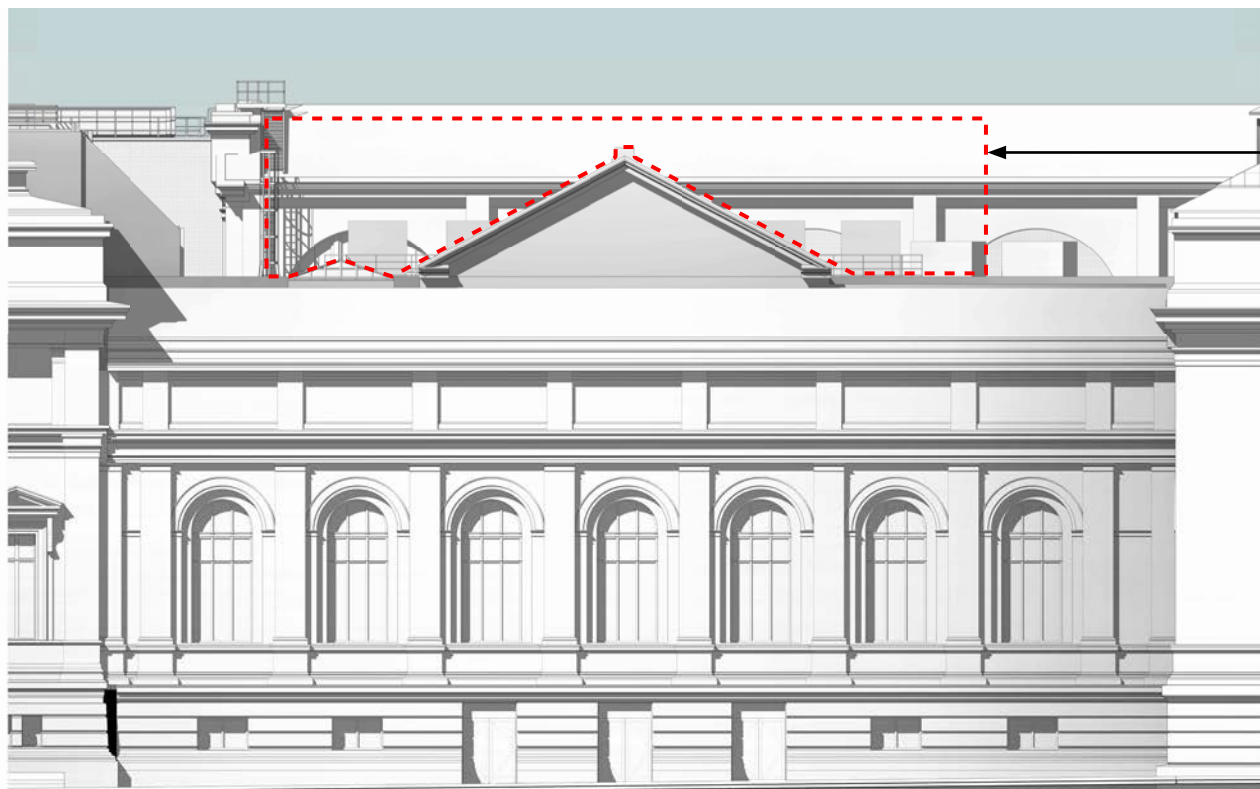
PROPOSED

MET MUSEUM EAST ELEVATION AT FIFTH AVENUE





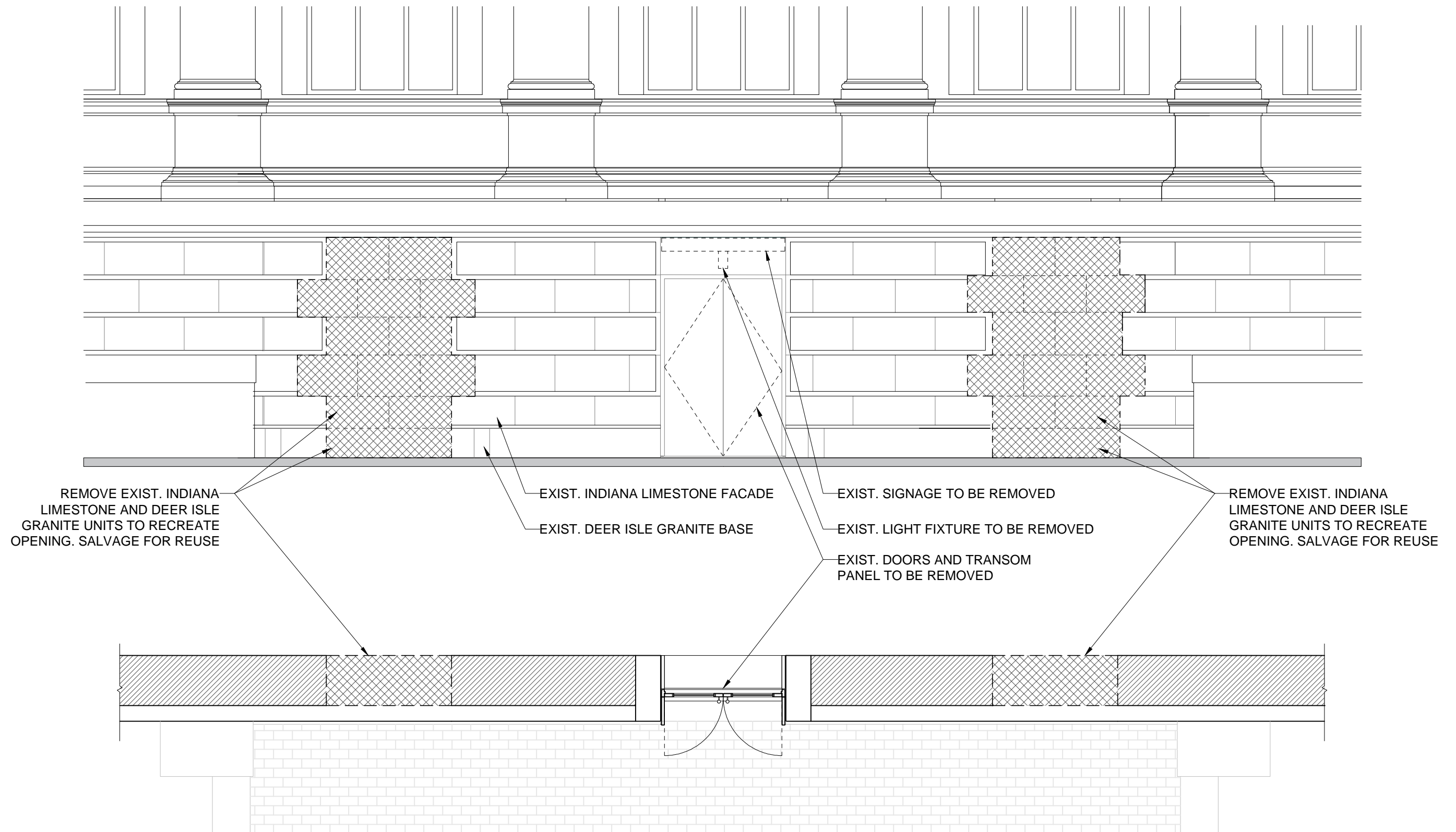
Existing



Future Northside
Chiller Plant screen

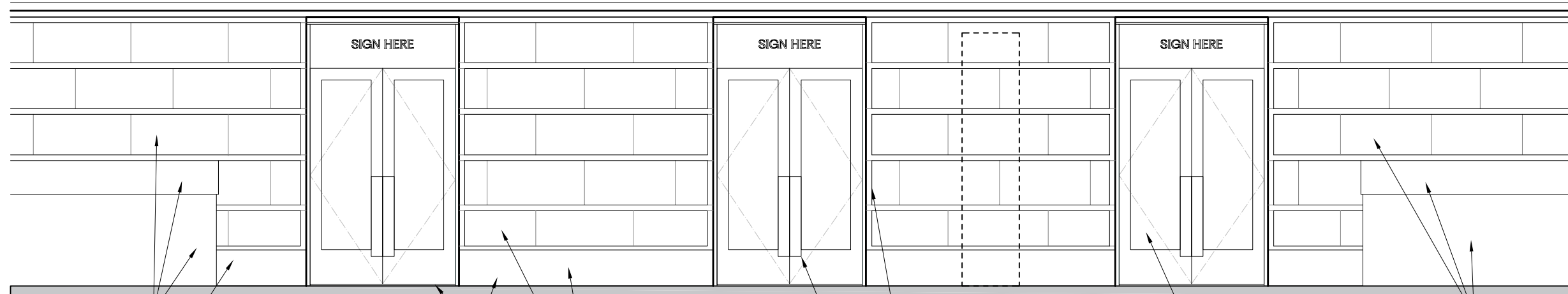
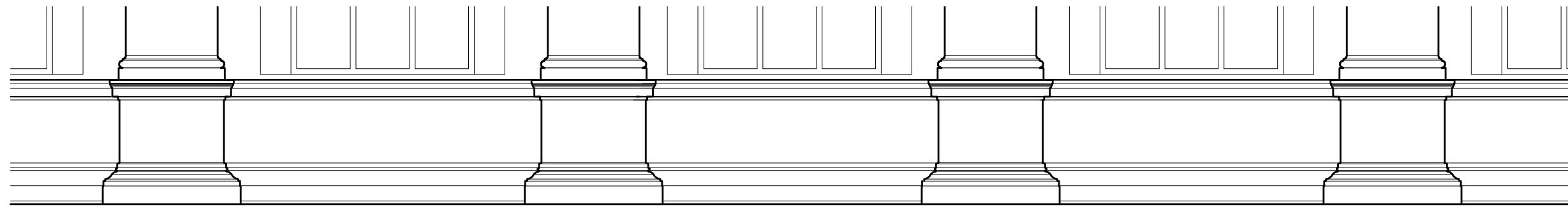
Proposed

WING E - EAST ELEVATION



scale: 3/16" = 1'-0"

WING E - EAST ELEVATION AT 83RD ST DOORS - DEMOLITION



CLEAN SOILING FROM INDIANA LIMESTONE PEDESTAL

REPLACE BACKER ROD AND SEALANT AT TOP OF GRANITE BASE, TYP.

NEW DEER ISLE GRANITE SLAB AT THRESHOLD, TYP. AT (3) OPENINGS.

EXIST. DEER ISLE GRANITE BASE

REPOINT VERTICAL JOINTS AT GRANITE BASE, TYP.

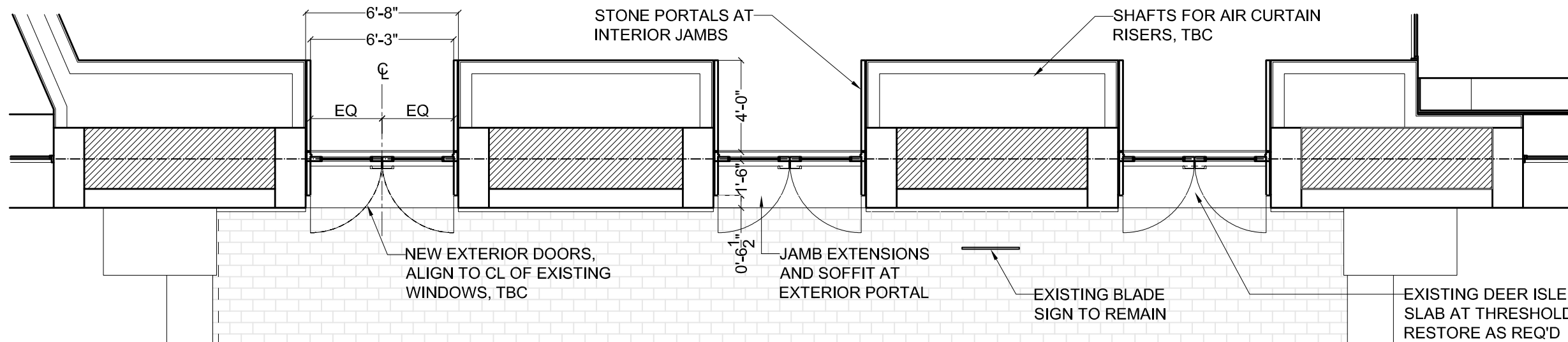
CUSTOM BRONZE PULLS

EXIST. RUSTICATED INDIANA LIMESTONE FACADE

PROVIDE SALVAGED/NEW INDIANA LIMESTONE TO MATCH EXIST. WHERE REQUIRED TO RECREATE ENTRANCES. FINISH PROFILES TO MATCH EXIST., TYP.

NEW OXIDIZED STATUARY BRONZE AND GLASS DOORS, TYP. AT (3) OPENINGS. FINISH TO MATCH DOORS AT 82ND STREET ENTRANCE.

CLEAN SOILING FROM INDIANA LIMESTONE PEDESTAL



STONE PORTALS AT INTERIOR JAMBS

SHAFTS FOR AIR CURTAIN RISERS, TBC

NEW EXTERIOR DOORS, ALIGN TO CL OF EXISTING WINDOWS, TBC

JAMB EXTENSIONS AND SOFFIT AT EXTERIOR PORTAL

EXISTING BLADE SIGN TO REMAIN

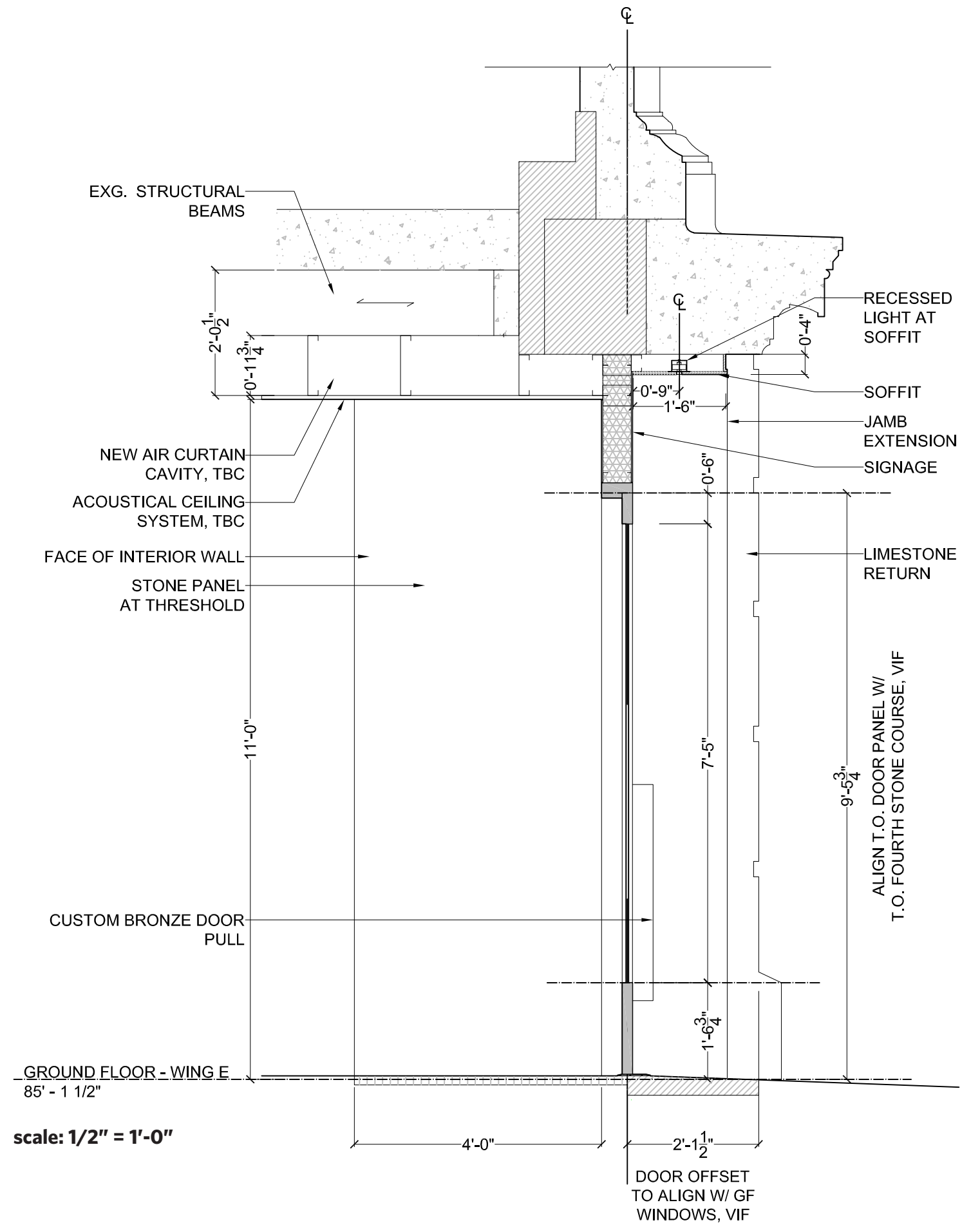
EXISTING DEER ISLE GRANITE SLAB AT THRESHOLD, RESTORE AS REQ'D

scale: 3/16" = 1'-0"

WING E - EAST ELEVATION AT 83RD ST DOORS - PROPOSED

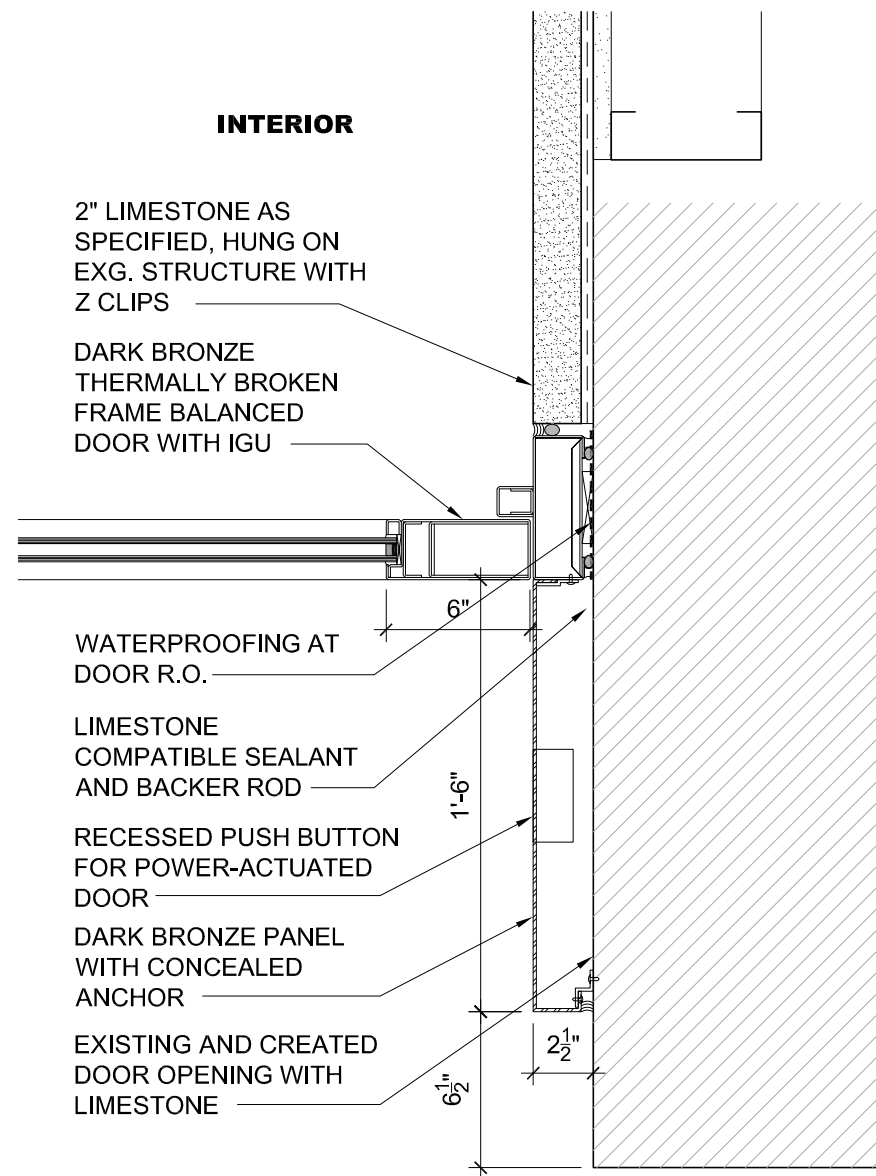


scale: 1/2" = 1'-0"

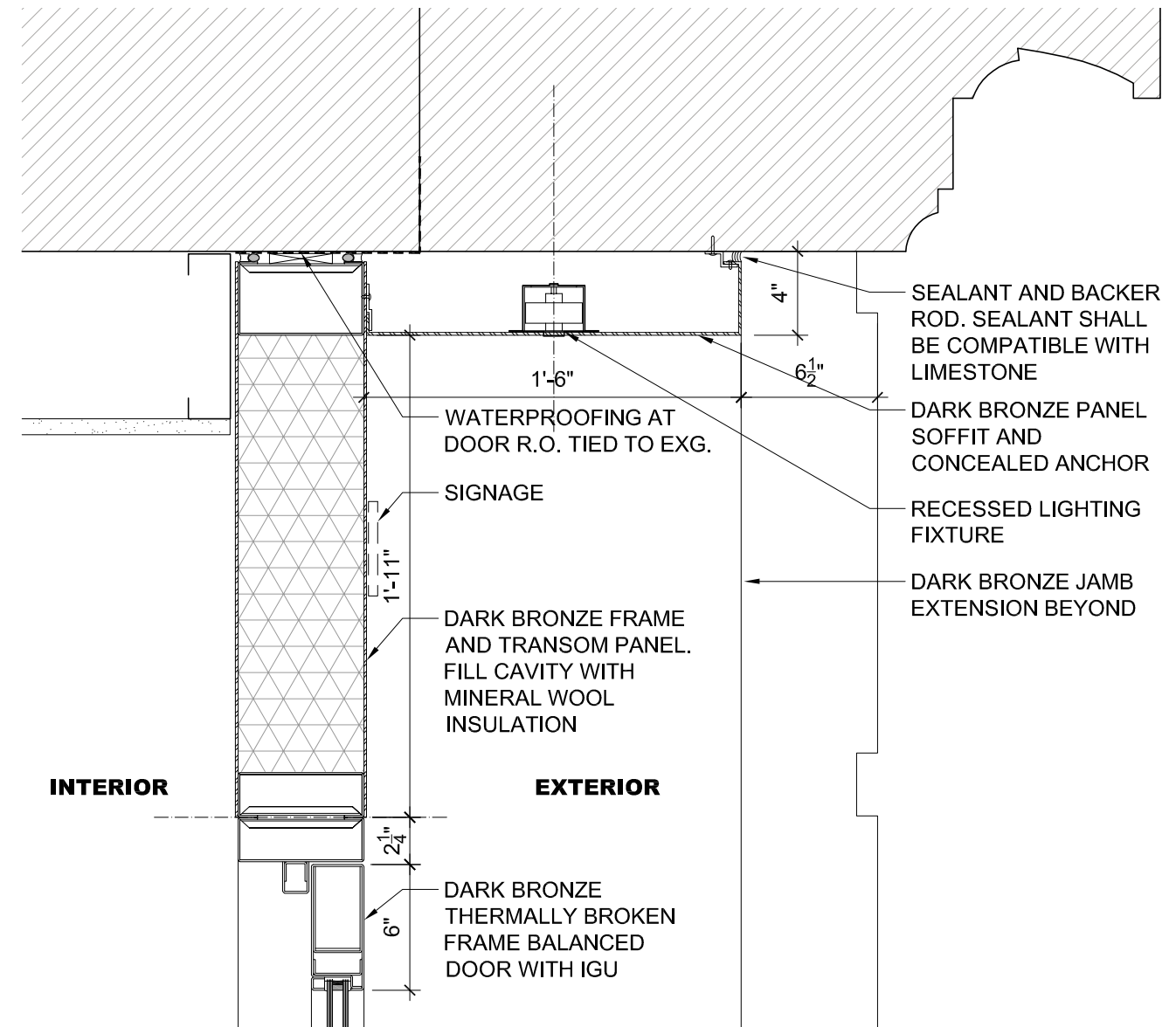


scale: 1/2" = 1'-0"

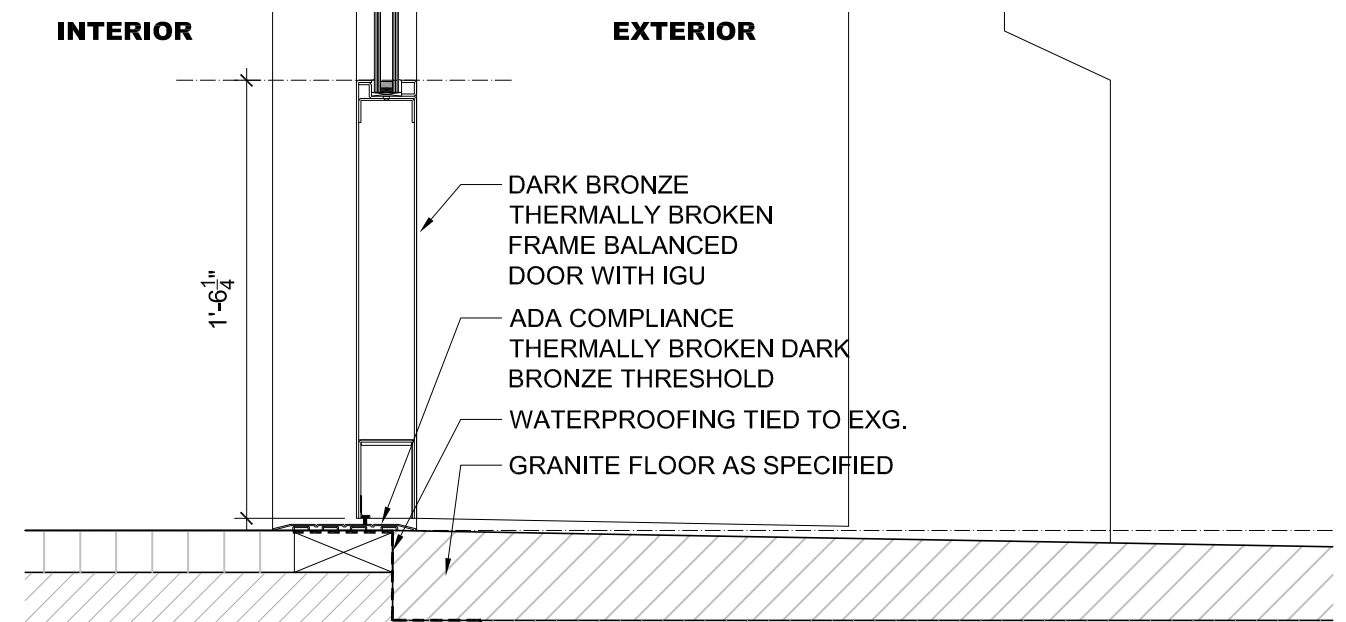
WING E - EAST ELEVATION AT 83RD ST DOORS - PROPOSED



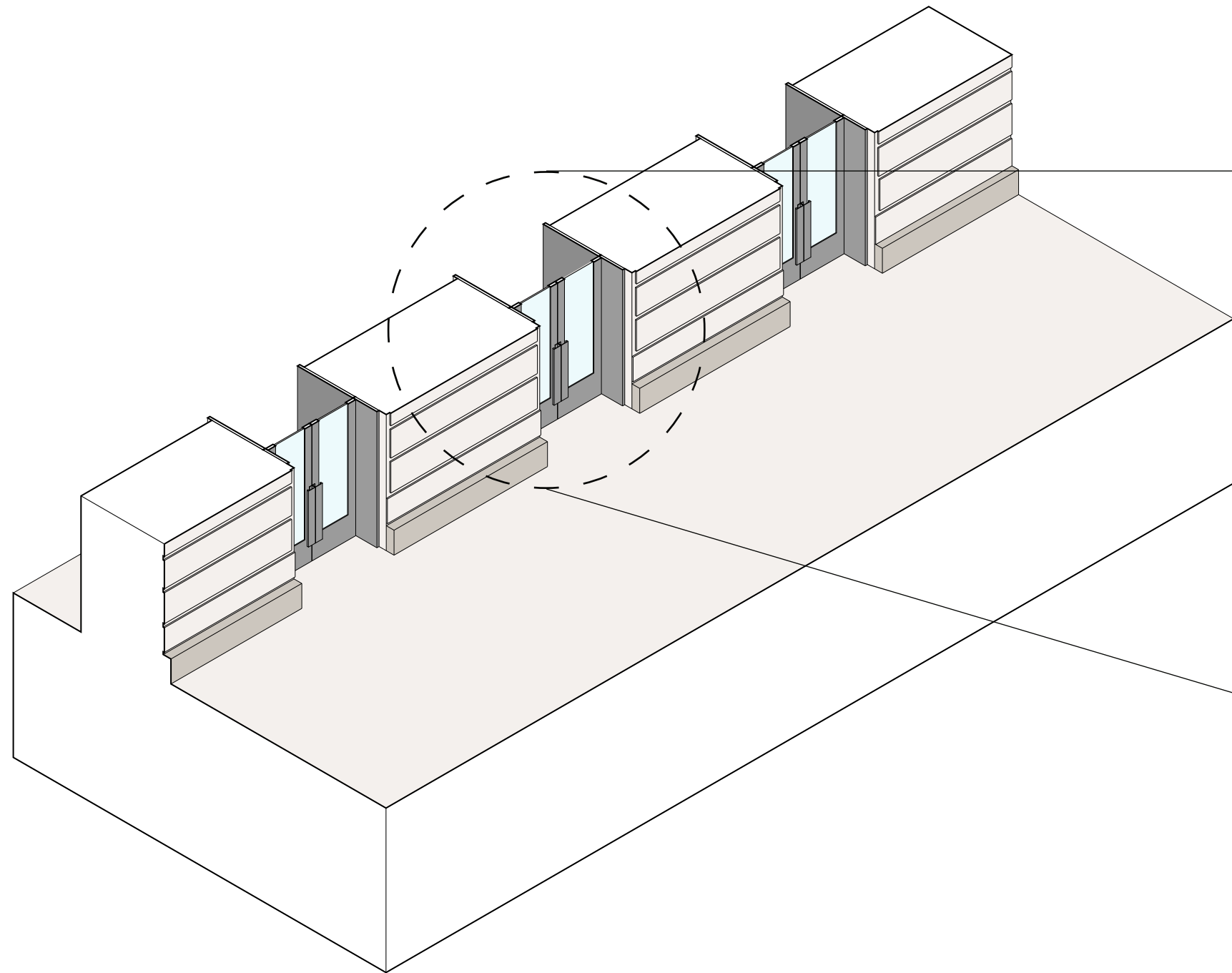
EXTERIOR
DOOR PLAN DETAIL (scale: 1-1/2" = 1'-0")



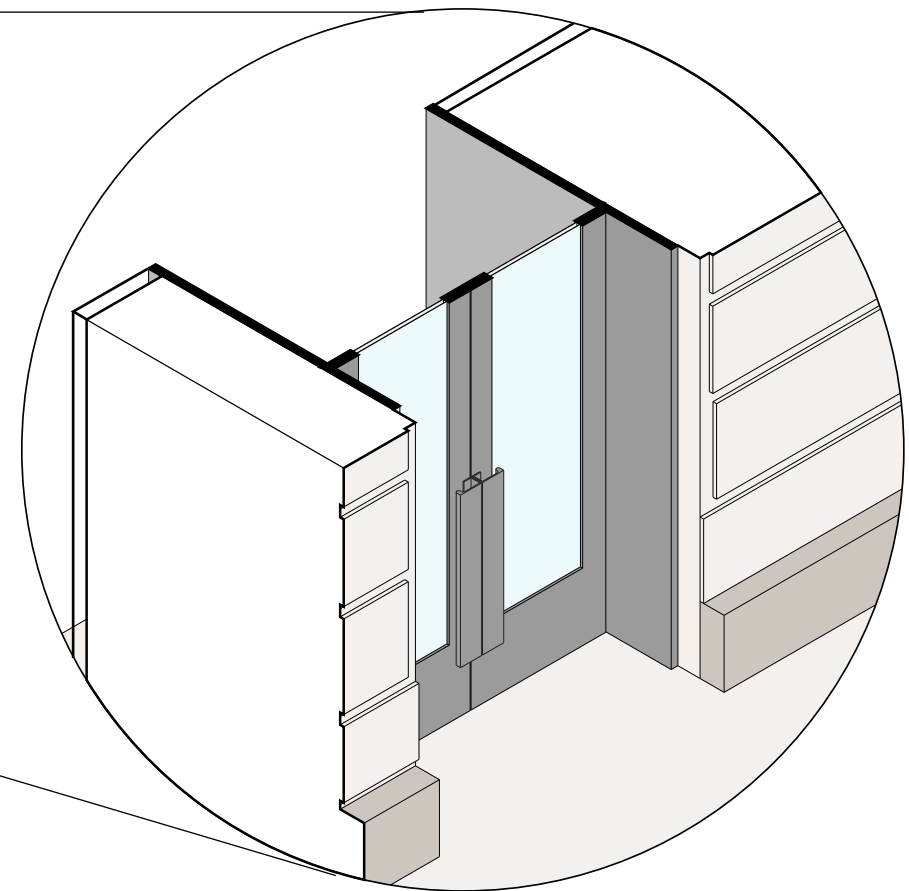
DOOR HEADER DETAIL (scale: 1-1/2" = 1'-0")



DOOR SILL DETAIL (scale: 1-1/2" = 1'-0")



AXON SHOWING PROPOSED DOORS AT 83RD ST

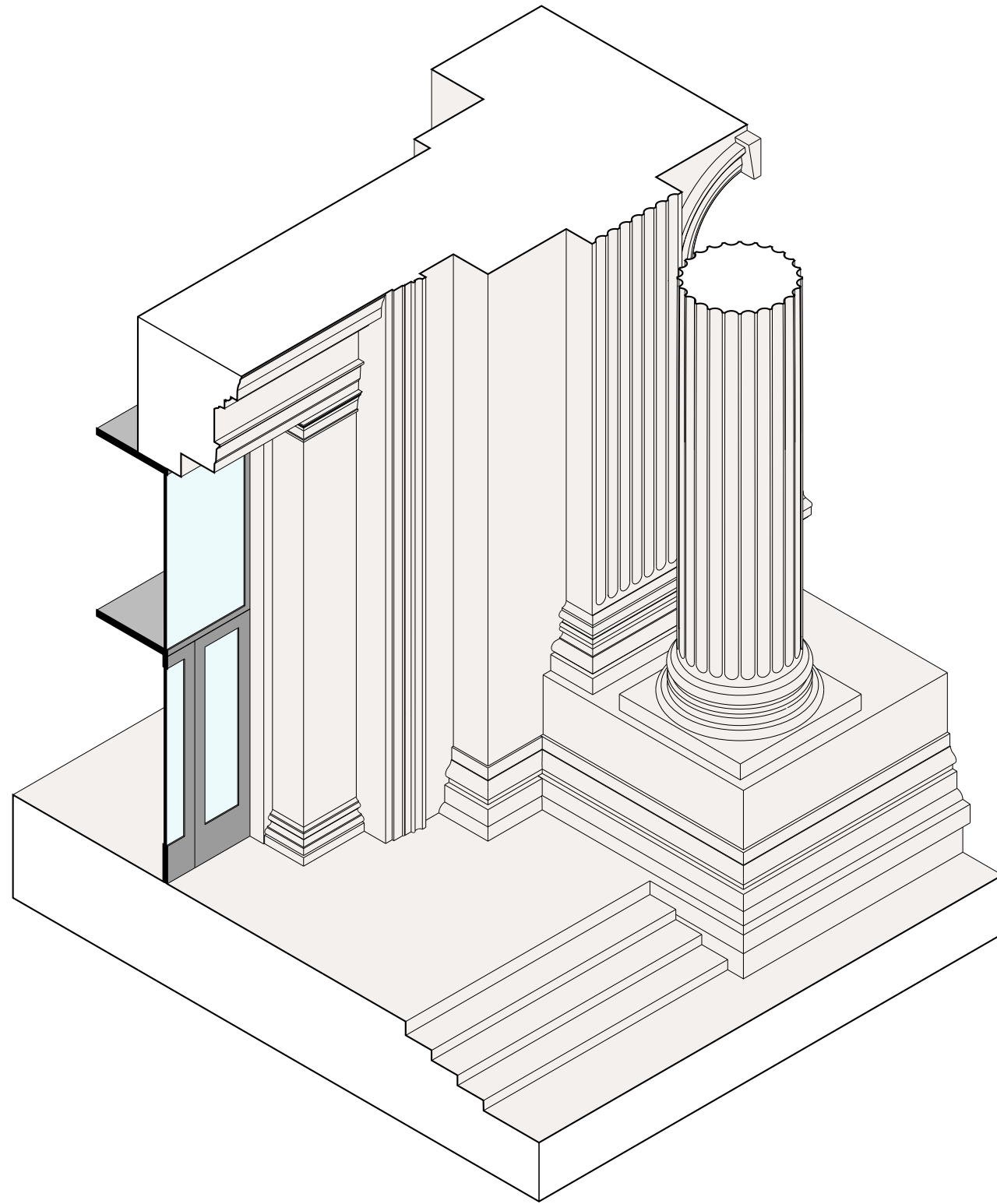


DETAIL AXON AT PROPOSED DOORS AT 83RD ST

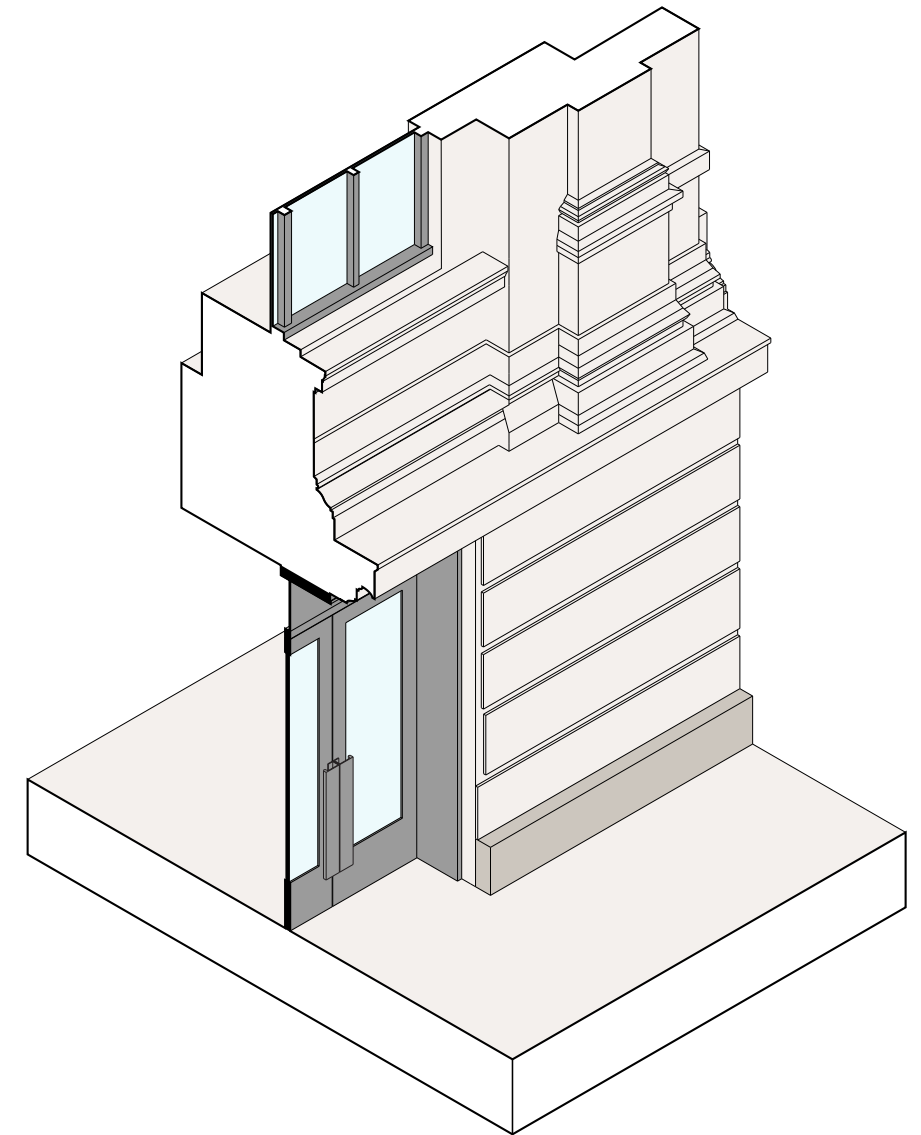
AXON SHOWING PROPOSED 83RD ST DOORS



PHOTO SHOWING EXISTING 82ND DOORS



AXON SHOWING EXISTING DOOR AND TRANSOM AT 82ND ST



AXON SHOWING PROPOSED DOOR AND TRANSOM AT 83RD ST

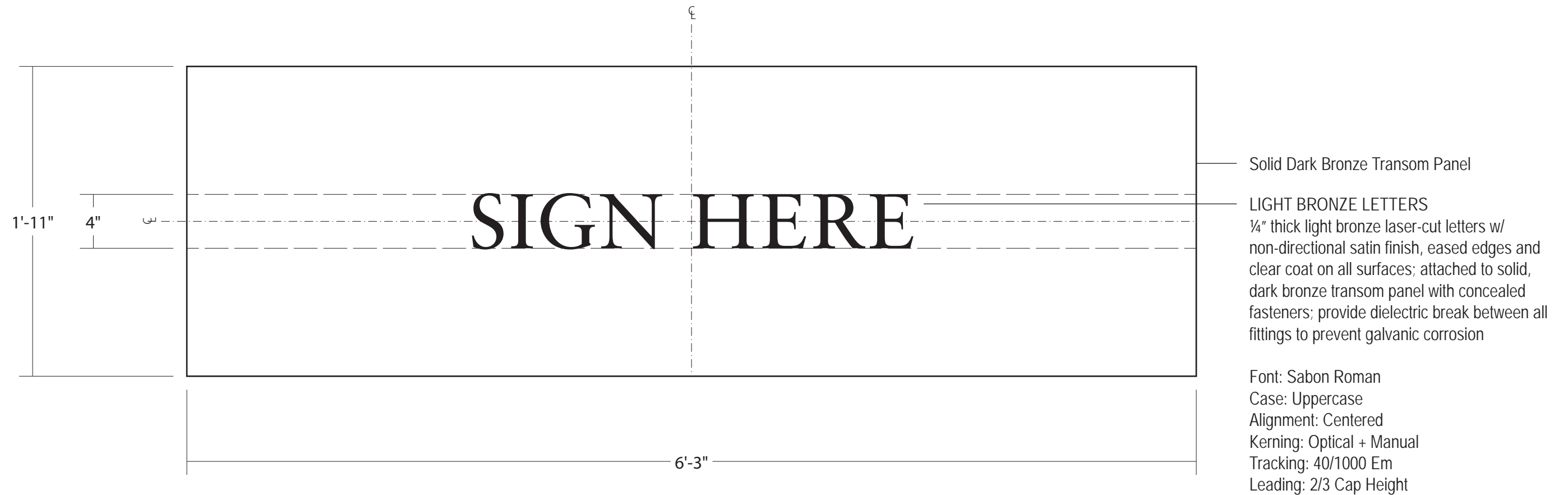
COMPARISON OF 82ND AND 83RD STREET DOORS



CONCEPTUAL RENDERING OF PROPOSED 83RD ST DOORS

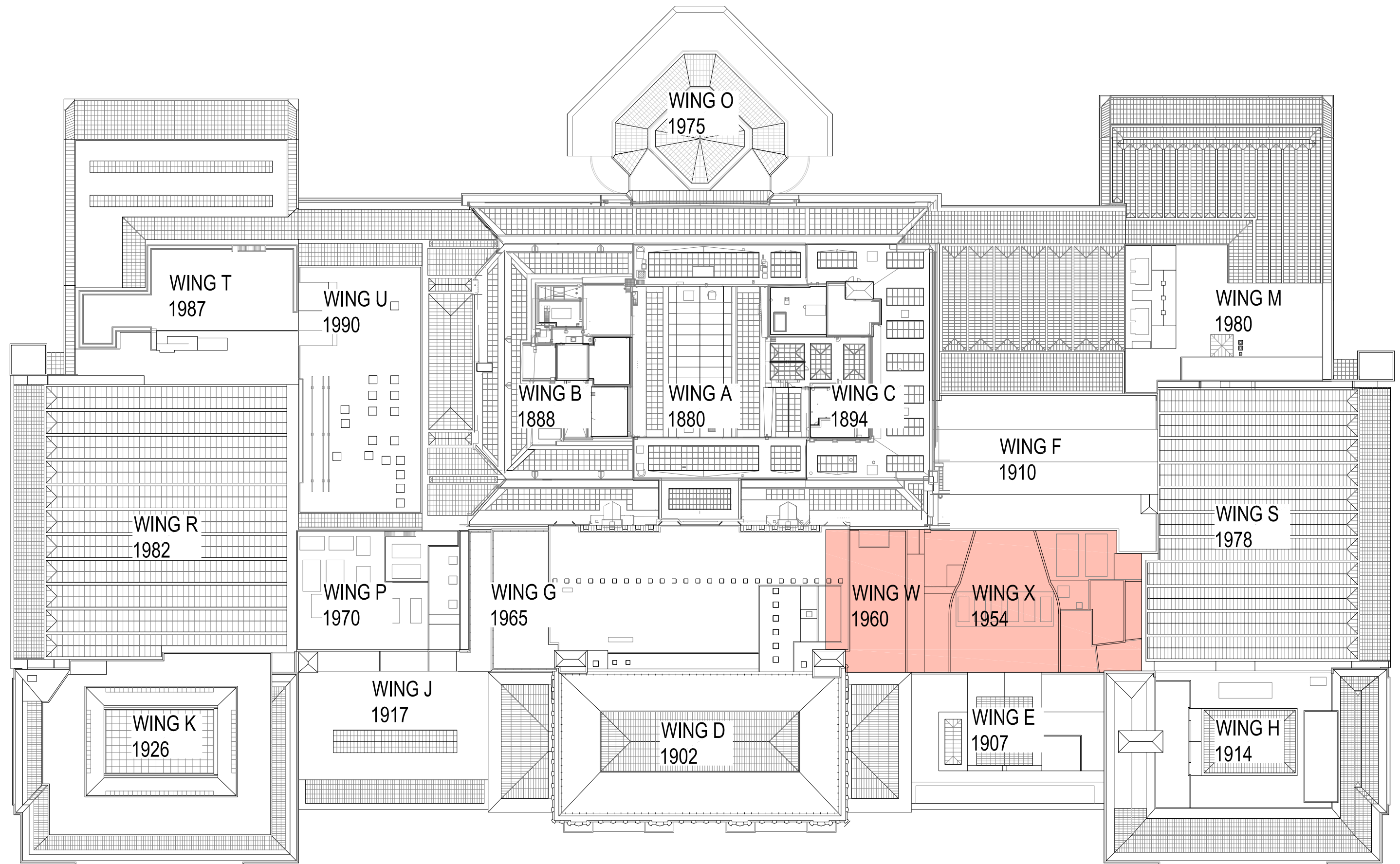


CONCEPTUAL RENDERING OF PROPOSED 83RD ST DOORS

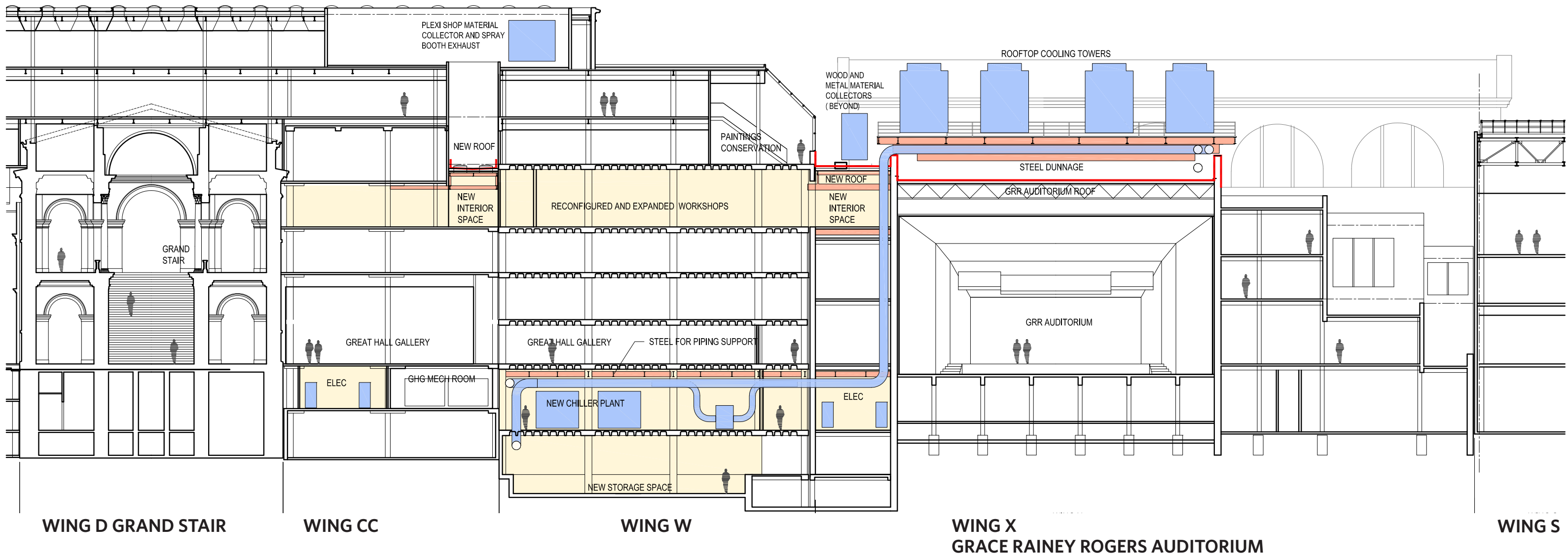


PROPOSED TRANSOM SIGNAGE AT 83RD ST DOORS

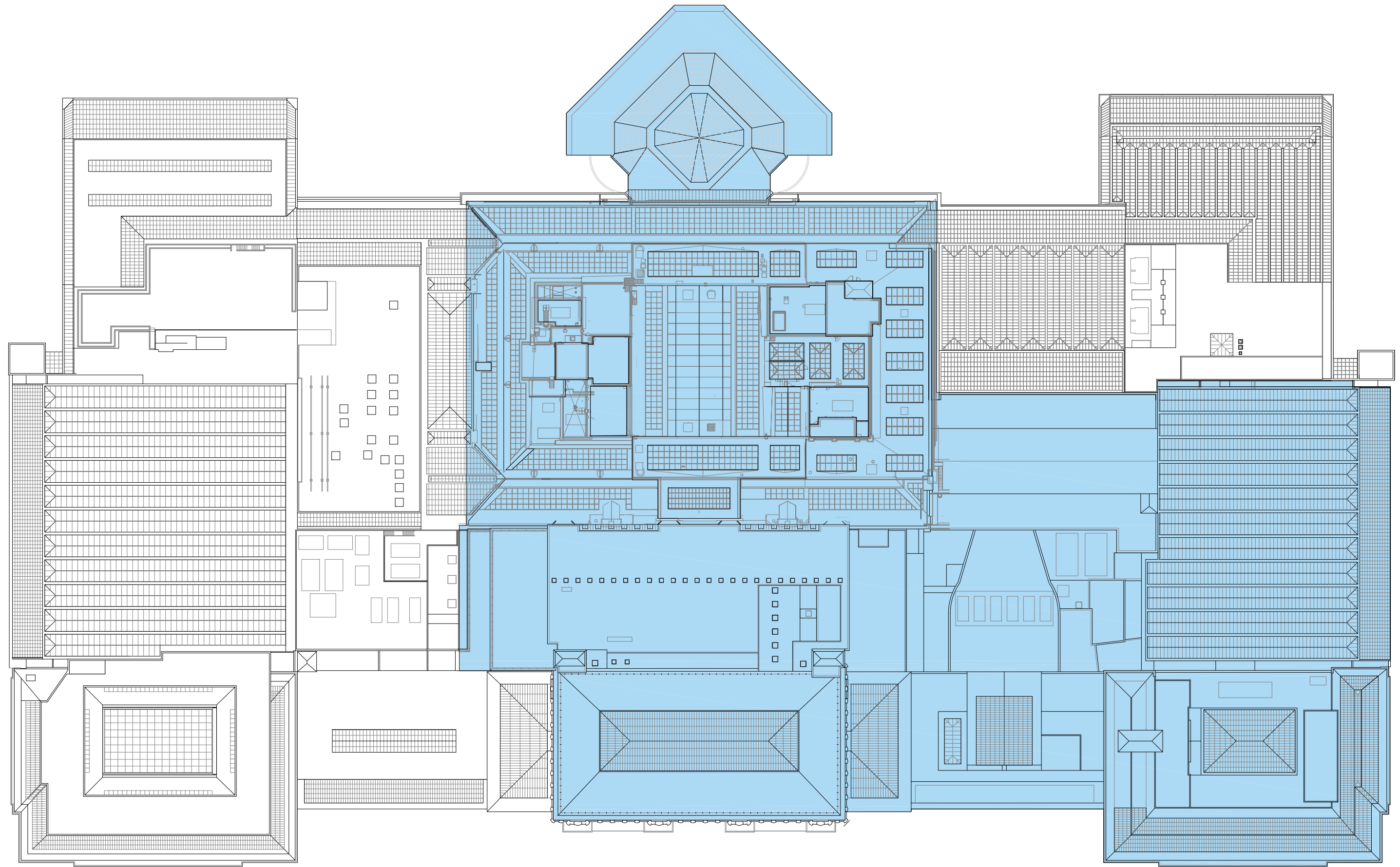
**NORTH SIDE CHILLER PLANT
REPLACEMENT**



NORTH SIDE CHILLER PLANT PROJECT LOCATION - WING W (BUILT 1960) AND WING X (BUILT 1954)



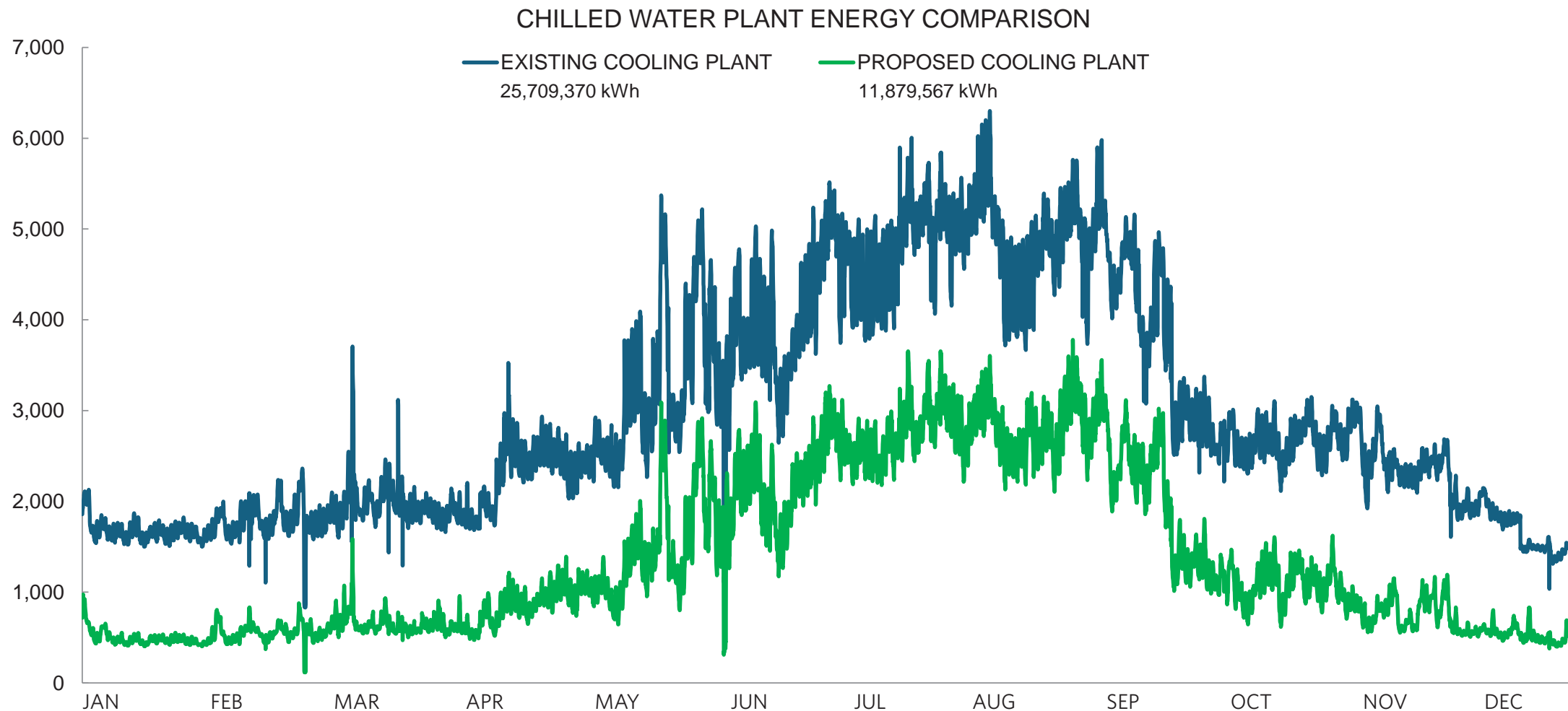
NORTH SIDE CHILLER PLANT SCHEMATIC N-S SECTION



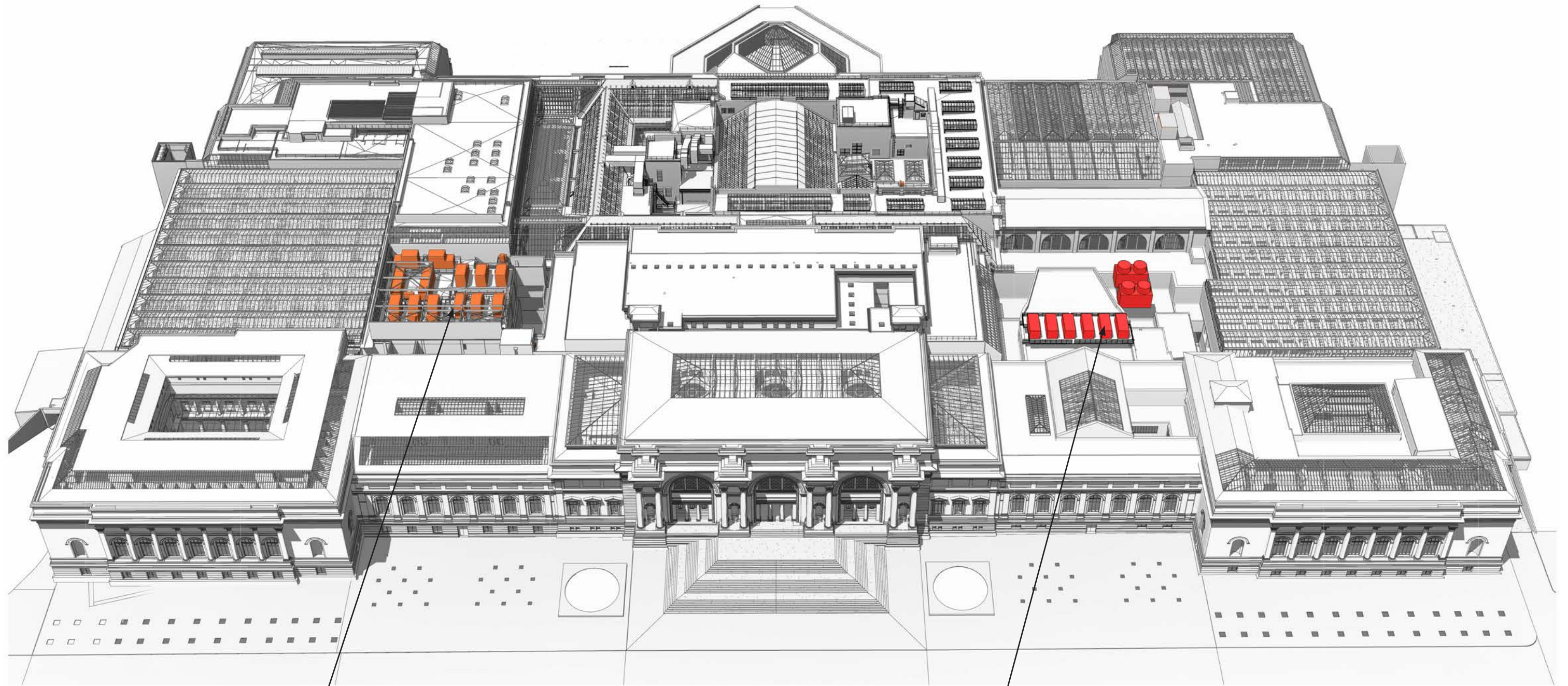
**AREAS SERVED BY THE NORTH SIDE CHILLER PLANT (BLUE)
60% OF THE MUSEUM BUILDING**

**NORTH SIDE CHILLER PLANT ENERGY MODEL
(KOHLEK RONAN, MEP ENGINEERS)**

- The proposed new chiller plant is expected to use **54% less electricity per year** compared to the existing chiller plant.
- **Existing chiller plant (3150 Tons):**
One of the oldest plants on campus - chillers are from 1980-1990 with poor efficiencies. Pumps are constant volume and have high pumping head and power. Cooling towers serving this plant were installed in 1997 and have an efficiency of 20 gpm/hp compared to code min of 38 gpm/hp. **Average plant efficiency is 1.105 kW/ton.**
- **Proposed new chiller plant (4800 tons):**
The new plant will have four 1200-ton Trane CenTraVac chillers which are able to achieve a high part load-efficiency during low load conditions. The chiller are also able to utilize low condenser water temperatures which improves the chilled water efficiency. The associated pumps and cooling towers exceed code minimum efficiencies for motors and fans resulting in a high-performance plant operation. Actual chiller performance curves for peak and part load were simulated and tested against the measured plant loads to determine an **average plant efficiency of 0.400 kW/ton**



The proposed North Side Central Plant has the potential to reduce electrical consumption by **54% (3,750 - 4,000 MTCO₂e reduction)** compared to existing conditions

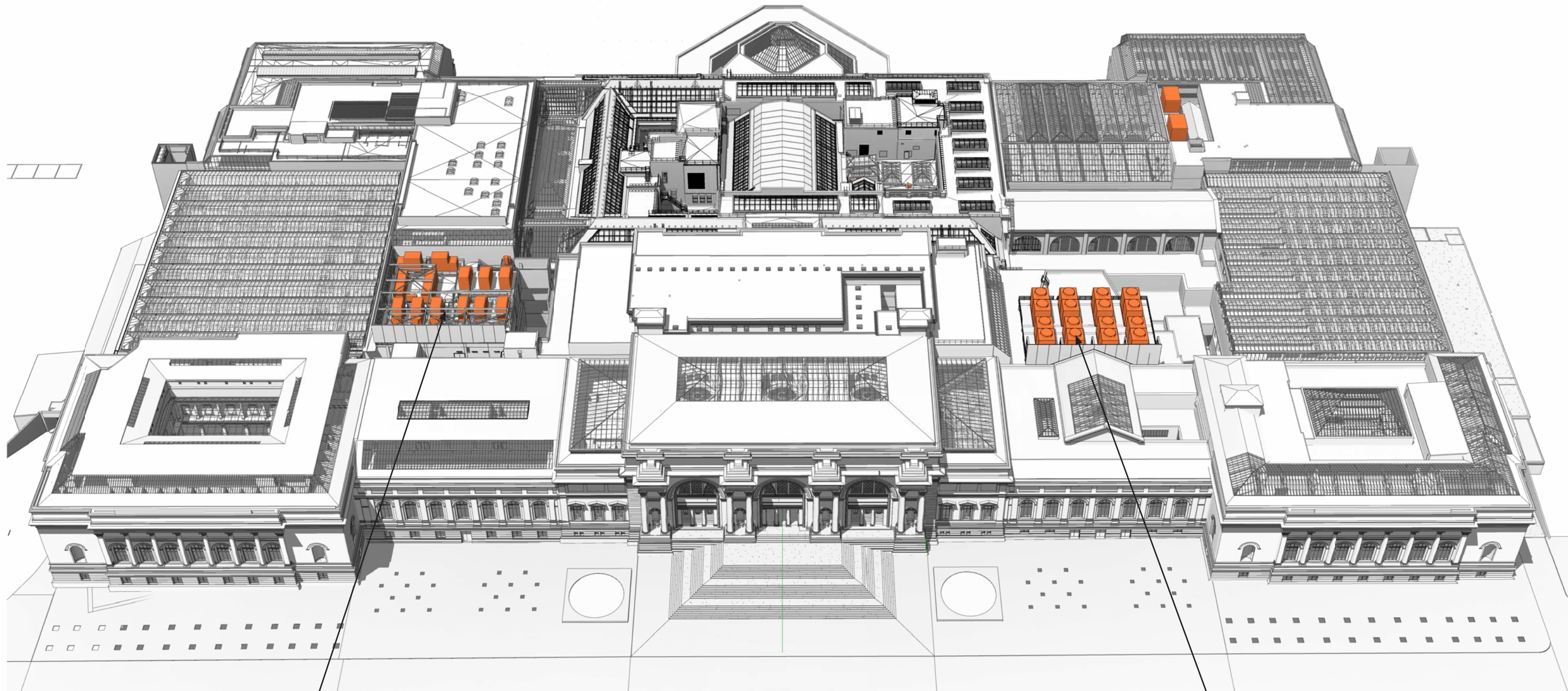


EXISTING SOUTH SIDE COOLING TOWERS
AND SCREEN WALL (2012) TO REMAIN

EXISTING NORTH SIDE COOLING TOWERS
TO BE REMOVED

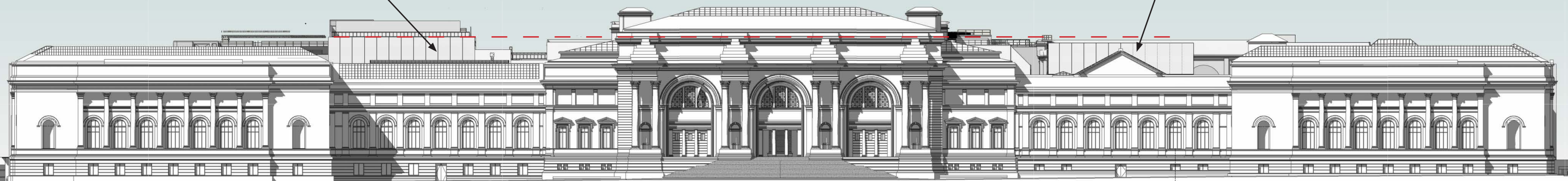


EAST (FIFTH AVENUE) ELEVATION EXISTING

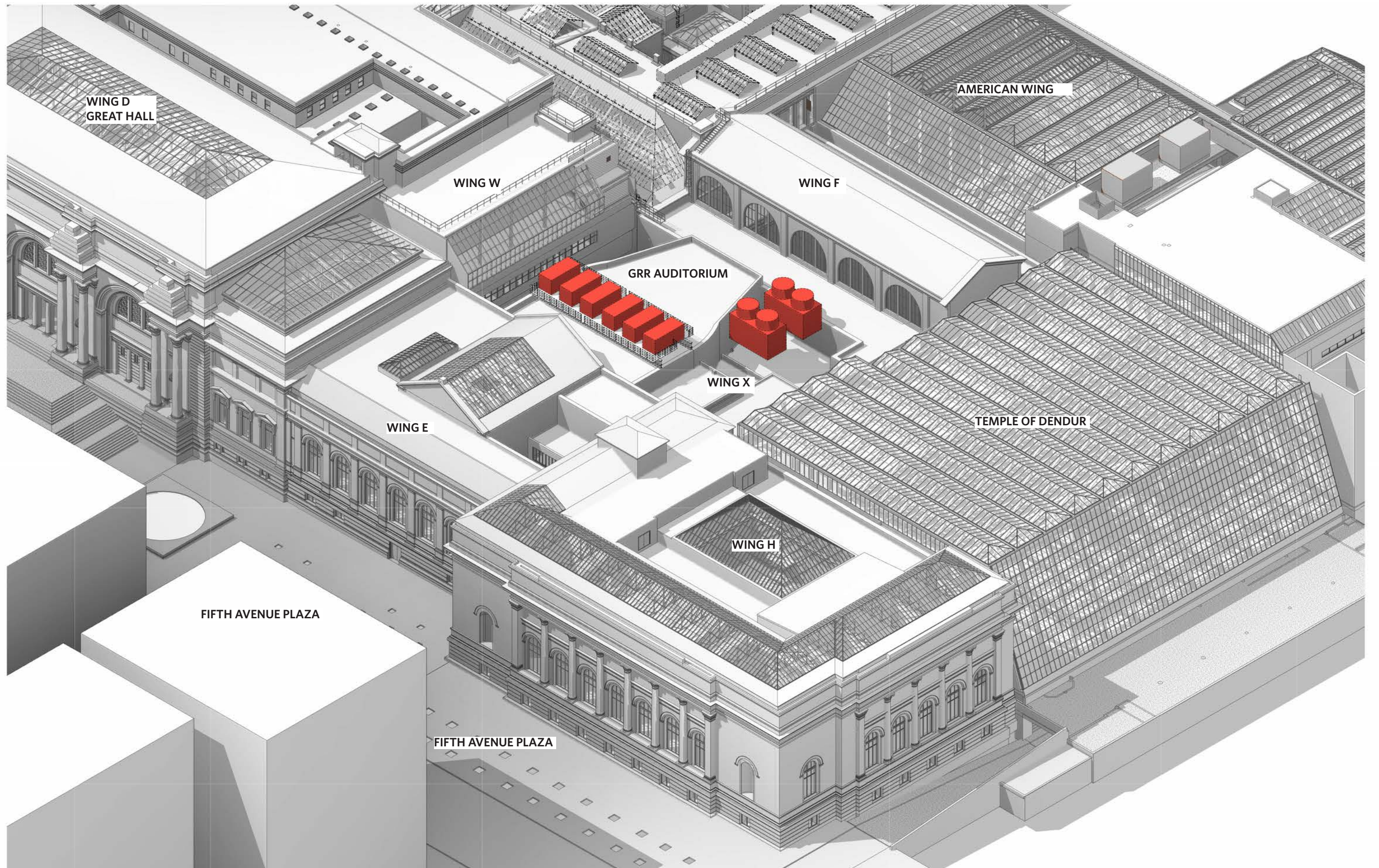


EXISTING SOUTH SIDE COOLING TOWERS AND SCREEN WALL (2012)

PROPOSED NORTH SIDE COOLING TOWERS AND SCREEN WALL



EAST (FIFTH AVENUE) ELEVATION PROPOSED



WING D
GREAT HALL

AMERICAN WING

WING W

WING F

GRR AUDITORIUM

WING X

WING E

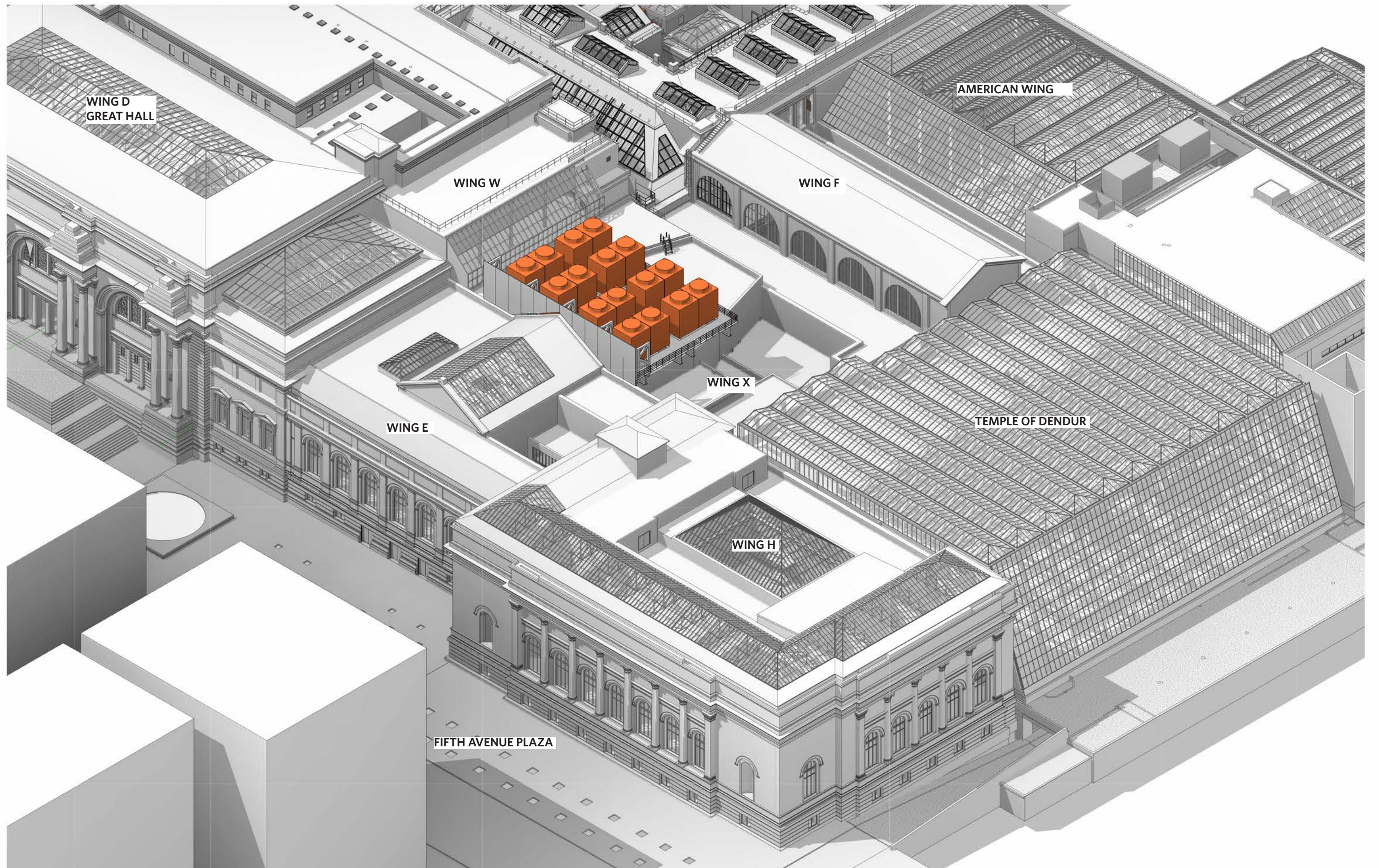
TEMPLE OF DENDUR

WING H

FIFTH AVENUE PLAZA

FIFTH AVENUE PLAZA

AXON VIEW OF EXISTING NORTH SIDE COOLING TOWERS TO BE REMOVED



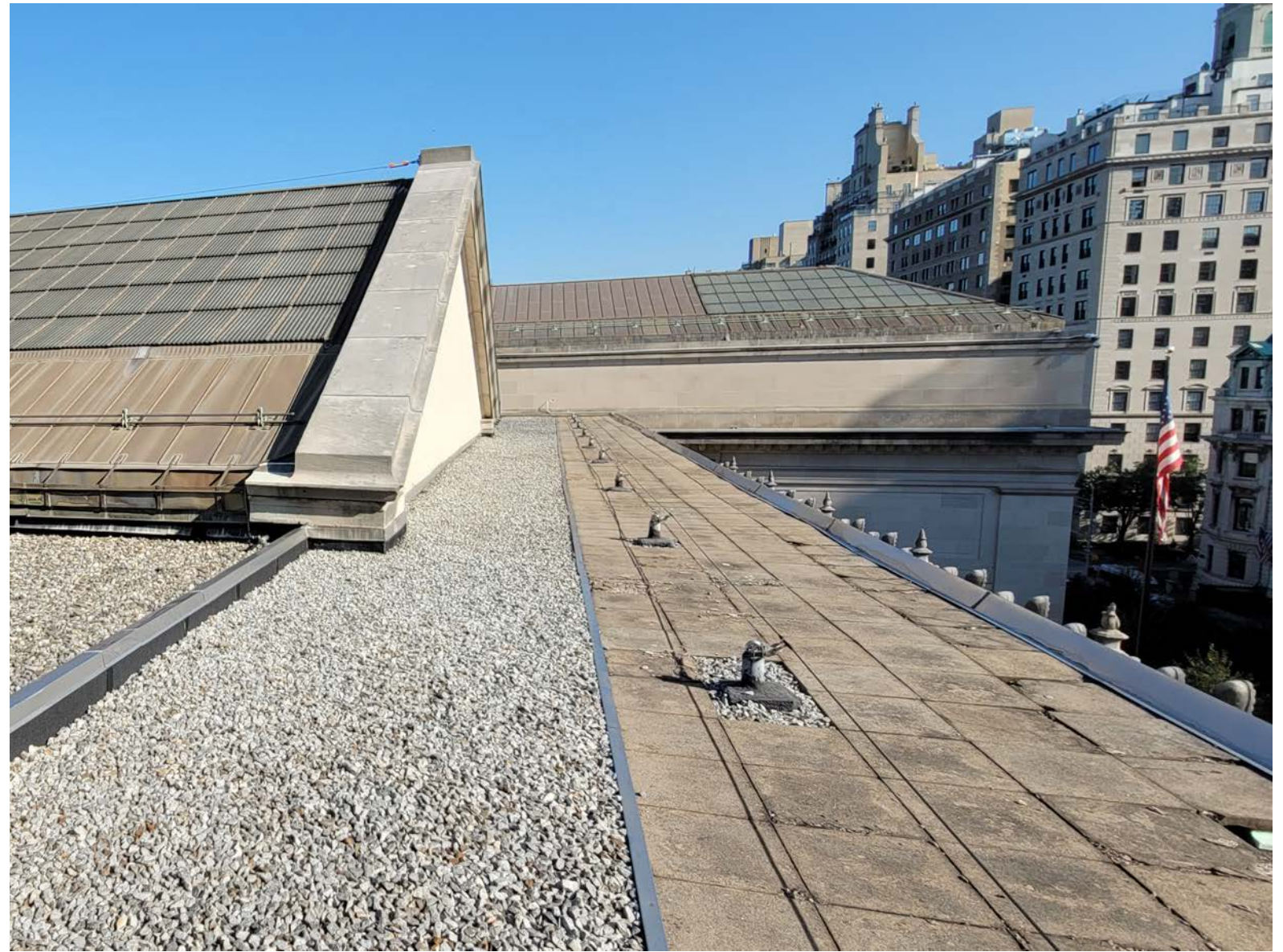
AXON VIEW OF NORTH SIDE PROPOSED COOLING TOWERS AND SCREEN WALL



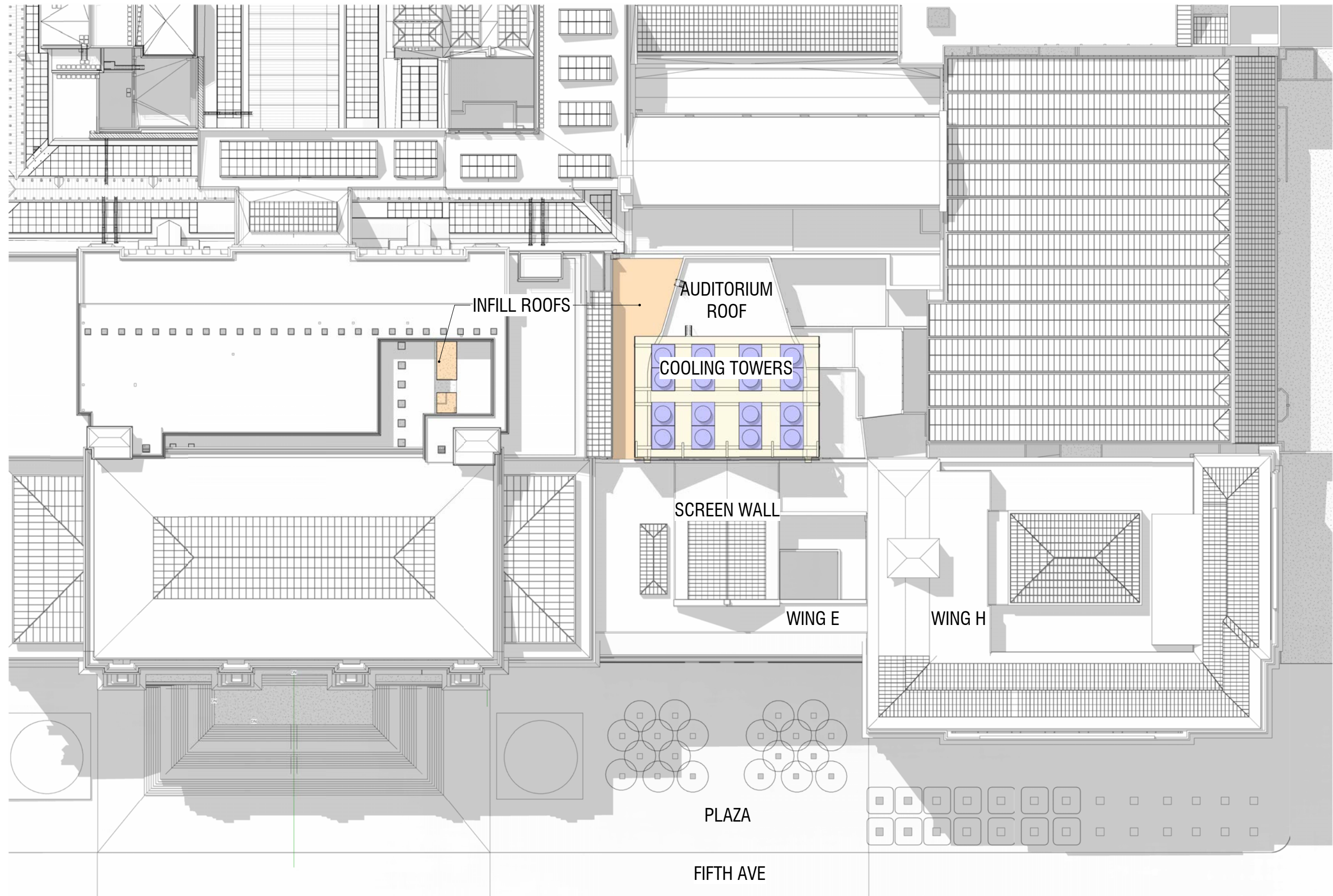
EXISTING CONDITION GRACE RAINEY ROGERS AUDITORIUM ROOF AND COOLING TOWERS



EXISTING CONDITION GRRR ROOF AND WING E ROOF



EXISTING CONDITION WING E ROOF PEDIMENT AT FIFTH AVE FACADE



ROOF PLAN SHOWING PROPOSED COOLING TOWERS AND LIGHT WELL INFILL AREA

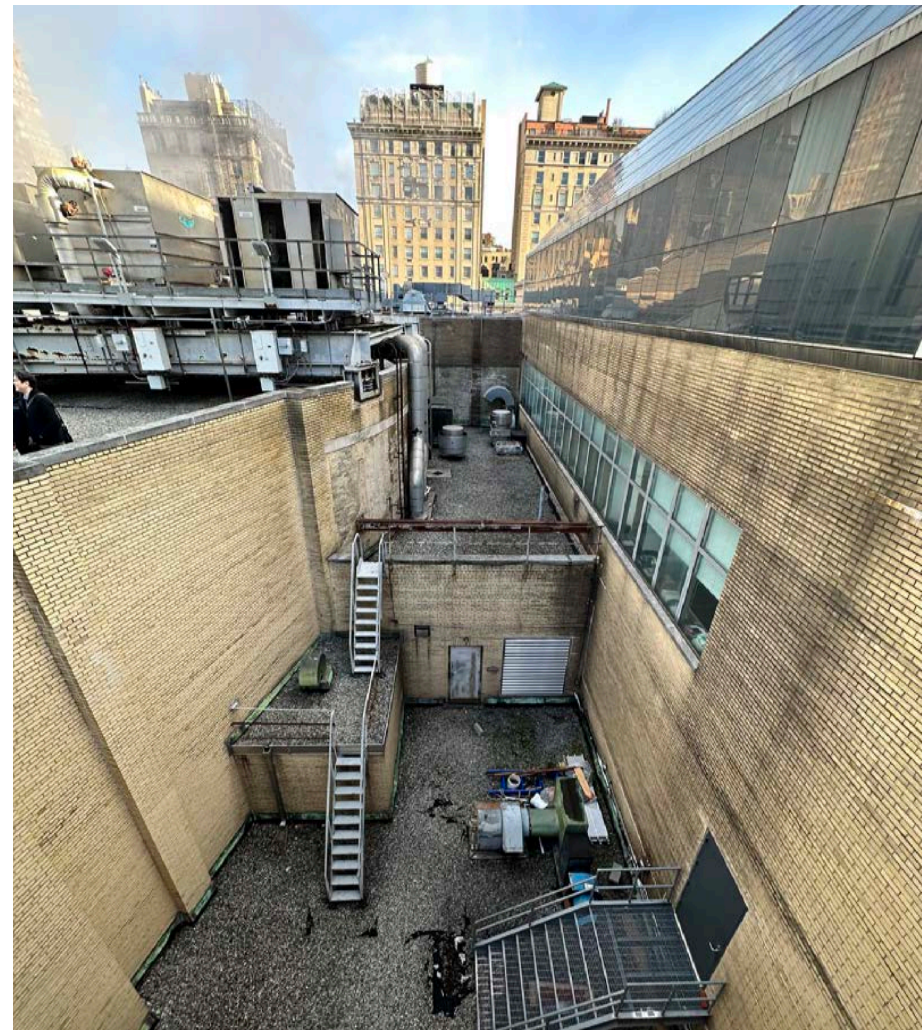
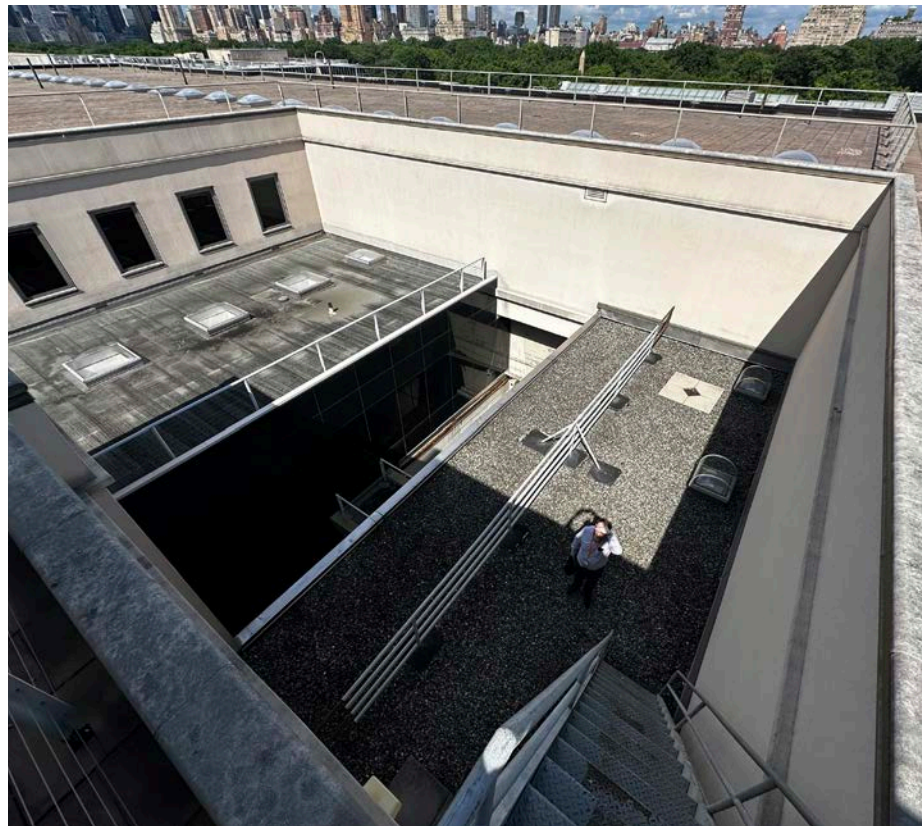
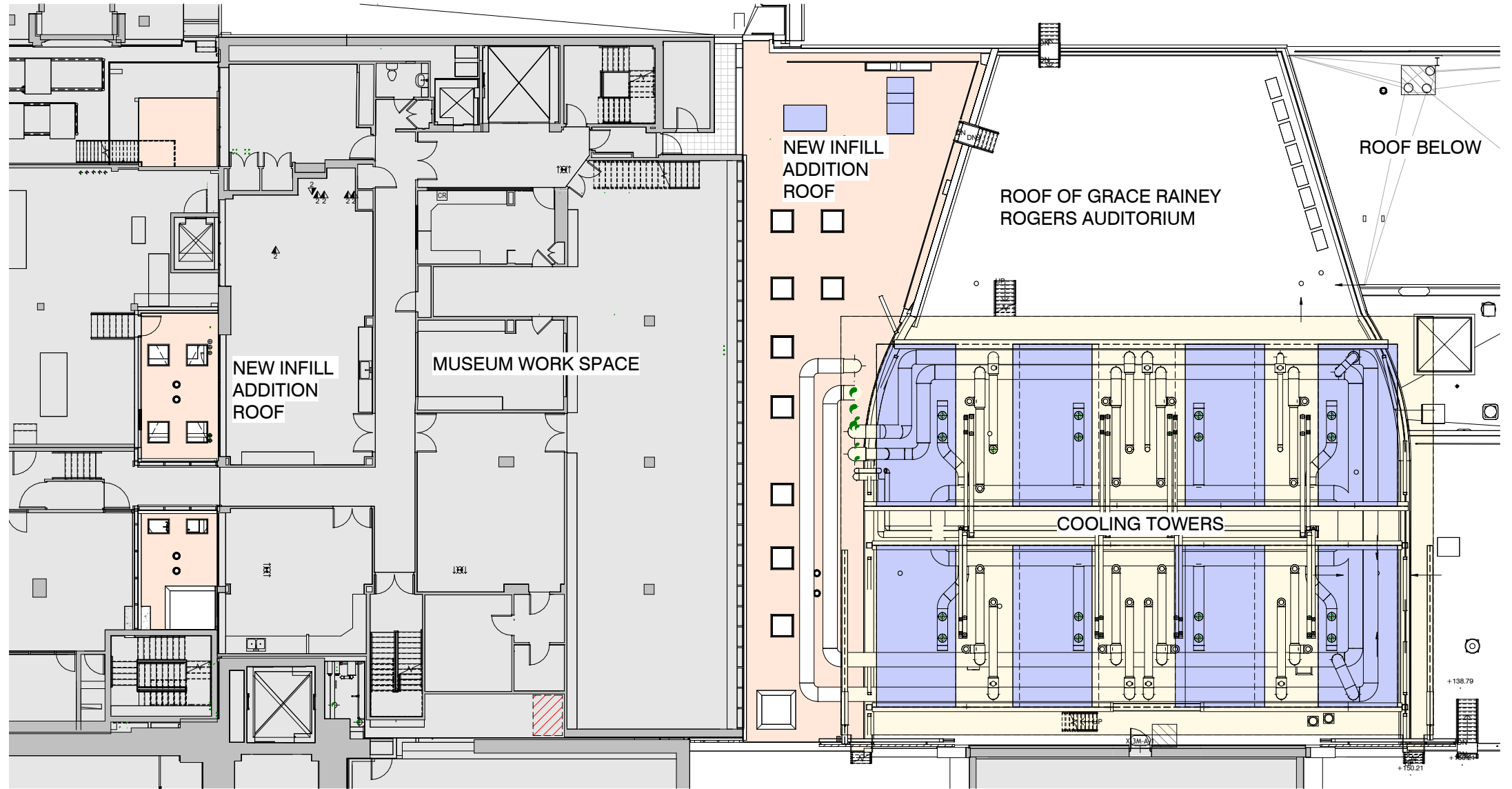
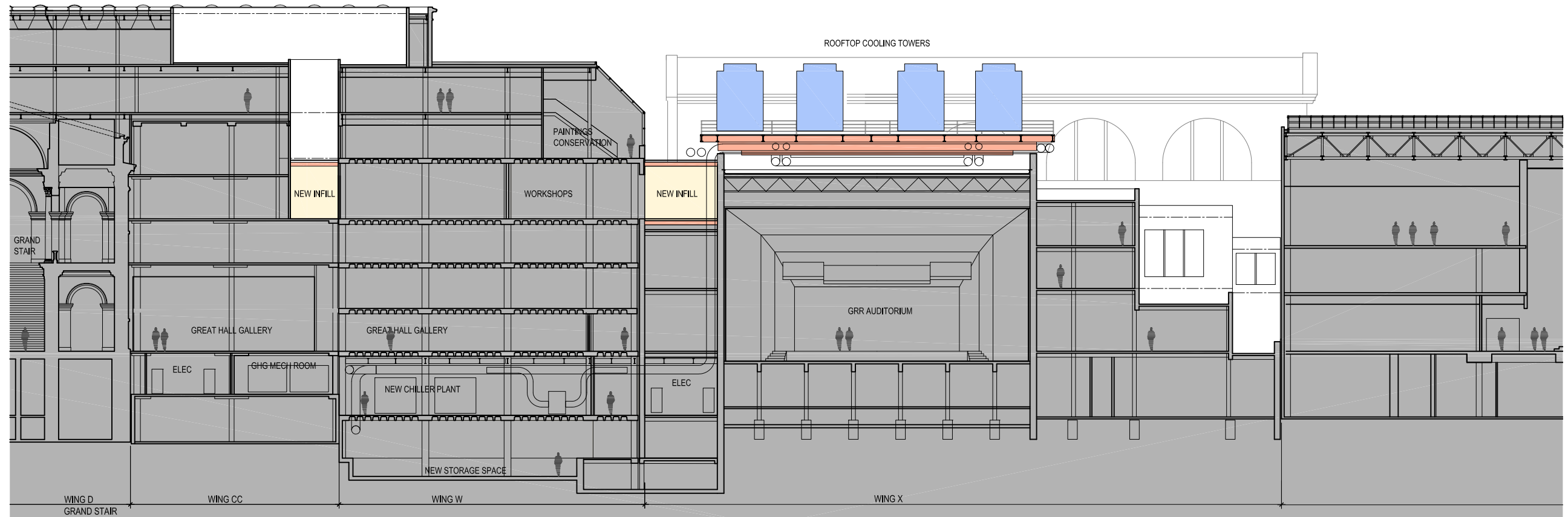


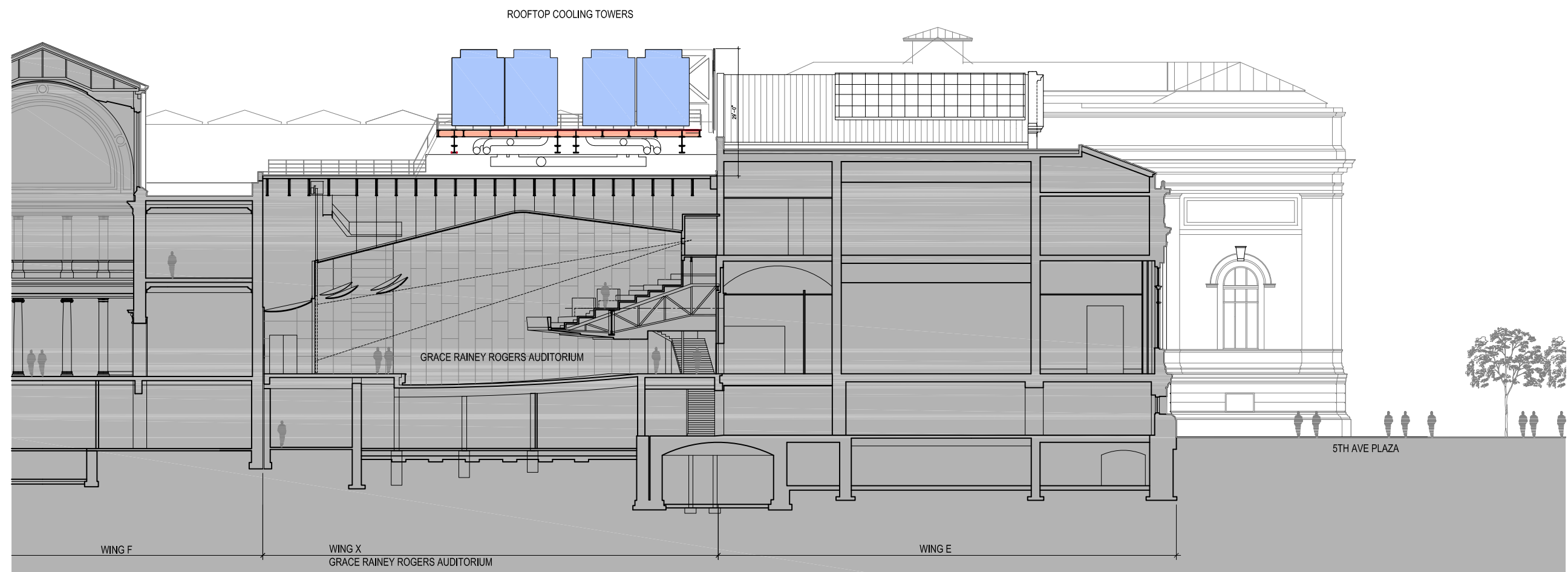
PHOTO OF EXISTING LIGHTWELLS TO BE INFILLED WITH NEW CONSTRUCTION



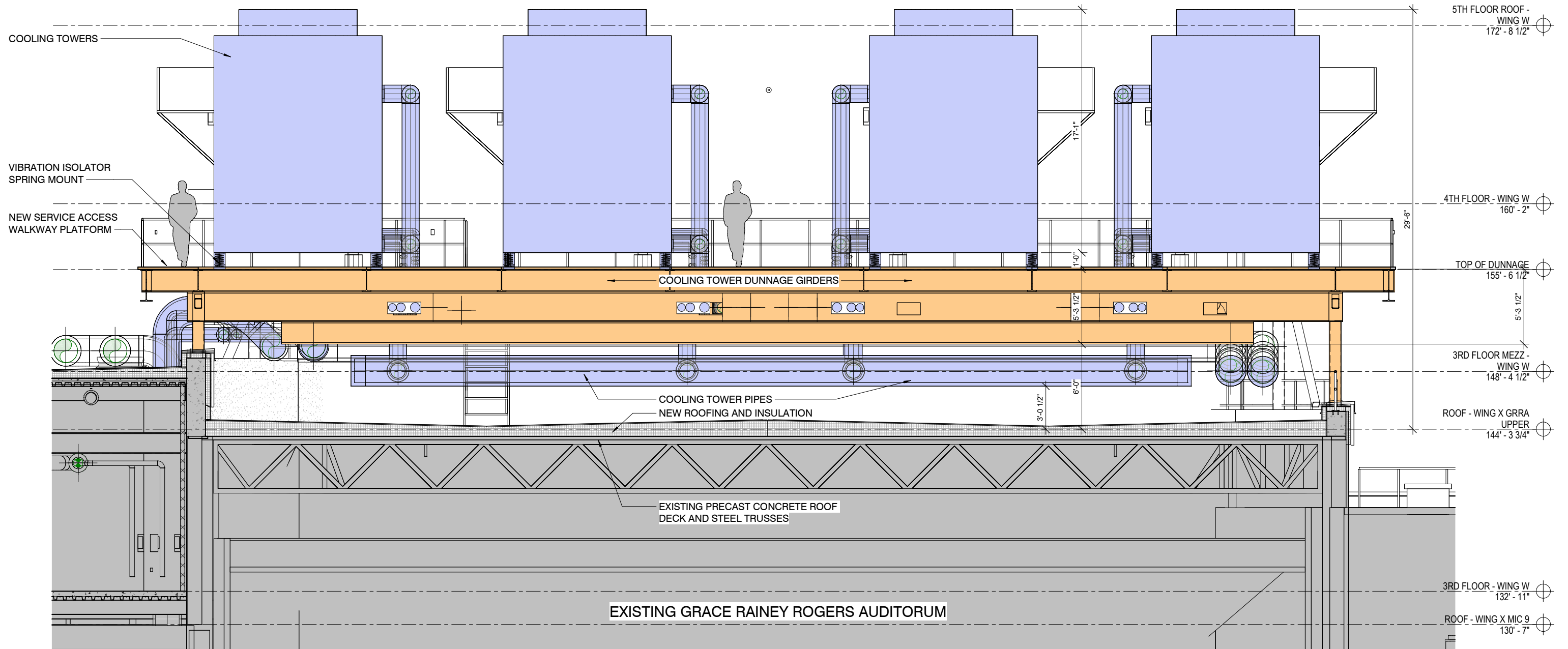
ROOF PLAN SHOWING PROPOSED COOLING TOWERS AND LIGHT WELL INFILL AREA



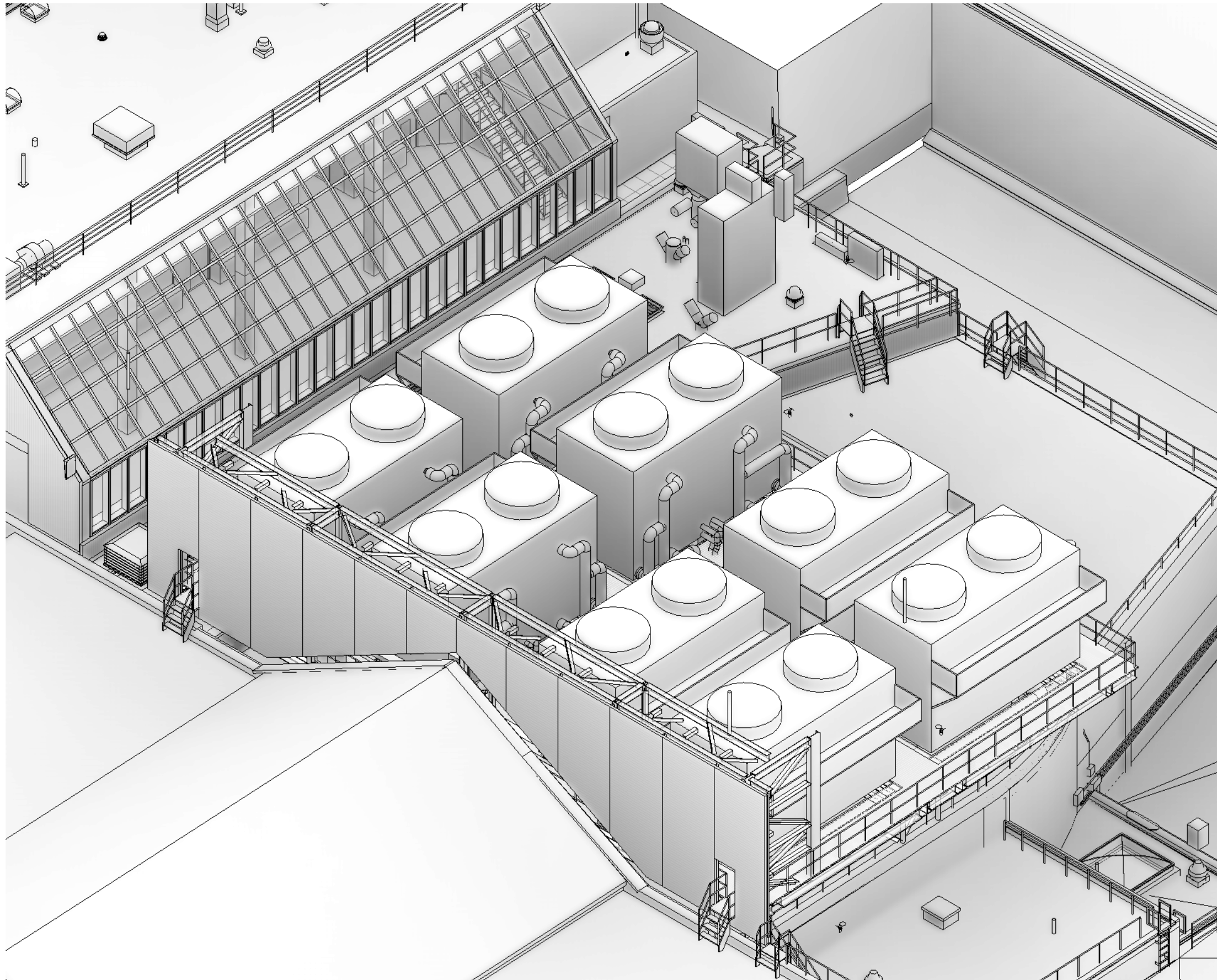
N-S SECTION SHOWING PROPOSED COOLING TOWERS, STEEL DUNNAGE GIRDERS, AND LIGHT WELL INFILL CONSTRUCTION



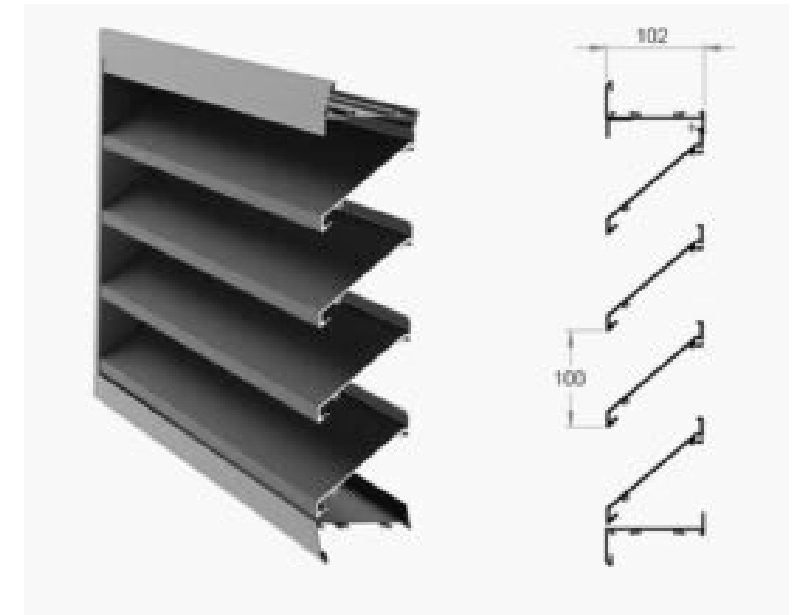
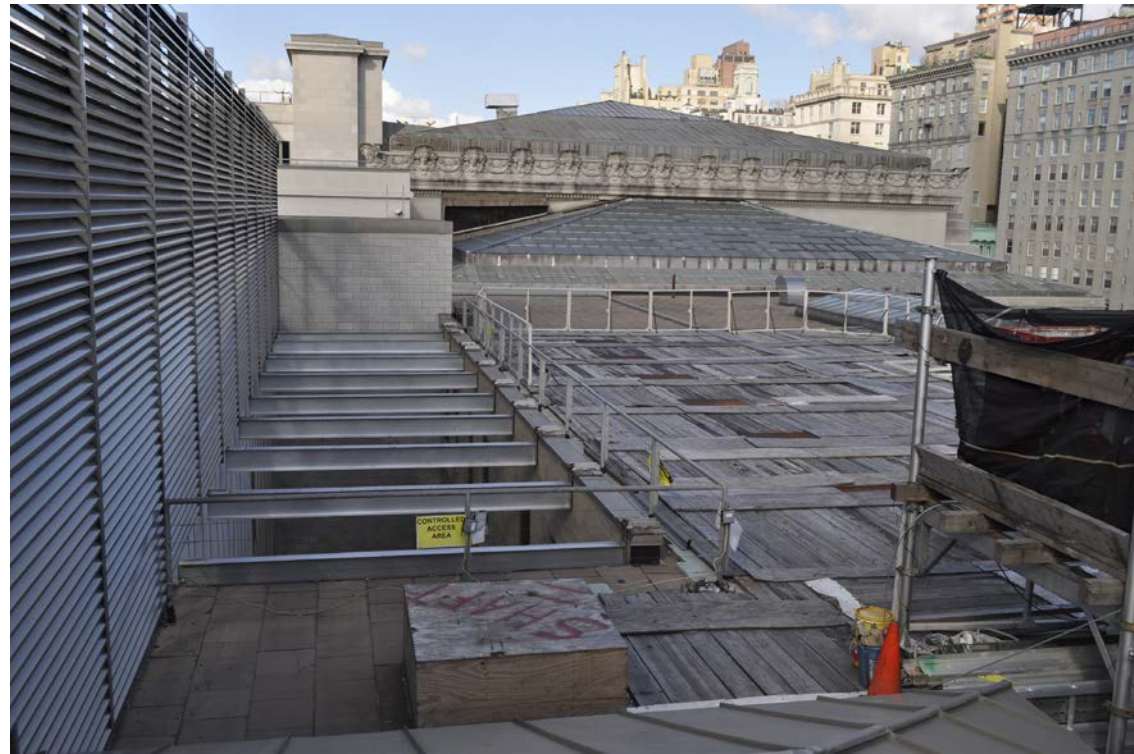
E-W SECTION SHOWING PROPOSED COOLING TOWERS, STEEL DUNNAGE FRAMING, AND SCREEN WALL



N-S SECTION SHOWING PROPOSED COOLING TOWERS, STEEL DUNNAGE GIRDERS, AND PIPING

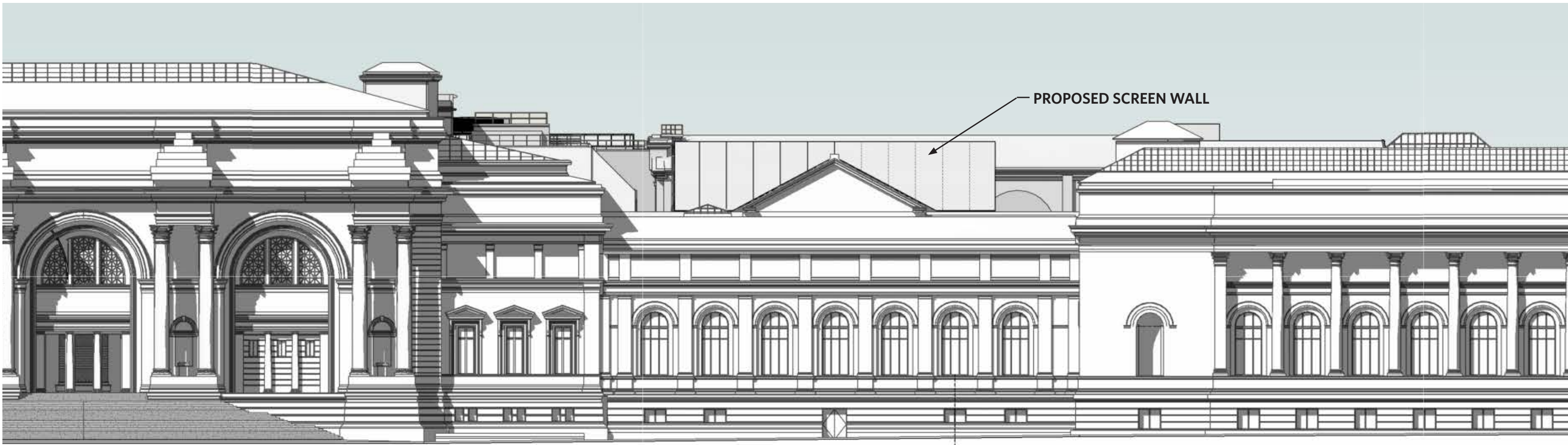


**GRACE RAINEY ROGERS AUDITORIUM ROOF:
PROPOSED NEW COOLING TOWERS AND SCREEN WALL**



PHOTOS OF EXISTING SCREEN WALL AT SOUTH SIDE COOLING TOWERS (2012)

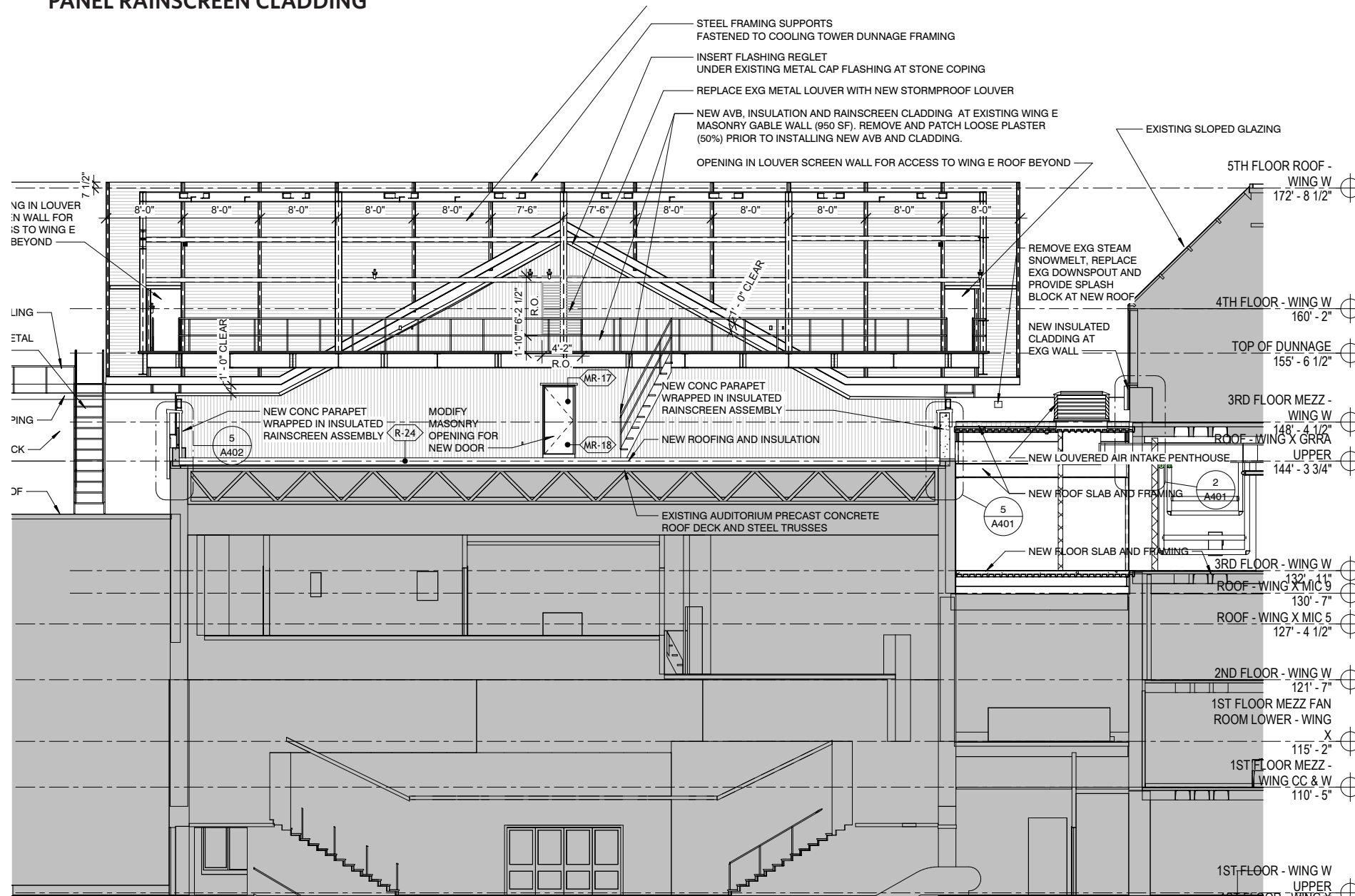
LOUVER DETAIL



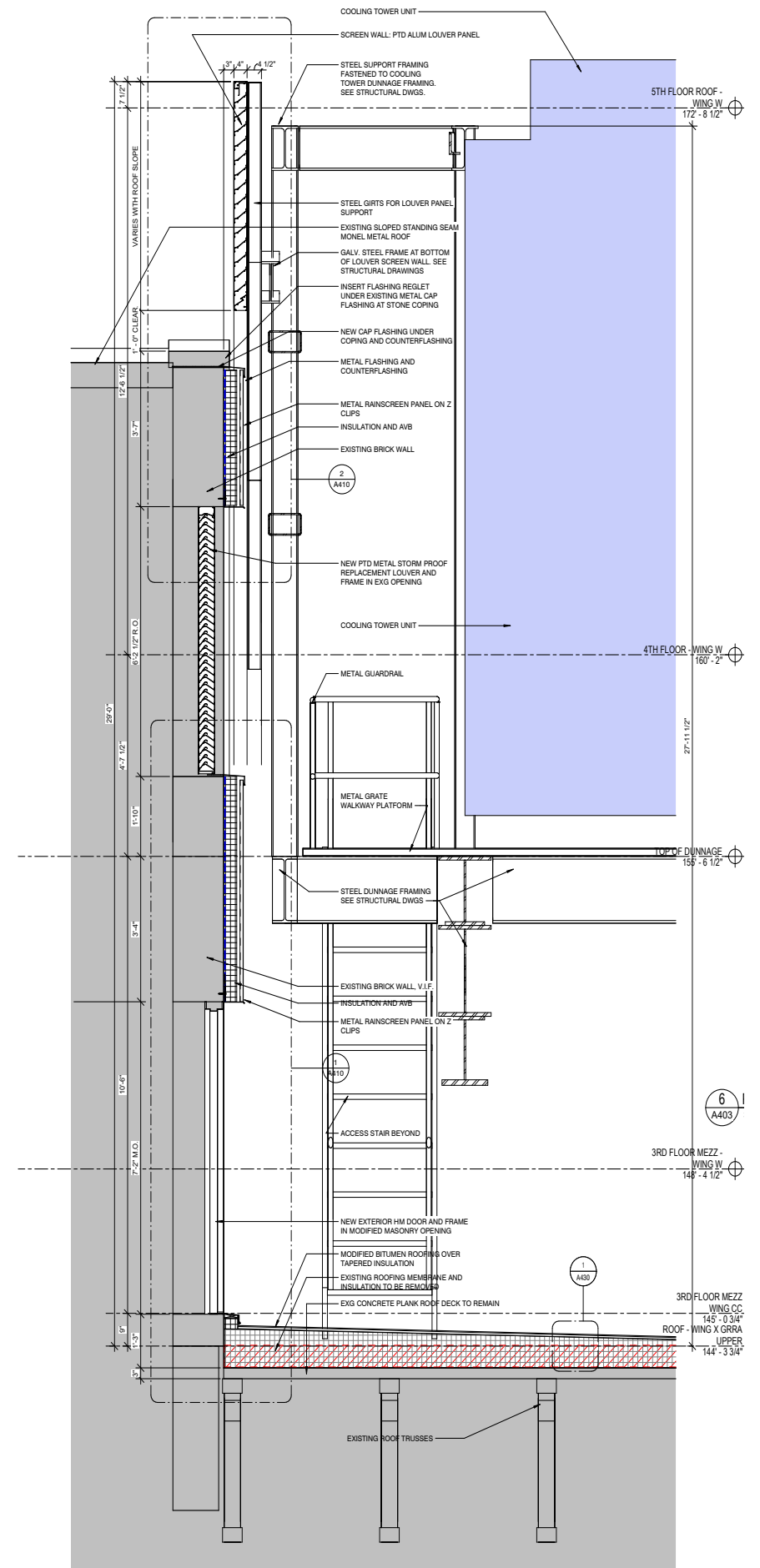
PARTIAL EAST ELEVATION - PROPOSED SCREEN WALL
ALUMINUM LOUVER PANELS TO MATCH SOUTH SIDE MATERIAL AND COLOR



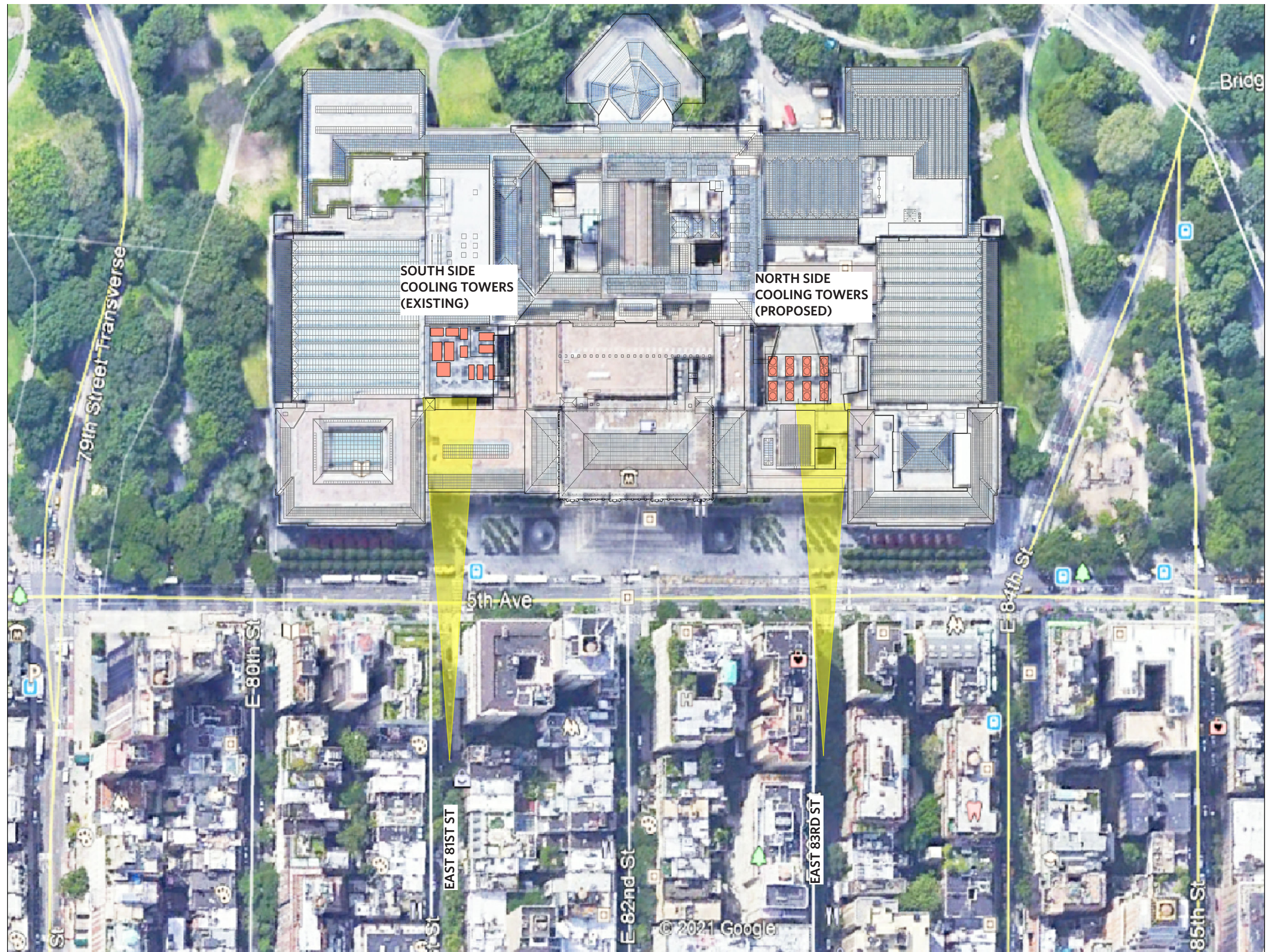
**PHOTO OF WEST FACING GABLE WALL.
EXISTING STUCCO PROPOSED TO BE REPAIRED AND CLAD WITH INSULATION AND METAL PANEL RAINSCREEN CLADDING**



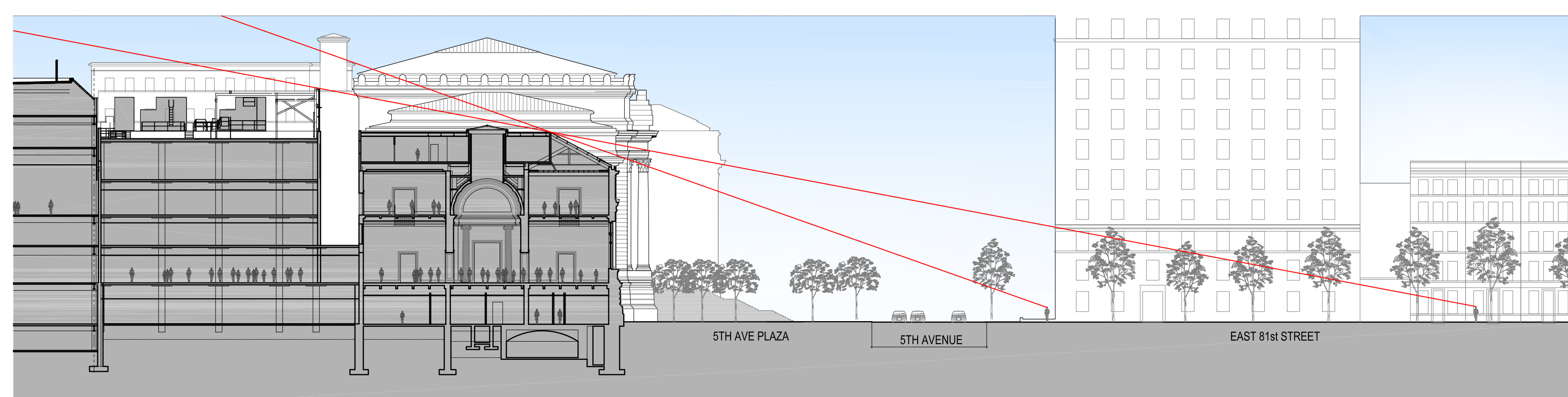
**PROPOSED SCREEN WALL DETAIL: ELEVATION SEEN FROM WEST
THE METROPOLITAN MUSEUM OF ART**



**SECTION DETAIL AT PROPOSED SCREEN WALL
AND STEEL SUPPORT FRAMING**



SIGHT LINE CORRIDORS AT EAST 81ST ST. AND EAST 83RD ST. PARTIALLY ALIGN WITH NORTH AND SOUTH ROOFTOP COOLING TOWERS.



SIGHT LINE SECTION AT EAST 81ST ST. THROUGH WING J AND EXISTING SOUTH SIDE COOLING TOWERS AND SCREEN WALL



THE EXISTING SCREEN WALL AT THE SOUTH SIDE COOLING TOWERS IS NOT VISIBLE WHEN CLOSE TO THE BUILDING AT THE PLAZA OR FIFTH AVENUE.



THE EXISTING SCREEN WALL AT THE SOUTH SIDE COOLING TOWERS IS PARTIALLY VISIBLE ABOVE THE WING J ROOF VIEWED FROM FARTHER DOWN THE SIDE STREET (E. 81ST ST).



THE EXISTING SCREEN WALL AT THE SOUTH SIDE COOLING TOWERS IS PARTIALLY VISIBLE ABOVE THE WING J ROOF VIEWED FROM FARTHER DOWN THE SIDE STREET (E. 81ST ST).



ENLARGED DETAIL OF PHOTO AT LEFT SHOWING EXISTING SCREEN WALL VISIBILITY ABOVE ROOF OF WING J



THE EXISTING SCREEN WALL AT THE SOUTH SIDE COOLING TOWERS IS PARTIALLY VISIBLE ABOVE THE WING J ROOF FROM FARTHER DOWN THE SIDE STREET (E. 81ST ST).



ENLARGED DETAIL OF PHOTO AT LEFT SHOWING EXISTING SCREEN WALL VISIBILITY ABOVE ROOF OF WING J (HIGHLIGHTED WITH RED LINE)

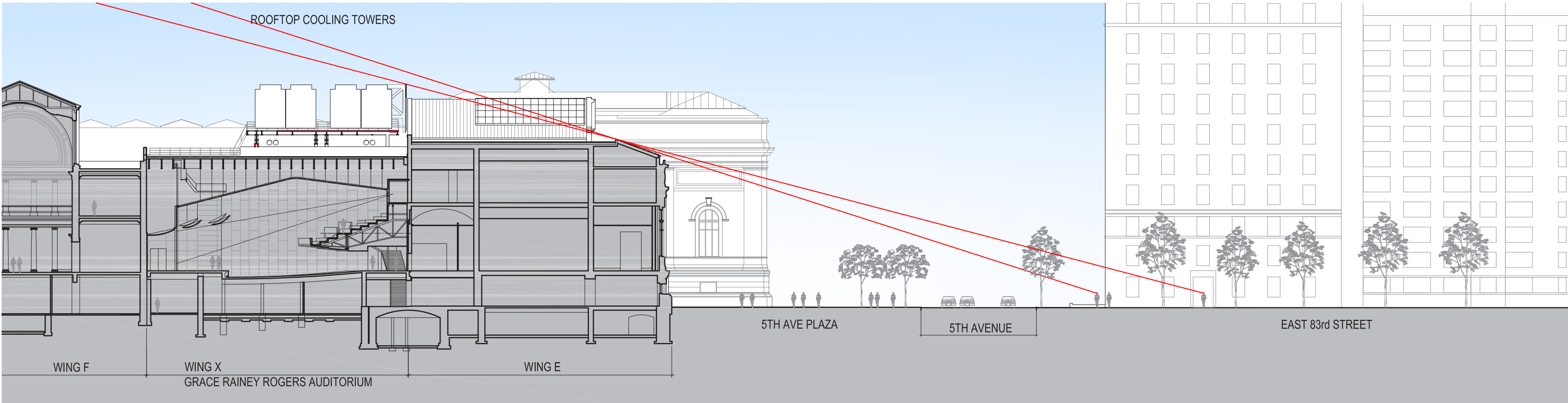


MOVING FARTHER DOWN E 81 ST ST, THE THE EXISTING SCREEN WALL AT THE SOUTH SIDE BECOMES MORE VISIBLE RISING ABOVE THE WING J ROOF



ENLARGED DETAIL OF PHOTO AT LEFT SHOWING EXISTING SCREEN WALL VISIBILITY ABOVE ROOF OF WING J (HIGHLIGHTED WITH RED LINE)

ROOFTOP COOLING TOWERS



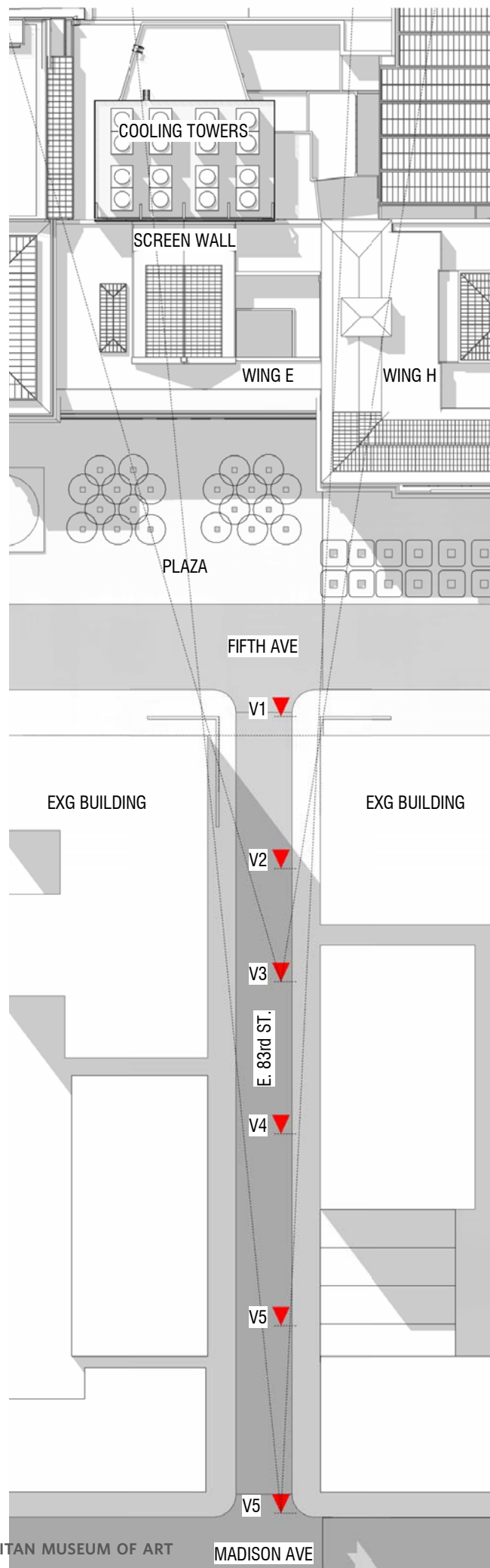
SIGHT LINE SECTION AT EAST 83RD ST THROUGH WING E AND PROPOSED NORTH SIDE COOLING TOWERS



THE SCREEN WALL AT THE NORTH SIDE COOLING TOWERS WILL NOT BE VISIBLE ABOVE WING E ROOF WHEN CLOSE TO THE BUILDING AT THE PLAZA OR FIFTH AVENUE.



THE TOP OF THE SCREEN WALL AT THE NORTH SIDE COOLING TOWERS WILL BE PARTIALLY VISIBLE ABOVE THE WING E ROOF FROM FARTHER DOWN THE SIDE STREET (E. 83RD ST.)



VIEW
KEY PLAN

THE METROPOLITAN MUSEUM OF ART

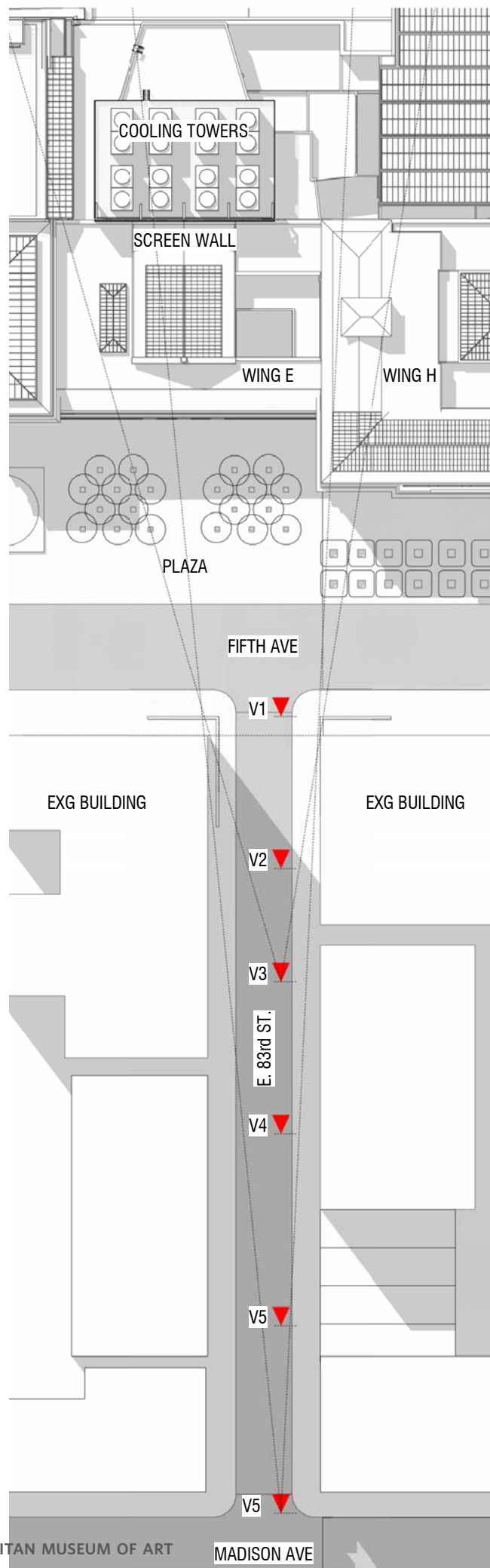


EXISTING CONDITION PHOTO VIEW 1



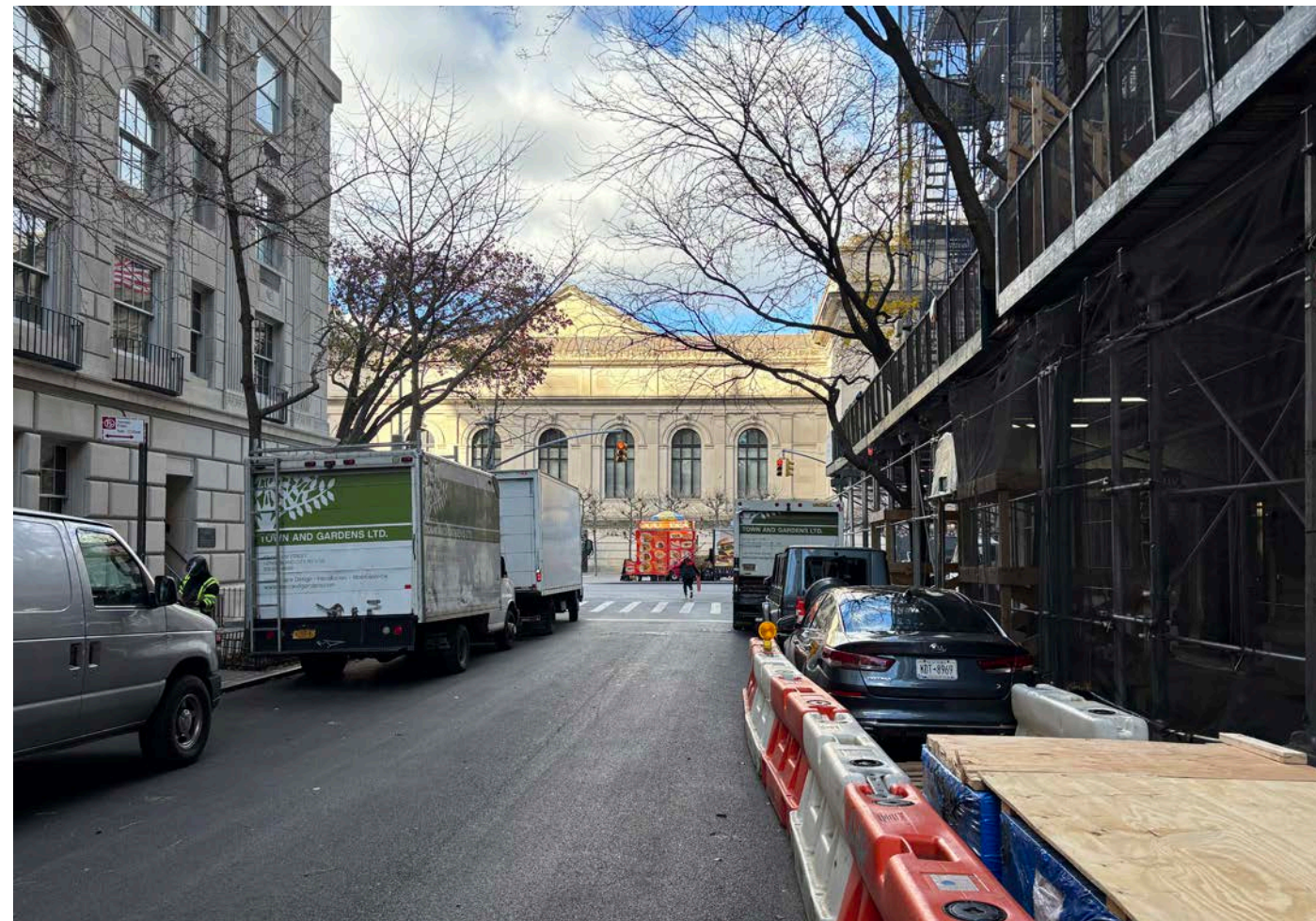
MONTAGE VIEW 1 - SCREEN WALL NOT VISIBLE

RESTORATION OF THE 83RD STREET ENTRANCE AND NORTHSIDE CHILLER PLANT REPLACEMENT



VIEW
KEY PLAN

THE METROPOLITAN MUSEUM OF ART

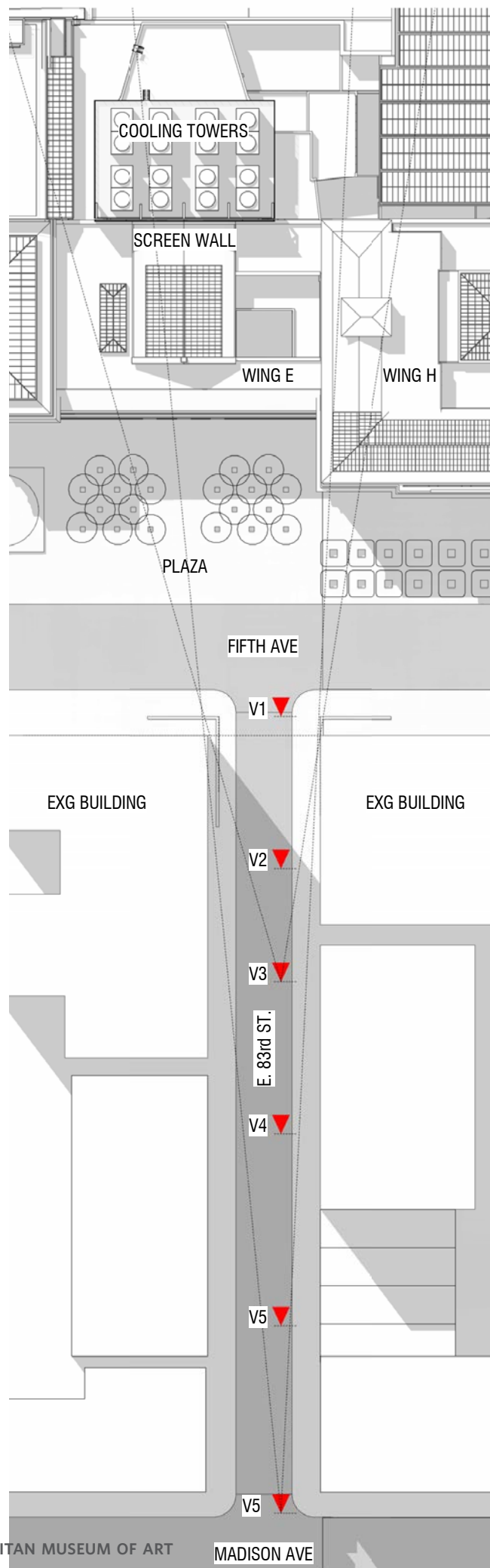


EXISTING CONDITION PHOTO VIEW 2



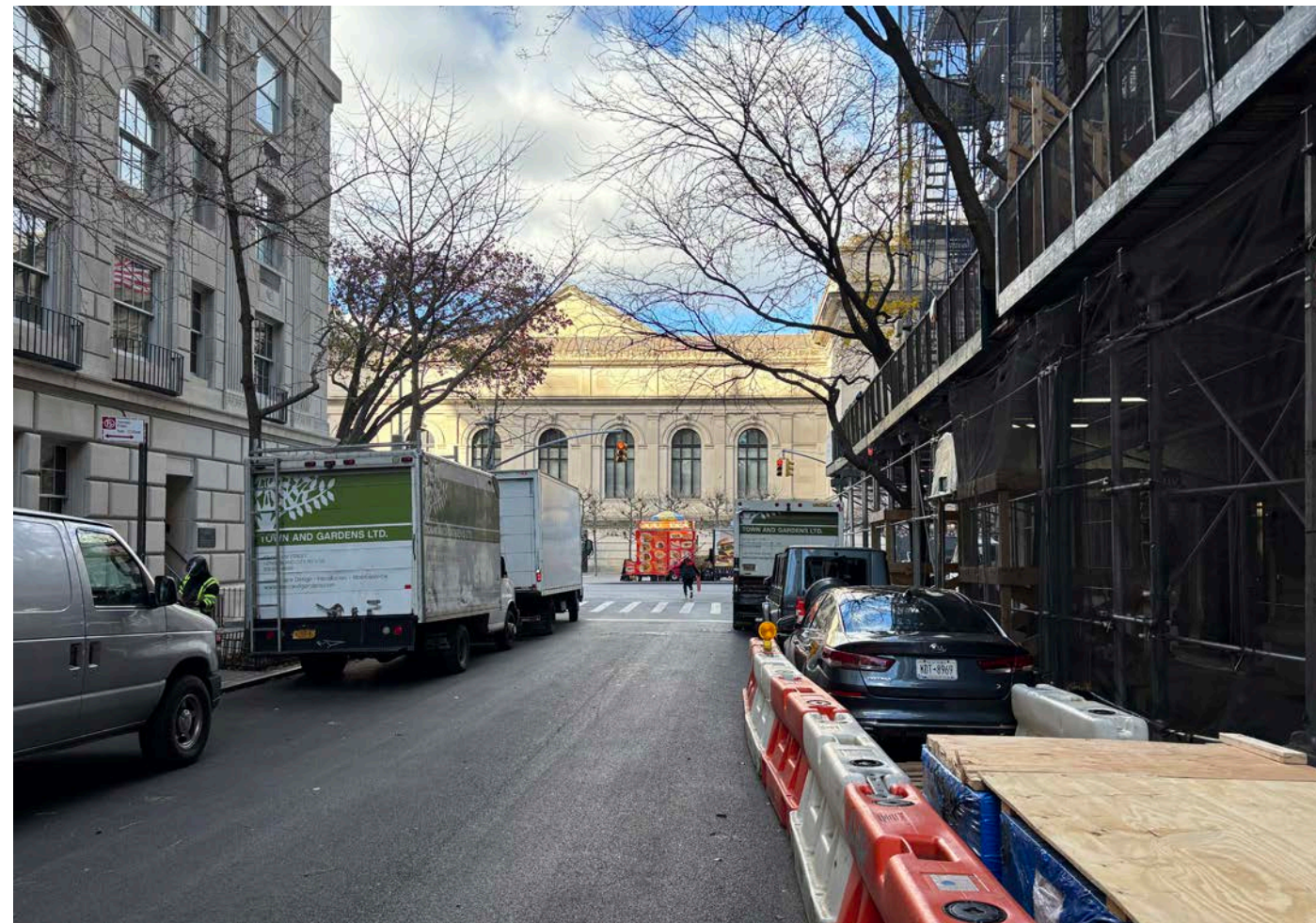
MONTAGE VIEW 2 - TOP EDGE OF SCREEN WALL BECOMES VISIBLE (RIGHT OF PEDIMENT)

RESTORATION OF THE 83RD STREET ENTRANCE AND NORTHSIDE CHILLER PLANT REPLACEMENT



VIEW
KEY PLAN

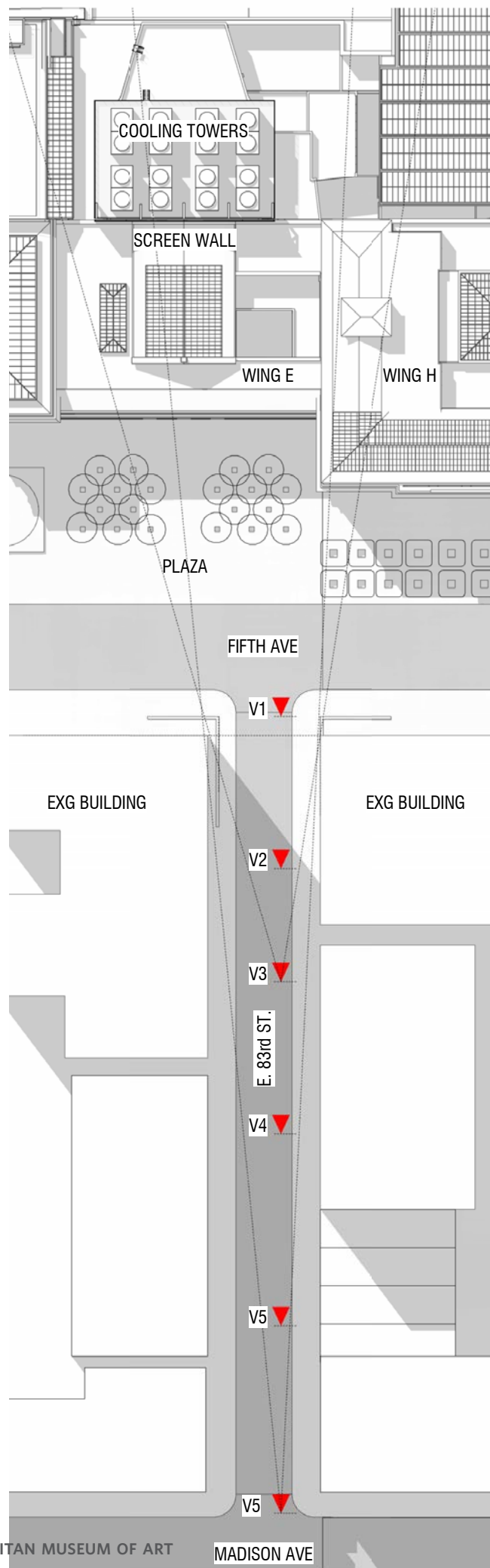
THE METROPOLITAN MUSEUM OF ART



EXISTING CONDITION PHOTO VIEW 2



MONTAGE VIEW 2 - TOP EDGE OF SCREEN WALL BECOMES VISIBLE (RIGHT OF PEDIMENT)
HIGHLIGHTED WITH RED LINE
RESTORATION OF THE 83RD STREET ENTRANCE AND NORTHSIDE CHILLER PLANT REPLACEMENT



VIEW
KEY PLAN

THE METROPOLITAN MUSEUM OF ART

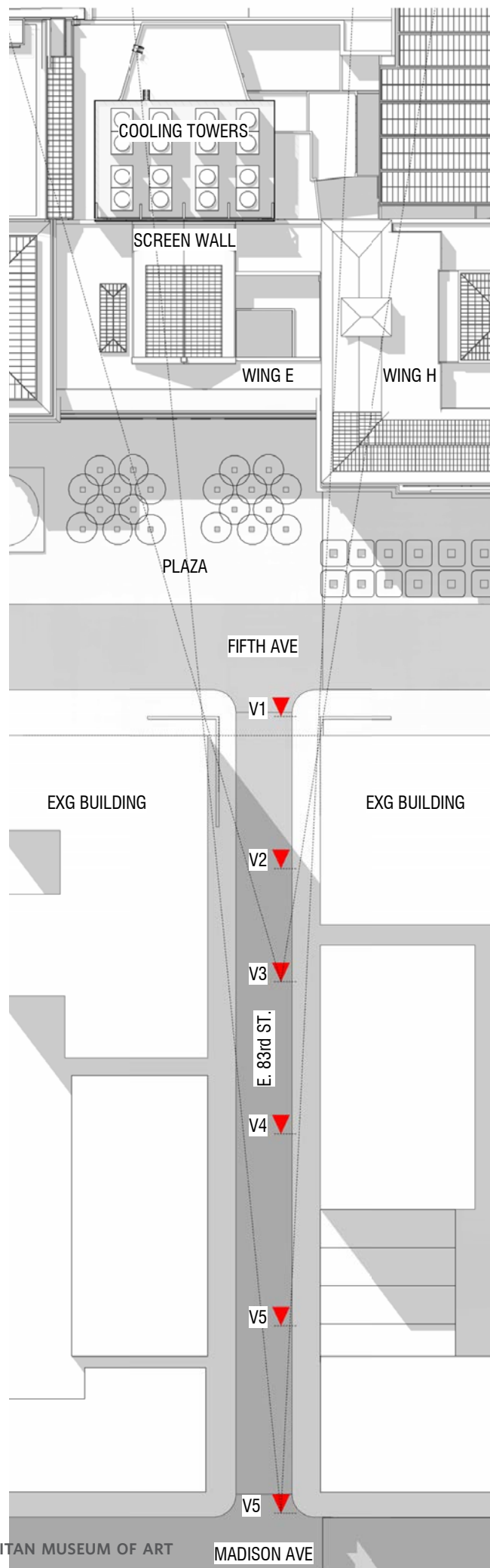


EXISTING CONDITION PHOTO VIEW 3



MONTAGE VIEW 3 - TOP OF SCREEN WALL VISIBLE

RESTORATION OF THE 83RD STREET ENTRANCE AND NORTHSIDE CHILLER PLANT REPLACEMENT



VIEW
KEY PLAN

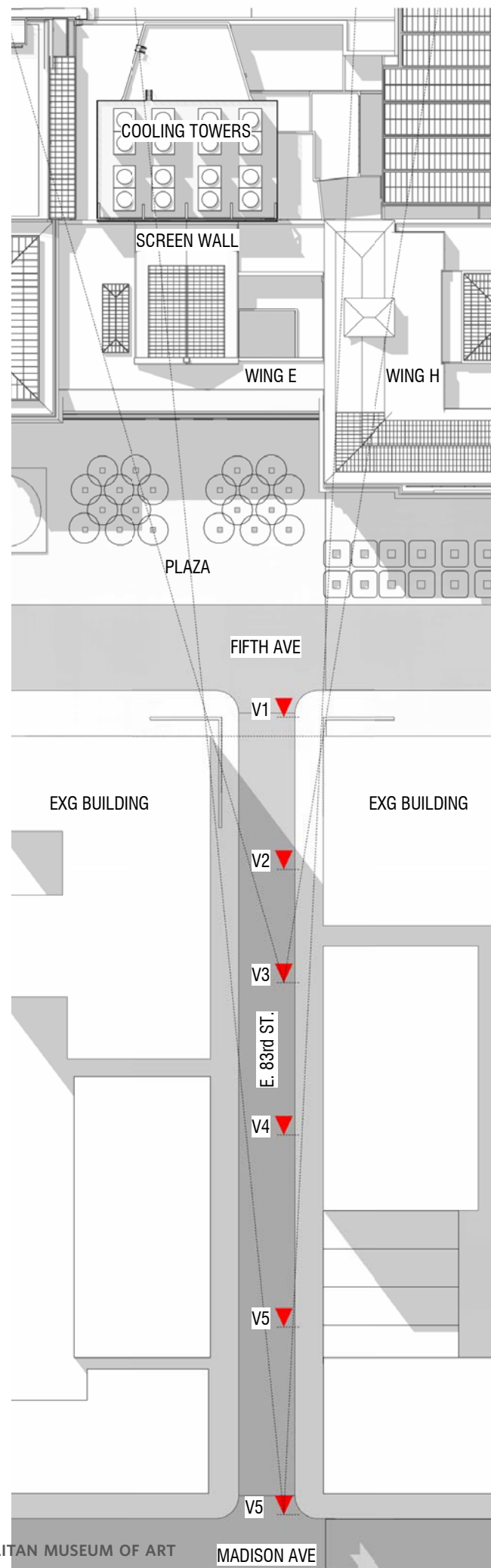
THE METROPOLITAN MUSEUM OF ART



EXISTING CONDITION PHOTO VIEW 3



MONTAGE VIEW 3 - TOP OF SCREEN WALL VISIBLE
HIGHLIGHTED WITH RED LINE
RESTORATION OF THE 83RD STREET ENTRANCE AND NORTHSIDE CHILLER PLANT REPLACEMENT



VIEW
KEY PLAN

THE METROPOLITAN MUSEUM OF ART

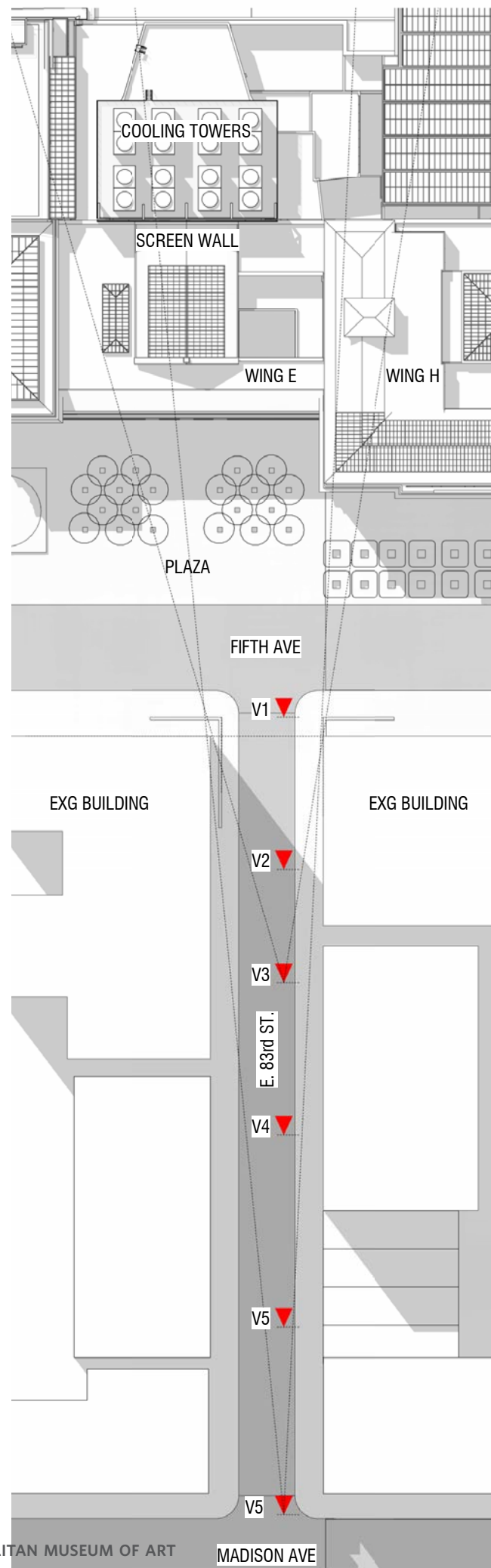


EXISTING CONDITION PHOTO VIEW 4



MONTAGE VIEW 4 - TOP OF SCREEN WALL VISIBLE

RESTORATION OF THE 83RD STREET ENTRANCE AND NORTHSIDE CHILLER PLANT REPLACEMENT



VIEW
KEY PLAN

THE METROPOLITAN MUSEUM OF ART

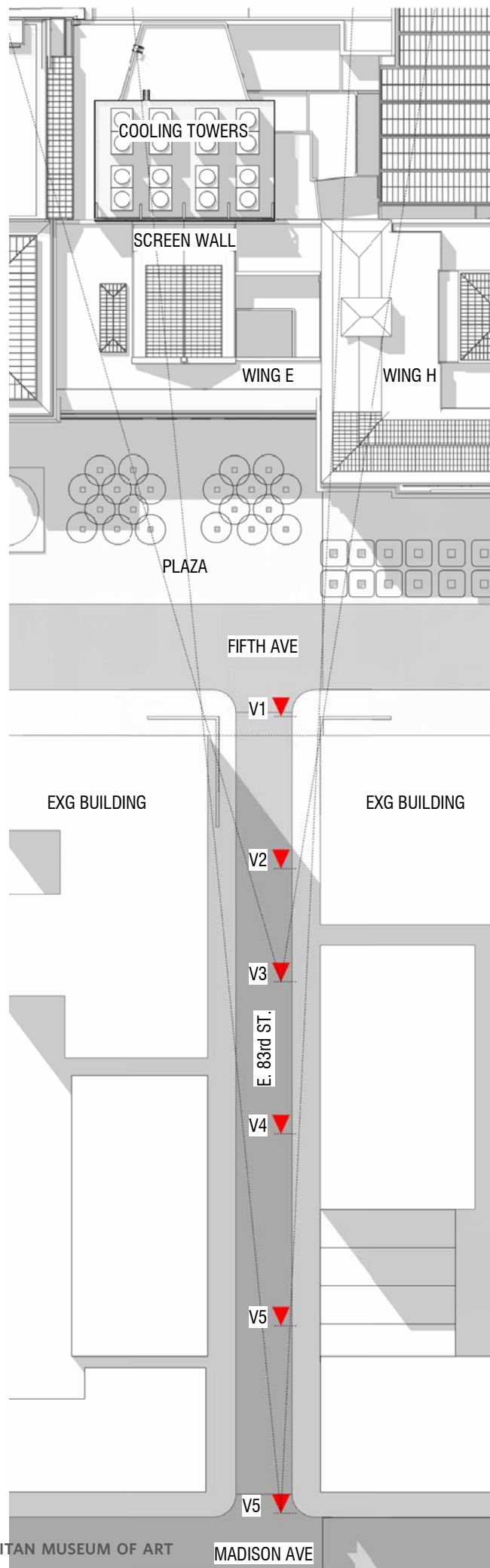


EXISTING CONDITION PHOTO VIEW 4



MONTAGE VIEW 4 - TOP OF SCREEN WALL VISIBLE
HIGHLIGHTED WITH RED LINE

RESTORATION OF THE 83RD STREET ENTRANCE AND NORTHSIDE CHILLER PLANT REPLACEMENT



VIEW
KEY PLAN

THE METROPOLITAN MUSEUM OF ART

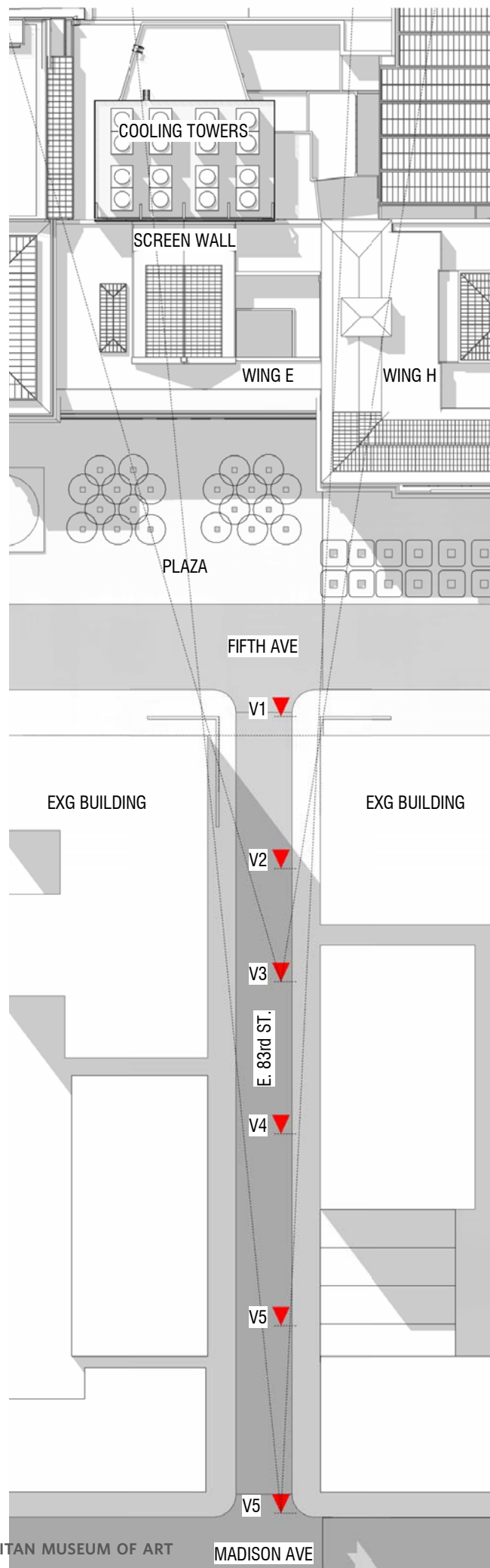


EXISTING CONDITION PHOTO VIEW 5



MONTAGE VIEW 5 - TOP OF SCREEN WALL VISIBLE

RESTORATION OF THE 83RD STREET ENTRANCE AND NORTHSIDE CHILLER PLANT REPLACEMENT



VIEW
KEY PLAN

THE METROPOLITAN MUSEUM OF ART

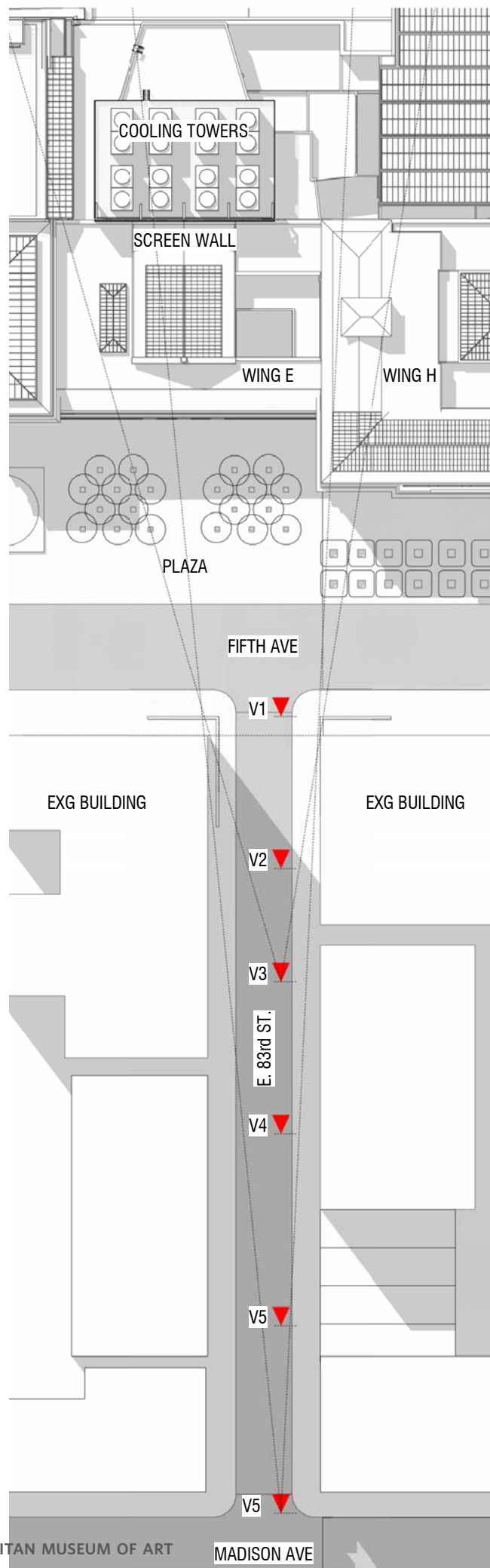


EXISTING CONDITION PHOTO VIEW 5



MONTAGE VIEW 5 - TOP OF SCREEN WALL VISIBLE
HIGHLIGHTED WITH RED LINE

RESTORATION OF THE 83RD STREET ENTRANCE AND NORTHSIDE CHILLER PLANT REPLACEMENT



VIEW
KEY PLAN

THE METROPOLITAN MUSEUM OF ART

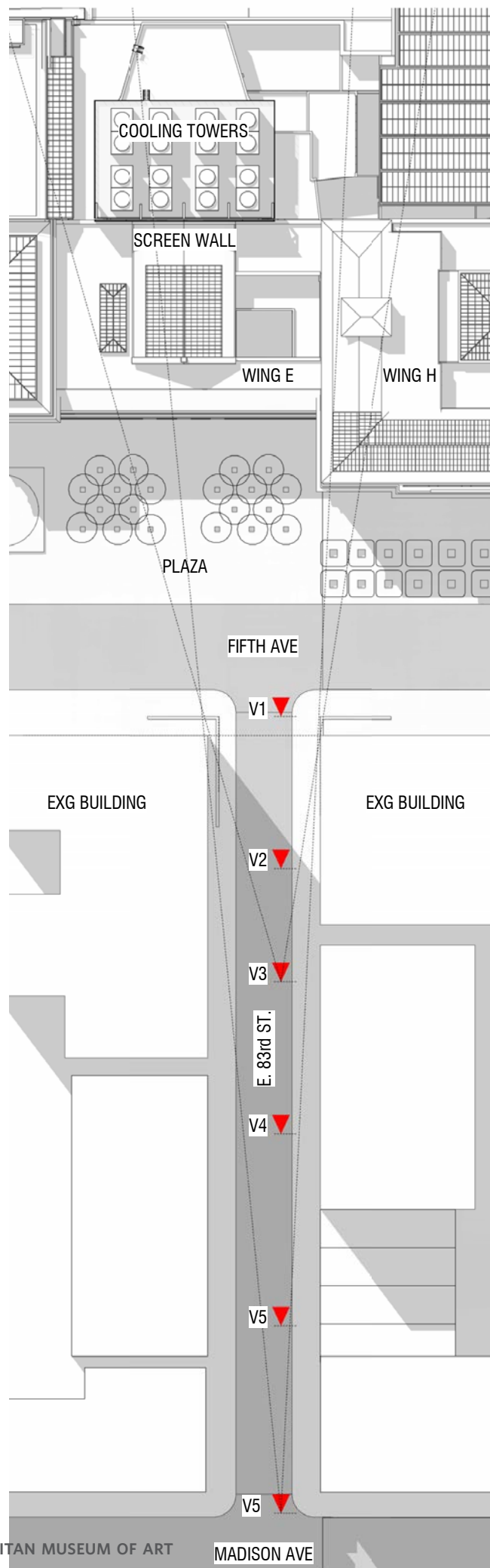


EXISTING CONDITION PHOTO VIEW 6 - MADISON AVENUE AND EAST 83RD ST



MONTAGE VIEW 6 - MADISON AVENUE AND EAST 83RD ST

RESTORATION OF THE 83RD STREET ENTRANCE AND NORTHSIDE CHILLER PLANT REPLACEMENT



VIEW
KEY PLAN

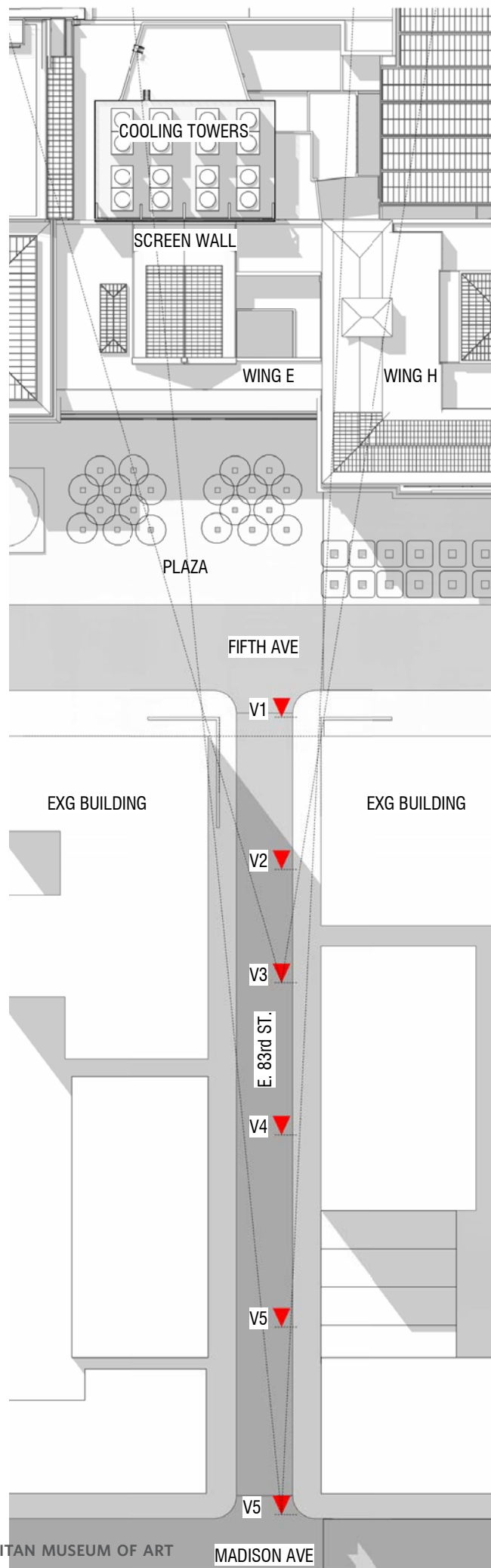
THE METROPOLITAN MUSEUM OF ART



EXISTING CONDITION PHOTO VIEW 6 - MADISON AVENUE AND EAST 83RD ST

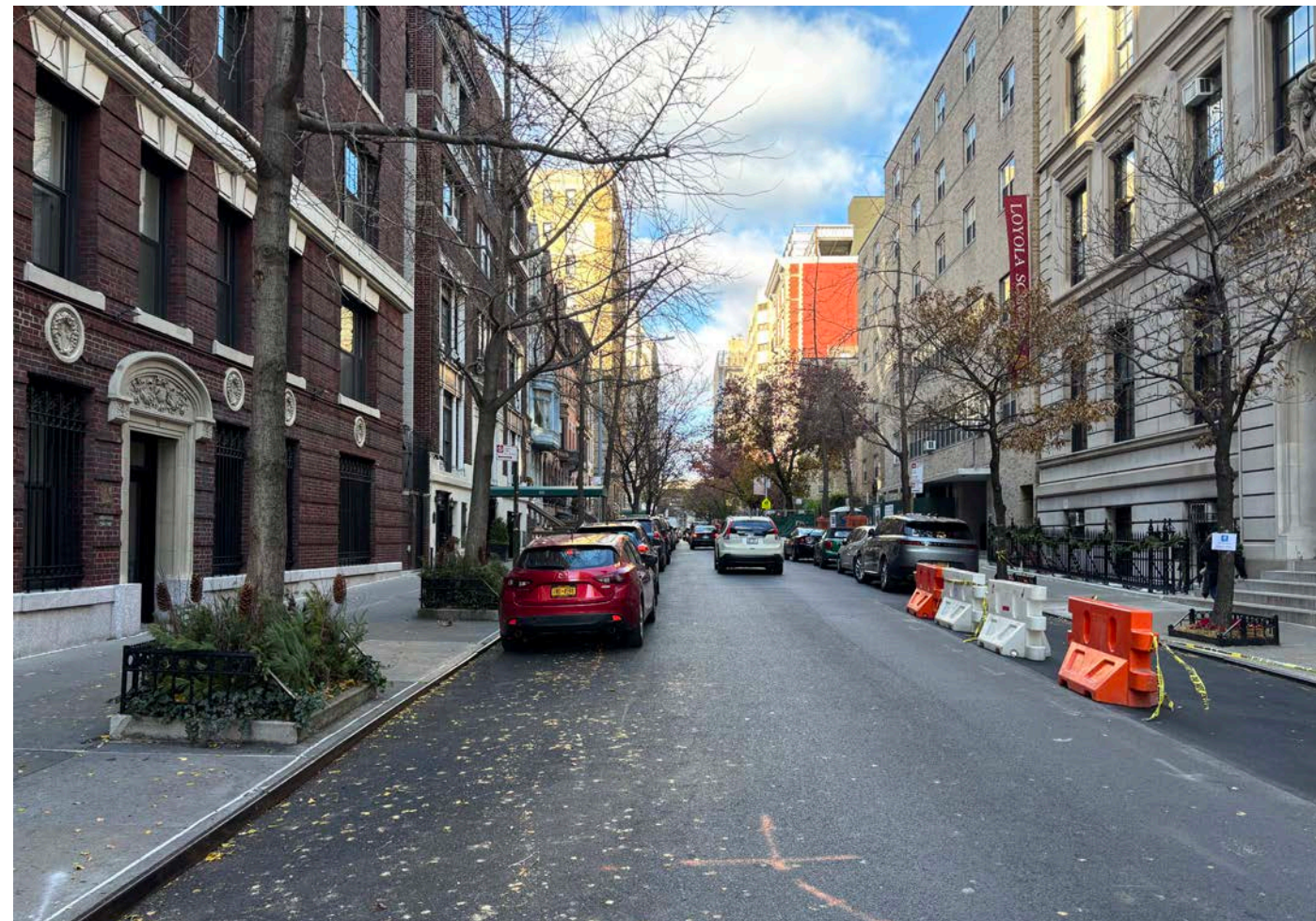


MONTAGE VIEW 6 - MADISON AVENUE AND EAST 83RD ST
TOP OF SCREEN WALL HIGHLIGHTED WITH RED LINE
RESTORATION OF THE 83RD STREET ENTRANCE AND NORTHSIDE CHILLER PLANT REPLACEMENT

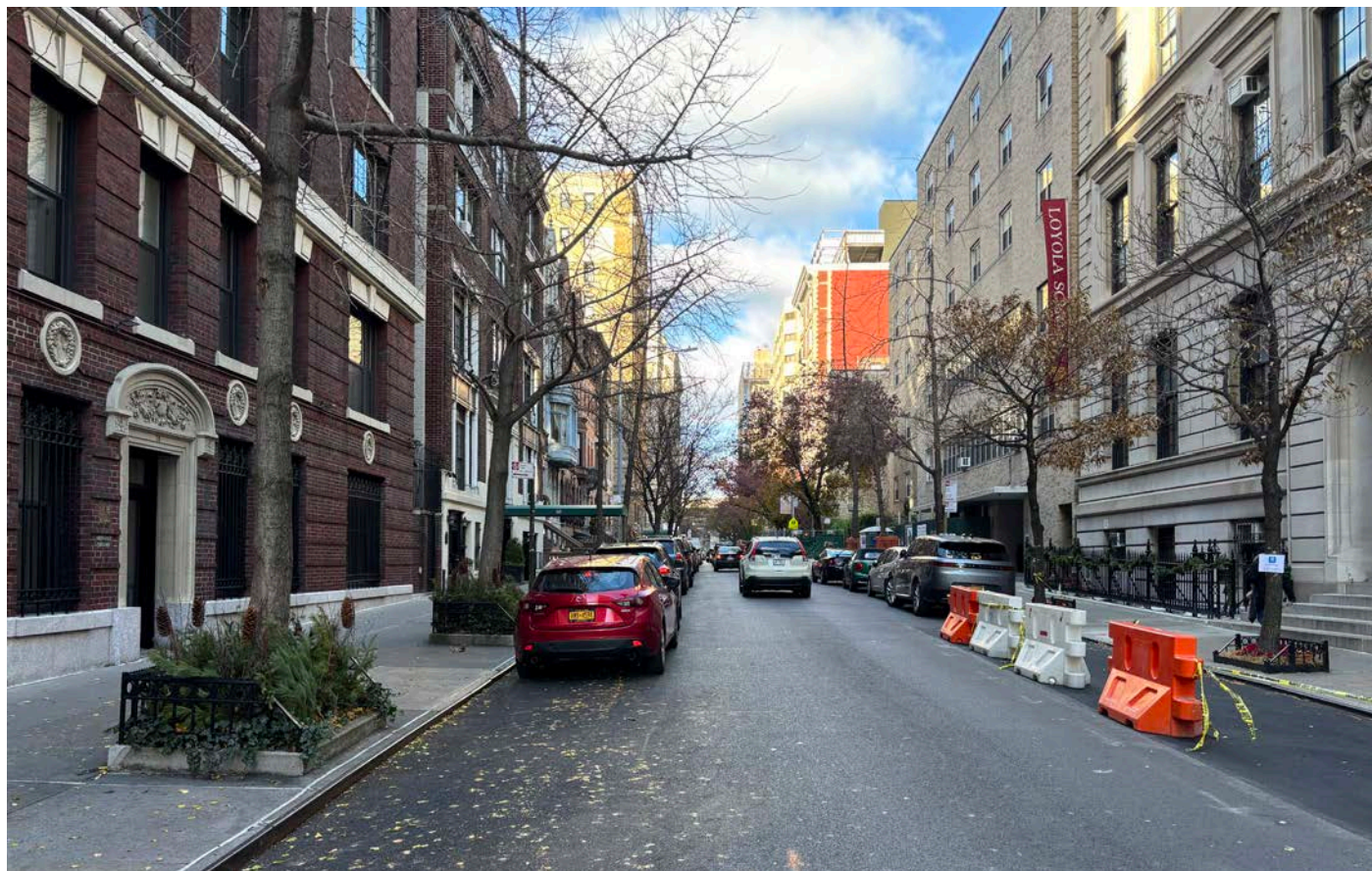


VIEW
KEY PLAN

THE METROPOLITAN MUSEUM OF ART

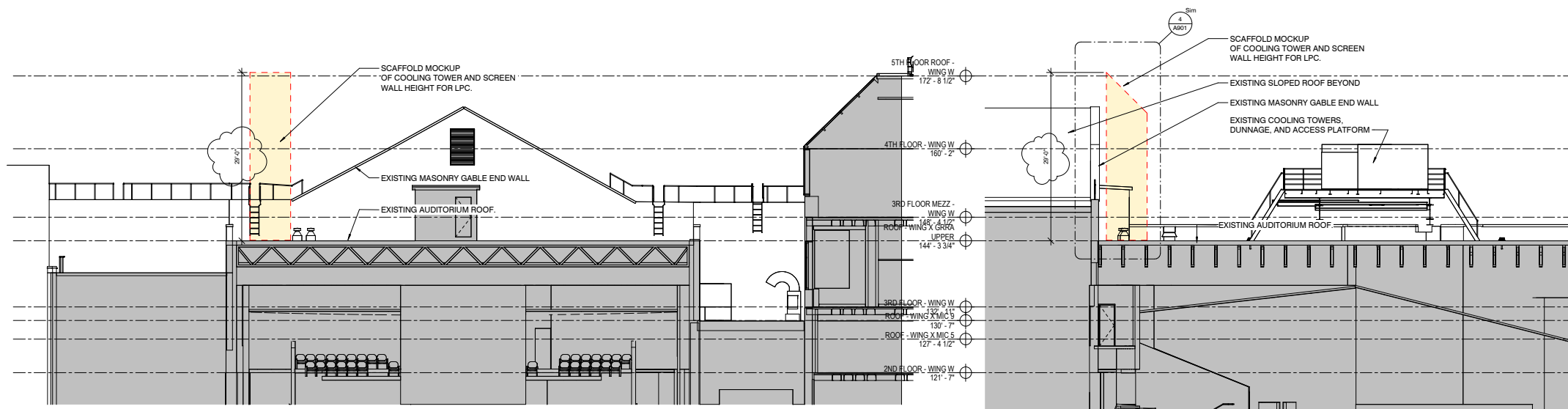


EXISTING CONDITION PHOTO VIEW 7 - PARK AVENUE AND EAST 83RD ST



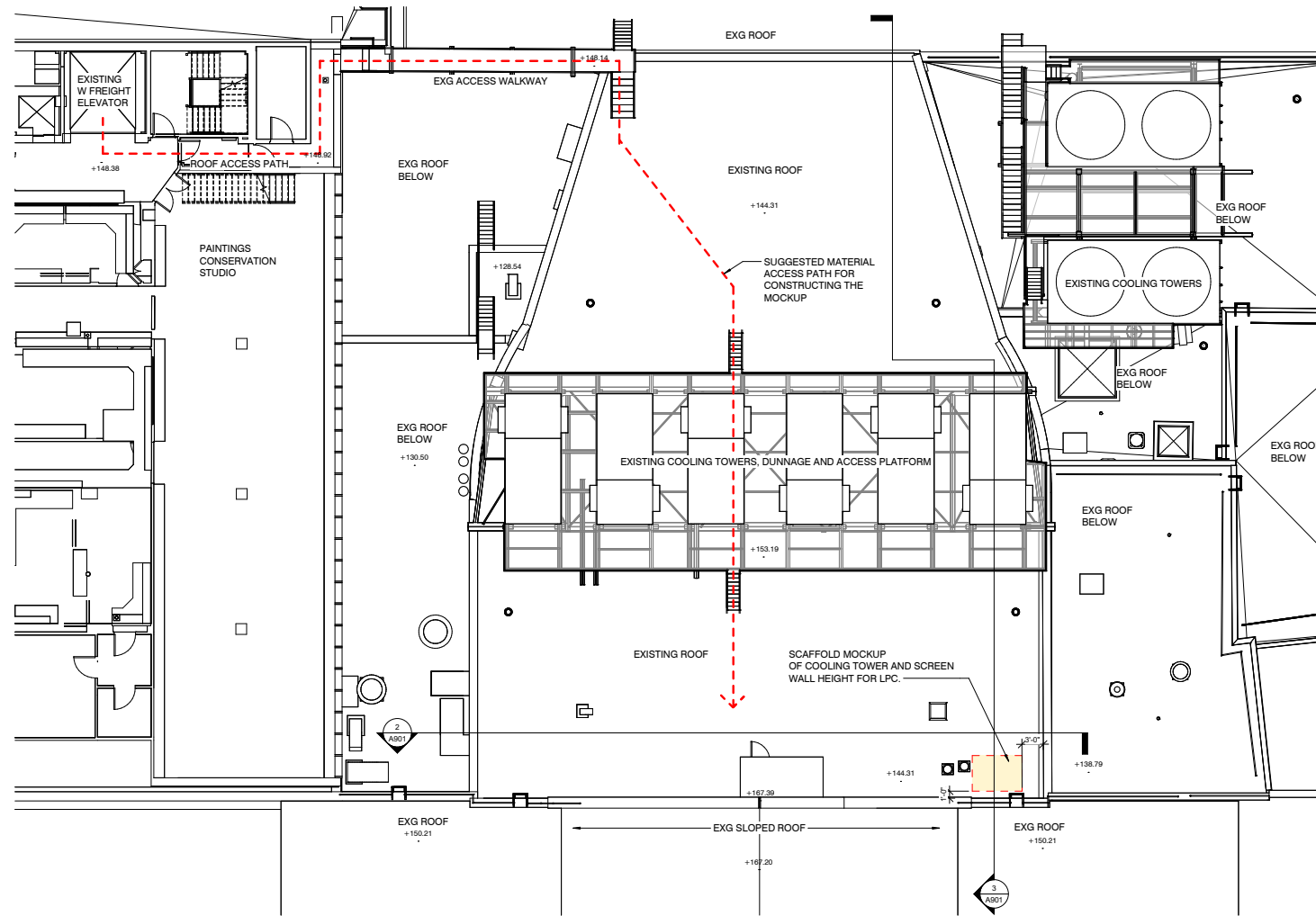
MONTAGE VIEW 7 - PARK AVENUE AND EAST 83RD ST - SCREEN WALL IS TOO FAR TO BE DISTINCT AND VISIBLE

RESTORATION OF THE 83RD STREET ENTRANCE AND NORTHSIDE CHILLER PLANT REPLACEMENT

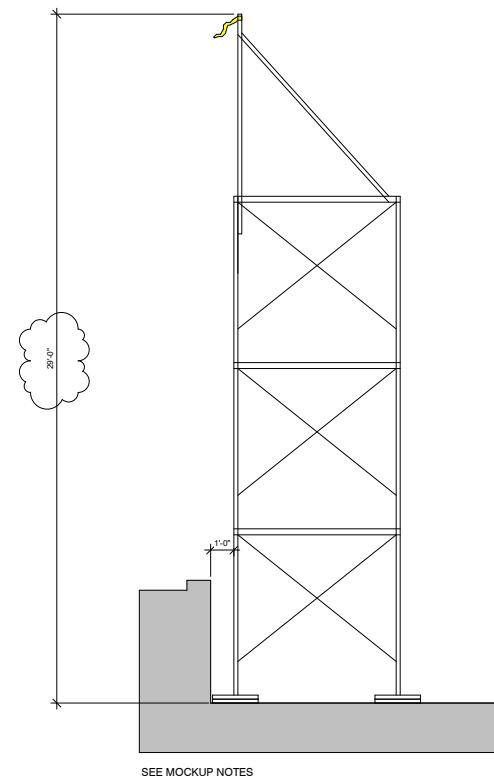


2 LPC MOCKUP SECTION 1
A901 1/8" = 1'-0"

3 LPC MOCKUP SECTION 2
A901 1/8" = 1'-0"



1 LPC MOCKUP PLAN GRRA ROOF
A901 1/8" = 1'-0"



4 LPC MOCKUP ELEVATION CONCEPT
A901 3/8" = 1'-0"

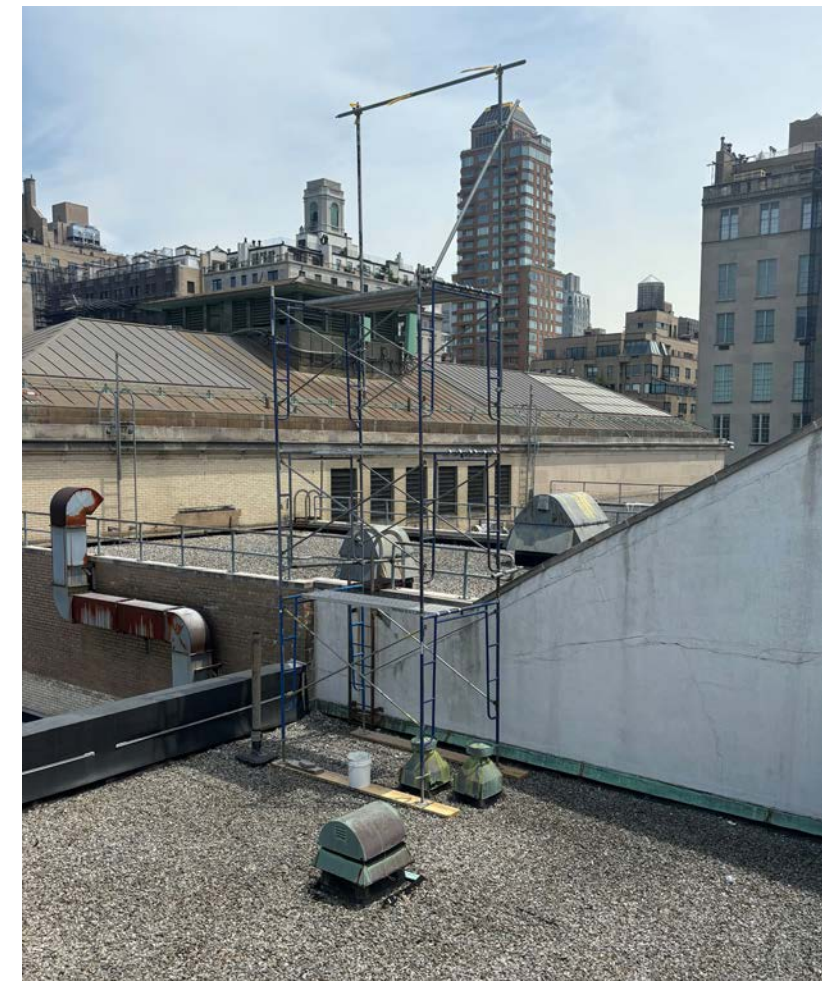


PHOTO OF LPC MOCKUP OF SCREEN WALL HEIGHT (JULY 2024)

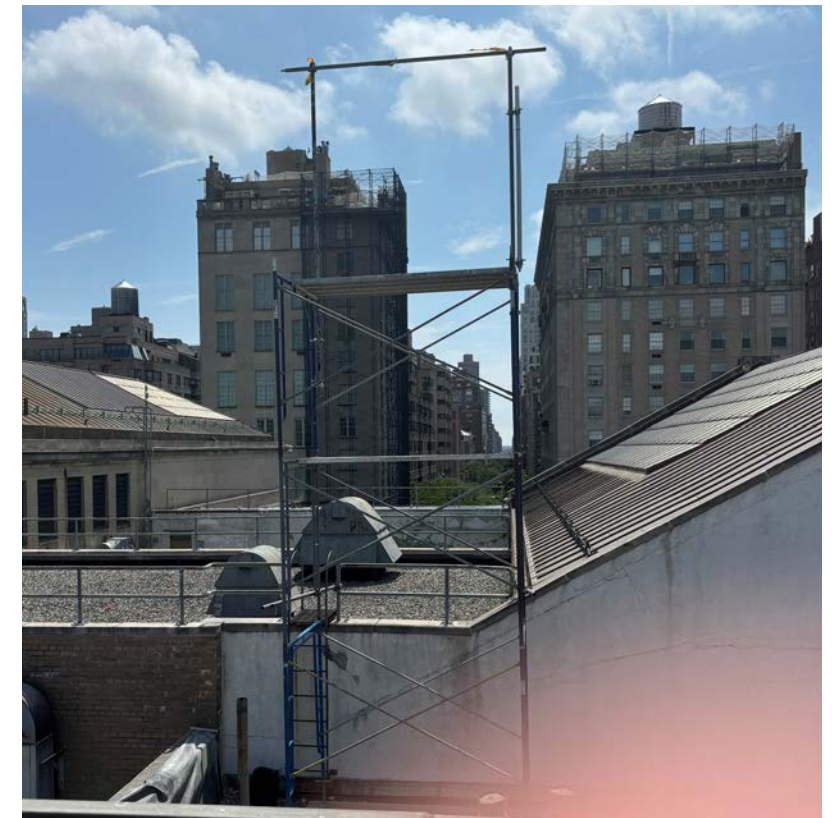


PHOTO OF LPC MOCKUP OF SCREEN WALL HEIGHT SHOWING ALIGNMENT WITH E. 83RD ST. (JULY 2024)

DRAWINGS AND PHOTOS OF MOCKUP OF SCREEN WALL HEIGHT FOR LPC SIGHTLINE REVIEW



PHOTO ON E 83RD ST WHERE MOCKUP FIRST BECOMES VISIBLE ABOVE WING E ROOF



PHOTO ON E 83RD ST SOME DISTANCE FURTHER DOWN THE STREET

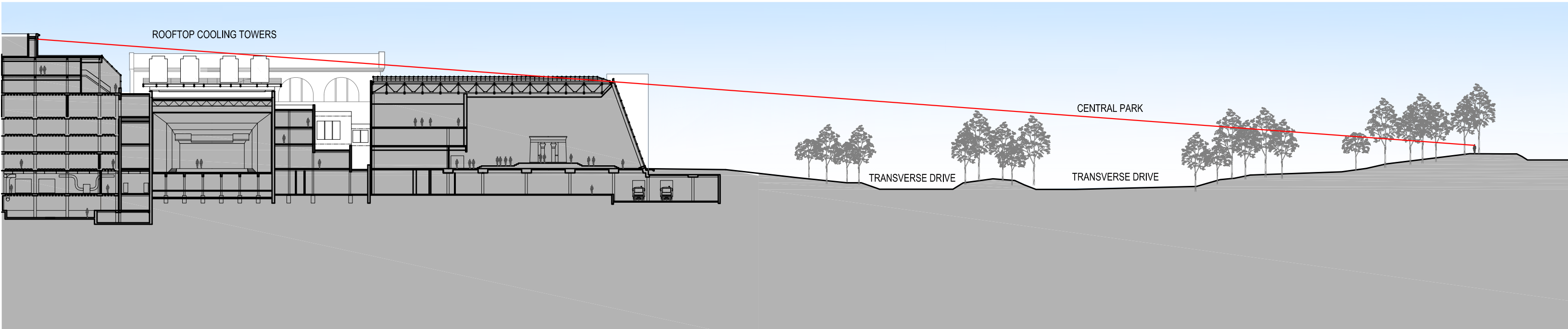


DETAIL OF PHOTO ABOVE



DETAIL OF PHOTO ABOVE

PHOTOS OF ROOFTOP MOCKUP



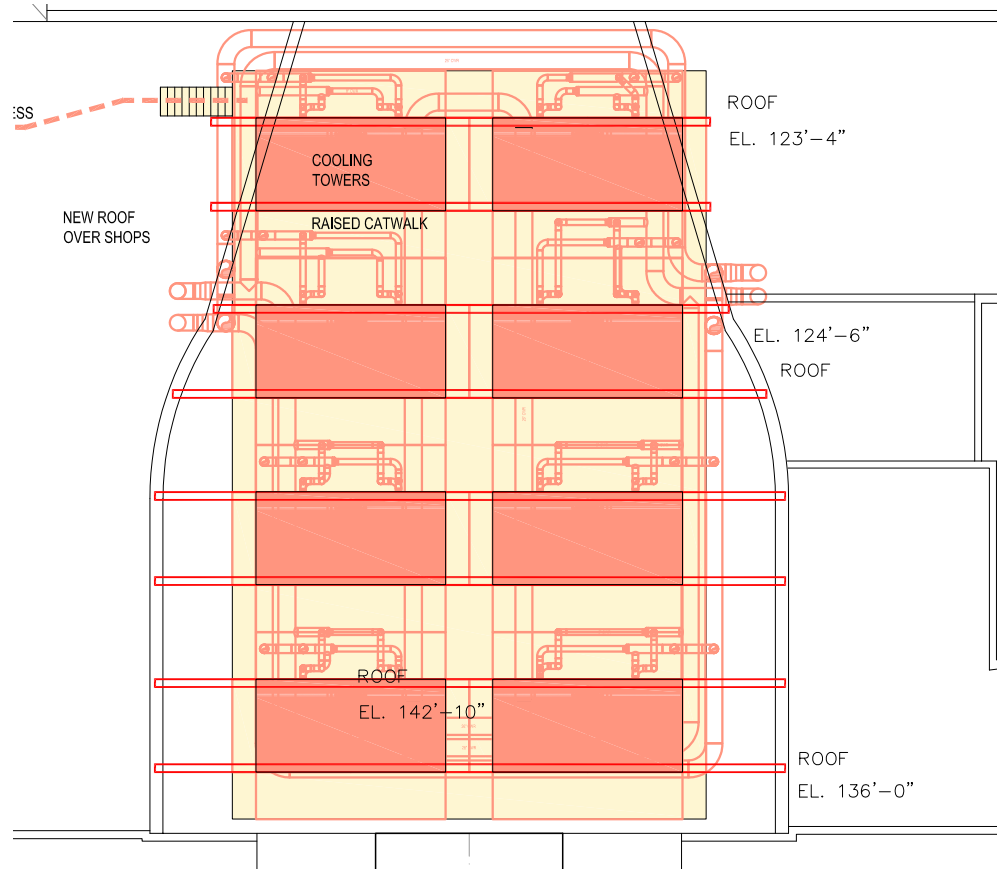
N-S SIGHT LINE SECTION SHOWING VIEWS FROM NORTH IN CENTRAL PARK



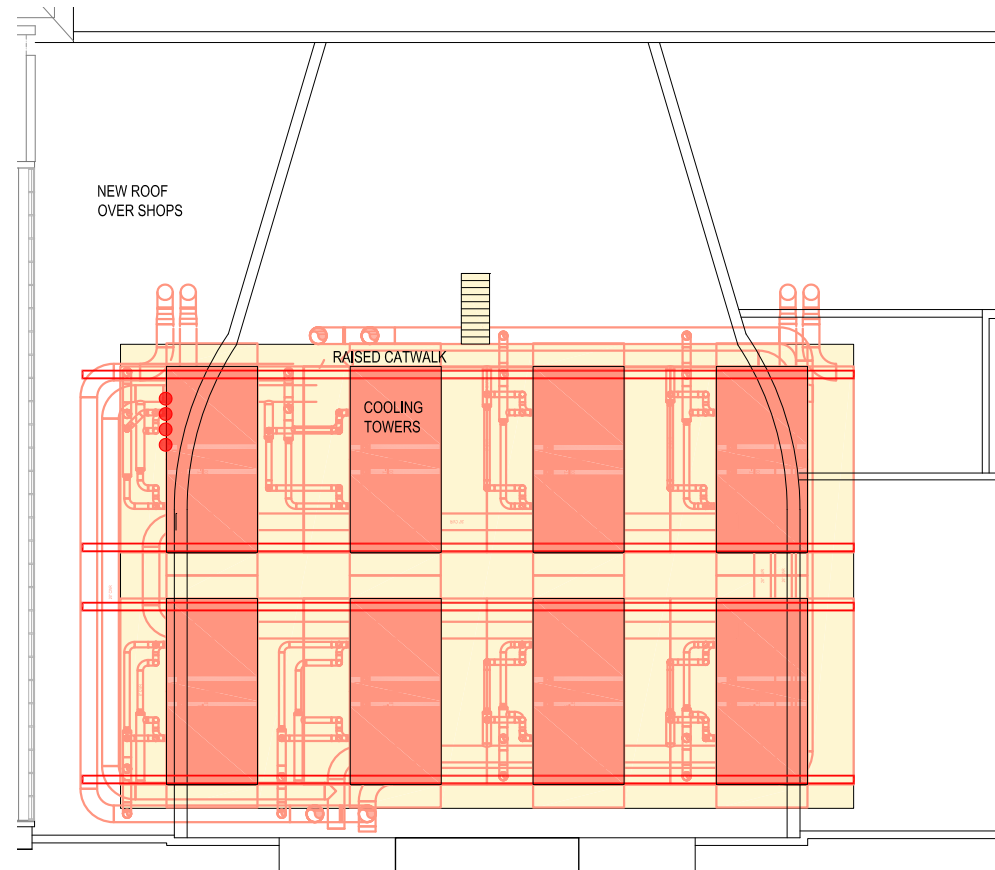
VIEW FROM THE NORTH: COOLING TOWERS ARE NOT VISIBLE FROM THE WESTBOUND TRANSVERSE DRIVE



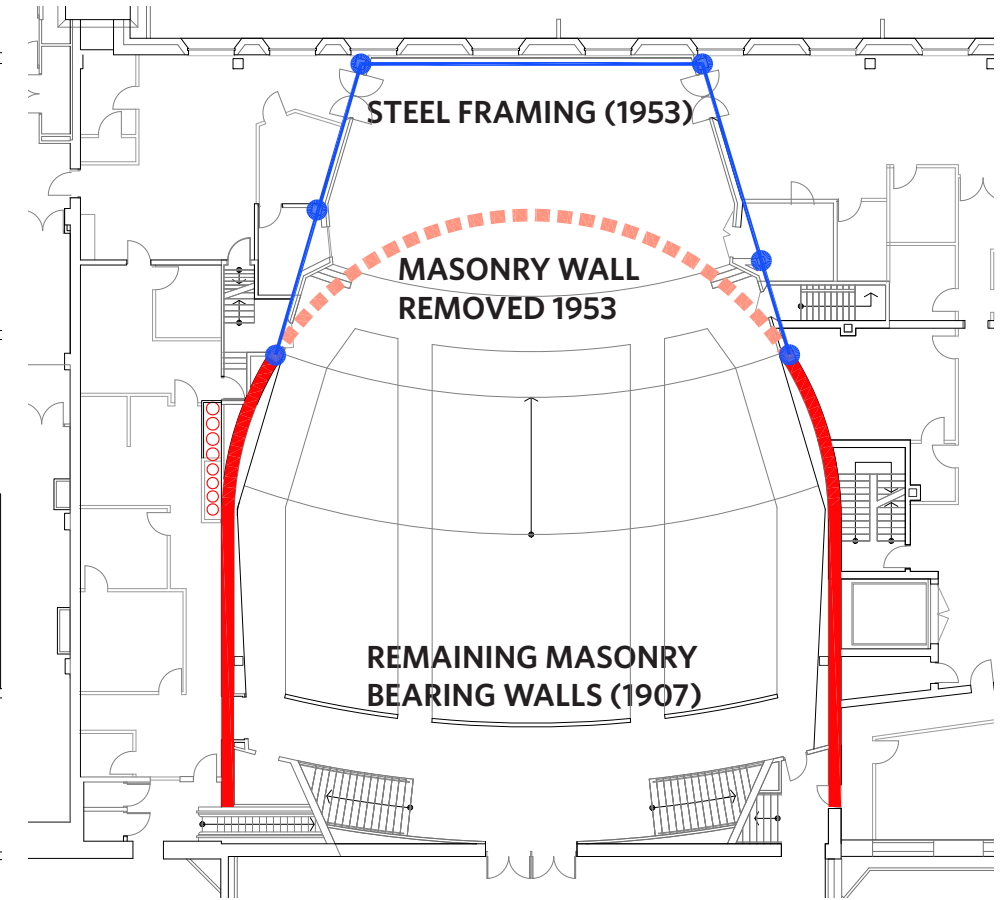
VIEW FROM THE NORTH: THE TOPS OF THE COOLING TOWERS WILL BE MINIMALLY VISIBLE AND BARELY PERCEPTIBLE FROM NEAR THE RESERVOIR



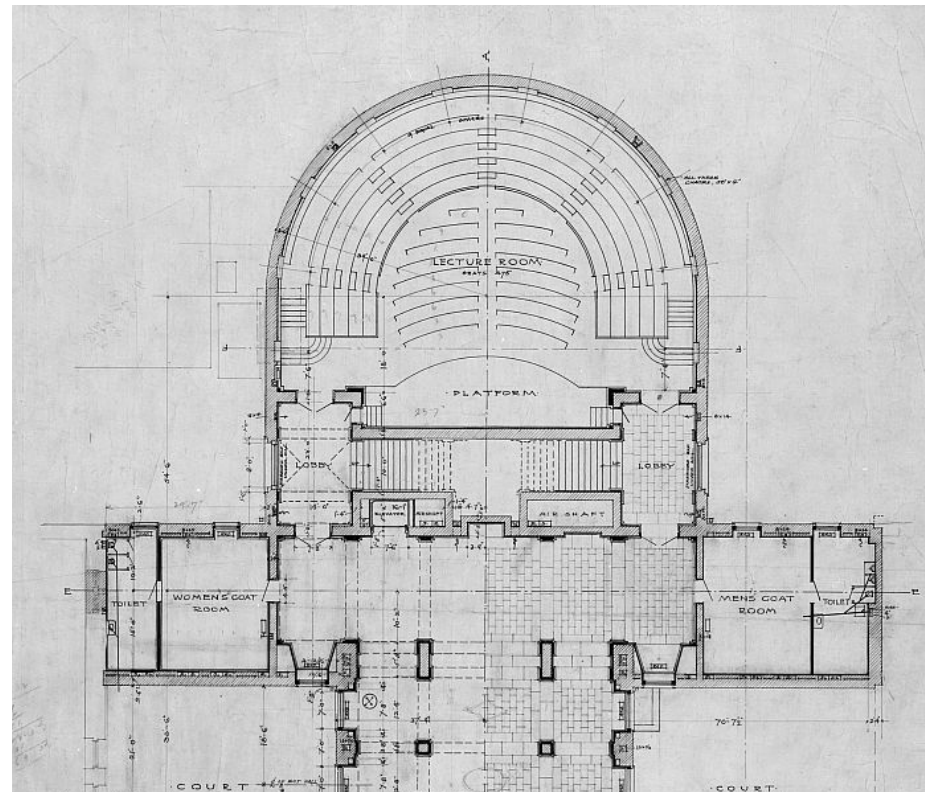
COOLING TOWER LAYOUT OPTION 1



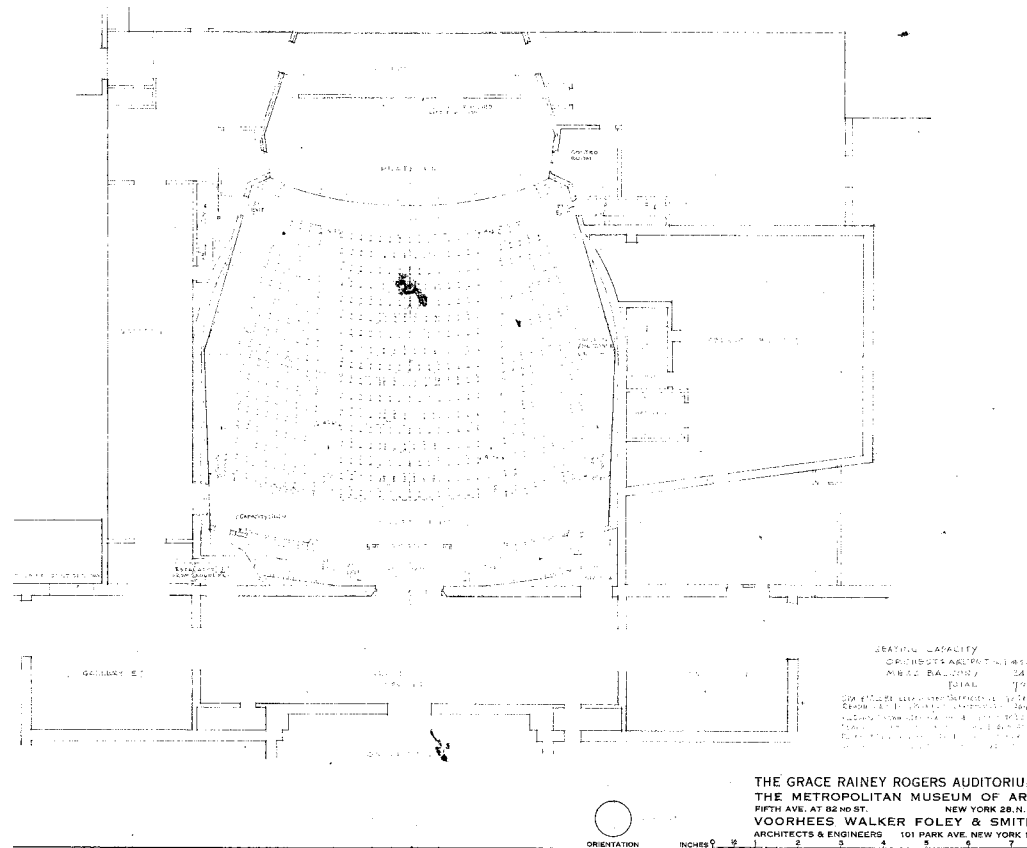
COOLING TOWER LAYOUT OPTION 2



GRR AUDITORIUM STRUCTURAL DIAGRAM



**MCKIM MEAD AND WHITE
ORIGINAL WING E AUDITORIUM PLAN 1907**



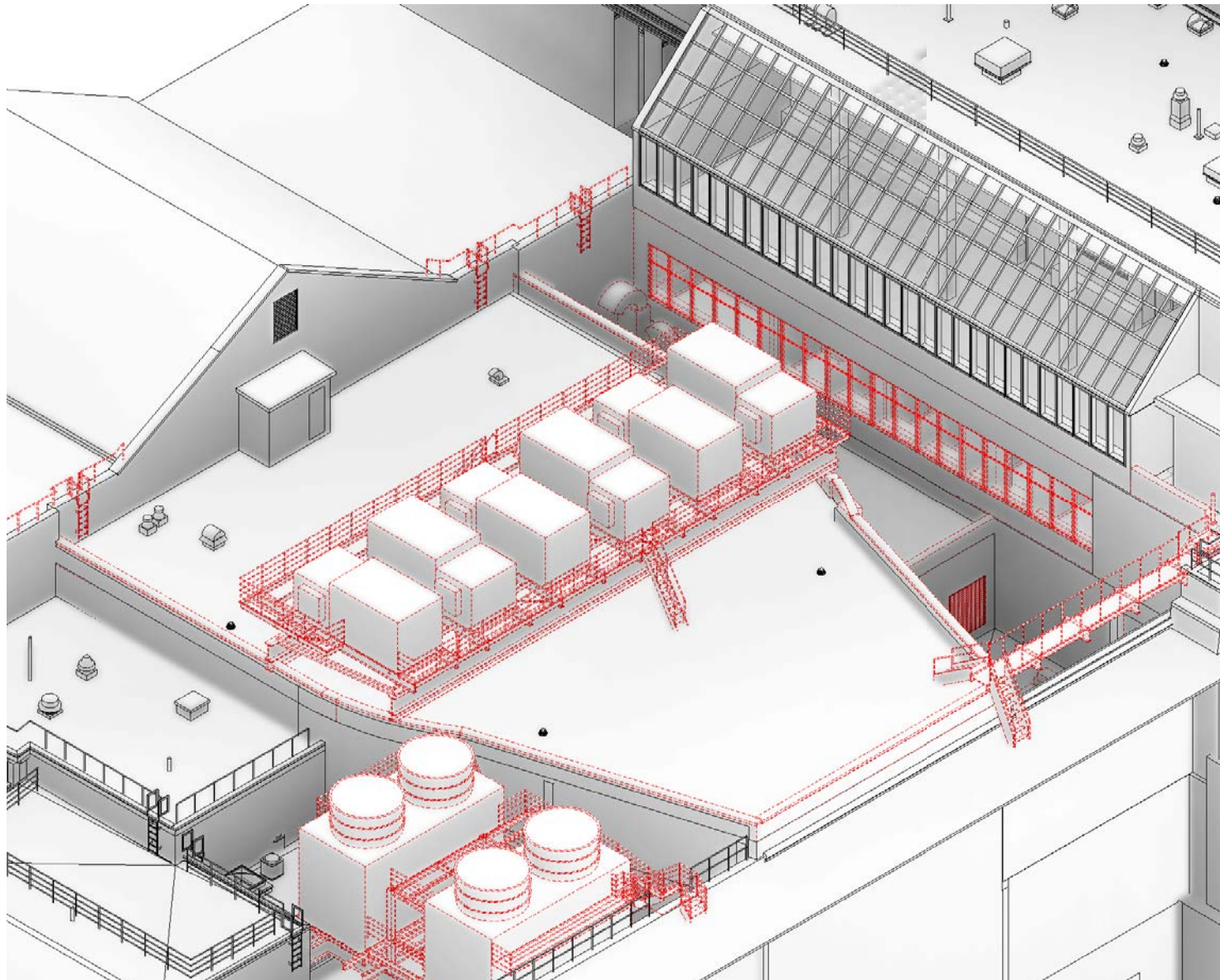
**VOORHEES WALKER FOLEY & SMITH
GRR AUDITORIUM PLAN 1953**

**COOLING TOWER SUPPORT
STRUCTURAL ANALYSIS
(THORNTON TOMASETTI,
STRUCTURAL ENGINEERS)**

The remaining masonry bearing walls from 1907 on the east side of the auditorium have the capacity to carry the weight of the new rooftop cooling towers.

However, the steel columns on the west side of the auditorium do not have the capacity and would require substantial and disruptive reinforcements to both the steel structure and the foundations.

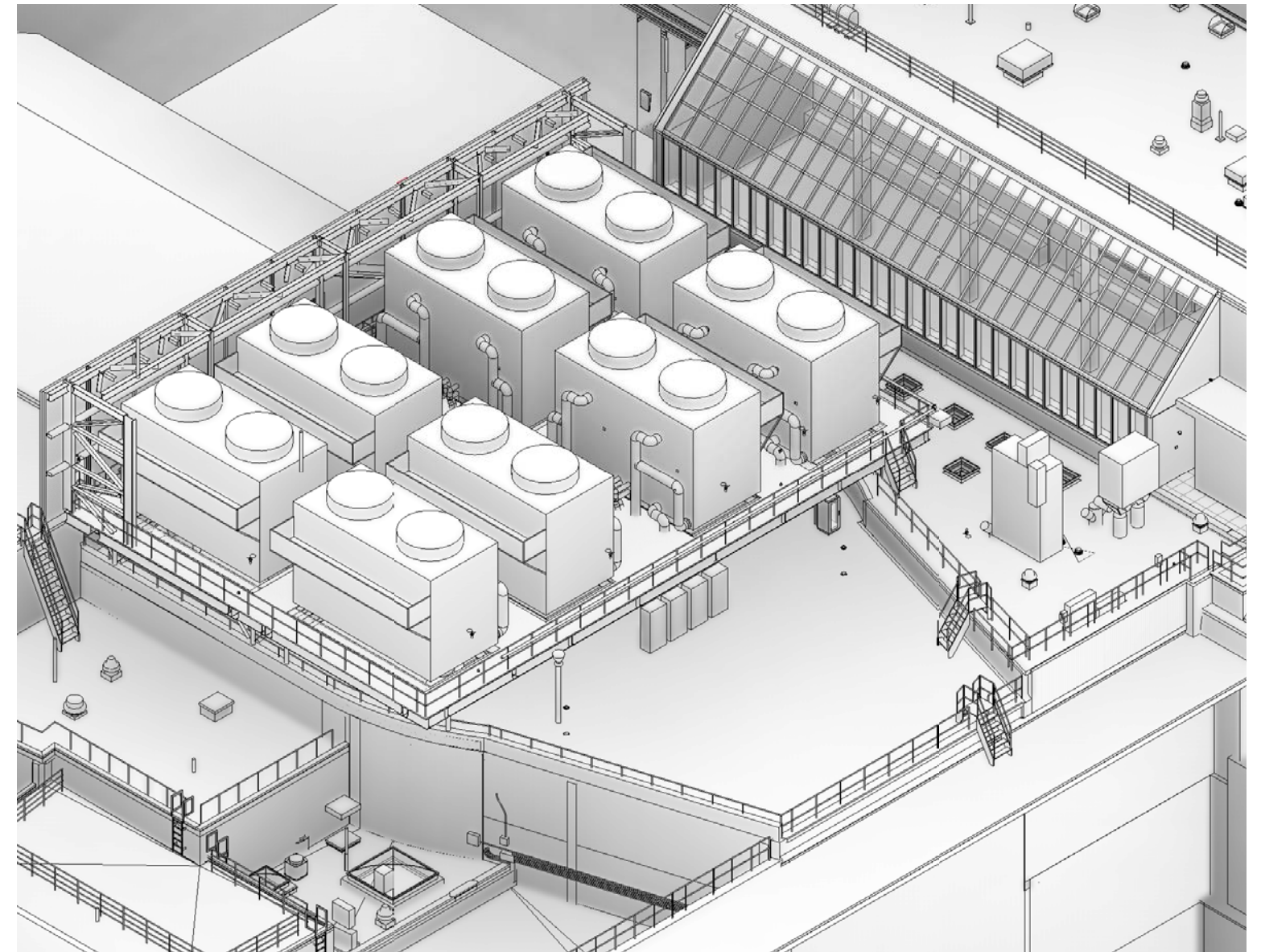
Therefore the cooling towers are proposed to bear on the masonry walls at the east side of the auditorium (option 2).



EXISTING COOLING TOWERS TO BE REMOVED FROM AUDITORIUM ROOF

The existing cooling towers are aging and in need of replacement. The cooling towers on the auditorium roof are of the forced draft horizontal type, which are consume much more electricity than the taller induced draft type. The two additional cooling towers on the Wing X roof are at a much lower elevation than the others; this difference in elevation and resulting pump pressure differentials has been problematic for operations and maintenance.

Cooling towers of this type are no longer permitted by the NYC Energy Conservation Code, which mandates that mandating that covered heat rejection devices of comparable size must perform better than or equal to induced draft type cooling towers.



PROPOSED NEW COOLING TOWERS AND SCREEN WALL ON THE AUDITORIUM ROOF

The proposed cooling towers are all of the more efficient induced draft type, which are vertically configured and therefore taller, but use **one half the electricity** of the existing type. The proposed cooling towers are all on the same level, which allows a more efficient operation where the units can be used interchangeably as needed. The configuration has redundancy for partial maintenance shut downs.

The new cooling towers are taller than the existing cooling towers because of energy efficiency and code requirements

ROOFTOP COOLING TOWER ENERGY SAVING FEATURES (KOHLER RONAN, MEP ENGINEERS)

- The proposed cooling towers are **induced draft cross flow cooling towers** equipped with axial type fans that consume significantly less energy than the existing towers on the auditorium roof which are **forced draft cooling towers** with centrifugal type fans.
- Induced draft cooling towers have a vertical configuration and therefore the proposed cooling towers are taller than the existing forced draft cooling towers which have a horizontal configuration and are shorter in height.
- New York City has recognized this comparative advantage in the New York City Energy Code, mandating that covered heat rejection devices of comparable size must perform better than or equal to induced draft type cooling towers.
- Based on the Museum's historic demands, installing new forced draft cooling towers in lieu of the proposed new induced draft cooling towers would likely double electricity consumption associated with heat rejection.
- When applying the Museum's utility rates and current greenhouse gas emissions coefficients, this increased consumption would equate to an additional \$39,000 in utility cost and 75 metric tons of carbon dioxide equivalent per year.

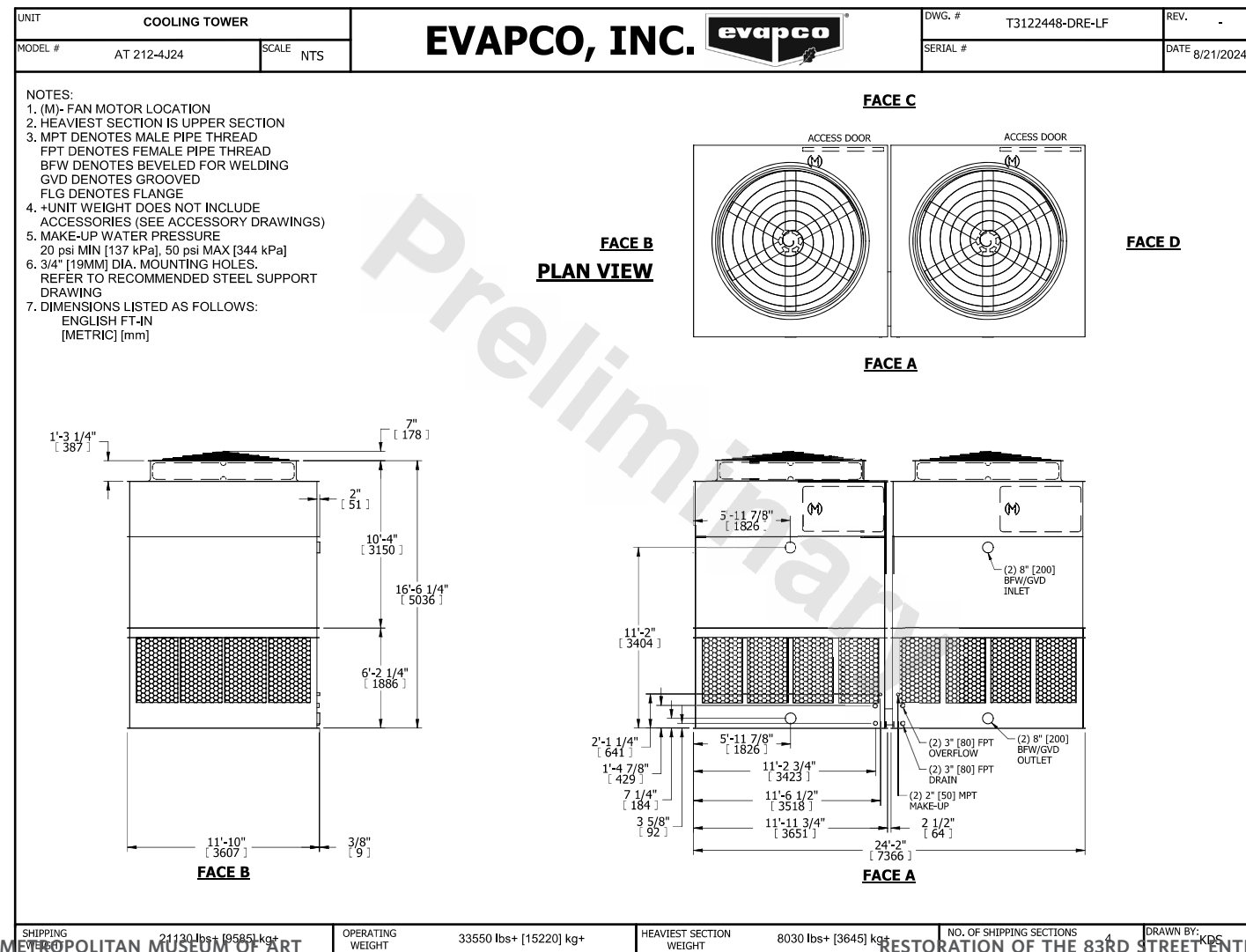




PHOTO OF WING E AROUND 1912. THE BOILER HOUSE CHIMNEY IS VISIBLE LEFT OF THE PEDIMENT.

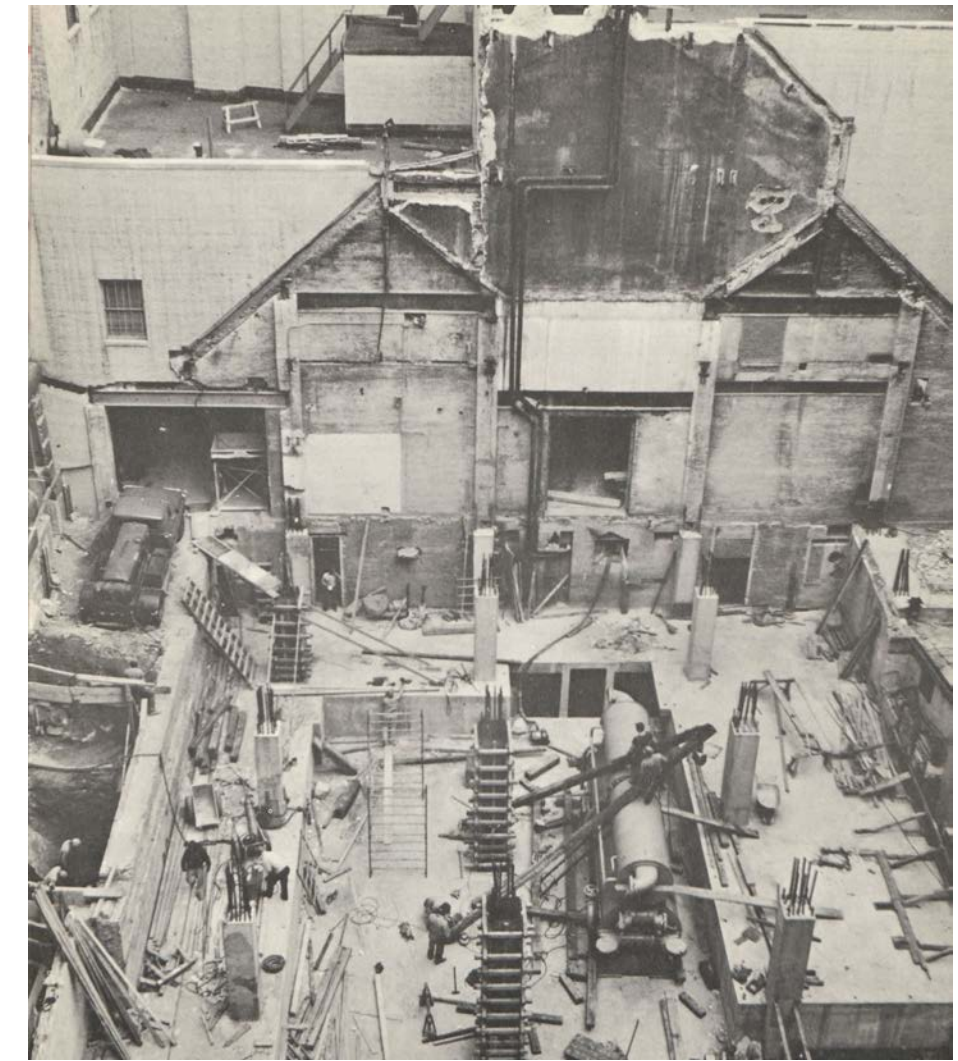
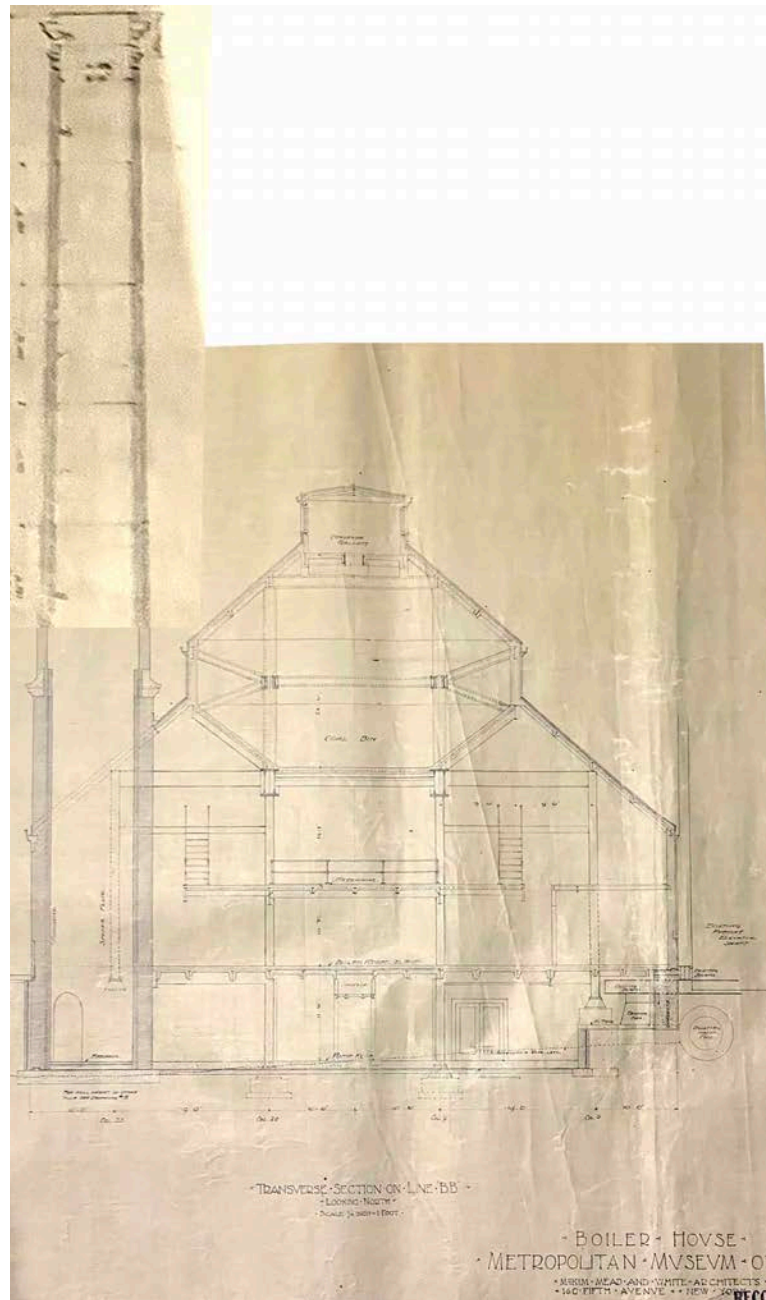
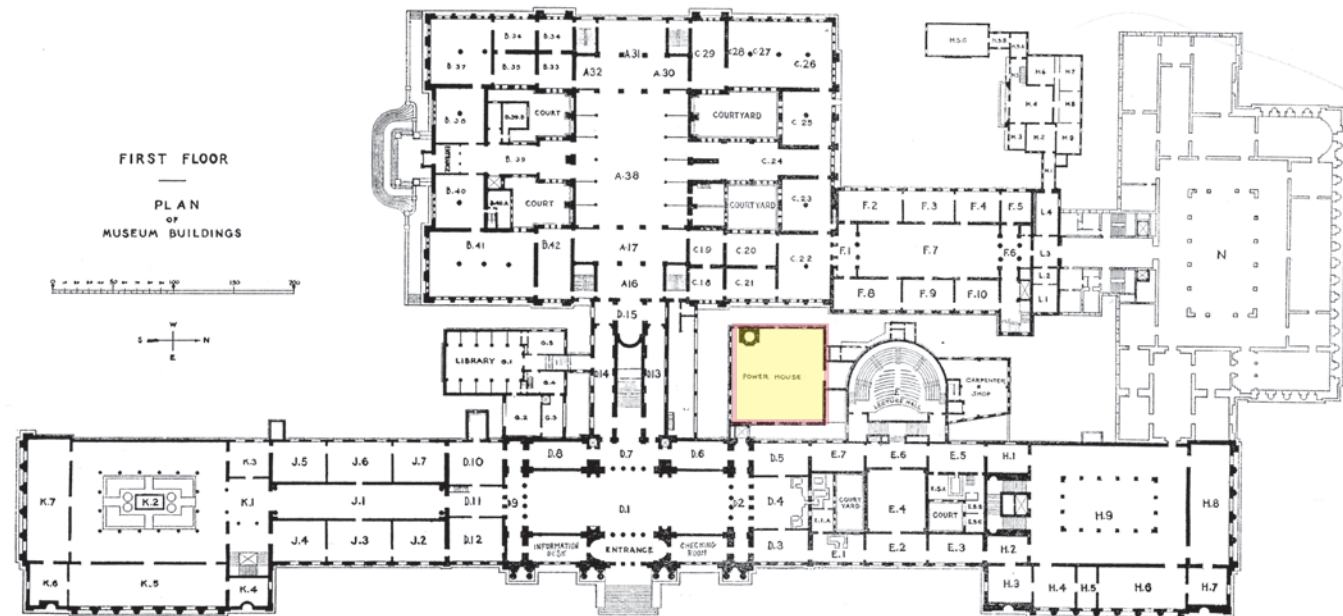


PHOTO OF BOILER HOUSE BEING DEMOLISHED DURING THE CONSTRUCTION OF WING W (EARLY 1960'S)



AERIAL VIEW 1920'S. BOILER HOUSE CHIMNEY IS VISIBLE.

HISTORIC SECTION DRAWING THROUGH THE BOILER HOUSE AND CHIMNEY (McKIM MEAD & WHITE, 1911)

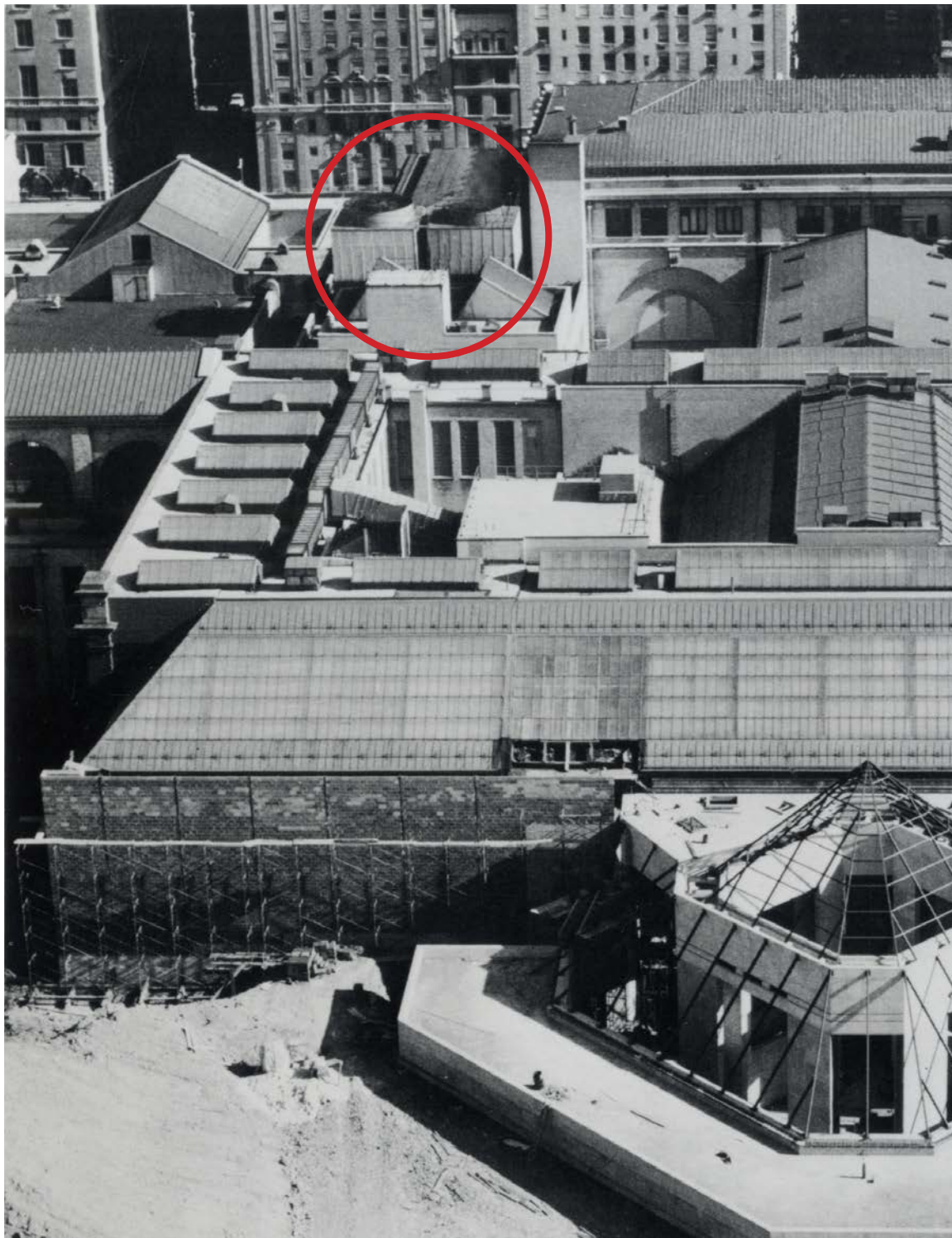


FIRST FLOOR PLAN FROM 1920'S SHOWING BOILER HOUSE AND CHIMNEY

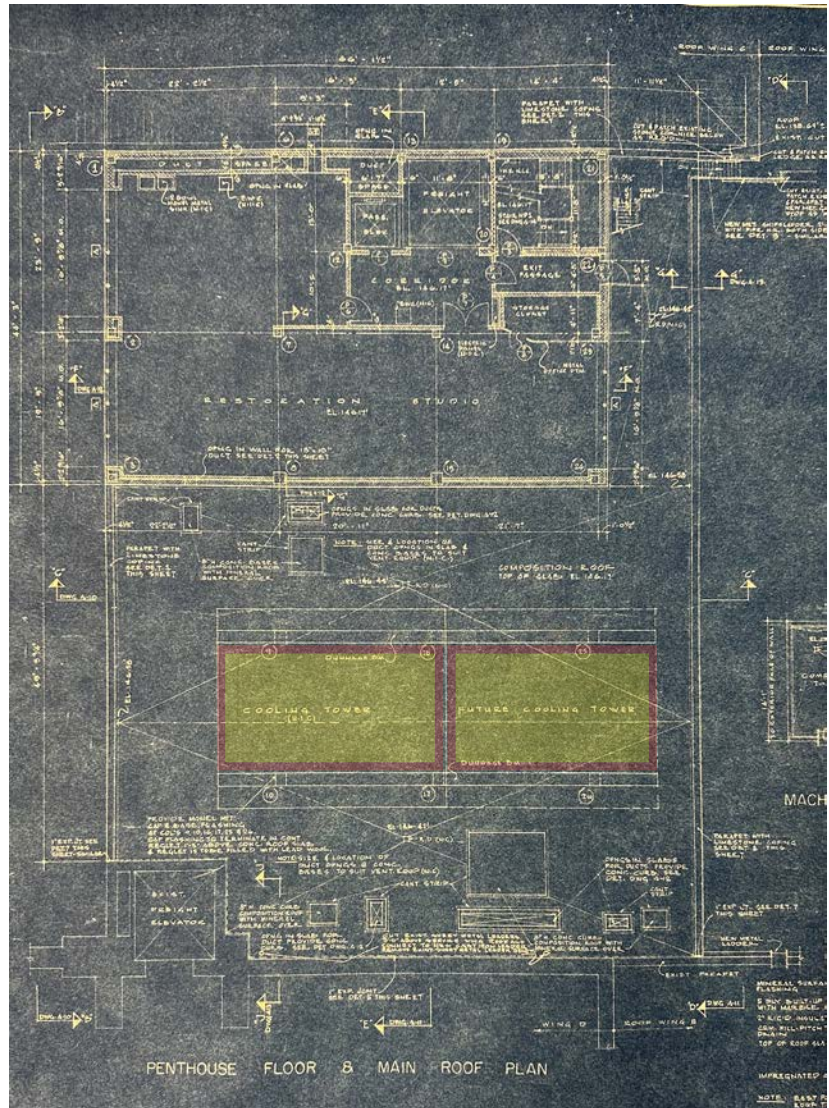
HISTORY OF THE MECHANICAL INFRASTRUCTURE ZONE AT THE MET: 1911-1964

THE METROPOLITAN MUSEUM OF ART

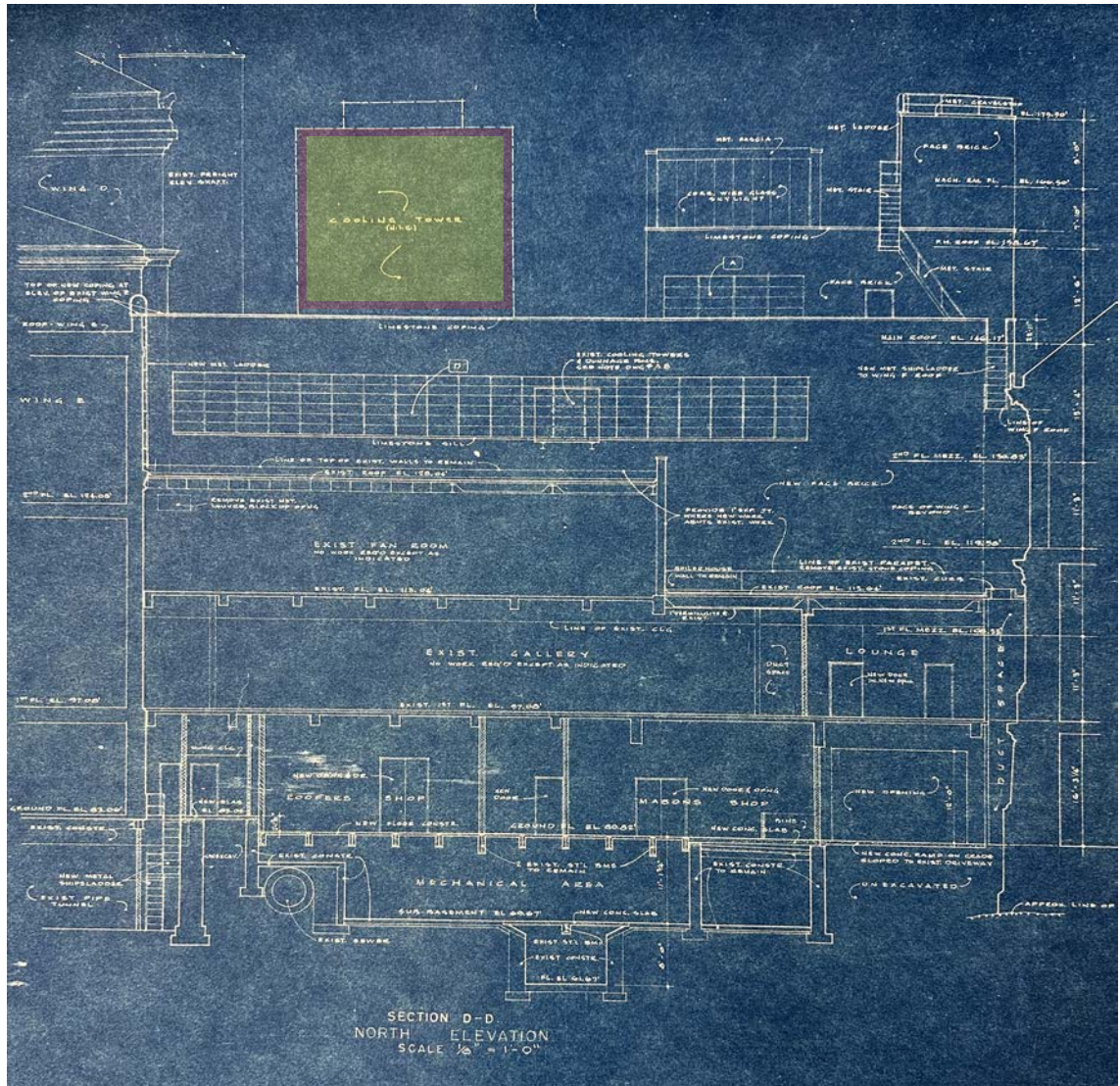
RESTORATION OF THE 83RD STREET ENTRANCE AND NORTHSIDE CHILLER PLANT REPLACEMENT



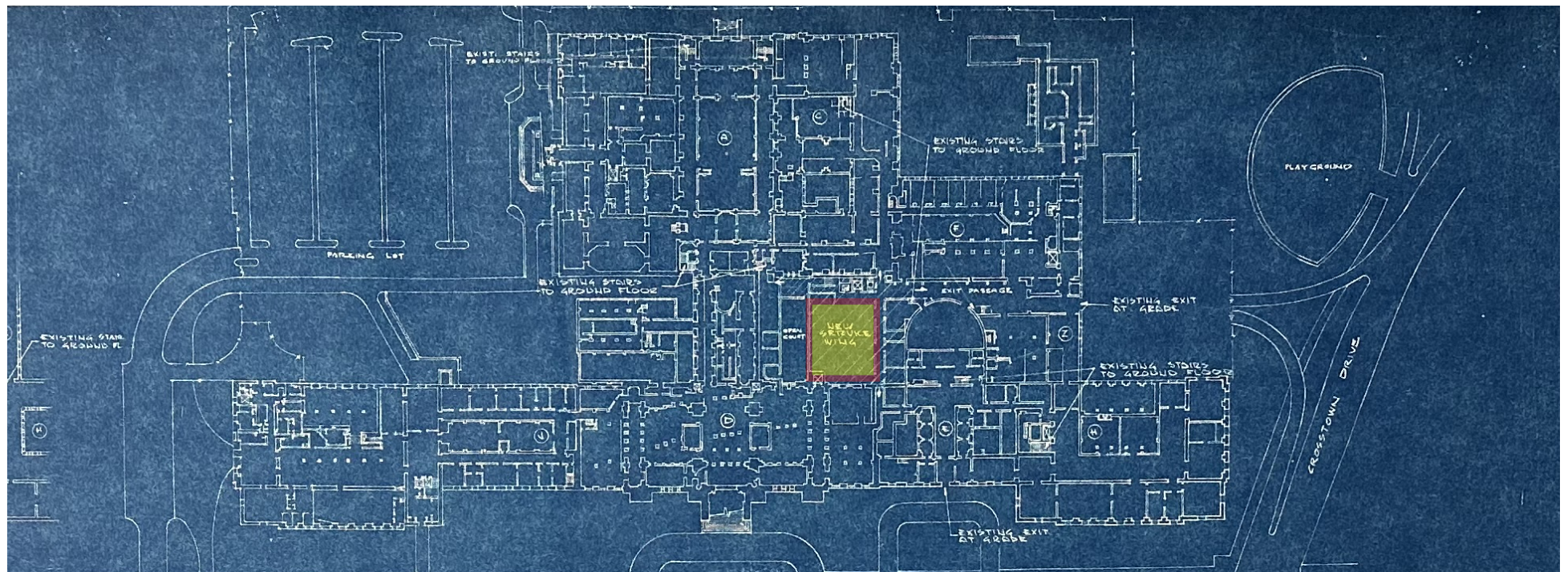
AERIAL VIEW FROM THE WEST, 1970'S.
THE COOLING TOWERS ON THE ROOF OF WING W ARE VISIBLE AT TOP



WING W ROOF PLAN, 1960
WITH ROOFTOP COOLING TOWERS



WING W NORTH ELEVATION, 1960
WITH ROOFTOP COOLING TOWERS



FIRST FLOOR PLAN 1960 SHOWING WING W "NEW SERVICE WING"

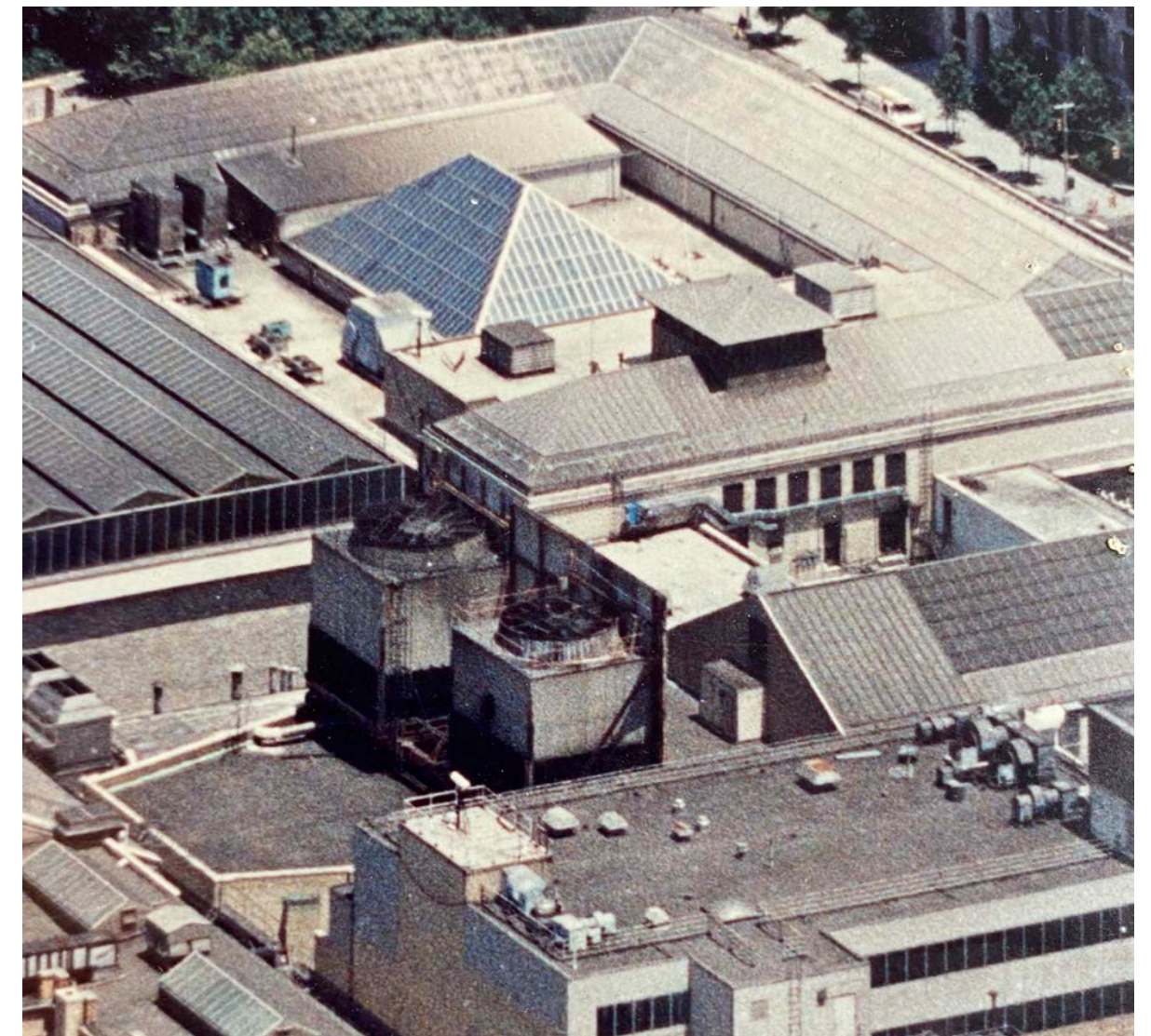
HISTORY OF THE MECHANICAL INFRASTRUCTURE ZONE AT THE MET: 1964-1980'S

THE METROPOLITAN MUSEUM OF ART

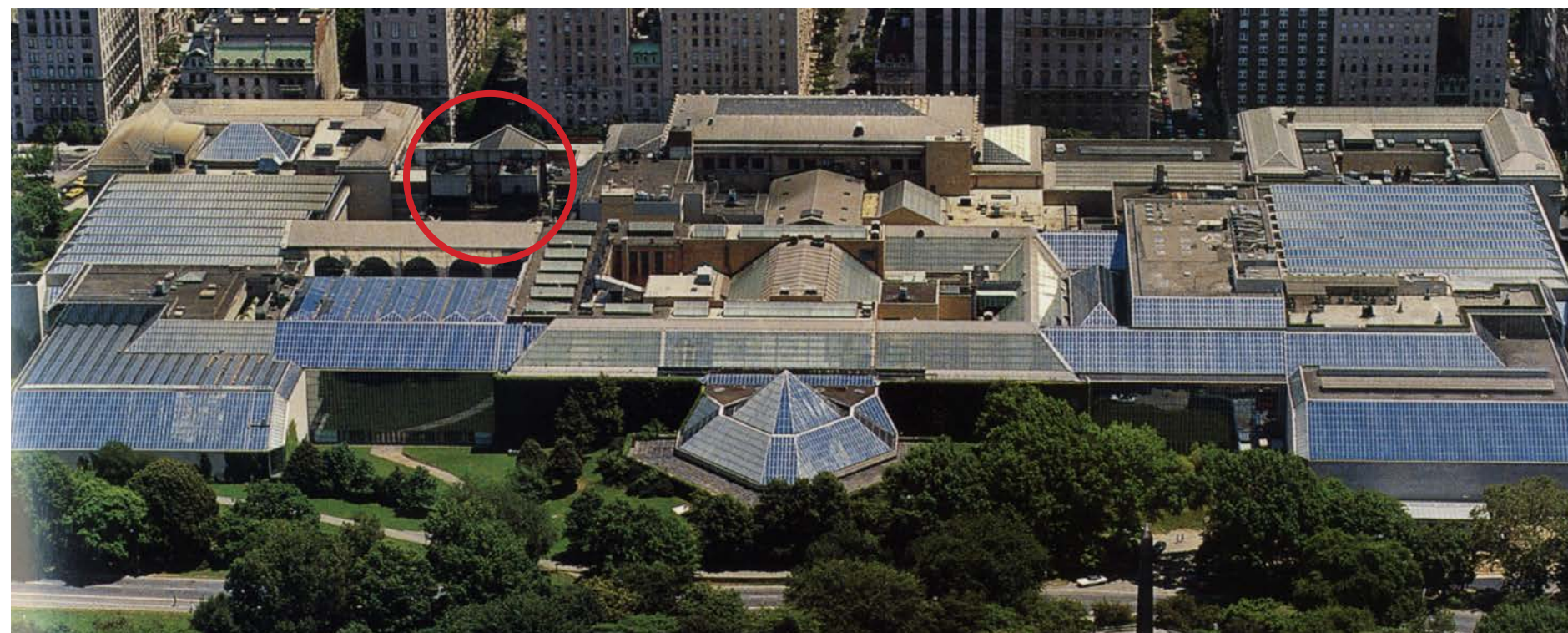
RESTORATION OF THE 83RD STREET ENTRANCE AND NORTHSIDE CHILLER PLANT REPLACEMENT



AERIAL VIEW 1991, SHOWING COOLING TOWERS AND SCREEN WALL ON ROOF OF GRACE RAINEY ROGERS AUDITORIUM



DETAIL SHOWING COOLING TOWERS AND SCREEN WALL ON ROOF



AERIAL VIEW 1991, SHOWING COOLING TOWERS AND SCREEN WALL ON ROOF OF GRACE RAINEY ROGERS AUDITORIUM



DETAIL SHOWING COOLING TOWERS AND SCREEN WALL ON ROOF

HISTORY OF THE MECHANICAL INFRASTRUCTURE ZONE AT THE MET: 1980'S-1990'S

THE METROPOLITAN MUSEUM OF ART

RESTORATION OF THE 83RD STREET ENTRANCE AND NORTHSIDE CHILLER PLANT REPLACEMENT

END