



**THE METROPOLITAN
MUSEUM OF ART**

**ROCKEFELLER WING
SLOPED GLAZING
PROPOSED REPLACEMENT**

**DESIGN OF POTENTIAL FUTURE
REPLACEMENT OF TEMPLE OF
DENDUR WING SLOPED GLAZING
AND ROCKEFELLER AND TEMPLE
OF DENDUR WING SKYLIGHTS**

**SUBMISSION TO LANDMARKS
PRESERVATION COMMISSION**

**BEYER
BLINDER
BELLE**

FEBRUARY 1, 2021

REVISION 3

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BBB DESIGN TEAM

Beyer Blinder Belle
Architects & Planners, LLP
Architecture and Planning

Arup
Facade and Daylighting

Kohler Ronan, LLC
Mechanical, Electrical,
Plumbing, and Fire Protection
Engineers (MEP/FP),
Energy Modeling

Wiss, Janney, Elstner
Associates (WJE), Inc.
Exterior Building Envelope,
Roofing, Masonry Repair and
Restoration, Waterproofing

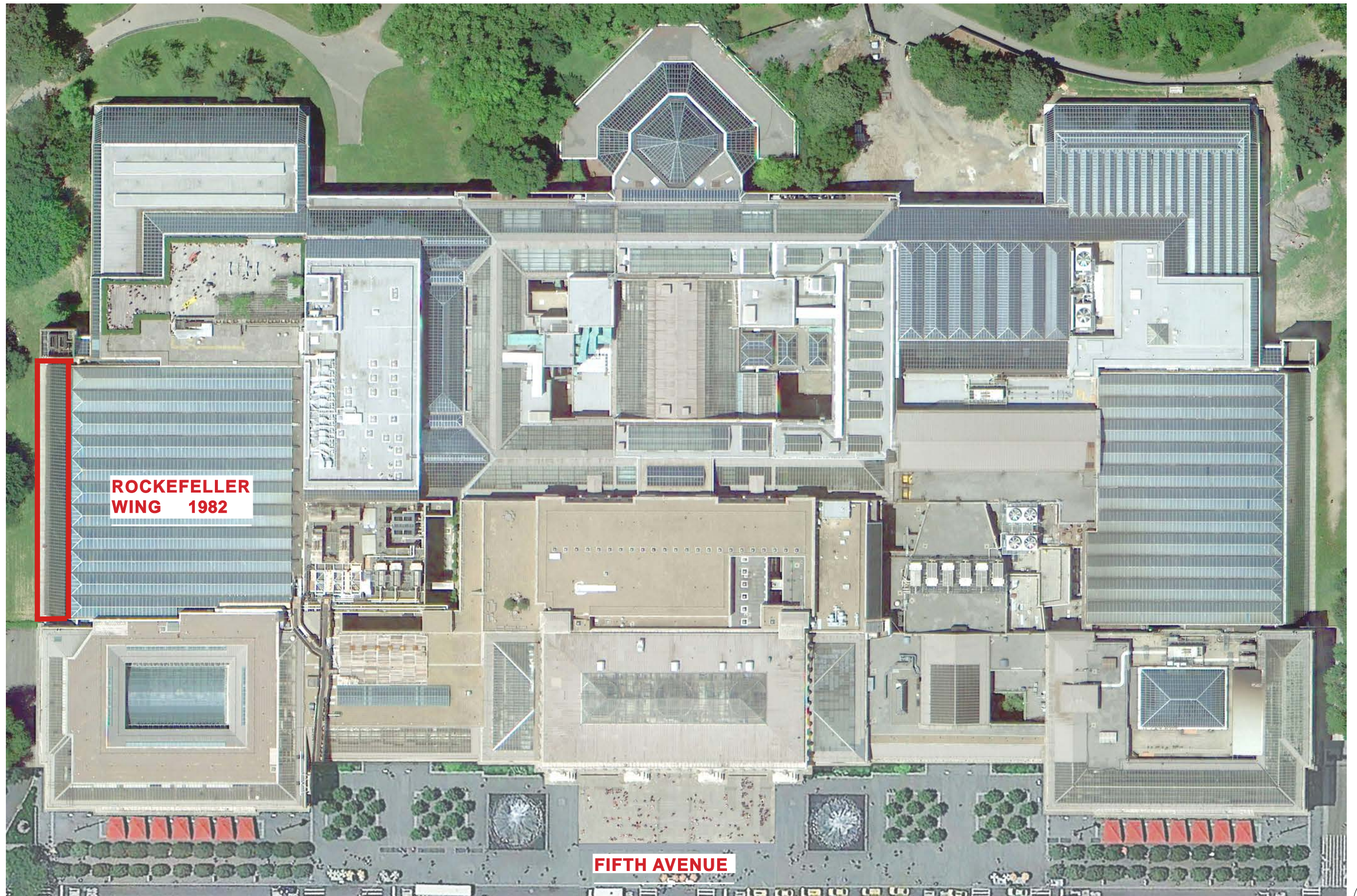
Thornton Tomasetti
Structural Engineers

wHY
Exhibit Design Architect

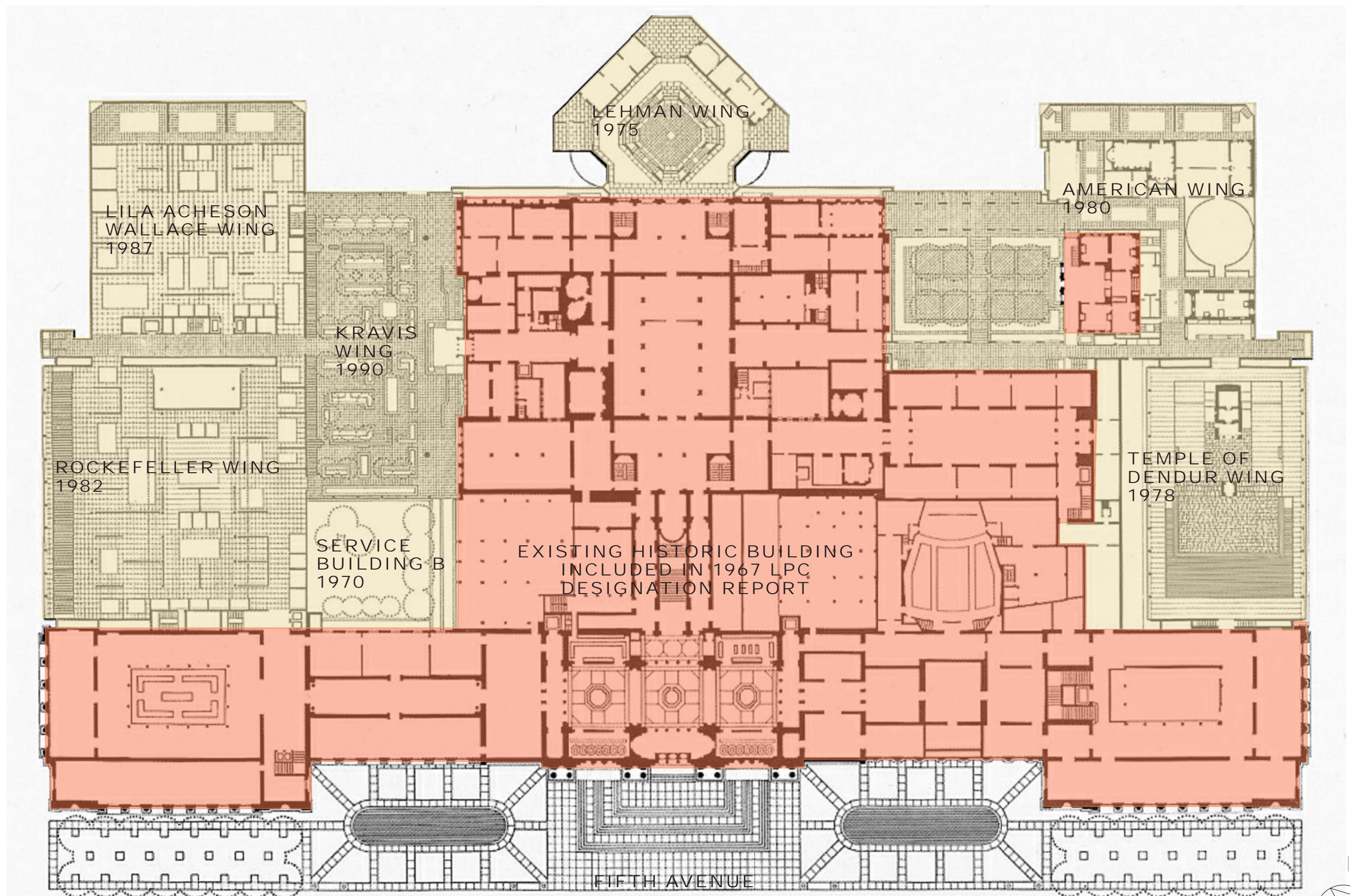


ZONING MAP

1. LOCATION AND CONTEXT



AERIAL PHOTO

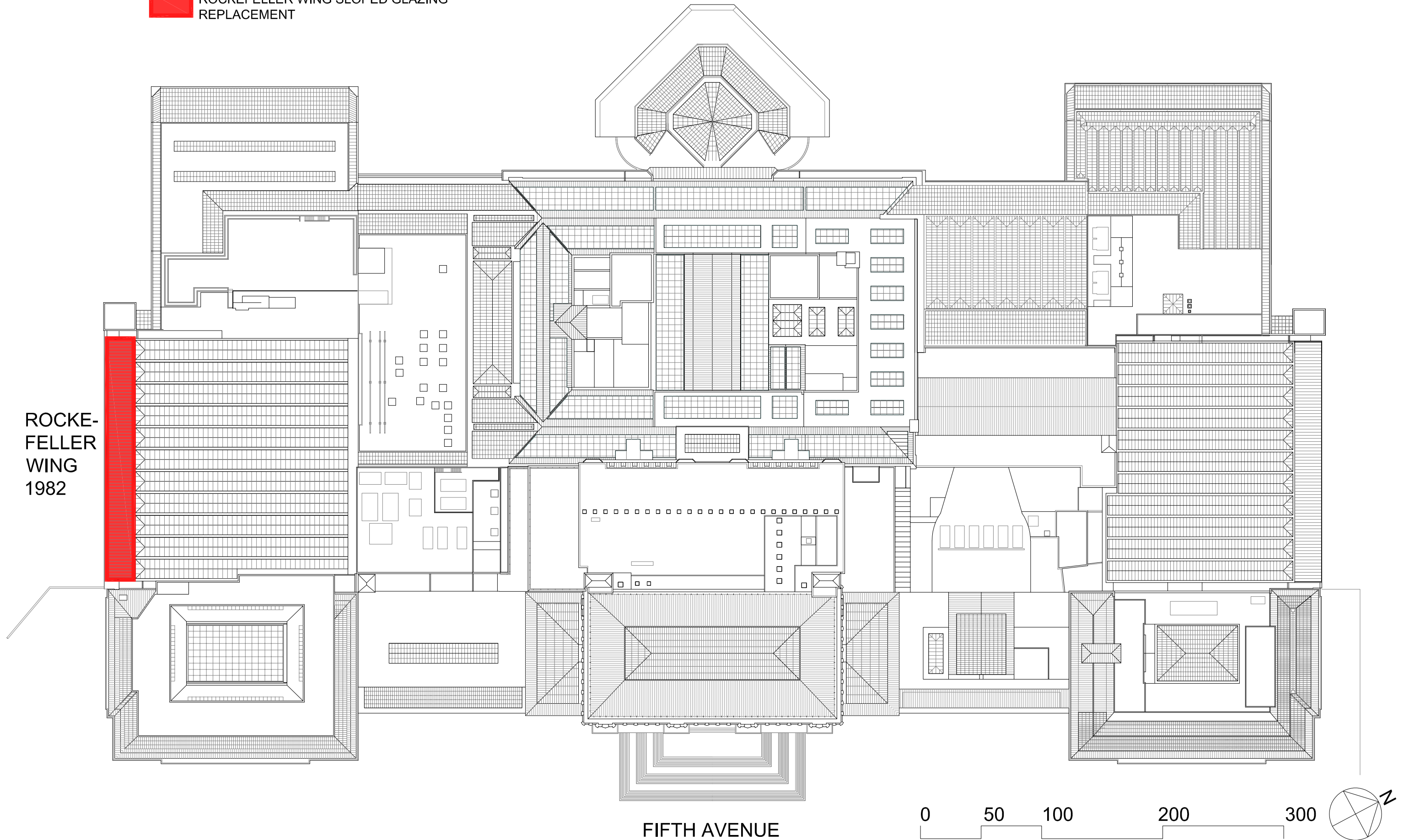


1970 MASTER PLAN SHOWING ADDITIONS IN YELLOW (KEVIN ROCHE JOHN DINKELOO AND ASSOCIATES)

PROJECT SCOPE



ROCKEFELLER WING SLOPED GLAZING
REPLACEMENT



ROOF PLAN: POTENTIAL FUTURE SKYLIGHTS AND SLOPED GLAZING REPLACEMENT

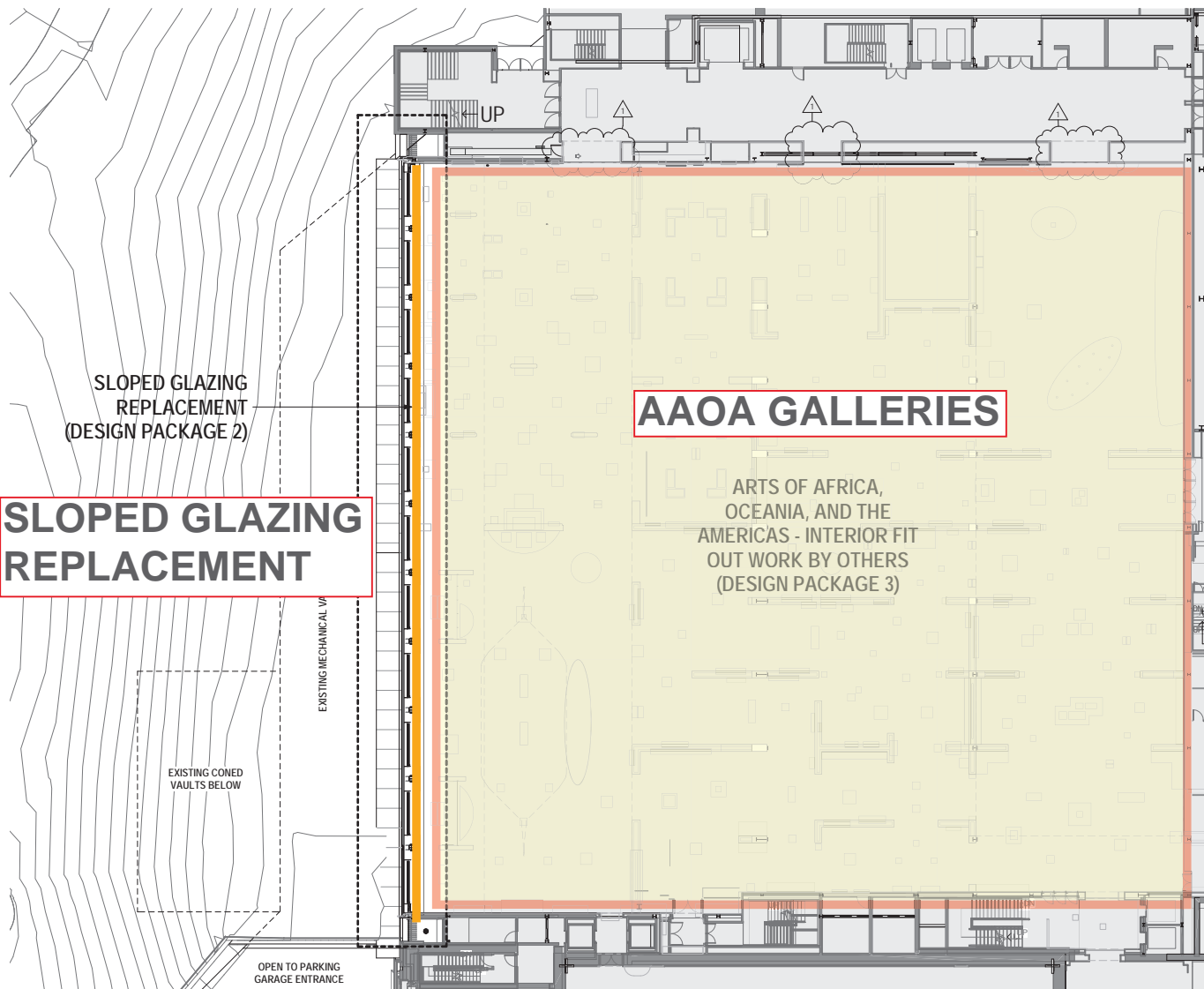
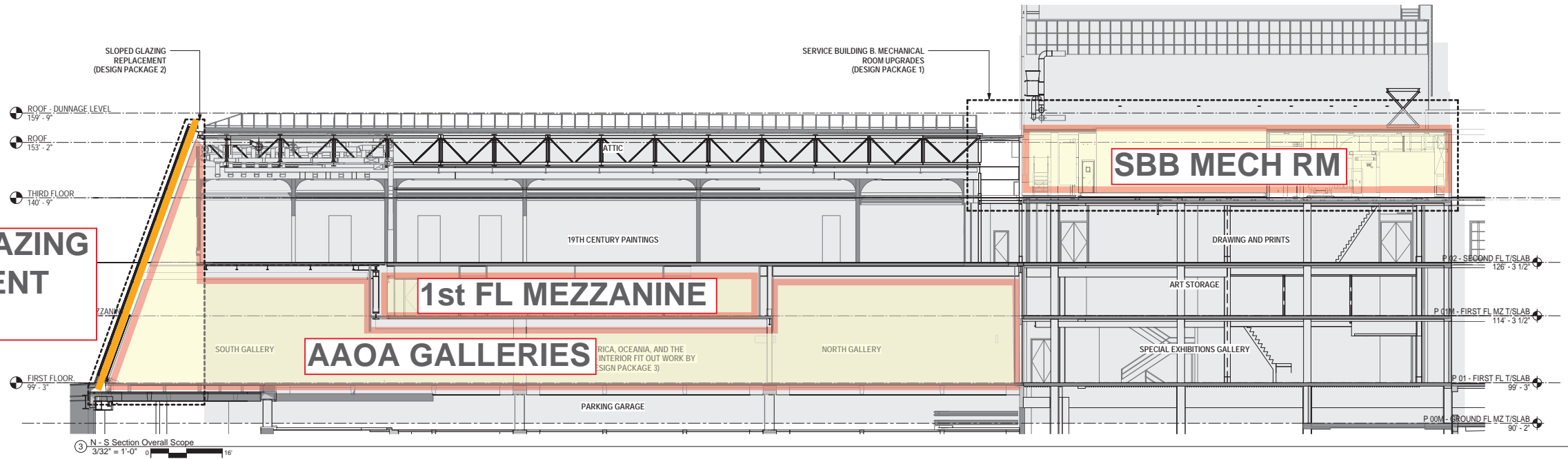


AERIAL PHOTO SHOWING LOCATION OF PROJECT

**ROCKEFELLER WING
SLOPED GLAZING**

2. ROCKEFELLER WING SLOPED GLAZING REPLACEMENT DESIGN

SLOPED GLAZING REPLACEMENT



SCOPE OF WORK SUMMARY

DESIGN PACKAGE 1 (SBB MECHANICAL ROOM UPGRADES)

- DEMO AND REPLACEMENT OF MECHANICAL UNITS AND ASSOCIATED PIPING AND DUCTWORK.
- MODIFICATION OF EXISTING FLOOR DRAINS.
- WATERPROOFING OF EXISTING FLOOR.
- SPINKLER SYSTEM INSTALLATION.
- MISCELLANEOUS ELECTRICAL AND FIRE ALARM WORK AS REQUIRED TO SUPPORT MECHANICAL WORK.
- NO CHANGE TO USE, OCCUPANCY, OR FLOOR AREA.

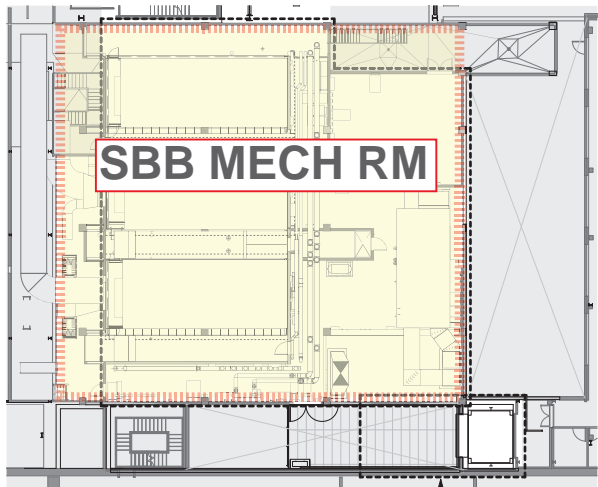
DESIGN PACKAGE 2 (SLOPED GLAZING REPLACEMENT)

- DEMOLITION OF EXISTING ALUMINUM-FRAMED SLOPED GLAZING SYSTEM AND RELATED FLASHINGS AND COPINGS
- DISMANTLING OF EXISTING GRANITE WALL PANELS AND PAVERS AT EXTERIOR
- DEMOLITION OF EXISTING FIN TUBE RADIATORS, ASSOCIATED PIPING, AND ALUMINUM ENCLOSURES AT INTERIOR
- DEMOLITION OF EXISTING MECHANICAL EQUIPMENT AS SHOWN ON MECHANICAL DRAWINGS
- DEMOLITION OF ROOF R-6 DOWN TO STRUCTURAL DECK
- INSTALLATION OF ALUMINUM-FRAMED TRIPLE-GLAZED SLOPED GLAZING SYSTEM, AND ASSOCIATED INSULATED ALUMINUM FLASHING AND COPINGS
- INSTALLATION OF ROOF R-6 AND REPAIR OF ADJACENT WALLS AND FLASHINGS
- INSTALLATION OF ACCESS HATCH AT ROOF R-6
- FLASHED OPENING IN WEST WALL AND ROOF PENETRATOR WITH FLASHED CURB AT ROOF R-3 TO ACCOMMODATE MECHANICAL DUCTWORK.
- REPORTING OF EXISTING EAST AND WEST FACING LIMESTONE WALLS ADJACENT TO SLOPED GLAZING
- REPAIR JOINTS AND CLEAN SOUTH FACING LIMESTONE WALLS ADJACENT TO SLOPED GLAZING
- INSTALLATION OF ANCHOR POINTS IN EXISTING STEEL PLATE GUTTERS
- WATERPROOFING OF EXISTING CONCRETE BEAM AT BASE OF SLOPED GLAZING AND TIE IN TO EXISTING
- INSTALLATION OF ACTIVE FIN TUBE RADIATORS IN NEW METAL ENCLOSURES
- PROVIDE (7) 48" X 2" OPENINGS IN EXISTING GWB PARTITIONS BETWEEN 19TH CENTURY PAINTINGS AND SBB MECHANICAL ROOM. SEE MECH DRAWINGS FOR ADDITIONAL INFO.
- NO CHANGE TO USE, OCCUPANCY, OR FLOOR AREA.

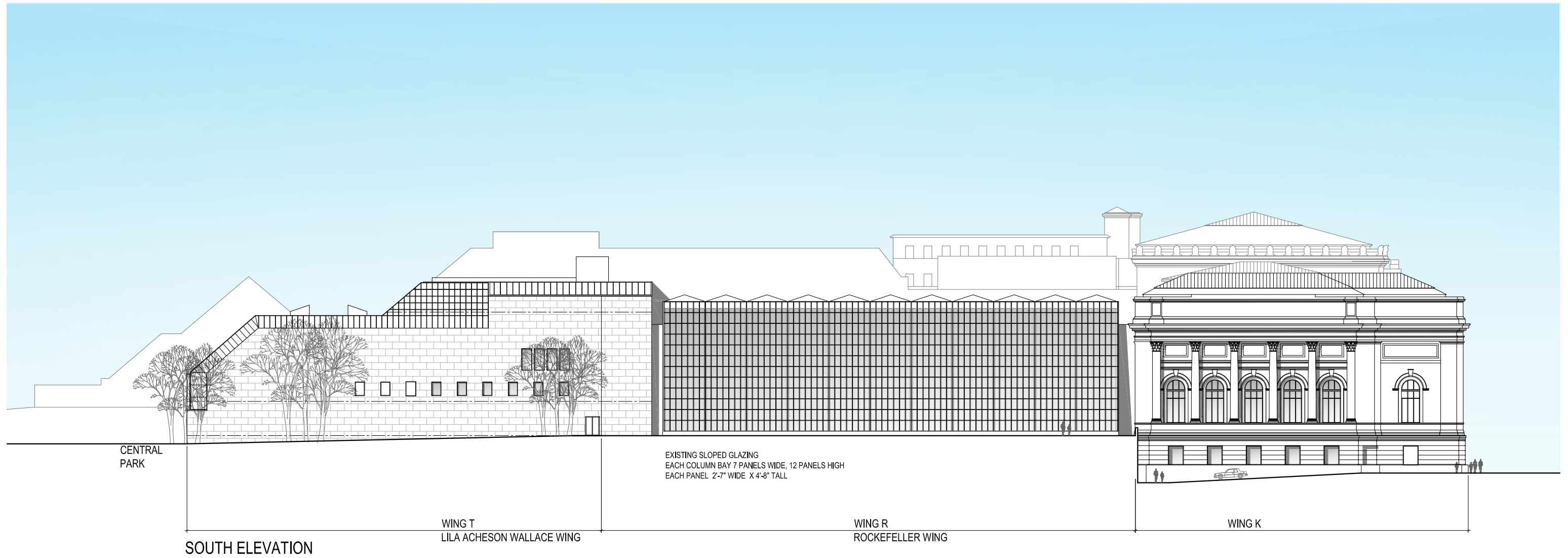
INDICATES NOT IN SCOPE OR BY OTHERS

NOTE: SEE AERIAL PHOTO ON G-101 FOR LOCATION OF DESIGN PACKAGE 1 AND 2 IN RELATIONSHIP TO OVERALL BUILDING

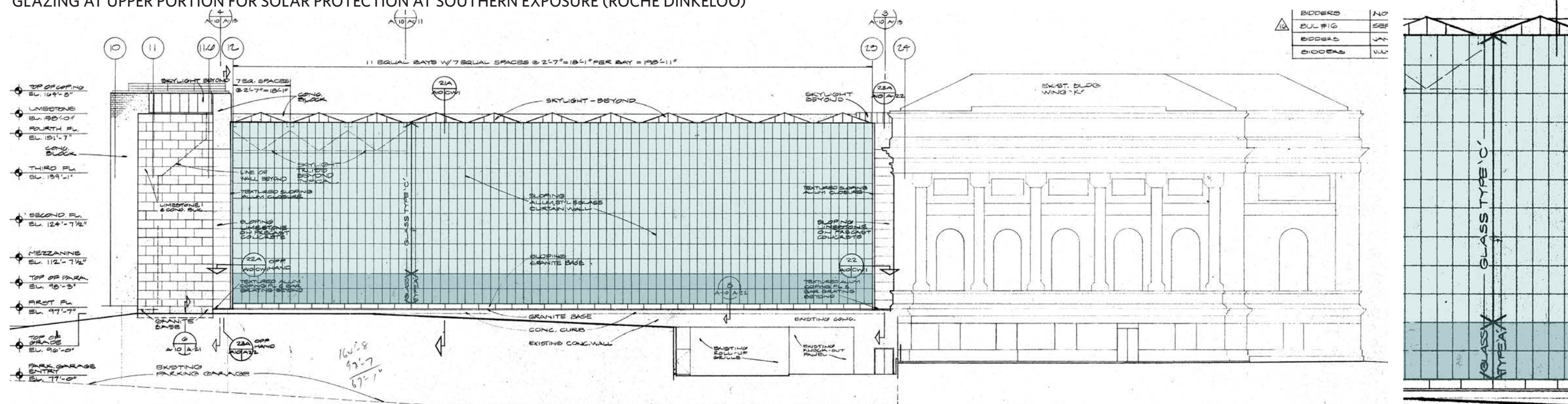
SERVICE BUILDING B AIR HANDLING UNIT REPLACEMENT (DESIGN PACKAGE 1)



SCOPE OF WORK AT ROCKEFELLER WING

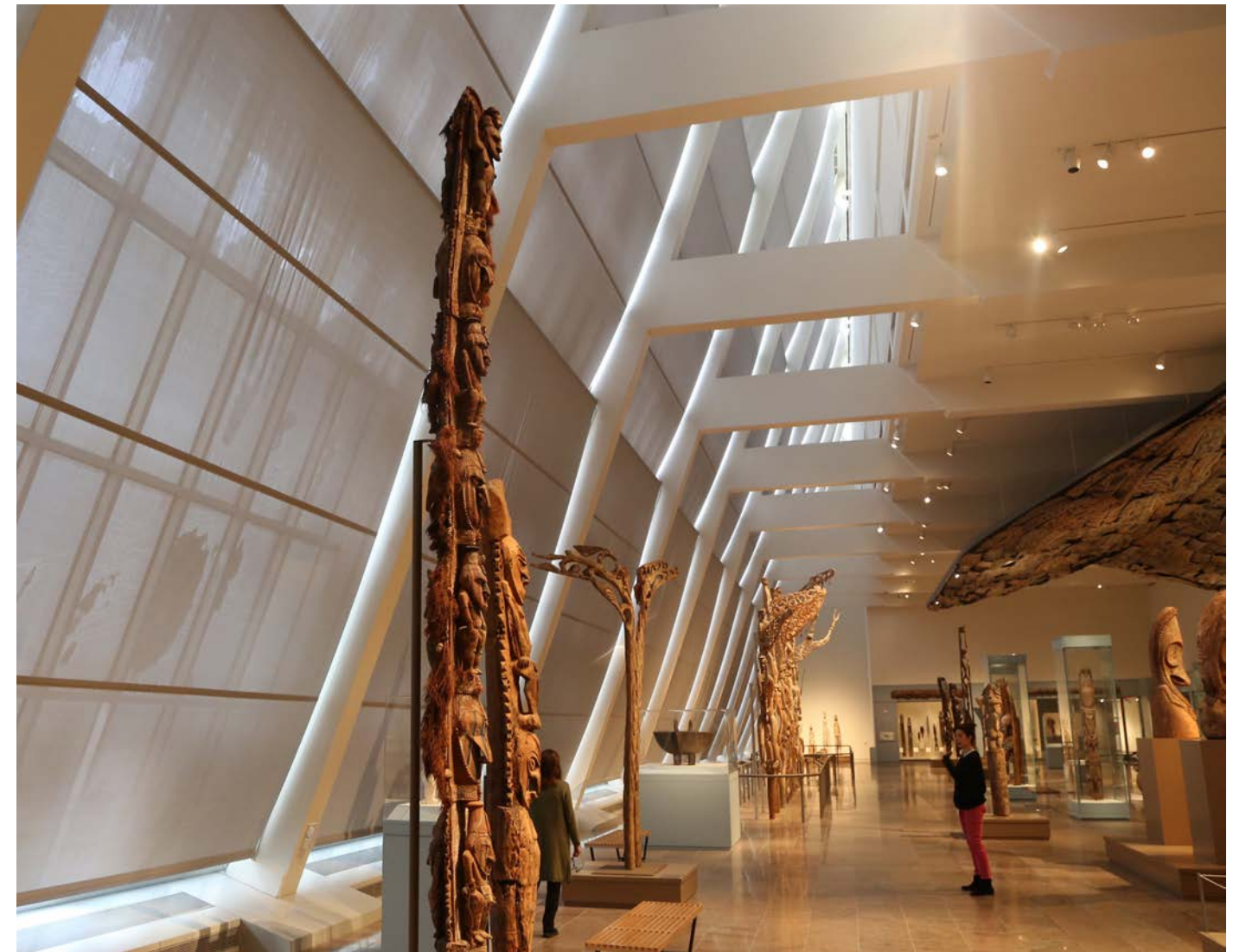


MET MUSEUM EXISTING SOUTH ELEVATION





ROCKEFELLER WING AAOA (ARTS OF AFRICA, OCEANIA, AND THE AMERICAS) GALLERIES
ORIGINAL CONDITION 1982 - SOUTH EXPOSURE



ROCKEFELLER WING AAOA GALLERIES EXISTING CONDITIONS
AFTER 2005 MODIFICATIONS



Existing condition: exterior with deteriorating tinted plastic film on glass



Exterior detail: deteriorating plastic film and corroding curtain wall framing



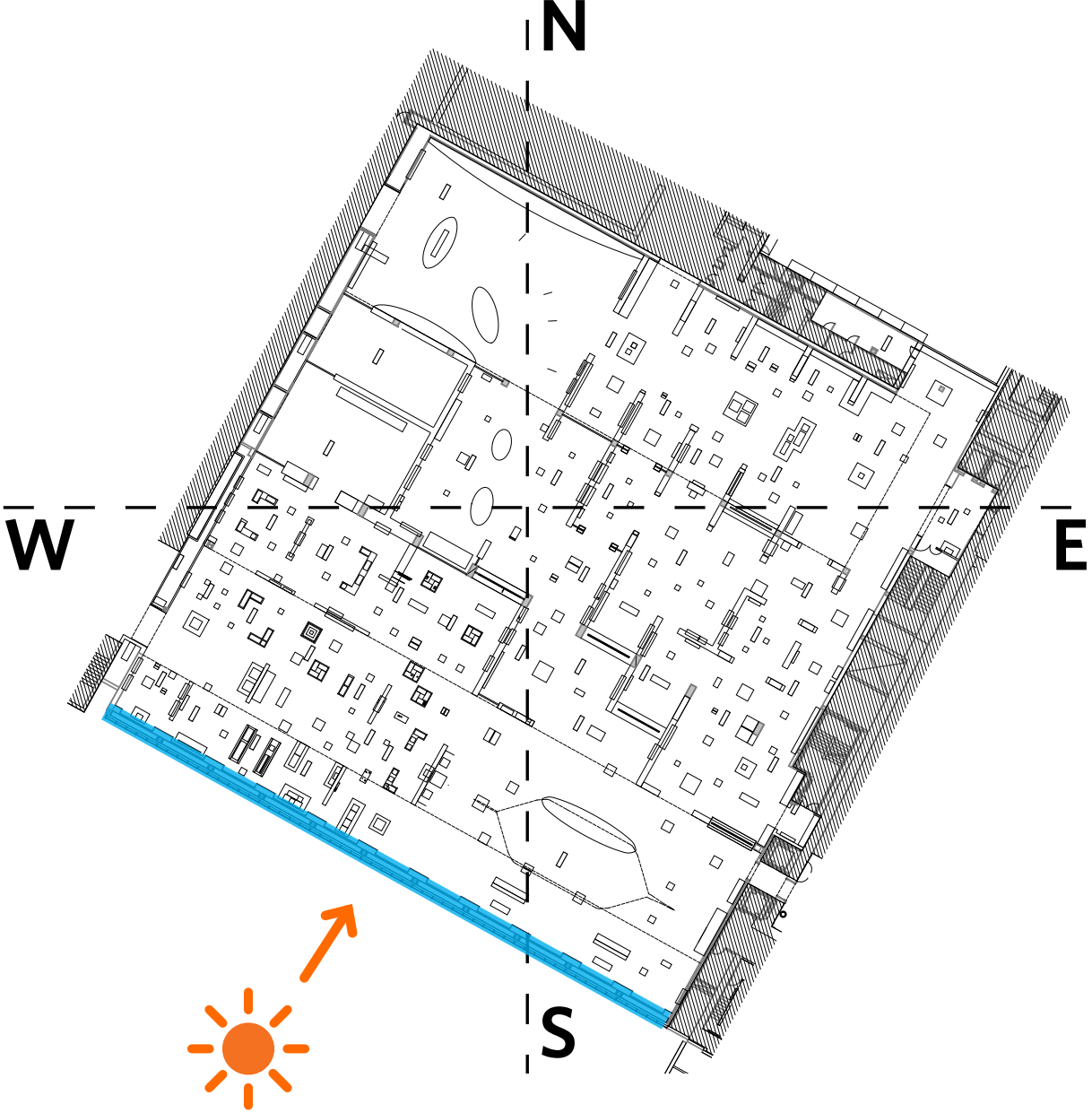
Interior detail of with deteriorating plastic film



Interior: deteriorated film visible through mesh roller shades.



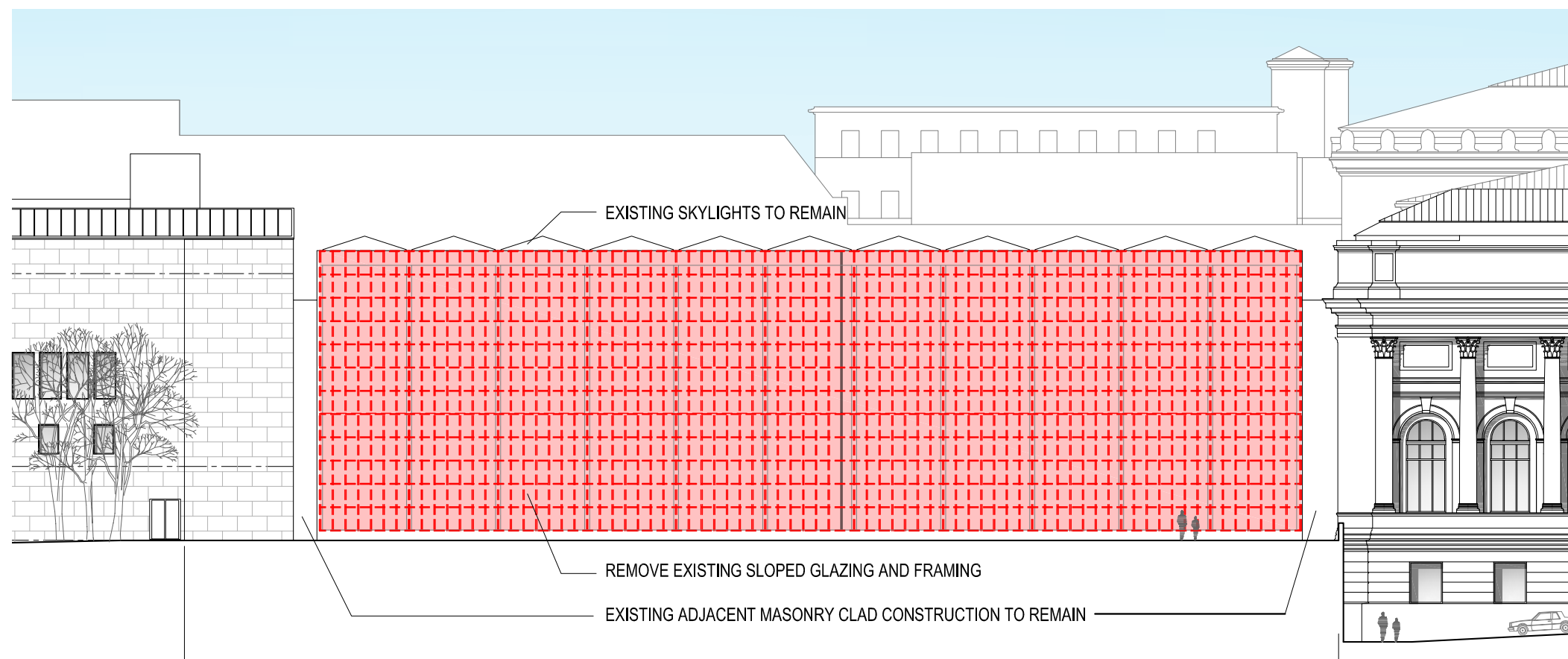
Existing Condition View from South of Rockefeller Sloped Glazing
 Sloped glazing is 200 feet long, 60 feet high and at a 70 degree slope with a surface area of approximately 12,000 square feet.



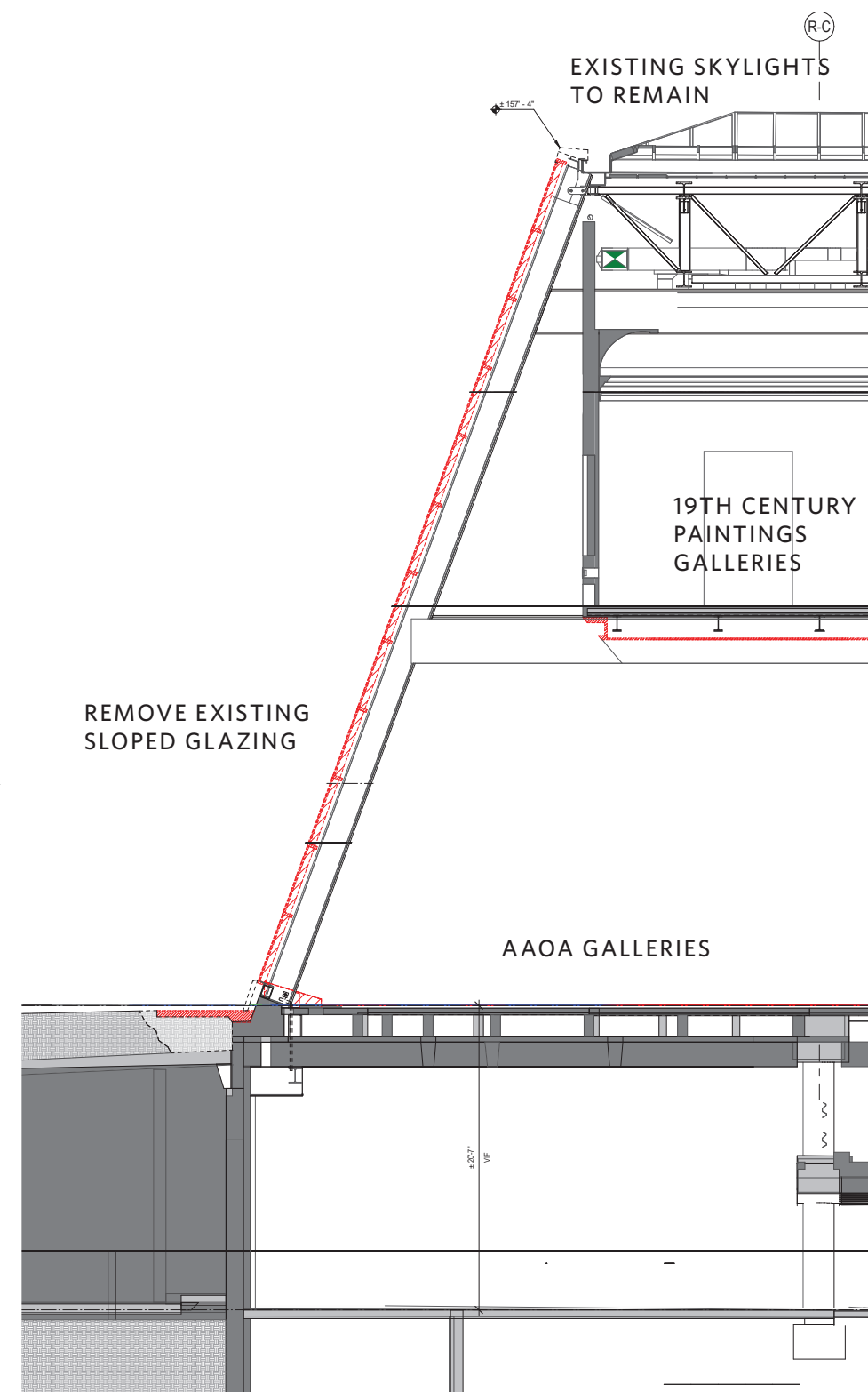
AAOA GALLERY PLAN

PROPOSED SLOPED GLAZING SYSTEM IMPROVEMENTS:

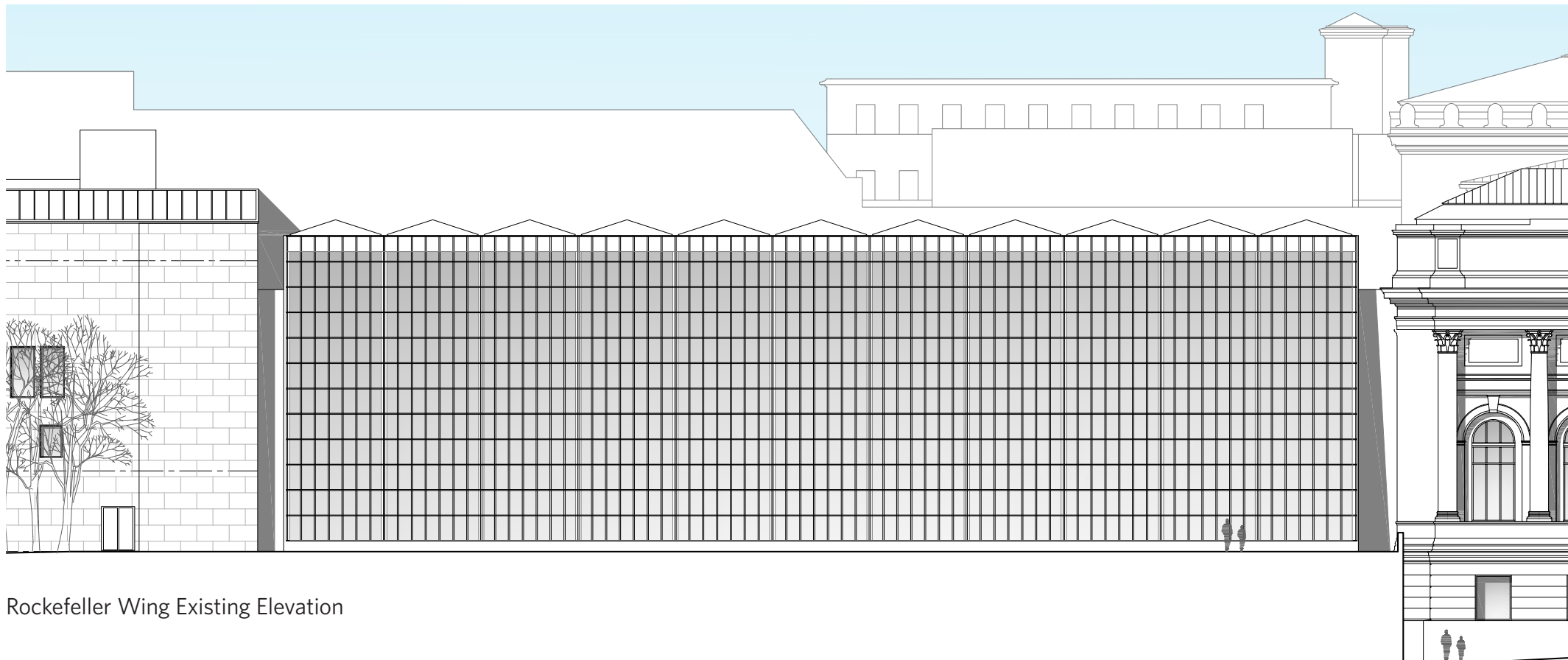
- State of the art sloped glazing assembly, which has been custom designed to meet the needs of the Met Museum's collection and environment.
- Greater resistance to condensation, which is critical for humidified museum conditions. The current system is not sufficient and condensation is an on-going issue for the curators.
- Four-sided structurally glazed cassettes which eliminate thermal bridges between interior and exterior improving energy efficiency.
- Improved glass with solar and thermal control layers including low-E and solar control coatings, triple glazing, and argon fill.
- Natural daylight and visual connection to Central Park from within the AAOA collections to complement the contemporary exhibition design being developed in parallel to this project by wHY architects. The existing glazing system is not able to mitigate the daylighting coming in to the south-facing glass, and as a result the shades are always deployed.
- Provides the quality and quantity of daylight desired by curators for visitor experience and optimal appreciation of the art. The existing glazing system does not meet the conservators requirements for daylighting.
- Provides bird safe glass with visual frit pattern to avoid bird collisions.
- Also address other problematic areas of the exterior envelope: gutters, flashing, and connection to adjacent masonry walls.
- The mechanical system adjacent to the sloped glazing will also be updated in order to provide additional protection against condensation.



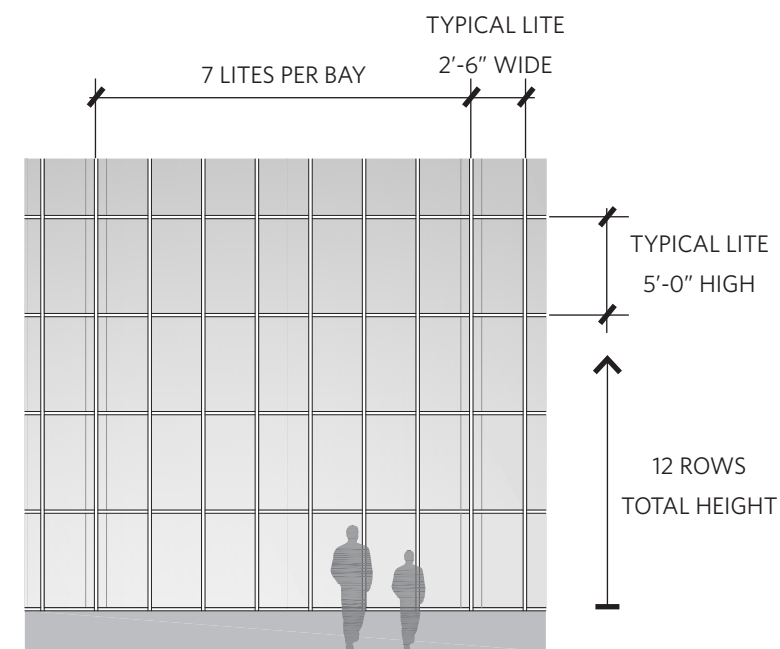
ROCKEFELLER WING SOUTH ELEVATION:
SELECTIVE REMOVALS INDICATED IN RED



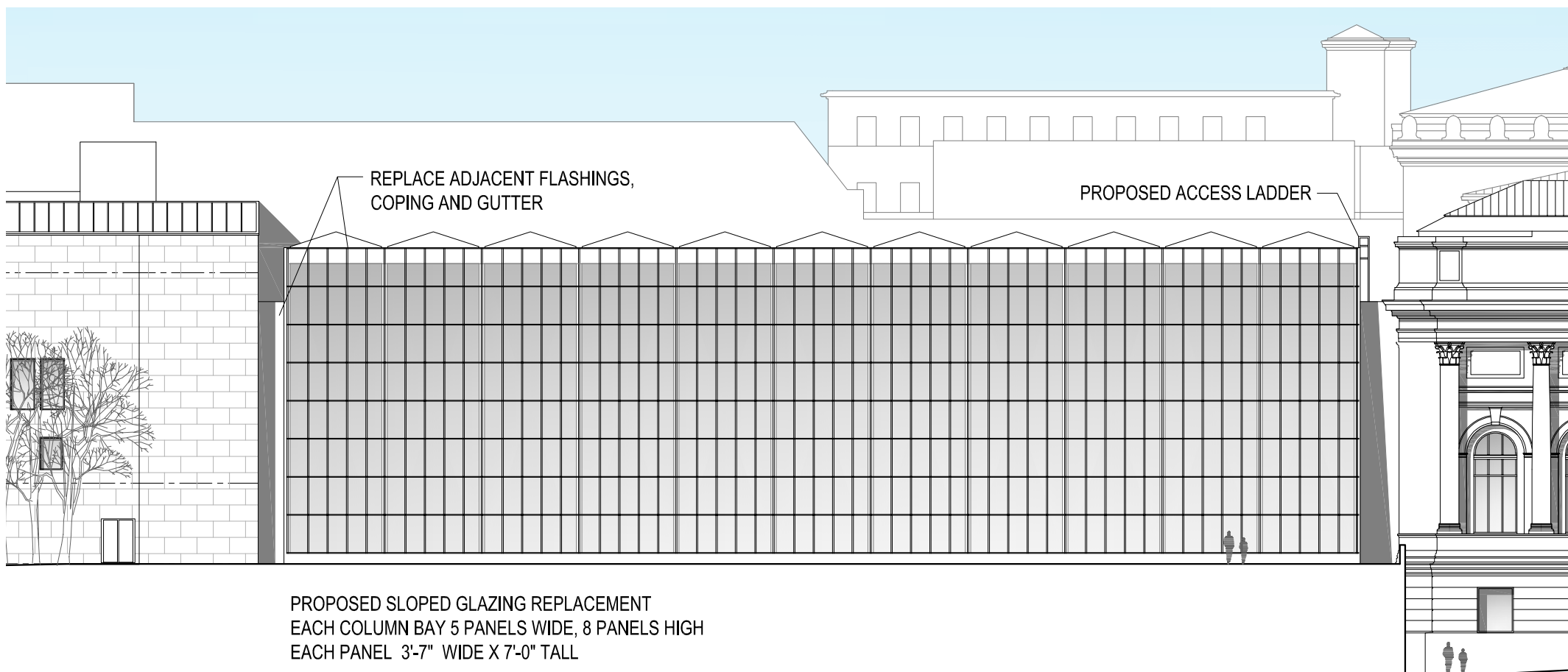
SECTION AT SLOPED GLAZING: SELECTIVE REMOVALS
INDICATED IN RED



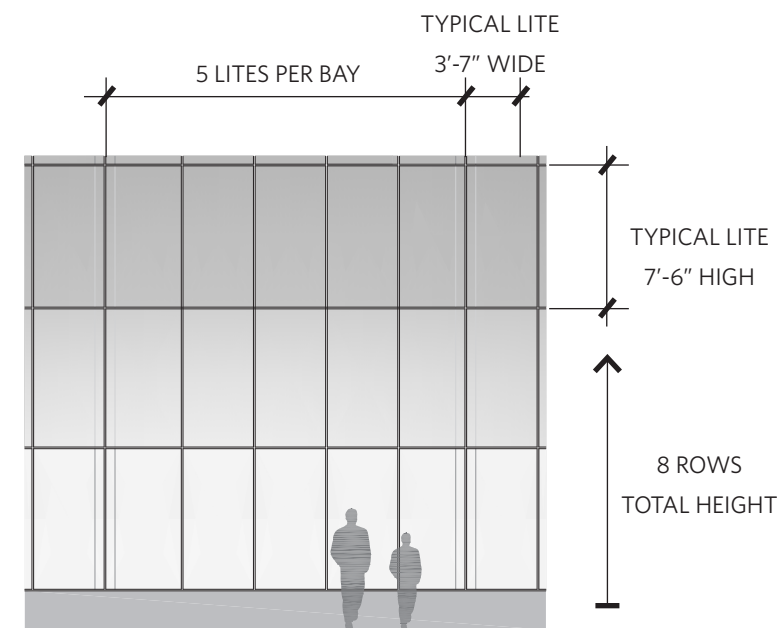
Rockefeller Wing Existing Elevation



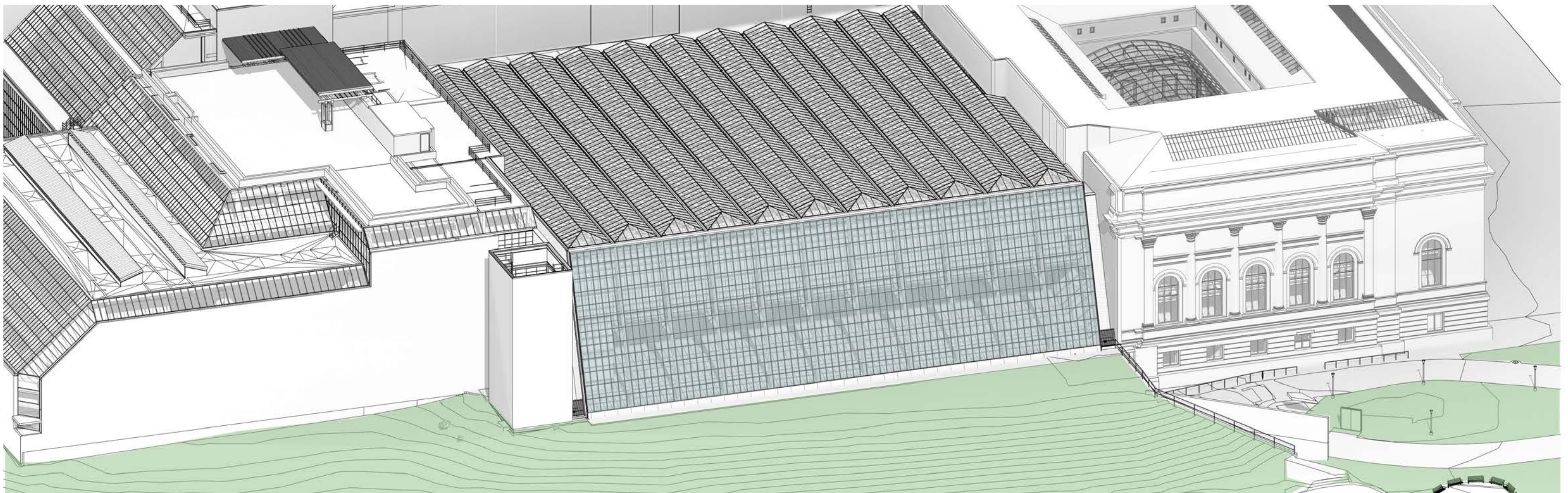
Existing Detail Elevation



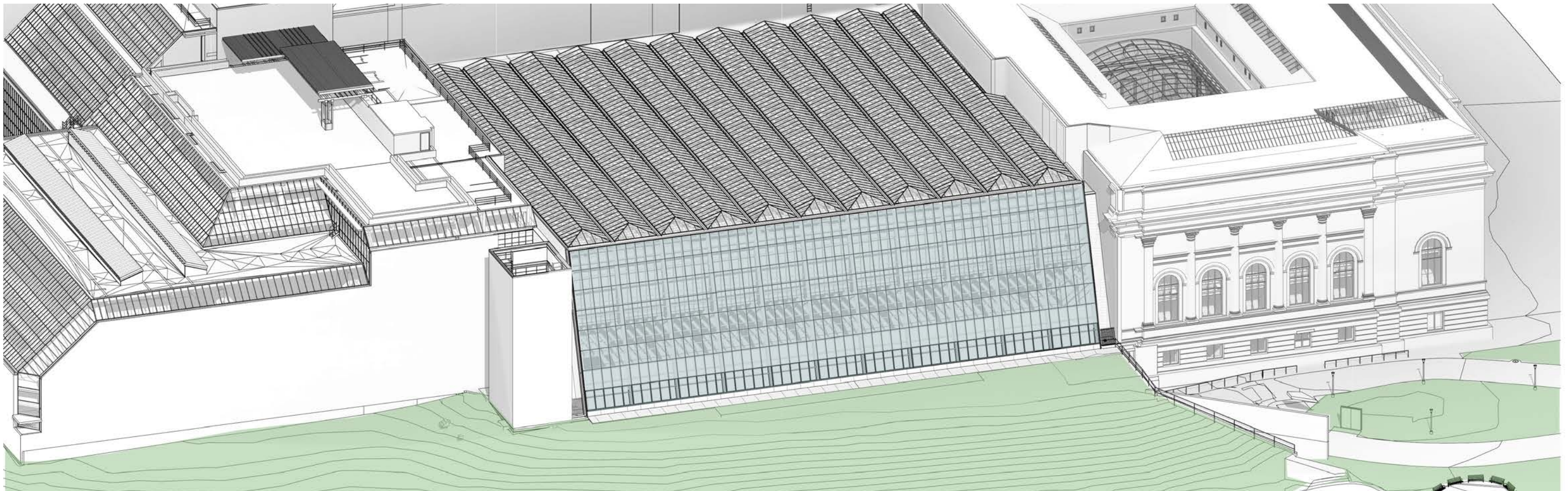
Rockefeller Wing Proposed Elevation



Proposed Detail Elevation

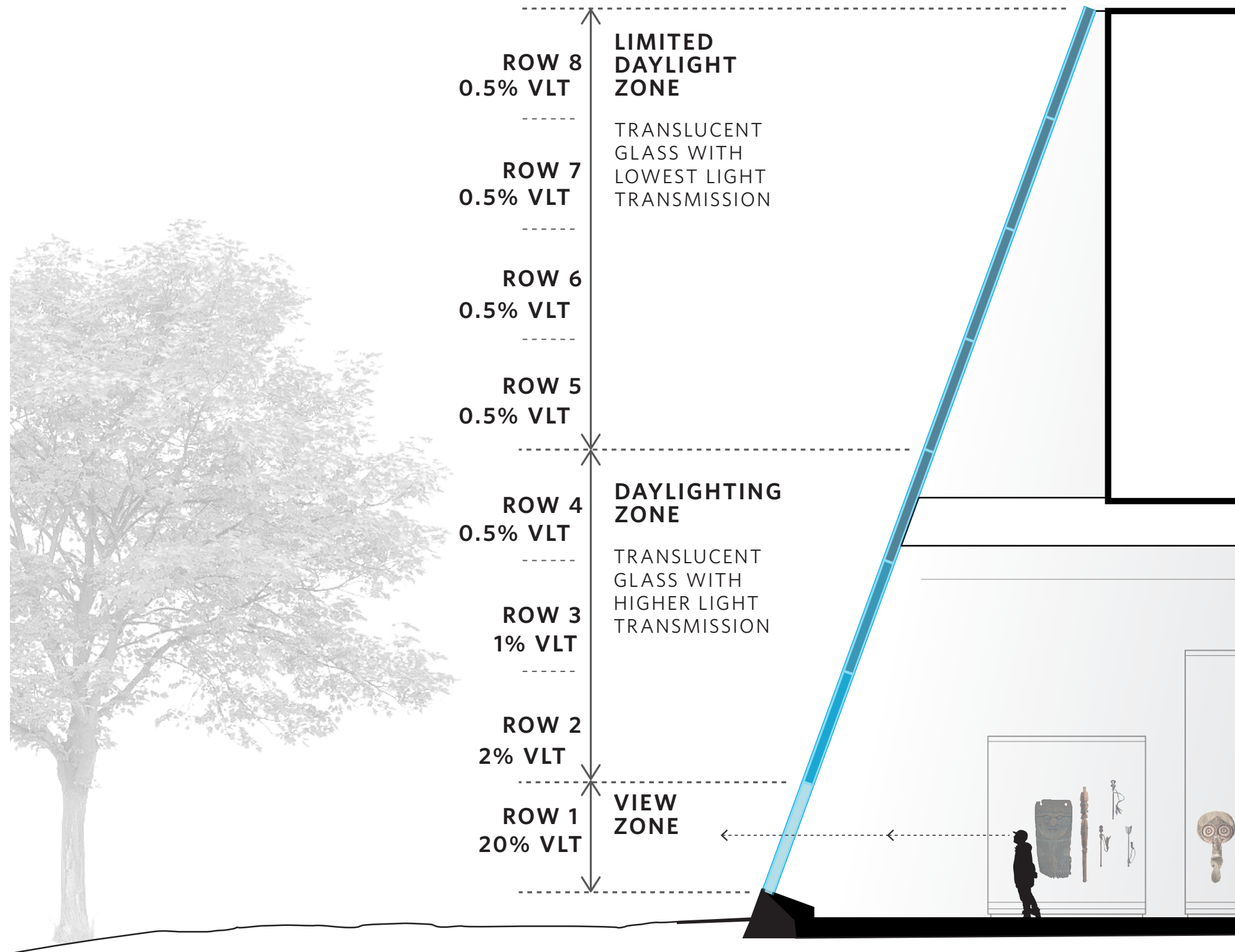


AXONOMETRIC VIEW OF MUSEUM SOUTH ELEVATION - EXISTING CONDITION



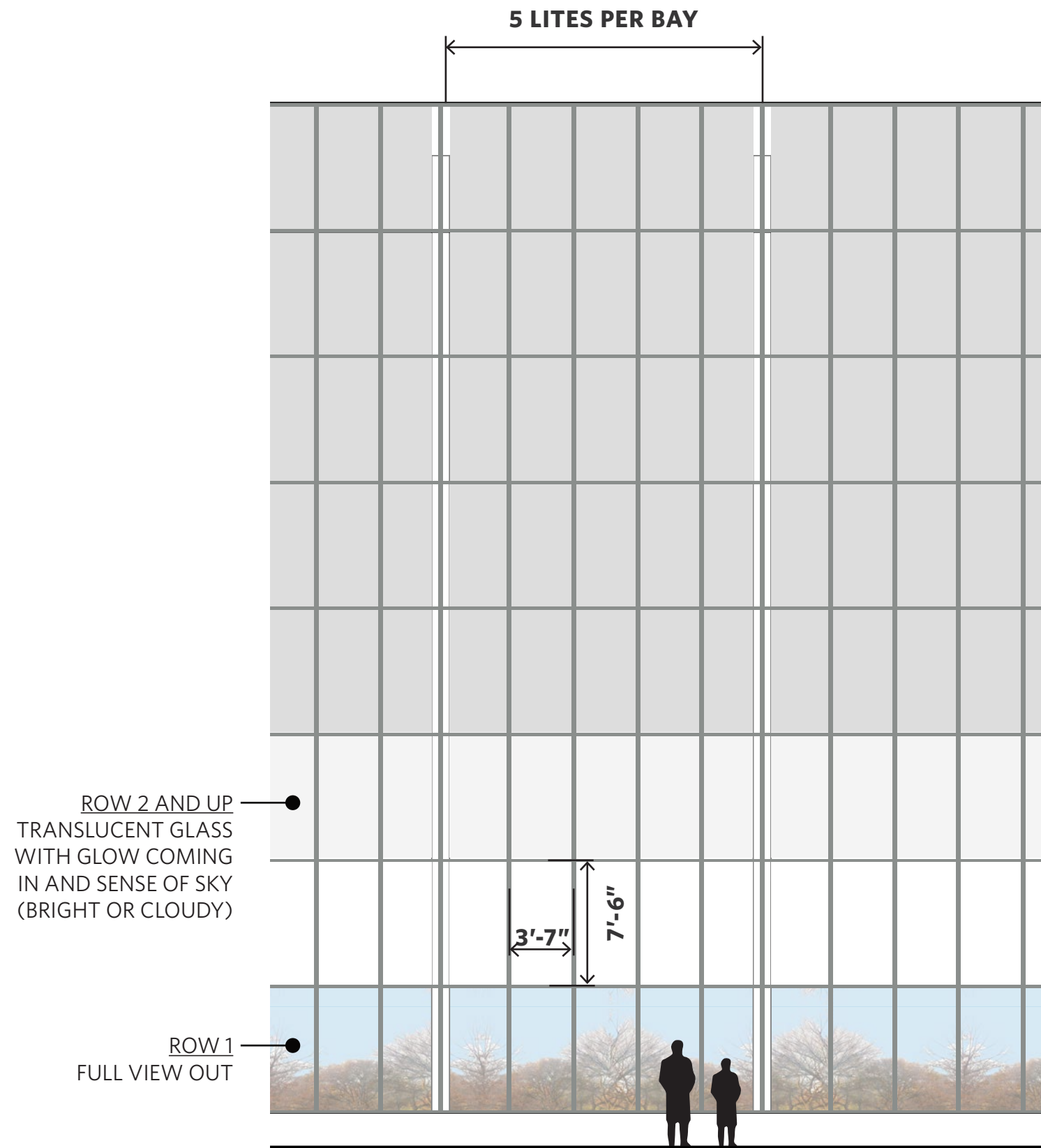
AXONOMETRIC VIEW OF MUSEUM SOUTH ELEVATION - PROPOSED DESIGN

NOTE: VLT (Visible Light Transmittance) is subject to refinement as the glass build-up is finalized



SECTION DIAGRAM OF SOUTH GALLERY LOOKING WEST

PROPOSED DAYLIGHTING DESIGN



INTERIOR ELEVATION OF SOUTH GALLERY LOOKING SOUTH

GLASS ASSEMBLY SOLAR CONTROL LAYERS

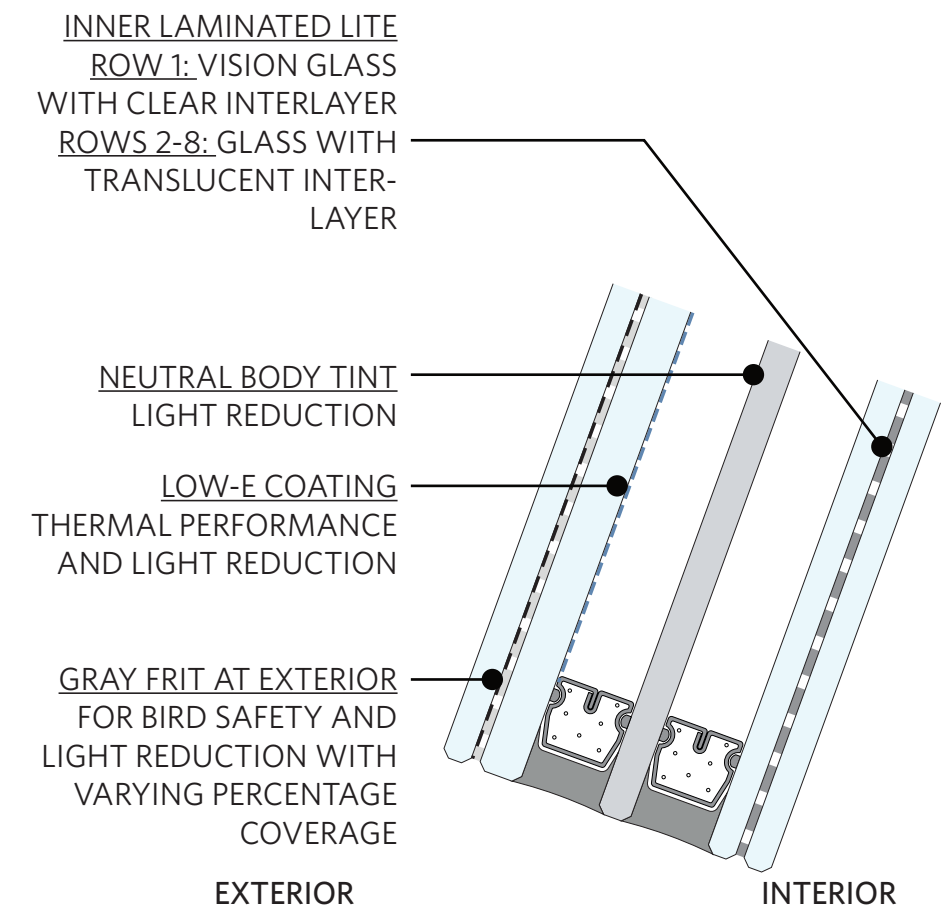


DIAGRAM OF TRIPLE-PANE GLAZING UNIT



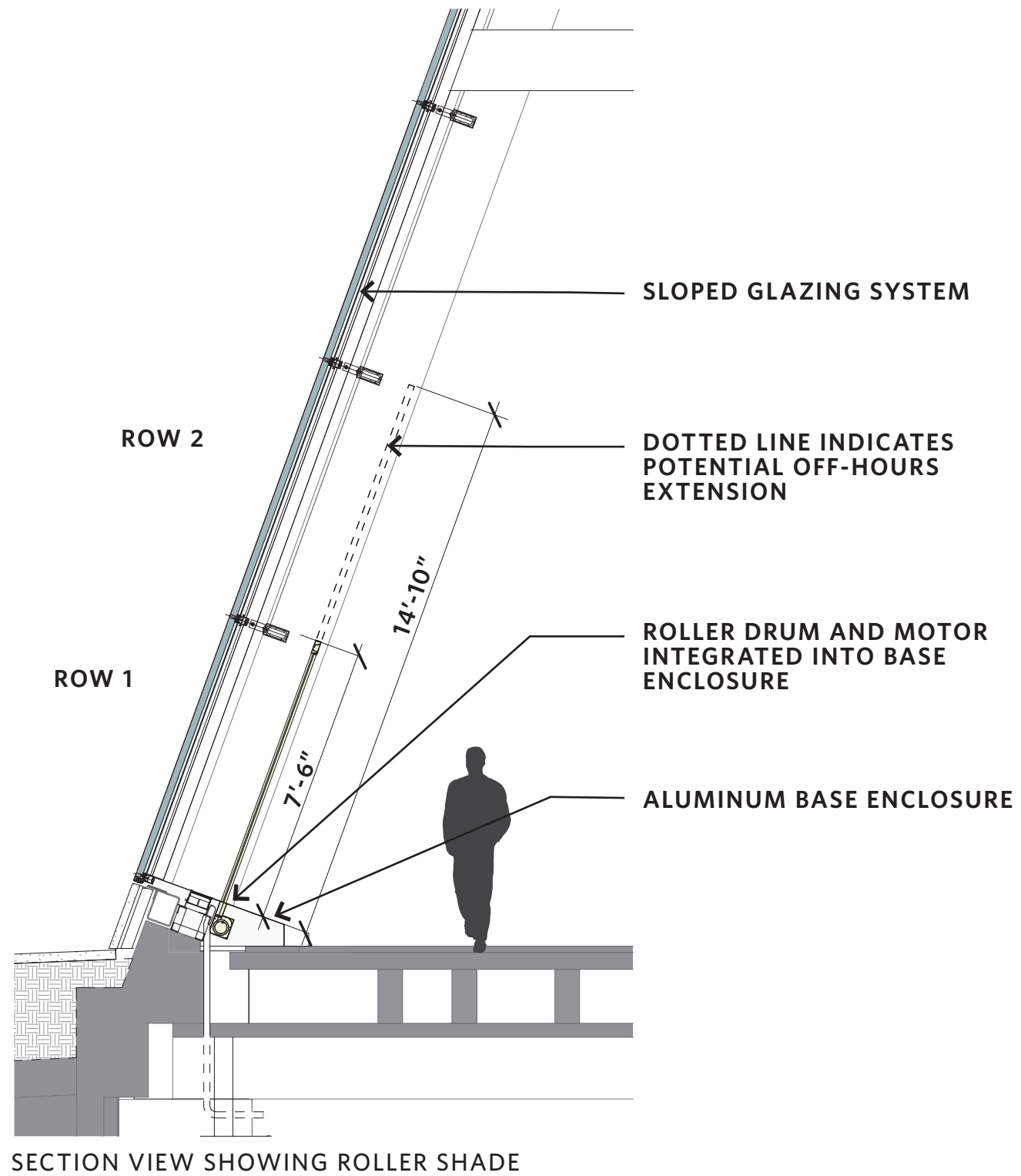
EXISTING CONDITION VIEW FROM FIRST FLOOR INTERIOR OF AAOA GALLERIES

ROW 2 AND UP
TRANSLUCENT GLASS
WITH GLOW COMING
IN AND SENSE OF SKY
(BRIGHT OR CLOUDY)

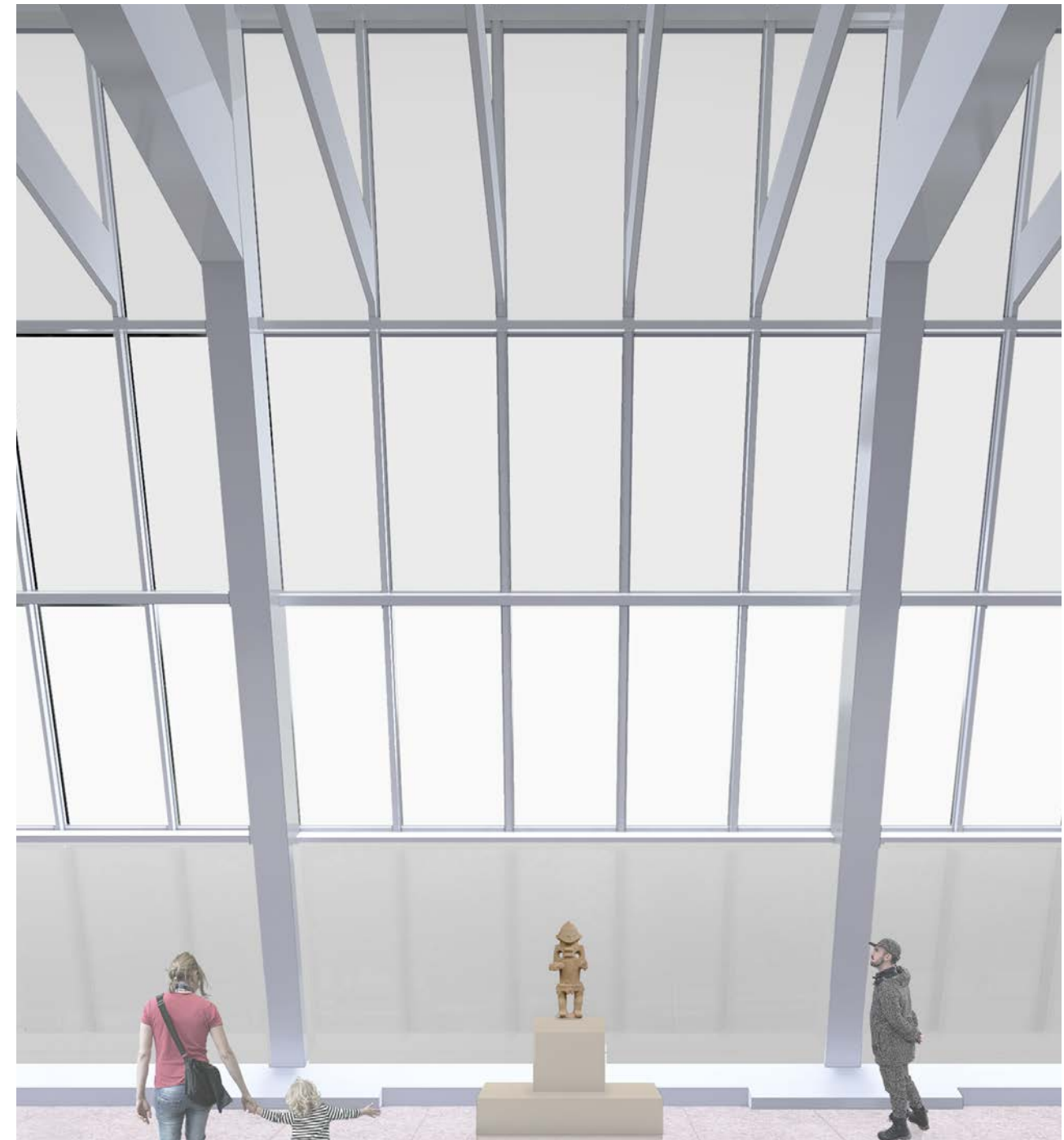
ROW 1
FULL VIEW OUT



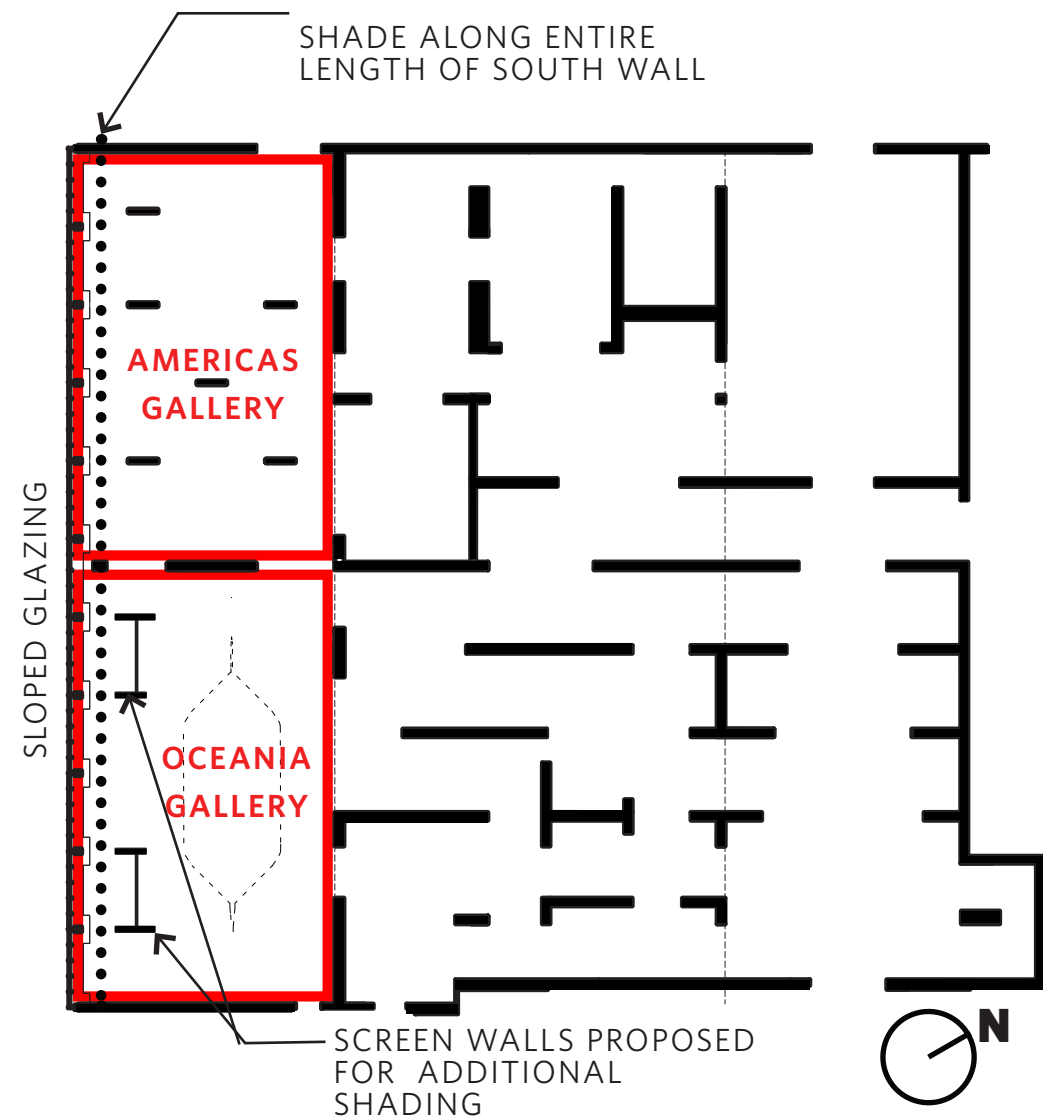
PROPOSED VIEW FROM FIRST FLOOR INTERIOR OF AAOA GALLERIES



INTERIOR ROLLER SHADES

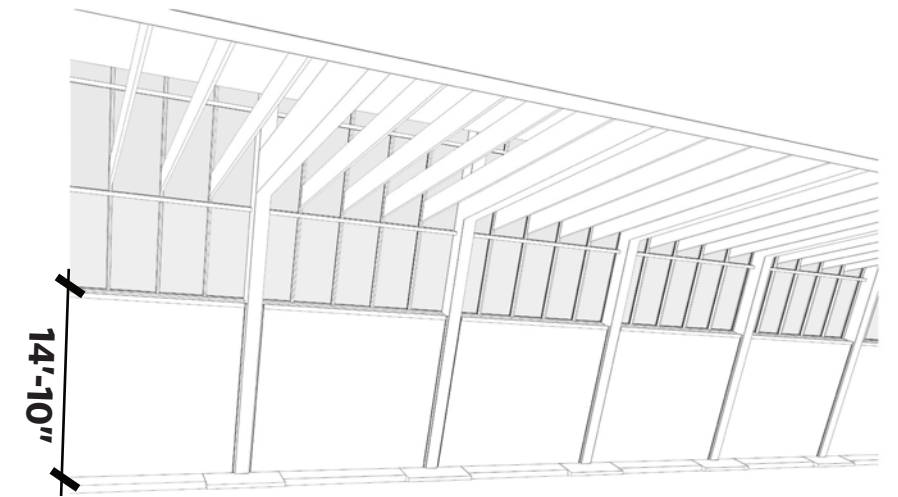


PROPOSED VIEW FROM FIRST FLOOR INTERIOR OF AAOA GALLERIES - WITH SHADE DEPLOYED

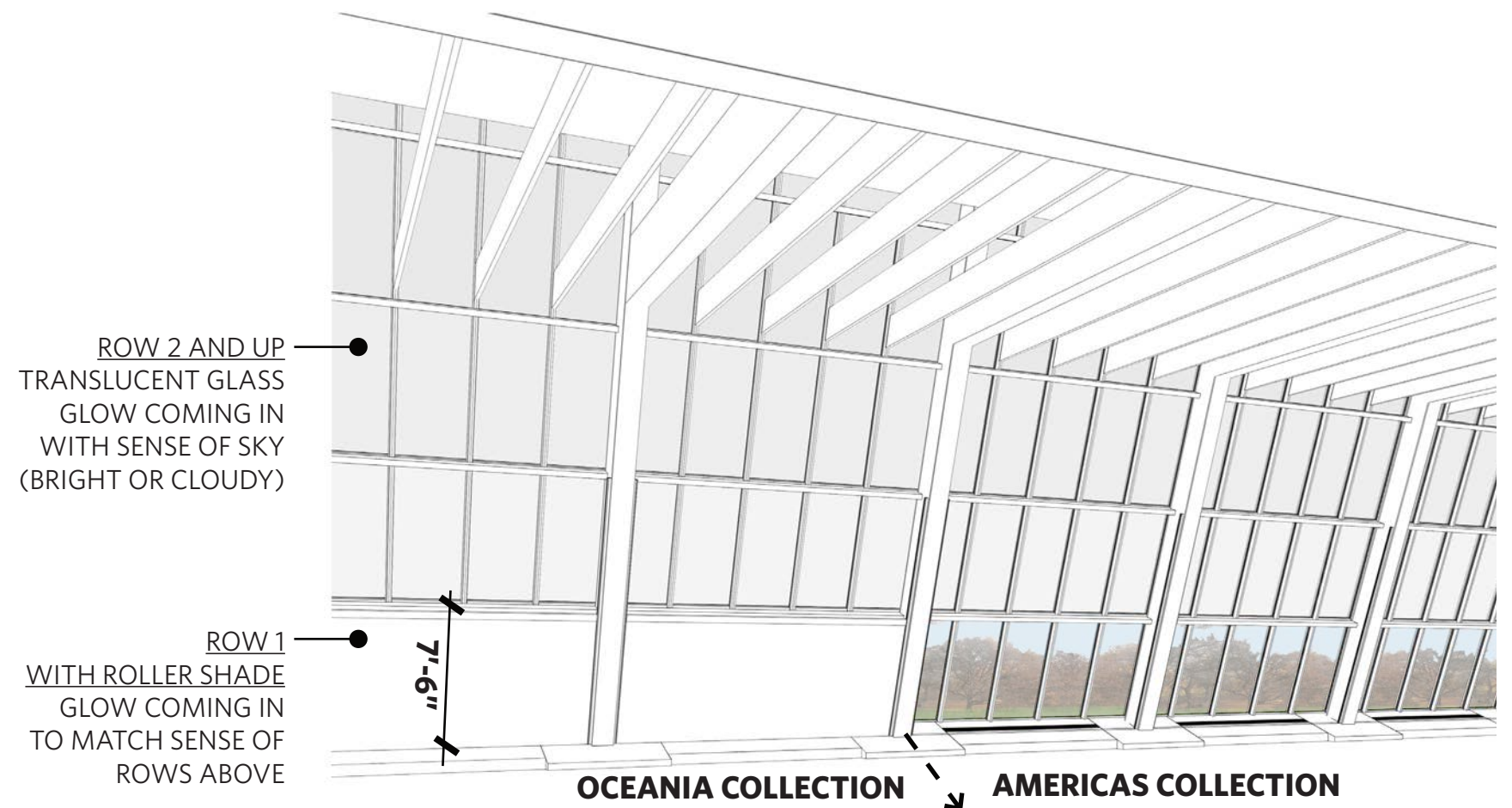


AAOA GALLERY PLAN SHOWING AREAS WHERE SHADES ARE NEEDED

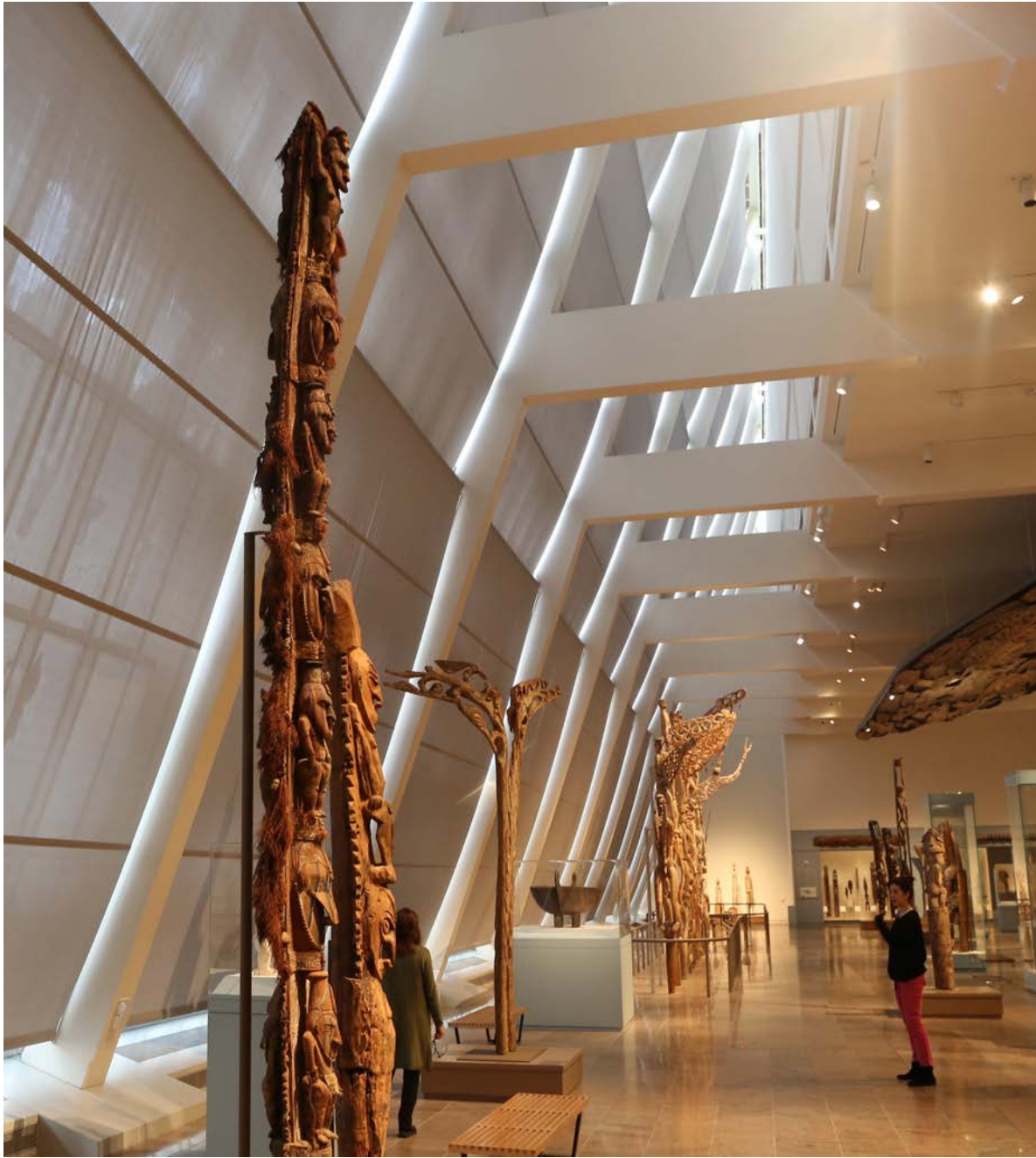
INTERIOR ROLLER SHADES



ROLLER SHADES DEPLOYED UP TO THE SECOND ROW OF GLASS ACROSS ALL BAYS WHEN MUSEUM IS CLOSED - REDUCES CUMULATIVE LIGHT EXPOSURE



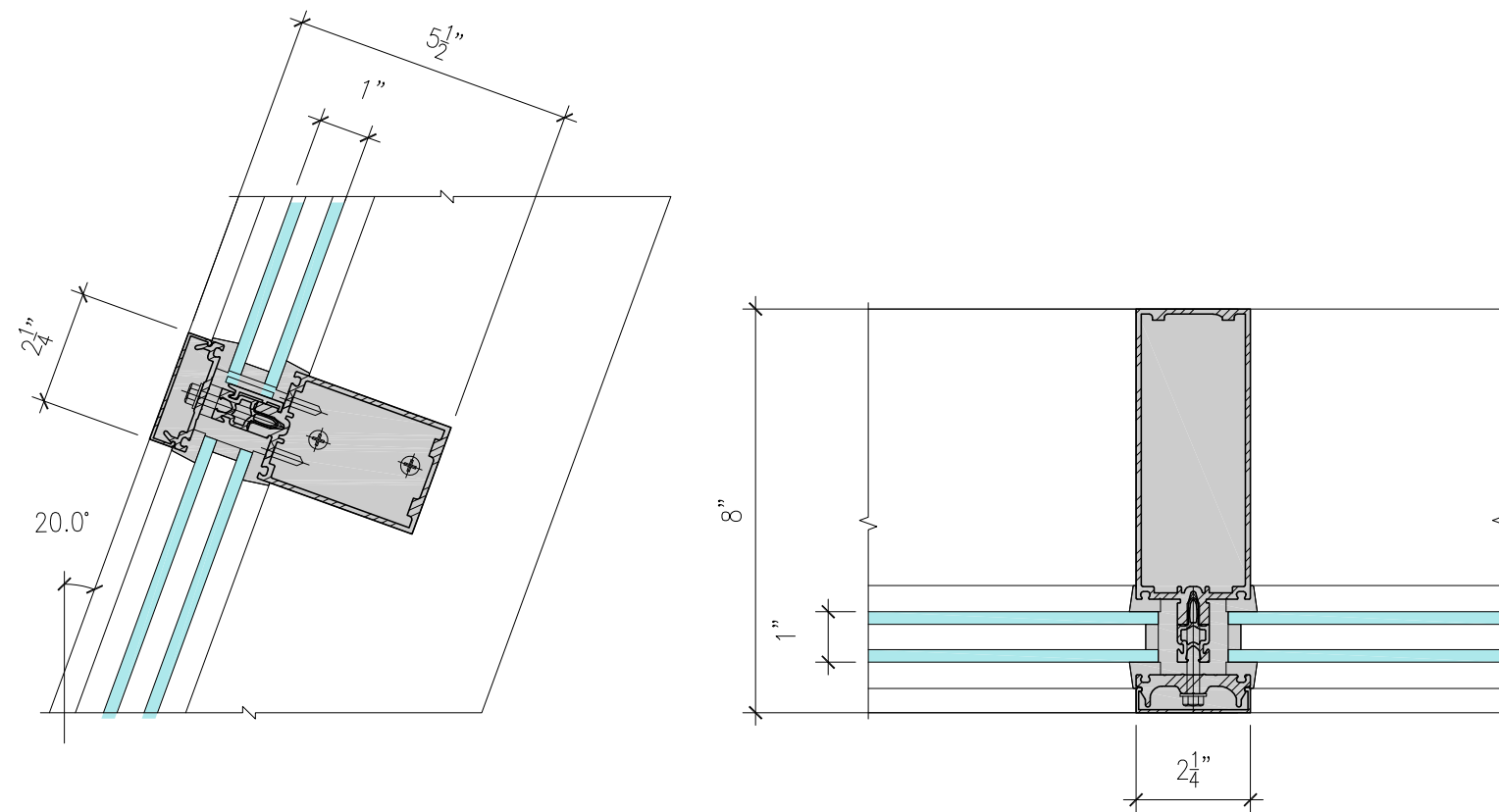
ROLLER SHADES DEPLOYED UP TO THE FIRST ROW OF GLASS AT OCEANIA WHEN THE DAYLIGHT QUANTITY IS HIGH. ARTWORK IN AMERICAS ARE MORE DURABLE, AND DO NOT REQUIRE THE SHADE TO BE DEPLOYED WHEN THE MUSEUM IS OPEN



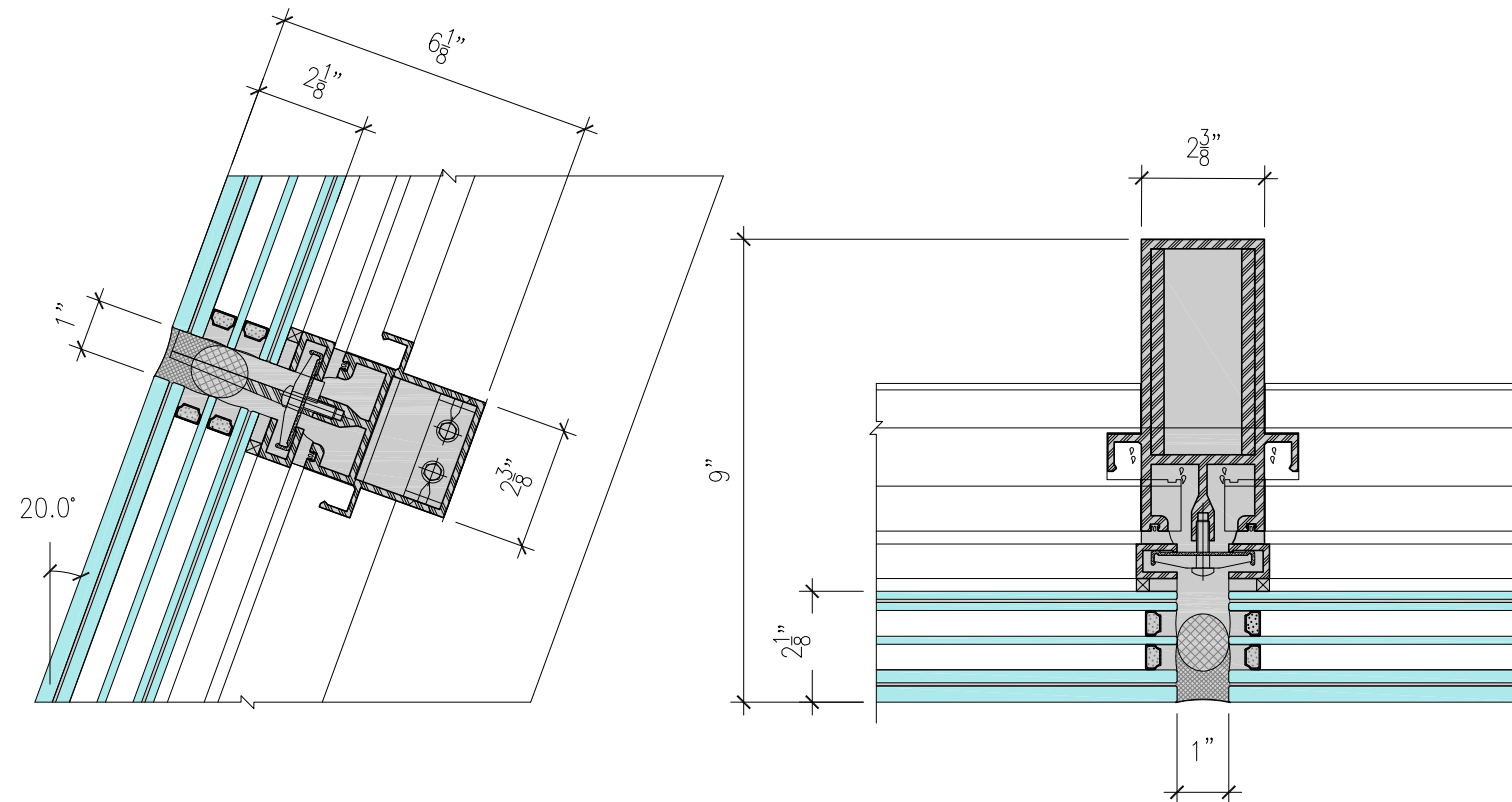
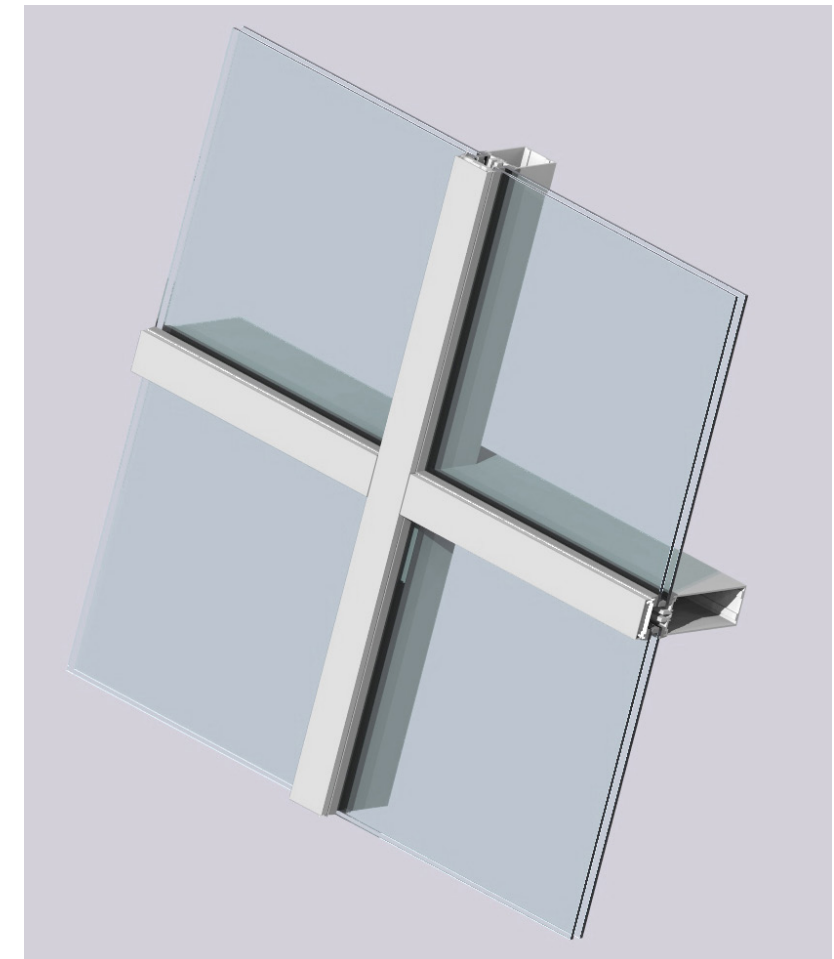
AAOA GALLERIES EXISTING CONDITIONS



ARCHITECTURAL CONCEPT INTENT RENDERING AT SOUTH GALLERY, VIEW EAST

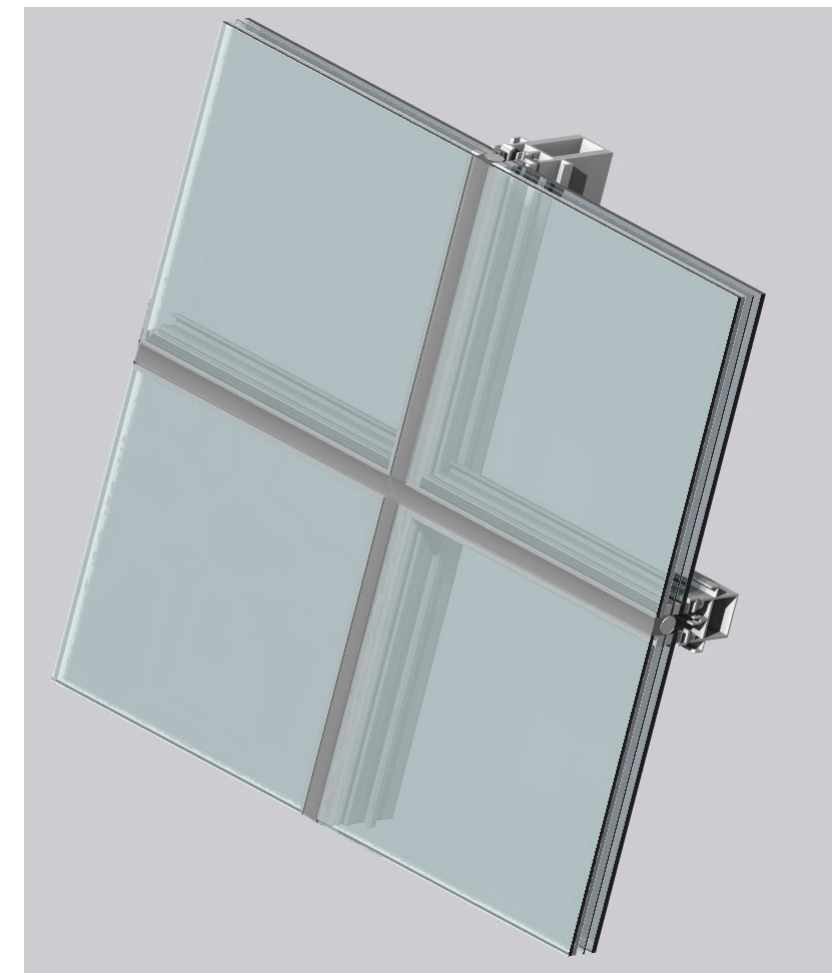


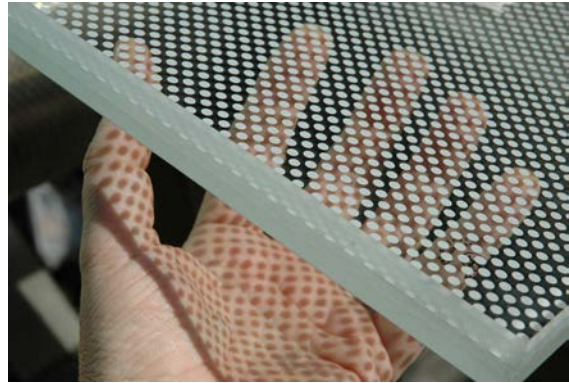
EXISTING DETAILS: HORIZONTAL MULLION AND VERTICAL MULLION
CONVENTIONAL INSULATED GLASS UNITS WITH PRESSURE CAPS



PROPOSED DETAILS: HORIZONTAL MULLION AND VERTICAL MULLION
TRIPLE GLAZING, LAMINATED GLASS, AND STRUCTURAL SILICON GLASS ATTACHMENT FOR
IMPROVED THERMAL AND SOLAR PERFORMANCE, WEATHER TIGHTNESS, AND LONGEVITY

COMPARATIVE GLAZING DETAILS: EXISTING AND PROPOSED

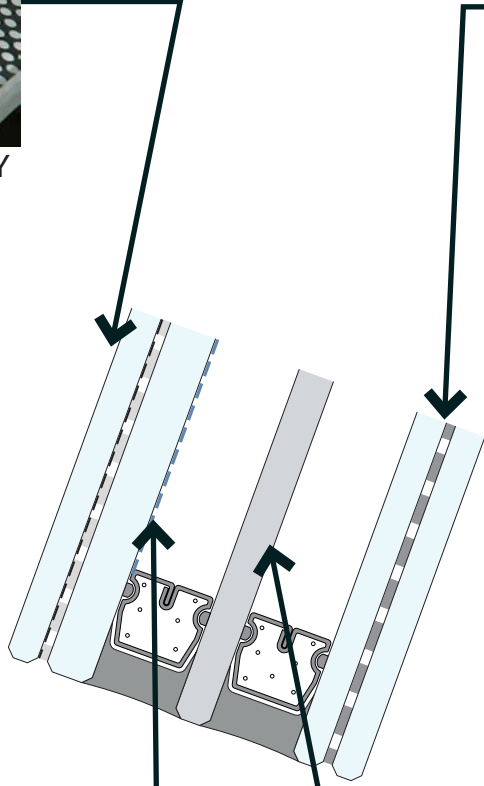




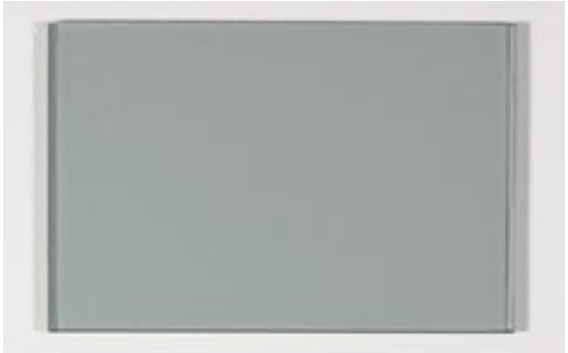
GRAY FRIT AT EXTERIOR - BIRD SAFETY AND LIGHT REDUCTION WITH VARYING PERCENTAGE COVERAGE



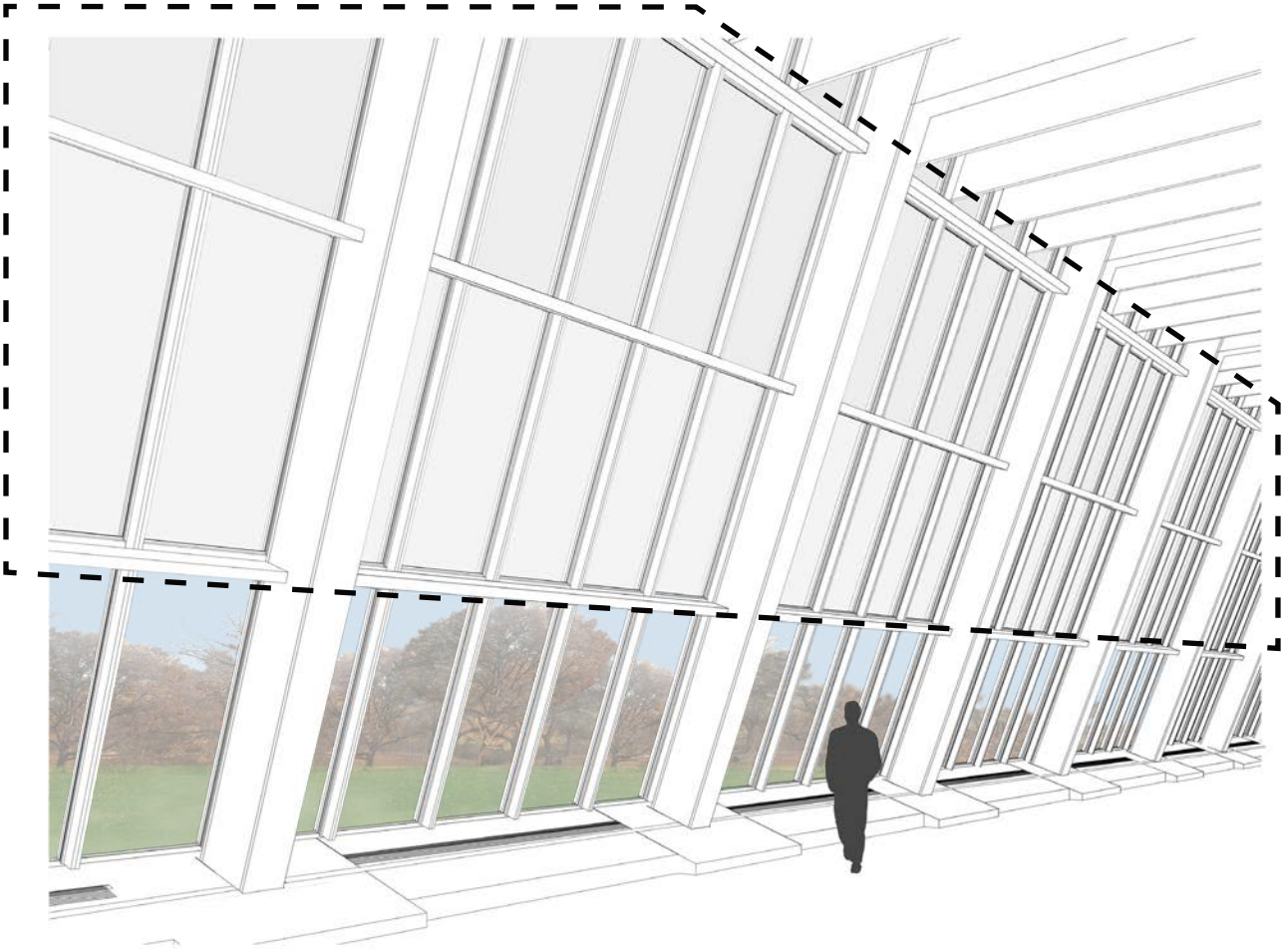
TRANSLUCENT INTERLAYER - SUN PROTECTION AND LIGHT REDUCTION



LOW-E COATING - THERMAL PERFORMANCE AND LIGHT REDUCTION (SURFACE #4 OF OUTER LAMINATE)



NEUTRAL BODY TINT - LIGHT REDUCTION



TRANSLUCENT GLASS PANEL ASSEMBLY

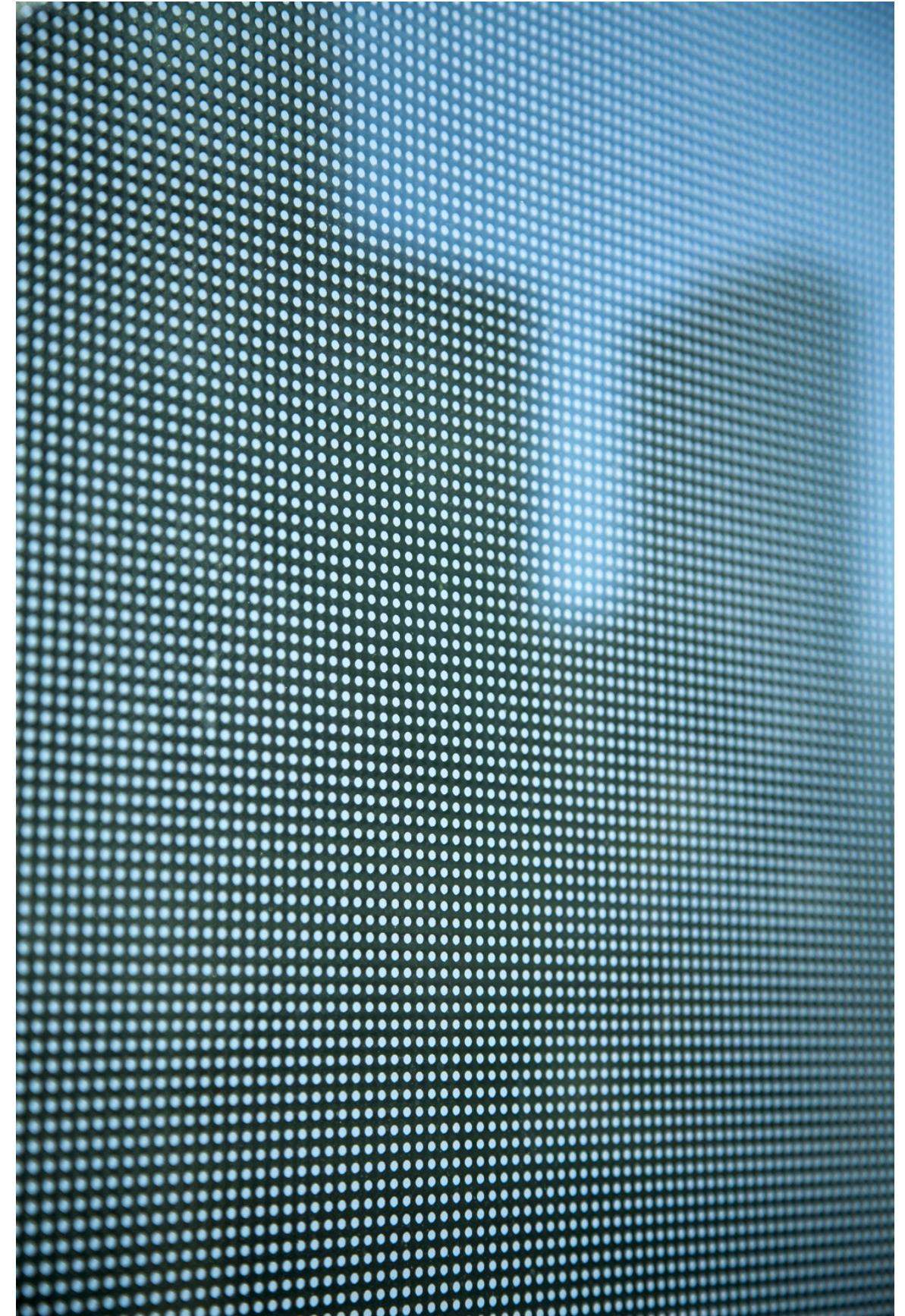


GLASS SAMPLE
VIEW OF EXTERIOR FACE: ROW 1



GLASS SAMPLE
VIEW OF EXTERIOR FACE: ROW 4

NOTE: FRITS ARE REQUIRED AS PART OF NYC BUILDING CODE NEW REQUIREMENTS FOR BIRD FRIENDLY GLASS MATERIALS, EFFECTIVE IN 2021



PRECEDENT: EXAMPLE OF FRITTED BIRD FRIENDLY GLASS AND ITS VISIBILITY FROM A DISTANCE: RENOVATION OF JACOB JAVITS CONVENTION CENTER



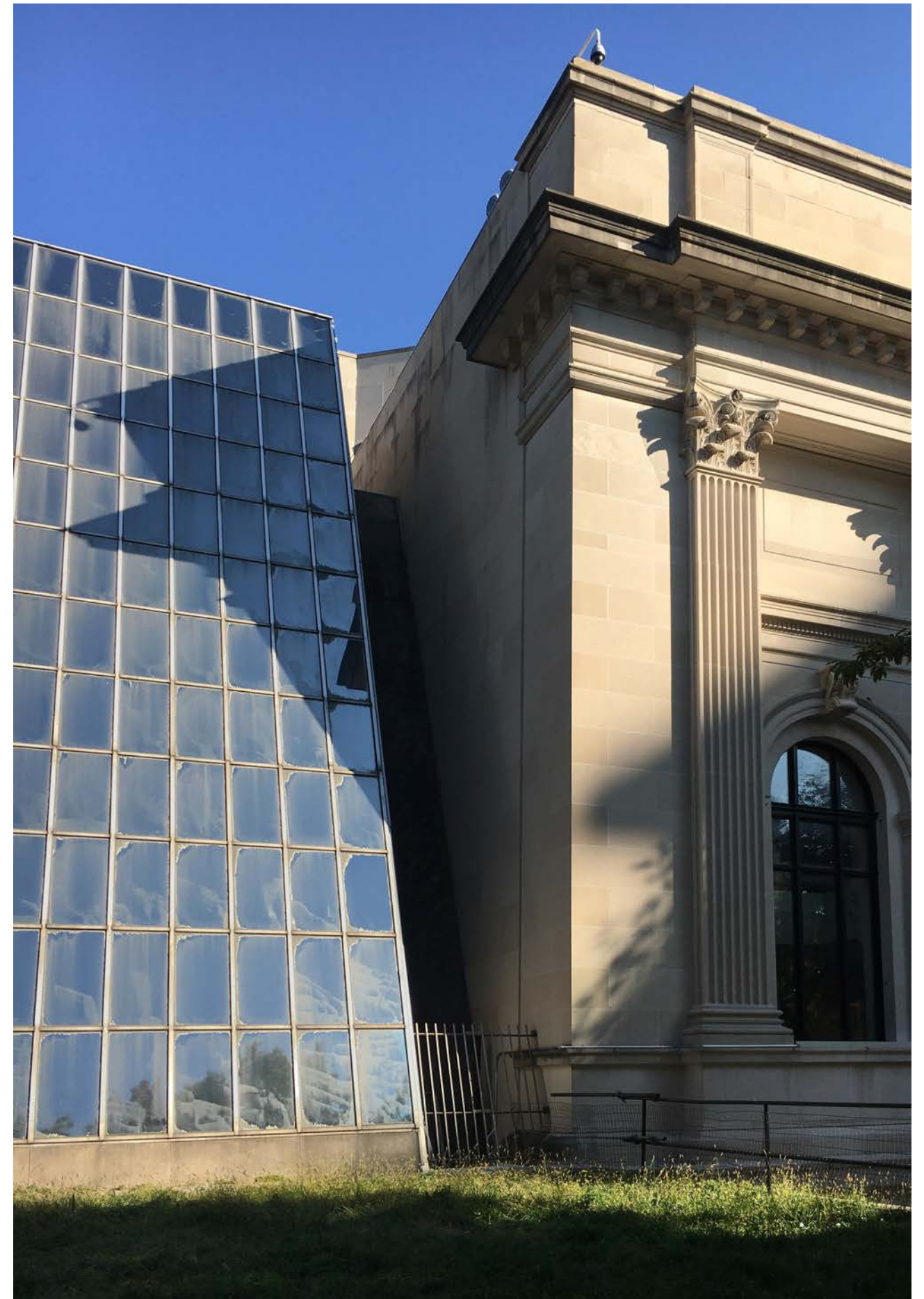
ROCKEFELLER WING - EXISTING CONDITION PHOTO

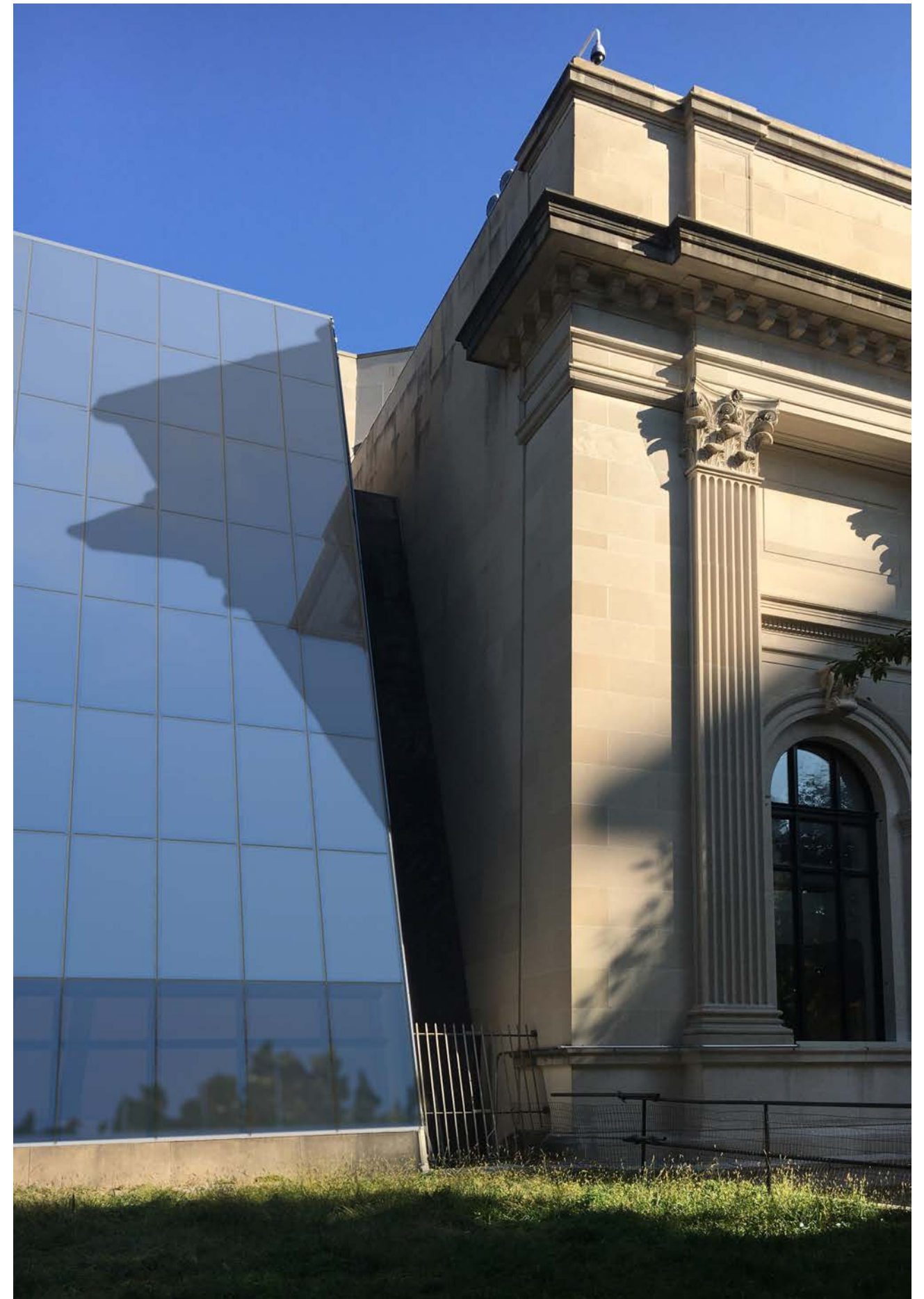


ROCKEFELLER WING PROPOSED SLOPED GLAZING REPLACEMENT - RENDERING



ROCKEFELLER WING - EXISTING CONDITION PHOTOS





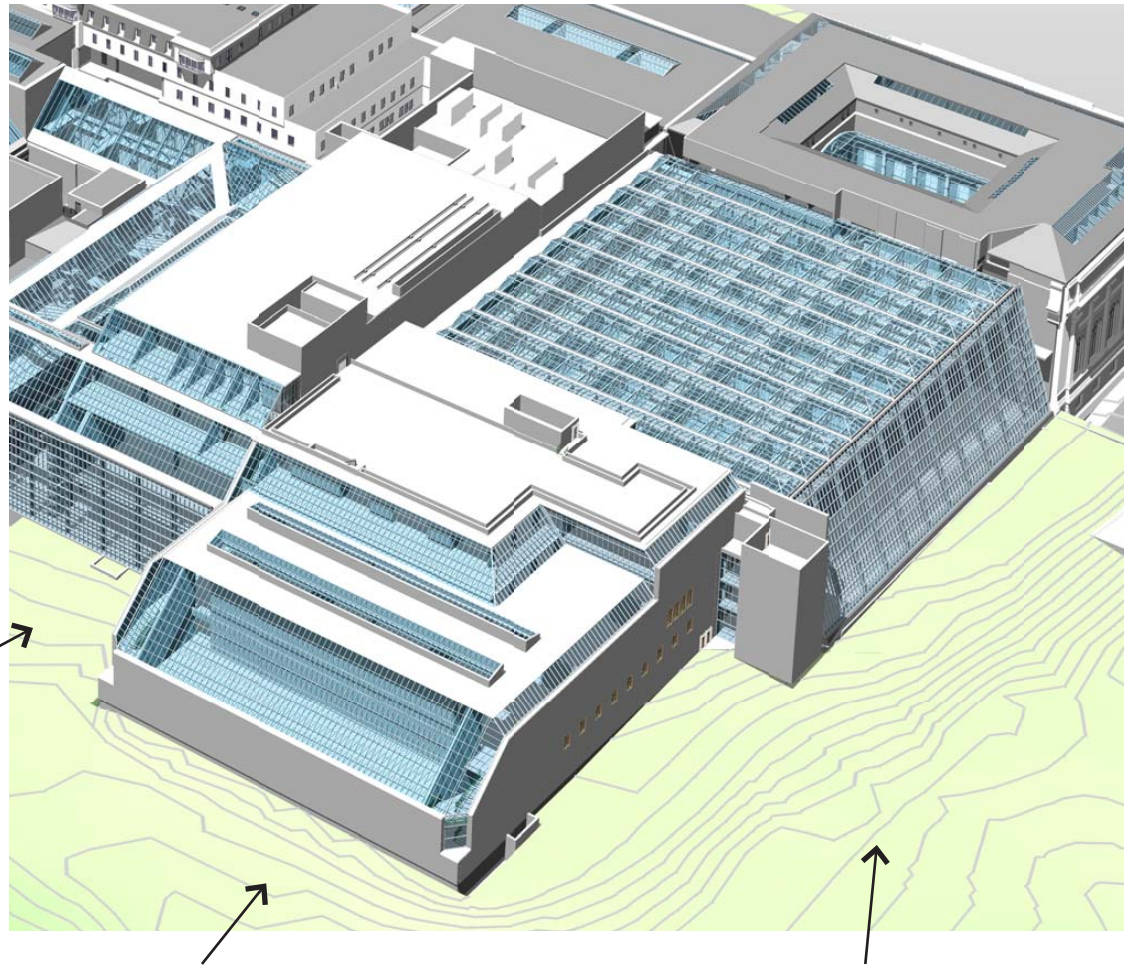
ROCKEFELLER WING PROPOSED SLOPED GLAZING REPLACEMENT - RENDERINGS



CONTEXT PHOTOS IN CENTRAL PARK



CONTEXT PHOTO: VIEW OF ROCKEFELLER WING SLOPED GLAZING FROM FIFTH AVENUE



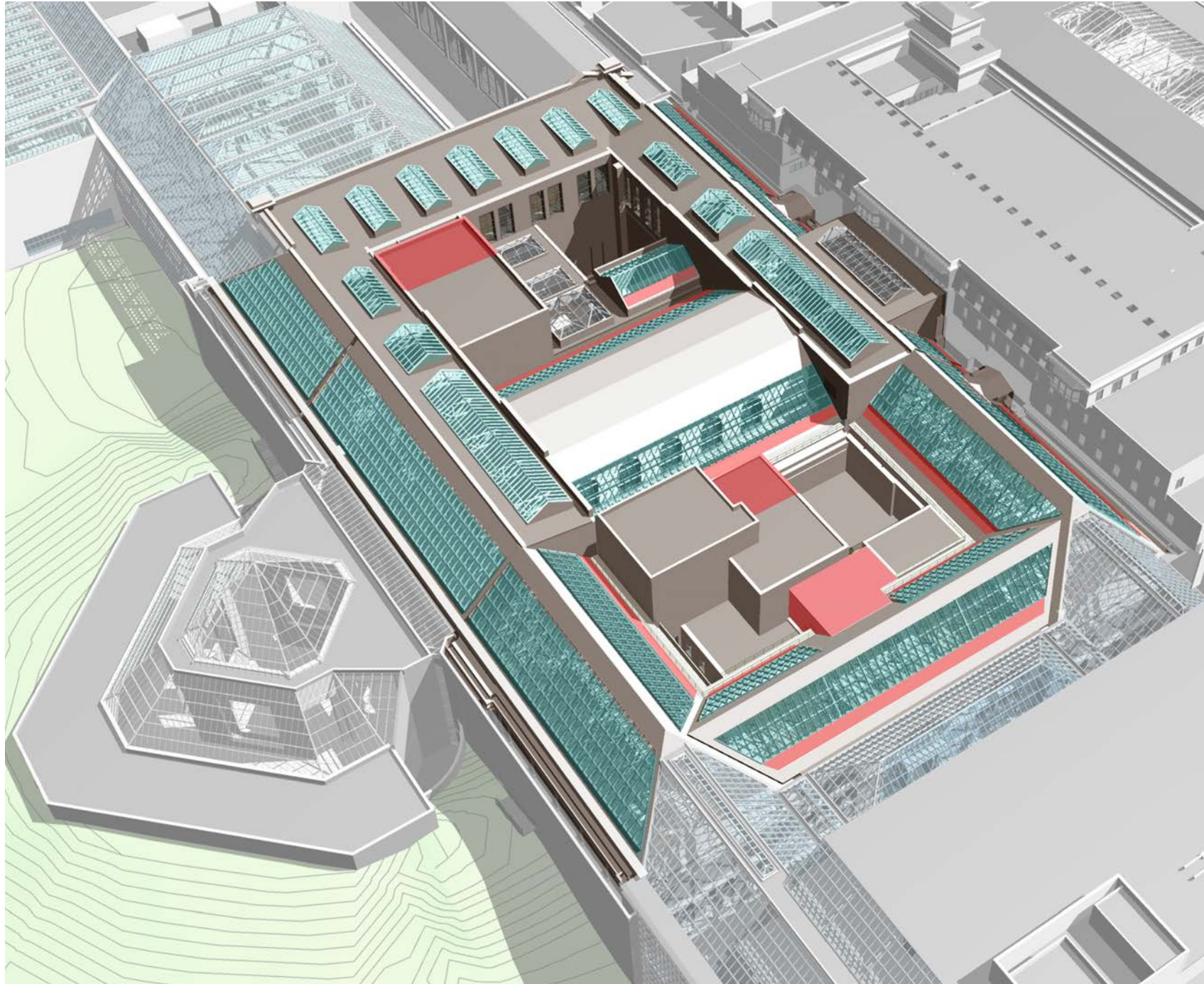
CONTEXT PHOTOS AT SOUTHWEST CORNER OF MUSEUM - VISIBILITY OF ROCKEFELLER WING WITH LILA ACHESON WALLACE WING AND PETRIE COURT



EXISTING CONDITION PHOTO: VIEW OF MET SOUTHWEST WING AND ROCKEFELLER WING



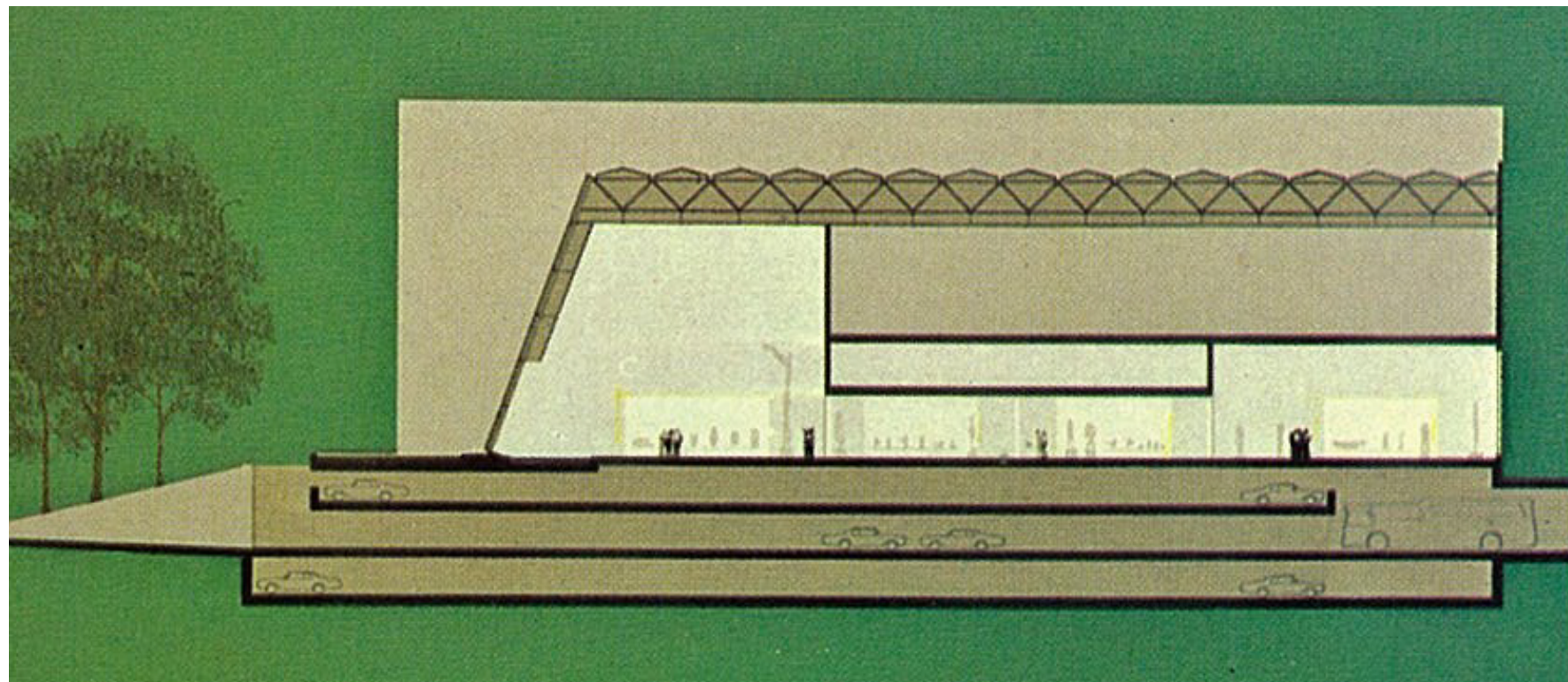
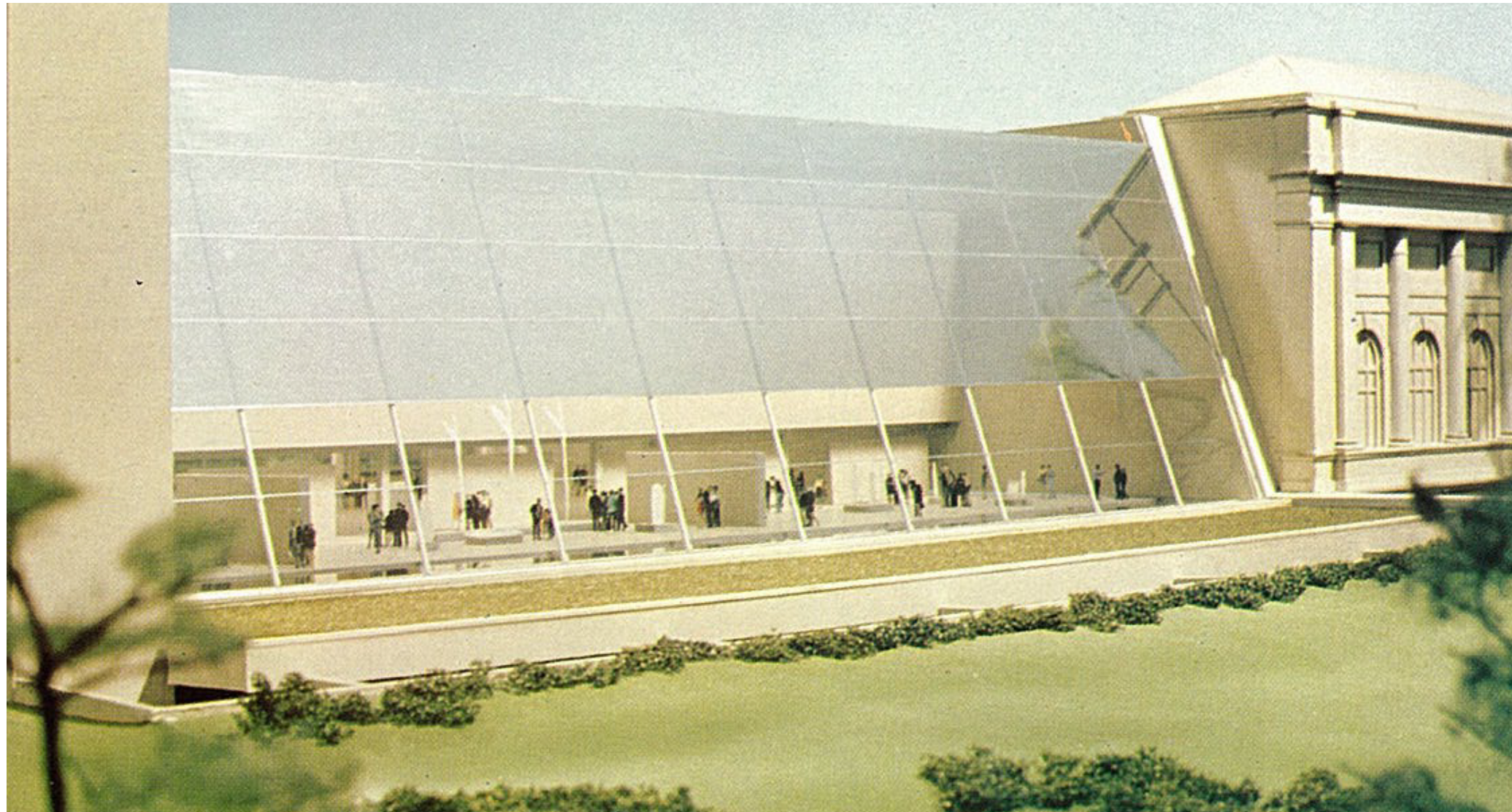
PROPOSED RENDERING: VIEW OF MET SOUTHWEST WING AND ROCKEFELLER WING



METROPOLITAN MUSEUM PRECEDENT:
WINGS A,B AND C SKYLIGHT REPLACEMENT OVER EUROPEAN PAINTINGS GALLERIES AS APPROVED BY LPC AT STAFF LEVEL IN 2017. THE NEW GLAZING SYSTEM IS SIMILAR TO THAT PROPOSED FOR THE ROCKEFELLER WING.

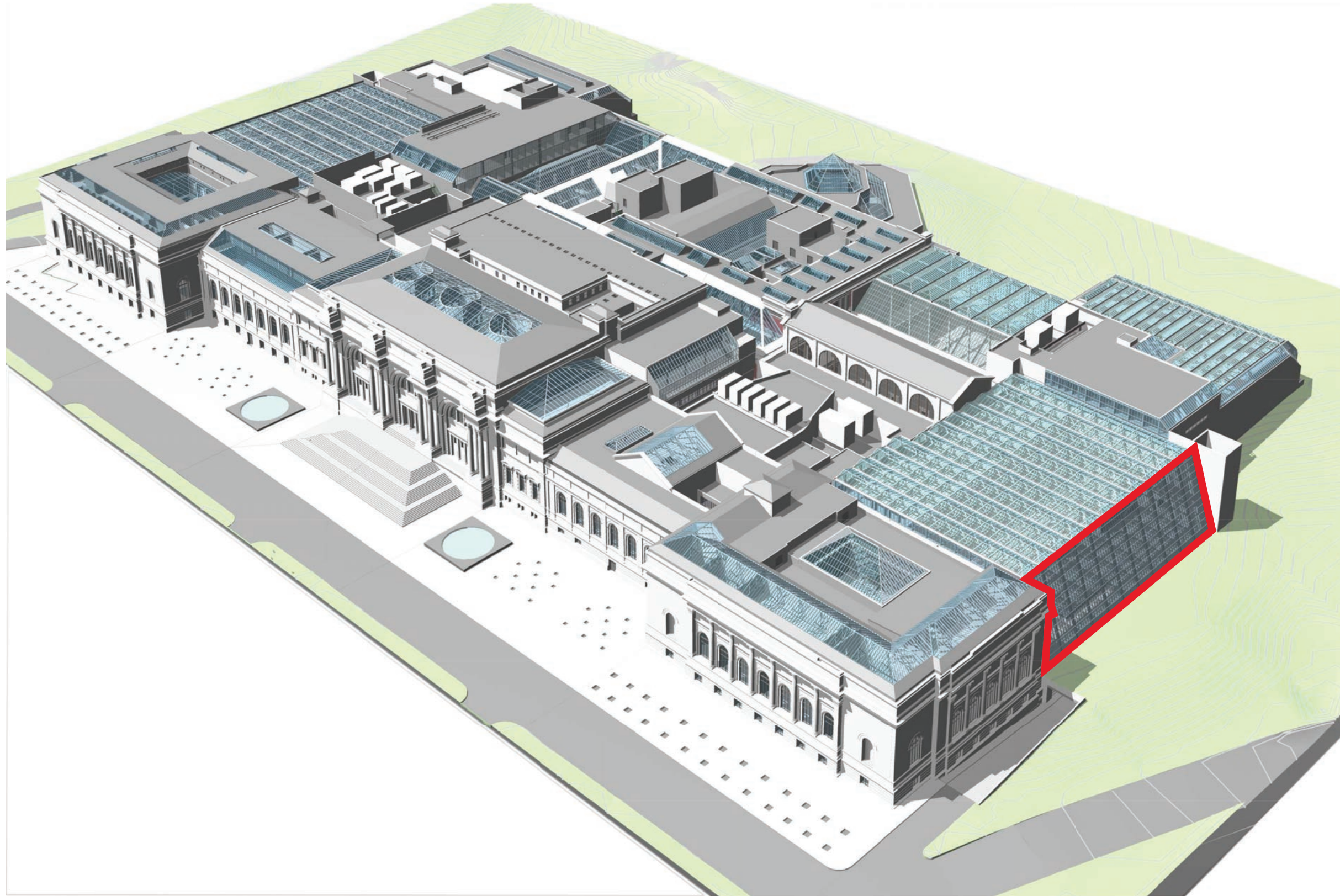


CONSTRUCTION PHOTO OF SKYLIGHT REPLACEMENT (2020)

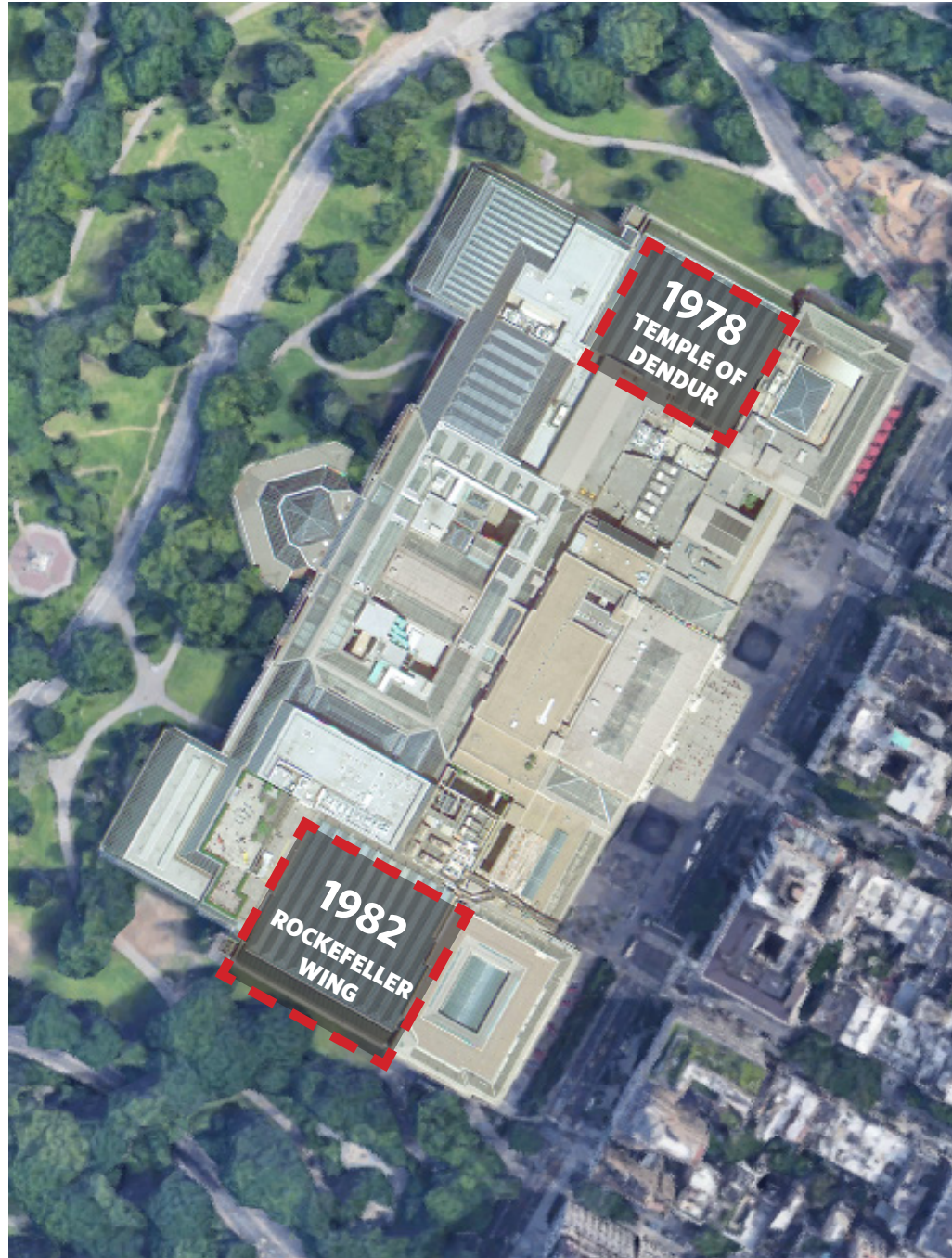


KEVIN ROCHE JOHN DINKELOO ASSOCIATES:
MODEL AND SECTION OF OF THE ROCKEFELLER WING, 1970 MASTER PLAN

THE 1970 MODELS SHOW SHEER PLANES OF GLASS WITHOUT THE MULLION GRIDS THAT WERE INCORPORATED INTO THE BUILT PROJECTS USING THE GLASS TECHNOLOGY AVAILABLE IN THE 1970'S AND EARLY 1980'S.



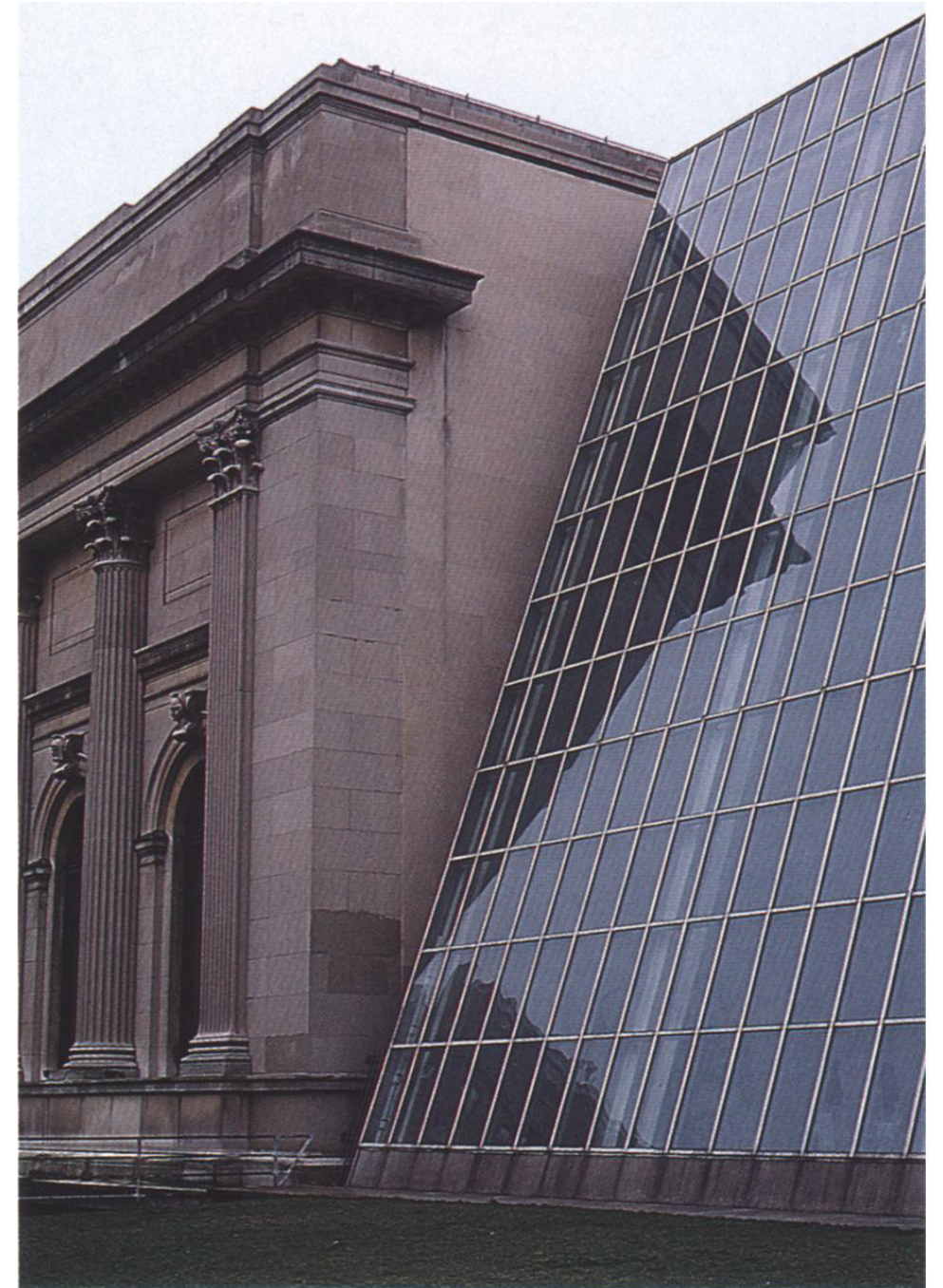
APPENDIX 3A: DESIGN OF POTENTIAL FUTURE TEMPLE OF DENDUR SLOPED GLAZING REPLACEMENT



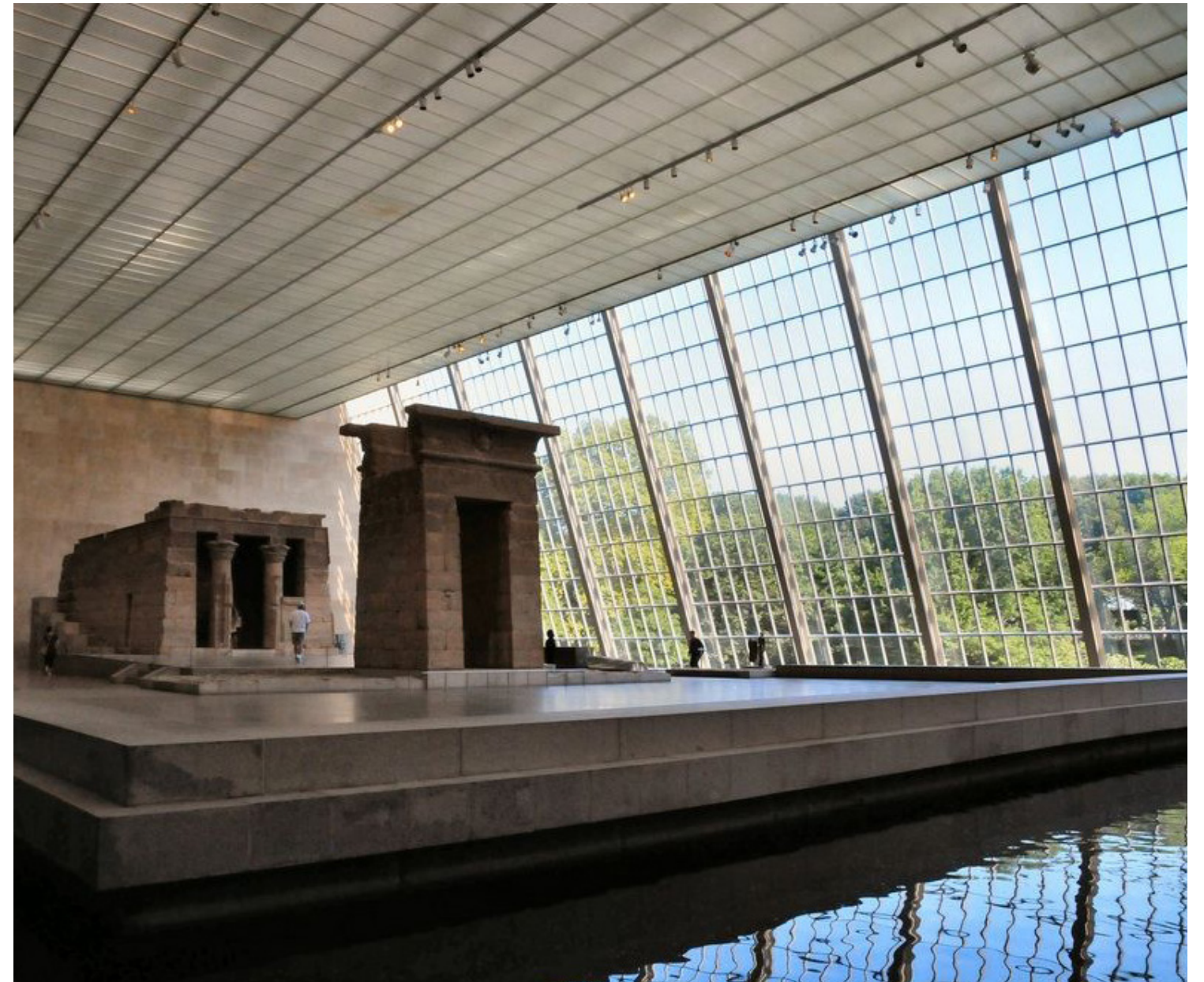
ORIENTATION PLAN



ROCKEFELLER WING FACES SOUTH



TEMPLE OF DENDUR WING FACES NORTH



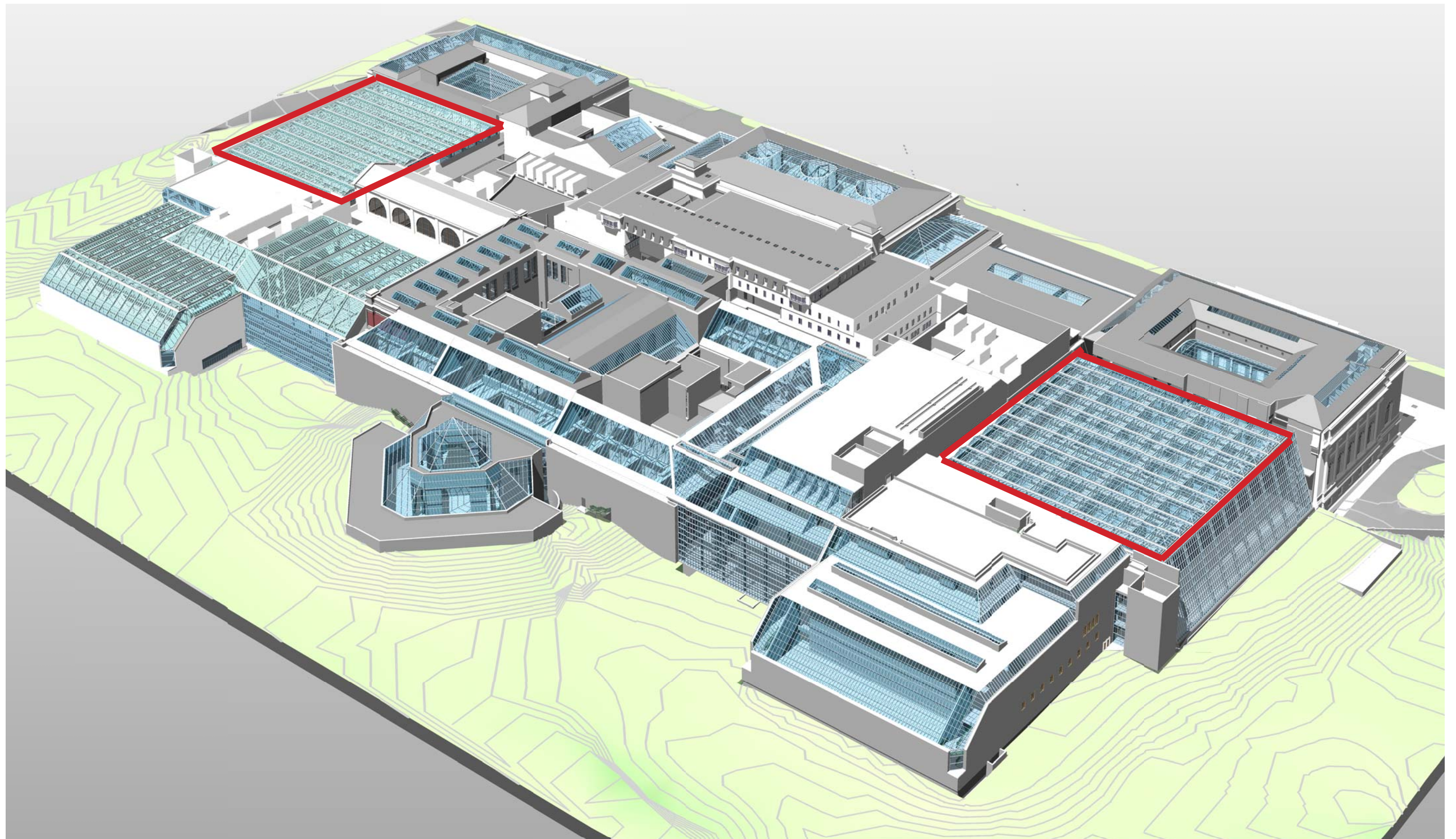
TEMPLE OF DENDUR WING EXTERIOR AND INTERIOR PHOTOS - EXISTING CONDITIONS



ROCKEFELLER WING SLOPED GLAZING PROPOSED REPLACEMENT



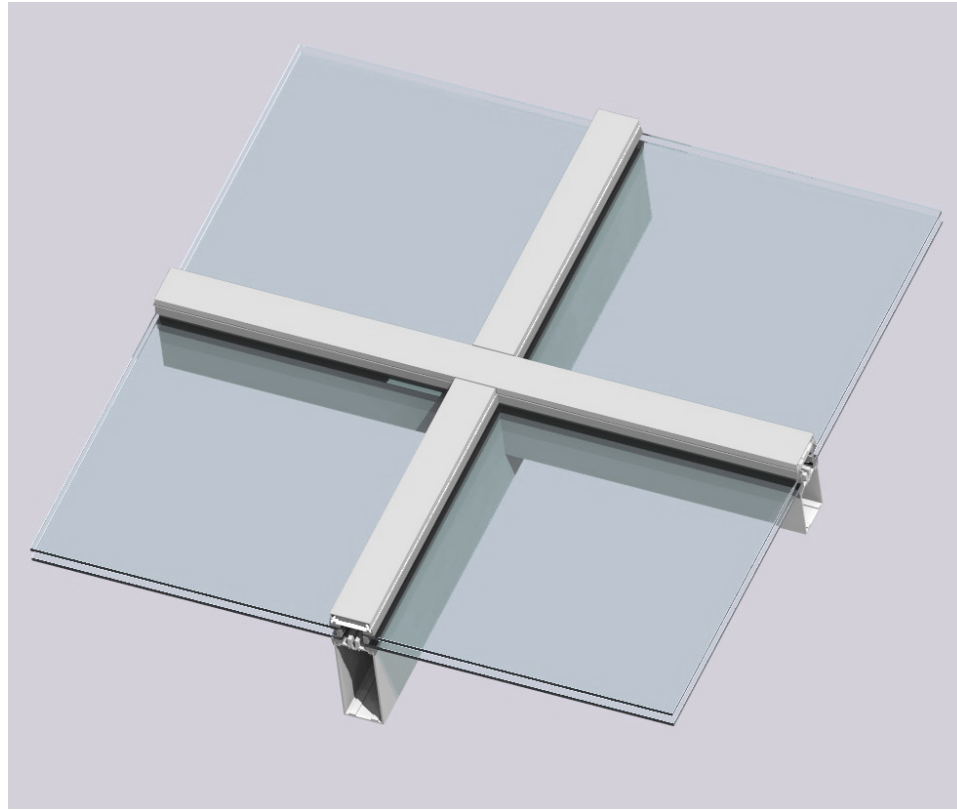
TEMPLE OF DENDUR WING SLOPED GLAZING: DESIGN OF POTENTIAL FUTURE REPLACEMENT



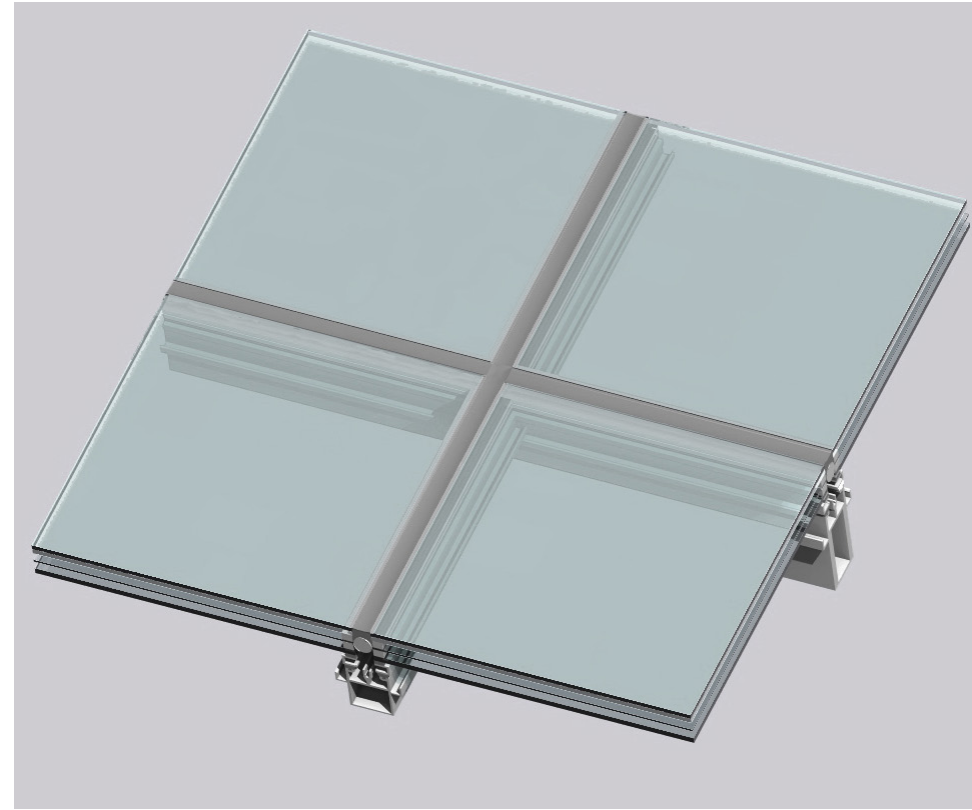
APPENDIX 3B: ROCKEFELLER AND TEMPLE OF DENDUR SKYLIGHTS: DESIGN OF POTENTIAL FUTURE SKYLIGHT ROOF REPLACEMENT



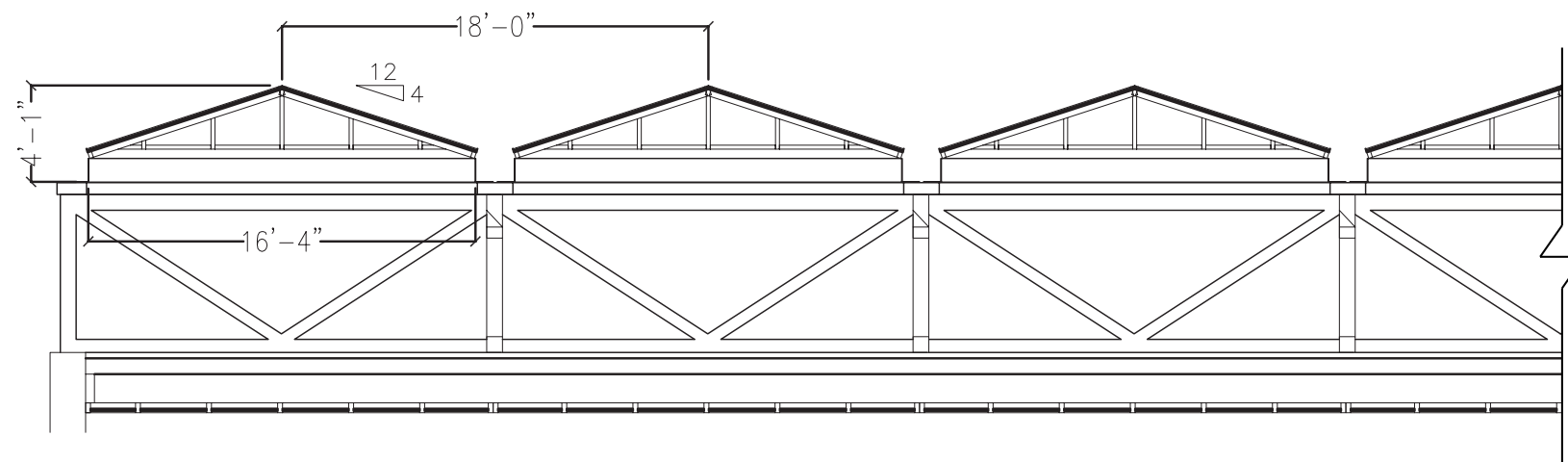
TEMPLE OF DENDUR WING SKYLIGHTS EXISTING CONDITIONS



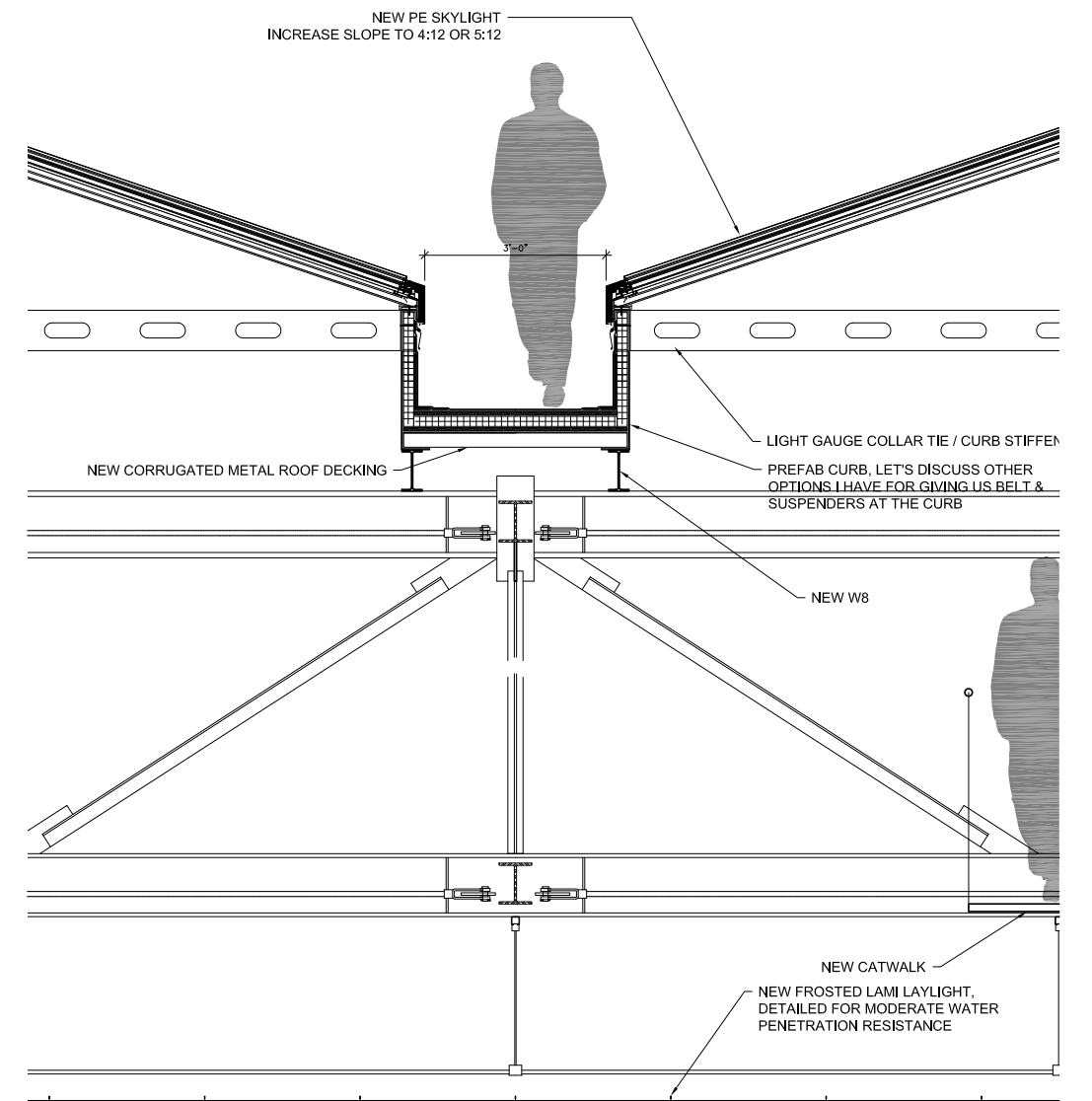
EXISTING SKYLIGHT DETAIL



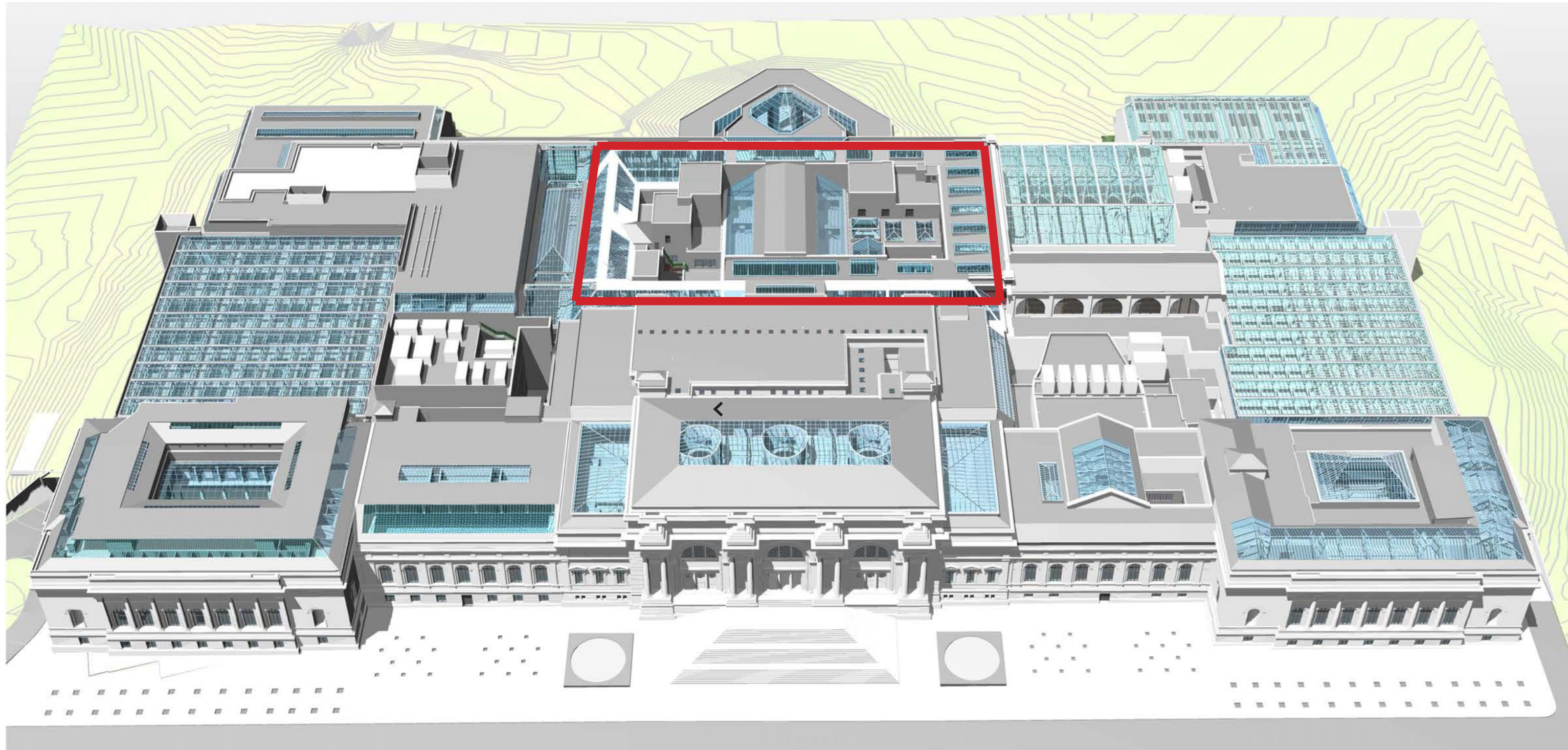
POTENTIAL FUTURE SKYLIGHT DETAIL



ROCKEFELLER AND TEMPLE OF DENDUR EXISTING SKYLIGHTS SECTION

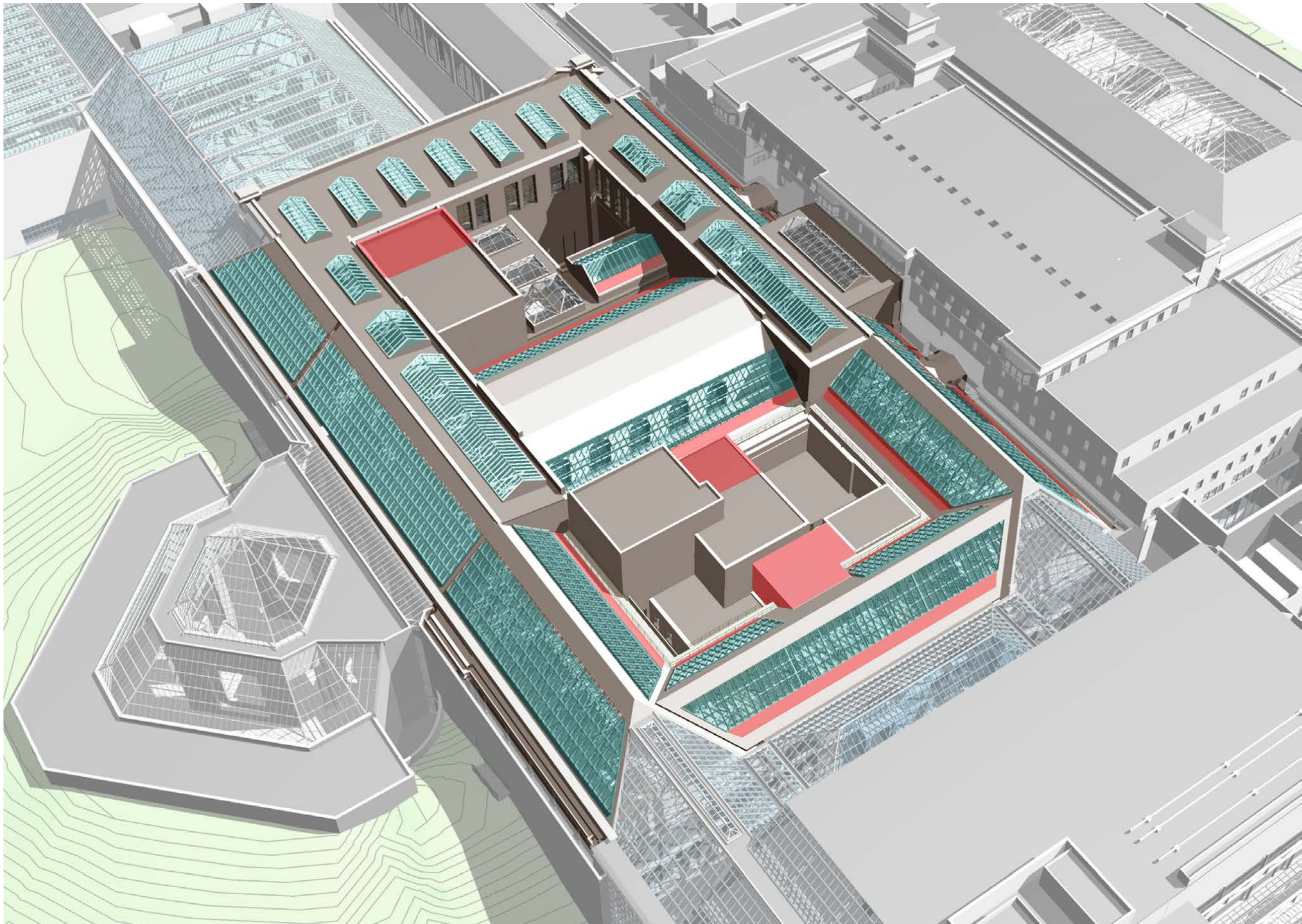


POTENTIAL FUTURE GUTTER DETAIL

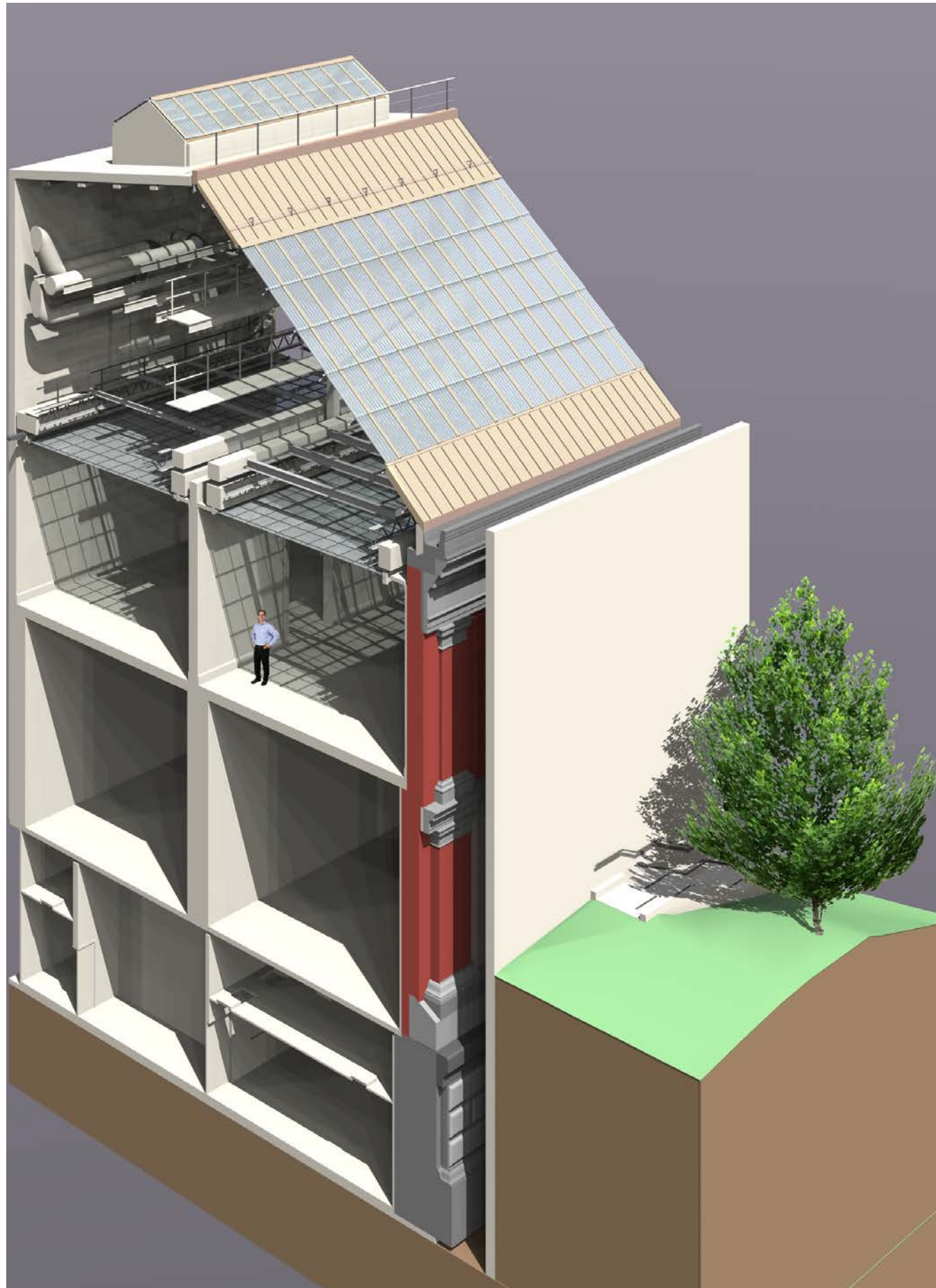


WINGS A,B,C SKYLIGHTS OVER EUROPEAN PAINTINGS GALLERIES

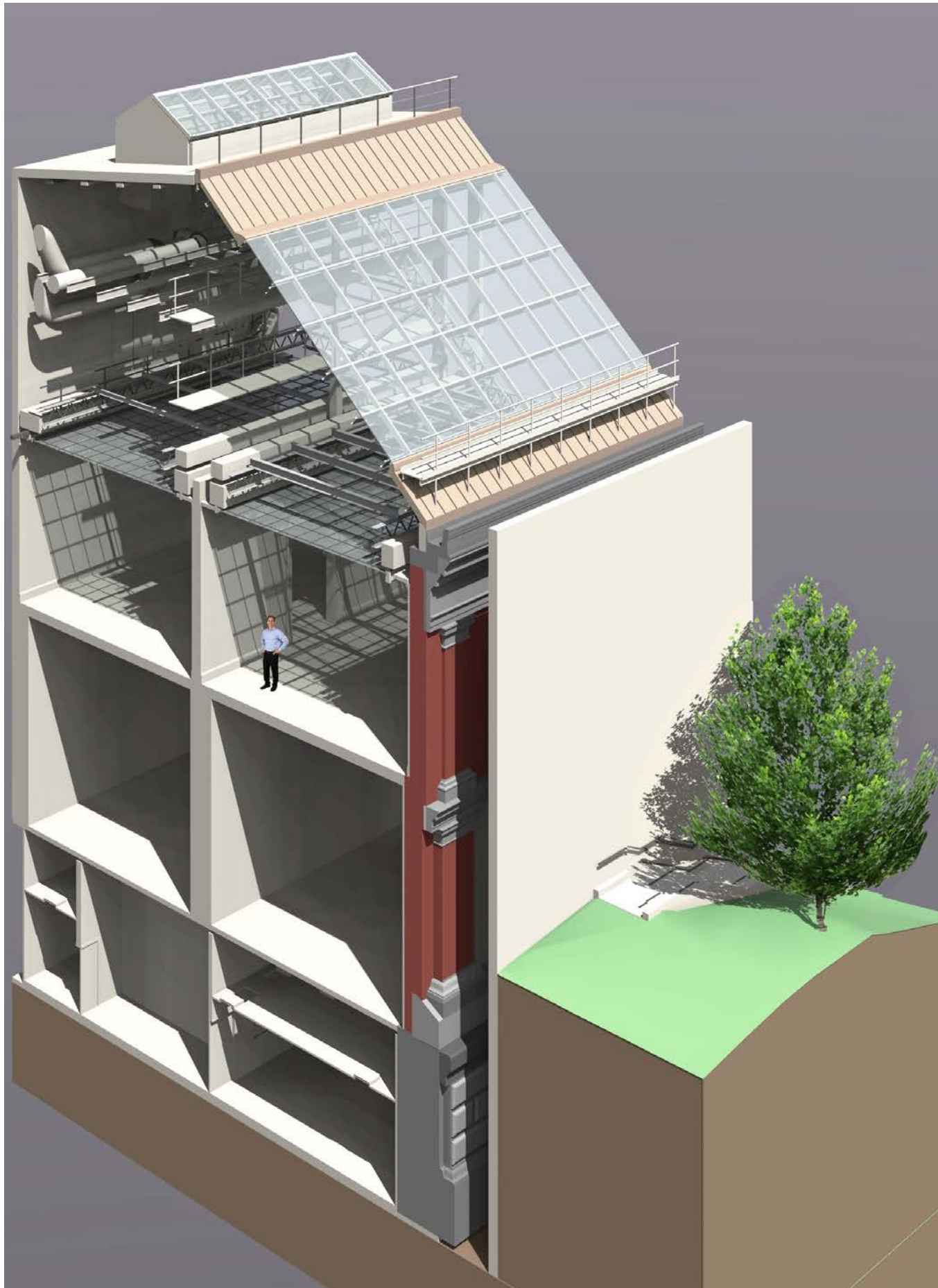
APPENDIX 3C: PRECEDENT: WINGS ABC SKYLIGHT REPLACEMENT LPC STAFF LEVEL APPROVAL (2017-2022)



AERIAL VIEW OF WINGS ABC: SKYLIGHT REPLACEMENT OVER EUROPEAN PAINTINGS GALLERIES AS APPROVED BY LANDMARKS COMMISSION



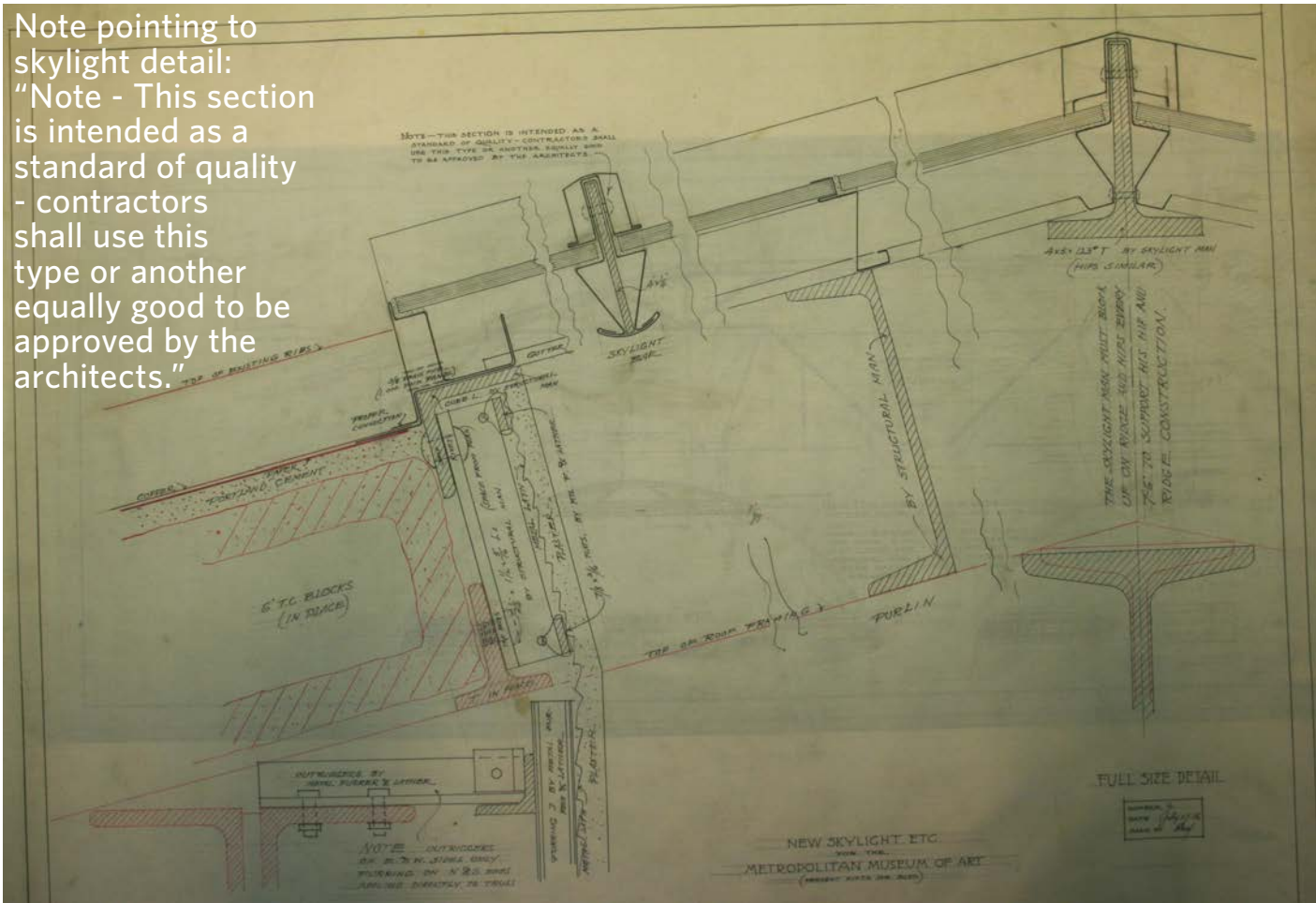
1. CUTAWAY VIEW OF WEST FACADE, EXISTING CONDITION



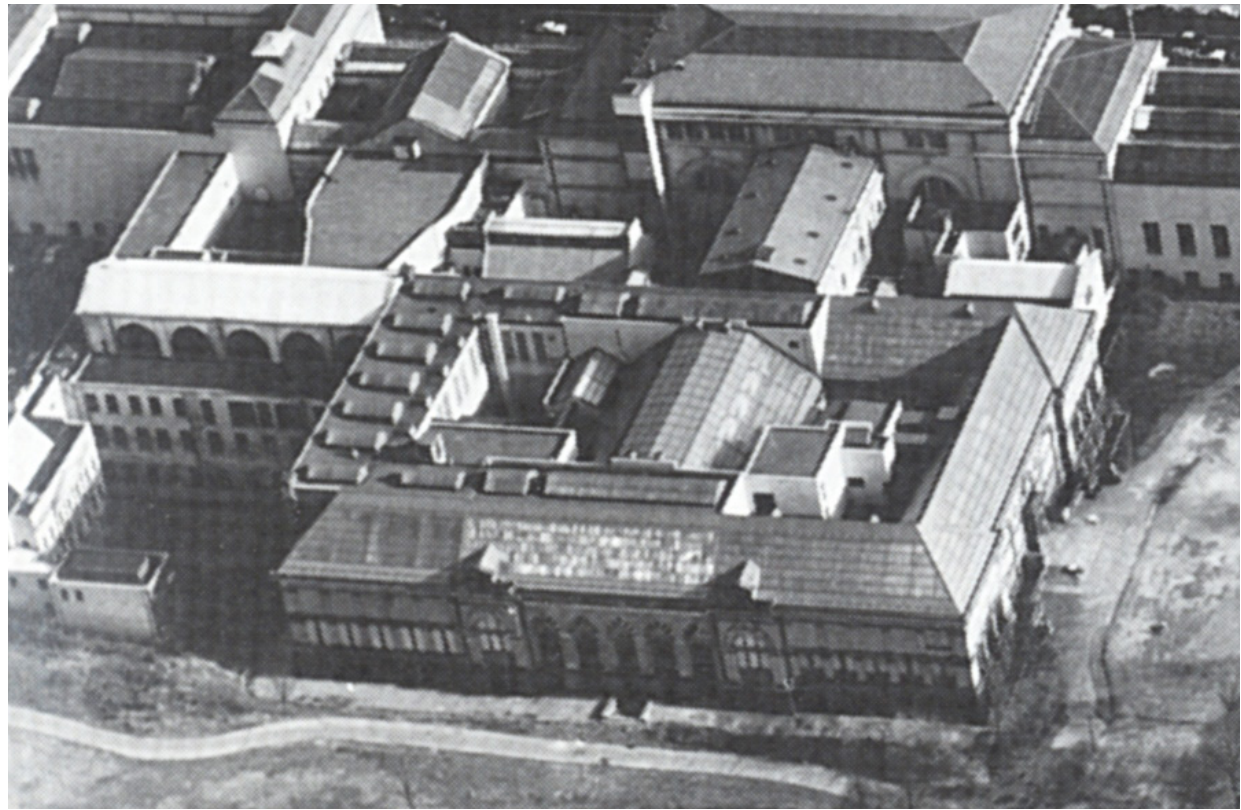
2. CUTAWAY VIEW OF WEST FACADE, APPROVED SKYLIGHT REPLACEMENT



WINGS ABC WEST FACADE IN THE 1890'S



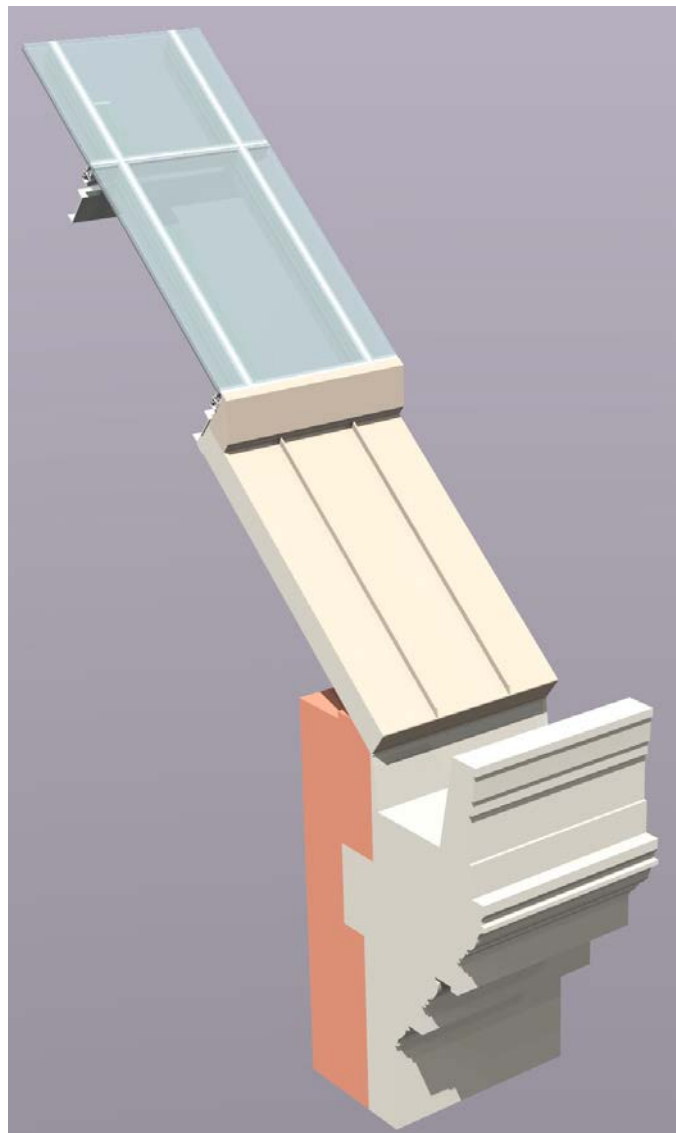
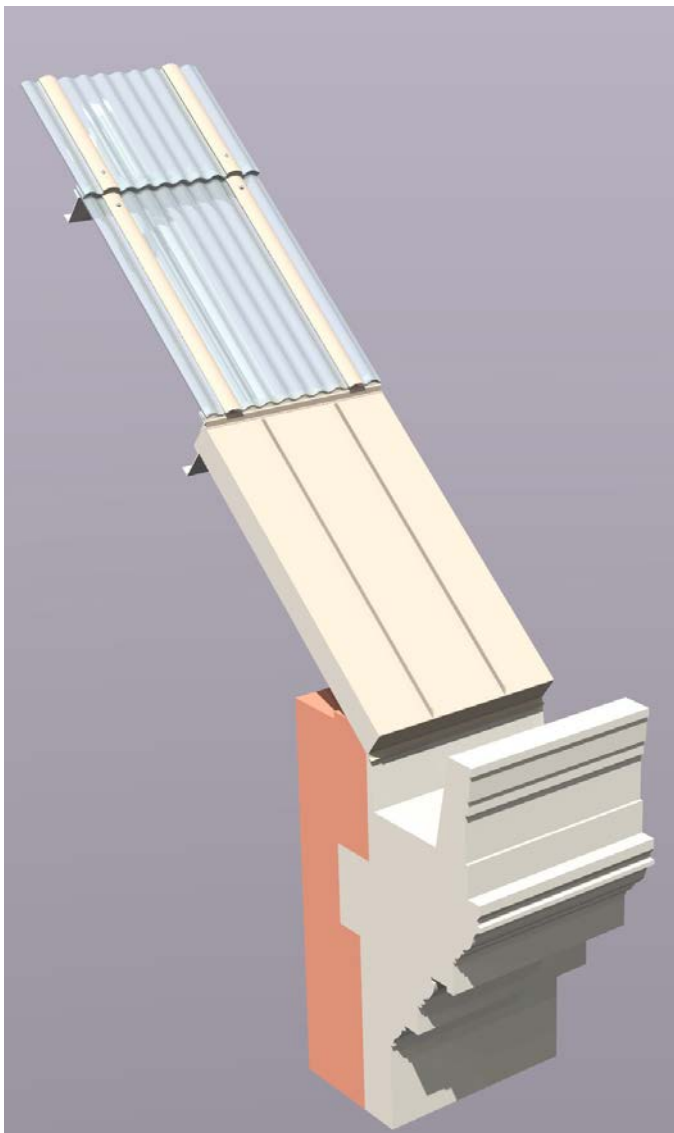
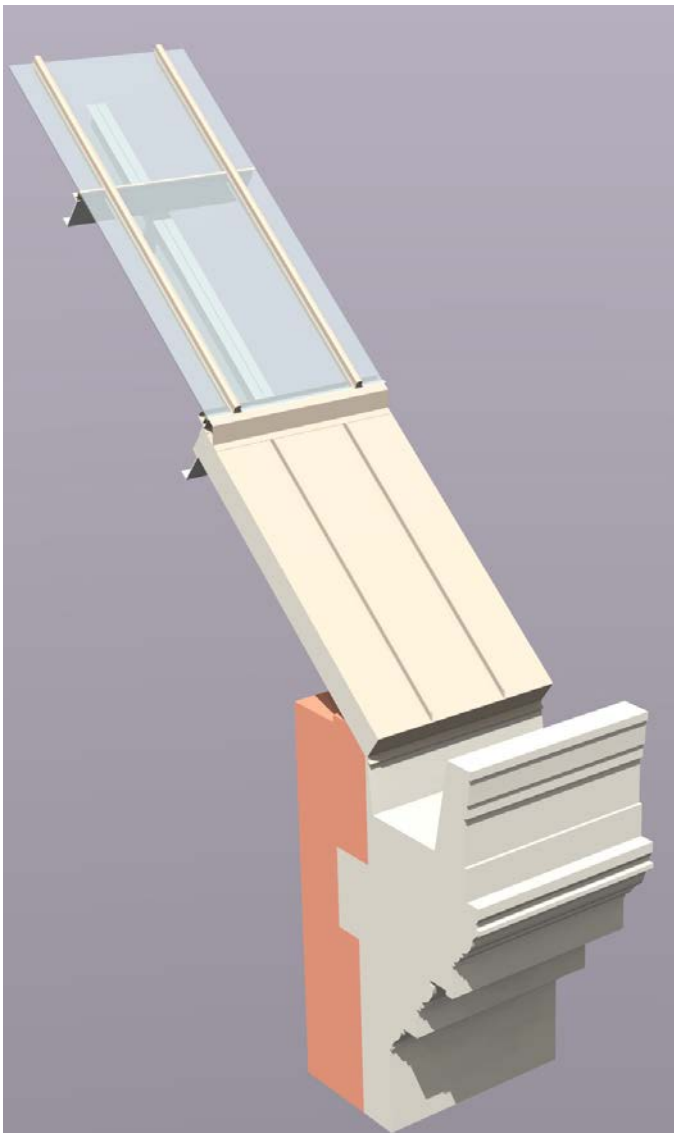
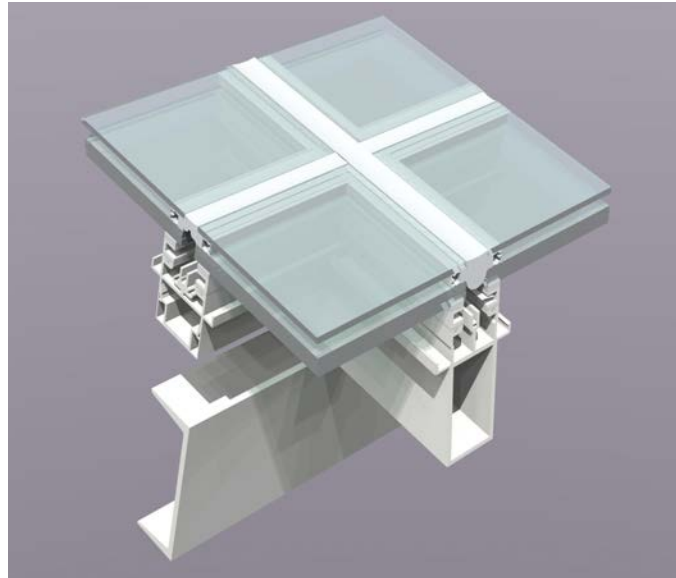
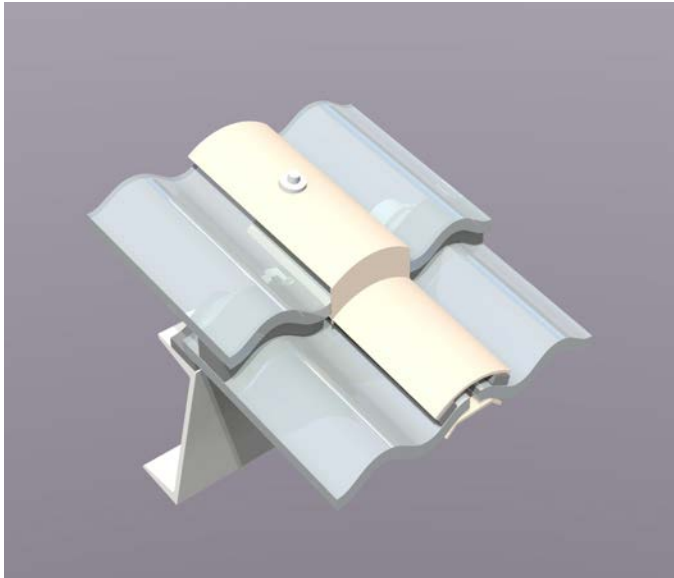
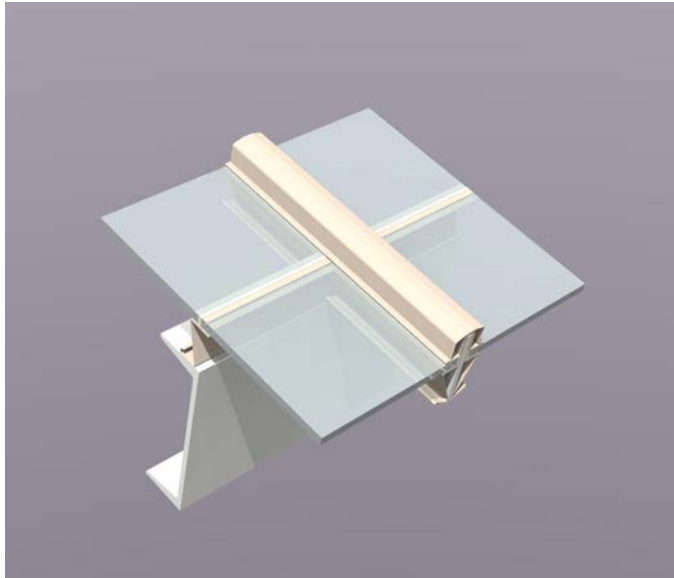
MCKIM MEAD AND WHITE SKYLIGHT REPLACEMENT DETAIL 1907



RECONSTRUCTION OF WINGS ABC ROOF AND SKYLIGHTS, 1939



1970'S CONSTRUCTION OF LEHMAN WING AND STONE SCREEN WALL IN FRONT OF WINGS ABC FACADE



1907 - 1939
Flat wire glass skylights

1939-PRESENT
Corrugated wire glass skylights

APPROVED REPLACEMENT:
Laminated insulated glass units with thermally-broken aluminum framing with pressure equalization (interior drainage channels)
Structural silicon glazing with toggled cassette.

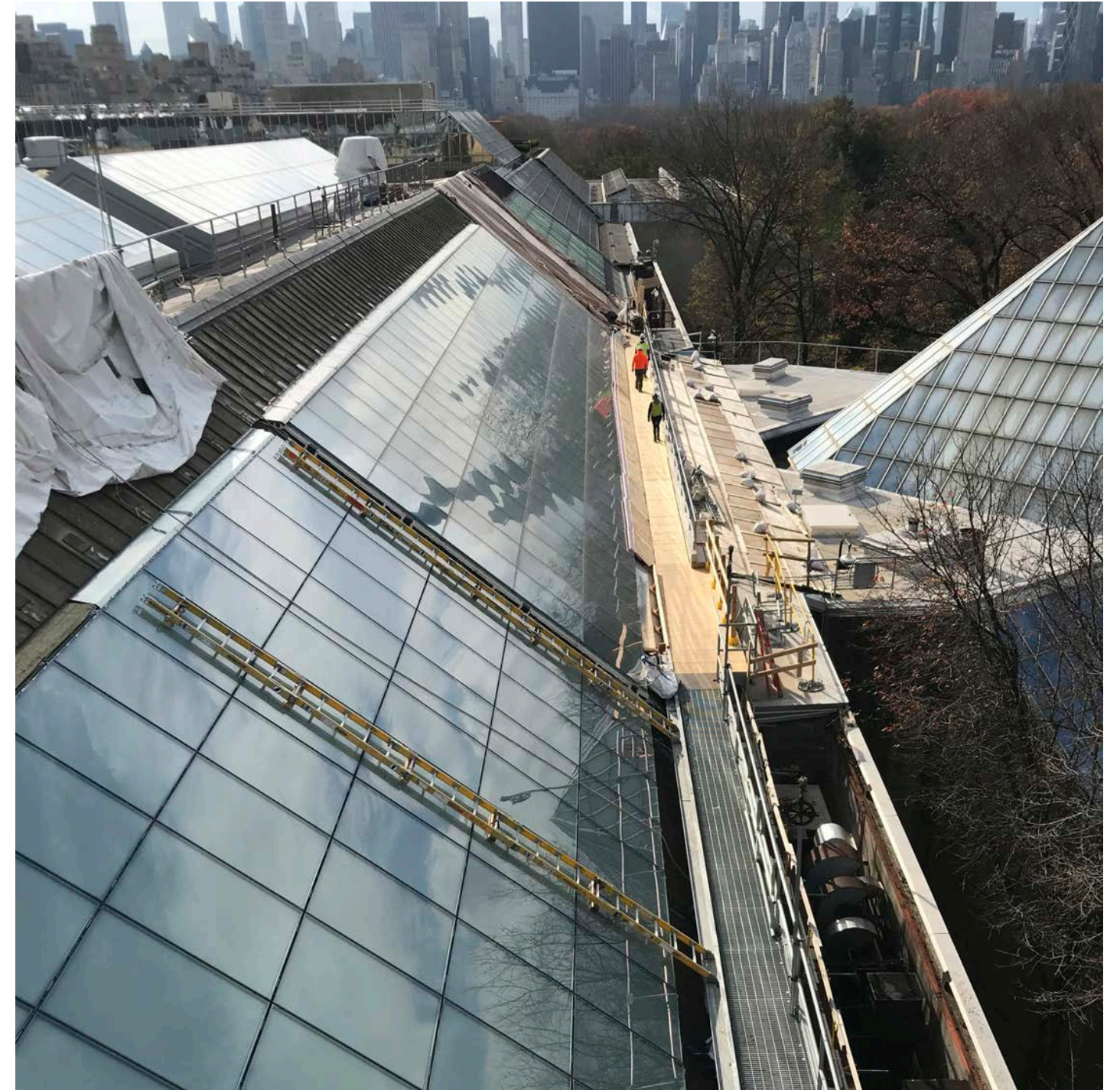
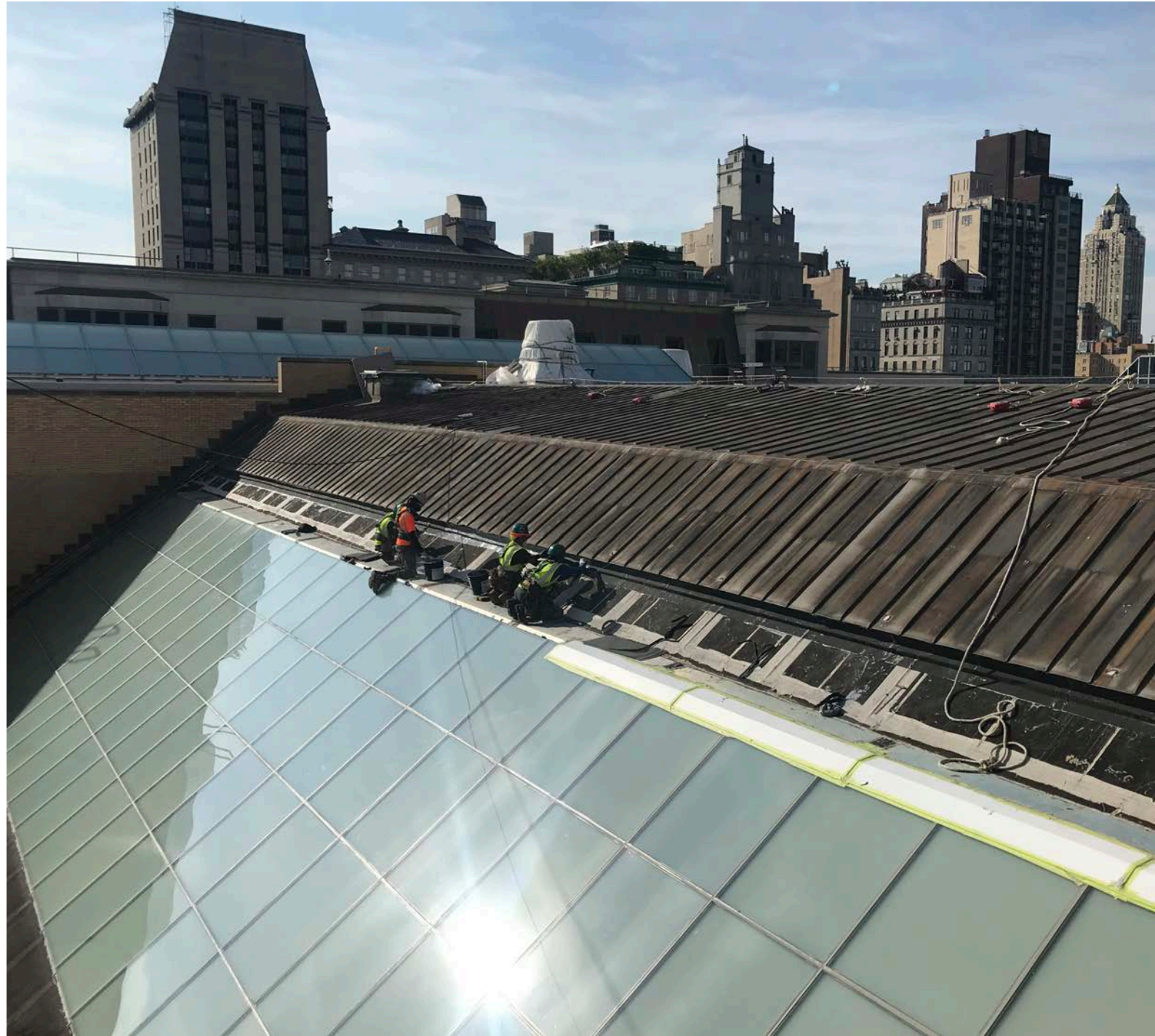
COMPARATIVE SKYLIGHT SYSTEMS: HISTORIC AND APPROVED REPLACEMENT



EXISTING CONDITION PHOTO



PHOTO MONTAGE WITH APPROVED NEW REPLACEMENT SKYLIGHTS AND ACCESS CATWALK



WINGS ABC NEW SKYLIGHTS - CONSTRUCTION PHOTOS