amodal inc.

INTEGRATING BUILDING DESIGN & TECHNOLOGY

NEW YORK | BOULDER
www.amodalinc.com

COMPANY

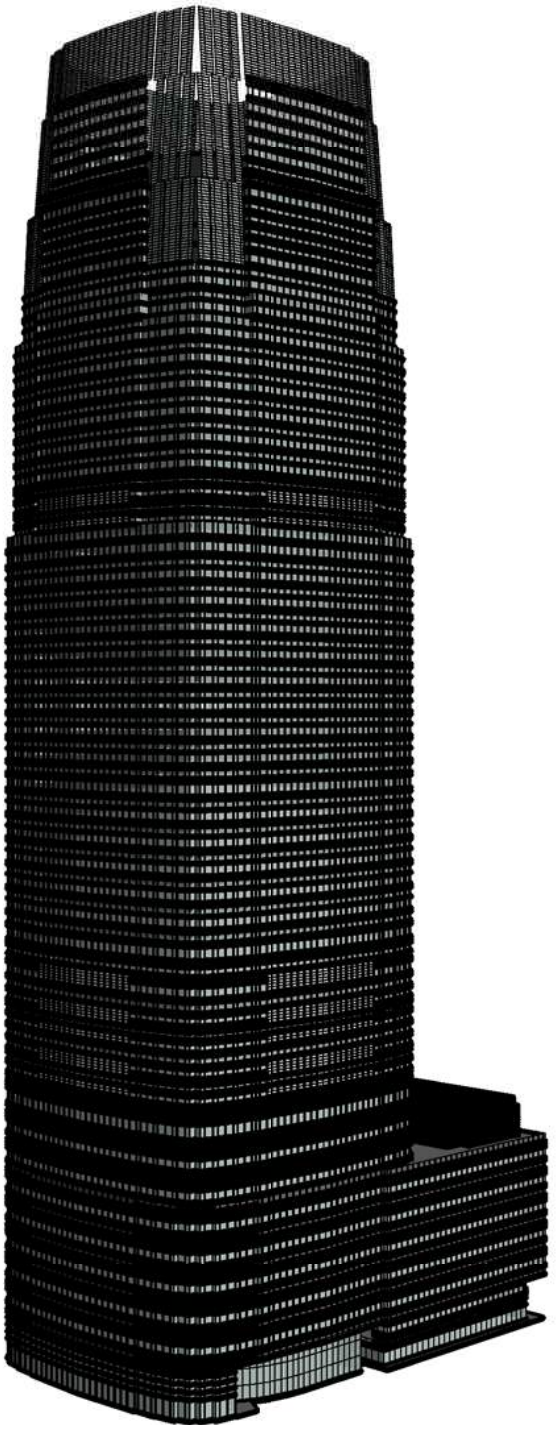
Amodal Inc. is a professional Building Envelope, Facade and Curtain Wall consultancy focused on integrating the architectural process with BIM analysis to deliver constructible solutions to project owners, architects, designers, consultants and contractors.

Founded by Shaun Salisbury in 2014 to provide project continuity on the Smithsonian's National Museum of African American History and Culture (NMAAHC), Amodal's consulting projects have included all scales and complexities from high-rise commercial buildings to cultural institutions; from single-family residences to luxury condominium towers; from applied research to digital and traditional fabrication.

Amodal's emphasis on intensive collaboration between architects, engineers, and fabricators to develop innovative solutions to the complex demands of the building envelope has yielded professional relationships that transcend the scale of our small firm. Amodal Inc. is often sub-contracted to assist world-renowned architecture firms and larger facade consulting firms to provide cutting-edge technical expertise, design flexibility, and responsiveness associated with a lean organization.

Within the organization, Shaun Salisbury is responsible for project management, technical design and implementation guidance, quality control, and mentorship to a small staff of architects and engineers that belie the depth of our experience.

Collectively, we have consulted on over fifty facades in the United States and Asia while maintaining an enviable list of repeat clientele that affirms our capability to execute services on large-scale building envelopes and complex facade systems.



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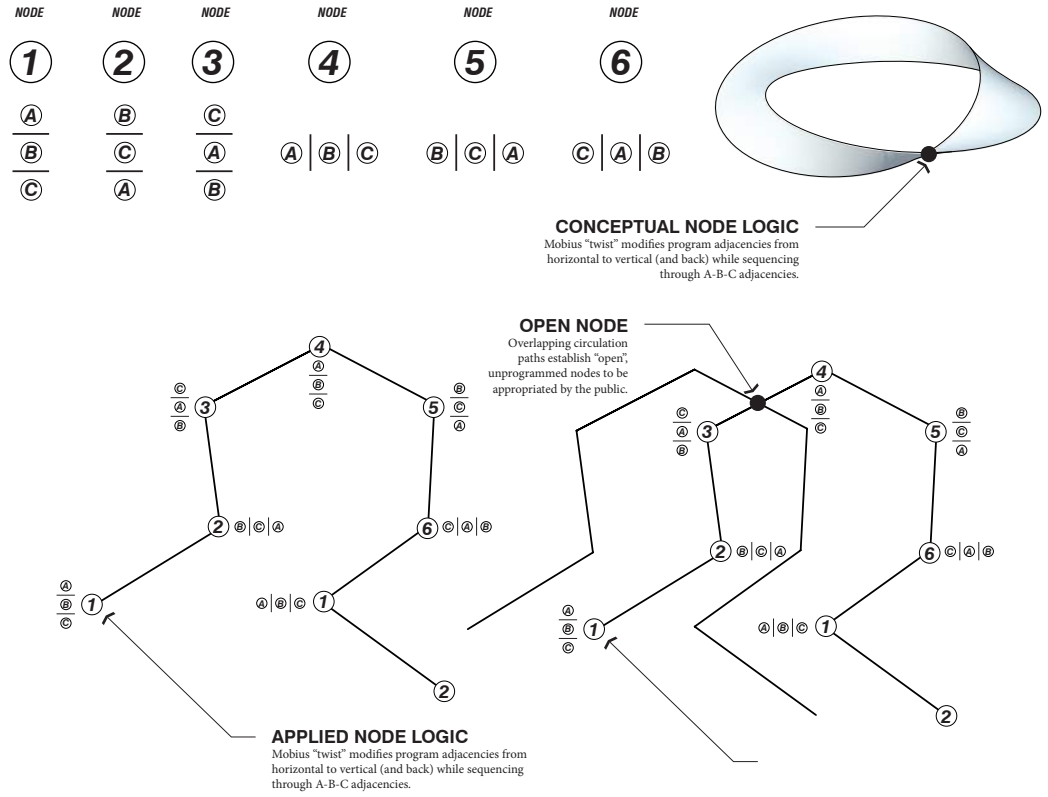
PRINCIPAL

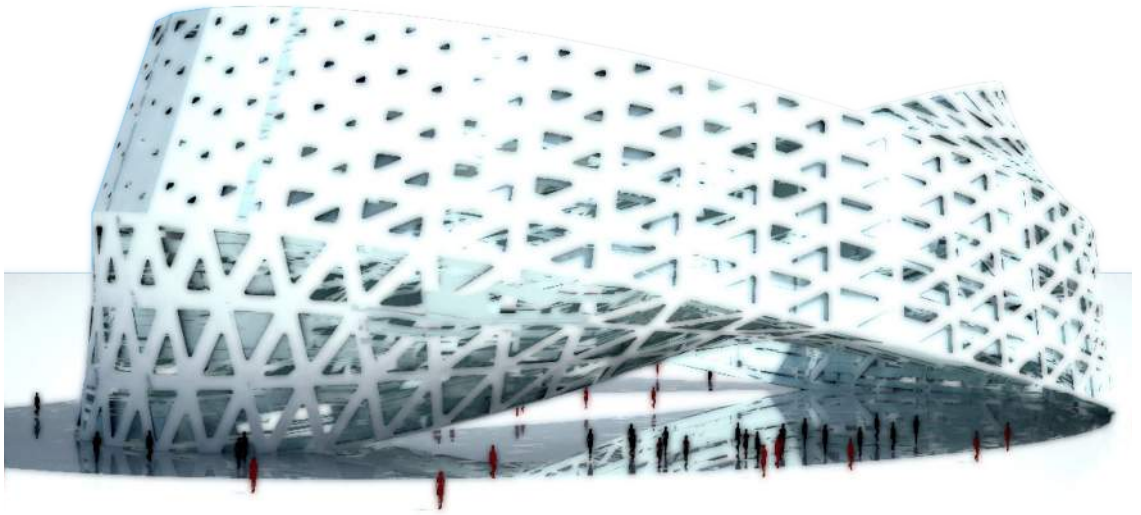
Shaun Salisbury is a licensed architect in New York and Colorado. He received his Master of Architecture degree from Columbia University's Graduate School of Architecture, Planning, and Preservation (GSAPP), where his research in facade performance, digital fabrication and computational analysis yielded improvements to Building Information Modeling (BIM) workflows used by the firm today.

Prior to launching Amodal Inc., Shaun was a Design and Technical Architect at Heintges & Associates, specializing in building envelope and curtain wall design, analysis and engineering.

He has worked with international architects and owners, including Adjaye Associates, Ennead Architects, Gensler, NADAAA, Smithgroup, Studio Libeskind, Studio Sofield, Brodsky Organization, Smithsonian Institution and Goldman Sachs.

Shaun holds two United States Patents in design and technology related applications; has developed fabrication technology in Singapore and Thailand; and teaches an advanced course on high-performance building envelope design for the College of Architecture and Planning at the University of Colorado- Denver.





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SHAUN SALISBURY, AIA NCARB

BUILDING ENVELOPE and FACADE PORTFOLIO

- Private Island Resort, St. Lucia (WATG)
- Lot 6 Development, Aspen CO (Peter Marino Architect)
- Salt Lake City Convention Center Hotel, UT (Portman Architects)
- Urby- Dallas, TX (5G Studio Collaborative)
- Anthem Technology Center, GA (John Portman & Associates)
- Virgin Hotel, TX (5G Studio Collaborative)
- LaGuardia Airport Terminal B Expansion, NY (HOK)
- Leila Ranch Aspen, CO (Stephen Moser Architects)
- 150 Central Park South, NY (SPAN Architects)
- Creel Townhouse, NY (Kinlin Rutherford Architects)
- Brodsky Residence, CO (Efficiency Lab for Architecture)
- Hyman Residence, CO (Zone 4 Architects)
- High Tiara Residence, CO (Confidential)
- NYU Science Building Renovation, NY (Gensler)
- Beaver Country Day School, MA (NADAAA)
- Pace Gallery, NY (Bonetti Kozerski Architecture)
- Lane Field South, CA (John Portman & Associates)
- Portland International Airport, OR (Fentress Architects)
- Dinkins Residence, CO (Arch 11)
- Sheik Mohammad bin Football Stadium, UAE (HKS)
- Grand River Restaurant, MI (Touloukian Touloukian)
- MIT Student Residences, MA (NADAAA)
- NBA Flagship Store, NY (Gensler)
- Smithsonian National Museum of African American History and Culture (NMAAHC), Washington D.C. (Freelon Adjaye Bond/Smithgroup)
- Jersey City Office Tower, NJ (Pelli Clark Pelli)
- Memorial Sloan Kettering Cancer Research Hospital, NY (Ennead Architects)
- Riverside Center / One West End Avenue, NY (Pelli Clark Pelli)

* Conrad Hotel, NY (Kohn Pederson Fox)
* Keppel Bay Plot 3 Development, Singapore (Studio Libeskind)
* Temple University Library, PA (Snohetta)
* 399 Park Avenue, NY (Evans Heintges Architects)
* East 79st Street Luxury Condominium Tower, NY (Studio Sofield)
* NYU Science Building, NY (Ennead Architects)

* Denotes projects completed with Heintges & Associates.

PROFESSIONAL FACADE EXPERIENCE

Amodal Inc., Boulder CO
Heintges & Associates, New York NY
Columbia University, New York NY
University of Colorado, Denver CO

EDUCATION

Columbia University Graduate School of Architecture, Planning and Preservation, M.Arch
Columbia University, B.A. Architecture

PROFESSIONAL REGISTRATIONS and MEMBERSHIPS

Registered Architect, New York
Registered Architect, Colorado
Registered Architect, Washington
American Institute of Architects- New York Chapter
Society of Facade Engineers
NCARB Certified

BASIC SERVICES

Amodal Inc. offers consulting services through all phases of design and construction.

- New Building Construction
- Overclad Construction
- Existing Conditions Evaluation

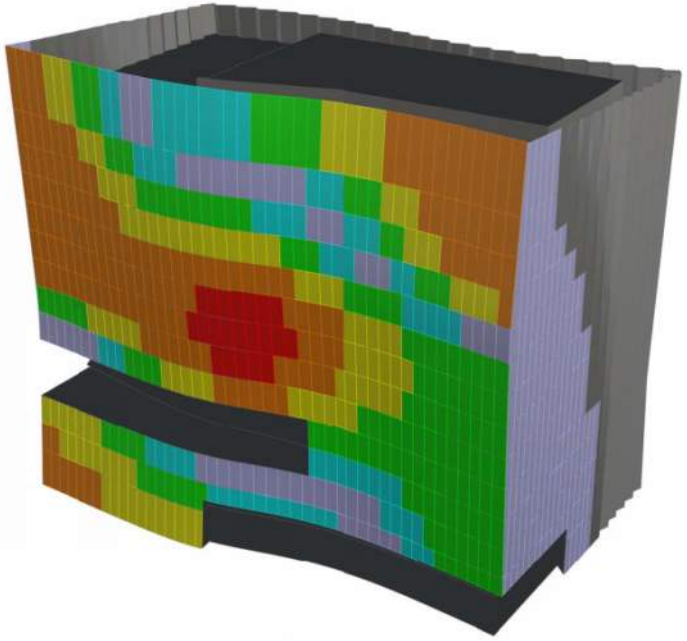
- Schematic Design
- Design Development Detailing
- Construction Documents
- System Thermal Analysis
- Performance Specification
- Bid and Negotiation
- Shop Drawing Review
- Performance Mock-up Testing
- Factory Inspections
- Site Inspections

*Rendering courtesy of Boston Properties

ADDITIONAL SERVICES

Amodal Inc. offers advanced digital modeling and analysis services, including:

- Computational Scripting
  - Rhino / Grasshopper
  - Revit / Dynamo
  - CATIA / Knowledgeware
- Geometry Analysis
  - Surface Rationalization
  - Digital Fabrication
  - Drawing Automation
- Geometry Optimization
  - CW Module Development
  - Cold Bending Limits
  - Solar Insolotation
  - Daylighting
- Envelope Energy Modeling
  - eQuest/DOE 2 Simulation
  - Trimble Sefaira Analysis



*Rendering courtesy of Krueck + Sexton

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SAMPLE PROJECT DELIVERABLES

Early SD (Sketchbook) Details

Glazing Analysis

Component Diagrams

Design Development Detailing

Code Compliant Design Options

Curtain Wall System Roadmap

Construction Document Detailing

Construction Sequencing

Thermal Analysis

U-Factor Analysis

Surface Rationalization / Parametric Scripting

Design Process Optimization for Fabrication

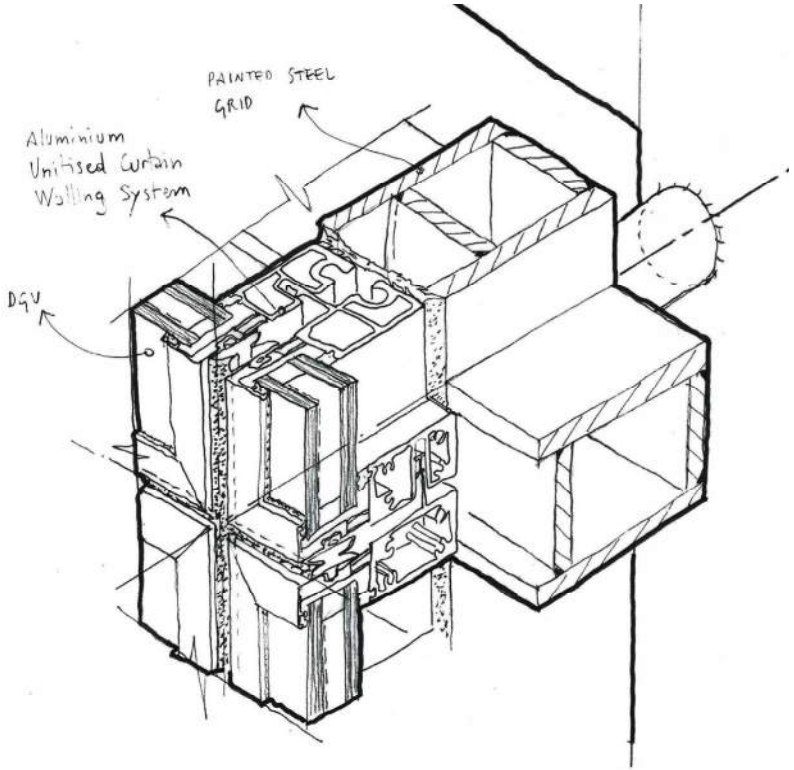
Shop Drawing Development

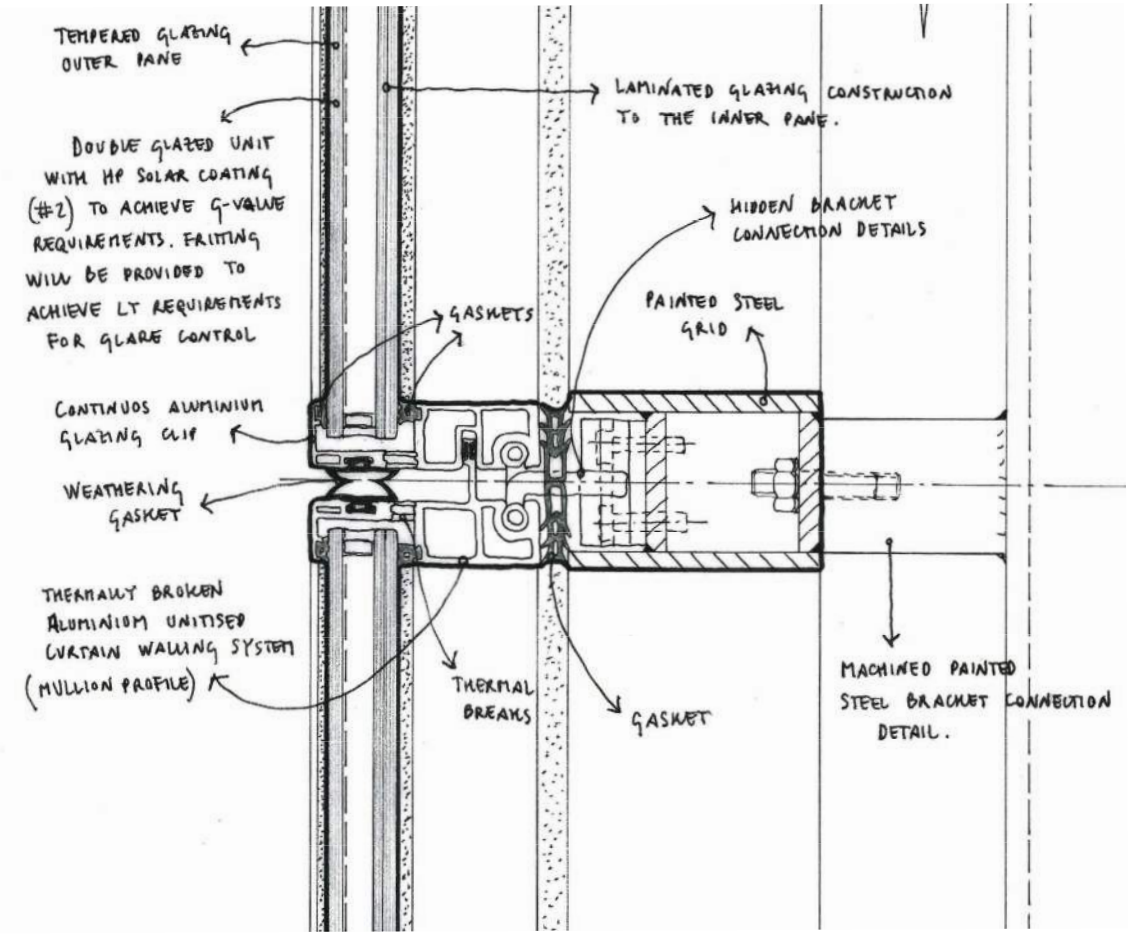
Shop Drawing & Specification Review

Design/Assist and Construction Coordination

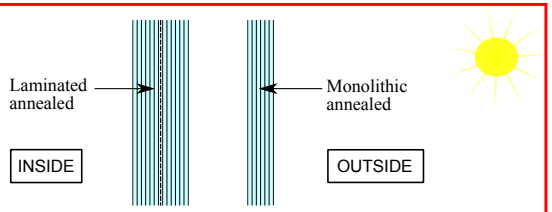
Construction Contract Administration

EARLY SD (SKETCHBOOK) DETAILS



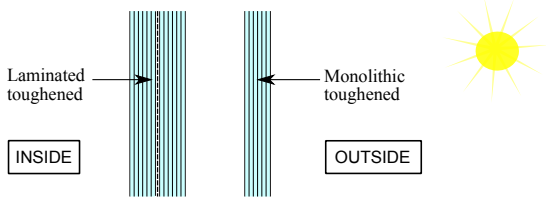


GLAZING ANALYSIS & MATERIAL SELECTION



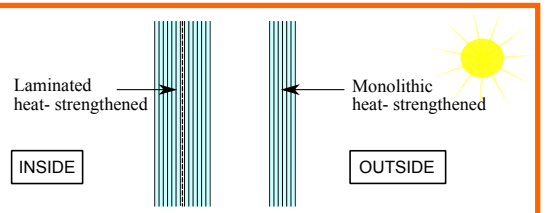
~ Laminated annealed glass to inner lite would act as safety glass and provide containment in the case of glass breakage.
~Lower stress capacity of inner annealed glass may result in a heavier glass build-up when compared to a heat-treated glazing.
~Outer monolithic annealed glass may be at risk of thermal shock and heat treated glazing may be required to provide sufficient resistance to thermal shock.
~Annealed glass to the outer surface would provide a surface without roller wave distortions and other visual distortions associated with heat-treated glass.
~ The external monolitic pane doesn't provide protection to passers-by

Option 1



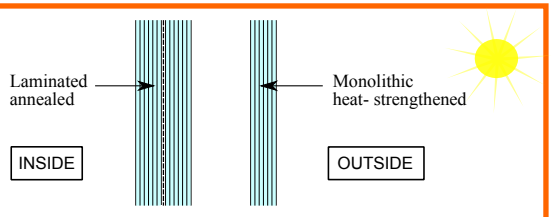
- Laminated toughened glazing to the inner lite would have no post breakage bending stiffness and would rely on catenary action of the interlayer for any significant post breakage robustness. In a vertical state the structural silicone to the frame or between the inner and outer lites may provide some resistance.
- Pvb laminate to inner lite would provide some blast resistance and could restrain a broken outer lite travelling inwards in a blast event (if applicable) when integrated as part of a full blast resisting assembly.
- Monolithic toughened outer lite allows the use of fritted glass and would address risks of thermal shock to the outer lite.
- Use of toughened glass throughout provides minimum weight/ thickness solution.
~Toughend glass, even if heat-soaked would be at risk of spontaneous failiure due to nickle sulphide inclusions changing state.
~ The external monolitic pane doesn't provide protection to passers-by

Option 2



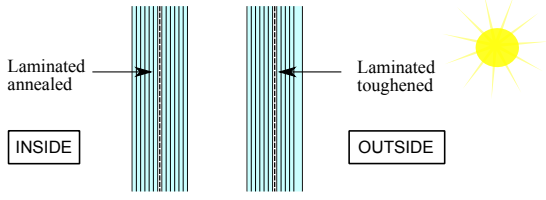
- Laminated heat-strengthened ply to inner lite may can be considered a safety glass and would provide some post breakage bending strength even with both plies broken.
- Longer quenching time when compared to toughened glass results in failure of glass affected by Nickle sulphide inclusions to occur typically during processing rather than on site resulting in a lower risk of spontaneous fracture when compared to toughened glass.
- Pvb laminate to inner lite would provide some blast resistance and could restrain a broken outer lite travelling inwards in a blast event (if applicable) when integrated as part of a full blast resisting assembly although larger shards of outer heat strengthened glass could increase risks of pvb tearing.
- Monolithic heat-strengthened outer lite allows the use of fritted glass and addresses the risk of thermal shock to outer lite.
- Risk of spontaneous failure due to Nickle sulphide inclusions is lower than would be the case for toughened glass.
~ The external monolitic pane doesn't provide protection to passers-by

Option 3



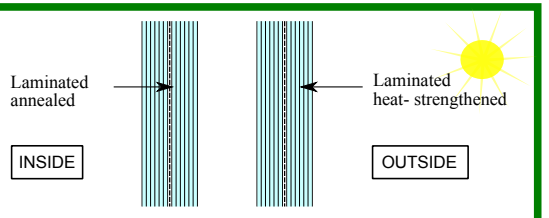
- Similar to Option 3
- The use of laminated annealed glass to the inside may reduce costs but should be reviewed against risk of thermal shock and increased glass weights.
- Frit to inner lite is not typically applied to annealed glass as fritting process involves elevated temperatures and would require annealing rather than quenching which is the normal process in the toughening oven where fritting is typically applied.
~ The external monolitic pane doesn't provide protection to passers-by

Option 4



- Similar to Option 3
- Laminated toughened glazing to the outer lite would have no post breakage bending stiffness and would rely on catenary action of the interlayer for any significant post breakage robustness. In a vertical state the structural silicone to the frame or between the inner and outer lites may provide some resistance.
- The use of laminated glass to the outside provides additional protection to passers-by in the event of certain blast event and allows the use of fritting to more surface locations.
- The use of laminated glass to the outside provides the possibility of further solar control through the use of printed interlayers to the outer lite or soft coatings in contact with the interlayer.
- Heat build-up in outer laminate increases the risk of delamination in particular if a shadow box design is adopted.

Option 5



- Similar to Option 5
- The use of laminated heat strengthened glass greatly reduces the risk of failure due to nickel sulphide inclusions.
-Laminated heat strengthened glass has greater post breakage robustness when compared to laminated toughened glazing.

Option 6

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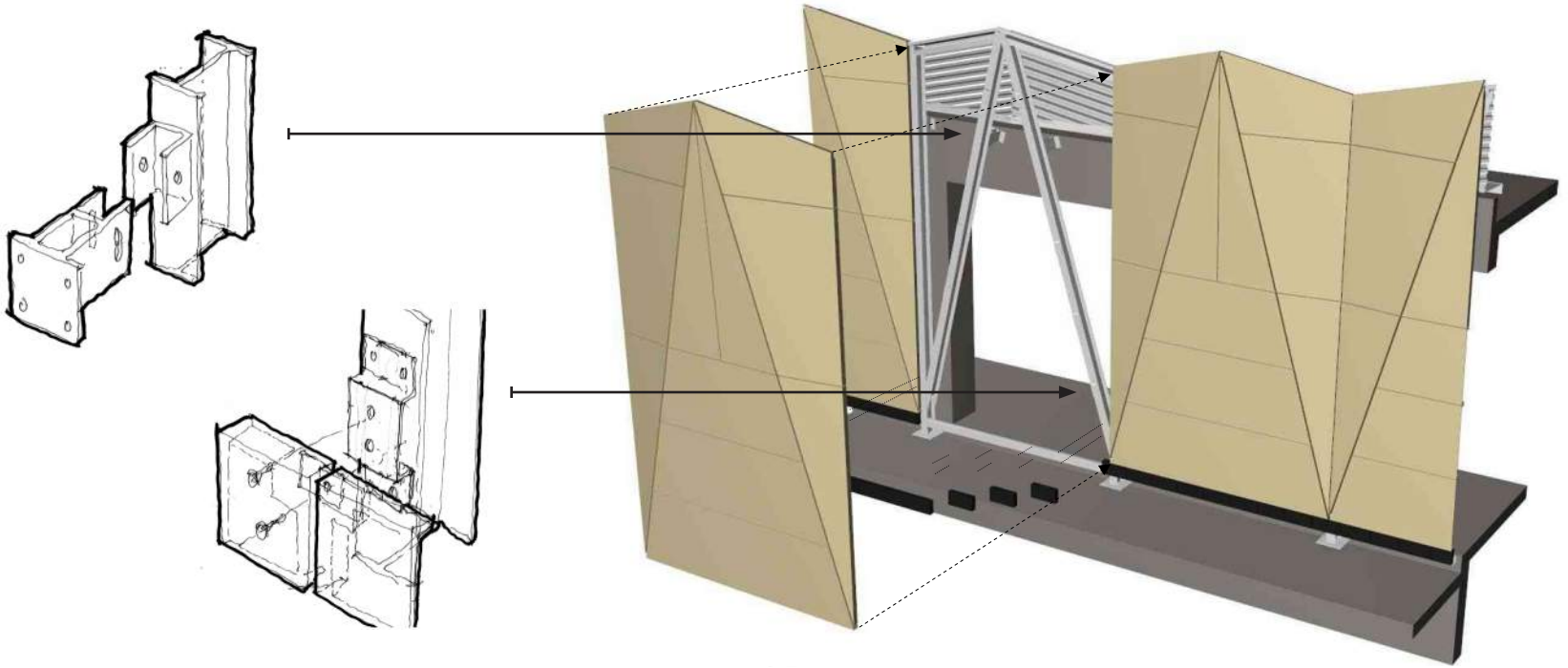
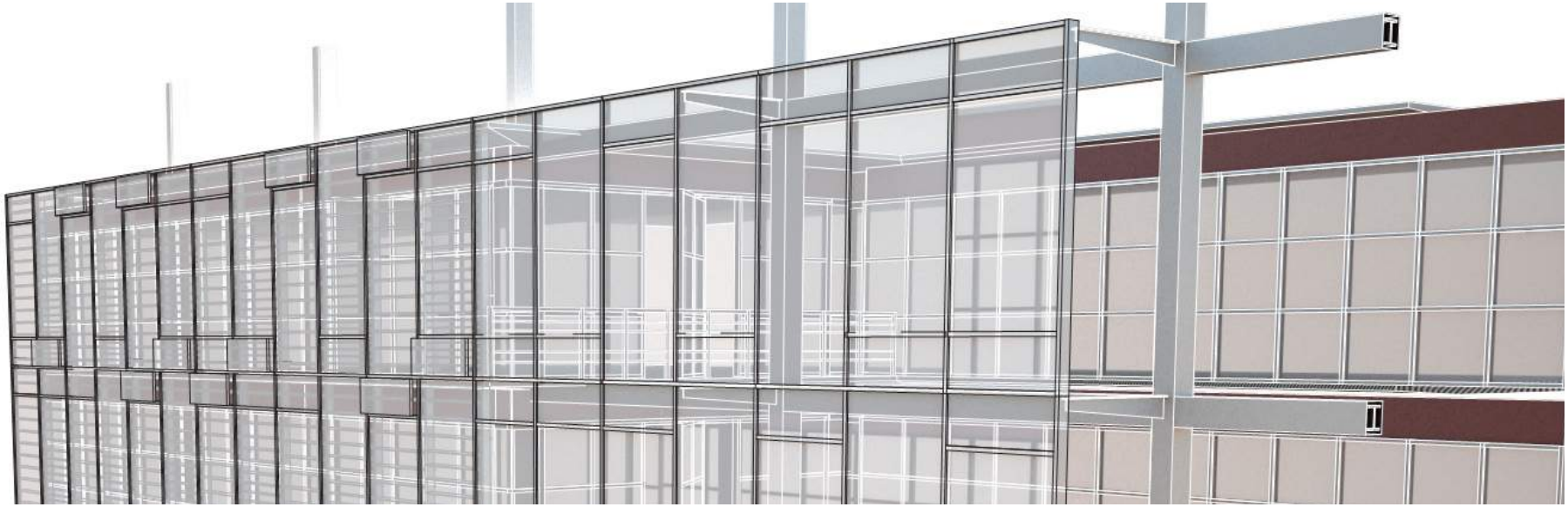
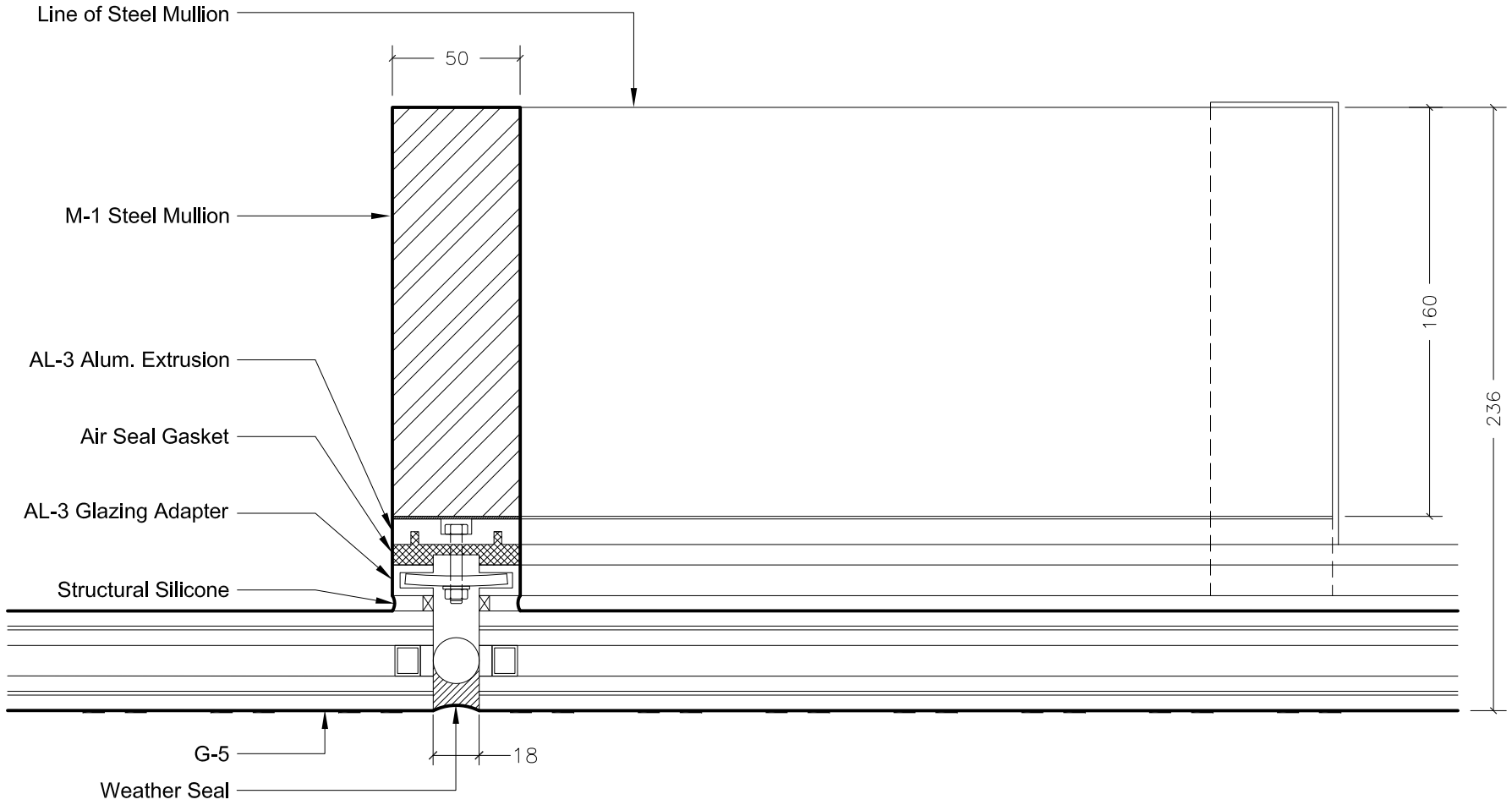
COMPONENT DIAGRAMS & CLADDING STUDIES





DESIGN DEVELOPMENT DETAILING



* See Glass Type Elevation and Specification for Individual Glass Make-ups

CODE COMPLIANT DESIGN OPTIONS

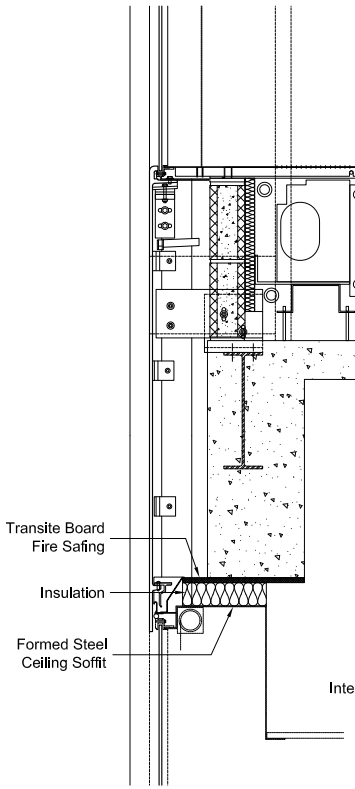


Figure 1

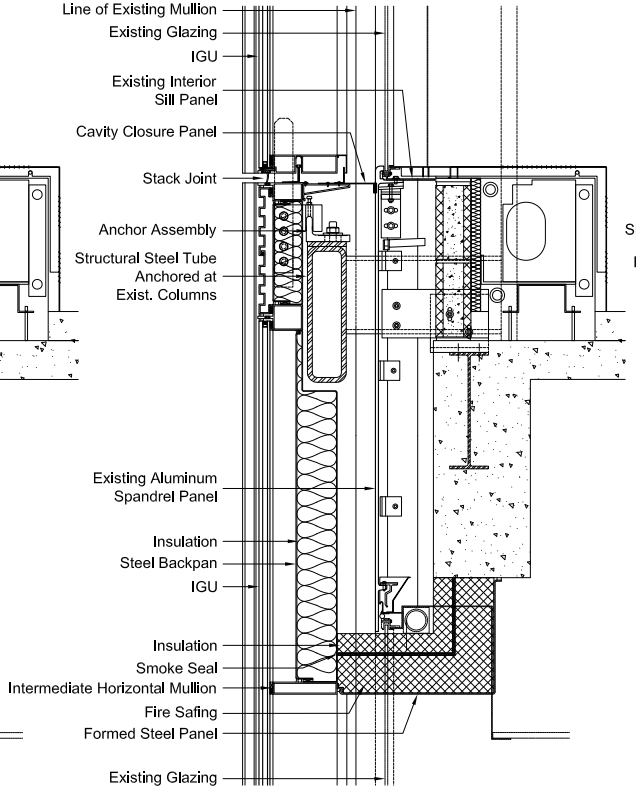


Figure 2

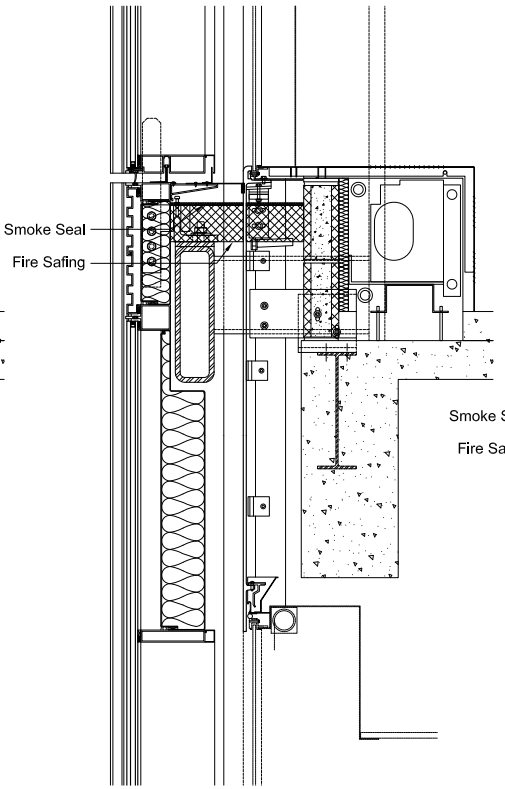


Figure 3

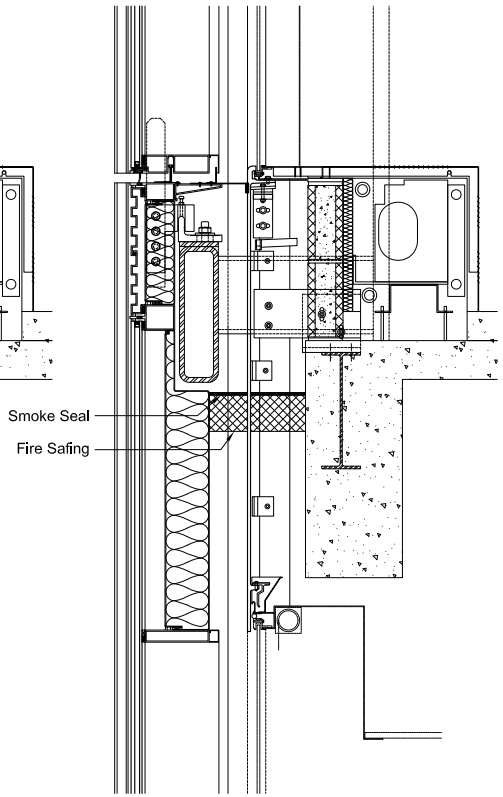


Figure 4

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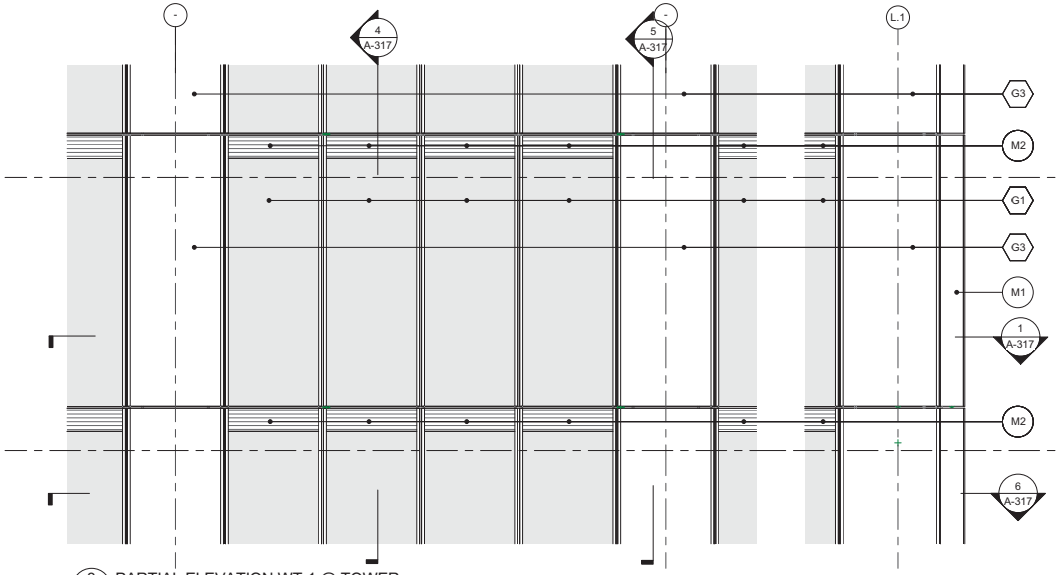
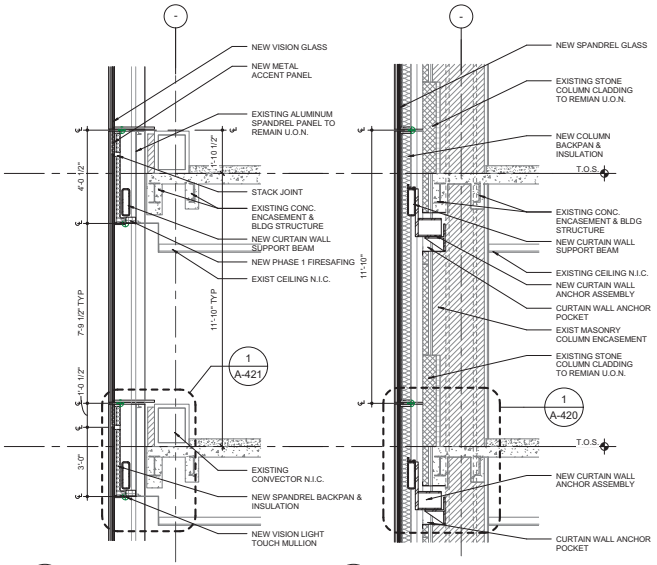
CURTAIN WALL SYSTEM ROADMAP DEVELOPMENT

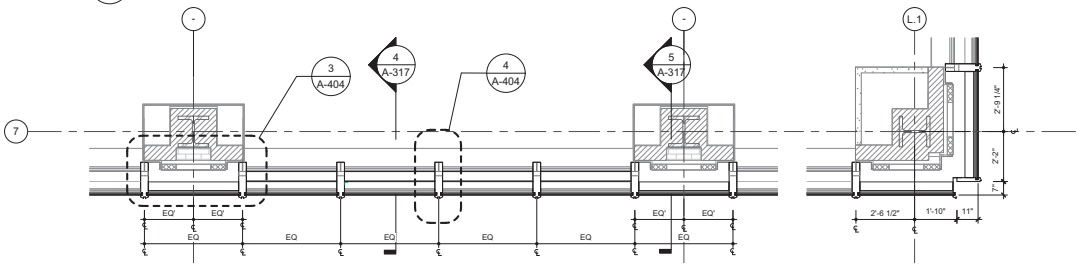


3 A-317 PARTIAL ELEVATION WT-1 @ TOWER
3/8" = 1'-0"

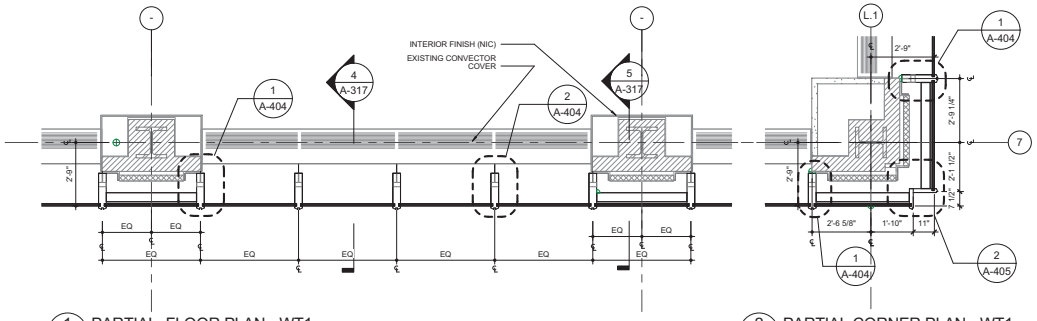


4 A-317 VISION SECTION WT-1
3/8" = 1'-0"

5 A-317 COLUMN SECTION WT-1
3/8" = 1'-0"



6 A-317 PARTIAL SPANDREL PLAN WT-1
3/8" = 1'-0"



1 A-317 PARTIAL FLOOR PLAN - WT1
3/8" = 1'-0"

2 A-317 PARTIAL CORNER PLAN - WT1
3/8" = 1'-0"

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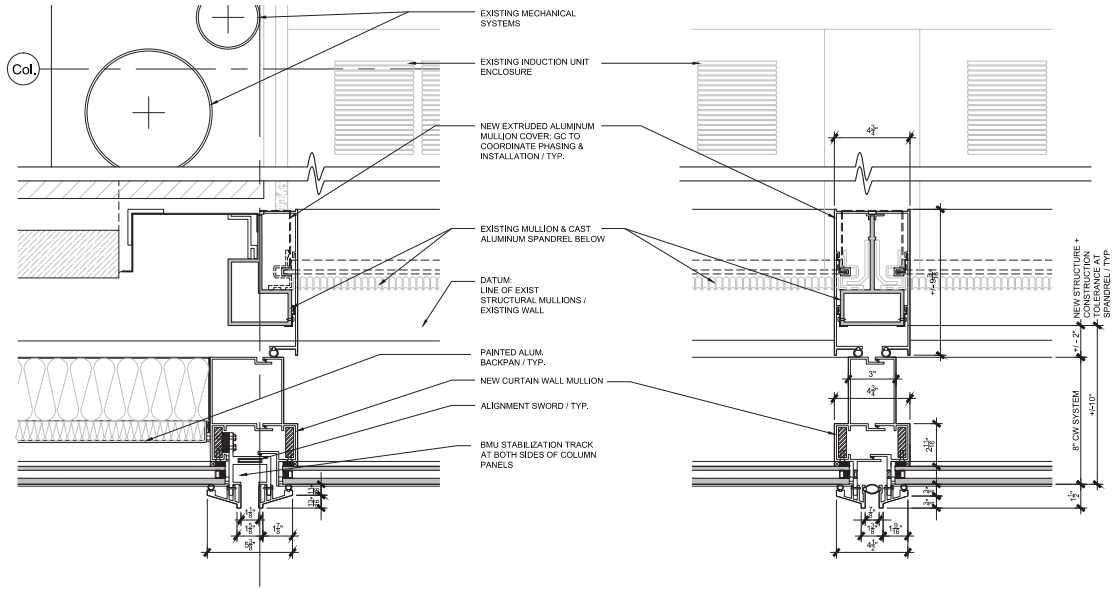
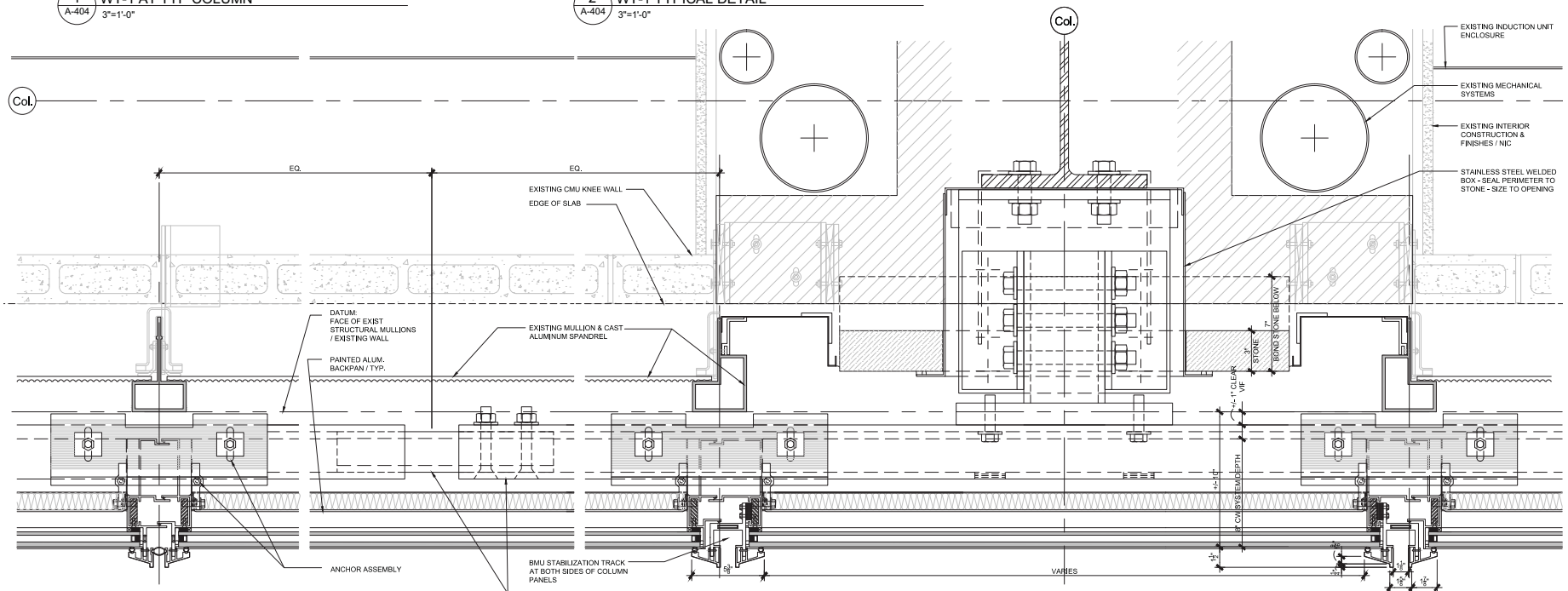
CONSTRUCTION CONTRACT DOCUMENT DETAILING



1 A-404 WT-1 AT TYP COLUMN
3"=1'-0"

2 A-404 WT-1 TYPICAL DETAIL
3"=1'-0"



3 A-404 TYPICAL ANCHOR DETAIL WT-1
3"=1'-0"

4 A-404 TYPICAL ANCHOR DETAIL AT COLUMN WT-1
3"=1'-0"

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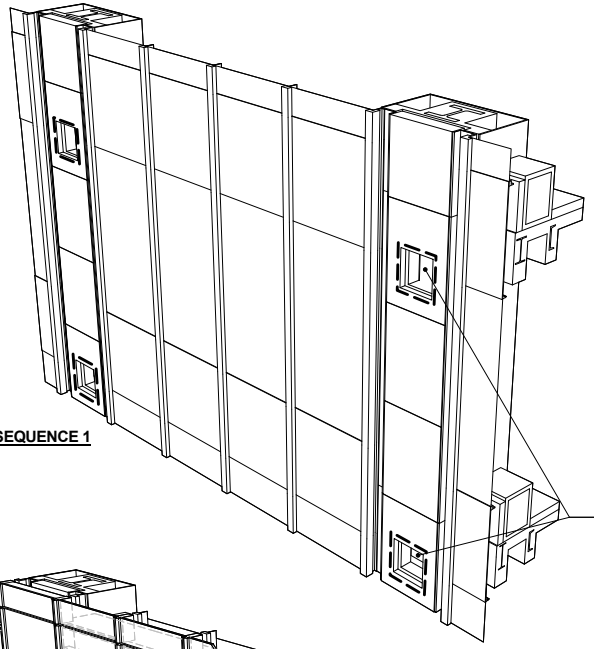
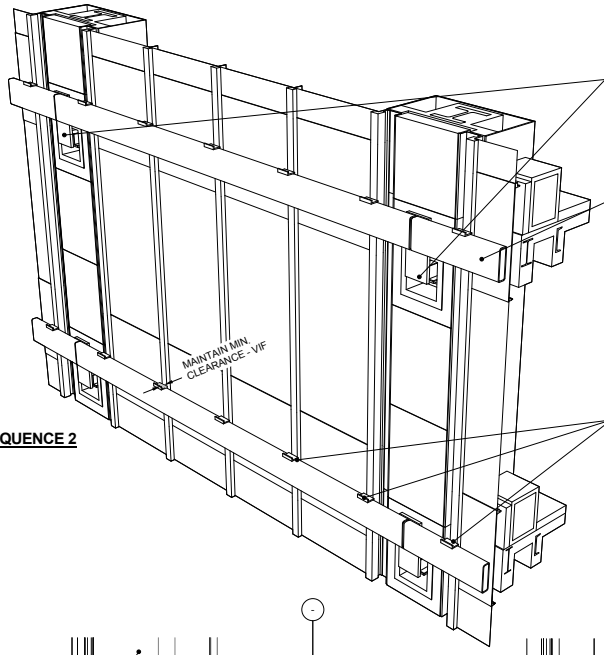
CURTAIN WALL CONSTRUCTION DIAGRAMS



SEQUENCE 1

1. DEVELOP PLAN TO CUT / CORE/ REMOVE PORTION OF EXISTING STONE COLUMN CLADDING TO EXPOSE EXISTING STEEL COLUMNS. PROVIDE ADEQUATE SHORING TO ENSURE STABILITY OF EXISTING STONE & MASONRY.
2. NEW OPENING THROUGH EXISTING STONE CLADDING, BACK-UP MASONRY AND CONCRETE ENCASEMENT AT COLUMNS AS REQUIRED FOR ANCHOR CONNECTION TO EXISTING STRUCTURE. TYP.
3. SHORE EXISTING STONE AS REQUIRED. PROVIDE TEMPORARY STAINLESS STEEL WEATHER PROOF ENCLOSURE - SEAL TO STONE CLADDING



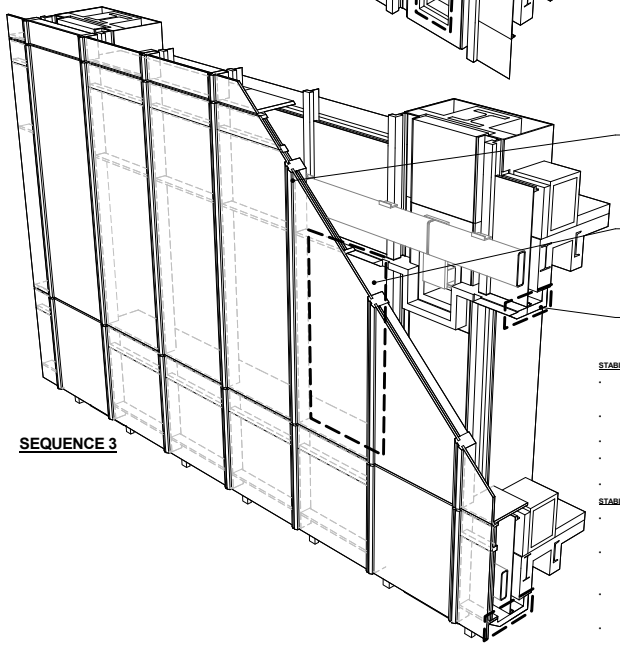
SEQUENCE 2

4. INSTALL STRUCTURAL STEEL PLATE ASSEMBLY TO COLUMN ANCHOR
5. INSTALL NEW SPANNING BEAM AND CONNECT TO ANCHOR AT EXISTING COLUMN

ALLOW MIN. 1/2" TOLERANCE FROM FACE OF EXISTING MULLIONS TO PLANE OF NEW STRUCTURAL TUBES. NO NEW LOADS TO BE IMPOSED ON EXISTING MULLIONS

NEW STEEL TUBE TO CONFORM TO ASCE CHAPTER 30: WIND LOAD REQUIREMENTS FOR COMPONENTS AND CLADDING

6. ATTACH NEW CURTAIN WALL ANCHORS TO SPANNING BEAM (TYP)



SEQUENCE 3

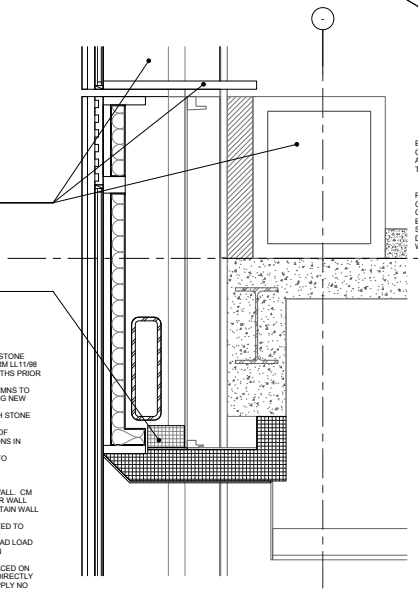
7. NEW CURTAIN WALL OVERCLAD SYSTEM TO BE INSTALLED FROM THE EXTERIOR AND SECURED TO NEW ANCHORS
8. REMOVAL AND PHASING OF EXISTING GLAZING, INSTALLATION OF INTERIOR TRIM PACKAGE AND CONVECTOR COVER TO BE COORDINATED WITH OWNER REQUIREMENTS.
9. PHASED INSTALLATION OF CONTINUOUS FIRESAFING REQUIRED AT EACH FLOOR.

STABILITY OF EXISTING STONE CLADDING AT COLUMNS

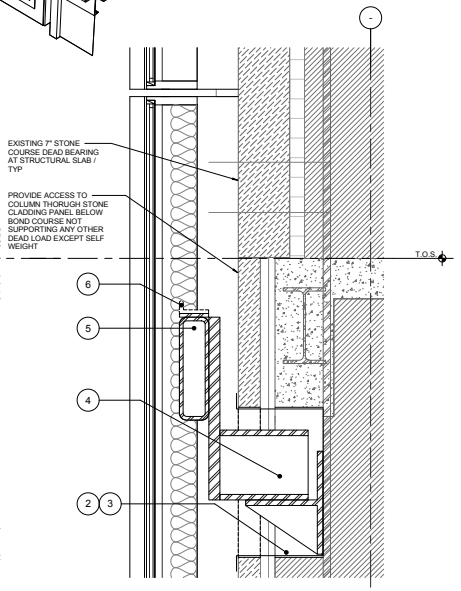
- CM TO ENSURE INTEGRITY OF EXISTING EXTERIOR STONE COLUMN CLADDING AND ANCHORS. CM TO PERFORM LL11/98 INSPECTION OF THE EXTERIOR WALL WITHIN 6 MONTHS PRIOR TO INSTALLATION OF CURTAIN WALL PANELS.
- CUT INTO EXISTING LIMESTONE CLADDING AT COLUMNS TO ACCESS EXISTING STEEL COLUMNS FOR ANCHORING NEW CURTAIN WALL
- ACCESS TO COLUMN SHALL ONLY OCCUR THROUGH STONE PANELS NOT SUPORTING ANY STONES ABOVE.
- PROVIDE STABILIZATION ACNHORS AT PERIMETER OF CLADDING PANELS PRIOR TO ANY CUTS/PENTRATIONS IN STONE.
- REFER TO SEQUENCE DIAGRAMS FOR FURTHER INFO

STABILITY OF EXISTING CURTAIN WALL

- CM TO ENSURE INTEGRITY OF EXISTING CURTAIN WALL. CM TO PERFORM LL11/98 INSPECTION OF THE EXTERIOR WALL WITHIN 6 MONTHS PRIOR TO INSTALLATION OF CURTAIN WALL PANELS.
- REMOVAL SCOPE OF WORK AT CURTAIN WALL LIMITED TO DEGLAZING AND REMOVAL OF TRIM (AS NOTED IN DEMOLITION DRAWINGS AND NOTES) REDUCING DEAD LOAD OF EXISTING WALL. EXISTING ANCHORS TO REMAIN UNDISTURBED.
- CM TO ENSURE NO NEW EXTERNAL LOADS ARE PLACED ON EXISTING WALL. WIND LOADS SHOULD TRANSFER DIRECTLY FROM NEW FRAME TO SPANNING MEMBERS AND APPLY NO STRESSES TO EXISTING CURTAIN WALL ELEMENTS.
- REFER TO SEQUENCE DIAGRAMS FOR FURTHER INFO



2 A-011 SECTION @ SILL
1 1/2" = 1'-0"



3 A-011 SECTION @ COLUMN
1 1/2" = 1'-0"

1 A-011 ASSEMBLY SEQUENCE DIAGRAMS
NTS

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THERMAL & CONDENSATION RESISTANCE ANALYSIS

THERM Simulation U-Values

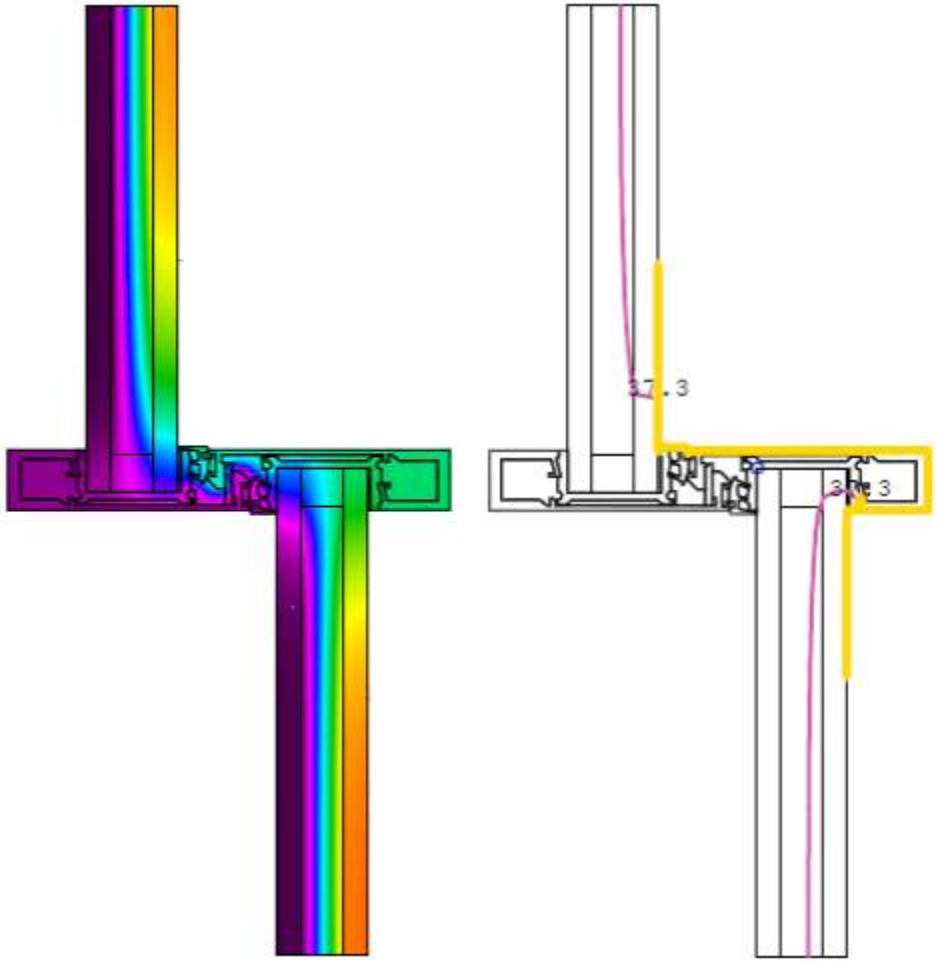
2-dimensional computer heat transfer analyses were performed with the THERM V7.4 to determine heat transfer through frame and glazing edge areas. The software enables the calculation of stationary (Steady State) distributions of temperature and heat flow using the finite element analysis (FEA) method.

The heat transfer through the frame and glazing is assessed as described in the thermal guide NFRC and ISO15099 as referenced by NFRC. There are then the following thermal transmittances (U-values):

a. Center-glazing/panel U-value Ug, which is assumed to apply to the whole of the glazing or opaque panel;
b. Frame U-value Uf;
c. Edge U-value Uedge1, Uedge2, to take into account the heat transfer due to the interaction (edge effect) between the framing and glazing/spandrel panel.

The overall U-value of the curtain wall is then calculated by using the principle of the area-weighting of U-values of the frames, edges, and center of glazing. The total fenestration product U-factor shall be calculated as per the formula from NFRC 100 Section 4.6.3:

$$U_t = \frac{\left[\Sigma(U_f A_f) + \Sigma(U_d A_d) + \Sigma(U_e A_e) + \Sigma(U_{de} A_{de}) + \Sigma(U_c A_c)\right]}{A_{pf}}$$



Condensation Resistance Simulation

Condensation Resistance (CR) is a relative indicator of a fenestration product's ability to resist the formation of condensation at a specific set of environmental conditions. The higher the Condensation Resistance value the greater the resistance to the formation of condensation.

Condensation forms at the coldest locations, such as the lower corners or edges of an insulated product even when the center of glazing is above the limit for condensation. Generally, as the insulating value of the glazing is improved, the area where condensation can occur is diminished. Condensation potential increases as the outdoor temperature is lowered and the indoor relative humidity increases.

The whole-product Condensation Resistance calculation is implemented in WINDOW according to NFRC 500: *Procedure for Determining Fenestration Product Condensation Resistance Values*. The procedure is based on the calculated surface temperature on the indoor side of the glazing and frame boundaries.

This simulation method consists of 2-D heat transfer simulation of the same cross-sections used for U-Factor determination as specified by NFRC 100, or the latest applicable procedures.

U-FACTOR ANALYSIS & ENERGY CODE COMPLIANCE

Table 1: Proposed Envelope U-Factor vs. NYCECC Code Requirements

AREA WEIGHTED AVERAGE CALCULATION	Area *A*	U-Factor (Proposed) *B*	UA (Proposed) *C=A*B*	U-Factor (Code Max.) *D*	UA (Code) *E=A*D*
WT-1*					
Fenestration	154,544.7	0.408	63,085.1	0.500	77,272.4
Opaque Spandrel	82,123.8	0.057	4,705.7	0.064	5,255.9
Opaque Column	63,284.1	0.041	2,575.7	0.064	4,050.2
WT-2					
Fenestration	27,490.0	0.408	11,221.4	0.500	13,745.0
Opaque Spandrel	17,612.8	0.057	1,009.2	0.064	1,127.2
Opaque Column	13,279.7	0.041	540.5	0.064	849.9
Total Area ==>	358,335.1		83,137.6		102,300.6
Compare U-Factors: Proposed vs. Code in Percentage ***[Total UA (Proposed)/Total UA (Code)] x 100***					**81.3**

Per ASHRAE 90.1 Table 11.3.1, Section 5 Building Envelope, Part a: Any area envelope assembly that covers less than 5% of the total area of that assembly type (e.g., exterior walls) need not be separately described. If not separately described, the area of an envelope assembly must be added to the area of the adjacent assembly of that same type.

1. Area of WT-3 is 2.2% of exterior wall.
2. Area of WT-4 is 1.7% of exterior wall.

Table 2: Wall Performance Analysis

ZR 12-10 (12)(ii)(1,2) - Exterior Wall Deduction - Wall Performance Analysis						
Elevation	Type	Area *A*	U-Factor (Proposed) *B*	UA (Proposed) *C=A*B*	U-Factor (Code Max.) *D*	UA (Code) *E=A*D*
South	WT-1					
	Opaque Spandrel	27,291.9	0.057	1,563.8	0.064	1,746.7
	Opaque Column	20,649.4	0.041	840.4	0.064	1,321.6
	WT-2					
	Opaque Spandrel	7,556.0	0.057	433.0	0.064	483.6
	Opaque Column	5,264.1	0.041	214.2	0.064	336.9
North	WT-1					
	Opaque Spandrel	27,291.5	0.057	1,563.8	0.064	1,746.7
	Opaque Column	20,649.4	0.041	840.4	0.064	1,321.6
	WT-2					
	Opaque Spandrel	7,556.0	0.057	433.0	0.064	483.6
	Opaque Column	5,264.1	0.041	214.2	0.064	336.9
East	WT-1					
	Opaque Spandrel	12,468.9	0.057	714.5	0.064	798.0
	Opaque Column	9,756.3	0.041	397.1	0.064	624.4
	WT-2					
	Opaque Spandrel	2,500.9	0.057	143.3	0.064	160.1
	Opaque Column	2,751.5	0.041	112.0	0.064	176.1
West	WT-1					
	Opaque Spandrel	15,071.5	0.057	863.6	0.064	964.6
	Opaque Column	12,229.0	0.041	497.7	0.064	782.7
	WT-2					
	Opaque Spandrel	0.0	0.057	0.0	0.064	0.0
	Opaque Column	0.0	0.041	0.0	0.064	0.0
Opaque Wall TOTAL		**176,300.4**		**8,831.1**		**11,283.2**
Fenestration TOTAL (Weighted Avg U-Factor Calculation on Window/Door Schedule on Dwg A-XX)		182,034.7	0.408	74,306.6	0.500	91,017.4
Exterior Gross Wall TOTAL		**358,335.1**		**83,137.6**		**102,300.6**

Energy Efficiency of Opaque Wall comparing Proposed with Code Requirement:	
Total UA Opaque Wall (Proposed) / Total UA Opaque Wall (Code) = *(8,831.1 / 11,283.2) x 100*	78%
Energy Efficiency Allowable per ZR12-10 (12)(ii)(1) =	***80%***
Energy Efficiency of Gross Wall comparing Proposed with Code Requirement:	
Exterior Gross Wall UA (Proposed) / Exterior Gross Wall UA (Code) = *(83,137.6 / 102,300.6) x 100*	81%
Energy Efficiency Allowable per ZR12-10 (12)(ii)(1) =	***90%***

COMcheck Software Version 3.9.3

Envelope Compliance Certificate

2010 New York Energy Conservation Construction Code (by application of 90.1 (2007) Standard)

Section 1: Project Information

Project Type: **Addition**
Project Title : 399 Park Avenue Exterior Wall Overcladding

Construction Site:
399 Park Avenue
New York, NY 10022

Owner/Agent:
Boston Properties
599 Lexington Avenue
Suite 1900
New York, NY 10022
212 326-4000

Designer/Contractor:
Evans Heintges Architects PLLC
440 Park Avenue South
15th Floor
New York, NY 10016
212 652-2965

Section 2: General Information

Building Location (for weather data): **New York, New York**
Climate Zone: **4a**
Building Space Conditioning Type(s): **Nonresidential**
Vertical Glazing / Wall Area Pct.: **51%**

Activity Type(s)	Floor Area
Base (Common Space Types:Office - Open Plan)	375901
Bustle (Common Space Types:Office - Open Plan)	249946
Tower (Common Space Types:Office - Open Plan)	518824

Section 3: Envelope Assemblies

Envelope PASSES: Design 0.2% better than code.

Climate-Specific Requirements:

Component Name/Description	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor(a)
Orientation: NORTH					
WT-1: Other Steel Framed Wall (b)	79264	---	---	0.057	0.064
WT-1 Fenestration: Metal Frame Curtain Wall/Storefront, Perf. Type: Other testing/cert. Product ID: WT-1 with VRE15-59, SHGC 0.36, VT 0.55 (c)	51972	---	---	0.408	0.500
WT-1 Column: Other Steel Framed Wall (b)	20649	---	---	0.028	0.064
WT-2: Other Steel Framed Wall (b)	19246	---	---	0.057	0.064
WT-2 Fenestration: Metal Frame Curtain Wall/Storefront, Perf. Type: Other testing/cert. Product ID: WT-2 with VRE15-59, SHGC 0.36, VT 0.55 (c)	11690	---	---	0.408	0.500
WT-2 Column: Other Steel Framed Wall (b)	5264	---	---	0.028	0.064
Orientation: EAST					
WT-1: Other Steel Framed Wall (b)	35630	---	---	0.057	0.064
WT-1 Fenestration: Metal Frame Curtain Wall/Storefront, Perf. Type: Other testing/cert. Product ID: WT-1 with VRE15-59, SHGC 0.36, VT 0.55 (c)	23161	---	---	0.408	0.500
WT-1 Column: Other Steel Framed Wall (b)	9756	---	---	0.028	0.064
WT-2: Other Steel Framed Wall (b)	6611	---	---	0.057	0.064

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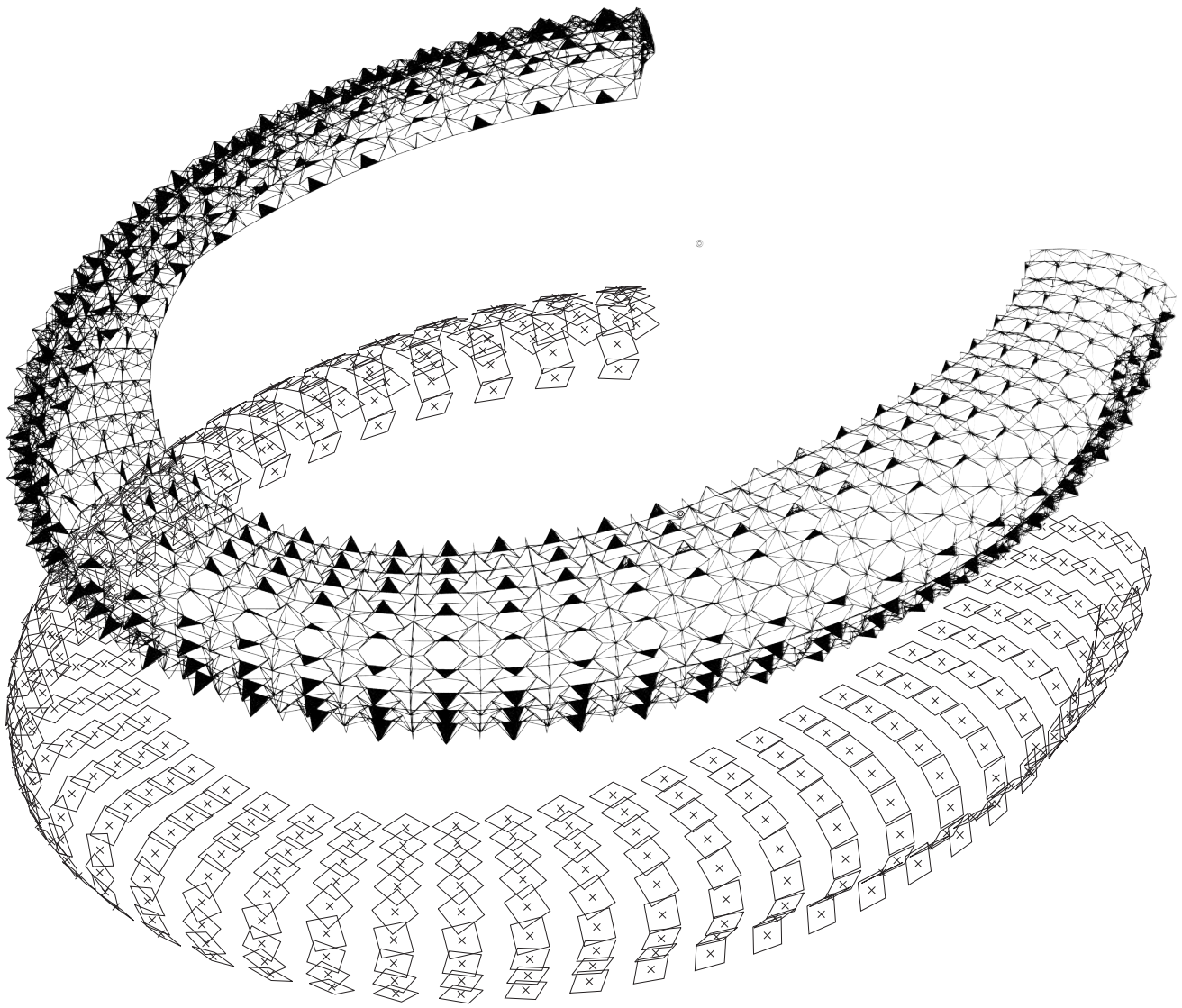
SURFACE RATIONALIZATION / PARAMETRIC SCRIPTING

- ScaledSurface001
  - xyplane
  - yzplane
  - zxplane
  - Parameters
  - Relations
  - KnowledgeTemplates
  - Geometrical Set.1
    - KnowledgePatternOutput
      - OutputPoints
      - OutputLines
      - OutputPlanes
      - OutputBasePoints
      - OutputPlanesTangent
      - UDFOutput_PANEL
        - Inverse.1
        - Surface.1
    - KnowledgePatternOutput_BASE
    - Panel
    - BaseFacade
    - BaseSurface
    - BaseSupport
    - BaseConnection
    - BaseTruss
  - BaseSurface



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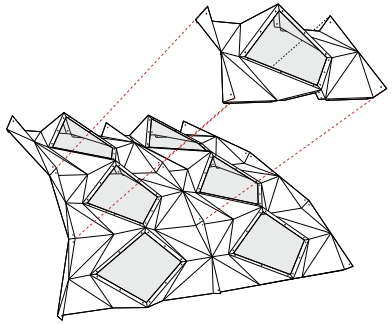
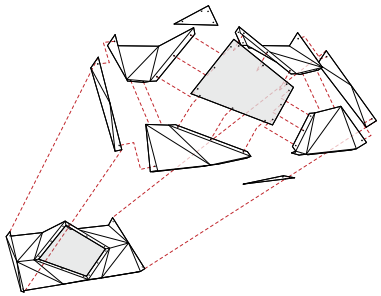
DESIGN PROCESS OPTIMIZATION FOR FABRICATION

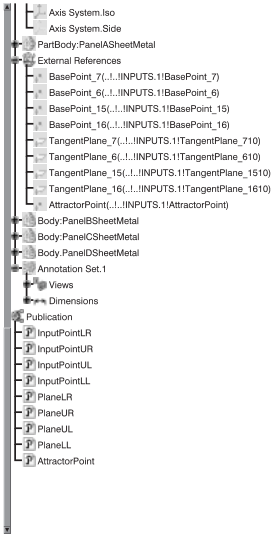


PanelUDF Aggregation

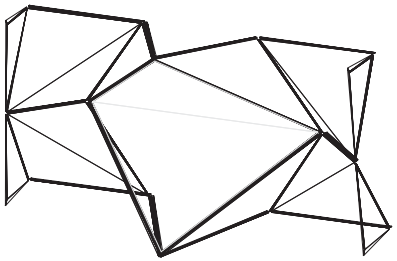


Exploded PanelUDF

1 **GENERATIVE SHAPE DESIGN**
BaseSurface generation
PanelUDF wireframe geometry
PanelUDF surfaces



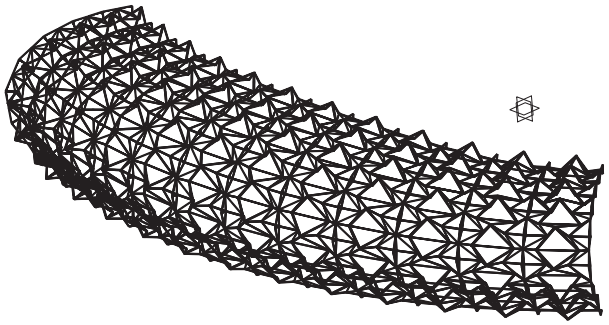
2 **KNOWLEDGEWARE**
SurfaceDivide KP
Generate UDF InputPoints
Generate TangentPlanes to Base Surface
Instantiate PanelUDF on BaseSurface



3 **GENERATIVE SHEETMETAL DESIGN**
Specify sheetmetal thickness & bend parameters
Develop 4 Sheetmetal Panels from PanelUDF

4 **FUNCTIONAL TOLERANCING AND ANNOTATION**
Document Template for PanelUDF
Document Template for SheetmetalPanelUDF

5 **CATALOG EDITOR**
Add Document Templates to database



6 **PRODUCT STRUCTURE**
Collection of files for AutoDoc Instantiation
1. InputPoints
2. InstantiationRepository
3. MasterProduct

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SHOP DRAWING REVIEW

GENERAL NOTES

1 WALL SYSTEM GENERAL DESCRIPTION

A. UNITIZED, PRESSURE EQUALIZED, THERMALLY BROKEN, CUSTOM EXTRUDED ALUMINUM FRAMING SYSTEM, WITH GLASS, TERRACOTTA, AND ALUMINUM PANEL INFILLS.
CONTAINS FOLLOWING ELEMENTS TYPICALLY ASSEMBLED, SEALED AND GLAZED IN A CONTROLLED ASSEMBLY FACTORY ENVIRONMENT.
- EXTRUSIONS
- GASKETS & WEATHERSTRIPPING, JOINERY SEALS
- GLASS AND/OR ALUMINUM PANELS
-TERRACOTTA
- BACKPANS

B. INTERLOCKING VERTICAL MULLIONS AND STACK JOINTS CONTAIN DRY GASKET SEALS.

C. VISION, SPANDREL & SHADOWBOX GLASS ARE GLAZED WITH STRUCTURAL SILICONE THAT IS FACTORY APPLIED.

D. ALL GLASS TYPES ARE REPLACED FROM EXTERIOR.

E. FABRICATION OF EXTRUSIONS IS COMPLETED PRIOR TO APPLICATION OF PAINT WITH THE EXCEPTION OF SHAPES CONTAINING POLYAMIDE ISOBARS.

F. INSULATION IS SHOP INSTALLED, MULLION WRAPS ARE FIELD APPLIED.

G. UNITIZED FRAMES ARE CRATED BY FLOOR AND SHIPPED TO SITE FOR DISTRIBUTION.

H. THE 4-WAY INTERSECTION REQUIRES FIELD APPLICATION OF SILICONE SEALANT.

I. TYPICAL ANCHOR CONNECTIONS CONSIST OF ALUMINUM EXTRUDED PLATES AND SPECIAL CONNECTIONS TO THE EMBEDS.

J. FIRE-SAFING AND SMOKE SEAL ARE SITE INSTALLED.

2 DESIGN CRITERIA

A. AIR INFILTRATION:
- 0.06 CFM AT 6.24 PSF FOR FIXED WALL AREAS WHEN TESTED PER ASTM E283

B. WATER PENETRATION:
NO UNCONTROLLED WATER AT 11 PSF WHEN TESTED PER:
- ASTM E331 FOR STATIC PRESSURE
- AAMA 501.1 FOR DYNAMIC PRESSURE

C. DESIGN LOADS :

WIND LOAD: CPP "FINAL CONSOLIDATED CLADDING REPORT WIND TUNNEL TESTS FOR MSKGC & CUNY, NEW YORK", DATED JAN. 30, 2013. TEST WIND LOADS ARE +55/-60 PSF.

Per specification, PMU to use +60/-85 psf for design wind pressure.

SEISMIC LOAD: COMPLY WITH ASCE 7-05
DESIGN CATEGORY B, Sds=0.24, Ip= 1.25

D. STRUCTURAL DEFLECTION:
FRAME MEMBERS NORMAL TO WALL:
L/240 OR 3/4" WHICHEVER IS LESS FOR SPANS UP TO 13'-6", L/240+1/4" FOR SPANS GREATER THAN 13'-6" BUT LESS THAN 40'-0" CANTILEVERED MEMBER, 2L/240 OR 5/8" WHICHEVER IS LESS, L IS CANTILEVERED LENGTH.

Confirm deflection criteria. Specification is L/175.

FRAME MEMBERS PARALLEL TO WALL:
L/360 OR 1/8", WHICHEVER IS LESS FOR DEAD LOAD.
METAL PANELS: L/60, L IS SHORT SPAN.

E. GLASS DEFLECTION:
CENTER OF GLASS DEFLECTION, RELATIVE TO IT'S SUPPORTING FRAMING MEMBERS, SHALL NOT EXCEED L/65 OR 3/4", WHICHEVER IS LESS. WHEN SUBJECTED TO DESIGN WIND LOADS.

F. BUILDING MOVEMENT:
LIVE LOAD DEFLECTION.....5/8" MAXIMUM
COLUMN SHORTENING.....TDB".
ELASTIC STORY DRIFT DUE TO WIND LOAD.....0.01H = 0.01x216" =2.16"
INELASTIC STORY DRIFT DUE TO SEISMIC LOAD.....0.02H = 4.32".

Note to Ennead: spec lists H/300. Confirm with structural engineer.

G. THERMAL MOVEMENT:
SYSTEM SHALL ACCOMMODATE MOVEMENTS AT TEMPERATURE RANGE 5°F TO 180°F MATERIAL SURFACES.

H. STACK JOINT MOVEMENT: 15/16" (24mm) & DOWN 1 1/8" (29mm)
-REF: PM-T1-16

Update per PM-T1-16

3 ALUMINUM EXTRUSIONS

A. ALLOYS ARE AS SPECIFIED BELOW:.

1. 6063-T5 - ALL TRIM AND NON-CRITICAL ELEMENTS
2. 6063-T6 - VERTICAL MULLIONS AND MAIN FRAMING ELEMENTS
3. 6061-T6 - ALL STRUCTURAL SPLICES AND ANCHOR ELEMENTS

B. SEE EXTRUSION CATALOG PM-T1-03 SHEET FOR SPECIFIC ALLOY SELECTION FOR EACH DIE.

C. EXTRUSION MINIMUM THICKNESS SHALL BE AS REQUIRED BY STRUCTURAL CALCULATIONS.

4 FINISHES

No mill finish aluminum. All surfaces not exposed to exterior or interior shall receive a chemical conversion coating per 084413 section 2.04

A. ALUMINUM EXTRUSION FRAMING & TRIM - EXTERIOR
1. MEETS AAMA 2605-98
2. PPG DURANAR 3-COAT 70% KYNAR METALLIC MATCH TO ALPHATON 5708400 STANDARD
3. COLOR (A-1)

B. ALUMINUM EXTRUSION FRAMING - EXTERIOR (PARTIALLY CONCEALED)
1. MEETS AAMA 2605-98
2. PPG DURANAR 2-COAT 70% KYNAR UC109852 CHARCOAL
3. COLOR (A-2)

C. SHADOWBOX BACKPAN
1. MEETS AAMA 2605-98
2. PPG DURANAR 3-COAT 70% KYNAR 2212-40 STONE
3. COLOR (A-3) (BM2122-40 -1 LIGHTER)

D. EXTERIOR ALUMINUM AND PERFORATED PANELS
1. MEETS AAMA 2605-98
2. PPG DURANAR 3-COAT 70% KYNAR
3. COLOR (A-1A) (ZINC +1 DARKER)

E. ALUMINUM EXTRUSION FRAMING - INTERIOR
1. MEETS AAMA 2605-98
2. PPG DURANAR 2-COAT 70% KYNAR
3. COLOR (A-4) (ZINC +2 DARKER)

F. NON-EXPOSED ALUMINUM EXTRUSION, CLIPS AND ANCHORS (NOT IN CONTACT WITH CONCRETE) SHALL BE FINISHED WITH CHROMATE

G. SEE EXTRUSION CATALOG PM-T1-03 SHEET FOR SPECIFIC FINISH FOR EACH DIE

H. ALUMINUM ANCHORS AND CLIPS THAT CONTACT CONCRETE WILL RECEIVE 2 COAT PVDF KYNAR FINISH FOR ISOLATION.

I. FORMED CARBON STEEL AND HOT ROLLED STEEL SHALL BE PRIME COATED IN CONFORMANCE WITH GSA SPECIFICATIONS TT-P-643B (1990), IF EXPOSED TO POTENTIALLY WETTED AREAS USE HOT DIP GALVANIZED IN CONFORMANCE WITH ASTM A 123/A 123M-00.

Confirm per 084413 section 2.03

5 GLASS ... (REF: PM-T1-06)

A. LAMINATED VISION GLASS UNIT - M-GL-1A
1 7/16" LAMINATED HS/HS
12mm ULTRA-CLEAR, IPASOL ULTRASELECT 62/29
LOW IRON HS w/60% VLT ON #2
12mm ITS-SPACER, AIR
5+5mm LAM. ULTRA-CLEAR w/ 1.52mm PVB

Coordinate argon per project specification and T1-06.

B. INSULATED VISION GLASS UNIT - M-GL-1A-S
1 3/8" LAMINATED HS/HS
12mm ULTRA-CLEAR, IPASOL ULTRASELECT 62/29
LOW IRON HS w/60% VLT ON #2
12mm ITS-SPACER, AIR
10mm ULTRA-CLEAR

C. LAMINATED VISION GLASS UNIT - M-GL-1B
12mm ULTRA-CLEAR, IPASOL NEUTRAL 50/27
LOW IRON HS w/50% VLT ON #2
12mm ITS-SPACER, AIR
5+5mm LAM. ULTRA-CLEAR w/ 1.52mm PVB

Combine all glass information on one glass schedule. Coatings not listed on PM-T1-06

Similar to Dow Corning Review, provide certification letter from glass manufacturer per 1.12.C1.

D. INSULATED VISION GLASS UNIT - M-GL-1B-S
12mm ULTRA-CLEAR, IPASOL NEUTRAL 50/27
LOW IRON HS w/50% VLT ON #2
12mm ITS-SPACER, AIR
10mm ULTRACLEAR

E. LAMINATED VISION GLASS UNIT - M-GL-1D
12mm ULTRA-CLEAR, IPASOL NEUTRAL 50/27
LOW IRON HS w/50% VLT ON #2
20mm ITS-SPACER, AIR
6+6mm LAM. ULTRA-CLEAR w/ 1.52mm PVB

F. LAMINATED VISION GLASS UNIT - M-GL-2A
12mm ULTRA-CLEAR, IPASOL ULTRASELECT 62/29
LOW IRON HS w/60% VLT ON #2
12mm ITS-SPACER, AIR
5+5mm LAM. ULTRA-CLEAR w/ 1.52mm PVB

G. INSULATED VISION GLASS UNIT - M-GL-2A-S
12mm ULTRA-CLEAR, IPASOL ULTRASELECT 62/29
LOW IRON HS w/50% VLT ON #2
12mm ITS-SPACER, AIR
10mm ULTRACLEAR

H. GLASS UNITS ARE DESIGNED FOR STRUCTURAL GLAZING.

6 ELASTOMERIC COMPONENTS

A. SEE PM-T1-05 FOR TECHNICAL DESCRIPTION OF GASKETS, THERMAL BREAKS, BACKER RODS, COMPATIBLE TAPES, ETC...

7 SEALANTS

STRUCTURAL	DOW 983	BLACK
FRAME ASSEMBLY	DOW 791	BLACK
SPLICE AT 4-WAY INTERSECTION	DOW 791	BLACK
WEATHERSEAL	DOW 791	BLACK

A. ALL SEALANTS WILL BE BY DOW CORNING.

B. SILICONE ADHESION TO SUBSTRATES, CLEANING AND PRIMER RECOMMENDATIONS, SURFACE PREPARATION METHOD ARE TO BE DETERMINED BY DOW CORNING TESTING.

C. ALLOWABLE DESIGN STRESS IN THE STRUCTURAL SILICONE IS NOT TO EXCEED 20 PSI IN TENSION AND 1 PSI IN SHEAR.

D. DOW CORNING TO PROVIDE AND COMPLETE REVIEW AND APPROVAL OF THE STRUCTURAL SILICONE JOINT DESIGN, INTERNAL FRAME SEALS AND ALL WEATHER SEALS.

E. SEALANT BACK-UP ROD IS TO BE NON-GASSING POLYOLEFYHANE OR URETHANE FOAM AS APPROVED BY DOW CORNING.

Submit for PMU

F. BOND BREAKER TAPE AS RECOMMENDED AND APPROVED BY DOW CORNING.

G. STRUCTURAL GLAZING TAPE IS OPEN CELL HIGH DENSITY POLYURETHANE DOUBLE SIDED ADHESIVE FOAM TAPE, MINIMUM DENSITY 30 LBS. /CU. FT. WITH A 55 SHORE A HARDNESS.

Confirm product to be used in contact with terra cotta substrate.

L. SEE PM-T1-12 FOR JOINERY DETAILS

8 INSULATION ... (REF: PM-T1-19)

A. SPANDREL AND NON-VISION AREAS WILL BE INSULATED WITH NON FOIL BACKED THERMAFIBER FIRESPAN OR EQUAL WITH FIRESPAN MULLION COVERS W\ FOIL VAPOR BARRIER AS NEEDED.

B. FOIL VAPOR BARRIER WILL BE USED ONLY ON MULLION WRAPS AND OTHER EXTERNALLY APPLIED AREAS.

C. ALL JOINTS, EDGES, PUNCTURES OR TEARS WITHIN THE VAPOR BARRIER WILL BE FULLY TAPED W/FSK TAPE OR EQUAL.

D. INSULATION WILL BE RETAINED BY STEEL IMPALING ASSEMBLIES WITH BASES FASTENED TO FRAMES WITH SCREWS OR APPROVED EQUAL.

9 FIRESAFING, MULLION WRAPS AND SMOKE SEAL ... (REF: PM-T1-19)

A. 1" THICK MINIMUM (SEE DETAIL) MINERAL WOOL FIBER SAFING INSULATION WITH SPRAY APPLIED SMOKE SEAL OR EQUAL MULLION WRAPS RETAINED BY INSULATION SCREWS COVERING MULLIONS ABOVE THE CEILING.

B. FILL THE VOID BETWEEN THE CURTAIN WALL AND THE BUILDING STRUCTURE AT FLOORS LEVELS AND THE ROOF EDGE WITH USG MINERAL WOOL FIRESAFING

C. INSULATION, THICKNESS SHALL BE FOUR INCHES MINIMUM TOP TO BOTTOM, CUT SAFING 1/2" WIDER THAN OPENING TO ASSURE COMPRESSED FIT.

D. SAFING IS TO BE SUPPORTED BY SAFING INSULATION IMPALING CLIPS SPACED AT MAXIMUM OF 18" ON CENTER.

E. COMPLETELY COAT THE TOP SURFACE OF THE SAFING INSULATION WITH FIRE BARRIER SPRAY. INSTALLATION TO COMPLY WITH MANUFACTURES REQUIREMENTS FOR TEMPERATURE AND CONDITION OF SUBSTRATES.

F. FIRESAFING, MULLION WRAPS AND SMOKE SEAL INSTALLATION SHALL BE BASED ON UL RATED ASSEMBLIES.

10 FASTENERS ... (REF: PM-T1-04)

A. TYPE 302 OR 304 STAINLESS STEEL FASTENERS WILL BE USED IN THE FOLLOWING AREAS

1. LOCATIONS WITH EXPOSURE TO OUTDOOR AIR
2. GLAZING POCKETS
3. INTERNAL CAVITIES THAT ACT AS GUTTERS OR THAT CAN CONTAIN WATER RESULTING FROM LEAKAGE OR CONDENSATION.
4. CARBON STEEL FASTENERS WITH ZINC PLATING, CADMIUM PLATING OR STALGARD COATING WILL BE USED IN ALL OTHER AREAS.
5. LOCK WASHERS OR OTHER LOCKING DEVICE WILL BE USED AT ALL BOLTED CONNECTIONS.
6. SEE PM-T1-04 FASTENER SCHEDULE FOR SPECIFIC APPLICATIONS.

11 STEEL & WELDING

A. STEEL NOTES.
1. ROLLED SHAPES, PLATES AND BAR SHALL BE ASTM A36
2. SQUARE AND RECTANGULAR TUBES SHALL BE ASTM A300, GRADE B
3. PIPE SHALL BE ASTM A53, GRADE B, TYPE SE

B. WELDING NOTES.
4. WELDING OF STEEL SHALL BE PER ANSI / AWS D1.1 USING E70XX ELECTRODE
5. WELDING OF ALUMINUM SHALL BE PER ANSI / AWS D1.2, USING FILLER ALLOY 4043

C. SITE WELDED CONDITIONS SHALL BE "TOUCH UP" PAINTED WITH ZINC RICH PRIMER AS REQUIRED.

12 SHIMS, BAFFLES & ISOLATION

A. CONNECTIONS SUBJECT TO MOVEMENT WILL BE SEPARATED WITH FRICTION REDUCING PADS, MINIMUM THICKNESS 0.062 - PADS SHALL NOT BE SUBJECT TO HEAT DAMAGE FROM WELDING, CUTTING, OR EXCESSIVE PRESSURE DUE TO OVER-TIGHTENED BOLT.

B. STEEL PLATE SHIMS WILL BE USED AT ALL CONNECTIONS THAT TRANSFER SHEAR FORCES.

C. PLASTIC SHIMS WILL BE USED AT ALL STATIC CONNECTIONS TRANSFERRING COMPRESSION LOADS.

D. ALL DISSIMILAR MATERIALS WILL BE ISOLATED FROM EACH OTHER USING ONE OF THE FOLLOWING: PAINT, PLASTIC SHIM, STAINLESS STEEL SHIM OR TAPE.

E. BAFFLES AT WEEP HOLES SHALL BE 30PPI PVC COATED POLYURETHANE.

13 TERRACOTTA ... (REF: PM-T1-08 THRU PM-T1-11)

A. TERRACOTTA TO BE MANUFACTURED BY SHILDAN TERRACOTTA RAINSCREEN VIA THE LONGOTON PRODUCT LINE

B. FINISH TYPE A1 - FINE
OPTION A1a G5708400-320 / LT230851 - SURFACE #5
OPTION A1b G5708400-320 / LT230851 - SURFACE #2

C. FINISH TYPE A2 - ENGOBE
G5708438-480 / LT230851

D. FINISH TYPE A3 - STANDARD
2/8" 1324_G5708400

14 WINDOW WASHING TRACKS ... (REF: PM-T1-20)

A. SEE T-SHEET FOR DETAILED INFORMATION

15 ACOUSTICS

A. THE CURTAINWALL SYSTEM IS ACOUSTICALLY RATED BASED ON THE FOLLOWING CRITERIA

1. CURTAINWALL STC/OITC ACOUSTICAL PERFORMANCE REQUIREMENTS
PODIUM = STC 45 / OITC 35
TOWER = STC 40 / OITC 30
2. PODIUM AND TOWER CURTAINWALL SURFACE AREAS
VISION = 25%
SPANDREL = 26.5%
TERRACOTTA = 50.5%

B. PERFORMANCE RESULTS OF THE CURTAINWALL

1. COMPOSITE STC & OITC INITIAL ESTIMATTES WERE CALCULATION AS FOLLOWS:
PODIUM = STC 47 / OITC 38
TOWER = STC 41 / OITC 34

C. WE NOTE THAT WHILE THESE PREDICTED STC AND OITC RATINGS ARE BASED ON INDUSTRY STANDARD ENGINEERING METHODS FOR STC/OITC ESTIMATION, PROJECT-SPECIFIC ASTM E90 TESTING WOULD BE REQUIRED TO CONFIRM/DETERMINE ACTUAL STC AND OITC RATINGS.

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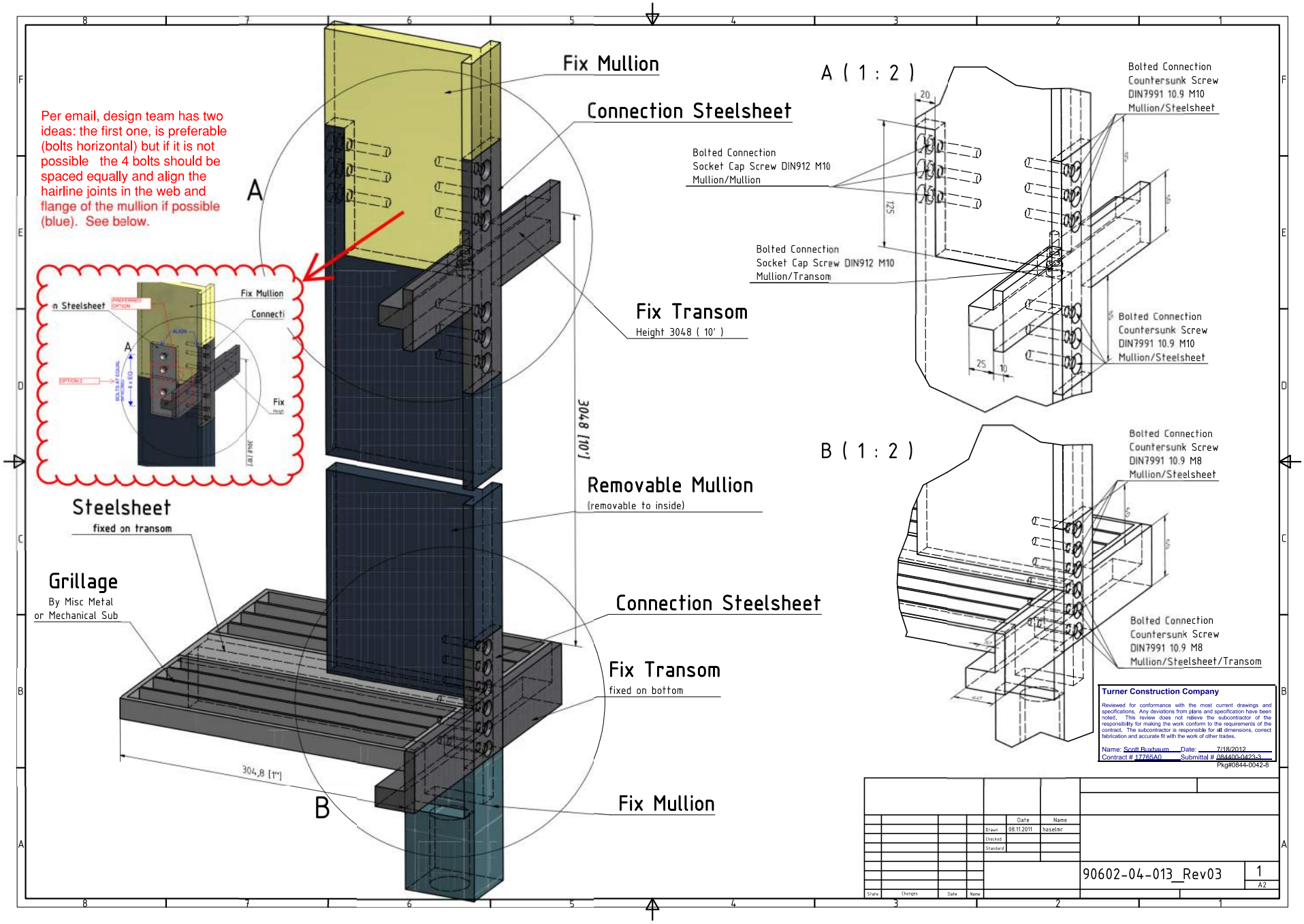
SHOP DRAWING DEVELOPMENT



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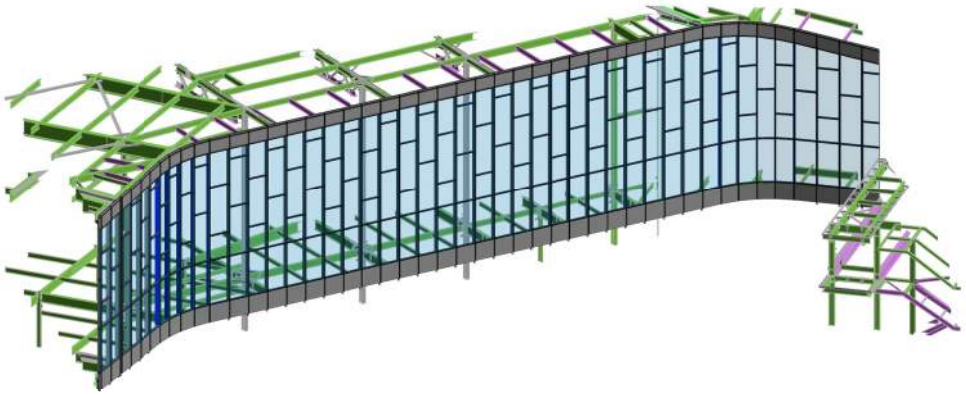
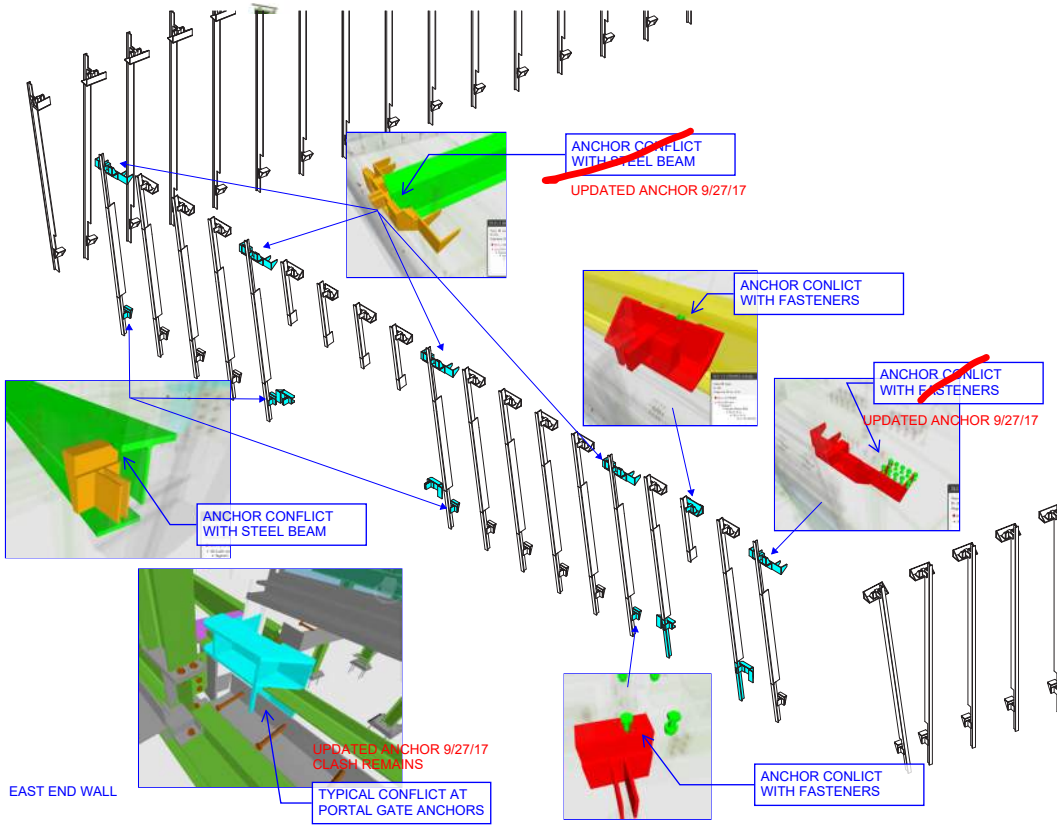
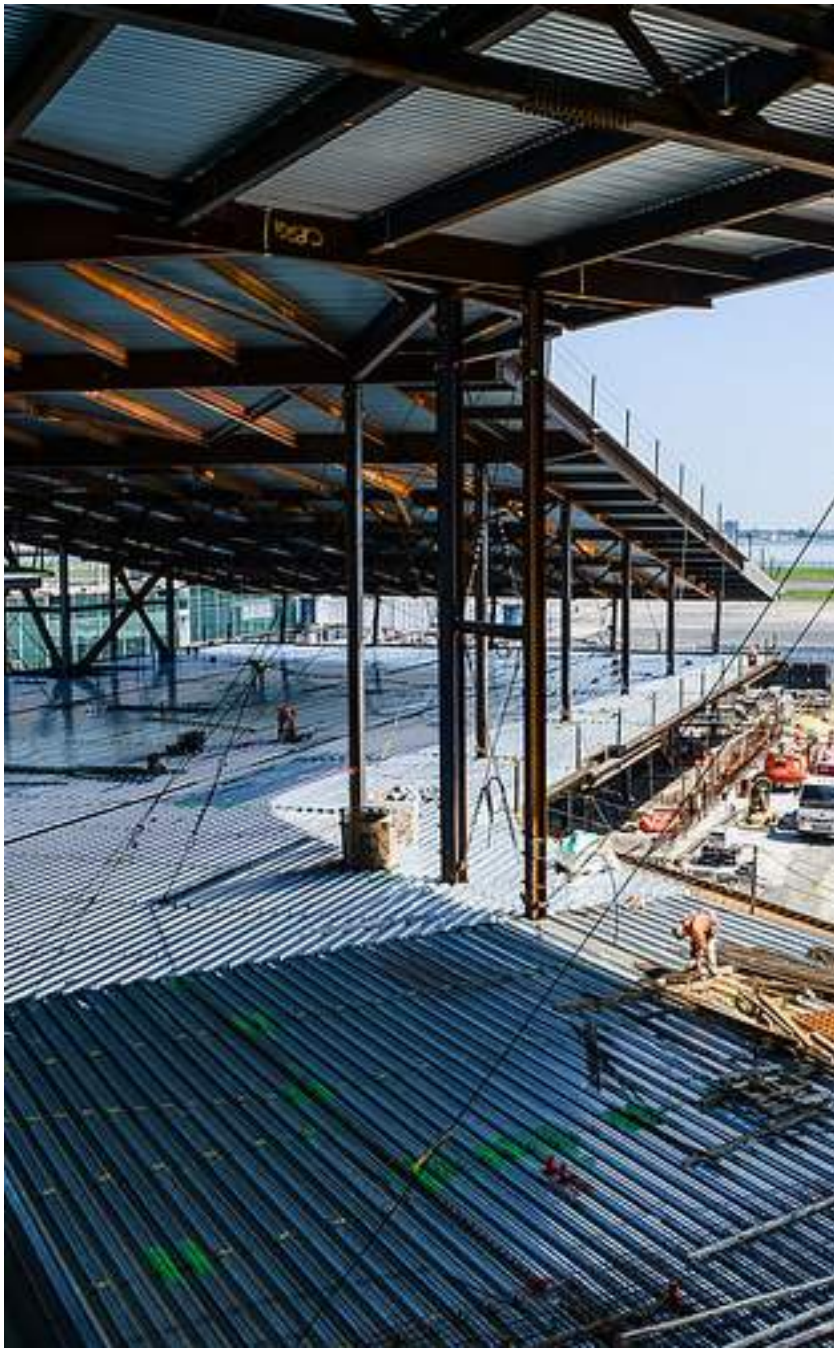
DESIGN/ASSIST AND CONSTRUCTION COORDINATION







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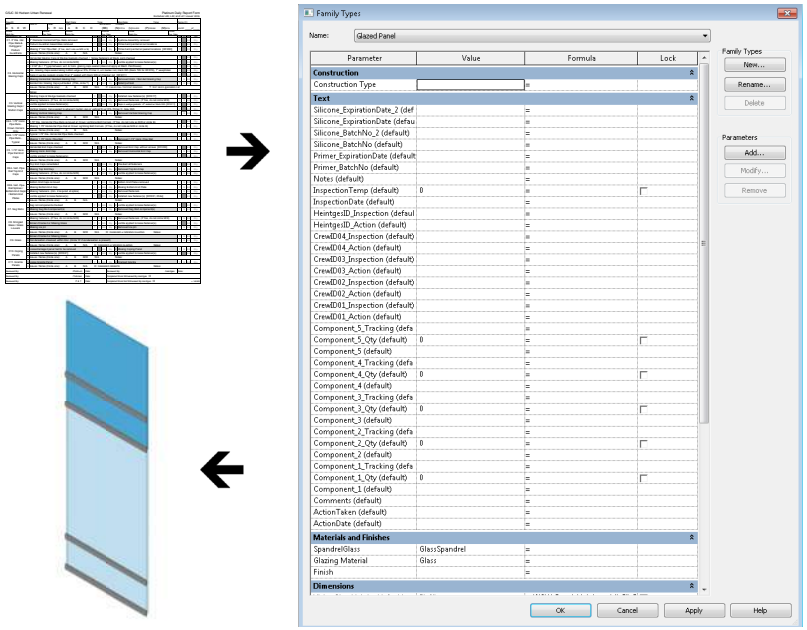
CONSTRUCTION CONTRACT ADMINISTRATION

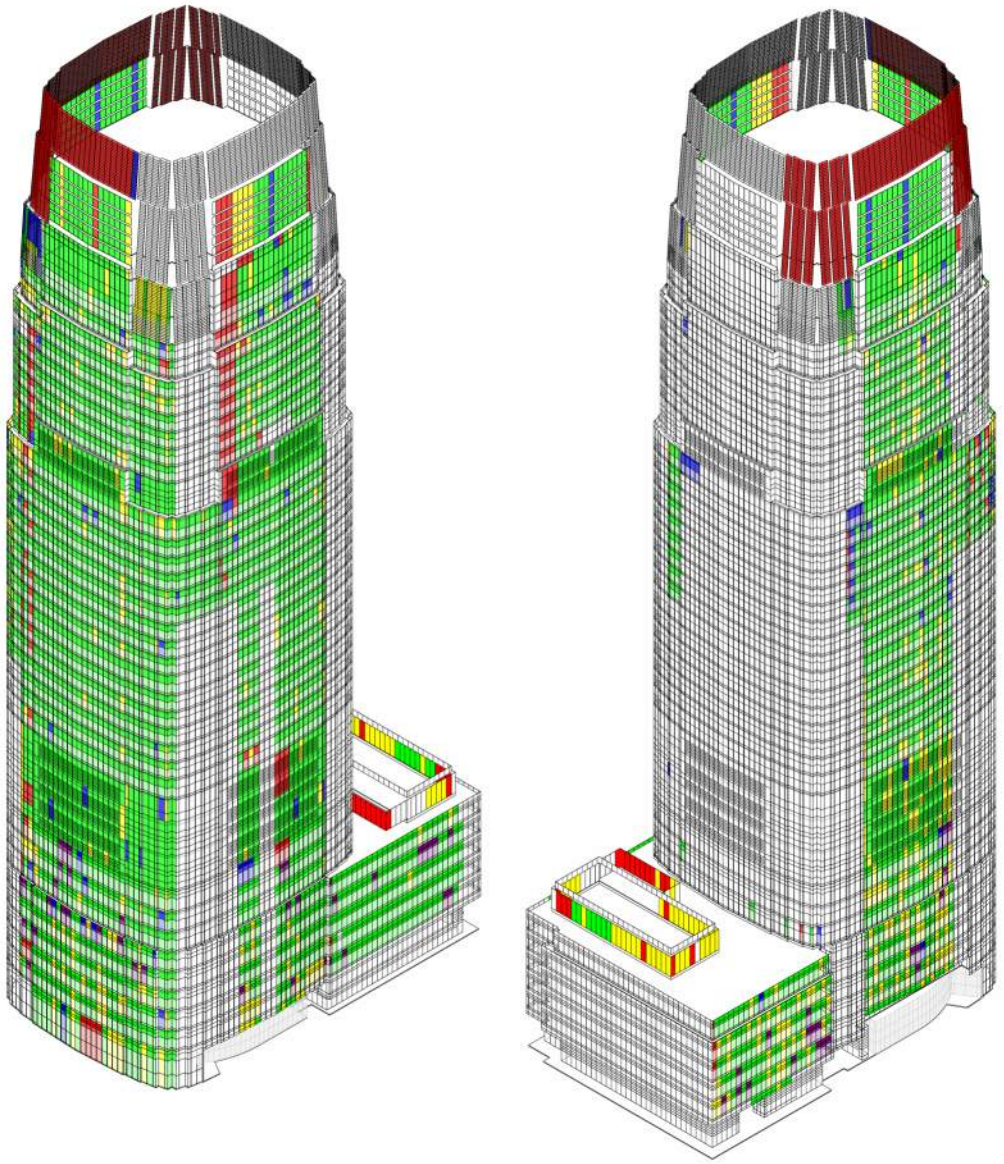
	7244 TOTAL Unique Unit IDs / TOTAL Units Inspected	UNIT STATUS				
		GREEN = Inspection & Remediation COMPLETE	YELLOW = Component MISSING or REMOVED Due to Deficiency	RED = FURTHER INSPECTION REQUIRED	BLUE= DAMAGED IGU (C9) or GLASS LOUVER (C8)	PURPLE= DAMAGED GRANITE (C11)
10-Jun-14	760	266	19	475	*	*
	9%	3%	0.2%	6%	-	-
12-Sep-14	2673	2029	249	321	40**	34***
	32%	24%	3.0%	4%	0.5%	0.4%
30-Dec-14	3621	2802	449	211	99	60
	50%	39%	6.2%	3%	1.4%	0.8%
Percent Complete:		45%				

* Data not differentiated from "B: Further Inspection Required" prior to 8/28/14.

** IGU damage includes: surface corrosion, cracked glass and condensation in IGU.

*** Damaged granite panels exhibit breaks near kerf cuts or cracks in surface of panel.





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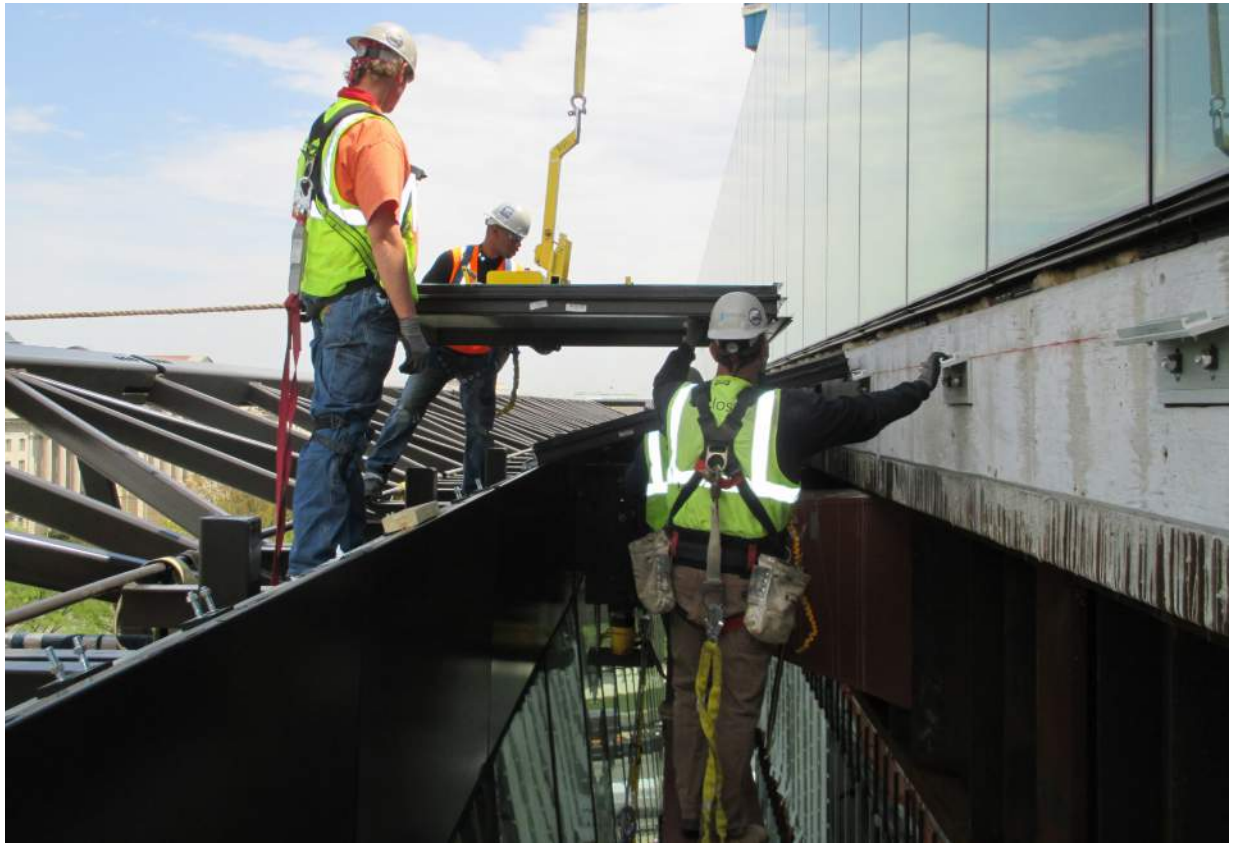
FIELD OBSERVATION, FIELD MOCK-UP TESTING, AND FACTORY INSPECTIONS



REPRESENTATIVE FACADE PROJECTS

Virgin Hotel (Boutique Hospitality)

Anthem Technology Center (Commercial Office)

LaGuardia Terminal B Expansion (Large Scale Municipal Infrastructure)

NMAAHC (Institutional Museum)

East 79th Street (Condominium Tower)

Brodsky Residence (Private Residence)

150 Central Park South (Private Residence)

VIRGIN HOTEL

5G Studio Collaborative
Dallas

Scope of Services: (completed) Amodal Inc. is providing full consulting services for the building envelope, including: Design Development, Design Detailing, Fabrication Process Development, Bid Negotiation, and Construction Contract Administration services.

*Renderings courtesy of 5G Studio Collaborative

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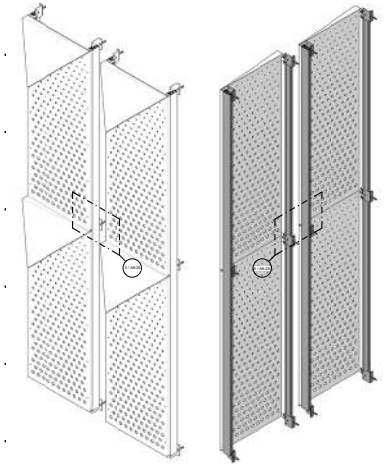
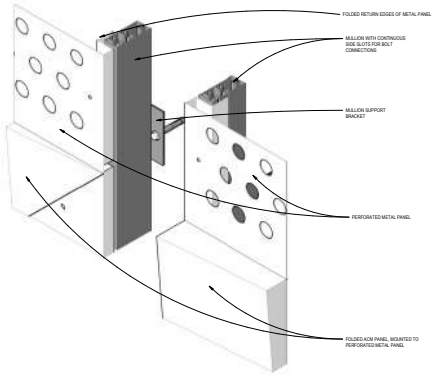
ANTHEM TECHNOLOGY CENTER

John Portman & Associates
Atlanta

Scope of Services: (completed) Amodal Inc. is providing full consulting services for the building envelope, including: Design Development, Design Detailing, Fabrication Process Development, Bid Negotiation, and Construction Contract Administration services.

Renderings courtesy of John Portman & Associates





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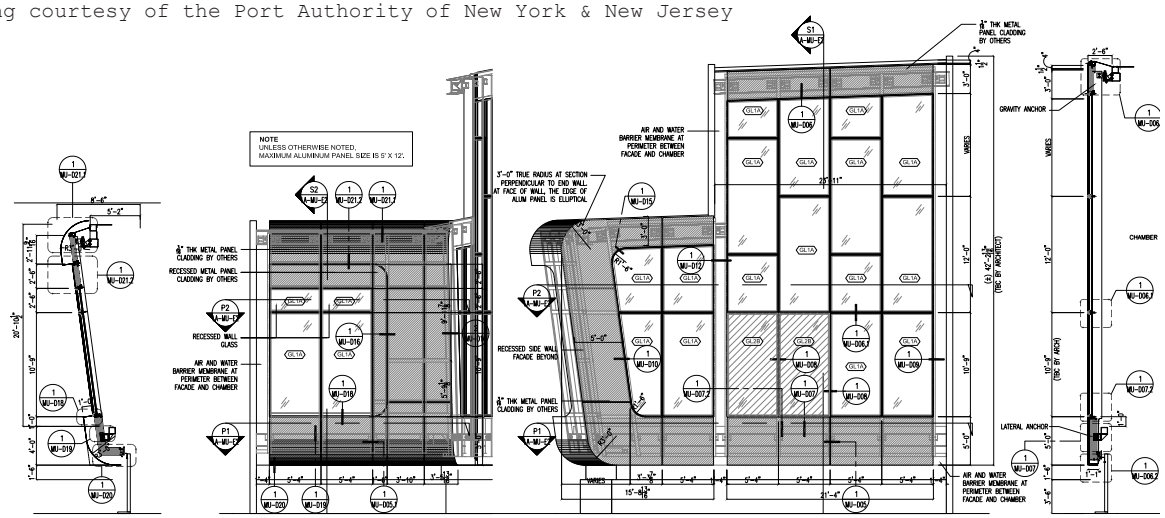
LAGUARDIA TERMINAL B EXPANSION

HOK
New York

Scope of Services: (completed) Amodal Inc. was contracted for facade consulting, BIM development, and project coordination services related to the curtain wall systems.

*Rendering courtesy of the Port Authority of New York & New Jersey



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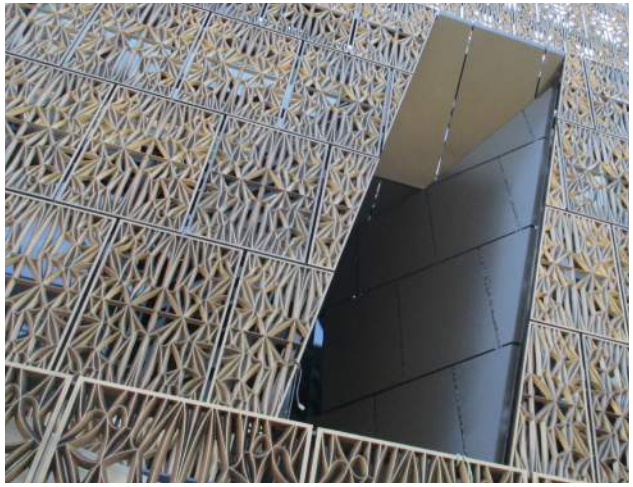
NMAAHC

Freelon Adjaye Bond/
Smithgroup(FAB/S)
Washington D.C.

Scope of Services: (completed) Amodal Inc. provided project continuity through Design Development, Fabrication, Installation, and full Construction Administration Services for the building envelope, including effective oversight of the fabrication of the custom cast aluminum Corona panels.*

* Shaun Salisbury, with approval of FAB/S and the Smithsonian Institute, was sub-contracted by Heintges & Associates to remain on the Enclosure Team through Substantial Completion while allowing Amodal Inc. to launch as an independent consulting company.

*Rendering courtesy of Adjaye Associates



EAST 79TH STREET

Studio Sofield
New York

Scope of Services: (completed) Completed for the Brodsky Organization, Shaun provided building envelope consulting services and intensive construction administration services for the 19-floor hand-set brick masonry building.

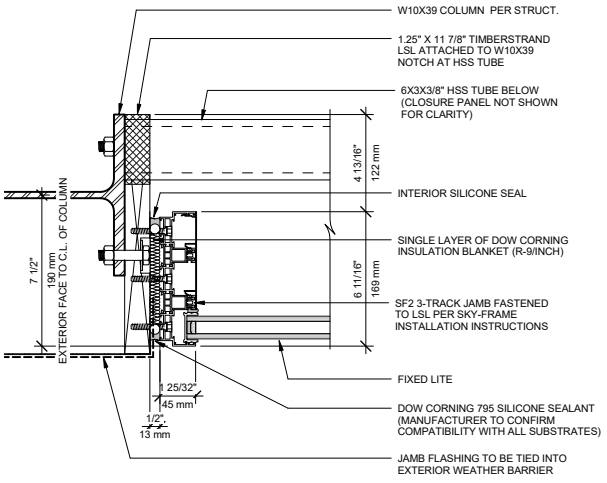
*Rendering courtesy of Studio Sofield

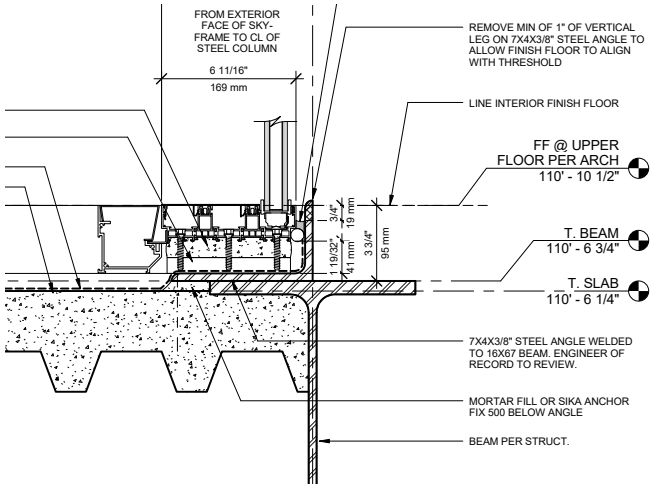
BRODSKY RESIDENCE

Efficiency Lab for Architecture
Telluride

Scope of Services: (completed) Amodal Inc. is providing facade consulting services, and shop drawing development for the Swiss Manufactured Sky-Frame fenestration systems.

*Rendering courtesy of EL





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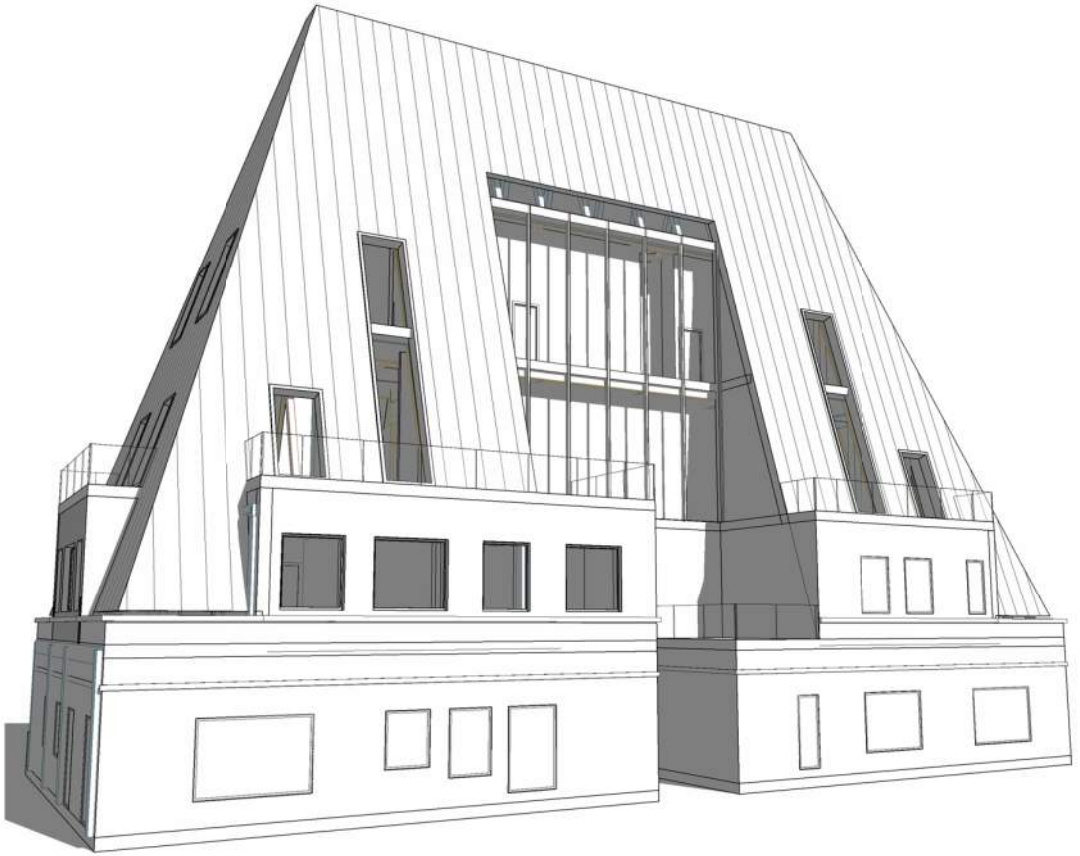
CENTRAL PARK SOUTH

Confidential Client
New York

Scope of Services: (unbuilt)
Amodal Inc. is providing full-consulting services for the building envelope, including: Design Development, Design Detailing, Fabrication Process Development, Bid Negotiation, and Construction Contract Administration services.



*Rendering courtesy of SPAN Architecture

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