SURFACE DESIGN

AJLP

BUILDING ENVELOPE CONSULTANTS

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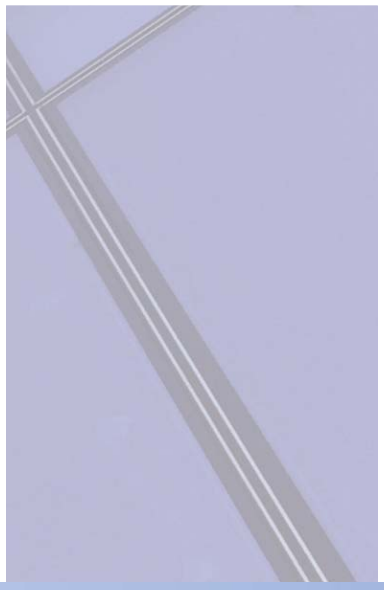
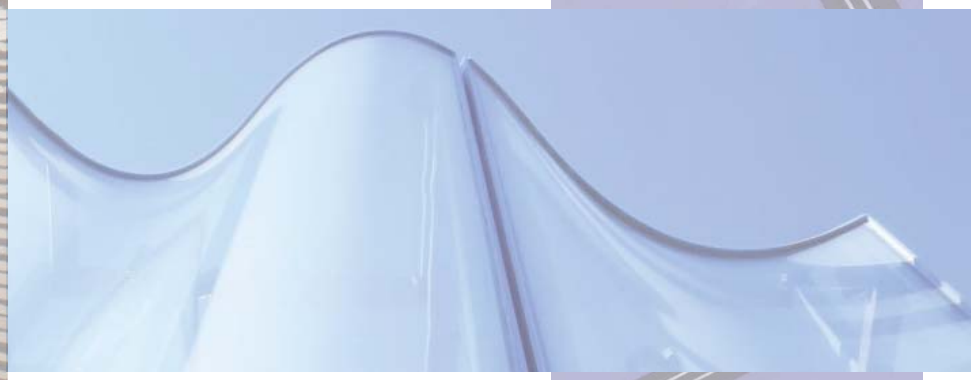
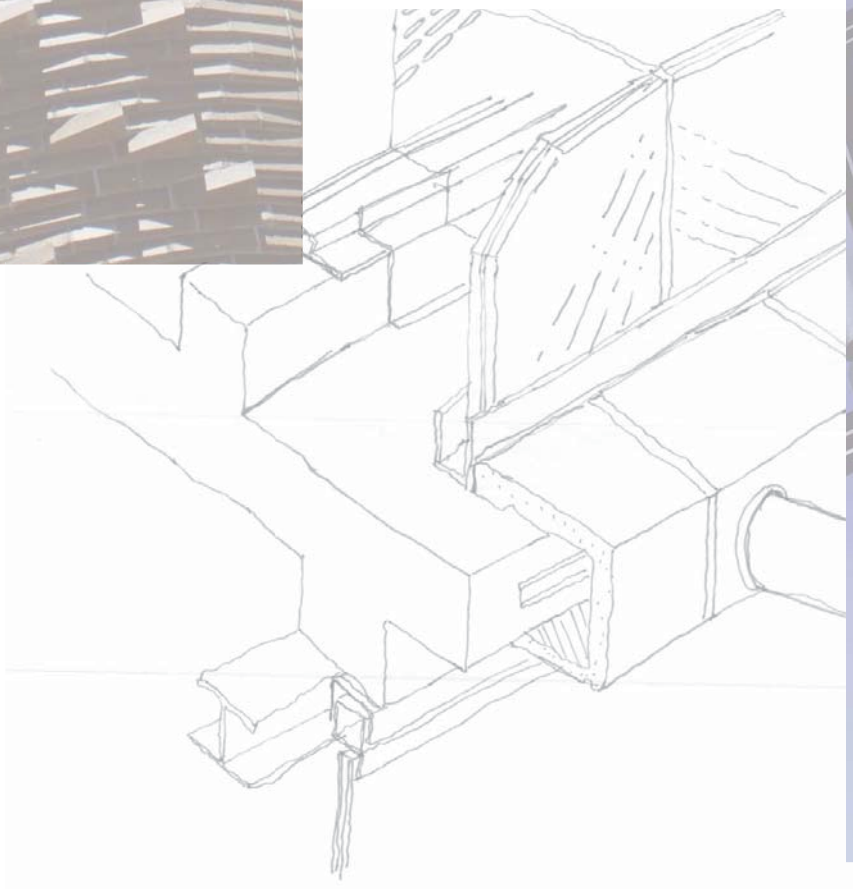
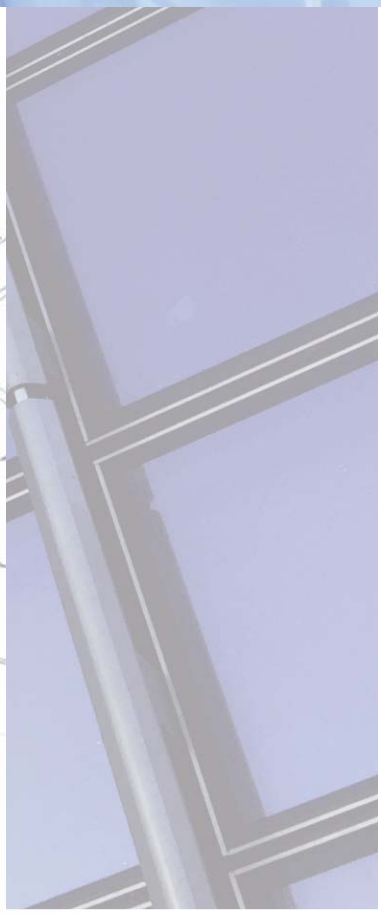
SURFACEDG.COM | 212.757.5659









ABOUT US

SURFACE DESIGN GROUP provides comprehensive exterior envelope design and construction expertise to projects of all sizes across a wide range of market sectors. We are known for our hands-on approach and our ability to help realize the design intent within the budget and project schedule, while mitigating our client's risk. Our services range from design-assist of complex specialty structures to historic facade restoration. Our mission is to provide a real world approach to facade consulting and are committed to developing personalized relationships with each and every one of our clients.

The partners of our company collectively have over 150 years of experience. They have designed and have been actively involved in the construction of building facades, both new and old construction projects in the United States, Europe, Australia, Asia and South America for the past 25 years. From early schematic design through construction administration, we specialize in all facade types such as new metal and glass curtain walls, masonry restoration and window replacement, specialty structures, planar facades and structures with complex geometries.

We are a team of architects, engineers and construction professionals who are experts in building envelope design and construction.

SURFACE DESIGN GROUP encompasses two distinct companies for consulting and architectural services, with teams of architects, engineers and construction professionals across three main divisions: Consulting and Engineering Services; Monitoring and Special Inspections; and Restoration, Landmarks, and Historic Preservation.

For new construction, as AJ LaBelle & Partners, we fully integrate advanced parametric software and BIM delivery systems to develop exterior walls. We provide alternate solutions, represent the architectural intent through 3D models, and deliver 2D drawings. Our unparalleled industry knowledge of the current marketplace can assist the project team in their cost analysis and decision making process.

For restoration and historic preservation projects, we utilize the latest technology such as thermal scanning, electronic field vector mapping and 3D point cloud scanning to assist us in assessment of envelope conditions and in analyzing and developing restoration solutions for complex conditions. We are well versed in facade inspection laws (Local Law 11 of New York City), DoB and Landmarks Preservation protocol and the corresponding complex approval process.

SURFACE Design Architects offers shop monitoring and site inspection services and is a fully accredited Class 1 Special Inspection Agency. Certified in Wall Panels, Curtain Walls and Veneers, EIFS, and Masonry, we provide full and part-time site monitoring in compliance with New York City Building Code requirements. SURFACE DESIGN also performs TR-8 progress inspections for exterior wall components, as well as general site monitoring services for above and below-grade waterproofing installation.

The core strength of SURFACE DESIGN is our comprehensive understanding of the exterior wall, from new design, fabrication and installation, to existing and traditional facade assembly restoration and upgrades.

We believe in a personalized approach to the development of each project.

SURFACE DESIGN takes a lead in assisting the client's management team with a personalized approach, from procurement to final punch list in new construction, and from investigation through completed restoration in existing buildings. Part of our strength is our ability to source globally while meeting the local needs of the project, regardless of the location. This is accomplished through focused work sessions with architects and owners to assist in advancing the project. We understand local fabrication, installation and restoration trade practices and building codes in all of our project locations and use our experience to minimize our client's risk.

We work through a collaborative approach that best suits the project's design intent. Our team brings experience from years spent working in well-established offices, while having the privilege of working on some of the most prominent projects built in the past 25 years worldwide. We have the capacity to produce all exterior wall-related work for integration into the architect's deliverables, enabling a highly effective and streamlined work flow, whether through fluid exchange of CAD details, BIM modeling or providing specification templates. SURFACE Design Architects can also prepare stand-alone construction document sets for the bidding and implementation of restoration work as the Architect of Record.

SCOPE OF SERVICES

NEW CONSTRUCTION

EXTERIOR ENVELOPE CONSULTING

- Design Assistance (DA)
- Roofing and Waterproofing
- Specialty Structures

DESIGN ASSIST AND PRODUCTION

- Design Development (DD)
- 2D/3D Digital Drawings
- Construction Document (CD) Preparation
- Specifications
- Parametric Modeling

CODE CONSULTING

- Compliance Verification
- Local Ordinance
- ADA Interpretation
- Department of Health
- Department of Labor

EXISTING CONDITION ASSESSMENT

- Condition Assessment Surveys
- Prospective Property Review
- Acquisition Due Diligence

FORENSICS

- Failure Evaluations
- Leak Investigations
- Material Testing & Analysis

ENGINEERING

- ASCE 7 Calculations
- Wind Tunnel
- Calculation Reviews

CONSTRUCTION ADMINISTRATION

- Shop Drawing Review
- Visual Mock-up
- Performance Mock-Up
- Requisition Review
- Request For Information (RFI)

SHOP AND SITE MONITORING

- Manufacturing Monitoring
- Site Monitoring
- Special Inspections (TR-1)

ENERGY ANALYSIS

- COMcheck
- Zone Green Analysis
- Green Building Initiatives, LEED, BREEM, NYSERDA, Passive House
- Energy Modeling
- Dew Point Analysis/Hygrothermal Analysis

ENERGY/SITE MONITORING

- Energy Inspection (TR-8)

RESTORATION, LANDMARKS & HISTORIC PRESERVATION

EXTERIOR ENVELOPE CONSULTING

- Restoration
- Historic Preservation
- Window & Door Replacement
- Roofing and Waterproofing, including Green and Blue Roofing
- Subgrade Waterproofing

ARCHITECT OF RECORD

- Facade Condition Evaluation
- Project Scoping and Budgeting
- Contract Bid and Negotiation
- Preparation of Construction Documents
- Preparation of Specifications

CODE CONSULTING

- Compliance Verification
- Local DoB Filing (Directive 14)
- Local Landmarks Compliance
- Local Law 11 (FISP) Inspections & Reports

EXISTING PROPERTY ASSESSMENT

- Condition Assessments
- Prospective Property Review
- Acquisition Due Diligence
- Life Cycle Costing and Evaluation

FORENSICS

- Building Material Failure Evaluations
- Facade & Roof Leak Investigations
- Historic Materials Testing & Analysis

CONSTRUCTION ADMINISTRATION

- Shop Drawing Review
- Submittal Review
- Visual Mock-Up
- Landmarks Preservation Commission (LPC) Mock-Ups
- Progress Pay Requisition Review
- Application for Payment Request Review

SHOP AND SITE MONITORING

- Manufacturer Shop Inspection
- Restoration & Historic Preservation Site Monitoring
- Special Inspections [TR-1] for Masonry

LPC CONSULTING

- Landmark Master Plans for Window & Door Replacement and Air Conditioner Installation

ENGINEERING

- ASCE 7 Calculations
- Structural Calculations
- In-Field Thermal Analysis

ENERGY ANALYSIS

- Zone Green
- COMcheck
- Green Building Initiatives, LEED, BREEM, NYSERDA
- Energy Assessment
- Energy Modeling
- Dew Point Analysis/Hygrothermal Analysis

Armand J. LaBelle

NOTABLE EXPERIENCE:

- **Guggenheim Museum;** Abu Dhabi, UAE
- **Louis Vuitton Foundation;** Paris, France
- **One57;** New York, NY
- **IAC;** New York, NY
- **Repsol Tower;** Buenos Aires, Argentina
- **Project Viol;** Sao Paulo, Brazil
- **University of Sydney, Dr. Chau Chak Wing Building;** Sydney, Australia
- **Ronald Reagan Building & International Trade Center;** Washington, D.C.
- **Princeton University, Frick Chemistry Laboratory;** Princeton, NJ
- **Princeton University, Peretsman Scully Hall & Princeton Neuroscience Institute;** Princeton, NJ
- **Ventura Coroporate Towers;** Rio De Janeiro, Brazil
- **Parkchester Renovation;** New York, NY
- **731 Lexington Ave;** New York, NY
- **Costanera Center;** Santiago, Chile
- **Chennai Residential;** Chennai, India
- **Torre Z;** Sao Paulo, Brazil
- **Project Infinity;** Sao Paulo, Brazil

As president of the firm Armand (AJ) LaBelle brings a varied and rich history of experience to the Company. He understands the needs of our individual clients as well as the realities of project execution in today's competitive and complex marketplace. He has selected and personally trained the people within the firm to follow the same core beliefs, ensuring that the façade services rendered are based on years of field experience and real world solutions that can deliver results.

AJ has developed a long standing track record with the firm's client base, establishing a precedence of personal involvement in each project that underlines our focus on an individualized approach to our clients as well as the profession.

His 25 years of experience has touched upon all aspects of exterior envelope consultation, design, and inspection for a myriad of systems such as unitized curtain walls, structural glass systems, windows, masonry walls, prefabricated panels, stone cladding, precast, specialty structures, roofing and waterproofing. It has given him the opportunity to work with world renowned architects as well as work on some of the world's most innovative cladding projects.

Armand holds a Bachelor of Science in Engineering and an Associate of Science in Engineering from the Wentworth Institute of Technology.

Fortunato (Fred) Zanghi

Fred has over 25 years of combined architectural experience as an exterior envelope consultant, architect, and owner's representative. He applies his knowledge of complex building envelope systems and technologies in working collaboratively with architects, engineers, manufacturers, and construction managers to assemble focused and cost-effective solutions. His responsibilities include project management, property condition assessment, technical development, system and material evaluation, drawing and specification preparation and review, performance mock-up testing, and construction administration.

Fred's projects in New York City and throughout the U.S. range from challenging programmatic and exterior envelope systems by internationally recognized architects, to a LEED Gold-rated headquarters for a non-profit organization. He consults and manages projects for clients on academic, judicial, institutional, and high-rise office and residential buildings. System designs vary from unitized curtain walls, specialty glazing, metal cladding, to masonry and stone walls, roofing and waterproofing.

Fred holds a Masters of Architecture from the University of Pennsylvania and a Bachelor of Professional Studies from the University at Buffalo. He is a Registered Architect in New York State, a LEED Accredited Professional and a mentor to young professionals in the field.

NOTABLE EXPERIENCE:

- **Princeton University;** Princeton, NJ
  - » 20 Washington Road, Economics & International Buildings
  - » Andlinger Center for Energy & the Environment
  - » Frick Chemistry Laboratory
  - » Peretsman Scully Hall & Princeton Neuroscience Institute
- **Columbia University;** New York, NY
  - » Jerome L. Greene Science Center
  - » Lenfest Center for the Arts
- **The New School University Center;** New York, NY
- **Gates Vascular Institute and UB Clinical Translational Research Center;** Buffalo, NY
- **National Museum of American History, West Exhibition Wing Window Replacement;** Washington D.C.
- **555 10th Avenue;** New York, NY
- **One57;** New York, NY
- **One Madison;** New York, NY
- **One York Street;** New York, NY
- **Gotham Center;** Long Island City, NY
- **Winrock International Headquarters;** Little Rock, AR
- **Phoenix Municipal Courthouse;** Phoenix, AZ

Benson Bright Gillespie

NOTABLE EXPERIENCE:

- **217 W 57th Street;** New York, NY
- **548 W 22nd Street;** New York, NY
- **42nd Road QPS;** Queens, NY
- **41st Road QPP;** Queens, NY
- **One Soho;** New York, NY
- **NDIA Airport Headquarters;** Doha, Qatar
- **King Abdullah University of Science and Technology;** Doha, Quatar
- **Project Viol;** Sao Paulo, Brazil
- **Faria Lima Plaza;** Sao Paulo, Brazil
- **Torre Z;** Sao Paulo, Brazil
- **HSBC Tower;** Lima, Peru
- **Infinity Tower;** Sao Paulo, Brazil
- **Diamond Tower;** New York, NY
- **One57;** New York, NY
- **Harvard Fogg Art Museum;** Boston, MA

Benson has experience in all phases of project delivery, from evaluating sketches during schematic design to assisting in the bid process and ultimately monitoring shop fabrication and on-site installation. His focus has been on the design, fabrication, and use of parametric software in the development of custom exterior wall systems and specialty structures.

Having worked as both a technical façade designer and subsequently a façade consultant over the past decade, Benson has a unique perspective that benefits the relationship between the Designer, Architect and Client.

Benson holds a Masters of Architecture from Rice University and BA from Wesleyan University. He has been an invited architectural critic at Rice University, University of Houston and The Cooper Union. Benson is a Registered Architect in the State of New York and is a LEED Accredited Professional.

Molly Forr

Molly began her career at Gehry Partners, where she spent seven years creating and realizing challenging architectural designs and building systems. As an AutoCAD Director, she oversaw drawing set production and the coordination and interface between 2D documents and 3D BIM data.

At SURFACE DESIGN, Molly continues her focus on developing elegant design solutions and detailing for technically-demanding projects. She manages several high-rise projects in New York City and also directs daily operations of the firm. Molly started SURFACE Design Architects' site monitoring division and currently leads the Energy division.

The common thread to Molly's work across various disciplines is the desire to find technical, design-sensitive solutions to complex technical challenges. At Gehry Partners she advanced acoustical isolation solutions and developed energy-use models for New World Symphony, and researched novel material and manufacturing techniques for the Eisenhower Memorial. At SURFACE DESIGN she has developed tools for analyzing the thermal performance of exterior walls and researched application of innovative and green technologies to the building sector.

Molly holds a Bachelor's of Science in Architecture and a Masters of Architecture from MIT, where she was a Presidential Fellow. Molly is a Registered Architect licensed in Massachusetts and New York, and a LEED Accredited Professional.

NOTABLE EXPERIENCE:

- **Patio da Maritima;** Rio de Janeiro, Brazil
- **50 West Street;** New York, NY
- **555 10th Avenue;** New York, NY
- **920 Broadway;** New York, NY
- **Project 865;** New York, NY
- **Faria Lima Tower;** Sao Paulo, Brazil
- **Dwight D. Eisenhower Memorial;** Washington, DC
- **University of Sydney Dr. Chau Chak Wing Building;** Sydney, Australia
- **Luma Foundation Project;** Arles, France
- **New World Symphony;** Miami, FL
- **New York by Gehry;** New York, NY
- **Grand Avenue Development;** Los Angeles, CA

Russ Newbold

NOTABLE EXPERIENCE:

- **1780 Broadway;** New York, NY
- **920 Broadway;** New York, NY
- **Beekman Hotel at 5 Beekman;** New York, NY
- **570 Lexington Avenue;** New York, NY
- **Carnegie Hall;** New York, NY
- **New York Public Library;** New York, NY
- **One Liberty Plaza;** New York, NY
- **270 Park Avenue;** New York, NY
- **The Hearst Building;** New York, NY
- **Cooper Hewitt Museum;** New York
- **Federal Reserve Bank of New York**
- **St Paul's Chapel at Columbia University;** New York, NY
- **Pratt Institute;** Brooklyn, NY
- **1 Wall Street;** New York, NY
- **180 Water Street;** New York, NY
- **443 Greenwich Street;** New York, NY
- **10 Jay Street;** Brooklyn, NY
- **27 E 62nd Street;** New York, NY
- **1466 Broadway, the Knickerbocker;** New York, NY
- **550 Madison, Sony Building;** New York, NY
- **485 7th Avenue;** New York, NY

As Partner leading the Historic Preservation and Restoration Division at SURFACE Design Architects, Russell has over 20 years of experience in the restoration and preservation of existing and historic building facades. This experience includes the restoration of traditional load bearing masonry structures dressed in stone, brick and terra cotta, cast iron façade assemblies, window replacement and restoration, glass and metal curtain wall assemblies, storefronts and waterproofing and roofing assemblies.

Russ has managed the façade restoration and maintenance of many large portfolio clients. These buildings demand a wide variety of technical services, including building condition surveys, forensic material deterioration investigations, leak investigations and the preparation of construction documents and the proper implementation of comprehensive restoration programs.

Over the course of his career, Russ has led preservation efforts for a wide range of architectural projects, from master plans for large Federal building complexes and schools to urban planning projects to building envelope restorations and historic interiors.

Russ places great emphasis on serving as an advocate for historic structures and materials themselves, stressing appropriate and compatible conservation techniques. He has experience in a wide range of building types and preservation disciplines, and has devoted his career to the preservation of our architectural heritage, both through preservation and adaptive use.

Russell holds a Bachelor of Science in Architecture from the University of Utah and an Master of Science in Architecture and Historic Preservation from the Graduate School of Architecture, Planning and Preservation at Columbia University.

Tina M. Tapinekis

Tina Marie Tapinekis has over 30 years of experience as a preservation and restoration architect. She has established a reputation in the New York City restoration community for adopting a practical methodology to problem solving while administering construction projects. Passionate about the importance of maintaining buildings, she has devoted her career to retaining the character and fabric of the city's facades, especially designated Landmark structures.

With her in-depth understanding of building components, and her knowledge of historic building materials such as terra cotta and cast iron, Tina has developed a set of fine-tuned restoration procedures and waterproofing techniques that are unique to the industry. She has successfully conducted leak investigations and directed facade restoration and roof replacement projects to remediate water infiltration. This has extended the useful life of many buildings while keeping the structure true to form.

Early in her career Tina worked for both architectural and engineering firms specializing in historic building restoration. This diverse experience helped her develop practical expertise with a wide variety of building types.

Prior to joining SURFACE DESIGN, Tina was the Principal of tmt Restoration Architect, PC for over 20 years overseeing various projects in range and scale. The building types she has restored include historic brownstone townhouses, cast iron structures in SoHo, ornate religious structures as well as curtain wall skyscrapers throughout greater New York City.

Tina is a Registered Architect, holds a Bachelor of Science in Architectural Technology from the New York Institute of Technology and is an active member in many industry associations notably the International Concrete Repair Institute, Association for Preservation Technology.

NOTABLE EXPERIENCE:

- **110 West 86th Street;** New York, NY
- **760 West End Avenue;** New York, NY
- **Turner Towers, 135 Eastern Parkway;** Brooklyn, NY
- **201 West 16th Street;** New York, NY
- **222 Broadway;** New York, NY
- **Xavier High School;** New York, NY
- **477 Broadway;** New York, NY
- **Ritz-Carlton Central Park, 50 Central Park South;** New York, NY
- **The Marseilles, 230 West 103rd Street;** New York, NY
- **NYU 42 Washington Mews;** New York, NY
- **118 8th Avenue;** Brooklyn, NY
- **The Copley, 2000 Broadway;** New York, NY
- **Imagination Playground;** New York, NY
- **41 Union Square West;** New York, NY
- **141 West 36th;** New York, NY
- **The Coney Island Carousel;** Brooklyn, NY
- **Congregation Or Zarua, 127 East 82nd Street;** New York, NY
- **Euclid Hall, 2345 Broadway;** New York, NY
- **NYU Coles Redevelopment;** New York, NY

Arturo Beccar Varela

NOTABLE EXPERIENCE:

- **Catalinas Tower;** Buenos Aires, Argentina
- **BankBoston Headquarters;** Buenos Aires, Argentina
- **Serena Nordelta;** Buenos Aires, Argentina
- **Barracas Central;** Buenos Aires, Argentina
- **Hotel Cerro Lopez;** Bariloche, Argentina
- **Apartur "Las Barrancas;"** Punta del Este, Uraguay
- **Apartur "Moutain Club;"** Bariloche, Argentina
- **Paladini S.A.;** Prov. de San Luis, Argentina
- **ECO de los Andes;** Prov. de Mendoza, Argentina

Arturo Beccar Varela was born in Argentina where he started his professional activity in 1976 working as a student, for Architect Juan Molinos. Since 1978 until its dissolution in 1987, Mr.Beccar worked in Sánchez Elía Peralta Ramos office, one of the largest architectural firms of the last decades, where he participated in various projects, such as office buildings, private homes and hospitals.

After this apprenticeship, Mr.Beccar created with Emilio Beccar Varela in 1987 the office Beccar Varela-Sepra Arquitectos. As a partner and Director Project Manager he performed great variety of works of design, from office buildings, hotels, houses and factories to urban developments.

In 2002 he founded his own office, Arquitecto Arturo Beccar Varela y Asociados, which continues to develop its activity to date. The office has done works for international architects like Pelli Clark Pelli Architects, private clients such as Consutatio SA., Repsol-YPF, BankBoston, Ledesma S.A. and Loma Negra S.A., and main contractors like Caputo S.A. and Obras Civiles S.A.

ABV's core business is providing executive architecture, construction administration services, and project management on large scale projects, including schematic and conceptual design, as well as the development of complete construction documents and construction specifications for all building disciplines. Partnering with AJLP has enabled the expansion of ABV's Latin American service offerings by providing international façade consultation at a local level.

Arturo Beccar Varela is a graduate of the University of Buenos Aires with a degree in Architecture.

CURB
TBD.
RIGID INSULATION
AT SLAB EDGE.
CONC SLAB


HEAD OF
WINDOW
SYSTEM

NEW CONSTRUCTION

SAMPLE PROJECTS

SERVICES

50 West Street

Owner/Developer: **Time Equities**

Architect: **Jahn Architects, SLCE Architects**

Location: **New York, NY**

Phase: **Construction Administration**

Type: **Unitized Curtain Wall**

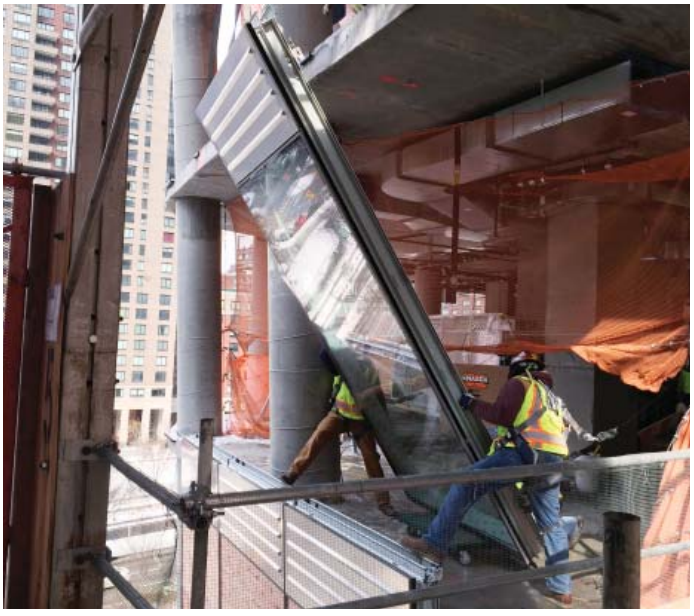
Status: **In Progress**

This 64-story residential tower is located in downtown Manhattan near the World Trade Center. The architect's design called for an exquisitely detailed and elegantly proportioned facade which allows for stunning views and features large, textured stainless steel spandrels, operable vent panels, within a graceful curving form. The corners of the building have single-curved, insulated glass units spanning from floor to ceiling, which are double height on some floors.

Our services included full consulting from Schematic Design through Construction Administration, including a BIM Model cataloging panel types, sizes, and quantities. Special inspections on this project began in the third quarter of 2014 and are currently ongoing.

This page, left to right: Architectural rendering; documenting facade installation progress.

Opposite page: Curtain wall installation seen during inspections.



Central Park Tower

Owner/Developer: **Extell**

Architect: **Adrian Smith & Gordon Gill**

Location: **New York, NY**

Phase: **Schematic Design through Construction Administration**

Type: **Unitized Curtain Wall; Specialty Structures**

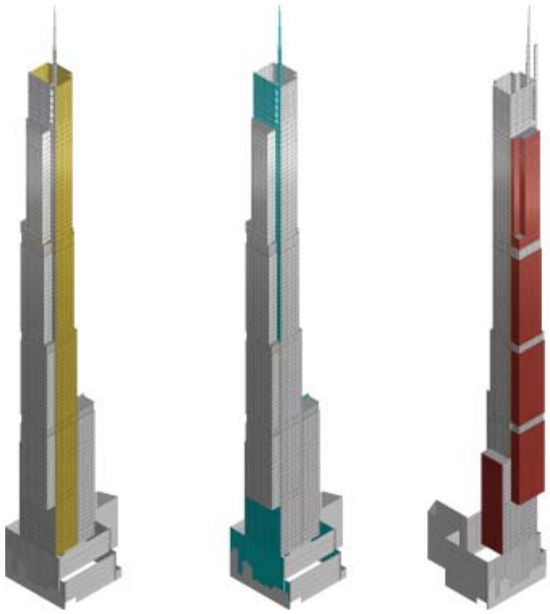
Status: **In Progress**

Central Park Tower is a 1,550-foot-tall mixed-use tower, (retail & residential) designed as the tallest in North America. The proposed structurally-glazed aluminium curtain wall system utilizes double wide glass modules, a point-supported glazed atrium spanning over 100 feet tall and a horizontal steel supported lobby wall with vertical silicone joints.

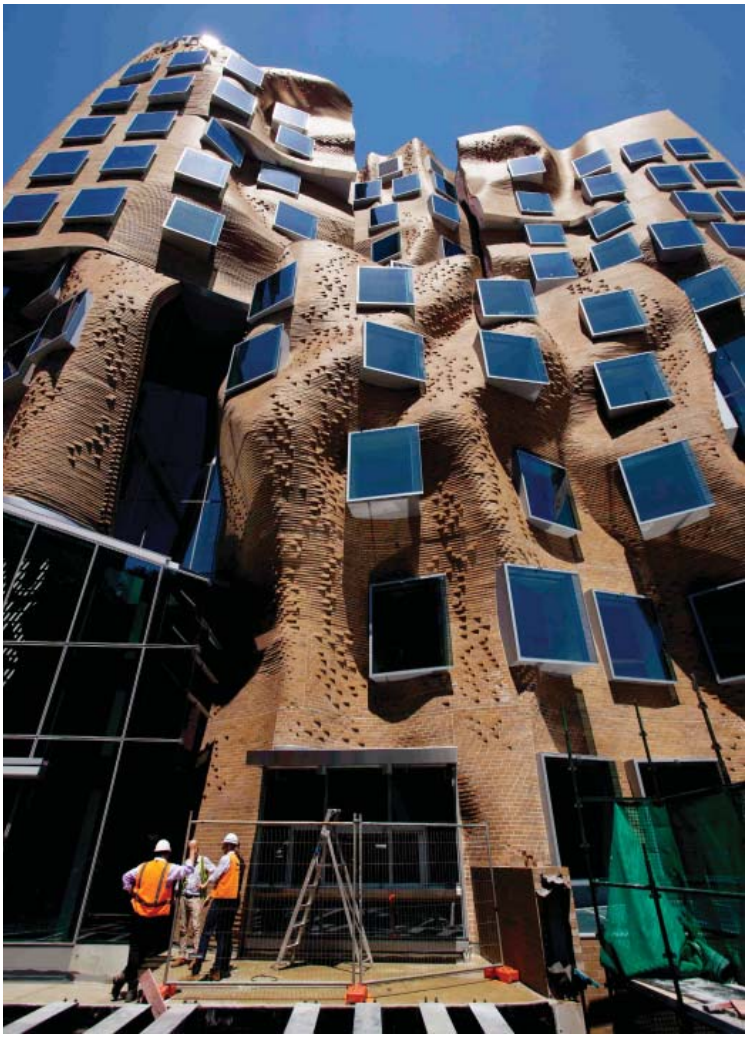
Our services include full consulting from early Schematic Design through Construction Administration, an Exterior Wall Bid Package with material quantities and weights, a BIM enclosure model, and Special Inspection services.

This page, left to right: Architectural rendering; screenshots of 3D model used to optimize panelization.

Opposite page: Performance Mock-Up Test installation.



Chau Chak Wing Building for Business Studies



Owner/Developer: **University of Technology, Sydney**

Architect: **Gehry Partners**

Location: **Sydney, Australia**

Phase: **Design Development, Construction Documents, Construction Administration**

Type: **Hand-laid Brick & Curtain Wall**

Status: **Completed 2014**

This project began while AJ LaBelle was at Gehry Partners, and later he remained on the job as a consultant after the formation of SURFACE DESIGN. Our services included consulting from Design Development through Construction Administration. Frank Gehry's vision for this project featured a sculptural brick facade that appeared to be folded and wrinkled. Traditional brick-laying techniques could not achieve the desired effect, but through extensive parametric modeling studies in Digital Project, we worked with the architect to develop a new application method for a heavily-corbelled hand-laid brick. By providing systematically rationalized geometry and accurately calculated member sizes and quantities, the contractor was able to build a performance mock-up that achieved the design intent.

This page: Photos taken on-site as construction of the exterior nears completion.

250 South Street

Owner/Developer: **Extell**

Architect: **Adamson**

Location: **New York, NY**

Phase: **Schematic Design, Design Development, Construction Documents**

Type: **Unitized Curtain Wall & Cable Net Lobby Wall**

Status: **In Progress**

Upon its completion this condominium tower will stand at 823 feet and will be the tallest building on the Lower East Side. Located in a flood plain along the East River, the project is vulnerable during storm conditions. SURFACE DESIGN worked to develop a green roof storm water retention system to mitigate runoff from the building. Due to its close proximity to the FDR Drive, acoustic performance was a key issue in selecting glass and designing the facade. The exterior wall features articulated sloped glass, Muntz metal panels, and a point-supported cable net glass system at the lobby. In addition SURFACE DESIGN provided detailed analysis of the facade's thermal performance.

Below: Architectural rendering of building entrance, showcasing chevron facade articulation.

555 10th Avenue

Owner/Developer: **Extell**

Architect: **SLCE Architects**

Location: **New York, NY**

Phase: **Construction Administration (Shop/Site Inspection Services)**

Type: **Unitized Curtain Wall System**

Status: **In Progress**

This 52-story tower will contain 600 luxury rental apartments and a 300-bed student dormitory in the developing Hudson Yards area. The building is designed with two tones of glass, stainless steel accent panels, and vertical metal fins that race up the facade. At the crown of the tower, horizontal fins will be illuminated at night and join the lights of the Midtown skyline. SURFACE DESIGN is currently providing full inspection services, including shop monitoring during fabrication and in the field while installation occurs on site.

Below: Image captured during inspection of curtain wall installation.

420 Kent Avenue

Owner/Developer: Spitzer Enterprises

Architect: ODA

Location: Brooklyn, NY

Phase: Schematic Design, Design Development, Construction Documents

Type: Unitized Curtain Wall System

Status: In Progress

Positioned south of the Williamsburg bridge along the East River waterfront, this three tower complex contains over 800 units of rental dwellings. At 24 stories each, with a total of 800,000 square feet, the towers are shaped to create outdoor spaces and to maximize views. Beginning at the schematic design phase, SURFACE DESIGN assisted the architect in design decisions relating to constructability. We continued to advise throughout the bidding process and into the design assist phase with the selection of a manufacturer.

Queens Plaza

Owner/Developer: Tishman Speyer

Architect: GHWA. Mack Scogin Merrill Elam

Location: Long Island City, NY

Phase: Schematic Design, Design Development, Construction Documents

Type: Hybrid Wall Systems

Status: In Progress

One of the largest residential projects currently under construction in the Long Island City redevelopment zone, this development consists of 3 towers with a total of 1,789 apartments and 15,000 square feet of retail space. The exterior wall is a hybrid system that uses multiple glass coatings and frit patterns to create a glass facade with a pixelated appearance. Acoustic performance was a key factor in the facade design to mitigate noise from nearby trains. Construction is expected to be completed in June 2018.

Faria Lima Plaza

Owner/Developer: **VR Empreendimentos**

Architect: **KPF**

Location: **São Paulo, Brazil**

Phase: **Schematic Design, Design Development, Construction Documents, Construction Administration**

Type: **Unitized Curtain Wall & Storefront Systems**

Status: **In Progress**

Located along Avenida Bridadeiro Faria Lima in São Paulo, this 22-story office tower has structurally glazed, unitized aluminium curtain wall with offset glass in two planes within each panel and a 3 meter 'fly-by' panel at each corner. The lobby contains a 17 meter tall inward sloping glass wall supported by vertical and horizontal steel members varying in depth and clad with stainless steel panels. Our services included full consulting from schematic design through Construction Administration, an Exterior Wall Bid Package with material quantities and weights, and BIM Enclosure Model.

Patio da Maritima

Owner/Developer: **Tishman Speyer**

Architect: **Foster + Partners**

Location: **Rio de Janeiro, Brazil**

Phase: **Schematic Design, Design Development, Construction Documents, Construction Administration**

Type: **Unitized Curtain Wall & Storefront Systems**

Status: **In Progress**

This two-phase project includes 20 stories of prime office space and retail at the ground level with a generous plaza. The building seeks to have a low environmental impact, and the overall form and exterior wall design were driven by studies that optimized solar angles and thermal performance. The building envelope required creative technical solutions to achieve the architect's performance and aesthetic goals within the Brazilian market and budget. Our services included full consulting from early schematic through Construction Administration, an Exterior Wall Bid Package with material quantities and weights, and a BIM enclosure model.

3D Parametric Panel Modulation & Component Detailing

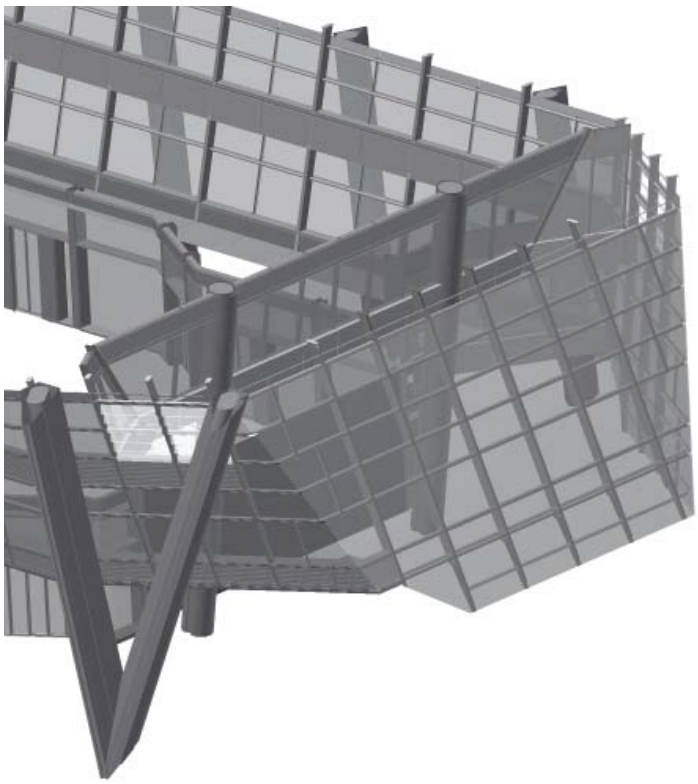
SURFACE provides full design-assist services utilizing BIM software, from concept sketches though Construction Documents phase. We develop parametrically-driven models of the project, optimizing the exterior panels and family types. We also develop detail vignettes of typical and unique conditions to further study design and constructability.

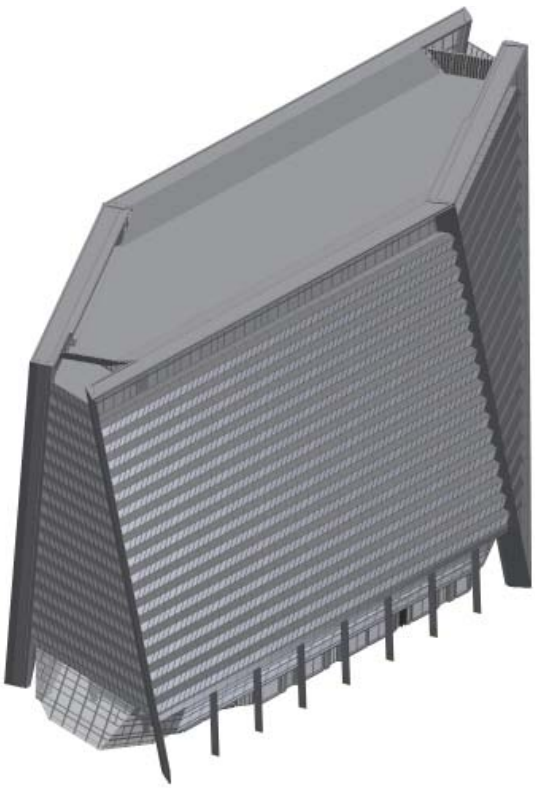
Parametric BIM models help to facilitate change in the development of the design, identify problems earlier in the building process, and provide accurate cost estimating quantity take-offs. Ultimately, the reduced redesign and closer collaboration among design team members result in lower final costs. Reflecting the broad adoption of BIM in the construction industry, SURFACE considers BIM modelling a valuable asset to the project delivery

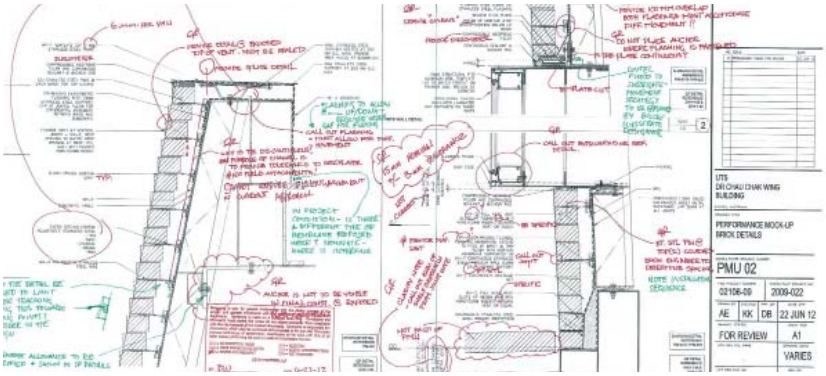
2D CAD Details

We provide full AutoCAD detailing for all types of exterior walls and material cladding. We can produce detail packages as a stand-alone document or for incorporation into the Architect's sheet sets for Schematic Design, Design Development and Construction Documents deliverable packages. Upon request, we can generate a full set of 2D drawings and specifications for an exterior wall bid-package for any project type and scale.

This page, left to right: Detail of parametric model showing all exterior wall components of the lower atrium as they meet and negotiate a corner; overall view of the full building model.





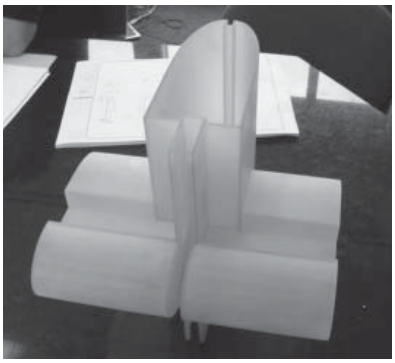


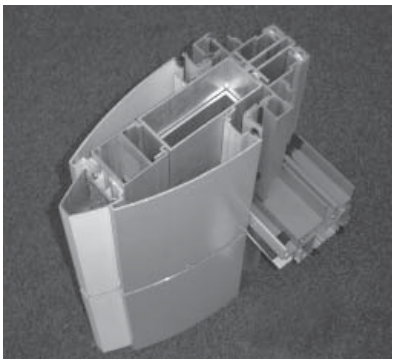
Shop Drawing Review

Numerous considerations go into developing performance-driven and cost-effective exterior wall systems. In the shop drawing process, we review and comment on the constructability, waterproofing, and thermal performance, as well as recommend strategies for executing the exterior wall system design.

Thermal Analysis

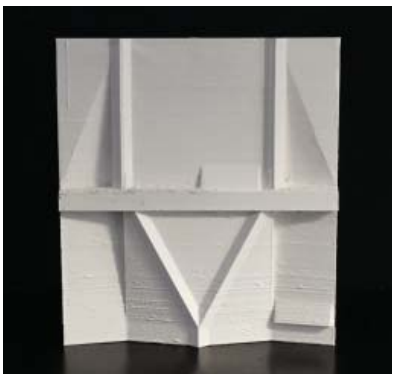
With each project we provide careful study and analysis of the building envelope performance. We model each wall system, taking into consideration the location of various material types, thicknesses, and location of thermal breaks to determine the optimal energy performance of the exterior wall assembly.



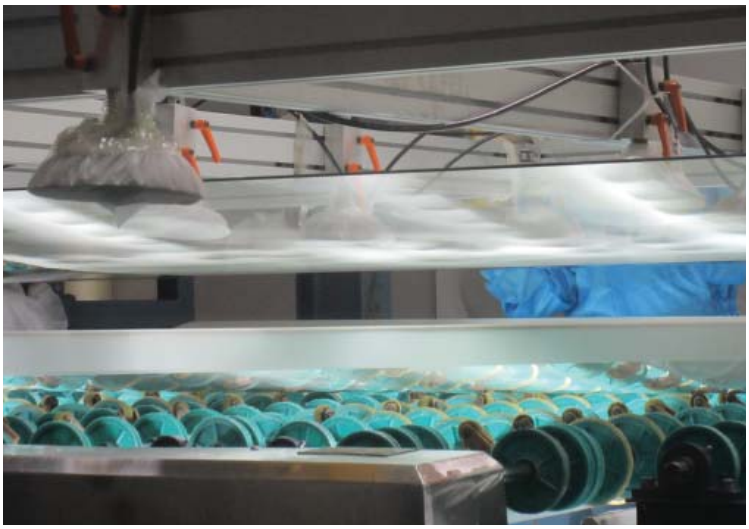


Physical Modelling

SURFACE works with 3D print media of components and complex intersections to better understand the systems geometry. We collaborate with fabricators to create sample parts and facilitate the design of extrusions.



This page: Scan of shop drawing for a performance mock-up; 2D model for thermal analysis of a balcony slab; various physical models of specific system extrusions as well as overall facade geometries.



Fabrication

SURFACE provides quality assurance and quality control services on our projects worldwide. We verify that wall systems are manufactured in accordance with the approved design and are of consistent quality.

On-Site Forensic Testing

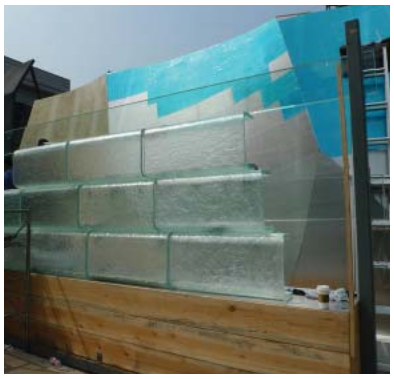
We utilize innovative methods of testing existing facade failures and provide remediation solutions.

Monitoring Site Installation

We provide monitoring services and reports that document the conformance to approved plans and specifications, as well as compliance to local code requirements.

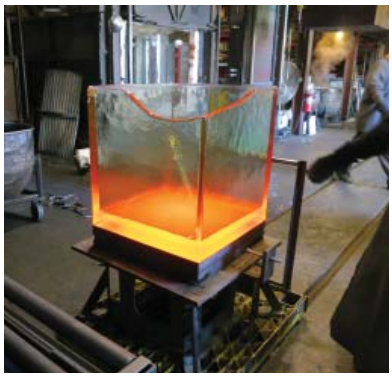
Material R+D

SURFACE works closely with fabricators to push the boundaries of material capabilities. We work with designers and owners to evaluate and develop new and innovative materials for use in facades.



Material Science

We dedicate time in research and development to conduct shop tests of new materials and applications to fully understand their capabilities and performance potential.

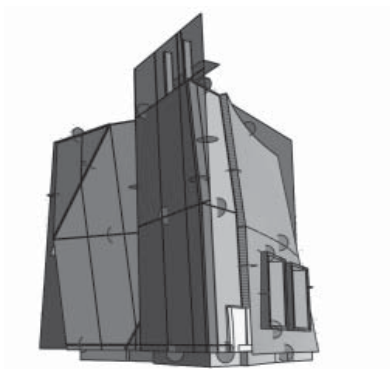


Visual Mock-Up

SURFACE assists the architect and owner with the evaluation of various design options during visual mock-ups from both a constructability and performance standpoint.

Performance Mock-Up Testing

We witness the full performance mock-up procedure and thoroughly document each test conducted. In the event of failure, we work with the fabricator/installer for fixes and document any and all issues that arise during testing for use in project QA/QC.



New York City Department of Buildings Special Inspection

SURFACE is a fully accredited Class 1 agency, compliant with the International Accreditation Service (IAS) for Special Inspection. In 2008 the City of New York adopted a new building code based on the International Building Code (IBC). In the new code, "Controlled Inspection" was replaced with the new "Special Inspection" program, which requires all special inspection agencies to be accredited and have certified professionals perform all Special Inspections. SURFACE is certified in the following categories (Chapter 17, Building Code):

- Wall Panels, Curtain Walls and Veneers
- Exterior Insulation Finish Systems (EIFS)
- Masonry Construction

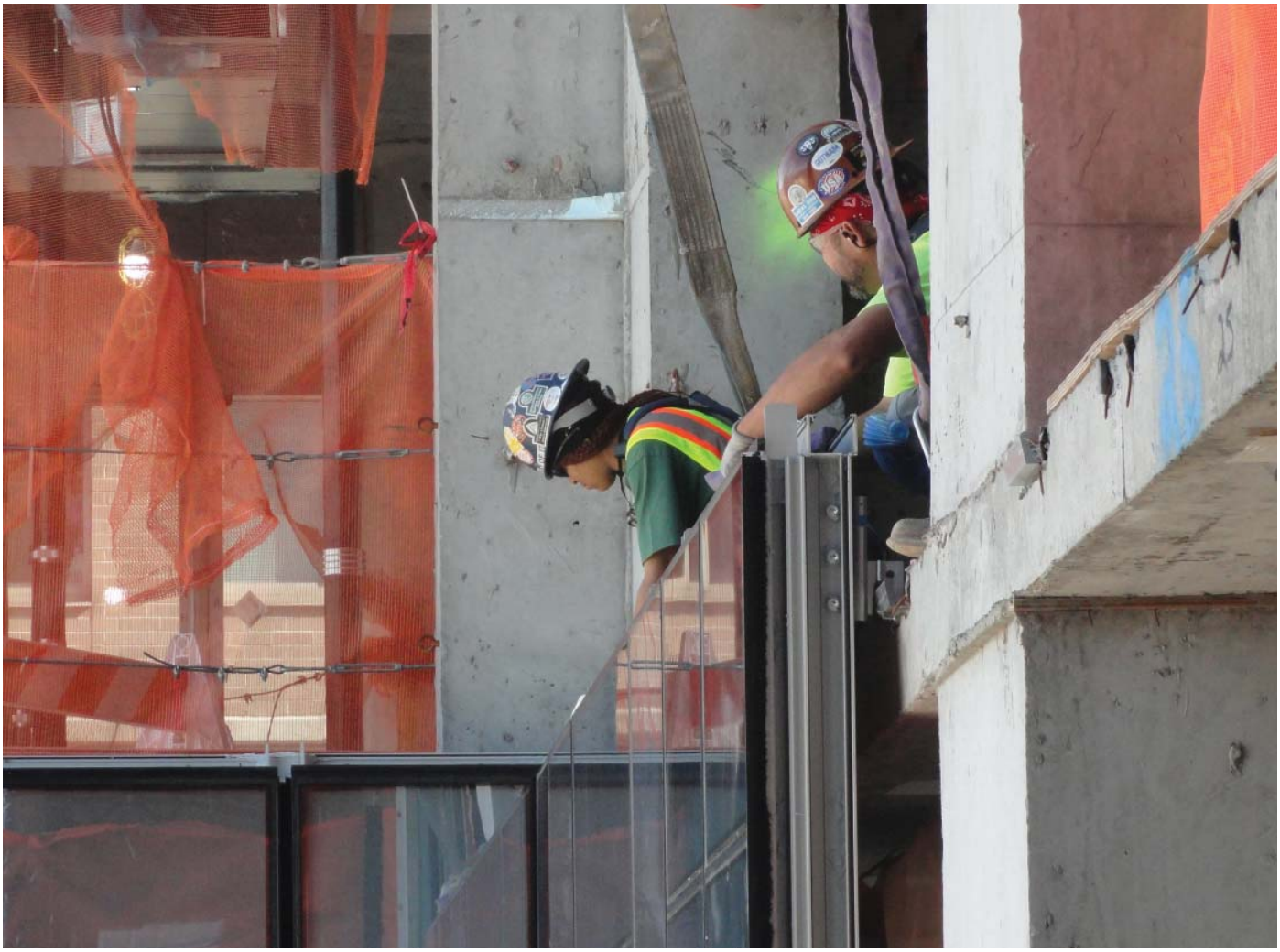
TR-8 Energy Inspections

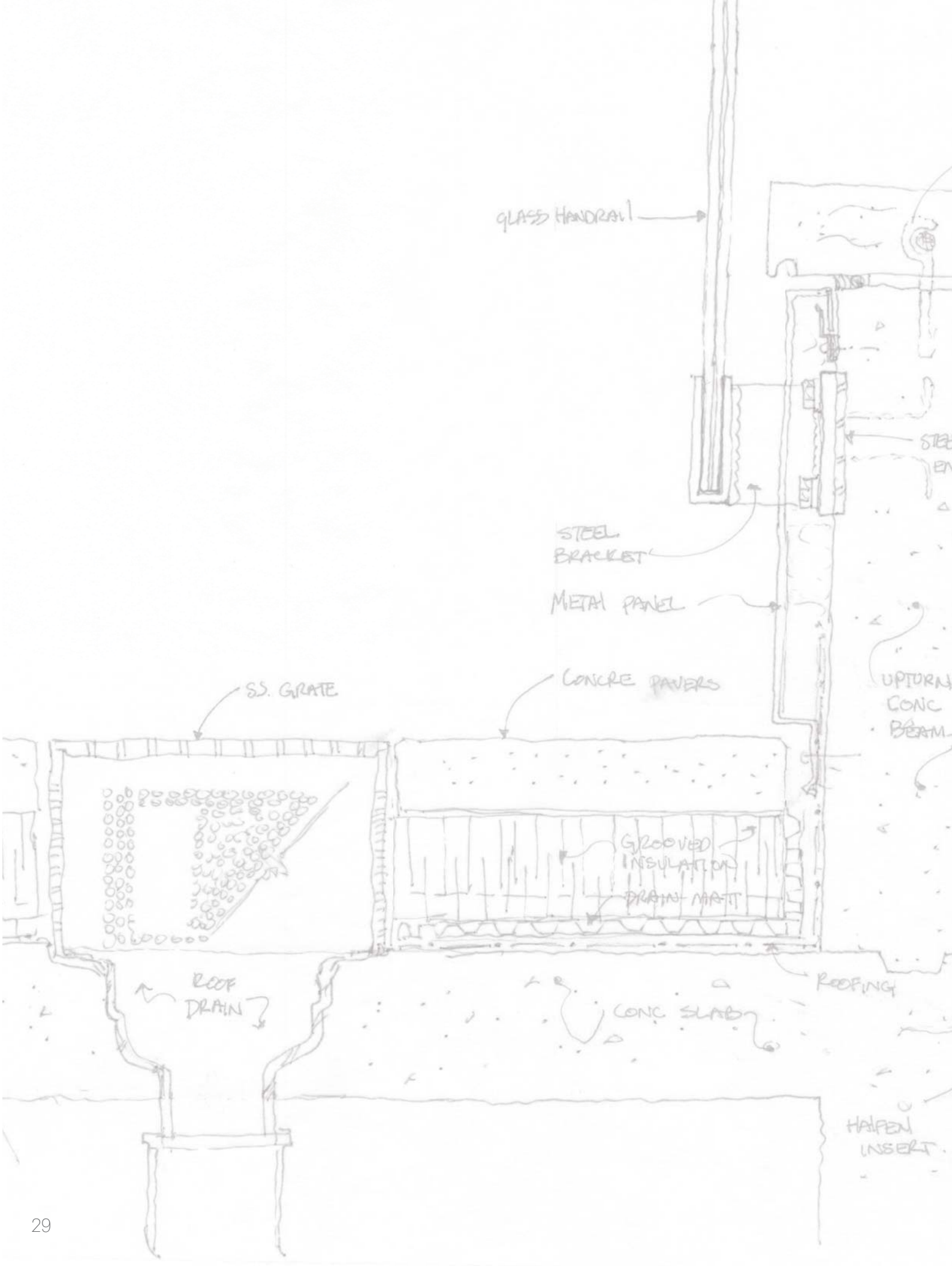
TR-8 Progress Inspections are required to ensure that all exterior wall components are installed in compliance with the Energy Code and the approved construction documents. SURFACE DESIGN performs weekly inspections and provides progress reports to ensure that project and installation requirements are met at every stage of the construction process.

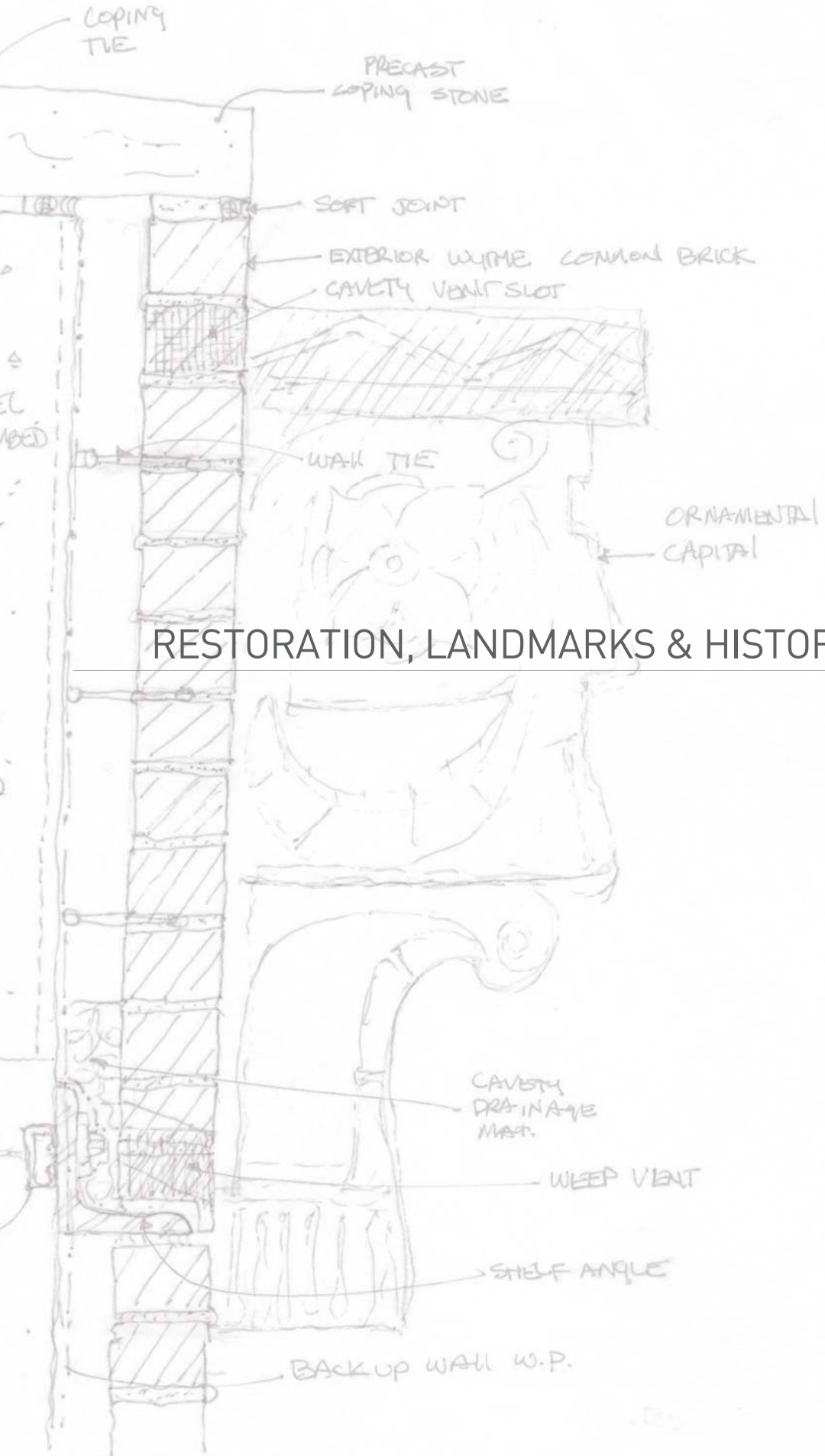
Shop Monitoring

Shop monitoring is one of the most effective methods to identify and address potential problems before the wall system arrives on site. This type of continuous quality control ensures consistent quality of components and can also help prevent rejections and delays in the field.

SURFACE offers shop monitoring services on our projects worldwide to verify that wall components and systems are manufactured in compliance with the approved design documents and specifications.




GLASS HANDRAIL
STEEL BRACKET
METAL PANEL
S.S. GRATE
CONCRE PAVERS
GROOVED INSULATION
DRAIN MATT
ROOF DRAIN
CONC SLAB
ROOFING
HALFEN INSERT



RESTORATION, LANDMARKS & HISTORIC PRESERVATION

SAMPLE PROJECTS

SERVICES

20 Washington Road

Owner/Developer: Princeton University

Architect: KPMB Architects

Location: Princeton, NJ

Phase: Bidding, Performance Mock-Up, Construction Observation

Type: Historic Preservation/Adaptive Use/ Curtain Wall

Status: In Progress

Originally constructed in 1928 to house Princeton's Frick Chemistry Laboratory, this Collegiate Gothic structure is being re-imagined as the home for the University's Economics and International Studies programs. The scope of work includes the restoration of the historic masonry facades, the replacement of existing windows with new heritage steel windows and the addition of a modern penthouse and courtyard infills that will house common spaces and lecture facilities for the school.

SURFACE DESIGN was engaged by the University to assist in the procurement, performance mock-up and installation of the new curtain wall facade system. We are currently performing observation services for the heritage window, curtain wall and roofing systems installations.

From left to right: Heritage window mock-up; heritage door mock-up; heritage window replacement.

443 Greenwich Street

Owner/Developer: **Metroloft**

Architect: **Cetra Ruddy**

Location: **New York, NY**

Phase: **Construction Administration & Site Observation**

Type: **Historic Landmark Preservation/Adaptive Use**

Status: **In Progress**

This 19th century former book bindery has been redesigned to house 53 luxury apartments. Mahogany tilt and turn windows custom made for the project fulfil the requirements of the NYC Landmarks Preservation Commission, mimic the aesthetic of the original double hung windows and provide the high performance required of today's building envelopes.

SURFACE DESIGN was engaged in the construction phase of the project to provide Quality Control/ Quality Assurance for the window installation, storefront installation, custom movable glass walls at the new penthouse addition, as well as the roofing and waterproofing installation. With construction in progress, we are monitoring window installation & assisting in the shop drawing phases of the storefront and roofing systems.

From left to right: Liquid applied waterproofing mock-up installation; views of window mock-up installation.

477 Broadway

Owner/Developer: **Owner Developer**

Architect: **tmt Restoration**

Location: **New York, New York**

Phase: **Condition Survey, Construction Documents**

Type: **Historic Preservation**

Status: **Completed**

Located in the SoHo Landmark Historic District, the street facades of this SoHo cast iron building were heavily deteriorated with many missing cast iron pieces. As part of the restoration, the cast iron facade elements were carefully catalogued unit by unit. Each one was tagged and replicated in kind. Over 30 layers of paint were stripped to bare metal and primed. A paint analysis was conducted and paint color was matched. The paint from the cornice was also stripped; deteriorated units replicated, installed and painted. The original double hung windows were replaced and replicated in mahogany.

This page, above: Cornice after completed work. Below, left to right: survey of cast iron capital before restoration; capital during repair; paint removal and re-painting of cast iron arches.

550 Madison - Sony Building

Owner/Developer: **Chetrit Group**

Architect: **Robert A.M. Stern Architects, SLCE Architects**

Location: **New York, NY**

Phase: **Design & Construction**

System: **Building Envelope Upgrade/Local Law 11 (FISP)**

Status: **In Progress**

Completed in 1984, this Phillip Johnson designed tower is one of the most notable landmarks of the Post Modern era in New York. With its iconic 3 story "Chippendale" pediment marking the New York skyline, it is said to have legitimized Post Modernism on the world stage.

SURFACE DESIGN was engaged to assist the design team in the conversion of the building into luxury condominiums. The scope of our work includes the design of new operable windows for light and air requirements, facade repairs related to the Facade Inspection Safety Program (Local Law 11), storefront alterations, and building envelope design related to a new enclosed swimming pool and open terrace at the penthouse level.

This page, right: View of facade from street level. Below, from left to right: Failed sealant at window sill; SURFACE technician examining granite and sealant conditions; interior view of the existing curtain wall asembly.

920 Broadway

Owner/Developer: **Walnut Point Realty**

Architect: **Moed de Armas & Shannon**

Location: **New York, NY**

Phase: **Assessment, Construction Documents & Site Observation**

System: **Masonry**

Type: **Historic Preservation**

Status: **Completed 2015**

SURFACE DESIGN engaged in a full scope of façade restoration services of this Flatiron District Landmark, providing assessment of the existing masonry which has undergone various alterations. In some areas these changes left the building without its original cornice and decorative terra cotta capitals at the top of the 3 story base. We prepared full scope construction documents and performed shop inspection for replacement glass fiber reinforced concrete units and site observation of all masonry work. We worked with the Architect of Record on building envelope issues with regard to the new fiberglass cornice (FRP), storefront alterations and architectural lighting. Work was completed in early spring 2015 in time for the new commercial tenant opening.

This page, above: Overall view of cornice and capitals after completed work. Below, left to right: Damaged capital before; restoration in progress; terra cotta capital at corner of building after restoration.

10 Jay Street

Owner/Developer: **Glacier Global Partners, Triangle Assets**

Architect: **ODA**

Location: **Dumbo, Brooklyn, NY**

Phase: **Schematic Design, Design Development, Design Assist, Construction Documents**

Type: **Landmark Preservation, Adaptive Use/ Unitized Curtain Wall**

Status: **In Progress**

The project combines our diverse expertise in Historic Preservation and in new building envelope design. The existing 1897 sugar refinery will be converted into Class A office space, its three historic brick facades fully restored. The north facade will take on a faceted design of glass and steel which evokes the industrial past of the site. SURFACE DESIGN worked closely with ODA to provide masonry restoration and window replacement detailing for the landmarked facades as well as a detailed parametric 3D model of the new north facade. Moving into the Design Assist phase, we continued to advise ODA and the selected manufacturer in developing and standardizing the complex elements of the north facade into a unitized design.

This page, above: Architectural rendering of the project. Below, left to right: 1930 photo of the existing building; the existing site in 2014; probe into north facade.

One Wall Street

Owner/Developer: **Macklowe**

Architect: **Robert A.M. Stern Architects, SLCE Architects**

Location: **New York, NY**

Phase: **Construction Documents & Specifications**

Type: **Historic Preservation**

Status: **In Progress**

One of the great examples of Art-Deco style in Lower Manhattan, the former bank headquarters is to be transformed into luxury condominiums and rentals. SURFACE DESIGN developed a scope of work for the exterior, including repairs such as repointing of limestone and retrofit of the terraces which currently do not meet code. In addition, we are also assisting in the design of window restoration and replacement, as well as the cleaning and restoration of the historic mosaic vaulted ceilings in the interior.

240 Centre Street - Police Building

Owner/Developer: **240 Centre Condominium**

Architect: **Hoppin & Koen (1905)**

Location: **New York, NY**

Phase: **Facade maintenance & repair**

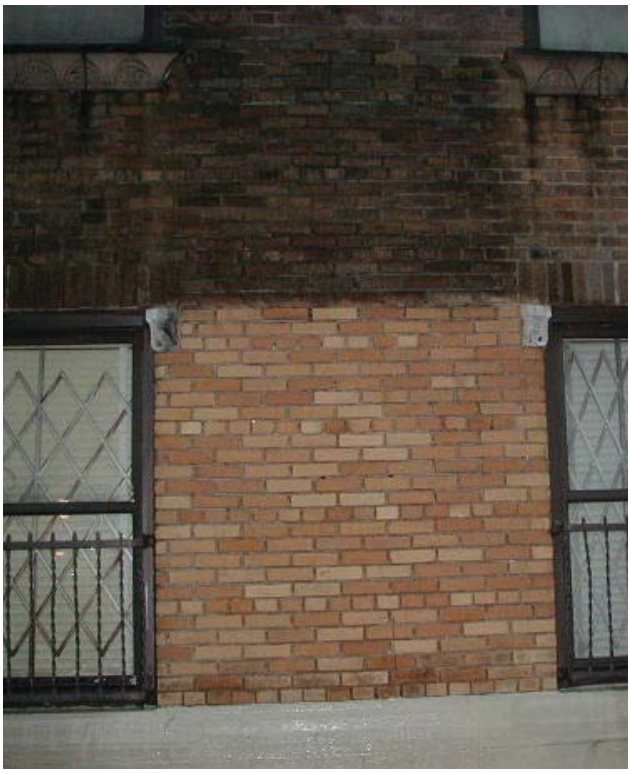
Type: **Historic Landmark Preservation**

Status: **In Progress, from 1996**

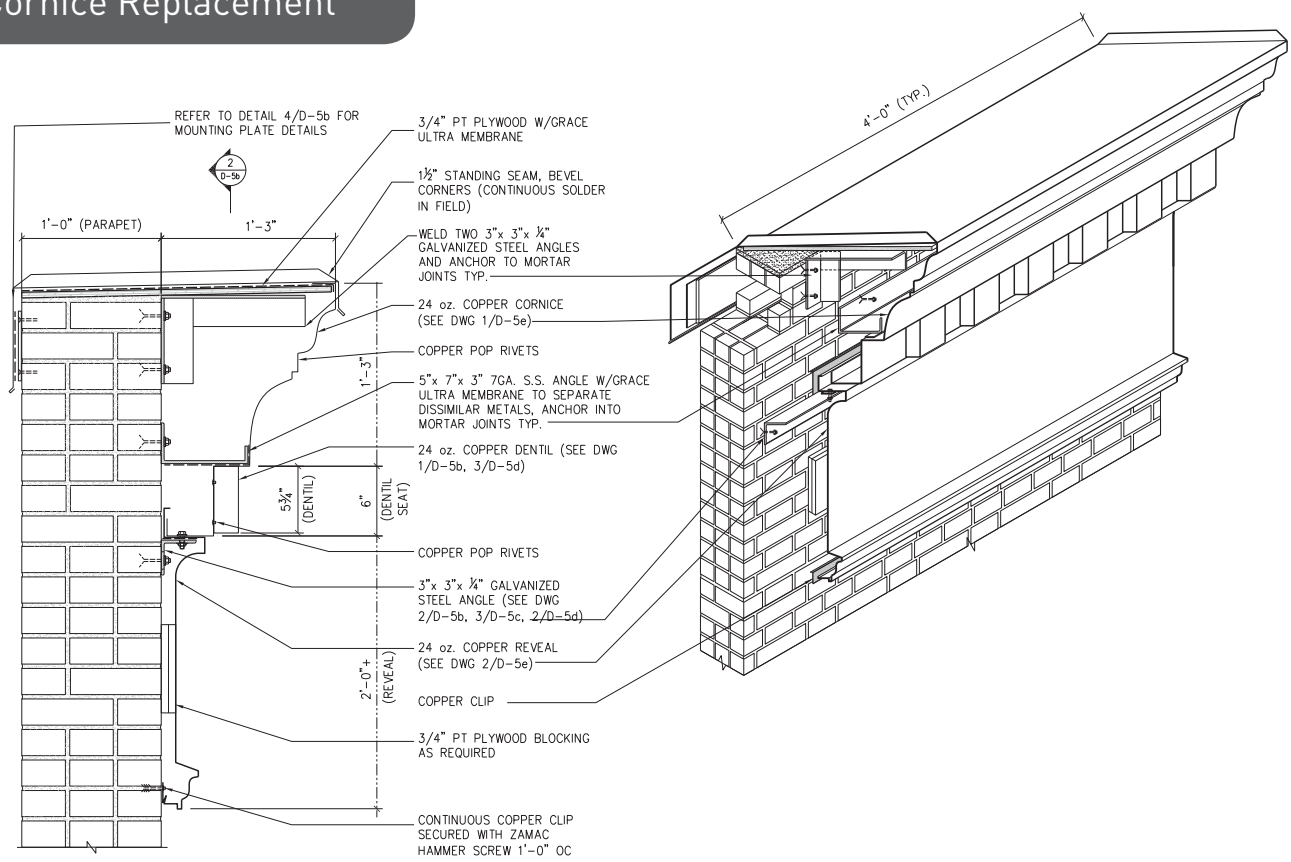
Designed in 1905 as the first Police Headquarters for all 5 Boroughs of New York City, this Beaux Arts inspired building demonstrated the power and strength of the Police force. In 1986 the building was converted into luxury apartments. SURFACE DESIGN partner Russ Newbold has managed the ongoing maintenance and repair of this iconic domed structure since 1996. Mr. Newbold developed an overall repair and restoration master plan for the building's exterior and implemented restoration scopes include the restoration of the copper dome and clock faces, terra cotta masonry restoration, and terrace waterproofing. Recent work included repair to terra cotta at the dome colonnade damaged in an earth tremor.

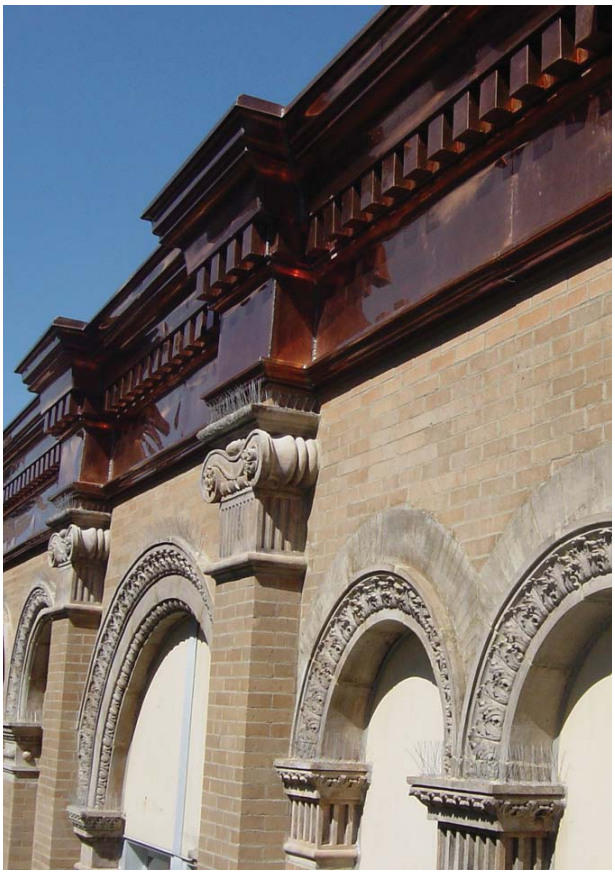
Facade Reconstruction

Terra Cotta & Decorative Masonry Repair & Replacement

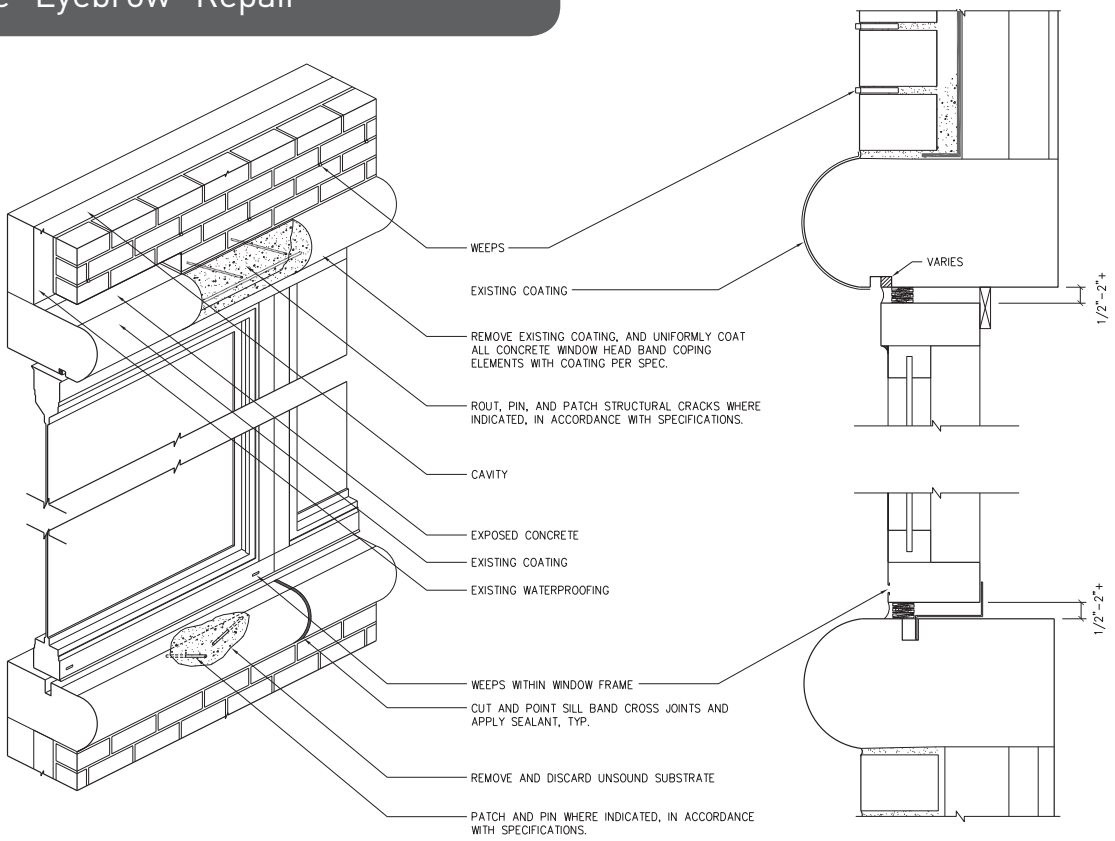


Cornice Replacement





Concrete "Eyebrow" Repair

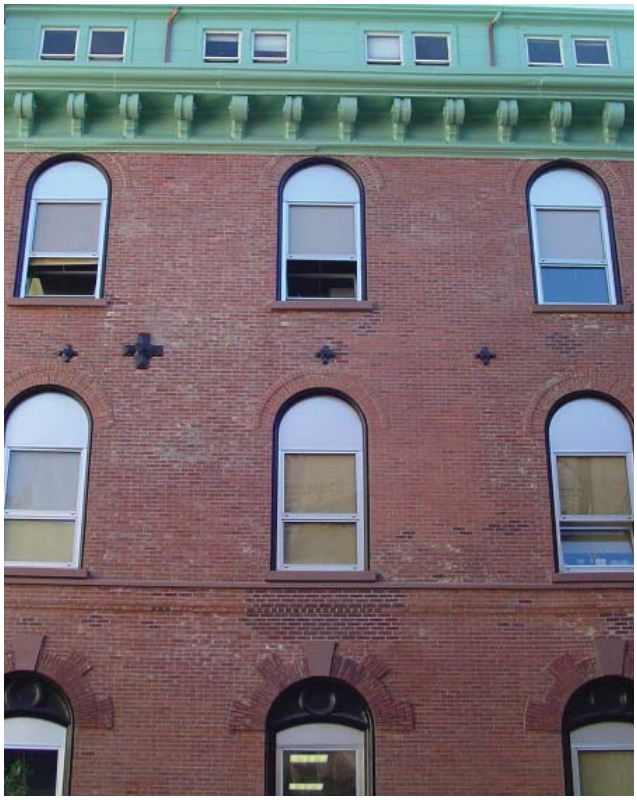


The preservation of existing structures is one of SURFACE DESIGN's most passionate objectives. To us, working with historic structures is not only about conserving the physical aspects, it is also about preserving the individual story or imprint of a building. Historic Preservation is being able to place one's self in the time continuum of the present, define one's self with the richness of the past and while looking forward to the future.

Our Historic Preservation techniques and practices are rooted in traditional building systems but utilize today's advanced technology and innovation to address complex documentation and maintenance issues, evaluate existing building materials and prolong the life of historic buildings.

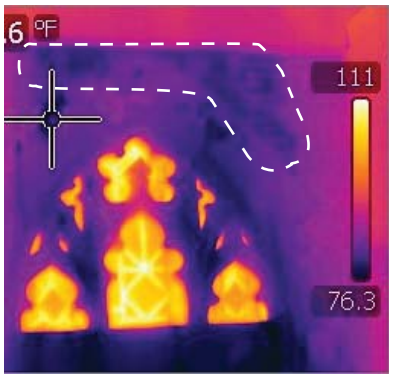
Our staff has extensive experience in dealing with existing buildings and working with the repair of traditional building envelope assemblies. Our knowledge and disciplined approach to the evaluation process makes us highly qualified to address the range of complex restoration techniques and sequences. We believe that an existing building must be treated as a living and breathing entity and deserves careful forensic investigation and diagnostics.

Below: Facade restoration on an 1880's building including paint removal, face brick replacement, anchor plate crosses, cutting and pointing, sandstone repair, cornice restoration and roof replacement, window frame restoration.



Leak Investigation

We provide water testing and monitoring services for façade and roofing leaks with the use of moisture detection equipment and infrared thermography.



Infared thermography shows trapped moisture in existing masonry.

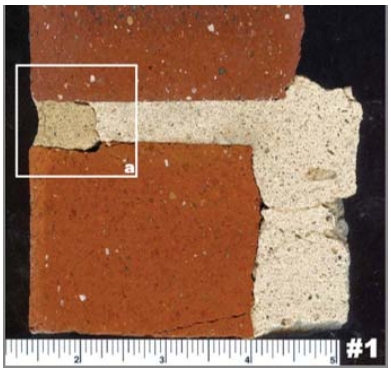
Physical Investigation & Probes

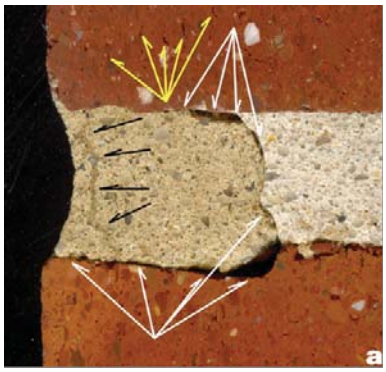
Probing into existing façade assemblies is often required to determine the cause of deterioration and specify repair strategies. We provide skilled facade restoration investigations and are certified to access facades via suspended and supported scaffolding and lifts.

Probe at base flashing reveals moisture bypassing flashing.

Lab Materials Testing

We are experts in materials testing to identify decay mechanisms and recommending appropriate repairs and restoration. These tests include: Petrographic analysis, Absorption testing, Mortar digestion and replication, Coatings testing and analysis and Dewpoint analysis.

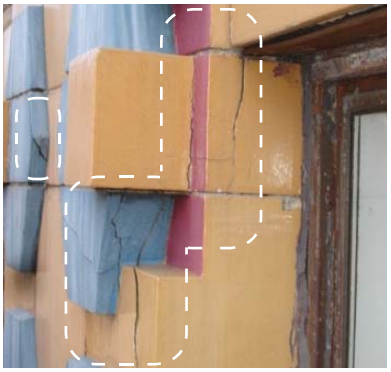




High power magnification of brick repointing mortar & its lack of bond.

Condition Reports

We provide evaluation and condition reports which document our building envelope investigations, providing site specific repair and restoration options to the client.



Cracked existing terra cotta; view after removal of loose terra cotta.

Construction Documents

SURFACE Design Architects prepares construction drawings and specifications for façade restoration and files them with the New York City Department of Buildings. Our construction document sets are tailored to meet the specific needs of each building typology and reflect our in depth review of existing conditions and knowledge of restoration treatments.

Contract Bid & Negotiation

Building owners and clients benefit from our experience in recommending qualified Contractors, assisting with the bidding of restoration packages, bid-leveling, and responding to technical questions in the bid process. We provide the client with qualified bidders that can perform the work specified in a high quality manner within budget.

Site Observation

The proper execution of the scope of work in the field is crucial to historic preservation. Our site observation services verify compliance to construction documents and address existing conditions that may affect overall resolution or system performance as well as project budget. We often give direction and issue field sketches on the sketches on the scaffolds during construction.

Facade Inspection Safety Program (FISP)

Formerly Local Law 10/80 and Local Law 11 of 1998, the façade inspection law in New York City is one of the most important pieces of legislation protecting public safety. SURFACE Design Architects has extensive experience in providing the 5-year cycle reports and architectural services to address "Unsafe" and "Safe with Repair and Maintenance Program" (SWARMP) façade conditions.

Window Replacement

The partners at SURFACE DESIGN have overseen the installation of many window replacements, from accurate replications of historic wood double-hung windows to steel casement windows and aluminium replications, with the full range of configurations and performance levels. We are experts in the preparation of Landmarks approval documents for review, Landmark Preservation Commission approval and implementation.

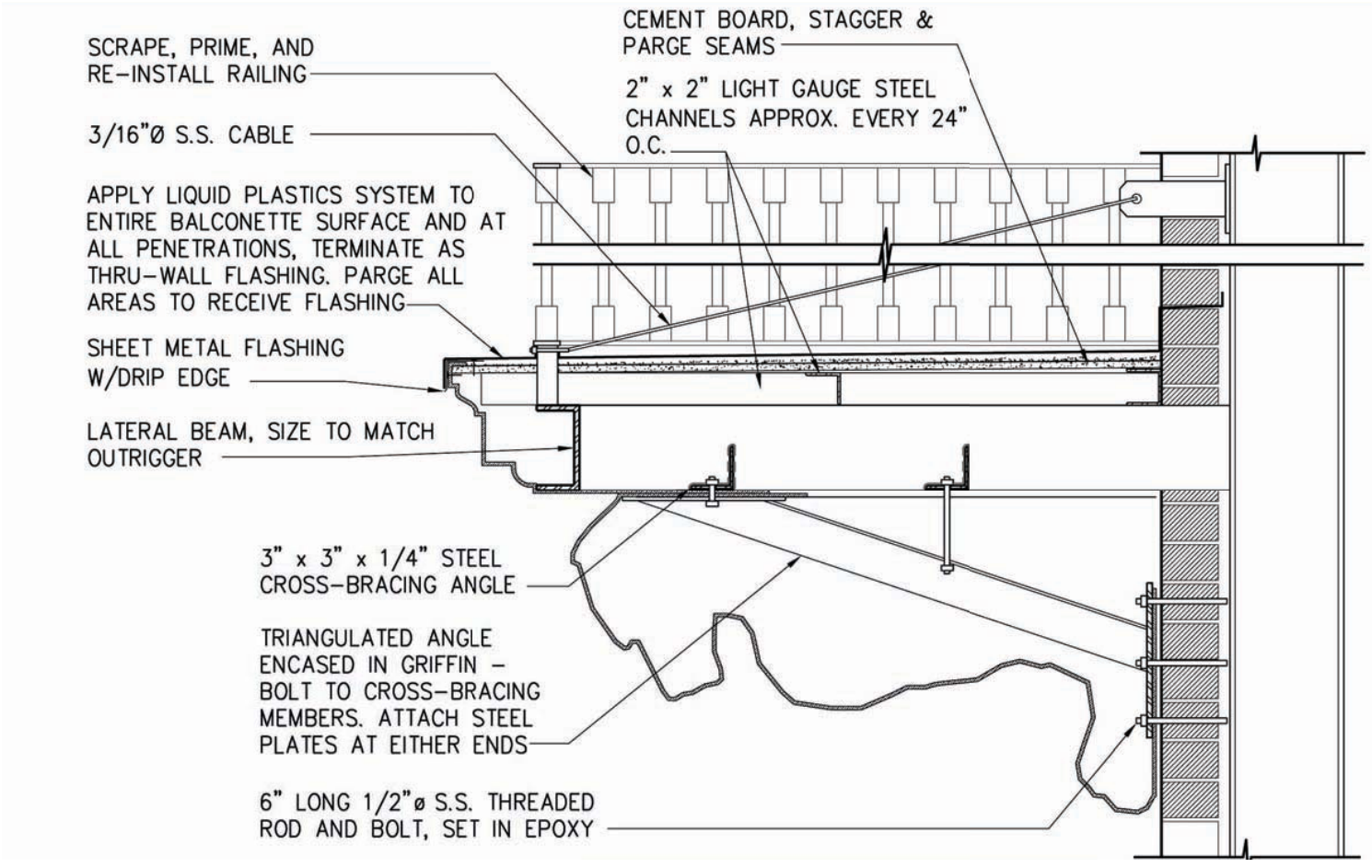
Due Diligence + Life Cycle Costing

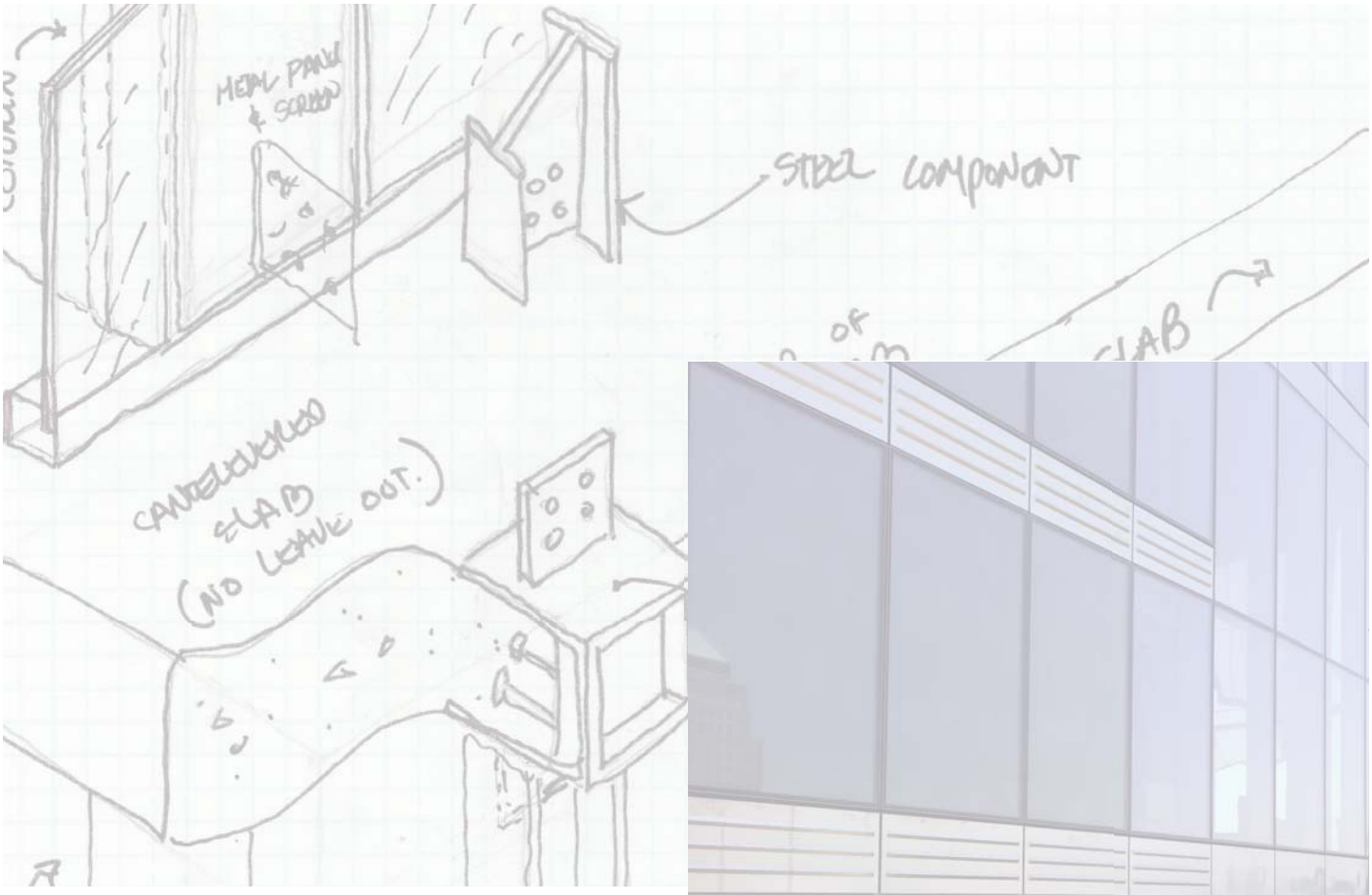
We provide existing building evaluations for investment/owner acquisition as well as for maintenance over the life of the building. Our experience with the building trades and manufacturers provides us with great insight into what it costs to maintain and upgrade building envelopes.

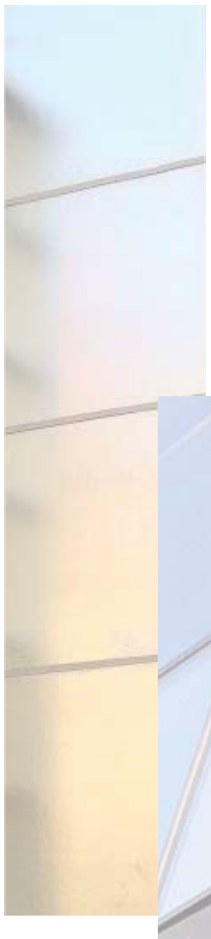
Before

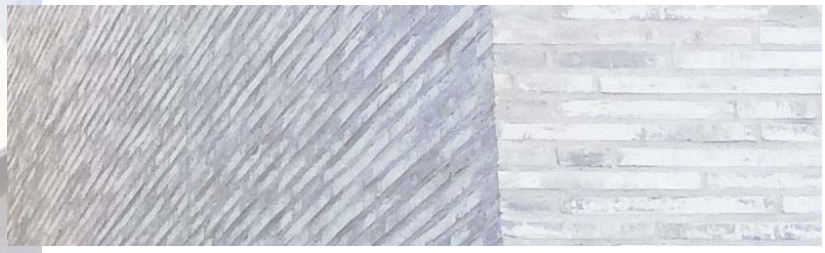
During Construction

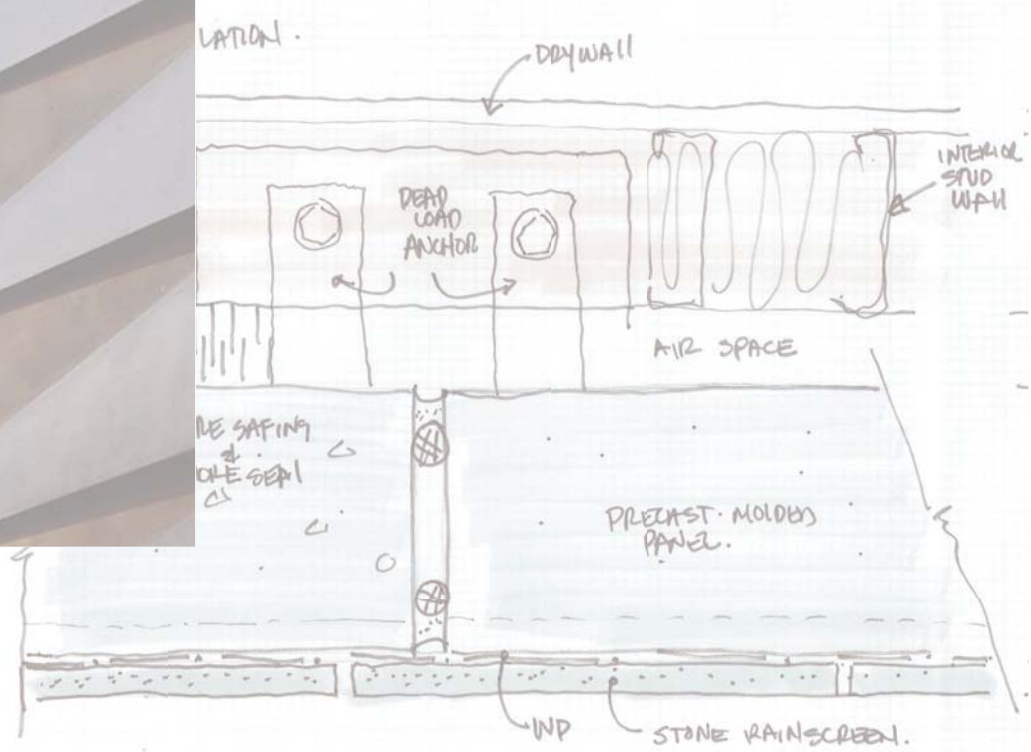
After




METAL PANEL & SCREWS
STEEL COMPONENT
SLAB






DRYWALL
INTERIOR STUD WALL
DEAD LOAD ANCHOR
AIR SPACE
PRECAST MOLDED PANEL.
WP
STONE RAINSCREEN.

SURFACE DESIGN
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