THE PORTLAND BUILDING
RECONSTRUCTION PROJECT

Type III Historic Resource Review

June 26, 2017
LU 17-153413 HR

Howard S. Wright
a Balfour Beatty company

DLR Group

CITY OF PORTLAND, OREGON
1851

TYPE III HISTORIC RESOURCE REVIEW

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Owner

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PROJECT TEAM

The Portland Building

The Portland Building is an iconic example of the postmodern architectural style by renowned architect Michael Graves. The result of a design competition chaired by Philip Johnson, the Portland Building was one of Graves' earliest public buildings. The building was individually listed on the National Register of Historic Places in 2011 as a notable work by a master architect and as an early influential work of Postmodern Classicism. As such, the Portland Building qualified for listing under special consideration for properties that have achieved significance in the past 50 years.

The original design and construction of the Portland Building was fraught with hurdles and complexities. One of the major design drivers for the project was the City's limited budget. The final project was completed for a total of $28.9 million, including furnishings, or approximately $72/per square foot. Even at the time it was built, this represented approximately half of what a comparable office building would have cost. In addition, it was an early example of a design-build process involving a project management firm, two architects, two contractors and an engineering firm. Multiple changes occurred throughout the design and construction process. Some of these changes were documented, while others have been discovered during various investigations over the years.

Due to the City's limited budget at the time of its construction, the materials and systems installed on the building were chosen for budget reasons, rather than for durability, performance, and the full aesthetic realization of Michael Graves' design intent. As an example, the ceramic tile at the building base was originally envisioned as glazed terracotta later replaced with smaller ceramic tiles due to cost. The energy crisis of the mid-1970s caused the City to grant additional scoring points to competition entries with fewer and smaller windows to increase energy performance. Based on the common wisdom and technologies available at the time, this decision had a large impact on how the competition entrants treated glazed areas. Michael Graves himself noted that his design provided limited window openings in order to meet the energy conservation goals stated in the competition brief. The choice for the dark glazing was made during the construction process and was not part of the original design intent.

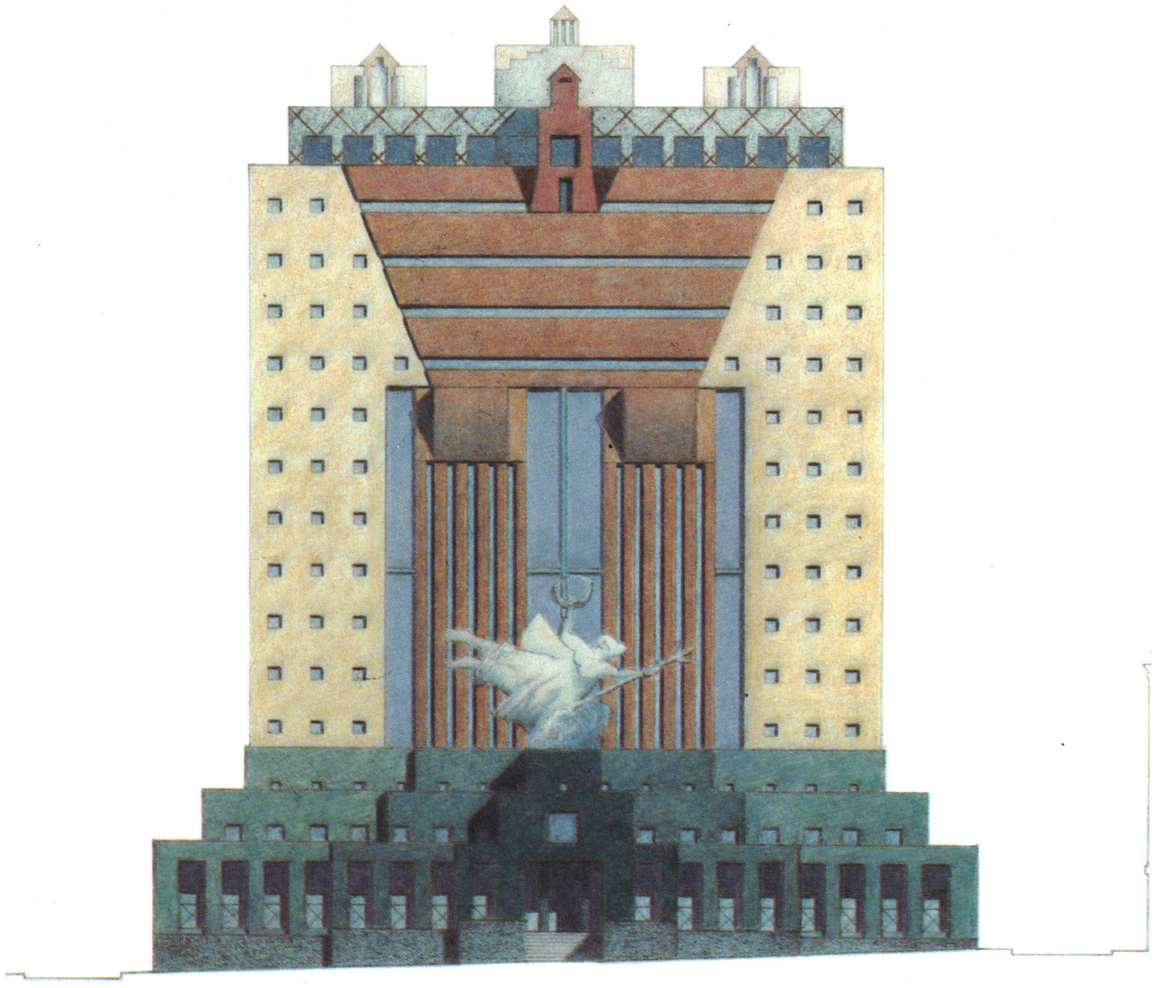
The result of these issues is that the Portland Building has suffered from numerous technical and performance deficiencies requiring both structural and building enclosure remedies. These deficiencies became evident shortly after its completion in 1982. The issues related to the building's urban design and workplace shortcomings are also well documented. The garage entrance on Fourth Avenue has long been lamented by Portlander's for its lack of engagement with the pedestrian realm and Chapman Square. The loggia has been a barrier to retail uses on the ground floor. The small windows and heavily tinted glazing have created a dark and unpleasant working environment for the building's inhabitants. While the primary driver for this project is to fix exterior enclosure performance issues, the $195 million project has provided an opportunity to address the way the building engages with the public and provide a better environment for the City employees who work there.

Over the past 34 years, the City of Portland has commissioned multiple studies and has performed multiple repair projects in an attempt to stop water infiltration. The majority of these piecemeal efforts have failed to solve the building's problems. In 2012, a comprehensive building envelope study was done that looked at the building exterior and structure holistically for the first time. The results of this assessment work demonstrated that the issues facing the Portland Building envelope are systemic and cannot be solved with simple repairs to individual materials or components. While this assessment did contain some preliminary thoughts as to how the issues could be remedied, it should be noted that this work was done at a conceptual study level and was not intended to represent a fully designed and vetted solution.

In 2016, the City of Portland engaged the design-build team of DLR Group and Howard S. Wright to perform a "reconstruction" of the existing Portland Building that would first and foremost provide a long-term and weather-tight building enclosure. As part of the concept design process, the team held multiple charrettes and engaged with professional consultants and trade partners to look deeper into the existing conditions and develop workable solutions that would achieve the project goals. The team brought to the table a wide range of expertise in building enclosures, historic preservation and high-rise envelope systems construction. With these major project concerns represented, the team was able to thoroughly investigate the issues and come to consensus on an envelope system that would save the Portland Building and transform it into a functional and healthy asset for the community.

The team also reached out to Michael Graves Architecture and Design (MGAD) as the original designers of the Portland Building to discuss the proposed reconstruction project and review the proposed solution. While Michael Graves is deceased, design staff who worked with him during the Portland Building design and construction process are now leaders of the firm and were able to provide insights into the original intent and process as well as engage in a dialog about the proposed solution.

Following is a letter of support from Patrick Burke, Senior Principal at Michael Graves Architecture and Design.



PROJECT BACKGROUND

MICHAEL GRAVES
ARCHITECTURE & DESIGN

April 12, 2017

To Whom It May Concern:

In November 2016, I spoke with Carla Weinheimer and Erica Ceder of DLR Group and reviewed a draft of their proposals for renovating The Portland Building. They wanted to see what Michael Graves Architecture & Design (MGAD) would think about their strategies for renovating and updating the building that we originally designed in the 1980's. I was impressed to see what a thorough, realistic and respectful proposal they had produced. We enthusiastically supported the proposed recommendations that the DLR Group and Howard S. Wright submitted in their report labeled DAR #2 and dated December 19, 2016. I wrote a letter of support that was included in that report. We do care a great deal about The Portland Building and are pleased to see such a comprehensive approach to renovating the building.

When the Portland Building was designed, I was in graduate school and one of Michael Graves' students at Princeton University. The project was an extremely important contribution to architecture at the time and much discussed by everyone in academia and the profession. After graduate school, I started working in Michael's office in February 1982 and The Portland Building was under construction. The years when we were working on The Portland Building represented a key turning point in architecture, academia and our firm's history.

I would also like to note that from our perspective as the designers of The Portland Building, we would be happy to see the building improved and modernized and do not believe that all the details would necessarily need to be slavishly replicated. For example, the windows should be updated to clear glass and not simply match the original black glass, and if the size of the glass area can be increased even a bit, that would be for the better. I think the recommendations by DLR Group and Howard S Wright strike an appropriate balance between respect and improved performance.

Michael Graves often discussed with us that he wished there was a way to renovate The Portland Building comprehensively and not as a series of local patch repairs, and he asked me several times if I had any suggestions. I know that Michael Graves would also have been supportive of this proposal and thrilled to see this happening.

Earlier this year, MGAD was added to The Portland Building Design Build team so that we could be a regular part of the conversation and at times provide some historical background on certain topics. We still have the primary material from the project in our archives and have used these files to answer some of the questions. I have also spoken with Lisa Lee Morgan, who was the architect responsible for the project in our office from the beginning of the competition through construction and the building opening. Lisa said that every decision on the building involving materials and details was driven by the need to find the lowest cost solution. Some of the important topics that we have participated in discussing are as follows:

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1. POSTMODERNISM

The Portland Building played a significant role in the evolution of architecture in the early 1980s and was the single most important project in this revolution. I would like to briefly describe the historical context.

Much of the architecture produced in the 1950s – 1970s in America had become very sterile, inhumane and repetitive. The excitement and variety of the modern work of the first half of the century had by mid-century evolved into a very narrow point of view about how we should design our buildings. Architectural history and theory had become discounted in the schools and students were taught a very uniform and formulaic approach to modern design. Students were not to have unique ideas, or look at history, but to design as they were instructed – and by the 1970s, our built environment was showing the results of so much bland thinking.

In 1966, Robert Venturi, a Philadelphia-based architect, published a book called *"Complexity and Contradiction in Architecture,"* which was a gentle manifesto rebelling against the current formulaic and inhuman modernism that was widely being practiced in America. He compared many contemporary buildings and details to other historical and vernacular examples to demonstrate how rich the pre-modern work was, and how inhuman and sterile the current modern work was to experience.

This book led to a major debate in the profession and academia, one that sought to challenge Modernism and reintroduce architectural history. Some members of the profession found that much of current modern architecture and urban design were in fact very disappointing when compared to historical examples. By the mid to late 1970s, some architects in academia started incorporating historical lessons in their teaching and professional work. Michael Graves was one of the early converts, leading architects and students on this path. He embraced history wholeheartedly and challenged the established modern architecture norms. In the late 1970s the architectural critic Charles Jencks became a convert to this point of view, began writing about it and labeled the movement Postmodernism.

Postmodernism versus Modernism played out as a heated battle in the architecture and urban design professions from the late 1970s to the late 1980s and some of the architects still subscribing to mid-century established Modernism took this very personally and were ready to fight for their position. The Modernists took comfort in the fact that up until the 1980s there were no major Postmodernist projects built, and they perceived that the Postmodernists could not succeed in getting a significant commission. Up to that time the Postmodernist work was mostly small in scale, such as house additions, or never built designs existing on paper only. The Modernists simply did not take the Postmodernists seriously.

Then, in 1980 Michael Graves won the commission for The Portland Building with a Postmodernist design and everything changed in our profession. Michael and the office were driven not merely to design a building for The City of Portland but also as a revolutionary challenge to the architecture profession. Michael promoted using color and historical references. He promoted the traditional city over the modern

city. He was critical of the prevailing point of view that saw the building as a "functional machine" and wanted to design something more joyful for people.

The Portland Building opened the door for many more Postmodernist projects in the decade ahead. It gave Postmodernism a significant role in the profession and the debates were taken more seriously afterwards. The debates and exuberance of the 1980s were in the long run very healthy for our profession and our built environment. Since that time, we have accepted that history does indeed have many important lessons to teach us, that we are designing for people, how one experiences the building does matter, that we can do better than produce formulaic banality, and that it is OK to use color, etc.

At the time of its design and over the years since, The Portland Building has generated much debate. There are those that admire the building and those that don't. One thing about the building is certain is that The Portland Building occupies an important place in architectural history.

2. CHARACTER

The Portland Building is a collage of historical references and symbols. The building is colorful and the intent was to create a joyful, spirited addition to the city. The building is composed in a somewhat traditional manner with a base, middle, and top. The building steps up from its base and it is articulated to relate to both the human scale and the broader city scale.

The composition and character of the building were the most important parts of the design. What materials were used would not have mattered very much to Michael Graves, particularly when faced with such a low budget.

3. FAÇADE MATERIALS

Michael Graves' original intent for the facades was to use glazed terra cotta tile over the entire building, mostly in larger pieces. He wanted the building to be colorful and cheerful, even in gray weather. He also thought this would be an appropriate material for a rainy climate. A materials study and cost estimate was prepared for the glazed terra cotta tile facades by the Hoffman & Pavarini contractor team and Gladding McBean, a manufacturer in California that specialized in glazed terra cotta tiles. This study demonstrated that glazed terra cotta tile was going to be too expensive to meet the very low budget established in the design build competition.

Michael was disappointed that he could not use glazed terra cotta tiles for the façade but he was determined to find a way to get within the budget. Thus, the facades were changed to mostly stucco and some inexpensive tile work in smaller sizes was included as a cheaper version of the originally intended terra cotta tile.

After the first round of the competition representatives of the City of Portland had expressed their concern about using stucco as a finish material on the exterior of a large public building. The competition evolved into a second round where the

design build teams were asked to respond to the city's concerns on a number of topics pertinent to each design. We were asked to find an alternative to stucco. Our structural engineer, Vincent DeSimone, and the Hoffman / Pavarini contractor team came up with a way to reduce cost by building the facades in concrete, using this as part of the structural system, and then painting the concrete as a façade finish. George Pavarini called Michael on a Sunday morning to say he had solutions for getting in the budget, but he needed to meet with Michael urgently to convince him. This resulted in a meeting that Sunday afternoon in our office where George Pavarini presented Michael with the cost estimates and the limited options. In that meeting Michael said, *"I don't care if we have to make this building out of ******* oatmeal, we have to stay within this crazy budget."*

That is how the facades became painted concrete. Painted concrete was never an intended design choice for Michael, but rather a concession to the contractor team and budget. He had made the decision that executing the design in any manner was more important than the materials.

Michael, and our office, would be glad to see the building renovated using better materials requiring less maintenance.

4. TILE & GROUT

As noted above, the use of small ceramic tiles came from the original intent to use larger scaled glazed terra cotta tile. The ceramic was a cheaper alternative. Lisa Lee Morgan, who was the architect in our office responsible for the project, said that the 9 x 9 inch size was smaller than originally intended, but it was the most cost effective size to use, and cost was the determining factor.

I also asked Lisa Lee about the black grout, as our firm has never used black grout in any of our other projects. She said that the original grout was not black, and that we had selected a grey grout that was similar in tone to the tile color. That is consistent with how we have selected grout for tile installations over the years. We've never used black grout, and we don't know where the black grout came from.

The grout for this renovation project should not be black solely because that is what is on the building now. The grout should be as originally intended, in a grey color similar in tone to the tile color.

5. COLORS

Carla Weinheimer (lead architect at DLR Group) commented that she believes that the paint colors used in more recent repainting of the building seem to be a little brighter in color than the original colors. I searched our files and found the actual approved paint submittals from the contractor and have given these samples to DLR Group for use in this project. Carla was correct, the original colors were not quite as bright as recent repainting selections.

6. BLACK GLASS

The fact that black glass was used in the windows is something of an oddity for us as there is no other project in our firm's history that has used black glass. Our whole office travelled to Portland for the building dedication in October 1982 and I recall in our office tour of the building that Michael pointed out the black glass and said, "This was a mistake and we are not doing this again." And we never did use black glass again.

Michael Graves gave a presentation at Princeton University in 2008 called "*The Portland Building, 25 Years Later.*" In that talk, he noted that the black glass was not his intent. I spoke with Karen Nichols and Lisa Lee Morgan, both of whom were in our office during the project design and execution to see how black glass came to be selected. They both recall that this was a decision promoted by the architect of record, Emery Roth, the engineers and the contractor that was driven by cost and energy demands. Lisa said that we were not happy about the black glass but conceded to the decision.

We hope that the current renovation will correct this and use clear glass in the windows.

7. LOGGIA AREAS

In the design, it was our intent to bring the base of the building to the sidewalk and engage with the pedestrian and social life of the city. Our approach to the urban environment was more traditional and was an intentional reaction to the numerous underutilized urban plazas being developed in American cities at that time. We thought the best way to engage with the pedestrian experience was to include small retail shops and a covered loggia. I understand that over the years the retail shops have not been very successful and today the facades inside the loggia feel very closed and uninviting.

Over the past 15 years our office has done several buildings for the federal government in the GSA Design Excellence program. In each of these projects, the GSA and various government agencies have asked us to express the transparency and openness of the democratic process in our design. In our various government been a part of the public areas of the building that is very transparent.

In DLR Group's proposed renovation of the pedestrian level loggia façade, they have opened up the activities at the base of the building by using a glass façade inside the loggia. This will add life and activity to the base of the building and improve the experience for the people inside the building and people passing by. We also like the fact that in a government building we are promoting openness and transparence at the entry level. We think this is a great improvement.

8. 4th AVENUE FAÇADE

It was always unfortunate that the parking entrance had to be opposite the park, but as Lisa Lee Morgan reminded me, the only logical location for the parking entry was on the lowest side of the building.

In DLR Group's proposed renovation, the parking is eliminated. The large opening in the center of the façade will then be glass and have a common public area pre-function on the main level with a view to the park beyond. It is great that this façade will now be activated with something other than cars. We believe this façade will be greatly improved on the park side.

It is worth noting that DLR Group's current design proposal remains very respectful to the original design of the building on 4th Avenue.

Feel free to contact me at any time if you would like to discuss any of this further.

I can speak for our entire firm, and I'm sure also for Michael Graves, that we wish you all the best in this admirable endeavor.

Sincerely,

Patrick Burke

Patrick Burke AIA
Senior Principal

Previous Historic Landmarks Commission Hearings

The Portland Building has been presented to the Historic Landmarks Commission on two previous occasions in the last four years.

Briefing #1 – November 26, 2012 (Presented by FFA Architecture and Interiors, Inc.)

Items Presented – The presentation was given to the Landmarks Commission in the form of a briefing with the purpose of introducing the Commission to the Portland Building and its many issues. FFA presented information that had been collected up to that point as part of the exterior condition assessment work. The main focus of the presentation was to show the nature and severity of the damage to the exterior envelope caused by the building's ongoing water infiltration issues. The briefing was given prior to completion of the report and did not include formal recommendations. However, the possibility of extensive material replacement was introduced. The presentation also touched on how preservation techniques for modern/postmodern buildings might differ from more traditional approaches.

Feedback received – The presentation was given for informational purposes and did not request feedback from the Commission.

DAR #1 – January 11, 2016 (Presented by Kristin Wells, City of Portland, Office of Management and Finance)

Items presented – This presentation was given in the form of a Design Advice Request hearing that built upon the information provided in the previous briefing and introduced information from additional assessment studies commissioned by the City with potential design solutions. The City provided a recap of the exterior enclosure issues presented in the first briefing as well as introduced some of the findings of the interior and MEP systems study.

The City further presented the following potential design solutions for review and comment from the Commission:

i) Full replacement of all windows and curtainwall systems with more energy efficient (double glazed) and thermally broken systems with clear glass to improve occupant comfort

ii) Removal of the interior furring walls and spandrel glazing to increase visible glass area inside the building

iii) Full replacement of the ceramic tile systems with a new rainscreen system

iv) Infill of all or a portion of the existing loggia with new interior space to provide a more inviting space

v) Eliminate or reduce vehicle parking and modify the Fourth Avenue parking garage entrance to provide a more pedestrian-friendly experience or potentially to become a pedestrian-only entryway. The idea of replacing the concrete "blind windows" on this façade with glazing or as opportunities to integrate art installations was also discussed.

Feedback received – The Commission provided the following feedback:

i) Window/Curtainwall replacement – Commission was generally supportive of replacing glazing systems with more energy efficient options. The idea of reducing the degree of or eliminating the tint from the glazing was also supported if it would not result in the interior floor lines becoming visible and breaking up the vertical appearance of the curtainwalls from the exterior. Keeping the reflectivity at the east- and west-facing curtainwalls was encouraged.

ii) Removal of interior furring wall behind curtainwall – The same concern listed above regarding the visibility of the interior floor lines from the exterior was expressed as the floor lines occur in the middle of the glazing panes.

iii) Ceramic tile replacement – Commission was generally supportive of replacing the tile if it matched the existing in color, size and sheen. The Commission expressed concern with the insertion of a rainscreen system behind the tile and the potential change in the dimensional relationship of the various exterior building elements, but was understanding of the need for a technical solution.

iv) Loggia modifications – The Commission expressed support for infilling the loggia at the north and south sides of the building, as these portions are already truncated. The loggia along the west side of the building was deemed a significant feature, and the commission encouraged improvements to furnishings and/or lighting to improve the environment.

v) Fourth Avenue modifications – The Commission was very supportive of eliminating vehicle access/parking along this façade. Any new entry integrated into this facade would need to be compatible with the architecture, but also differentiated. The idea of replacing the "blind windows" with glazing was met with support. The potential of integrating a significant art piece on this side of the building would need to be done with the understanding that it not compete with the architecture.

vi) General comments – Commissioners noted that the building is based on the square and that the modulations are important to maintain as well as the colors. Commissioners were also supportive of eliminating the street trees directly in front of Portlandia to increase visibility of the statue.

SUMMARY OF PREVIOUS HEARINGS

Previous Historic Landmarks Commission Hearings -cont.

DAR #2 – December 19, 2016 (Presented by Erica Ceder with DLR Group and Matthew Davis with Architectural Resources Group)

Items presented – This presentation was given in the form of a Design Advice Request hearing that built upon the information provided in the previous briefing and DAR #1. This presentation focused on the reconstruction of the building's design as a new rainscreen enclosure over the failing skin. Alterations to the loggia, improvements to Fourth Avenue, and new rooftop mechanical were also discussed in the presentation. As part of the presentation, the Applicant provided a recap of the building's history and significance, exterior enclosure issues, and project goals.

Feedback received – The Commission provided the following feedback:

Rainscreen

- The Commission generally support the rainscreen strategy but individual commissioners expressed concerns about the major material change, questioning the qualities of proposed metal panels. One Commissioner noted that mock-ups and material samples will be very important, while another stated that input from the National Parks Service regarding the treatment's potential threat to the building's National Register status would be critical.
- One Commissioner noted that details and finishes should match as closely to the original as possible and that areas where systems come together need to be addressed. Another Commissioner further noted that metal panels are unlikely to read the same as concrete, potentially pillowing or oil canning over time, and may not be the appropriate choice.
- One Commissioner stated support for a tile to tile change at the base of the building, but pointed out that the existing terracotta tile is not as flat as a ceramic tile.
- Commissioners generally supported glazing changes to allow more daylight into the building. However, one Commissioner was concerned about the glass colors being changed too much, particularly within highly reflective areas, and echoed the importance of material samples.

Loading/Loggia

- One Commissioner stated the need for clarity in design at the garage opening on 4th Avenue. Another noted that this façade has been the least successful, having been changed at the last minute in the original design, and that art in combination with a different storefront system may help mitigate the large opening and blank wall condition.
- One Commissioner noted that the garage entry solution should maintain the overall balance of the building.
- One Commissioner stated support for changes thus far to the north and south loggias. She supported some infill in those areas and suggested the applicant look for ways to differentiate and recognize the center bays, noting this may be accomplished with a stepping motif and/or only infilling half way.
- Multiple Commissioners stated support for new storefront glazing and one noted that it should be consistent with the other details. Another mentioned that maintaining the idea of the stepping motif from the original storefronts may be worthwhile.

Rooftop

- Several Commissioners supported the removal of second floor louvers to accommodate clear glass, but one expressed concerns with relocation of mechanical equipment to the rooftop. The units appear too big and she suggested the applicant further study the feasibility of moving units below grade with the understanding that this would require louvers be added elsewhere.
- Another Commissioner added that while expansion of the rooftop may not affect ground level sightlines, what can be seen at elevation is important. He presented the idea that the rooftop penthouse be expanded to maintain the current motif and screen the relocated equipment, noting its importance to the iconography of the building and its classical detailing. Another Commissioner stated she may be able to support this approach.

SUMMARY OF PREVIOUS HEARINGS

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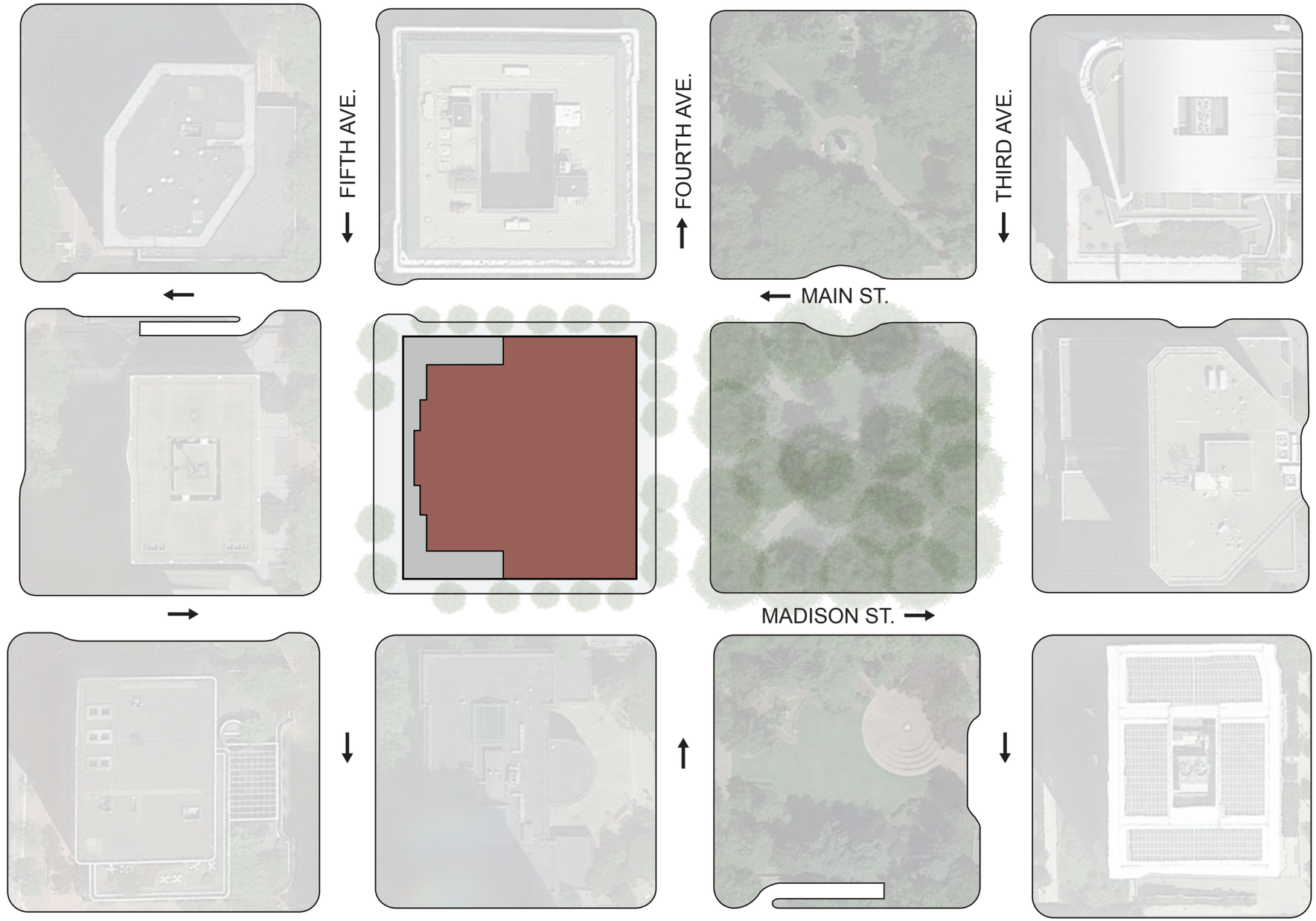
SITE AND CONTEXT

Zoning Summary

Applicant:	City of Portland - Office of Management and Finance 1120 SW 5th Ave #1200 Portland, OR 97204 Contact: Kristin Wells
Representative:	DLR Group 421 SW 6th Ave, Suite 1212 Portland, OR 97204 Contact: Erica Ceder
Owner:	City of Portland Managed by the Office of Management and Finance
Site Address:	1120 SW 5th Ave Portland OR 97204
Property ID:	R246103
Tax Lot:	Block 57, Lot 1-8, Sub-Acct R508653 (R667706771)
Base Zone:	CX - Central Commercial
Overlay:	d - Design Zone
Historic Resource:	Individual National Register Resource
Plan Dist:	Central City Plan District - Downtown
Procedure:	Type III Historic Resource Review
Pre-App Conf:	November 30, 2016

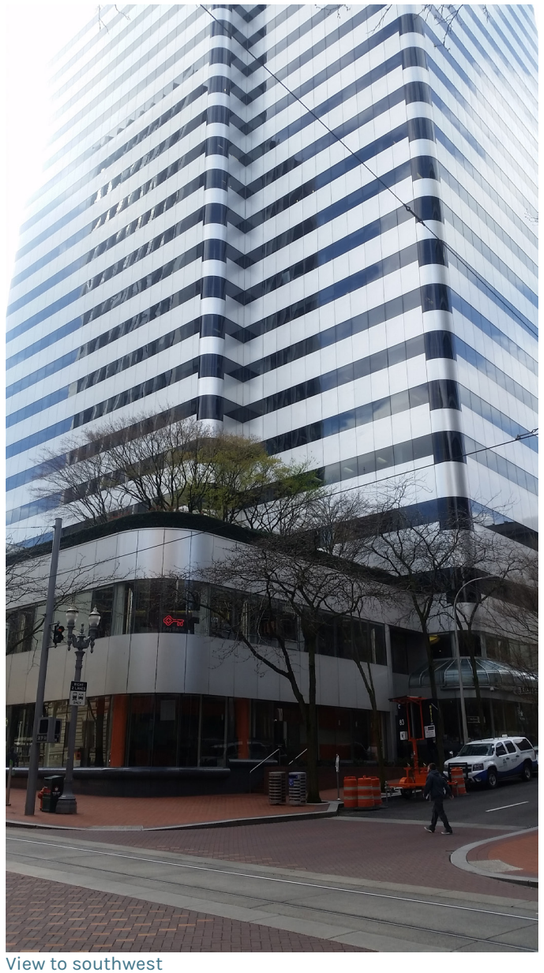


SCALE
0 25 50 100 200

NORTH

VICINITY MAP/ZONING INFO

View across 4th Avenue (Chapman Square)



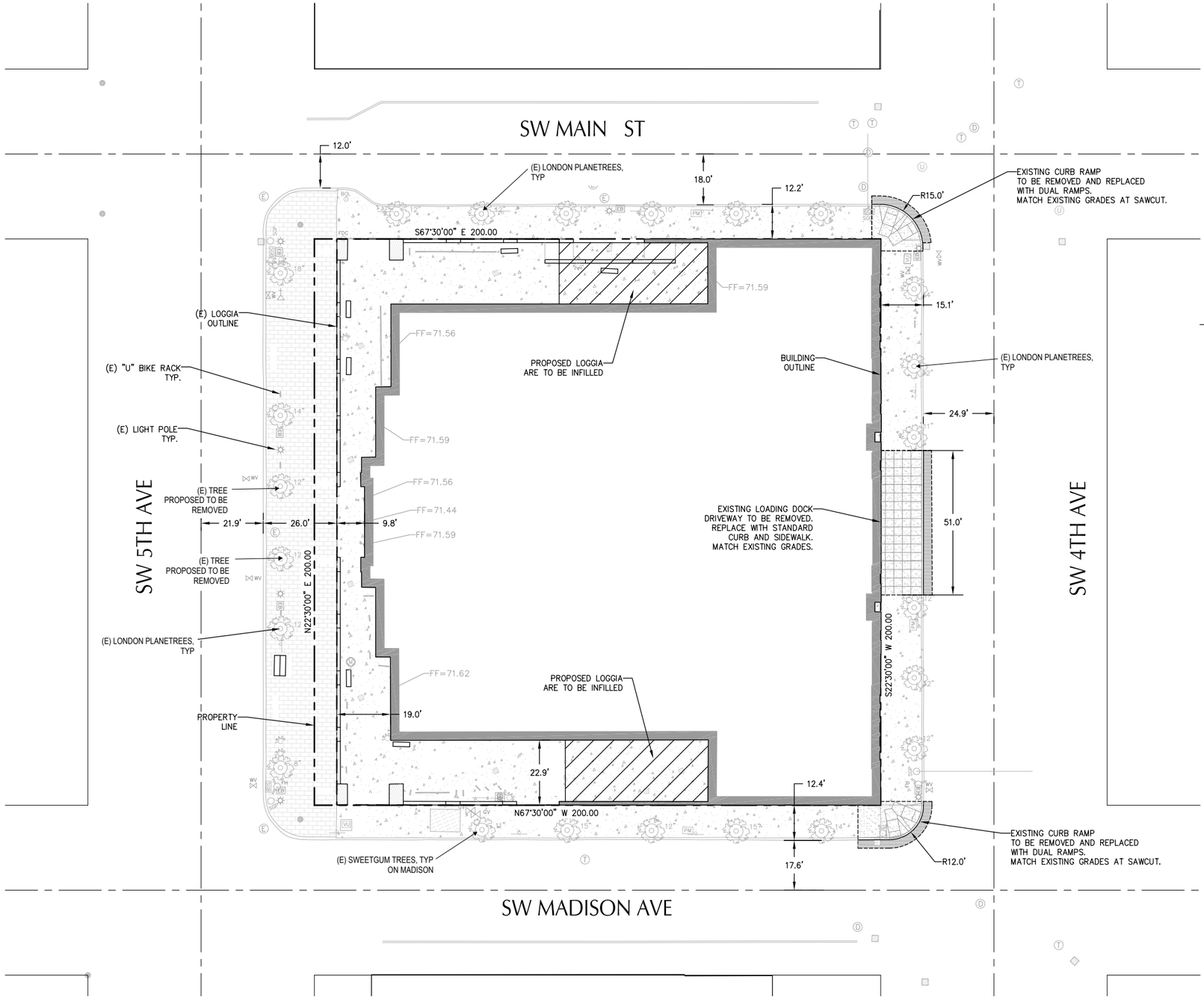
View to southwest

View across Madison St. (City Hall)

View across 5th Avenue

View across Main (Multnomah CO. Courthouse)

VICINITY PHOTOS



SHEET NOTES

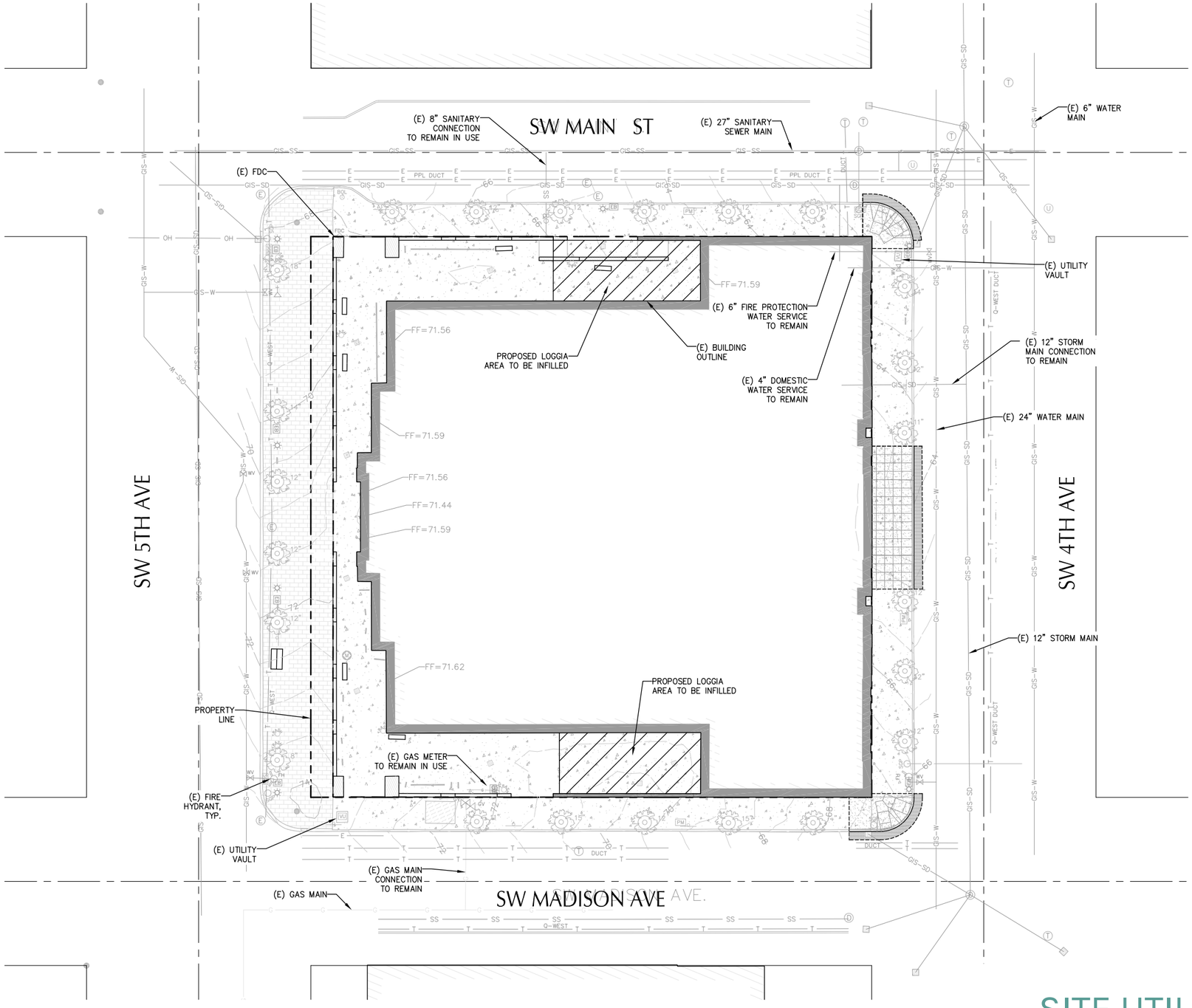
1. NEW WORK IN THE PUBLIC RIGHT-OF-WAY IS NOT APPROVED AS PART OF THIS BUILDING PERMIT. ALL FRONTAGE IMPROVEMENTS IN THE RIGHT-OF-WAY SHALL BE CONSTRUCTED UNDER SEPARATE PUBLIC WORKS PERMIT.
2. ALL PROPOSED SIDEWALKS AND CURBS SHALL BE CONSTRUCTED PER CITY OF PORTLAND STANDARD DETAILS P-551 AND P-540, RESPECTIVELY.
3. ALL PROPOSED SIDEWALK CURB RAMPS SHALL BE CONSTRUCTED PER CITY OF PORTLAND STANDARD DETAIL P-548.
4. ALL PROPOSED ASPHALT REMOVAL AND REPLACEMENT SHALL BE RECONSTRUCTED PER CITY OF PORTLAND DETAIL P-506.

1/40" = 1'

NORTH

0 8 16 32 64

CIVIL SITE AND TREE PLAN



1/40" = 1'

NORTH

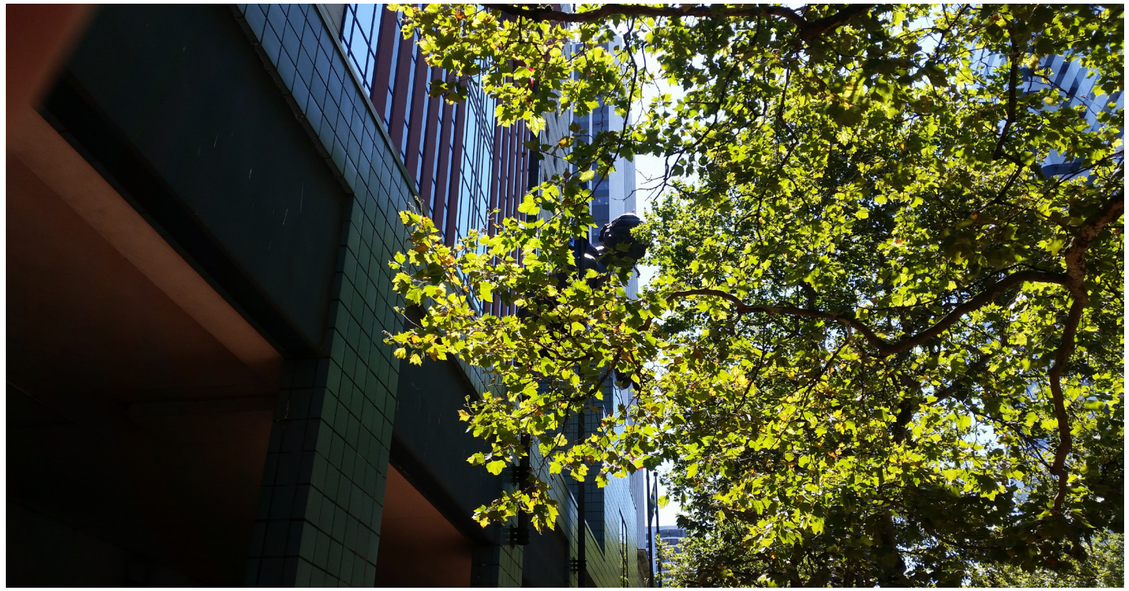
0 8 16 32 64

SITE UTILITY FEASIBILITY PLAN

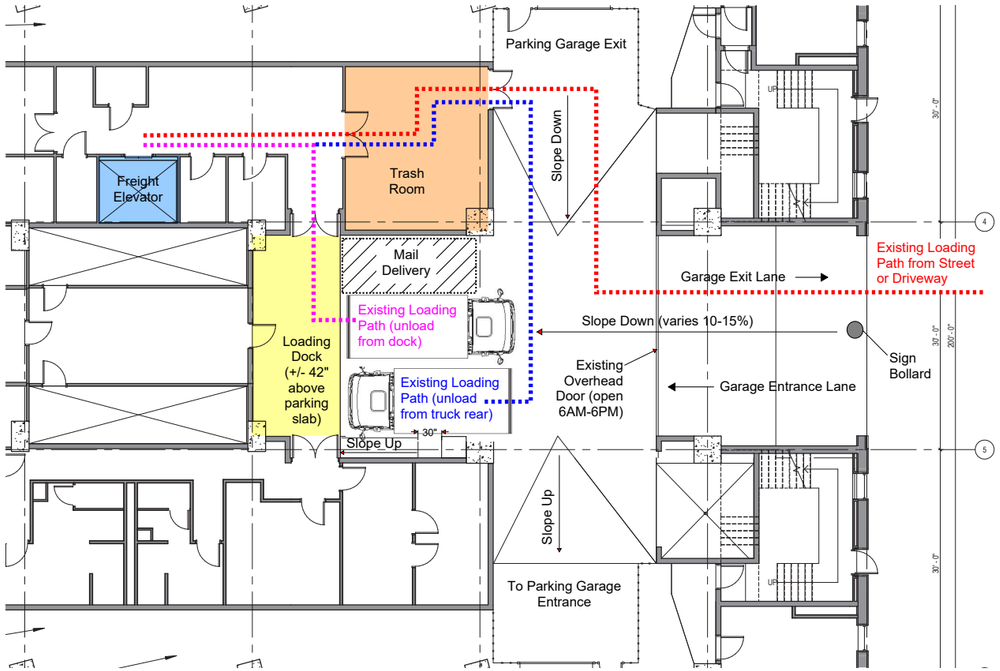
Enhancing Visibility of Portlandia

To create year-round views of Portlandia and limit long-term maintenance, the two London Planetrees directly in front of Portland Building will need to be removed as part of the reconstruction project. Even with on-going pruning, the two trees will continue to limit views to this important local landmark. The Bureau of Planning and Sustainability's Visual Resources Inventory in the Central City 2035 Plan identifies Portlandia as a View Terminus Focal Point and notes that management of the resource should consider that the street trees while in leaf "almost entirely block" the view. In previous Design Advice Request hearings, the Landmarks Commission has voiced their support for tree removal in this location.

Significant pruning is currently being performed throughout the canopy of these two middle London Planetrees. These two trees are top pruned to limit their height under Portlandia and bottom pruned to provide clearance for adjacent street lights and vehicles. Additional pruning is also likely done for the catenary support cables, branching structure and to clear dead branches. The trees are located approximately half the distance from existing light poles than is recommended by Urban Forestry. As a species, these trees grow quite large. This growth habit, combined with the site constraints, will require them to be aggressively pruned for the remainder of their lives.

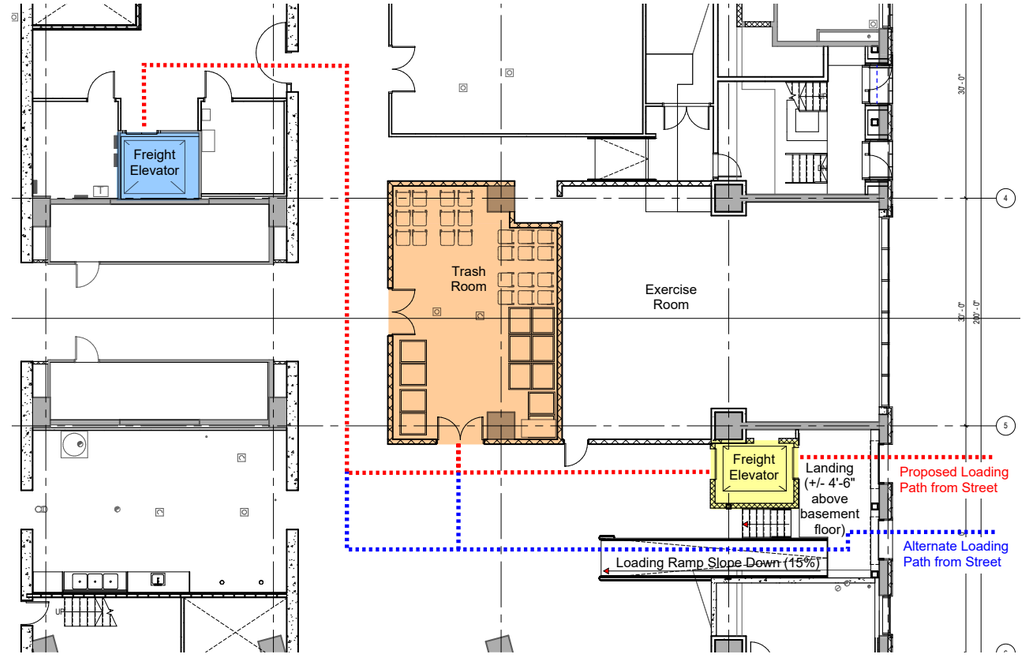


PROPOSED TREE REMOVAL



Existing Loading Configuration Diagram

Not To Scale



Proposed Loading Configuration Diagram

Not To Scale

The Portland Building currently has an interior loading dock with access mid-block on the Fourth Avenue façade. Loading access is combined with vehicle and bicycle entry to the parking garage and requires loading vehicles to back in. The loading dock only provides about 12' of overhead clearance and 20' of length with only 16' being flat landing area. The lack of overhead clearance and flat area makes the loading dock inaccessible to anything other than small vehicles such as vans. It also creates a situation where longer vehicles would have to be parked on a slope, making it unsafe to unload. Because of these functional issues, the City has not been able to use the loading dock and currently relies on the on-street loading spaces adjacent to the loading access driveway for large vehicle deliveries.

The purpose of the standard states that it is intended to ensure that loading does not have "a negative effect on the traffic safety or other transportation functions of the abutting right-of-way." Removal of the garage parking and loading access will eliminate a driveway that currently crosses the public right-of-way in a busy urban environment. The fact that vehicles are required to back into the dock also creates a situation that is disruptive to traffic on Fourth Avenue. The existing loading configuration does not fulfill the purpose of the Loading Standard and, because of the sloping site and the existing building's structure, it is not feasible to modify the Portland Building to accommodate two Standard A loading spaces on-site.

The use of on-street loading would increase pedestrian safety and minimize disruptions to traffic flow. Furthermore, new street parking will be created as a result of closing the existing curb cut on Fourth Avenue. This curb cut closure will create approximately 33' of additional area for vehicles, that could facilitate another on-street loading space.

Originally driven by a need to have on-site parking when the Portland Building was constructed in 1982 and constrained by the difficult site sloping, the Fourth Avenue parking and loading entrance has long been viewed as a major shortcoming of the building's engagement with the urban fabric. This loading/parking function has essentially made the building's east façade the "back" of the building and ignored the potential for engagement with the adjacent Chapman Square Park. The City's decision to eliminate the vehicle parking from the basement along with the non-functioning existing loading area, brings about an opportunity to create a pedestrian-friendly experience along Fourth Avenue and to restore Michael Graves' original vision of an axial connection between Fourth and Fifth Avenues through the building. It also creates public space within the building where occupants can enjoy views of the park.

In previous Design Advice hearings, the Landmarks Commission was very supportive of improving this historic resource by removing the vehicle functions and the Commission encouraged the design team to explore ways to improve the urban design along that façade. This was reiterated in the staff report from the Pre-Application conference: "removal of the existing on-site loading could help address the unsatisfactory condition of the SW 4th Avenue façade, as was encouraged by the Historic Landmarks Commission during both DARs." This adjustment also allows multiple Central City Fundamental Design Guidelines to be fulfilled with respect to the City's urban design goals.

Refer to Adjustment Request section of Zoning Analysis document for full loading adjustment justification text and supporting documentation.

PROPOSED LOADING ADJUSTMENT

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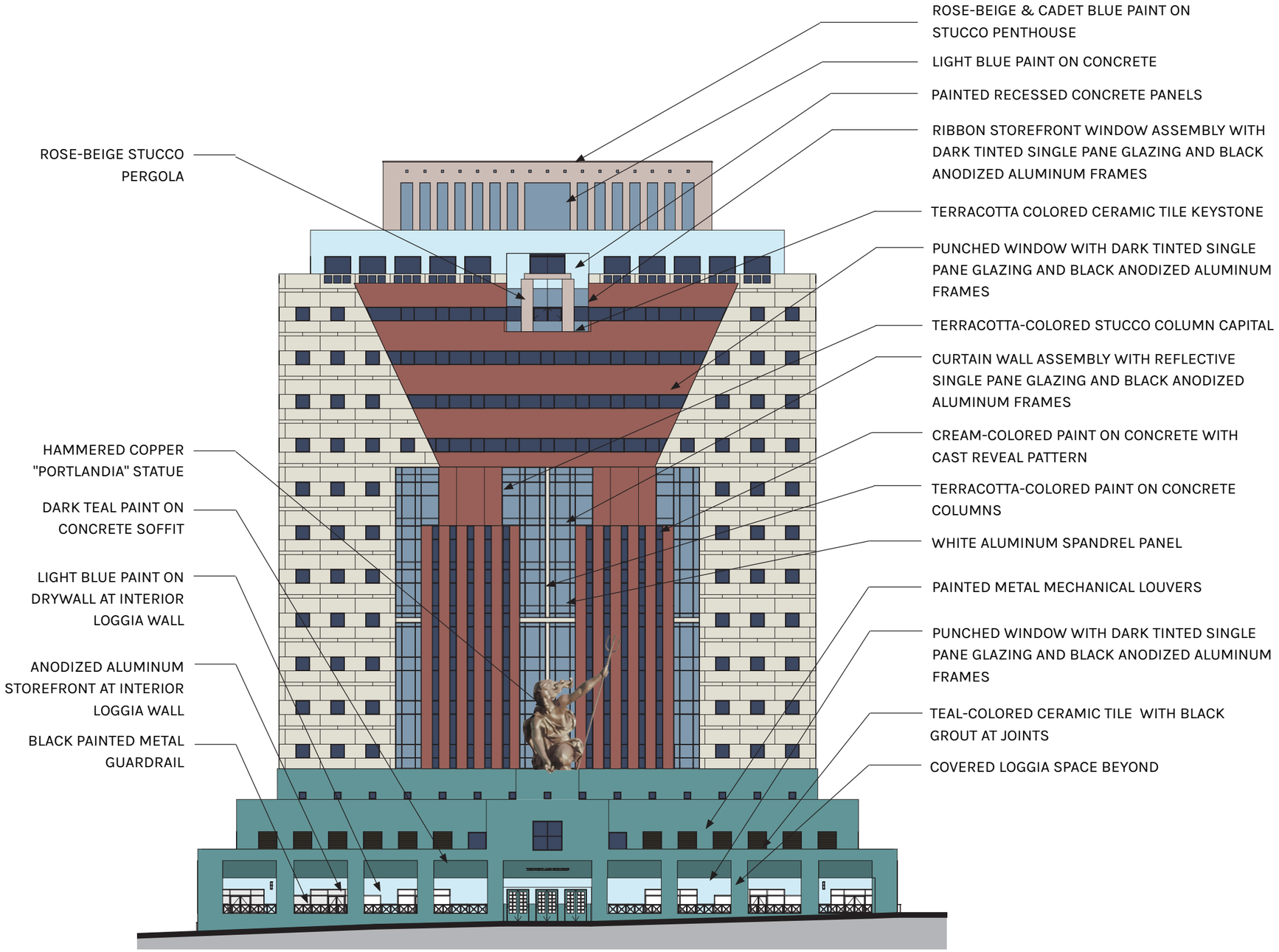
EXISTING CONDITIONS

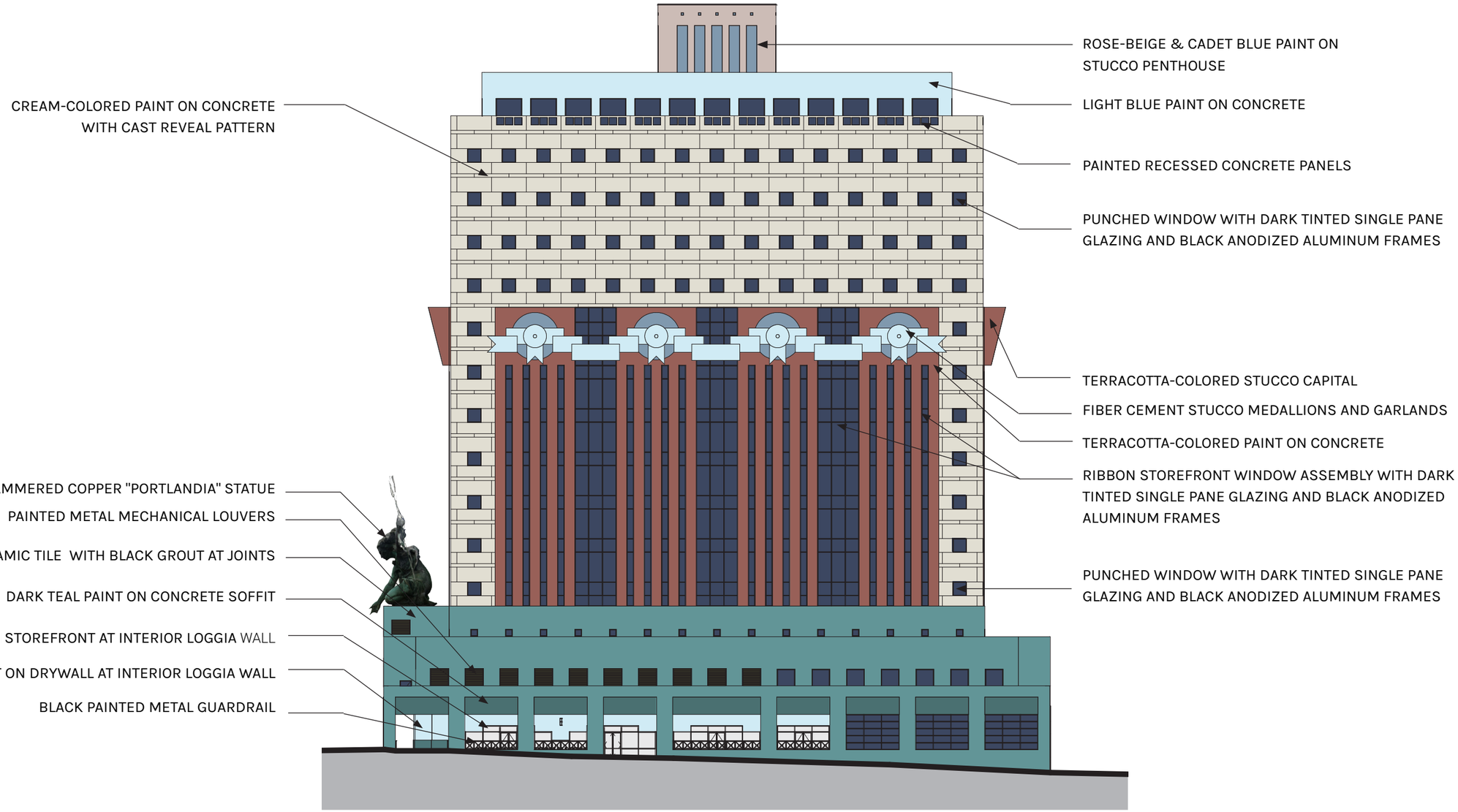
Existing Building Composition

The Portland Building is composed in a classical tripartite arrangement of base, shaft and capital. The facades are composed such that the east and west faces are similar to one another as are the north and south. The base component consists of three floors that step in a “wedding cake” style toward the shaft. All three floors of the base are clad in a teal color square tile set in a grid pattern. The ground level of the base contains a covered loggia on the west side of the building that partially wraps the north and south sides as well. The shaft or tower portion of the building is primarily a square concrete tower painted a limestone color. The concrete contains a pattern of cast reveals that give the impression of joints. On the east/west facades, a central curtainwall area is centered underneath a red tile clad “keystone” element. This keystone sits atop two “column” elements with projecting wedge shaped capitals. The curtainwall glazing in this area has a reflective coating and is divided into four quadrants by a white band.

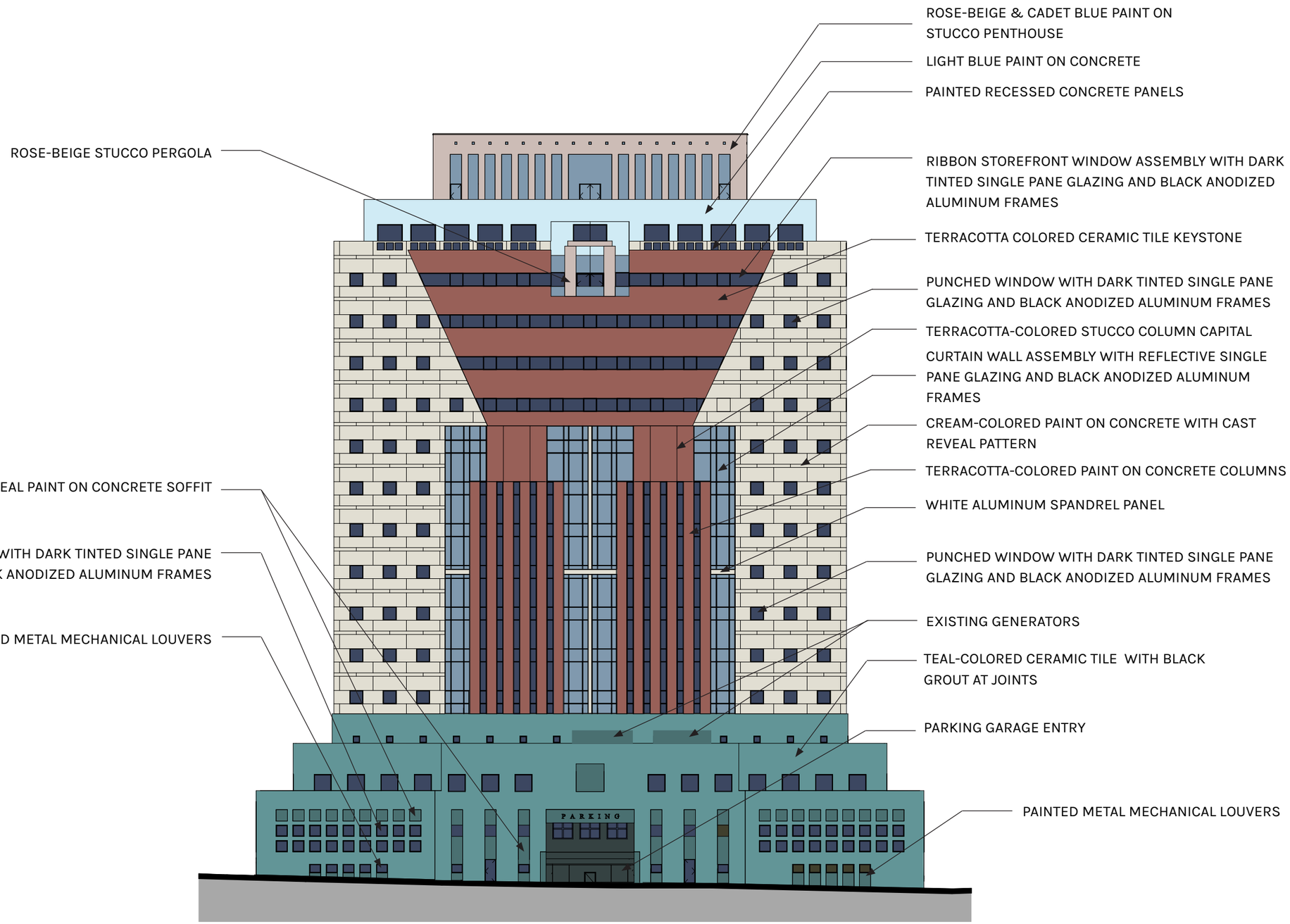
The north/south facades feature four “columns” composed of thin concrete pilasters divided by strips of curtainwall glazing. The capitals of these columns are connected by a medallion and garland motif that is composed of a fiber-cement stucco over metal framing and applied to the face of the building. The top floor of the building steps in further from the shaft and, along with the rectangular mechanical penthouse, creates the capital of the building.



EXISTING ELEVATION MATERIALS - WEST



EXISTING ELEVATION MATERIALS - SOUTH



EXISTING ELEVATION MATERIALS - EAST

ROSE-BEIGE & CADET BLUE PAINT ON STUCCO PENTHOUSE

LIGHT BLUE PAINT ON CONCRETE

PAINTED RECESSED CONCRETE PANELS

PUNCHED WINDOW WITH DARK TINTED SINGLE PANE GLAZING AND BLACK ANODIZED ALUMINUM FRAMES

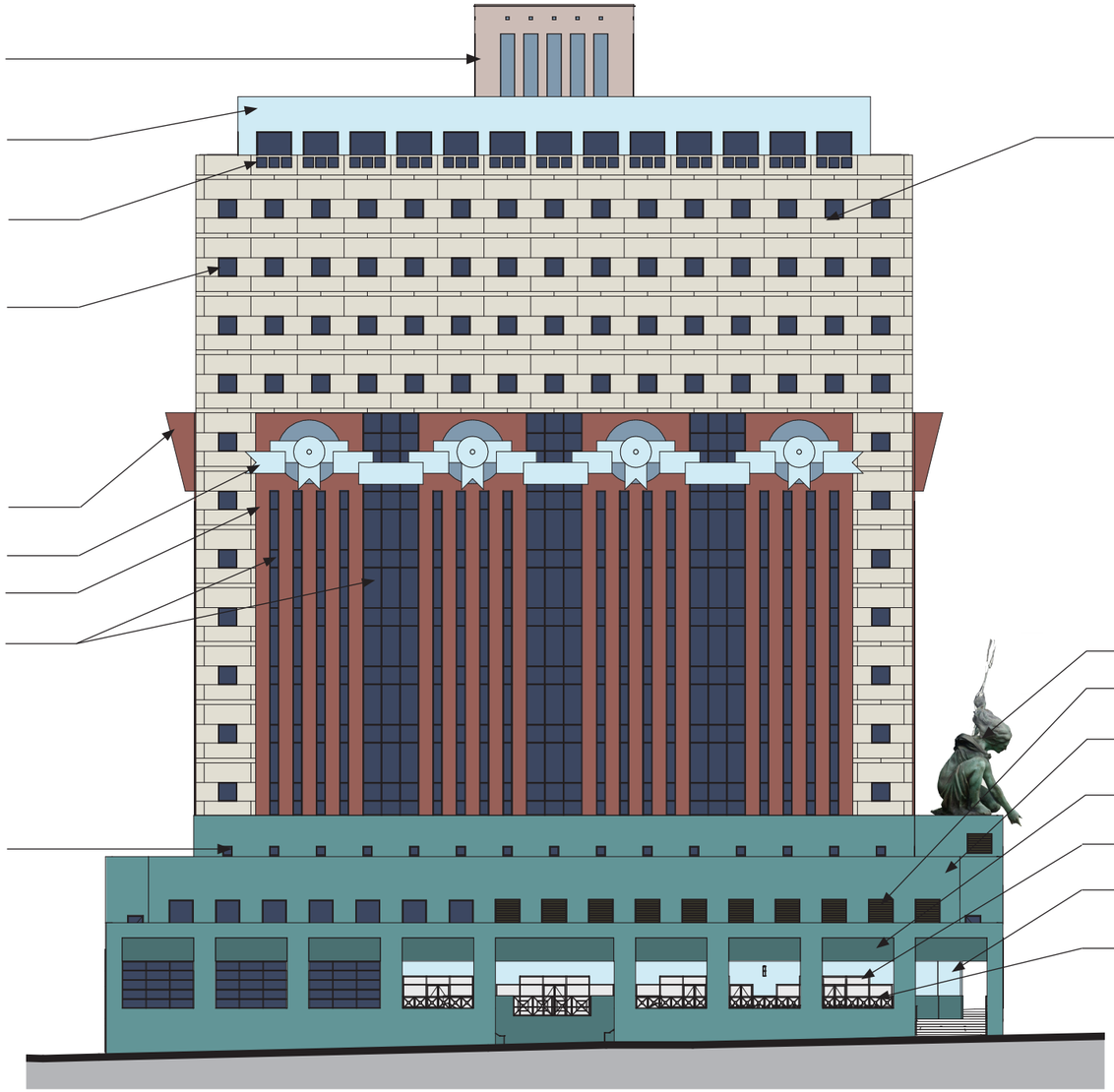
TERRACOTTA-COLORED STUCCO CAPITAL

FIBER CEMENT STUCCO MEDALLIONS AND GARLANDS

TERRACOTTA-COLORED PAINT ON CONCRETE

RIBBON STOREFRONT WINDOW ASSEMBLY WITH DARK TINTED SINGLE PANE GLAZING AND BLACK ANODIZED ALUMINUM FRAMES

PUNCHED WINDOW WITH DARK TINTED SINGLE PANE GLAZING AND BLACK ANODIZED ALUMINUM FRAMES



CREAM-COLORED PAINT ON CONCRETE WITH CAST REVEAL PATTERN

HAMMERED COPPER "PORTLANDIA" STATUE

PAINTED METAL MECHANICAL LOUVERS

TEAL-COLORED CERAMIC TILE WITH BLACK GROUT AT JOINTS

DARK TEAL PAINT ON CONCRETE SOFFIT

ANODIZED ALUM. STOREFRONT AT INTERIOR LOGGIA WALL

LIGHT BLUE PAINT ON DRYWALL AT INTERIOR LOGGIA WALL

BLACK PAINTED METAL GUARDRAIL

EXISTING ELEVATION MATERIALS - NORTH

Building Envelope

The Portland Building's issues are extensive and well documented. Deficiencies in the building envelope caused chronic water infiltration, resulting in harmful moisture inside the building and premature deterioration outside. Leaks into the inside compromised occupants' comfort and led to ongoing interior maintenance problems. The resulting exposure to water- generated staining, efflorescence, cracks, corrosion and a degradation of some of the attachment of the tile to the concrete wall.

Reversing the decline of the Portland Building's condition, upgrading its serviceability and extending its useful life require a long-term remedy for leaks and degradation beyond the capabilities of strict preservation of existing conditions. Decades of repair attempts have failed to provide a permanent solution. Since construction finished in 1982, repeated efforts to fix problems using methods that preserved the original materials did not stop leaks or prevent recurring symptoms. They sometimes marred the building's original appearance while leaks re-occurred, and degradation spread. These failed repair efforts have proven that continual short-term repairs to treat symptoms do not address the root cause. Building envelope deficiencies and resulting degradation originate in the Portland Building's inherently flawed construction and the industry's not- yet- developed understanding of enclosure science at the time it was built.

Past re-caulking, re-pointing, re-coating, re-tiling, re-patching, re-glazing, and re-gasketing to try to restore the facade's fabric failed to fix problems and at best masked symptoms for a short time. Repeating those repairs will not change outcomes because the Portland Building is not built like, and does not behave like, a traditional mass masonry building.

Refined over centuries, the technology of load-bearing masonry enclosures minimizes leaks into their insides by absorbing and holding moisture, like a reservoir, until drying by breathing the moisture back out. Periodic restoration by traditional techniques like repointing and selectively replacing masonry units effectively preserves those types of buildings and their weathering mechanisms by restoring the reservoir and its water-shedding features.

The Portland Building has a mostly exposed reinforced concrete enclosure. Its construction lacks water-shedding details prevalent on many historic masonry buildings. Understanding of the performance limitations of this type of wall system was still evolving in the 1980s, and it is now known that concrete in this application does not resist weathering well. A reinforced concrete wall cannot be a reservoir because absorbed moisture induces corrosion and carbonation of the reinforcing steel within that can exert stresses and destroy it; so concrete must be protected by a barrier.

The Portland Building's dense but relatively thin concrete walls cannot resist water and thermal penetration by acting as reservoirs, therefore the building has been forced to rely on paint, grout, tiles and caulk to create a barrier against water intrusion/absorption. Ultimately these materials are by nature only temporary and rely on nearly flawless application in the field to function properly.

Perhaps the most notable aspect of the Portland Building's construction is the fact that it has no exterior finish or cladding on the structural concrete tower other than paint. While there is plenty of precedent for painted concrete buildings, it is extremely uncommon for a building of this height and scale. The fact that the building also attempts to combine this concrete barrier type wall with curtainwall systems further separates it from typical construction techniques. Curtainwall systems by nature are designed to manage a certain amount of water infiltration that they then are equipped to drain back to the outside. Barrier walls need to completely prevent water from entering the system at all. The integration of these two types of systems creates problematic details where the two types of systems come together. The barrier wall has no mechanisms that would allow it to tie in with the curtainwall system; therefore, a sealant joint becomes the only protection at these transitions.

Urban Design

Loggia

The loggia at the building's ground floor has struggled to function the way it was intended. Designed as a reaction to unsuccessful public plazas, Graves had envisioned that the loggia would be activated by retail spaces and sought after as protection from the wet Pacific Northwest weather. This vision was never realized. The south and north loggia wings were truncated short of the Fourth Avenue façade and never functioned as a true loggia. The loggia is also too deep putting the retail areas too far out of view to draw in pedestrian traffic. Openings into the loggia from the interior are not large enough to allow interior light and views into the retail spaces.

Over the years many retail tenants have come and gone and as a result, the interior loggia wall has been altered many times with various reconfigurations of doors and glazing types. Several of these tenant spaces are currently used as office spaces that have added window treatments to block views from the loggia into employee work areas. This evolution has created a loggia that demonstrates little to no connection with the interior of the building or its functions and is a singularly uninviting place to be.

Fourth Avenue Elevation

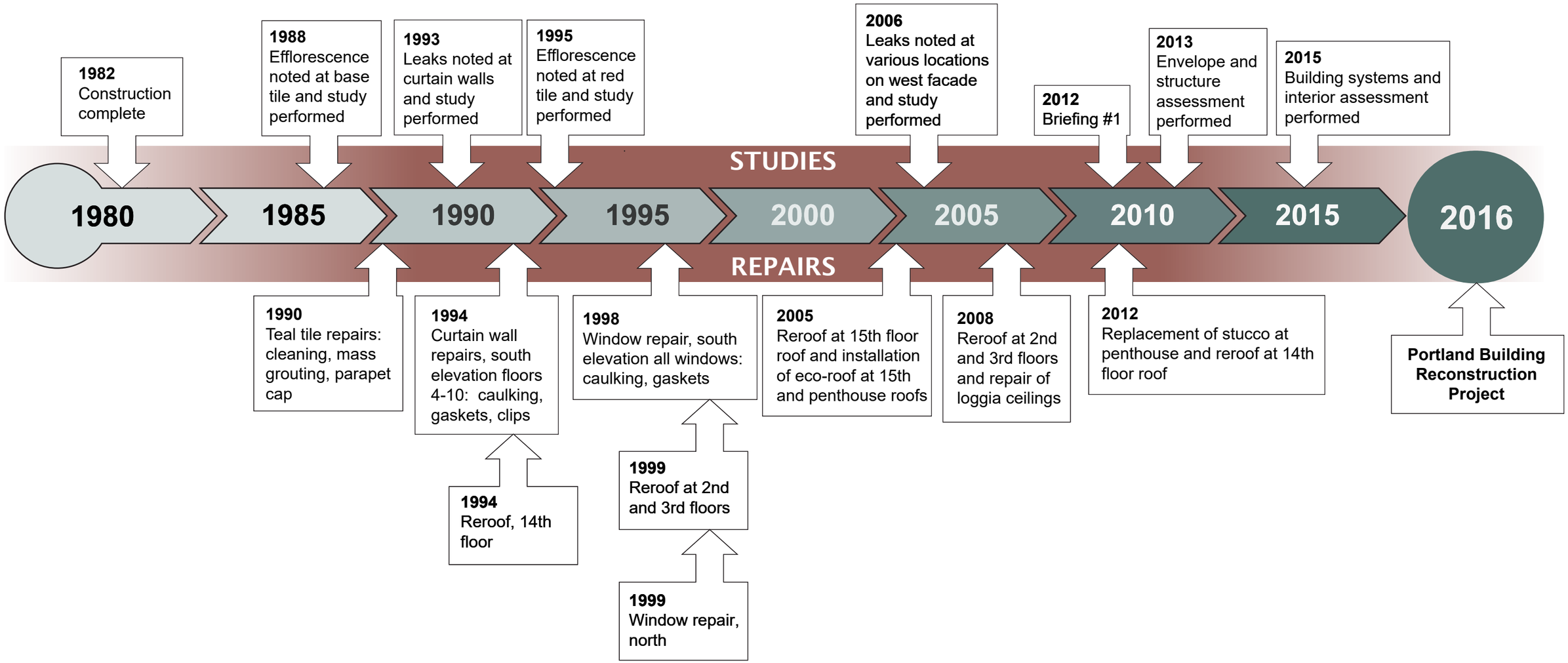
While Graves' original designs for the Portland Building showed a greater degree of symmetry between the Fourth and Fifth Avenue facades, his final design was changed to feature a large opening on the Fourth Avenue elevation in order to provide access to added parking in the basement. This change had a great effect on his original intent for an axial plan where one could enter the building on Fifth Avenue and connect to the park side. The garage and loading area entry on Fourth Avenue has long been considered an urban design failure and has created a condition where the building effectively turns its back on the park.

In addition to the urban design issues with the Fourth Avenue garage entrance there are myriad functional problems with this area. Steep driveway slopes and low head clearances have created a building loading area that is not functional and that the City is unable to utilize in a safe and effective manner.

Exterior Finish Materials

As noted previously, the low project budget became the major driver of decisions made on the project. This was especially true of materials. The original building exterior was value engineered from terracotta to painted concrete and ceramic tile. As a result,many of these choices work in opposition to the big ideas of the original design. The small scale of the existing tile is incongruous with the grand scale of Graves' classical design motifs and the overall scale of the building. The black glass deprives the building of the sparkle and views into the interior that Graves intended.

EXISTING CONDITIONS SUMMARY



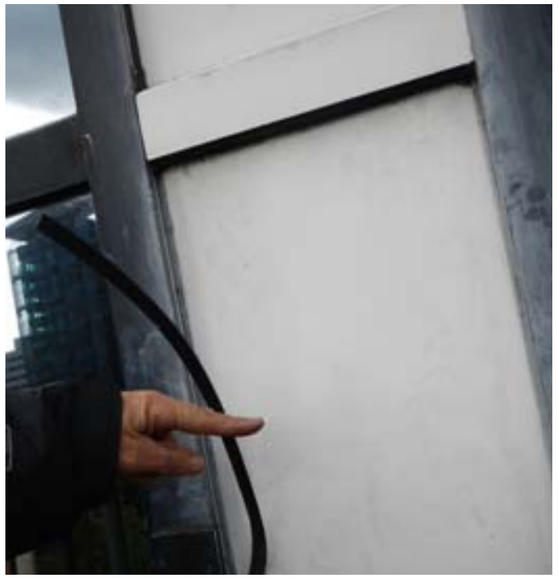
HISTORY OF STUDIES AND REPAIRS

Openings/Glazing Systems

The existing building openings are infilled with four major types of glazing systems: Fixed window units inserted into punched openings, stick built curtainwall systems, ribbon windows and ground level storefronts. Glazing systems are typically single pane and frames are aluminum with no thermal break. Deficiencies noted include:

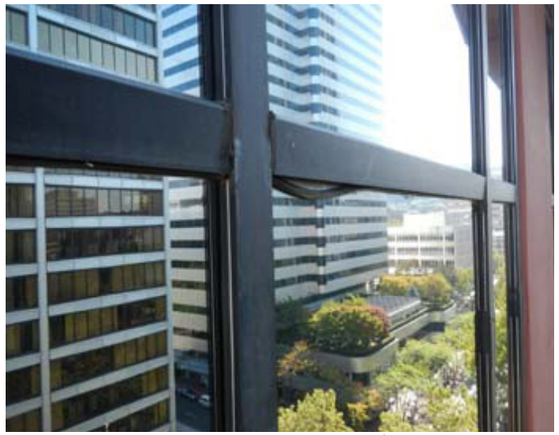
- Failed curtainwall systems- deteriorated gaskets, deformed mullions, interior drainage systems compromised by the addition of sealant at weep locations, failed flashing, oxidation at metal components,deteriorated perimeter sealant, and water intrusions throughout the system.
- Failed punched windows - deteriorated perimeter sealant, gaps at frame corners and oxidized aluminum components.
- Failed ribbon windows - improper use of a storefront system at upper floors, deteriorated gaskets, failed flashing, oxidation at metal components,deteriorated perimeter sealant, and water intrusions throughout the system.

Failed sealant at punched window perimeter joint



Failed gaskets at curtainwall system

Failed gaskets and oxidized finish at ribbon window frames



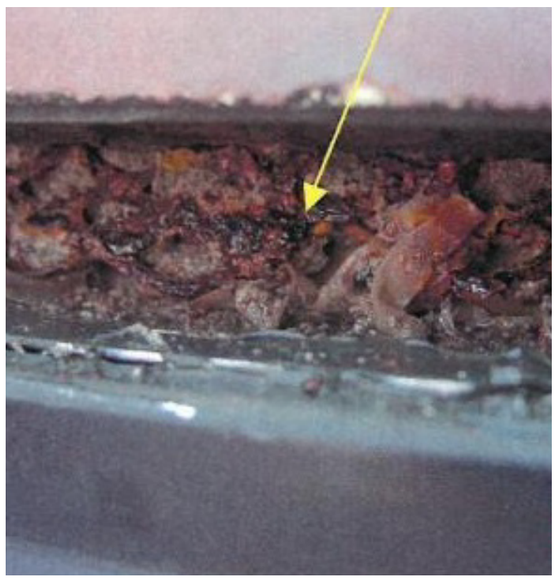
Failed gasket and displaced pressure plate/cap at curtainwall

Failed movement splice connection at curtainwall jamb

Failed metal finish at ribbon window head

Water infiltration at 14th floor ribbon window

EXISTING BUILDING CONDITIONS



Rusting metal lath expanding behind tile system

Failed sealant at tile system control joint

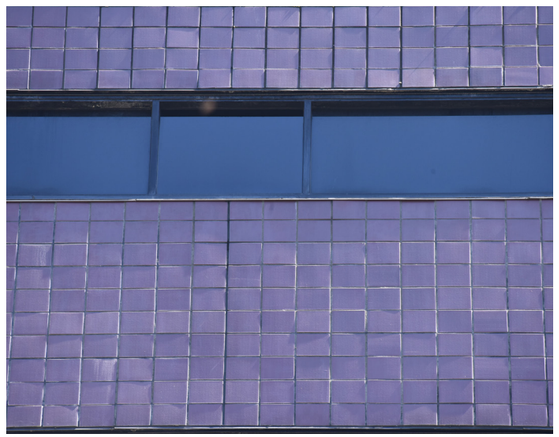
Out of plane tiles potentially delaminated from wall

Tile over Concrete

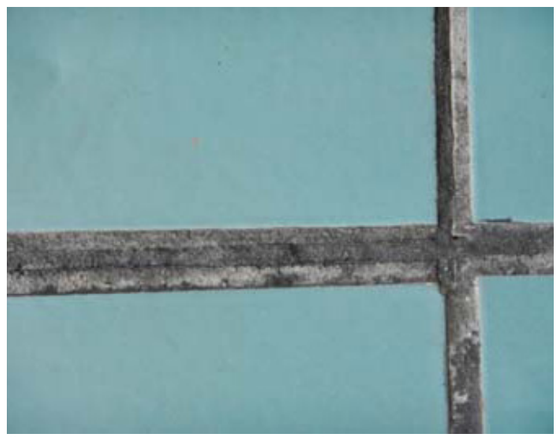
Existing tile assembly is composed of glazed ceramic tiles mortared onto a bed layer and metal lath that is in turn fastened to the concrete wall. Some investigations have found a layer of sheet plastic behind the lath; however, there is no functional drainage plane or water management system. Deficiencies noted include:

- Failed ceramic tile systems - continuing efflorescence at grout that obscures the intended black color, cracked/broken tiles, improper past re-pointing efforts, deteriorated/cracked grout, areas of rusted metal lath forcing tile out of plane, failed control joints, and biological growth in grout joints.

Failed grout in joint/efflorescence



Out of plane tiles potentially delaminated from wall



Seams in improperly repointed grout

Biological growth at grout in joints

Painted Concrete

Existing exterior walls are solid, reinforced, structural concrete with an elastomeric paint applied to the exterior surface. The interior side of these walls are covered with a furring wall filled with fiberglass batt insulation. Deficiencies noted include:

- Failed elastomeric coating - In many areas, the elastomeric paint (which is the concrete's primary defense from water) has been compromised, allowing water to become trapped behind the paint.
- Spalling concrete - Areas where moisture has infiltrated the coating has forced some patches of the concrete to spall.
- Condensation - The concrete wall has little resistance to exterior thermal conditions. The interior side of the mass wall frequently develops condensation which is then trapped within the furring wall. This creates and ideal environment for microbial and fungal growth within the furring cavity.

Bubbling at elastomeric paint

Insulation discolored by moisture from air or water infiltration

Water staining on interior side of concrete wall

Cracking at exterior side of concrete wall

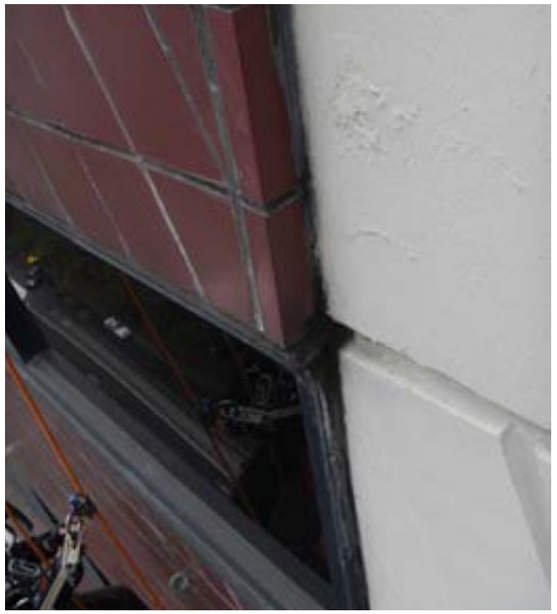
Failed elastomeric paint and loose concrete edge

Spall and rusted reinforcing at exterior concrete wall

Spall at exterior side of concrete wall

EXISTING BUILDING CONDITIONS

Adhesive and cohesive sealant failure



Weather tightness of transition dependent on sealant

Sealant applied over curtainwall drainage outlet

Multiple layers of sealant applications

Sealant applied under head flashing

Multiple layers of sealant applications

Complex material transition joints dependent on sealant

Joints at System Transitions

Existing Joint Treatments - The current building enclosure's resistance to leaks is entirely dependent on the use of sealants at locations where materials and systems transition from one type to another. This means that there is no opportunity to properly manage water through flashing, drainage channels or weeps. Therefore these sealants are the only line of defense against water infiltrating the building. Sealant issues observed include:

- Failed sealant joints - Existing sealant materials are experiencing both adhesive and cohesive failures.
- Improper sealant applications - In many instances, joint repair/maintenance was done by applying new sealant over existing sealant rather than removing it and doing proper surface preparation.
- Sealants applied to weeps - In many locations within the curtainwall assemblies and in some tile transitions, the few system weep holes that are existing have been covered with sealant, exacerbating the water issues.

EXISTING BUILDING CONDITIONS

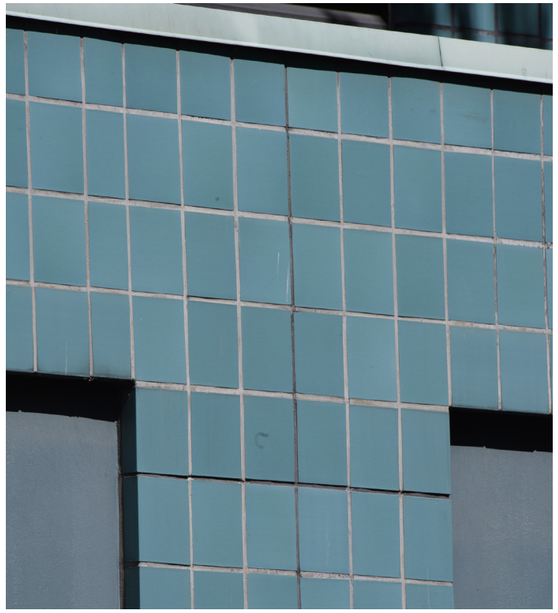
Detail/Dimensional Irregularities

The building design contains multiple features that were intended to maintain a set modularity or alignment. These items were adjusted in several different ways during construction sometimes resulting in undesirable conditions. These variations include:

- Irregular grout joint size - The existing grout joints vary from less than 1/2" to over 1" in width. Wide grout joints are more susceptible to shrinking and cracking.

- Tiles cut for size/shape - Tiles were frequently cut down in areas where openings or other features were intended to align with the tile module. While there are some tiles that were fabricated for specialty conditions like corners, there are many instances where field tiles were cut instead. This resulted in conditions where tile bisque is exposed to the elements and/or grout joints are irregular in width.

- Alignment - There appears to be a design intent to align window systems with the reveal pattern, however this alignment is irregular with some elements occurring at the reveal and others below the reveal. These conditions exist at most curtainwall/ribbon window locations.

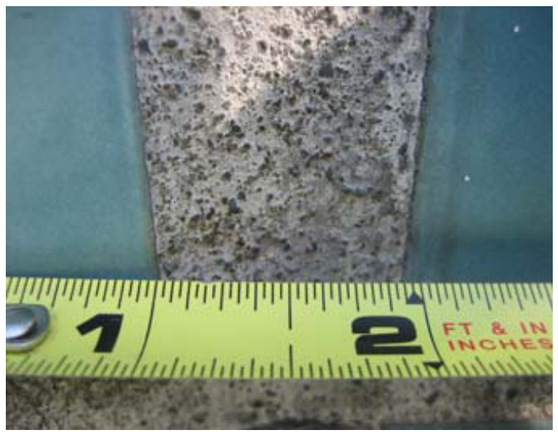


Tiles cut to different widths to maintain alignment

Ribbon window head below reveal

Ribbon window sill aligned with reveal

Irregular grout joint size



Irregular grout joint size

Field tiles modified for a corner condition

Modified tiles at keystone with irregular joints/alignment

EXISTING BUILDING CONDITIONS

BUILDING AND PROJECT HISTORY

Significance of the Portland Building

One of the key factors to the significance of the Portland Building is that it was truly at the forefront of a movement. It became an icon of the Postmodernist style and was widely published as a "salient example" of this new architectural movement even before it was built. When it was finally completed in 1982, it became the first large scale realized example of Postmodernist architecture. As such, it manifested much of what Postmodernism sought to bring back to architecture including ideas of context, applied ornament and symbolism. The Portland Building immediately became the focus of a growing stylistic debate within the architectural community about the evolution of the modernist theories of design.

In addition to its importance to the postmodern movement, the Portland Building was a seminal project for architect Michael Graves. At the time of the Portland Building design competition, Graves was not particularly well known and had mostly completed smaller works and private residences. The Portland Building became Graves' first completed major project and brought national attention to his architectural practice. The building defined a style that would come to be recognized as uniquely Graves' and propelled his career to a new level. In the years since, Michael Graves and his firm completed multiple notable large building projects and achieved success in the field of product design as well.

Defining the Portland Building's "Character"

The Statement of Significance Summary in the Portland Building's National Register Nomination focuses on two elements: 1) its importance as an influential project for the Postmodern movement, and 2) its importance as a defining work in the career of architect Michael Graves. As such, it is not significant for the workmanship or craft of the specific materials of which it is composed, but by the way that its composition conveys the theoretical ideas of a stylistic movement.

In terms of visual character, the dominant aspect of the Portland Building's design is expressed by its form and color. The National Register nomination notes key elements of the design as being "the bold and symbolic color, well-defined volumes, and stylized- and reinterpreted- classical elements." The diagram to the right shows that if one reduces the building to its basic geometric shapes and color palette, the result is an image that is instantly recognizable as the Portland Building. It is a building that is defined much less by the fine layer of details than the bold, sweeping design gestures.

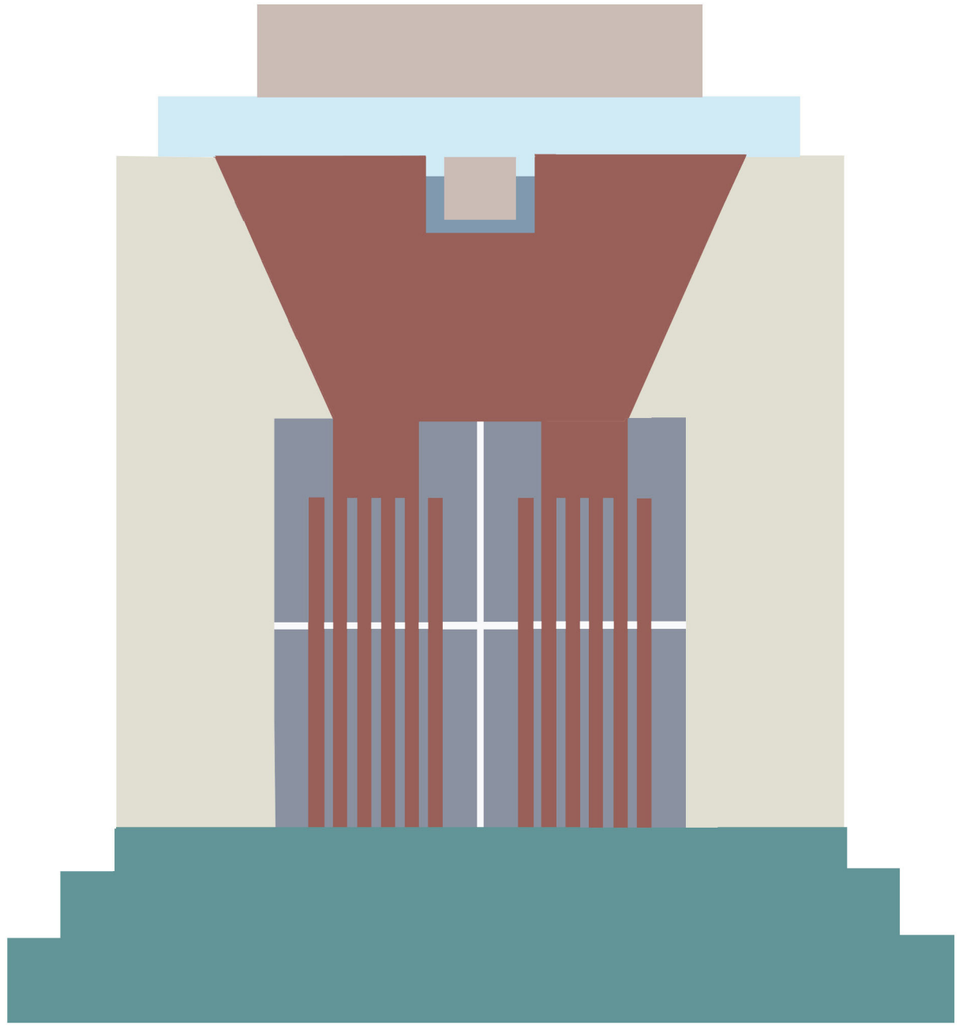


Diagram - The Portland Building Reduced to Basic Form and Color

"The first major-scale work of Graves' to be translated from paper to reality, the Portland Building was an architectural experiment in the supremacy of surface over form, paint over material, vocabulary over construction."[1]

The Portland Building's visual significance is largely tied to the ways in which it embodies many of the principles of Postmodernism. The use of reinterpreted classical elements, its response to site context, and the deep and layered use of symbolism put into physical form many of the ideas about Postmodernism that had previously been confined to theory. Graves' use of items like keystone shapes, column elements and oversized capitals speaks to the language of traditional civic buildings. Their large scale and simple geometric nature, however, give them a decidedly modern flair. The building uses ornament and color as both a way to impart visual interest to the design and to be symbolic. Elements such as the garlands and Portlandia's outstretched hand are used to represent ideas of welcome. The Portland Building makes great efforts to be contextual and responsive to its site. The thin red column elements that pick up similar colored columns on the portico of the adjacent City Hall building and the reflective quality of the glazing that reflects the cityscape help the Portland Building relate to its surroundings.

Ultimately, Postmodern architecture was a movement that sought to make buildings relate to people. The Portland Building represents a building that was intended to be of and for the City of Portland. Perhaps best said by Vincent Scully,

"...his building takes its place perfectly in Portland's solid grid between the river and the hills. By any reasonable definition of the term, it is an entirely modern building, finding new "objective correlatives" for every one of the great, traditional shapes which it employs, and reproducing none of them. Because of that it should be taken as a major and highly creative step toward the salvation of our cities from the mindless junk with which they have recently been strewn. It enhances the meaning and enlarges the emotional scope of the office building program, and as such it touches the very heart of the city, the place where we work. But it belongs to town government most of all and is a monument to the principle of civic pride."[2]

[1] *Bosker, Gideon and Lencek, Lena. Frozen Music: A History of Portland Architecture. Portland, 1985*
[2] *Scully, Vincent. "Michael Graves' Allusive Architecture", New York,1982*

PORTLAND BUILDING AS POST MODERNIST ICON

Defining the Portland Building's "Character"

In sharp contrast to the diagram on the preceding page, is this photo of the building under construction. Without the applied ornaments and surface treatments that provide the distinctive colors and shapes, the building is far less recognizable. This photo demonstrates how the building's base material quality does not define it's character. It is the application of surface coverings such as the existing tile and paint and ornamental pieces such as the garland features that truly make the building iconic.

The importance of the Portland Building as a seminal project for Michael Grave's is unquestionable. As one of his architecture firm's first sizable projects, the Portland Building had a huge impact on the trajectory of Michael Graves' career and was soon followed by other large commissions such as the Humana Building in Louisville, Kentucky and the San Juan Capistrano Library in southern California.

Over the course of his career, Graves became well known not only for his works of architecture, but for his many notable product designs as well. Graves was awarded many honors for his achievements including the prestigious AIA Gold Medal and a National Medal of Arts.

PORTLAND BUILDING AS POST MODERNIST ICON

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Postmodern Architecture

Postmodernism is a style that had an important influence in shaping the path of architecture despite its often polarizing aesthetic. The preceding modernist movement was characterized by pure, functional structures devoid of unnecessary ornamentation. A reaction against the neoclassical styles of the 19th century, modernism was fascinated by technology and the machine age and rejected references to classical styles and detail. The resulting buildings were often monumental structures seen by some as brutal and austere. As modernist architecture grew in popularity, a growing number of architects became disillusioned with the style. These designers saw modernist buildings as machines with no relation to the people dwelling within or to the context surrounding them.

Postmodernism developed as a rejection of the rigid tenets of modernism, and sought to restore humanity to architecture. Postmodernist architects embraced the integration of ornamentation and symbolism back into buildings. Traditional architectural building elements such as columns, porticos, and gables were reintroduced and often reinterpreted in oversized scales and bold colors. Postmodernism revived classic organizational techniques as well, such as the division of building facades into distinct base, shaft and capital features. The use of representational symbolism was also a key element of the style and was used as a way to connect postmodern buildings to their surroundings. Postmodern architecture was not afraid to be ornamental, referential, incongruous and even whimsical.

Vanna Venturi House, 1964 - Robert Venturi

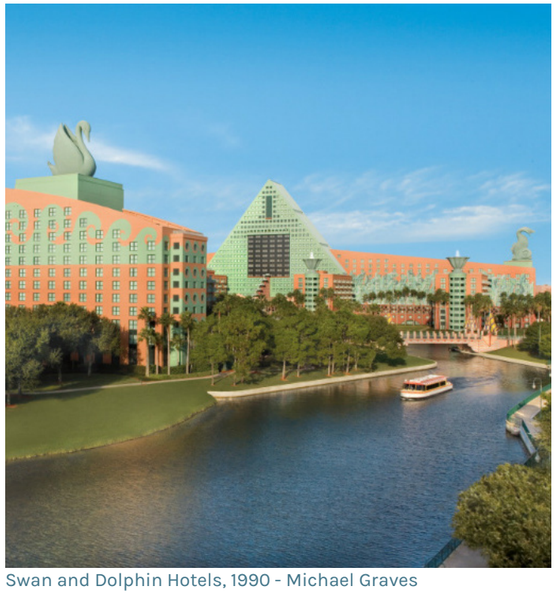
Key Elements of Postmodernism

- Heavily referential to history and context
- Use of classical organization and features
- Use of ornamentation and symbolism
- Use of reinterpreted classical or historical features, often oversized
- Use of color and stylized forms

AT&T Building, 1984 - Philip Johnson

Piazza D'Italia, New Orleans, 1978 - Charles Moore

Harold Washington Library, 1991 - Hammond, Beeby and Babka



Swan and Dolphin Hotels, 1990 - Michael Graves

How have other buildings dealt with similar issues?

While the application of preservation standards to post-war architecture is still relatively new, there have been several examples of significant works of modern and postmodern architecture that have undergone extensive rehabilitations and replacement of failed materials and systems. These buildings all struggled with issues similar to the Portland Building in that they were originally constructed with early iterations of building systems (many of which had almost no track records) or had design flaws based on the industry's limited understanding of building envelope systems at the time.

The shift to modern era construction types and systems holds many challenges to the use of standard preservation methods and justifications. While preservation has traditionally endeavored to retain existing materials or replace "in kind," modern era buildings do not always facilitate those techniques. The nature of the materials and the ways that they are used is fundamentally different in modern architecture than in traditional buildings. Wayne Curtis wrote about these challenges in 2002 in an article for Preservation magazine[1]. In the article he notes "Traditional buildings age gracefully, acquiring patina through the years; patinas don't enhance modern structures." The article notes that traditional buildings are usually made of "robust" materials that are "forgiving" while modern construction consists of much more thin and delicate assemblies that "leave very little margin for error. And consequently when they need to be repaired, it requires substantial replacement of what had been there."

In addition to the challenges of avoiding material replacement, many modern buildings pose similar challenges to the notion of replacement "in kind". As the following studies show, the Portland Building is not alone in dealing with issues borne of inherent design flaws. Whether prompted by budget constraints or undeveloped technology or understanding of a certain material or system, sometimes the basic design proves untenable. The issues faced by these modern-era buildings will require an adjustment to how "character" is defined. For these buildings, the materials and workmanship become less critical to the architectural character than the building's expression of a larger idea.

[1] Curtis, Wayne. "No Clear Solution." Preservation, September/ October 2002, pp.46-51, 118.

BMA TOWER
Kansas City, MO

The BMA Tower is a modernist style office building in Kansas City, Missouri, designed by Bruce Graham of Skidmore, Owings & Merrill. Graham would go on to lead the design of two of the most famous skyscrapers in the United States, the John Hancock Center and the Willis Tower (formerly the Sears Tower). The BMA Tower was individually listed in the National Register of Historic Places in 2002 despite the fact that its original marble cladding had been replaced with neoparium glass panels.

Completed in 1963, the tower was created to be a clean expression of modernist ideas. With a grid representing floor slabs and columns, and a window wall set back from the edge, the design allowed the structure to be the dominant visual element. The simplicity of the stark black and white facade is noted in the National Register nomination form as exemplifying "the Modernist philosophy of architect Ludwig Mies van der Rohe that 'less is more'."

The expression of the floor slabs and columns was originally achieved with a cladding of 1 1/4" thick white marble panels. But by the mid-1980s, many of the original marble panels had developed issues. As a result of some panels falling off of the building, the building owners commissioned an investigation into the cladding problems. The investigation noted a variety of issues with the original marble panels including inconsistent material quality, insufficient thickness, and improper attachment method. After concluding that "the facade marble is structurally unsafe at this time," the design team began exploring options including re-cladding the entire building. Due to a variety of constraints and the limited understanding of marble as a high-rise cladding material, alternate materials were examined.

The selected replacement material was neoparium glass, a crystallized glass panel product from Japan that somewhat simulated the look of marble. These glass panels offered the strength and dimensional stability required for a high-rise building application while achieving a similar visual effect. In 1986, all of the original marble was removed and replaced with neoparium glass.

In 2002 the building was nominated and listed in the National Register of Historic Places. In the *Integrity Assessment* portion of the nomination form the justification reads:

"As described in National Register Bulletin 15, an assessment of integrity requires a clear understanding of three things: The ways in which a property is significant; those physical elements that define its significance; and the integrity retained by these elements. The BMA Tower is significant for its clear expression of the tenets of architectural Modernism expressed by Ludwig Mies van der Rohe, and as a rare example of Modern Movement architecture in Kansas City. Therefore, in evaluating the integrity of the BMA Tower emphasis must be placed on the areas of ***Design, Setting, Feeling*** *and* ***Association****."*

The character of the BMA Tower is further explained as truly defined by the simplicity, symmetry and formal arrangement. The nomination goes on to state that "None of the changes to the building's materials, described above, impede the viewer's understanding of the original design."

ARONOFF CENTER FOR DESIGN
University of Cincinnati
Cincinnati, OH

The Aronoff Center is a unique Postmodern-style building that connects three previously separate structures occupied by the University of Cincinnati's College of Design, Architecture, Art and Planning. A campus landmark designed by noted architect Peter Eisenman, it was one of the first in a series of buildings by marquee architects intended to attract national attention for the University. A daring departure from its 1950s international style predecessors, the Aronoff is defined by its bold geometry and bright colored panels.

Completed in 1996, the building was originally clad with an adhered exterior insulation finish system (EIFS) which was chosen as a substantial cost savings over the tile cladding that Eisenman envisioned. Within a few years of its completion, the building was dealing with water infiltration issues at transitions and openings and the EIFS panels began to delaminate from the supporting structure. Various attempts to repair the system were unsuccessful and a mere 14 years after its completion, the university undertook a full replacement of the enclosure. In 2010, a new pressure equalized open joint rainscreen system with painted aluminum panels was installed over a weather barrier that replicated the original EIFS cladding. This system provided the building with a new facade that preserved the original appearance and created a building that will stand the test of time.

STANDARD OIL BUILDING
Chicago, IL

An influential work by noted modernist architect Edward Durell Stone, the Standard Oil Building was the tallest building in Chicago at the time of its completion in 1974. It was originally clad entirely in thin Italian Carrara marble panels. This material failed to resist thermal and wind pressures, and by the mid-1980s many of the marble panels had deformed and cracked. A short-term stabilization effort was undertaken using steel straps to ensure the panels would not fall off of the structure while the owner looked for a more permanent solution.

In the early 1990s, the entire building cladding was replaced with Mount Airy white granite, which is a stronger, more durable material. In addition to the change in material, the thickness of the panels was increased from 1 1/4" thick to 2" to provide the necessary stability to perform properly.

LEVER HOUSE
New York, NY

Listed in the National Register of Historic Places in 1983, the Lever House is a pioneer of early curtainwall skyscraper design. Designed by influential architect Gordon Bunshaft of Skidmore, Owings & Merrill, the building was instantly hailed as a wonder of modern American architecture.

Framed in carbon steel and relying only on sealants to keep out moisture, the 1952 structure quickly began experiencing problems. Moisture infiltration rapidly attacked the corrodible steel framing and expanding oxidation began cracking the glazing panels one by one. Piecemeal replacements left a building that looked more like a "patchwork quilt" than the pure gleaming tower it was intended to be.

By the late 1990s the building ownership started looking for solutions to save the building. As the existing steel framing was beyond repair and the use of carbon steel in the replacement would have been susceptible to the same failures in the future, a new skin of modern curtainwall framing and glazing was selected. Completed in 2002, the re-cladding project was hailed as a successful preservation effort and received an award from the New York City Landmarks Conservancy for restoring the original design.

UN SECRETARIAT BUILDING
New York, NY

Designed by a team of master architects including Le Corbusier and Oscar Niemeyer, the Secretariat is the hallmark building of the UN complex. Completed in 1952, it is one of the first glass curtain wall high rise buildings in New York City.

The building was challenged with performance issues soon after occupancy due to the intense solar heat gain through the single pane glazing. In order to alleviate this, a reflective film was added. Unfortunately, the film did not perform well and in many areas added thermal stress that caused the glass to crack.

In 2012, a full replacement of the existing curtain wall assembly was undertaken. The existing glazing and framing was replaced with a new thermally broken double glazed unitized curtain wall system that replicated the mullion layouts, but altered the internal configuration to solve the original performance issues.

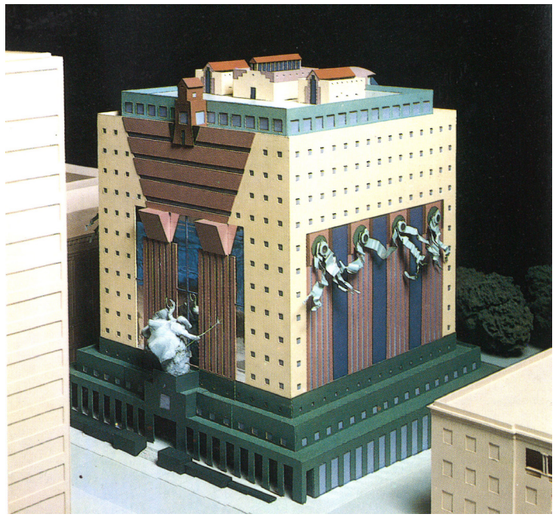
CROWN HALL
Illinois Institute of Technology
Chicago IL

Listed in the National Register of Historic Places in 2001, Crown Hall is considered to be on of Mies van der Rohe's greatest examples of modern architecture and the "crown jewel" of the IIT Campus. The simple facade structure is composed entirely of glass and steel and is a testament to the purity of modernist design.

Completed in 1956, Crown Hall utilized construction methods that were revolutionary in their simplicity. The steel structure that supports the building is entirely exposed both inside and out protected by only a coat of paint.

Over the years, the building began to show the effects of the harsh Chicago climate. Condensation issues, due to the conductivity of the steel and exacerbated by the use of salt in the wintertime to melt ice and snow, had caused substantial corrosion to the steel frame and especially the glazing stops. Temperature fluctuations in the frames and strong Chicago winds had also cracked many of the original glazing panels resulting in piecemeal replacements.

By 2005, the stark steel and glass structure was in dire need of repair. At this time, IIT began a full renovation project that replaced all of the building's glazing and stops in addition to reconstruction of the south porch. Due to the fact that the glazing system for this building composed the majority of the exterior envelope, the project was in essence a full facade replacement. The glass was replaced with modern glazing that is stronger than the original annealed glazing and, due to new innovations in glazing, was able to be tempered and sandblasted to provide the translucence that was key to the original design.



PROJECT OVERVIEW

Project Vision Statement

Provide a resilient building that serves community and workplace needs for current and future City operations for years to come.

Project Mission Statement

Reconstruct the Portland Building in a fiscally responsible way, creating a functional, accessible, sustainable, seismically upgraded workplace.

Project History and Business Need

The existing building has significant deficiencies including but not limited to: water intrusion, structural degradation, end-of-life mechanical and electrical systems, expensive operations and maintenance, and inadequate technology infrastructure. The building was also built prior to significant revisions to the building code in the 1990s that provided improved seismic performance criteria. Starting in 2012, multiple studies and assessments were completed addressing various fiscal and business scenarios that included: building a new City building or moving employees to another building within the downtown or east Portland area. It was ultimately determined that the best option was to invest in the current asset and reconstruct the Portland Building. This option demonstrates fiscal responsibility, preserves the existing government center in the downtown core, is appropriate for the business needs of the City employees, provides convenient access to the public and maintains a historically significant building.

On October 21, 2015, Portland City Council adopted a resolution directing the Office of Management and Finance to develop a Request for Proposals and solicit bids for the reconstruction of the Portland Building for an amount not to exceed $195 million for the design, relocation, reconstruction and project management and be complete by the end of 2020.

Project Principles

- Accessibility
- Cost Consciousness
- Historic Preservation
- Quality Workplaces
- Seismic Resiliency
- Sustainability

Project Requirements and Expectations

While this project initially began as a maintenance project, it has become evident that solving the building's issues will require an extensive scope of work. So much so, that it provides an opportunity to achieve goals beyond the bare necessities.

At a minimum, the project will do the following;

- Eliminate water intrusion issues
- Repair structural degradation and upgrade seismic performance to meet current code for existing buildings
- Upgrade/replace HVAC and other building systems that are at/near the end of their useful life
- Upgrade accessibility of the building

Additionally, the project scope provides an opportunity to:

- Preserve the historic integrity of the building
- Meet the City's goals for equity and inclusion as set forward in the Equity and Inclusion Plan for the project, as well as goals for DWMESB participation in consultation services
- Work with the Bureau of Planning and Sustainability to ensure that the City's Green Building Policy is appropriately applied to the project, including the expectation it will achieve a minimum certification of LEED Gold
- Improve the quality of the workplace
- Improve the technology infrastructure to support current and future technology solutions

The Project will also require moving and relocating staff to accommodate the construction work. The project will do this with the goal of minimizing disruptions of staff and services to customers.

Aspirational Goals and Anticipated Benefits

- Maintain the historic and iconic status of the building
- Incorporate current best practices in construction, design and technology to create a 21st century facility that meets community, business and operational needs
- Follow Universal Design practices
- Create a flexible and efficient building
- Demonstrate fiscal responsibility by using high quality and durable materials and systems
- Provide systems and materials that are economical to operate and maintain
- Balance remodel costs with the need to keep life-cycle costs low

DESIGN PROPOSAL

Proposed Envelope Solution

In determining a solution for the Portland Building it is important to consider the following:

- The Portland Building suffers from envelope issues that are severe and inherent in its flawed construction detailing
- The current level of deterioration is beyond repair, and innovative technical solutions that truly address these issues are required to save the building
- The Portland Building is the workplace for over 1,300 City employees and needs to function properly for the people who use it

With these considerations in mind and after careful study of the existing enclosure, it has become clear to the design/build team that removing and replacing elements “in kind” will not remedy the problems with the Portland Building’s envelope. The team has determined that the only viable way to provide a long-term remedy for the extensive and severe envelope failures is to add a new rainscreen enclosure system over the entirety of the existing façade. While previous reports and studies had already made this recommendation at the tile clad portions of the building, the project team determined that any scenario that attempts to integrate rainscreen systems with the concrete barrier wall will ultimately fail over time. The existing building’s reliance on sealant between these wall types has proven to be an untenable condition and should not be repeated.

Because of the way that the building is detailed, screening the concrete to shed water, relieve wind pressure, and control temperature fluctuations is the only approach that will successfully prevent leaks, arrest deterioration, and provide a functional interior environment. This rainscreen system will provide the building with a protective layer that it desperately needs. Consequently, there is no need to demolish the existing materials as the new system could be installed over them as a reversible intervention. The proposed rainscreen system and materials have the ability to replicate the exterior enclosure appearance, planar relationships and joint patterns.

In some cases, the building’s failed systems cannot be replaced with like materials. Similar to many of our precedent studies, there are issues that must be addressed where materials are not suitable for their intended applications or there are existing building limitations. In the case of the concrete, the existing building structure cannot bear the additional weight that pre-cast concrete panels would add, so the proposed replacement material is aluminum panel painted to match the existing painted concrete. Mortared ceramic tile systems do not perform well in the wet climate of the Pacific Northwest, so the proposed replacement material is mechanically fastened terracotta tile. What is most critical is that the proposed new glass, aluminum panels, and terracotta tile will be carefully detailed to maintain the existing look and feel of the building. By achieving these objectives, the rainscreen solution will preserve the design intent of the original exterior and protect an important and valuable resource for the City of Portland.

The rainscreen concept is the best possible enclosure remedy for The Portland Building, as it closes gaps in the barrier and shields air, water and thermal leak locations in the existing enclosure from exposure to weather. The new high-performance enclosure will protect the building and its occupants from the elements while significantly improving the energy performance of the building. The proposed system is comprised of panels, filled with insulation, that cover all surfaces. Pressure equalization engineered within the new system effectively diverts air and water away from joints so they remain dry, and thus cannot leak. This new insulative layer warms walls in winter and keeps them cool in summer, stabilizing interior surface temperatures so occupants are comfortable and mechanical performance is improved. It also serves to alleviate condensation, eliminate thermal bridges, and reduce energy loss.

A more detailed explanation of the technical benefits of the rainscreen solution as well as a brief summary of other systems and materials considered are included in Appendix A: Facade Forensics Enclosure Report.

The proposed changes do not compromise the integrity of the Portland Building’s character. With materials and workmanship being less critical for this style of building, the new skin over the historic failed skin does not irrevocably harm the resource’s integrity. As stated in the National Register nomination form, “The building’s style was expressed through paint and applied ornament that implied classical architectural details…” In addition to continuing to communicate the building’s form, diagrammatic areas of shape and color, and its ornament, the design for the reconstruction also captures smaller design components that affect integrity including relationship between parts and planes; reveals/shadow lines; sheen, texture, and reflectivity; material differentiation; and areas of increased design emphasis/material quality at the pedestrian level. All of these efforts preserve the form and integrity of the resource.

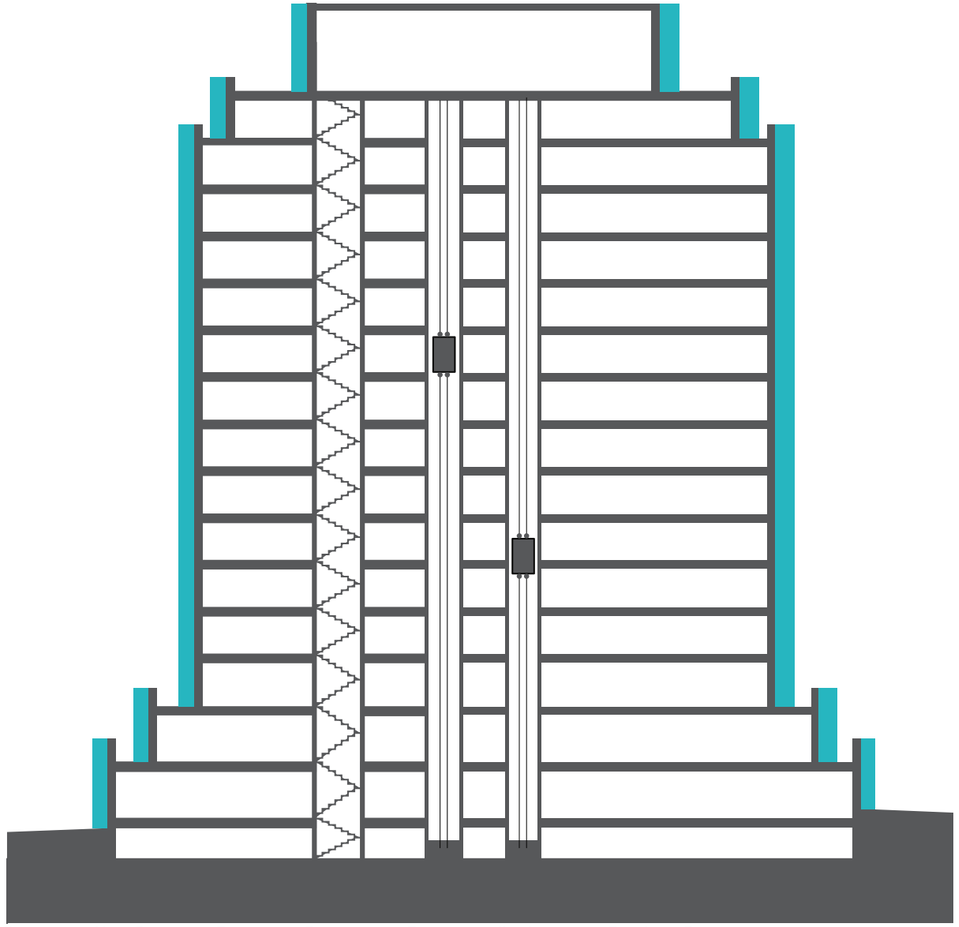
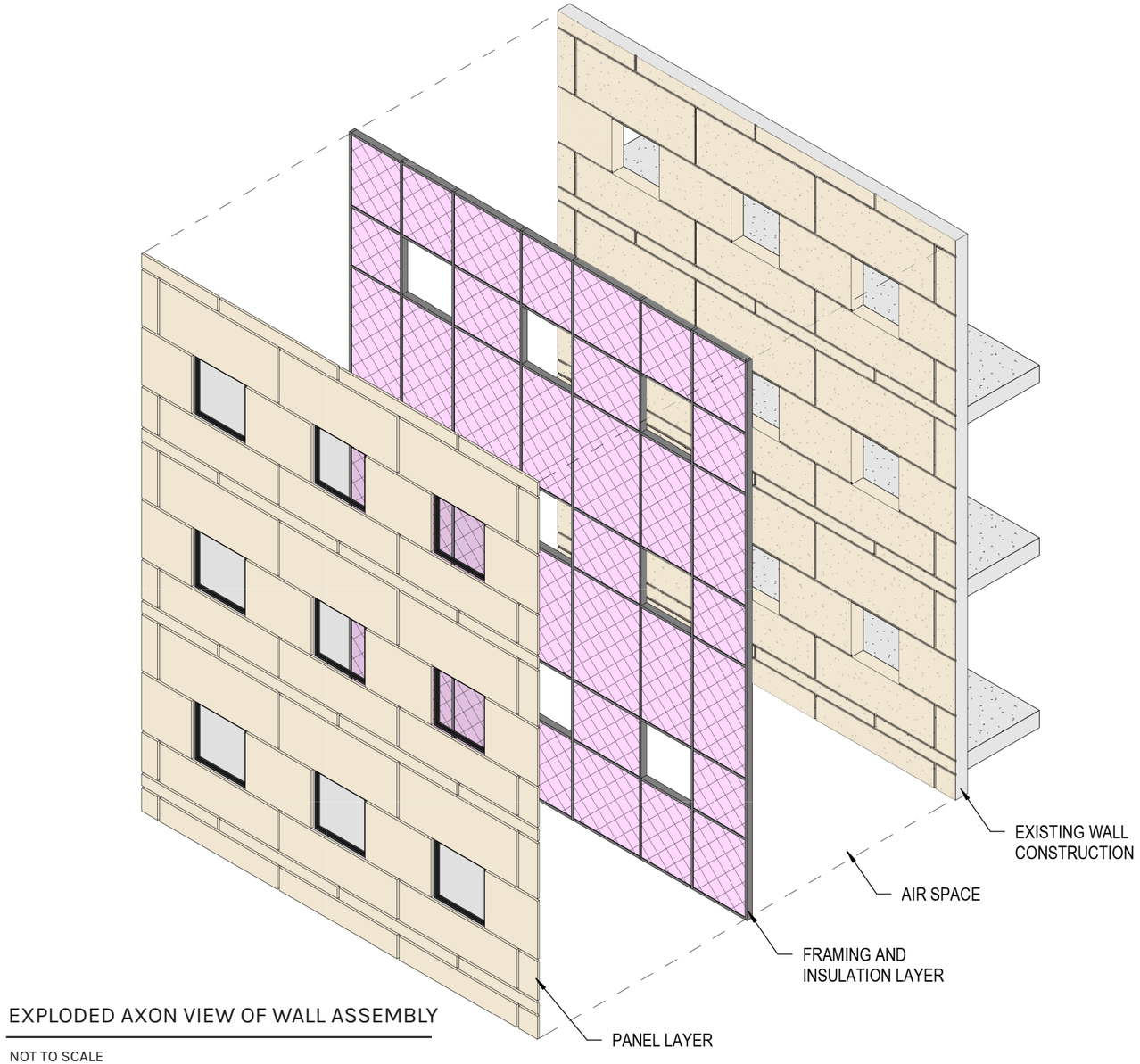
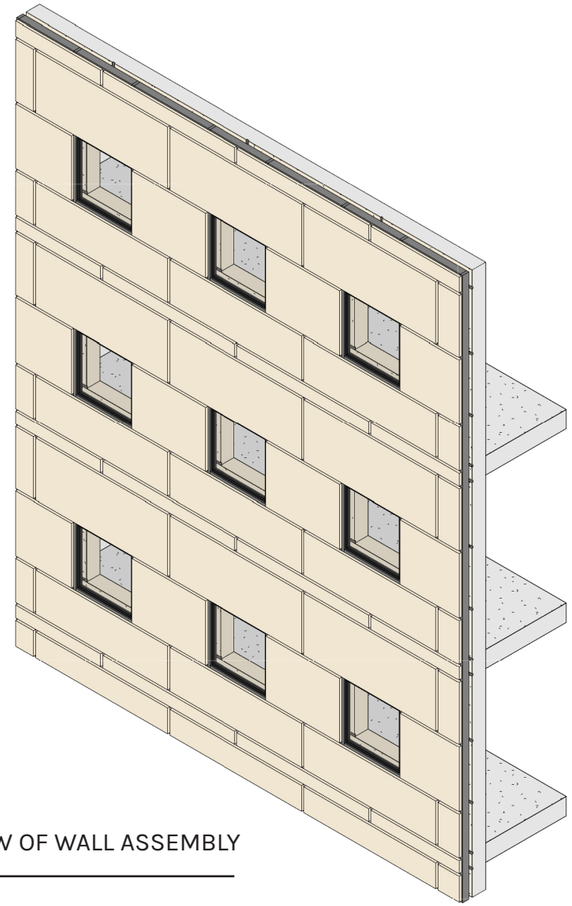


Diagram - New Pressure Equalized Rainscreen Enclosure System over Existing Building



EXPLODED AXON VIEW OF WALL ASSEMBLY

NOT TO SCALE



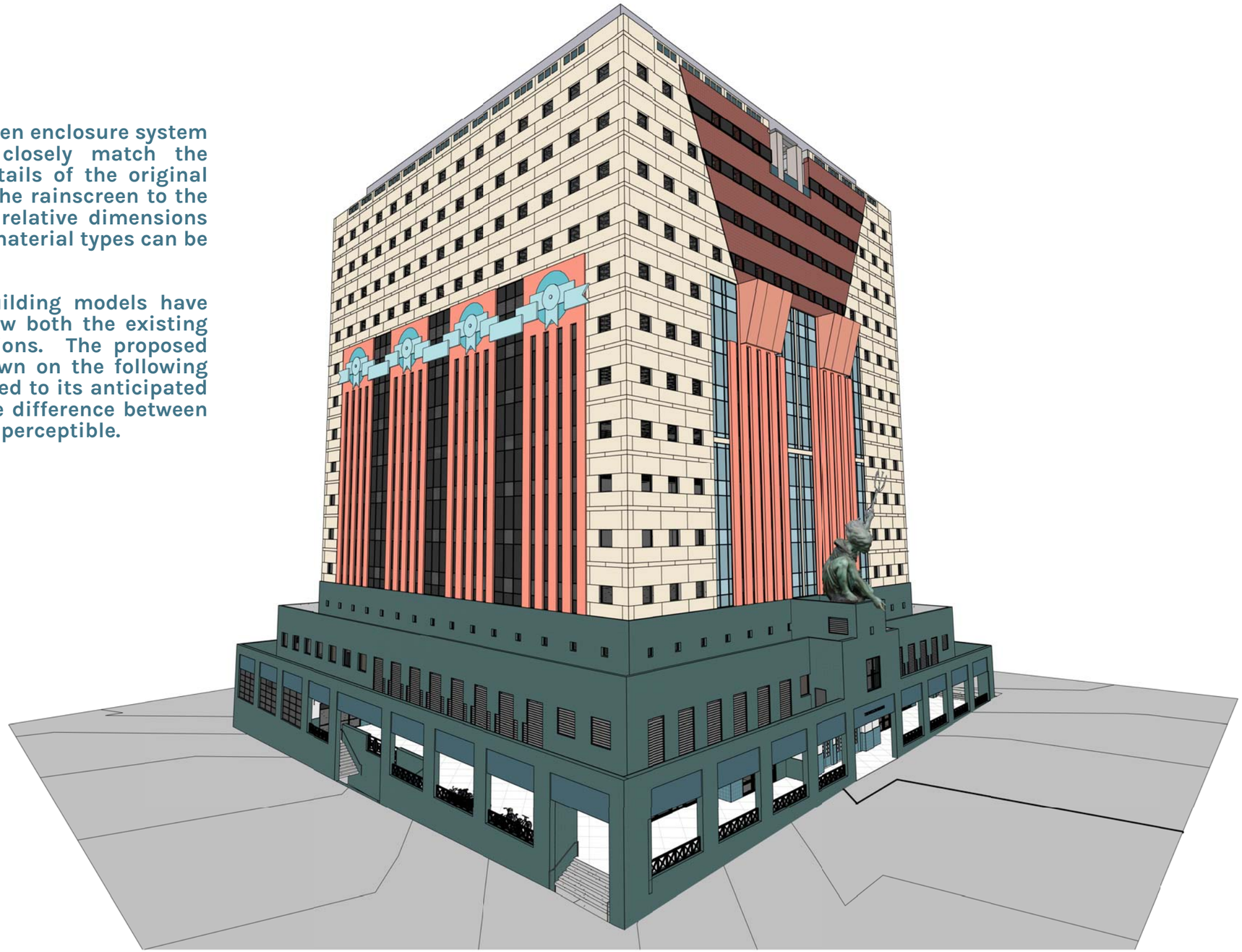
AXON VIEW OF WALL ASSEMBLY

NOT TO SCALE

RAINSCREEN CURTAINWALL ASSEMBLY

The proposed rainscreen enclosure system has the ability to closely match the colors, forms and details of the original building. By adding the rainscreen to the entire enclosure, the relative dimensions between system and material types can be maintained.

The following two building models have been rendered to show both the existing and proposed conditions. The proposed cladding system, shown on the following page, has been modeled to its anticipated thickness and yet, the difference between the views is almost imperceptible.

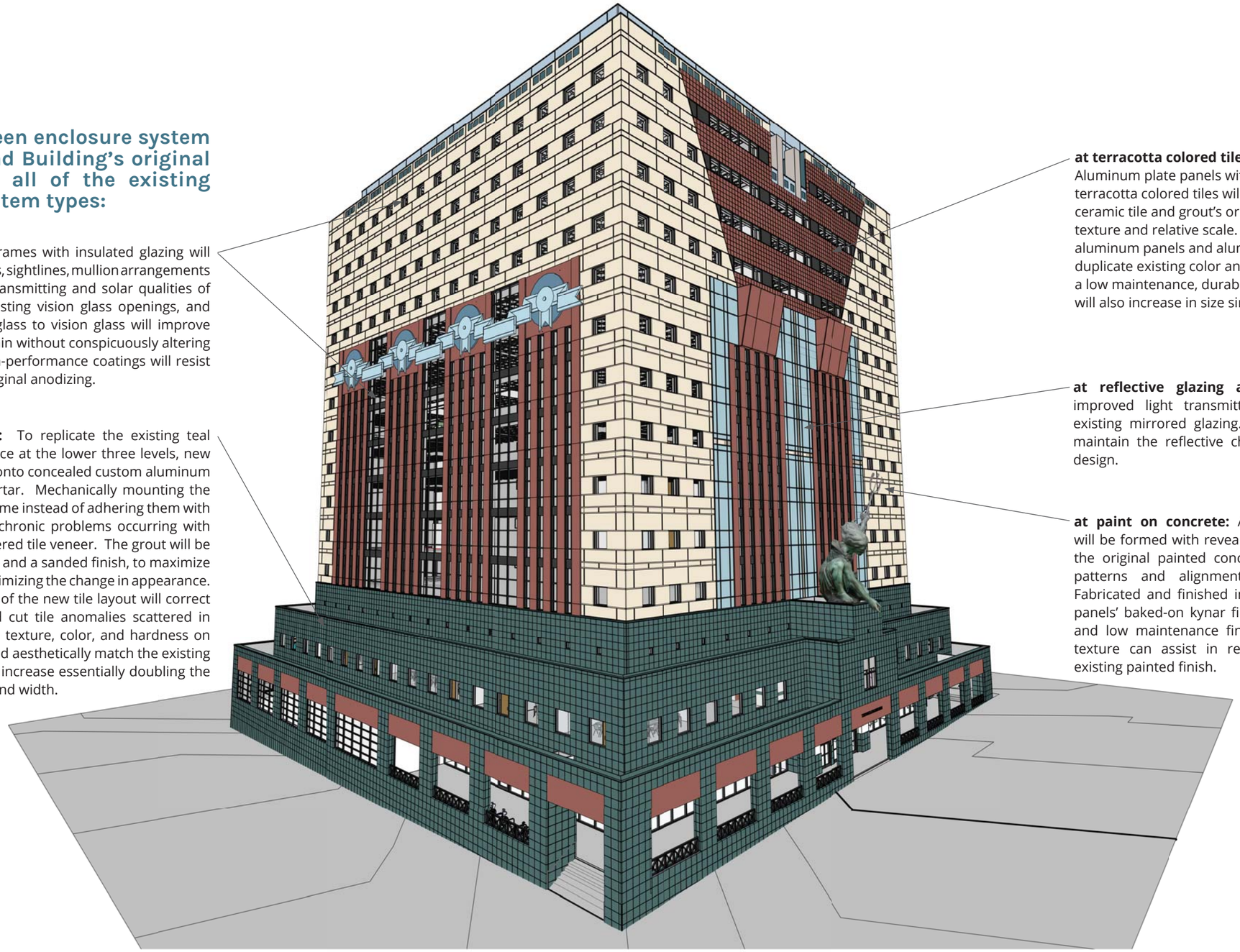


OVERALL BUILDING PERSPECTIVE - EXISTING

The proposed rainscreen enclosure system replicates The Portland Building's original exterior surfaces for all of the existing primary enclosure system types:

at openings: Aluminum frames with insulated glazing will replicate the original frames, sightlines, mullion arrangements and colors. Better light-transmitting and solar qualities of new glass, maximizing existing vision glass openings, and changing some spandrel glass to vision glass will improve daylighting and cut heat gain without conspicuously altering exterior appearance. High-performance coatings will resist weathering better than original anodizing.

at teal tile on concrete: To replicate the existing teal glazed clay tile hard surface at the lower three levels, new terracotta tiles will mount onto concealed custom aluminum frames, without using mortar. Mechanically mounting the tiles to a hidden backup frame instead of adhering them with mortar eliminates risk of chronic problems occurring with the existing building's adhered tile veneer. The grout will be replaced with hard silicone and a sanded finish, to maximize the performance while minimizing the change in appearance. Thorough pre-engineering of the new tile layout will correct unwanted wide joints and cut tile anomalies scattered in the existing facade. Glaze texture, color, and hardness on terracotta will physically and aesthetically match the existing ceramic tiles. Tile size will increase essentially doubling the existing tile size in height and width.



at terracotta colored tile on concrete: Aluminum plate panels with applied aluminum terracotta colored tiles will replicate the original ceramic tile and grout's original patterns, color, texture and relative scale. Kynar finishes on aluminum panels and aluminum tiles will duplicate existing color and sheen while providing a low maintenance, durable finish. The new tiles will also increase in size similar to the base.

at reflective glazing area: New glass with improved light transmittance will replace the existing mirrored glazing. The new glazing will maintain the reflective character of the original design.

at paint on concrete: Aluminum plate panels will be formed with reveals and painted to match the original painted concrete surface. Reveals, patterns and alignments will be replicated. Fabricated and finished in a factory, the custom panels' baked-on kynar finish is a proven, stable and low maintenance finish. The ability to add texture can assist in replicating the building's existing painted finish.

OVERALL BUILDING PERSPECTIVE - PROPOSED

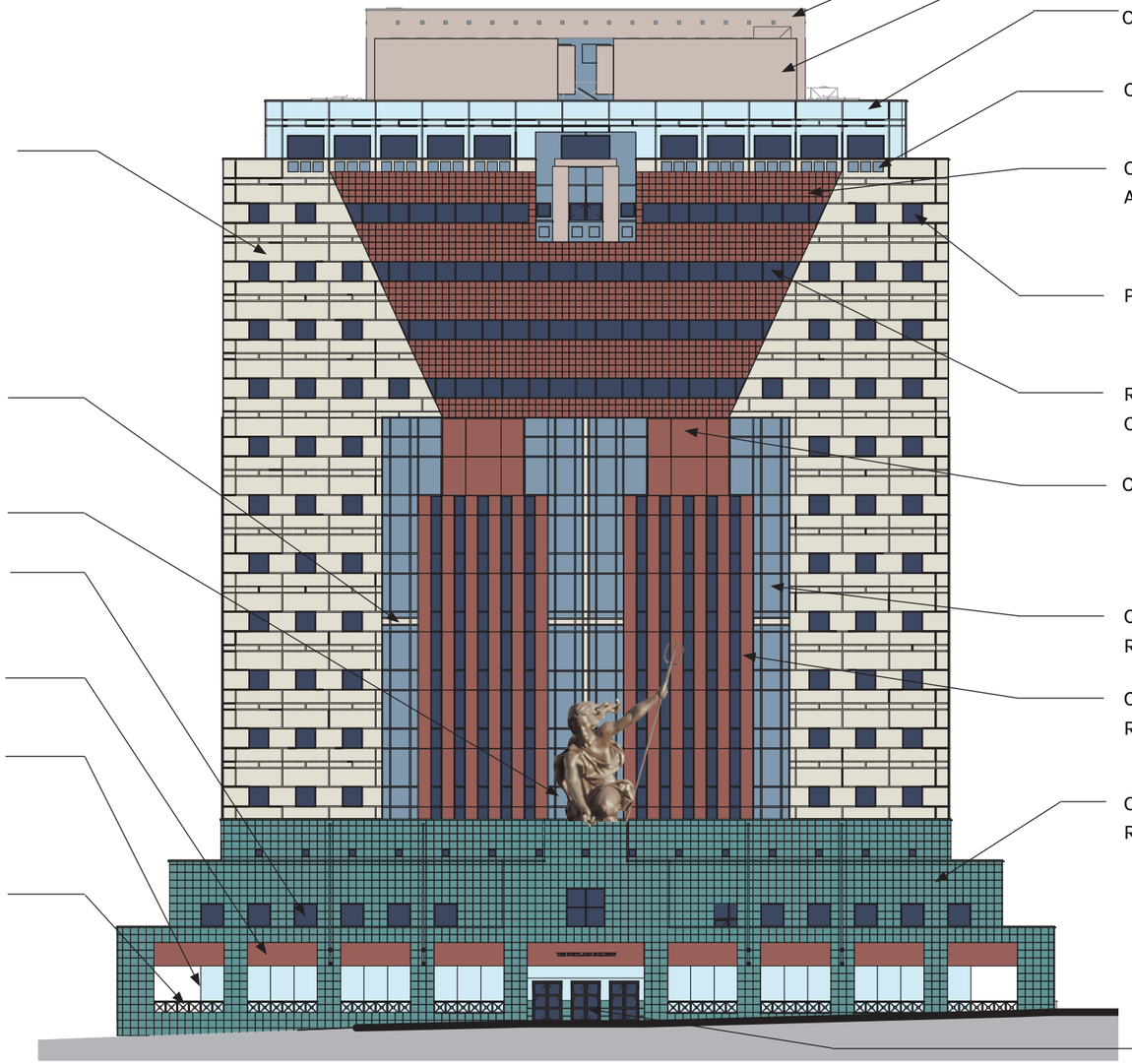
Historic Exterior Photo - 1983

Existing Exterior Photo - 2017

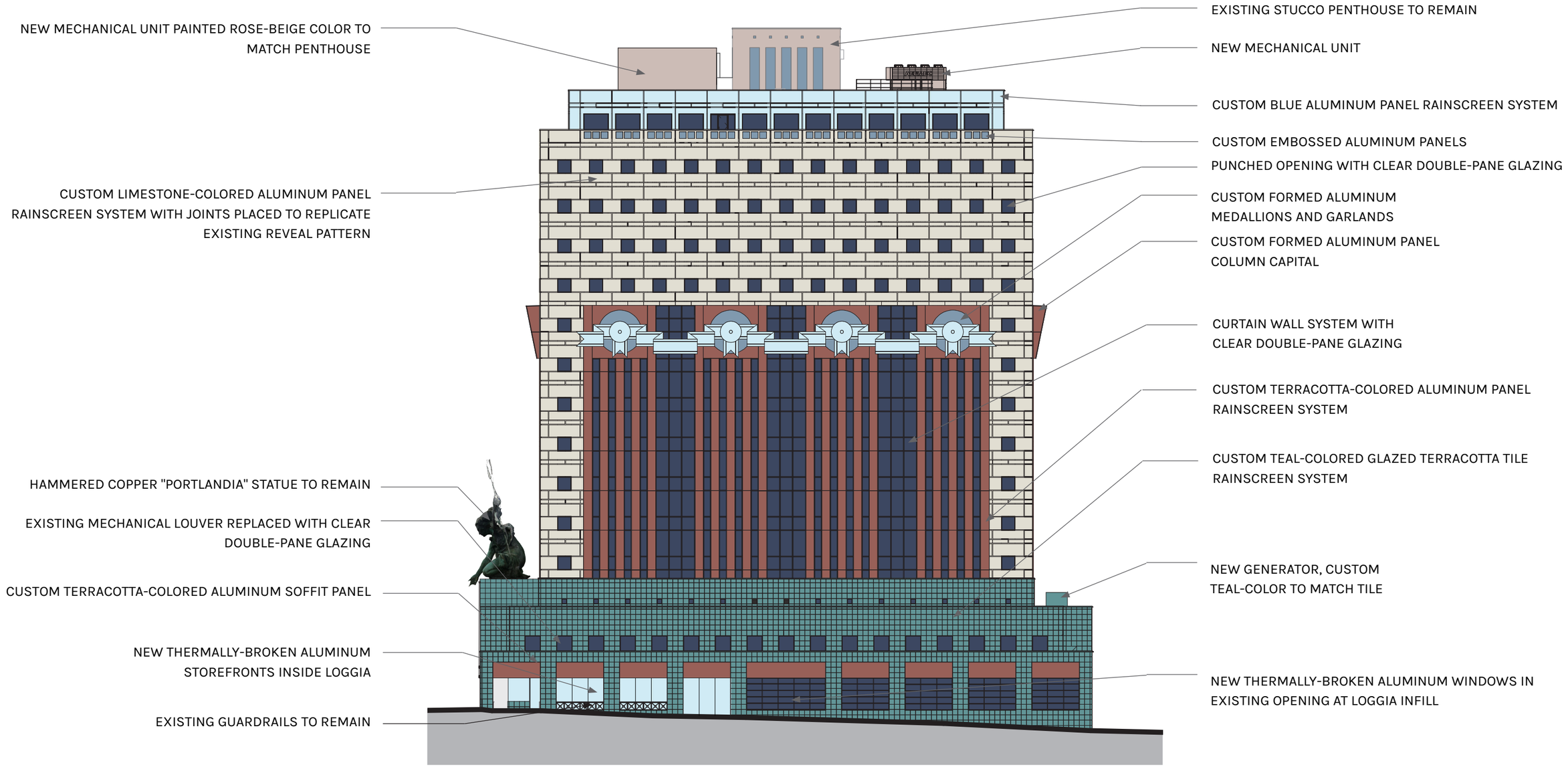
EXISTING EXTERIOR PHOTO

PROPOSED
EXTERIOR RENDERING

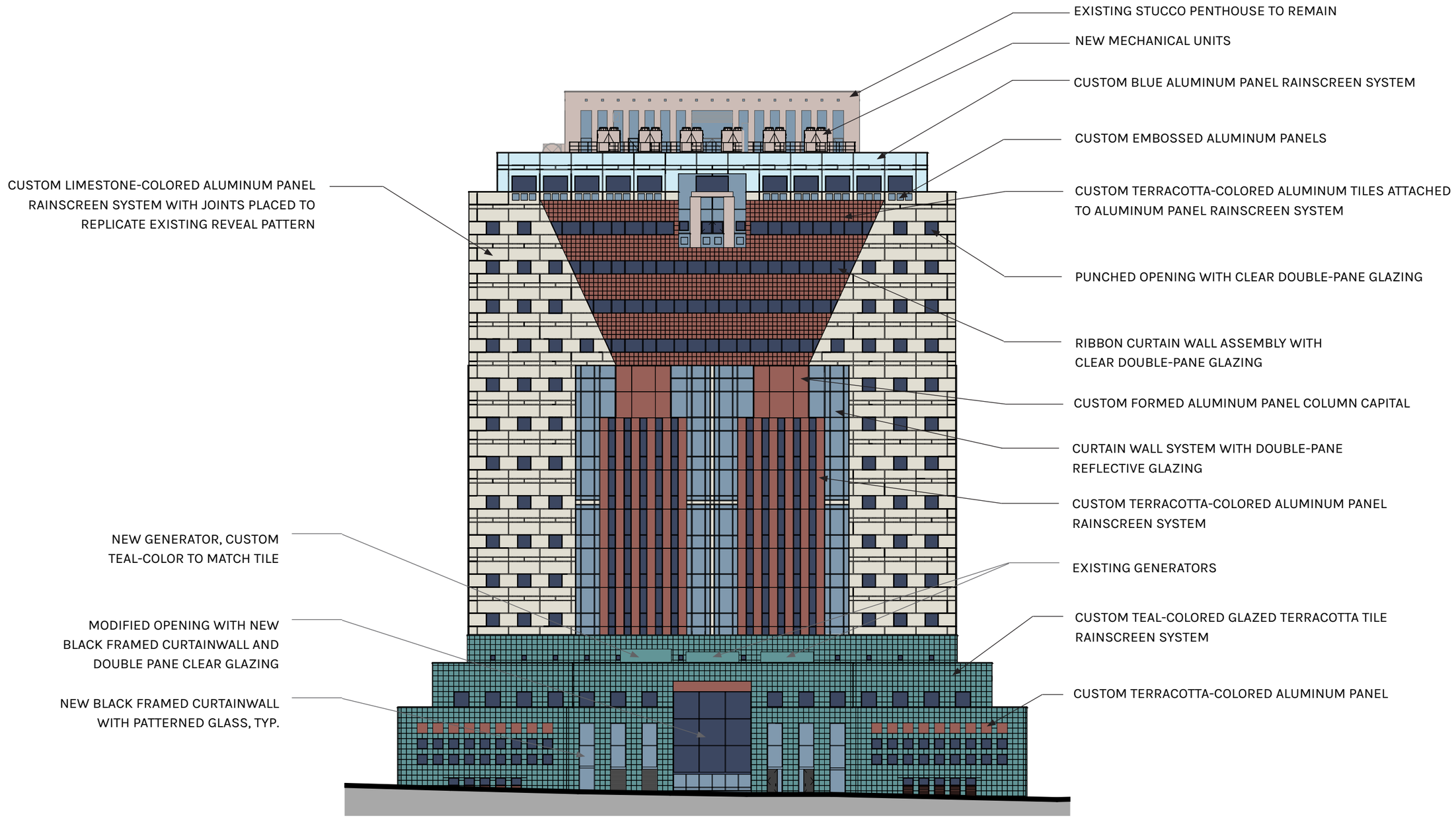
NOTE: PROPOSED COLORS ARE INTENDED TO BETTER REPLICATE ORIGINAL HISTORIC PAINT COLORS PROVIDED BY MICHAEL GRAVES ARCHITECTURE AND DESIGN.



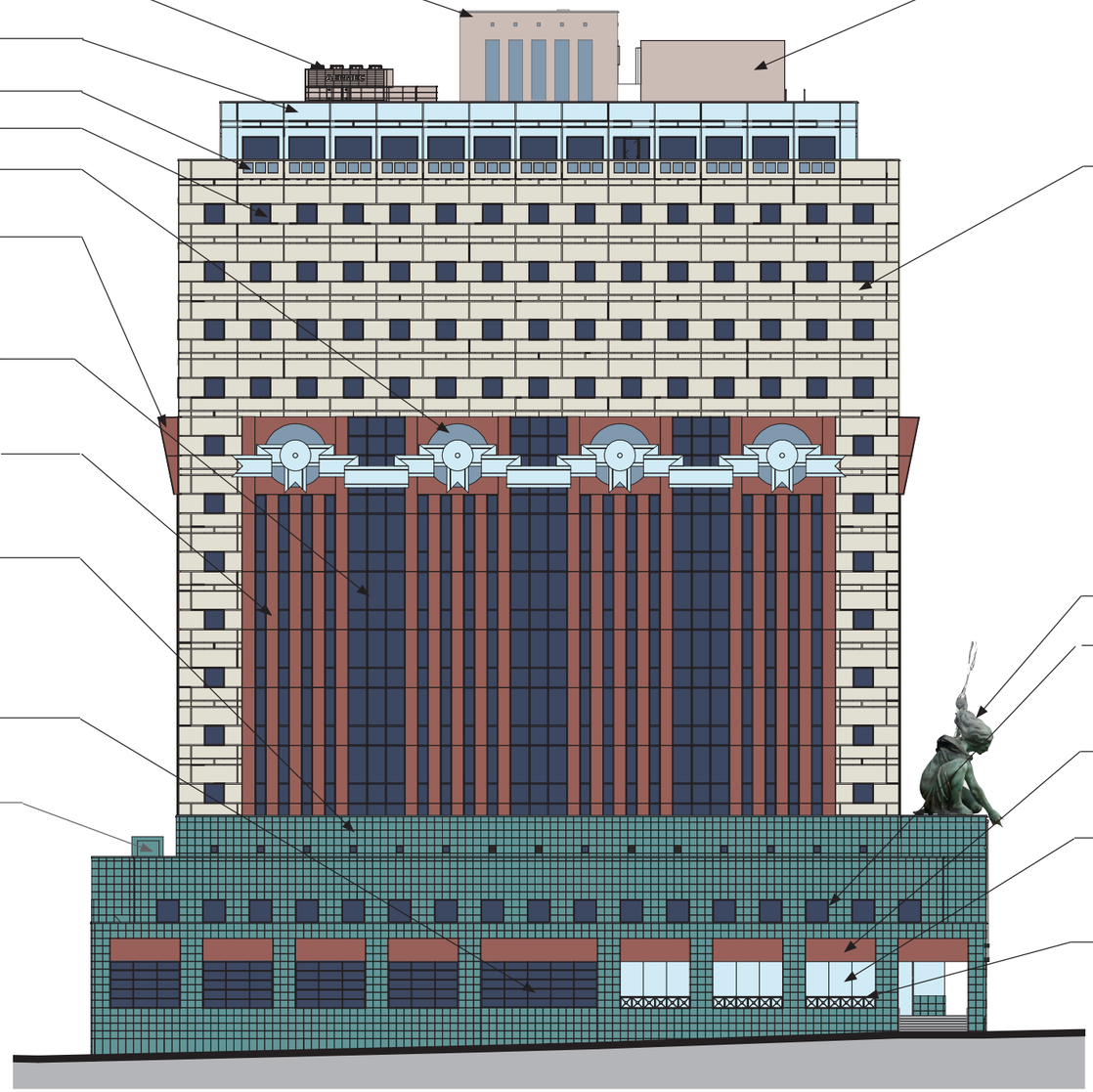
PROPOSED ELEVATION MATERIALS - WEST



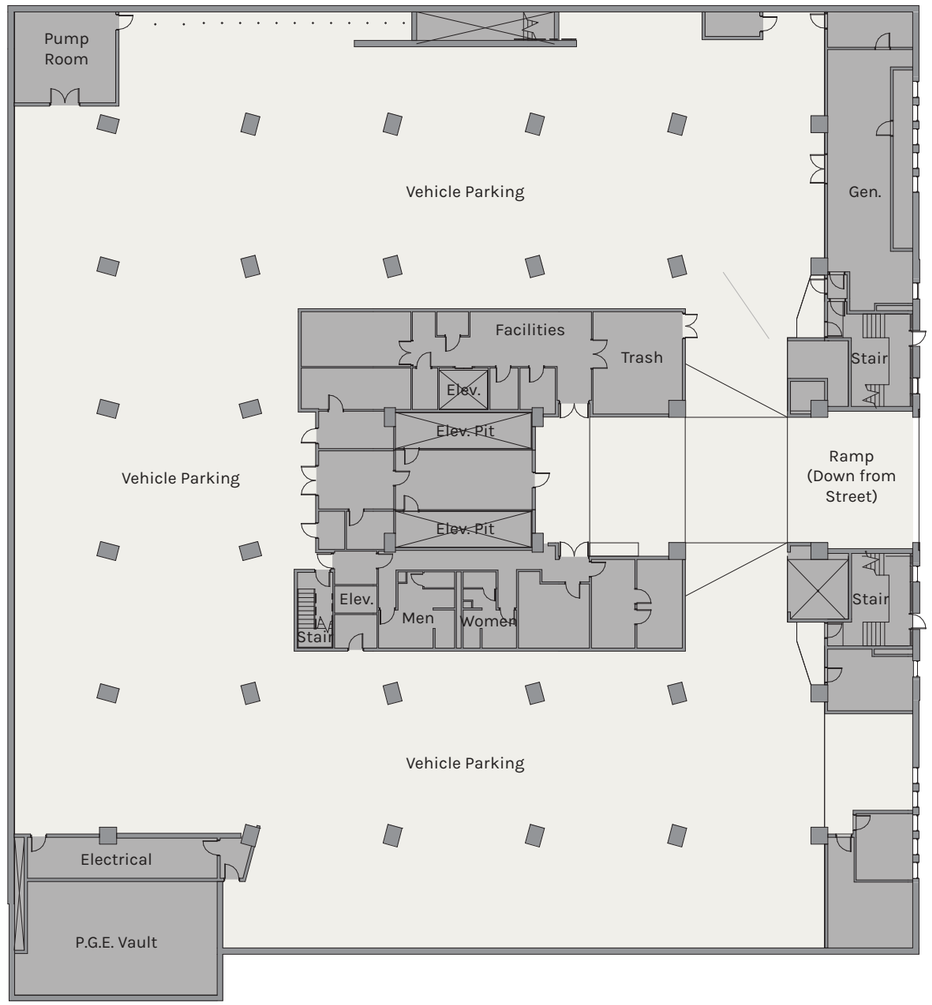
PROPOSED ELEVATION MATERIALS - SOUTH



PROPOSED ELEVATION MATERIALS - EAST



PROPOSED ELEVATION MATERIALS - NORTH

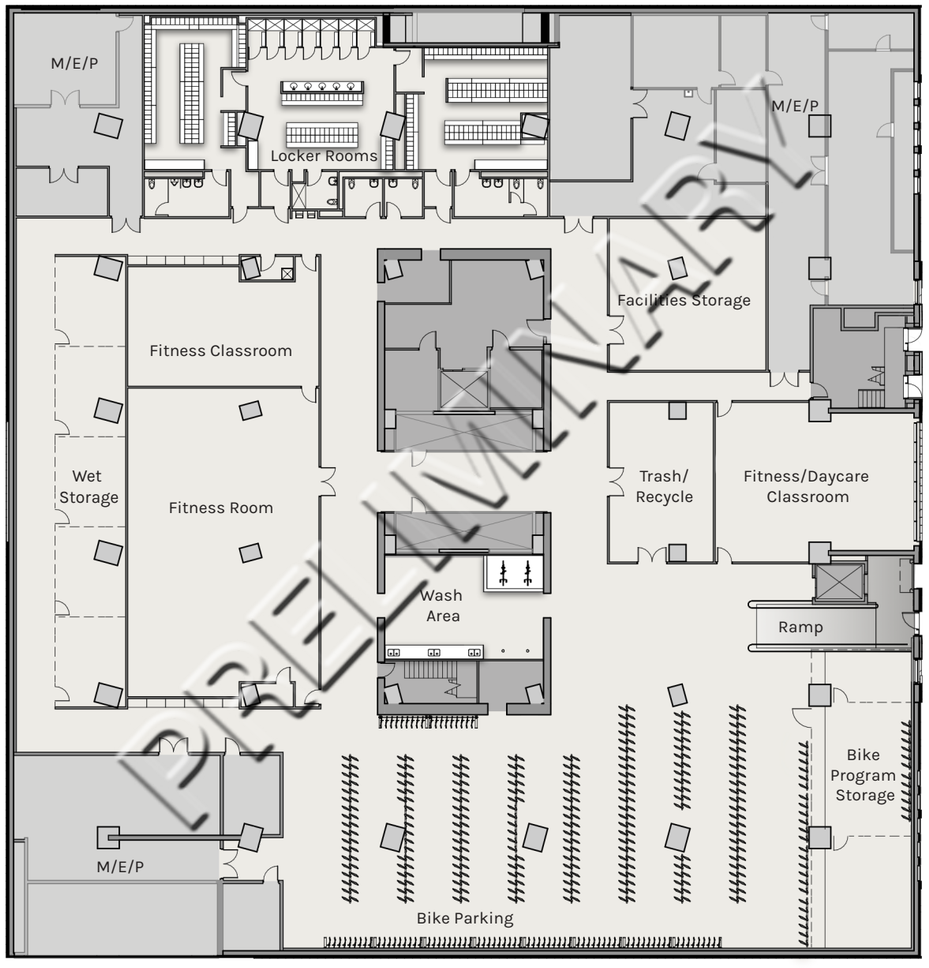


1/32″ = 1’

NORTH

0 8 16 32 64

EXISTING BASEMENT LEVEL



39,261 GSF

1/32" = 1'

NORTH

0 8 16 32 64

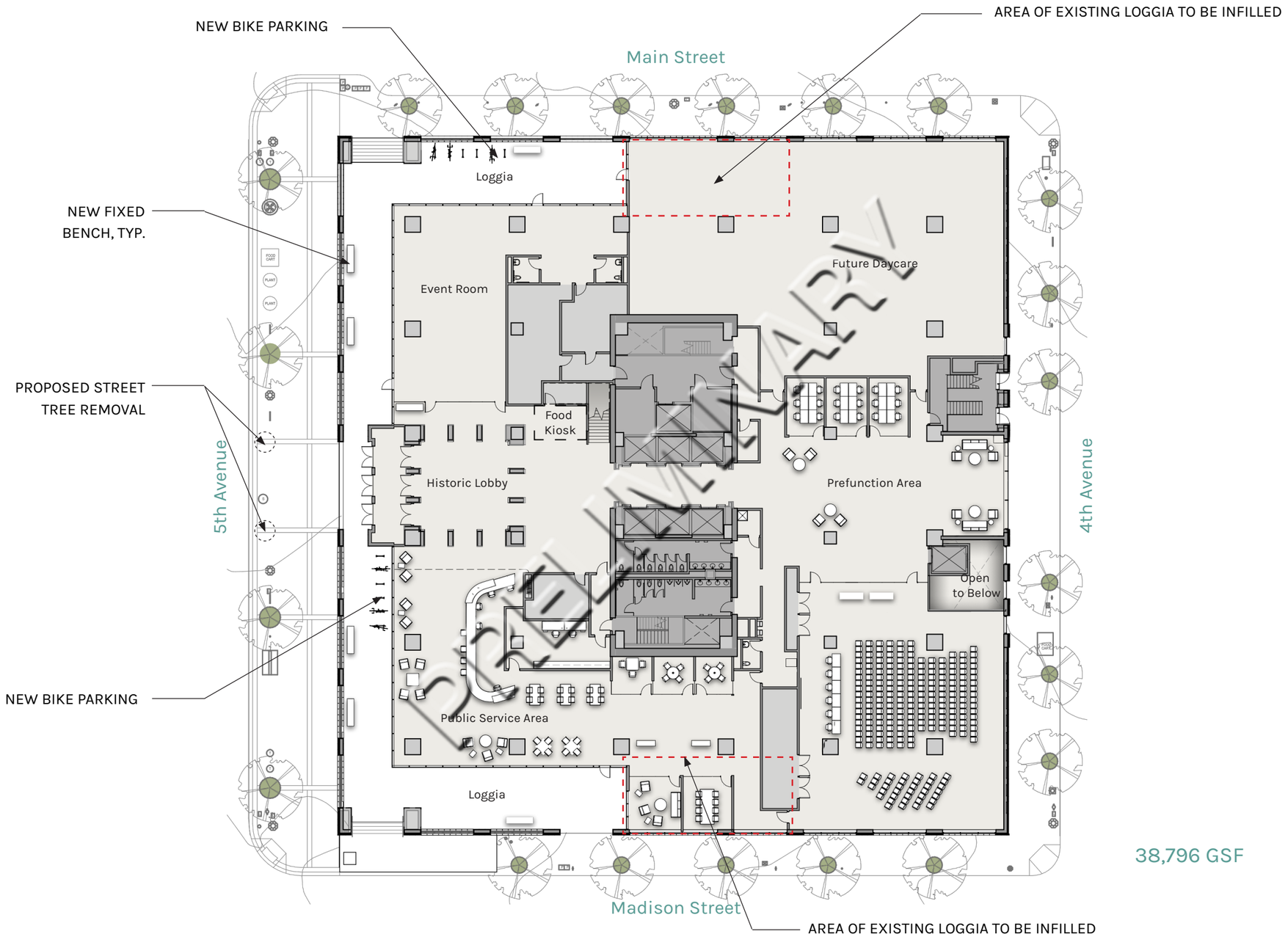
BASEMENT CONCEPT FLOOR PLAN (*FOR REFERENCE*)

1/32" = 1'

NORTH

0 8 16 32 64

EXISTING FIRST LEVEL / SITE PLAN



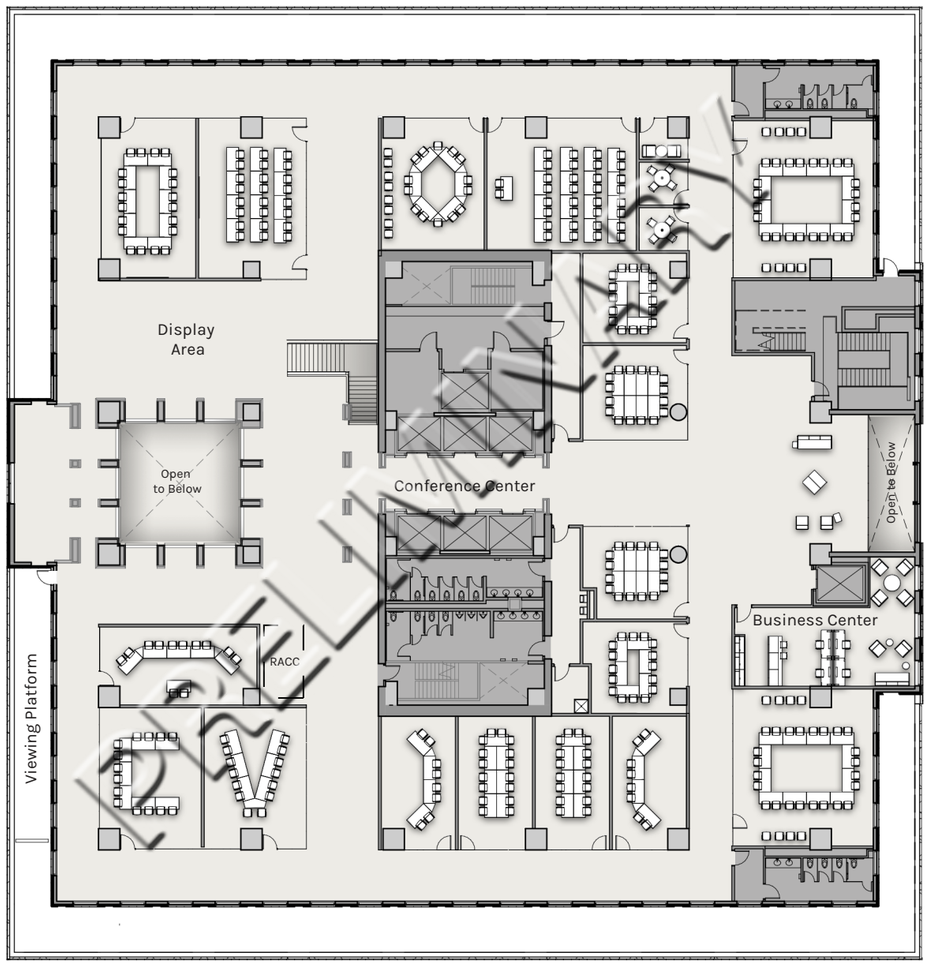
38,796 GSF

1/32" = 1'

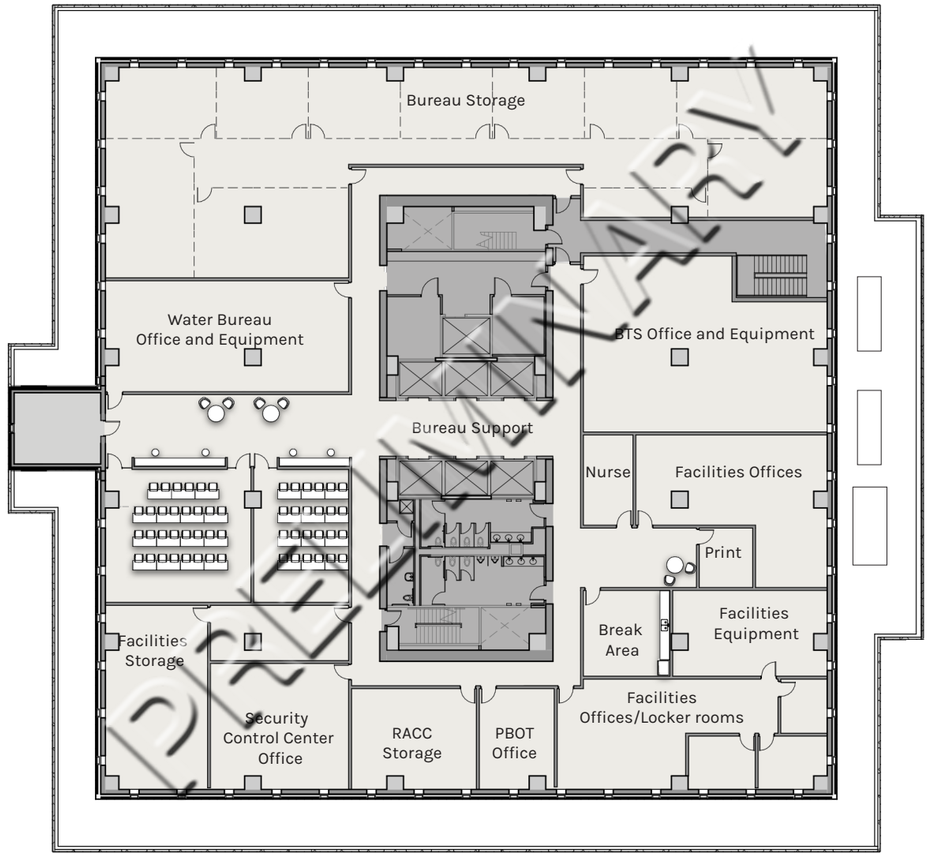
NORTH

0 8 16 32 64

FIRST LEVEL CONCEPT PLAN / PROPOSED SITE PLAN (*FOR REFERENCE*)



SECOND LEVEL FLOOR PLAN 32,366 GSF



THIRD LEVEL FLOOR PLAN 24,801 GSF

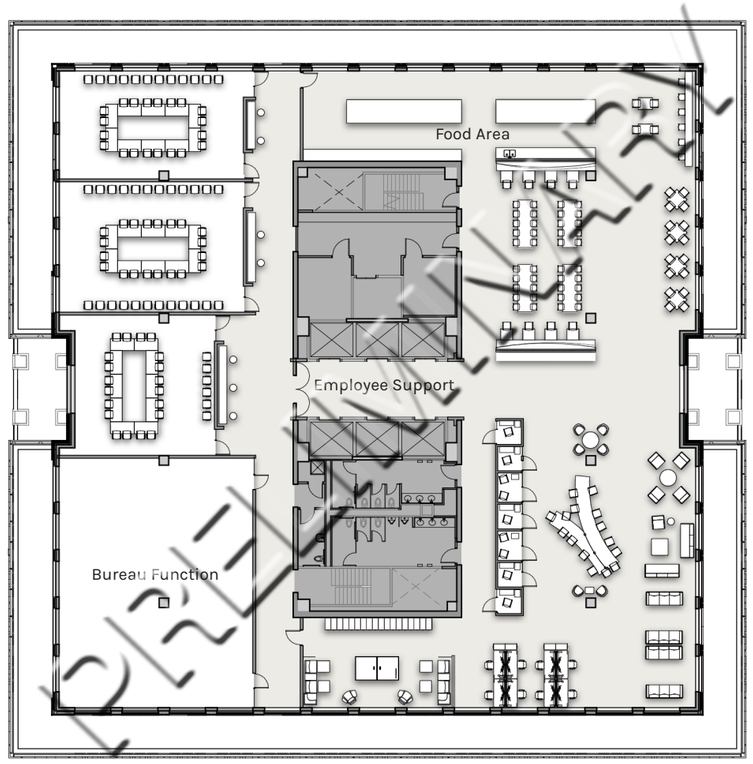
1/32" = 1'

NORTH

0 8 16 32 64

SECOND & THIRD LEVEL CONCEPT FLOOR PLANS *(FOR REFERENCE)*

TYPICAL UPPER LEVEL FLOOR PLAN 24,226 GSF



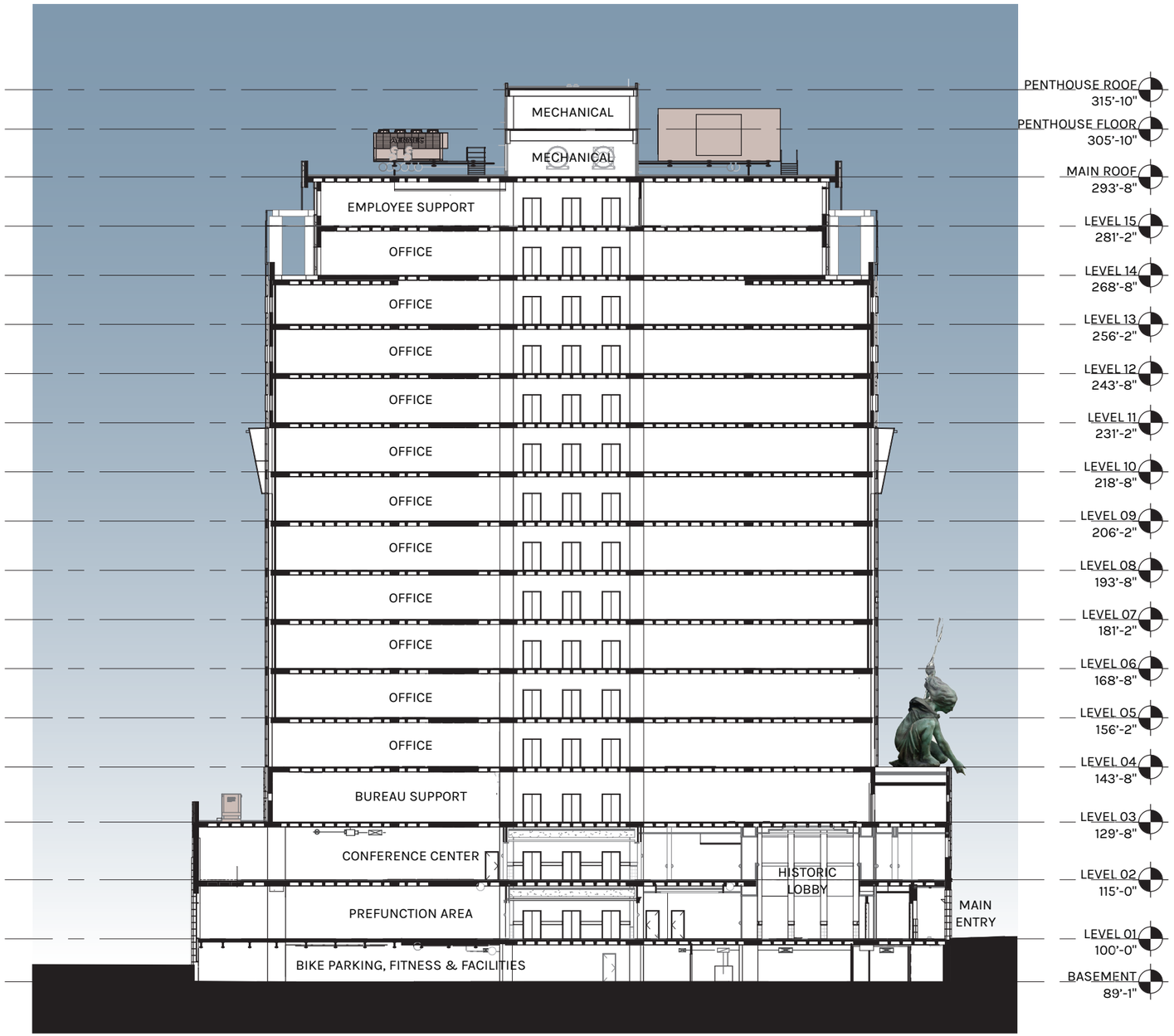
FIFTEENTH LEVEL FLOOR PLAN 18,747 GSF

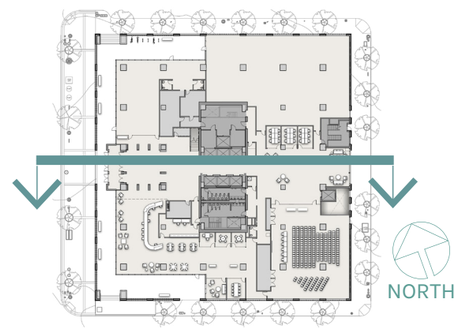
1/32" = 1'

NORTH

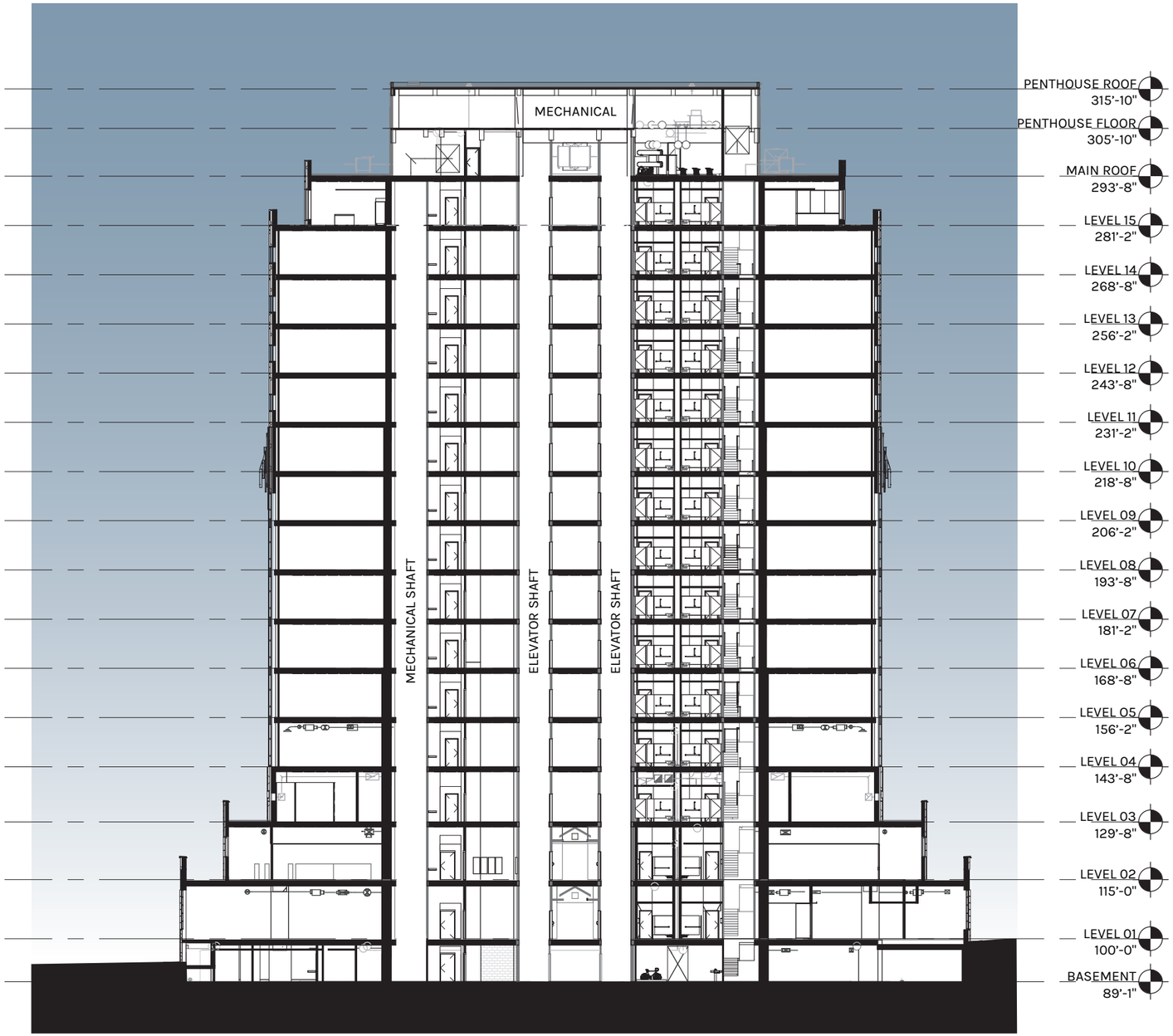
0 8 16 32 64

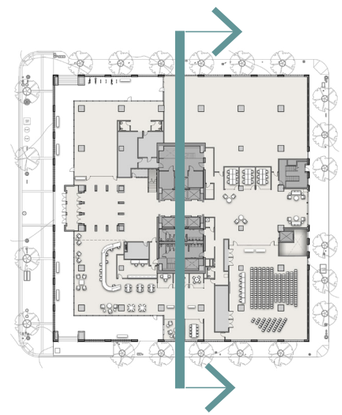
TYPICAL FLOOR & 15TH LEVEL CONCEPT FLOOR PLANS *(FOR REFERENCE)*



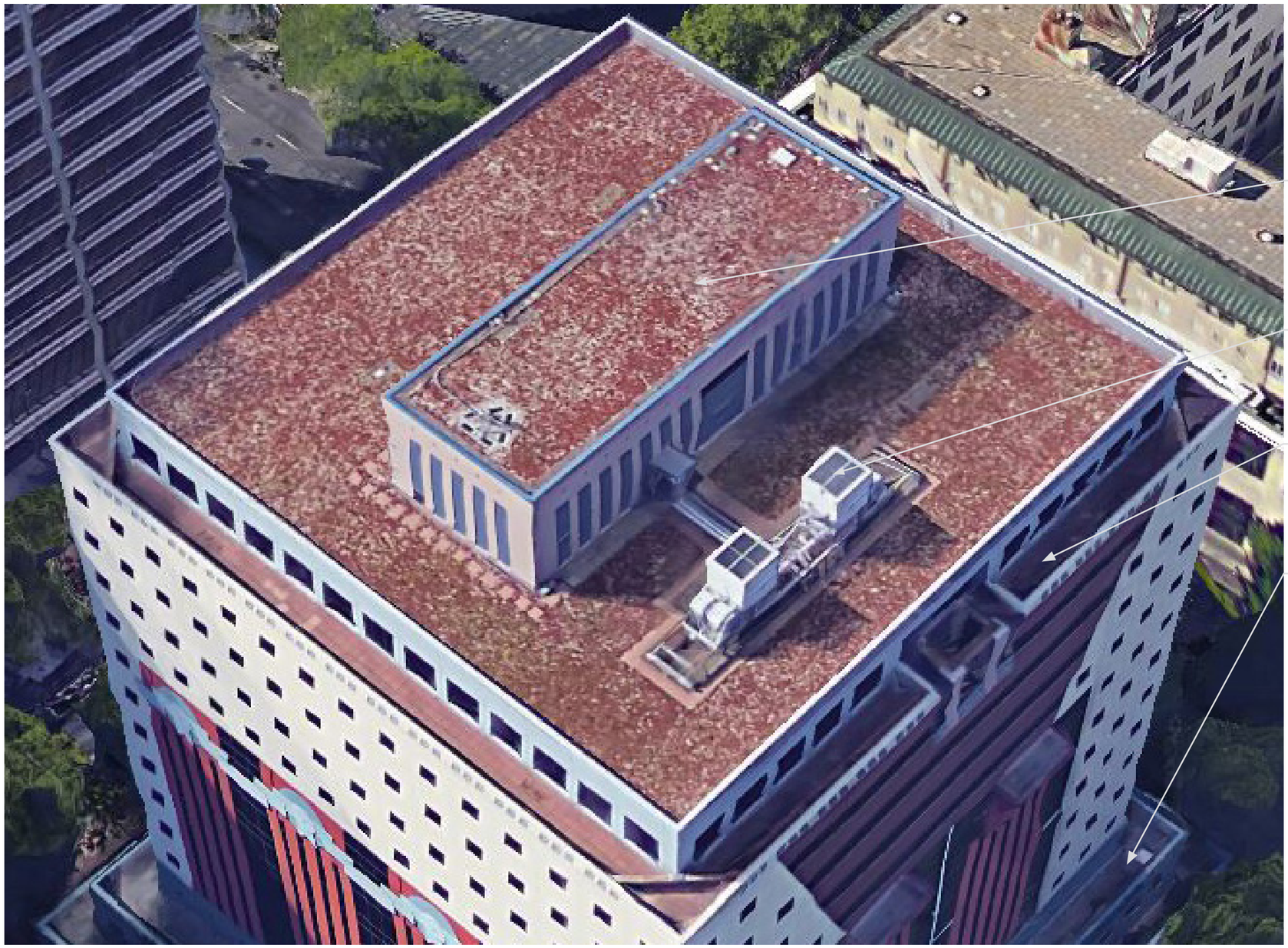


PROPOSED BUILDING SECTION - EAST/ WEST

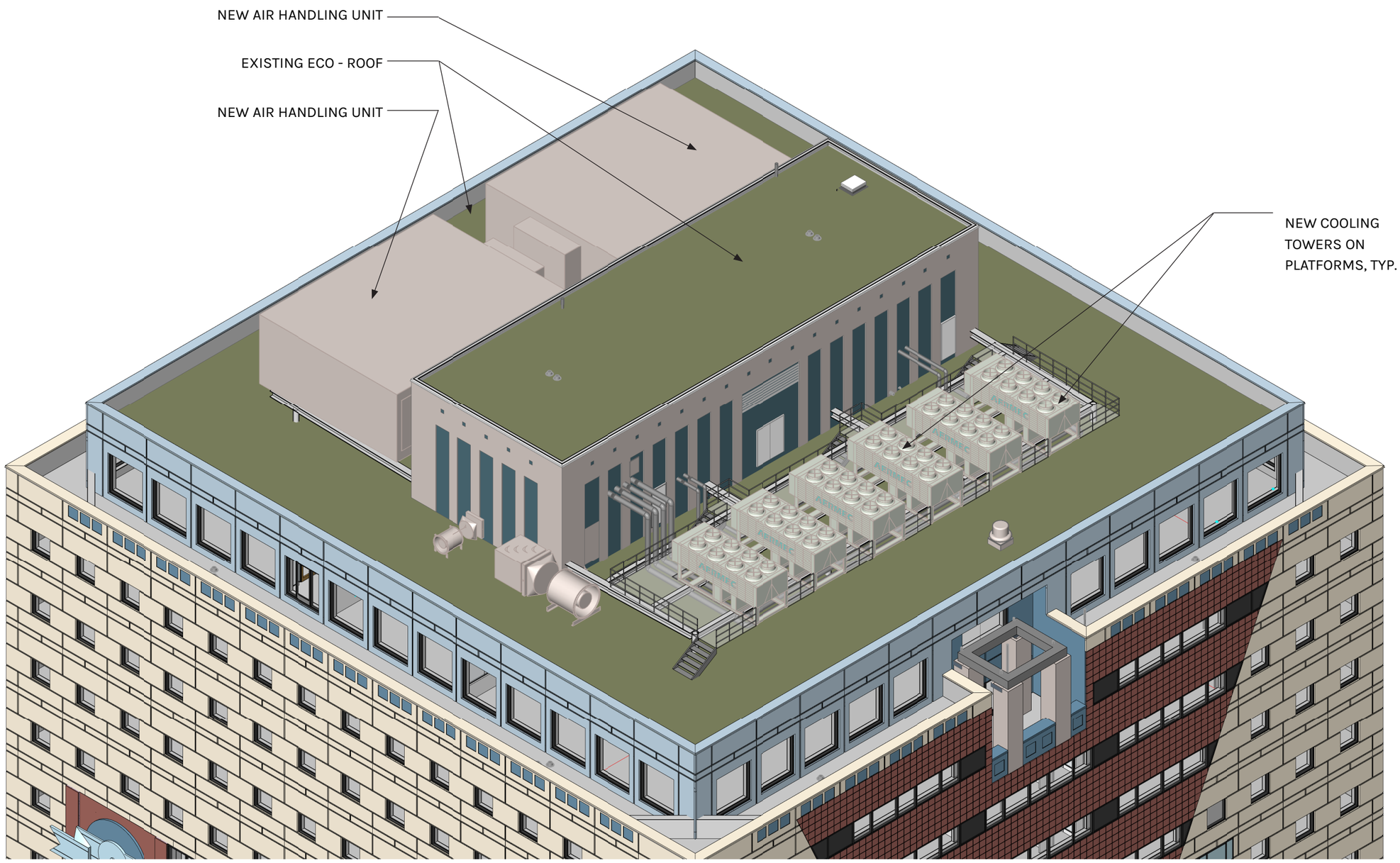




PROPOSED BUILDING SECTION - NORTH/SOUTH

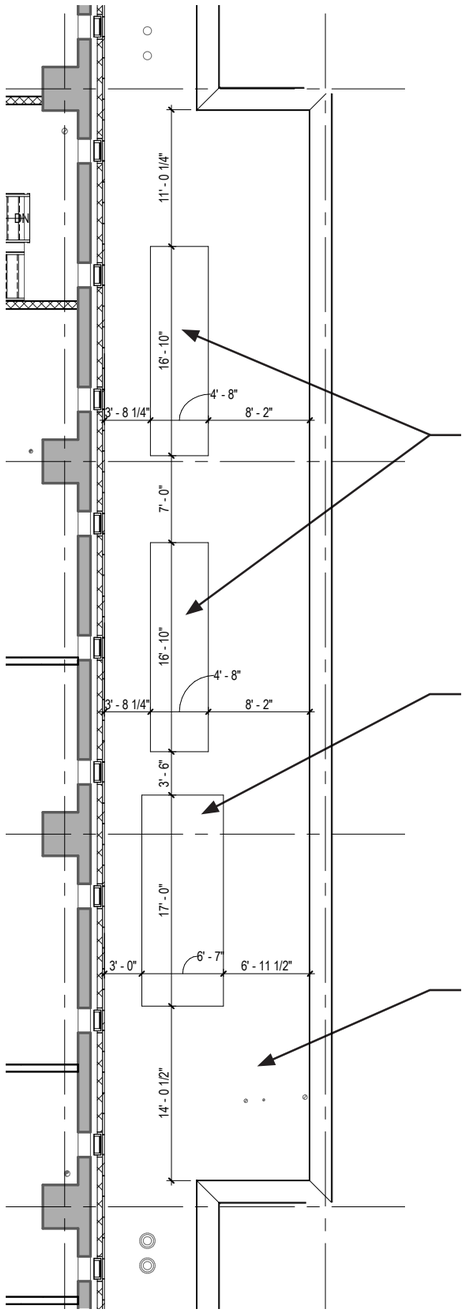


EXISTING ROOF AERIAL VIEW



PROPOSED ROOF - AXON

EXISTING ROOF AERIAL VIEW - SECOND LEVEL ROOF

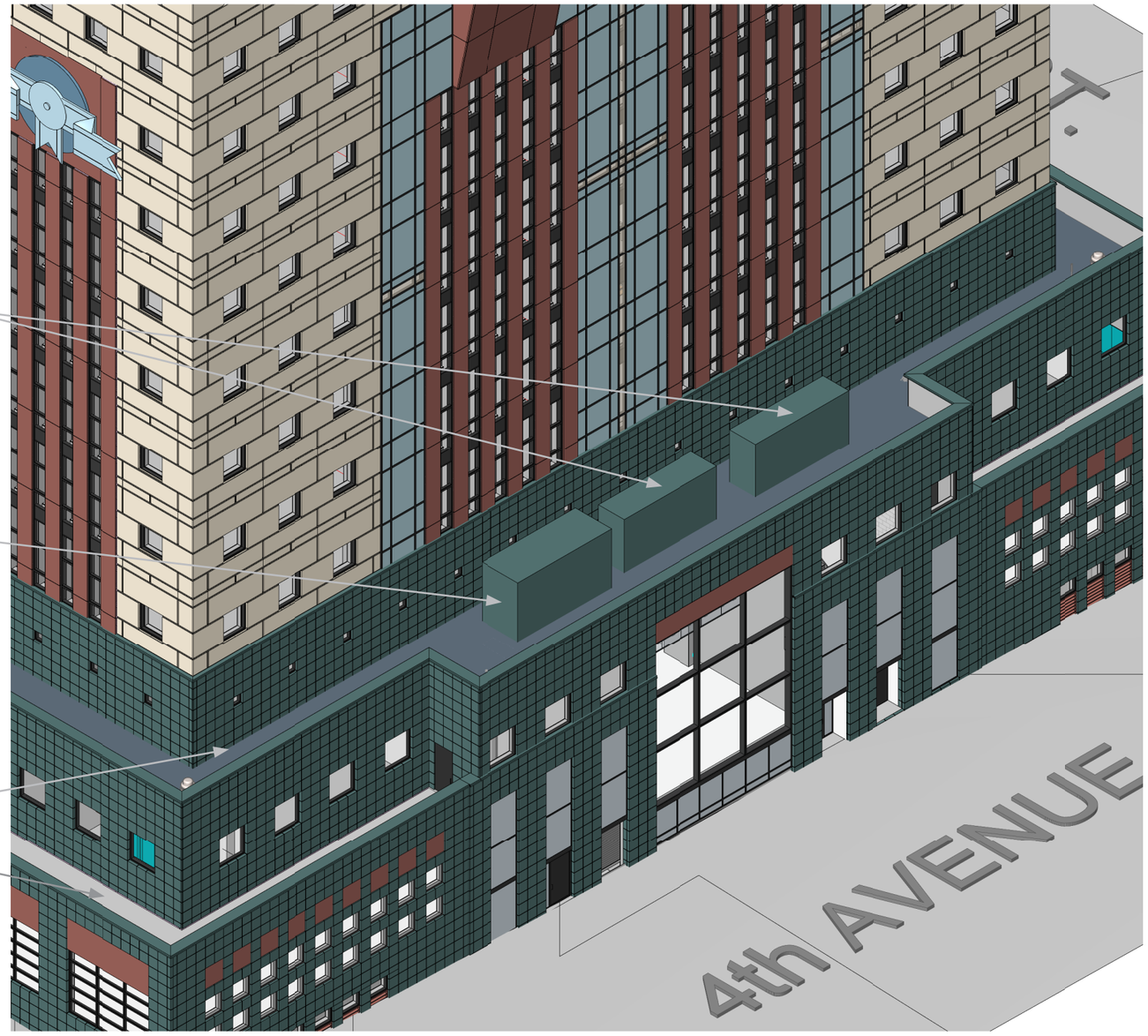


EXISTING GENERATORS TO REMAIN

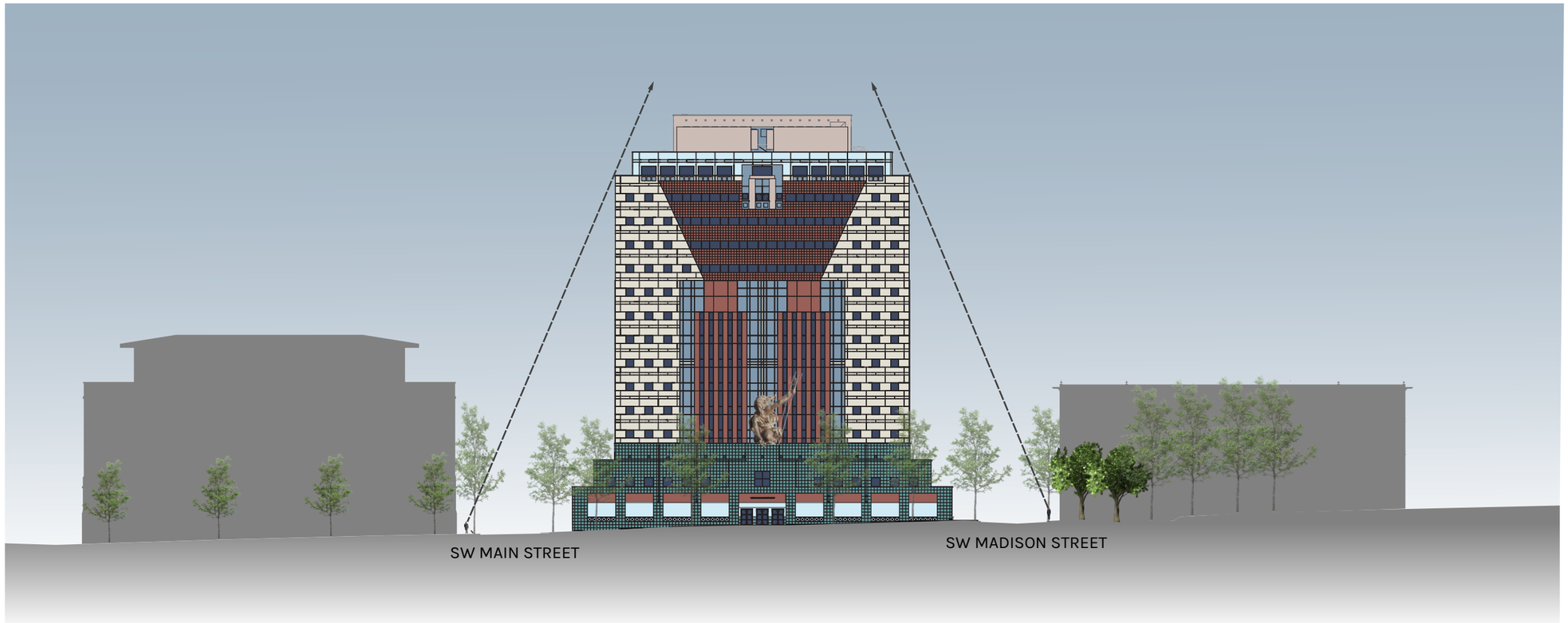
NEW EMERGENCY GENERATOR

SECOND LEVEL ROOF

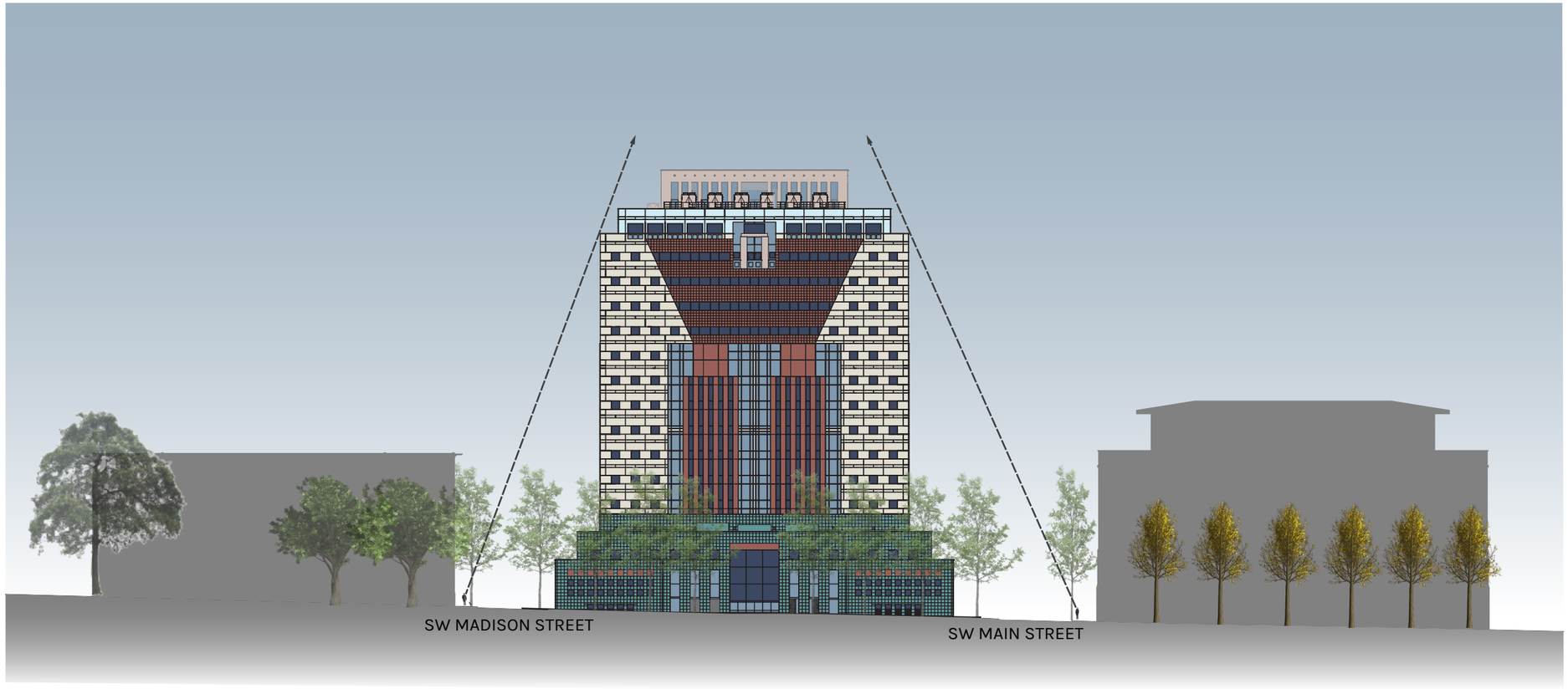
FIRST LEVEL ROOF



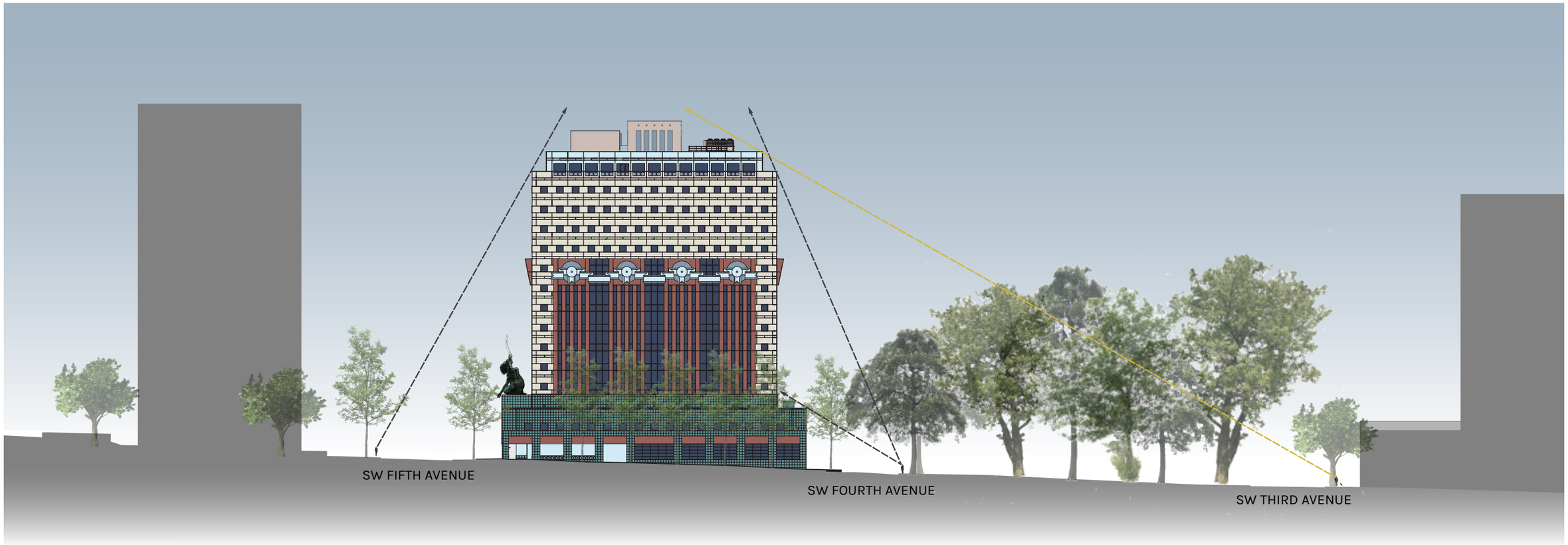
PROPOSED ROOF AXON - SECOND LEVEL ROOF



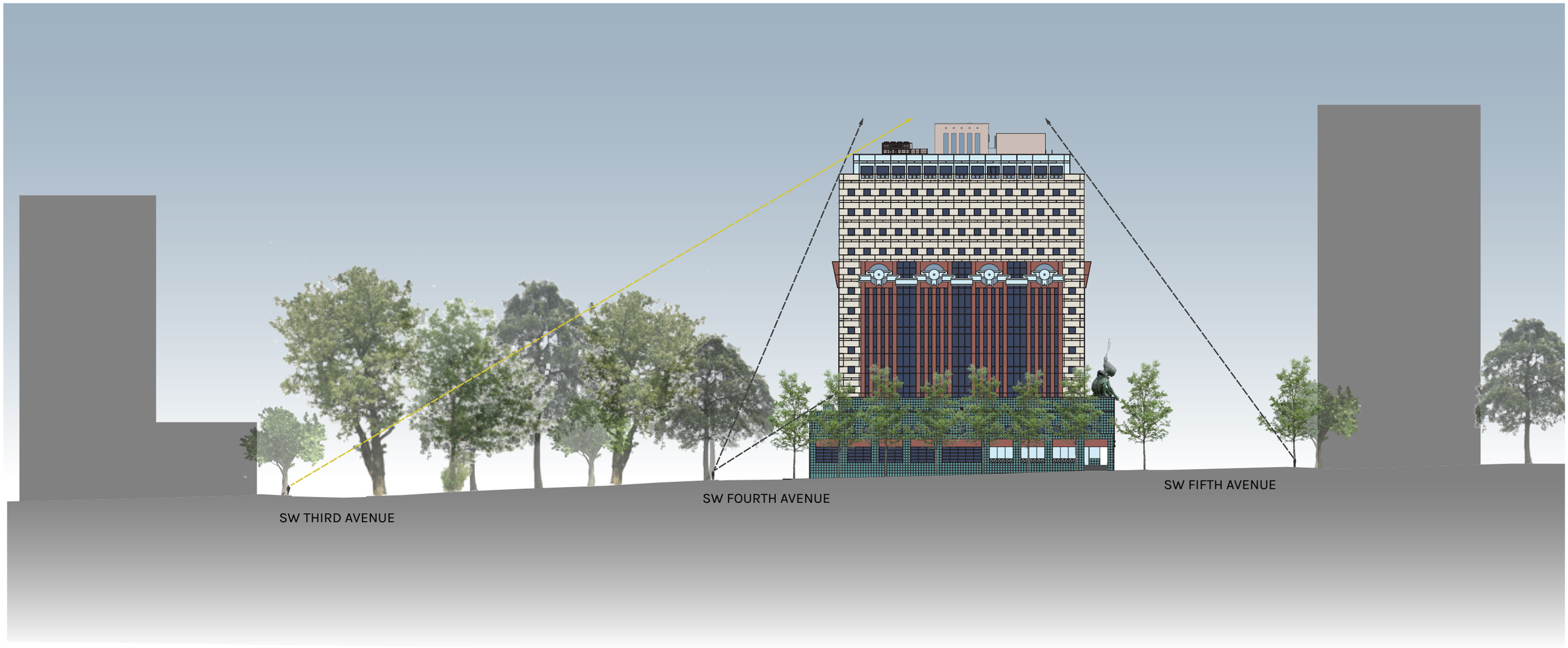
PROPOSED DESIGN VIEW ANGLES - WEST ELEVATION



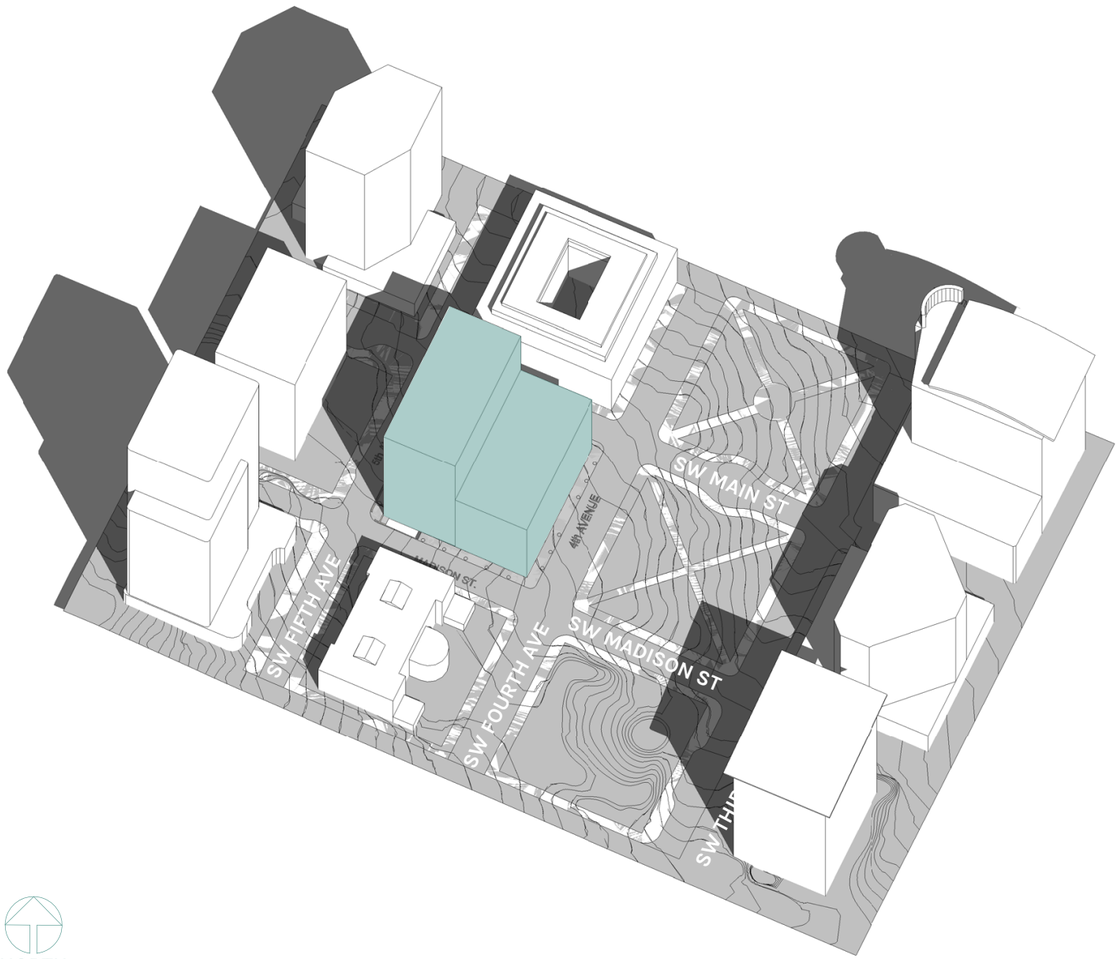
PROPOSED DESIGN VIEW ANGLES - EAST ELEVATION



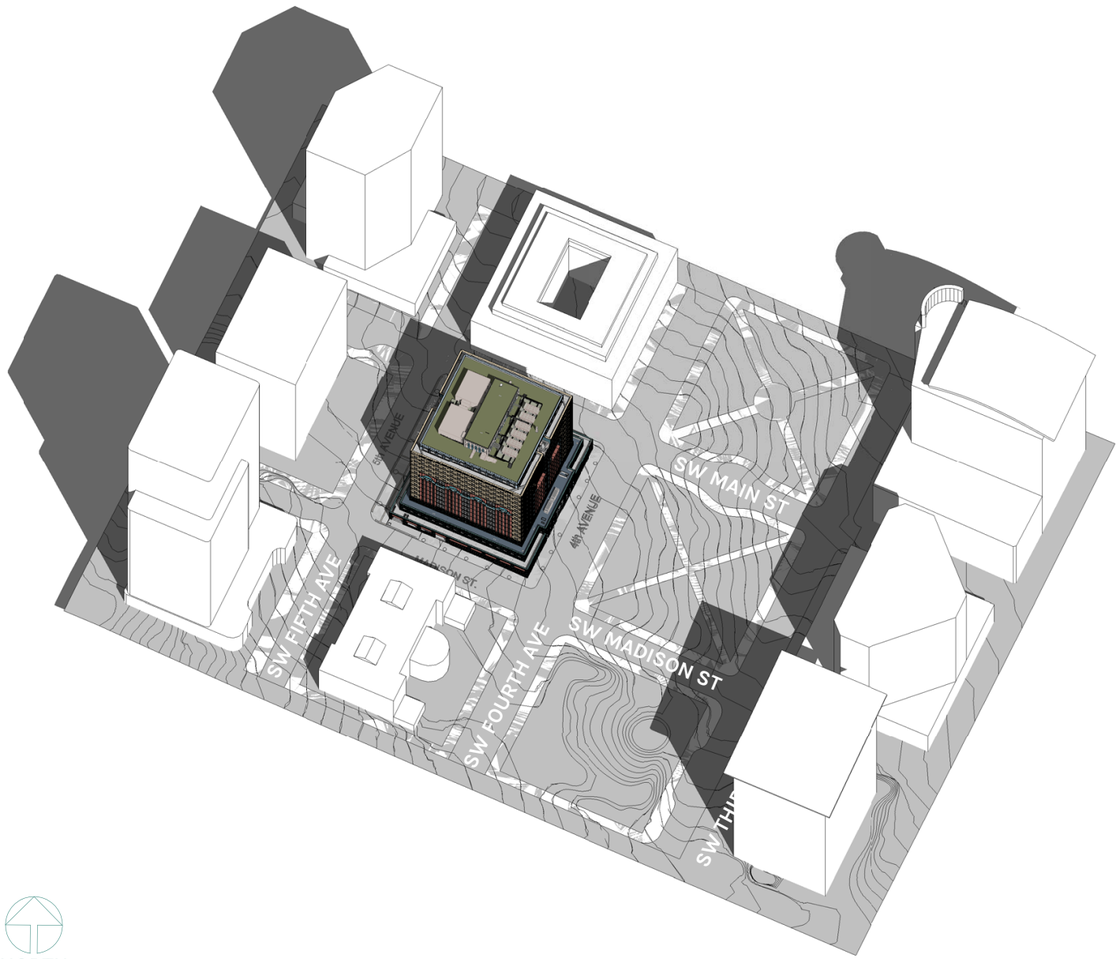
PROPOSED DESIGN VIEW ANGLES - SOUTH ELEVATION



PROPOSED DESIGN VIEW ANGLES - NORTH ELEVATION

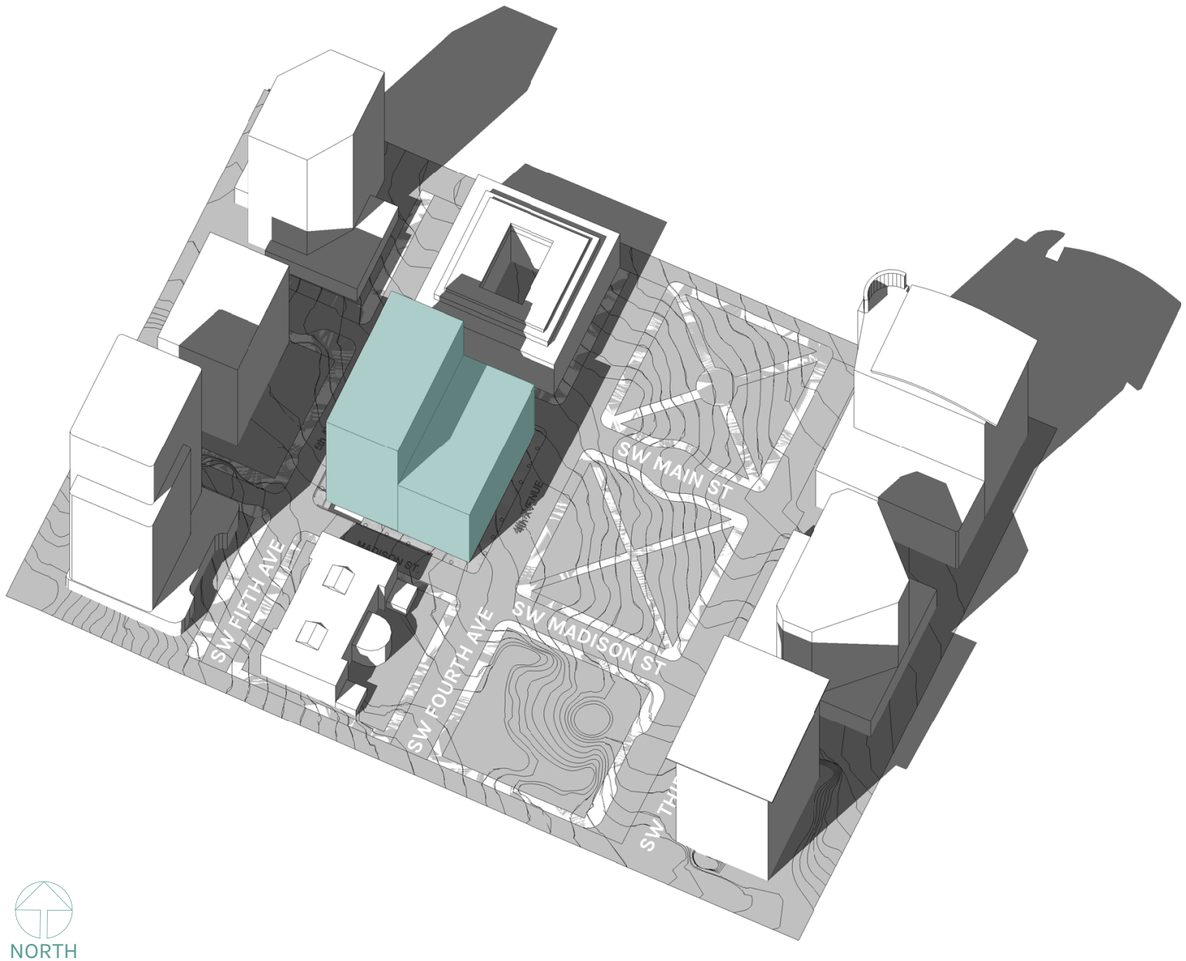


Maximum Allowable Building Volumes and Height with Shadows - April 21st @ 12:00pm

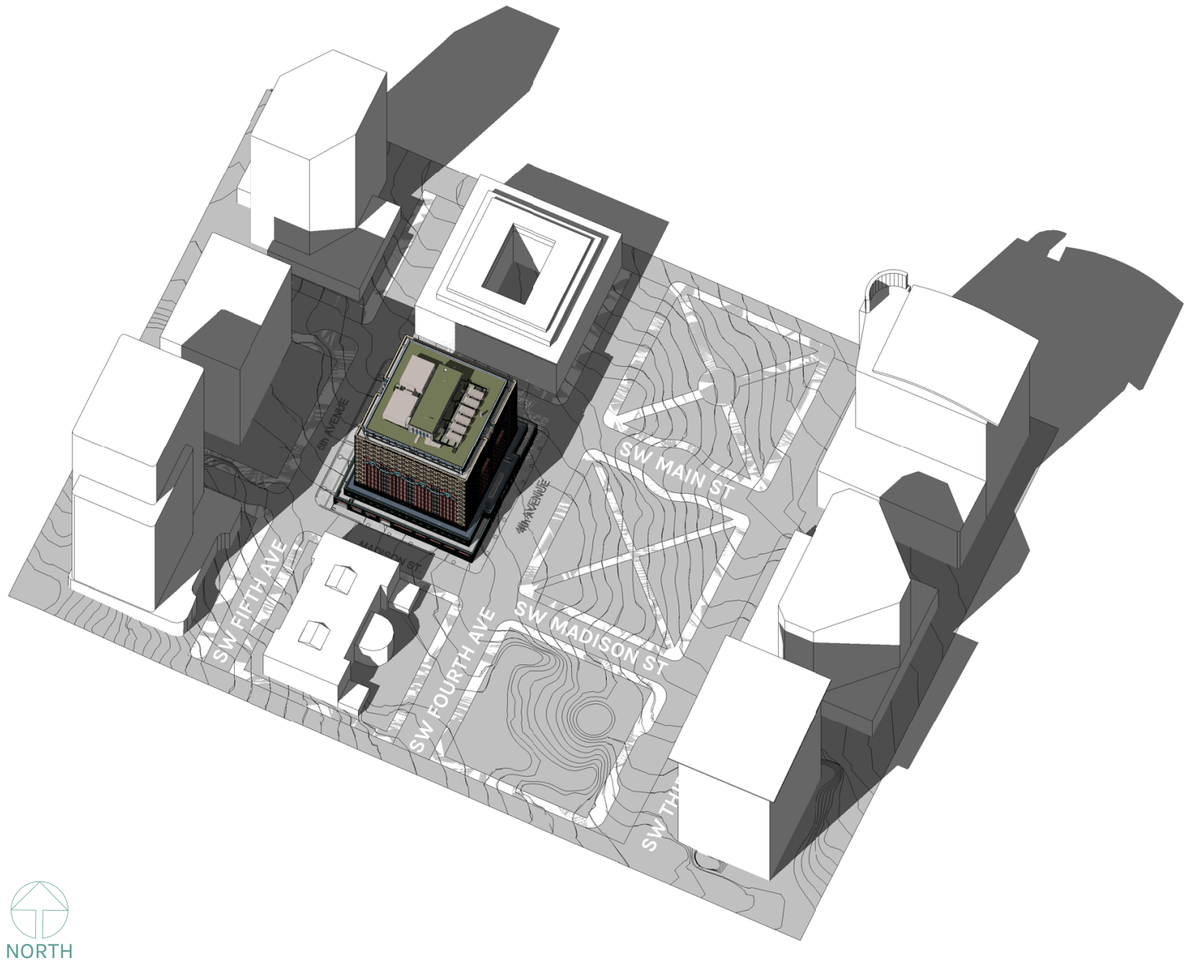


Proposed Building with Shadows - April 21st @ 12:00pm

BUILDING HEIGHT PERFORMANCE STANDARD



Maximum Allowable Building Volumes and Height with Shadows - April 21st @ 3:00pm



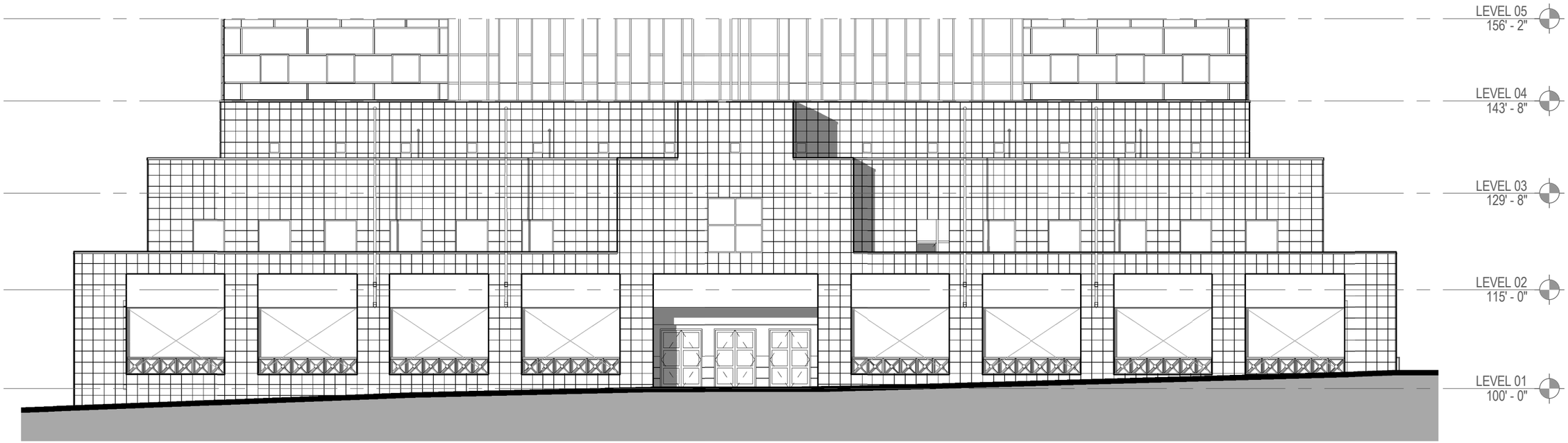
Proposed Building with Shadows - April 21st @ 3:00pm

BUILDING HEIGHT PERFORMANCE STANDARD

LEGEND

+9' Above Finish Grade

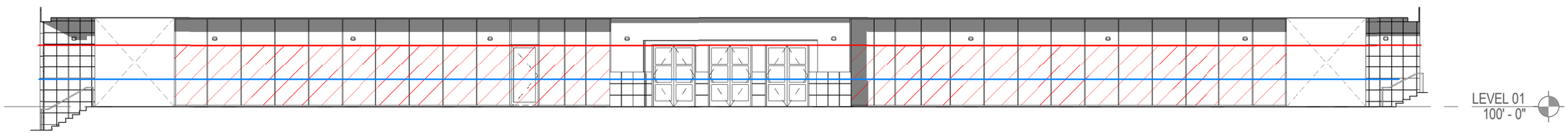
+4' Above Finish Grade



1 BUILDING ELEVATION - SW 5TH AVENUE

SCALE 1/16" = 1'-0"

:



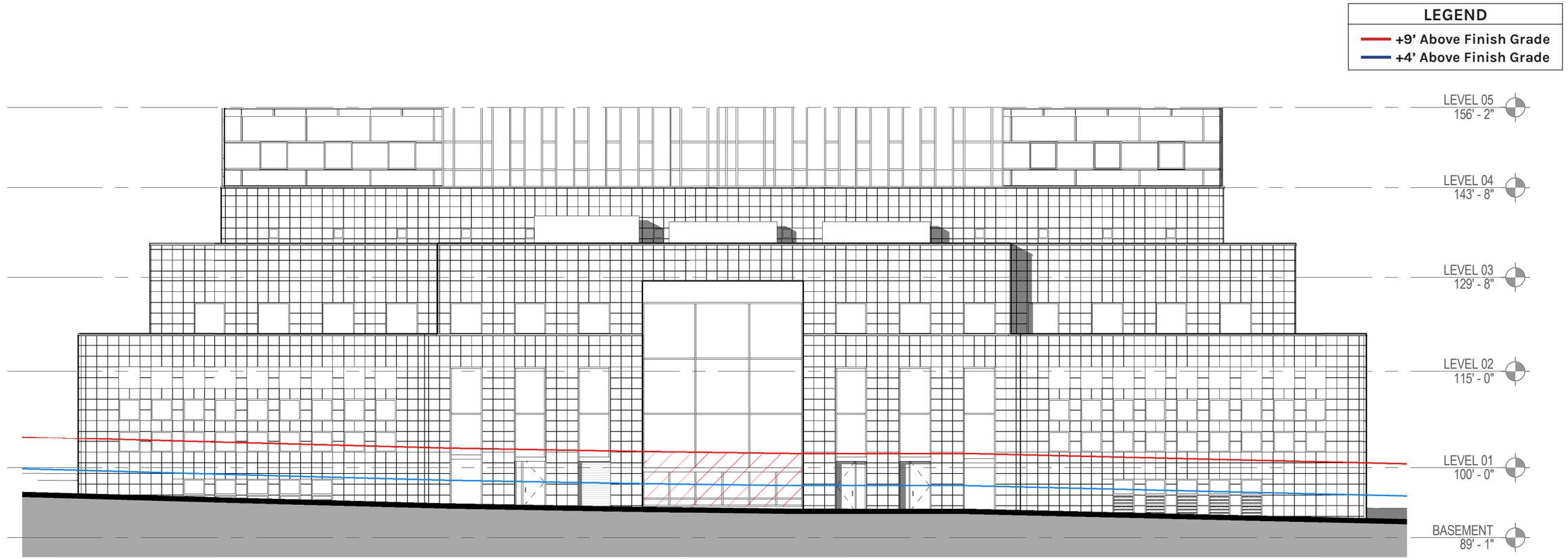
2 WEST LOGGIA - WEST ELEVATION

SCALE 1/16" = 1'-0"

:

SW Fifth Avenue elevation is providing 127 linear feet of window for 71% of the building length and 1,120 sf for 69% of the ground floor wall area.

GROUND FLOOR WINDOW STANDARD



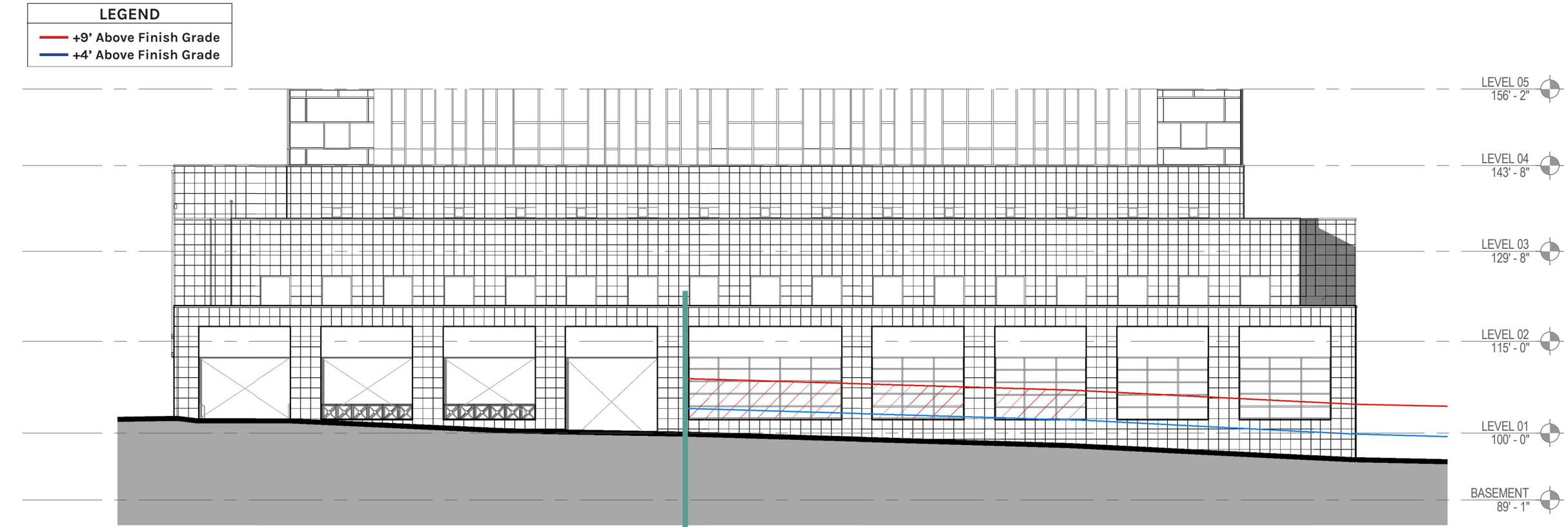
1 BUILDING ELEVATION - SW 4TH AVENUE

SCALE 1/16" = 1'-0"

:

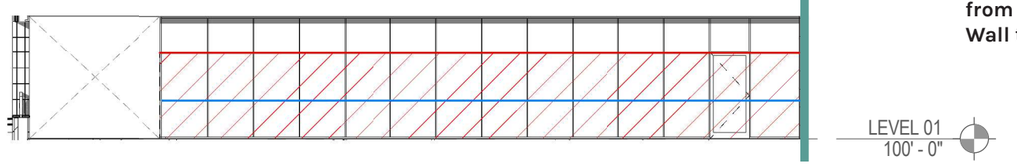
SW Fourth Avenue elevation is providing 25 linear feet of window for 12.5% of the building length and 210 sf for 12% of the ground floor wall area.

GROUND FLOOR WINDOW STANDARD



2 BUILDING ELEVATION - SW MADISON STREET

SCALE 1/16" = 1'-0"



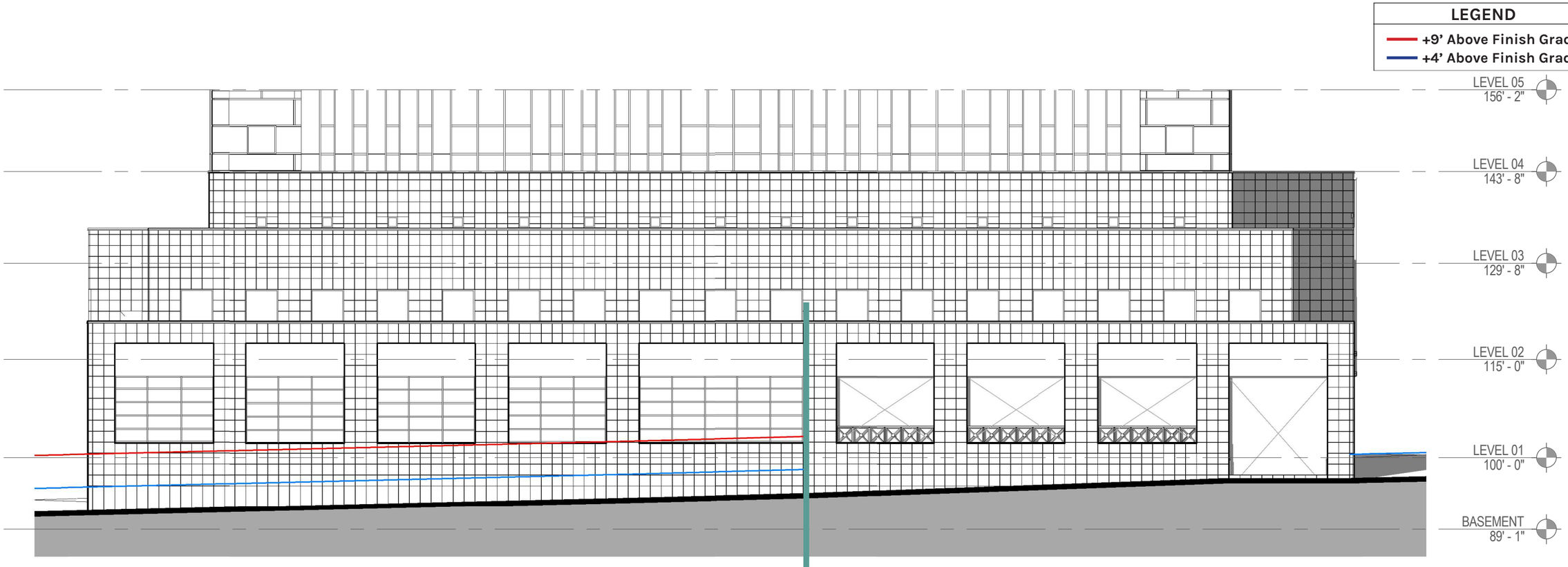
Calculation Shifts Here from Primary Building Wall to Loggia Wall

1 SOUTH LOGGIA - SOUTH ELEVATION

SCALE 1/16" = 1'-0"

SW Madison Street elevation is providing 122.5 linear feet of window for 68% of the building length and 923 sf for 57% of the ground floor wall area.

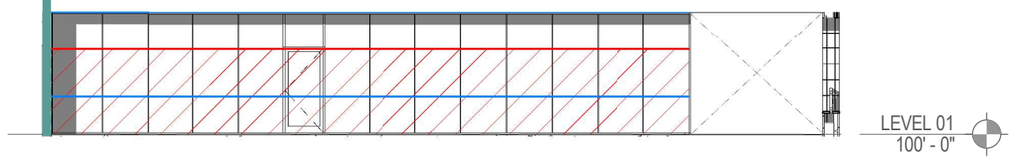
GROUND FLOOR WINDOW STANDARD



1 BUILDING ELEVATION - SW MAIN STREET

SCALE 1/16" = 1'-0"

Calculation Shifts Here from Primary Building Wall to Loggia Wall



2 NORTH LOGGIA - NORTH ELEVATION

SCALE 1/16" = 1'-0"

SW Main Street elevation is providing 67.5 linear feet of window for 37% of the building length and 606 sf for 37% of the ground floor wall area.

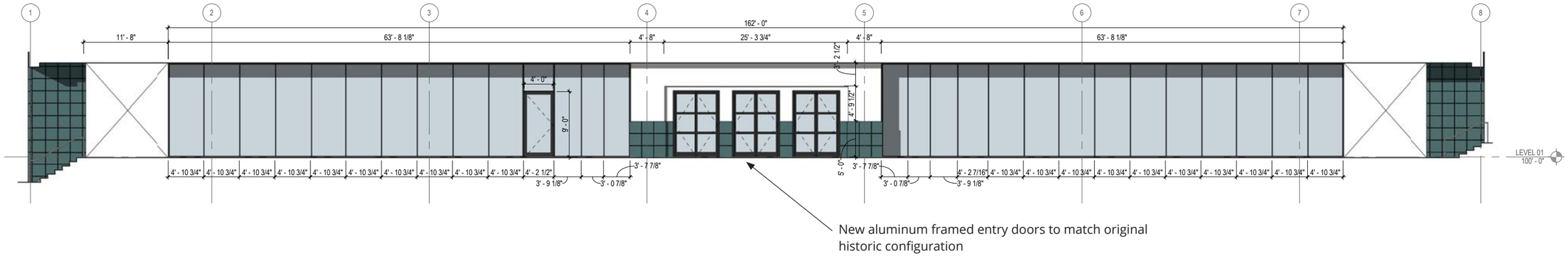
GROUND FLOOR WINDOW STANDARD

MADISON STREET PEDESTRIAN LEVEL - EXISTING

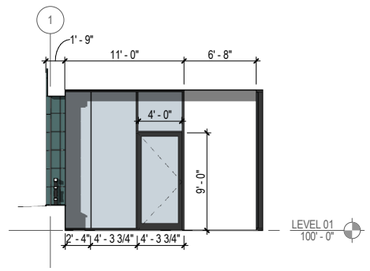
MADISON STREET PEDESTRIAN LEVEL - PROPOSED

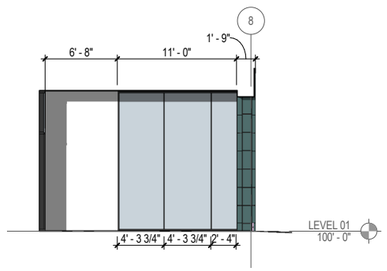
5th AVENUE LOGGIA - EXISTING

5TH AVENUE LOGGIA - PROPOSED

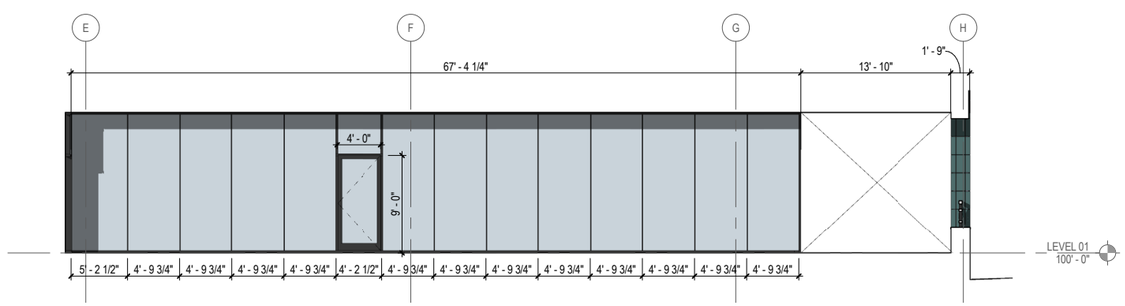


Loggia - West Elevation





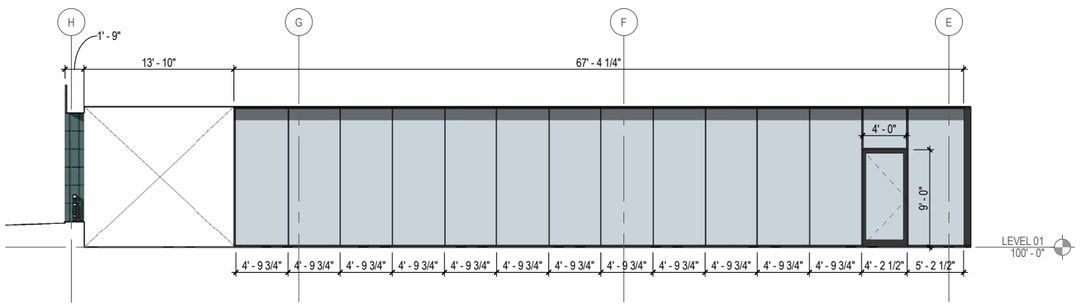
Loggia - Daccare Entry Elevation



System Description

- Kawneer 1600 System 2
- Butt-glazed vertical mullions Typ.
- Typical mullion with caps at storefront door frames.
- Color of mullions - Dark Grey

Loggia - Conference Elevation



Loggia - North Main St. Elevation

Loggia - South Madison St. Elevation

PROPOSED LOGGIA - ELEVATIONS

The existing loggia of the building was originally designed as a ground floor retail experience with an expression of “storefronts”. This expression did not meet with the realities of the building program and many of the “storefronts” have been covered up to hide interior spaces from exterior view.

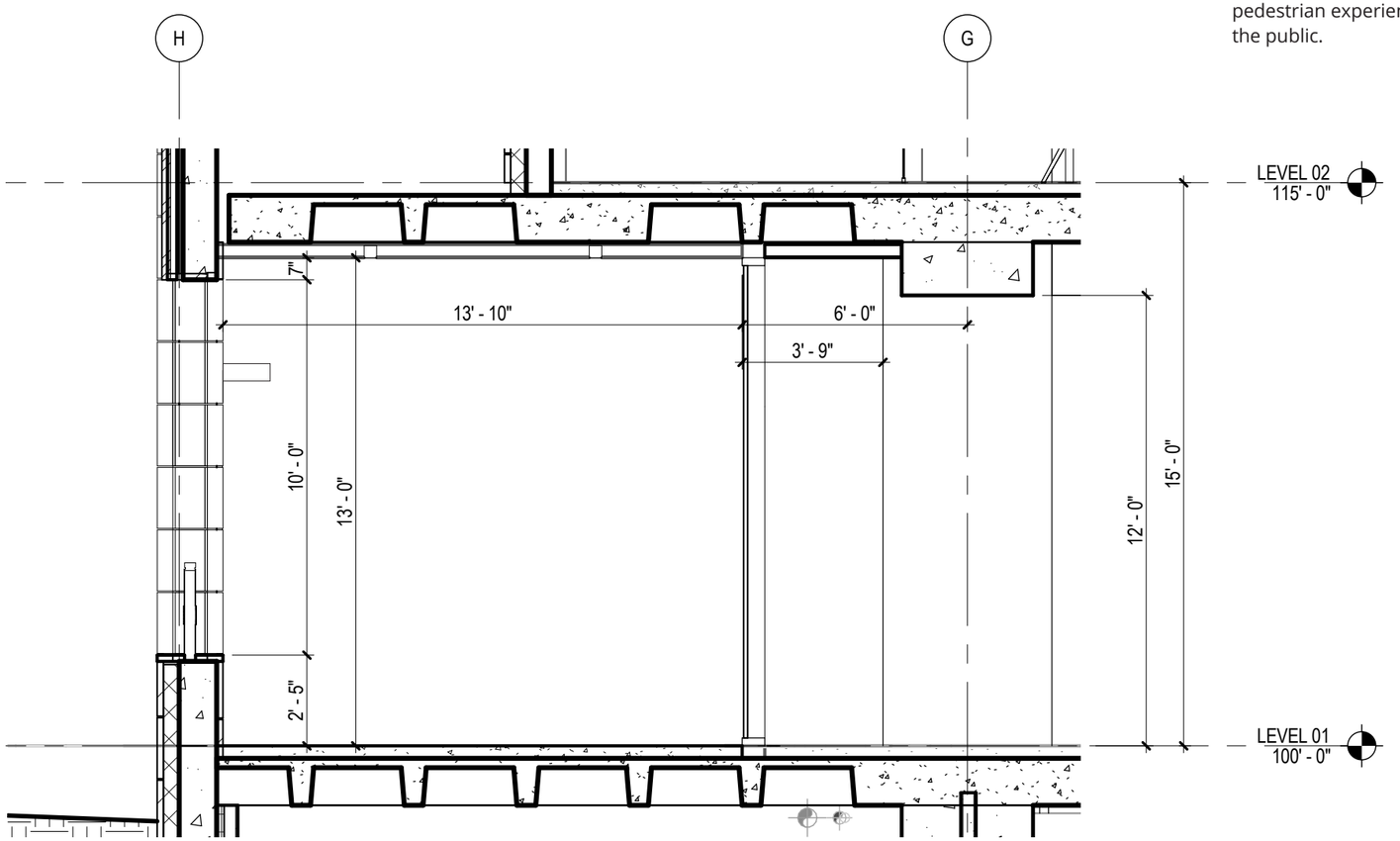
As a result, the existing loggia spaces are not well utilized and suffer from several key issues:

- Most of the Loggia floor is higher than the sidewalk which makes existing storefronts in the Loggia difficult to see from the pedestrian level, reducing the amount of foot-traffic to these retail and food establishments.
- Insufficient lighting makes the Loggia space dark and unwelcoming
- The loggia is too deep and storefront windows are too low to allow sufficient daylight light into interior spaces. Dark glass further reduces light to the interior during the day, but also from the interior to the exterior at dusk and after dark contributing to the unwelcoming experience.

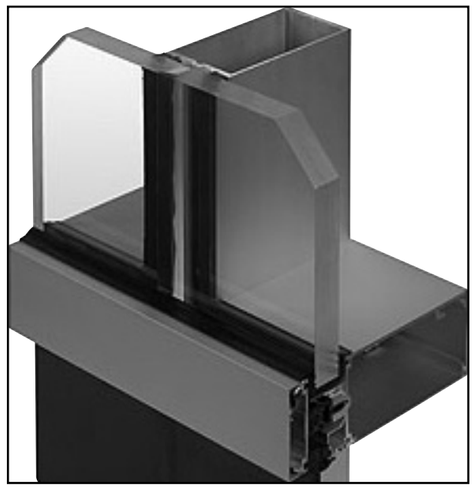
Proposed improvements to the Loggia will correct some of these deficiencies and open views from the street into public engagement areas within the building

The proposed design will:

- Reclaim some of the loggia space along Main Street and Madison Street and convert it into interior space. This will reduce the “dead end” portions of the loggia.
- Improve lighting and furnishings to make a more welcoming environment.
- Replace loggia walls with full height curtain wall glazing to open building activities to the street and enliven the pedestrian experience—showcasing the “City at work” to the public.



Loggia - Typical Wall Section

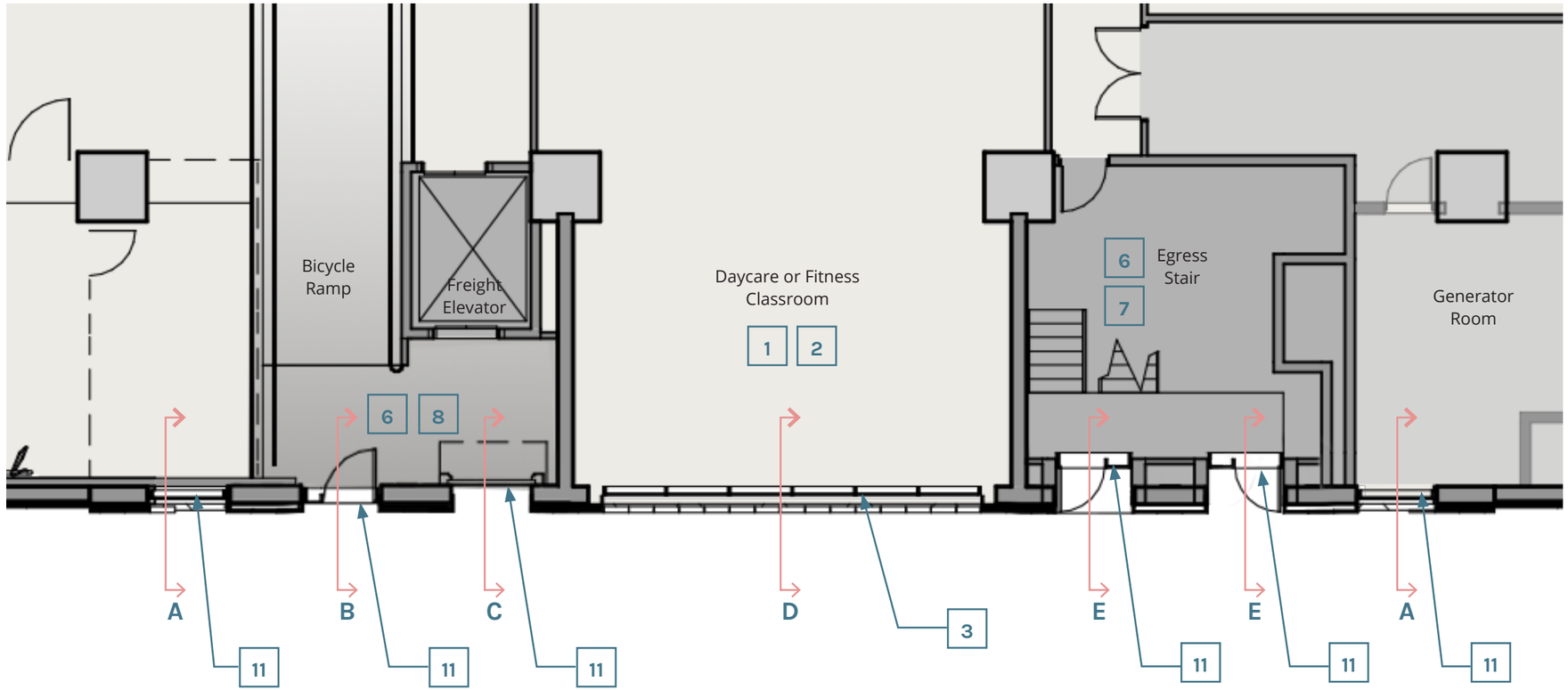


Loggia - Proposed Mullion & Glazing Detail

PROPOSED LOGGIA - DETAILS

FOURTH AVE. LOADING AREA - EXISTING

FOURTH AVE. LOADING AREA - PROPOSED



The existing building opening that provides access to the vehicle parking creates a challenging feature at the focal point of the Fourth Avenue facade. The Fourth avenue facade was designed with this opening in response to the City's requirement that parking be included in the lower level. This exposed the park across the street to an unfriendly façade and a lackluster pedestrian experience.

The City made a number of program changes inside the building including removing parking from the lower level. These changes have allowed us to replace the parking opening with a large double height curtainwall opening at the first and second levels creating an appropriately scaled response to the 4th Avenue urban setting.

The vertical "strips" on either side of the new curtainwall element complete the composition and create a holistic enhancement to this facade.

The proposed design will:

1 Close off loading entry to vehicles, eliminate parking in basement, create long-term bike parking area

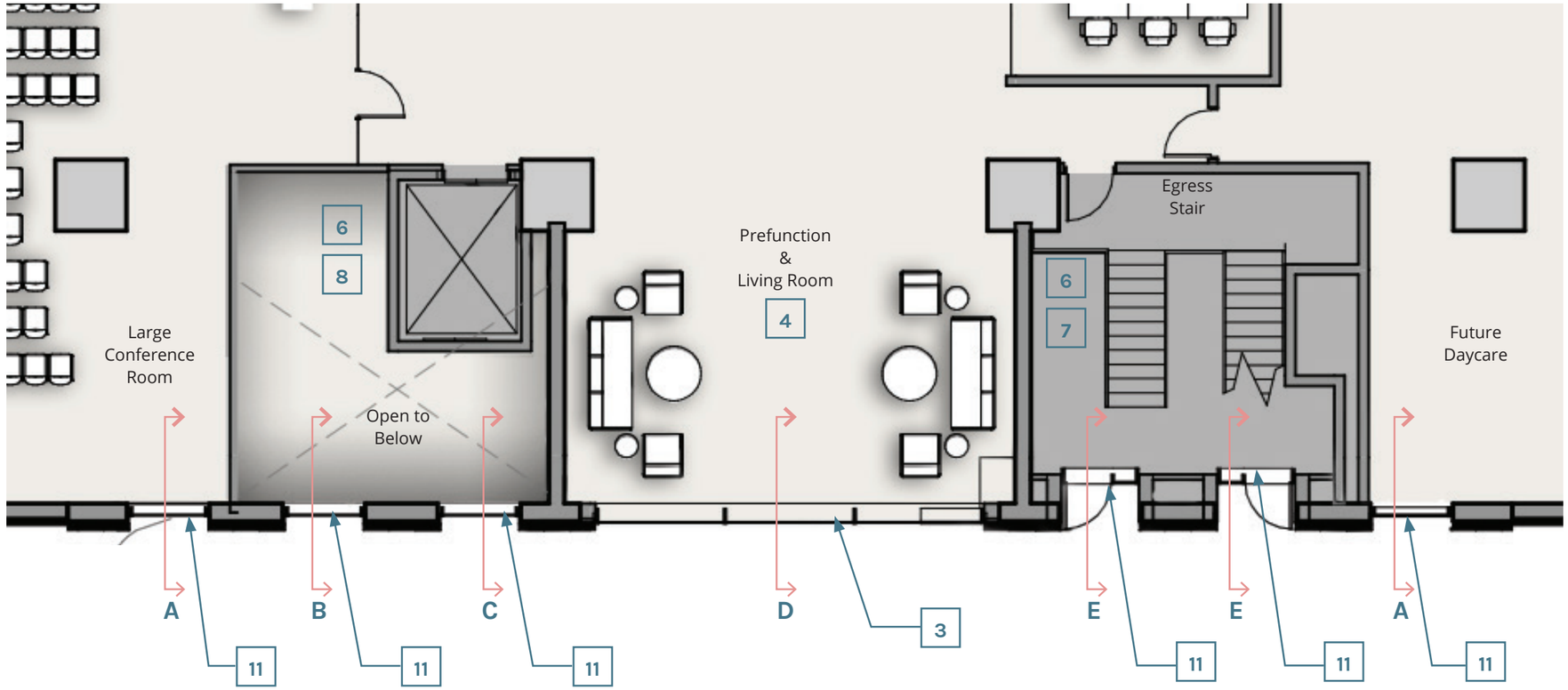
2 Replace existing entry ramp with interior floor space

3 Widen facade opening at existing parking entry and insert two story glazing intervention to facilitate views and connection between interior and exterior

4 On Level 1, remove interior platforms and extend floor plate to Fourth Avenue. The resulting space acts as a terminus to the main entry sequence and will allow for a public gathering space providing a peaceful visual connection with the park.

5 Pull back Level 2 floor plate to open up double height space creating visual connections between the interior and the park. This showcases the life of the building to the street and reinforces the East-West view axis that is so important for this building.

FOURTH AVE. ENLARGED FLOOR PLAN - BASEMENT



6 Upgrade both existing stairwells

7 Modify North stairwell to accommodate egress access upgrades on interior.

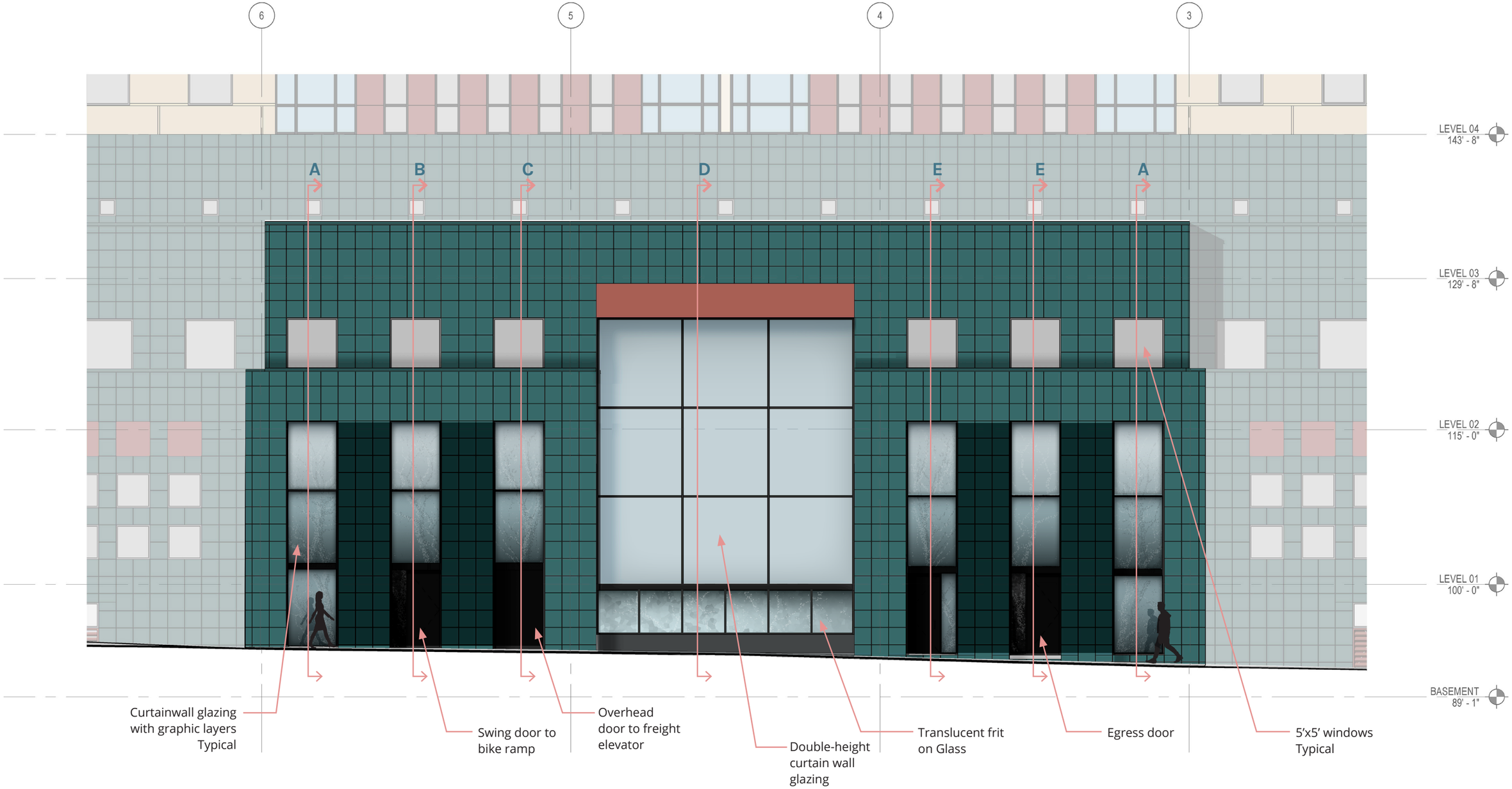
8 Modify South stairwell to accommodate bicycle ramp access as well as freight elevator for loading and trash removal.

9 Upgrades to Resize 2nd floor windows to match all other windows on this level.

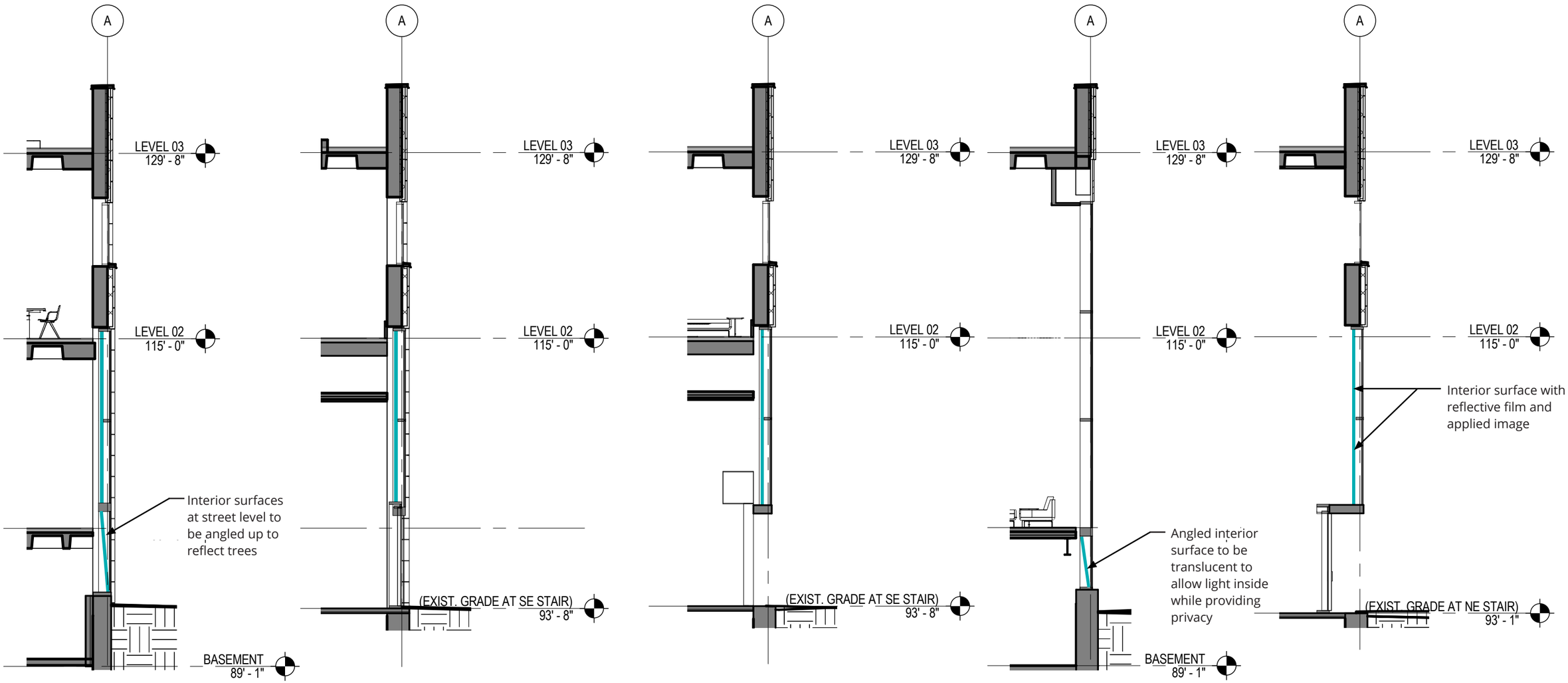
10 Set back Level 2 tile facade by 2” to create sense of depth per original design intention by Michael Graves.

11 Replace vertical opaque “strips” on either side of central opening with graphic glass shadow boxes. This will provide a more varied and interesting experience at the pedestrian level, and will contribute to the overall composition of the facade when viewed from the park across the street. Doors at sidewalk level are for limited employee and service access.

FOURTH AVE. ENLARGED FLOOR PLAN - FIRST FLOOR



FOURTH AVE. ENLARGED ELEVATION



A Sliding Door

B Swing Door

C Double Height Glazing

D Typical

E Egress Door

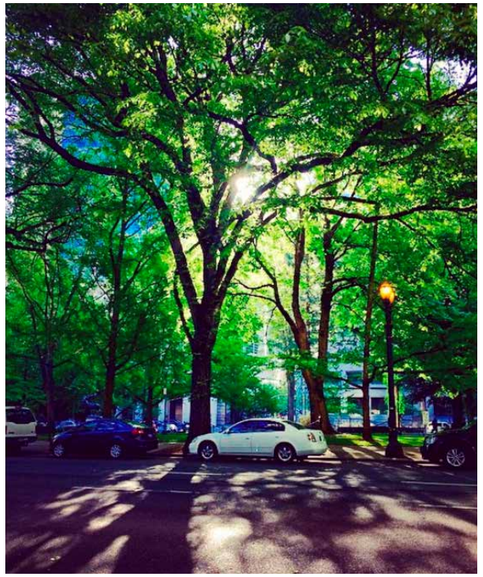
4th Ave Wall Sections

FOURTH AVE. FACADE - WALL SECTIONS

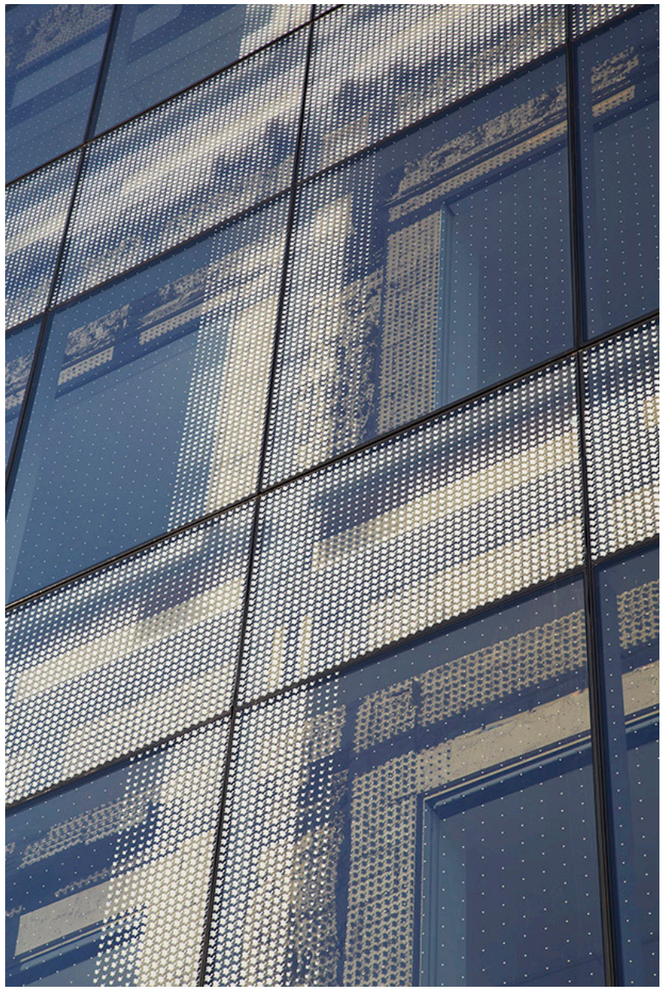
CONCEPT STATEMENT

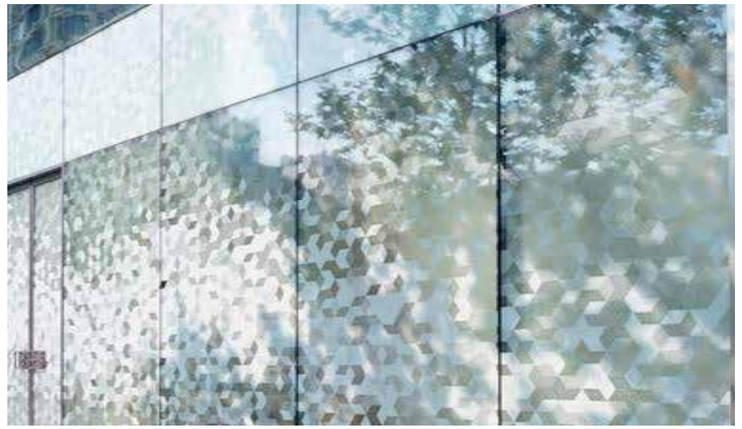
The existing six columnar recesses adjacent to the new grand central window facing Chapman Square on SW Fourth Avenue are transformed into fritted glass shadow boxes conceptually expressing the City of Portland's protection and management of parks, water, natural environment and transportation.

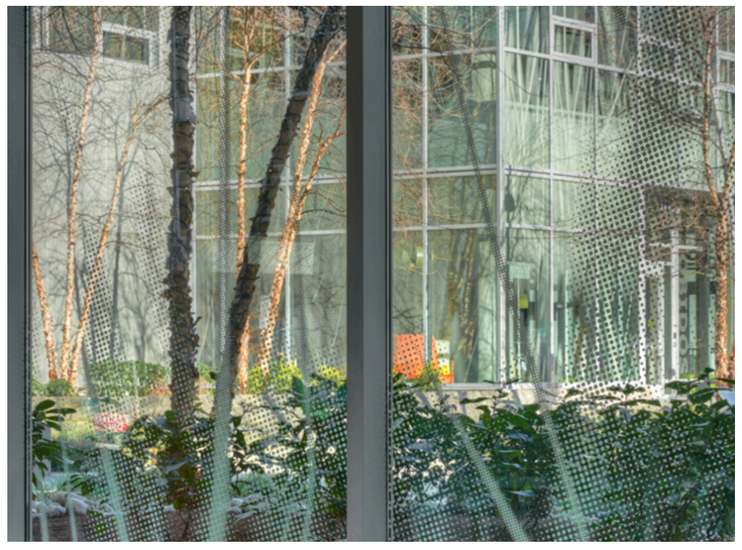
The shadow box's graphic effects layer and reflect the streetscape vitality superimposed over tree canopy and sky. Lighting effects will be explored to activate the shadow boxes at night. The grand central window now allows for a visual connection from the public spaces within the building where the park's seasonal changes of light and color brings life and energy to the east side of the Portland Building.



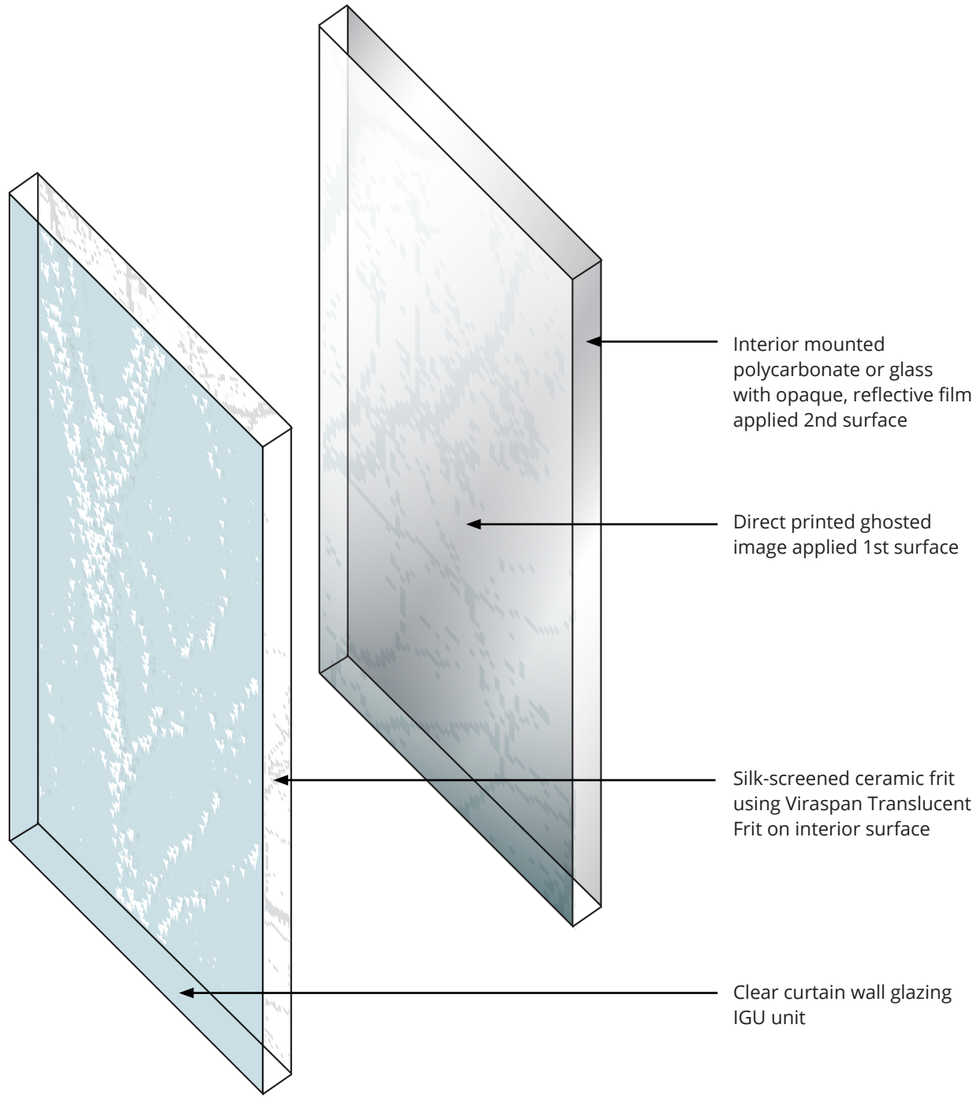
GRAPHIC GLASS INSPIRATION - PARK CONTEXT





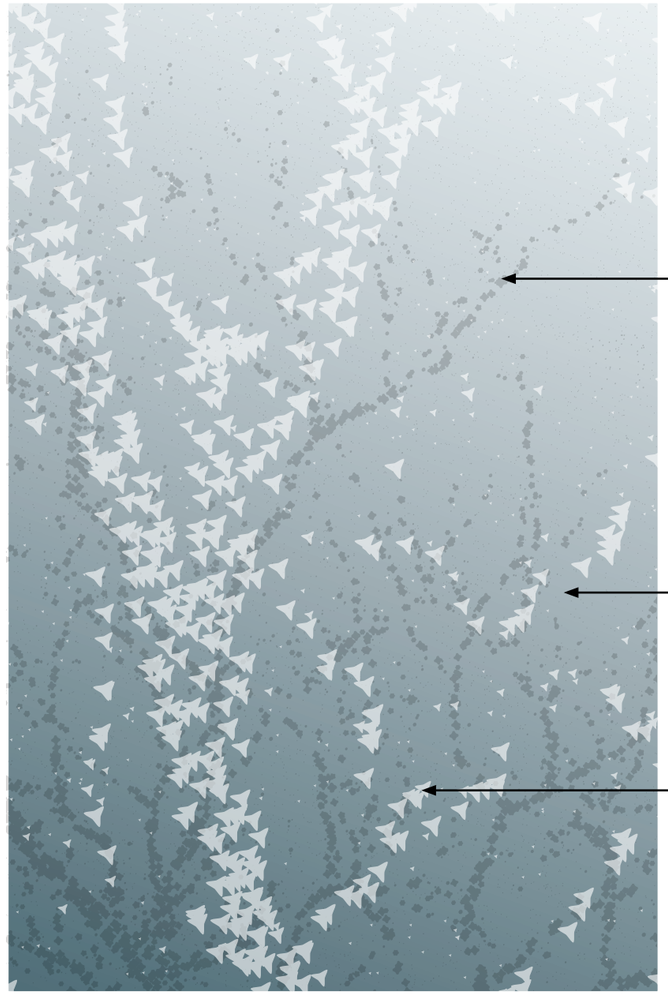


GRAPHIC GLASS INSPIRATION - FRIT & APPLIED GRAPHICS



Graphic Glass Axon Diagram

FOURTH AVE. GRAPHIC GLASS



Ghosted image applied to reflective background surface

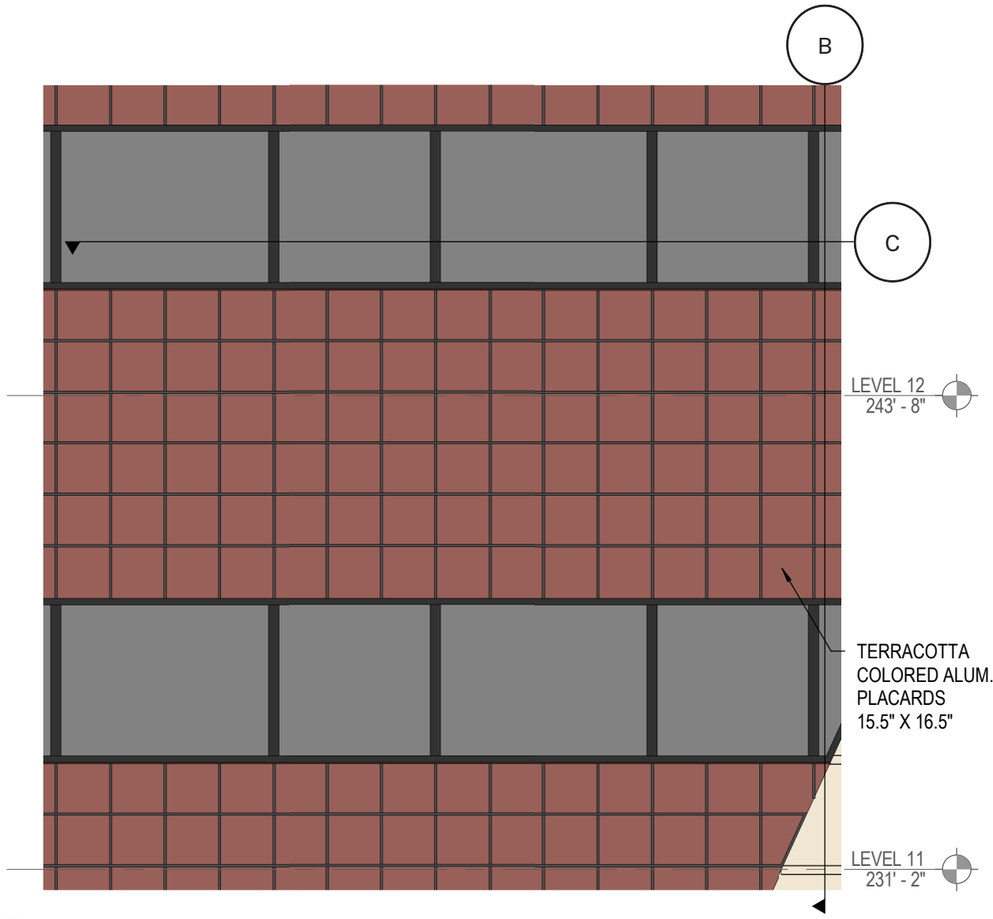
Gradient tone applied to reflective background surface to add depth and soften glare

Abstracted tree image applied as translucent, ceramic frit to interior surface of curtain wall; pattern shape to be studied

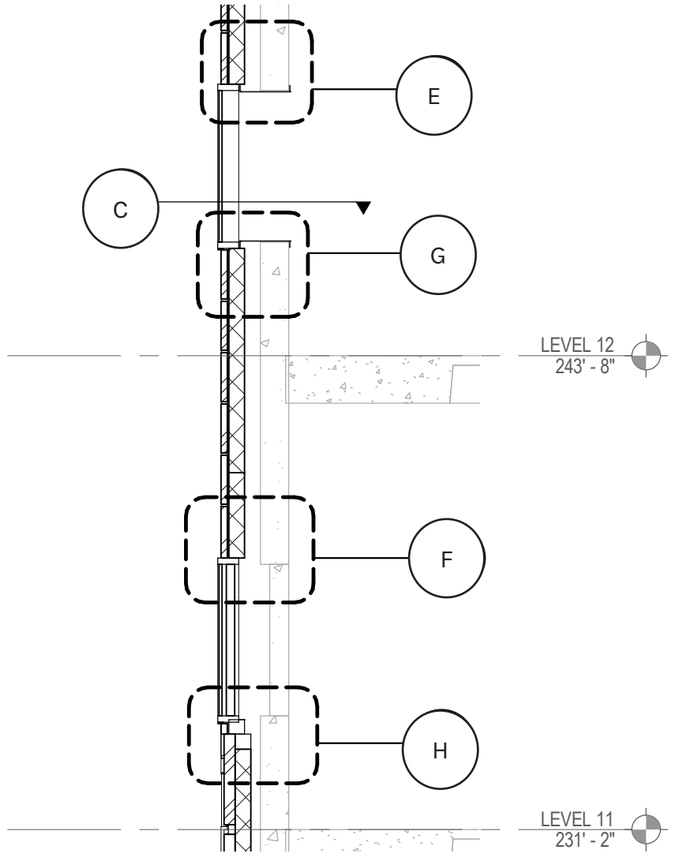
Typical Pattern Detail

EXTERIOR NIGHT RENDERING - PROPOSED

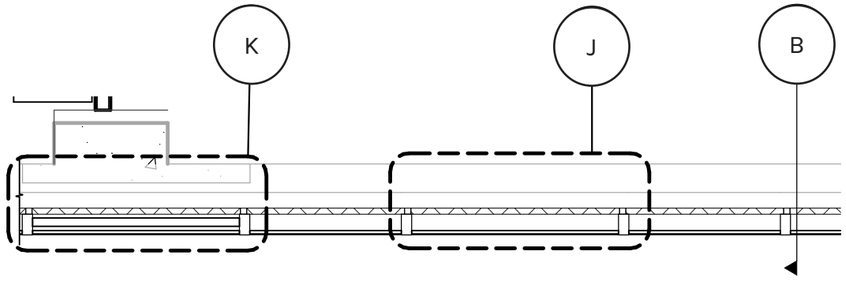
DETAILS AND CUTSHEETS



A PARTIAL ELEVATION KEYSTONE - WALL TYPE "A"
SCALE: 1/4" = 1'-0"

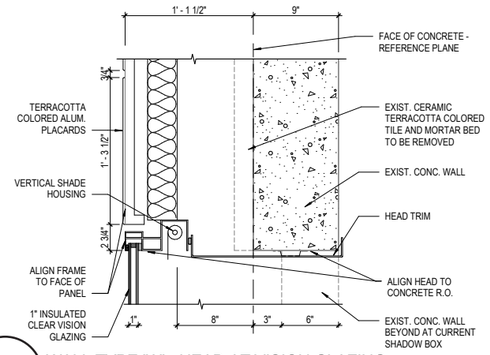


B PARTIAL SECTION KEYSTONE - WALL TYPE "A"
SCALE: 1/4" = 1'-0"

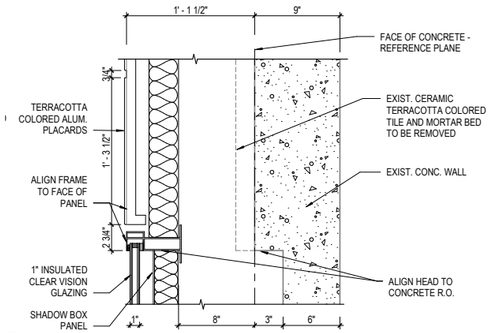


C PARTIAL PLAN KEYSTONE - WALL TYPE "A"
SCALE: 1/4" = 1'-0"

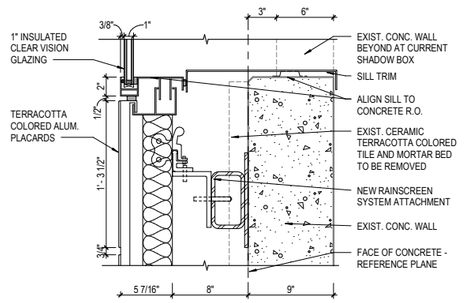
PROPOSED FACADE DETAILS



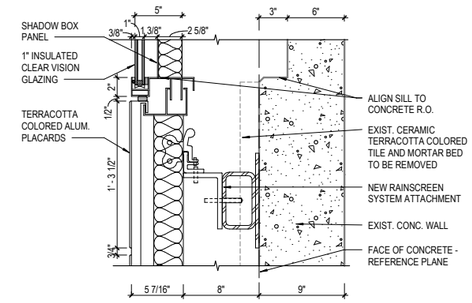
E WALL TYPE "A" - HEAD AT VISION GLAZING
NOT TO SCALE



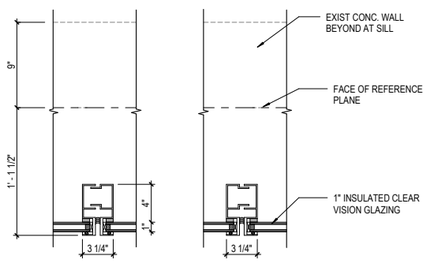
F WALL TYPE "A" - HEAD AT SHADOW BOX
NOT TO SCALE



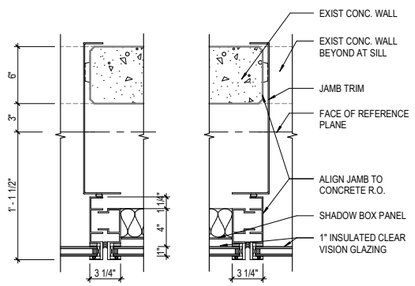
G WALL TYPE "A" - SILL AT VISION GLAZING
NOT TO SCALE



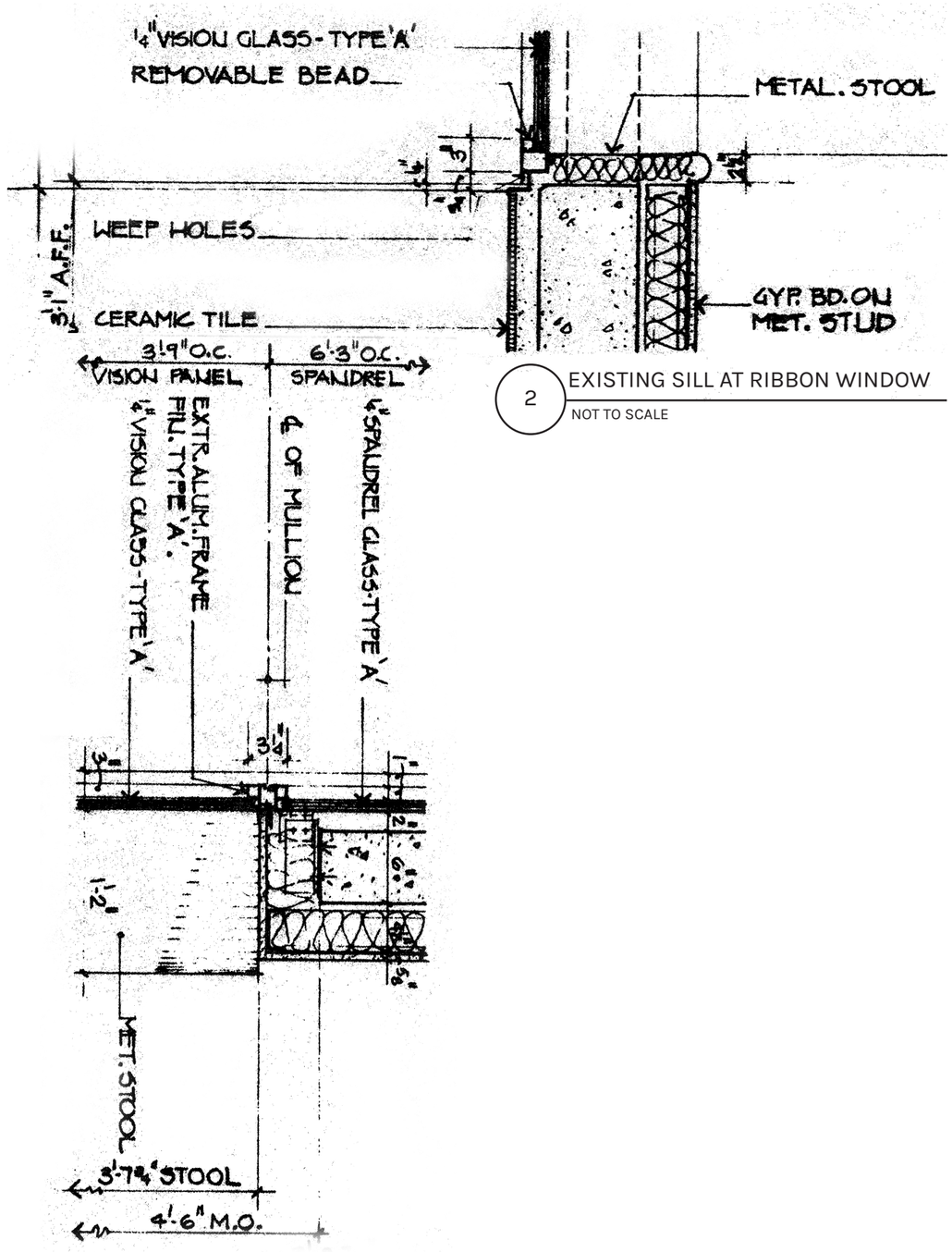
H WALL TYPE "A" - SILL AT SHADOW BOX
NOT TO SCALE



J WALL TYPE "A" - JAMB AT VISION GLAZING
NOT TO SCALE



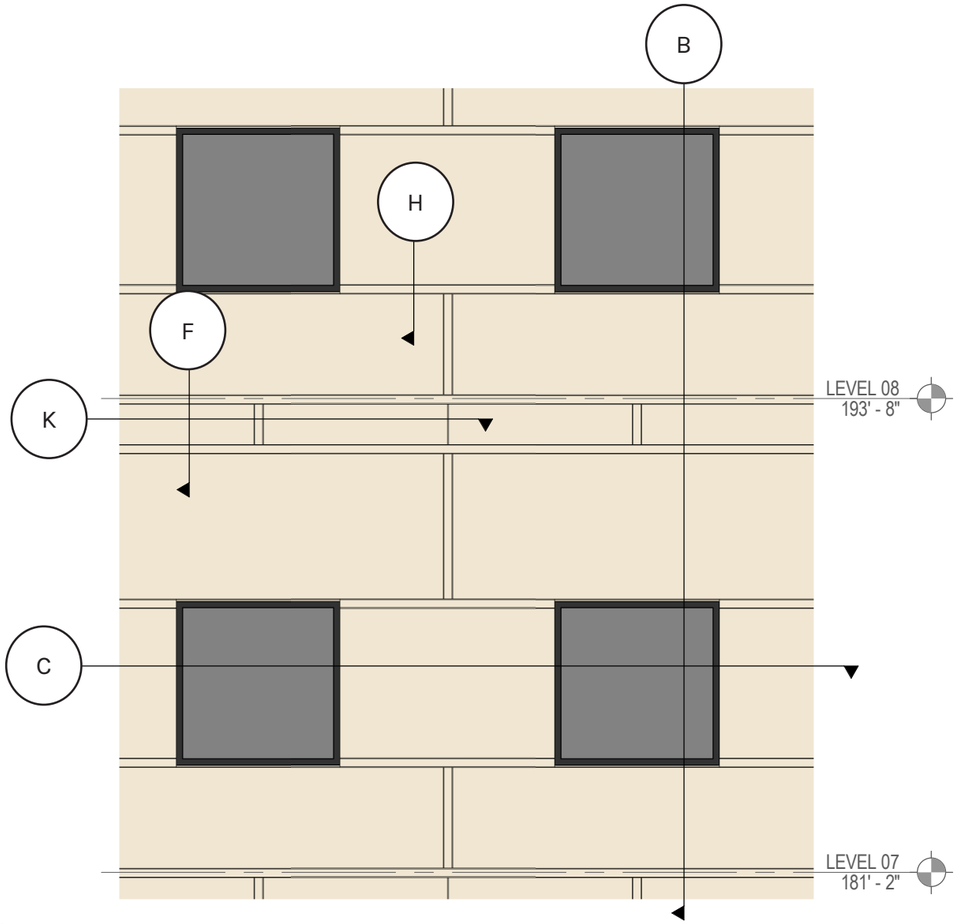
K WALL TYPE "A" - JAMB AT SHADOW BOX
NOT TO SCALE



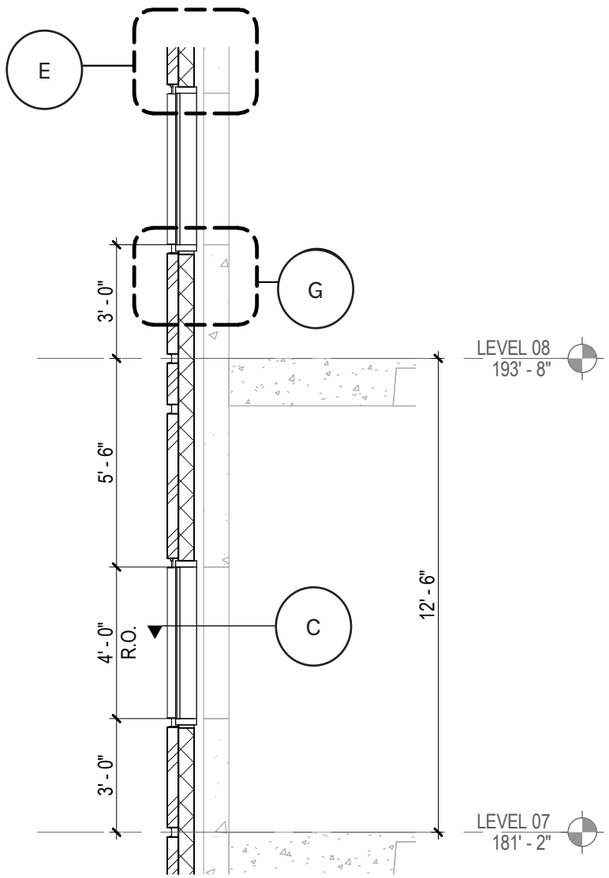
2 EXISTING SILL AT RIBBON WINDOW
NOT TO SCALE

1 EXISTING JAMB AT RIBBON WINDOW
NOT TO SCALE

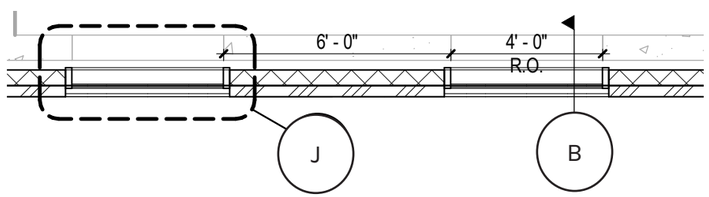
FACADE DETAILS



A PARTIAL ELEVATION UPPER LEVELS - WALL TYPE "B"
SCALE: 1/4" = 1'-0"

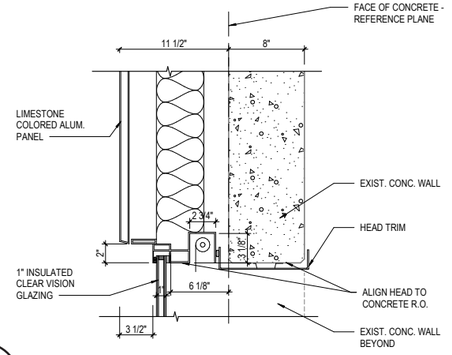


B PARTIAL SECTION UPPER LEVELS - WALL TYPE "B"
SCALE: 1/4" = 1'-0"

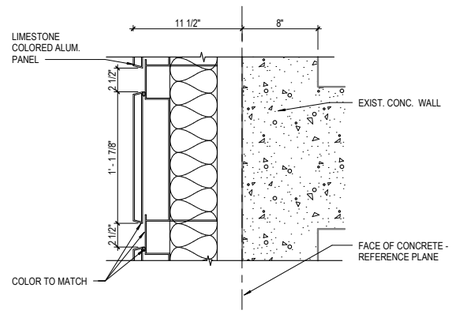


C PARTIAL PLAN UPPER LEVELS - WALL TYPE "B"
SCALE: 1/4" = 1'-0"

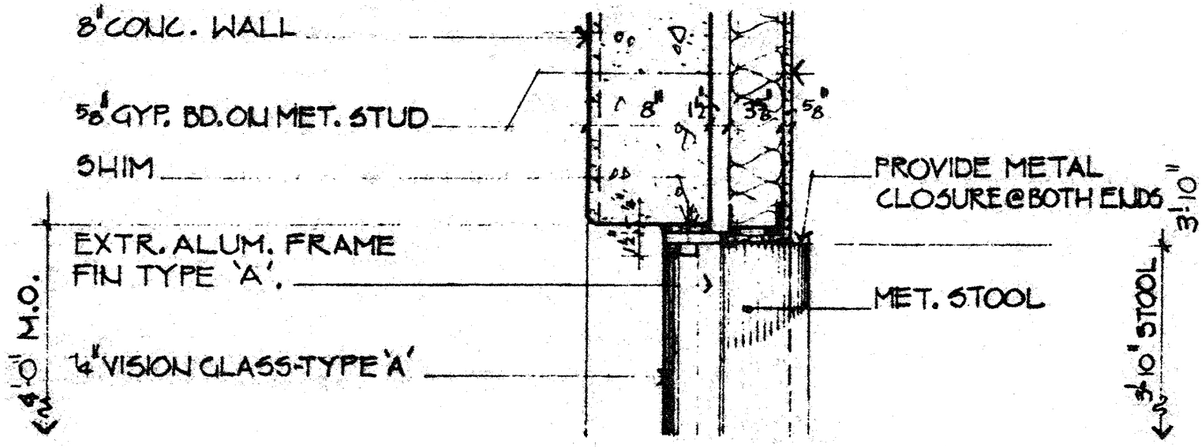
PROPOSED FACADE DETAILS



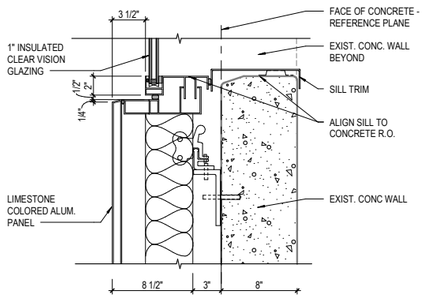
E WALL TYPE "B" - HEAD AT PUNCHED OPENING
NOT TO SCALE



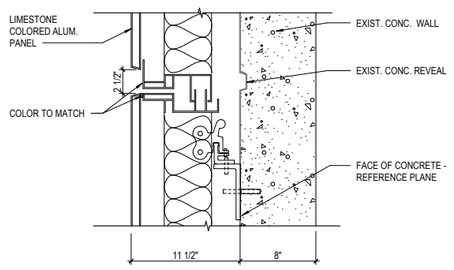
F WALL TYPE "B" - NARROW HORIZONTAL PANEL
NOT TO SCALE



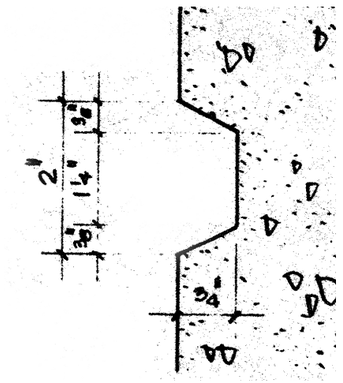
1 EXISTING JAMB DETAIL AT PUNCHED WINDOW
NOT TO SCALE



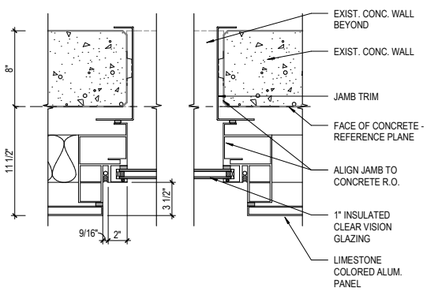
G WALL TYPE "B" - SILL AT PUNCHED OPENING
NOT TO SCALE



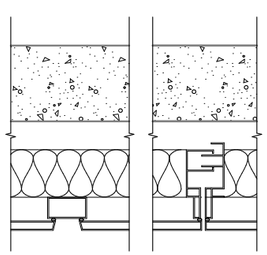
H WALL TYPE "B" - STACK JOINT AT REVEAL
NOT TO SCALE



2 EXISTING REVEAL DETAIL
NOT TO SCALE

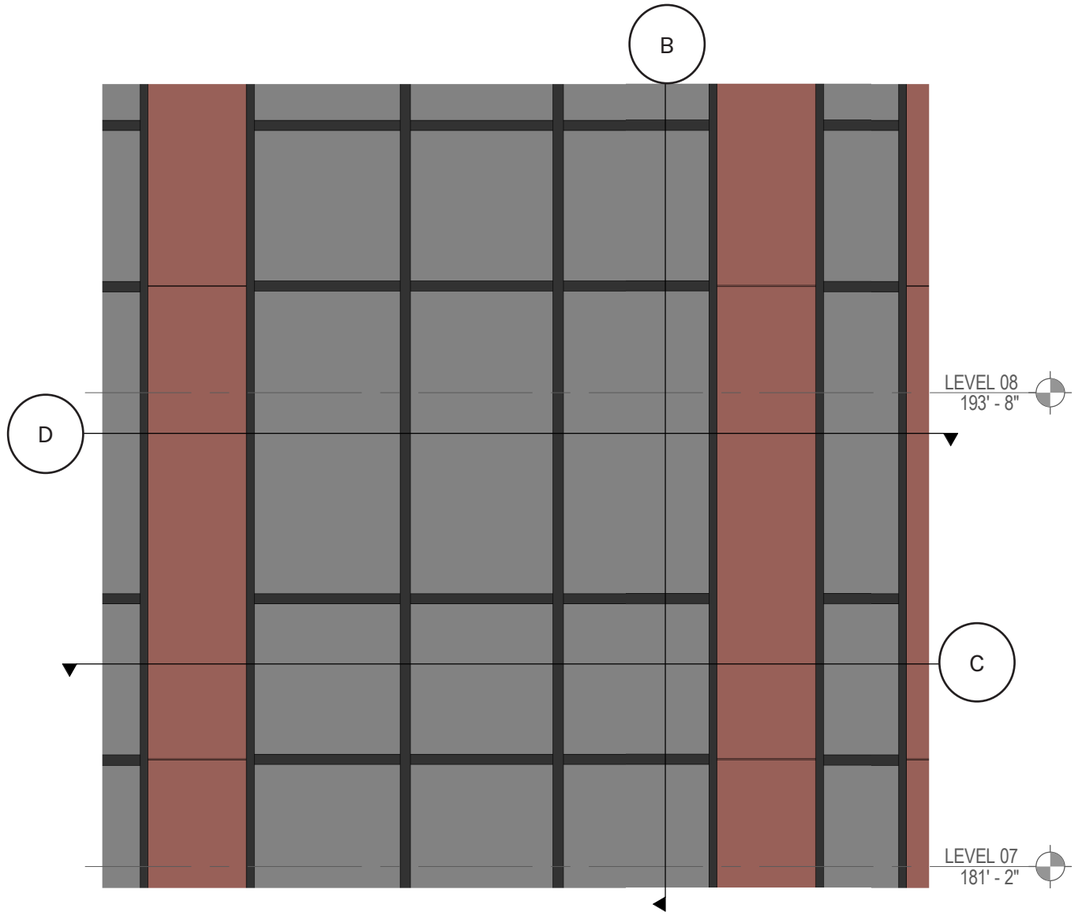


J WALL TYPE "B" - JAMB AT PUNCHED OPENING
NOT TO SCALE

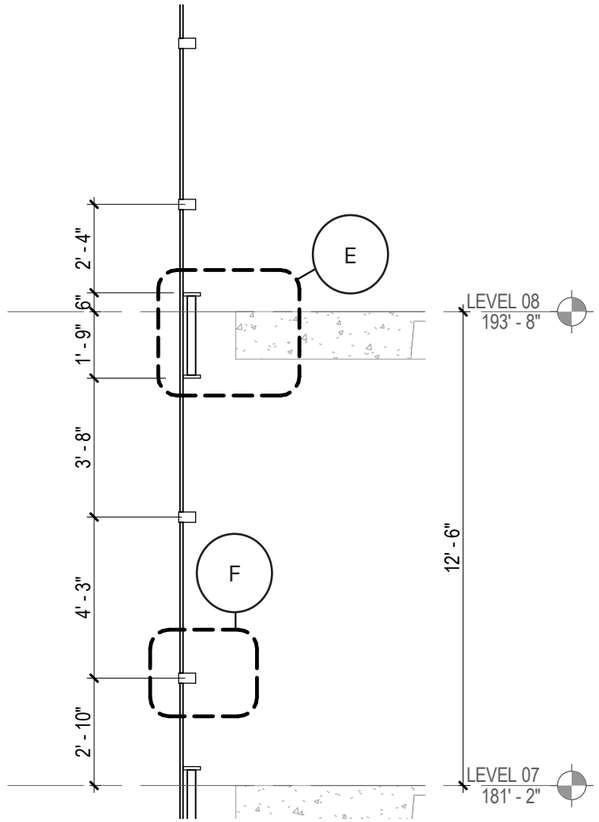


K WALL TYPE "B" - MAJOR AND MINOR PANEL JOINTS
NOT TO SCALE

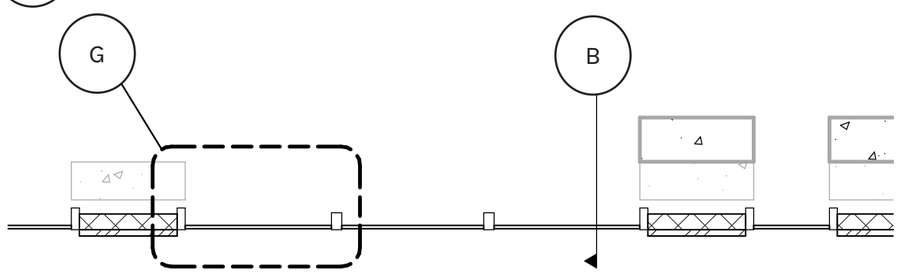
FACADE DETAILS



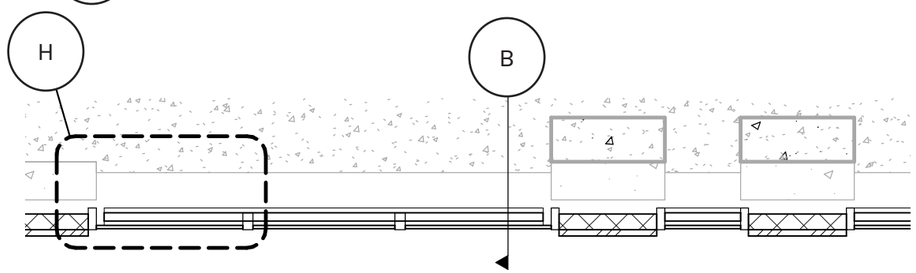
A PARTIAL ELEVATION CURTAINWALL - WALL TYPE "C"
SCALE: 1/4" = 1'-0"



B PARTIAL SECTION CURTAINWALL - WALL TYPE "C"
SCALE: 1/4" = 1'-0"

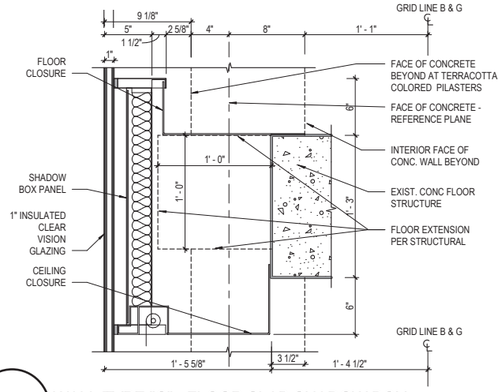


C PARTIAL PLAN CURTAINWALL - WALL TYPE "C"
SCALE: 1/4" = 1'-0"

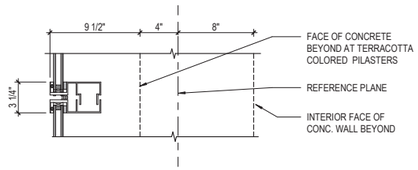


D PARTIAL PLAN CURTAINWALL - WALL TYPE "C"
SCALE: 1/4" = 1'-0"

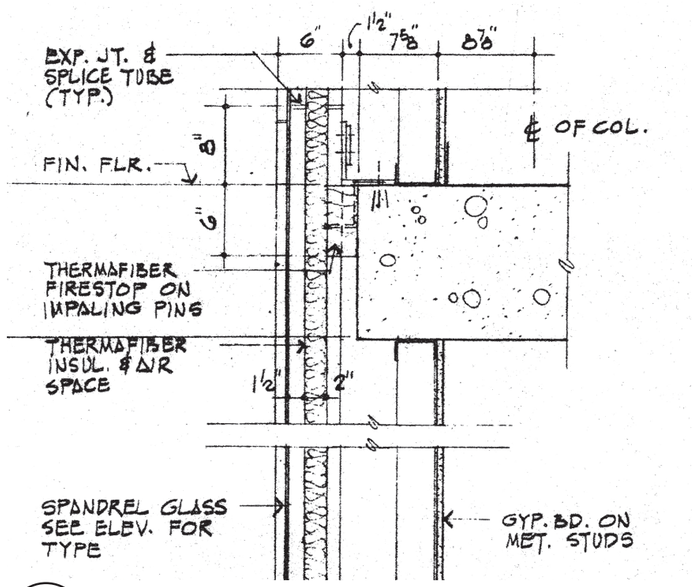
PROPOSED FACADE DETAILS



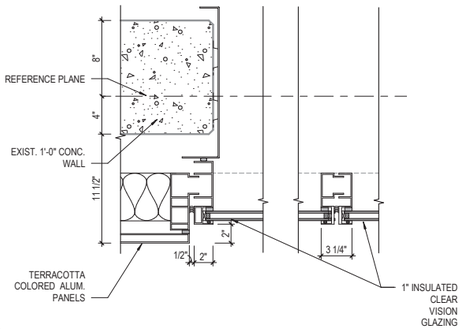
E WALL TYPE "C" - FLOOR SLAB SHADOW BOX
NOT TO SCALE



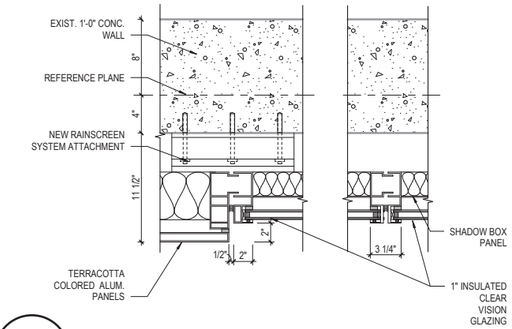
F WALL TYPE "C" - TYP. HORIZONTAL MULLION
NOT TO SCALE



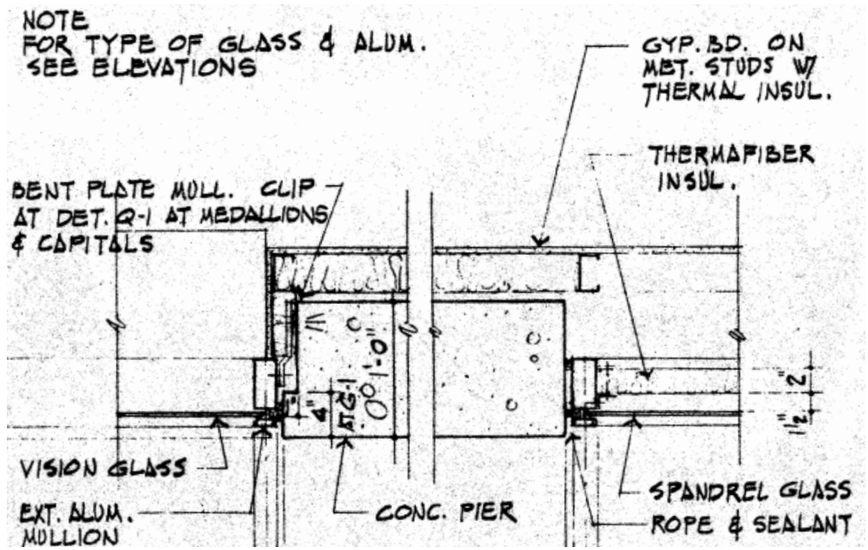
1 EXISTING CURTAINWALL ATTACHMENT AT FLOOR SLAB
NOT TO SCALE



G WALL TYPE "C" - CURTAINWALL JAMB VERT. MULLIONS
NOT TO SCALE

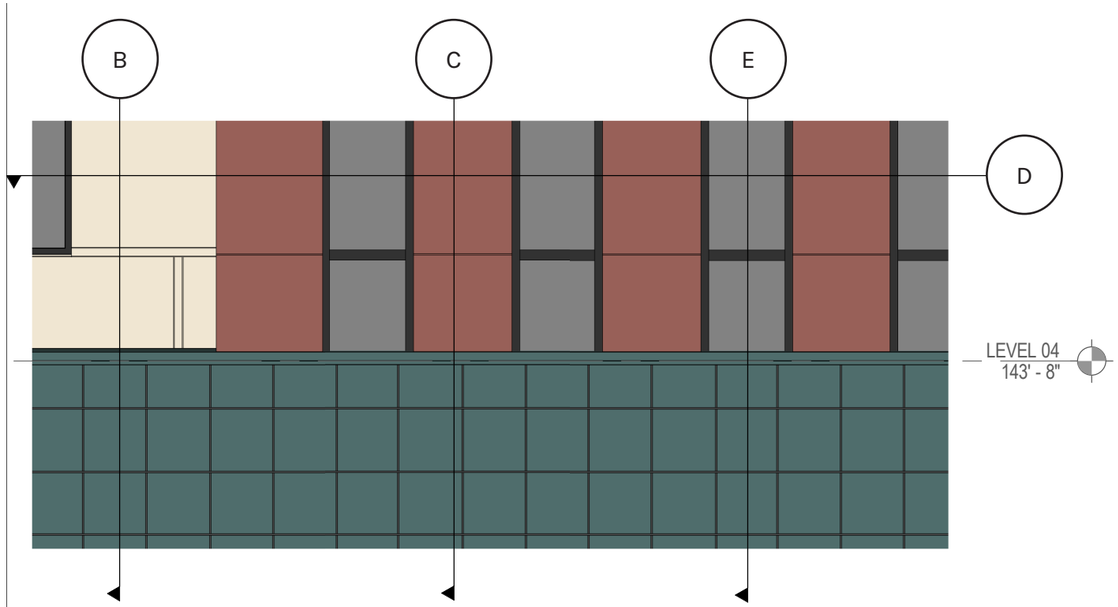


H WALL TYPE "C" - CURTAIN WALL JAMB AT SHADOW BOX
NOT TO SCALE



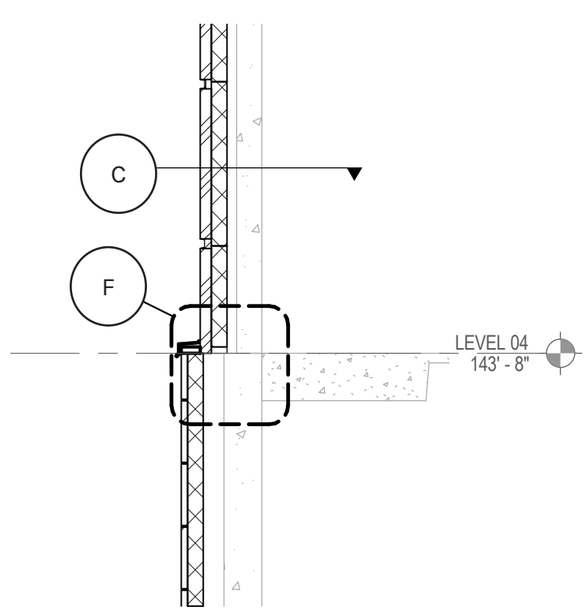
2 EXISTING CURTAINWALL ATTACHMENT AT CONCRETE PIER
NOT TO SCALE

FACADE DETAILS



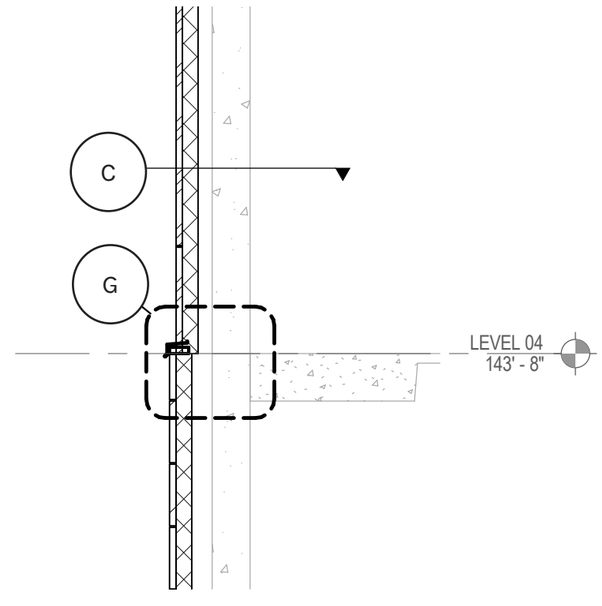
A PARTIAL ELEVATION - WALL TYPE TRANSITION

SCALE: 1/4" = 1'-0"



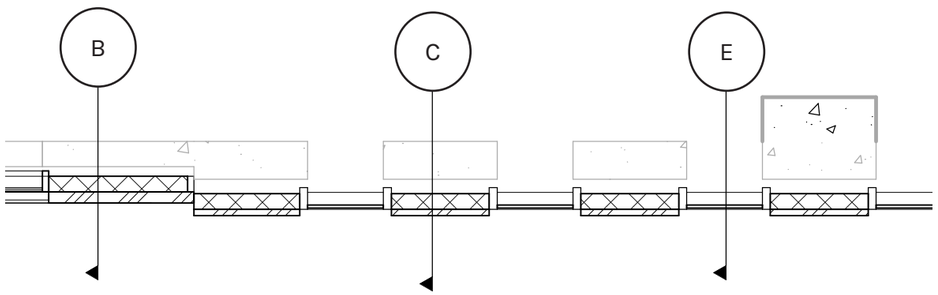
B PARTIAL SECTION - WALL TYPE TRANSITION

SCALE: 1/4" = 1'-0"



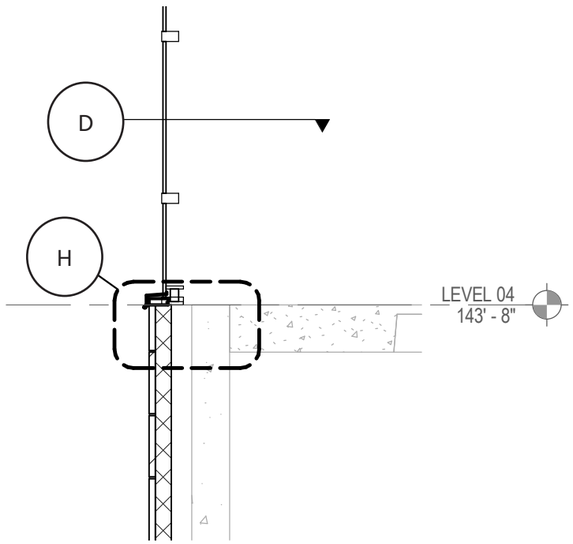
C PARTIAL SECTION - WALL TYPE TRANSITION

SCALE: 1/4" = 1'-0"



D PARTIAL PLAN - WALL TYPE TRANSITION

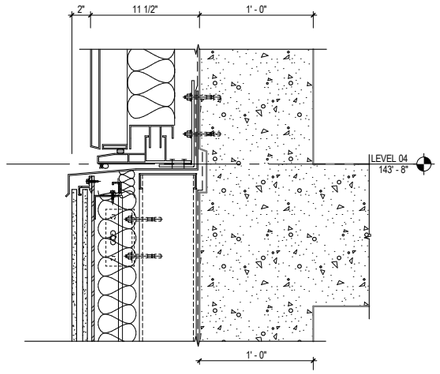
SCALE: 1/4" = 1'-0"



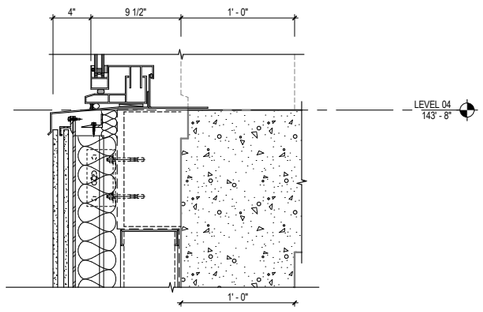
E PARTIAL SECTION - WALL TYPE TRANSITION

SCALE: 1/4" = 1'-0"

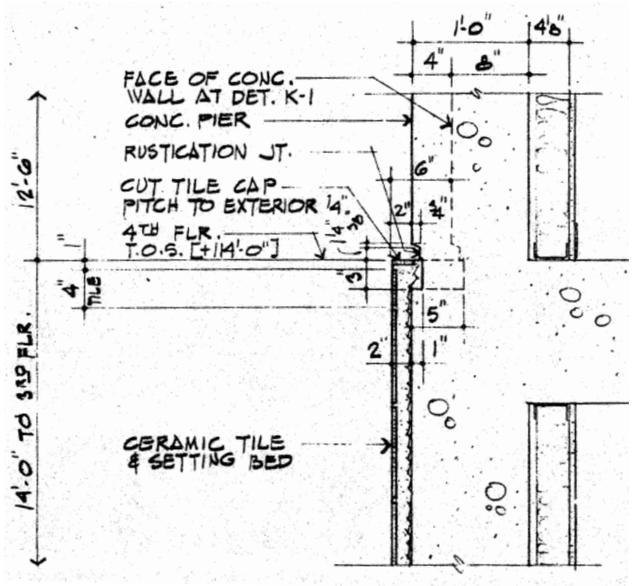
PROPOSED FACADE DETAILS



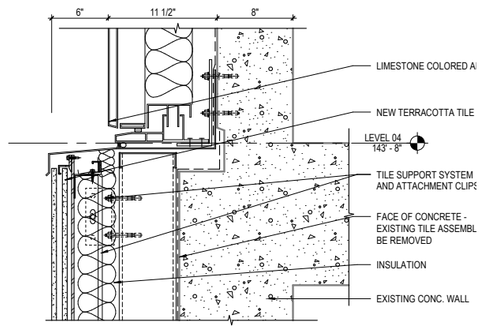
F TRANSITION DETAIL - FOURTH LEVEL
NOT TO SCALE



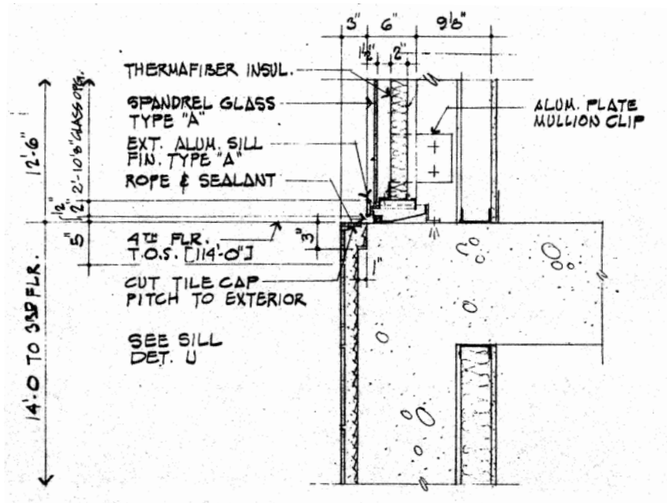
G TRANSITION DETAIL - FOURTH LEVEL
NOT TO SCALE



1 EXISTING SILL AT 4th FLOOR CONCRETE PIER & WALL
NOT TO SCALE

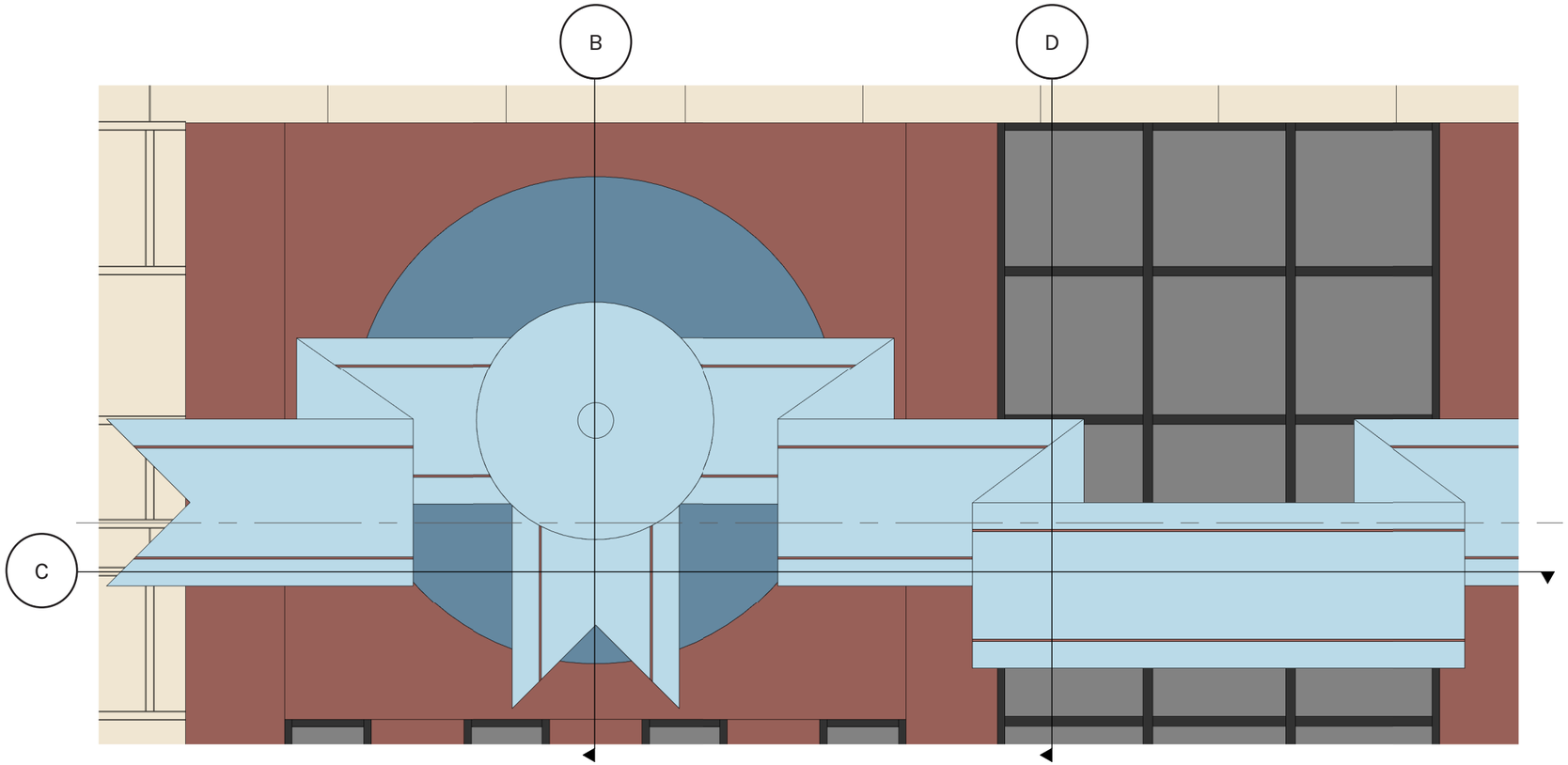


H TRANSITION DETAIL - FOURTH LEVEL
NOT TO SCALE



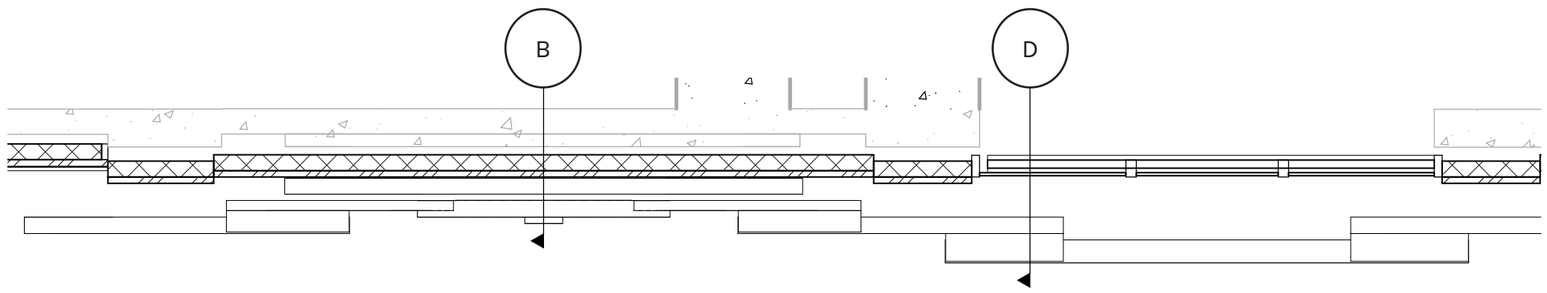
2 EXISTING SILL AT 4th FLOOR SPANDREL GLAZING
NOT TO SCALE

FACADE DETAILS



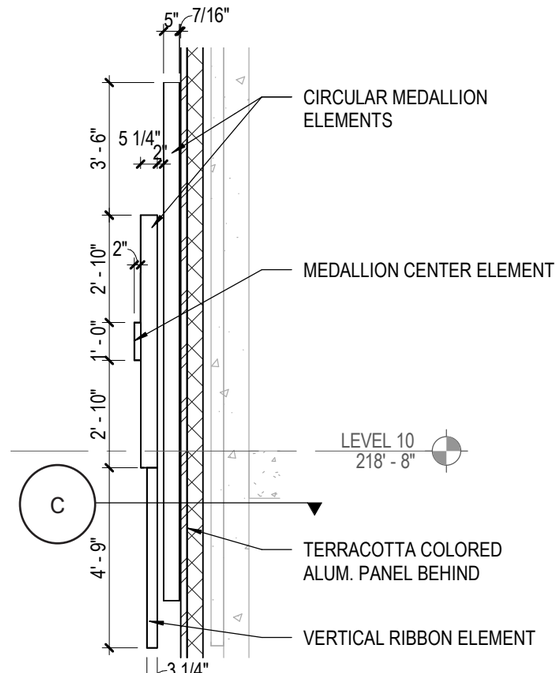
A PARTIAL ELEVATION - GARLAND AND MEDALLION

SCALE: 1/4" = 1'-0"



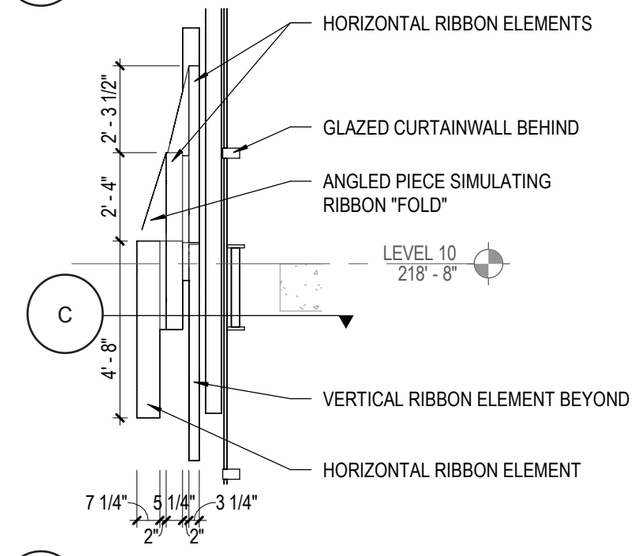
C PARTIAL PLAN - GARLAND AND MEDALLION

SCALE: 1/4" = 1'-0"



B PARTIAL SECTION - GARLAND AND MEDALLION

SCALE: 1/4" = 1'-0"



D PARTIAL SECTION - GARLAND AND MEDALLION

SCALE: 1/4" = 1'-0"

PROPOSED FACADE DETAILS

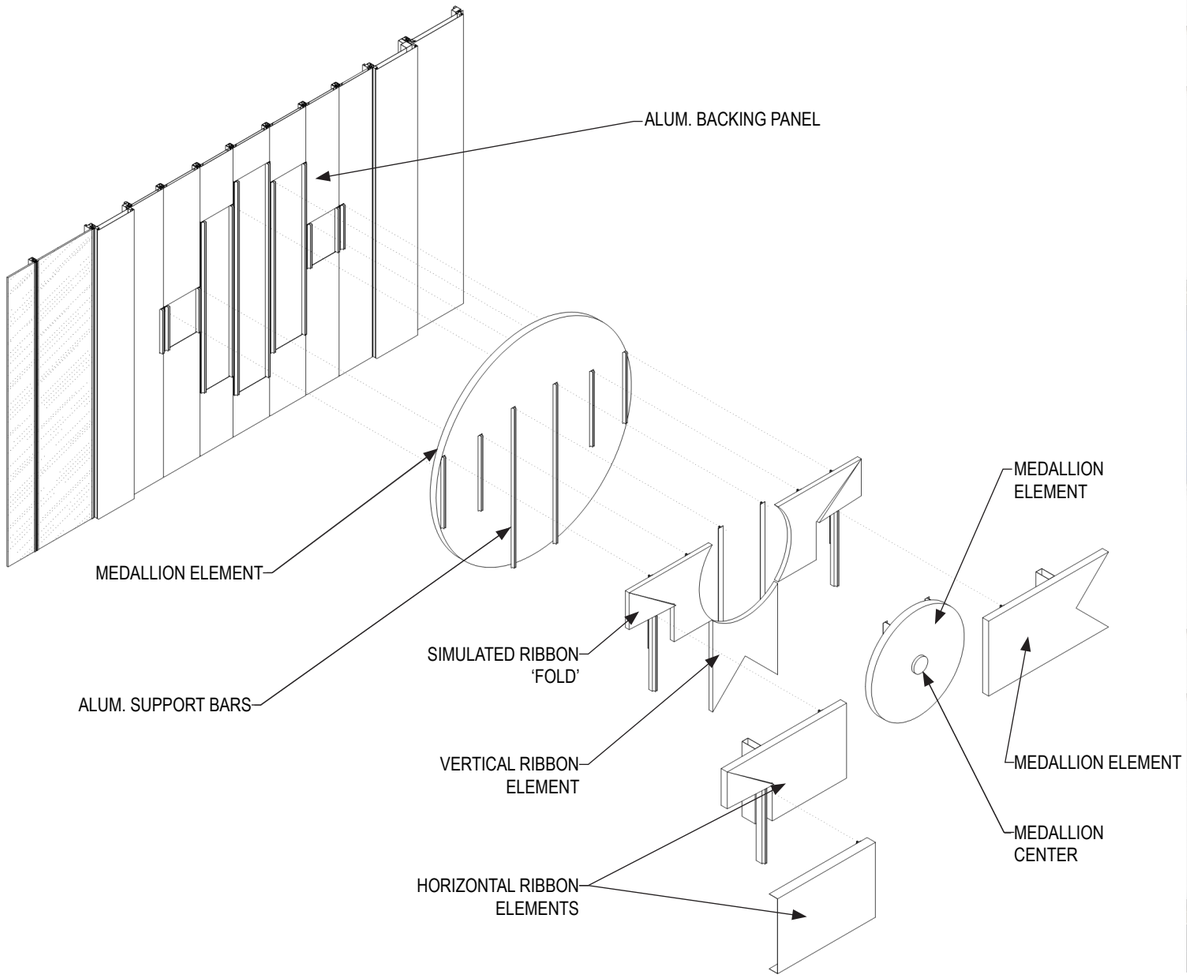
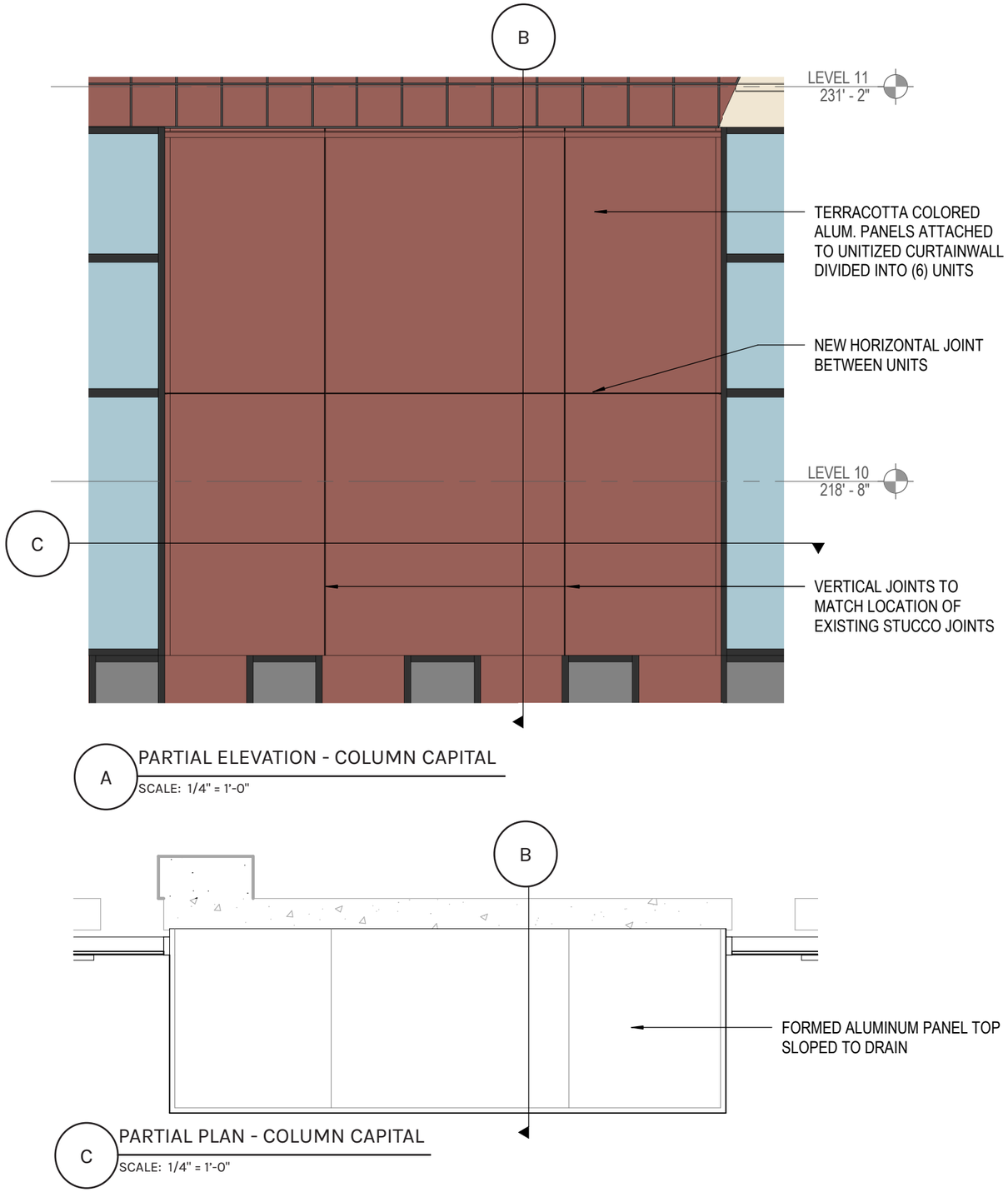


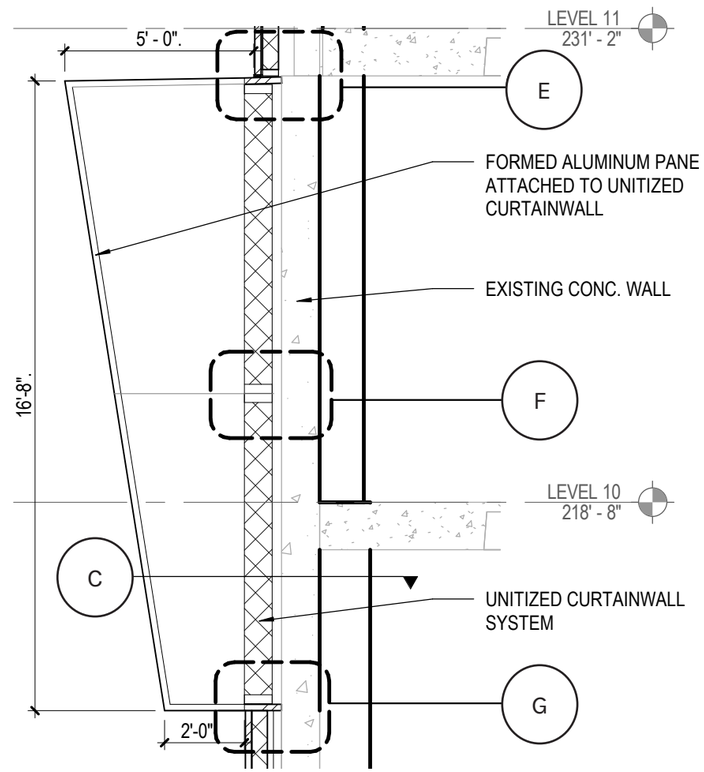
DIAGRAM - EXPLODED ISOMETRIC OF GARLAND ATTACHMENT

PHOTO - EXISTING CONDITION OF GARLAND



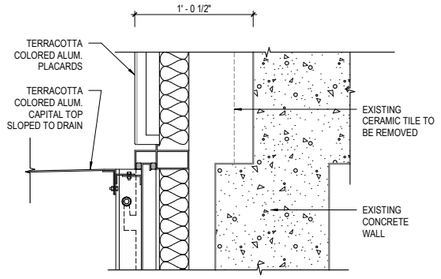
A PARTIAL ELEVATION - COLUMN CAPITAL
SCALE: 1/4" = 1'-0"

C PARTIAL PLAN - COLUMN CAPITAL
SCALE: 1/4" = 1'-0"

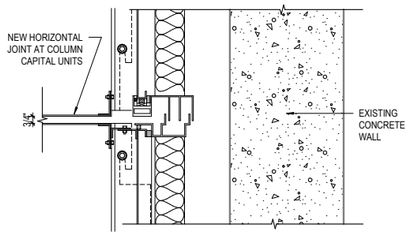


B PARTIAL SECTION - COLUMN CAPITAL
SCALE: 1/4" = 1'-0"

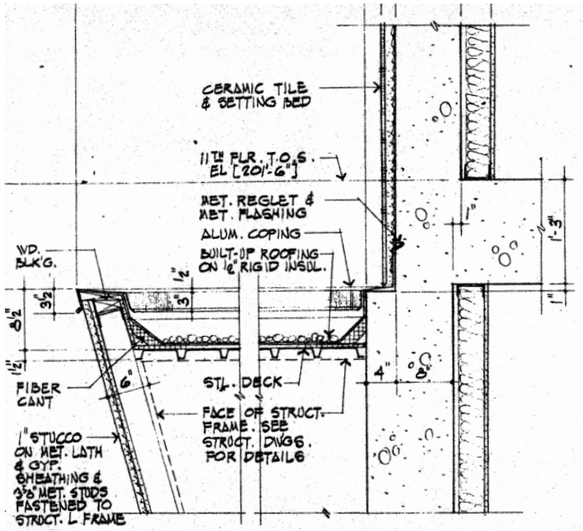
PROPOSED FACADE DETAILS



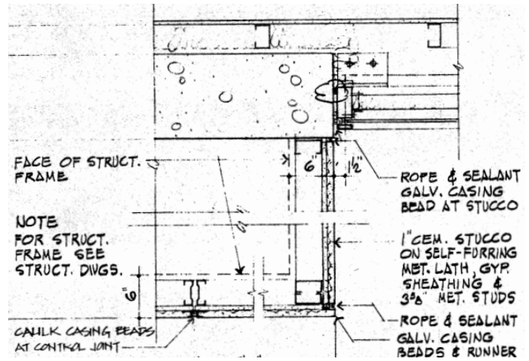
E WALL TYPE "C" - HEAD AT COLUMN CAPITAL
NOT TO SCALE



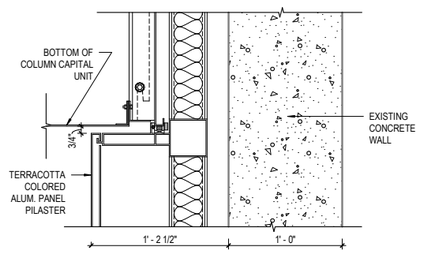
F WALL TYPE "C" - STACK JOINT COLUMN CAPITAL
NOT TO SCALE



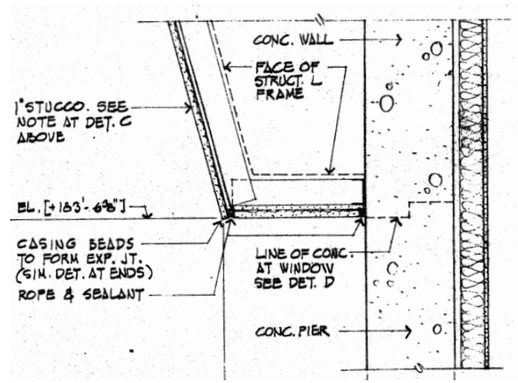
1 EXISTING SECTION AT TOP OF CAPITAL
NOT TO SCALE



2 EXISTING PLAN OF JAMB AT CAPITAL
NOT TO SCALE

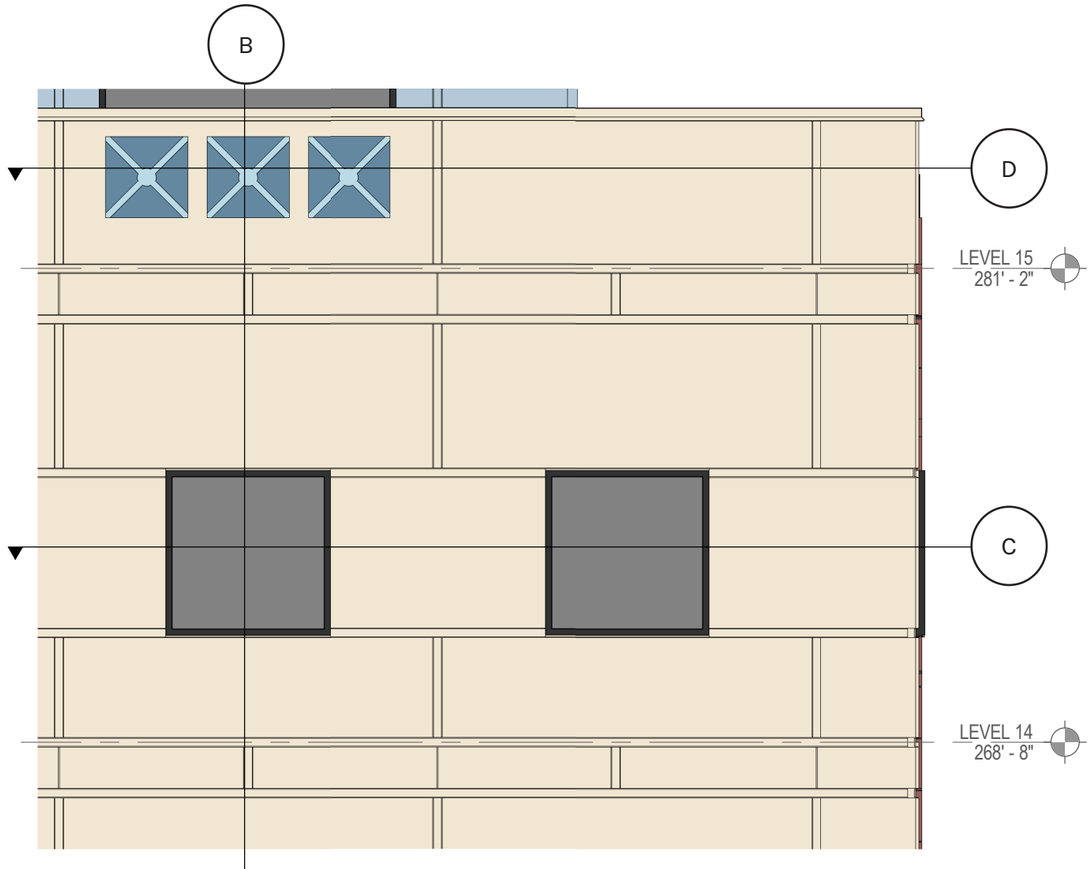


G WALL TYPE "C" - SILL AT COLUMN CAPITAL
NOT TO SCALE



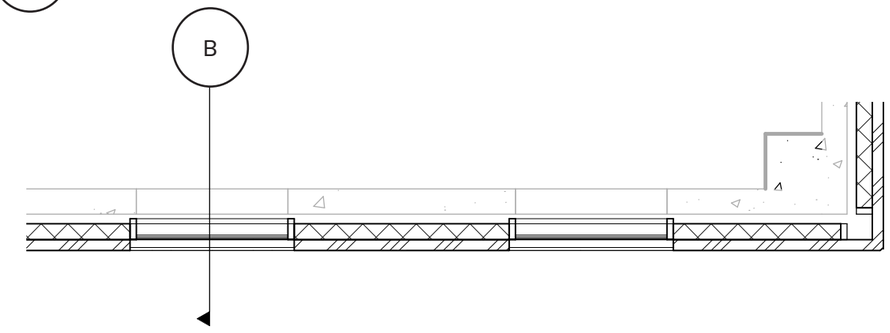
3 EXISTING SECTION AT BOTTOM OF CAPITAL
NOT TO SCALE

FACADE DETAILS



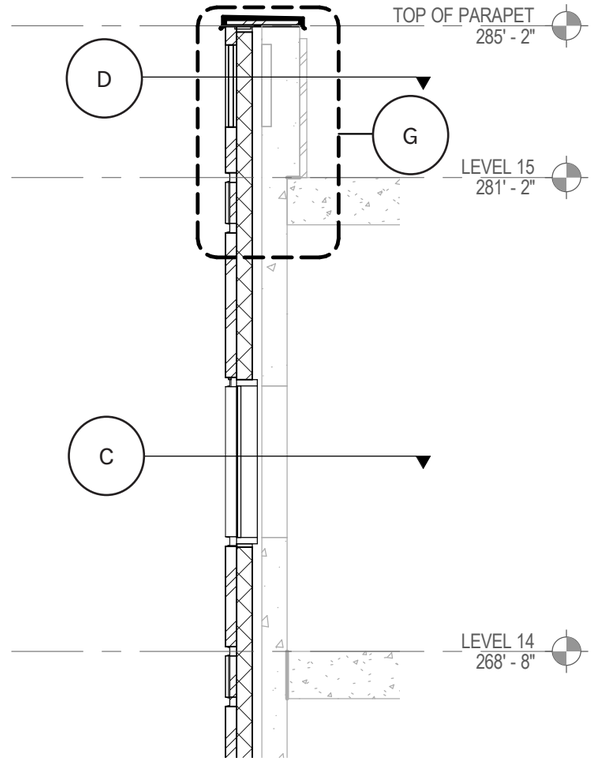
A PARTIAL ELEVATION UPPER LEVELS - WALL TYPE "B"

SCALE: 1/4" = 1'-0"



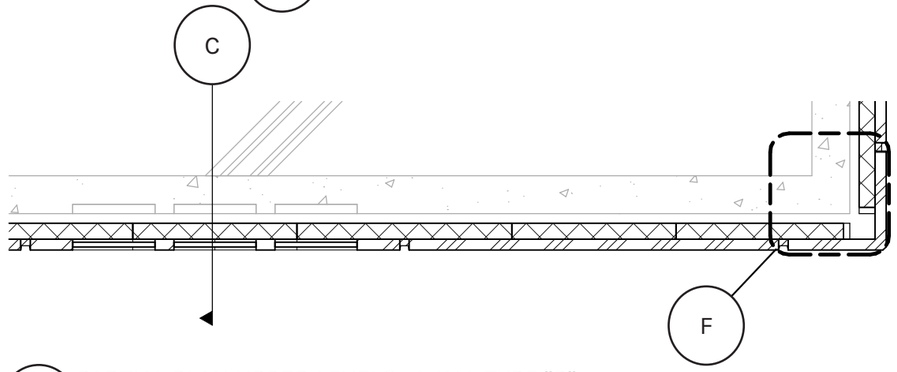
C PARTIAL PLAN UPPER LEVELS - WALL TYPE "B"

SCALE: 1/4" = 1'-0"



B PARTIAL SECTION UPPER LEVELS - WALL TYPE "B"

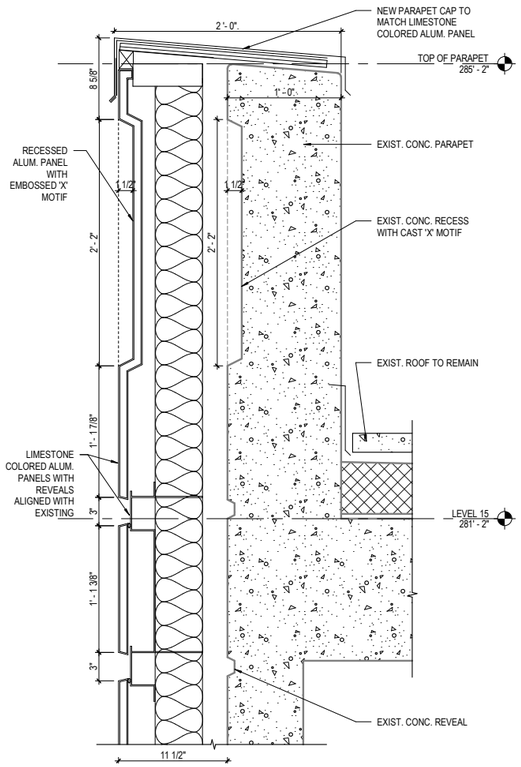
SCALE: 1/4" = 1'-0"



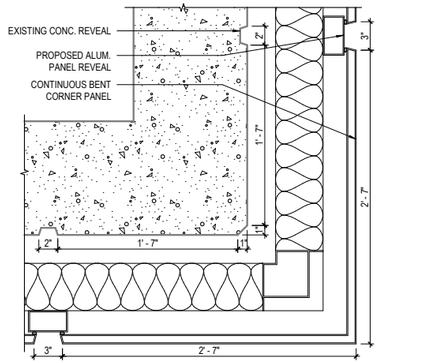
D PARTIAL PLAN UPPER LEVELS - WALL TYPE "B"

SCALE: 1/4" = 1'-0"

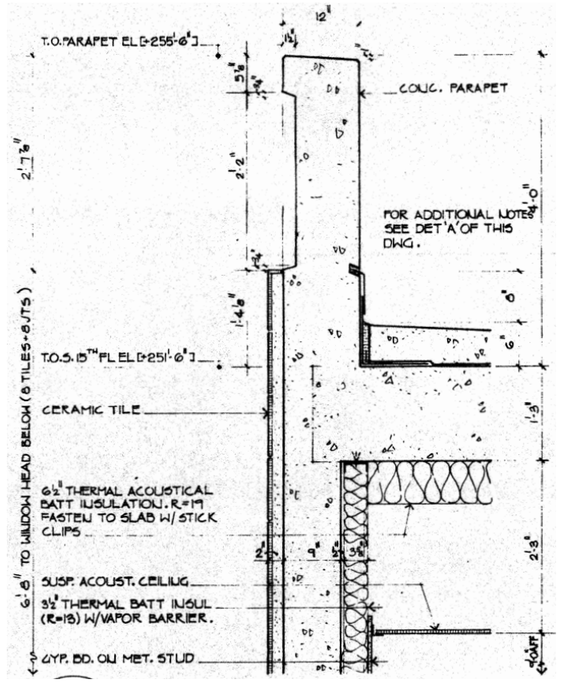
PROPOSED FACADE DETAILS



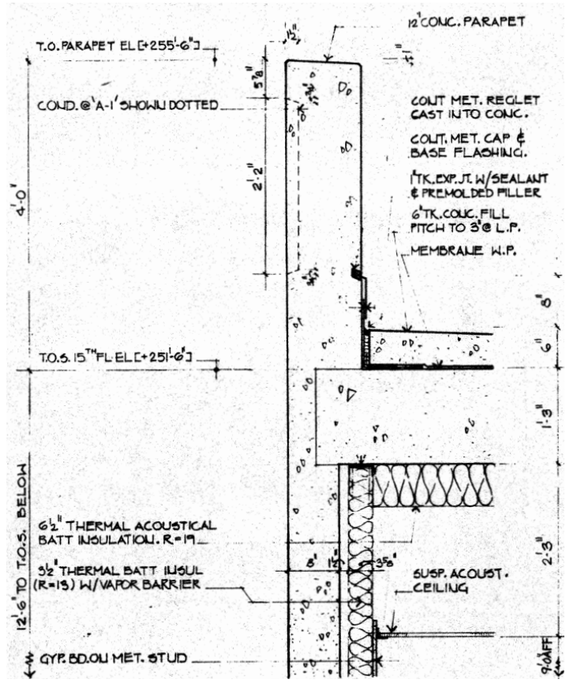
G WALL TYPE "B" - PARAPET CONDITION
NOT TO SCALE



F WALL TYPE "B" - CORNER DETAIL
NOT TO SCALE

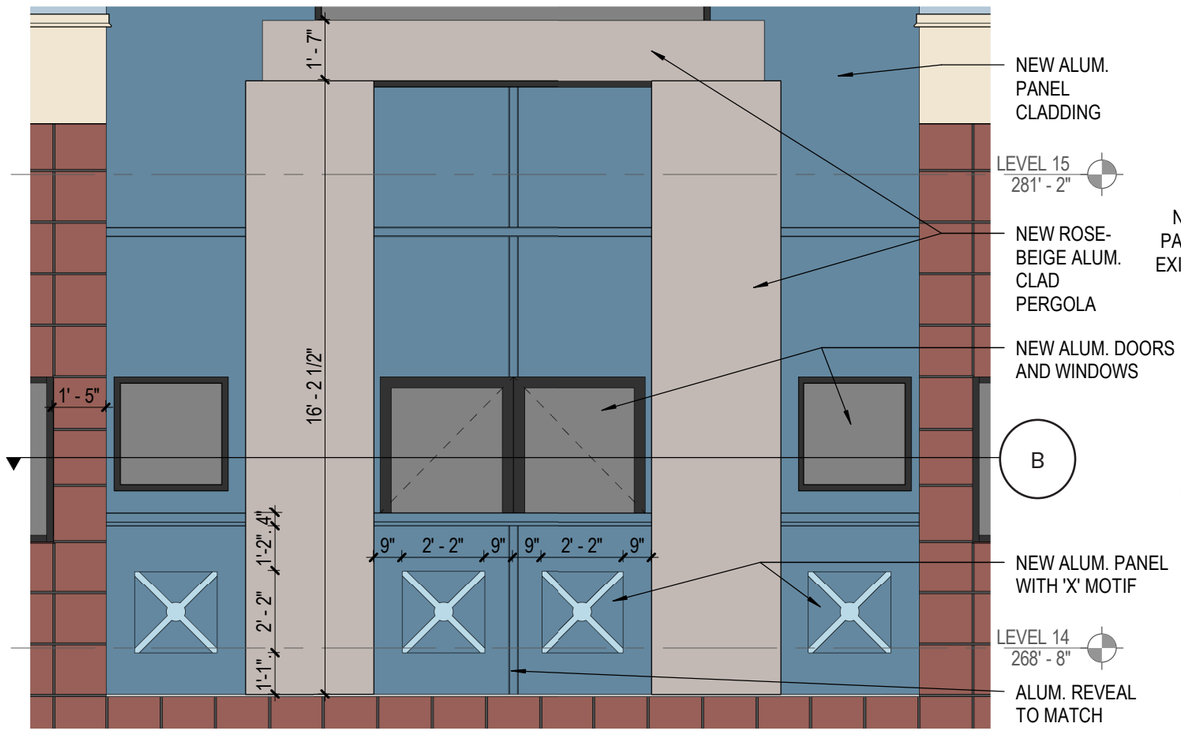


1 EXISTING SECTION AT 14th FLOOR PARAPET
NOT TO SCALE



2 EXISTING SECTION AT 14th FLOOR PARAPET
NOT TO SCALE

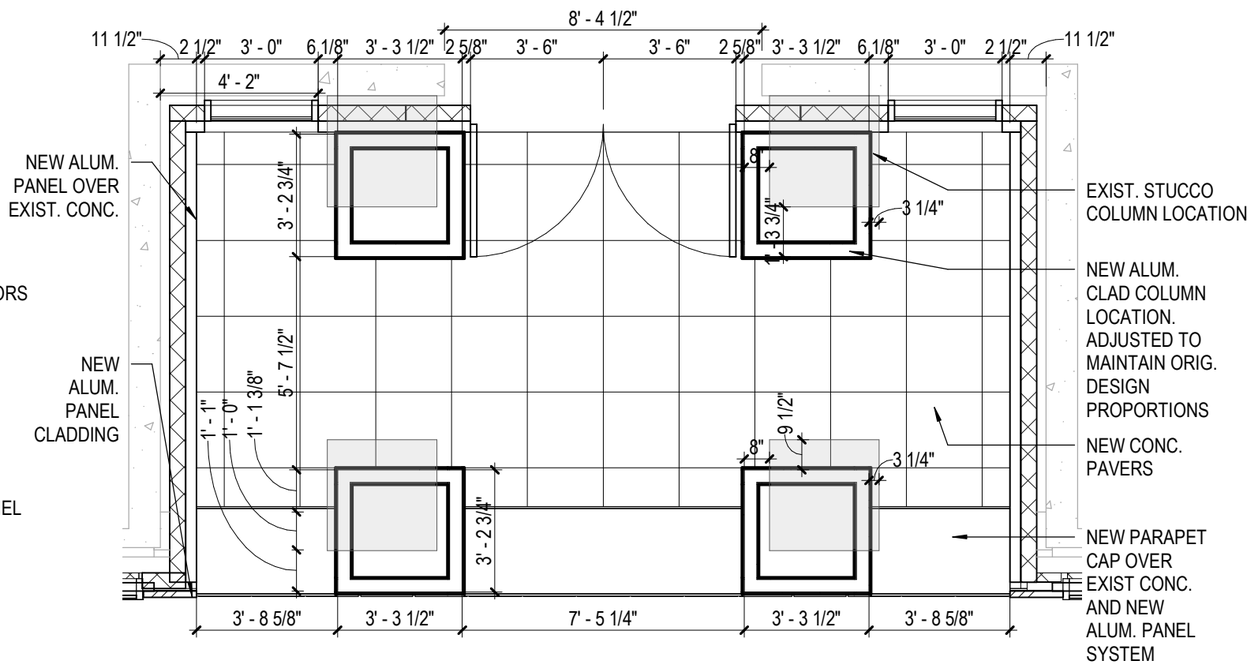
FACADE DETAILS



A

PARTIAL ELEVATION - FOURTEENTH FLOOR PERGOLA

SCALE: 1/4" = 1'-0"

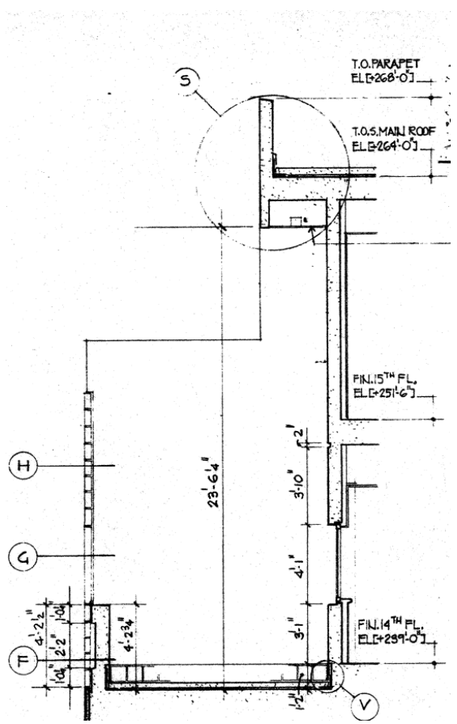


B

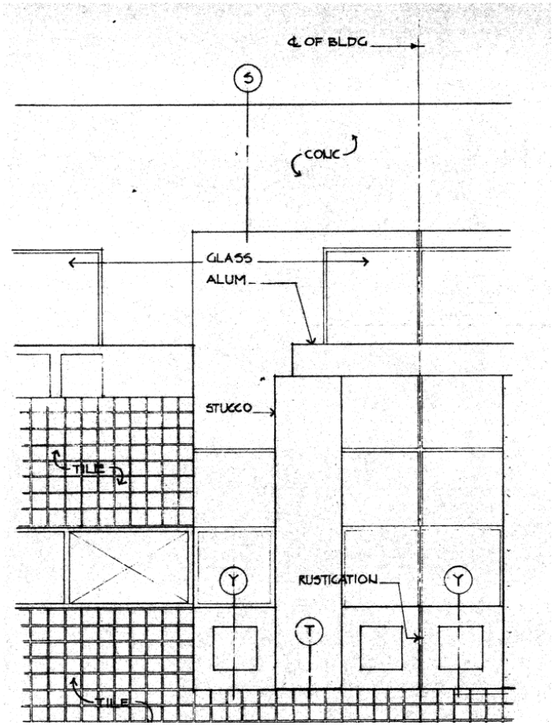
PARTIAL PLAN - FOURTEENTH FLOOR PERGOLA

SCALE: 1/4" = 1'-0"

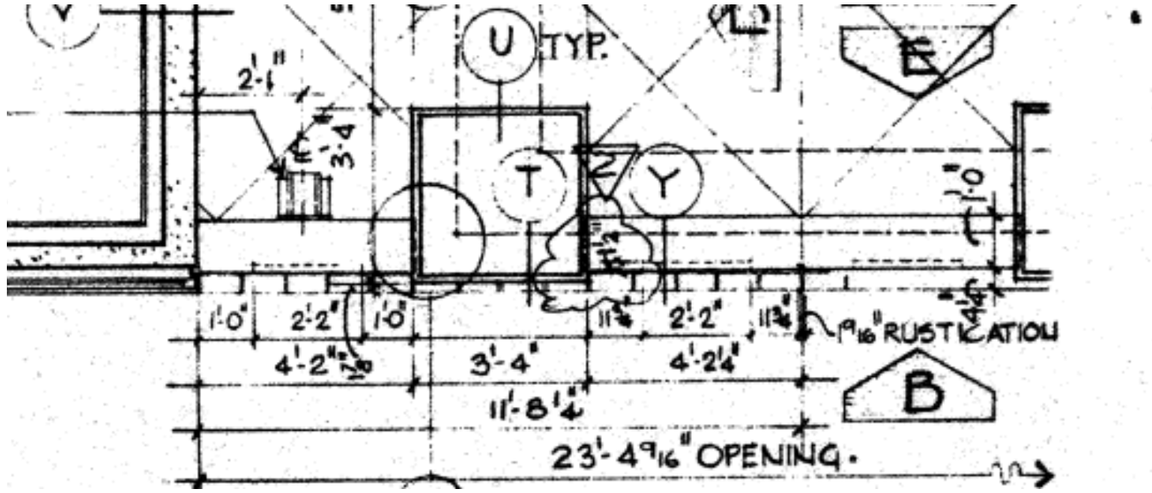
PROPOSED FACADE DETAILS



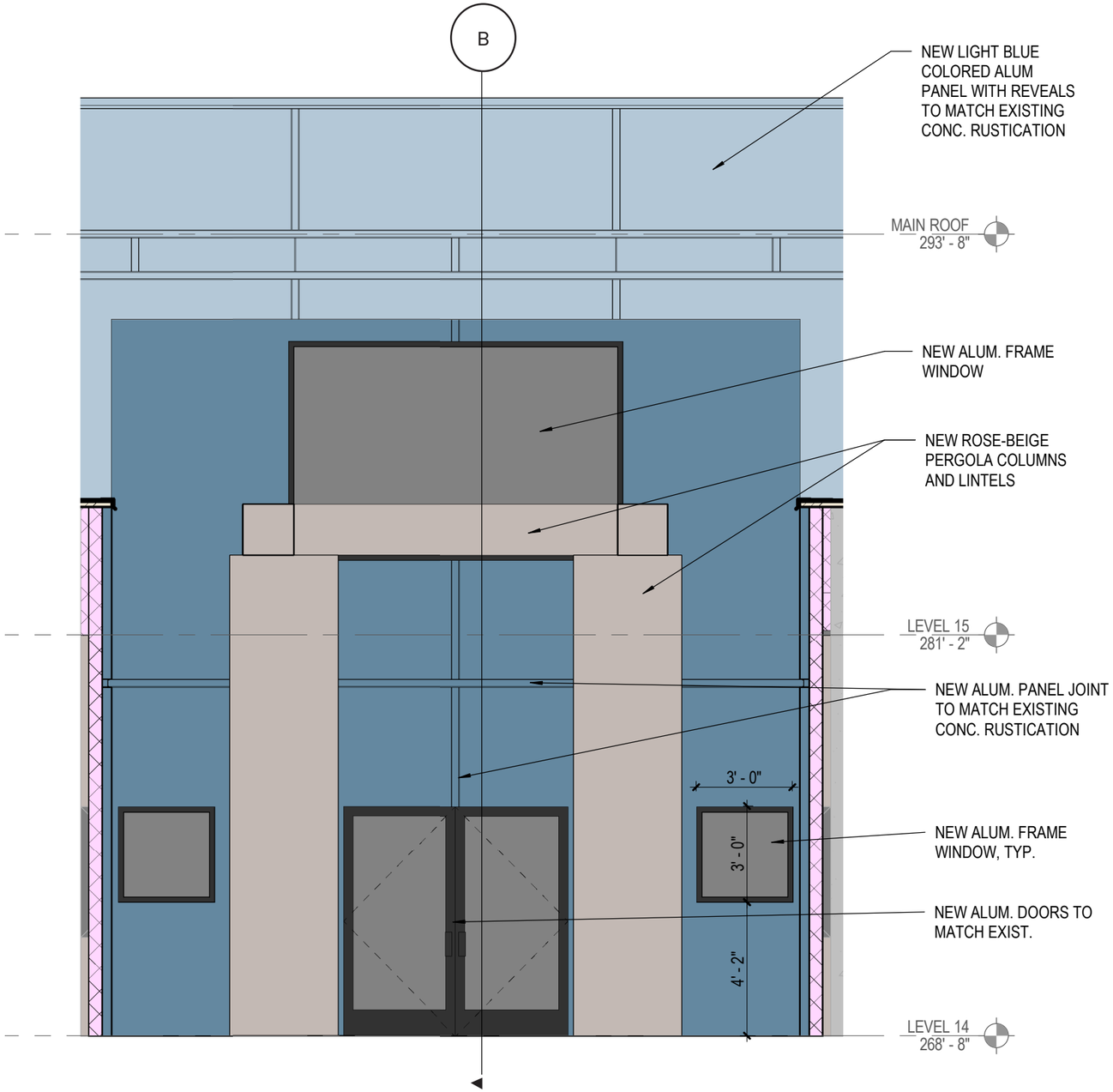
EXISTING SECTION AT 14th FLOOR PERGOLA



EXISTING ELEVATION AT 14th FLOOR PERGOLA

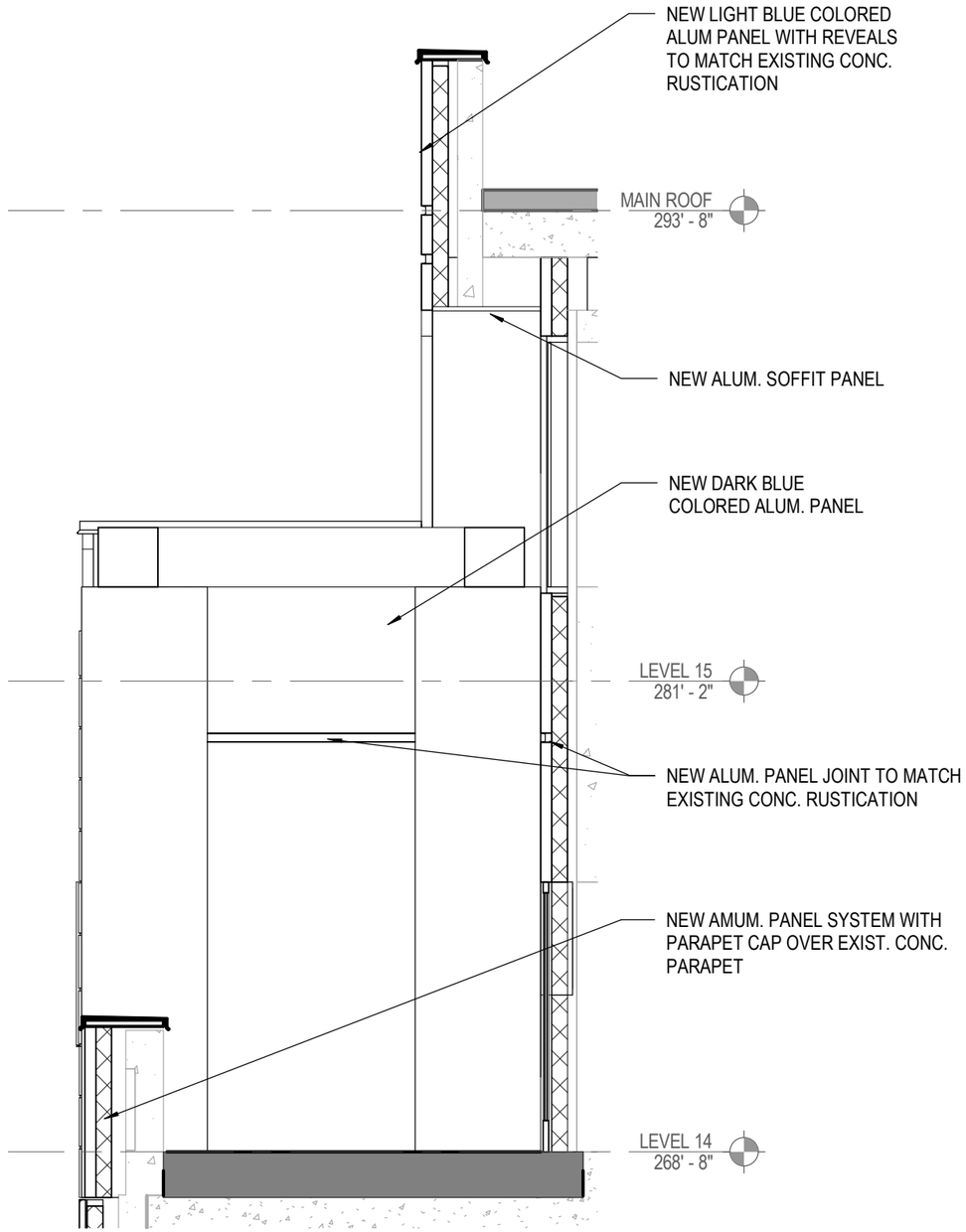


EXISTING PLAN AT 14th FLOOR PERGOLA



A PARTIAL ELEVATION - FOURTEENTH FLOOR PERGOLA

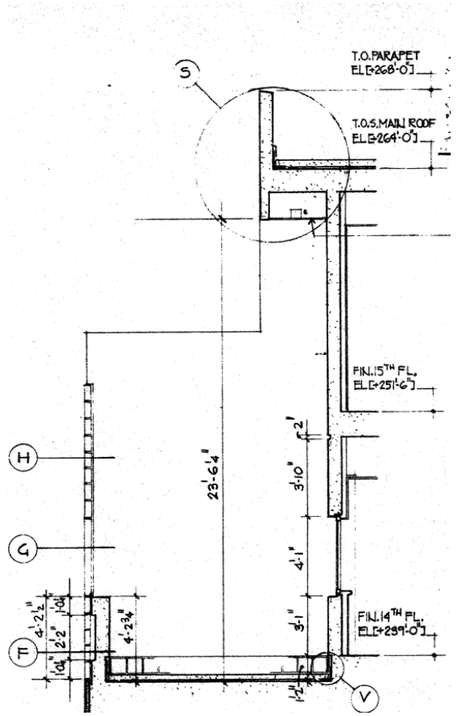
SCALE: 1/4" = 1'-0"



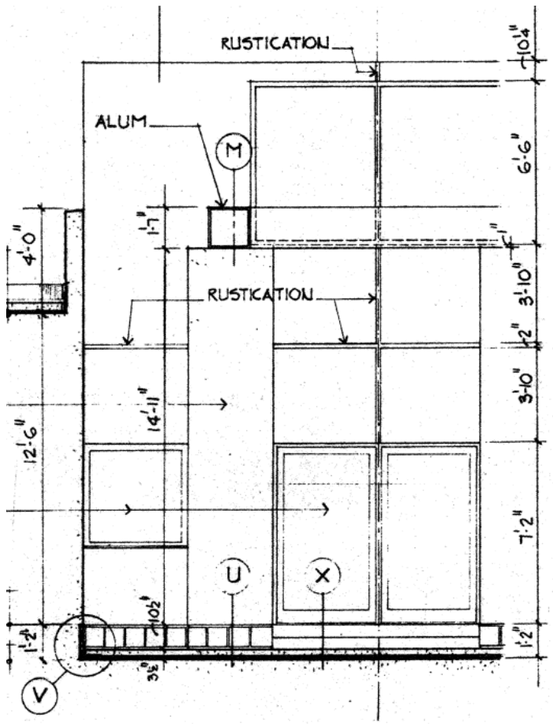
B PARTIAL SECTION - FOURTEENTH FLOOR PERGOLA

SCALE: 1/4" = 1'-0"

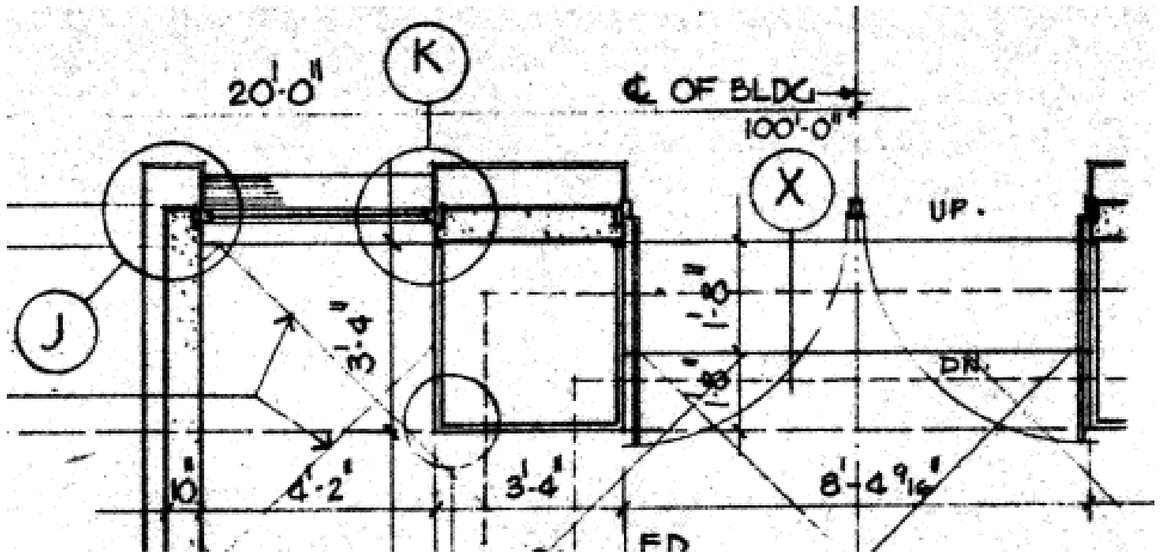
PROPOSED FACADE DETAILS



EXISTING SECTION AT 14th FLOOR PERGOLA

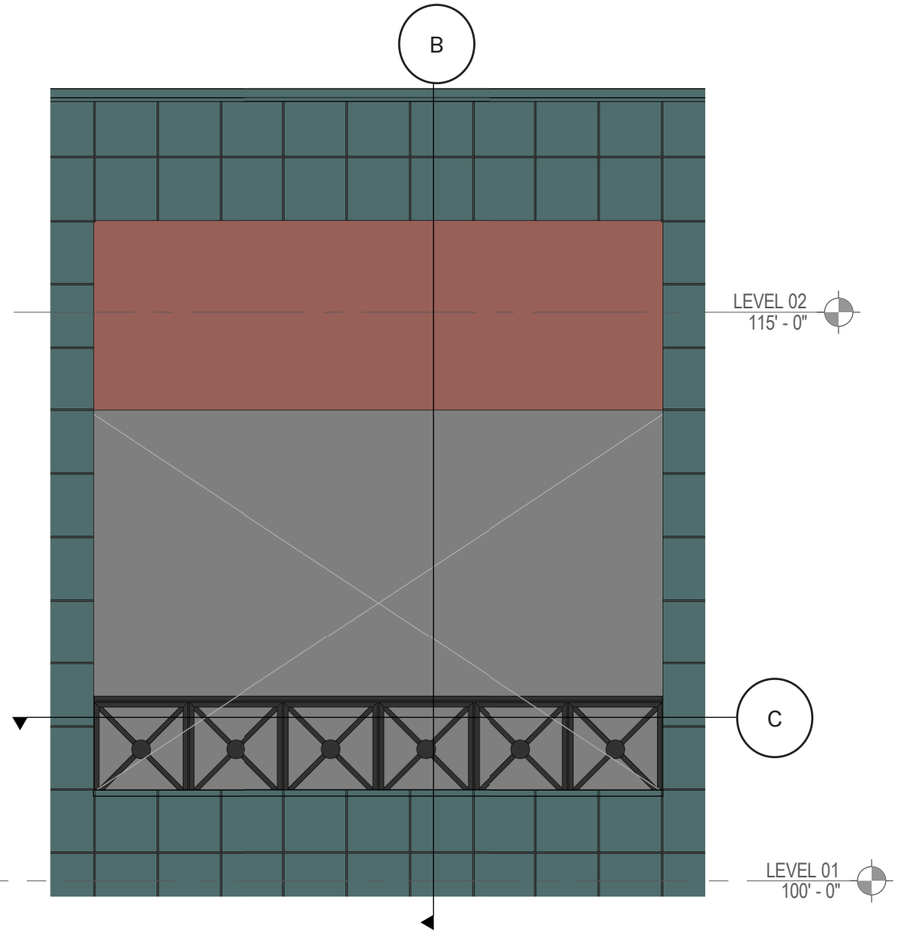


EXISTING ELEVATION AT 14th FLOOR PERGOLA

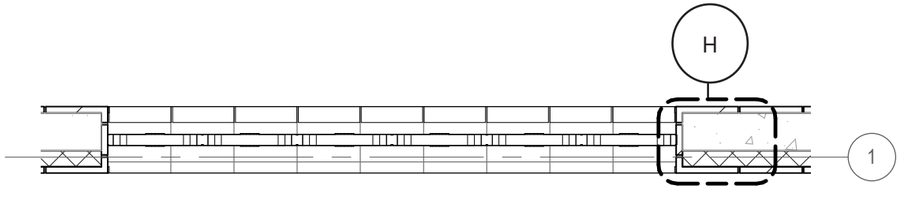


EXISTING PLAN AT 14th FLOOR PERGOLA

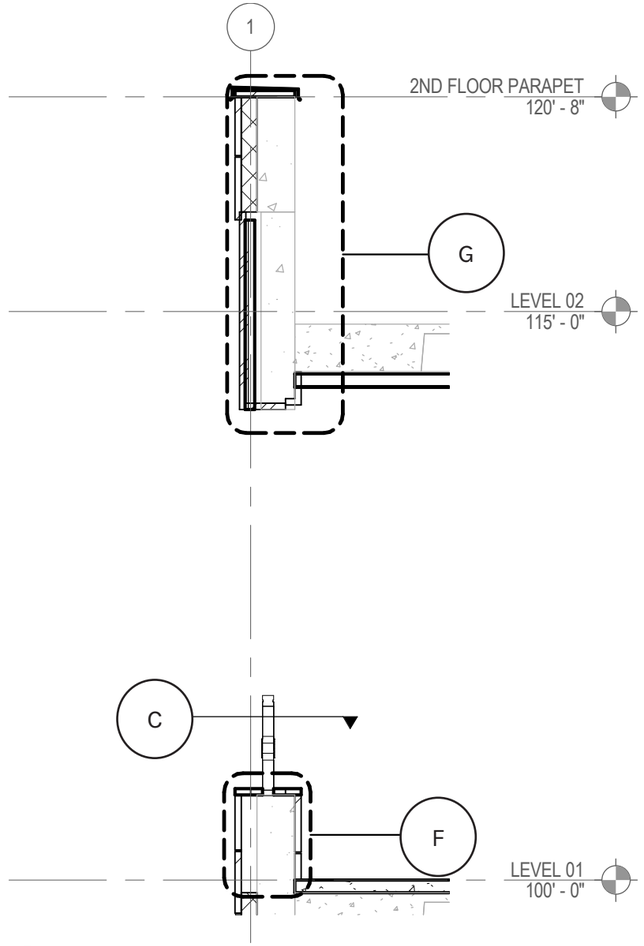
FACADE DETAILS



A PARTIAL ELEVATION - WALL TYPE "D"
SCALE: 1/4" = 1'-0"

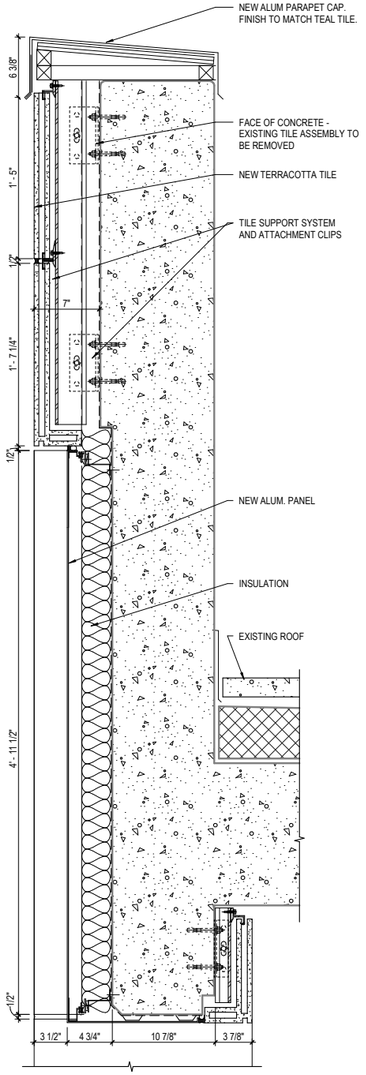


C PARTIAL PLAN - WALL TYPE "D"
SCALE: 1/4" = 1'-0"



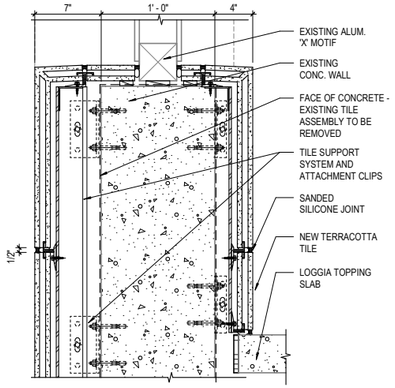
B PARTIAL SECTION- WALL TYPE "D"
SCALE: 1/4" = 1'-0"

PROPOSED FACADE DETAILS



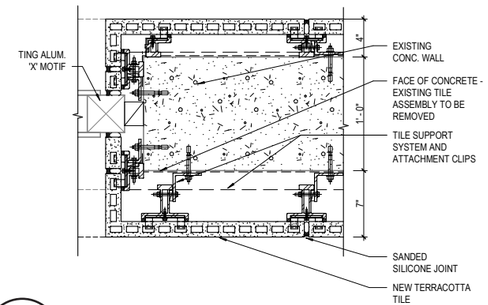
G FIRST LEVEL LOGGIA OPENING HEAD SECTION

NOT TO SCALE



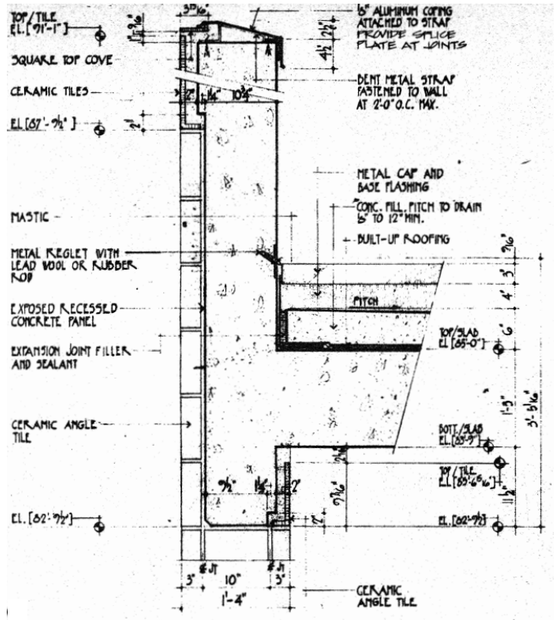
F X MOTIF @ LOGGIA OPENINGS - PLAN

NOT TO SCALE



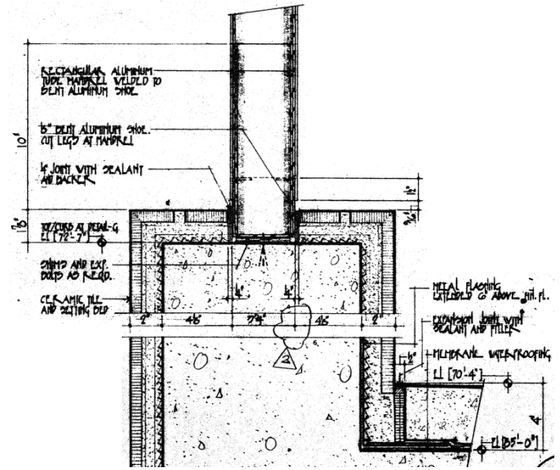
H X MOTIF @ LOGGIA OPENINGS - PLAN

NOT TO SCALE



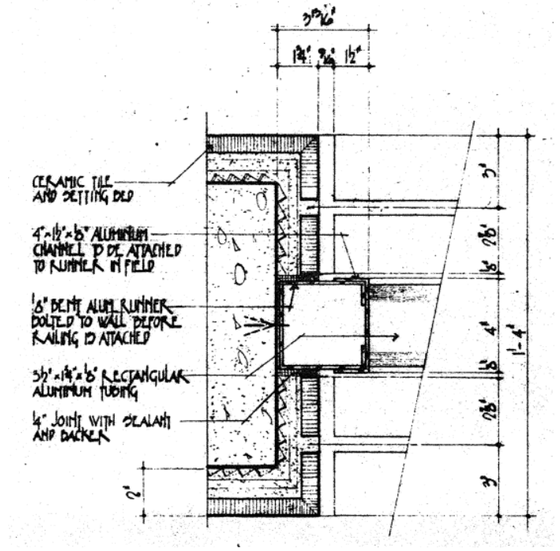
1 EXISTING SECTION AT LOGGIA OPENING

NOT TO SCALE



2 EXISTING SECTION AT LOGGIA RAILING

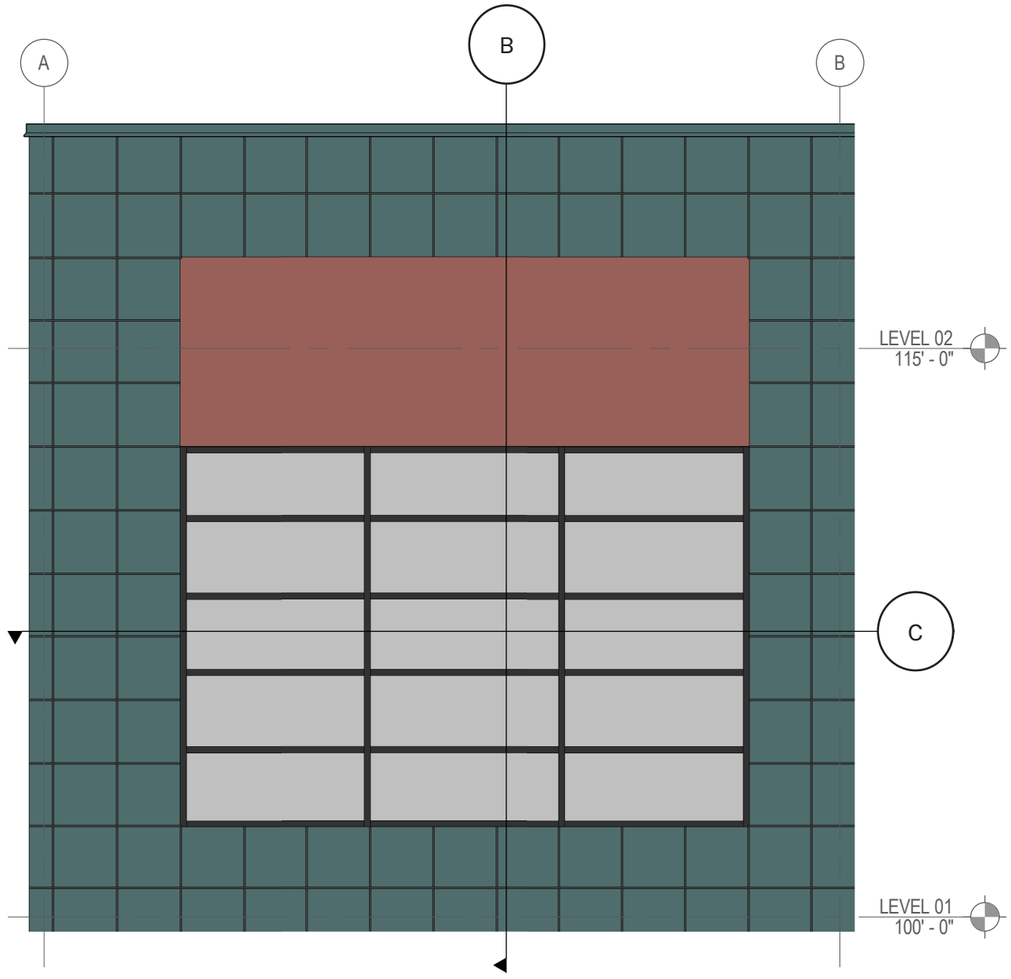
NOT TO SCALE



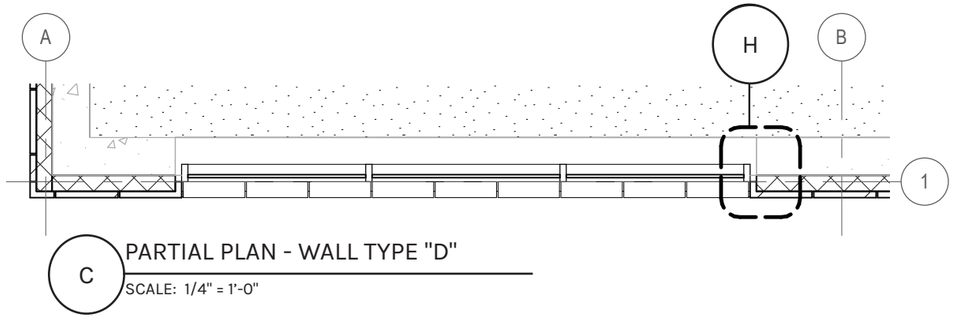
3 EXISTING JAMB AT LOGGIA RAILING

NOT TO SCALE

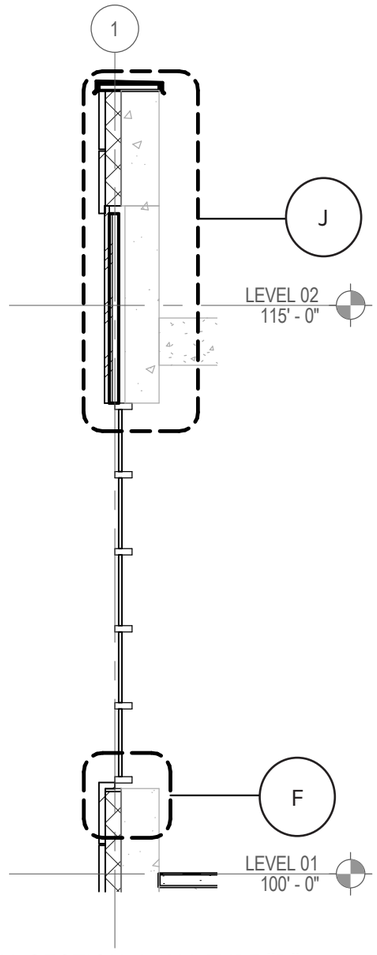
FACADE DETAILS



A PARTIAL ELEVATION - WALL TYPE "D"
SCALE: 1/4" = 1'-0"

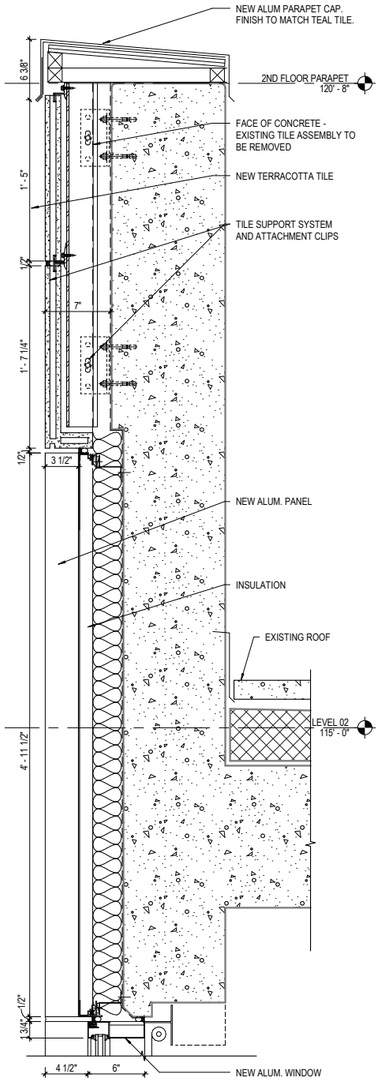


C PARTIAL PLAN - WALL TYPE "D"
SCALE: 1/4" = 1'-0"

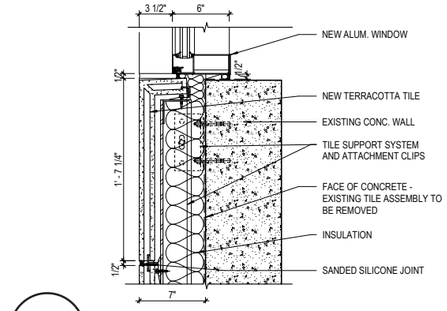


B PARTIAL SECTION- WALL TYPE "D"
SCALE: 1/4" = 1'-0"

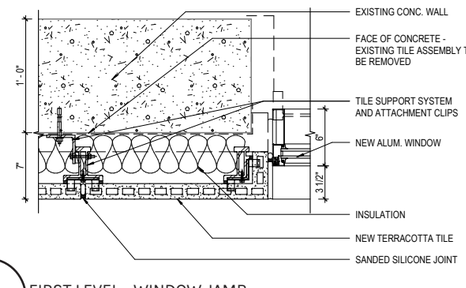
PROPOSED FACADE DETAILS



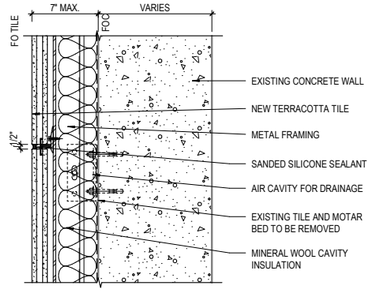
J FIRST LEVEL - WINDOW HEAD
NOT TO SCALE



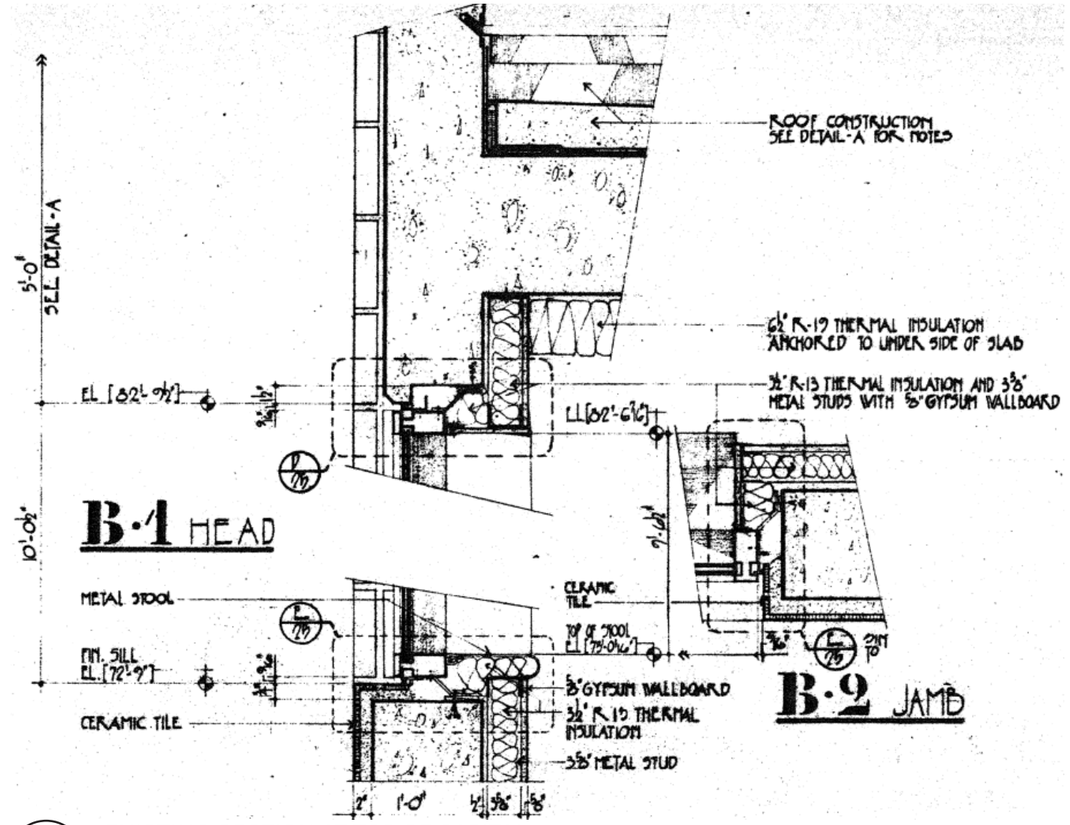
F FIRST LEVEL - WINDOW SILL
NOT TO SCALE



H FIRST LEVEL - WINDOW JAMB
NOT TO SCALE



K TEAL TERRACOTTA WALL SYSTEM
NOT TO SCALE



1 EXISTING SECTION AT TOP OF CAPITAL
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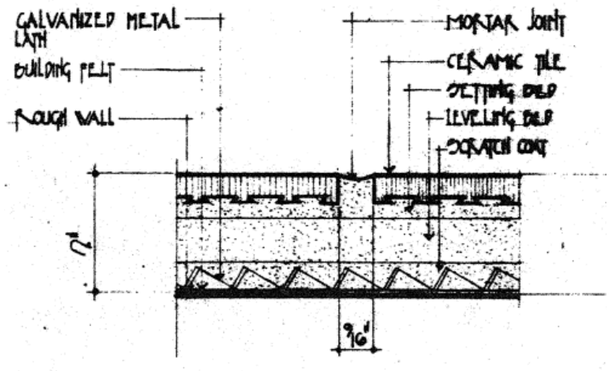
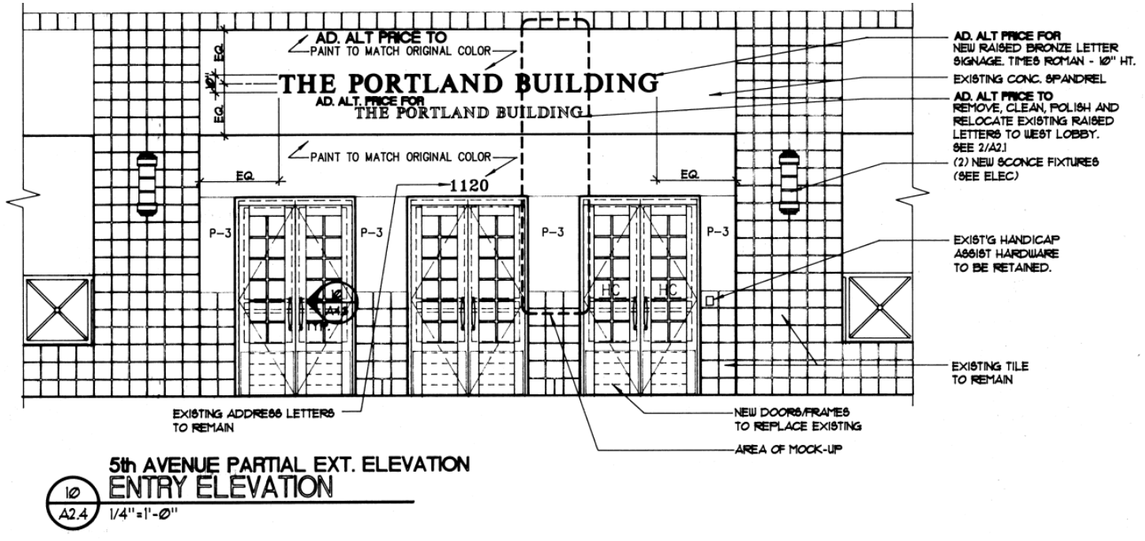


2 EXISTING TILE AND MORTAR BED
NOT TO SCALE

FACADE DETAILS



ENTRY DOORS FROM 1991 LOBBY RENOVATION CONSTRUCTION DRAWINGS

PHOTO OF EXISTING DOORS

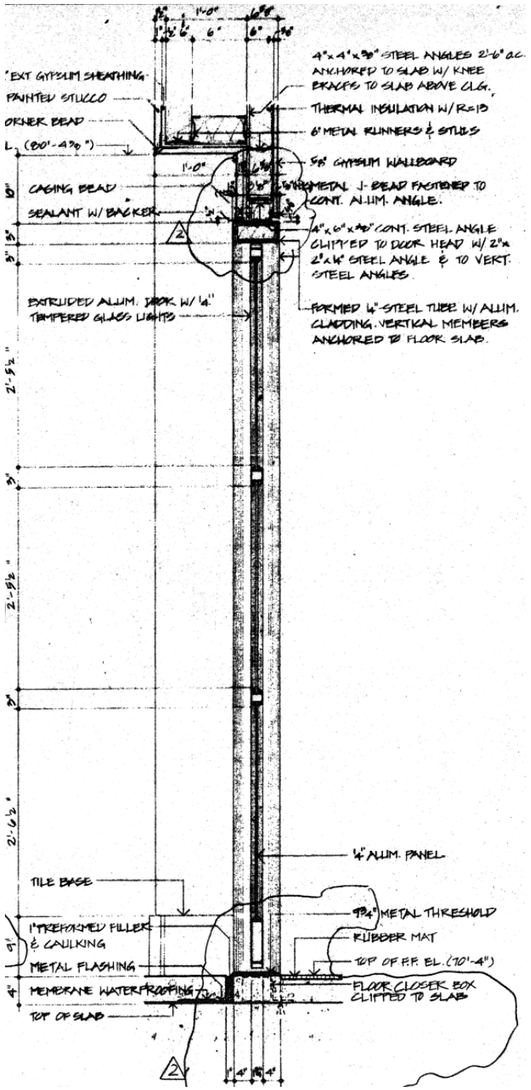
Previous Alterations In Loggia

Although the Portland Building is largely intact, there have been some alterations that have occurred outside of the period of significance (1982-1985). One of the most notable scopes of work was in 1991 where the original historic entry doors were replaced as well as the original loggia light fixtures.

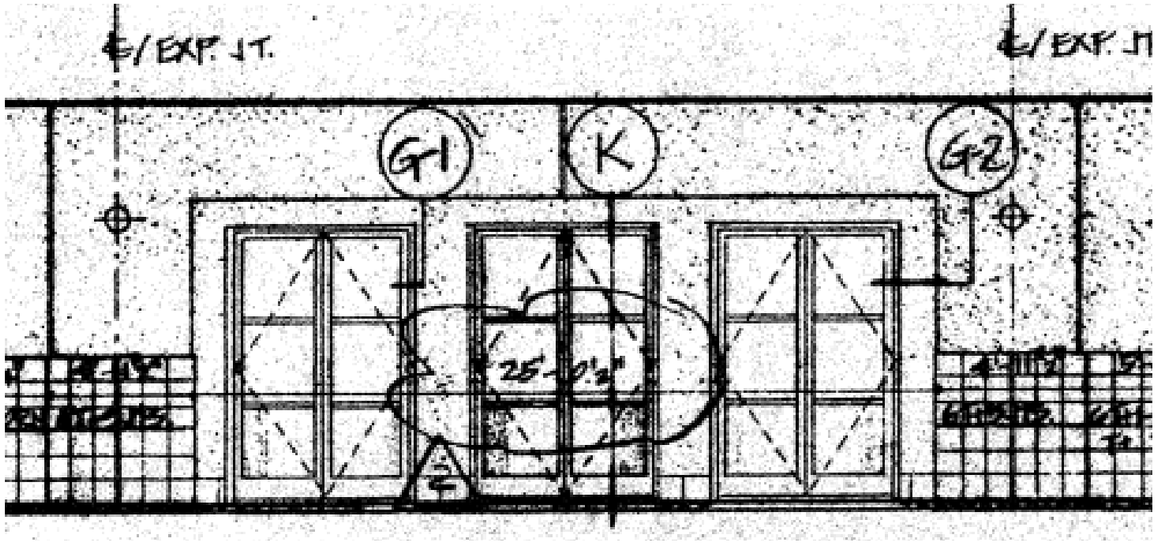
The existing entry doors must be removed in order to meet ADA requirements. Per Michael Graves' drawings, the original entry doors were a simple black framed storefront style door divided into three parts. The application proposes re-creating this configuration with wider door leaves to meet the City's accessibility goals.

The existing wall sconces located inside the loggia as well as the two flanking the main entry portal were added in 1991. The application proposes new fixtures with a simple black shroud. See proposed lighting plan.

MAIN ENTRY DOORS

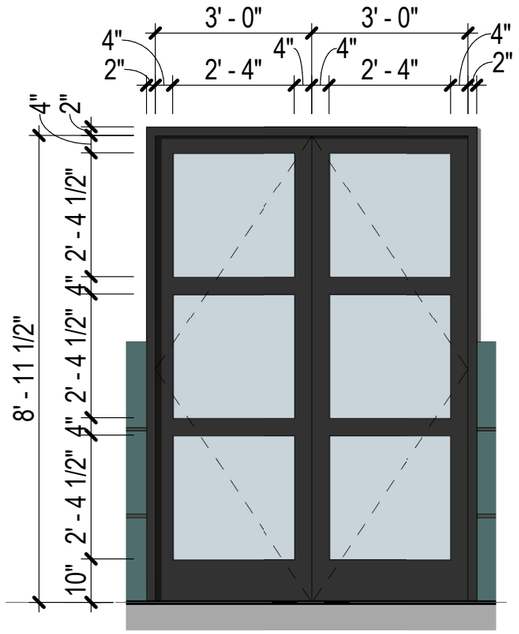


ORIGINAL ENTRY DOOR DIMENSION/ MATERIALS FROM 1980 CONSTRUCTION DRAWINGS



ORIGINAL ENTRY DOORS FROM 1980 CONSTRUCTION DRAWINGS

PROPOSED NEW ENTRY DOORS



PROPOSED ENTRY DOOR DIMENSIONS

MAIN ENTRY DOOR DETAILS

PANELS AT TOWER
Material: 3mm Formed Aluminum
Finish: Kynar Coating
Color: To match original paint sample provided by MGAD

PANELS AT COLUMNS AND CAPITALS
Material: 3mm Formed Aluminum
Finish: Kynar Coating
Color: To match original terracotta-colored tile

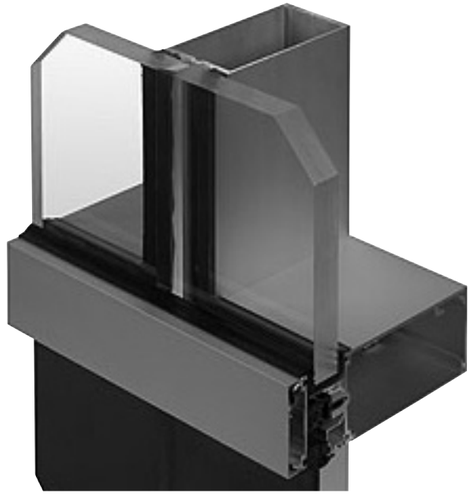
TILES AT KEYSTONE
Material: 1/4" Aluminum Plate over 3mm Formed Aluminum
Finish: Kynar Coating
Color: To match original terracotta colored tile

TERRACOTTA TILE RAINSCREEN
Finish: Semi-Matte Glaze to match existing
Color: Custom to match existing
Joint Treatment: Charcoal Grey Silicone with Sanded Surface

PANELS AT 15TH FLOOR
Material: 3mm Formed Aluminum
Finish: Kynar Coating
Color: Benjamin Moore - Watercolor

MEDALLIONS AND GARLANDS
Material: 3mm Formed Aluminum
Finish: Kynar Coating
Color: Benjamin Moore - Watercolor (light) and Blue Nose (Dark)

TYPICAL WINDOW FRAMES
Material: Aluminum with Captured Frames
Finish: Kynar Coating
Color: Black



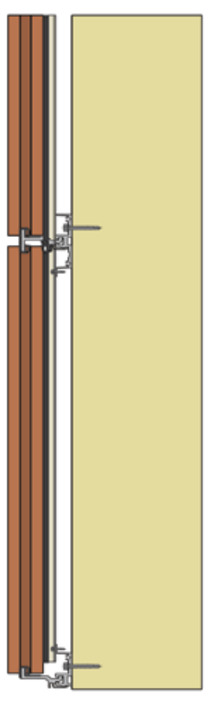
LOGGIA DOOR AND WINDOW FRAMES
Material: Aluminum w/ silicone joints at verticals
Finish: Kynar Coating
Color: Black

PROPOSED MATERIALS AND COLORS

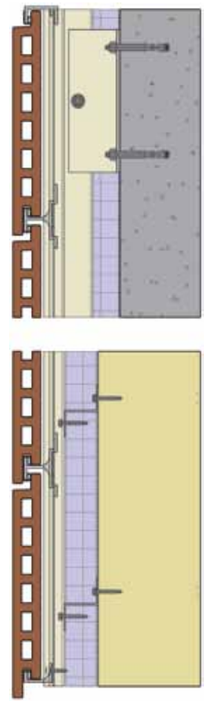
Terra Cotta Systems Overview

TerraClad™ System

Boston Valley Terra Cotta's ceramic rain screen cladding system provides benefits above and beyond conventional masonry cavity wall systems. In addition to the durability and ease of maintenance inherent to any ceramic cladding, the TerraClad™ system incorporates ship-lapped open joints that shield the structural wall from wind driven rain and snow while also ventilating the air space to mitigate mold and mildew growth. Our various track systems shown in section below give us flexibility to select that which provides greatest installation ease when considering your design. Beyond the functionality of the system, the plasticity of terra cotta offers profile opportunities to designers not available in alternate rain screen cladding materials.

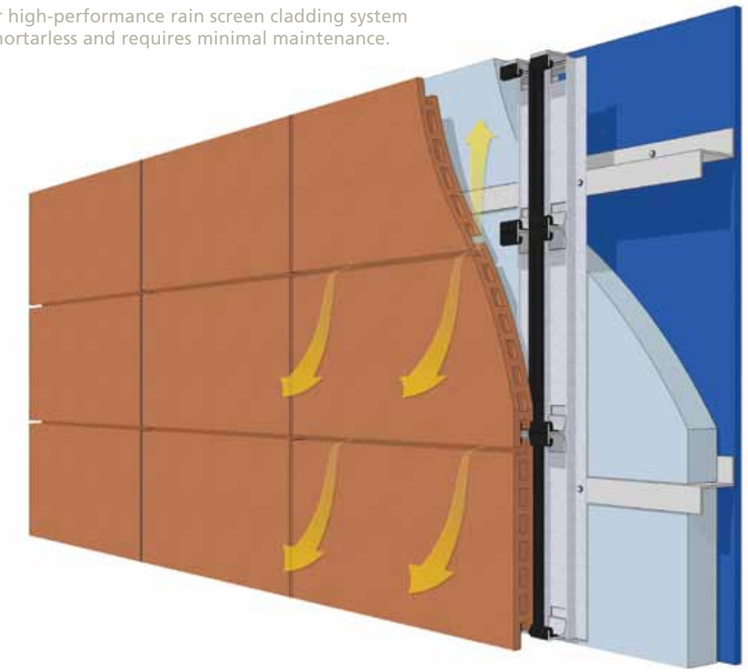


TERRACLAD™ SYSTEM SECTION DIAGRAM
HORIZONTAL TRACK



TERRACLAD™ SYSTEM SECTION DIAGRAM
TOP - FLANGED TRACK
BOTTOM - STANDARD TRACK

Our high-performance rain screen cladding system is mortarless and requires minimal maintenance.



Rain Screen Principles

The TerraClad™ system creates a ventilated cavity wall, mitigating mold and mildew growth. The ship-lap joint helps prevent wind-driven rain and snow from reaching the structural wall while also allowing the cavity to breathe and panels to dry faster. Gaskets and isolators provide a snug fit between panels and the framing system to prevent wind induced rattle and allow for movement of the aluminum framing system due to thermal expansion.

Benefits of the TerraClad™ System Design

- Ceramic panels installed on an aluminum framing system offer the durability of a masonry installation without the weight
- Continuous insulation outboard of the primary wall system increases the thermal performance of the building envelope
- A mortarless system allows for installation in any weather condition and reduces maintenance costs associated with re-pointing
- LEED credit opportunities
- Abundant profile, color and finish opportunities available

PROPOSED TERRACOTTA CLADDING SYSTEM

A INDIRECT LIGHTING

Ametrix - Asyx Wall Mount
The currently dark loggia, will now be bathed in light by the Asyx sconces that will be mounted onto the columns.

B RECESSED DOWNLIGHT

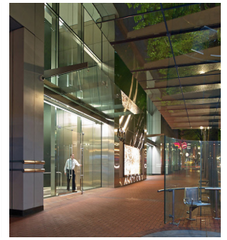
Gotham - Incito Square
The miniature square downlight will be utilized to provide lighting along the pathway. Its small aperture along with a high cutoff beam angle will provide the additional light required, all while having a minimal presence on the ceiling.

C FLAG POLE LIGHTING

Erco - Grasshopper
Four miniature grasshoppers will be mounted onto the walkway above the first floor to spotlight the flags.

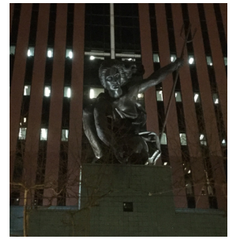
THE PORTLAND BUILDING - EXTERIOR LIGHTING

D RECESSED LINEAR



Selux - M36
A recessed linear will be located at the entrance to emphasize the main entry point of the building.

E PORTLANDIA LIGHTING



Erco - Beamer
The 36 watt Beamer fixture from Erco will replace the existing metal halide fixtures at a fraction of the wattage and will produce a truer color light.

NOTE: The existing wall sconces located inside the loggia as well as the two flanking the main entry portal were added in a 1991 remodel (see drawing page 110). Applicant proposes removal of these fixtures and replacement with the fixtures shown.

PROPOSED EXTERIOR LIGHTING

HUNTCO
SITE FURNISHINGS

Bike racks, lockers, benches and architectural site furnishings since 1980.

Tradition & Innovation

PHONE 503.224.8700
FAX 503.274.2055

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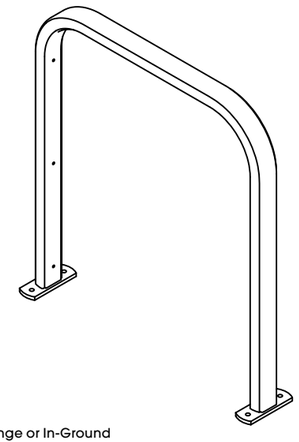
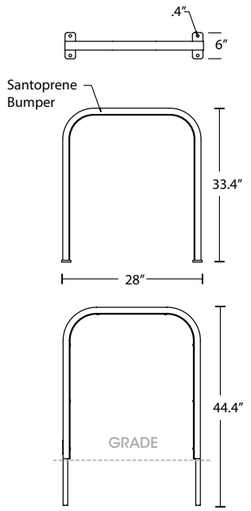
MAIL P.O. Box 10385
Portland, Or. 97296-0385

×2

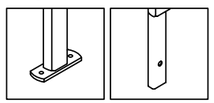
THE BURNSIDE

The refined, high-security Burnside, with its no-scratch protective bumper, is a superior means to show your respect for cyclists by protecting their investment.





Flange or In-Ground



CONSTRUCTION/MATERIAL

Outer: 2"× 1" Stainless Steel Rectangular Tubing

Inner Bar: .25"× 2" Stainless Steel Flat Bar

Bumper: Santoprene TPV

Flanges: 2"× 6" Stainless Steel

DIMENSIONS

– 28" Length
– 6" Width
– 33.4" Height

MOUNTING OPTIONS

☐ Flange Mount (Shown)
(4) .4" Mounting Holes
☐ In-Ground
11" Leg Extensions

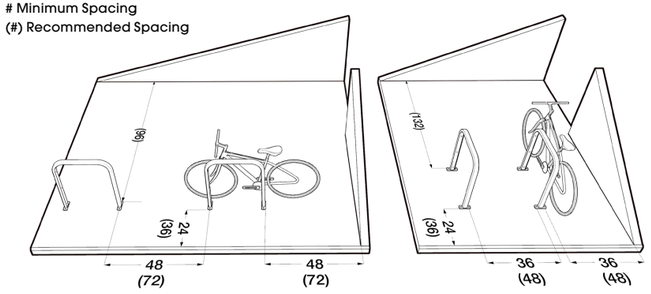
FINISH

Stainless Steel Bead Blast Finish

RECOMMENDED LAYOUT

NOTES:

"Bike" is 70"
Minimum Spacing
(#) Recommended Spacing



CONTRACTOR:

JOB:

NOTES:

Manufactured in the Pacific Northwest

landscapeforms®

SOCRATES

Product Data Sheet

A simple seating block with precise geometric form and crisp polished finish. Socrates can be used to organize space through the rhythm of its arrangements. Its rectilinear mass sits on a low plinth that is hidden from view, making the bench appear to float.

Bench

- Socrates is a backless Cast Stone bench.
- Available in three lengths: 24", 95" and 142".
- Socrates is polished and waterproofed and available in Grey, Black, White and Beige.
- Socrates can be freestanding, or embedded.

	STYLE	DEPTH	LEGHTH	HEIGHT	PRODUCT WEIGHT
	24"	24"	24"	18"	816 lb
	95"	24"	95"	18"	3,307 lb
	142"	24"	142"	18"	5,070 lb

Material

- The colors of Escofet cast stone products are neutral, muted and earth-toned and are derived from the aggregates used in casting.
- No color is added in manufacture and no color is applied to finished products.
- The color range of every Escofet cast stone product is pre-determined by the formulation used in its manufacture.
- Cast stone products do not require any specific maintenance during their estimated lifespan of more than 30 years.
- Water absorption and freeze-thaw cycles can cause weathering, a reproduction of the process that takes place in natural rock.
- Escofet applies a waterproof finish to its products to protect against this process.
- Escofet cast stone products are large and heavy.
- Shipping, receiving, staging and installing these pieces is more akin to handling large statuary or pre-fabricated architectural elements.
- See installation guide for important information.

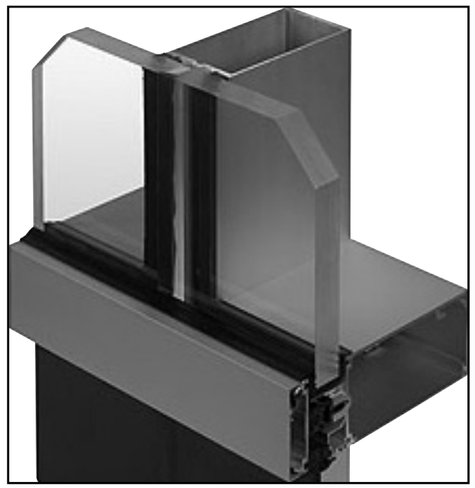
Product Warranty

- ESCOFET warrants the durability of its product to Landscape Forms for a period of three (3) years from the date of invoice.

Landscape Forms, Inc. | 800.521.2546 | F 269.381.3455 | 7800 E. Michigan Ave., Kalamazoo, MI 49048

STOREFRONT DOORS PRECEDENT IMAGE

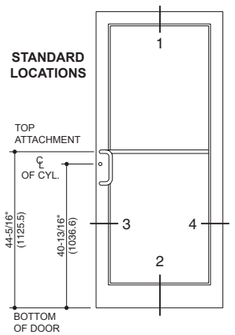
GLAZING PRECEDENT IMAGE

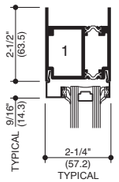


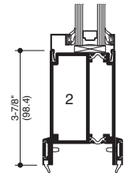
PROPOSED MULLION & GLAZING DETAIL

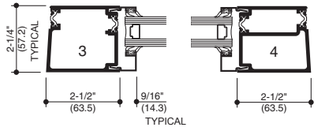
PROPOSED LOGGIA GLAZING SYSTEM

250 MEDIUM STILE



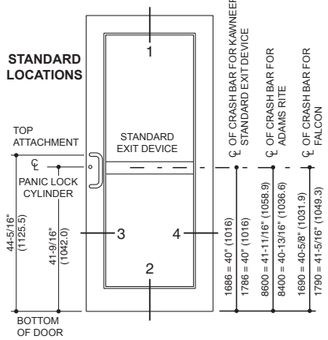


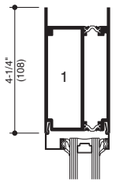


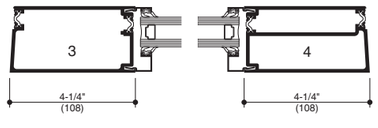


LOCK STILE PIVOT STILE

425 WIDE STILE







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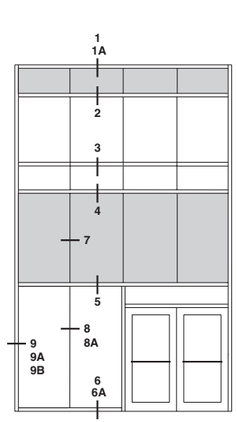
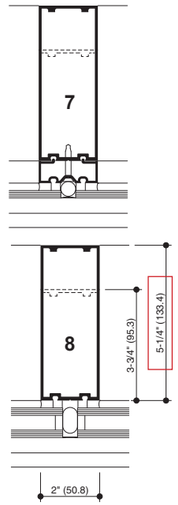
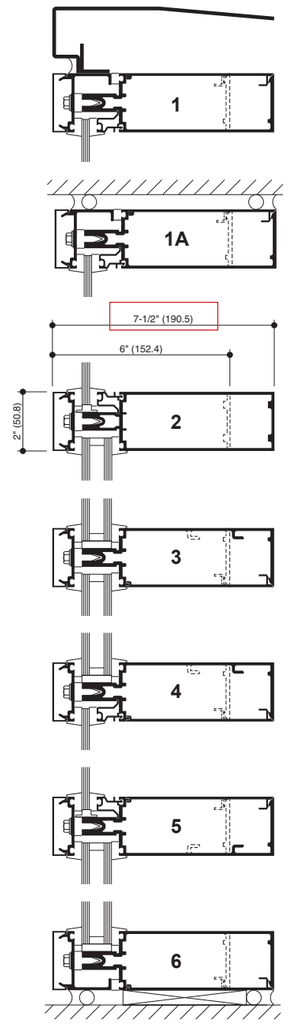
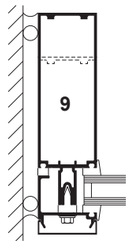
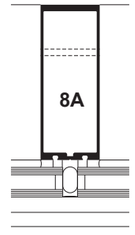


ELEVATION IS NUMBER KEYED TO DETAILS

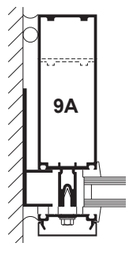


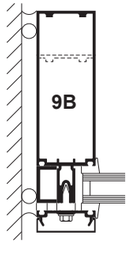


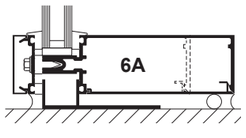




HEAVY VERTICAL MULLION

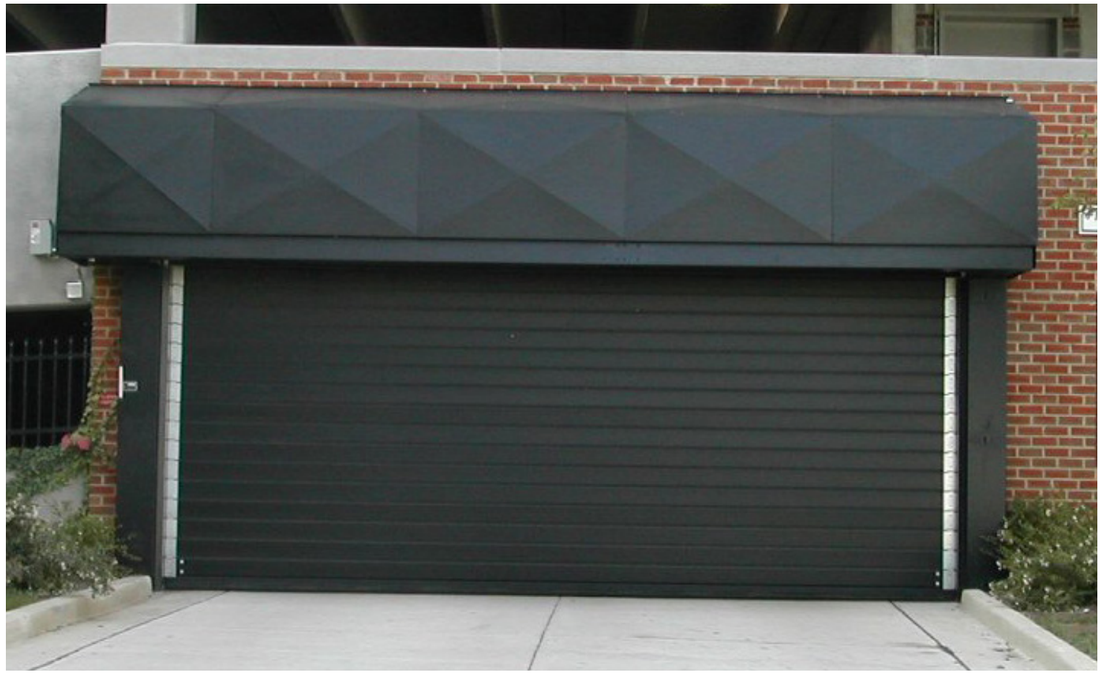






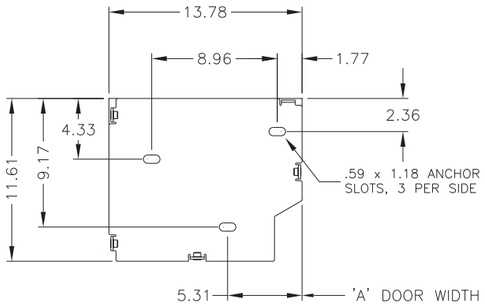
PROPOSED LOGGIA GLAZING SYSTEM

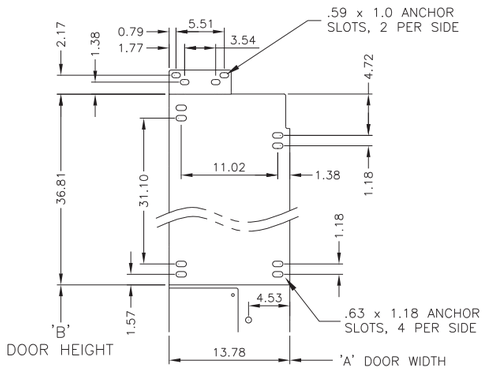
FLUSH MOUNTED HIGH PERFORMANCE RIGID ROLLING DOOR - PRECEDENT IMAGE

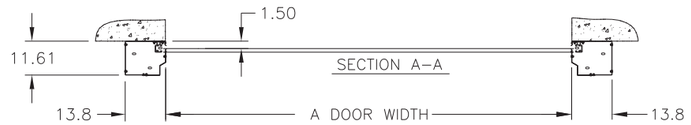


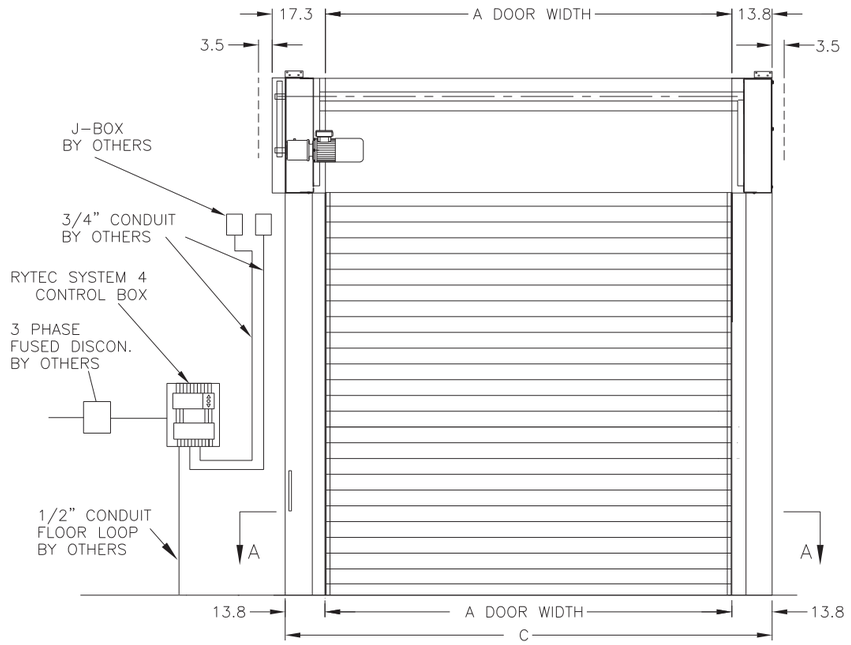
PAINTED HIGH PERFORMANCE RIGID ROLLING DOOR - PRECEDENT IMAGE

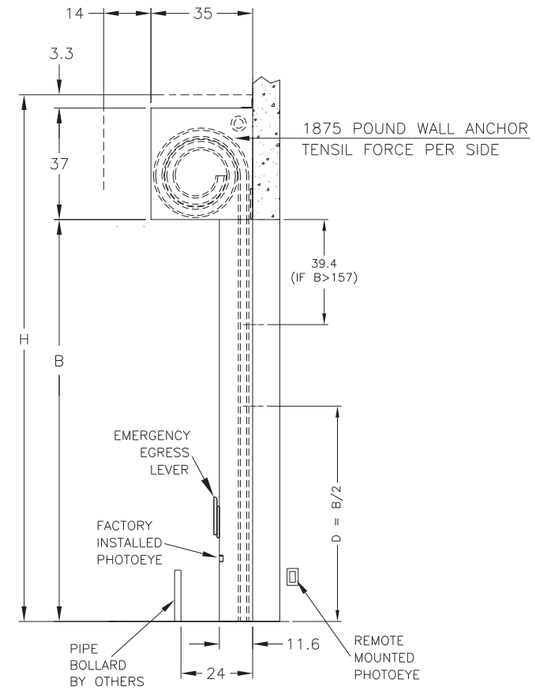
PROPOSED SERVICE ENTRANCE DOOR











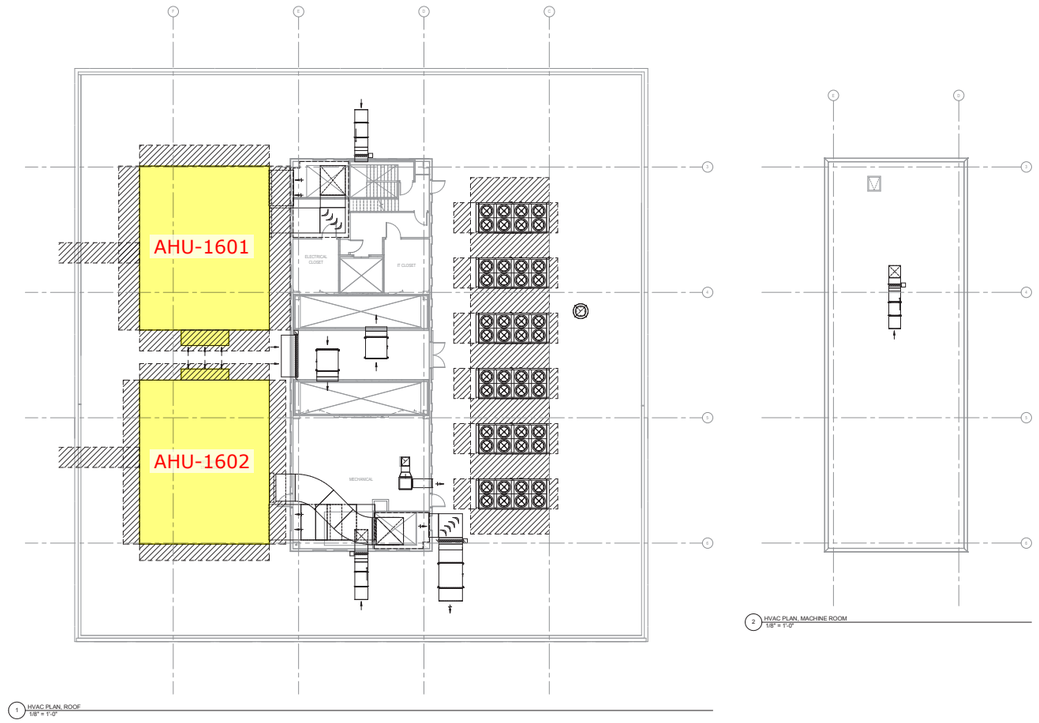
PROPOSED SERVICE ENTRANCE DOOR

AHU-1601 & AHU-1602

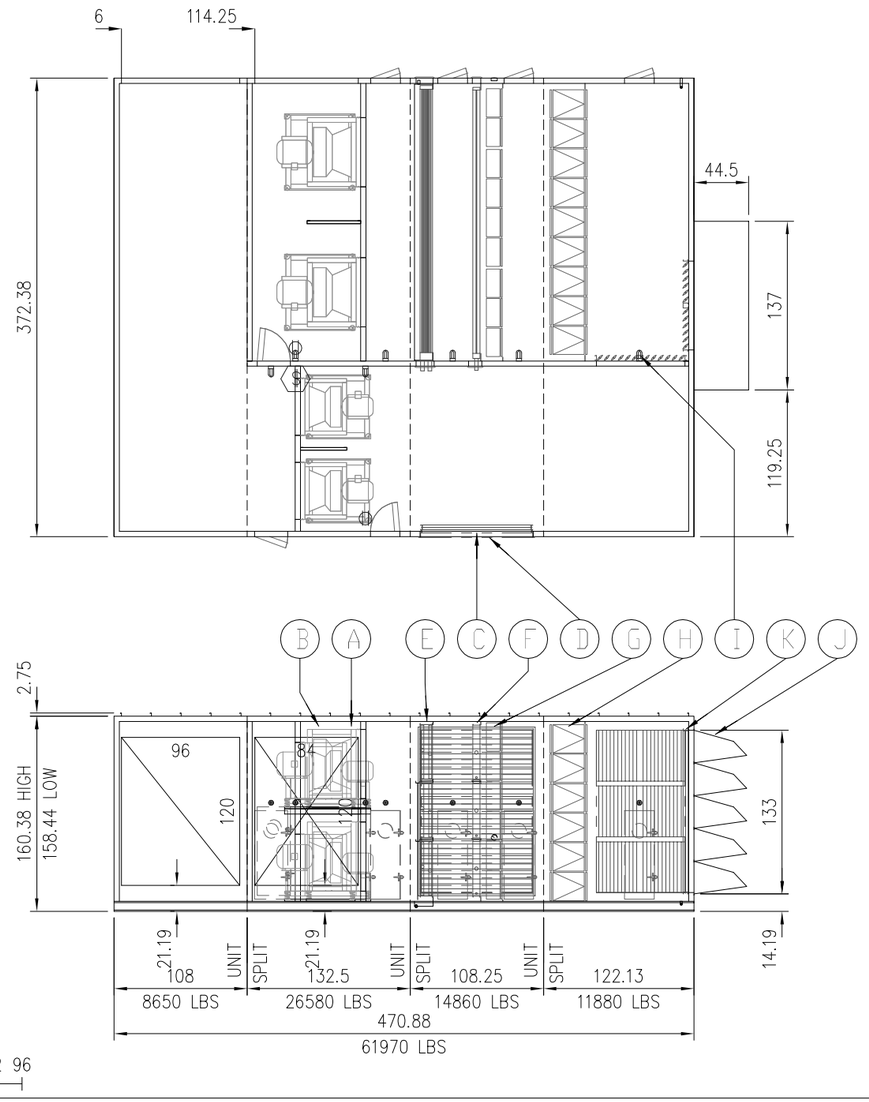
SAMPLE IMAGE:

FINISH:

- BAKED ENAMEL STANDARD
  - COLOR: CUSTOM COLOR MATCHING OR PPG # FROM PAINT MANUFACTURER.



PROPOSED ROOFTOP AIR HANDLING UNITS



Note : Calculated unit weights are shipping weights and do not reflect operating conditions, items which are field installed or ship loose.

(A) FAN : 4 @ 33" EPQN SW, 105% Width, Arrangement-4
AIR FLOW : 22500 CFM RPM : 1187
T.S.P. : 2 in wc CLASS : I
MOTOR : 15 HP, TEFC Prem-Eff, 460/3/60
RPM : 1150 (GROUNDED SHAFT)
ISOLATORS : OS DEF : 2 in
FEG80 η_{pt}: 75% η_t / η_{pt} : 73%

(B) FAN : 4 @ 40" EPFN SW, 90% Width, Arrangement-4
AIR FLOW : 25000 CFM RPM : 1202
T.S.P. : 7 in wc CLASS : II
MOTOR : 40 HP, TEFC Prem-Eff, 460/3/60
RPM : 1150 (GROUNDED SHAFT)
ISOLATORS : OS DEF : 2 in
FEG85 η_{pt}: 80% η_t / η_{pt} : 94%

(C) EA DAMPER : OPPOSED BLADES
MAKE : T.A. Morrison 1000
SIZE : 92 X 134

(D) LOUVRE SIZE : 92 X 134
Std Louvre

(E) COOLING COIL
TYPE : 6 ROW
SIZES : 3 @ 45 X 214
CONN : RIGHT PULL : LEFT
DRAIN : LEFT VEL : 498 FPM

(F) HEATING COIL
TYPE : 1 ROW
SIZES : 3 @ 45 X 214
CONN : RIGHT PULL : LEFT
VEL : 249 FPM

(G) FILTERS : LIFT-OUT UPSTREAM
VELOCITY : 463 FPM
TYPE : 2" (MERV 8) Farr 30/30
12" (MERV 13) Farr Riga-Flo 100 PH Style
SIZES : 54 @ 24 X 24

(H) FILTERS : LIFT-OUT UPSTREAM
VELOCITY : 463 FPM
TYPE : 2" (MERV 8) Farr 30/30
26.5" Farr CF4A Carbon Filters
2" (MERV 8) Farr 30/30
SIZES : 54 @ 24 X 24

(I) RA DAMPER : PARALLEL BLADES
MAKE : T.A. Morrison 1000
SIZE : 134 X 74

(J) OA HOOD
TYPICAL OF 5

(K) OA DAMPER : PARALLEL BLADES
MAKE : T.A. Morrison 1000
SIZE : 134 X 74

UNIT MOUNTING
The unit is designed to be mounted on a roof curb.

SDG VER: Mar 1 2017

PROJECT	TPB							OPENINGS AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS. RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES.		HAAKON INDUSTRIES	
JOB NO.	54838	DRAWN BY	SL	DWG NO.	54838U05SD01	ACCESS SIDE	RIGHT	DWG UNITS	IN	SALES OFFICE	SUSTAINABLE MECHANICAL SYSTEMS
TAG	RTU-1D	DATE	MAR 2/17	TYPE	OUTDOOR	14:53		SCALE	N.T.S.	SALES ENGINEER	GREG KORKOWSKI

11851 DYKE ROAD, RICHMOND, B.C. CANADA V7A 4X8

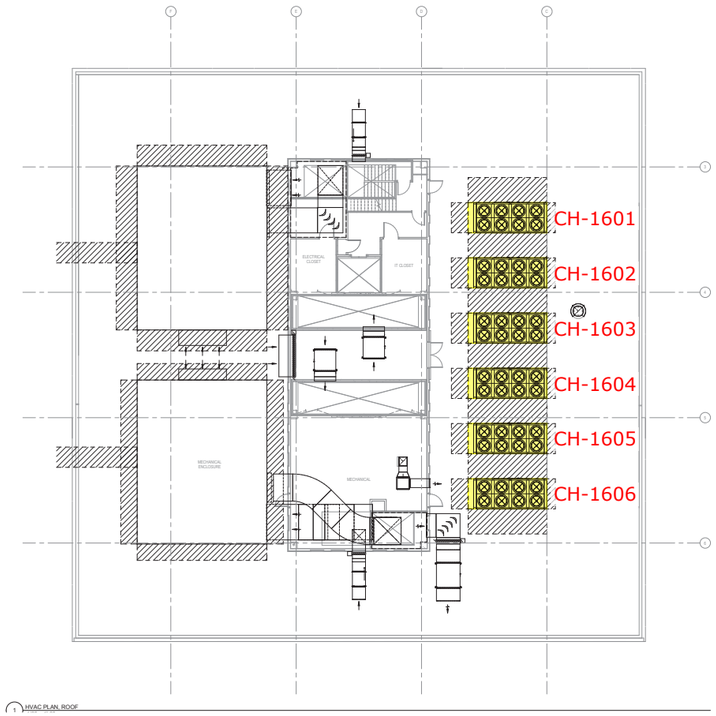
PROPOSED ROOFTOP AIR HANDLING UNITS

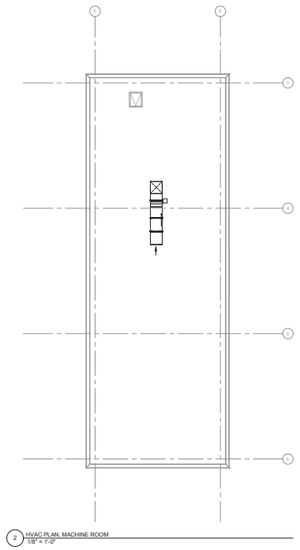
CH-1601 THRU -1606

SAMPLE IMAGE:

FINISH:

- LIGHT BEIGE AS STANDARD





PROPOSED ROOFTOP CHILLERS

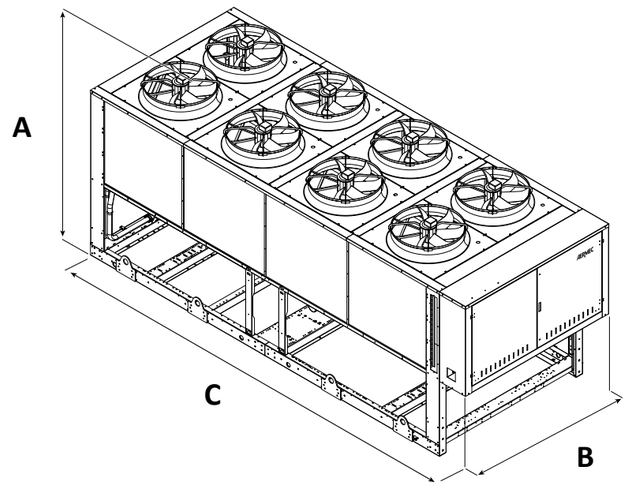
AERMEC

NRP
0800/1800

Multipurpose
Air/Water for outdoor installation
Axial fans, scroll compressor
Cooling capacity 51,71/120,35 tons
Heating capacity 738278/1689276 BTU/h

R410A

NRP 1250-1800



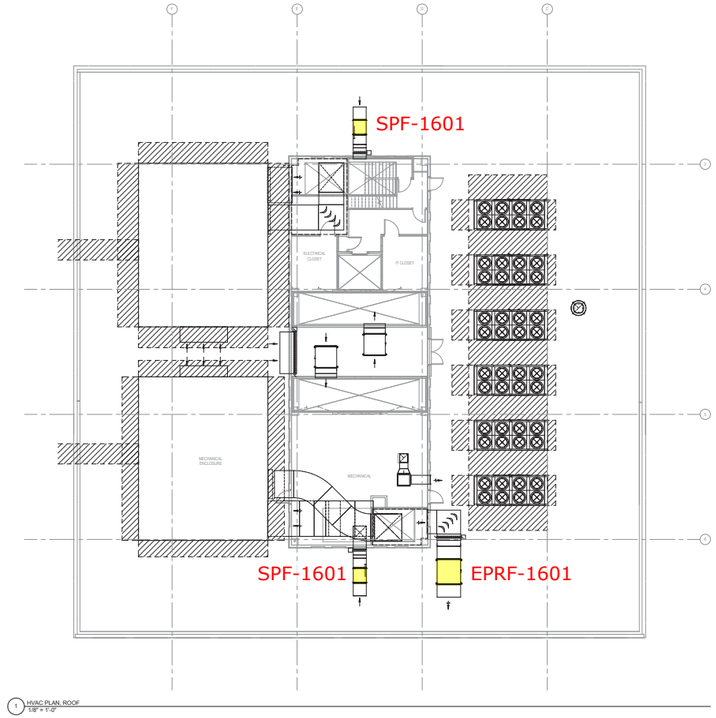
Mod. NRP			**1800**
Height	(inch)	A	96,5
Width	(inch)	B	86,6
Depth	(inch)	C	226,4
Weight when empty	(lb)		8994,9

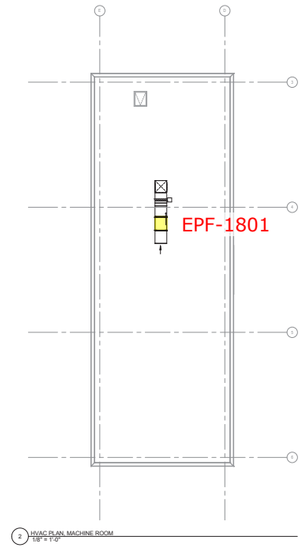
SPF-1601 & -1602;
EPRF-1601; EPF-1801

SAMPLE IMAGE:

FINISH:

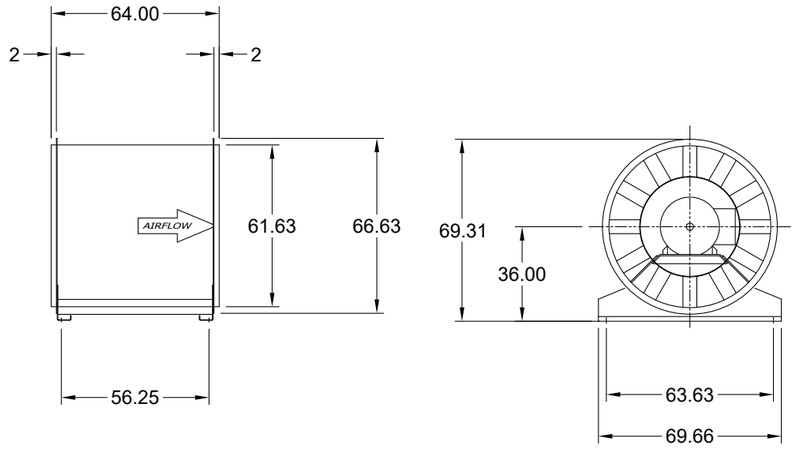
- BAKED ENAMEL STANDARD
  - COLOR: CONCRETE GRAY (FOR BASIS OF DESIGN MANUFACTURER)
  - OPTIONS: CUSTOM COLOR MATCHING



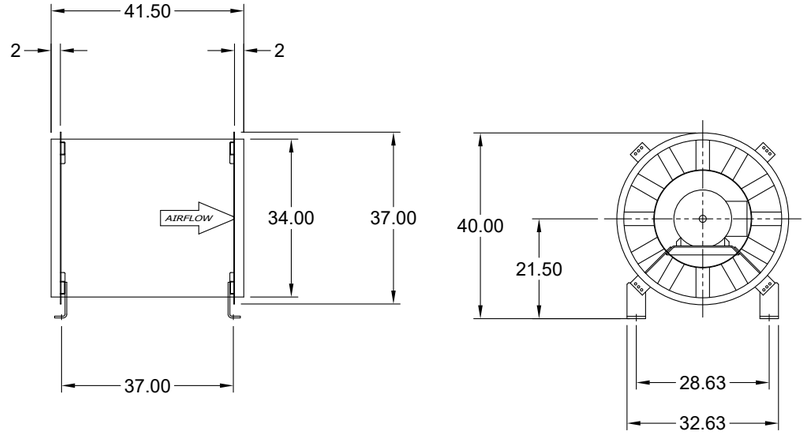


PROPOSED ROOFTOP FAN UNITS

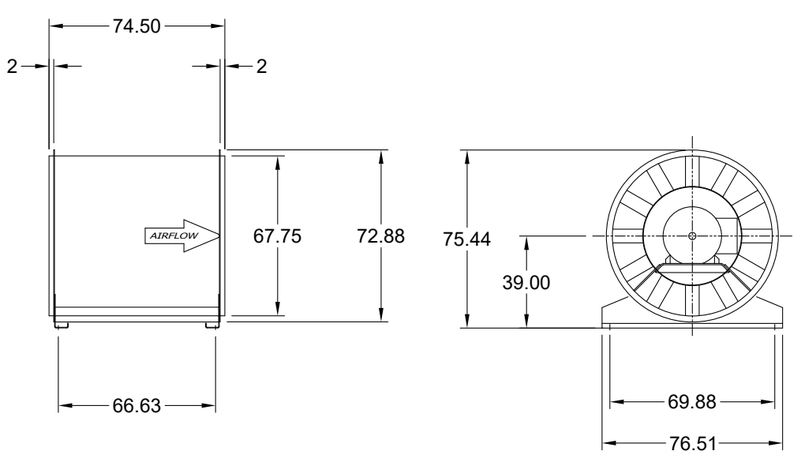
EPF-1601 & -1602:



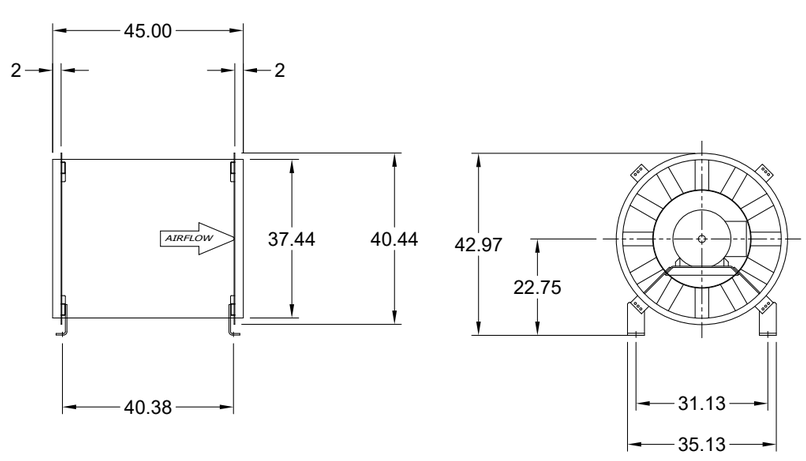
EPF-1801:



EPRF-1601:



SRF-1601 & 1602:



PROPOSED ROOFTOP FAN UNITS

Image shown may not reflect actual configuration

C13 / C15 / C18 SOUND ATTENUATED ENCLOSURES

US Sourced
Diesel Generator Set
350 – 600 kW 60 Hz

Features

Robust / Highly Corrosion Resistant Construction
- Factory installed on skid base
- Environmentally friendly, polyester powder baked paint
- 14 gauge steel
- Interior zinc plated fasteners
- Exterior stainless steel fasteners
- Internally mounted exhaust silencing system
- Designed and tested to comply with UL 2200 Listed generator set package
- Compression door latches providing solid door seal

Excellent Access
- Large cable entry area for installation ease
- Accommodates side mounted single or multiple breakers
- Three doors on both sides
- Vertically hinged allow 180° opening rotation and retention with door stays
- Lube oil and coolant drains piped to the exterior of the enclosure base
- Radiator fill cover

Security and Safety
- Lockable access doors which give full access to control panel and breaker
- Cooling fan and battery charging alternator fully guarded
- Fuel fill, oil fill and battery can only be reached via lockable access
- Externally mounted emergency stop button
- Designed for spreader bar lifting to ensure safety
- Stub-up area is rodent proof

Transportability
These enclosures are of extremely rugged construction to withstand outdoor exposure and rough handling common on many construction sites.

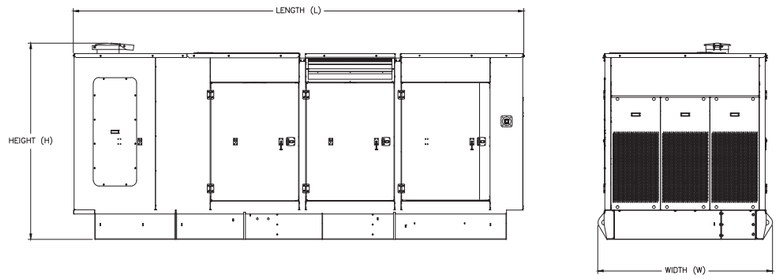
Options
- Enclosure constructed with 14 gauge steel
- Enclosure constructed with 12 gauge aluminum (5052 grade)
- Caterpillar yellow or white paint custom color available
- Control panel viewing window
- UL Listed integral fuel tank with 670, 400, and 300 gallon capacities
- UL Listed sub base fuel tank with 660, 1000, 1900, and 2200 gallon capacities.
- Seismic certification per applicable building codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, IBC 2012, CBC 2007, CBC 2010
- IBC Certification for 150 mph wind loading
- AC/DC lighting package
- 5 kW Canopy space heater to facilitate compliance with NFPA 110
- Motorized louvers and gravity discharge damper
- 125A Load Center
- GFCI outlets

*Not available with aluminum enclosures.

Component Weights to Calculate Package Weight

Model	Standby ekW	Narrow Skid Base		Wide Skid Base		Sound Attenuated Enclosure (Steel)		Sound Attenuated Enclosure (Aluminum)	
		kg	lb	kg	lb	kg	lb	kg	lb
C13	350	253	578	579	1276	1245	2745	765	1687
	400								
C15	350	273	602	465	1025	1245	2745	765	1687
	400								
	450								
	500								
C18	550	301	664	466	1027	1301	2868	817	1801
	600								

Sound Attenuated Enclosure on Skid Base

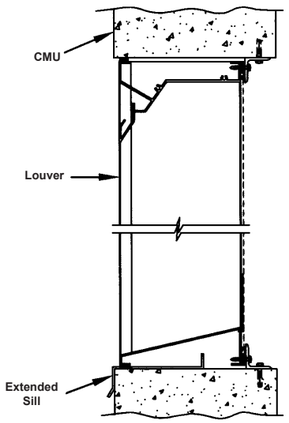


Model	Standby ekW	Length "L"		Width "W"		Height "H"	
		mm	in	mm	in	mm	in
C13	350	4948	194.8	2014	79.3	2320	91.3
	400						
C15	350	4948	194.8	2014	79.3	2320	91.3
	400						
	450						
	500						
Proposed model C18	550	5183	204.0	2014	79.3	2262	89.0
	600						

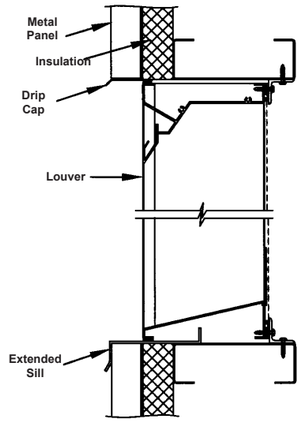
PROPOSED THIRD FLOOR ROOF GENERATOR

TYPICAL INSTALLATION DETAILS

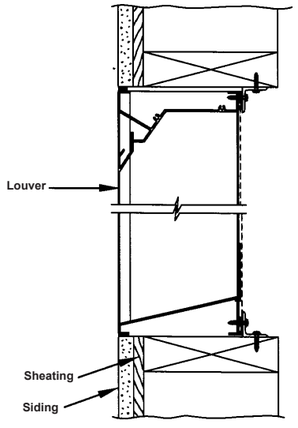
Masonry Wall



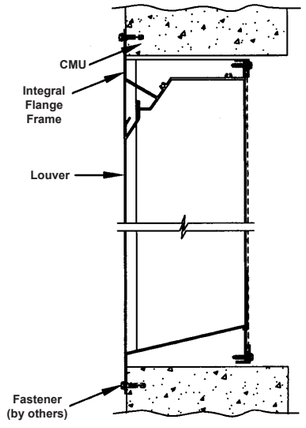
Metal Panel Wall



Wood Installation



Flange Mount



Accessories at additional cost.

RUSKIN®
3900 Dr. Greaves Rd.
Kansas City, MO 64030
(816) 761-7476
FAX (816) 765-8955

RUSKIN®
3900 Dr. Greaves Rd. • Kansas City, MO 64030 • (816) 761-7476 • FAX (816) 765-8955

ELF6375DX and ELF6375DXH DRAINABLE STATIONARY LOUVERS

EXTRUDED ALUMINUM LOUVER

STANDARD CONSTRUCTION

FRAME
6" (152) deep, 6063T5 extruded aluminum. ELF6375DX 1 – .081" (2.1) nominal wall thickness. ELF6375DXH – .125" (3.2) nominal wall thickness. Downspouts and caulking surfaces provided.

BLADES
6063T5 extruded aluminum. ELF6375DX – .081" (2.1) nominal wall thickness. ELF6375DXH – .125" (3.2) nominal wall thickness. Drainable blades are positioned at at 37 1/2° angle and spaced approximately 5 29/32" (150) center to center.

SCREEN
3/4" x .051" (19 x 1.3) expanded, flattened aluminum bird screen in removable frame. Screen adds approximately 1/2" (13) to louver depth.

FINISH
Mill.

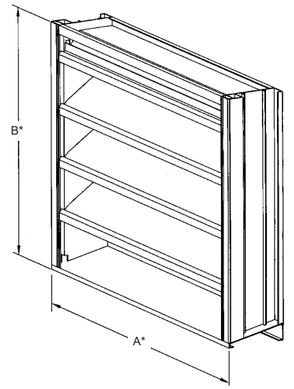
MINIMUM SIZE
12"w x 12"h (305 x 305).

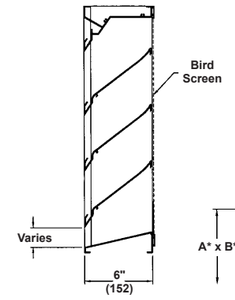
APPROXIMATE SHIPPING WEIGHT
ELF6375DX - 4 lbs./ft.² (19.5 kg /m²)
ELF6375DXH - 6 lbs./ft.² (29.3kg /m²)

MAXIMUM FACTORY ASSEMBLY SIZE
Shall be 75 sq. ft. (7m²) per section, not to exceed 120"w x 90"h (3048 x 2286) or 90"w x 120"h (2286 x 3048).
Louvers larger than the maximum factory assembly size will require field assembly of smaller sections.

SUPPORTS
Louvers may be provided with rear mounted blade supports that increase overall louver depth depending on louver size, assembly configuration or windload.

Consult Ruskin for additional information.





FEATURES

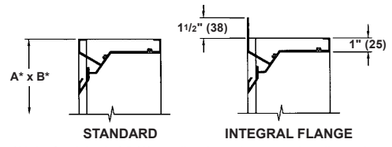
The ELF6375DX and ELF6375DXH offers:
- 57% Free Area.
- Published performance ratings based on testing in accordance with AMCA Publication 511.
- High performance frame system with drainable head collects and removes water to provide excellent water penetration performance.
- Drain gutter in each blade minimizes water cascade between blades.
- Architecturally styled, hidden mullions allowing continuous line appearance up to 120" (3048).
- Aluminum construction for low maintenance and high resistance to corrosion.
- All welded construction.

VARIATIONS

Variations to the basic design of these louvers are available at additional cost. They include:
- Extended sill.
- Hinged frame.
- Front or rear security bars.
- Filter racks.
- A variety of bird and insect screens.
- Selection of finishes: prime coat, baked enamel (modified fluoropolymer), epoxy, Acrodize, Kynar, clear and color anodize. (Some variation in anodize color consistency is possible.)

Consult Ruskin for other special requirements.

FRAME CONSTRUCTION



Dimensions in inches, parenthesis ( ) indicate millimeters.

*Units furnished 1/4" (6) smaller than given opening dimensions.

TAG	QTY.	SIZE		FRAME	VARIATIONS
		A*-WIDE	B*-HIGH		

PROJECT	LOCATION
ARCH./ENGR.	CONTRACTOR
REPRESENTATIVE	DATE

Spec ELF6375DX/ELF6375DXH-597/Replaces ELF6375DX-296

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HISTORIC APPROVAL CRITERIA AND ENCLOSURE REPORT

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Section 33.846.060 (G) Approval Criteria Response

1. Historic character.

The historic character of the property will be retained and preserved. Removal of historic materials or alteration of features and spaces that contribute to the property's historic significance will be avoided.

Response:

It is important to first define those features that comprise the Portland Building's historic character. These include:

- The building's size: 15 stories on a full city block.
- Its iconic massing and composition of colorful shapes: The teal-colored stepped base, the limestone-colored tower and the terracotta-colored stylized classical motifs (columns, capitals, and keystone).
- The square motif used in the punched windows and tile shape.
- The use of different window types including crisp punched window openings in the tower, the ribbon glazing in the keystone, curtainwall glazing below the keystone, and reflective glass on the west and east elevations
- The design of the garlands and medallions on the north and south elevations.
- The loggia on the west elevation with three pairs of double entry doors.
- The Portlandia statue.

Significantly altering any of the above would not allow the Portland Building to retain its historic character and, therefore, this project does not propose to change these aspects of the building's design.

The Portland Building is a unique postmodern resource that was completed in 1982. The attributes that comprise its historic character are different from many older, pre-modernist resources where character is imbued in large part through materials and details that convey the craftsmanship of its construction and materials. The primary character-defining features of postmodern architecture, however, are the concepts and ideas expressed through design. True to its style, the Portland Building's character does not directly come from its materials and workmanship—which were value engineered to be of a much lesser quality than Michael Graves originally intended—but instead comes from Graves's defining composition of colorful surfaces and geometries that plays out in an iconic and diagrammatic design.

Because of extensive material failures that cannot be repaired or replaced in-kind, this proposal seeks to reconstruct a new envelope over the existing skin, expanding the enclosure by several inches while respecting existing planar relationships. Because the enclosure is also the structure, the existing concrete will not be demolished, but will remain underneath. The new skin will remedy the water intrusion issues that have plagued the building since it was constructed, while recreating the visual qualities of the Portland Building that define its historic character. The building's failed systems cannot be replaced with the same materials, but new glass, aluminum plate panels, and terracotta tile will be carefully detailed so that Michael Graves' design and the qualities that make the building an important example of postmodernism will persist via reconstruction.

The precedent examples provided in the drawing package of this submittal demonstrate how many significant modern resources have faced material failures of a similar magnitude. In these examples, the use of alternate materials that convey the visual qualities similar to the buildings' original materials have not resulted in a significant loss of integrity or character. The Portland Building can employ such a reconstruction approach and retain what is significant about the building's historic character, allowing this criterion to be met.

2. Record of its time.

The historic resource will remain a physical record of its time, place, and use. Changes that create a false sense of historic development, such as adding conjectural features or architectural elements from other buildings will be avoided.

Response:

While original failing exterior materials will no longer be a part of the physical record, the design will be replicated with new, substantially visually accurate replacement materials. As described under the previous guideline and under guideline #9, the design composition and surface color expression are the most important aspects of the Portland Building's character and integrity, and therefore the most important features to retain in the physical record.

For most older (pre-WWII) historic resources, materials and workmanship play a greater role in defining the physical record and what is significant about the property. With a postmodern resource like the Portland Building, that has mass-produced parts creating an iconic composition of colorful shapes and surfaces, the materials themselves become a much less important part of the physical record than the preservation of the surface color expression and the composition as a whole. This is particularly relevant because the final selection of materials that exists on the building today, was not based derived from Michael Graves' design aesthetic for the building; rather they were dictated by the low budget for the project.

As detailed in this submittal, a fully rehabilitated Portland Building with a reconstructed skin will closely reflect the design that was completed in 1982, thus maintaining the historic resource as a physical record of the building's significant features. The compatible alterations proposed to the loggia and Fourth Avenue base do not create a false sense of historic development, as they are clearly differentiated from Graves' original and well-documented design with new modern materials. While the change in the tile size from 9.5x9.5" to 19x19" does not replicate the Portland Building that was constructed in 1982, this change also does not create a false sense of historical development because when viewed at a distance close enough to touch the wall, this new tile system with its silicone grout will clearly be a new, modern assembly.

Lastly, the proposed work for this project adds no conjectural features or architectural elements from other buildings, nor does it attempt to recreate some of Michael Graves' early unrealized design elements such as the fanciful garland or penthouse village.

3. Historic changes.

Most properties change over time. Those changes that have acquired historic significance will be preserved.

Response:

There have been no changes to the Portland Building's original construction that have acquired historic significance. The proposal is to reconstruct the building with new materials in a manner that conveys the same design and character as what exists today, with compatible alterations to enhance function and civic experience.

4. Historic features.

Generally, deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement, the new feature will match the old in design, color, texture, and other visual qualities and, where practical, in materials. Replacement of missing features must be substantiated by documentary, physical, or pictorial evidence.

Response:

The Portland Building Reconstruction Project Team recognizes that for historic resources, repair is preferred over replacement whenever possible. This standard of practice in the field of historic preservation was codified in the 1970s with pre-WWII buildings in mind. These preservation standards have not been revised to account for modern-era materials and assemblies that have far shorter life expectancies than traditional materials and are not repairable in the traditional sense—especially complex assemblies like those at the Portland Building. During the Modern/Postmodern era, many assemblies were used in their infancy, often employing methods that were later significantly improved upon or abandoned altogether for better technology.

The Portland Building suffers the effects of budget and detail deficiencies that resulted in a building enclosure that is fatally flawed. The concrete structural wall (protected only by paint) is combined with a curtainwall system that cannot properly integrate with the structure and creates a building envelope that has leaked since its infancy. Repairing and replacing in-kind—while the preferred approach in preservation—is not viable at the Portland Building because such an approach would only perpetuate the building's flaws and lead to ongoing degradation.

As documented through numerous studies and physical and pictorial evidence, the severity of the Portland Building's deterioration necessitates reconstruction by adding a rainscreen system over the existing exterior wall. A repair strategy for the existing system was vetted by the Portland Building Reconstruction Project Team, but could not adequately resolve the root cause of the building's issues. The new materials in the rainscreen system will replicate the old, closely matching in design, color, texture, and other visual qualities. As this guideline indicates, new materials can be used when it is not practical to replace in-kind, which is certainly the case for the Portland Building. As discussed above in the project summary, the concrete skin cannot be over-clad with concrete panels because the structure cannot support this additional weight. Similarly, the cost burden and constructibility challenges associated with replacing the tiled areas with replica 9.5 x 9.5" tiles is likewise impractical. A larger tile size is a compatible replacement, that meets the guidelines. The historical record reflects that color was Graves' primary design driver and that he originally specified a larger Gladding McBean terracotta tile that was later replaced with the smaller ceramic tile for budget reasons. Side-by-side elevation drawings of the existing and proposed systems demonstrate that the character of Graves' design is not significantly altered by the increased tile size given that the color matches his specifications and the square patterning is retained.

The Portland Building's colorful surface treatment and design composition as a whole represent the historic features that are most important to retain. Through careful reconstruction of the exterior, what is significant about this building will persist for generations to come.

5. Historic Materials.

Historic materials will be protected. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials will not be used.

Response:

As discussed under "Historic Features" above, there are no original material assemblies that, when repaired, would achieve a watertight enclosure. Repair measures that would improve the building's performance—but not solve the root cause of the problem—would result in additional flashings around the square window openings. These measures would detract from the crisp punched openings that are a key character-defining feature of the Portland Building's historically significant design. Because the preservation of the design is the most important aspect of the building's integrity, this criterion is better met by the reconstruction solution that also fully addresses the performance deficiencies.

The reconstruction will replicate the look and feel of the original historic materials, respecting the significance of Michael Graves' design. For instance, new window frames will closely replicate the original sight lines, mullion arrangements, and colors of the original windows. While the light-transmitting and solar qualities of the new glass will be altered by changing the black glass to vision glass, these improvements to daylighting and energy performance are consistent with Graves' original design intent and will not alter the exterior appearance in an incompatible manner. At the concrete, painted aluminum plate panels will also closely replicate the painted surface of the concrete face, including its reveal size, patterns, and alignments. Additionally, at the base, new terracotta tiles applied to aluminum panels will mimic existing color, sheen, and texture. The new terracotta tiles will be proportioned to be exactly four times the size of the original at approximately 19x19 inches, retaining the character-defining square pattern.

6. Archaeological resources.

Response:

Not applicable.

7. Differentiate new from old.

New additions, exterior alterations, or related new construction will not destroy historic materials that characterize a property.

Response:

This approval criterion is most applicable with respect to the design alterations proposed at the loggia and Fourth Avenue façade base. The proposed alterations for both of these areas balance compatibility with differentiation. New materials will complement but not compete or create contrast with primarily envelope materials.

Because the function of the ground floor is changing to public engagement space and a customer-service-first approach, the building wall beyond the loggia will be opened up with glazing to create an improved public experience and bring more natural light into the building. The rear wall of the loggia was never a space that was significant to Graves' design for the building and was always intended to be altered to accommodate changing retail tenants and functions. Over the years, these spaces have been modified many times with various reconfigurations of doors and glazing types, and are no longer in their original condition. For these reasons, the proposed alterations to these walls do not negatively alter an aspect of the building that has character and significance. This new glazing is clearly a modern treatment and thus differentiated, but utilizes black mullions that draw from the existing language of building materials to ensure the change is also compatible. Because the glazing is recessed, the effect on the overall façade does not negatively alter the character of the important teal-colored base, yet allows the project to better meet some of the Central City Fundamental Design Guidelines focusing on urban engagement.

On the south and north elevations, two bays of the open loggia will be enclosed to accommodate additional interior office space. Because the south and north loggia wings have been truncated short of the Fourth Avenue façade throughout the building's existence, this reversible alteration has minimal negative impact on design integrity.

On Fourth Avenue, there has been a strong desire from the public and the Landmarks Commission to transform the garage entry into a design element that has a better urban response to the park. The team considered many approaches and the final design was chosen because of its proportional harmony with the building as a whole.

Both of these alterations are differentiated from the original design in that they are clearly contemporary changes, but their scale and materiality allows them to fit harmoniously with the building.

HISTORIC APPROVAL CRITERIA RESPONSE

8. Architectural compatibility.

New additions, exterior alterations, or related new construction will be compatible with the resource's massing, size, scale, and architectural features. When retrofitting buildings or sites to improve accessibility for persons with disabilities, design solutions will not compromise the architectural integrity of the historic resource.

Response:

Like the response above regarding differentiation, the Portland Building Reconstruction Project seeks to recreate the overall design—the iconic colors and shapes—such that the reconstructed Portland Building continues to convey the significance of its design. Given the circumstances where the building's highly degraded exterior materials must be replaced, reconstruction is a compatible approach that maintains design integrity but also fixes the building for the long term.

As also mentioned under guideline #7, the alterations proposed at the loggia and Fourth Avenue façade base results in some design alteration, but without negative effect on the building's integrity or character. New materials will compliment but not compete or create contrast with primarily envelope materials. For instance, the new loggia glazing uses black mullions, which is part of the existing material palette. The large glazed opening on Fourth utilizes the existing garage entry that is centered on the facade, but enlarges it so that the size is a harmonious proportion with major features on this elevation. Both of these alterations take their cues from the existing building to achieve compatibility.

Changes to the black glazing and tile size are also compatible. We know from the historic record that Michael Graves did not specify black glazing and was disappointed by its inclusion in the constructed building. Conversely, the crisp pattern of square punched window openings was a very intentional part of his design. Therefore, in an effort to improve the quality of the interior, the glazing is being changed to vision glass, but the square punched openings will be replicated in the rainscreen system. Likewise, with the tile, we know that the color and square patterning are the most significant character elements of the base and keystone, and the choice of 9.5 x 9.5 inch ceramic tile was the product of value engineering. The proportional increase of the tile to approximately 19x19 inches is a compatible alteration based on Graves' known design intent. This change maintains existing critical alignments while reducing the number of joints.

9. Preserve the form and integrity of historic resources.

New additions and adjacent or related new construction will be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic resource and its environment would be unimpaired;

Response:

When a building is listed in the National Register, it must have both historic significance and sufficient integrity to convey that significance. To evaluate whether a resource has sufficient integrity for designation, the National Register had defined seven aspects that comprise integrity: location, setting, design, materials, workmanship, feeling, and association. However, an historic resource does not have to have integrity in all seven areas. Determining which of these aspects are most important to a particular property requires knowing why the property is significant.
In the case of the Portland Building, the nomination clearly states the building's significance is derived from its design and its association with Michael Graves.

The following analysis determines which aspects of integrity are the most relevant to the Portland Building and it considers how the proposed project will affect the integrity of this historic resource after the reconstruction is completed:

Location: The Portland Building occupies a full city block in downtown Portland and will fully retain its integrity of location.

Setting: As a zero-lot-line building in the heart of downtown, the Portland Building is surrounded by sidewalks, street trees, other civic and commercial buildings, and a park. The building is situated in the government area as designated by the 1912 City Beautification Plan by Edward Bennett. Graves' design references the context and playfully responds to its historic neighbor—City Hall. The setting in close proximity to the building may have very minor changes (such as street trees) that do not have a substantive impact on the resource's integrity. The proposed setting is largely the same as it was at the time of the building's construction and, therefore, integrity in this area will remain.

Design: The Portland Building's design—with its bright colorful surface treatment, strong geometric organization, and stylized historic forms—is recognized internationally. The highly diagrammatic nature of Graves' design was an architectural experiment in surface and color, rather than in materials or workmanship. The 1981 construction photo included with this submittal—taken before the building was painted—underscores the importance of color over materiality in Graves' design. The Portland Building was an entirely different building before the colors were applied. Great effort will be taken with this project to reconstruct the façade, closely replicating Michael Graves' design, including the more intricate details that affect integrity, such as the relationship between parts and planes; reveals/shadow lines; and sheen, texture, and reflectivity. While not all materials can be replicated in-kind, the design will be executed with precision using compatible modern materials such that building will remain entirely recognizable as Graves' original design and will retain its visual integrity. As with the BMA Tower precedent described in this submittal, none of the changes to the building's materials will impede the viewer's understanding of the original design.

Materials: At the conclusion of the project, there will be a significant alteration to the building's exterior materials. New exterior materials will replicate the design and the original Portlandia statue will remain. However, the full significance of the building's design can only be understood at a far enough distance to take in its playful juxtaposition of color, surface, and stylized forms. Across the street, the material changes will hardly be perceptible.

Workmanship: Modern and Postmodern resources like the Portland Building, feature materials and systems that emphasize machine-age technology rather than the work of skilled craftsmen. The Portland Building's original materials reveal a significant lack of craftsmanship in their installation, seen in examples like the teal tile grout lines that range from 3/8" to 1" wide. Workmanship is evident, however, in the hammered copper statue of Portlandia by Raymond Kaskey, which will be preserved in place. Workmanship is not an important aspect of the Portland Building's integrity and the replacement of original materials does not diminish its level of integrity in this area.

Feeling: The Portland Building is one of the most prominent examples of postmodern architecture and embodies the ideals of this style. At the completion of the project, the building will fully retain its integrity of feeling, still conveying the playful surface colors, stylized historic forms, and bold diagrammatic design moves that characterize it as an icon of the postmodern movement.

Association: The influence of the Portland Building's iconic design on the field of architecture creates a strong link between this building and postmodern design theory. As the first major work of Michael Graves to be completed, it catapulted his firm into the national sphere. Following this project, the building's design will remain intact to convey its significant association with the postmodern movement and with Michael Graves. Additionally, Graves' office has reviewed the proposed work and provided a letter of support, noting that: "Michael Graves had [...] wished there was a way to renovate The Portland Building comprehensively and not as a series of local patch repairs. [He] would also have been supportive of this proposal and thrilled to see this happening."
Conclusion: Based on what the National Register nomination identified as being significant about this property—its importance as an influential project for the Postmodern movement and its importance as a defining work in the career of architect Michael Graves—the key aspects of the Portland Building's integrity are:

- Location/Setting – because the Portland Building's design is highly context driven.
- Design – because the Portland Building is one of the country's world's most notable example of postmodern designs, launching the movement and the influential career of architect Michael Graves.
- Feeling – because the Portland Building continues to express the aesthetic sense of the postmodern movement through its design and character.
- Association – because the Portland Building's design integrity creates a direct link with postmodern design theory and Michael Graves' significant portfolio and influence on postmodern architecture.

The Portland Building is not significant due to the character of workmanship or craft of the specific materials of which it is composed. Instead, it is significant for the way that its colorful surface treatment and composition conveys the theoretical ideas of a stylistic movement. In terms of visual character, the dominant aspects of the building's design are its form and color. Those aspects will be retained in the reconstruction.

With materials and workmanship being less critical, covering the Portland Building's failed skin with a new skin does not irrevocably harm the resource's integrity. In addition to continuing to communicate the building's form, diagrammatic areas of shape and color, and its ornament, the design for the reconstruction also captures smaller design components that effect integrity including the relationship between parts and planes; reveals/shadow lines; sheen, texture, and reflectivity. All of these efforts preserve the form and integrity of the resource.

10. Hierarchy of compatibility.

Exterior alterations and additions will be designed to be compatible primarily with the original resource, secondarily with adjacent properties, and finally, if located within a Historic or Conservation District, with the rest of the district. Where practical, compatibility will be pursued on all three levels.

Response:

Because this building is not located in a historic district, the response to this guideline is the same as #8 – Architectural Compatibility:

The Portland Building Reconstruction Project Team Applicant will recreate the overall design—the iconic colors and shapes—such that the reconstructed Portland Building continues to convey the significance of its design. Given the circumstances where the building's highly degraded exterior materials must be replaced, reconstruction is a compatible approach that maintains design integrity but also fixes the building for the long term.

As mentioned under guideline #7, the alterations proposed at the loggia and Fourth Avenue façade result in some design alteration, but without negative effect on the building's integrity or character. New materials will complement but not compete or create contrast with primarily envelope materials. For instance, the new loggia glazing uses black mullions, which is part of the existing material palette. The large glazed opening on Fourth utilizes the existing garage entry that is centered on the facade, but enlarges it so that the size is a harmonious proportion with major features on this elevation. Both of these alterations take their cues from the existing building to achieve compatibility.

Changes to the black glazing and tile size are also compatible. In an effort to improve the quality of the interior, the glazing is being changed vision glass, and the square punched openings will be replicated in the rainscreen system. Likewise, the proportional increase of the tile to 19x19 inch is a compatible alteration based on Graves' known design intent.

FACADE FORENSICS
ENCLOSURE REPORT

Facade Forensics is the envelope consultant for the Portland Building Reconstruction team providing support in the analysis of the existing building conditions and development of technical solutions for the building envelope.

The following report represents a summary of the Portland Building's envelope issues and probable root causes. In addition, it provides overview of the proposed rainscreen solution and technical justification for this approach. As part of this documentation, a brief summary of other solutions and systems considered as well as why they were not deemed feasible or appropriate is included.

facade forensics
fixing skins before and after they're built

facade forensics, inc. 5311 Salem Road *Suite* 100 Cincinnati, Ohio 45230 *p:*513-383-9906 *f:*513-232-0425 *e:*mlewis4@cinci.rr.com

Saturday, 19 November 2016

Ms. Carla J. Weinheimer AIA DBIA, Associate
DLR Group
421 Southwest Sixth Avenue, Suite 1212
Portland, Oregon 97204

Subject: The Portland Building Reconstruction, Portland, Oregon
Diagnosis of Enclosure Problems & Recommended Remedy
FF#1621.0, DLR#74 16113 00

Dear Ms. Weinheimer:
Facade Forensics' assessment of The Portland Building's thirty-year old historic enclosure concluded its problems could not be corrected by restoration-type repairs limited to traditional preservation techniques. Problems caused chronic water infiltration resulting in harmful moisture inside the building and premature deterioration outside. Together, they diminished the building's function, its integrity, and abbreviated its life. Leaks into the inside compromised occupants' comfort and led to ongoing interior maintenance problems; water within walls generated staining, efflorescence, cracks, and corrosion. On the exterior, water penetration into the wall degraded some of the mortar attaching the tile to the concrete wall. Reversing the decline of The Portland Building's condition, plus upgrading its serviceability and extending its useful life require a long-term remedy for leaks and degradation beyond the capabilities of in-kind preservation. Decades of those attempts failed to provide a permanent solution. Since construction finished in 1982, repeated attempts to fix problems by careful repairs that preserved the original materials did not stop leaks or prevent re-occurring symptoms. The repairs sometimes scarred the building's original appearance, yet leaks re-occurred, and degradation spread. Repeating failures proved continual short-term repairs that mitigated *symptoms* of problems cannot fix the *problems* in the building's flawed enclosure. Problems, or sources of moisture, and resulting degradation originate in the building's construction and the industry's not yet developed understanding of enclosure science at that time. Careful consideration of the existing enclosure details and structural concrete elements comprising the existing enclosure revealed that removing and replacing or restoring windows, sealants, grout, tile and flashing, as is common in a traditional preservation approach, would not remedy the fundamental enclosure problems. The only viable way to provide a long-term remedy for The Portland Building's enclosure is to add a rainscreen system over the existing facade. The rainscreen shall replicate the existing enclosure's finishes, planar relationships, and joint patterns as closely as possible; this preserves the design intent of the original enclosure while correcting its inherent functional flaws.

Past re-caulking, repointing, recoating, retiling, re-patching, re-glazing, and re-gasketing to try to restore the facade's original fabric failed to fix its problems. Usually the past work only slowed symptoms short-term. Repeating those repairs in the future, more frequently as deterioration worsens, cannot change outcomes because The Portland Building is not built like, and does not behave like, century-old masonry buildings where those type repairs work. Refined over more than twenty centuries, the technology of old load-bearing masonry enclosures minimize leaks into interior spaces by absorbing and holding moisture, like a *reservoir,* until drying by breathing the moisture back out. Periodic restoration by traditional techniques like repointing and selectively replacing parts effectively preserve those types of masonry buildings and their weathering mechanisms by restoring their reservoir and its watershedding features. The Portland Building is not a masonry building; it has an exposed reinforced concrete enclosure with tile attached to it in some areas. Its construction lacks watershedding details prevalent on many historic masonry buildings. Its enclosure technology, young at perhaps sixty years old in 1980, was still evolving, for concrete does not resist weathering well. It cannot be a reservoir because absorbed moisture induces corrosion and carbonation that destroy it; so concrete must be a *barrier.* The post-modern building's dense, but relatively thin concrete walls cannot resist water and thermal penetration by acting as reservoirs like old buildings' thick, porous masonry

walls are able to act as reservoirs. The Portland Building relied on its paint, grout between tiles, and caulk in joints to be a barrier against water intrusion and absorption, but they are by nature only temporary. Screening the concrete to shed water, relieve wind pressure, and moderate temperatures is the only approach that will successfully prevent degradation outside, leaks inside, and provide appropriate interior comfort.

How the Rainscreen Remedies Enclosure Problems Long-Term

The rainscreen concept is the correct enclosure remedy for the The Portland Building. It remedies enclosure problems by closing gaps in barriers and shielding existing air, water, and thermal leak locations in the existing enclosure from exposure to weather. The proven rainscreen concept needed to be adapted to The Portland Building's architecture to respond to its landmark status. This remedy for the building's enclosure applies new, mixed cladding systems over the original facade, to replicate the original appearance. It corrects original problems, improves performance to modern standards, and will require little maintenance. The new high-performance rainscreen enclosure will protect the building and its occupants from the elements while significantly improving the energy performance of the building. New factory-glazed, thermally-broken unitized windows and curtainwall shall replace the dilapidated glass systems. Setbacks and all relationships to reveals and mullions are kept consistent with the facade's design. The proposed rainscreen enclosure is comprised of insulation that covers all surfaces, panels covering the existing painted concrete and glazed terracotta covering the existing tile. Pressure equalization engineered within the new system effectively diverts air and water away from joints so they remain dry, and thus cannot leak. The insulation fully wrapping the building's outside behind the exterior covering warms walls in winter and keeps them cool in summer, stabilizing interior surface temperatures so occupants are comfortable and mechanical performance is improved. The new continuous insulation wrap also alleviates condensation, eliminates bridges, and abates lost energy. No repair-and-replace in-kind option that exposes the existing tile and concrete can achieve these critical building performance features required by current Building Energy Code and LEED.

The proposed rainscreen replicates The Portland Building's original exterior surfaces, before damage evident today, without replicating the enclosure's existing functional problems. The rainscreen solution accomplishes these objectives for all three existing primary enclosure systems:

1. *at openings:* Glass-filled aluminum frames copy the original frames' sightlines, mullion arrangements and colors. Better light-transmitting and solar qualities of new glass, maximizing existing vision glass openings, and changing some spandrel glass to vision glass will improve daylighting and cut heat gain without conspicuously altering exterior appearance. High-performance kynar extrusion coatings resist weathering better than original anodizing.

2. *at paint on concrete:* Aluminum plate panels formed with reveals painted to match the concrete's coating copy the original concrete's painted face, its reveal size, shapes, patterns and alignments. Fabricated and finished in a factory, the custom panels' baked-on kynar finish is a proven, stable, and low maintenance finish. Its color characteristics would be warranted not to change for decades. The multiple-coat kynar would replace the existing building's elastomeric paint.

3. *at tile on concrete:* The rainscreen design uses two different strategies for replicating the red tiles in the tower's keystones and green tiles at the base. To reduce weight and future maintenance requirements where red tiles are placed high on the tower, aluminum plate panels with applied aluminum red tiles, constructed almost identically to the panels covering the painted concrete, replicate the original clay tile and grout's original patterns, color, texture and relative scale. Relief, or depth of joint from tile face, increases slightly from existing to enable permanent concealed mechanical connections. Kynar finishes on aluminum panels and aluminum tiles, chemically identical to the kynar on panels over concrete, duplicate those panels' durability for decades.

   To replicate the existing green clay tile glazed hard surface at the lower three levels, new glazed terracotta green tiles will mount onto concealed custom aluminum frames, without using mortar. Mechanically mounting the tiles to a hidden backup frame instead of adhering them with mortar eliminates risk of chronic problems occurring with the existing building's adhered tile veneer. Separation, delamination, efflorescence, discoloration or displacement occur at multiple locations within the existing adhered tile veneer's grout joints and setting bed. Replacing grout with hard silicone in joints may slightly alter the

joints' surface texture, but the variance is likely indistinguishable from the existing at more than arm's-length. The silicone will, however, replicate the grout's profile, sustain the intended black color several decades after the grout would fade to light gray, and resist fungal growth. As existing conditions prove, grout fades from black in only a few seasons, then eventually develops efflorescence and in some areas, moss. The system will be continued above the sidewalk and loggia through the third floor so appearance is consistent. Thorough pre-engineering of the new tile layout will correct unwanted wide joints and cut tile anomalies scattered in the existing facade. Anomalies resulted from the underlying concrete's as-built dimensions not matching the tile's module. Glaze texture, color, and hardness on terracotta should physically and aesthetically perfectly match the existing clay tiles.

Repairs Unable to Remedy Enclosure Problems

Evaluation of many combinations of more traditional restoration-type repairs for The Portland Building's enclosure revealed all either failed to remedy its known sources of moisture, or their methods compromised conformance to current energy codes and standards. Interiors must be kept dry, and City energy policies require conformance to these codes and standards. Project goals also require the enclosure reconstruction to improve interior daylighting, not only intensity, but dispersion, and also improve views to the outside. Key criteria for judging potential remedy options include: 1.continuity of air, water, vapor and thermal barriers to stop leaks and moisture long-term, 2.expansion of existing openings without cutting concrete to improve daylighting and views, 3.simplifying transitions between systems to reduce risk of future problems, and 4.reducing, if not virtually eliminating, maintenance beyond glass cleaning. Following are summaries of repair options that did not successfully achieve necessary objectives, listed by existing enclosure system:

1. *at openings:* Facade Forensics recommends removal of existing storefront-type windows and stick-built multiple story curtainwall framing systems infilled with dark-tinted, un-insulated glass, and replacing them with new unitized curtainwall. Other repairs considered, but failing to satisfy requirements include:
   - replacing monolithic glass with new insulated glass in the existing aluminum frames requires re-working aluminum frames, adding visible adapters, and inheriting the existing frames' poor performance.
   - attaching adapters to existing frames to accept new insulated glass, even if visually acceptable, inherits the existing frames' limited structural capacity.
   - attaching adapters to existing frames also inherits faulty floor splices and perimeter joints to concrete that depend only on exposed sealant to prevent air leakage and water penetration; these continually fail.
   - keeping existing frames also keeps their perimeter seals, perpetuating reliance on exposed, field-placed sealants to resist leaks, and need to inspect them, find defects, and repair breaches at least annually.
   - expanding daylight openings vertically in existing curtainwalls would require reworking existing mullions and adding new horizontal mullions into an extinct framing system, increasing vulnerability to leaks.
   - keeping the existing aluminum frames eliminates the opportunity for making curtainwall and window daylight openings wider, and window daylight openings taller to increase opening sizes, light, and views.
   - keeping existing aluminum frames requires verifying capacity of all connections subjected to leaks or distress, and possible reinforcement; these extensive investigations and corrections cost more than new.
   - keeping the frames also prevents return of existing insulation on the interior side of concrete walls, into and around perimeters of the concrete openings to close existing gaps in insulation to the frames.

2. *at paint on concrete:* Facade Forensics recommends keeping the paint on concrete, removing its spalls and unsound areas, insulating over the outside, and covering with a rainscreen of painted aluminum panels that look like the painted concrete they cover. The new unitized curtainwall system is a separate weather barrier, so it negates the need for a barrier on the concrete, or to restore concrete surface integrity as the barrier's substrate. Repairs considered, but failing to satisfy requirements in the paint on concrete areas include:
   - keeping the insulation on the interior side of the concrete causes the concrete's temperature to nearly equal outside temperatures; the concrete's mass holds the temperature differentials to the interior.
   - keeping insulation on the interior, between studs, prevents the thermal continuity required by current Building Code and LEED certification.
   - changing interior-side insulation to spray-on closed cell polyurethane would require new interior finishes at all exterior walls and steel stud framing to support that wallboard.

- keeping insulation on the interior side of the concrete so the existing painted surface may be preserved, and attempting to connect that insulation to the windows' and curtainwalls' aluminum frames to comply with Code, would either reduce opening sizes or require extensive cutting of concrete.
- keeping insulation on the interior side of the concrete prevents its continuity through the floors, causing continuous thermal bridges directly to the exterior around the entire perimeter of every floor.
- keeping insulation on the interior side of the concrete makes the wall concrete cold in winter, causing condensation inside when surfaces descend below dewpoint; this moisture risks mold growth.
- cold exterior wall concrete during winter will extract heat from the floor slabs' edges where they connect, chilling those floors and ceilings, requiring more heating, and causing cold feet in edge offices.
- keeping insulation on the interior side of the concrete subjects the exposed concrete to maximum thermal ranges, cycles and stress, promulgating cracks that absorb water into the wall.
- keeping the paint on the concrete exposed requires the applied coating to function as a barrier while under direct exposure to all weathering elements in their full extremes.
- all coatings rely on continuous adhesion to their substrate to maintain their integrity; all coatings require frequent maintenance to sustain their continuity and protect their substrate.
- to function as a barrier, the coating must bridge over existing cracks in concrete, and cracks that form after its application and cure until re-application or repair.
- distress and moisture in concrete, more than a coating's chemical deficiencies, cause coatings to fail; exterior surfaces can rarely be perfectly dried or cleaned before coating, or fully protected while curing.
- preventing penetration through the barrier coating requires repeated re-application, thus repeated access to the building's facade to accomplish the maintenance.
- repeated access to restore the barrier components risks damaging and defacing the coating.

3. *at tile on concrete:* consistent with our recommendation for painted concrete areas, Facade Forensics recommends keeping the tile on concrete, its grout in joints and bed mortar where sound, removing its loose areas, insulating over the outside, and covering with a rainscreen of either red aluminum tiles on panels at the keystones high on the tower, or green glazed terracotta tiles at the base, that look like the tiles they cover. The new unitized curtainwall system is a separate weather barrier, so it negates the need to try to create a barrier on, or beneath, the existing tile, or even to restore concrete surface integrity as the adhered tile or barrier's substrate. Because existing tile-faced walls are concrete underneath, identical to the concrete under the paint, all repairs listed ineffective there are also not effective in this area. Repairs considered to address the tile, grout, and bed on the concrete, but failing to satisfy requirements include:
   - replacing loose or damaged tiles in-kind does not resist water absorption around tiles, into the wall.
   - replacing loose or missing grout in joints between tiles does not resist water absorption into the wall.
   - replacing delaminated or corroded lath and fractured bed mortar under tiles and joints does not resist water absorption into the wall or continued propagation of damage.
   - applying a clear sealer to the joints reduces absorption into the grout, if sound, but does not bridge cracks or seams, thus does not stop water absorption into the wall drawn in by capillary tension.
   - applying an opaque elastomeric coating over grout in joints to bridge cracks would expand the problems experienced at paint on concrete, and further, would need to lap onto tile faces to seal seams.
   - failing to prevent water absorption would perpetuate efflorescence and staining.
   - failing to prevent water absorption would propagate corrosion of embedded lath, and rust staining.
   - aluminum frames' perimeter seals to porous grout in joints between tile fail to prevent leaks through the tile joints, around sealant edges even when sealant is properly bonded.
   - preventing water absorption into the walls would require removing all tile, grout, and bed mortar to apply the barrier beneath the adhered tile system.
   - the barrier between concrete and tiles would inherently inhibit bond of setting bed to supporting wall.
   - potential of trapping absorbed water at barrier layer would require a drainage plane to evacuate water.
   - adding a drainage plane between wall and tile system completely separates tile from its support, ideally creating a narrow air cavity, thus requiring independent support of the tile in front of cavity and wall.

   - connecting aluminum frames' perimeters to the barrier under the tile would require adding continuous flexible flashing to bridge the gap between them, so air, water vapor, cold and hot do not transfer.
   - re-installation of new, duplicate tiles using mortar bed and grout repeats efflorescence problems.
   - too many tiles would be broken or damaged during removal to consider reclaiming for re-installation.
   - time and labor to attempt to remove and re-install adhered tile would be wasted, and repeat problems.
   - noise and dust generated by removal could not be contained within project site even with netting, curtains and diapers encapsulating scaffolds, affecting properties and public beyond site borders.
   - restoring existing tile would postpone enclosures at those openings, delaying start of subsequent trades.
   - restoration of existing tile could not begin until new, custom replacement tile could be produced.

Performance Benefits of Rainscreen as a Remedy

The recommended rainscreen solution can be built using a proven unitized curtainwall system. The system would erect individual interlocking, finished wall sections just outside the existing wall surface; each section, or *unit,* one floor tall and varying between approximately two and ten feet wide. Units are fabricated and assembled from aluminum mullions, plates, glass, insulation, sealants and gaskets indoors in an off-site shop by specially-trained crews. In an assembly-line process, units are built laying flat, outside-face up, with hands-on quality-assurance inspections verifying each step to reduce risk of future problems. Work done off-site is replaced by other trades on-site, promoting faster progress and an earlier overall finish. It is not unreasonable to expect enclosure of a floor in a week. Enclosing each floor earlier starts subsequent interior trades sooner.

Contemporary unitized systems are commonly engineered to resist *all* water leaks when two inches of rain fall in only a quarter-hour, with sustained 70mph winds. Air leakage can be limited to one cfm for every 20sf of wall during sustained 50mph winds. Actual, effective R-25 can be exceeded in non-vision glass areas by eliminating thermal bridging, resulting in resistance to condensation when outdoor temperatures descend to near zero, even with indoor climates kept to 30%RH. Such combined performance was rare ten years ago. Units are engineered with their primary seals and gaskets concealed within interlocking parts, thus not exposed to weathering, so they are maintenance-free and their performance virtually does not diminish over time. High performance, redundancy, quick erection and longevity justify unitized enclosure's premium expense and added wall depth. Every unit requires its own aluminum mullions and frames to span a full floor height, their depth dictated by structural loading. This framing is redundant because it bypasses the structural concrete wall doing the same work now. Claddings and offsets in claddings add onto the outside of this mullion depth; some setbacks may be shallower than existing to avoid exacerbating the overall wall depth. On the inside of the frame, space is needed between new wall units and the existing tile or concrete to enable the units' structural connections to the building and reasonable access to them during construction. At setback tower walls, the new units may push the face-of-wall ten or more inches outward from the existing walls' faces. This depth causes window surrounds to approach eighteen inches from inside the existing concrete to face-of-new glass. Existing interior window surrounds are typically eight inches deep, with windows inset five inches into their concrete openings. The new deep return might be used to disperse natural light further towards the core. Enlarging the glass openings and changing existing dark-tinted glass to clear glass allows more daylight into the openings. Depth can be reduced at base walls that start at the ground to avoid encroaching the sidewalk by only partially-unitizing the new rainscreen, a feasible approach at low walls.

Replacing glass systems and covering the facade with a rainscreen formed by a unitized curtainwall is the only long-term remedy for The Portland Building's enclosure problems. The solution replicates the facade's historic appearance, improves quality of interior workspaces, and cuts energy loss to extend the building's life many decades.

Sincerely,
Facade Forensics, Inc.

Michael D. Lewis, AIA NCARB FASTM MEng

/CITY OF PORTLAND / HOWARD S. WRIGHT / DLR Group
/THE PORTLAND BUILDING RECONSTRUCTION PROJECT