



43 Parliament/ 281 Front St. E. TR3 Data Centre

Schematic Design

June 24th, 2020

Project Description & Background

TR3 Data Centre

Proponent: Equinix

Design Team: WZMH Architects

Review Stage: Schematic Design

Background

- Represents phase 2 of the 43A Parliament St and 281 Front St East property
- The subject site was City-owned, then swapped via expropriation for First Parliament lands across Parliament Street in 2012
- The existing SPA application for a data centre on First Parliament site was then transferred to the subject property in the land swap
- TR2 was approved through the Committee of Adjustment (TR3 is planning to undergo a similar process)

TR3 Description

- This application (TR3) proposes an expansion northward from the existing TR2 data centre with a connection via the second floor over a vehicular access driveway
- Proposes shared entrance with TR2 with no new entry at grade

Site Plan Application

- First SPA submitted in May 2020

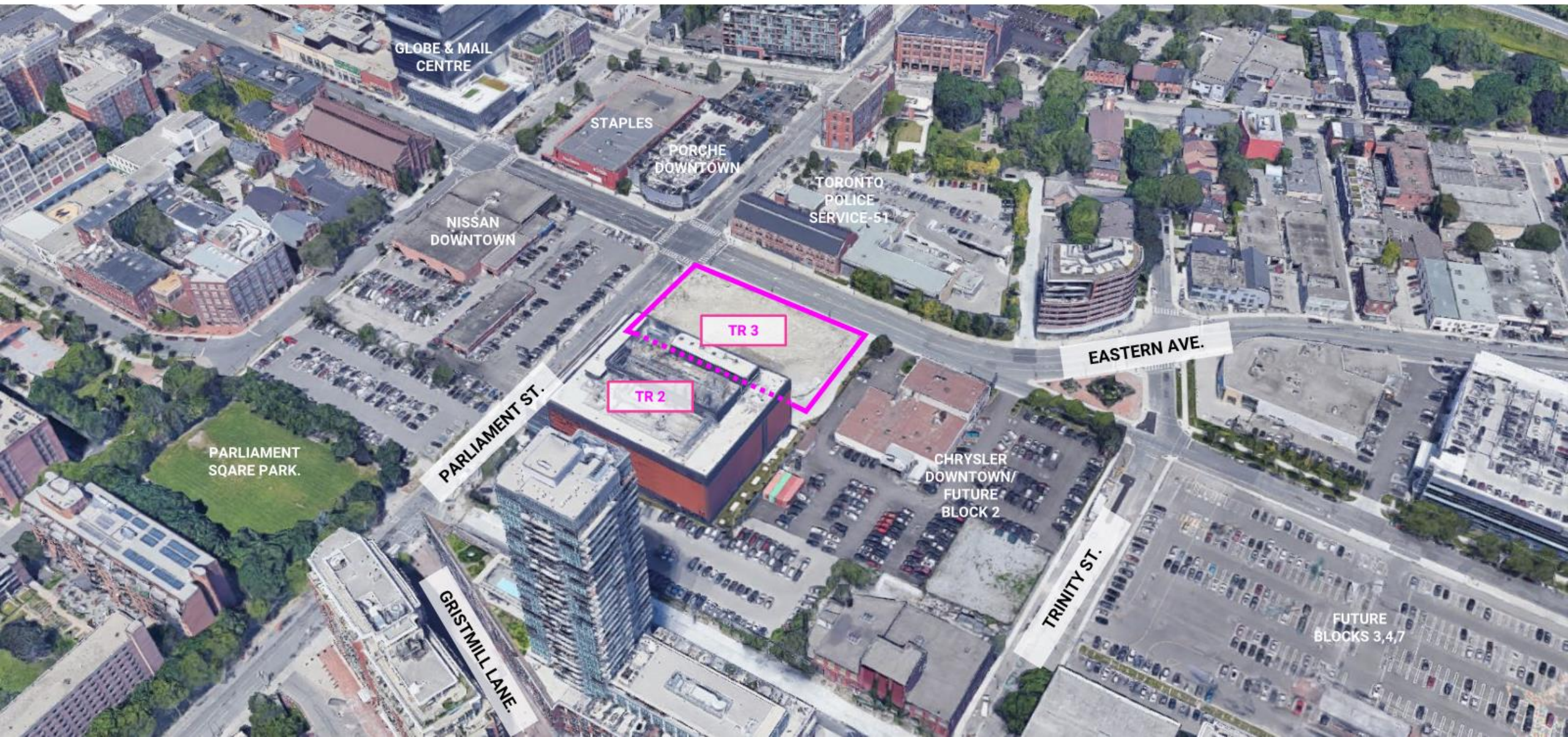
Existing Site Context

TR3 Data Centre

Proponent: Equinix

Design Team: WZMH Architects

Review Stage: Schematic Design



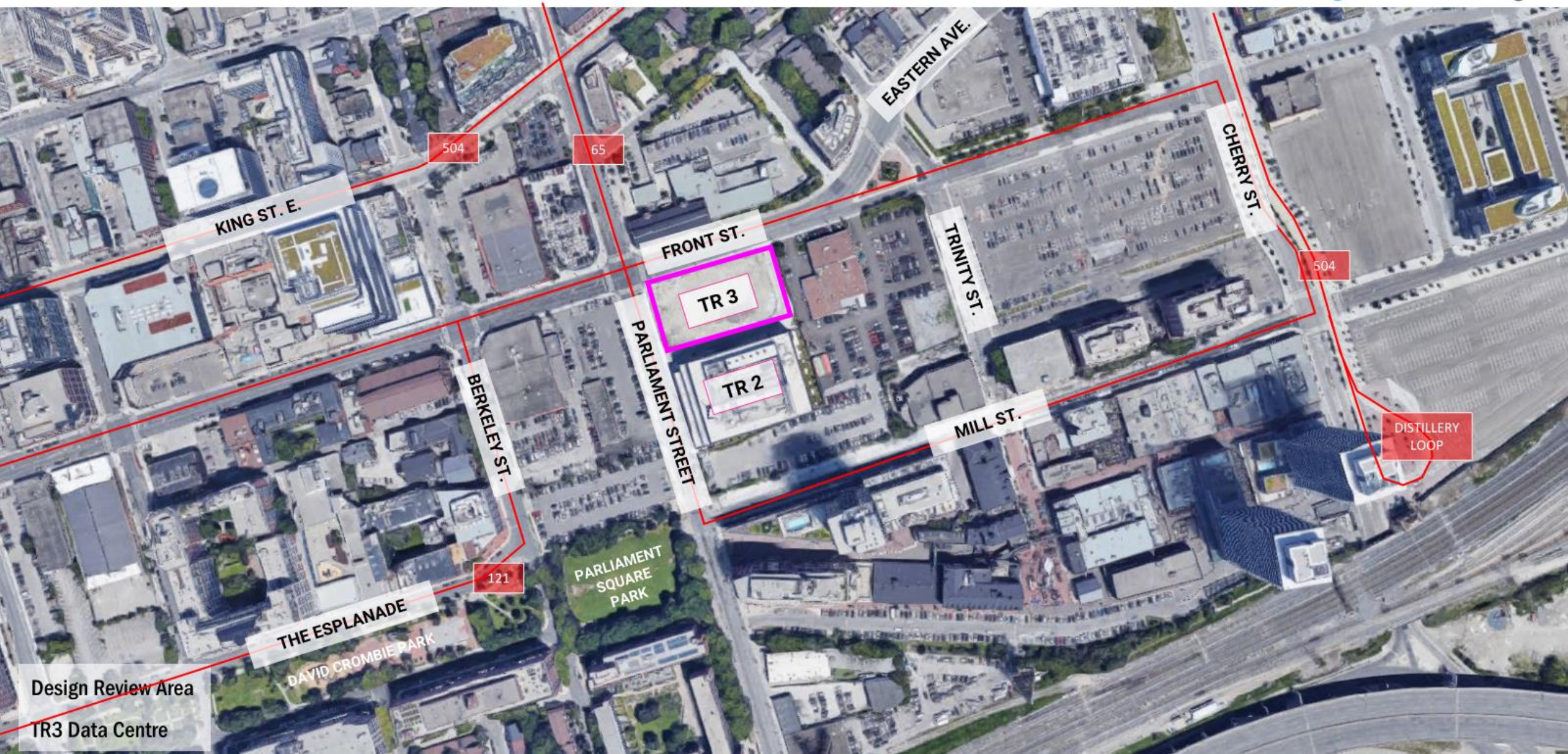
Existing Site Context

TR3 Data Centre

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Review Stage: Schematic Design



Design Review Area

TR3 Data Centre

DISTILLERY LOOP

KING ST. E.

504

65

EASTERN AVE.

CHERRY ST.

504

FRONT ST.

TR 3

TRINITY ST.

TR 2

PARLIAMENT STREET

MILL ST.

BERKELEY ST.

THE ESPLANADE

121

PARLIAMENT SQUARE PARK

DAVID CROMBIE PARK

DRP Stream 1: Private land – Site Plan Approval

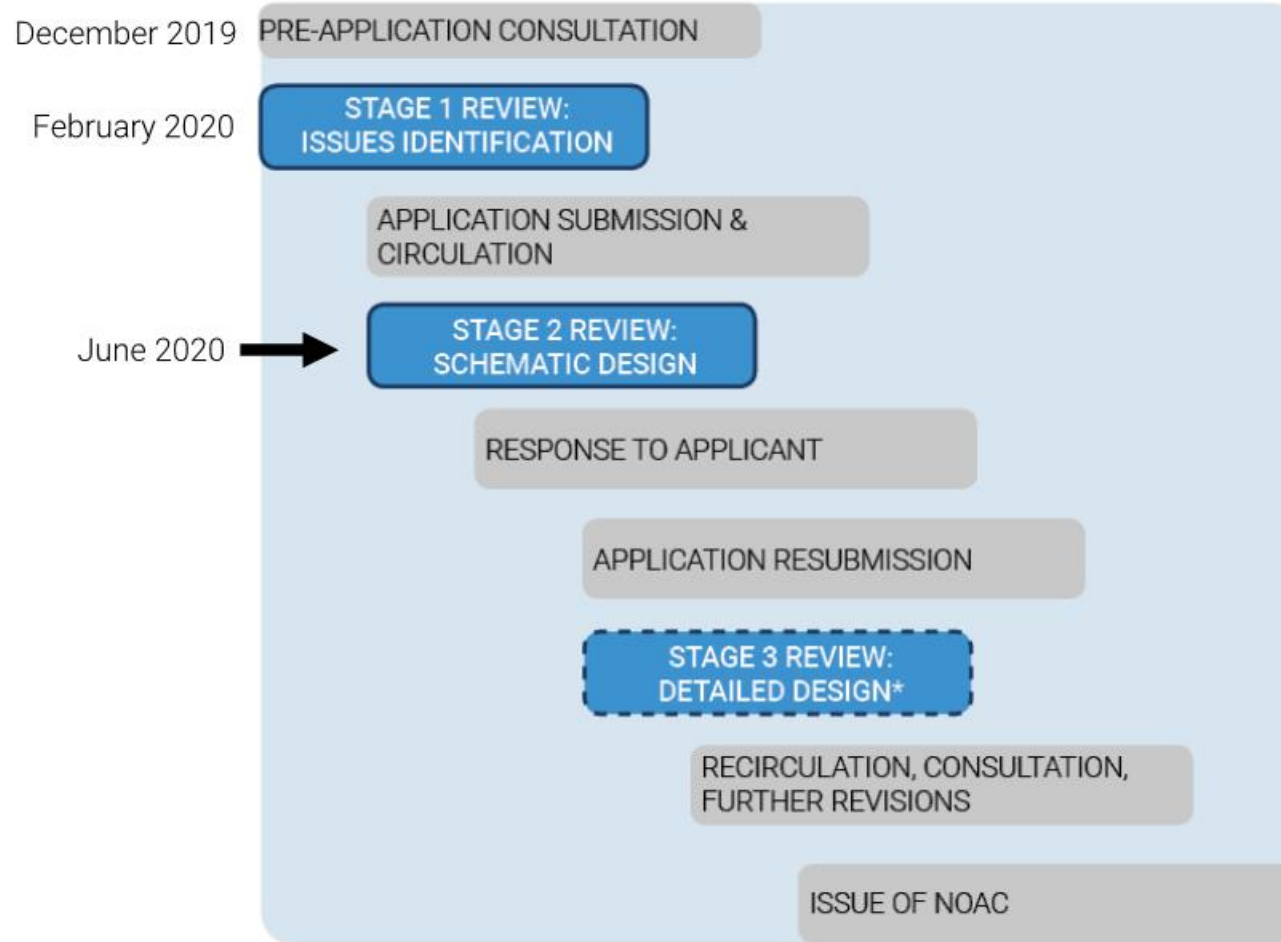
Project Approval Stage

TR3 Data Centre

Proponent: Equinix

Design Team: WZMH Architects

Review Stage: Schematic Design



Recap from Feb. 2020

Consensus Comments on TR3 Issues Identification

TR3 Data Centre

Proponent: Equinix

Design Team: WZMH Architects

Review Stage: Schematic Design



Feb. 2020 – Issues Identification



June 2020 – Schematic Design

Recap from Feb. 2020

Consensus Comments on TR3 Issues Identification

TR3 Data Centre

Proponent: Equinix

Design Team: WZMH Architects

Review Stage: Schematic Design

General

- Appreciated the presentation and impressed with the work done so far on the design.
- It is important to recognize that there is consensus support for the various proposed architectural treatments of TR2.

Building

- The project is a 21st century utility building that is located at an important corner, the team is encouraged to go beyond the traditional model of a data centre: ensure the design is **part of the city fabric** and support the **long term vision of the corner and neighbourhood**.
- Strong emphasis on picking **cladding materials** that are considerate of the surfaces' reflectivity and ensure bird-friendliness.
- Continue to explore the need for underground parking due to its high cost.

Recap from Feb. 2020

Consensus Comments on TR3 Issues Identification

TR3 Data Centre

Proponent: Equinix

Design Team: WZMH Architects

Review Stage: Schematic Design

Sustainability

- Provide a **full energy model** for the building at the next review for further comments.
- Provide more information and details on the energy performance “best practice” benchmark for data centres.
- Continue to explore partnership heat recovery opportunities with Enwave, Sidewalk Labs, and adjacent developments, i.e. the future park west of project.

Public Realm

- Consider **pedestrian flow** in the design and placement of the benches and trees along the sidewalk.
- Concerned that the proposed ground floor digital animation strategy will get dated, encouraged the team to consider alternative animation strategies or select an artist early in the design process to help curate **the vitrine work**.
- At the corner, consider the alternative of a detached, micro-retail unit that can activate the corner while not jeopardizing the security of the data centre.
- Continue to develop and push the design of the envelop to **animate the public realm**.

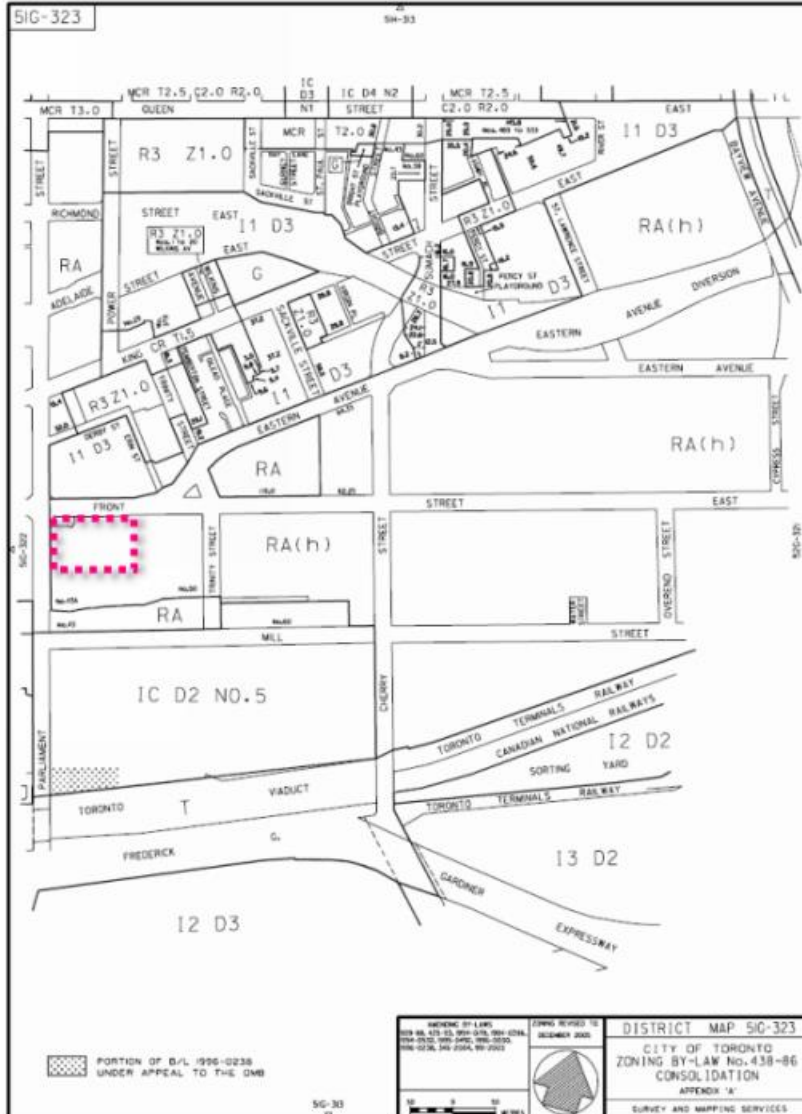
Zoning

TR3 Data Centre

Proponent: Equinix

Design Team: WZMH Architects

Review Stage: Schematic Design



RA (h)

Maximum height: 26 metres

Maximum height at the lot line: 16 metres with angular plane requirements along Front Street East and Parliament Street

Data processing establishments are allowed in RA zone
Required Setbacks: 7.5 metres from the side and rear lot lines

Former Zoning By-Law 438-86 – Map 51G-323

Areas for Panel Consideration

City Planning Issues

TR3 Data Centre

Proponent: Equinix

Design Team: WZMH Architects

Review Stage: Schematic Design

Public Realm

- Are the frontages along Front Street East and Parliament Street sufficiently activated?
- Is cantilevering the building appropriate along Front Street East?
- What should be the interface between the building and the laneway to the east?
- Does this provide an appropriate gateway into the West Don Lands?
- How does this building interact with the new First Parliament site to the west?

Additional comments:

- Focused on the new north/south street to the east of TR2/TR3. We want to protect for that street and also make sure we have sufficient setbacks for streetscaping. Equinix currently has gas tanks buried under what could be the future ROW.
- Ensure we are connecting this new street network to the future parkette at Mill/Parliament. This project is unique as they require additional security measures to be in place to protect the building, but concerned with how those interventions will impact the public realm.

Areas for Panel Consideration

Waterfront Toronto

TR3 Data Centre

Proponent: Equinix

Design Team: WZMH Architects

Review Stage: Schematic Design

Building

- Does the exterior design support the vision of the corner as a gateway to the neighborhood?
- Does the cladding strategy adequately compliment TR2 and meet the objectives of design excellence?

Public Realm

- Does the public art strategy adequately animate the ground floor frontages and anchor the corner?
- Does the revised landscape design provide enough pedestrian movement? i.e. benches, tree locations.

Sustainability

- Does the design support the proposed long-term sustainability goals of the building?

TR3 - 281 Front St. E

Waterfront Toronto Design Review Panel

JUNE 24, 2020

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1. Design Approach
2. Site Response
3. Public Art
4. Sustainability Objectives

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Recap of the initial meeting (Feb 26 2020)

Waterfront Design Review Panel #131

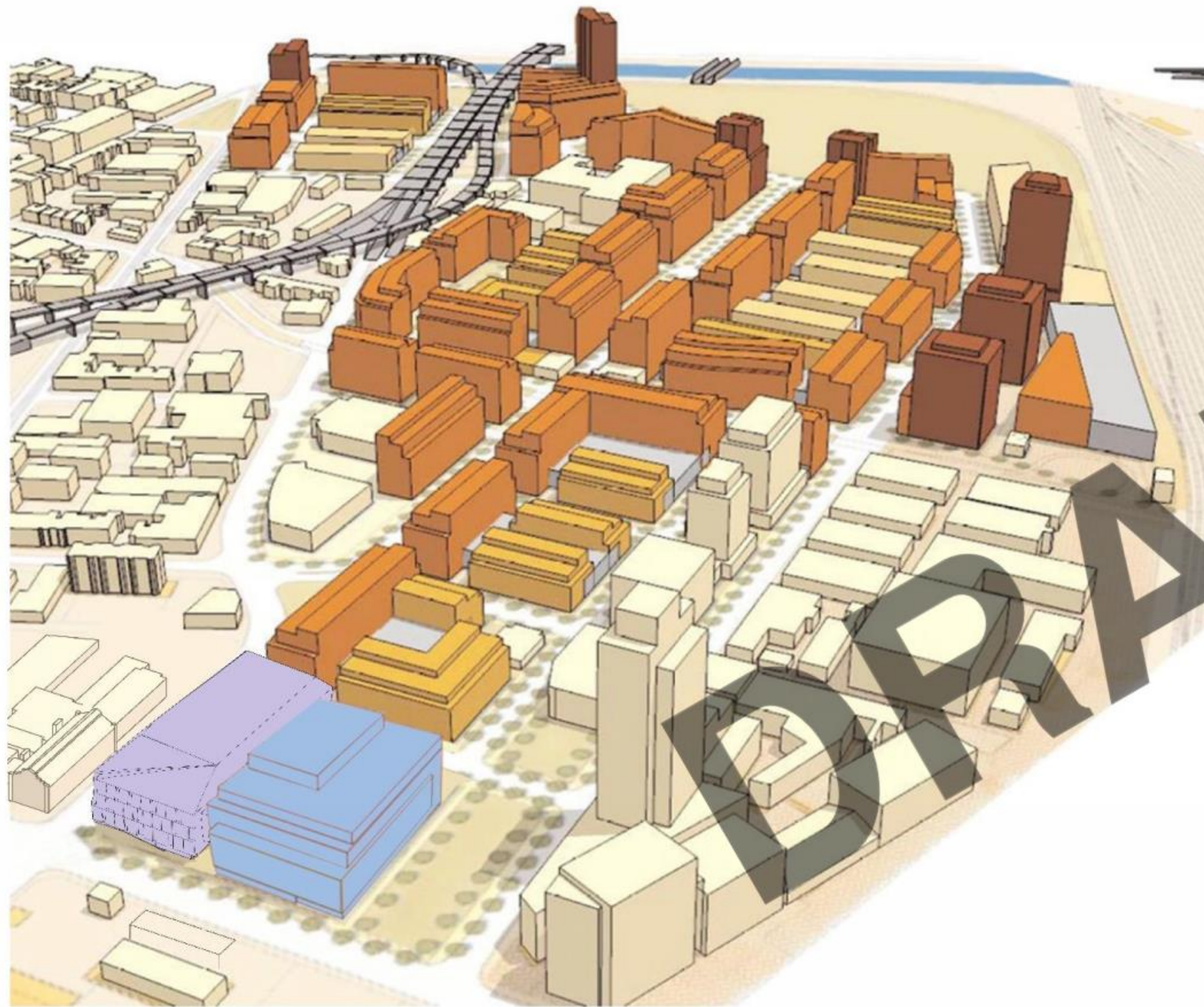
- The building is designed to be a part of the city fabric, support the long term vision of the corner (Parliament St And Front St E) and the Neighborhood
- We are currently investigating several metal cladding materials for aesthetics, reflectivity, costs, life cycle and bird friendliness
- Benches within the public realm support pedestrian flow and offer respite a place to contemplate the artwork
- An artist has been selected early in the design process to help curate the vitrine work
- The design approach supports the animation of the public realm
- We have established preliminary realistic energy and sustainability goals

1. Design Approach

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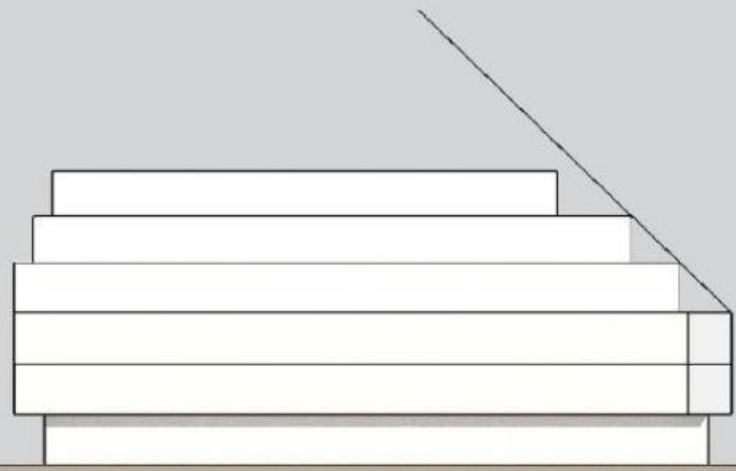
Preliminary Directions



West Don Lands Precinct Plan – Overall Massing

- TOWNHOUSES
- SMALL APARTMENT BUILDINGS
- LARGE APARTMENT BUILDINGS
- TOWER
- PROPOSED TR3
- TR2

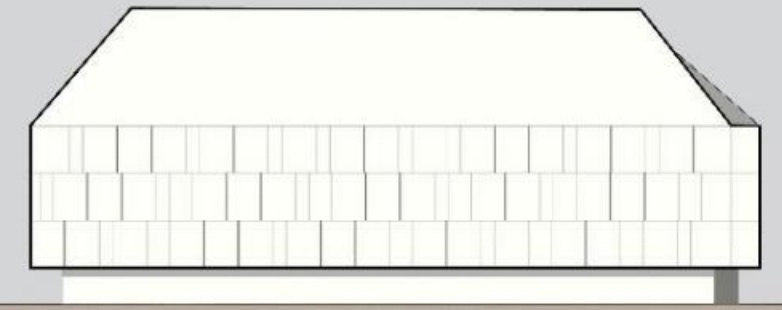
PROPOSED CONTEXT



STEPPED FORM



SIMPLIFIED FORM



SCULPTED FORM

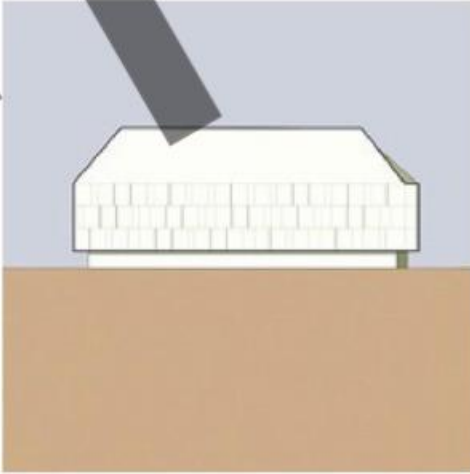
DRAFT

FRONT STREET

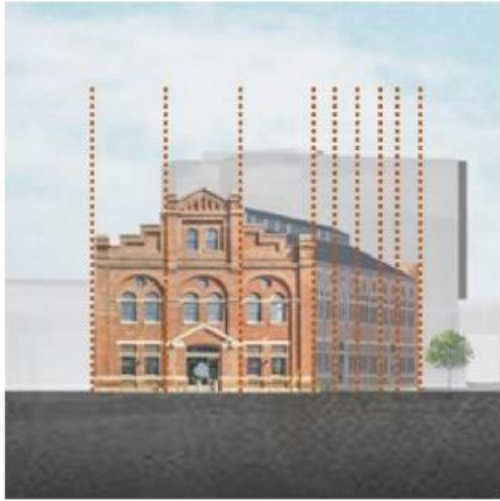
FORM GENERATION



MATERIALITY



SCULPTED FORM



ADAPTIBILITY



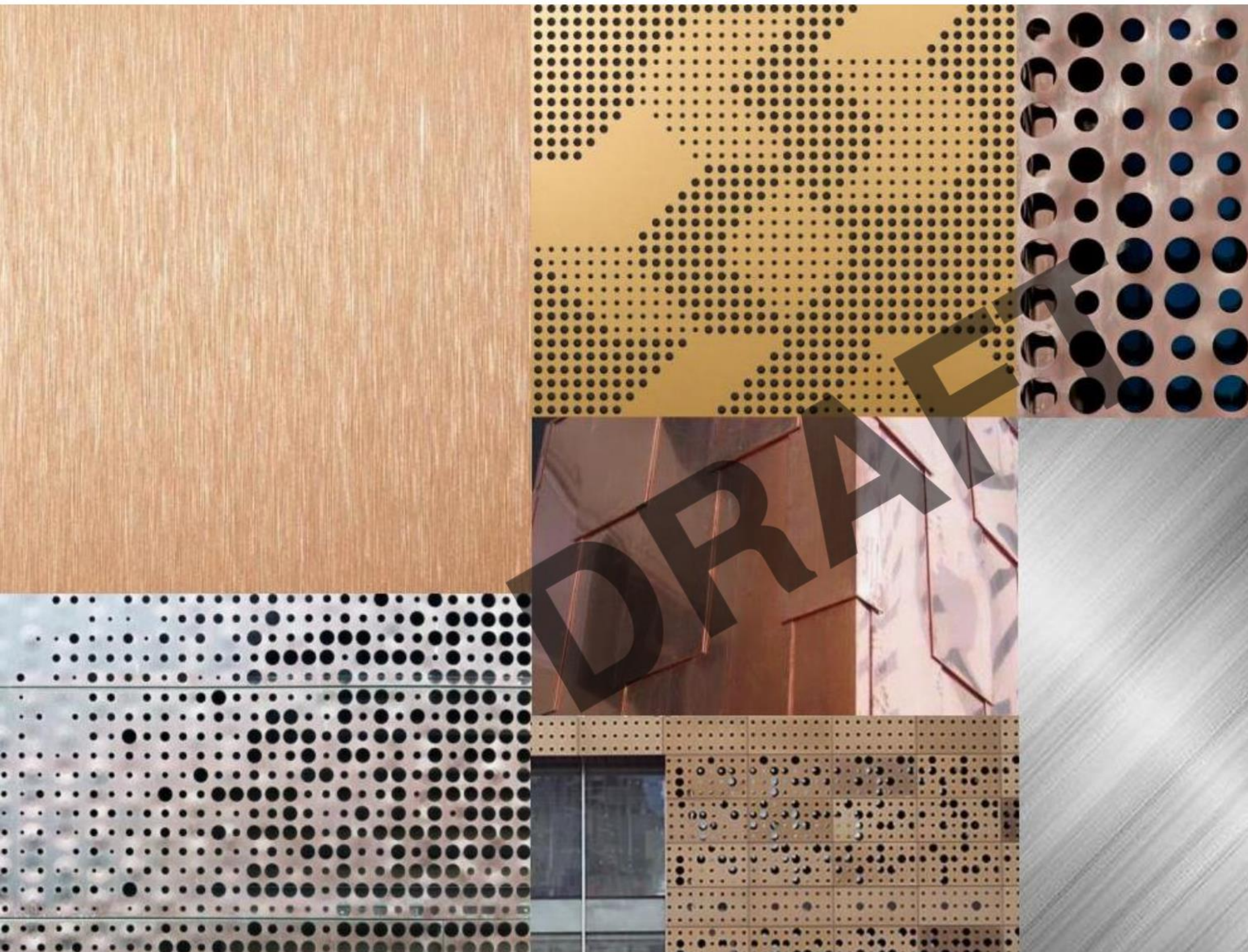
PERMANENT EXHIBIT



HISTORICAL CONTEXT



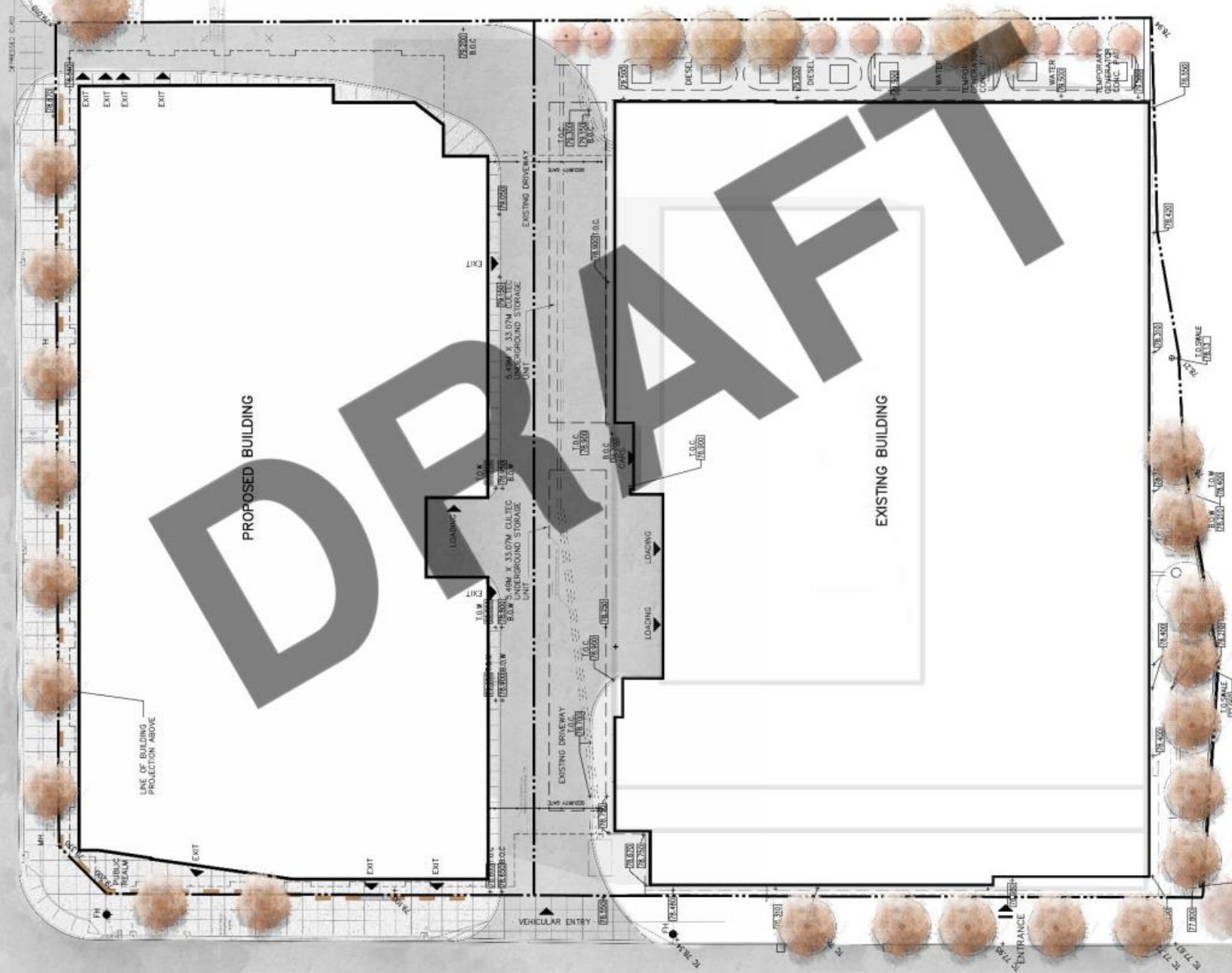
REFLECTION



MATERIALITY



LIGHTING



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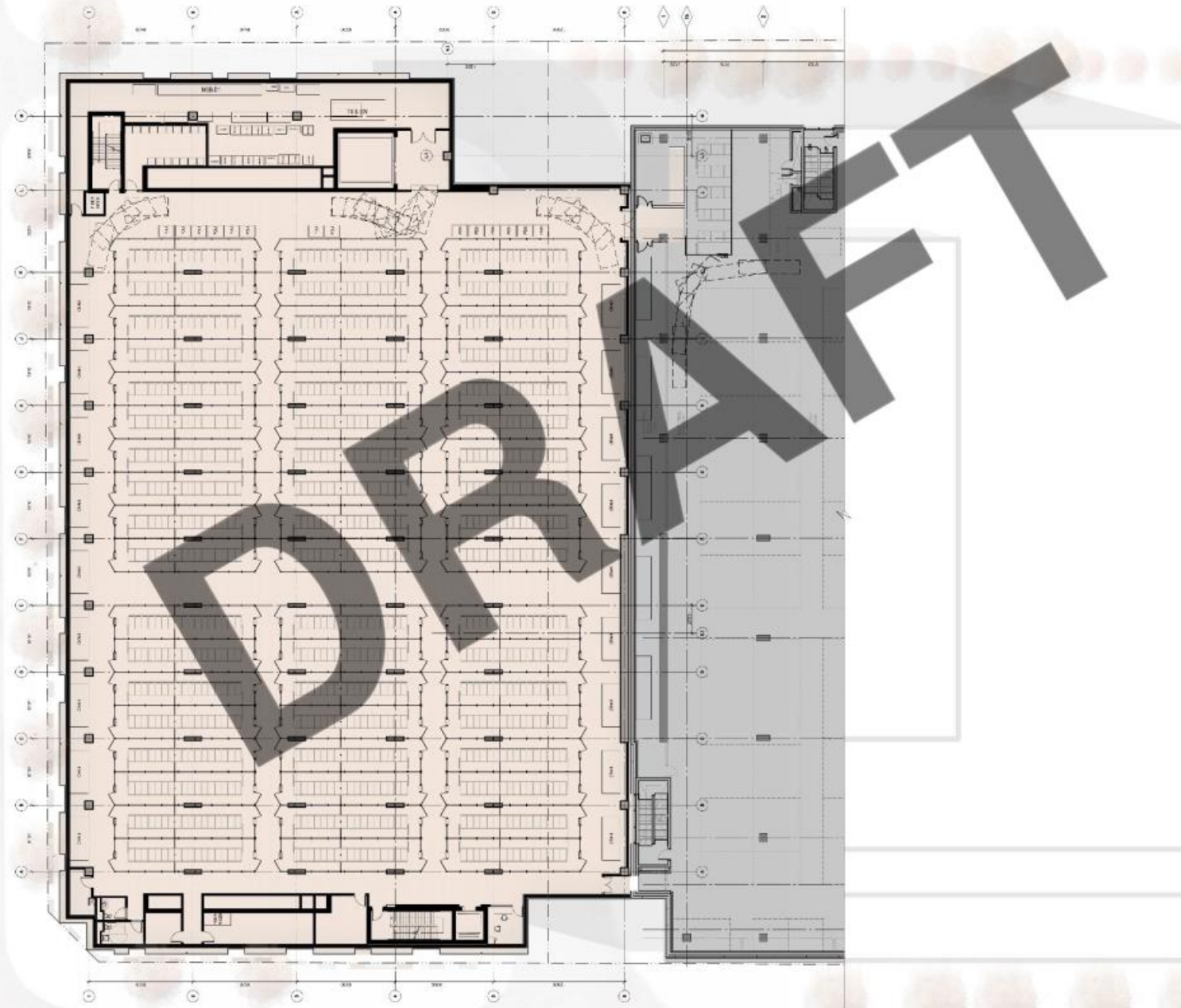
FRONT STREET EAST

PARLIAMENT STREET

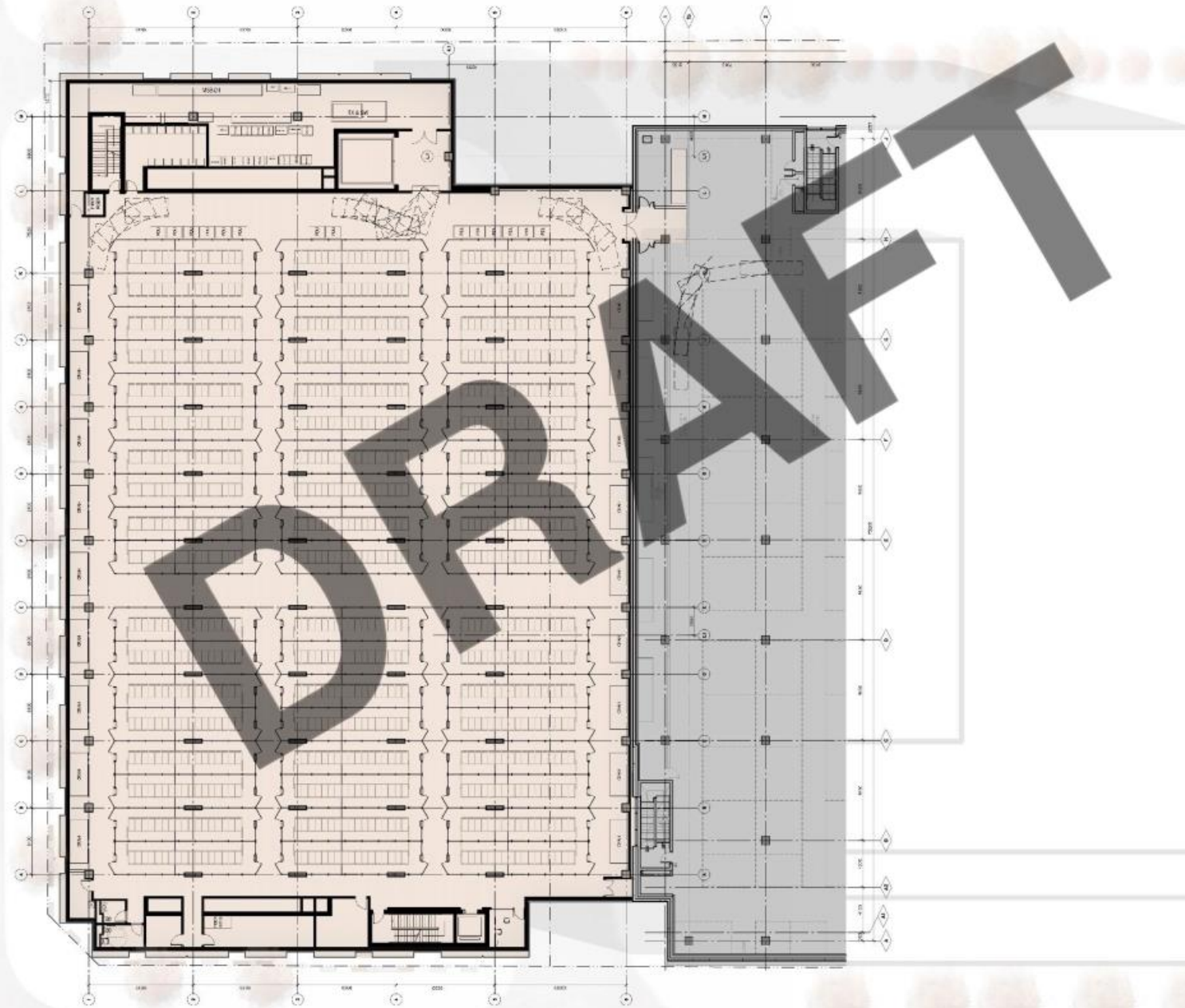
SITE PLAN



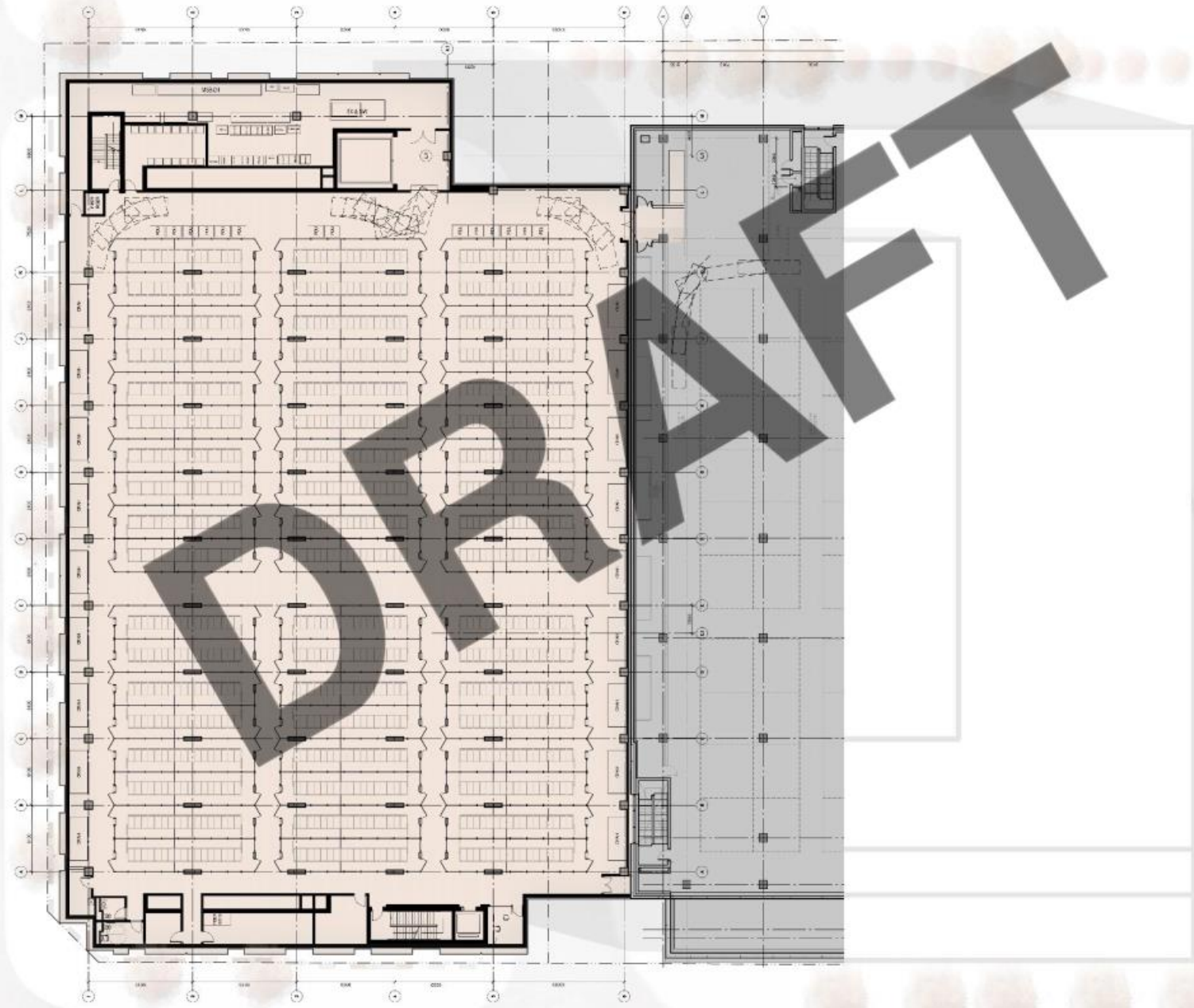
GROUND FLOOR PLAN



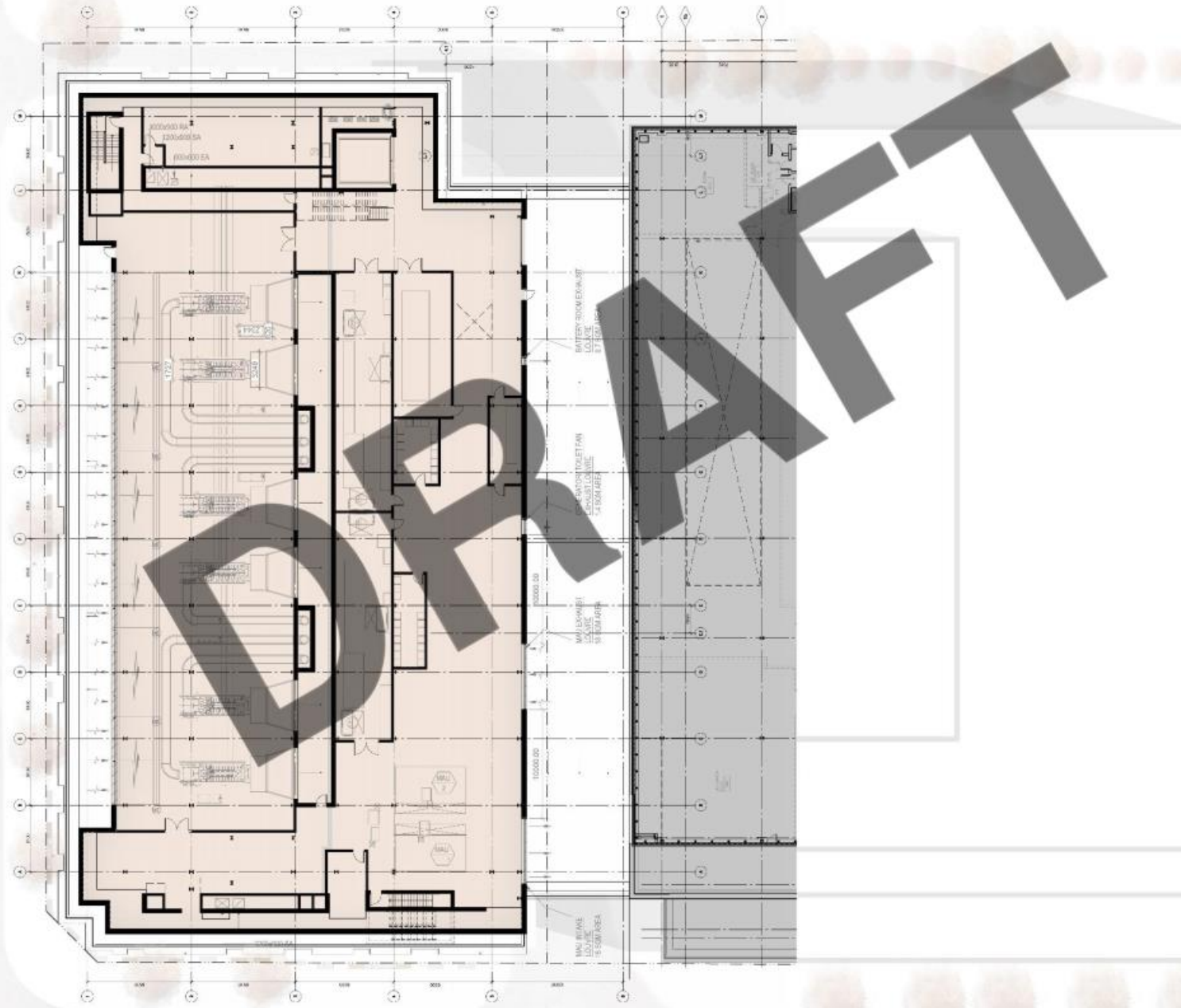
SECOND FLOOR PLAN



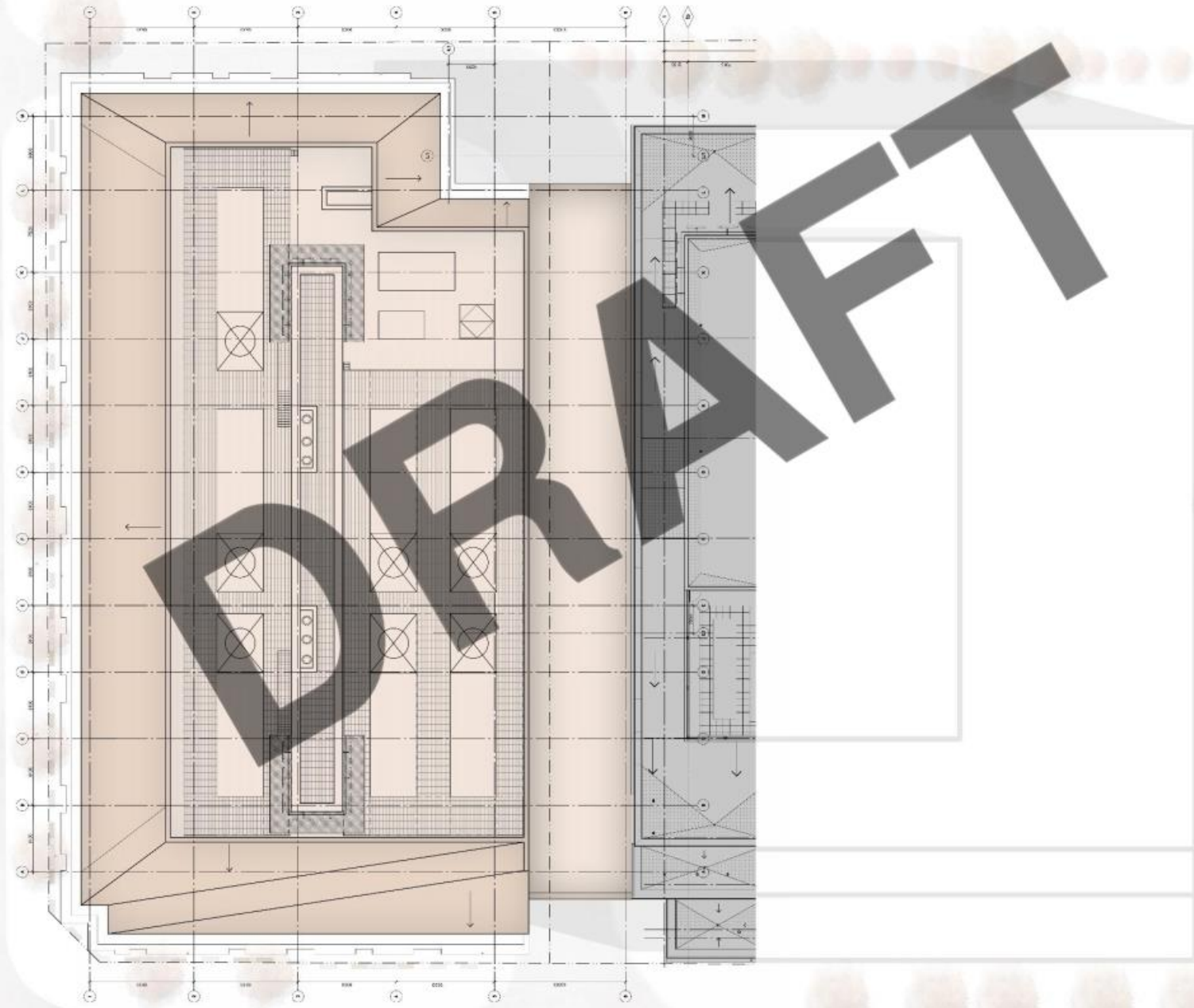
THIRD FLOOR PLAN



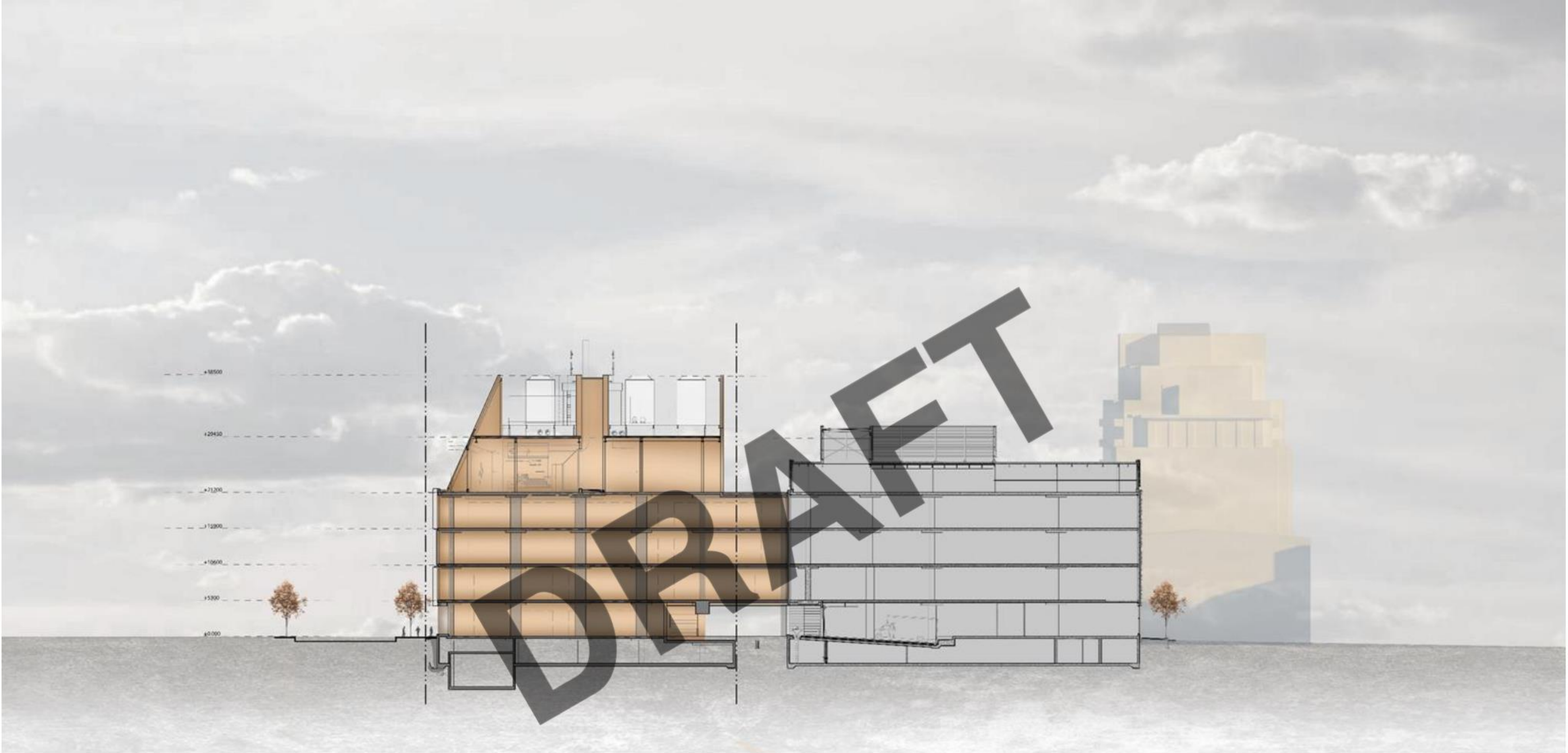
FOURTH FLOOR PLAN



MECHANICAL PENTHOUSE FLOOR PLAN



ROOF PLAN



BUILDING SECTION



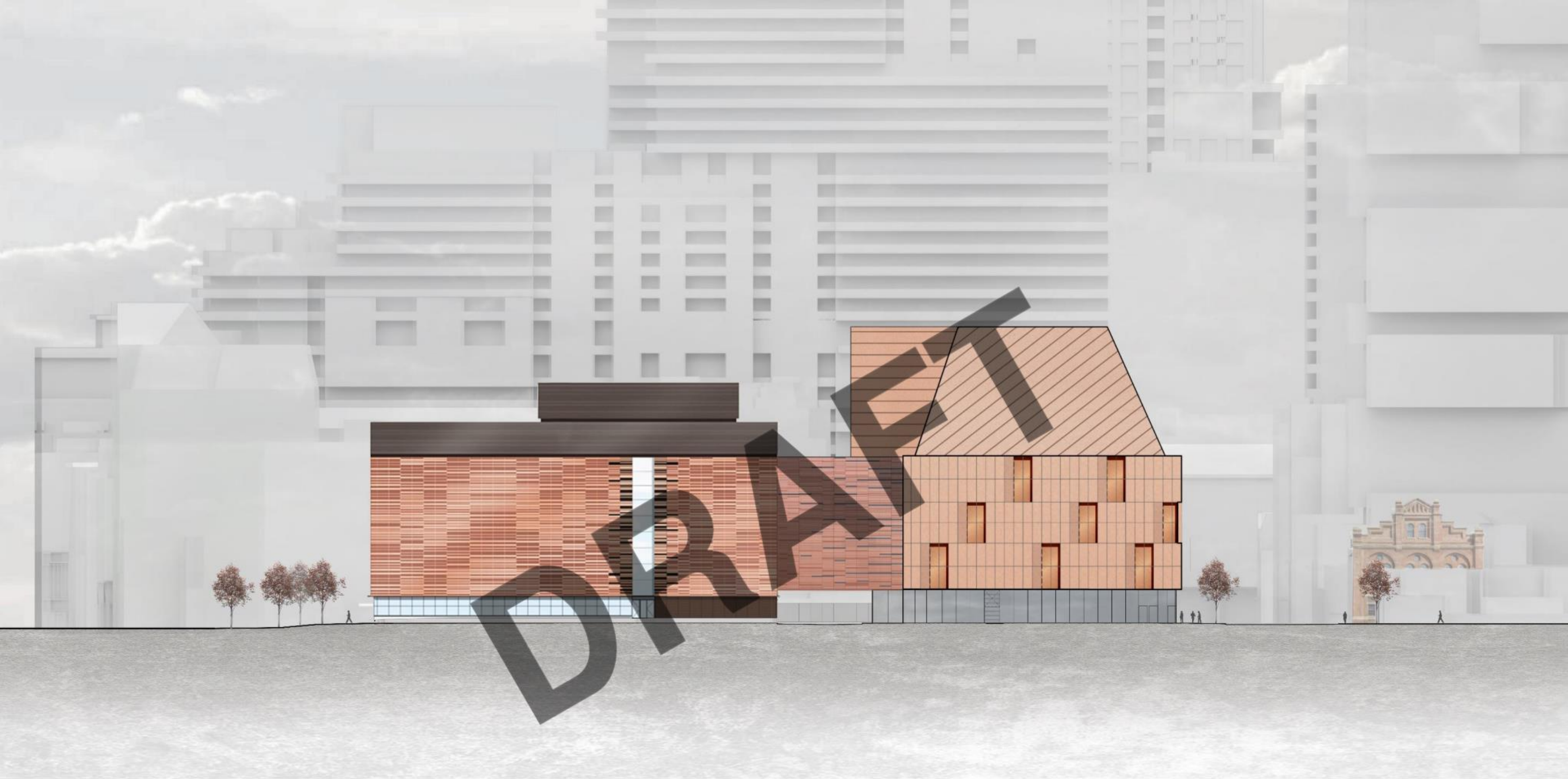
BUILDING SECTION



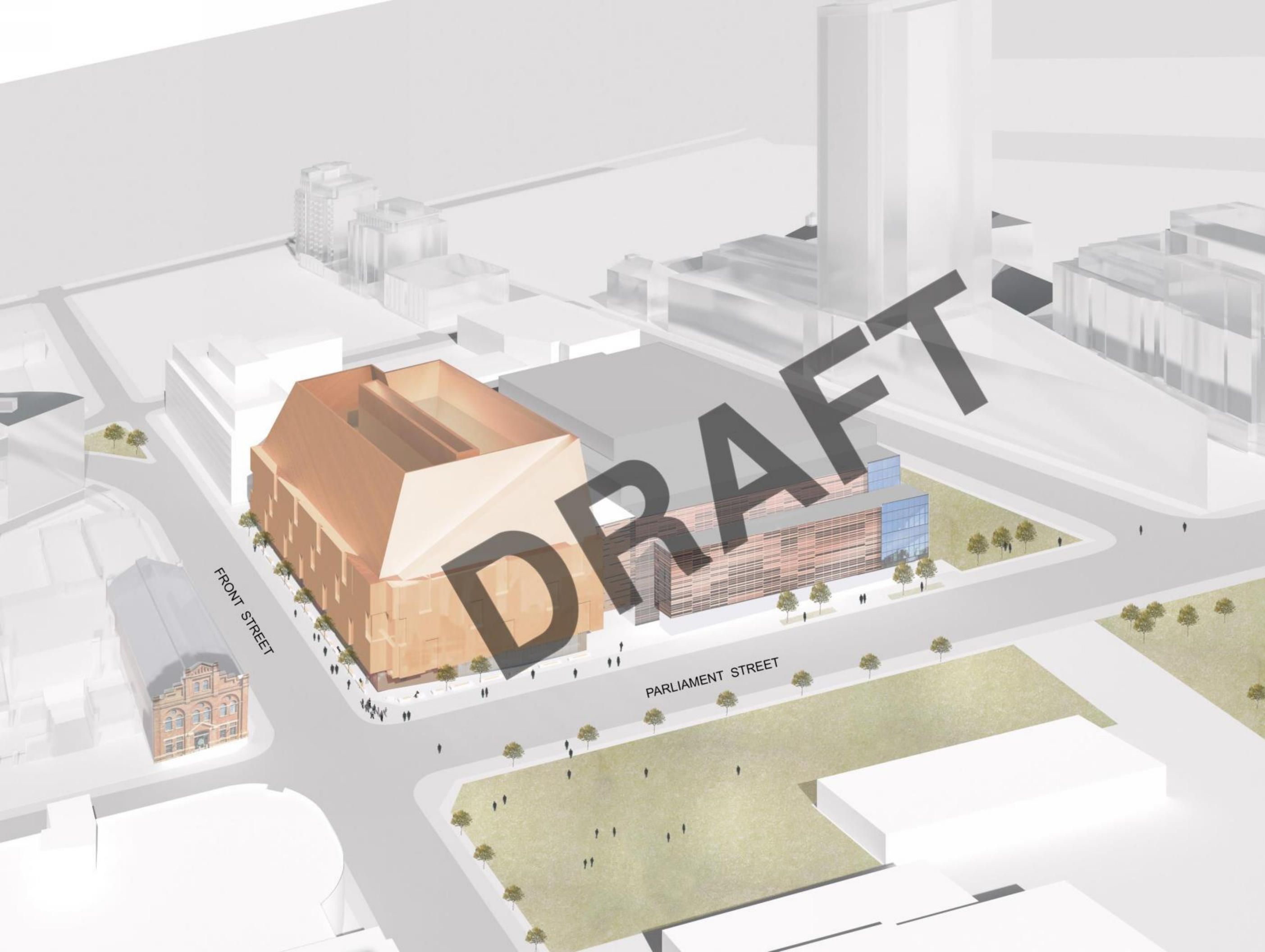
WEST ELEVATION



NORTH ELEVATION



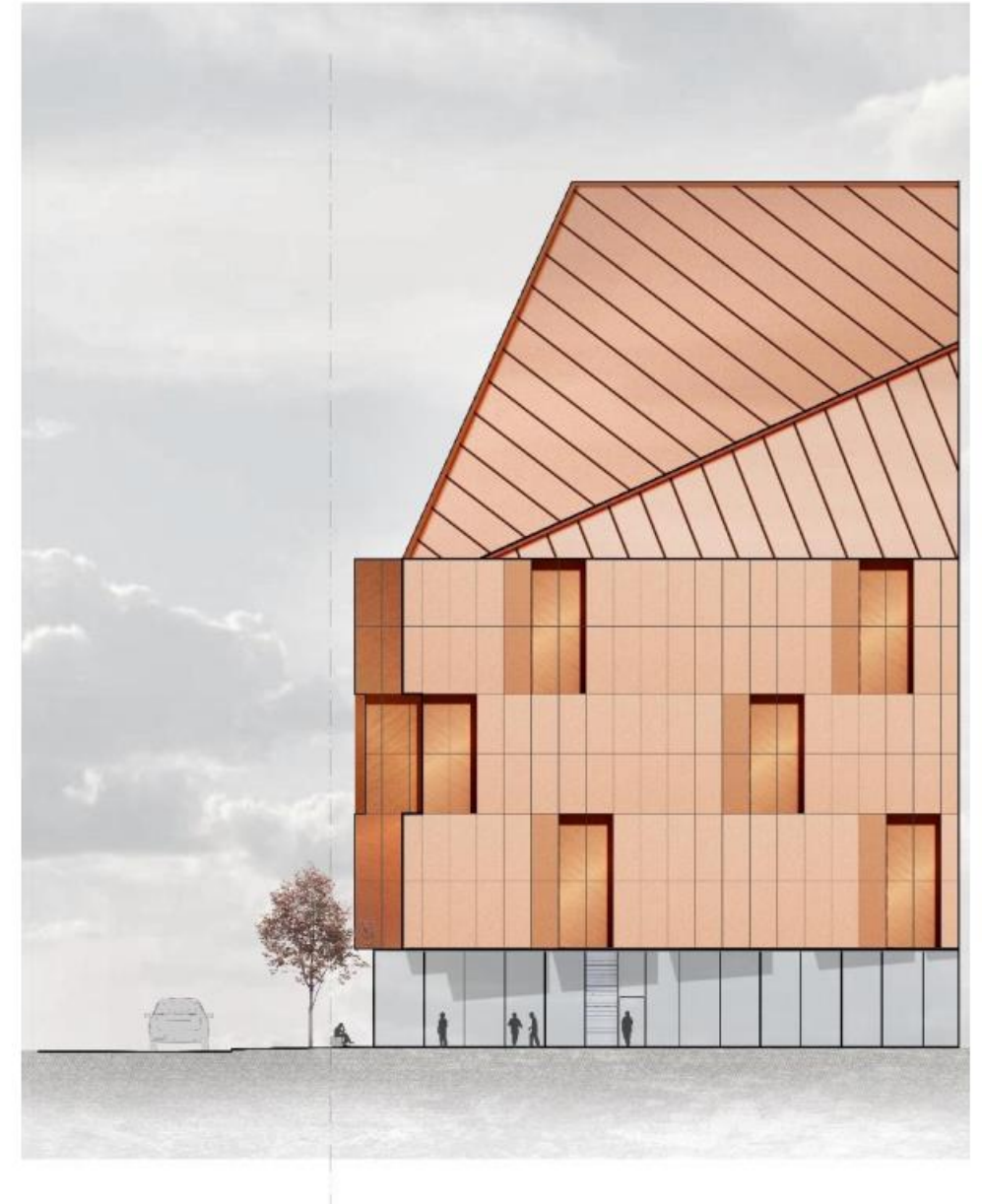
EAST ELEVATION



FRONT STREET

PARLIAMENT STREET

AERIAL VIEW



PARTIAL BUILDING ELEVATION



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FRONT STREET LOOKING EAST



FRONT STREET LOOKING WEST

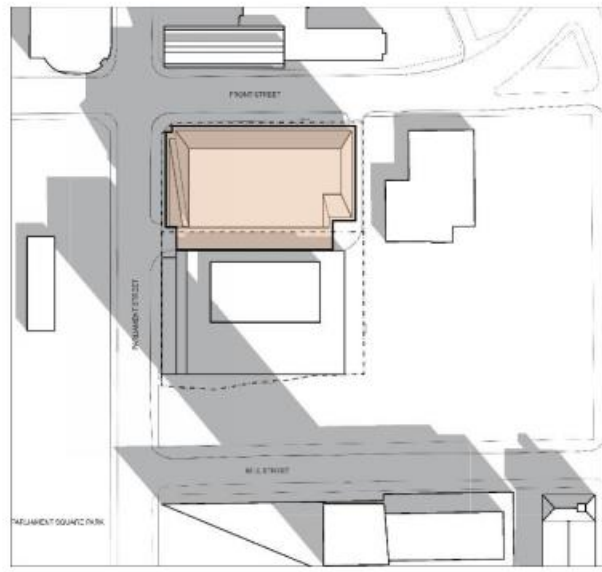


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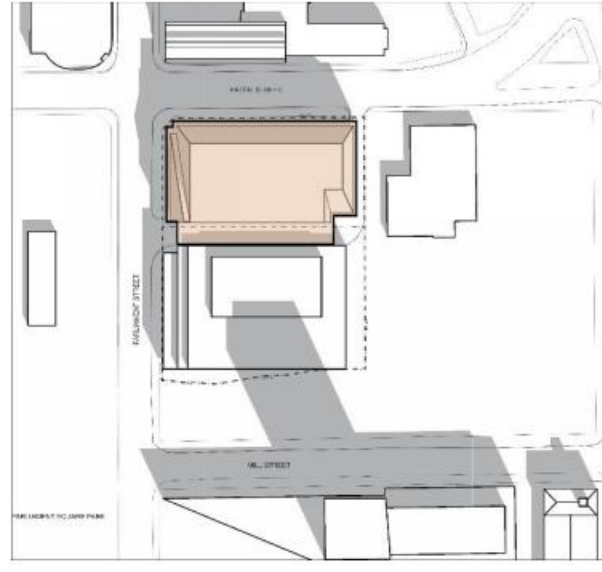
PARLIAMENT STREET LOOKING NORTH



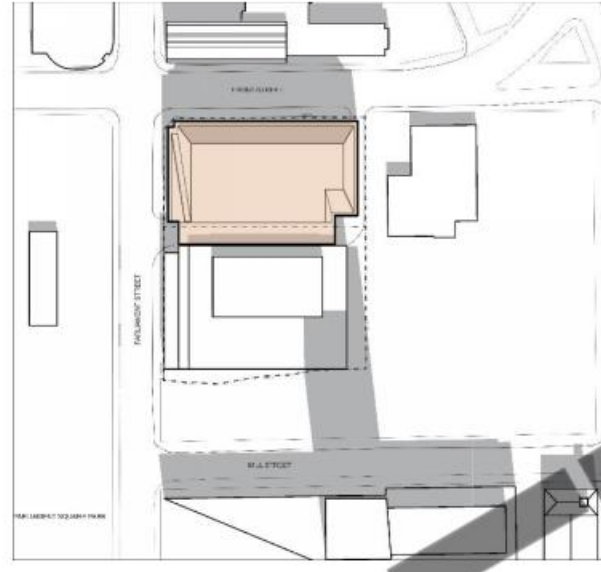
PARLIAMENT STREET LOOKING SOUTH



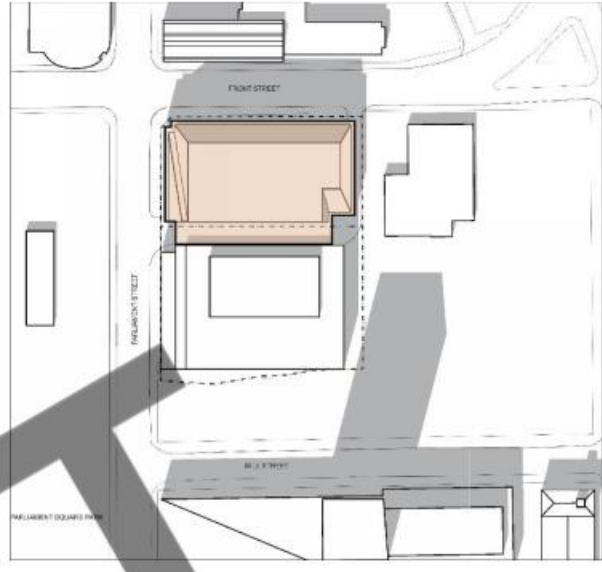
March21 9:18am



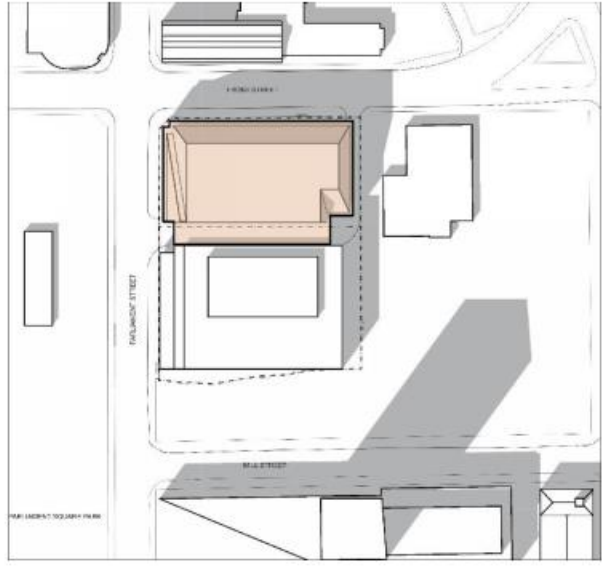
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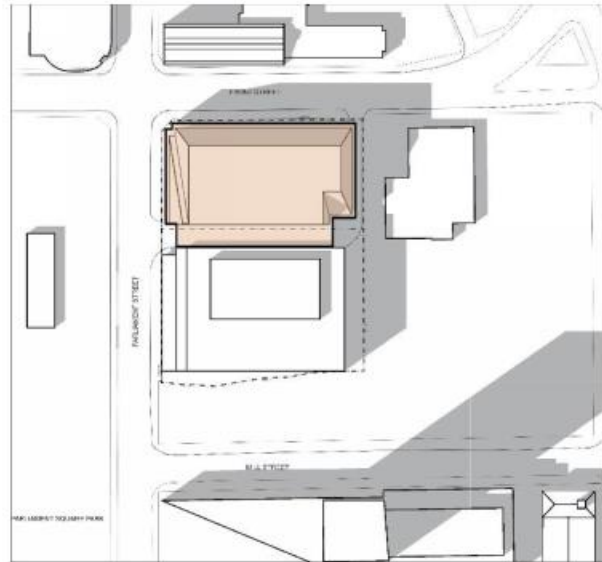
March21 11:18am



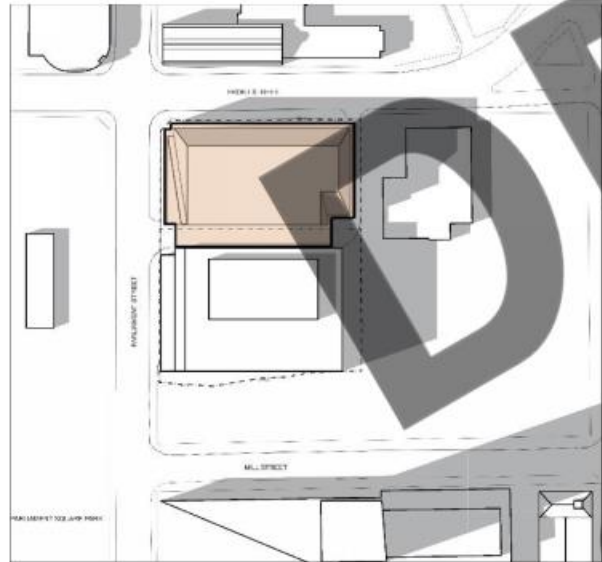
March21 12:18am



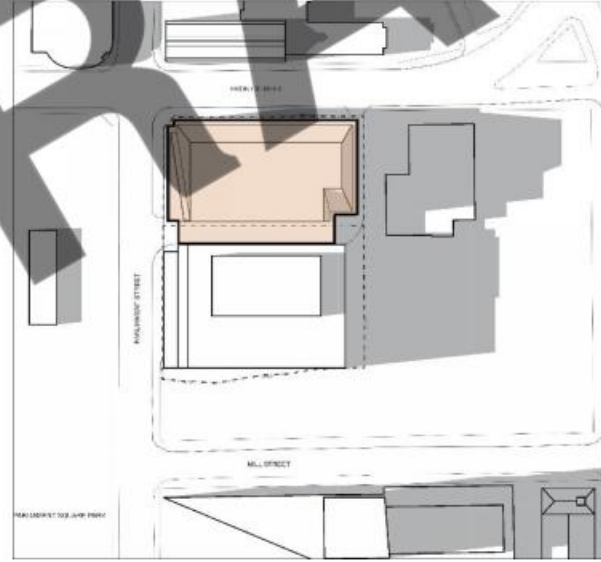
March21 1:18pm



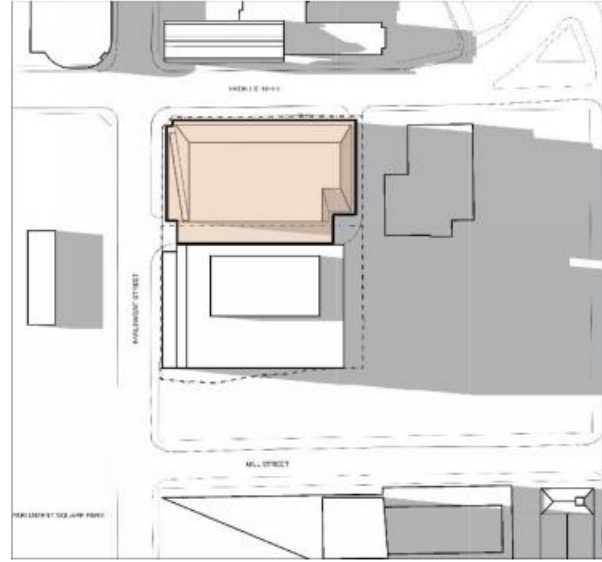
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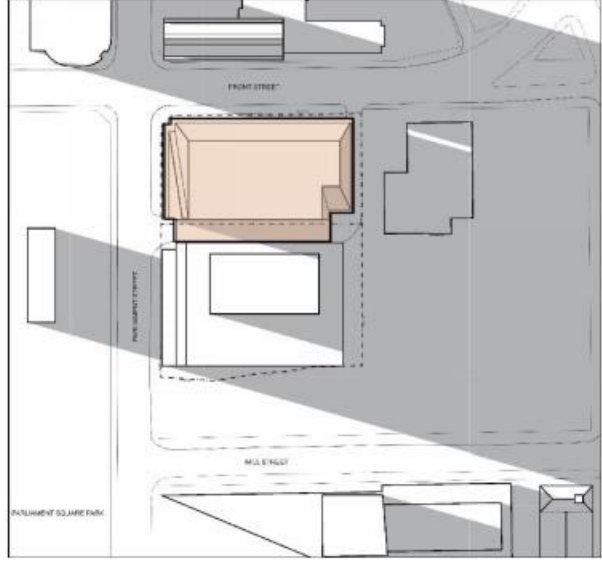
March21 3:18pm



March21 4:18pm

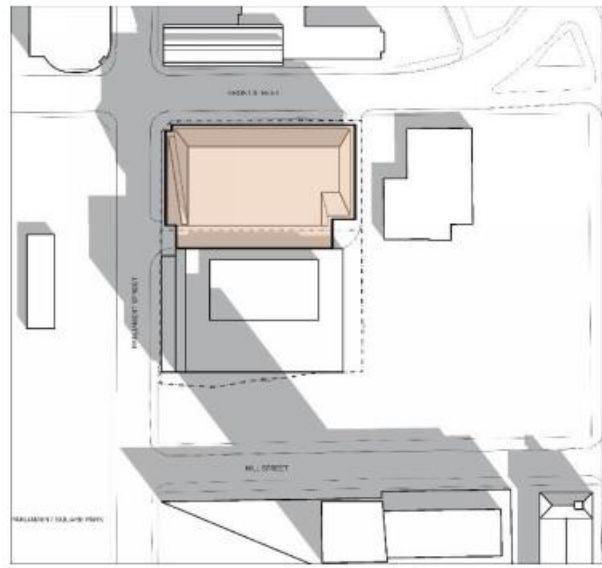


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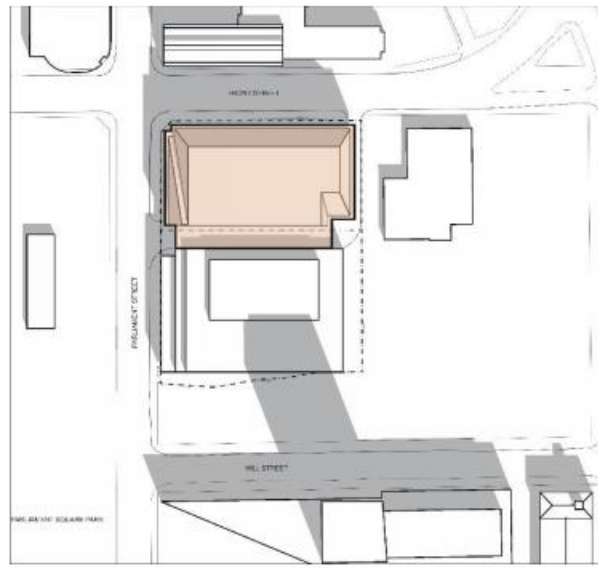


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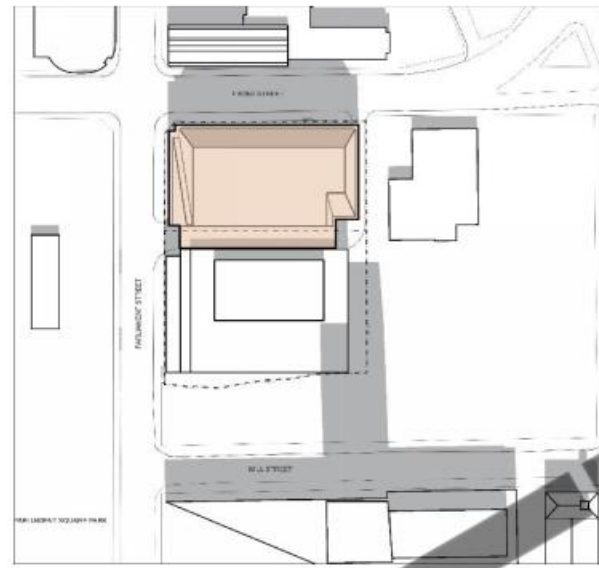
SHADOW STUDIES



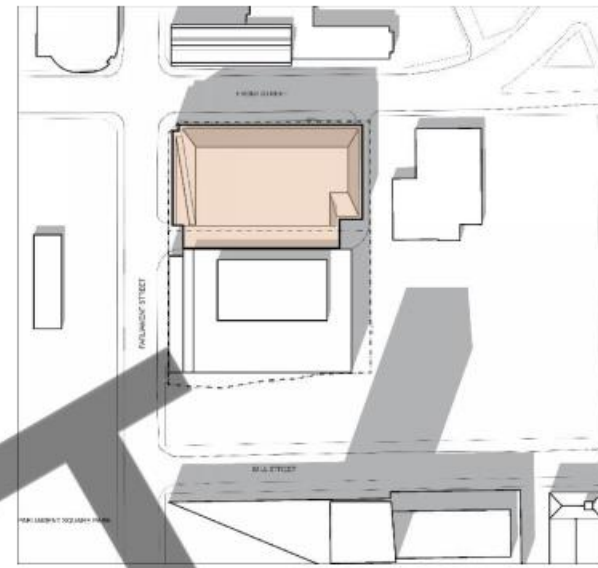
September 21 9:18am



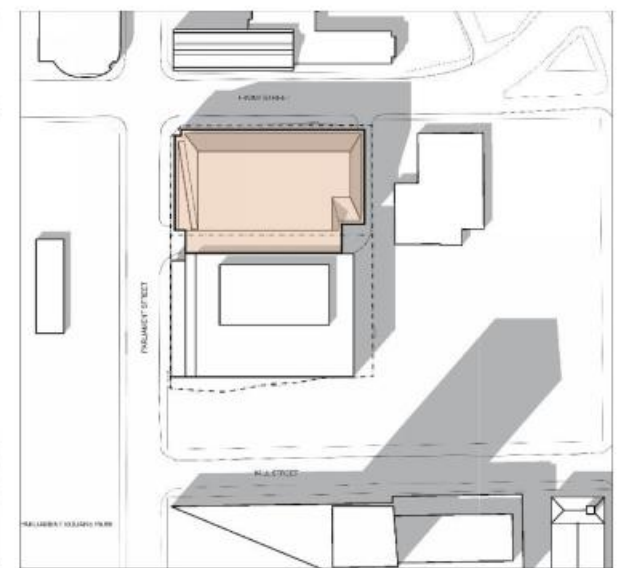
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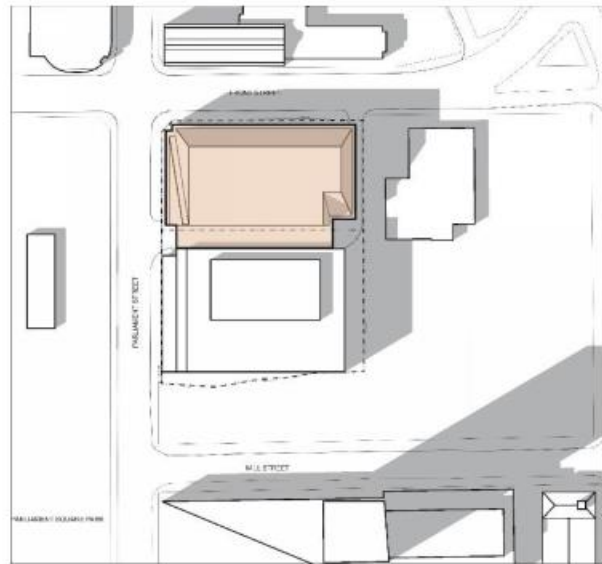
September 21 11:18am



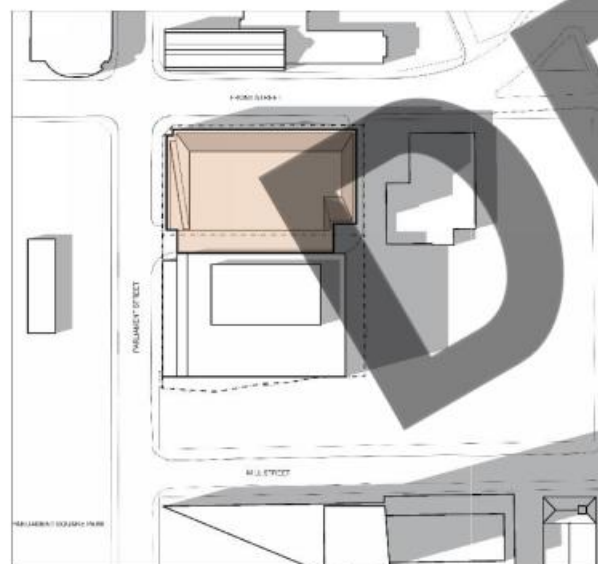
September 21 12:18pm



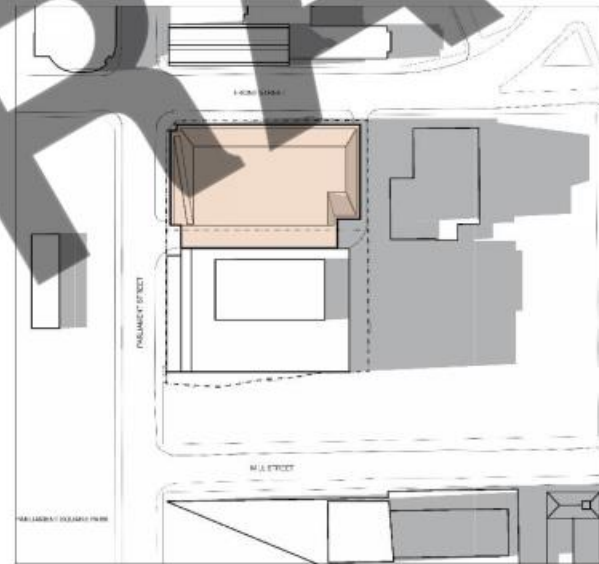
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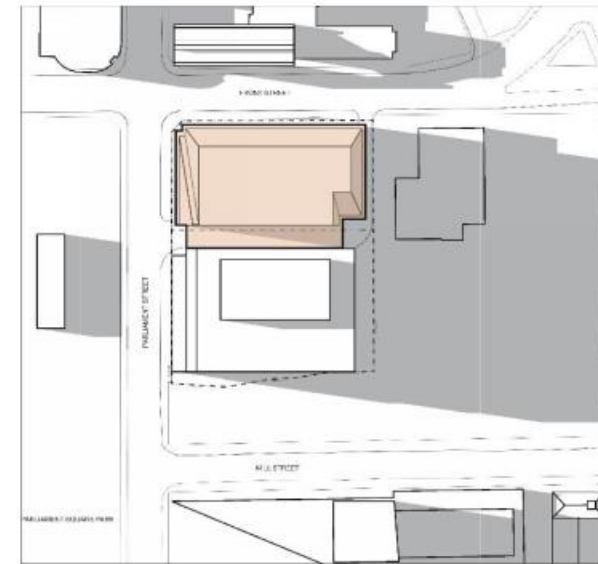
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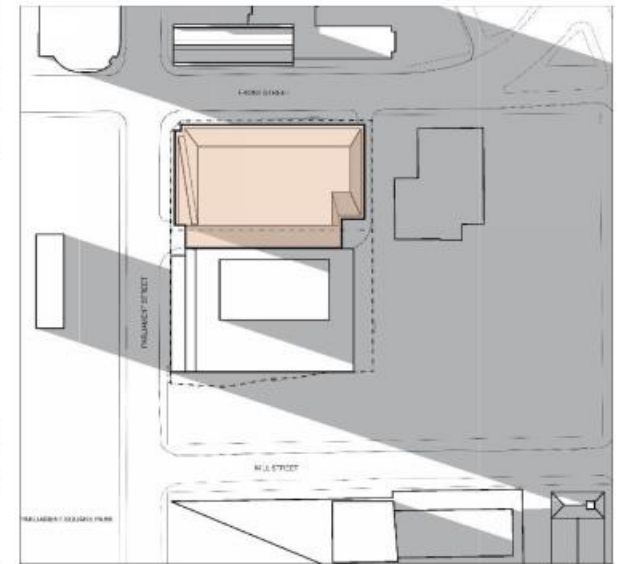
September 21 3:18pm



September 21 4:18pm

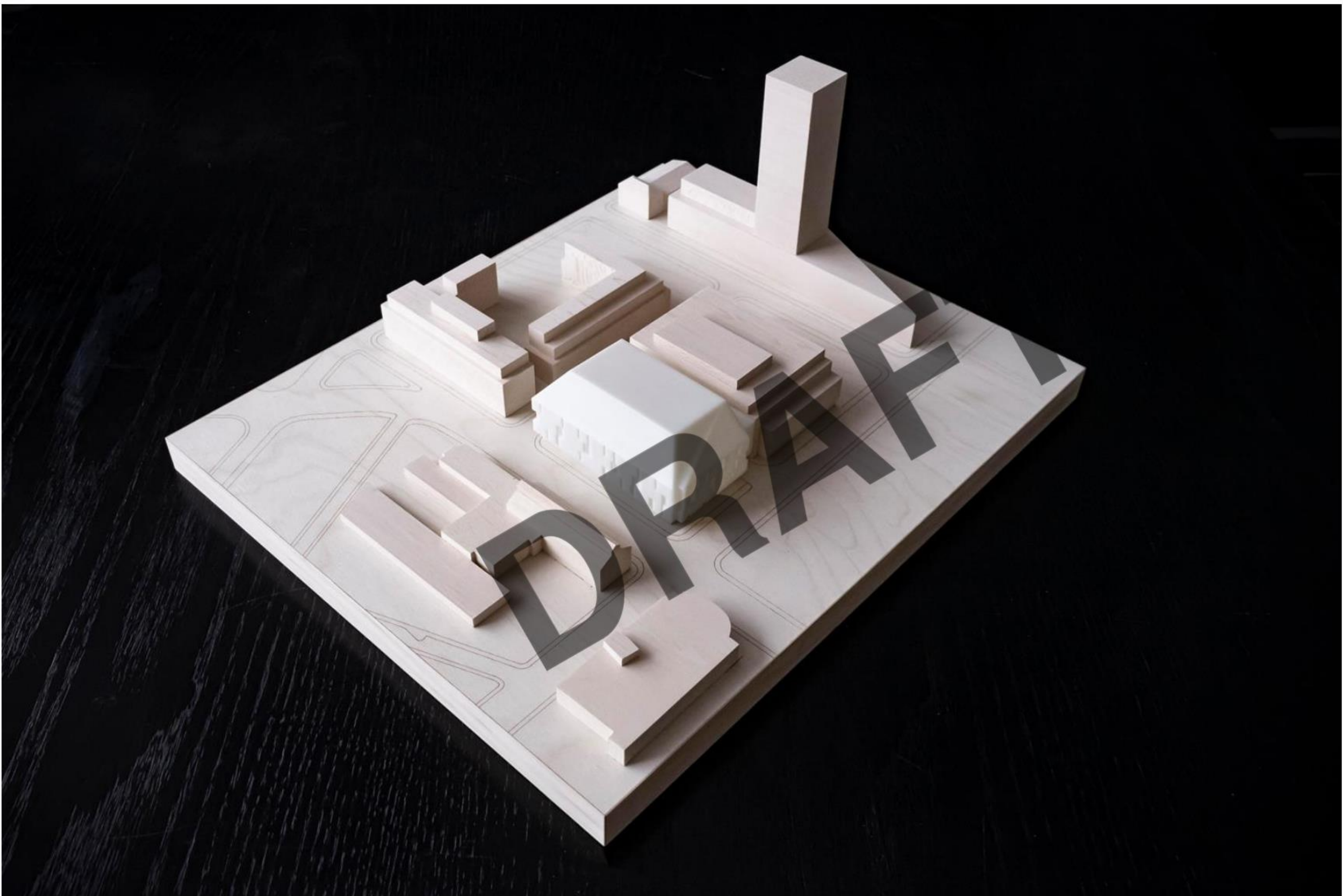


September 21 5:18pm



September 21 6:18pm

SHADOW STUDIES



AERIAL VIEW

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NORTH EAST CORNER



NORTH WEST CORNER

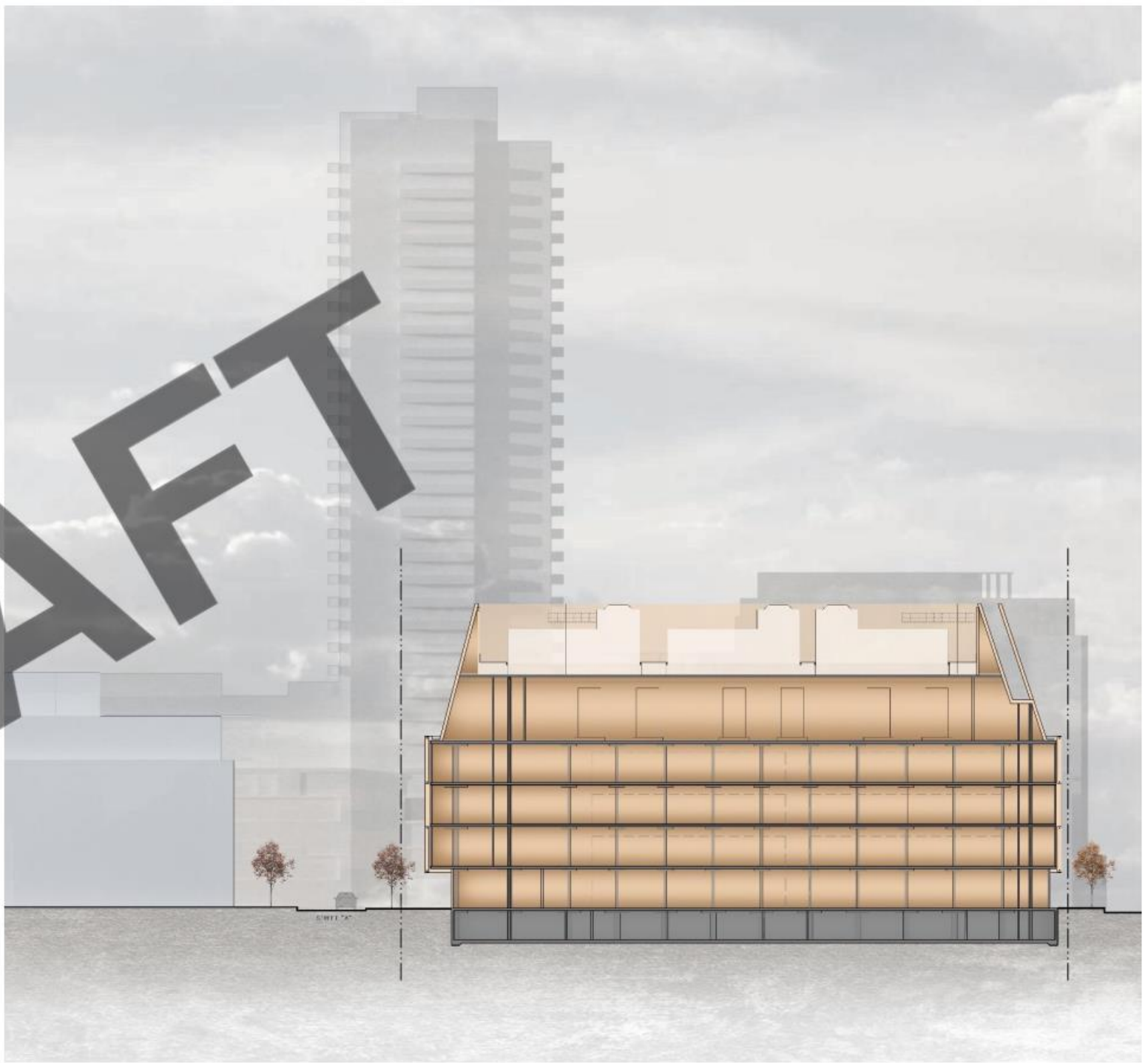
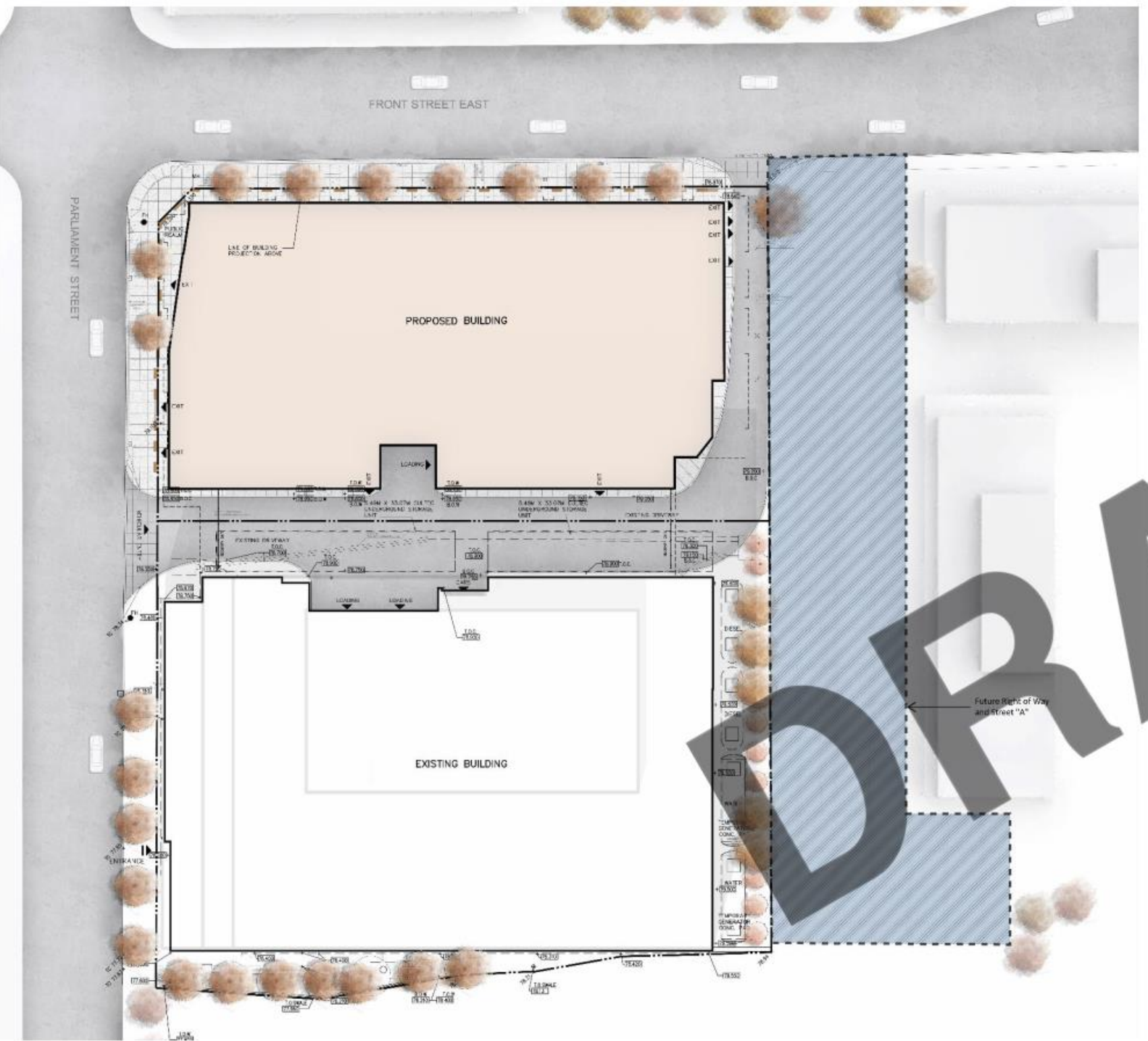
DRAFT

SOUTH WEST CORNER

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FRONT STREET



FUTURE ROAD AND RIGHT OF WAY

2. Site Response

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Public Realm

Given the building's prominent location, and the inclusion of exhibit space within the Front St and Parliament St façades, the landscape design for the public realm is envisioned to provide a comfortable pedestrian experience

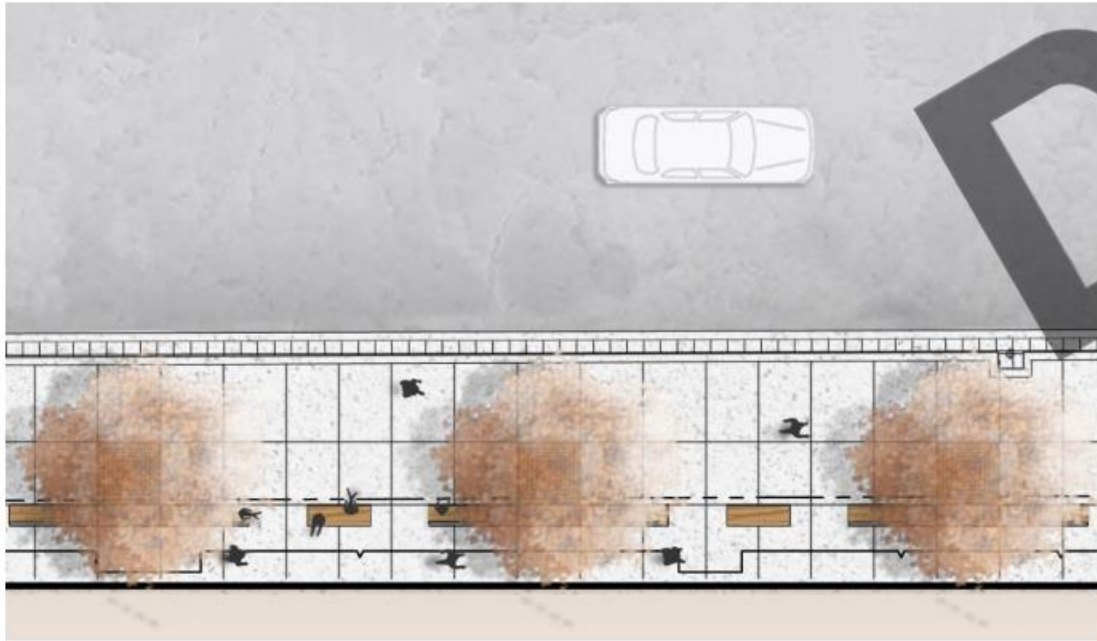
Equinix's TR2 at 45 Parliament
WZMH Architects

Public Realm

Provide a wide pedestrian clearway to facilitate easy pedestrian movement.

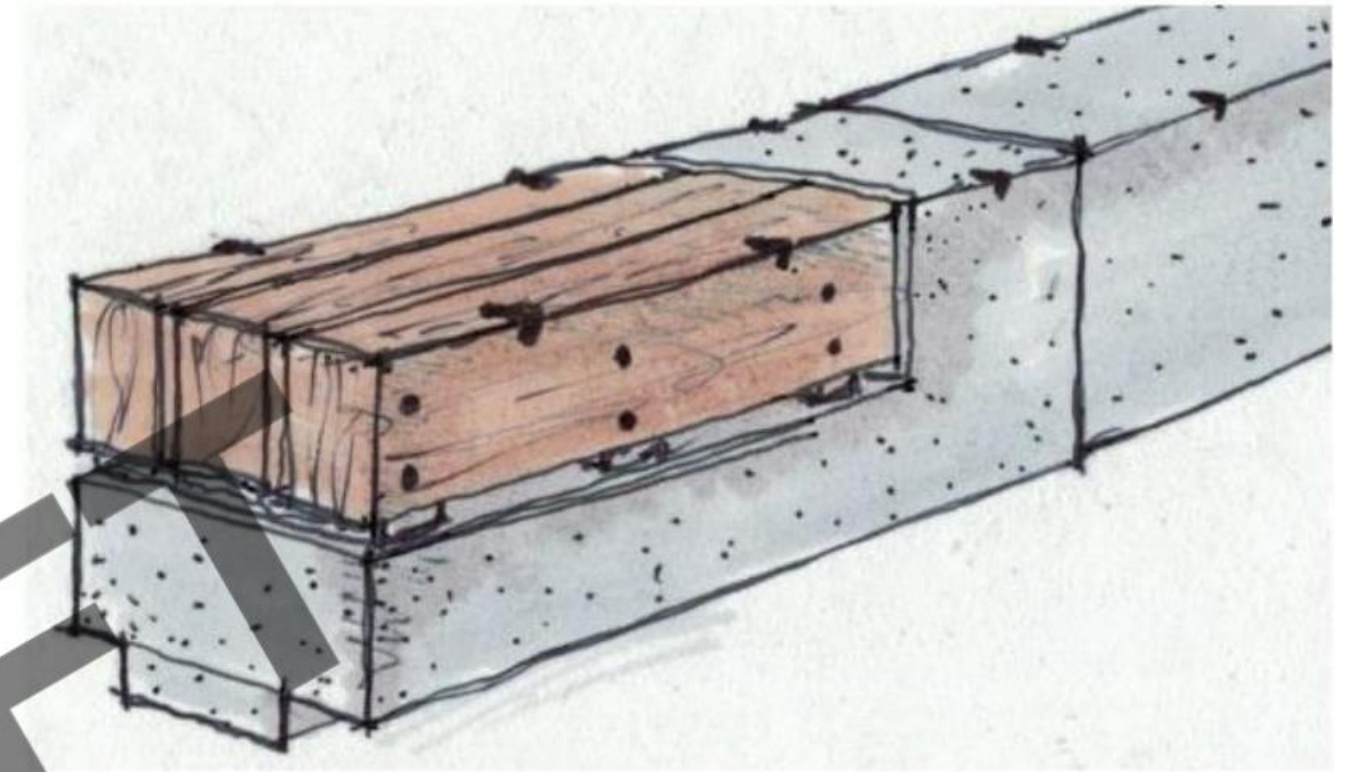
Create seating for public

Provide shading at seating areas by including tree planting



Public Realm

Benches contributing to the creation of a comfortable pedestrian experience.



Bench design concept



CONCRETE



TIMBER WOOD SLATS



LIGHTING



COLO

COLO

PERMANENT
EXHIBITION
AREA

PROPERTY LINE

1800

6000

FRONT STREET



FRONT ST.
URBAN REALM



Plant list

KEY	AR	GB
QTY	7	2
BOTANICAL NAME	<i>Acer rubrum 'Armstrong'</i>	<i>Ginkgo biloba 'Magyar'</i>
COMMUN NAME	Armstrong maple	Magyar Maidenhair Tree
CONDITION	WB	WB
SIZE	70mm cal.	70mm cal.
REMARKS	Uniform	Uniform
STATUS	Adaptable	Adaptable
TOLERANCE	Yes	Yes

NOTES:

1. Plant material to conform to the Canadian Nursery Trades Association metric Guide Specifications for Nursery Stock, latest edition.
2. Contractor to verify quantities listed: plant quantities to be supplied as shown on plan to provide full planting beds in case of discrepancies between plan and quantities listed.
3. All plant material to be sourced from nurseries with an 800km radius.
4. Provide a 2 year warranty for all plant material, unless indicated otherwise in the specifications.

PARLIAMENT ST.
URBAN REALM



URBAN REALM

3. Public Art

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**- 281 FRONT ST. EAST -
TR3 EQUINIX DATA CENTRE**

**DIGITAL ART INSTALLATION
PRELIMINARY VISION DOCUMENT**

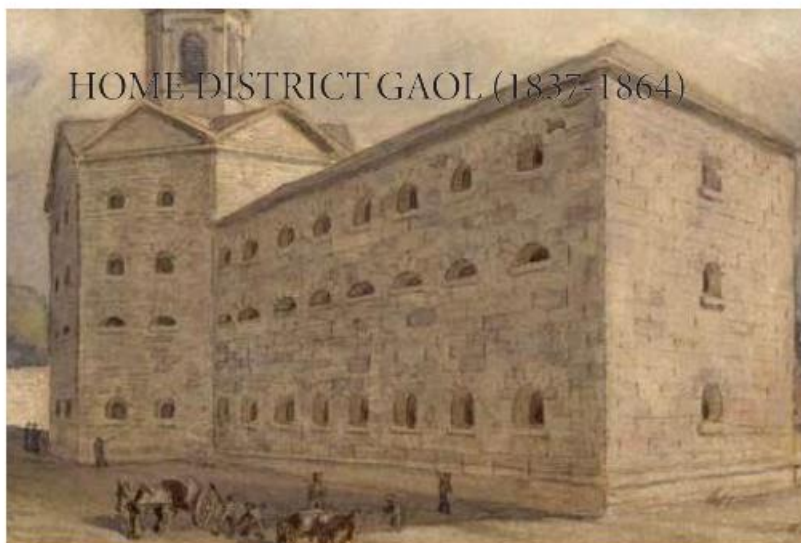
PREPARED BY STUDIO F MINUS & TATAR ART PROJECTS

CONTENTS

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ARTWORK LOCATION	02
CONCEPTUAL ARTWORK CADENCE	03
PRECEDENT ARTWORKS	04
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DRAFT

SITE INFLUENCE



CONCEPT

The Equinix T3 building stands adjacent to a site of unique historical value.

- The site of the first and second Parliament buildings of pre-confederation Canada.
- Later, the site of a notorious city prison.
- In the late- 19th and 20th century an industrial site used for gas purification and smelting

In nearby projects, the City of Toronto has communicated a strong desire to recognize this history of this site in the public realm.

APPLICATION

Artists at Studio F Minus have had initial communication with groups who have collected community input and historical records relevant to the site, with the intent of telling these stories through the artwork.

Our artwork will incorporate abstracted imagery from the site's archaeology, and combine them with reflective and refractive materials. In this way, our artwork reflects the site around it through different moments in history.

ARTWORK LOCATION



CONCEPTUAL ARTWORK CADENCE

CONCEPT - ART AS STREETScape



A streetscape is a rhythm of varying aesthetics

APPLICATION



Breaking the artwork into individual “chapters”

- creates a human scale at street level
- allows for a series of detailed and diverse dioramas which invite repeated viewing
- allows a more complicated artwork concept to unfold over a greater “gallery exhibition” of aesthetically similar works

PRECEDENT ARTWORKS (BAY ADELAIDE)

INFINITE DEPTH



The wildly popular Infinity Rooms of Yayoi Kusama illustrate the possibilities of creating wide open, illusionistic spaces using lighting and reflective surfaces.

SCULPTED LIGHT



James Turrell's enigmatic sculpted light installations serve as one of the primary visual references driving the direction by the Architectural team - fields of morphing, mutating colour wash the surface of the exhibition space, exploring perception for visual experiences where light is not a tool to enable vision but rather something to look at itself.

REFLECTIVITY

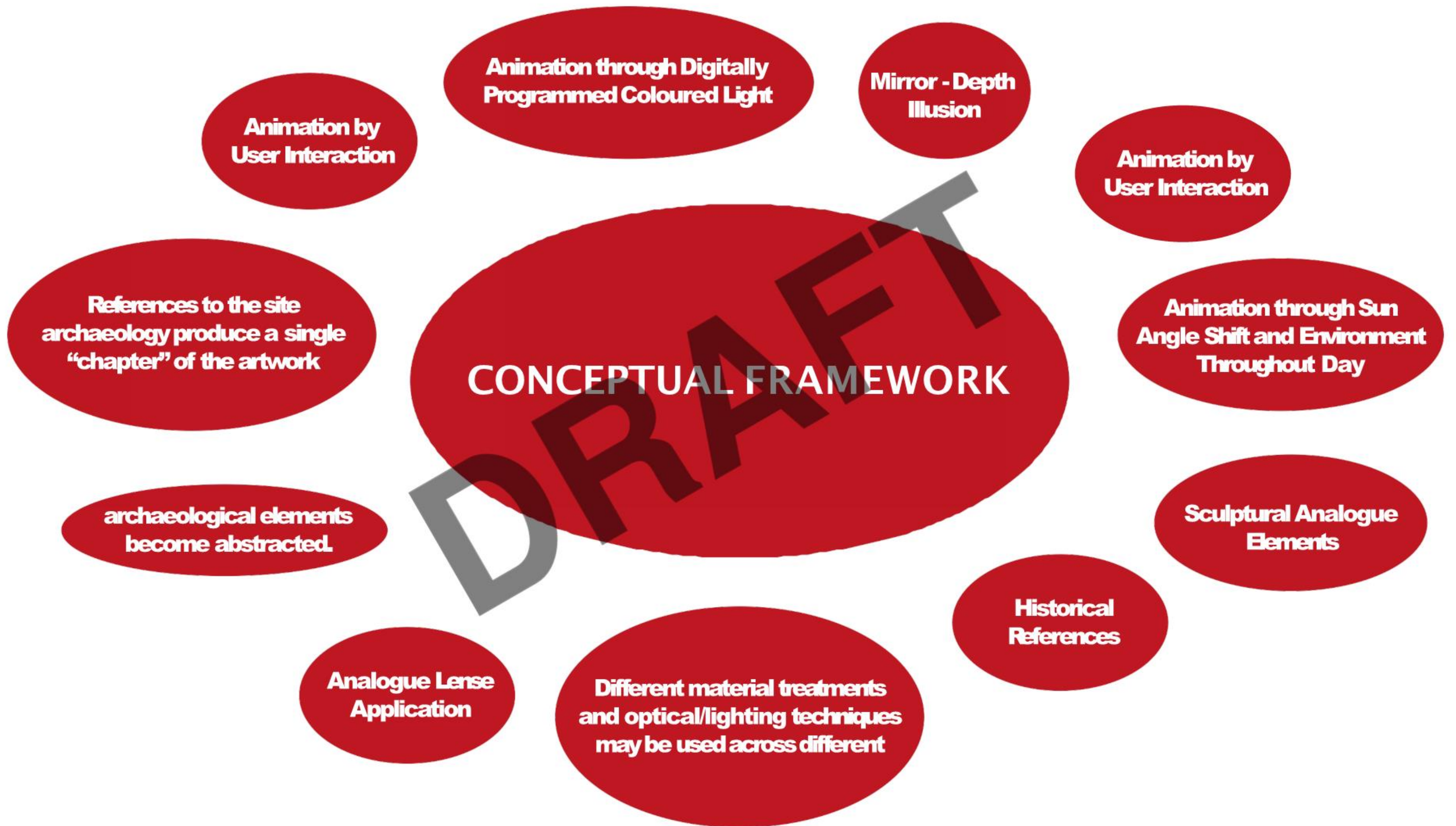


An example of an artwork which reflects both the viewer and the adjacent site. An under-appreciated aspect of this project is the juxtaposition between the reflected site (calm Lake Michigan) and the artwork's background (a busy, skyscraper-lined avenue.)

NARRATIVE COLLAGE

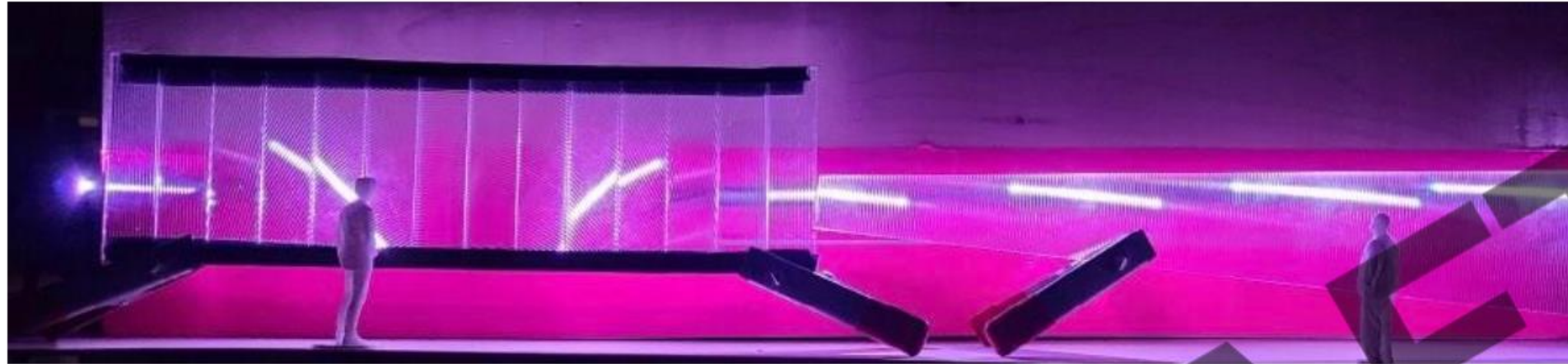


The work of Canadian artist Geoffrey Farmer illustrates how a many disparate elements combine in a collage to form a single legible aesthetic, and tell a complicated, multi-faceted story.



MATERIAL PALETTE

DIGITAL LIGHTING + LENTICULAR LENSES

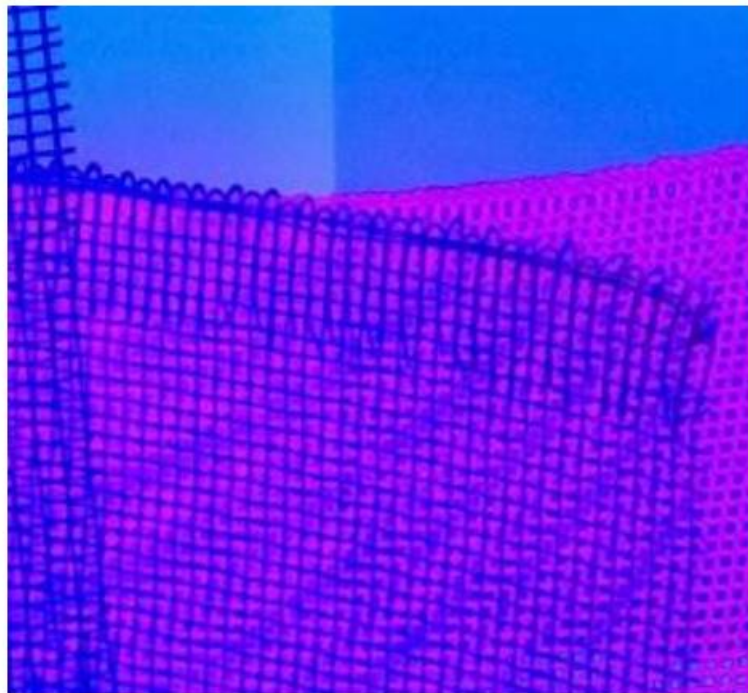
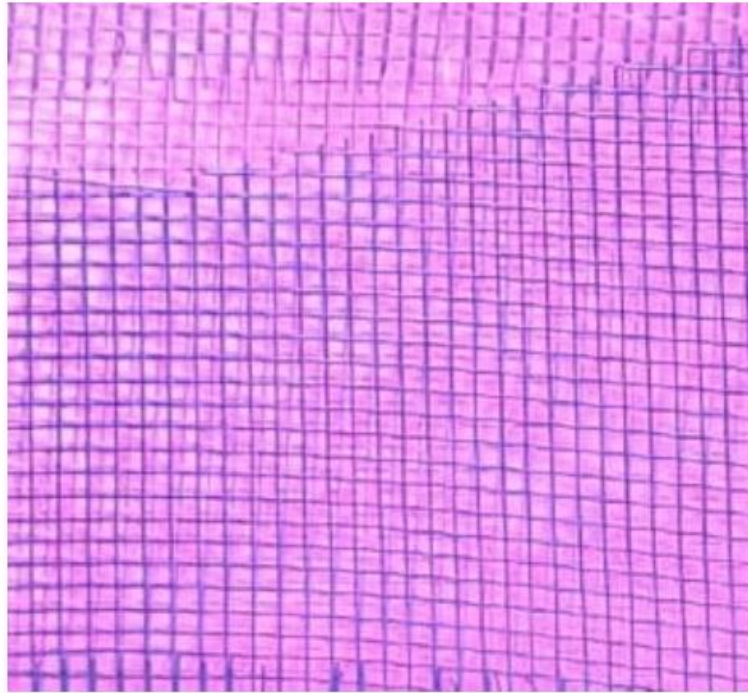


DIGITAL LIGHT + REFLECTIVE ILLUSION



MATERIAL PALETTE - CONT'D

MESH MOIRE + COLOURED LIGHT



DICHROIC KALEIDESCOPE



REFLECTIVITY + DICHROIC ILLUSION

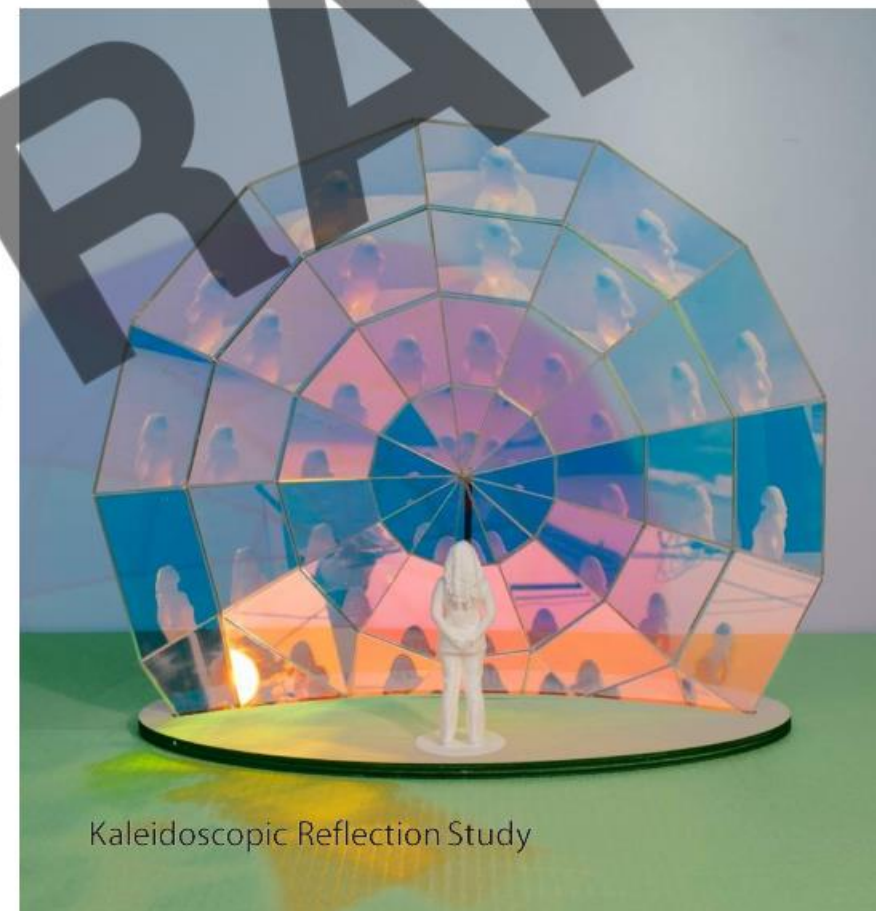


NOTES FOR FURTHER DEVELOPMENT

NOTES FOR FUTURE CONSIDERATION

- Each of segment of the Equinix T3 artwork is a unique “chapter” of the overall artwork.
- chapters are connected to the others by a common visual language and material palette.
- The previous pages showed early iterations of an example chapter of the artwork.
- Studio F Minus has developed a variety of techniques for creating optical effects and lighting animations that may be implemented
- Early studies of these techniques are shown in the adjacent photos
- Consolidate and abstract the rich historical narrative through material and light.
- Use digital technologies/Light combined with Analogue material treatments to generate a rich narrative that focusses on the transition of local culture to global society, history to the future, and the flow of data.

APPLICATION



4. Sustainability Objectives

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Sustainability at Equinix



OUR PROGRAM

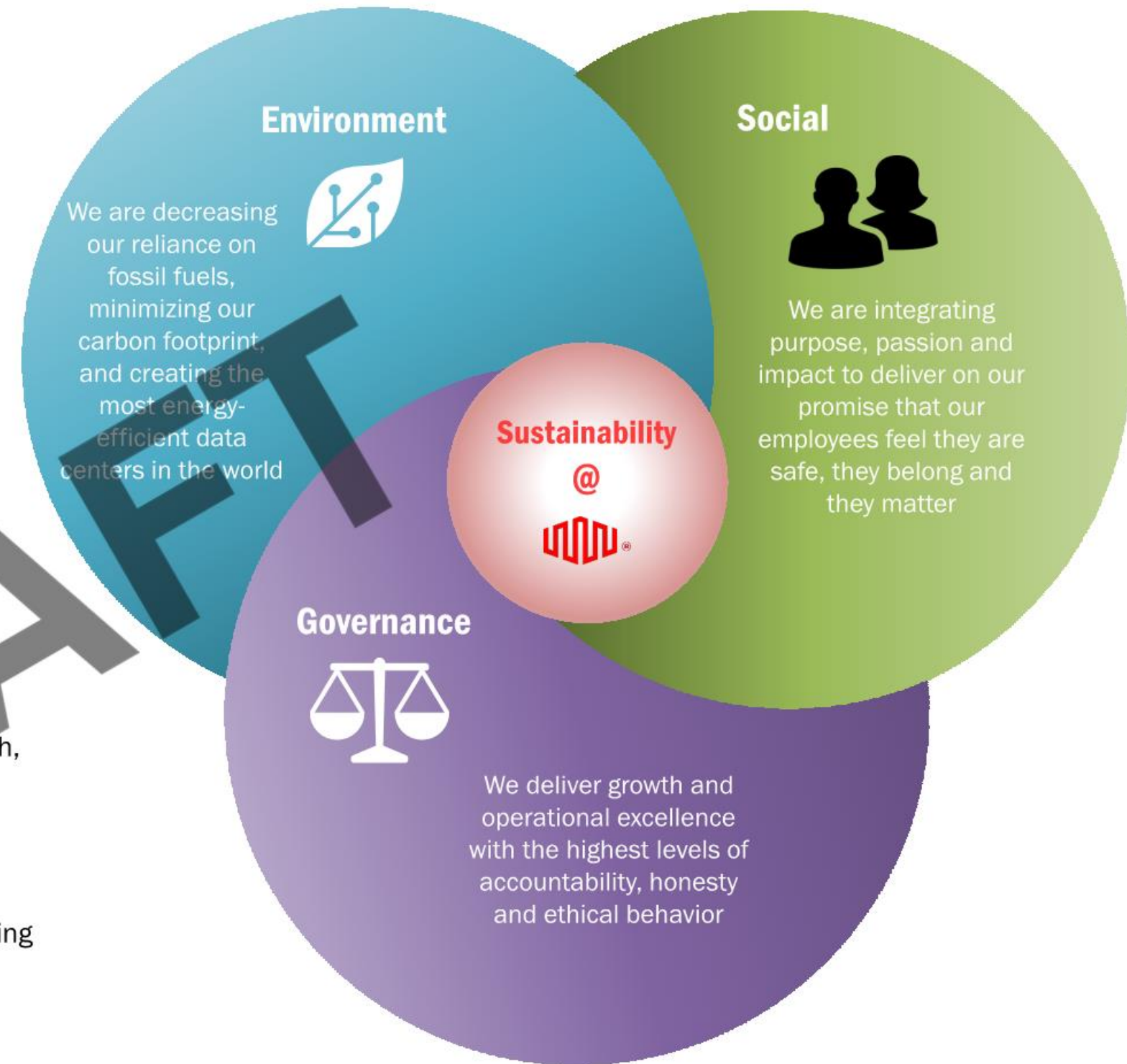
- Equinix values being a trusted and sustainable global partner
- We seek to strategically align our efforts with areas our business has control and influence over
- We positively create value for all Equinix's stakeholders: customers, investors and employees
- We are enhancing focus on emerging topics for growth and leadership
- We will transparently report on material issues



OUR ACHIEVEMENTS

- In 2019, Achieved over 90% renewable energy use, totaling 5,250 GWh, up from 34% in 2015 .
- Decreased carbon footprint by 60% since 2015, even with increasing overall data center footprint and energy consumption.
- Transparency in ESG reporting since 2015 (aligned with Global Reporting Initiative)
- Actively creating a work environment where every employee can confidently say, "I'm safe, I belong and I matter"

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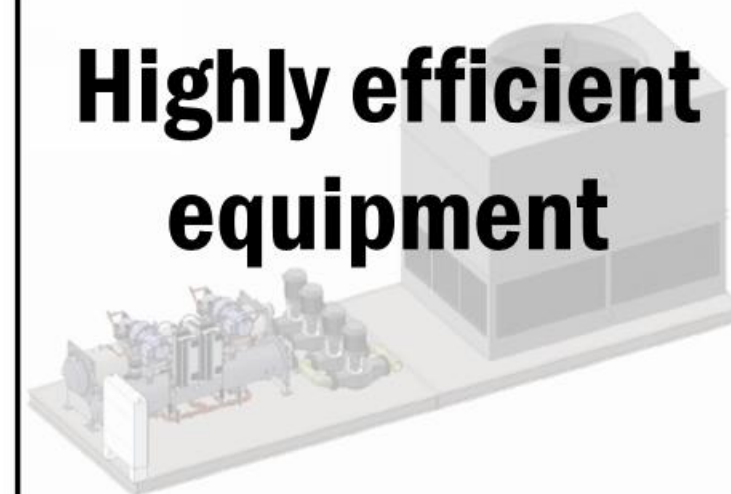
TR3 Energy and Sustainability

Hot aisle containment



Water-side economizer

Highly efficient equipment



Water treatment



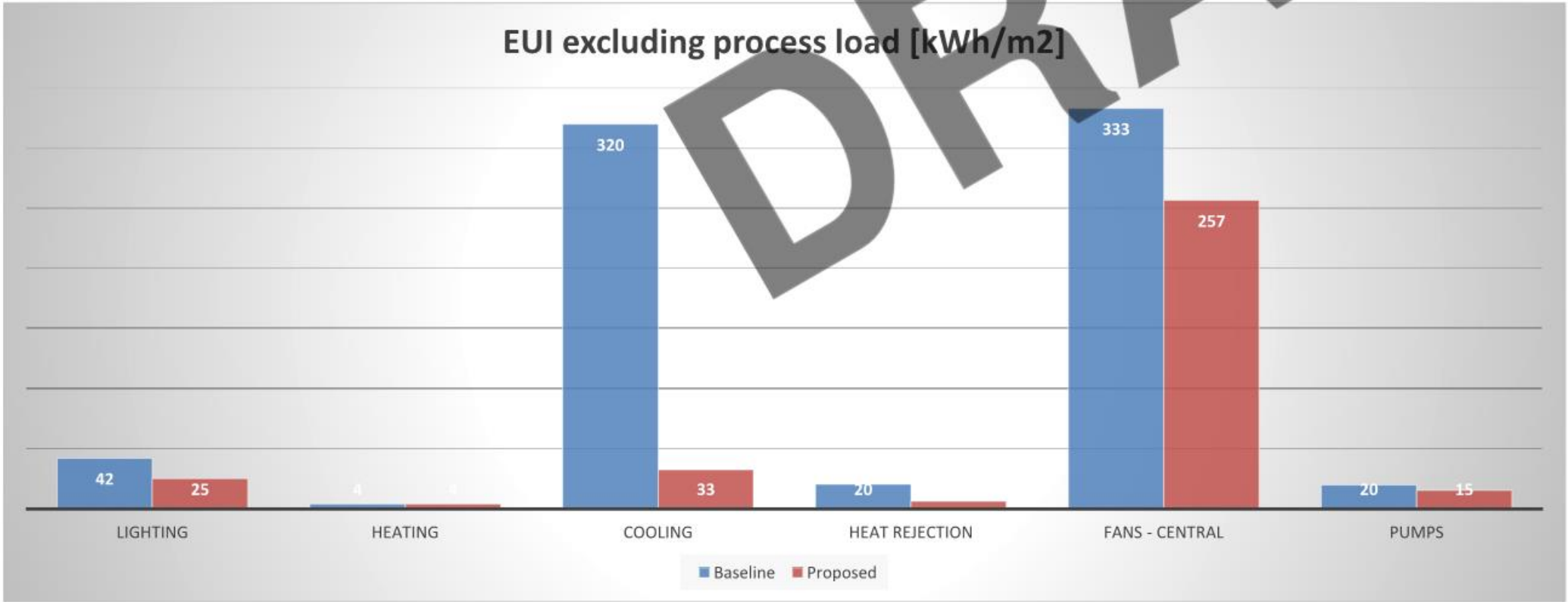
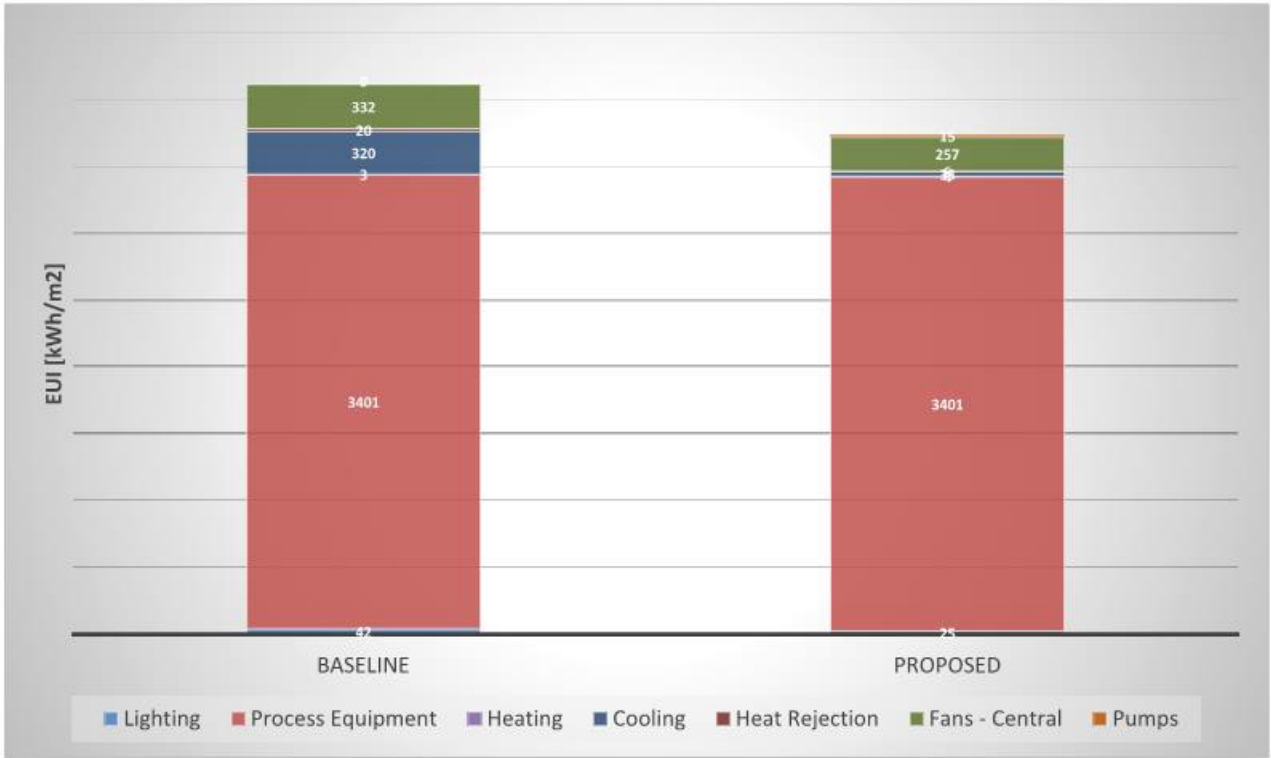
Waste heat reclaim

LEED



TR3 Energy and Sustainability

- Preliminary modeling suggests that the proposed design for the TR3 data center will achieve approximately 12% energy savings over an ASHRAE 90.1 2013 baseline. This value will become more specific as various assumptions, namely the server energy usage, are confirmed.
- ASHRAE 90.4 2019 Maximum Annualized Mechanical Load Component (MLC) for TR3 proposed building is 0.09 against the 0.16 baseline.
- TR3 targets the peak PUE (Green Grid PUE category 0) of 1.35.
- Due to nature of building and process inside TEDI is near zero.



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Thank You