

A RIVERFRONT REVIVAL

**Revitalizing St. Paul's Downtown in Synergy with the
Mississippi River**

Arch 772 Design Thesis
Revit, Rhino, Photoshop
InDesign

Introduction of St. Paul

- People have left downtown areas to for suburban homes
- Safety issues
- Weak riverfront on the Mississippi
- Skyline in overshadowed by Minneapolis and its grander structures



Riverfront Location

- Previous location of the Ramsey County Jail
- Large elevation change from the rest of the downtown setting
- Skinny site
- Runs along side the Mississippi River
- Downtown is currently cut of from the Mississippi River by Shepard Road and a railroad track



Public Safety

- “Public opinion often imagines urban crimes as a threat to “social order” and “public safety” in its clearest sense” (Zalnezhad, K., Esteghamati, M., & Hoseini, S. F. 2016, p. 182)
- The Theory of Defensible Space: Changing “the physical conditions of the neighborhoods so that residents are able to control their home surroundings” (Zalnezhad, K., Esteghamati, M., & Hoseini, S. F. 2016, p. 184)
- The Theory of Crime Prevention through Environmental Design: “crimes committed in the built environment can be prevented with proper designing of residence, work and life of people” (Zalnezhad, K., Esteghamati, M., & Hoseini, S. F. 2016, p. 184)
- Zalnezhad, K., Esteghamati, M., & Hoseini, S. F. then claim on p. 184 in 2016 how Crime Prevention through Environmental Design, or CPTED, is the “Proper design and effective use of the environment and building which will reduce crime and the fear of crime. In other words, ... can improve quality of life in addition to crime prevention and also reduce the fear of crime.” (Crowe, 2000, p. 46)
- Space Syntax Theory by Hillier and Hanson in 1980 explains “that an urban spatial space determines the relations through flow motions (especially walking) and affects the pattern of land use and urban density” (Zalnezhad, K., Esteghamati, M., & Hoseini, S. F. 2016, p. 185)



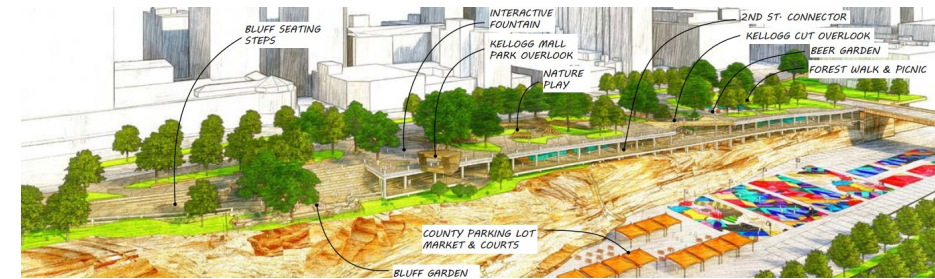
Previous Ideas and Plans

RiversEdge Redevelopment Project



- <https://www.startribune.com/riversedge-redevelopment-project-moves-forward-in-downtown-st-paul-despite-covid/572010242/>

Great River Passage Conservancy / River Balcony



- (River-Balcony-Final-Report.Pdf, n.d.)

The Role of Housing in Public Safety

- In order to have a safe city, there must be adequate living accommodations for its residents
- “Since the 1980s the stock of public housing has been regularly depleted through the demolition and sale of public housing” (Goetz, 2011, p. 270)
- “Gentrification of inner city neighborhoods led to conditions in which public housing projects were islands of poverty and distress in the midst of areas of wealth and renewal” (Goetz, 2011, p. 280)
- Goetz also says “*public housing removal is most prevalent in cities facing gentrification pressures, and the cities in which the management of public housing by the local housing authorities was subpar. Public housing removals are also associated with higher levels of racial segregation and violent crime*” (2011 p. 267)
- Goetz then states “the dismantling of public housing is not limited to the removal of high-rise towers, but affects mid-rise, row-house, and even single-family, scattered units as well” (2011, p. 267)



Riverfront Connections

- Tunnels and Coverings of Roads and Railroads
- Parks
- Pathways
- Observation decks



Case Studies

Rokko Housing

- Tado Ando
- Kobe, Japan
- Integrated into hill
- Stepped design
- <https://arquitecturaviva.com/works/edificios-rokko-i-ii-iii-kobe>



The Bianchi House

- Mario Botta
- Riva San Vitale, Switzerland
- Two entrances at different elevations
 - Connects two different elevations through architecture and design
- Includes elevated walkway for higher entrance
- <https://archeyes.com/bianchi-house-at-riva-san-vitale-mario-botta/>



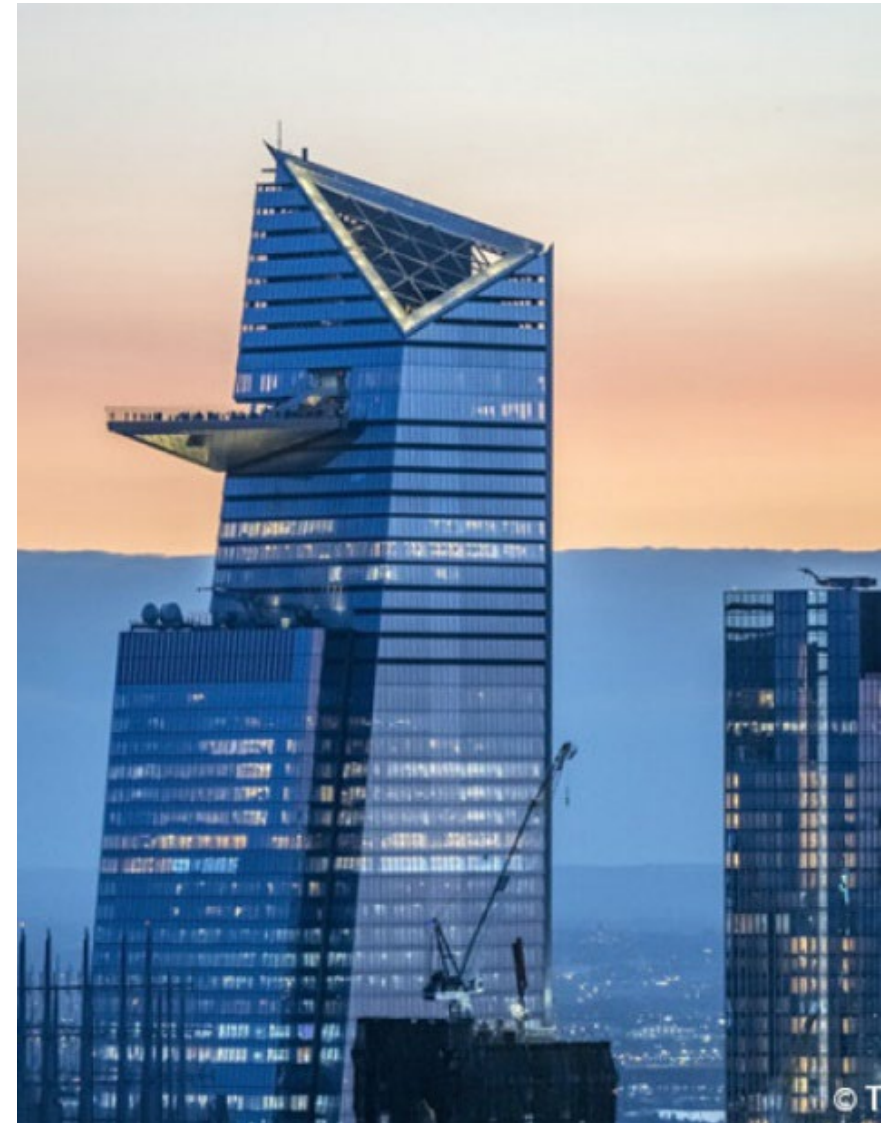
Cook's Camden

- Located in the UK
- Two total structures leaning away from each other
- Creates a valley in between structures
- <https://architecturetoday.co.uk/cooks-camden-2/>



30 Hudson Yards

- Kohn Pedersen Fox Architects
- New York City, NY
- Not a consistent or uniform shape
- Connected to 10 Hudson Yards by “A large, eight-story retail podium” on an “ambitious new 28-acre mixed-use district... over an active rail yard” (“River Dance,” 2017)
- <https://www.skyscrapercenter.com/building/30-hudson-yards/13325>



The One World Trade Center

- Daniel Libeskind and David Childs
- New York City, NY
- Simple, elegant, rigid shape
- One of the tallest towers in the world
- Expresses how to move forward with respect
- <https://www.loopnet.com/Listing/One-World-Trade-Center-New-York-NY/4043898/>



Shanghai World Financial Center

- Kohn Pedersen Fox Architects
- Shanghai, China
- Simple, elegant, rigid shape
- One of the tallest towers in the world
- Is halfway across the planet from St. Paul, but its shape is one which can transform any city
- Sense of modernity and success
- <https://www.skyscrapercenter.com/building/shanghai-world-financial-center/131>



The Bank of America Tower

- Rick Cook
- New York City, NY
- Stands beside Times Square
- Sharp cuts, edges, and turns
- “Mixing slag with concrete saves energy and makes the concrete stronger” (Lemonick, 2007)
- The tower is also meant to “save so-called gray water from washrooms” and creates “much of its own electricity from natural gas, a less potent carbon emitter than coal” (Lemonick, 2007)
- <https://www.homedit.com/tallest-buildings/us/nyc/bank-of-america-tower/>



Olympic Sculpture Park

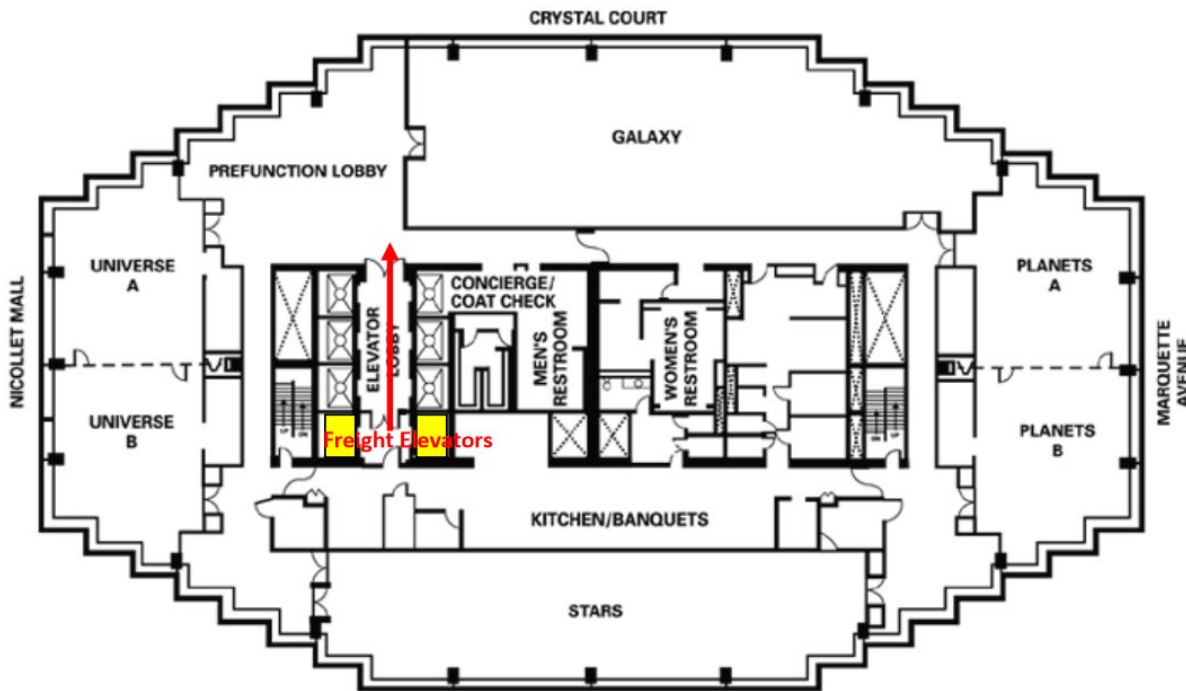
- Weiss/Manfredi
- Seattle, WA
- Park connecting the city to water
- Sharp edges
- Coverings of roads and railroads in unique ways
- Expresses the grandness of art, form, and nature
- Overcomes a difficult challenge to positively impact the community
- <https://www.floornature.com/weiss-manfredi-olympic-sculpture-park-seattle-14549/>



Structure

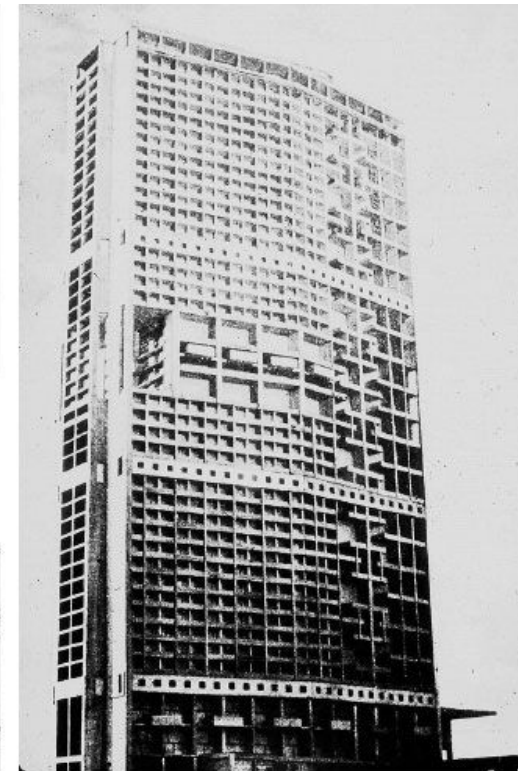
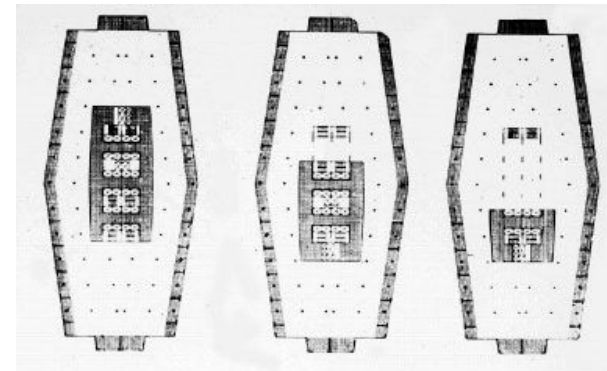
IDS Center

- Minneapolis, MN
- John Burgee, Philip Johnson
- (*Vendor_Cheatsheet_WOM.Pdf*, n.d.)



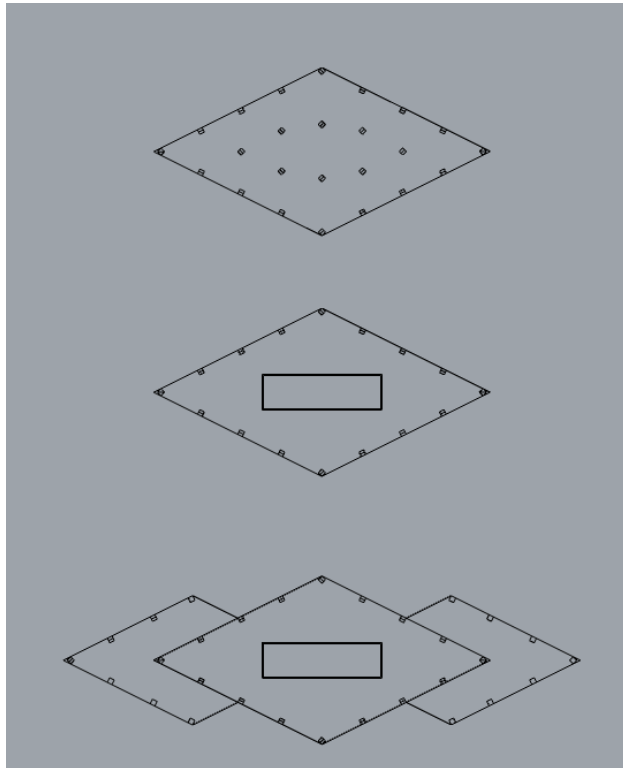
MetLife Building

- New York City, NY
- Pietro Belluschi, Walter Gropius, and Emery Roth
- (*Great Game Changers: How the MetLife Building Redefined Midtown Architecture* 6sqft Metlife Building, Building, Architecture - Online Store, n.d.)

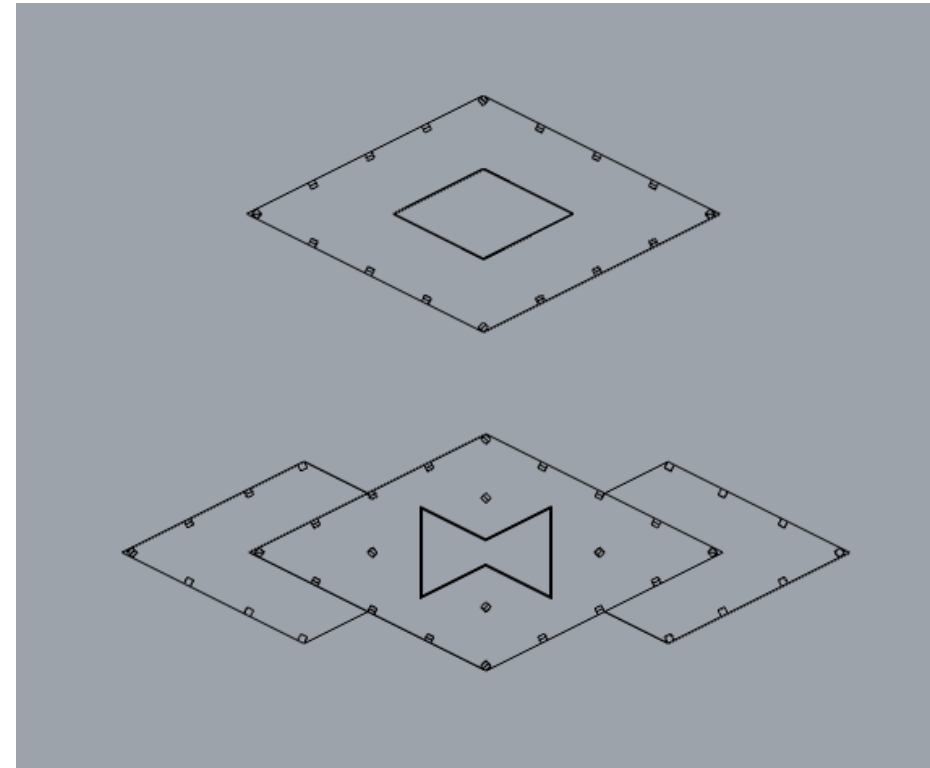


Structure (Initial Thoughts and Ideas)

- Steel Column Structure
- Concrete wall center shell

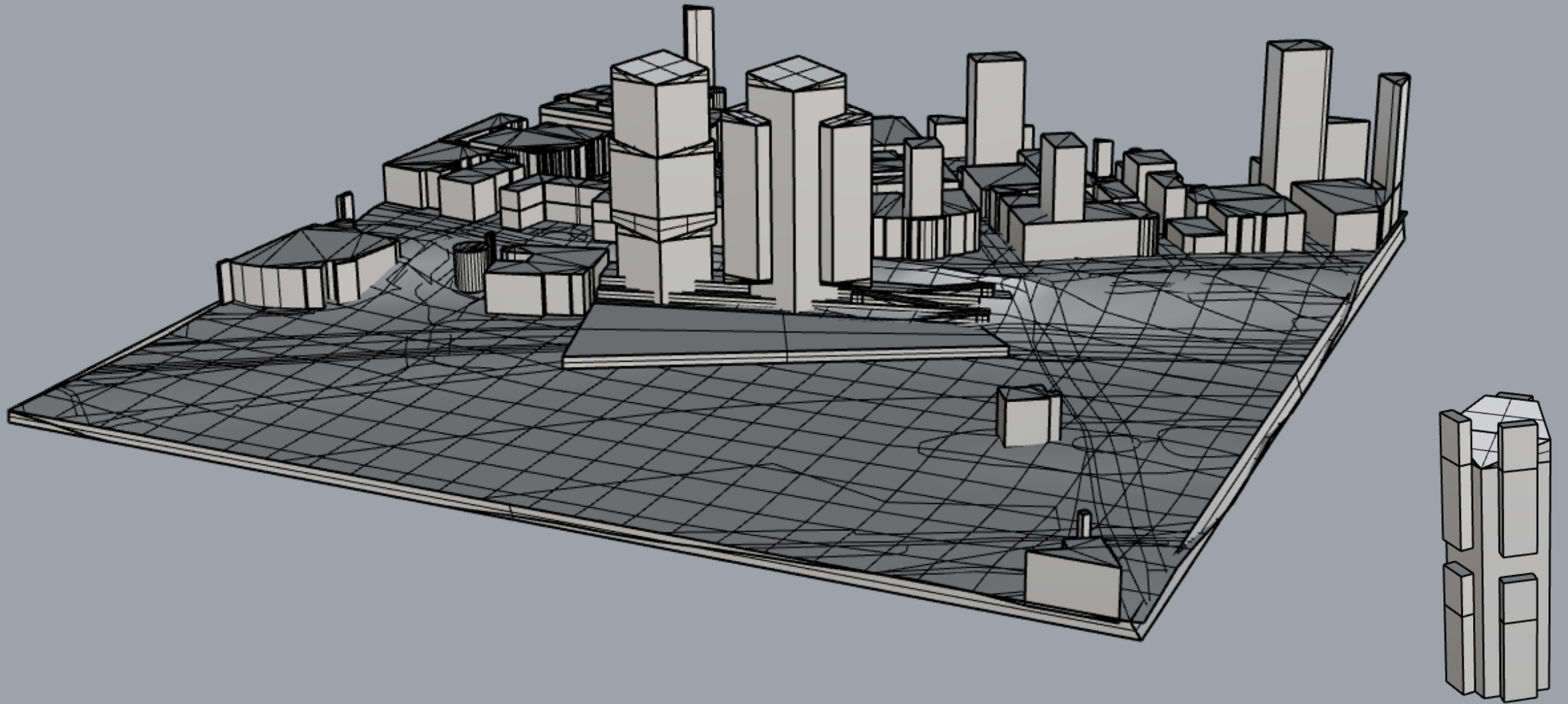


- Steel Column Structure
- Concrete wall center shell
 - Matching or opposite form from the exterior

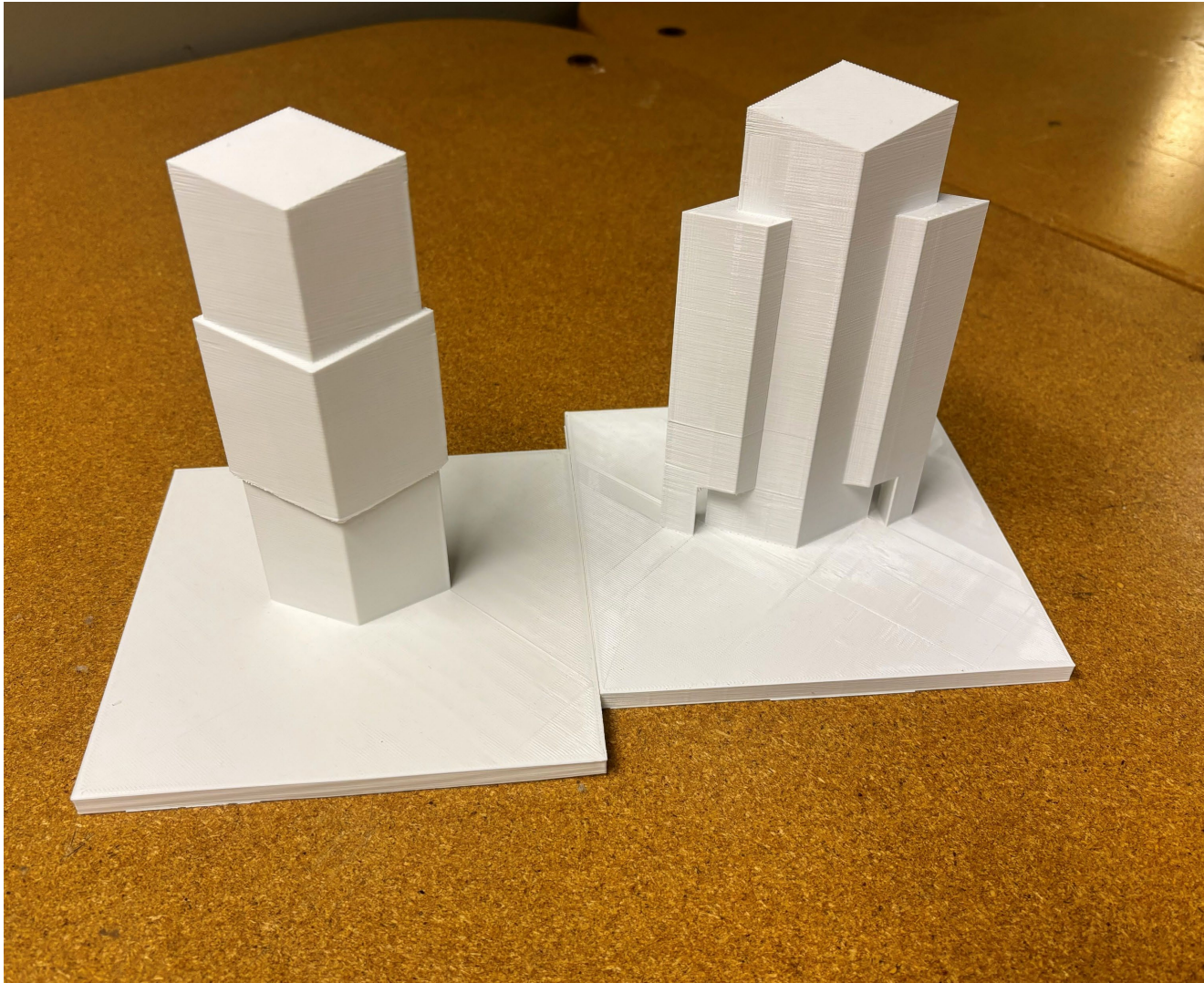


Early Models

Rhino Model



3D Printed Mass Model



Final Findings

Program:

- 56 Total floors in each structure
- 6 Mechanical floors
- 490 Total apartments in the West Tower
 - 128 One bedroom units
 - 166 Two bedroom units
 - 196 Three bedroom units
- 616 Total apartments in the East Tower
 - 56 One bedroom units
 - 300 Two bedroom units
 - 260 Three bedroom units
- 8 Office spaces in the West Tower with a possibility of more
- 8 Office Spaces in the East Tower with a possibility of more
- 2 Restaurants in the East Tower
- 1 Bar in the East Tower





View from ADA Park Ramp



Lobby Render



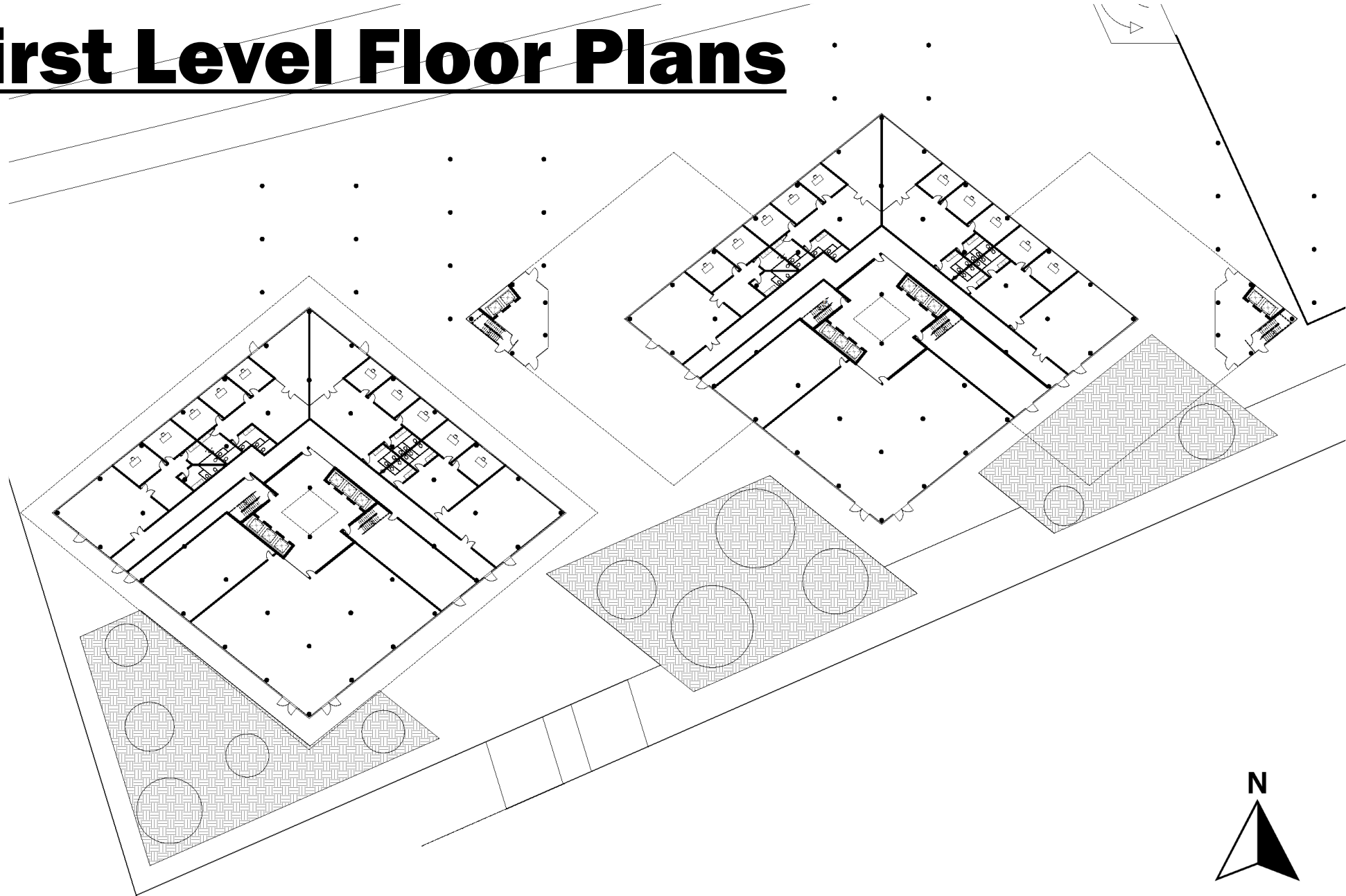
Apartment Render



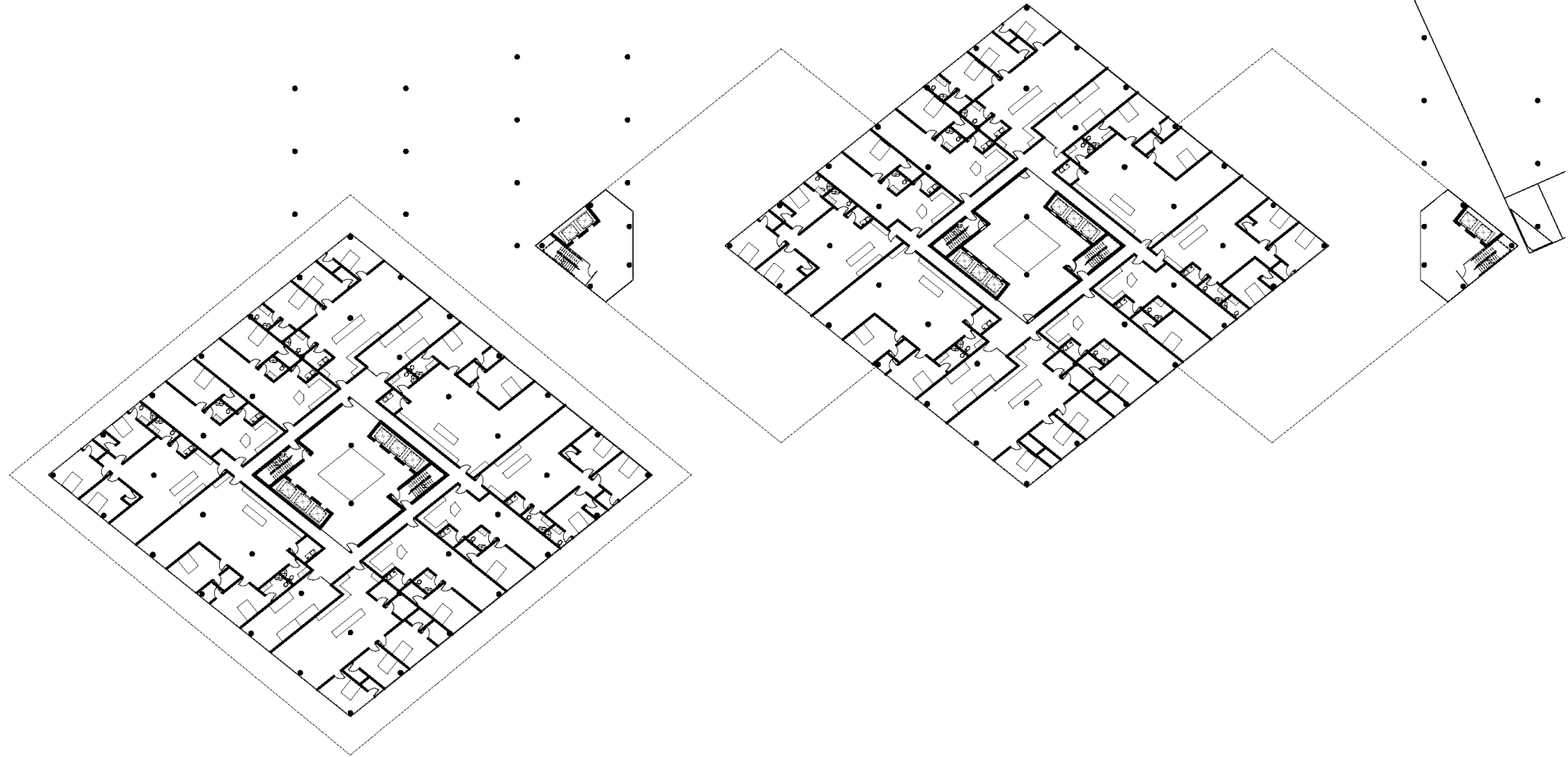
Site Plan



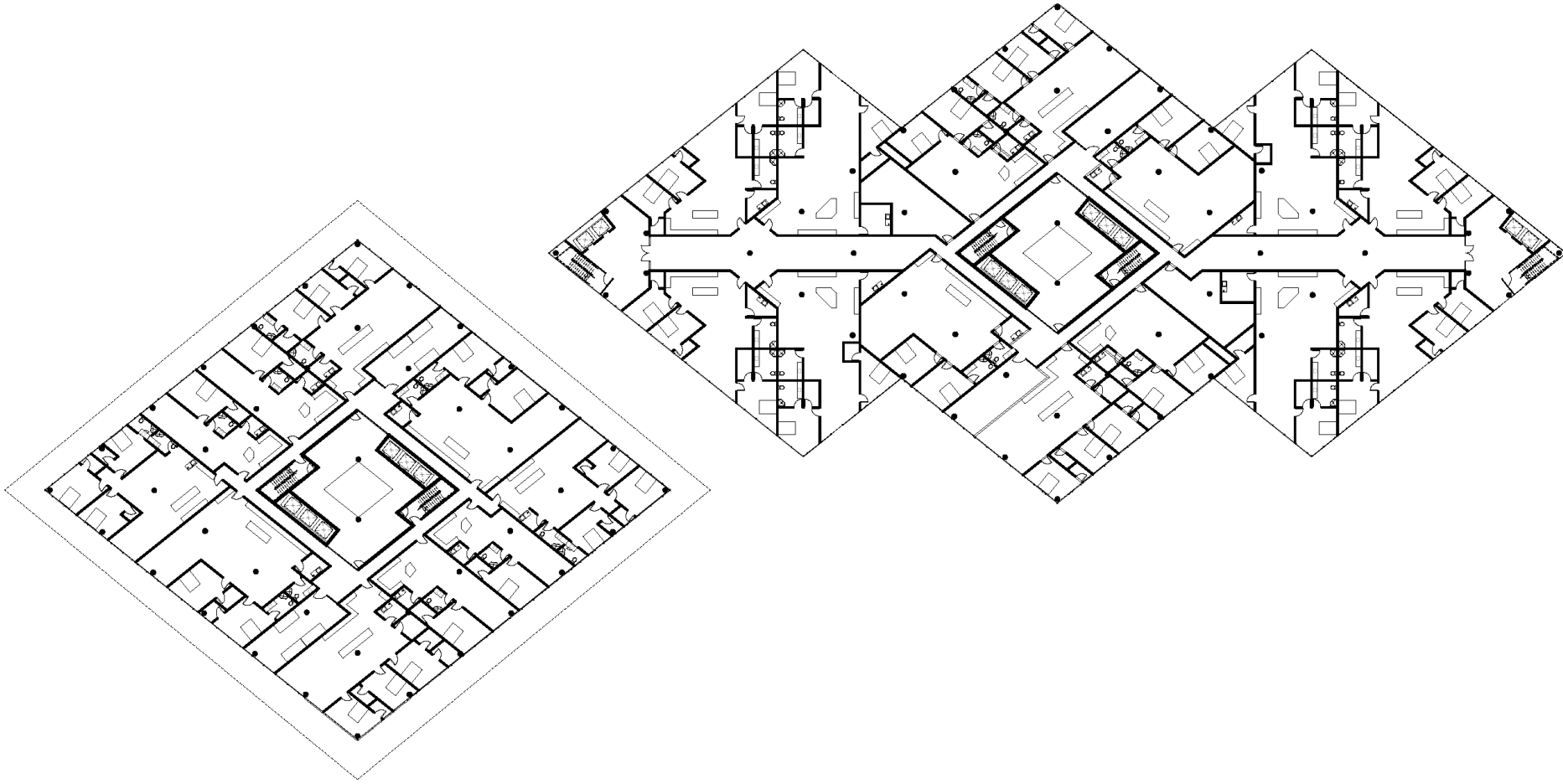
First Level Floor Plans



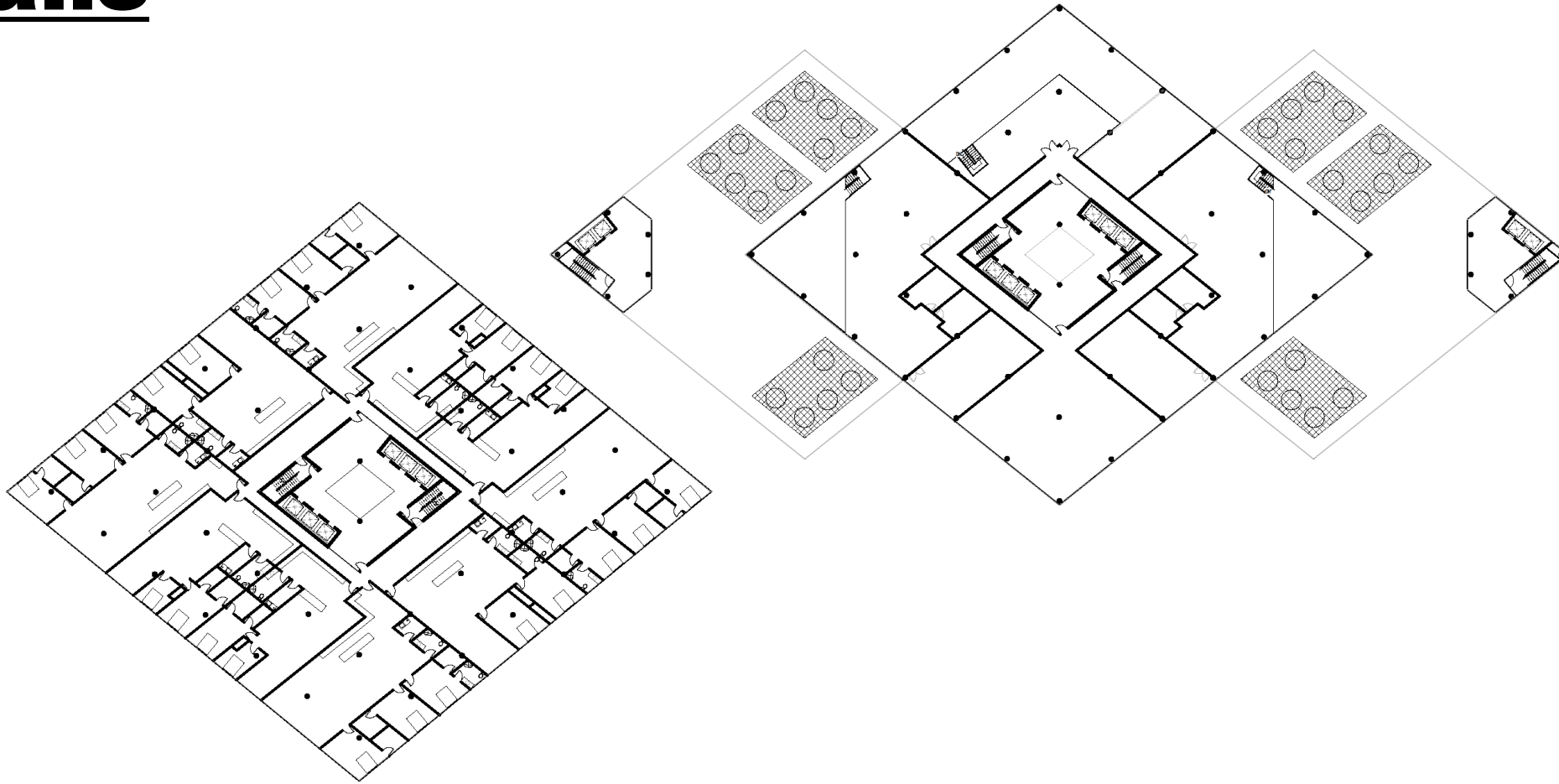
Lower-Level Floor Plans



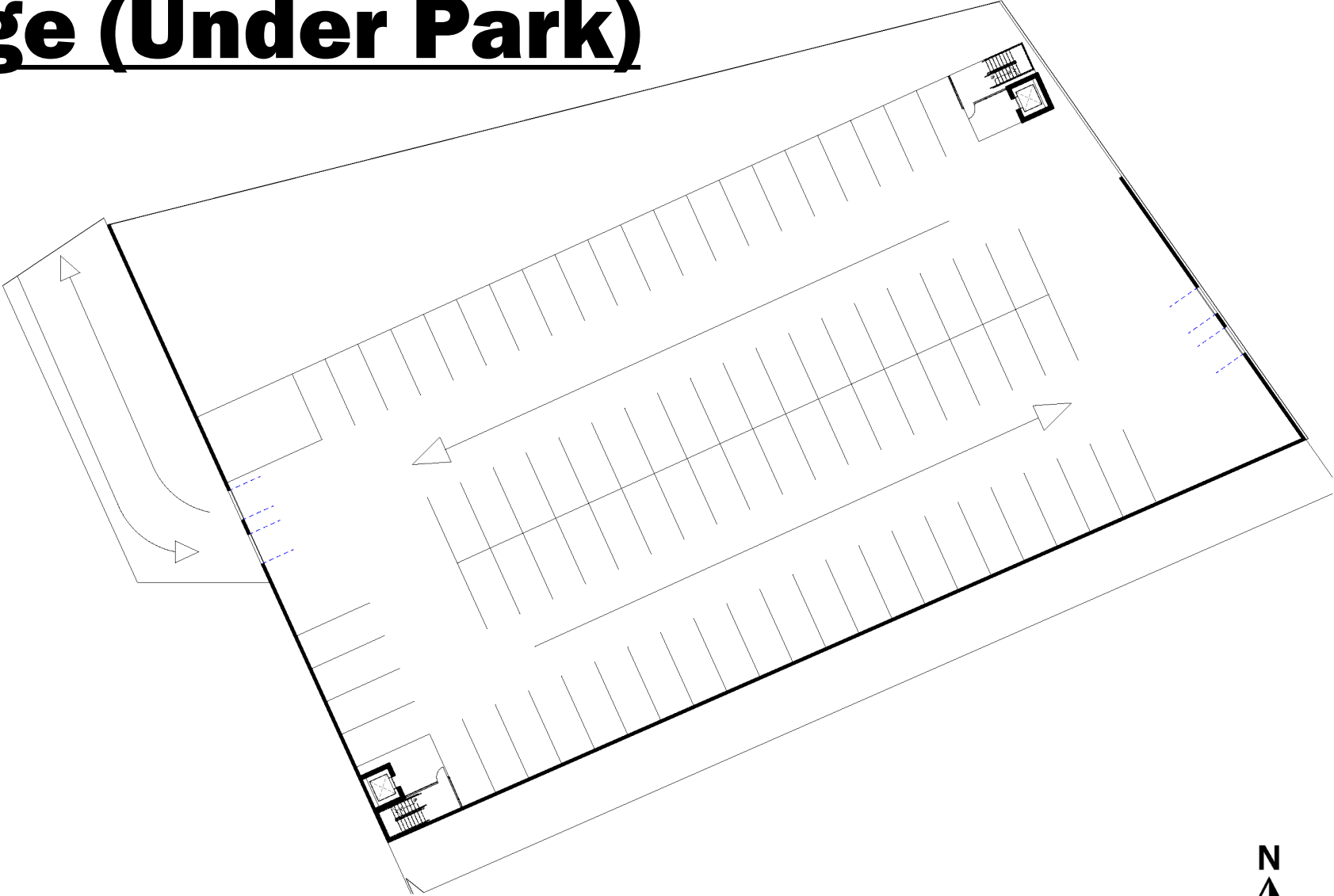
Upper-Level Floor Plan



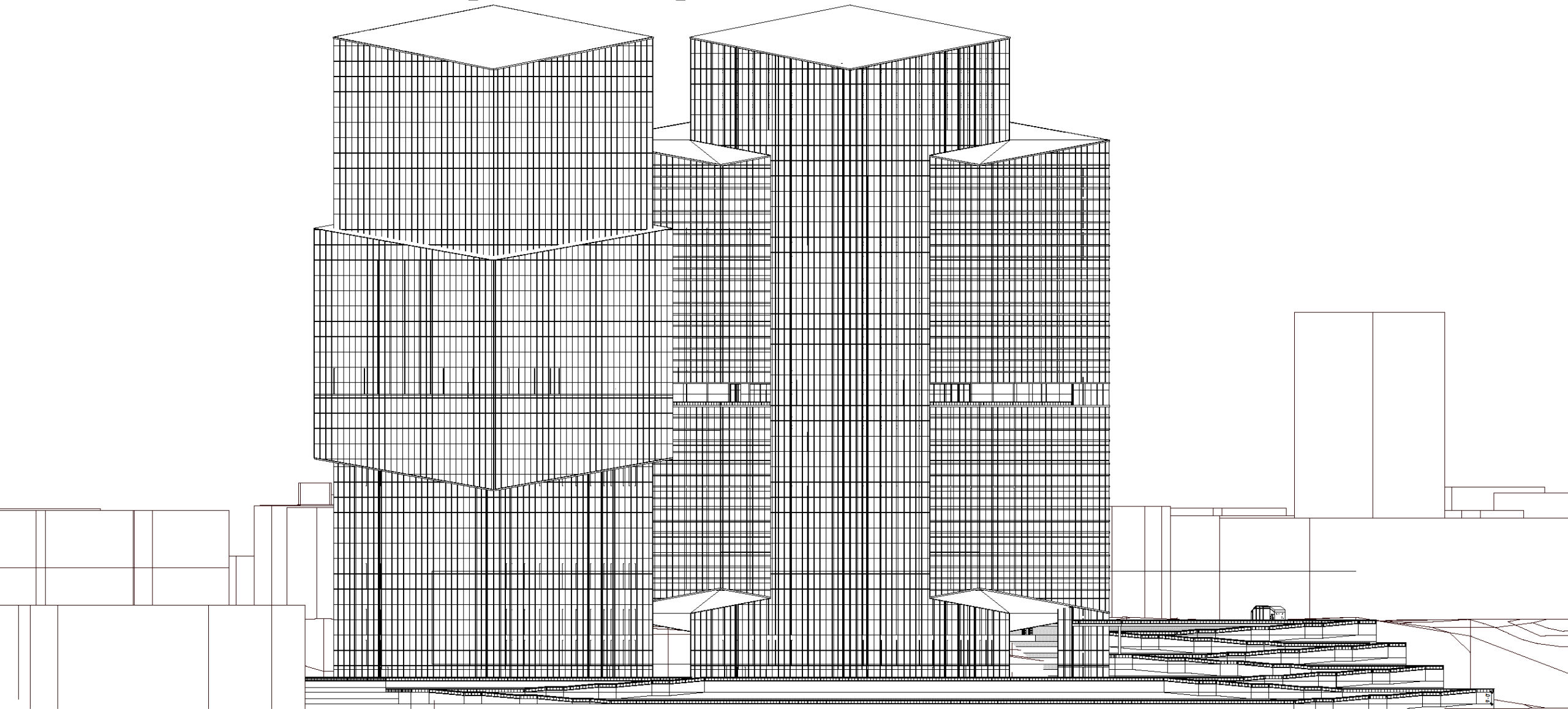
Luxury and Restaurant Level Floor Plans



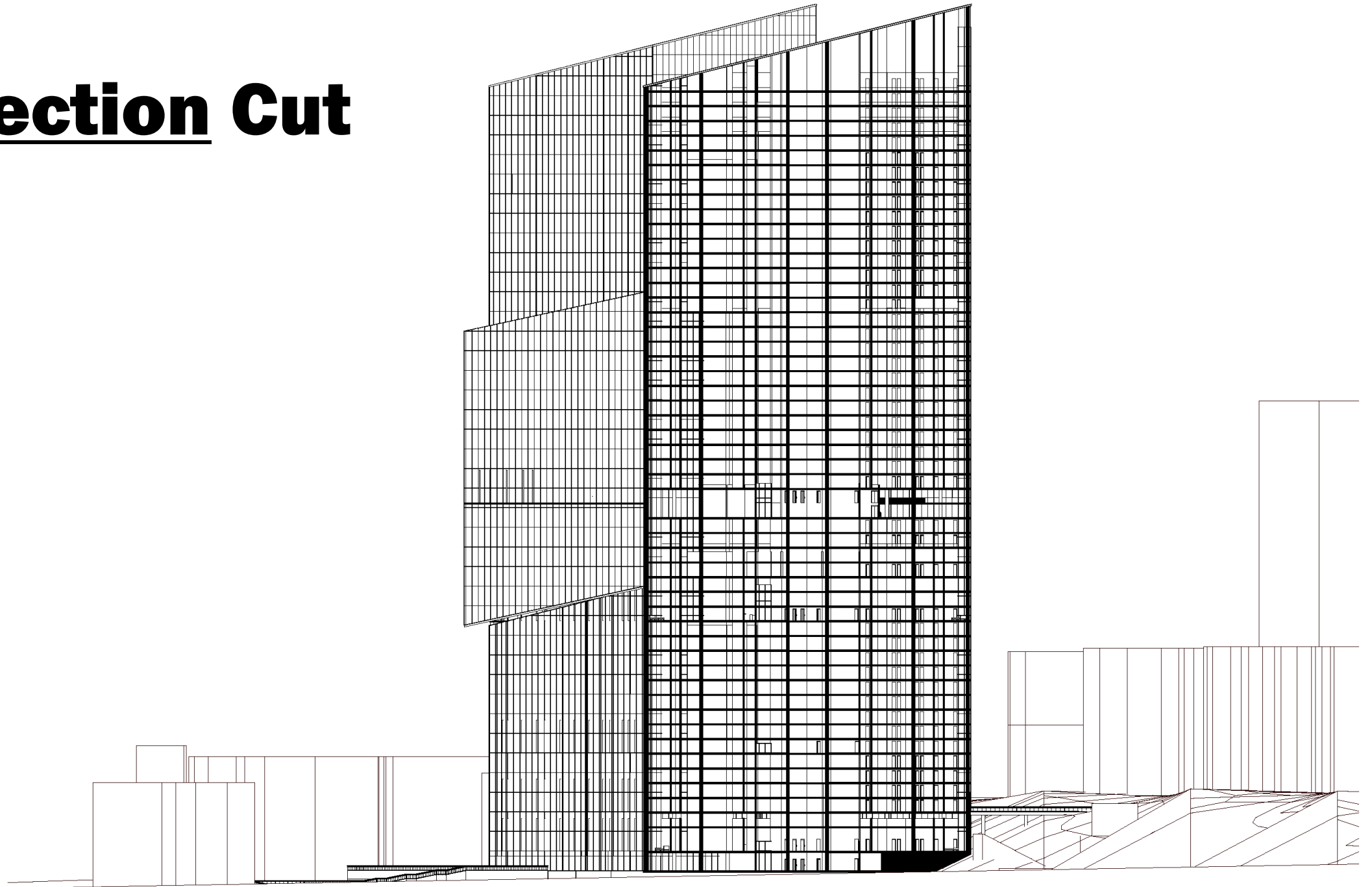
Garage (Under Park)



Riverside (South) Elevation



Section Cut



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