

ARE 320L - Intro to Design II  
Department of Civil, Architectural and Environmental Engineering

March 25, 2022

Kuala Lumpur

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This high-rise design project is an 8-week conceptual design project assigned in the 3rd-year design studios of the Architectural Engineering program at The University of Texas at Austin.

Students work in groups of 3 or 4 to design a 700' office building high-rise on a 250' x 250' site in an international city.

Designs include:

- Climate response to the given location.
- Architectural goals determined by the team
- Gravity and lateral structure
- Mechanical systems planning

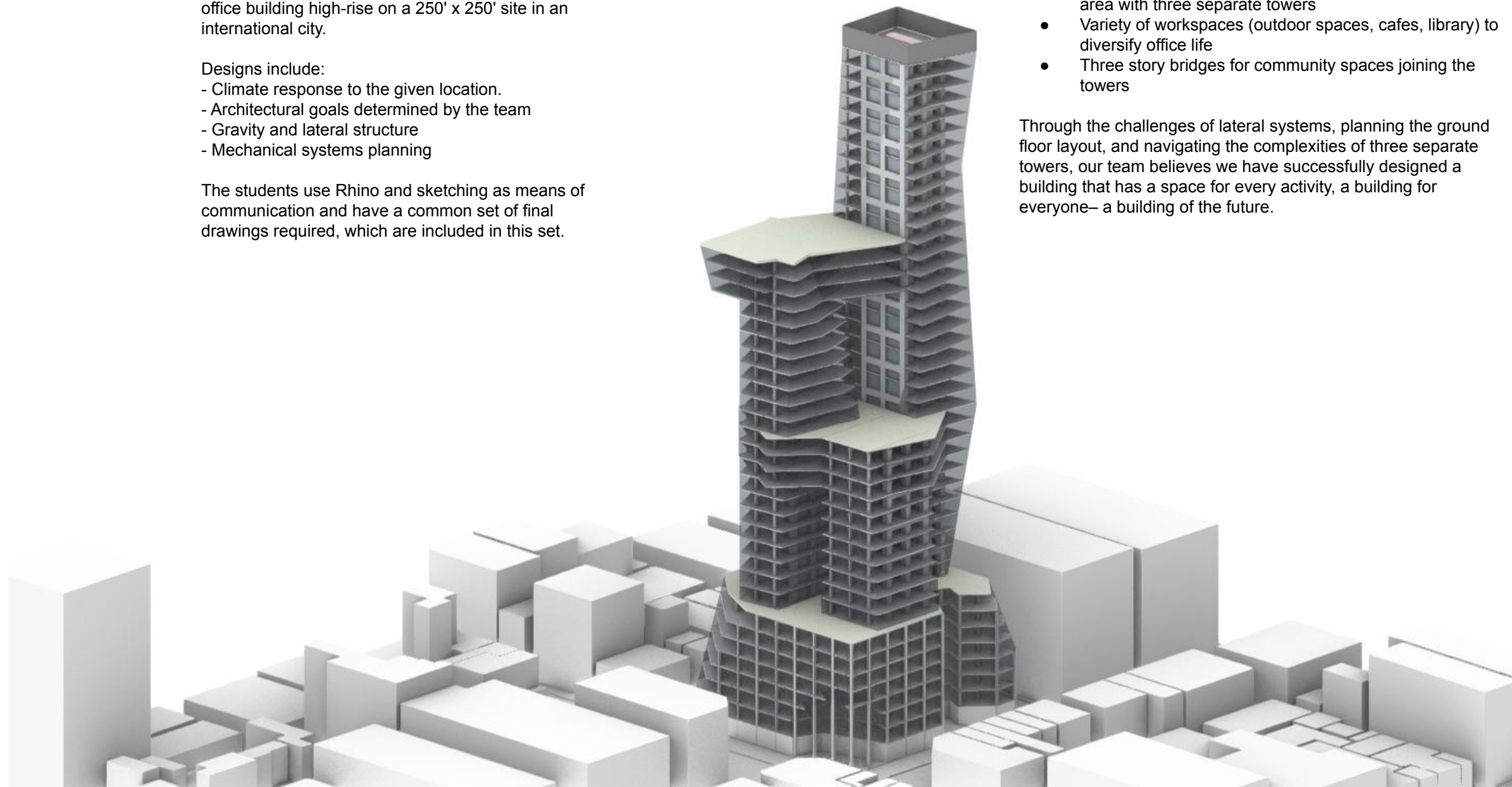
The students use Rhino and sketching as means of communication and have a common set of final drawings required, which are included in this set.

With our high rise design in Kuala Lumpur, we wanted to create a multi-use building with residential, recreational, and office spaces distributed throughout our podium and three towers.

Design Focuses:

- Natural light in all spaces- maximized available window area with three separate towers
- Variety of workspaces (outdoor spaces, cafes, library) to diversify office life
- Three story bridges for community spaces joining the towers

Through the challenges of lateral systems, planning the ground floor layout, and navigating the complexities of three separate towers, our team believes we have successfully designed a building that has a space for every activity, a building for everyone— a building of the future.





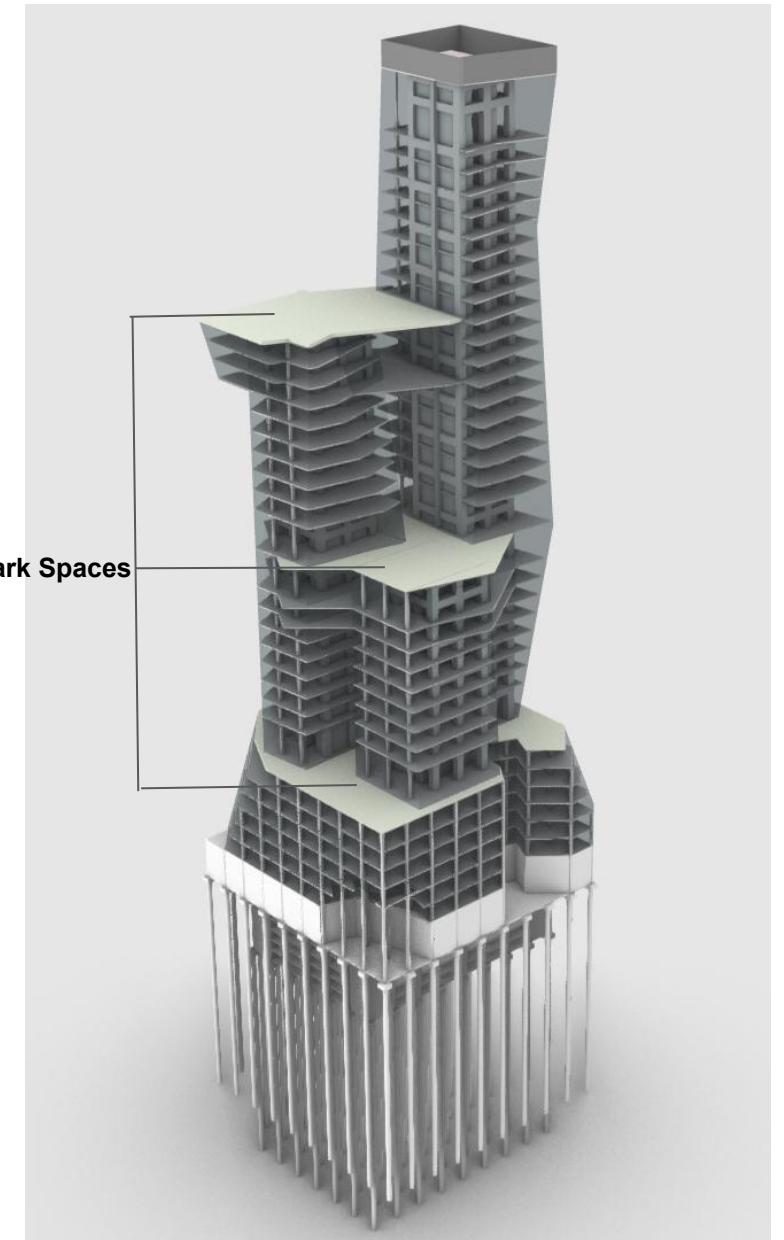
Podium and Lateral Structure  
(KD PG)



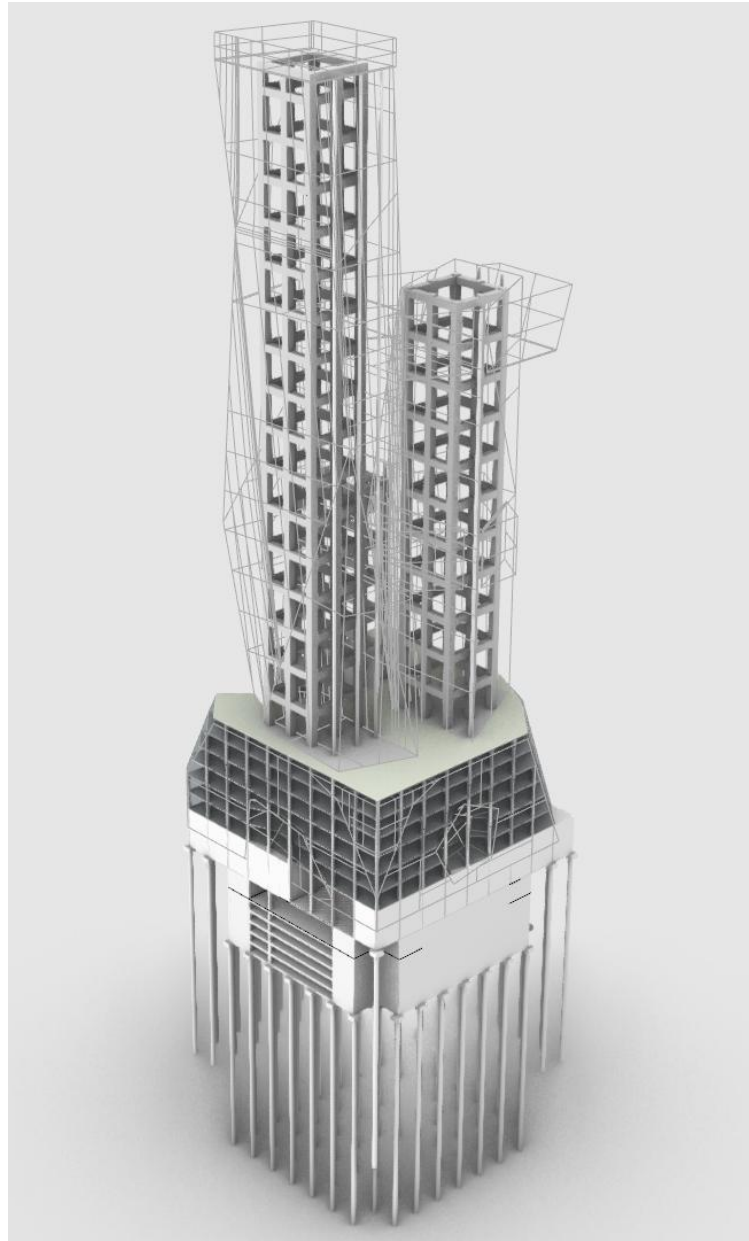
Tower  
(KD ZY)



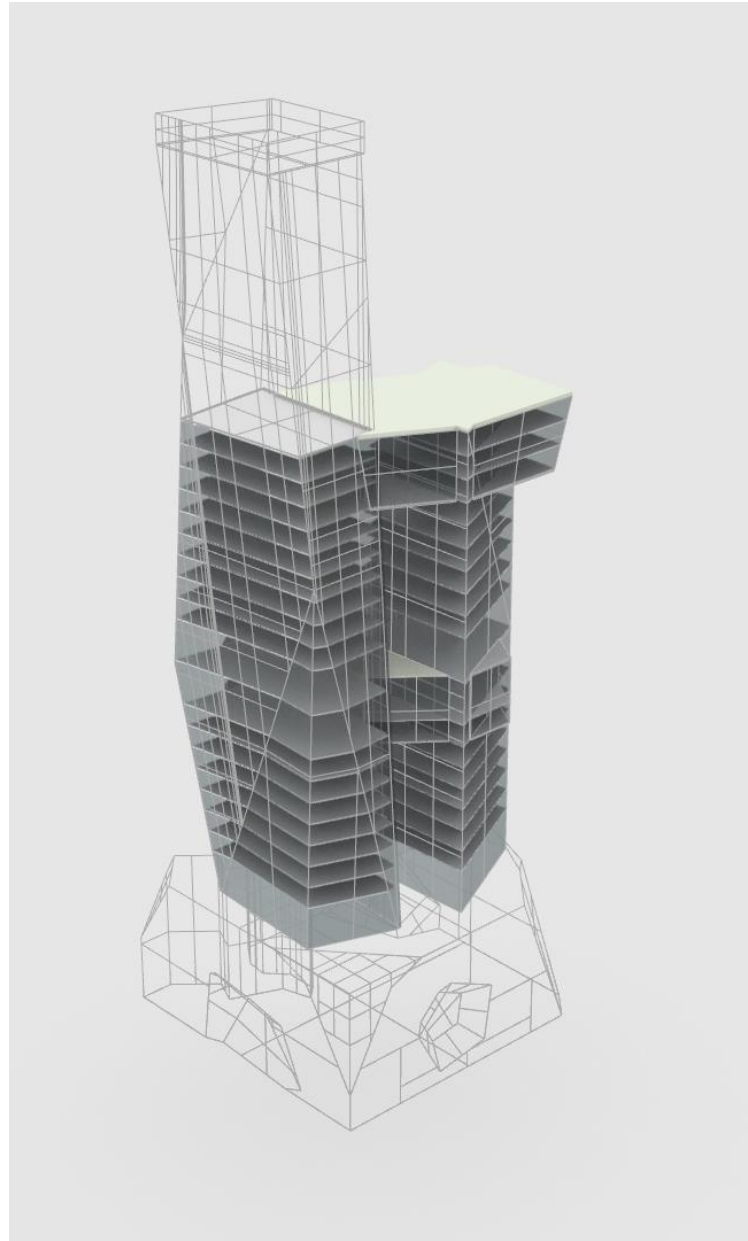
Crown and Vertical circulation  
(KD PG)



Composite  
(KD PG ZY)



Podium and Lateral Structure  
(KD PG)



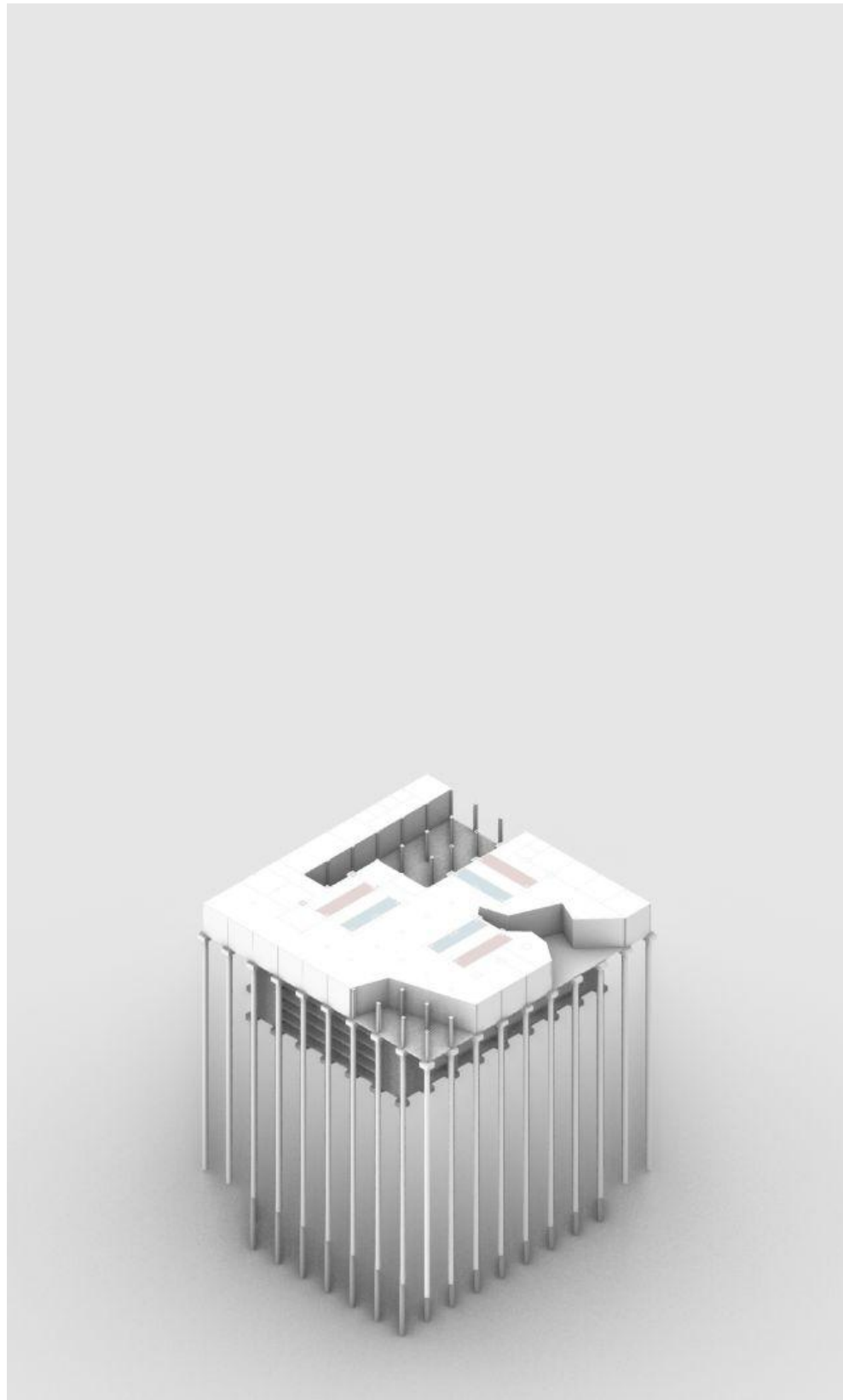
Tower  
(KD ZY)



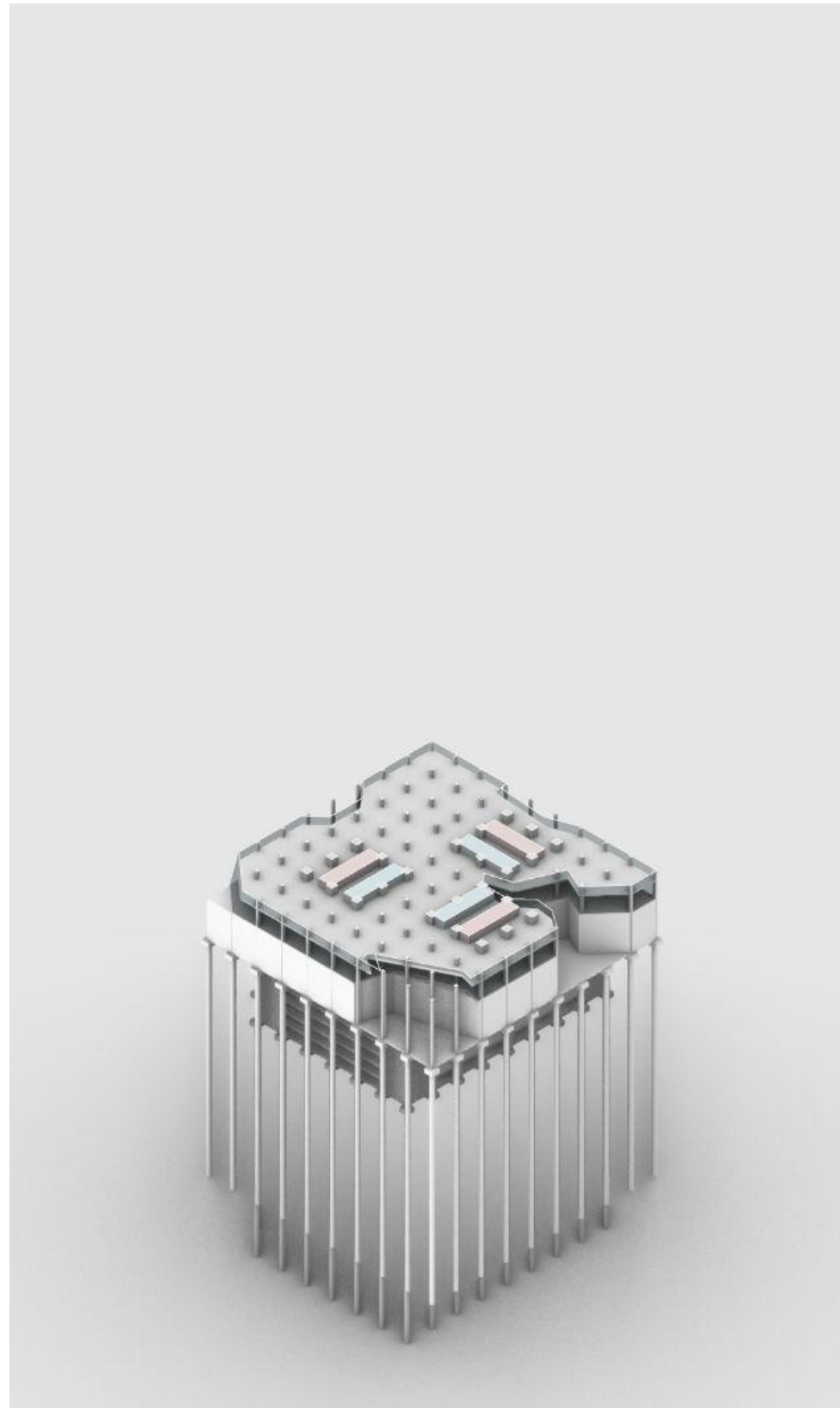
Crown and Vertical Circulation  
(KD PG)



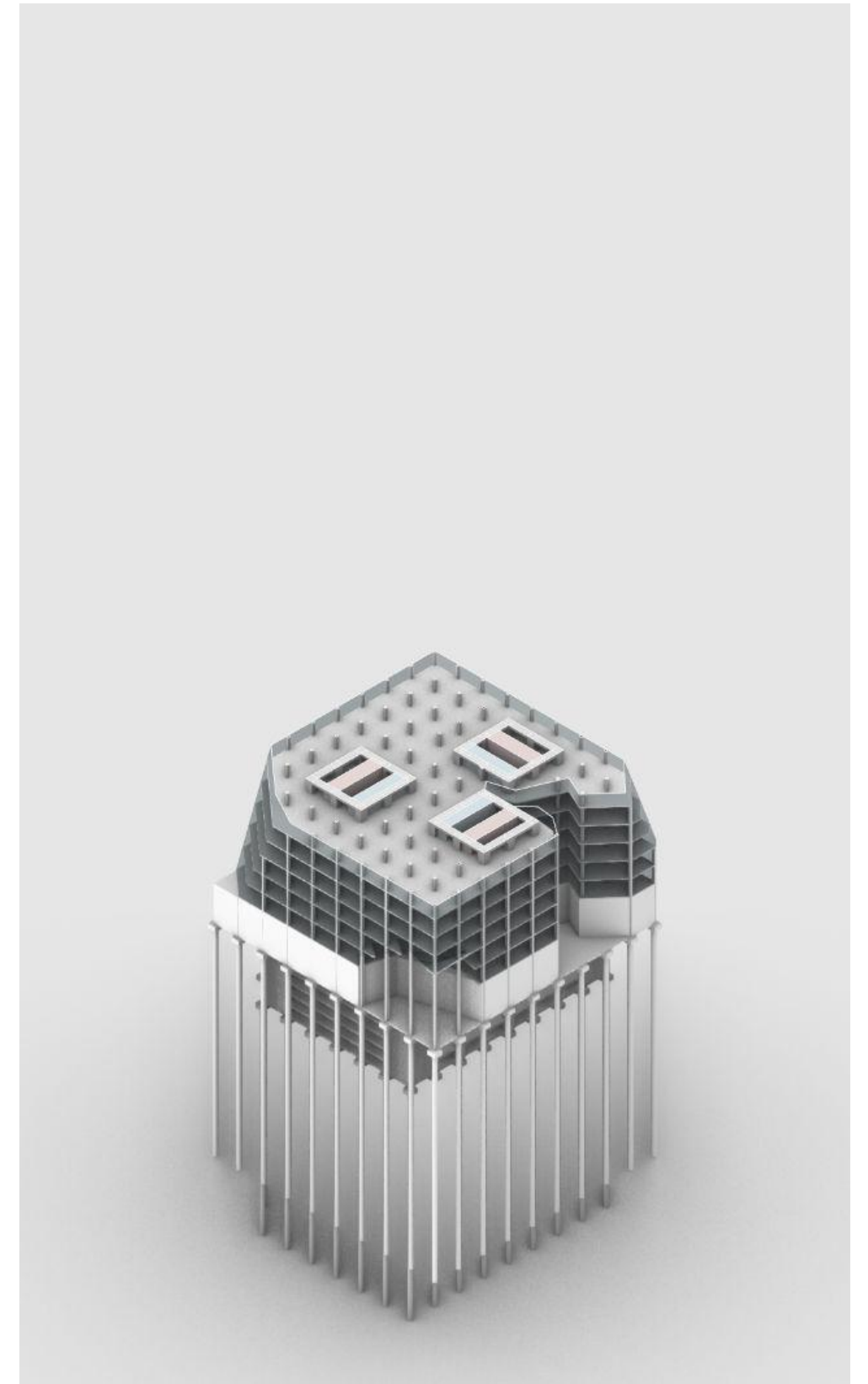
Composite  
(KD PG ZY)



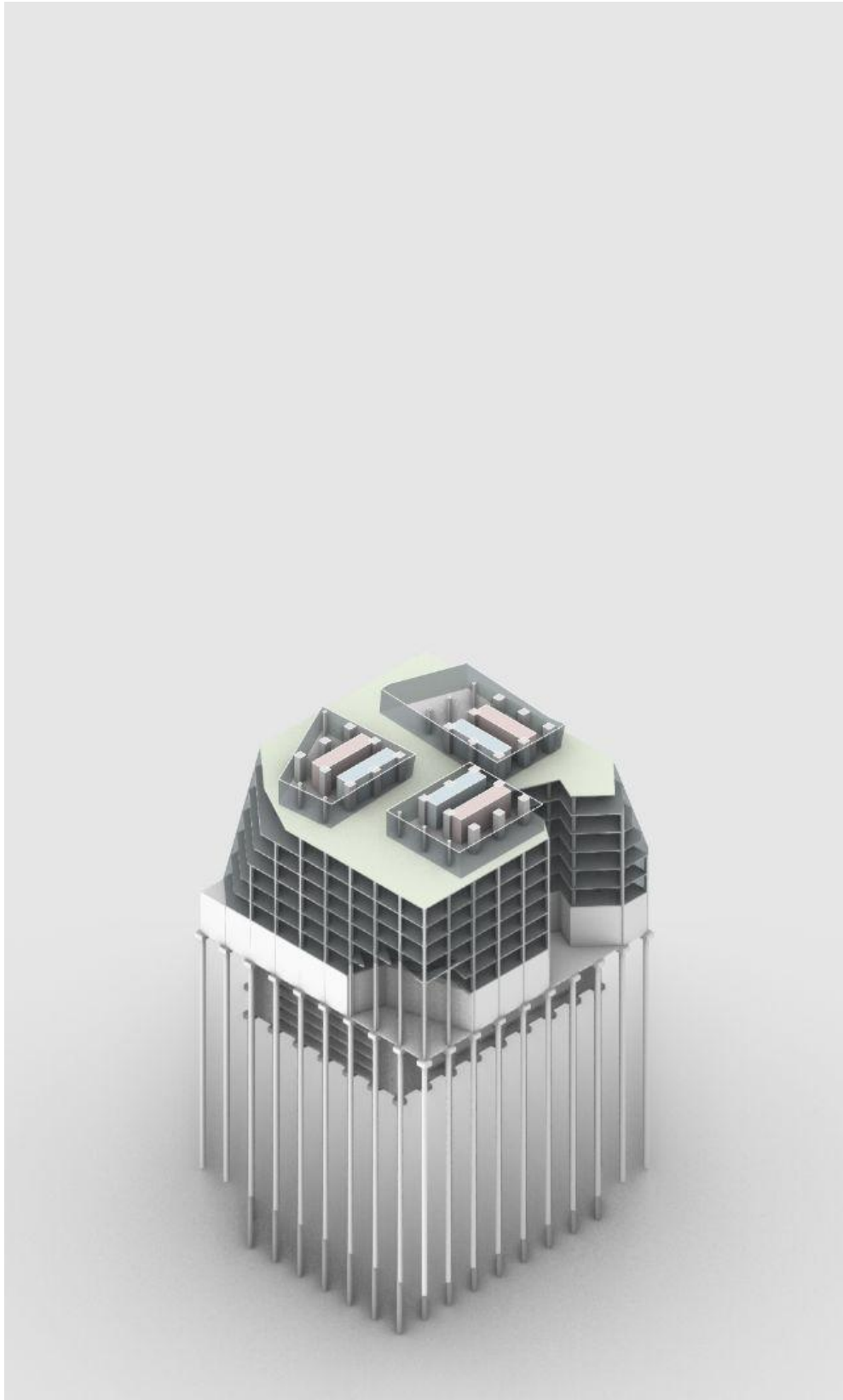
Podium, Level 1 (Ground Floor)



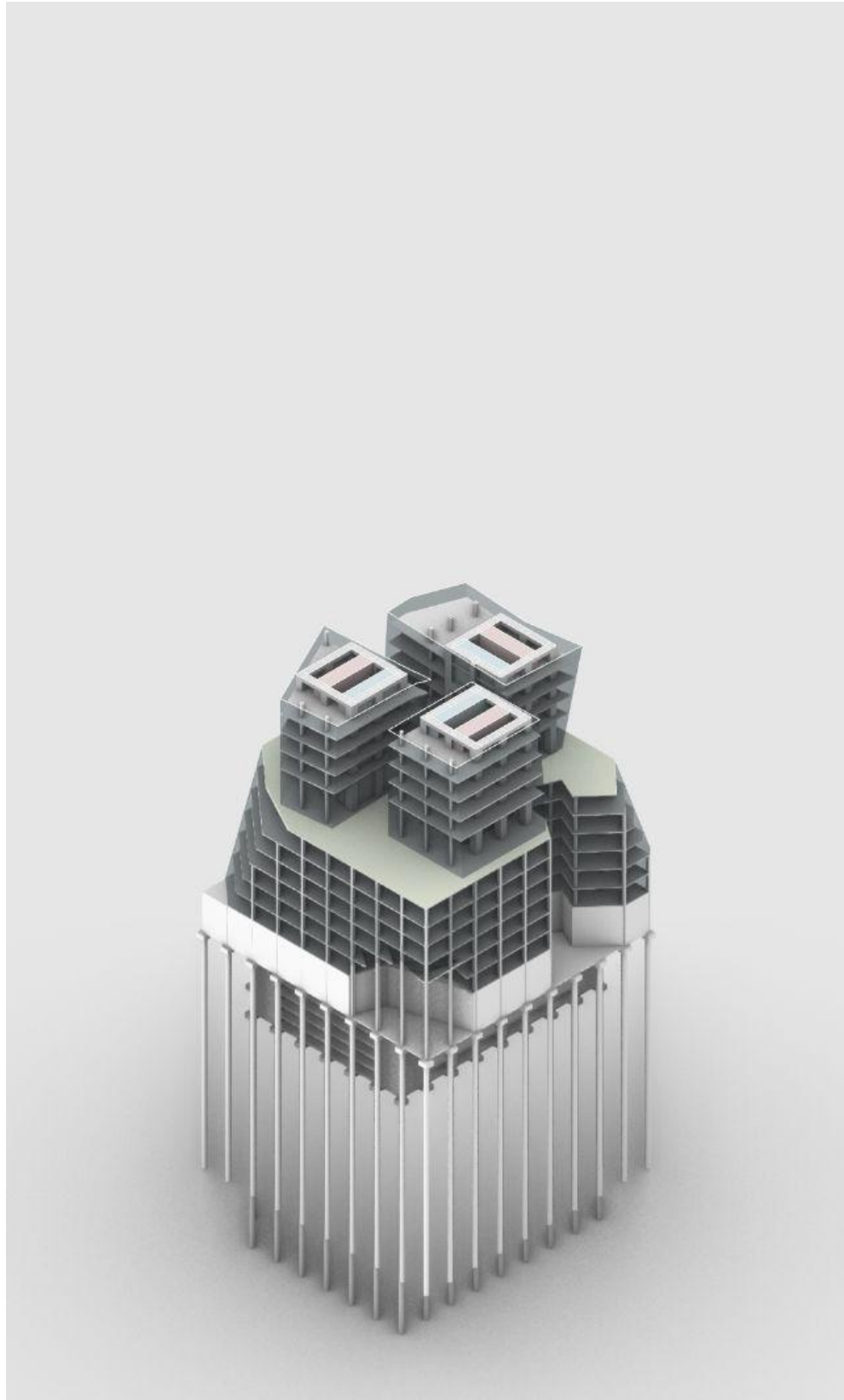
Podium, Level 3



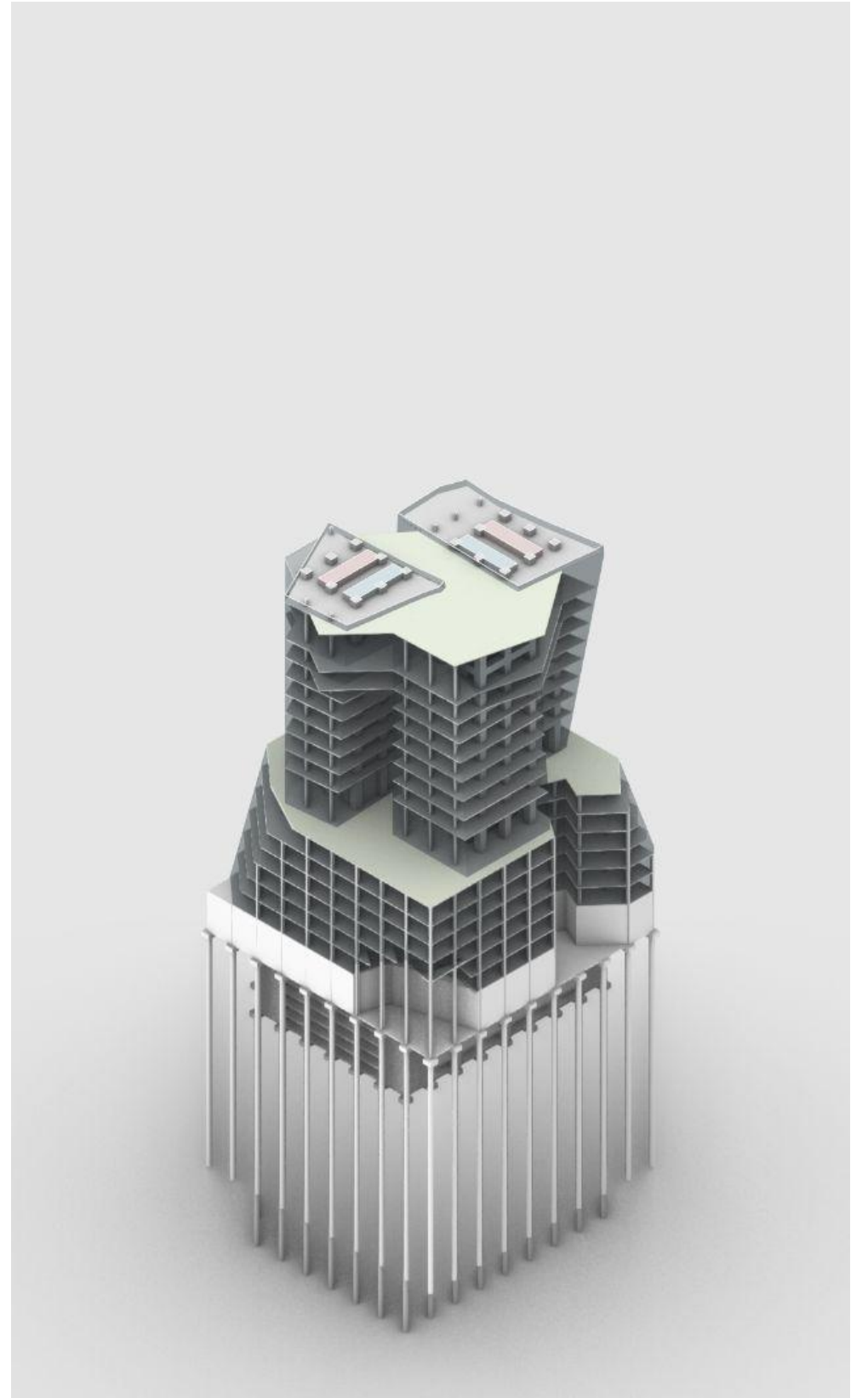
Podium, Level 7



Tower, Level 8



Tower, Level 12



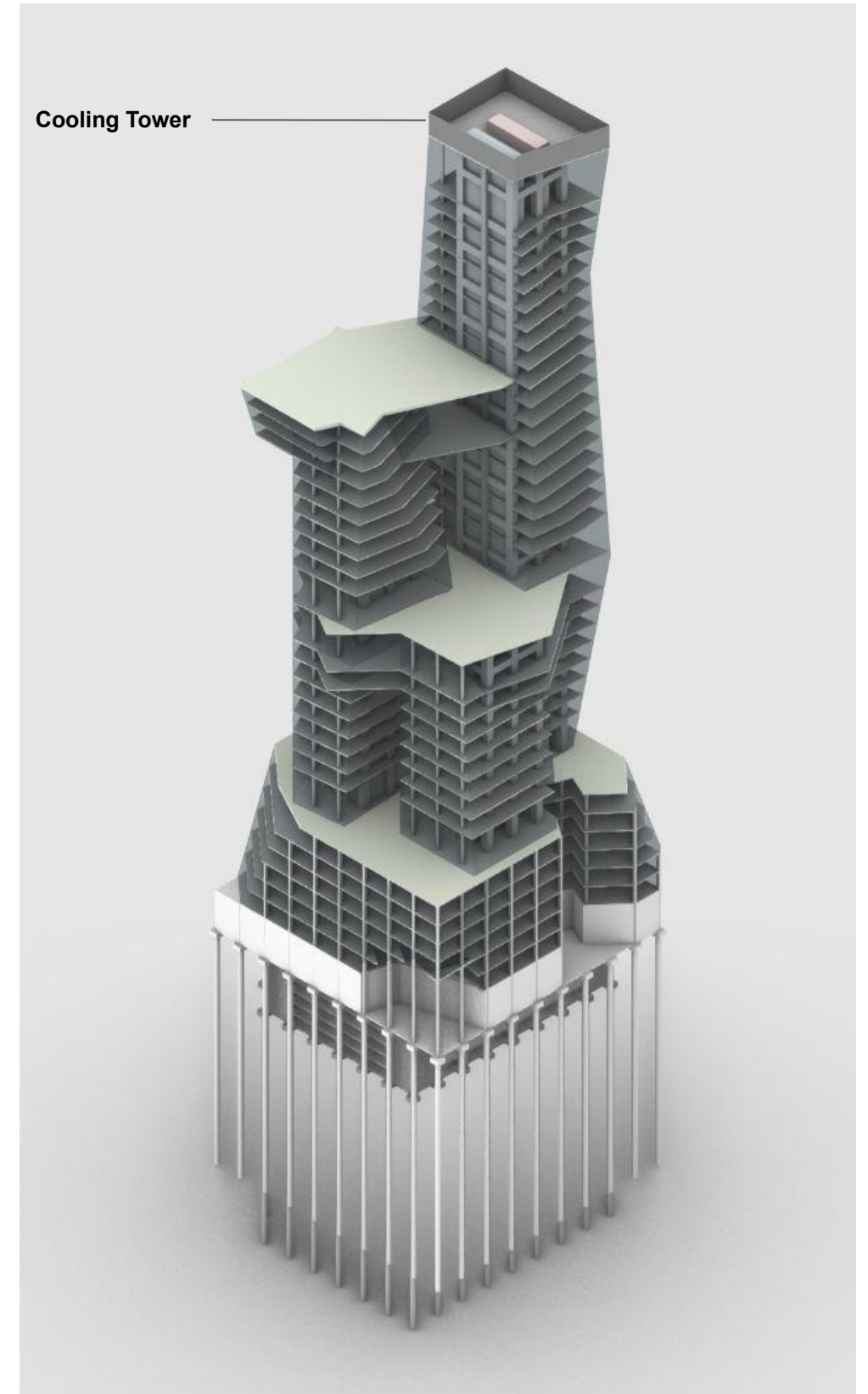
Tower, Level 18



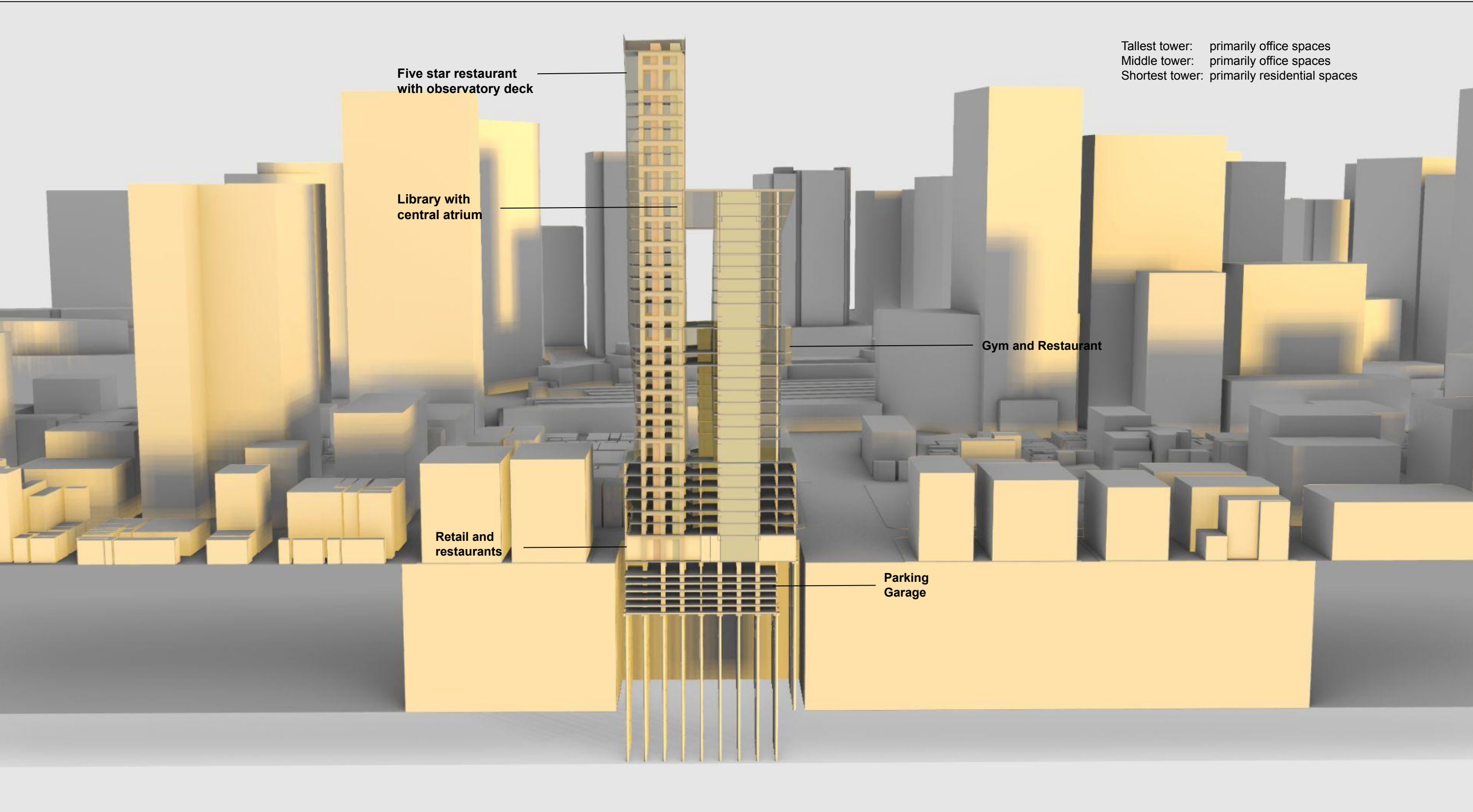
Crown, Level 26



Crown, Level 30



Crown, Level 37



Five star restaurant  
with observatory deck

Library with  
central atrium

Retail and  
restaurants

Gym and Restaurant

Parking  
Garage

Tallest tower: primarily office spaces  
Middle tower: primarily office spaces  
Shortest tower: primarily residential spaces



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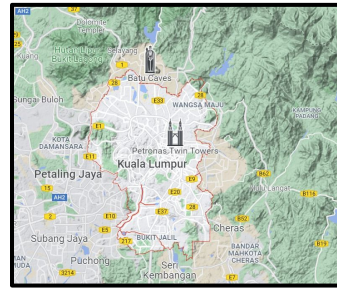
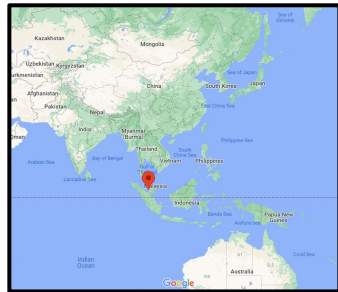
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Appendix

Location



Significant Architecture



Petronas Twin Towers



Istana Negara

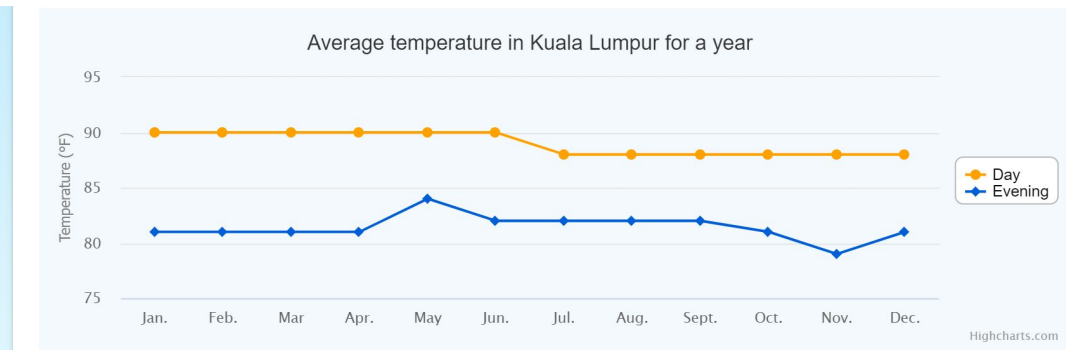


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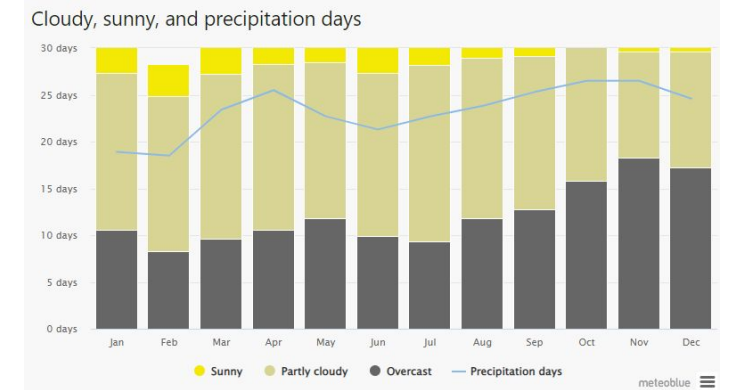
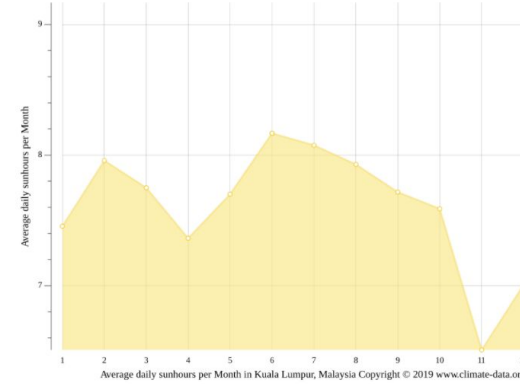
Sultan Abdul Samad Building

Average Temperature



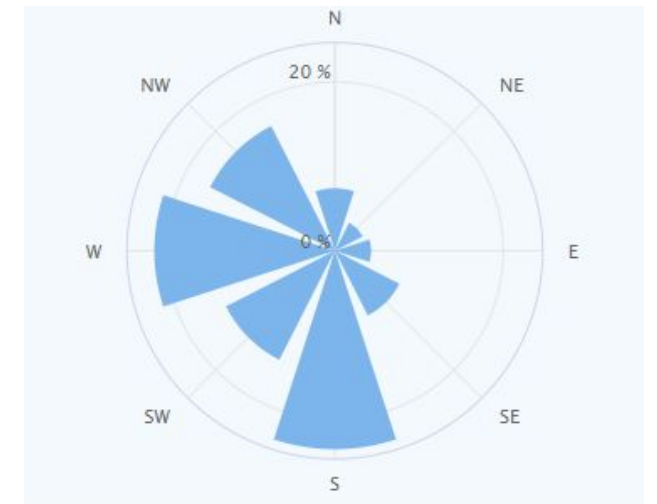
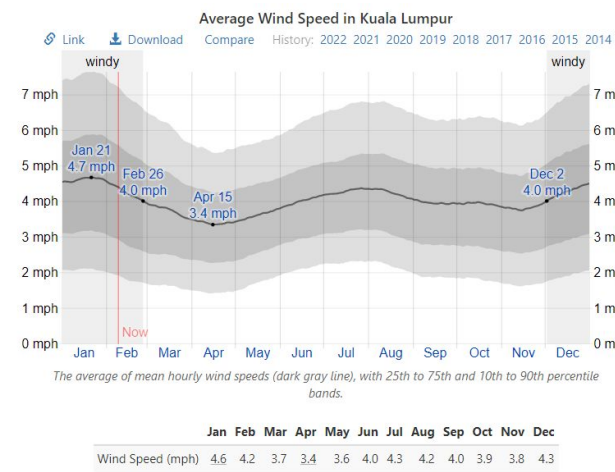
Heating Days = 0

Solar



- Sunlight hours range between 7 to 8 hours a month
- Most days of the month are either cloudy or overcast

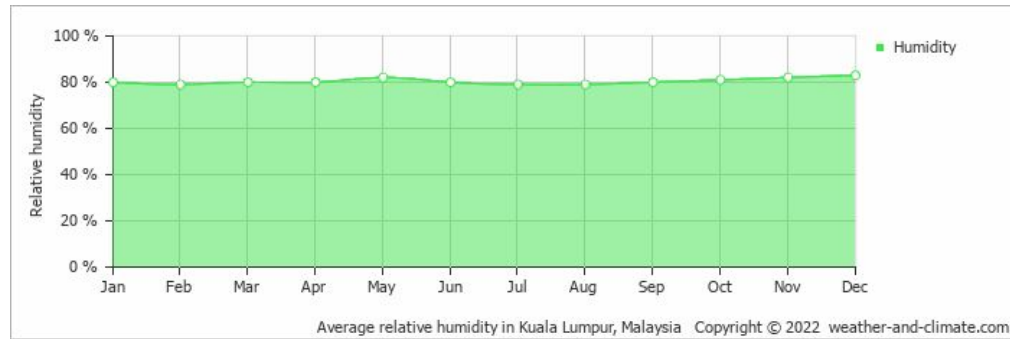
Wind/Air



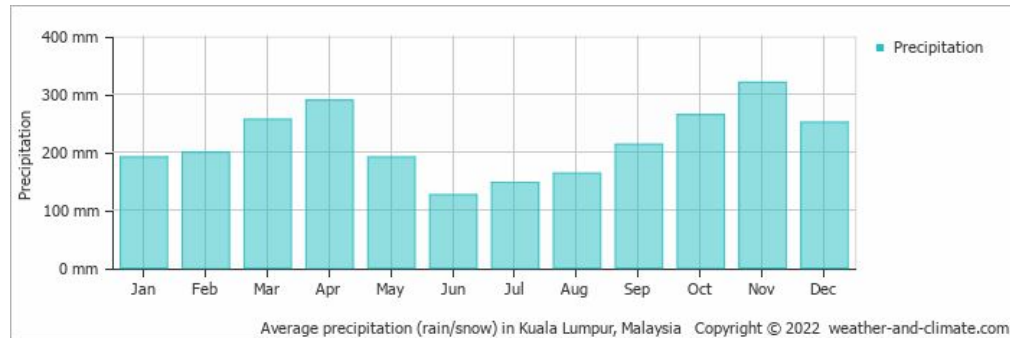
- Winds tend to blow in from the South and West,
- Year round speeds range between 3.4 - 4.6 mph
- Air quality- moderate (50 US AQI)

## Appendix

### Relative Humidity



### Precipitation



2 seasons: Wet & Dry

### Construction Materials

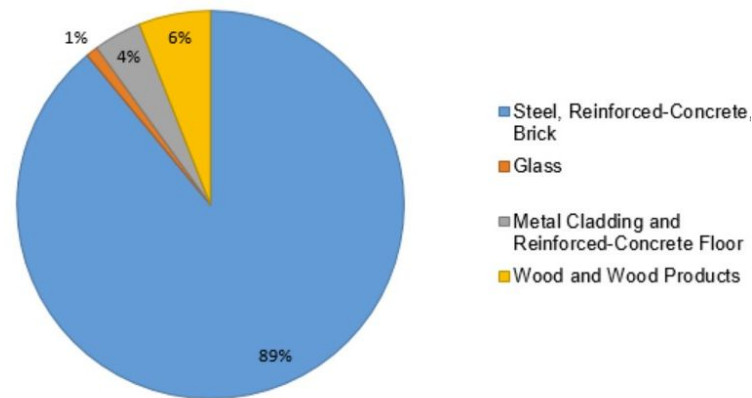


Fig. 1. Types of construction materials used (2013 to 2017)

### Natural Disasters

#### Flooding

- Happens quite often
- Heavy Rainfall
- Impervious cover



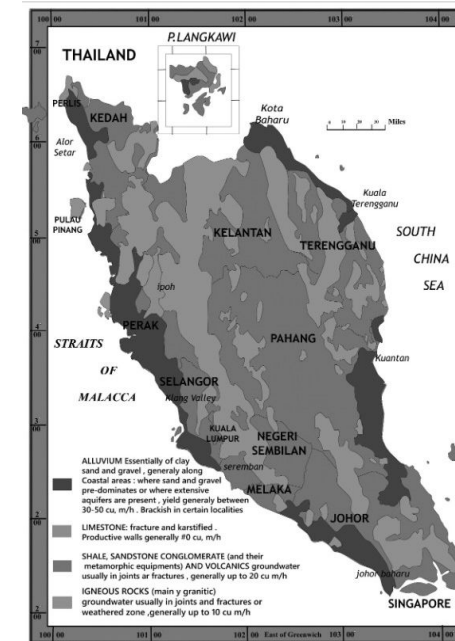
#### Landslides

- Usually around mountainous areas (heavy rainfall, erosion)
- [Article](#) shows landslide reports in the past month in the region.



### Soil Classification

- Predominantly shale, sandstone conglomerate, and volcanics
- Partially alluvium (clay, sand, and gravel) and igneous rocks

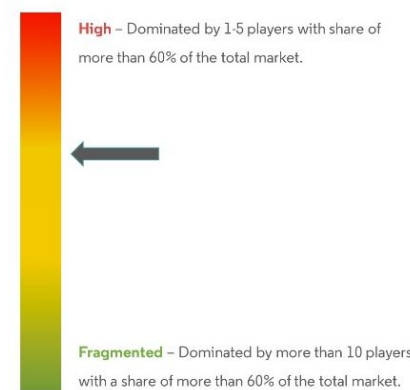


### Construction Market

#### Major Players

1. Bauer AG
2. China Communications Construction Group Ltd.
3. JGC Corp.
4. Gamuda Berhad
5. IJM Corporation Berhad

#### Market Concentration



### Sources

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3. [https://world-weather.info/archive/malaysia/kuala\\_lumpur/](https://world-weather.info/archive/malaysia/kuala_lumpur/)
4. <https://weatherspark.com/y/113829/Average-Weather-in-Kuala-Lumpur-Malaysia-Year-Round>
5. [https://world-weather.info/archive/malaysia/kuala\\_lumpur/](https://world-weather.info/archive/malaysia/kuala_lumpur/)
6. <https://weather-and-climate.com/average-monthly-precipitation-Rainfall,Kuala-Lumpur,Malaysia>
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8. <https://en.climate-data.org/asia/malaysia/kuala-lumpur/kuala-lumpur-715107/>

