



MVSA Architect

## Terms of Reference

<b>Course</b>	: Architecture Design Studio 6
<b>Program</b>	: Bachelor of Architecture (Undergraduate)
<b>Year / Semester</b>	: Year 3 of 4 – Semester 6 of 8
<b>Credit Load</b>	: Studio-based (Design Core)
<b>Meetings</b>	<ul style="list-style-type: none"><li>: 16 weeks (including final presentation)</li><li>• 2 meetings per week<ul style="list-style-type: none"><li>– <b>Meeting 1:</b> Progress Report / Design Supervision</li><li>– <b>Meeting 2:</b> Design Workshop + Supervision</li></ul></li></ul>
<b>Project Type</b>	: Individual Project

## COURSE OVERVIEW

Architecture Design Studio 6 is an advanced undergraduate design studio that focuses on the design of high-rise, mixed-use buildings in an urban context. The course develops students' ability to integrate complex programs, vertical circulation systems, structural logic, environmental strategies, and urban design principles into a coherent architectural proposal. Through an individual project, students are challenged to move beyond isolated building design and engage with issues of density, public space, and the relationship between architecture and the city.

The studio emphasizes a podium-and-tower typology as a framework for exploring vertical urbanism. Students work through iterative design development—from site and program analysis to massing, apartment typologies, façade articulation, and technical resolution—while strengthening professional communication skills. By the end of the course, students are expected to demonstrate design control at the scale of both the building and its urban interface, appropriate to the complexity of a mixed-use high-rise in a rapidly developing city.

## PROJECT TITLE

### **THE VERTICAL NEIGHBORHOOD: MIXED-USE ARCHITECTURE FOR URBAN LIVING**

#### **Project Outline**

The project is located on a ±2-hectare urban site in Bandar Lampung, Indonesia, within an emerging mixed-use corridor characterized by predominantly low-mid rise development and increasing pressure for densification. The urban design constraints include low-rise surrounding fabric, limited public open space, high dependence on private vehicles, weak pedestrian connectivity, and challenging climatic conditions (heat, glare, and rainfall).

Students are required to design a 20–25 storey mixed-use high-rise tower that integrates residential apartments, retail, parking, and public amenities into a compact vertical form. The design must respond to a tropical urban climate and establish a strong relationship between building, street, and city through podium articulation, public–private zoning, and climate-responsive massing.

Through this project, students are expected to develop a coherent vertical urban strategy, translate urban constraints into architectural form, resolve circulation and core logic in high-rise buildings, integrate housing typologies into a mixed-use tower, and demonstrate control of scale, proportion, and urban interface appropriate to a rapidly developing secondary city.

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## Objectives

- Analyze site and urban context
- Develop integrated conceptual solutions for mixed-use buildings
- Resolve functional, spatial, and vertical circulation in high-rise design
- Apply structural, environmental, and technical principles
- Communicate architectural ideas effectively through professional drawings, models, and presentations

## WEEKLY COURSE PLAN

Week	Topic / Activity	Output / Focus
1	Studio Introduction, Briefing & Site Overview	Understanding the brief, initial site reading, project scope
2	Urban Context & Precedent Studies	Urban analysis diagrams, precedent case study boards
3	Program Development & Space Requirements —Assessment 1	Program matrix, area calculations, adjacency diagrams
4	Concept Development & Massing Studies	Concept statement, initial massing models/sketches
5	Zoning, Core & Vertical Circulation	Core layout diagrams, zoning sections
6	Structural & Environmental Strategy	Structural grid logic, climate response diagrams
7	Concept & Massing —Assessment 2	Presented concept, massing model, feedback integration
8	Apartment Typologies & Unit Layouts	Typical unit plans, unit mix strategy
9	Podium Design & Retail Integration	Podium floor plans, street interface studies
10	Façade Articulation & Building Envelope	Façade concepts, shading & envelope systems
11	Parking, Services & Building Systems —Assessment 3	Parking layouts, service zoning diagrams
12	Design Development	Refined plans, sections, elevations
13	Sectional Design & Spatial Sequences	Key sections, vertical experience diagrams
14	Final Drawings & Model Development —Assessment 4	Near-final drawing set, 3D model
15	Pre-Final Review & Presentation Setup	Final revisions, board composition
16	Final Review & Presentation	Complete presentation set & jury review

## ASSESSMENT PLAN

- **Assessment 1:** Early formative evaluation; focuses on understanding site and program.
- **Assessment 2:** Mid-term concept evaluation; students show design development and massing.
- **Assessment 3:** Comprehensive technical review; ensures apartment layouts, podium, systems, and façade concepts are resolved.
- **Assessment 4:** Detailed technical evaluation before final presentation; focuses on refinement.

- **Final Review:** Summative assessment; evaluates overall design, technical integration, and presentation skills.

Component	Week	Weight	Description
Assessment 1 – Site & Program Analysis	3	15%	Site analysis, urban context, program matrix, adjacency diagrams
Assessment 2 – Concept & Massing	7	20%	Concept statement, massing models, zoning, initial design concept
Assessment 3 – Technical Resolution	11	20%	Apartment typologies, podium design, circulation, building systems, façade strategies
Assessment 4 – Final Technical & Detail Resolution	14	15%	Refined sections, technical drawings, spatial sequences, detailed design elements
Final Review & Presentation	16	30%	Complete presentation boards, 3D model, final jury review and discussion

## Deliverables

- Site analysis & urban diagrams
- Program matrix & adjacency diagrams
- Conceptual massing models
- Floor plans, sections, elevations, typical unit layouts
- Structural, environmental, and circulation diagrams
- Façade / envelope design
- 3D digital model + renderings
- Final presentation boards

## References

1. Neufert, E. – *Architects' Data*, Wiley-Blackwell
2. De Chiara & Crosbie – *Time-Saver Standards for Building Types*, McGraw-Hill
3. NSW Government – *Apartment Design Guide*
4. CTBUH (Council on Tall Building and Urban Habitat), *Tall Buildings and Urban Habitat: Design, Construction and Technology*, 2018.
5. SNI 03-1733-2004 – *Tata Cara Perencanaan Lingkungan Perumahan*
6. NFPA 101 – *Life Safety Code*

# PROJECT BRIEF

## CONTEXT AND SITE OVERVIEW

**Location:** Bandar Lampung, Indonesia (need to be determine)

**Site Area:** ± 2 Ha (20,000 m<sup>2</sup>)

### Urban Context Characteristics:

- Predominantly low–mid rise fabric (2–8 floors)
- Increasing demand for vertical housing
- Mixed residential–commercial corridors

### Urban Issues to Address:

- Land efficiency through vertical density
- Street activation and podium interface
- Public–private spatial gradients
- Climate-responsive urban form

### Key Concepts & Rationale

- Vertical Urbanism
- Podium + Tower Typology
- Public–Private Gradient
- Tropical High-Rise Design
- Mixed-Use Integration
- Urban Interface & Permeability

### Design Challenges

- Structural grid and tower stability
- Fire egress, stair pressurization, refuge logic
- Lift core sizing and zoning
- Parking and service access
- Climate-responsive façade
- Noise, privacy, and vertical community

# PROJECT'S PROGRAM OVERVIEW

Required Building Height:  
20–25 storeys ( $\pm 65$ –85 meters total height)

Building Type: Single high-rise tower with podium

Main Functions:

- Residential (Apartments):
  - Studio
  - 2-Bedroom
  - 3-Bedroom
- Commercial / Retail (Podium Level):
  - Anchor medium-supermarket
  - Supporting retail tenants
- Parking:
  - Basement / Podium parking
- Amenities:
  - Gym
  - Swimming Pool
  - Urban Park & Playground

## BUILDING PROGRAM & AREA CALCULATIONS

Apartment minimum net areas:

Unit Type	Net Area*	Gross Area (+15%)
Studio	35 m <sup>2</sup>	40 m <sup>2</sup>
2BR	70 m <sup>2</sup>	80 m <sup>2</sup>
3BR	95 m <sup>2</sup>	110 m <sup>2</sup>

Add **+15% Gross Factor** for walls, shafts, internal circulation.

\*SNI 03-1733-2004

### Unit Mix Calculation

The unit mix determines how many studio, 2-bedroom, and 3-bedroom apartments a building should contain. It ensures:

- Functional diversity for residents
- Market realism (affordability, family size)
- Efficient use of floor area and building height
- Compliance with local housing guidelines

For a mixed community, a common ratio:

- Studio: 30–35%
- 2BR: 45–50%
- 3BR: 15–20%

This is based on typical market demand (young professionals vs. families).

### **GFA (Gross Floor Area) Calculation:**

Site area :  $\pm 2$  hectares = 20,000 m<sup>2</sup>

Podium, public spaces, and parking occupy part of site: ~30–40% of site ( $\approx 6,000$ –8,000 m<sup>2</sup>)

Remaining buildable area for tower residential GFA: ~12,000–14,000 m<sup>2</sup> footprint

**Tower footprint\*** : ~700–900 m<sup>2</sup> per floor (reasonable for a single high-rise tower with structural core and circulation)

**Residential floors:** 20 floors (as in TOR, 20–25 storeys total)

Residential GFA = Floor plate/tower footprints  $\times$  Residential floors

$$\begin{aligned} &= 750 \text{ m}^2 \times 20 \\ &= 15,000 \text{ m}^2 \end{aligned}$$

Rounded to **~18,000 m<sup>2</sup>** for teaching purposes (allows **15–20% circulation, walls, etc.**)

\*CTBUH and NSW Apartment Design Guide

### **Proposed Unit Mix**

Type	Gross/Unit	Ratio	GFA allocation per unit (GFA $\times$ Ratio)	Number of Units* (GFA allocation / Gross Unit)	Total GFA
Studio	40 m <sup>2</sup>	30%	5,400 m <sup>2</sup>	80	3,200 m <sup>2</sup>
2 BR	80 m <sup>2</sup>	50%	9,000 m <sup>2</sup>	120	9,600 m <sup>2</sup>
3 BR	110 m <sup>2</sup>	20%	3,600 m <sup>2</sup>	48	5,280 m <sup>2</sup>

\*Numbers were slightly adjusted from calculated numbers for educational manageability and ensures practical floor layouts.

Total Units = 248 units  $\approx$  12 units/floor

## TOWER RESIDENTIAL FLOOR LAYOUT – UNIT DISTRIBUTION

- Total residential floors: 20
- Units per floor: 12 units (manageable for Year 3 studio)
- **Studio Units:** 80 total  $\rightarrow$  1–2 units per floor
- **2BR Units:** 120 total  $\rightarrow$  3–6 units per floor
- **3BR Units:** 48 total  $\rightarrow$  1–2 units per floor

Floor	Studio Units	2BR Units	3BR Units	Total Units / Floor
1–4	1 per floor	4 per floor	1 per floor	6 units
5–12	2 per floor	4 per floor	2 per floor	8 units
13–16	2 per floor	3 per floor	2 per floor	7 units
17–20	1 per floor	3 per floor	2 per floor	6 units

- Double-loaded corridor is assumed for efficient circulation.
- Unit stacking can vary slightly per floor depending on façade design and tower massing.
- Podium floors (1–4) also accommodate retail, parking, and amenities; **first residential floor starts at floor 5 if podium occupies 4 levels.**

### Tower Footprint & Residential GFA

The proposed residential tower is assumed to have a **floor plate of 750–900 m<sup>2</sup> per level**, consistent with high-rise residential standards. With **20 residential floors**, the gross floor area (GFA) for apartments is approximately **18,000 m<sup>2</sup>**, including 10–15% additional space for walls, corridors, and services.

This footprint is pedagogically appropriate for a Year 3 studio, allowing students to explore unit typologies, stacking strategies, façade design, and podium integration without excessive complexity.

### References:

1. CTBUH. Tall Buildings and Urban Habitat: Design, Construction and Technology, 2018
2. Neufert, E. *Architects' Data*, 41st Edition, Wiley-Blackwell, 2012
3. NSW Government. Apartment Design Guide – Part 3: Apartment Design and Floor Plate, 2015
4. SNI 03-1733-2004. Tata Cara Perencanaan Lingkungan Perumahan di Indonesia