Model a four-storey residential apartment building with compound wall and gate

Software: SketchUp

Task statement

Build a complete 3D model of a four-storey residential apartment building on its plot, working in millimetres. Use the supplied dimensioned diagrams (diagram_01.png and its details diagram_01_detail01.png to diagram_01_detail04.png) for layout and proportions.

Overall extents:

- Width: 10696.1 mm across the front, measured over the compound wall.
- Depth: 19082.2 mm front to back.
- Height: 15893.4 mm from ground to the top of the stair headroom.

Building program:

- Ground level: an open stilt or parking level on columns.
- Above it: three identical residential floors with interior partition walls, door and window openings, and floor slabs at each level.
- Each residential floor has projecting balconies on the front and rear faces, with slab edges and low parapet or balustrade walls.
- Recessed window bays and side projections run along the long elevation.
- A side staircase runs along one long face.
- An internal stair core rises through all floors.

Roof:

- A flat roof with a perimeter parapet that steps around the balcony projections.
- A stair headroom (mumty) block on the roof.
- A screen of vertical fins or louvers on the stair headroom.

Site:

- A perimeter compound wall surrounds the plot, with pilasters at its corners.
- A double-leaf entrance gate sits in the front compound wall.
- A paved, striped driveway or parking strip leads in from the gate.

Structure the model professionally:

- Make repeated elements (doors, windows, balcony units, fins, gate leaves) components and reuse them as instances across the three floors.
- Group major assemblies such as the floors, the roof, the stair, and the compound wall.
- Organise geometry on multiple tags that separate building elements, for example walls, slabs, doors and windows, stairs, and site or compound wall.
- Apply distinct materials to the main surfaces.

The model must read correctly in plan, front, right-side and isometric views consistent with the supplied diagrams.

Rubrics

- **R1:** The model shall use millimetres as its length unit.

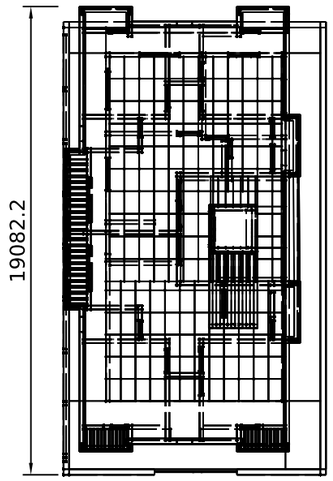
- **R2:** The model's overall width across the front, including the compound wall, shall be approximately 10696.1 mm.
- **R3:** The model's overall depth shall be approximately 19082.2 mm.
- **R4:** The model's overall height from ground to the top of the stair headroom shall be approximately 15893.4 mm.
- **R5:** The model shall contain an open ground-level stilt/parking floor beneath three residential floors.
- **R6:** The model shall include projecting balconies with parapets on each of the three residential floors.
- **R7:** The model shall include door and window openings in the exterior walls of the residential floors.
- **R8:** The model shall include an internal stair core rising through the floors to the roof.
- **R9:** The model shall include a side staircase along one long face of the building.
- **R10:** The model shall include a flat roof with a perimeter parapet wall.
- **R11:** The model shall include a rooftop stair headroom block with a screen of vertical fins or louvers.
- **R12:** The model shall include a perimeter compound wall around the plot.
- **R13:** The model shall include a double-leaf entrance gate in the front compound wall.
- **R14:** The model shall use component definitions with multiple instances for repeated elements such as doors, windows and balcony units.
- **R15:** The model shall organise geometry on multiple tags (layers) beyond the default tag.
- **R16:** The model shall apply multiple distinct materials to its surfaces.

Input files

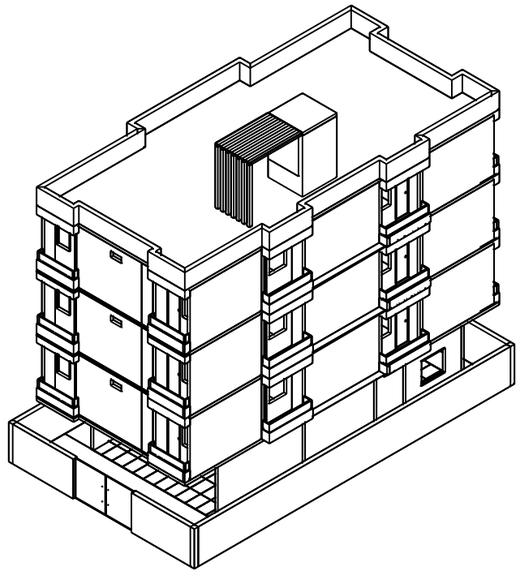
- task_files/diagrams/diagram_01.pdf
- task_files/diagrams/diagram_01.png
- task_files/diagrams/diagram_01_detail01.png
- task_files/diagrams/diagram_01_detail02.png
- task_files/diagrams/diagram_01_detail03.png
- task_files/diagrams/diagram_01_detail04.png

Deliverables

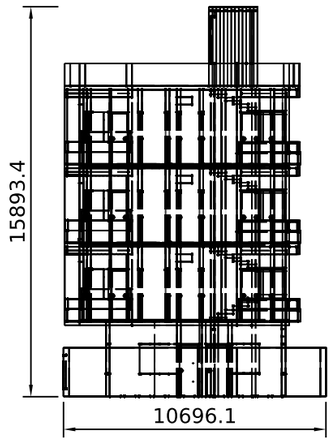
- **.skp:** output_files/project_files/g_3_elevation_new.skp: A single SketchUp model (g_3_elevation_new.skp) of the four-storey apartment building with balconies, roof stair headroom, compound wall and gate, built in millimetres with reused components, multiple tags and applied materials.



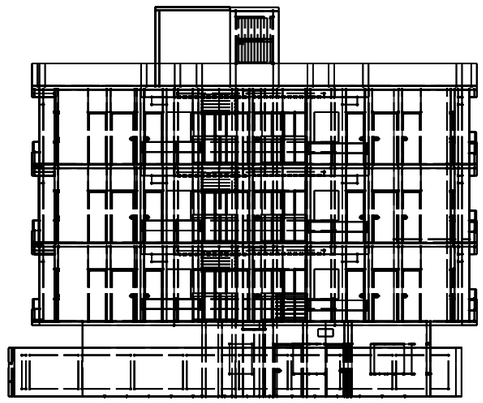
TOP VIEW



ISOMETRIC VIEW



FRONT VIEW



RIGHT SIDE VIEW

DRAWING TITLE

FOUR-STOREY RESIDENTIAL APARTMENT BUILDING WITH BALCONIES, COMPOUND WALL AND GATE

GENERAL NOTES

1. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED.
2. DO NOT SCALE; USE FIGURED DIMENSIONS.

GRAPHIC SCALE

0 5 m 10 m

UNITS

MILLIMETRES

SCALE	SIZE
1:250	**A3**

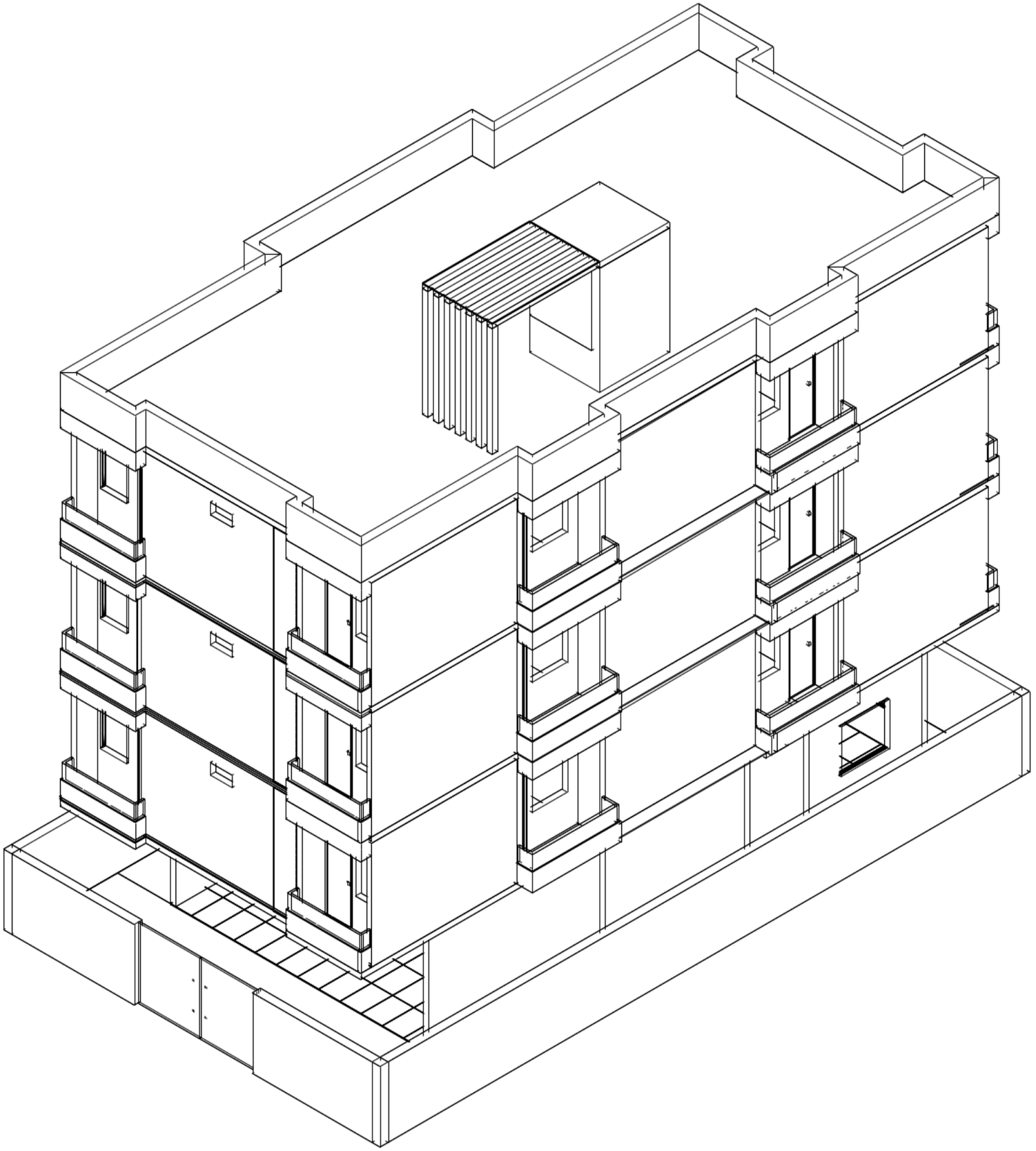
DRAWING NO.

MKV-97CA1D69-01

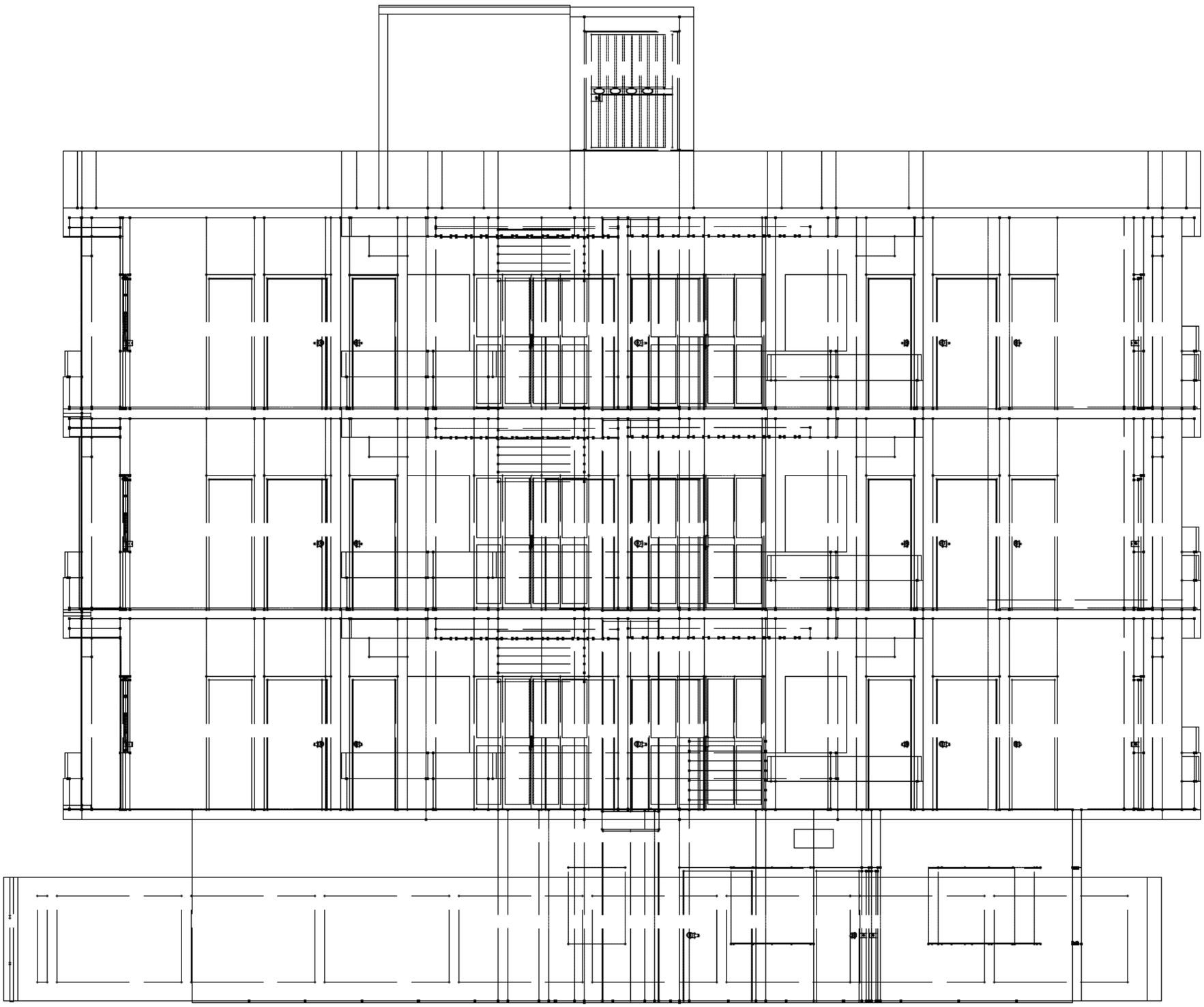
SHEET

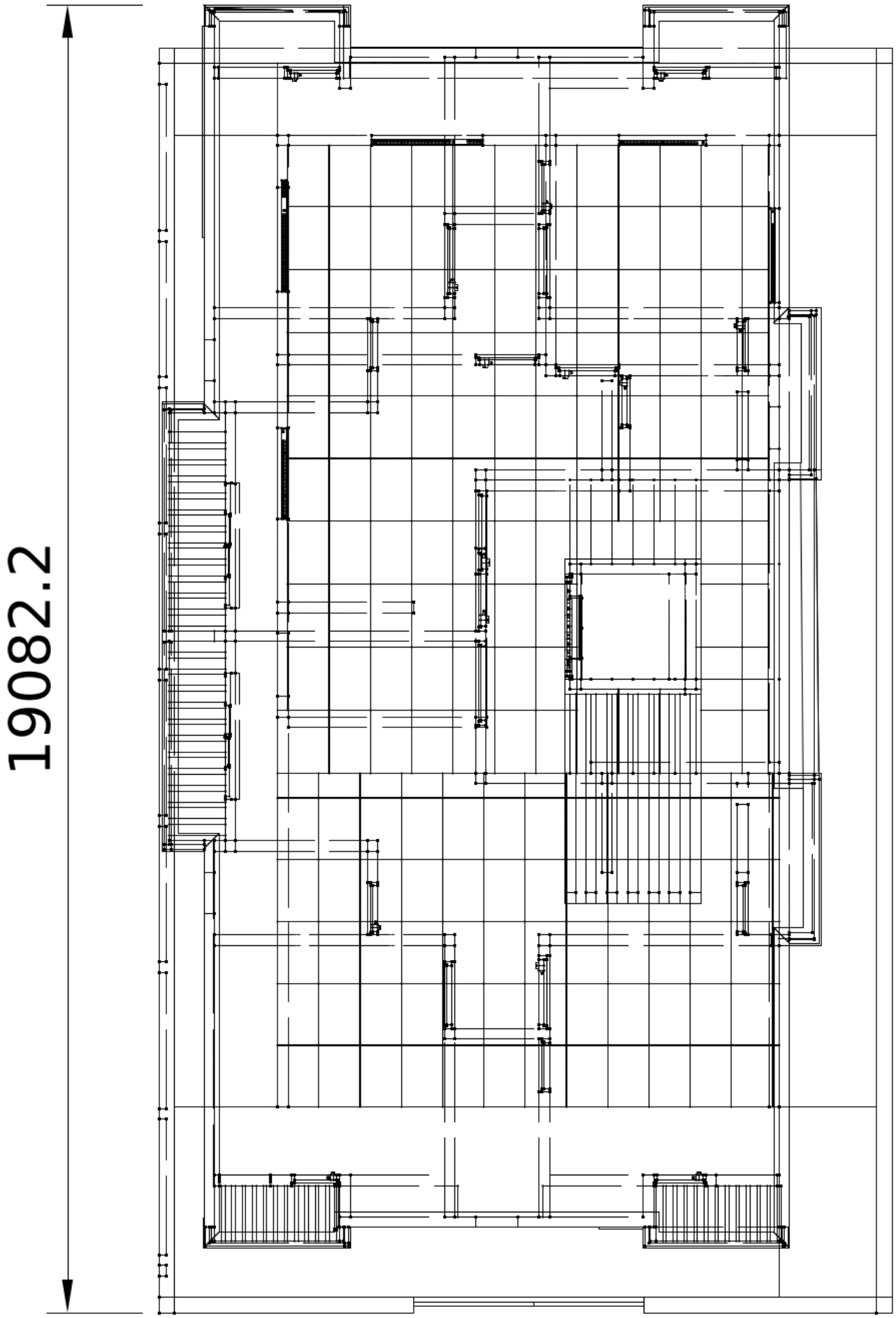
A-201

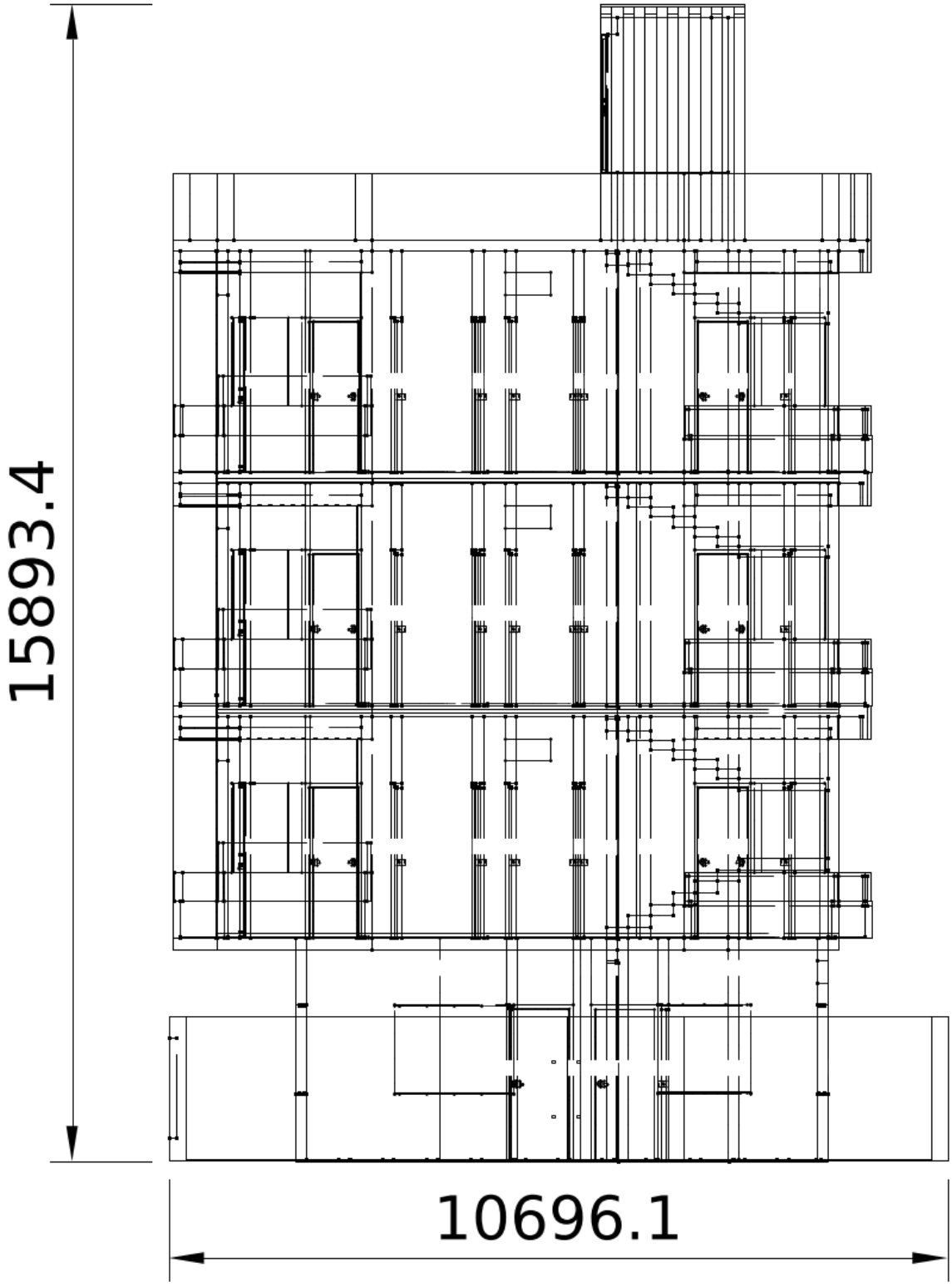
1 OF 1



ISOMETRIC VIEW




19082.2



FRONT VIEW