Model a two-storey residential apartment building with rooms and furniture

Software: Autodesk Revit

Task statement

Build a two-storey residential apartment block from the supplied dimensioned diagrams: diagram_01.png, diagram_01_detail01.png, diagram_01_detail02.png, diagram_01_sheet2.png, diagram_01_detail03.png, diagram_01_detail04.png, diagram_01_detail05.png and diagram_01_detail06.png.

Units: set the project length unit to imperial feet. Dimensions on the plans are annotated in millimetres. For example, 15443.2 mm equals 50'-8".

Levels: set Level 1 at 0 mm and Level 2 at 3050 mm. The overall building height is about 6400.8 mm.

Footprint: the plan is near-square, 15443.2 mm by 15443.2 mm.

Level 1 plan dimensions:

- Bottom chain: 3200.4 / 1828.8 / 2921 / 2184.4 / 5308.6 mm.
- Left chain: 3708.4 / 4013.2 / 3733.8 / 3987.8 mm.

Level 2 plan dimensions:

- Bottom chain: 3200.4 / 1828.8 / 2921 / 2184.4 / 2057.4 / 3251.2 mm.
- Left chain: 3708.4 / 4013.2 / 3886.2 / 3835.4 mm.

Layout: arrange two apartments on each floor around a central lobby and stair core.

- North apartment: kitchen, utility, toilet, bedroom, living/dining, master bedroom with dress area and en-suite toilet, and two balconies on the north face.
- South apartment: kitchen/dining, utility, toilet, bedroom, living, master bedroom with toilet, and a balcony on the south face.
- The lobby connects to a two-flight stair with winders on the east side, rising from Level 1 to Level 2.

Model the following elements:

- Exterior and interior walls on both storeys.
- Floor slabs.
- Interior doors, including double main entrance doors from the lobby into each apartment.
- Windows in the exterior walls.
- Railings at the balconies and the stair.
- Room elements for every room on both levels, about 34 in total.
- Furniture and fixtures placed as shown: beds, sofas, dining tables with chairs, coffee tables, dressers, kitchen counters with sinks and cooktops, WCs, bathtubs, washbasins and planters.

Views:

- Produce Level 1 and Level 2 floor plans carrying the overall and chain dimensions listed above.
- Produce a top view, a front elevation, a right side elevation and an isometric 3D view.

Rubrics

- **R1:** The model shall have a building footprint of approximately 15443.2 mm by 15443.2 mm.
- **R2:** The model shall contain at least 30 wall elements forming the exterior envelope and interior partitions

of both apartments.

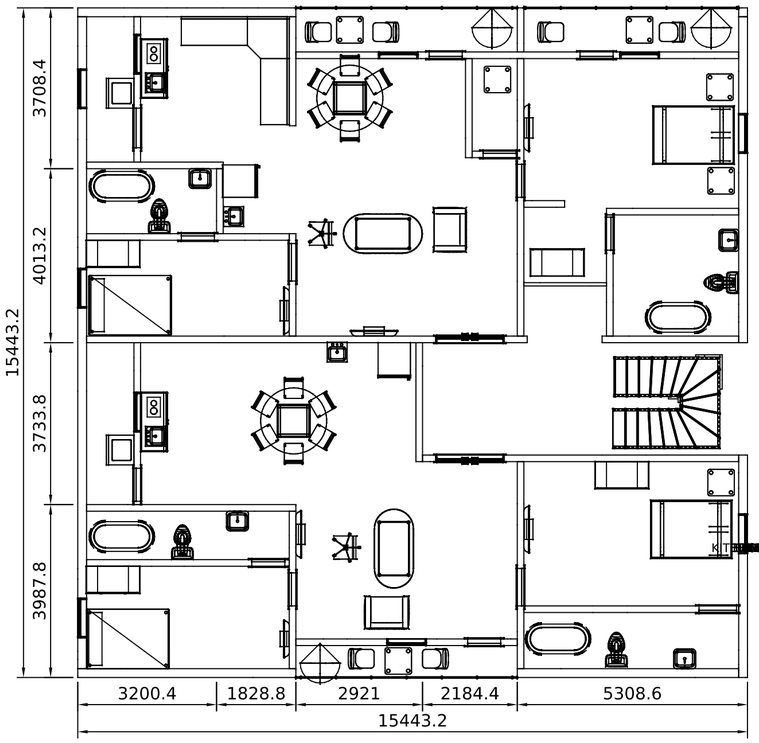
- **R3:** The model shall contain floor slab elements for the building.
- **R4:** The model shall contain at least 30 door instances, including double-leaf entrance doors from the lobby into the apartments.
- **R5:** The model shall contain at least 25 window instances hosted in exterior walls.
- **R6:** The model shall contain a stair with winders connecting Level 1 to Level 2 in the east-side core.
- **R7:** The model shall contain railing elements at the balconies and/or the stair.
- **R8:** The model shall contain room elements on both levels, approximately 34 in total.
- **R9:** The model shall contain at least 100 furniture and fixture instances, including beds, sofas, dining tables with chairs, WCs, bathtubs and kitchen counters.
- **R10:** The model shall have an overall height of approximately 6400.8 mm across two storeys.
- **R11:** The drawing shall include a Level 1 floor plan dimensioned with an overall 15443.2 and a bottom chain of 3200.4 / 1828.8 / 2921 / 2184.4 / 5308.6.
- **R12:** The drawing shall include a Level 2 floor plan dimensioned with an overall 15443.2 and a left chain of 3708.4 / 4013.2 / 3886.2 / 3835.4.
- **R13:** The drawing shall include a front elevation, a right side elevation and an isometric 3D view.
- **R14:** The model shall define two levels, Level 1 at 0 mm and Level 2 at 3050 mm.
- **R15:** The model shall use a feet-based (imperial) project length unit.

Input files

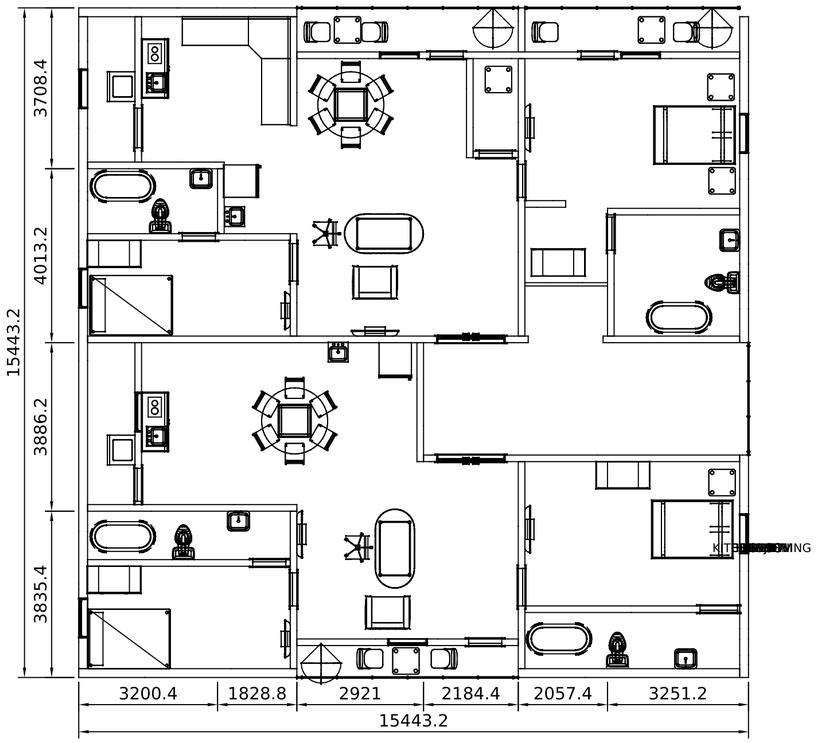
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- task_files/diagrams/diagram_01_detail04.png
- task_files/diagrams/diagram_01_detail05.png
- task_files/diagrams/diagram_01_detail06.png

Deliverables

- **.rvt:** output_files/project_files/Project34.rvt: A native Revit project (.rvt) in feet-based units containing the two-level apartment building with walls, slabs, doors, windows, stair, railings, rooms and furniture, plus dimensioned plan, elevation and 3D views.
- **.ifc:** output_files/project_files/Project34.ifc: IFC export of the model in the same units.



LEVEL 1 PLAN



LEVEL 2 PLAN

1 / A-101 **TWO-STOREY RESIDENTIAL HOUSE/APARTMENT REVIT**
SCALE: 1:100

DRAWING TITLE
TWO-STOREY RESIDENTIAL HOUSE/APARTMENT REVIT MODEL WITH ROOMS AND FURNITURE

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

GRAPHIC SCALE
0 2.5 m 5 m

UNITS
MILLIMETRES

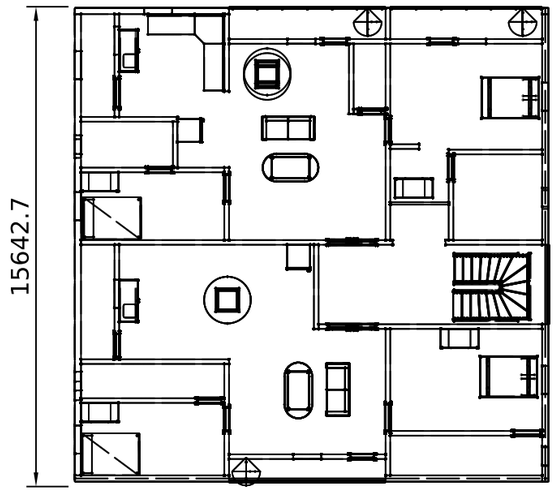
SCALE
1:100

SIZE
A2

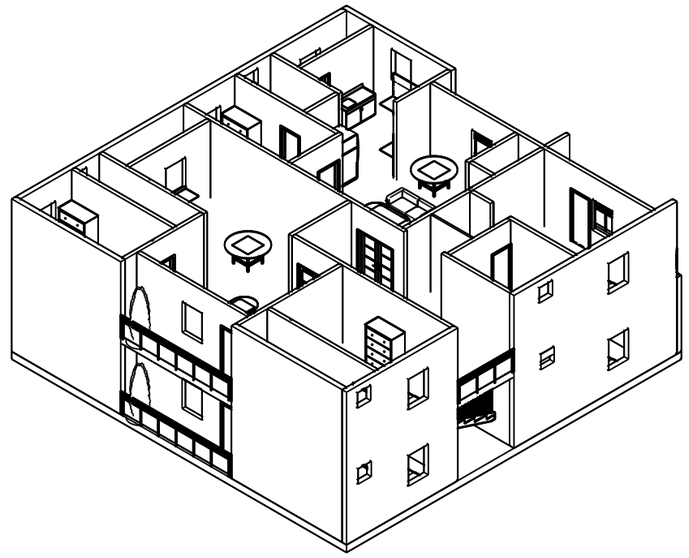
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SHEET
A-101

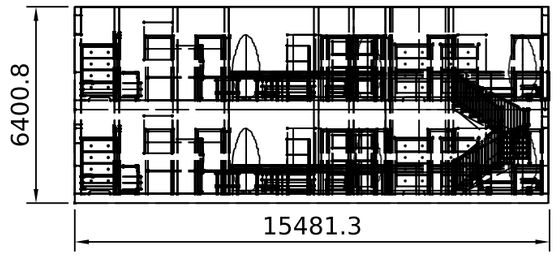
1 OF 2



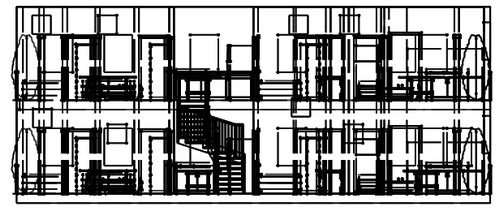
TOP VIEW



ISOMETRIC VIEW



FRONT VIEW



RIGHT SIDE VIEW

DRAWING TITLE

TWO-STOREY RESIDENTIAL HOUSE/APARTMENT REVIT MODEL WITH ROOMS AND FURNITURE

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
1:200	**A3**

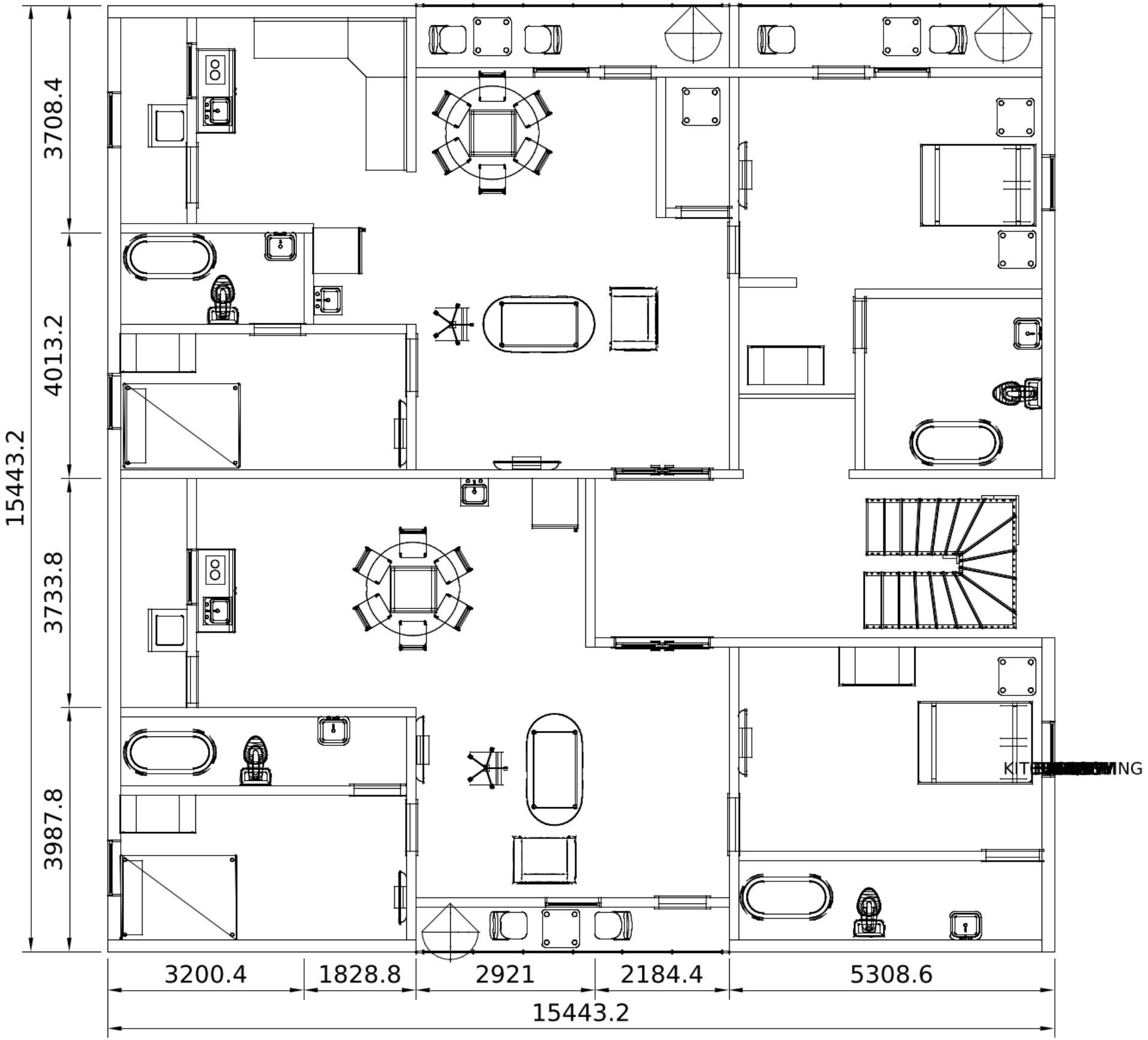
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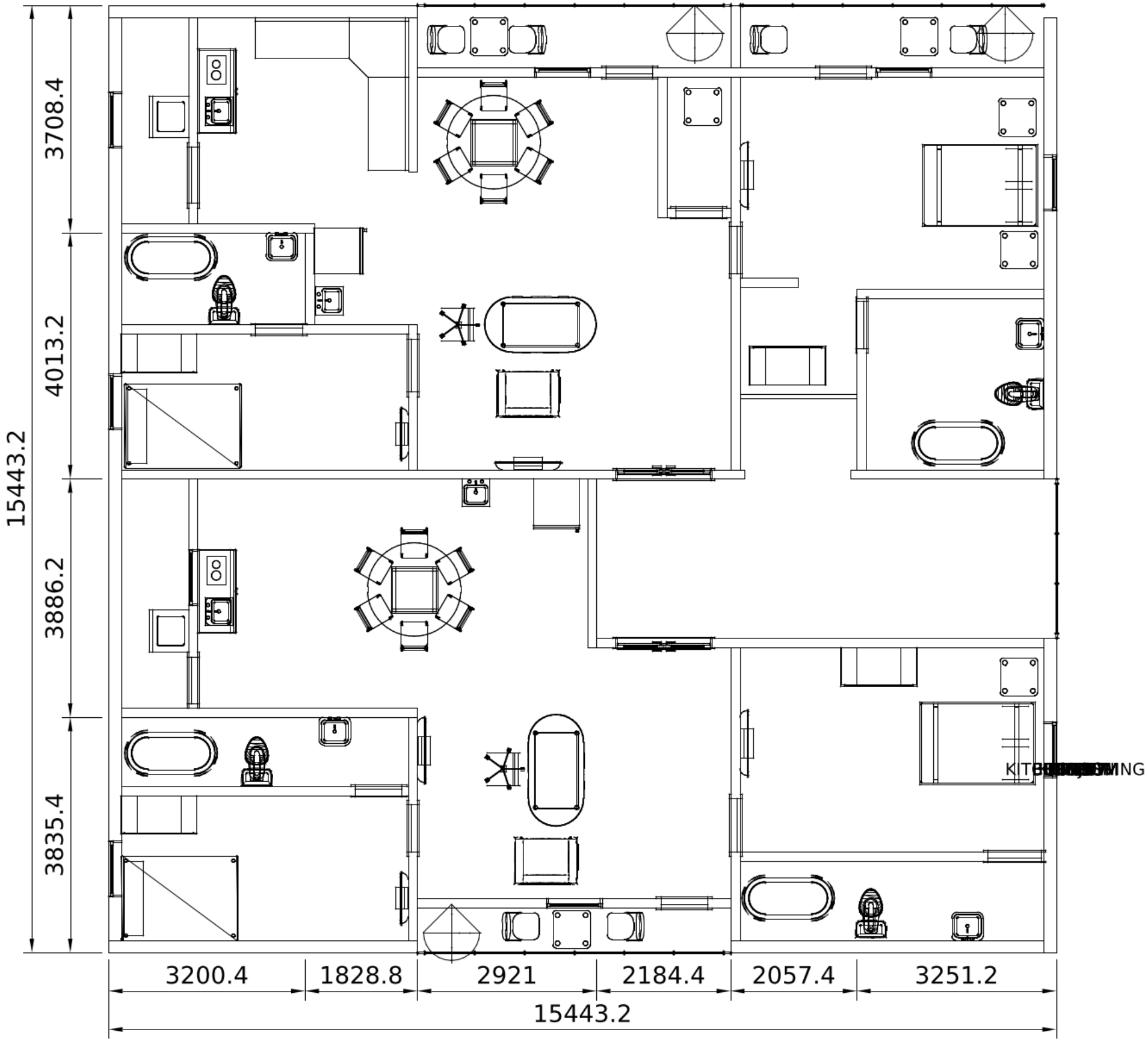
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A-102

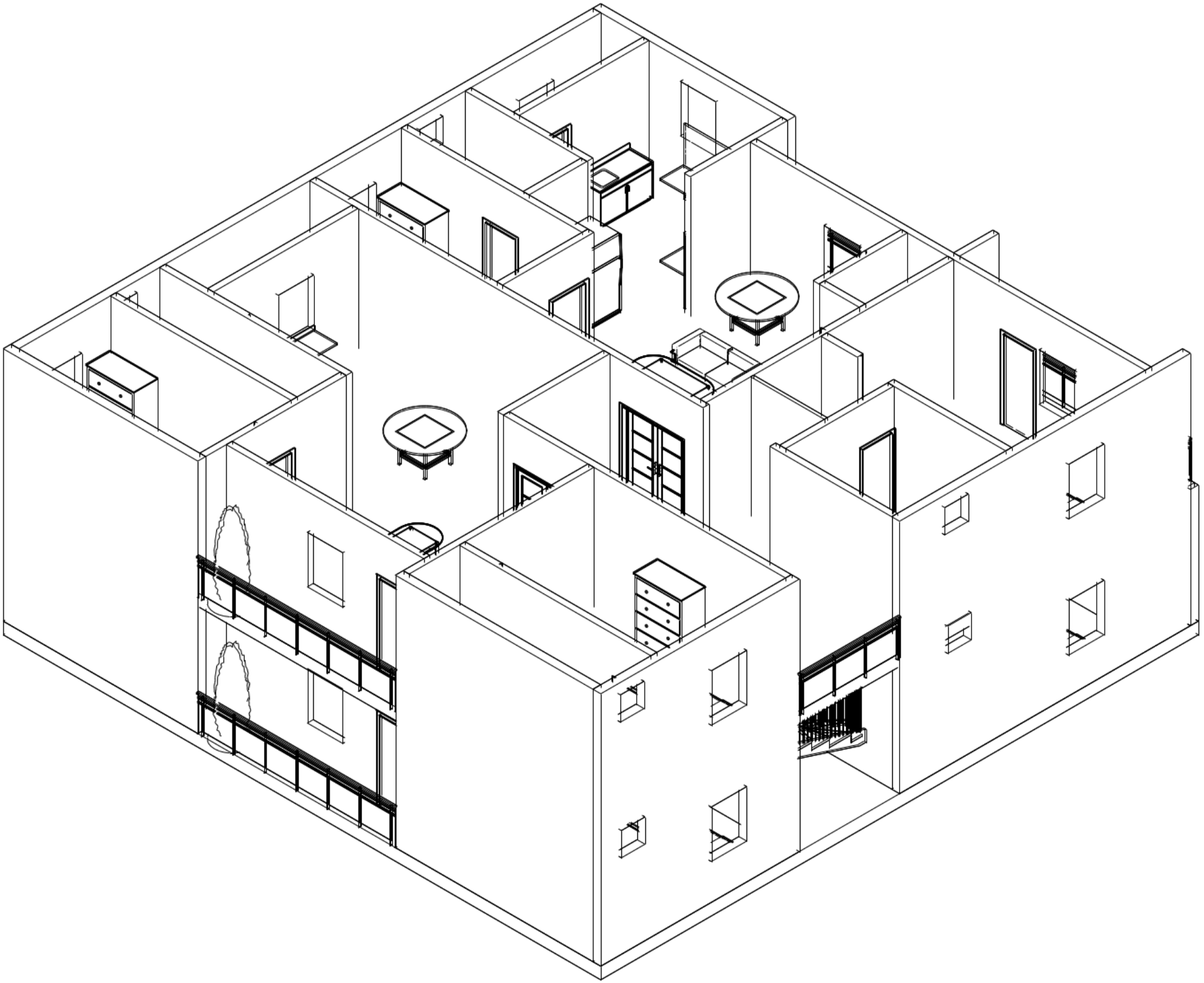
2 OF 2


15443.2
3708.4
4013.2
3733.8
3987.8
3200.4
1828.8
2921
2184.4
5308.6
15443.2

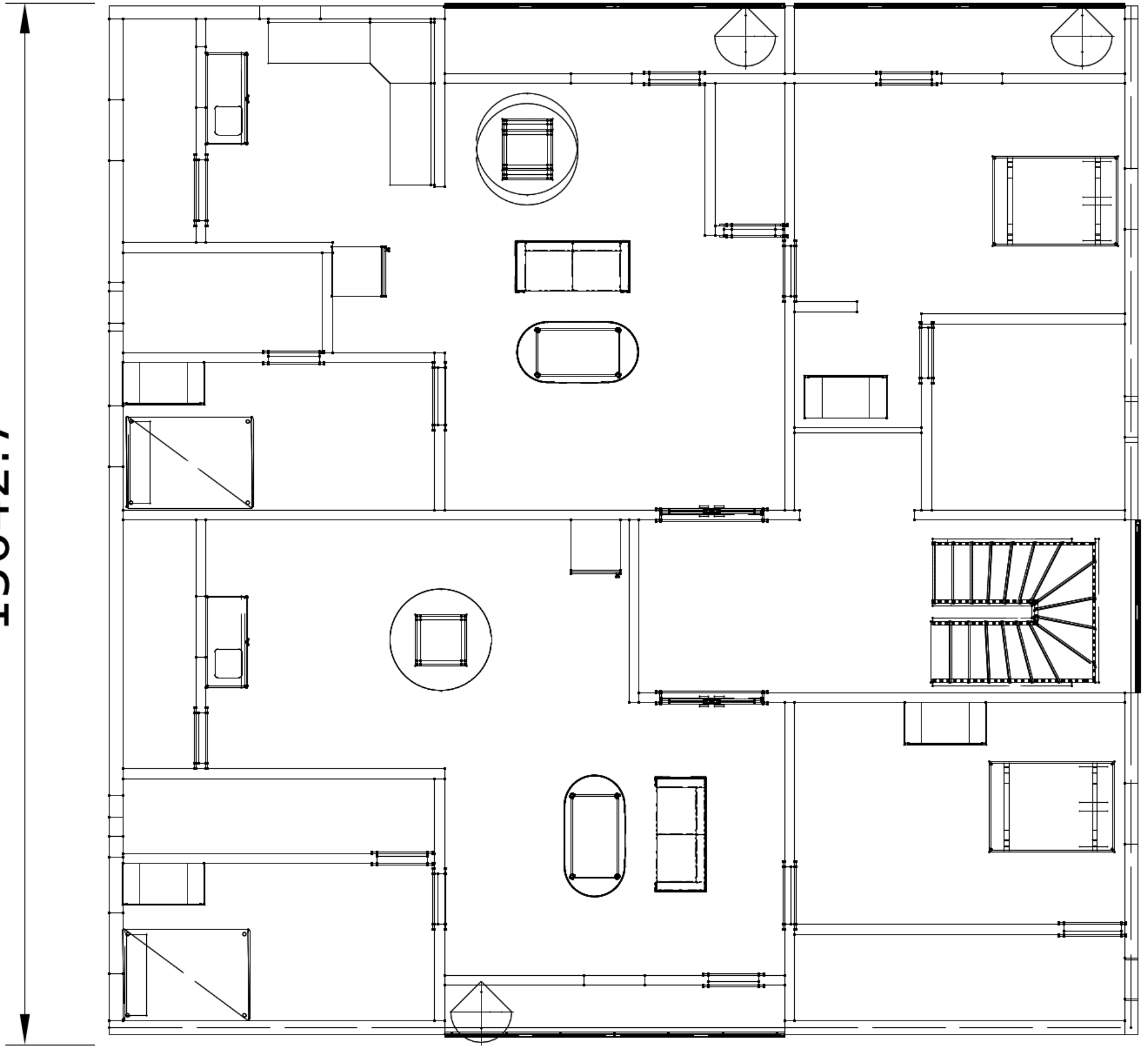
LEVEL 1 PLAN

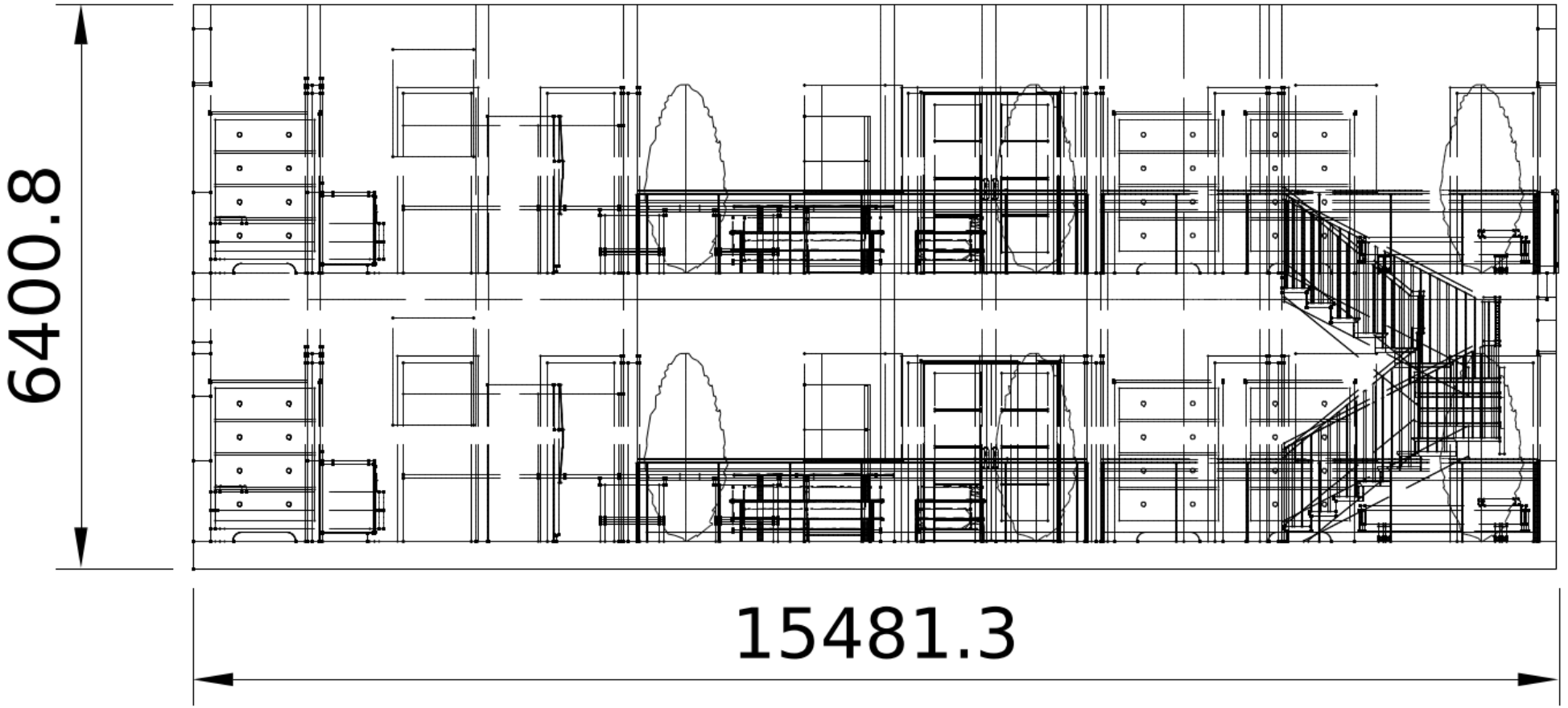

15443.2
3708.4
4013.2
3886.2
3835.4
3200.4
1828.8
2921
2184.4
2057.4
3251.2
15443.2

LEVEL 2 PLAN

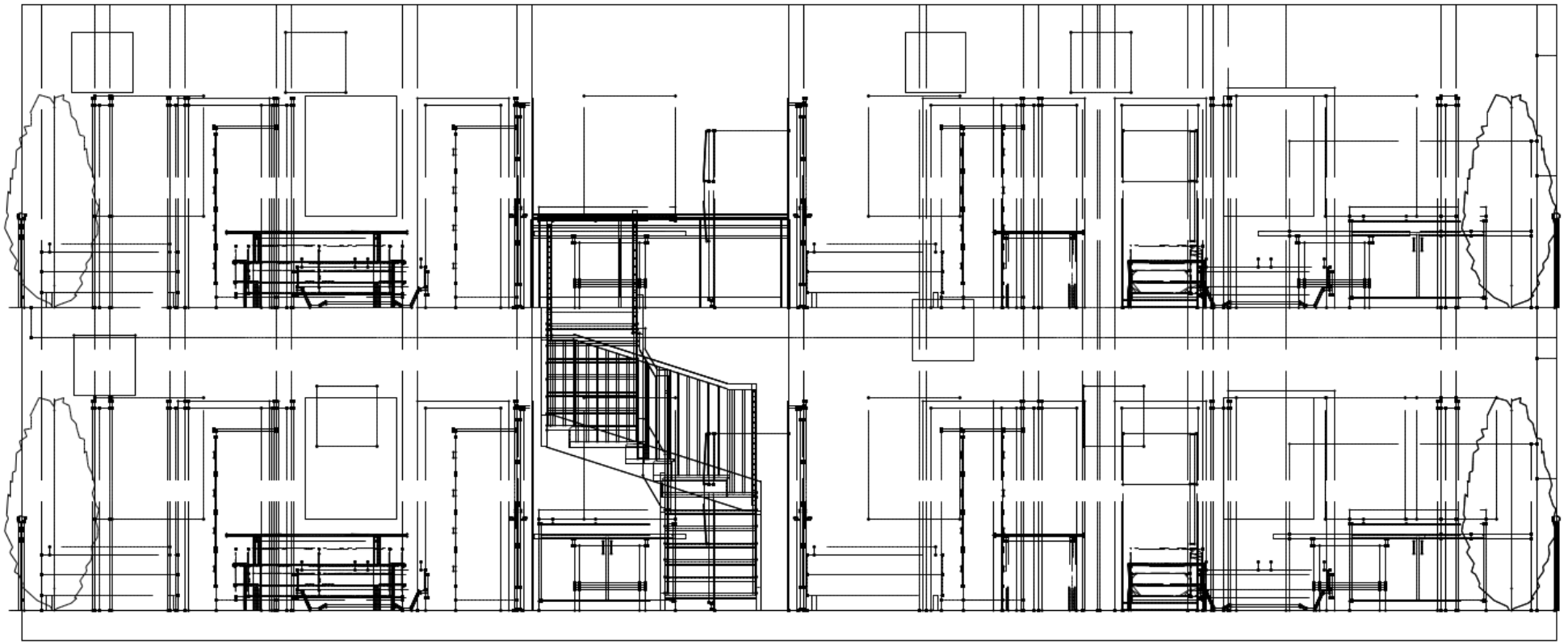


ISOMETRIC VIEW


1564.7



FRONT VIEW



DETAIL 4 · VIEW 4 · SHEET ZONES E4-E6