

2D Drawings Levels of Detail Specification



March 2018

2D Measured Building Survey

Level of detail

Level of detail should be chosen based on the intention that the final drawings will be used for. It should be noted that assuming the subject is comprehensively scanned during the data collection phase of works, then additional information can be added to a product as the project progresses. For example, a simple floor plan showing only the structure can be supplemented by sanitary fittings, partition walls or MEP equipment, etc. That complementation should be considered only by adding new elements to existing drawings without modification the previous accuracy and level of generalization.

The three levels of detail described below are a guide that helps in understanding the idea of their distinctiveness. For every type of drawings, there are examples that present most common information that might be included on a basic, standard or high detailed drawing. Any additional elements can be added or removed from each example to create a product tailored to your specific need. A checklist of optional requirements is included at the end of this document.

Accuracy Band

The selection of drawing scale determines the lines accuracy, level of element generalization and size of annotations contained in a final 2D product. That rule allows to plot the drawings in preferred scale and ensure the legibility of presented elements. For chosen option, we are seeking to preserve the elements alignments, wall parallelism and 90-degrees angles between them within the accuracy bands and building local coordinate system. If it is necessary to show also curvatures smaller than the accuracy value, please use the box provided under the table to describe.

Below there are described the accuracy bands for 2D products in typical scales acc. to RICS – specification for the measurement of land, buildings and utilities. If the project requirements go beyond the following table (1:20 scale needed) please use the box provided to explain.

Band Name	Accuracy	Plot Scale	Typical Product	Annotations size
D	+/- 10 mm	1:50	Floor and reflected ceiling plans, external and internal elevations, cross sections, elevational sections	10 mm
E	+/- 25 mm	1:100	Floor and roof plans, reflected ceiling plans, RoL, external and internal elevations, cross sections, elevational sections	15 mm
F	+/- 50 mm	1:200	2D and 3D topographical survey, RoL elevations	25 mm

Other client requirements:

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General rules

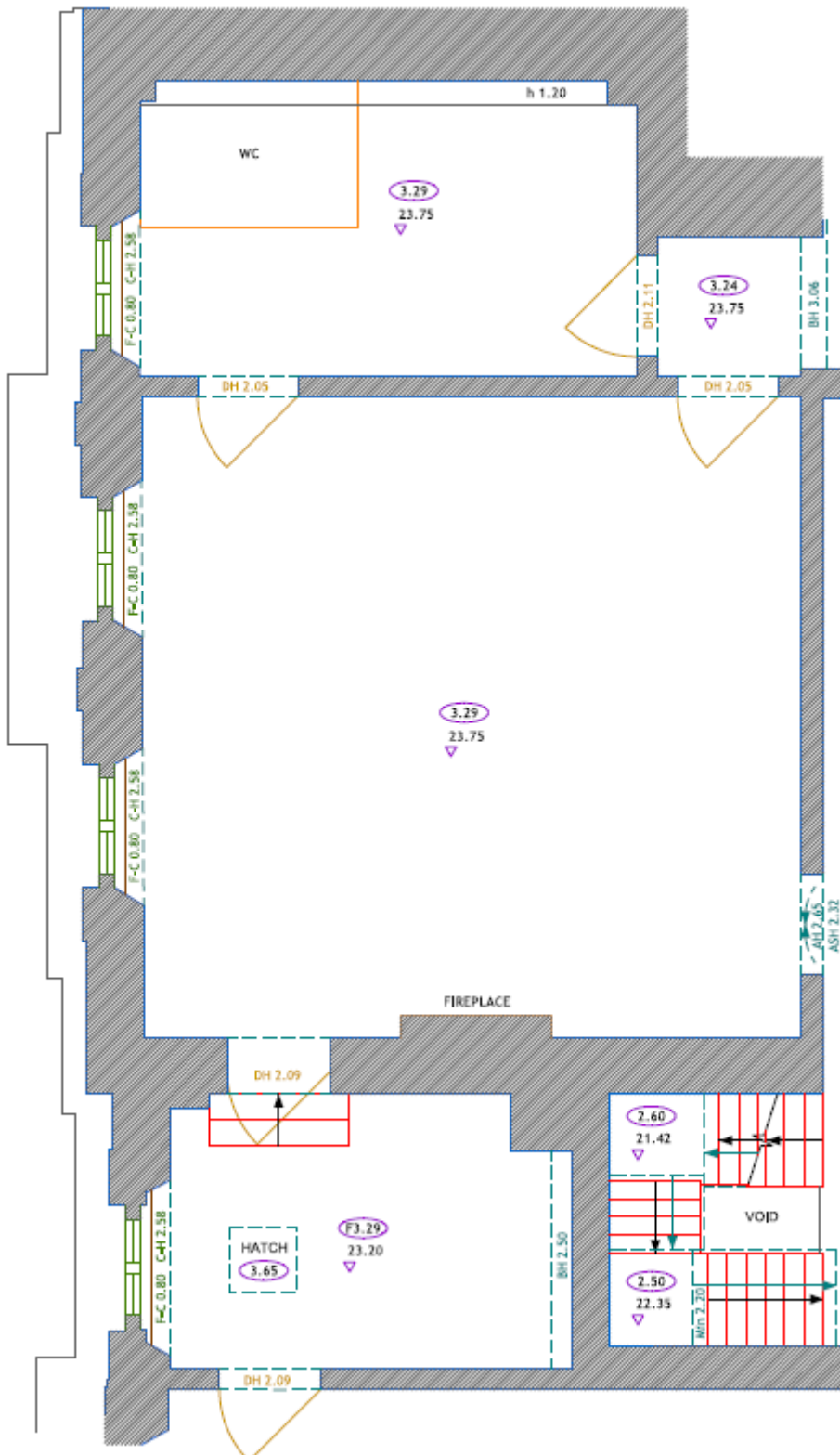
Every project is different, which requires to employ case-to-case approach. We have our standards developed for products but we are flexible and can adjust them depending on the client requirements. As a result, we can work on different layers and standards provided by the client. Also, the language used for layers and annotations can be changed according to the client preferences. Please use the boxes at the end of this file if you have any special requirement. Our specification for CAD drawings layers is set out in Annex 1.

Please find a few practices that we follow:

- Elements not visible on point cloud are drawn in assumed position as dash-dot style line.
- The structure building elements (walls, columns, etc.) are drawn in the same position across all the floors within the accuracy bands.
- Elements that look identical (windows, doors, etc.) are drawn once and copied to another place where they also occur. Distances between them also are preserved within applied accuracy.
- Every drawing is prepared based on existing ones drawn for a particular building, thanks to which all produced drawings of one property match one another.

FLOOR PLANS - 1:50 SPECIFICATION

Level 1 – Basic Detail



Included information:

Plan details:

- Main building structure in cutline (about 1.30m above the floor level),
- Major structural elements below and above the cutline,
- Simplified window frames,
- Door swings,
- Balconies and sills,
- Staircases and ramps with direction arrow,
- Partitions and fireplaces in outline.

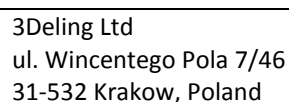
Levels and Heights:

- Major floor levels and ceiling heights,
- Beams, arches and hatches,
- Doors,
- Windows (floor-to-sill and sill-to-head heights),
- Parapets,

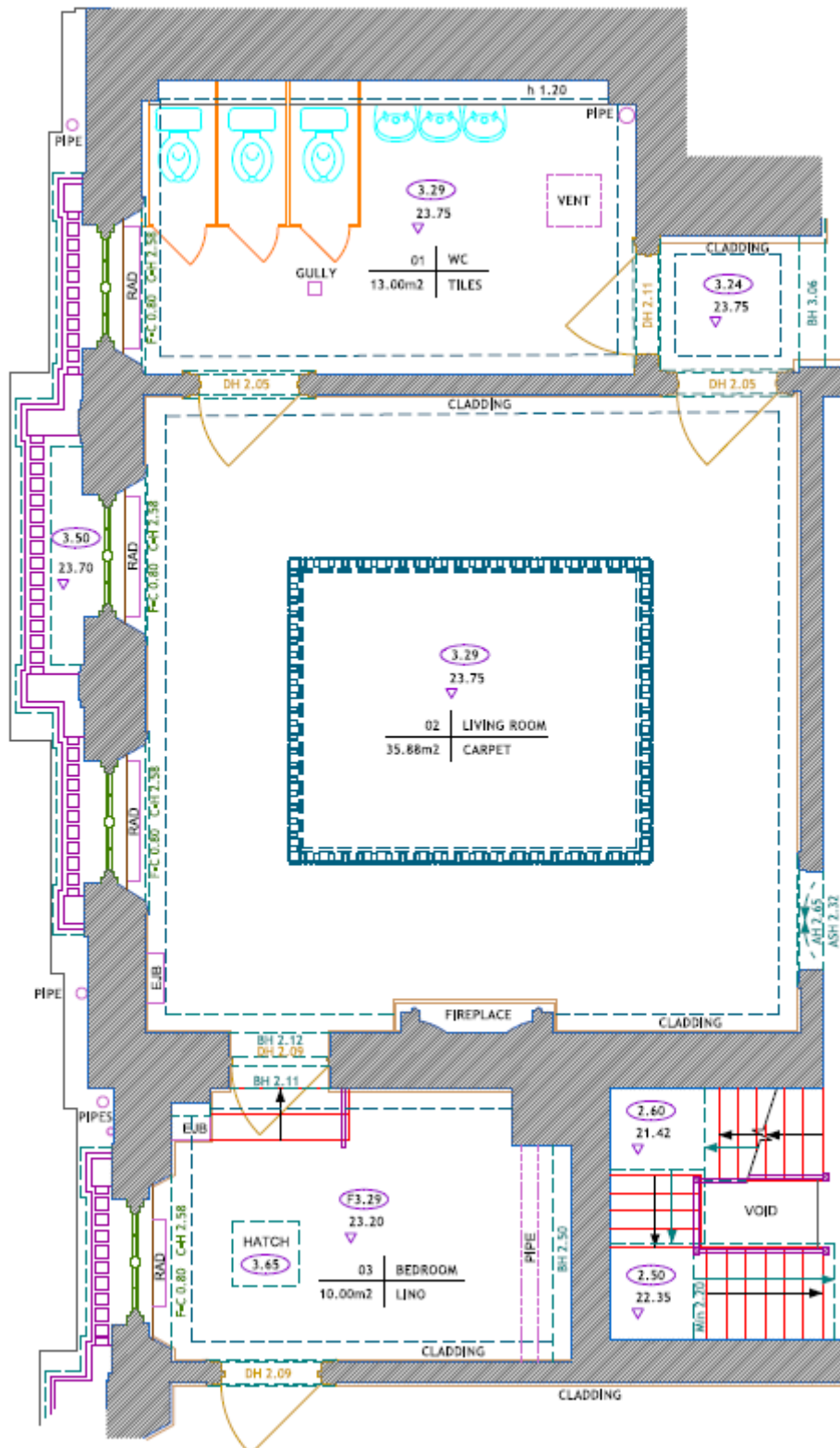
Included information:

- Building structure in cutline (about 1.30m above the floor level),
- Structural elements below and above the cutline,
- Simplified window frames,
- Simplified door frames with swings,
- Balconies and sills,
- Staircases and ramps with direction arrow,
- Simplified shapes of partitions and fireplaces,
- Simplified railings/barriers,
- Main services (also OH),
- Inspection covers/gullies,
- Ceiling details in outline,
- Sanitary fittings as symbols,

- Floor levels and ceiling heights,
- Beams, arches and hatches,
- Doors,
- Windows (floor-to-sill and sill-to-head heights),
- Parapets,



Level 3 – High Detail



Included information:

Plan details:

- Building structure in cutline (about 1.30m above the floor level),
- Structural elements below and above the cutline,
- Window frames with muntins,
- Detailed door frames with swings,
- Balconies and sills,
- Staircases and ramps with direction arrow,
- Detailed shapes of partitions and fireplaces,
- Railings and barriers,
- Main services (also OH),
- Inspection covers/gullies,
- Simplified ceiling details,
- Sanitary fittings,
- Cladding,

Levels and Heights:

- Floor levels and ceiling heights,
- Beams, arches and hatches,
- Doors,
- Windows (floor-to-sill and sill-to-head heights),
- Parapets,

Level 1 – Basic Detail



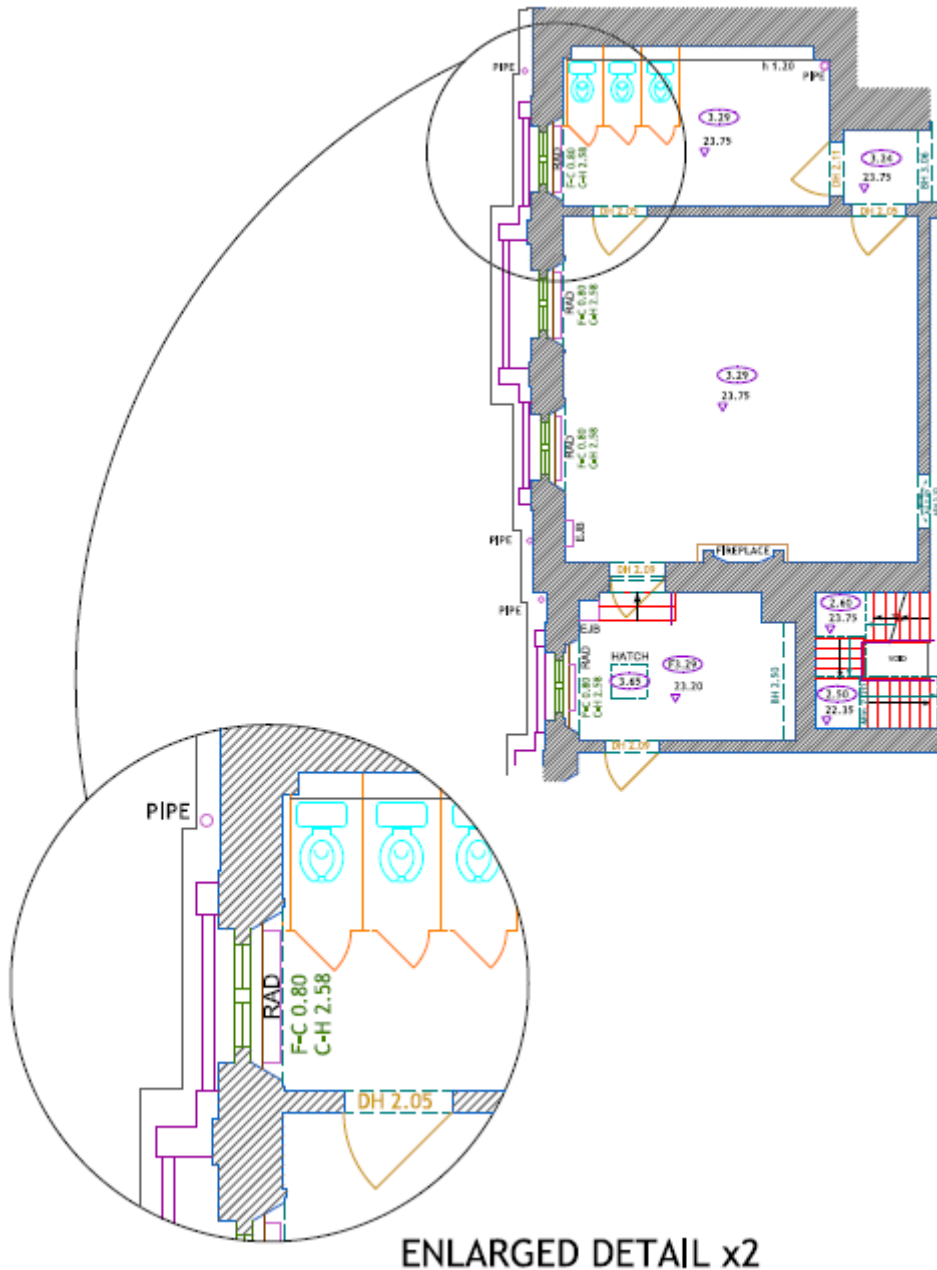
Plan details:

- Main building structure in cutline (about 1.30m above the floor level),
- Major structural elements below the cutline,
- Simplified window frames,
- Door swings,
- Balconies and sills,
- Staircases and ramps with direction arrow,
- Partitions and fireplaces in outline.

Levels and Heights:

- Major floor levels and ceiling heights,

Level 2 – Standard Detail



Included information:

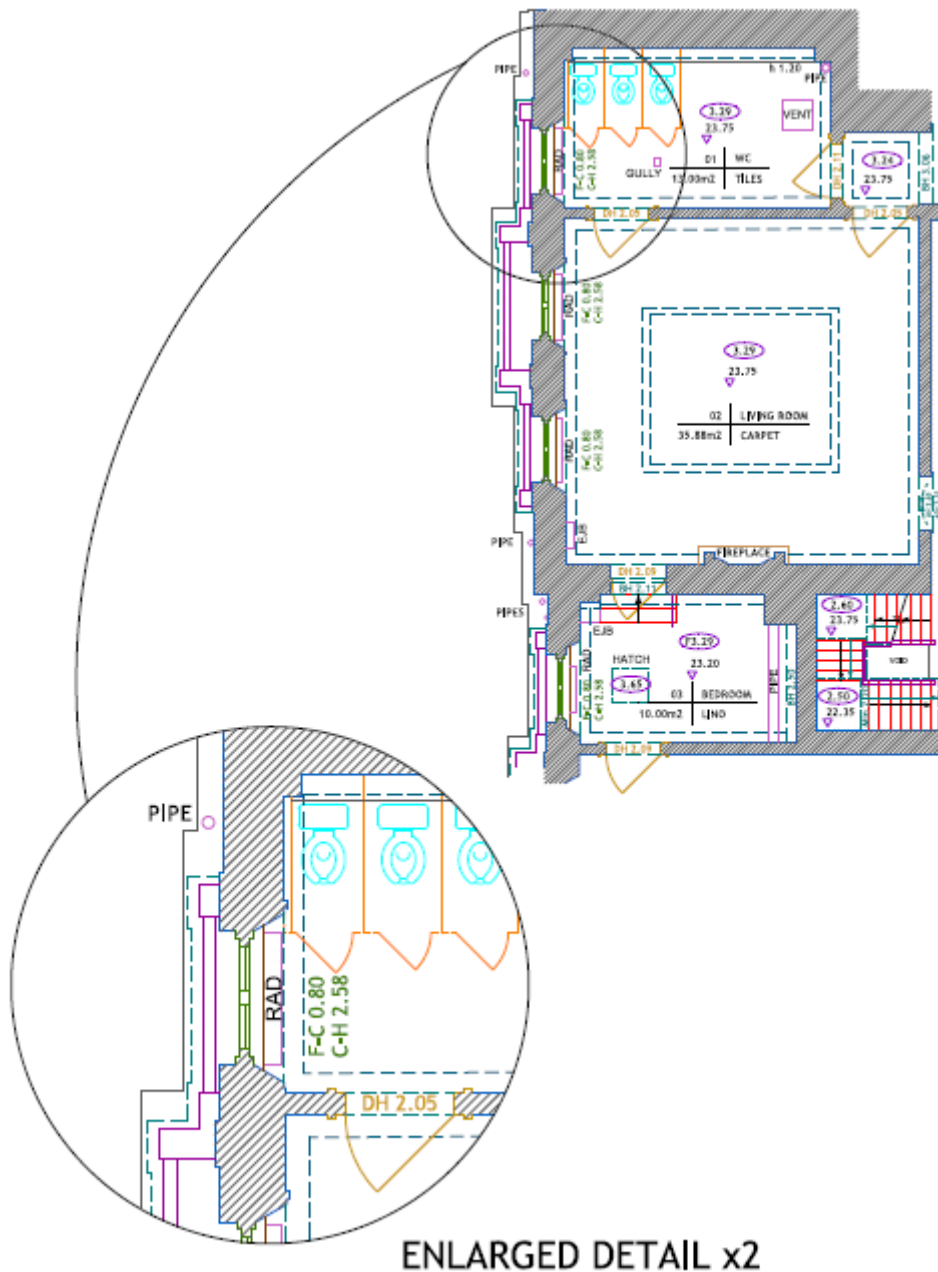
Plan details:

- Main building structure in cutline (about 1.30m above the floor level),
- Major structural elements below and above the cutline,
- Simplified window frames,
- Door swings,
- Balconies and sills,
- Staircases and ramps with direction arrow,
- Simplified shapes of partitions and fireplaces,
- Simplified railings/barriers,
- Main services in and below the cutline,
- Sanitary fittings as symbols,

Levels and Heights:

- Floor levels and ceiling heights,
- Beams, arches and hatches,
- Doors,
- Windows (floor-to-sill and sill-to-head heights),
- Parapets,

Level 3 – High Detail



Included information:

Plan details:

- Building structure in cutline (about 1.30m above the floor level),
- Structural elements below and above the cutline,
- Simplified window frames,
- Simplified door frames with swings,
- Balconies and sills,
- Staircases and ramps with direction arrow,
- Simplified shapes of partitions and fireplaces,
- Simplified railings/barriers,
- Main services (also OH),
- Inspection covers/gullies,
- Ceiling details in outline,
- Sanitary fittings as symbols,

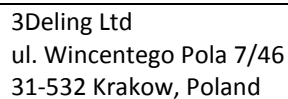
Levels and Heights:

- Floor levels and ceiling heights,
- Beams, arches and hatches,
- Doors,
- Windows (floor-to-sill and sill-to-head heights),
- Parapets,

Included information:

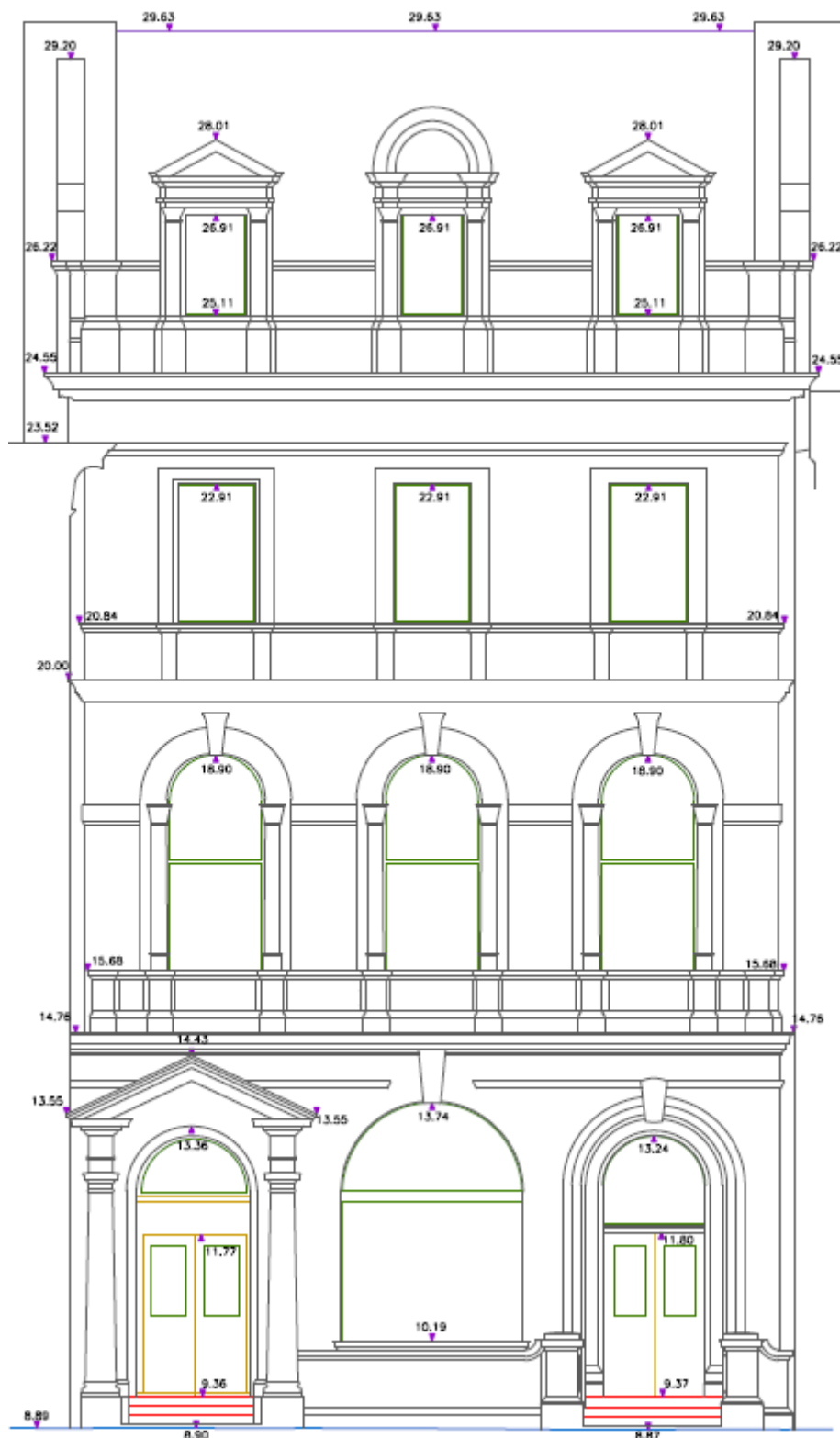
- Roof ridges and eaves,
- Dormers,
- Chimneys,
- Skylights,
- Main services (vents, A/C's, DP's),
- Drainage equipment (DrC's, gullies and gutters),
- Hatches,
- Platforms,
- Ramps,
- Slope symbols,

- Ridges and eaves,
- Chimneys,
- Dormers,
- Flat Roof,
- Steps,
- Hatches,
- Skylights,
- Copings,



EXTERNAL ELEVATIONS SPECIFICATION

Level 1 – Basic Detail



Included information:

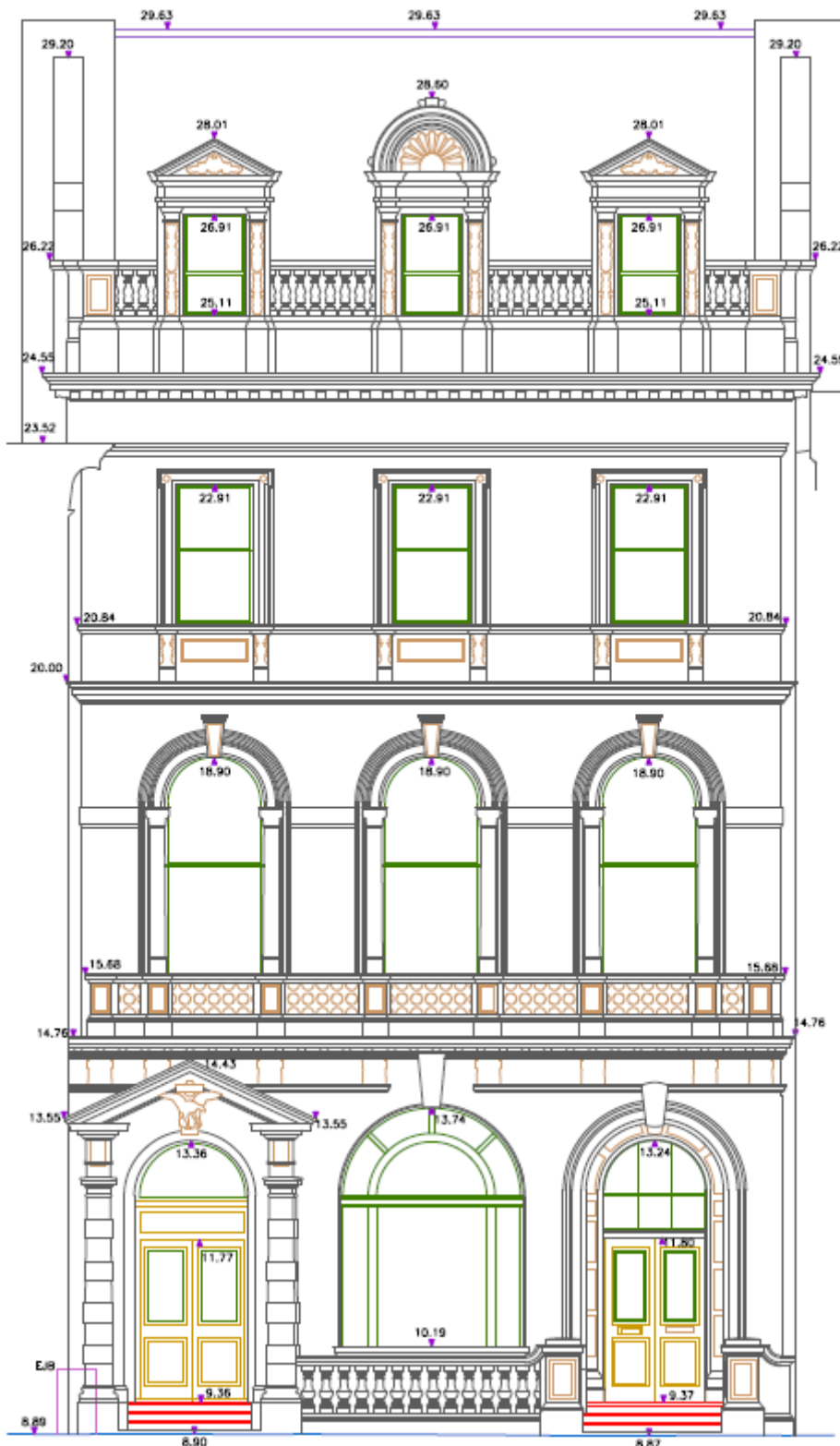
Elevation details:

- Building structure in outline,
- Simplified parapets and walls details,
- Simplified window and door frames,
- Stairs and steps in outline,
- Ground line,

Levels:

- Roof,
- Openings,
- Main parapets,
- Sills,
- Ground

Level 2 – Standard Detail



Included information:

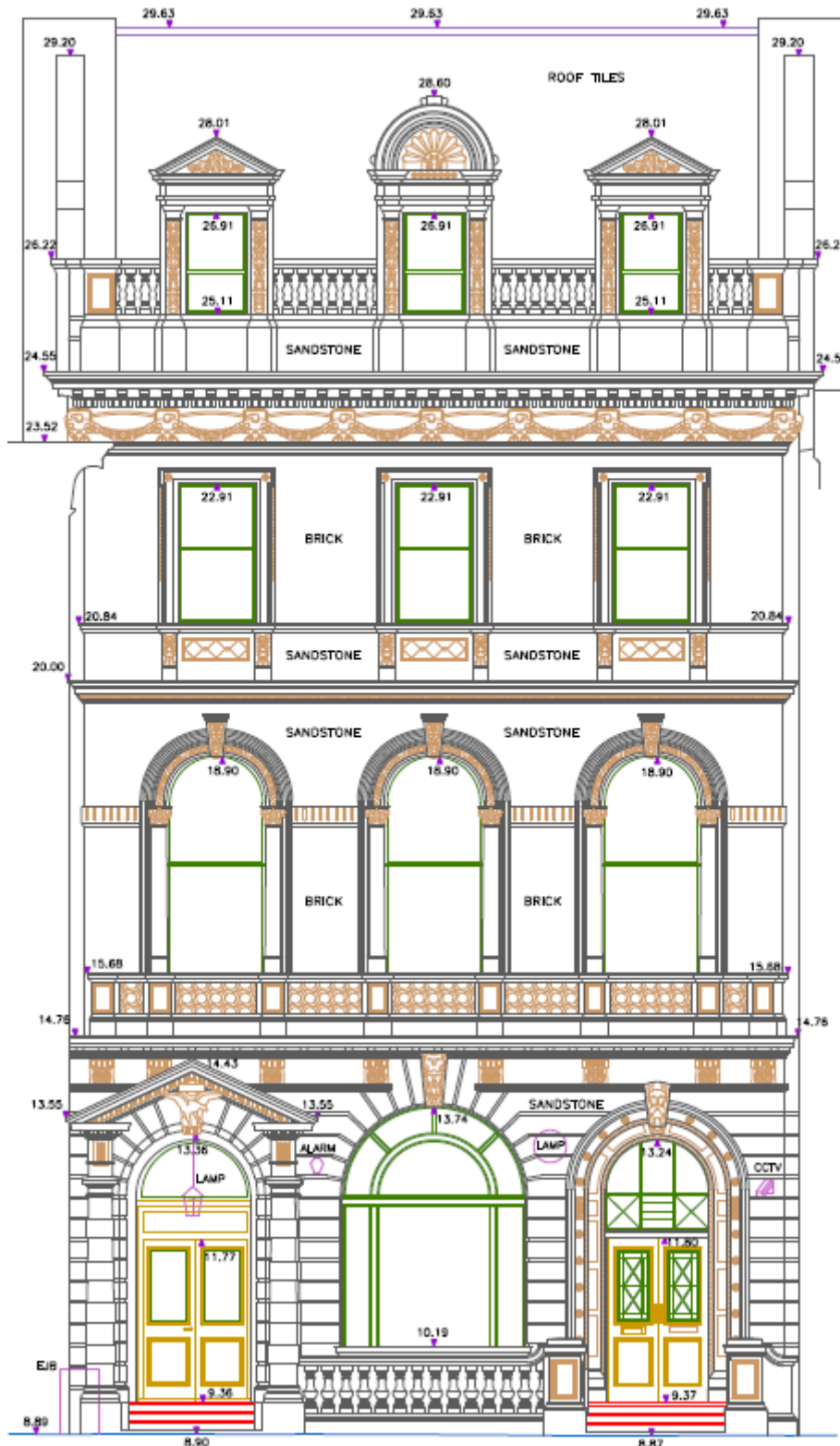
Elevation details:

- Building structure in outline,
- Parapets and wall details,
- Window and door frames with major muntins,
- Stairs and steps,
- Ground line,
- Decorative elements in outline,

Levels:

- Roof,
- Openings,
- Main parapets,
- Sills,
- Ground

Level 3 – High Detail



Included information:

Elevation details:

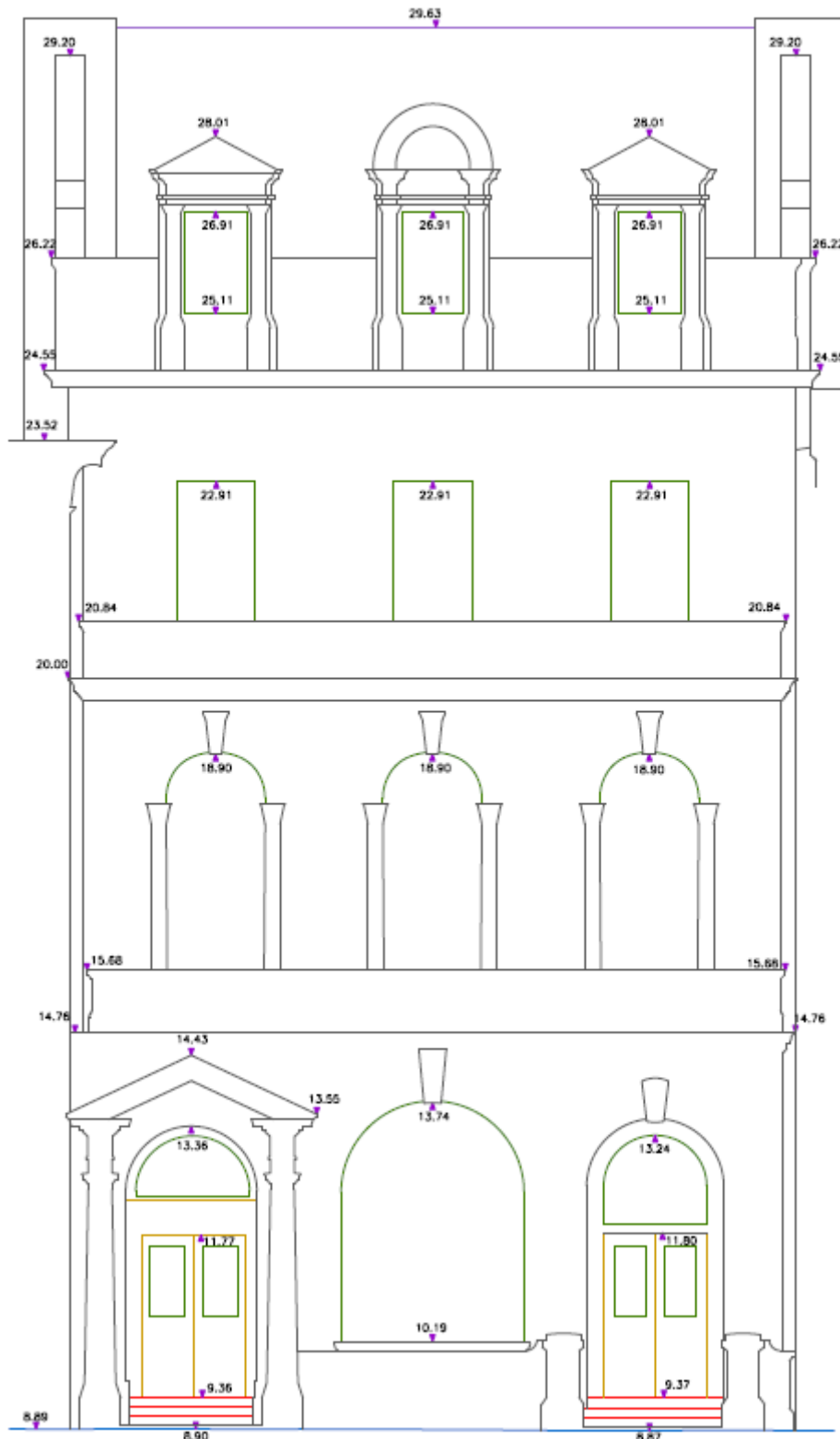
- Detailed building structure,
- Parapets and wall details,
- Window and door frames with all muntins and handles,
- Stairs and steps,
- Ground line,
- Detailed decorative elements,
- Services,

Levels:

- Roof,
- Openings,
- Main parapets,
- Sills,
- Ground

RoL ELEVATIONS SPECIFICATION

Level 1 – Basic Detail



Included information:

Elevation details:

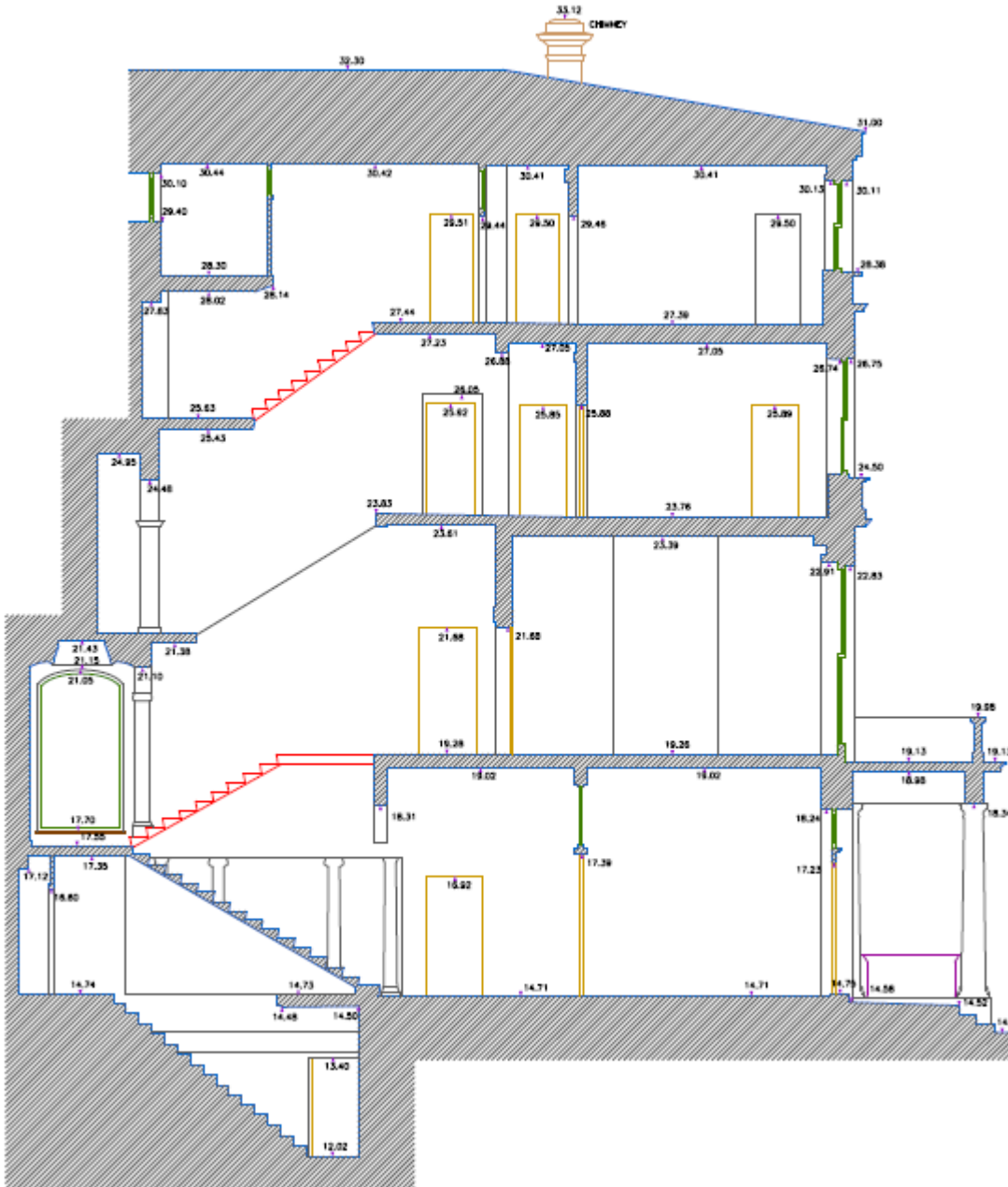
- Main building structure in outline,
- Parapets and walls as outline,
- Openings,
- Stairs and steps in outline,
- Ground line,

Levels:

- Roof,
- Openings,
- Main parapets,
- Ground

SECTIONAL ELEVATION SPECIFICATION

Level 1 – Basic Detail



Included information:

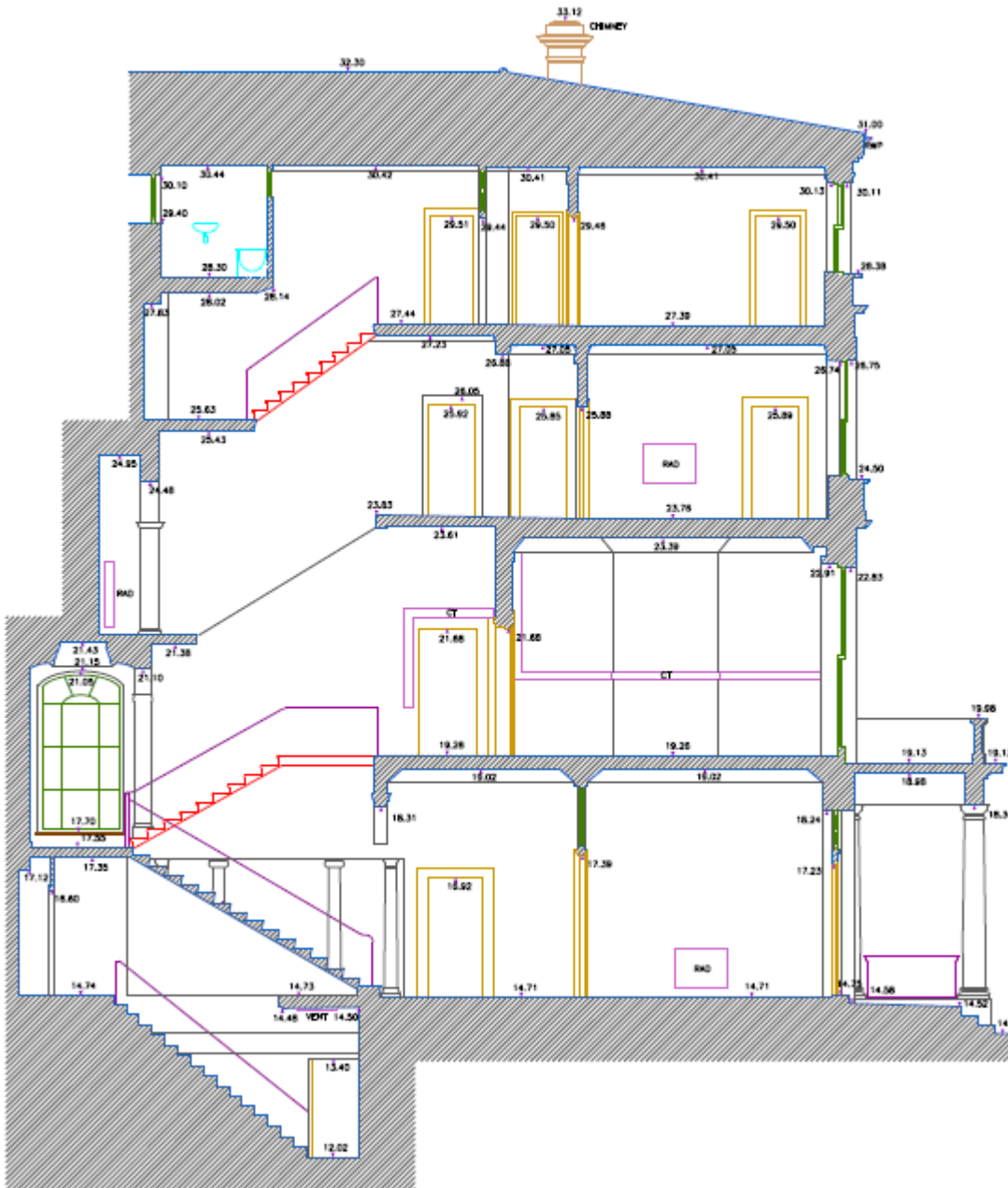
Section/Elevation details:

- Simplified building structure,
- Simplified window frames,
- Door openings,
- Door wings symbol in cutline

Levels:

- Floor and ceiling,
- Openings,
- Parapets,
- Ground,

Level 2 – Standard Detail



Included information:

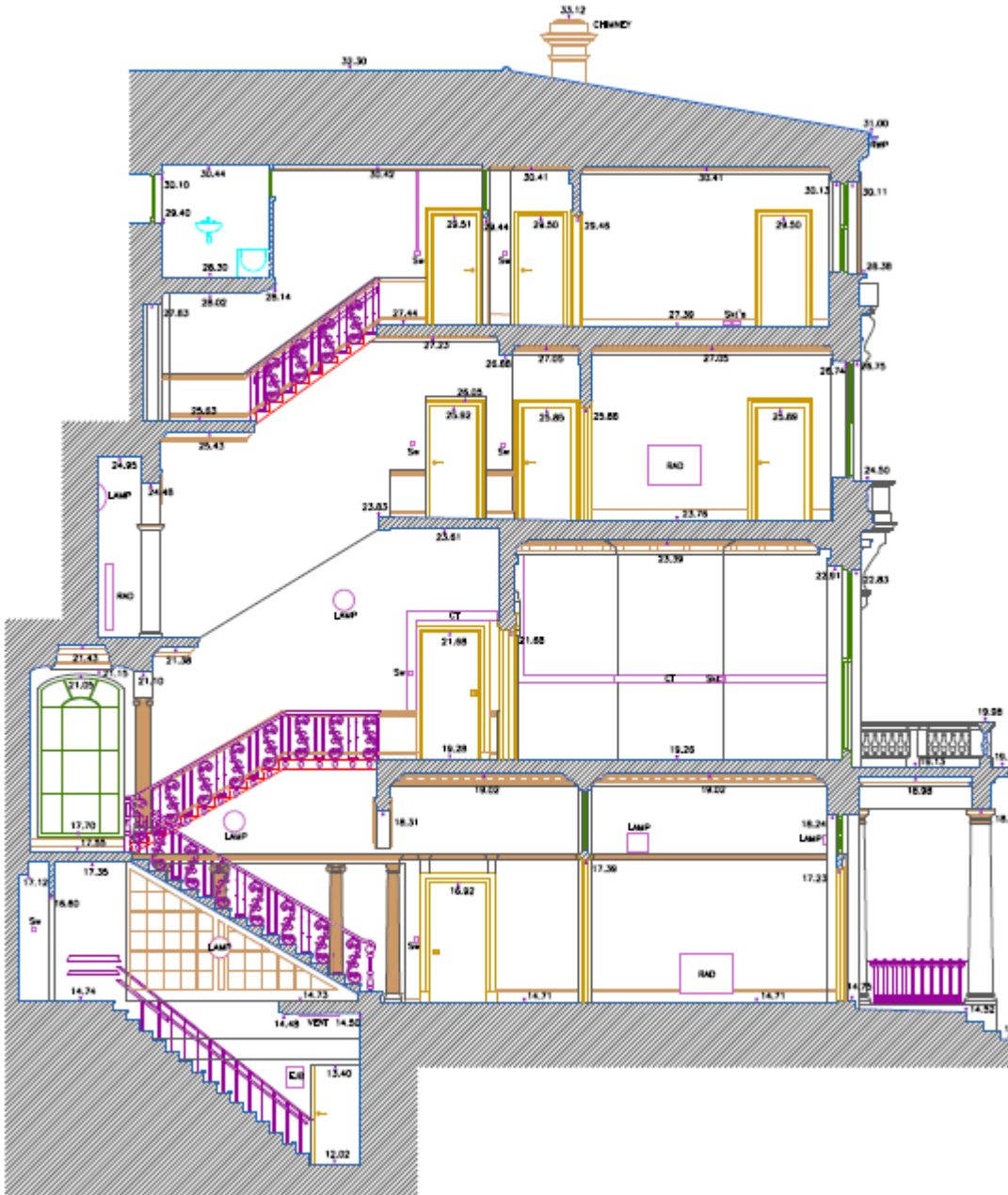
Section/Elevation details:

- Building structure,
- Simplified windows and doors frames,
- Door wings symbol in cutline,
- Main services,
- Sanitary fittings,
- Wall details in outline,

Levels:

- Floor and ceiling,
- Openings,
- Parapets,
- Ground,

Level 3 – High Detail



Included information:

Section/Elevation details:

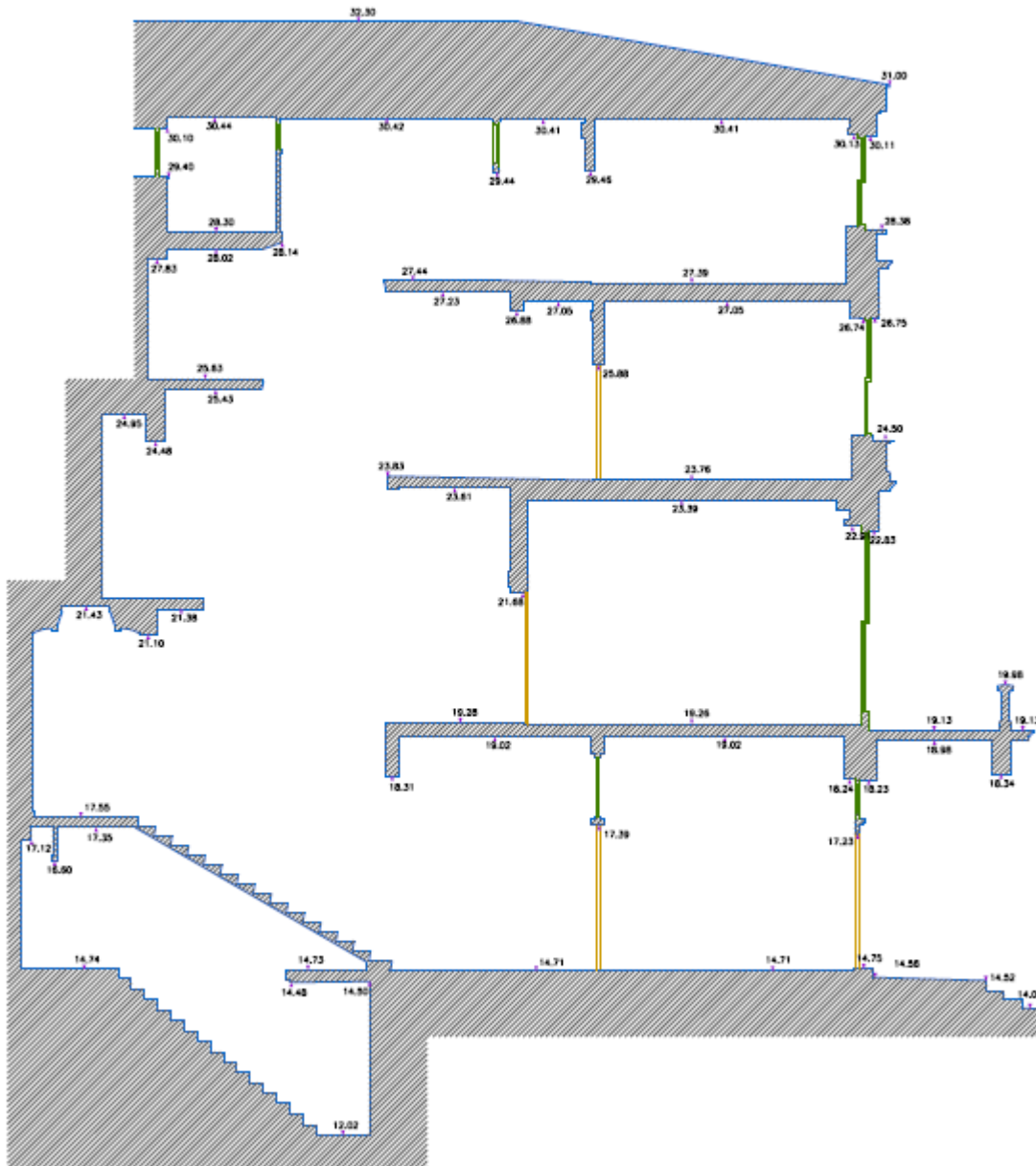
- Detailed building structure,
- Detailed window frames with muntins,
- Detailed door frames
- Door handles in elevation,
- Door wings symbol in cutline,
- All services,
- Sanitary fittings,
- Wall decorative elements,
- Railings and barriers,

Levels:

- Floor and ceiling,
- Openings,
- Parapets,
- Ground,

CROSS SECTIONS SPECIFICATION

Level 1 – Basic Detail



Included information:

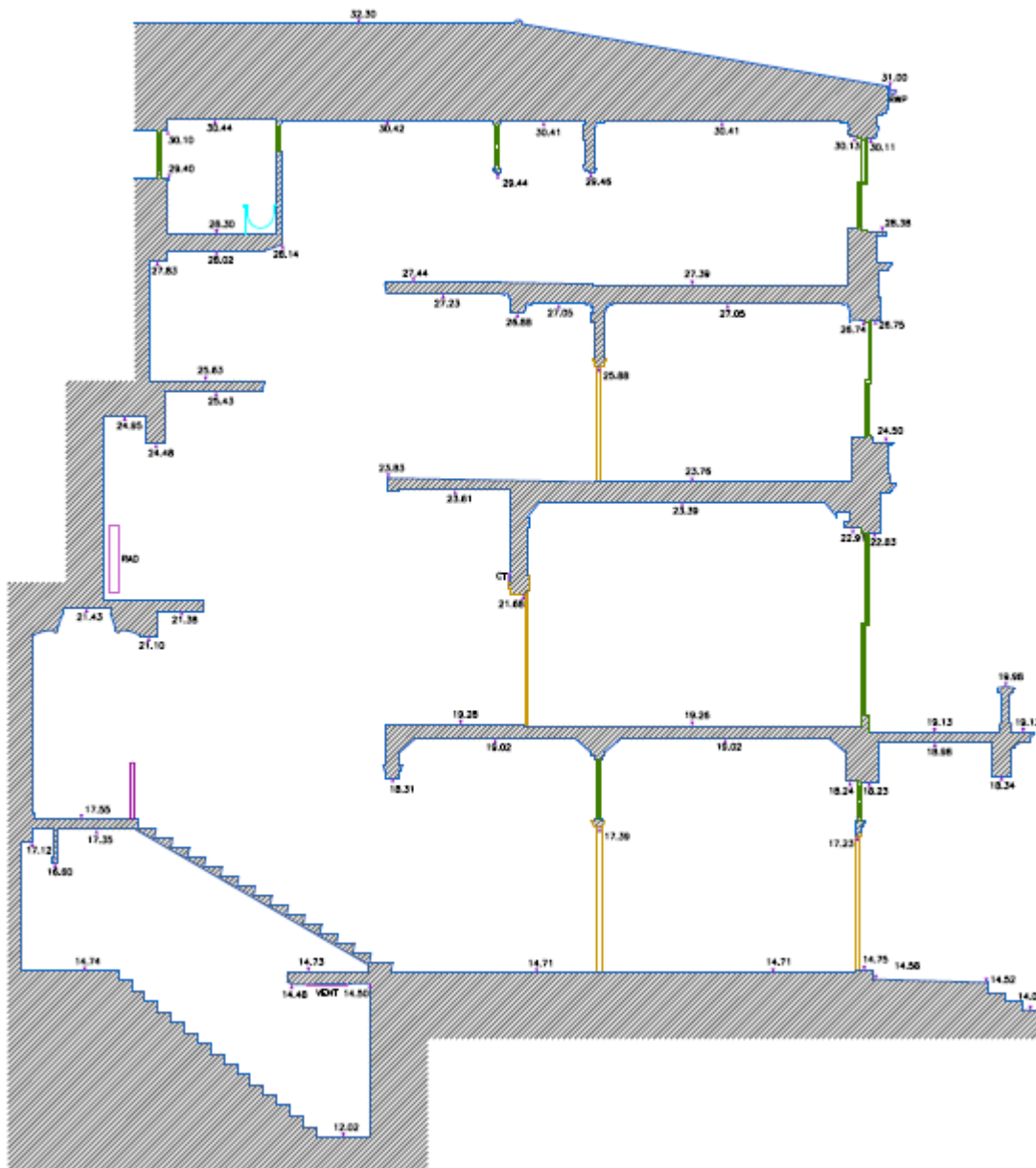
Section details:

- Simplified building structure,
- Simplified windows,
- Door wings symbol,

Levels:

- Floor and ceiling,
- Openings,
- Parapets,
- Ground,

Level 2 – Standard Detail



Included information:

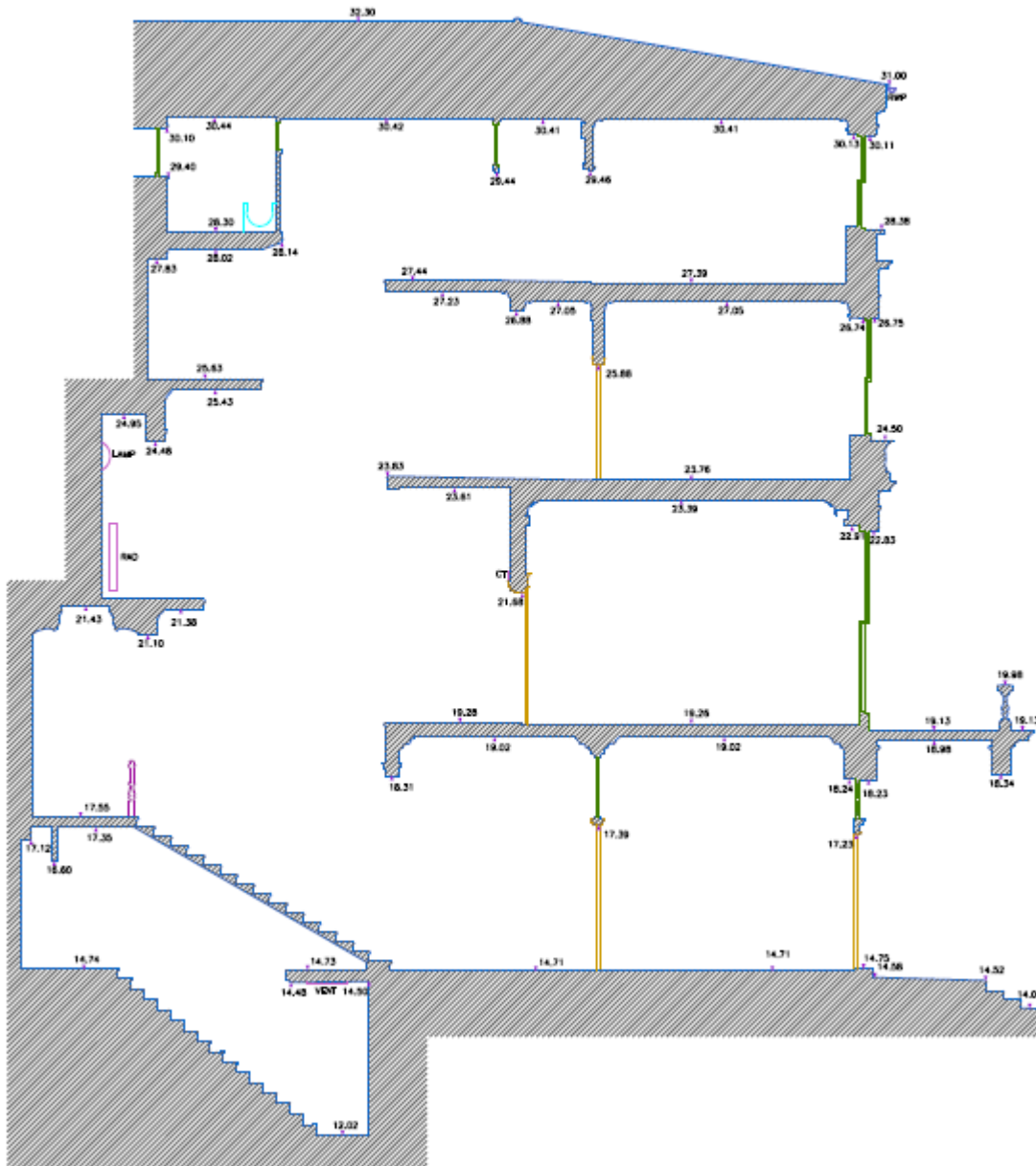
Section details:

- Building structure,
- Simplified windows and doors frames,
- Door wings symbol,
- Main services,
- Sanitary fittings,
- Simplified wall details,

Levels:

- Floor and ceiling,
- Openings,
- Parapets,
- Ground,

Level 3 – High Detail



Included information:

Section details:

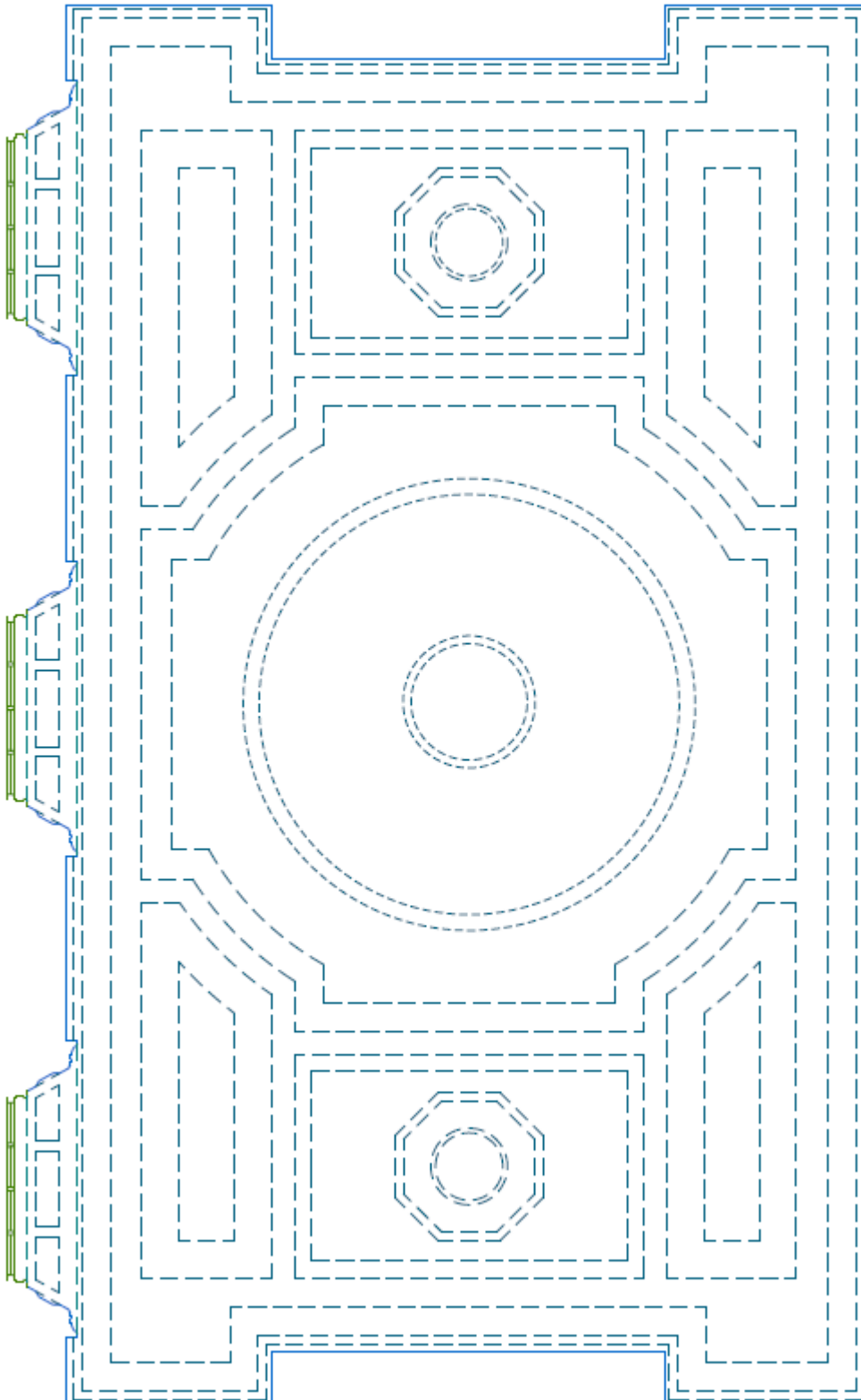
- Detailed building structure,
- Detailed window frames with muntins,
- Detailed door frames
- Door wings symbol,
- Services,
- Sanitary fittings,
- Wall details,
- Railings and barriers,

Levels:

- Floor and ceiling,
- Openings,
- Parapets,
- Ground

REFLECTED CEILING PLAN SPECIFICATION

Level 1 – Basic Detail

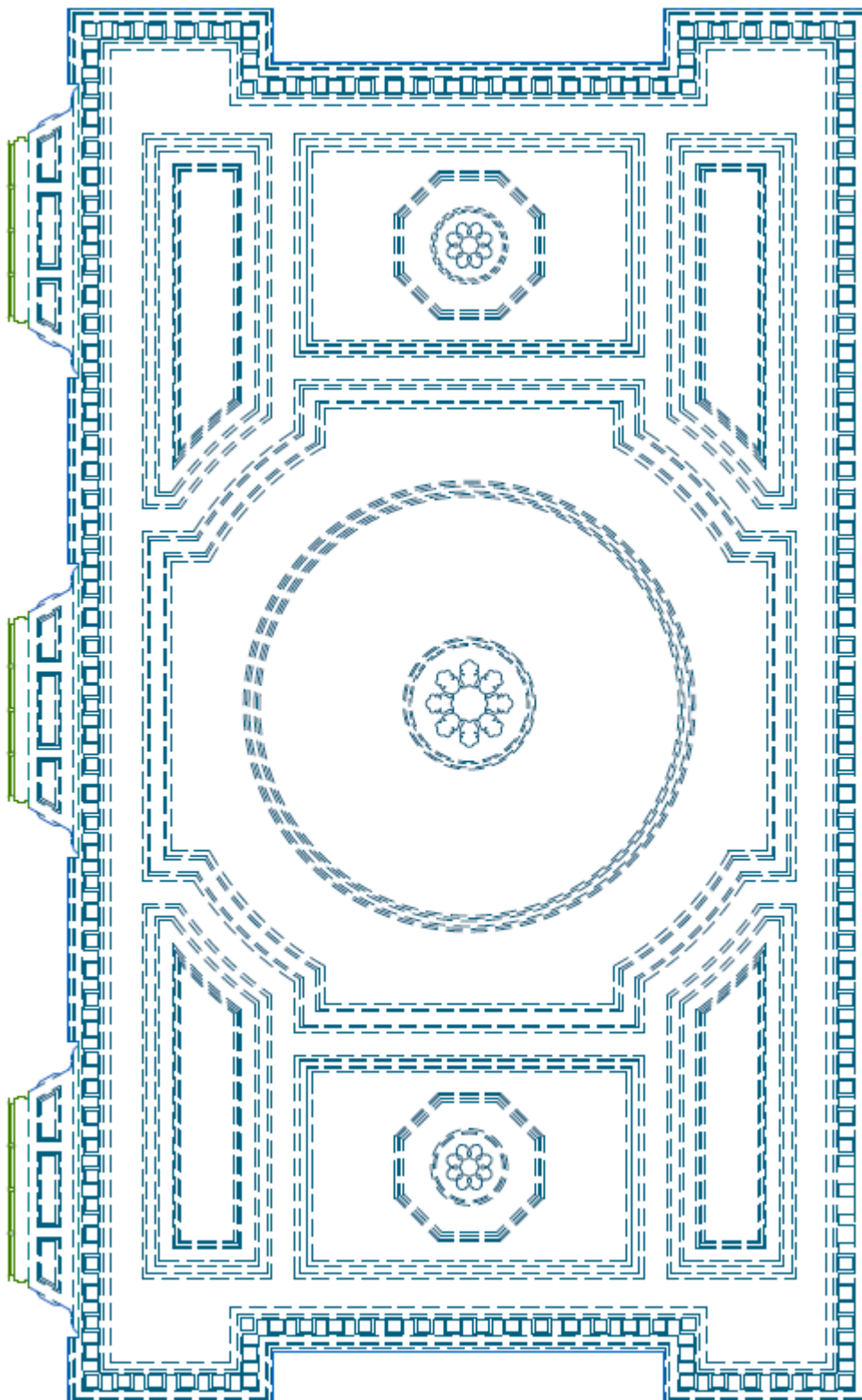


Included information:

Plan details:

- Building cutline under the ceiling,
- Simplified decorative ceiling elements in outline

Level 2 – Standard Detail

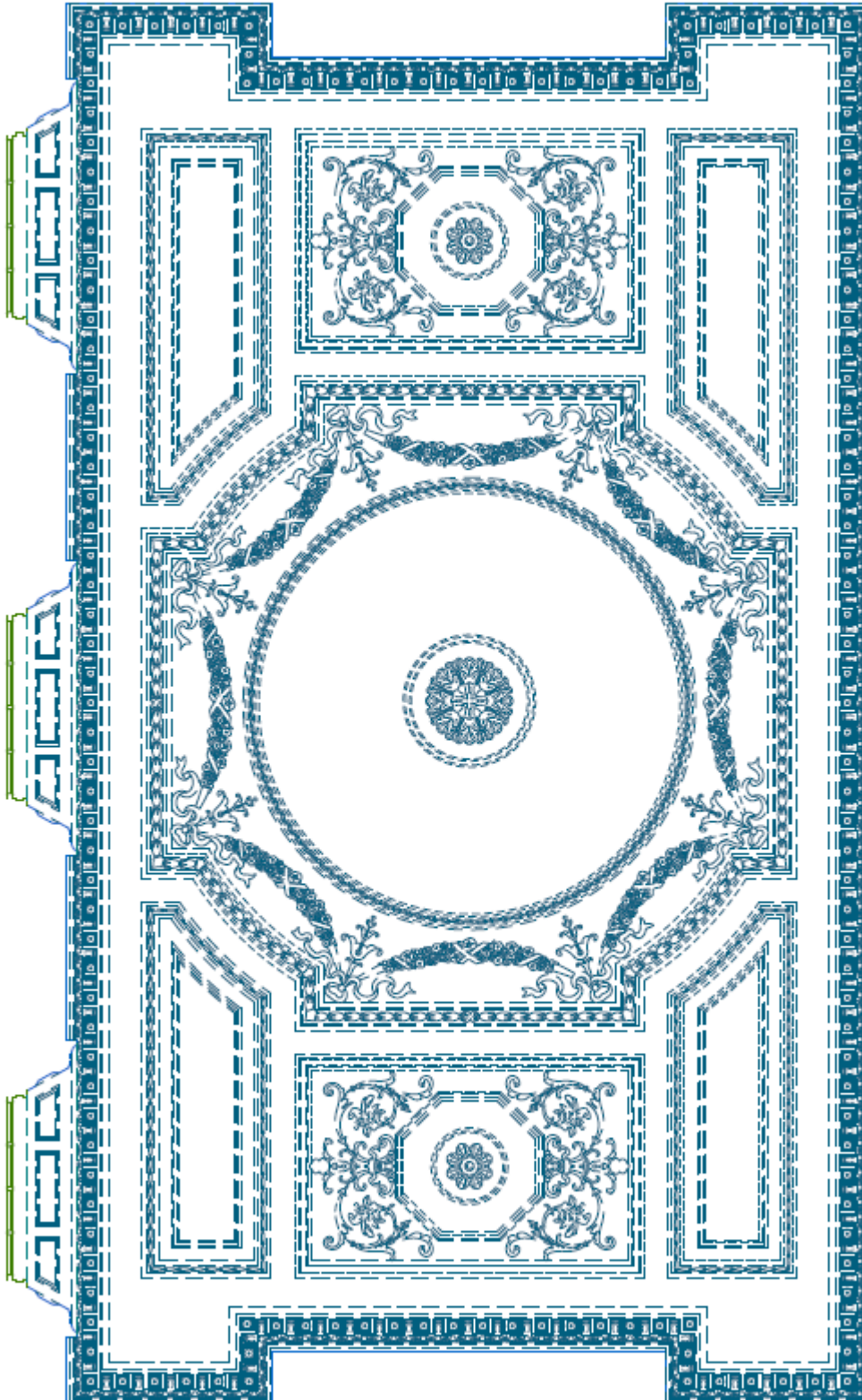


Included information:

Plan details:

- Building cutline under the ceiling,
- Simplified decorative ceiling elements

Level 3 – High Detail



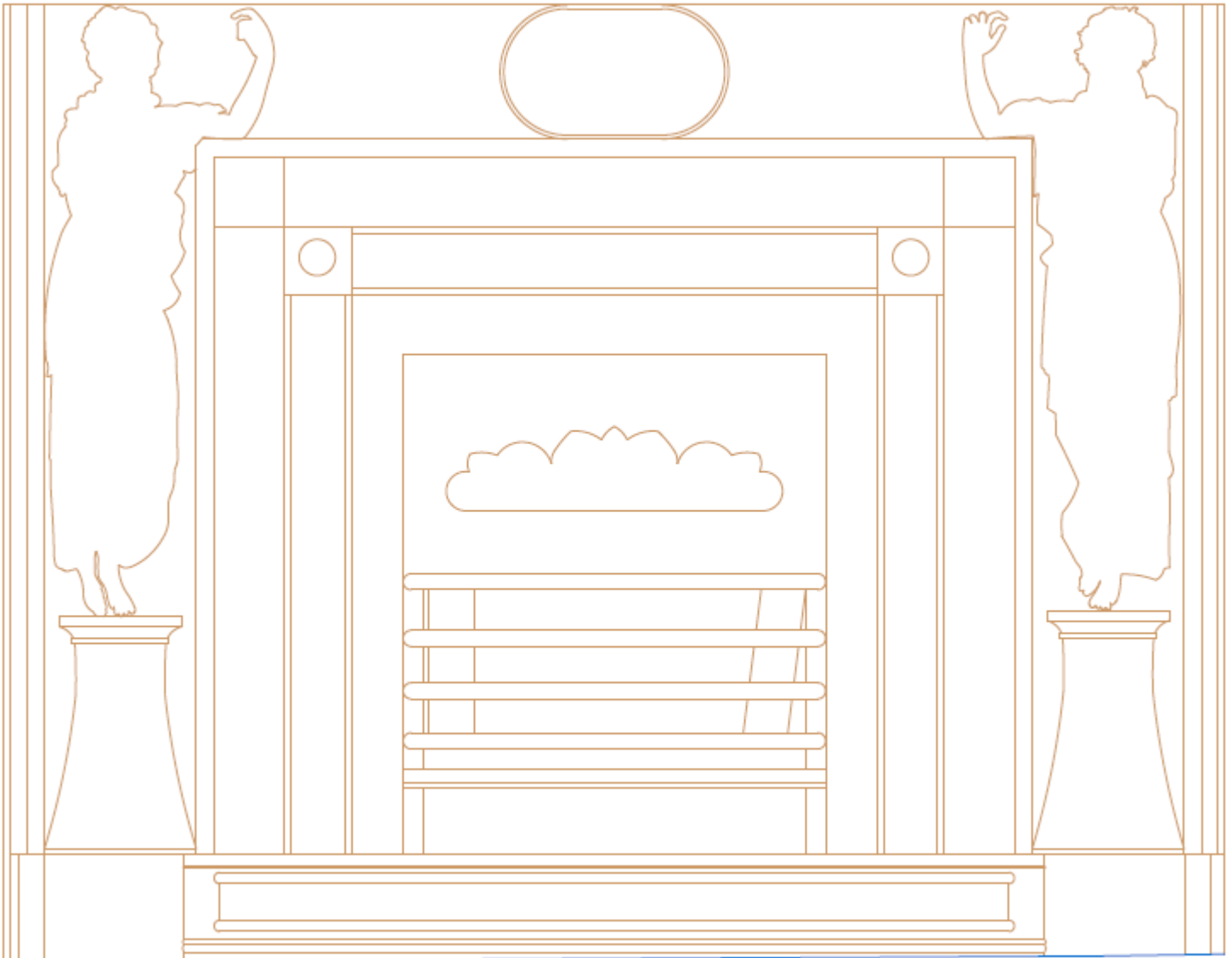
Included information:

Plan details:

- Building cutline under the ceiling,
- Detailed decorative ceiling elements

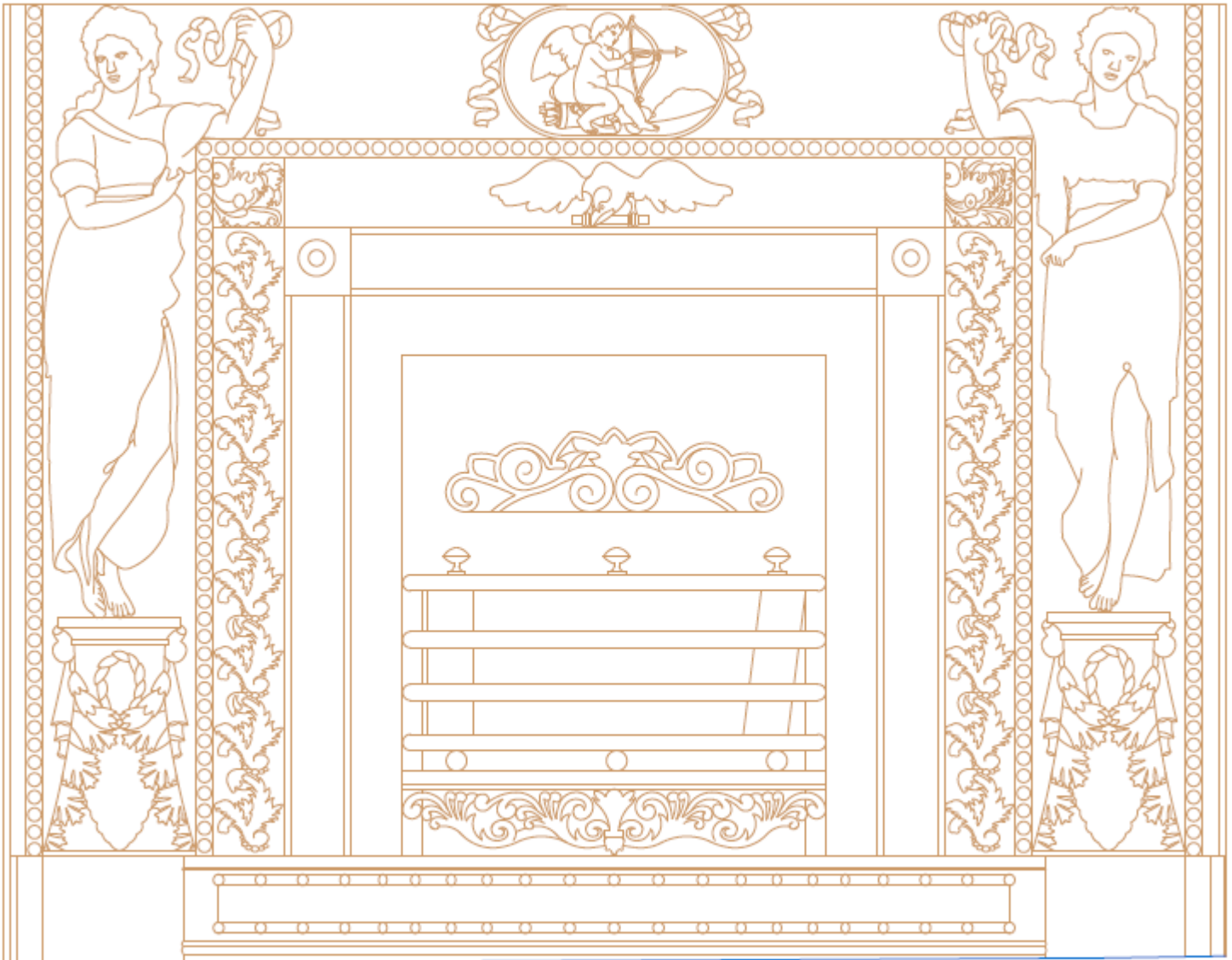
DECORATIVE ELEMENTS

Level 1 – Basic Detail



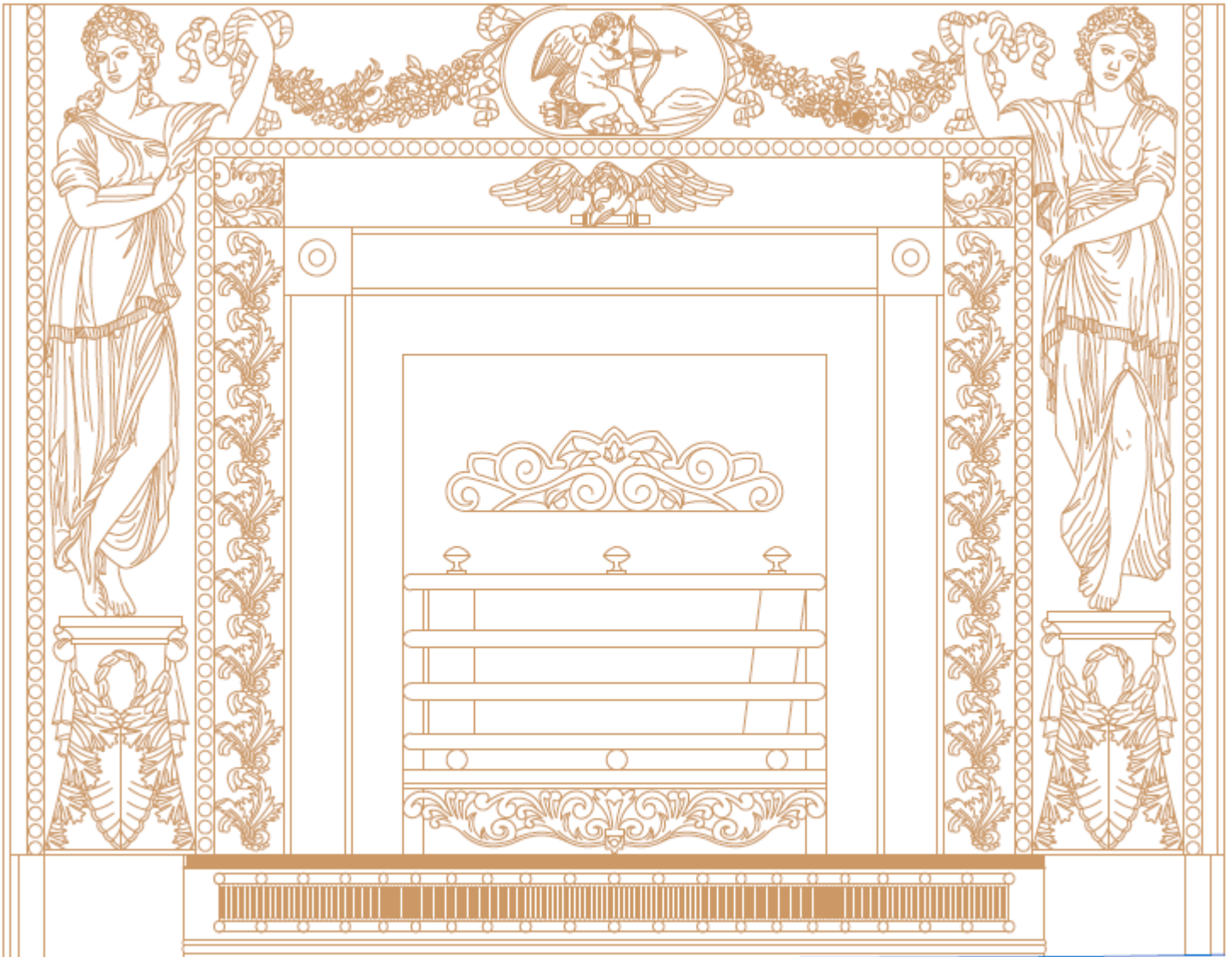
All decorative elements drawn as outlines to show the main shape of elements.

Level 2– Standard Detail



Decorative elements drawn as outlines and simplified elements inside.

Level 3– High Detail



Decorative elements drawn as detailed as data allows to.

Project name:

2D CAD Requirements Checklist

FLOOR PLANS

Not Required ☐

Level of Detail

L1 ☐

L2 ☐

L3 ☐

Scale

1:100 ☐

1:50 ☐

Additional elements:

Required

- Sanitary fittings ☐
- Fixed furniture ☐
- MEP elements ☐
- Ceiling services (lamps, smoke detectors, etc.) ☐
- Small electrical equipment shown as symbols (sockets, switches, etc.) ☐
- Decorative elements (cornices, dado rails, skirtings) ☐
- Loose furniture ☐
- Rooms areas ☐
- Floor materials ☐
- Rooms types ☐
- Rooms numbers ☐
- Stairs annotations (steps amount*av. height/av. depth) ☐
- Doors width ☐
- Windows width ☐
- Dimensions ☐
- Other (please describe below) ☐

Other requirements:

ROOF PLANS

Not Required ☐

Scale

1:100 ☐

1:50 ☐

Additional elements:

Required

- Railings and barriers
- Electrical equipment (lamps, CCTV's, antennas)
- Roof materials
- Roof slope value [%]
- Dimensions
- Other (please describe below)

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Other requirements:

ELEVATIONS

Not Required ☐

Level of Detail

RoL ☐

L1 ☐

L2 ☐

L3 ☐

Scale

1:200 ☐

1:100 ☐

1:50 ☐

Additional elements:

Required

- Electrical equipment (lamps, CCTV's, antennas)
- Drainage/ventilation equipment (RWP's, gutters, pipes, vents, A/C's)
- Stonework
- Brickwork
- Wall materials
- Other (please describe below)

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Other requirements:

CROSS SECTIONS

Not Required ☐

SECTIONAL ELEVATIONS

Not Required ☐

Level of Detail

L1 ☐

L2 ☐

L3 ☐

Scale

1:100 ☐

1:50 ☐

Additional elements:

Required

- Electrical equipment (lamps, CCTV's, antennas)
- Drainage/ventilation equipment (RWP's, gutters, pipes, vents, A/C's)
- Small electrical equipment (sockets, switches, etc.)
- Stonework
- Brickwork
- Wall materials
- Other (please describe below)

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Other requirements:

REFLECTED CEILING PLANS

Not Required ☐

Level of Detail

L1 ☐

L2 ☐

L3 ☐

Scale

1:100 ☐

1:50 ☐

Additional elements:

Required

- Ceiling services (lamps, smoke detectors, etc.)
- Floor levels
- Room heights
- Other (please describe below)

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Other requirements:

INTERNAL ELEVATIONS

Not Required ☐

Level of Detail

L1 ☐

L2 ☐

L3 ☐

Scale

1:100 ☐

1:50 ☐

1:20 ☐

Additional elements:

Required

- Electrical equipment (lamps, CCTV's, CT's)
- Small electrical equipment (sockets, switches, etc.)
- Stonework
- Brickwork
- Wall materials
- Other (please describe below)

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Other requirements:

TOPOGRAPHICAL SURVEY

Not Required ☐

Type

2D ☐

3D ☐

Scale

1:200 ☐

1:100 ☐

Additional elements:

Required

- Road markings
- Cross grid every 10 m (please describe below if other interval needed)
- Other (please describe below)

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Other requirements:

ANNEX 1

3Deling AutoCAD Layers Specification for Measured Surveys

LAYER NAME	COLOR	LINE STYLE	ELEMENTS INCLUDED
BALUSTRADE	214	CONTINUOUS	Balustrade, handrail, barrier
BUILDING	251	CONTINUOUS	Structural walls, on floor plans – under the cutline
CHIMNEY	33	CONTINUOUS	Chimney
CUTLINE	152	CONTINUOUS	Structural walls in cutline
DETAILS	33	CONTINUOUS	Non structural elements – cladding, decorative elements, etc.
DETAILS OH	146	DASHED	Overhead details, cornices
DOOR	40	CONTINUOUS	Door frames in cutline and door swing symbol
DOOR HEIGHT	40	CONTINUOUS	Door height and width (optional)
FENCE	214	CONTINUOUS	Fence, iron railings on Topo
GRID	251	CONTINUOUS	Cross grid
HATCH	251	CONTINUOUS	Filling between structural cut lines
HEIGHT	202	CONTINUOUS	Room height
INSPECTION COVERS	24	CONTINUOUS	Inspection cover outline
KERB	9	CONTINUOUS	Kerb top edges
LEVELS	202	CONTINUOUS	Floor and ceiling levels, Levels on sections and elevations
LEVELS OH	92	CONTINUOUS	Overhead levels on Topo
OVERHEAD	136	DASHED	Structural elements above the cutline (floor plan)
PARTITION	30	CONTINUOUS	Non structural/temporary walls
RAINWATER	173	CONTINUOUS	Gutters, Gullies and Drainage Channels
ROAD	23	CONTINUOUS	Edges of the road
ROAD MARKINGS	0	CONTINUOUS	Road markings (colour adjusted to existing)
ROOF	193	CONTINUOUS	Roof outline
SANITARY	4	CONTINUOUS	Sanitary ware
SERVICES	213	CONTINUOUS	Services in and under the cutline
SERVICES OH	213	DASHED	Services above the cutline
SILL	36	CONTINUOUS	Sill
STAIRS	10	CONTINUOUS	Stairs, steps and ramps
STREET FURNITURE	130	CONTINUOUS	Street furniture (lamps, road signs, etc.)
STRUCTURE	11	CONTINUOUS	Steel structure
SURFACE DETAIL	67	CONTINUOUS	Changes in Surface outlines
TEXT	7	CONTINUOUS	General text
VEGETATION	3	CONTINUOUS	Trees, bushes in outline
WALL	160	CONTINUOUS	External walls that are not a part of the building
WINDOW	76	CONTINUOUS	Window frames
WINDOW HEIGHT	76	CONTINUOUS	Window and sill heights, window width (optional)