

CAD Drawing Guidelines

1. Overview

This document presents CAD drawing guidelines for using and maintaining the Columbia University facilities base architectural and space CAD floor plans.

All drawings submitted to the University should adhere to these guidelines.

2. Architectural Plan

This drawing serves as the base plan of each floor with all the architectural elements and also including the furniture layouts in most of the drawings. In some drawings the architectural floor plan also currently includes additional information such as engineering information or construction specification information.

The naming of each architectural floor plan follows the following format:

Campus-Building-Floor
MH-BUEL-3.dwg

3. Space Plan

This drawing references the base architectural floor plan as an XREF and includes the polyline boundaries for each space drawn on layer *Tri_triSpace* and the room number and occupancy information placed as a text label within each of the spaces and appearing on layer *triLabelLayer*.

Planners will have read access to these drawings. As needed for printing purposes you can turn off the space boundary layer and or the room / space label layer.

The name of space floor plan CAD drawing is in the following format:

Campus-Building-Floor-P
MH-BUEL-3P.dwg

The architectural and space floor plans are always on the same folder.

3.1 Paper Space Layouts

The space floor plans include the following paper space layouts that offer a convenient way to print an 11x17 drawing:

Standard Layout	Designed for 11x17
Planning Layout	Designed for 11x17 with space on the layout to allow for a legend

You can update the attributes of the title blocks prior to printing the drawings.

4. Architectural Plan Guidelines

4.1 Separation of Base Plans and Project Design and Construction Plans

Since the architectural as-built plans are the base for all the drawings and all the projects it is essential to maintain a clean, accurate and consistent set of plans.

The base plans should be maintained so as not to include project specific information or construction document specification information. All design or construction drawings should be archived and only the key elements of a plan such as building shell and core, wall partitions, doors, windows, furniture and key equipment fixtures should be reflected in the base architectural plan.

The following information should not be included in the base architectural plans but rather remain archived in a separate folder as part of the project specific documents.

- Dimensions
- Design and construction symbols
- Project notes
- Project demarcation lines
- Tables
- Demolition information
- Design or layout studies

4.2 Furniture Plans

The attribute and specification details for furniture and equipment plans should not be included in the base architectural plan but rather be kept as part of the project specific documents.

If the furniture or equipment attributes are embedded with the furniture or equipment blocks then their layer should be set to the Freeze status so that they will not appear when the drawing is first loaded.

5. Space Plan Guidelines

All polyline boundaries should be closed and drawn accurately tracing the points of the inside edge of a space's walls, doors or windows.

Spaces can only be deleted following the Tririga standard practices.

6. Layering Standards

Layers should adhere to the following standard layering and color convention used by Columbia University Facilities and based on the AIA Layering standards.

Following is a list of the standard Architectural / Structural layers:

Layer	Color	Layer Description
S-COLS	1	Columns Structural
S-GRID	2	Column Grid
S-GRID-DIMS		Column Grid Dimensions
S-GRID-IDEN		Column Grid Tags
A-CONV		Conveying systems
A-CLNG		Reflected Ceiling Information
A-CLNG-GRID		Reflected Ceiling Grid
A-CLNG-TEES		Ceiling: main tees
A-CLNG-SUSP		Ceiling: suspended elements
A-DOOR	1	Doors
A-DOOR-IDEN		Door Identification
A-EQPM		Equipment
A-EQPM-OVHD		Equipment: overhead
A-FLOR		Floor information
A-FLOR-CASE	2	Floor: casework
A-FLOR-EVTR	6	Floor: elevator cars and equipment
A-FLOR-HRAL		Floor: handrails, guard rails
A-FLOR-LEVL		Floor: level changes, ramps, pits, depressions
A-FLOR-OTLN		Floor: Floor and building outline
A-FLOR-OVHD		Floor: overhead (objects above)
A-FLOR-RAIS		Floor: raised floors
A-FLOR-RISR		Floor: stair risers
A-FLOR-SIGN		Floor: signs
A-FLOR-SPCL		Floor: specialties (toilet room accessories, display cases)
A-FLOR-STRS	6	Floor: stair treads, escalators, ladders
A-FLOR-TPTN		Floor: toilet partitions
A-FLOR-SHFT	6	Floor: shafts
A-FLOR-WDWK		Floor: architectural woodwork

P-FIXT	5	Plumbing Fixture
A-FURN		Furnishings
A-FURN-FILE		Furnishings: file cabinets
A-FURN-FIXD		Furnishings: fixed in place
A-FURN-FREE		Furnishings: freestanding
A-FURN-PNLS		Furnishings: system panels
A-FURN-SEAT		Furnishings: seating
A-FURN-STOR		Furnishings: system storage components
A-FURN-WKSF		Furnishings: system work surface components
A-GLAZ	1	Glazing
A-GLAZ-SILL		Glazing: window sills
A-HVAC		HVAC
A-HVAC-SDFF		HVAC: supply diffusers
A-HVAC-RDFF		HVAC: return air diffusers
A-LITE		Lighting fixtures
A-ROOF	7	Roof
A-ROOF-HRAL		Roof: handrails
A-ROOF-LEVL		Roof: level changes
A-ROOF-OTLN		Roof: outline
A-ROOF-RISR		Roof: stair risers
A-ROOF-STRS	6	Roof: stair treads, ladders
A-WALL	7	Walls
A-WALL-INT	7	Walls Interior – Also on A-WALL
A-WALL-EXT	3	Walls: exterior
A-WALL-FULL	2	Walls: full-height – Also on A-WALL
A-WALL-CNTR		Walls: centerline
A-WALL-FIRE	1	Walls: fire wall
A-WALL-HEAD		Walls: door and window headers
A-WALL-JAMB		Walls: door and window jambs
A-WALL-MOVE		Walls: moveable partitions
A-WALL-PRHT		Walls: partial-height
A-WALL-PATT		Walls: texture or hatch patterns
L_1		Room Polyline Boundaries

7. Line Weights

Printed plans can utilize the following line weights to enhance readability and to provide a clear hierarchy of the architectural elements.

Light Lines (~ 0.10mm)

To be used for dimension, section, legends, overhead and door swing lines.

Medium Lines (0.20mm - 0.25mm)

For doors, furniture, cabinets, stairs, windows, partial height walls and other non-structural architectural elements and graphic symbols.

Cut Lines (0.40mm +)

For interior and exterior walls, columns and other structural elements.

8. Accuracy and Graphic Standards

It is essential to draw new elements accurately as per dimensions taken on the field. The base drawings will be used as an electronic source for the life of a building.

All CAD line work should intersect leaving no gaps.

All line work and drawing elements should be drawn with color and line type set BYLAYER.

Ideally blocks used should not have hidden layers within them.