DARTMOUTH

CAD Standards & Protocols

Fall 2013
Updated: spring 2014
Updated: fall 2014
Updated: winter 2015
Updated and Approved winter: 2019

Table of Contents

Introduction

The standards developed in this document are to inform Dartmouth staff and consultants about how space at Dartmouth College is being identified. These standards are provided for use by Architects and other consultants for projects involving new construction. Existing College buildings will also be evaluated when remodels take place.

This document provides standards for the following areas:
- Floor Numbering Standards
- Space Classifications for Rooms
- Base Drawing CAD Layering
- Maintenance of Base Drawings
- Product Submittal

These standards will allow floor and room numbering and way-finding procedures to be applied consistently to all College owned buildings. The Postsecondary Education Facilities Inventory and Classification Manual (FICM) 2006 Edition published by the National Center for Educational Statistics is the basis for our standards. Because room numbers affect emergency responders, as well as multiple campus databases systems room numbers should not be changed without a formal review process by the Office of Planning, Design and Construction.

For the design of our base plans we have adopted U.S. National CAD Standard (NCS) and expect that the drawings will be submitted in the form outlined in this document.

We understand that not all vendors use the same CAD system as Dartmouth College. However, we do expect that every vendor will include an accurate base drawing in error-free latest DWG format.

Questions may be forwarded to the Space Administrator in the office of Planning, Design & Construction:

Office of Planning, Design & Construction (OPDC)
4 Currier Place, Suite 306
Hanover, New Hampshire 03755
space.management@dartmouth.edu

1   Base Drawing Standards

In order to maintain floor plan consistency, OPDC has developed standards for base drawings[1].

1.1 Naming Convention
Floor plans will be delivered with the following naming convention:

A-XXXXXX-XX
A-baker-00

A= architectural
XXXXXX = Max. 6-character Building code assigned by OPDC
XX = indicates which floor level

1.2 General Layer List
Dartmouth has adopted the latest U.S. National CAD Standard (NCS) and requires the drawings to be delivered as follows:

---

[1] A Base Drawing is a drawing which is used as basic information for further use of possible projects reflecting the current situation of the architectural structures

General layer list of base drawings:

General Layer List			
Layer Name	**Color**	**Linetype**	**Description**
0	White	Continuous	
A-Anno-Ttlb	111	Continuous	Title block
A-Cols	110	Continuous	Columns
A-Comm	150	Continuous	Tele/Data
A-Door	150	Continuous	Door
A-Eqpm	90	Continuous	Equipment
A-Flor-Case	10	Continuous	Built-ins
A-Flor-Evtr	232	Continuous	Elevator
A-Flor-Pfix	140	Continuous	Plumbing Fixtures
A-Flor-Strs	12	Continuous	Stairs
A-Flor-Tptn	181	Continuous	Toilet Partitions
A-Furn	10	Continuous	Furniture
A-Glaz	92	Continuous	Windows
A-Grid	173	Center2	Column Grid Lines
A-Grid-Iden	171	Continuous	Column Grid Numbers
A-Roof	20	Continuous	Roof
A-Wall	50	Continuous	Wall
A-Wall-Abov	32	HIDDEN2	Wall Above
A-Wall-Blow	30	Continuous	Wall Below
A-Wall-Chas	32	Continuous	Chase
Defpoints	White	Continuous	
RA-Area	173	Continuous	Interior Area Polygon
RA-Area-Extr	White	Continuous	Exterior Area Polygon
RA-Area-Iden-Name	211	Continuous	Room Name
RA-Area-Iden-Numb	131	Continuous	Room Number
Ra-Area-Zone-Iden-Name	red	Continuous	Apartment or Suite Number
Ra-Area-Zone-Iden-Numb	red	Continuous	Apartment or Suite Name
RA-Area-Zone	red	Continuous	Apartment or Suite Area Polygon
VP	8	Continuous	View Ports
Camera	yellow	Continuous	Camera
Cat6	blue	Continuous	CAT6 Jacks
Telephone	green	Continuous	Telephone
Wireless	magenta	Continuous	Wireless
F-Prot-Eqpm	10	Continuous	Fire Protection Equipment

RA-Area-Extr is the exterior area polygon and should be poly-lined by measuring the outer face of the exterior walls, excluding major vertical penetration areas (e.g. atriums), low height spaces (under 3 Feet), unexcavated basements and other significant voids.

RA-Area is the net usable area of a building. It is the interior area of a space and should be polylined by measuring the inner face of the walls. It is the sum of the assignable and assignable areas.[2]

1.3 Other

- Each drawing will have to be delivered clean and purged.
- Do not use X-refs in drawings.
- Basepoints must be consistent from floor to floor in real world GIS coordinates.
- Use D-Text type for room numbers
- The Insertion Point and Text need to be within the P-line boundary.

2   How to maintain Base Drawings

The OPDC Space administrator is responsible for the maintenance of the base drawings. Once the Space administrator has confirmed the reception of the base drawings the following has to be done in CenterStone:

- Add a new floor plan,
- Replace an updated floor plan or
- Integrate the new partial floor plan into an existing floor plan

2.1 Floor plans

Floor plans are stored in CenterStone. Any structural drawing layer will be maintained in AutoCAD. This includes: All Building Geometry (Architectural) layers and Polylines. After updating the floor plans, they will be imported back into CenterStone. All other space related attributes must be maintained in CenterStone.

3   Floor plan delivery workflow

3.1 How do we get the information?

Close out of projects with new floor plans can be done in potentially 3 places:
1. The Space administrator must accept the project as the first part of the E-Builder Workflow
   a. A project will only be accepted for closeout if drawings of architectural changes have been provided to the Space Admin in a CAD format
   b. E-builder and the capital program controls coordinator are responsible for E-builders workflow, a project will
2. If the project is under $50,000 a Check-list that John keeps track of will be used.
   a. The checklist will provide the Space Admin with the Project Manager name as well as how far along the project is. This will allow the Space Admin to request updated CAD drawings, if they are not provided.
3. Floor plans created outside OPDC (EG REP Purchases)
   a. REO sends transaction memos to the Space Admin for all property purchases and sales
   b. It is the responsibility of the Space Admin to find out if drawings exist and to track them down once a transaction memo is received.
   c. If no drawing exists for a property, the Space team will create one.

No one should be able to close out a project without sending an updated floor plan to the Space software administrator. Space administrator confirms that the CAD files are received in the right standard.