

University of California, Santa Cruz
Capital Planning and Space Management
Space Inventory Standards for Area Reconciliations

Table of Contents

I	Introduction	2
II	Definitions & Area Calculation	2
III	Room Numbering	7
IV	Appendix A	9

I. Introduction

A. Purposes

The purposes of this document are to:

1. Clarify and provide definition of types of square feet associated with Detailed Project Programs (DPP) and Project Planning Guides (PPG) including Assignable Square Feet (ASF), Non-assignable Square Feet (NSF), Basic Gross SF (BG), Covered Unenclosed SF (CU) and Outside Gross SF (OGSF).
2. Define the process for assigning room numbers and calculating ASF, NSF, BG, CU, and OGSF.
3. Provide reference information to architects creating construction documents.

B. Benefits

The benefits of using this information will be to:

1. Provide a more thorough and accurate analysis of schematic and baseline construction documents to track actual ASF/OGSF to the PPG requirements. For State-funded projects, area reconciliations are required as part of the Preliminary Plans (P) and Working Drawings (W) submittals.
2. Provide the basis of setting up as-builts that can be easily incorporated into the campus facilities inventory system.

II. Definitions & Area Calculations

A. General

All areas of a floor plan are to be polylined for purposes of establishing area calculations for space inventory. UC interior area calculations are based on dimensions taken from the INSIDE faces of walls or other surfaces forming the boundary of the designated space. Round off totals to the nearest foot. The types of spaces to be polylined are Assignable, Non-Assignable space, Basic gross, Covered Unenclosed and Open Air. See Appendix A for definitions and plans of these areas.

B. Assignable Square Feet (ASF)

1. Definition:

Assignable Area is “The sum of all floor or surface areas of a building assigned to, or available for assignment to, an occupant or user, including every type of space functionally usable by an occupant or user. “Areas defined as custodial, public toilet, circulation and mechanical are excluded. Areas defined as central physical plant shops, custodial offices or locker rooms, interior loading and receiving docks, special purpose storage or maintenance rooms and private rest rooms are considered assignable area and therefore should be included.

2. Area Calculation

Assignable area is computed by calculating the area of a polyline formed from the inside faces of surfaces that form the boundaries of the designated areas. Deductions should not be made for necessary building columns and minor projections.

3. Exceptions and Clarifications:

- a. Deductions should not be made for necessary free-standing columns or architectural and structural projections unless the column or projection is over 4 SF.
- b. Exclude areas having less than 6’-6” clear ceiling height.
- c. Usable space under an interior stairway, enclosed space under an exterior stairway, or interior space beneath a sloped ceiling may be counted to the extent (or that portion of it) the ceiling height exceeds 6’6”; if not it is structural.
- d. The open office area of a suite of offices shall be considered asf. In general, circulation is not deducted from the open office area unless the area is large (over 1,000 asf).
- e. Intermediate levels – For the control room associated with assembly area (e.g., projection rooms) calculate the gross SF as part of the second floor level. The control room and adjacent spaces should be calculated as part of the assignable SF.
- f. Private toilet rooms are considered assignable area and include rest room areas for residence hall and apartments occupants, clinic outpatients, hospital inpatients, executive suites, instructional and research (e.g., controlled environment laboratories and gymnasias), washrooms and showers for academic activities performers, etc.
- g. Multi-level labs – On the ground floor, calculate the space as assignable SF. Include all non-public circulation corridors (access to the back of the theater) as part of the assignable space. On the second or third levels

University of California, Santa Cruz
Capital Planning and Space Management
Space Inventory Standards for Area Reconciliations

where there is no floor, the space is subtracted from the overall basic gross SF for the level. For the catwalk, if it is a solid floor, include in both the gross SF and the assignable SF. If the catwalk is an open grated construction, then it is not included in ASF or OGSF.

- h. Area is not deducted for circulation in dining halls; the dining hall ASF is calculated wall to wall.
- i. Within an assignable facility (e.g., library) allow 6'0" strip for circulation in front of public use facilities such as elevators and public toilets.
- j. If a basement space has a concrete floor, a ceiling higher than 6'6" and is used for storage, it would be included in BG and as assignable.
- k. In a large lobby (non-assignable) space that has a reception area or coffee cart/food service facility, the reception or food service portion of the space will be assignable.

C. Non-Assignable Square Feet (NSF)

1. Definition:

Non-Assignable area is the sum of all areas on all floors of a building not available for assignment to an occupant or specific use but necessary for the general operation of a building. This includes custodial services areas, circulation areas, public restrooms, mechanical areas and private vehicle parking areas. See Appendix A for definitions and plans of these areas.

2. Area Calculation:

The non-assignable area is measured in terms of non-assignable square feet and is computed by measuring from the inside face of walls and partitions. Open interior stairwell space (i.e. the gap between the handrails in the middle) need not be deducted from floor basic gross; the entire stairway area is counted as circulation.

3. Exceptions and Clarifications:

- a. Multiple-level lobbies – On the ground floor, calculate the space as non-assignable circulation. On the second or third levels where there is no floor, the space is subtracted from the overall basic gross SF for the level.
- b. Multi-level stairwells with open shaft area - On each level, calculate the complete area of the stairwell and shaft as non-assignable circulation SF.
- c. The elevator or lift to the control room of an assembly space can be calculated as non-assignable circulation SF.
- d. For regular elevator create polyline around the complete elevator shaft and not just the cab.
- e. Area is not deducted for circulation in dining halls.
- f. Within an assignable facility (e.g. library) allow 6'0" strip for circulation in front of public use facilities such as elevators and public toilets.

University of California, Santa Cruz
Capital Planning and Space Management
Space Inventory Standards for Area Reconciliations

- g. When determining corridor areas, only spaces required for public access should be included.
- h. Mechanical Area includes central utility plants, service closets, mechanical and electrical equipment rooms, chiller, generator, air ducts, service shafts and areaways.
- i. Custodial Services areas include janitor closets, clean up spaces, custodial toilets, maintenance material storage areas, trash rooms exclusively devoted to the storage of non-hazardous waste.

D. Outside Gross Square Feet (OGSF)

1. Definition

Outside Gross area is a system calculation based on basic gross area and covered unenclosed gross area data calculated for each building level. The corporate facilities database maintains two methods for calculating Outside Gross Area: OGSF100 and OGSF50. UCSC uses the OGSF50 method, also known as Related Gross Area (see paragraph 1.d below).

$$\text{OGSF50} = \text{Basic Gross (BG)} + 50\% \text{ Covered Unenclosed (CU)}$$

a. Basic Gross Area (BG)

The basic gross area is the sum of all areas, finished and unfinished, on all floors of an enclosed structure of all stories or areas which have floor surfaces. Basic gross area also includes excavated basement areas, mezzanines, garages, enclosed porches, inside balconies, mechanical and electrical shafts.

Structural Area (also known as construction area) is the sum of all areas on all floors of a building that cannot be occupied or put to use because of structural building features. The difference between the exterior of the building and net usable area is the structural area. Examples of building features normally classified as structural area include exterior walls, fire walls, permanent partitions, unusable area in attics or basements.

b. Covered Unenclosed Area (CU)

The covered unenclosed area is the sum of all covered or roofed areas of a building located outside of the enclosed structure, for all stories or areas which have floor surfaces. CU areas include unenclosed corridors, walkways, porches, balconies, loading docks, bridges and arcades and exterior stairways.

University of California, Santa Cruz
Capital Planning and Space Management
Space Inventory Standards for Area Reconciliations

c. Open Air Space-

This is an “open air” area within the building envelope which has no floor surface, such as upper atrium levels which are above a lobby, light wells, or rooms with greater than single-floor ceiling height. Subtract such polylined space from the floor gross to get the actual floor gross square footage.

d. Building Efficiency Ratio:

The Building Efficiency Ratio is defined as the ratio of Assignable Area to Related Gross Area (OGSF50). Classroom and office facilities tend to be more efficient in comparison to complex research buildings.

$$\text{Efficiency Ratio} = \text{Assignable} / \text{OGSF50}$$

2. Area Calculation

The Basic Gross area is computed by measuring from the outside faces of exterior walls, disregarding architectural and structural projections.

The Covered Unenclosed area is computed by measuring from the outside faces of the envelope and the outside faces of the building. Measure to edges (i.e. ignore handrails), unless edge barrier is a solid wall in which case measure to inside of barrier. Area beneath roof overhangs/window coverings/awnings is counted as covered unenclosed only if there is a walkway underneath. Use discretion in considering space beneath an overhang (i.e. size of overhang, how high above walkway). As a guideline, don't consider an overhang smaller than 30".

3. Exceptions and Clarifications:

- a. Exterior stairs are counted as covered unenclosed if the flight above makes a solid “ceiling”; i.e. cannot count the top flight unless it is covered. Landings will usually qualify.
- b. Sliding doors as a building feature (even interior, e.g. conf. rm.) can be included as an external wall and is considered as structural.
- c. Parking structures are NOT considered as “covered unenclosed” gross area. Measurements for parking structures are recorded as Basic Gross and Unrelated Gross.”
- d. Loading docks within a building are directly assignable to a specific department or program. Exterior loading docks serving the building are considered covered unenclosed (if covered).
- e. If a basement space has a concrete floor, a ceiling higher than 6'6" and is used for storage, it would be included in basic gross for that building level and as assignable.
- f. Excavated or unfinished basements must be included in the Basic Gross and OGSF calculations. If a portion of the basement is mechanical chase space such

University of California, Santa Cruz
Capital Planning and Space Management
Space Inventory Standards for Area Reconciliations

as for the restrooms, then the SF is considered non-assignable (NSF) and calculated in the OGSF calculations.

- g. Basements without floor surfaces are considered unfinished gross area. Unfinished Gross Area is included in Basic Gross Area and includes unfinished floors or portions of floors and unfinished basements with floor surfaces.

III. Room numbering guidelines

A. General

1. Numbers are to be four digits – fill in with initial zero(s) if room number is only 1, 2 or 3 digits. There may also be up to 2 prefix and/or 2 suffix characters (alpha or numeric) in a room number (AANNNA).
2. Do not leave a blank space between any characters.
3. If the room is too small for the number to be placed inside, use a leader. Do not use boxes around the room numbers.
4. Each room is to receive a room number regardless of room use (assignable or non assignable).

B. Assigning Room Numbers

1. For large buildings, the first digit is the floor level and the second digit is the area or wing number. (e.g. first floor, second wing 1200, third floor, first wing 3100).
2. For regular buildings, second digit reflects floor number (e.g. first floor 0100, second floor 0200, and third floor 0300).
3. The lowest floor of a building is considered the first floor, even if the main entrance is on a higher floor and even if the lowest floor is a partial level with basement-type use.
4. Room numbers shall be odd on one side of the corridor and even on the other and should rise consecutively from the lobby entrance. If the main lobby is in the center of the building, begin numbering in the left corridor. If there is more than one main corridor, begin numbering in the first left corridor and increase the numbers clockwise around the building.
5. Rooms located in approximately the same position on different floors (such as the corners of a building) should have the same last digits if possible (e.g. room numbers 0104, 0204, and 0304 in the same position on the first, second, and third floors).
6. Skip room numbers where there is a large room that may be divided into two or more rooms in the future. This will allow for future rooms without having to re-number existing rooms.
7. Rooms entered through other rooms (not circulation areas) should be labeled with the same room number plus A, B, C, etc. in clockwise order starting from the room to the left of the entrance to the main room. If the main room is 0152, then the rooms off of it will be 0152A, 0152B, 0152C, etc.

University of California, Santa Cruz
Capital Planning and Space Management
Space Inventory Standards for Area Reconciliations

8. In apartments, the entire apartment is assigned one room number.
9. In areas of public circulation, such as foyers, lobbies, libraries and dining commons, separate room numbers can be assigned for areas with distinctly different functions, even if not divided by hard walls.
10. If different departments share use of a single, undivided room, that room number is given letter suffixes starting with Z and working backwards down the alphabet, one for each such department (e.g. NS annex 141Z, 141Y, 141X)

C. Numbers for Non-assignable space

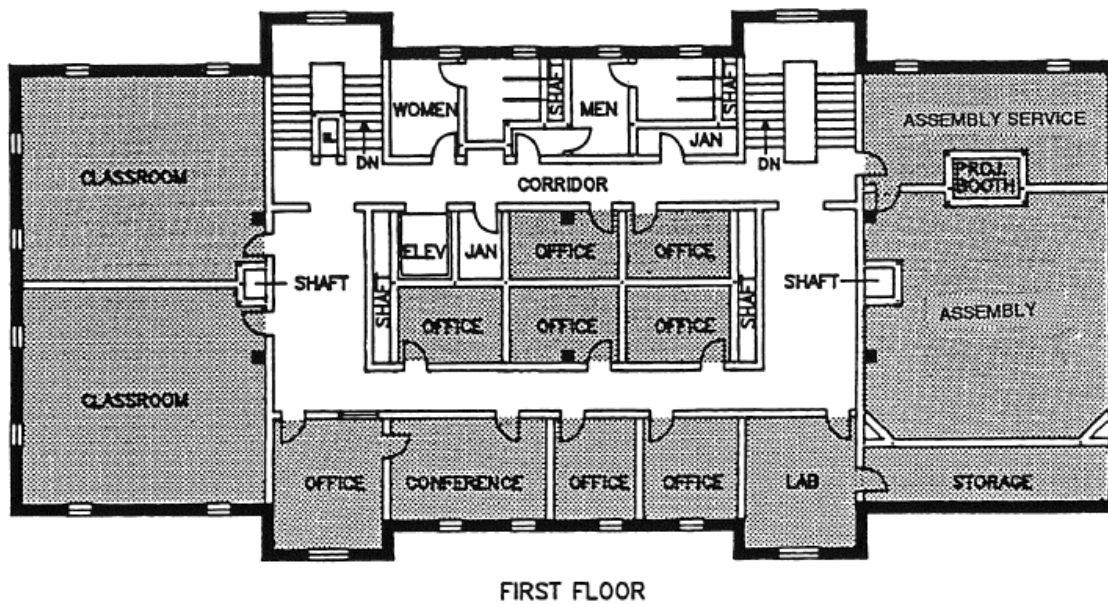
1. Prefix the identifier with a bracket character. Here are the conventions to use:
 - a. [NC]XXXX - NSF Circulation
 - b. [NJ]XXXX - NSF Janitorial/Custodial
 - c. [NM]XXXX - NSF Mechanical
 - d. [NM]XXXXL – NSF- Electrical Room
 - e. [NM]XXXXT – NSF – ITS Data closet
 - f. [NT]XXXX - NSF Public Toilet
 - g. [NX]XXXX– Excluded space (air space)
2. If a non-assignable space (Janitorial or restroom) is numbered on the drawing, you may use the architectural numbers with the addition of the appropriate bracketed identifier, zeros, prefix and suffix.
3. Following are some examples of room numbering consistent with numbering of assignable spaces.
 - a. Elevator off of main lobby 0100 = [NC]0100E1
 - b. The same elevator on 2nd floor = [NC]0200E1
 - c. If a building has multiple elevators, they should be numbered [NC]0100E1, [NC]0100E2, and so on
 - d. Lobby = First Floor [NC]0100, Second Floor [NC]0200 and so on.
 - e. Corridor = [NC]0100A, [NC]0100B, [NC]0100C and so on. Number clockwise from the first corridor on the left off of the main lobby.
 - f. Telecom/Data Room = [NM]0104T
 - g. Electrical Room = [NM]0104L
 - h. Janitorial Closet = [NJ]0114

IV. Appendix A

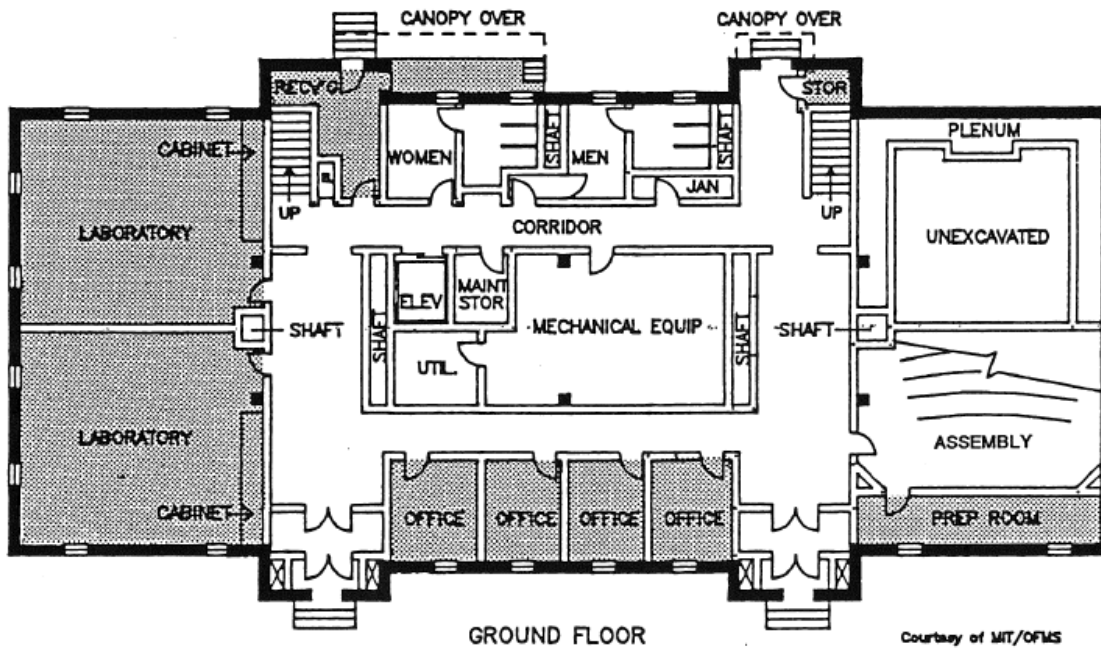
The UC Facilities Inventory Guide (FIG) is the source document for the Space Management Standards. References are taken from the FIG.

The shaded area represents Assignable areas.

Drawing: Assignable Area



University of California, Santa Cruz
Capital Planning and Space Management
Space Inventory Standards for Area Reconciliations



University of California, Santa Cruz
Capital Planning and Space Management
Space Inventory Standards for Area Reconciliations

The shaded area represents Custodial and Public Toilet areas.

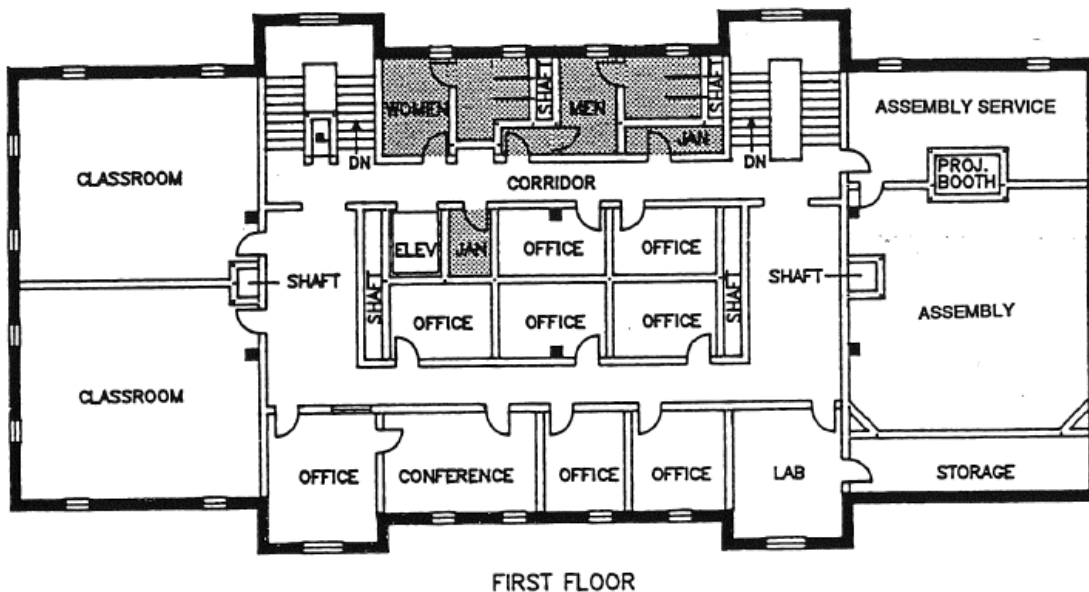
Custodial Services Area

The sum of all areas on all floors of a building used for building protection, care, maintenance and operation. This includes janitor closets, clean up spaces, custodial toilets, maintenance material storage areas, trash rooms exclusively devoted to the storage of non-hazardous waste.

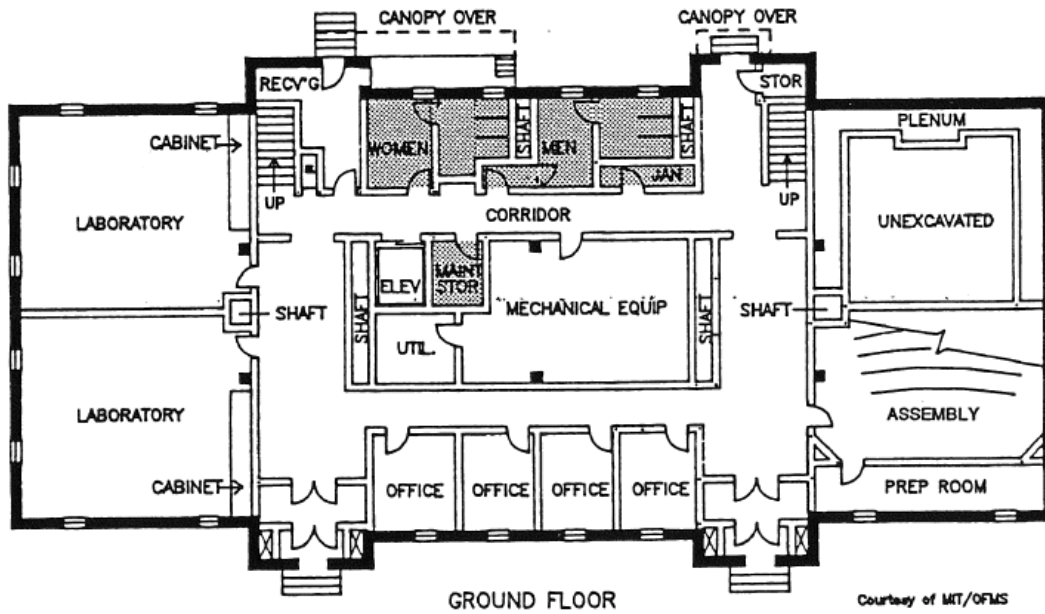
Public Toilet area

This is the area devoted to non-assignable public or general access toilet facilities. This area includes public or general access toilet rooms, including cot rooms and vestibules.

Drawing: Custodial Services and Public Toilet Areas



University of California, Santa Cruz
Capital Planning and Space Management
Space Inventory Standards for Area Reconciliations



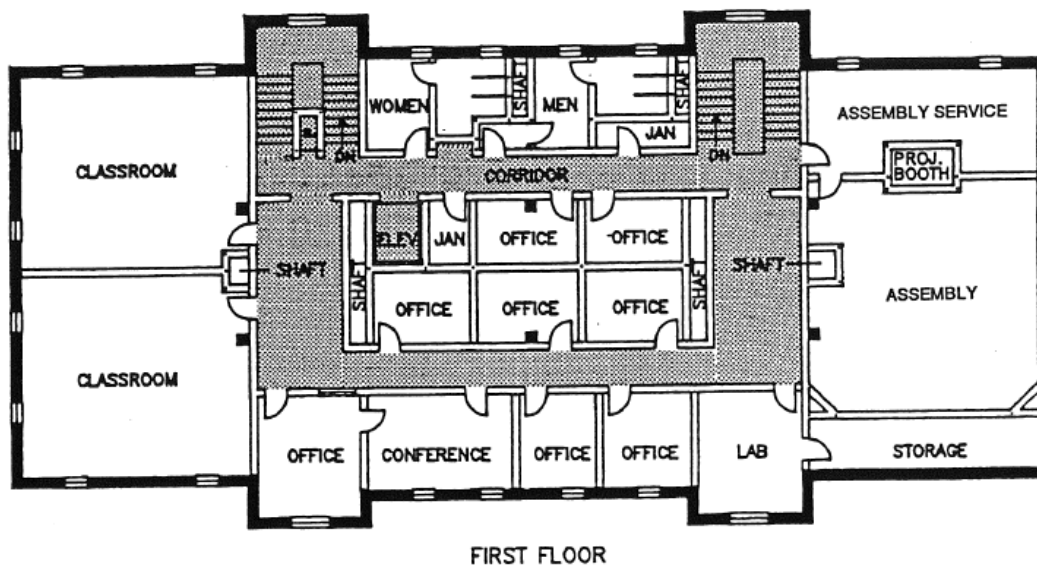
University of California, Santa Cruz
Capital Planning and Space Management
Space Inventory Standards for Area Reconciliations

The shaded area represents Circulation areas.

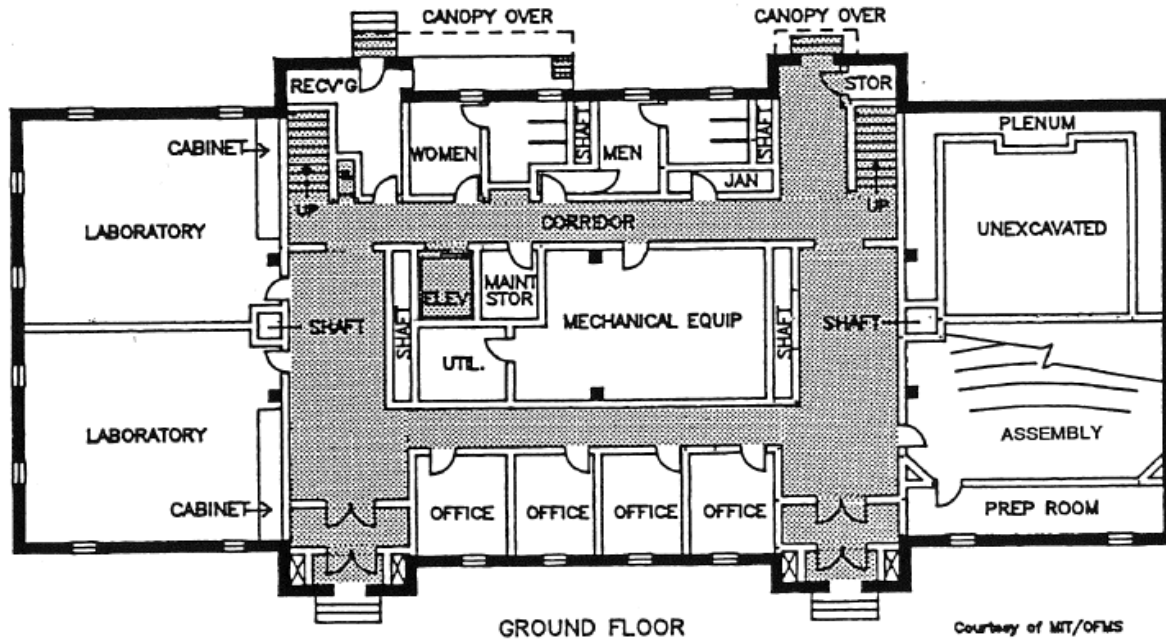
Circulation Area

The sum of all areas on all floors of a building, both within and without the environmentally controlled envelope, which is required for physical access to some subdivision of space, whether physically bounded by partitions or not, exclusive of private vehicle parking areas. This includes corridors, elevator shafts, escalators, stairs, stair halls and lobbies.

Drawing: Circulation Area



University of California, Santa Cruz
Capital Planning and Space Management
Space Inventory Standards for Area Reconciliations



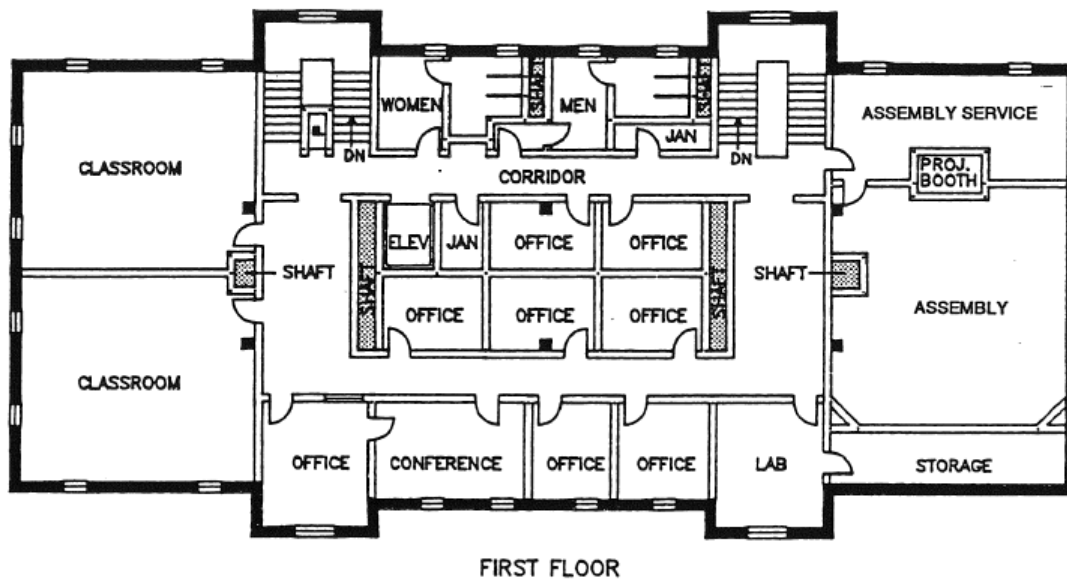
University of California, Santa Cruz
Capital Planning and Space Management
Space Inventory Standards for Area Reconciliations

The shaded area represents Mechanical areas.

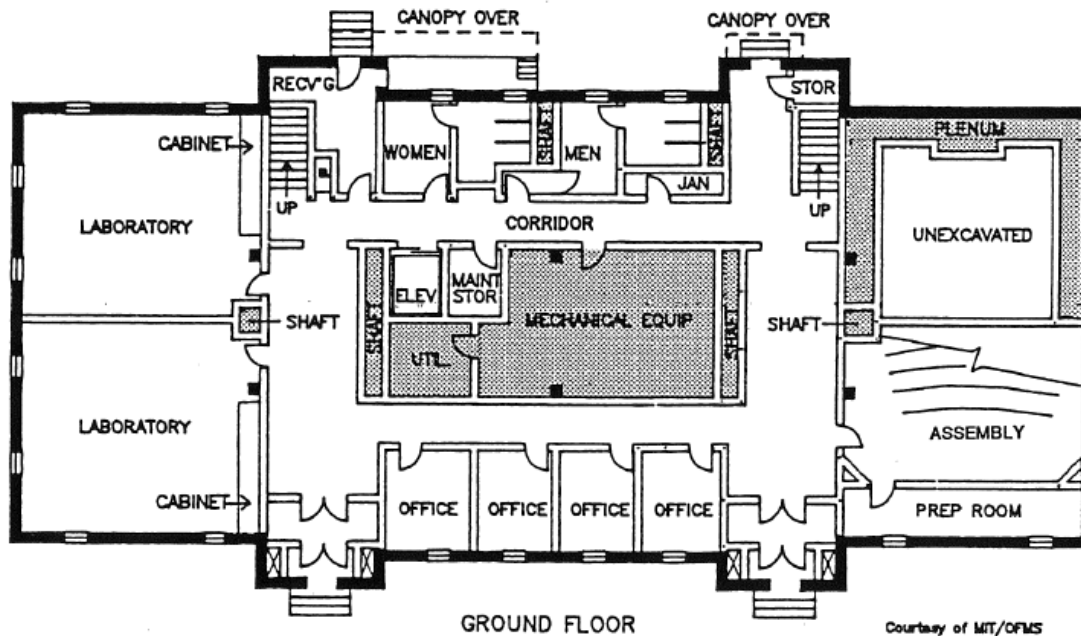
Mechanical Area

Mechanical area is the sum of all area on all floors of a building which houses the mechanical equipment, utility services and shaft areas for the building.

Drawing: Mechanical Area



University of California, Santa Cruz
Capital Planning and Space Management
Space Inventory Standards for Area Reconciliations

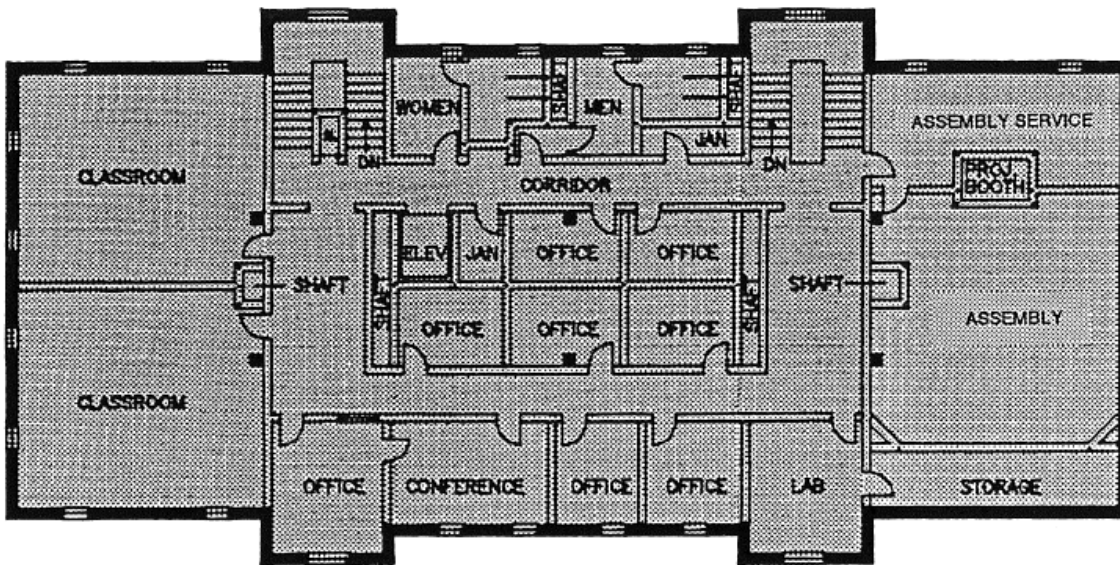


Private Vehicle parking Area

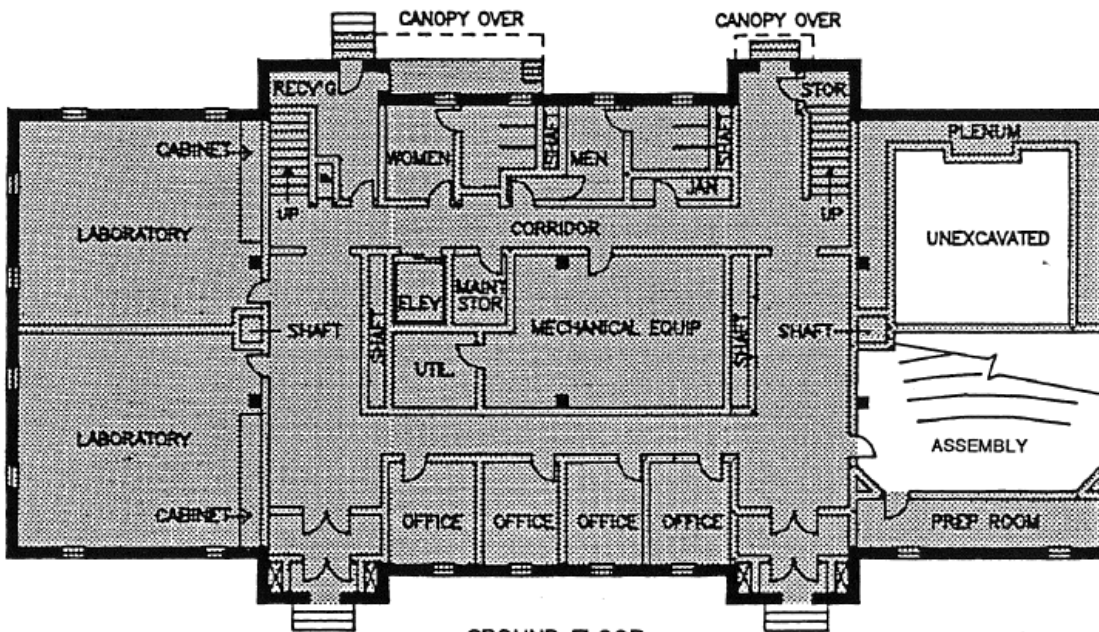
Private Vehicle parking area is that portion of the building which is used for private access, circulation and parking, whether in parking or non-parking buildings or structures.

University of California, Santa Cruz
Capital Planning and Space Management
Space Inventory Standards for Area Reconciliations

Drawing: Basic Gross Area



FIRST FLOOR



GROUND FLOOR

Courtesy of MIT/OFMS