




BUILDINGS BULLETIN 2019-009

Zoning

Supersedes: None

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Purpose: This bulletin clarifies the applicability of zoning floor areas to mechanical equipment floor spaces and other unused or inaccessible spaces in buildings.

Related Code/Zoning Section(s):	ZR 12-10 Definition of "floor area"	ZR 35-352
	ZR 23-16	ZR 96-21
	ZR 24-112	ZR 96-221

Subject(s): Floor area, mechanical equipment; Floor area, unused or inaccessible; Mechanical floors; Mechanical voids; Mechanical spaces; Residential; Tower regulation; Zoning diagram; Certificate of Occupancy

I. BACKGROUND

On May 29, 2019, an amendment of Article II, Chapter 3 and related provisions of the text of the Zoning Resolution, modifying residential tower regulations to require certain mechanical spaces and other unused or inaccessible spaces to be calculated as residential floor area, became effective. The intent of the text change is to discourage the use of excessively tall floors of mechanical equipment floor spaces and other unused or inaccessible spaces in residential towers in R9 and R10 Residential Districts and their equivalent Commercial Districts.

As a result of the text change, in R9 and R10 buildings developed pursuant to Tower Regulations, floors of mechanical equipment floor spaces and other spaces that are or become unused or inaccessible, that are taller than 25 feet, will count as zoning floor area. Such spaces, regardless of their individual heights, which are located within 75 feet of each other, will count as zoning floor area. The amended text applies to residential buildings, mixed buildings, and to residential buildings containing community facility use.

II. Zoning Text

ZR 23-16 states, in relevant part:

"The floor area ratio provisions of Sections 23-14 (Open Space and Floor Area Regulations in R1 through R5 Districts) and 23-15 (Open Space and Floor Area Regulations in R6 through R10 Districts), inclusive, shall be modified for certain areas, as follows:

(a) For standard tower and tower-on-a-base buildings in R9 and R10 Districts

1. In R9 Districts, for zoning lots where buildings are developed or enlarged pursuant to the tower-on-a-base provisions of Section 23-651, the maximum floor area ratio shall be 7.52, and the maximum lot coverage shall be 100 percent on a corner lot and 70 percent on an interior lot.

2. In R9 and R10 Districts, for zoning lots containing a building that is developed or enlarged pursuant to the applicable tower regulations of Section 23-65 (Tower Regulations), inclusive, any floor space used for mechanical equipment provided pursuant to paragraph (8) of the definition of floor area in Section 12-10 (DEFINITIONS), and any floor space that is or becomes unused or inaccessible within a building, pursuant to paragraph (k) of the definition of floor area in Section 12-10, shall be considered floor area and calculated in accordance with the provisions of this Section, provided that such floor space:
 - (i) occupies the predominant portion of a story;
 - (ii) is located above the base plane or curb level, as applicable, and below the highest story containing residential floor area; and
 - (iii) exceeds an aggregate height of 25 feet within any given 75 vertical feet of one another within a building.

For the purpose of applying this provision, the height of such floor space shall be measured from the top of a structural floor to the bottom of a structural floor directly above such space. In addition, the number of stories of floor area such space constitutes within the building shall be determined by aggregating the total height of such floor spaces, dividing by 25 feet, and rounding to the nearest whole integer...”

Other sections in the Zoning Resolution where the provisions of ZR 23-16 are applicable include: ZR 24-112, ZR 35-352, ZR 96-21 and ZR 98-221. For example, ZR 24-112 states, in relevant part:

“...the provisions of paragraph (a)(2) of Section 23-16 (Special Floor Area and Lot Coverage Provisions for Certain Areas) shall apply:

1. to only the residential portion of a building where less than 75 percent of the total floor area of such building is allocated to residential use; and
2. to the entire building where 75 percent or more of the total floor area of such building is allocated to residential use”

III. Interpretation

Item 1 The provisions of ZR 23-16 apply to enclosed spaces within a building and not to exterior spaces, such as rooftops and setbacks that contain outdoor mechanical equipment.

Item 2 **ZR 23-16(a)(2), interpretation of “any floor space that is or becomes unused or inaccessible within a building, pursuant to paragraph (k) of the definition of floor area in Section 12-10.”**

ZR 12-10 paragraph (k) of the definition of floor area already considers any floor space that is or becomes unused or inaccessible within a building floor area. Section 23-16(a)(2) further requires such floor spaces be calculated in accordance with the provisions of the section, potentially resulting in multiple floors of zoning floor areas for such floor spaces (See illustrative example B in Part IV of this bulletin).

Item 3 **ZR 23-16(a)(2)(i), interpretation of “occupies the predominant portion of a story”**

The “predominant portion” shall be the portion or portions of a story’s floor space that occupies cumulatively 50 percent or more of the gross area on a given story.

Item 4 **ZR 23-16(a)(2)(iii) interpretation of “exceeds an aggregate height of 25 feet within any given 75 vertical feet of one another within a building.”**

A. Aggregating floors. Floors of mechanical equipment floor spaces and any floor spaces that are or become unused or inaccessible within a building, and which are located within 75 vertical feet of another such floor shall be counted as zoning floor area until there is no other mechanical floor or unused or inaccessible floor within 75 vertical feet.

In determining the total zoning floor area for such mechanical equipment floor spaces, unused spaces, and inaccessible spaces that are clustered and subject to ZR 23-16(a)(2)(iii), the total height of all such floors, even if those floors do not exceed 25' individually, shall be aggregated for the purposes of the calculation. (see Figure 1a below)

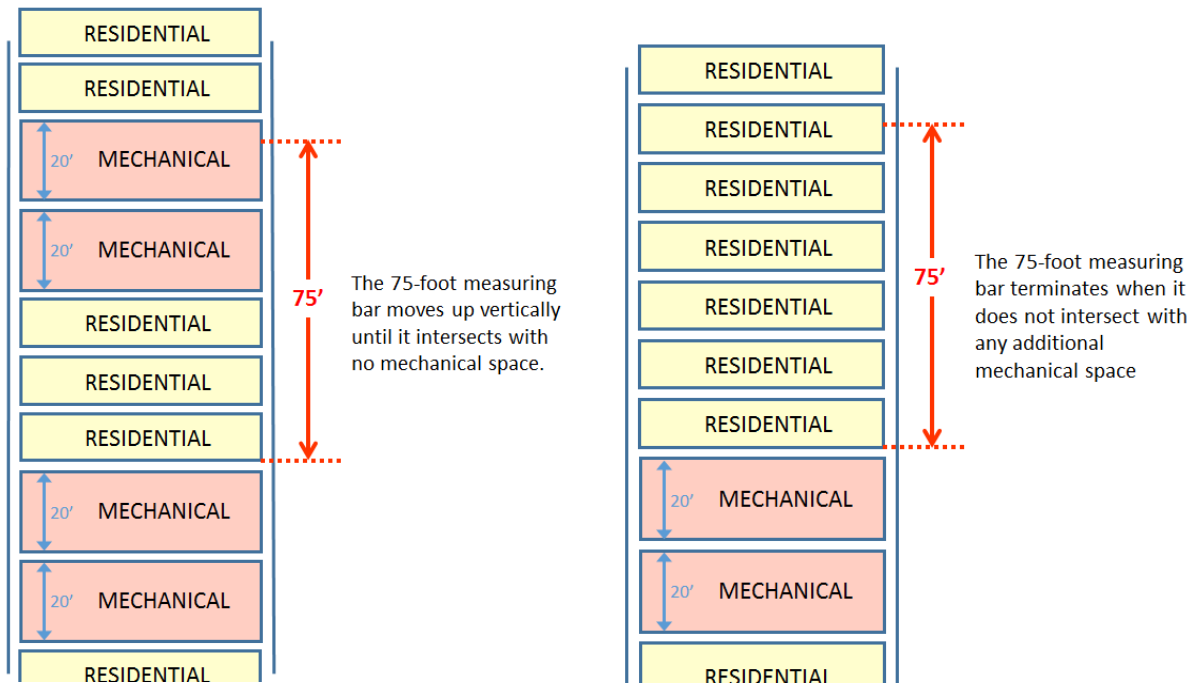


Figure 1a. Aggregating floors of mechanical floor spaces, unused spaces, and inaccessible spaces within 75 vertical feet of other such spaces.

- B. 75 vertical feet measurement.** In measuring the aggregated mechanical floors or void floors, the 75 vertical feet distance shall be measured from the top of the structural floor slab above the floor containing mechanical equipment, unused or inaccessible floor spaces, to the top of the closest structural floor slab of the floor containing mechanical equipment, unused or inaccessible floor spaces next above. (see Figure 1b below)

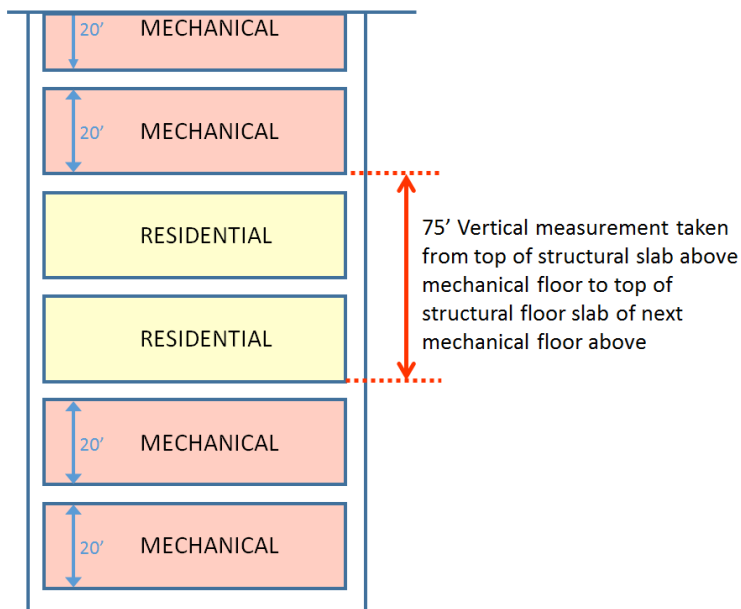


Figure 1b. 75 vertical feet measurement between floors of mechanical floor spaces, unused spaces, and inaccessible spaces.

C. Calculations

- 1. Determining number of stories.** The total height of all such floor spaces that are within 75 vertical feet of one another shall be aggregated, then divided by a factor of 25, and rounded down to the nearest whole integer when less than 1.5, and rounded up to the nearest whole integer when 1.5 or more. The resulting integer shall be the number of stories of floor area that such floor spaces constitute within the building. (see Figure 2 below)

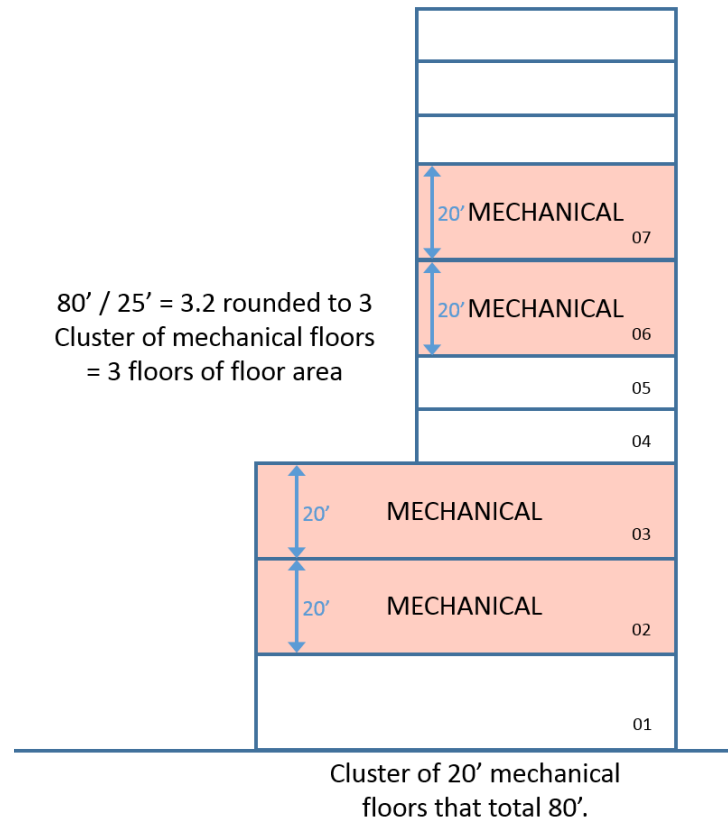


Figure 2. Example: calculation for the number of floors of zoning floor area occupied by mechanical floor spaces, unused spaces and inaccessible spaces

- 2. Weighted average of floor areas.** For floors of mechanical equipment floor spaces, unused spaces, and inaccessible spaces of varying floor sizes, a weighted average of floor areas shall be used in determining the zoning floor area of the mechanical equipment floor spaces, unused spaces, and inaccessible spaces. (see Example 2 in Part V of this bulletin)

Item 5 ZR 23-16(a)(2), interpretation of “...the height of such floor space shall be measured from the top of a structural floor to the bottom of a structural floor directly above such space.”

To determine the height of each floor, measurement should be taken from the top of the structural floor to the bottom of the structural floor slab next above. Measurements of floor height are not to be taken from the finished floor to the bottom of a drop ceiling above. In the case of a structural coffered ceiling (e.g. waffle slab or space frames), measurement shall be taken from the top of the structural floor to the bottom of the structural floor slab. Figure 3 indicates how floor height is measured for this purpose.

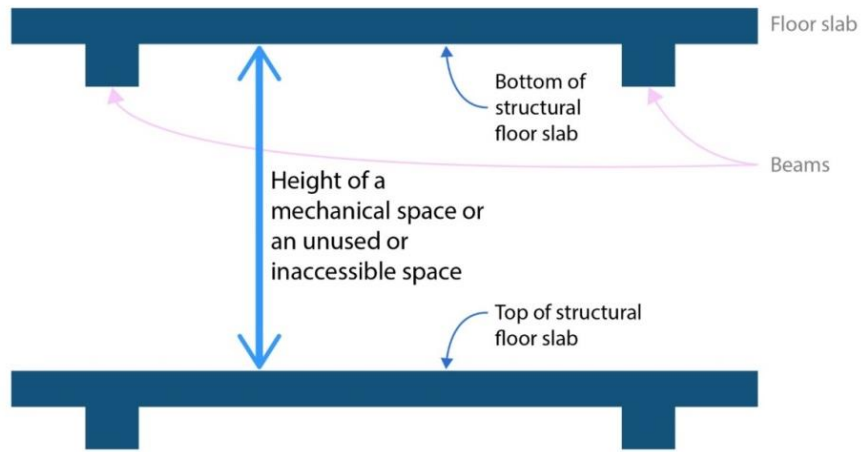


Figure 3. Measurement from the top of a structural floor to the bottom of a structural floor slab directly above

IV. Recordation of Zoning floor areas for mechanical floor spaces, unused space, or inaccessible spaces subject to ZR 23-16

1. **Construction documents.** Where mechanical floor spaces, unused spaces, or inaccessible spaces are subject to ZR 23-16, and result in zoning floor areas, such zoning floor areas shall be indicated on the zoning calculation in the construction documents as a line item as follows:

ZR 23-16 Floor areas for tall mechanical spaces/unused spaces/inaccessible spaces ____ (insert sq. ft.)

2. **Zoning Diagram.** Where a Zoning Diagram (ZD-1) is required, such ZD-1 shall include a line item as follows:

Floor Number	Building Code Gross Floor Area (sq. ft.)	Zoning Floor Area (sq. ft.)				FAR
		Residential	Community Facility	Commercial	Manufacturing	
Void floors	0	(insert sq. ft)				Insert FAR

Illustrative example A: Tall mechanical floors on 11th and 12th floors are subject to ZR 23-16, resulting in 19,500 square feet of floor area.

Floor Number	Building Code Gross Floor Area (sq. ft.)	Zoning Floor Area (sq. ft.)				FAR
		Residential	Community Facility	Commercial	Manufacturing	
11	20,500	0				0
12	20,500	0				0
Void floors	0	19,500				0.3

Illustrative example B: Tall unused floor spaces on 18th and 19th floors are subject to ZR 12-10 (k) definition of “floor area”, and to ZR 23-16 because of their height, resulting in 19,500 square feet of additional zoning floor area.

Floor Number	Building Code Gross Floor Area (sq. ft.)	Zoning Floor Area (sq. ft.)				FAR
		Residential	Community Facility	Commercial	Manufacturing	
18	20,500	19,500				0.3
19	20,500	19,500				0.3
Void floors	0	19,500				0.3

3. Certificate of Occupancy. Where a new or amended Certificate of Occupancy is required, each floor containing mechanical floor spaces, unused spaces, or inaccessible spaces that are subject to ZR 23-16 shall include floor height under “description of use”, as follows:

“Mechanical spaces/unused spaces/inaccessible spaces, with _____(insert feet/inches) of ceiling height”.

In addition, the following information shall be included onto the comment field of the Certificate of Occupancy:

“_____ (insert sq. ft.) square feet of zoning floor areas from tall mechanical spaces/unused spaces/inaccessible spaces pursuant to ZR 23-16.”

Such description and comment shall be maintained on any future new or amended Certificate of Occupancy as applicable.

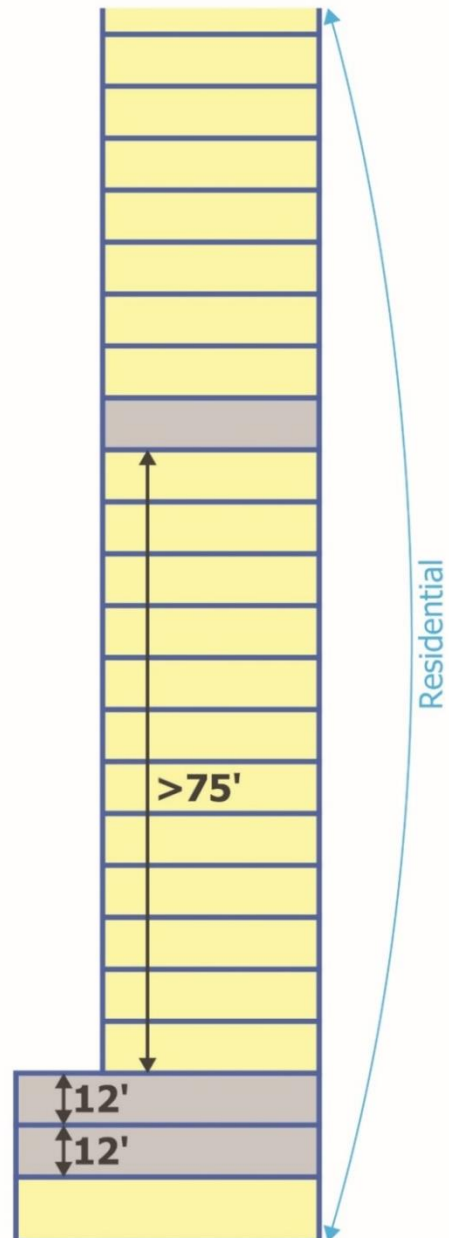
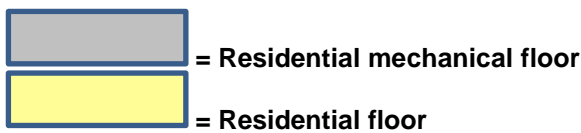
V. EXAMPLES OF ZONING FLOOR AREA CALCULATION FOR MECHANICAL EQUIPMENT FLOOR SPACES, UNUSED OR INACCESSIBLE FLOOR SPACES (for illustrative purposes only)

EXAMPLE 1

Residential Building

Two floors of mechanical equipment floor spaces, each measuring 12 vertical feet, with an aggregate mechanical floor height of 24 feet, are not located within 75 vertical feet of any other mechanical floors.

Since the overall mechanical floor height does not exceed the height threshold of 25 feet, the floors of mechanical floor spaces are exempt from zoning floor area.



EXAMPLE 2

Residential Building

Five floors of mechanical equipment floor spaces are located within 75 vertical feet of other mechanical floors. The aggregate mechanical floor height is 100 feet for the five mechanical floors. To determine the number of floors of mechanical floor spaces, the overall mechanical floor height of 100 feet is divided by 25:

$$100' / 25 = 4$$

The floors of mechanical equipment floor spaces count as 4 floors of zoning floor area.

Because the floors of mechanical floors are of varying sizes, a weighted average is used.

Assume floors 1 to 3 are 7,000 sf per floor and the remainder stories above are 5,000 sf per floor.

Two mechanical floors are 7,000 sf each. Three remaining mechanical floors are 5,000 sf each.

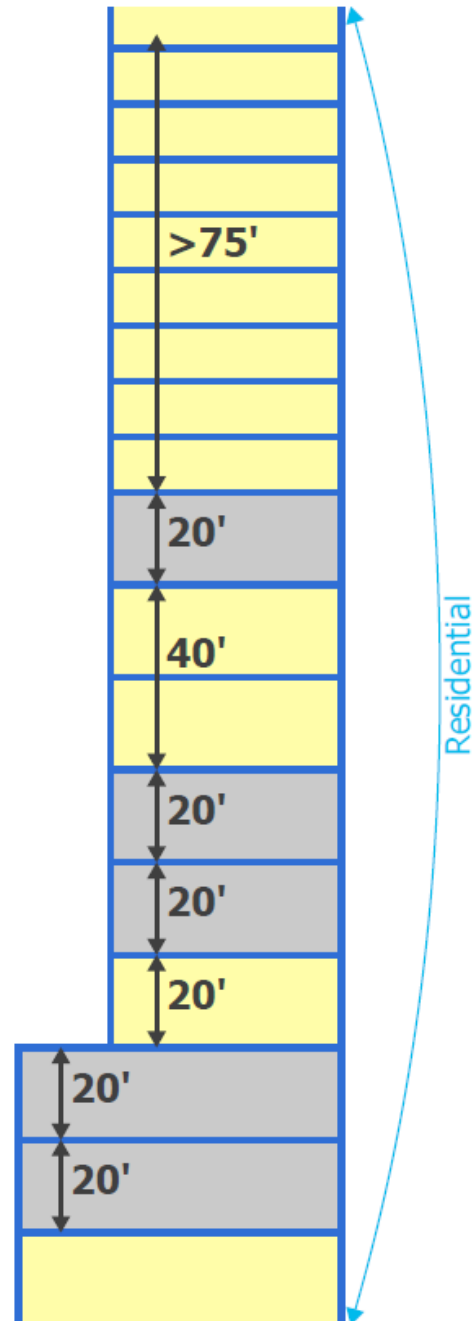
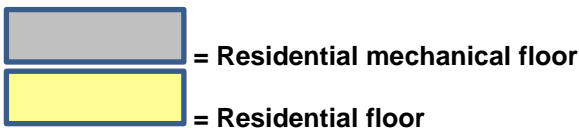
- 7,000 sf x 40 feet in height = 280,000
- 5,000 sf x 60 feet in height = 300,000
- $(a + b) / 100 \text{ feet in total height} = 5,800$

The weighted average floor area per floor is 5,800 sf.

Per 23-16(a)(2), 4 floors of zoning floor area is required to be counted.

Total floor area of the proposed mechanical floors:
(Weighted average floor area per floor) X (Number of floors counted as zoning floor area).

$$(5,800) \times 4 = 23,200 \text{ sf of zoning floor area.}$$



EXAMPLE 3

Mixed Building (*Commercial and Residential*)

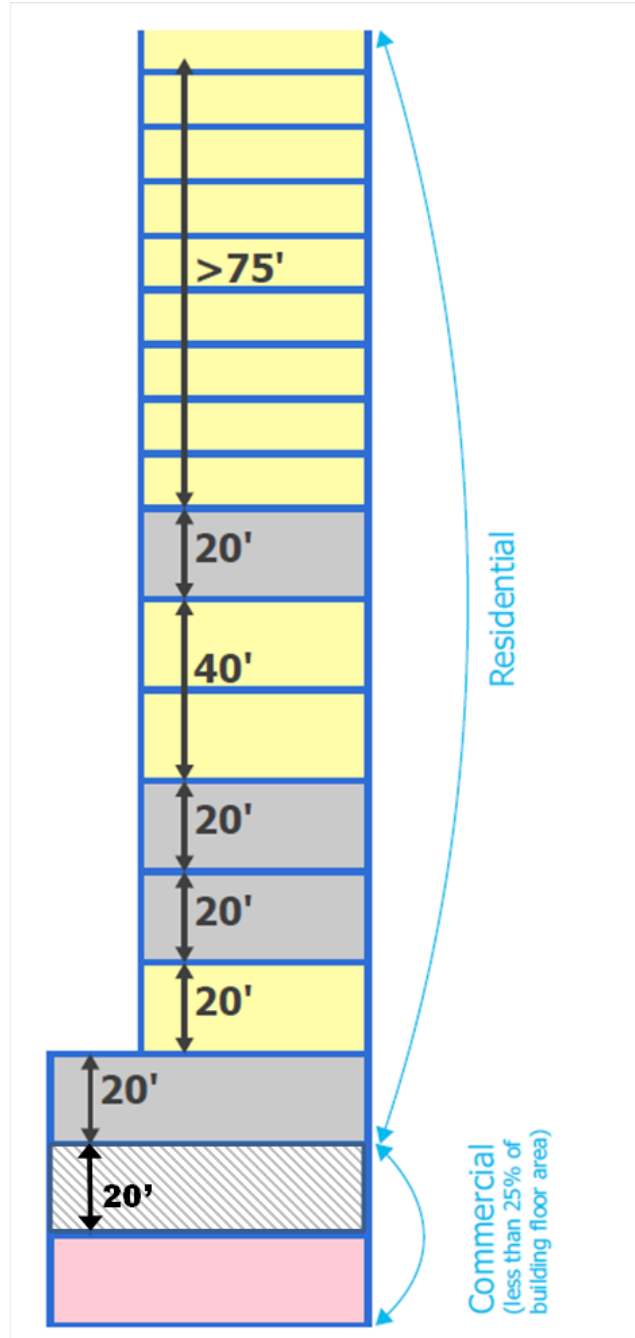
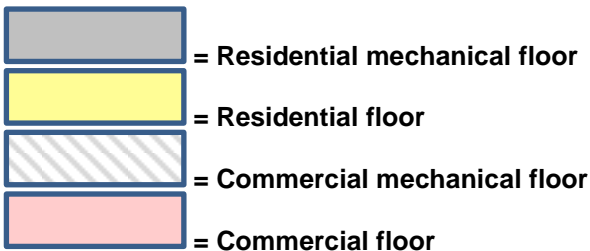
The commercial floor area is less than 25 percent of the total floor area of the building.

Since the commercial space, including the mechanical floor spaces within the commercial portion of the building, occupy less than 25 percent of total building floor area and 75 percent or more of the total floor area of the building is allocated to residential use, floors of mechanical equipment floor spaces, within the commercial portion of the building will be subject to the same provision governing residential mechanical floor spaces.

Five floors of mechanical equipment floor spaces are all located within 75 vertical feet of other mechanical floors. The aggregate mechanical floor height is 100 feet for the five mechanical floors.

The overall mechanical floor height of 100 feet divided by 25 equals to 5: $100'/25=4$.

The floors of mechanical equipment floor spaces count as 4 floors of zoning floor area.



EXAMPLE 4

Mixed Building (*Commercial and Residential*)

The commercial floor area is more than 25 percent of the total building floor area.

Mechanical equipment floor spaces within the commercial portion of the building are not considered since the commercial space, including such mechanical floor spaces, occupy more than 25 percent of total building floor area. The floor of mechanical equipment floor spaces within the commercial portion of the building will not be subject to the mechanical space restriction.

One floor of residential mechanical equipment floor spaces, measured 14 vertical feet, with an aggregate mechanical floor height of 14 feet, is not located within 75 vertical feet of any other mechanical floors.

Since the overall mechanical floor height does not exceed the height threshold of 25 feet, the floor of mechanical floor spaces

