

**Comments to the NYC Department of City Planning
Regarding proposed Zoning Text Amendment on Residential Tower Mechanical Voids
March 13, 2019**

The American Council of Engineering Companies of New York (ACEC New York) represents close to 300 consulting engineering and affiliate firms throughout New York State, with a concentrated presence in New York City. Our members plan and design the structural, mechanical, electrical, plumbing, civil, environmental, fire protection and technology systems for the City's buildings and infrastructure.

ACEC New York appreciates this opportunity to share our comments regarding the Department of City Planning (DCP) proposed zoning text amendment in relation to regulating mechanical voids in residential and mixed use buildings consisting of 75% or more residential area.

The engineering community has identified concerns with the proposal as outlined below. These are followed by suggestions for changes to the proposal that would mitigate these concerns.

Concerns:

- Building Energy Performance
 - The proposal creates incentive and pressures to limit mechanical space in residential buildings, which are already challenged.
 - The City is continually updating the Energy Code and advancing unprecedented sustainability and carbon reduction policies. It is anticipated that building designers will be called upon to create innovative and unique designs. The reduction in mechanical floor height will impact the performance of basic mechanical systems and it is expected that new technologies considered to meet high performance goals will also be challenged by the limits in the proposal.
 - Proposed increases in ventilation rates in residential buildings will require increased ventilation equipment which will require additional mechanical room space.
 - Code mandated increases in air filtration efficiency require larger filter banks which will require additional mechanical room space.
 - Elevator motor rooms are often co-located with mechanical equipment rooms. The dimensions of the elevator overhead clearance often determine the floor to floor height of the mechanical floor to avoid having the elevator overrun extend into the floor above.
 - Any proposal that encourages the reduction in mechanical space will mean that equipment is selected for size, not performance (eg. shorter chiller barrels, smaller heat exchanges, faster and noisier fans and pumps, higher pressure drop and noise at louvers, reduced space for energy saving, air side economizers, etc).
 - Energy impacts due to compressed duct, pipe, and feeder runs (higher motor HP, higher voltage drops)
- Space and Volume
 - Small floor plate buildings benefit from stacking Mechanical Equipment Rooms (MER) because net floor space is limited after core spaces (eg. building support areas, electric closets, stairs, elevators, etc...) are allocated.

- MERs may need to be clustered in small floor plate buildings to fit the necessary equipment and associated services. There are inefficiencies of having to separate equipment that has a synergy of being installed adjacent to or stacked near each other.
 - Mixed use buildings often require deep structure at structural transfer floors which occur where the residential column grid meets the commercial column grid. Does the proposal's definition of floor height as the underside of the "structural ceiling" fully address the impact of the structure on these floors? "Structural ceiling" is not a code defined term. We would recommend clarifying that it is measured as the "bottom of the lowest structural elements in the space".
- Noise
 - Stacking floors reduces MER-to-apartment interface area which creates less noise transmission into the apartments above and below the mechanical floors. Unstacked floors means MERs have greater interface area with residential units above and below, increasing noise impacts and need for acoustical treatments.

Recommendations:

- The proposal should give the Commissioner the ability to provide relief from these regulations where mechanical space heights exceeding the limits are proven to have a meaningful and functional technical purpose.
- As per Section 23-16 (a) (2), we interpret the term "structural ceiling" to mean the bottom of the structural beams, girders or trusses, etc. If this is the case, we believe that increasing the 25 foot clear height to 30 feet would greatly reduce the need for designers to apply for waivers to this regulation.
- Provide an exemption for small floor plate buildings (USF) with some enhanced criteria applicable to these structures.
- Create an exception for code required fire reserve tanks at intermediate floors that are required in addition to other building equipment that may necessitate multiple double height mechanical levels. This could be an example of a condition for which the Commissioner would consider relief.
- Create an exception for elevator machine rooms and overruns when they dictate the height of the elevator machine room.
- The language should be modified to allow not more than two mechanical floors within 75-feet of each other vertically.

Thank you for considering these concerns and recommendations. If you have questions or would like to discuss this subject deeper with members of our Code Committees, please let us know.

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