

# Mechanical Neighbors

## Historical Background

As 20th-century skyscrapers acquired air conditioning and increasing numbers of elevators, those systems began to occupy entire dedicated floors hidden from public view. The presence of those floors is sometimes externally visible as horizontal bands of louvers or panels on a building's façade.

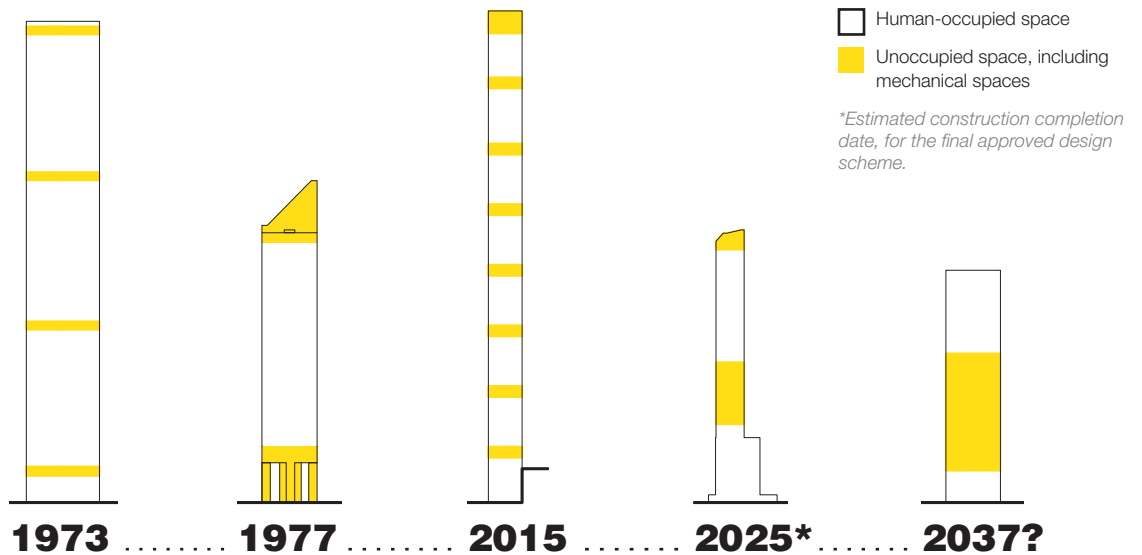
Tall buildings may also be engineered to counteract the forces of wind currents by dedicating floor space to multi-ton moving concrete blocks known as tuned mass dampers.

Those past technological trajectories, alongside the recent emergence of designs for towers

containing oversized internal voids to increase their height, suggest a future scenario in which empty spaces in high-rise buildings could house even greater quantities of increasingly automated systems in addition to floors for people.

Diagrams are approximate schematic illustrations.

## Timeline



<p><b>1973</b> ..... <b>1977</b> ..... <b>2015</b> ..... <b>2025*</b> ..... <b>2037?</b></p> <p><b>World Trade Center</b></p> <p>Exterior bands on the façade indicated where two floors out of every 32-33 in each tower housed mechanical systems such as elevator machinery.</p>	<p><b>Citigroup Center</b></p> <p>Office floors perch above a three-legged open-air base. Sway from wind loads is offset by a tuned mass damper beneath its distinctive sloping roof.</p>	<p><b>432 Park Avenue</b></p> <p>Open-air floors allow wind to pass through the tower, reducing structural loads. The building also incorporates tuned mass dampers.</p>	<p><b>50 West 66th St.</b></p> <p>A proposed condominium contained a 160 internal void to raise its height. Its final approved plans (not shown) used three smaller unoccupied spaces instead.</p>	<p><b>“The Ware-House”</b></p> <p>A former office tower is converted into a combination of a compact urban automated warehouse on its lower floors and condos on its most desirable higher floors.</p>
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## Percentage of Height as Unoccupied Space

(Estimated)



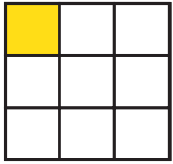
## New Height Counting Protocol

$$\boxed{\text{Total height} = [\text{human-occupied height}] + [\text{non-occupied height}]}$$

**Examples:** “The tower is 40 + 5 stories tall.”; “It’s 600 + 200 feet tall.”

A new means of counting building heights is needed. As mechanized interior spaces continue expanding, a means to count how many of a building's floors serve both human and non-human occupants

could facilitate more precise descriptions of their height. The term “non-occupied height” includes mechanical floors and high ceiling spaces, but not fictional floors within a building's enumeration.



A	D	D	R	E	S	S	A	B	L	E
S	P	A	C	E						

# Iterative Rooms

## Analysis

When two physical spaces are identical, actions and events taking place in one space may exhibit conceptual parallels with activities in the other space.

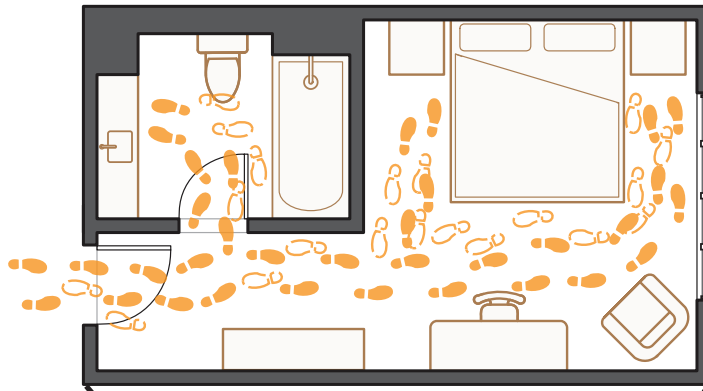
The repetitive floor plans of hotels take advantage of that paradigm. Buffalo, New York's 1923 Statler Hotel pioneered the use of identical room layouts in an attempt to increase the efficiency of cleaning them, by standardizing the motions involved.

For a computer, repeated performances of the same activity can run from one single piece of software code. The hotel can thus be said to have embedded the repeating "code" of its cleaning routines into its room layouts, even if no human could work with perfect repetition in reality.

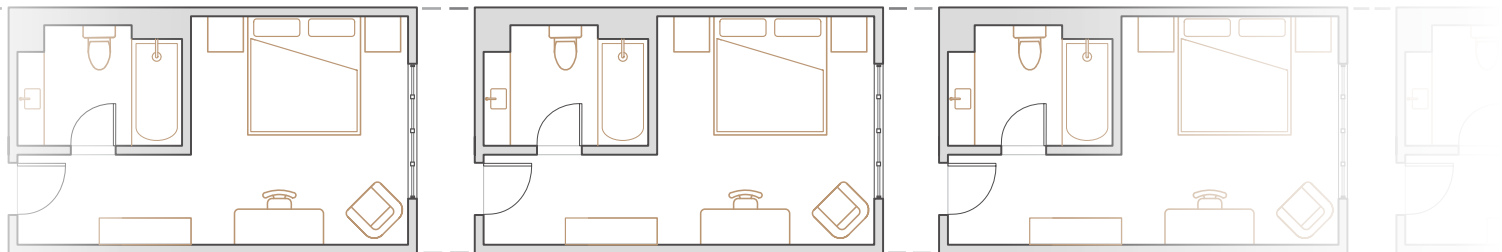
Within the ideal setting of a fully virtual world containing identical rooms loaded from a single source file, a standardized task taking place in one room would also take place in every room.

Source for hotel information: Lisa Pfueller Davidson, "Early Twentieth-Century Hotel Architects and the Origins of Standardization," *Journal of Decorative and Propaganda Arts* 25 (2005), p.86.

## Example Routine

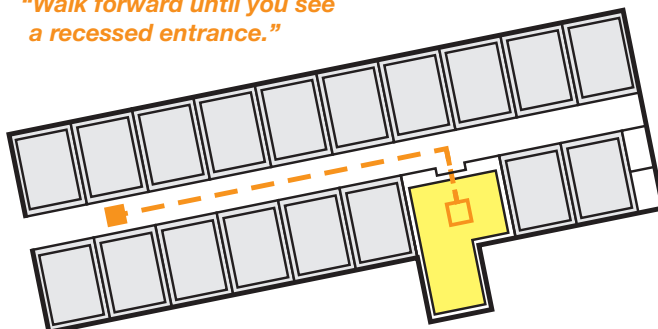


A *path* taken to clean one prototypical modern hotel room is also equally applicable to other locations in the same set of repeating standardized rooms.



## New Travel Directions

*"Walk forward until you see a recessed entrance."*



A new kind of simplified travel direction could delineate routes between **visually unique** parts of the built environment (i.e., landmarks),

de-emphasizing information about traveling past more common **identical repeating places** where it would be less necessary.