



# Unlocking better housing with point access blocks

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Larch Lab



# Radical Simplicity in Building Form



Foto: google earth



# Autocentric Missing Middle Housing

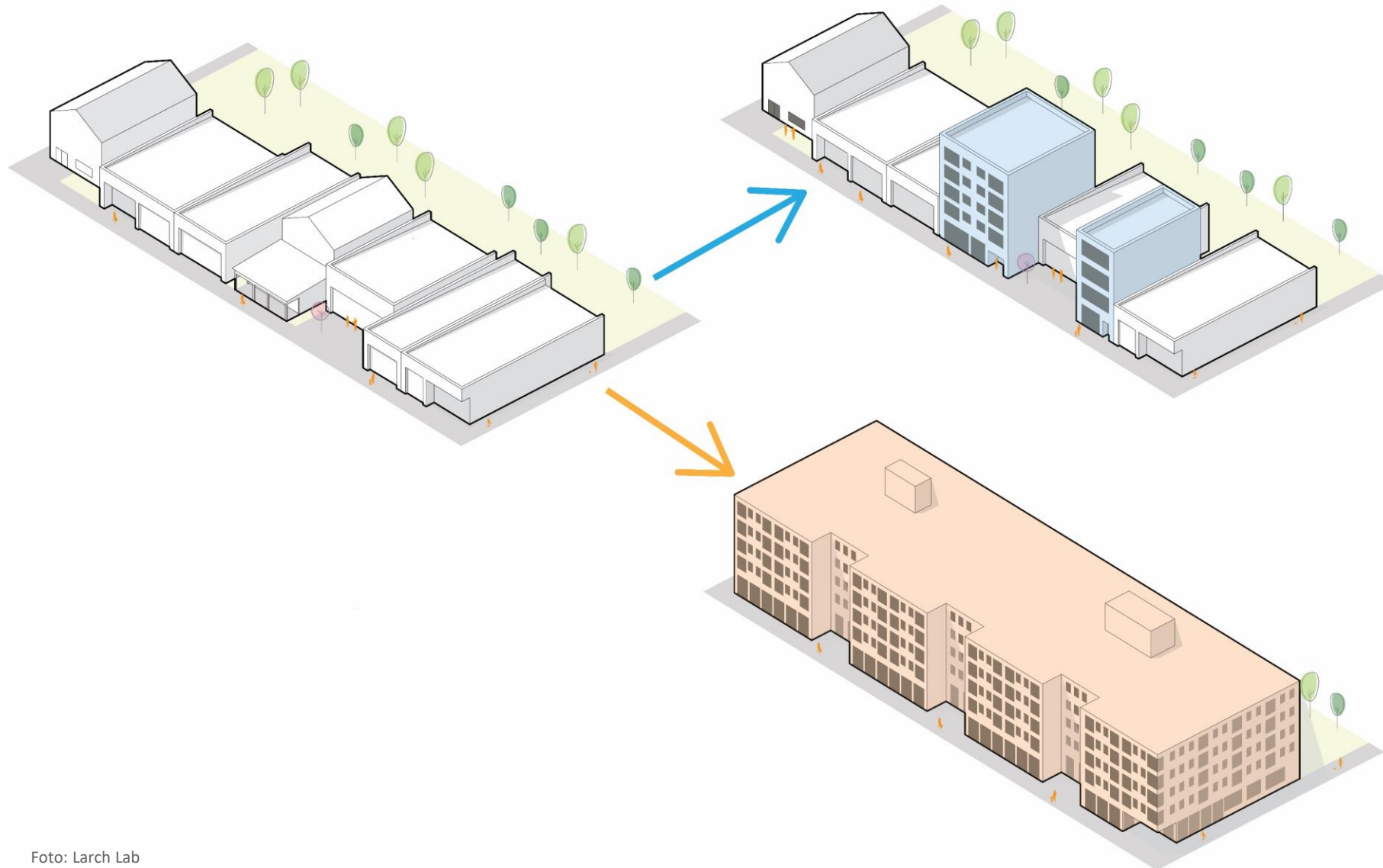


Foto: Luke Gardner

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# Building + Zoning Codes – Influence Redevelopment



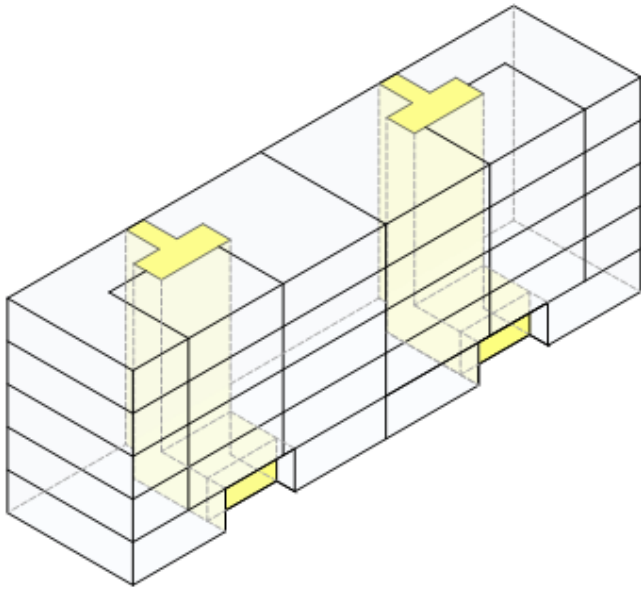
# This building does not exist outside the US/Canada



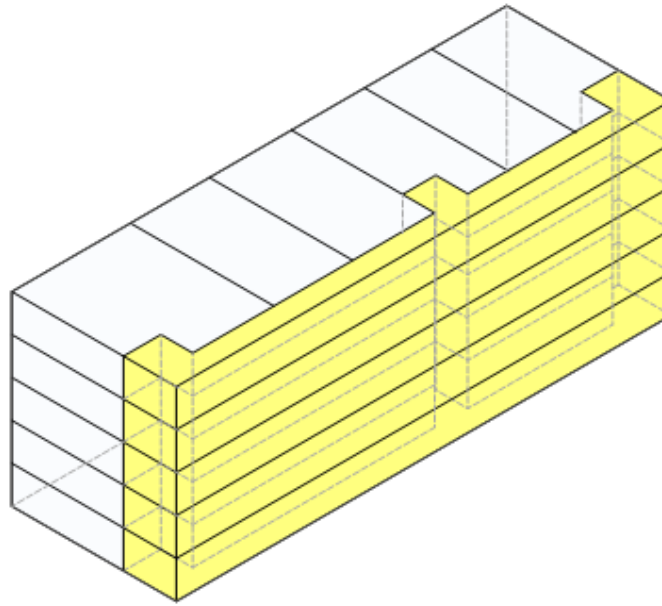
- + Modulation
- + Material Mess
- + Majority of units studios/1BRs
- + Massive development
- + Double loaded corridor
- + Flat Façade
- + No Solar Protection

# Point Access Blocks (Single Egress Stairs)

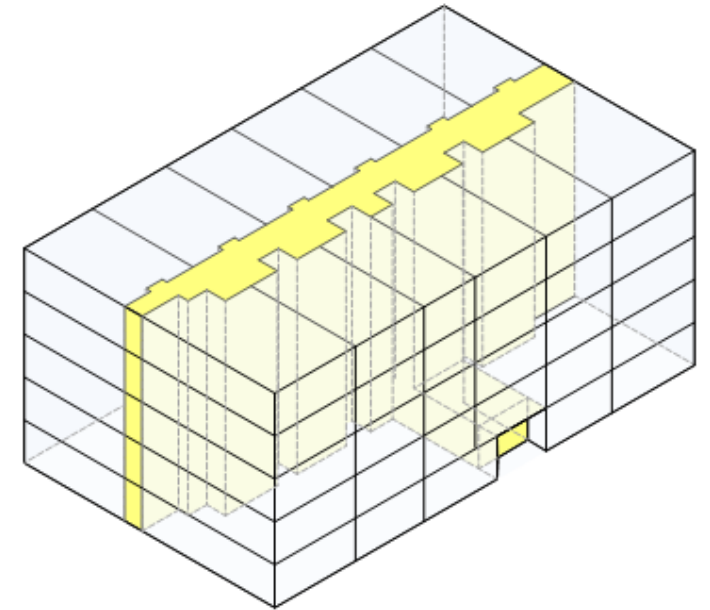
## Different Forms of Vertical Access



Point Access Block



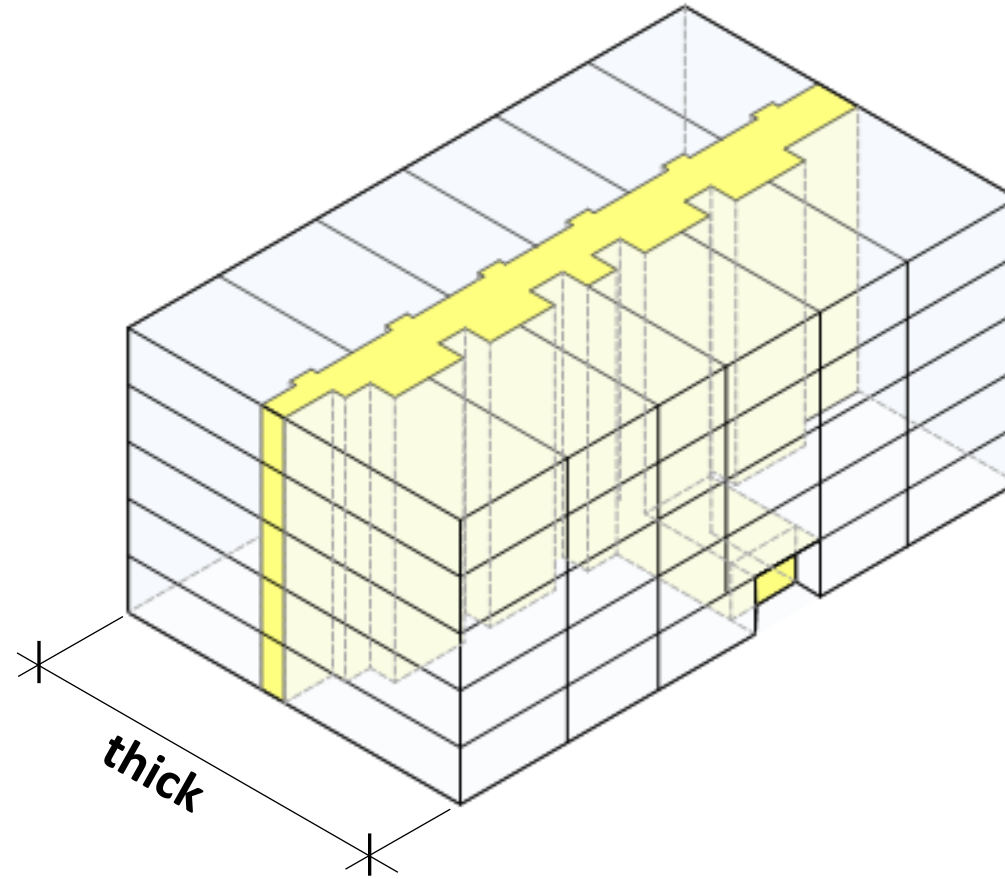
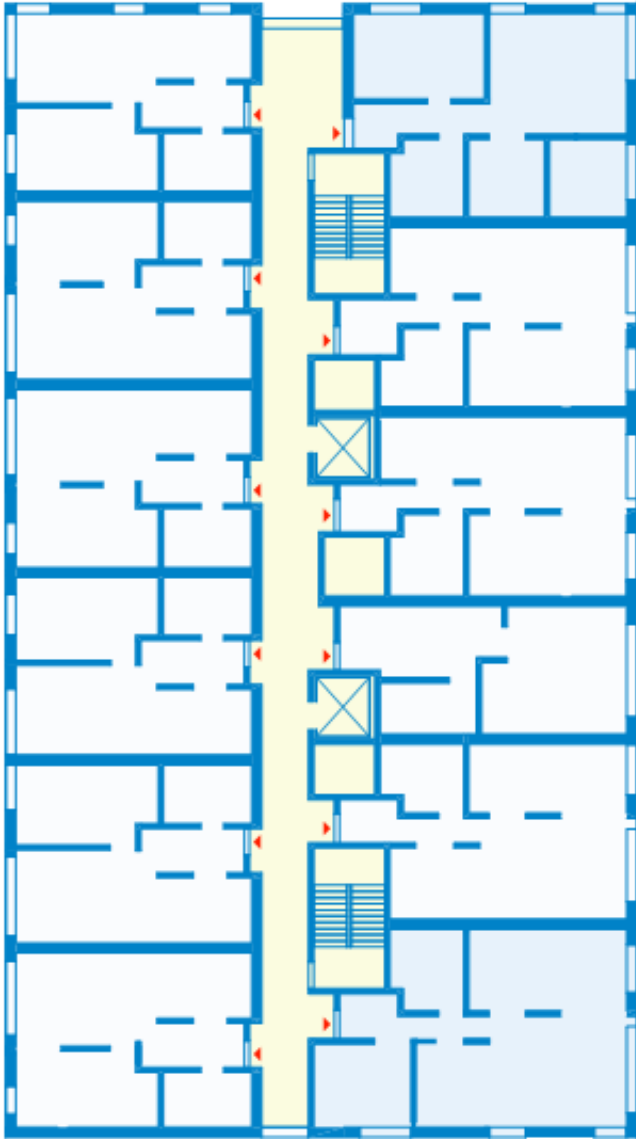
Single Loaded Corridor



Double Loaded Corridor



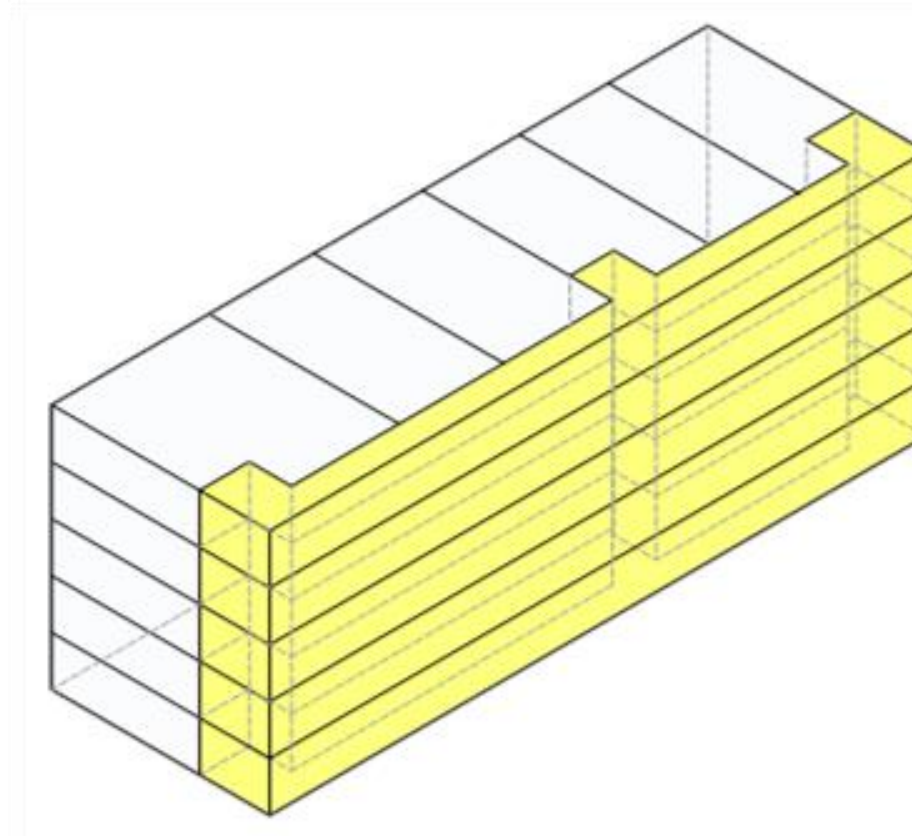
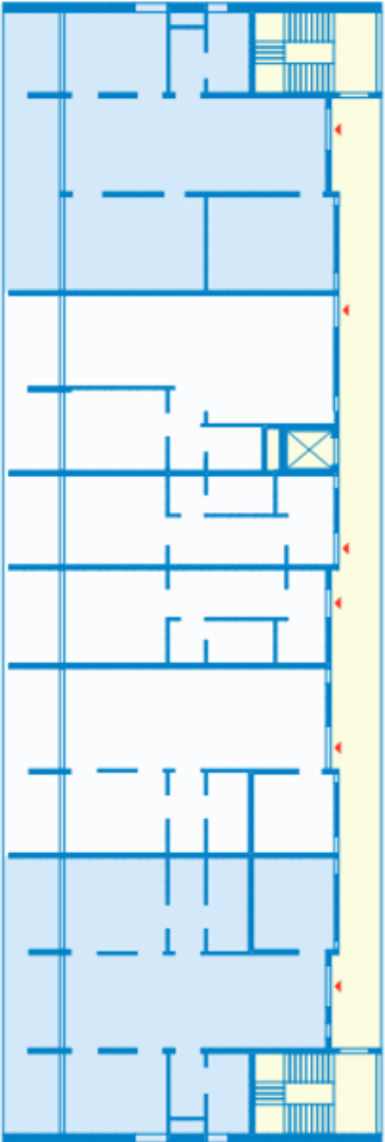
# Double Loaded Corridor



- 87% efficient floor plate
- primarily small units
- no cross-ventilation
- no daylight on multiple sides
- little respite from urban noise

floor plan (left) and axonometric drawing (right), Larch Lab

# Single Loaded Corridor

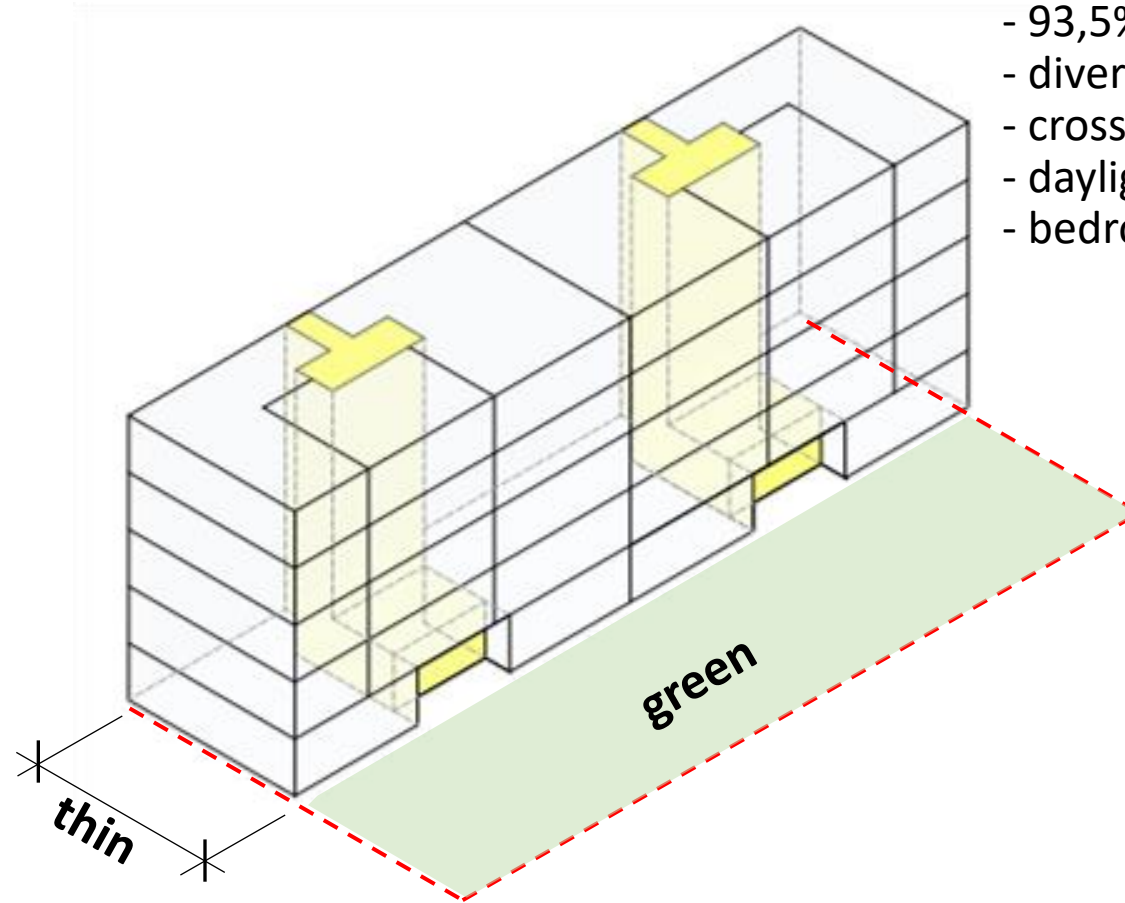
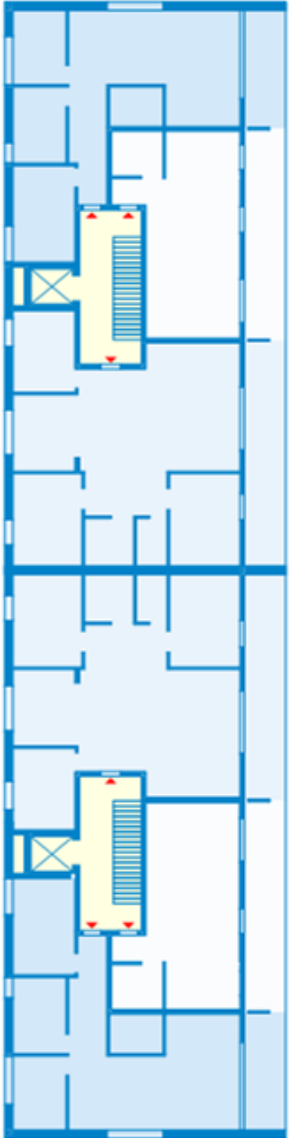


- 84% efficient floor plate
- diversity of unit sizes
- cross ventilation possible
- daylight on multiple sides

floor plan (left) and axonometric drawing (right), Larch Lab



# Point Access Block (single stair building)

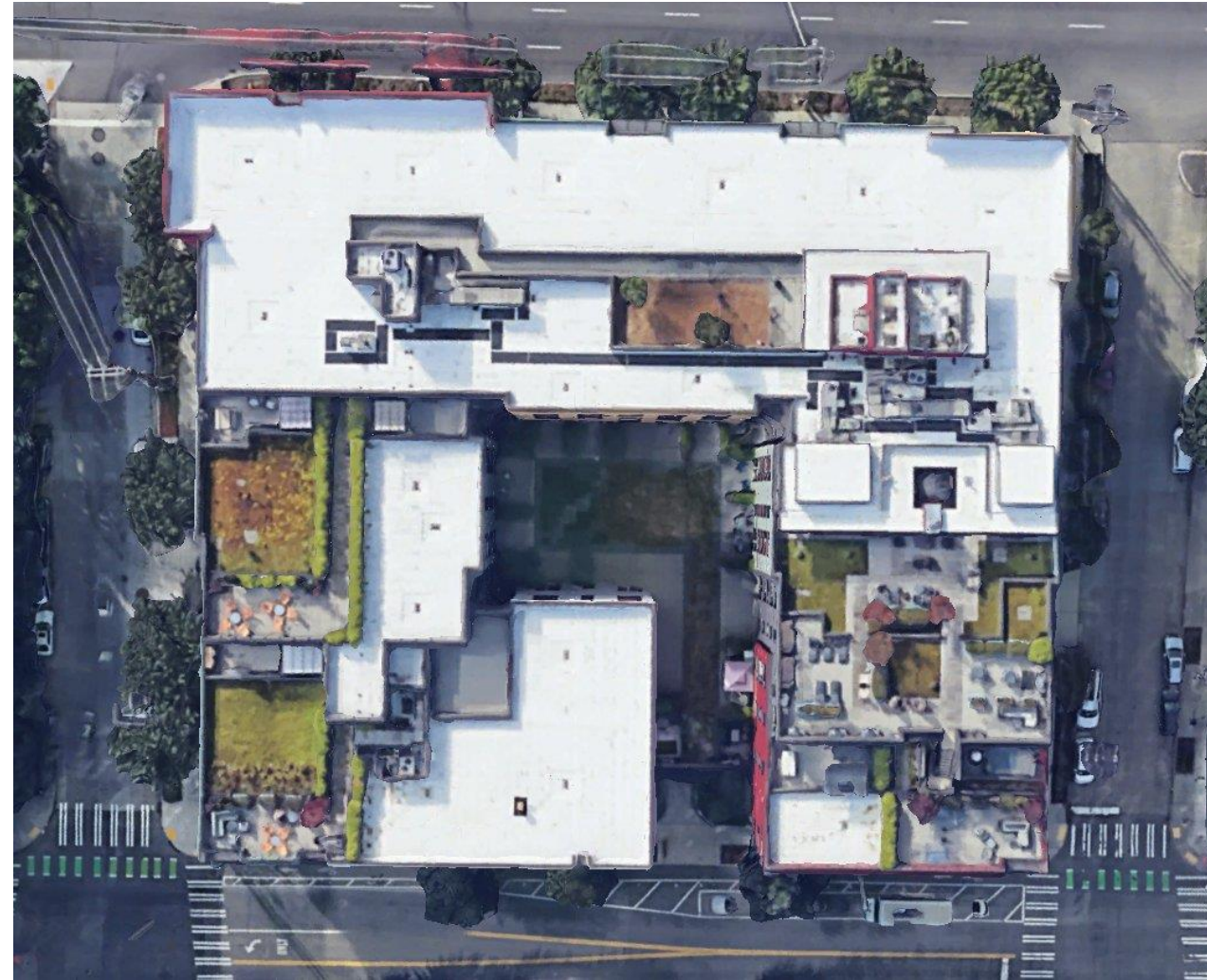
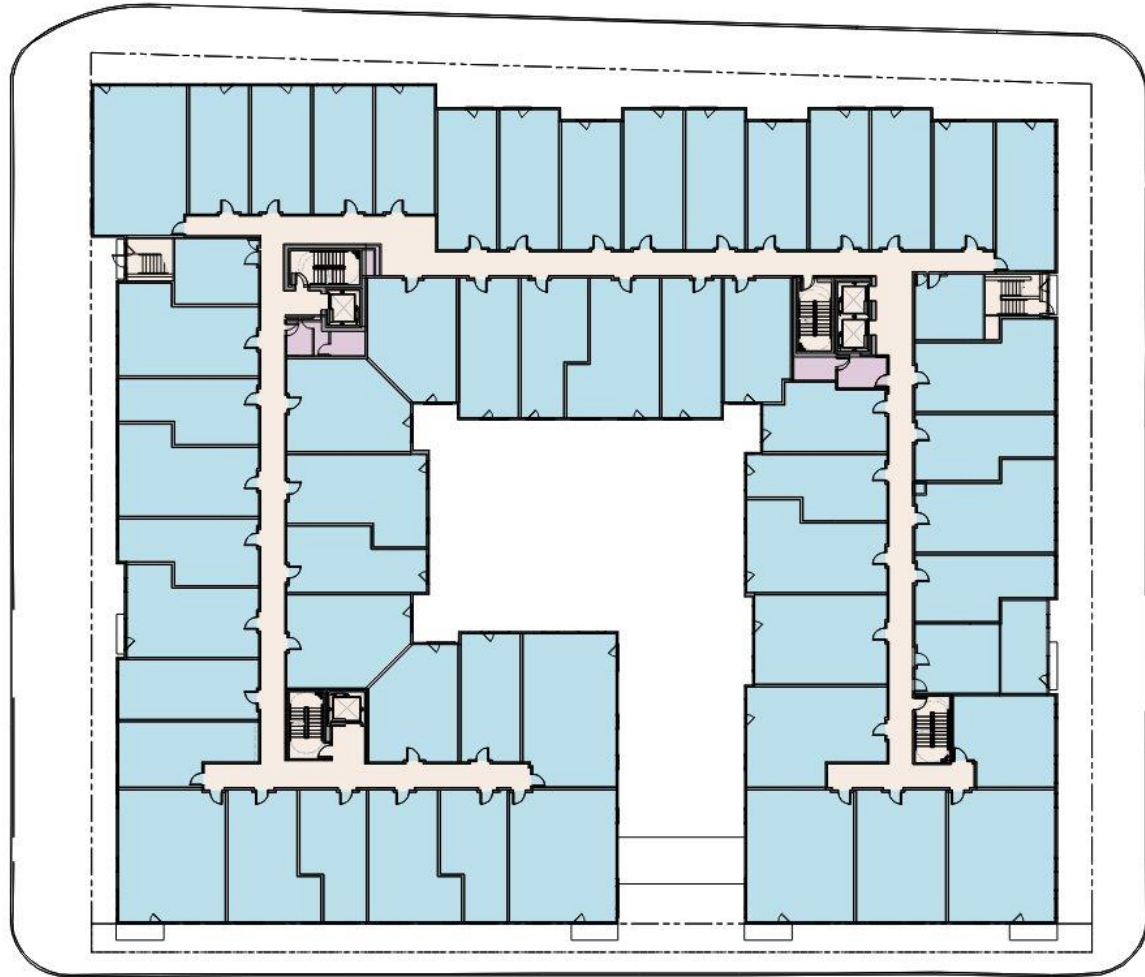


- compact layout
- 93,5% efficient floor plate
- diversity of unit sizes (1- to 3BRs)
- cross ventilation for most units
- daylight on multiple sides
- bedrooms on quiet side of building

floor plan (left) and axonometric drawing (right), Larch Lab

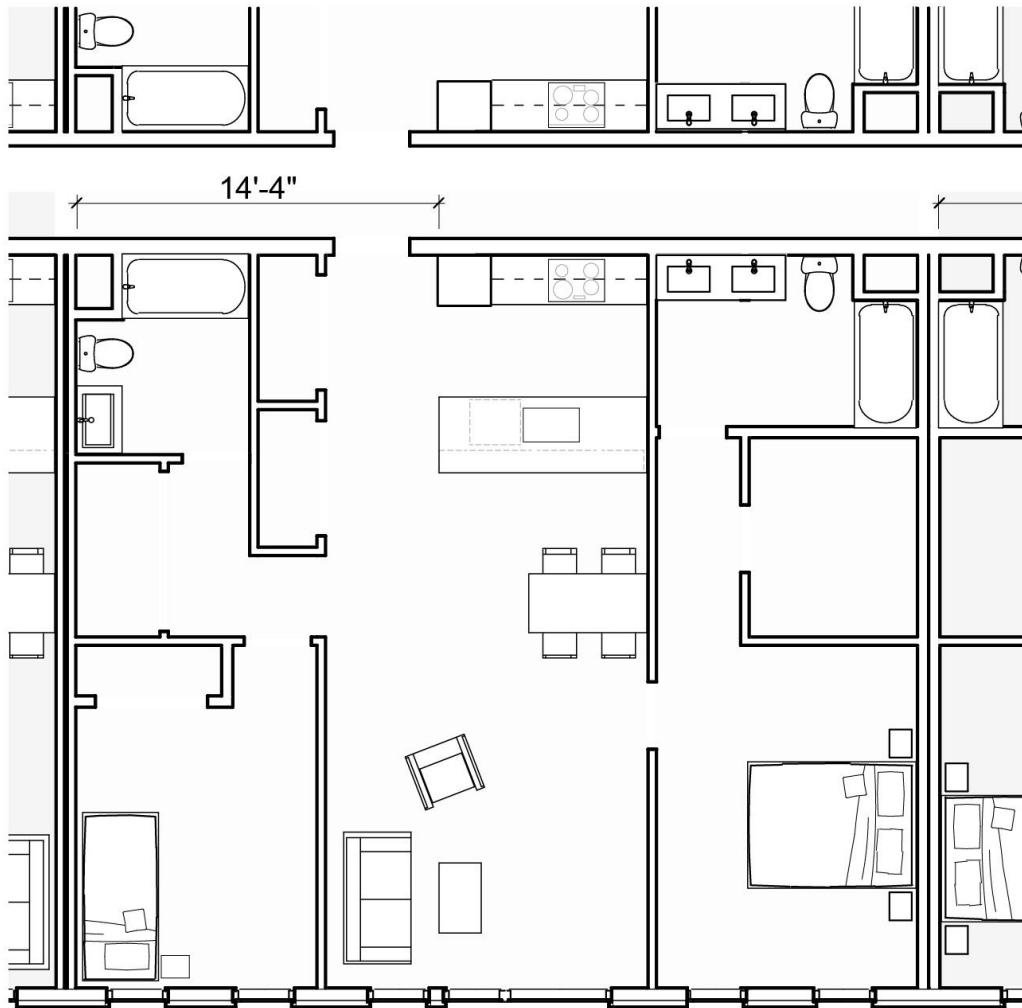


# Double Loaded Corridor: Limits of Building Codes?

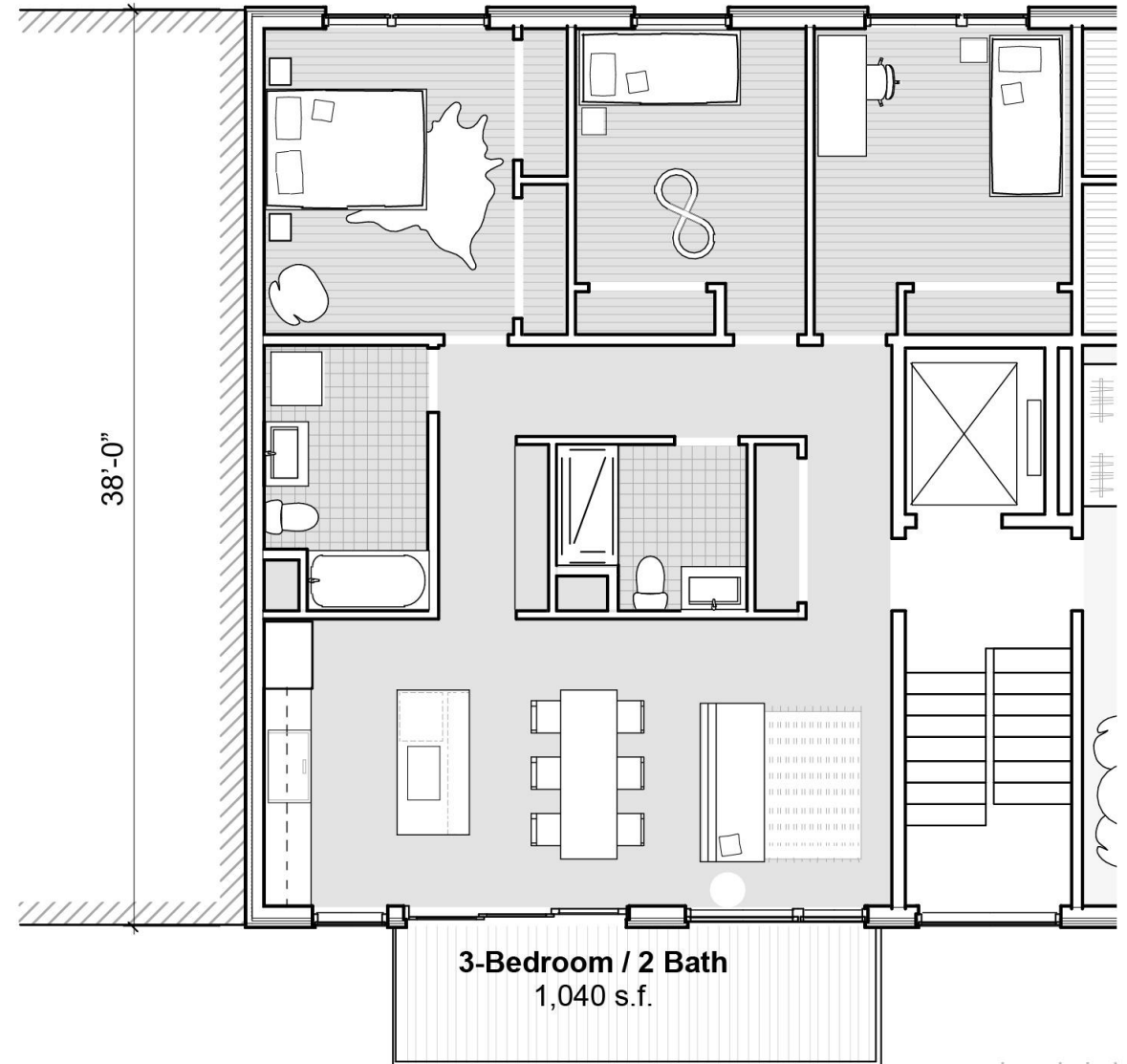




# US: Large units. Wasted space. Poorer quality of life...



**2-Bedroom/2 Bath**  
970 s.f.  
60 s.f. (1/2 hall)



**3-Bedroom / 2 Bath**  
1,040 s.f.



# Is this a substitute for living in a detached house?

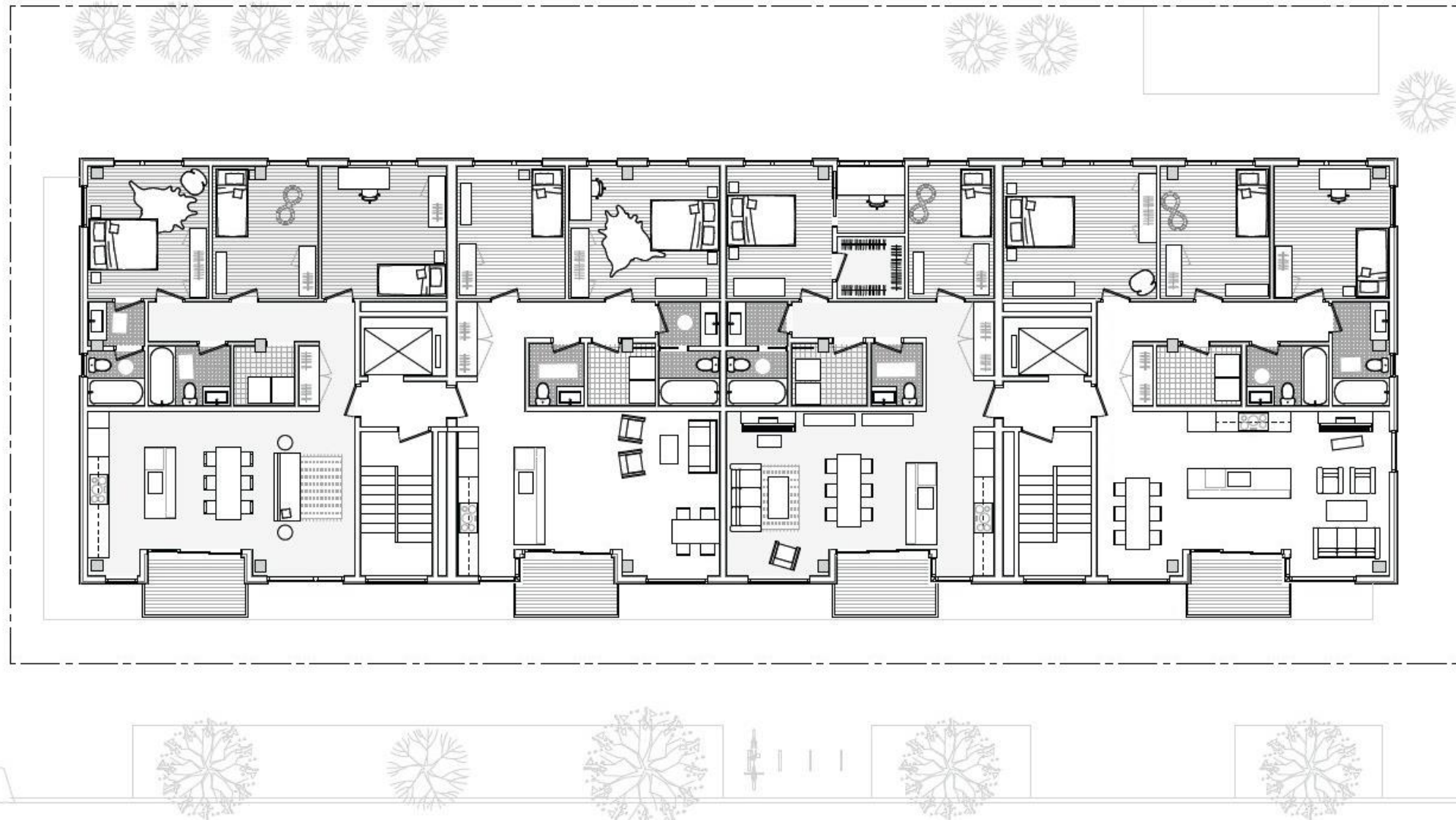


# Compared to this?

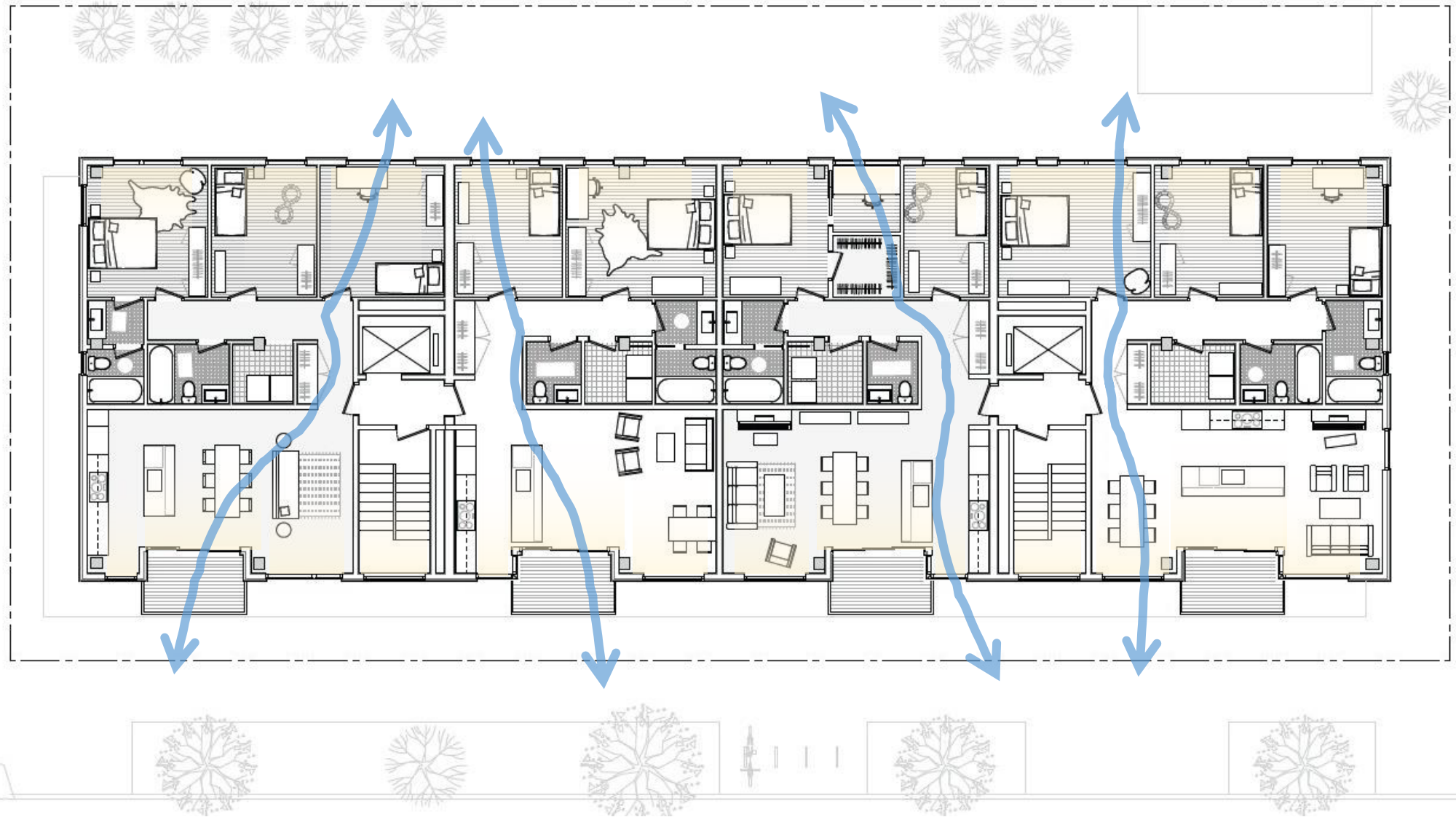




# Pushing legal limits of Seattle's Building Code

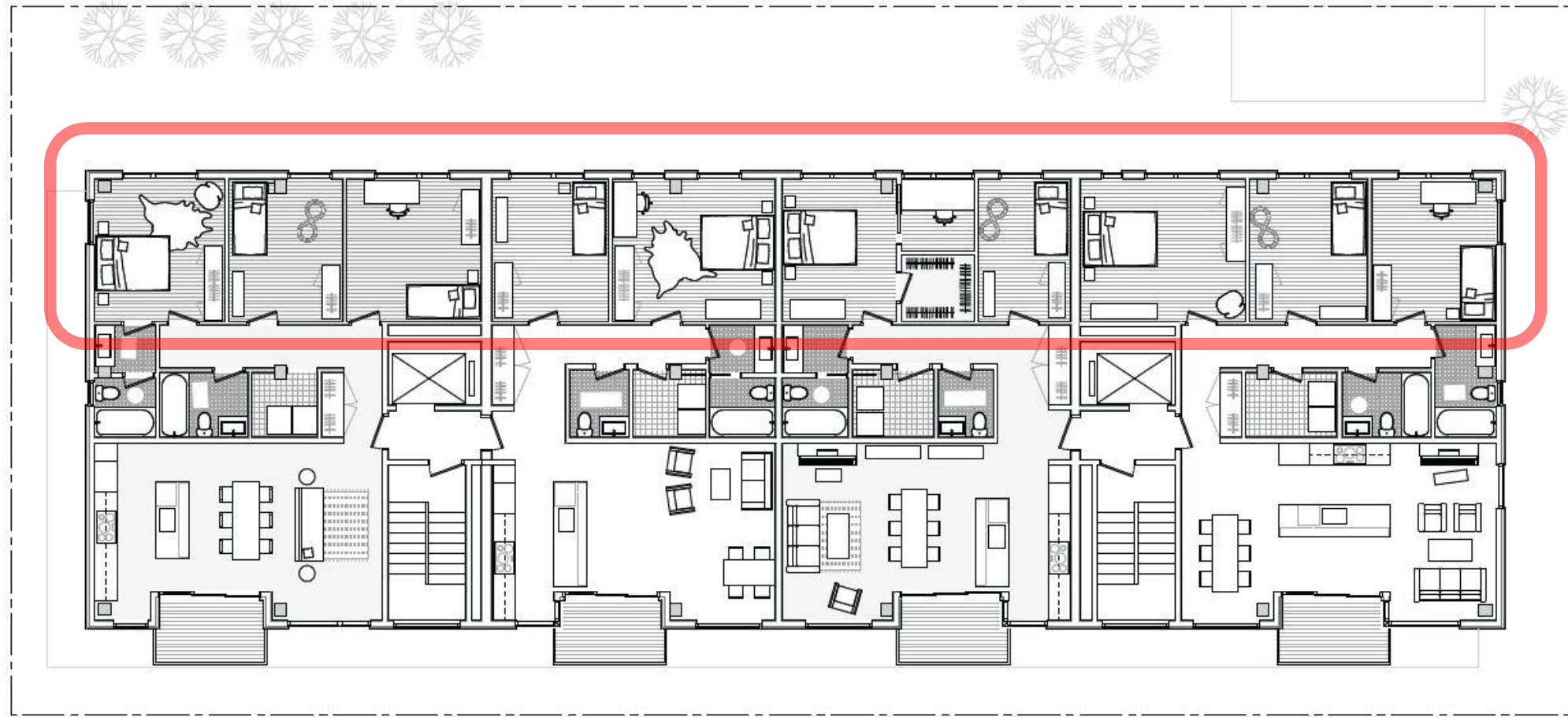


# Light on multiple sides, cross ventilation

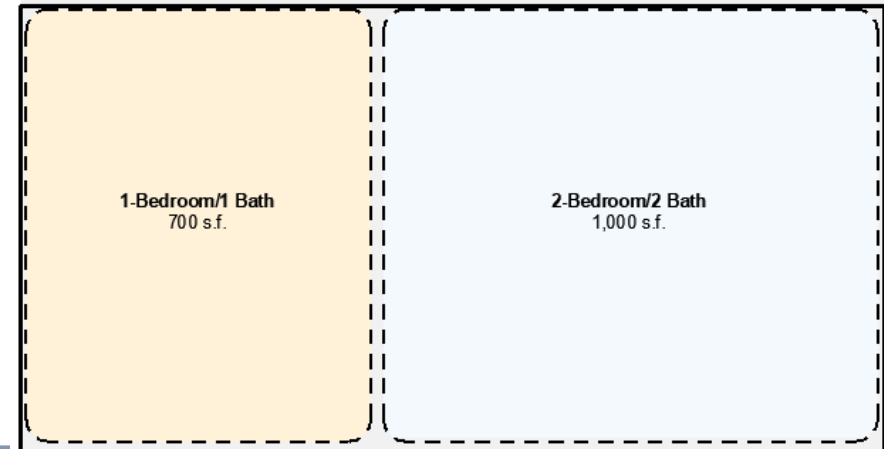
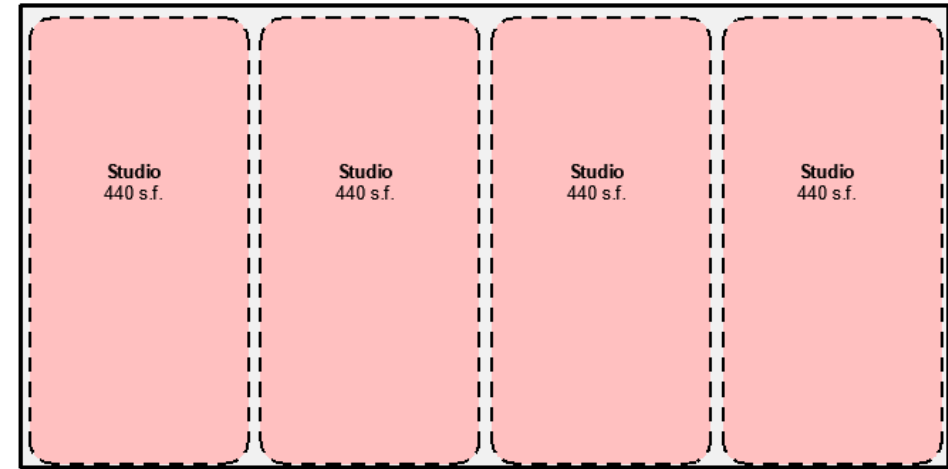
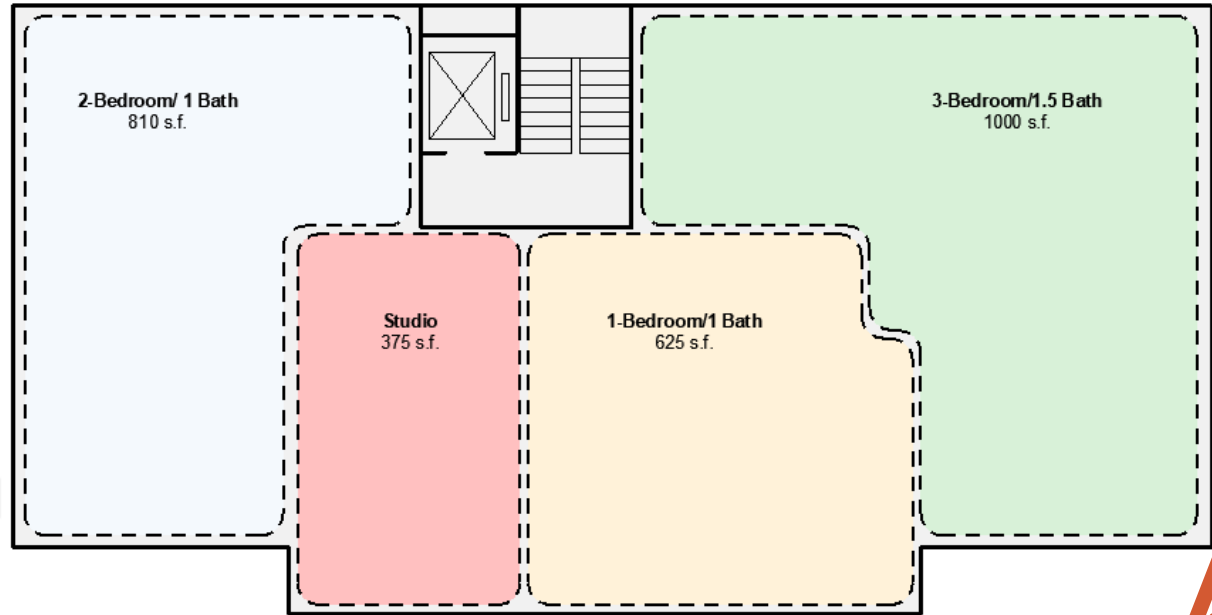




# Bedrooms on the quiet side of the building



# PAB v. DLC: Same number of bedrooms, 2/3 floor area

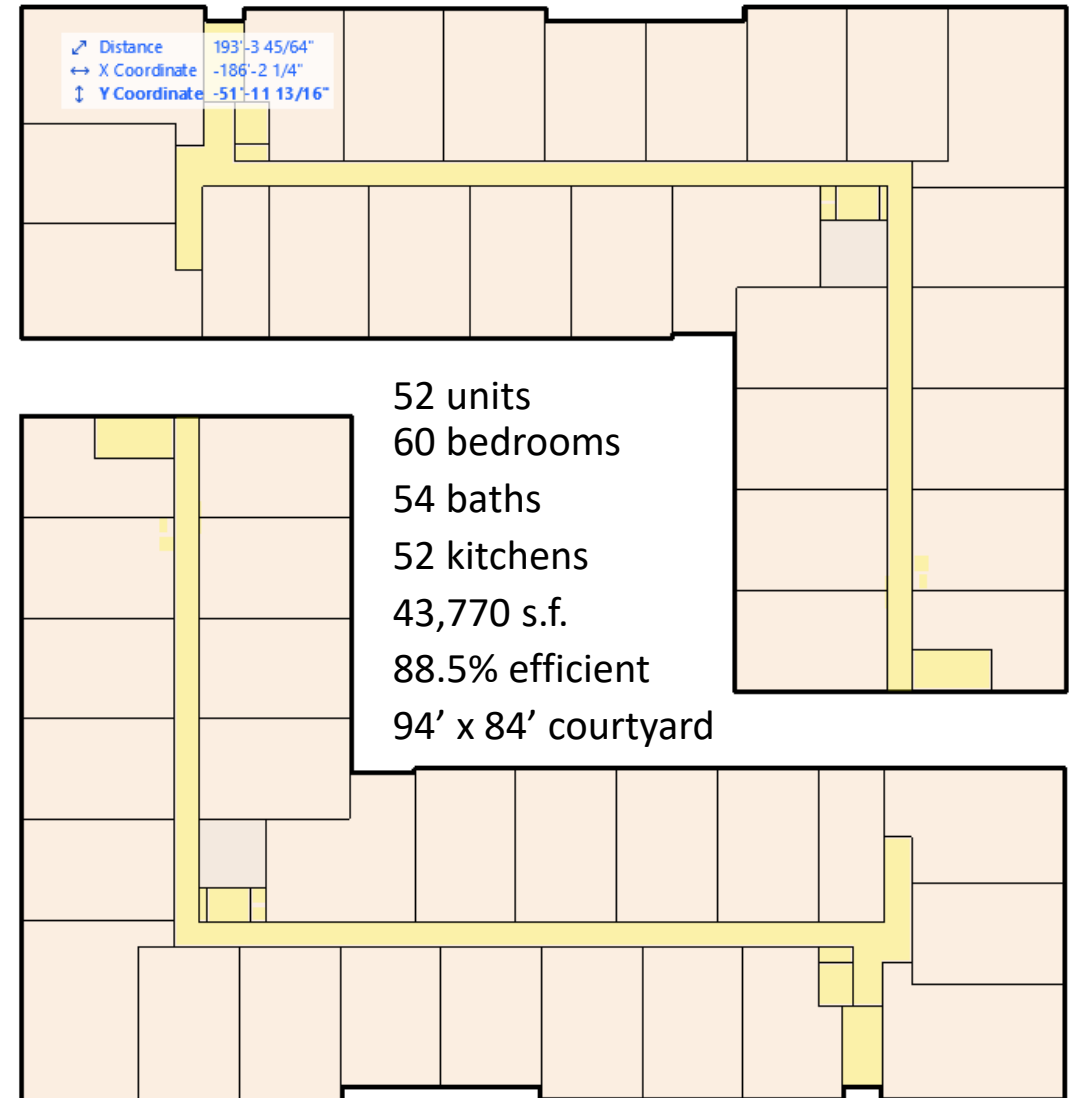
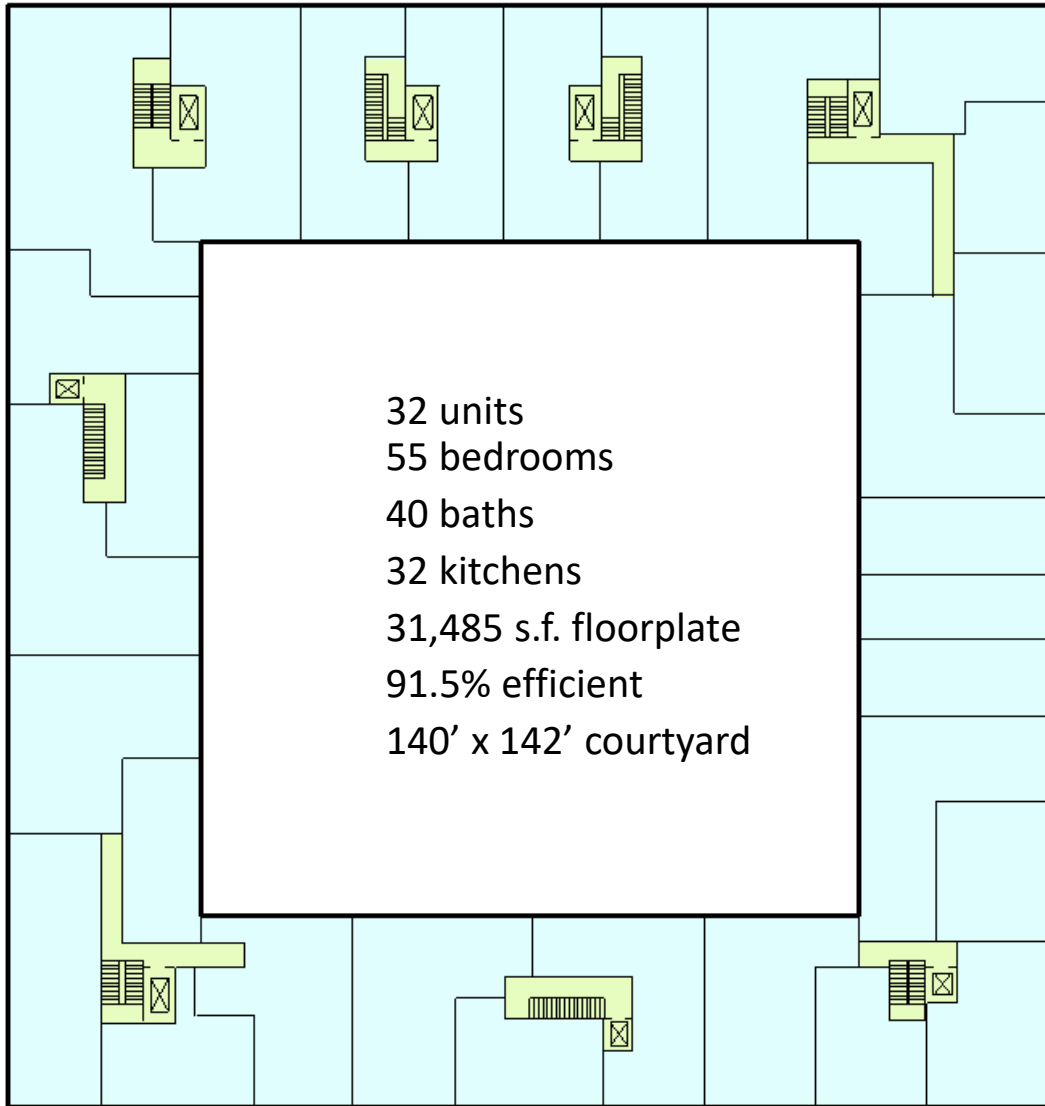


PAB: 93m<sup>2</sup> reduction @ 279 kgCO<sub>2</sub>e/m<sup>2</sup> = 25,950 kg CO<sub>2</sub>e

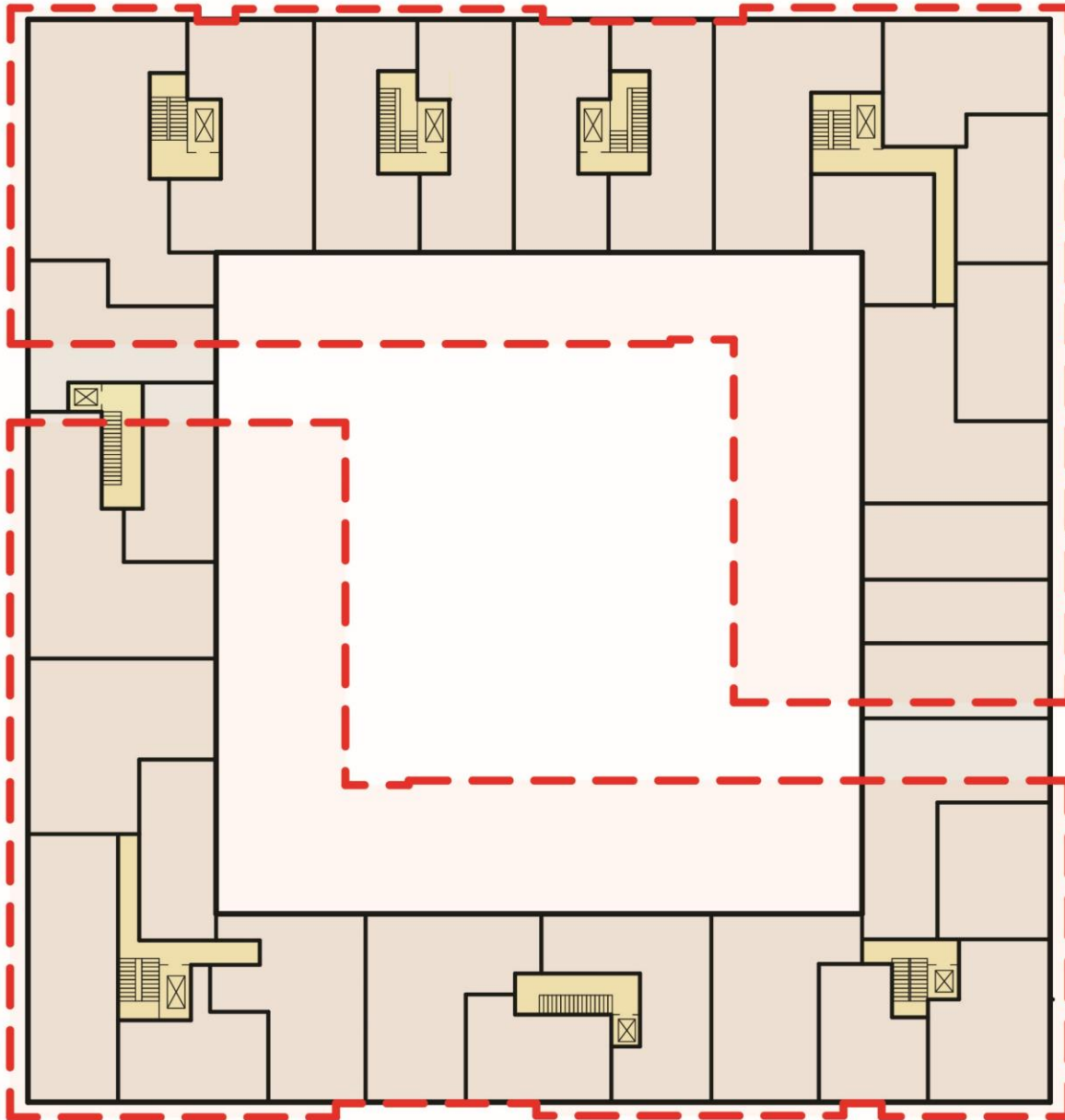
**Embodied carbon savings over 6 floors: 171 tons CO<sub>2</sub>e**



# Chained Point Access Blocks: Massive reduction in FAR



# Thinner Floor Plate: Lower Cost, More Space for Nature



Seattle requires 12,885 s.f. for 5 more bedrooms

Construction cost:  $\$375/\text{s.f.} \times 12,285 \text{ s.f.} = \$4.6\text{M}/\text{floor}$

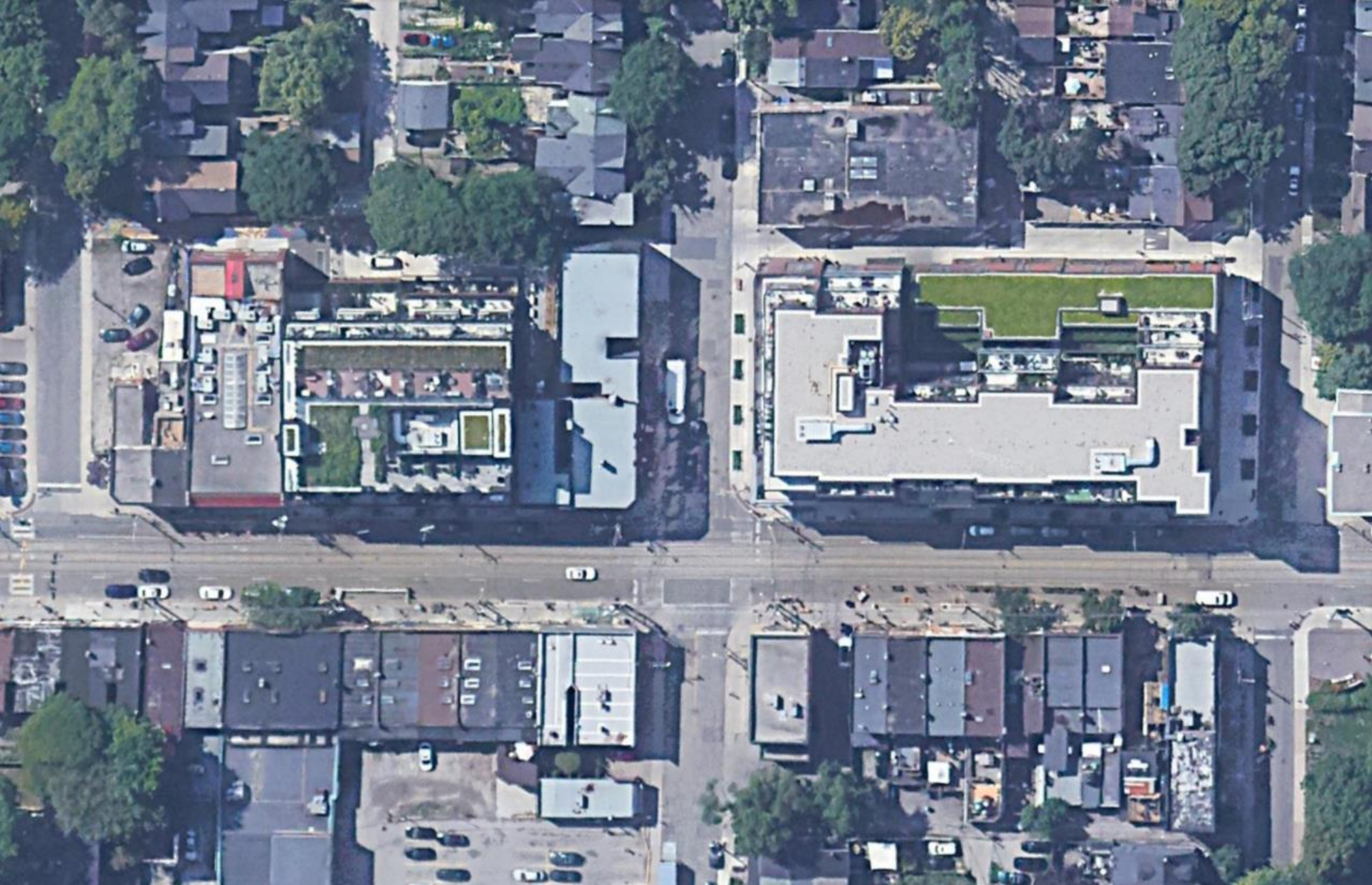
**PAB savings over 6 floors: \$27.6M**

Hamburg's courtyard: 150% larger

Embodied carbon effects as well



# Midrise Housing (double loaded corridors, no trees)





# These buildings look different... Because they are!

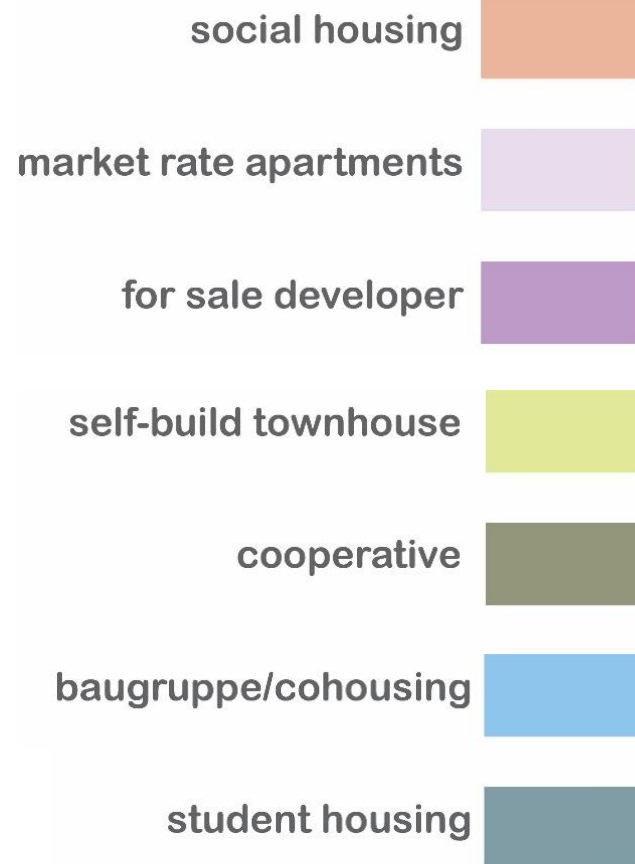
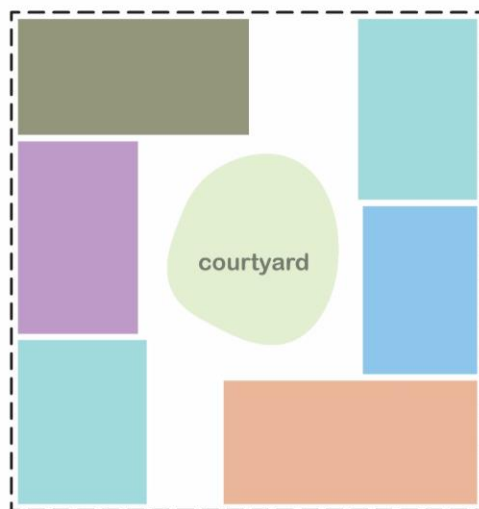
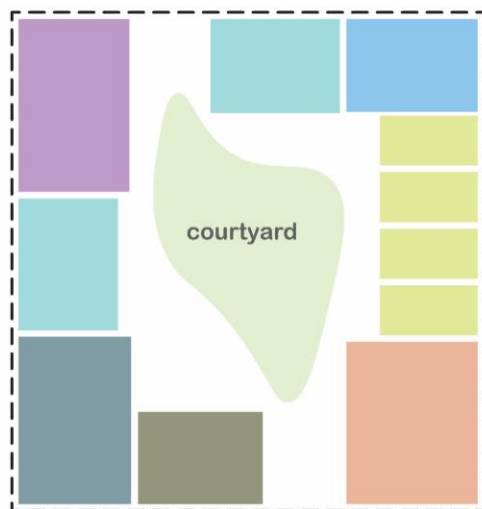
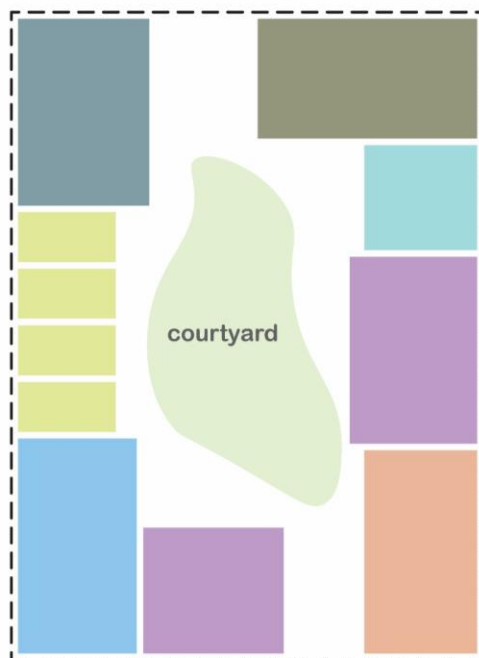
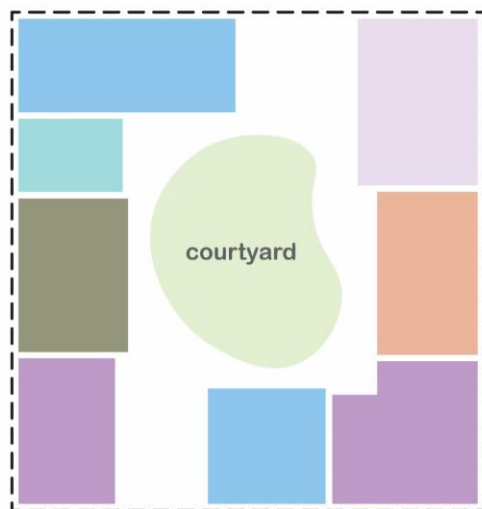


Source: Woehr Autoparksysteme GmbH

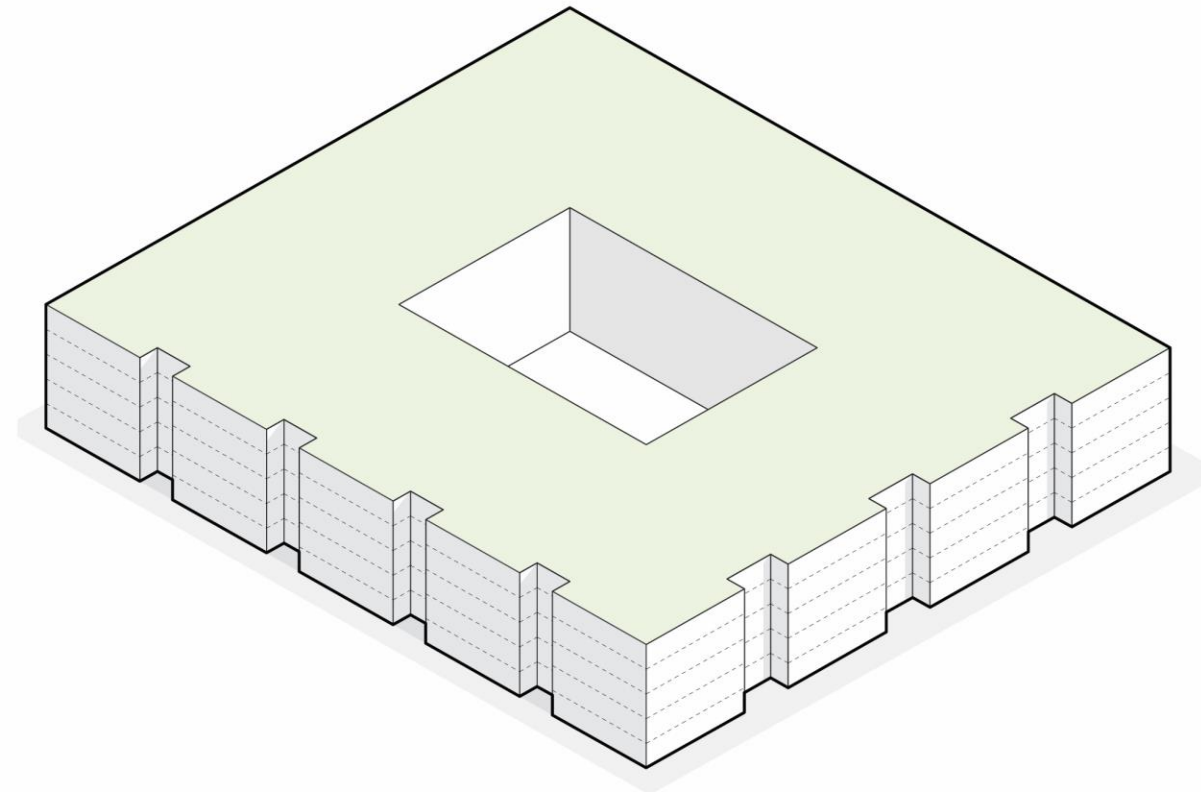
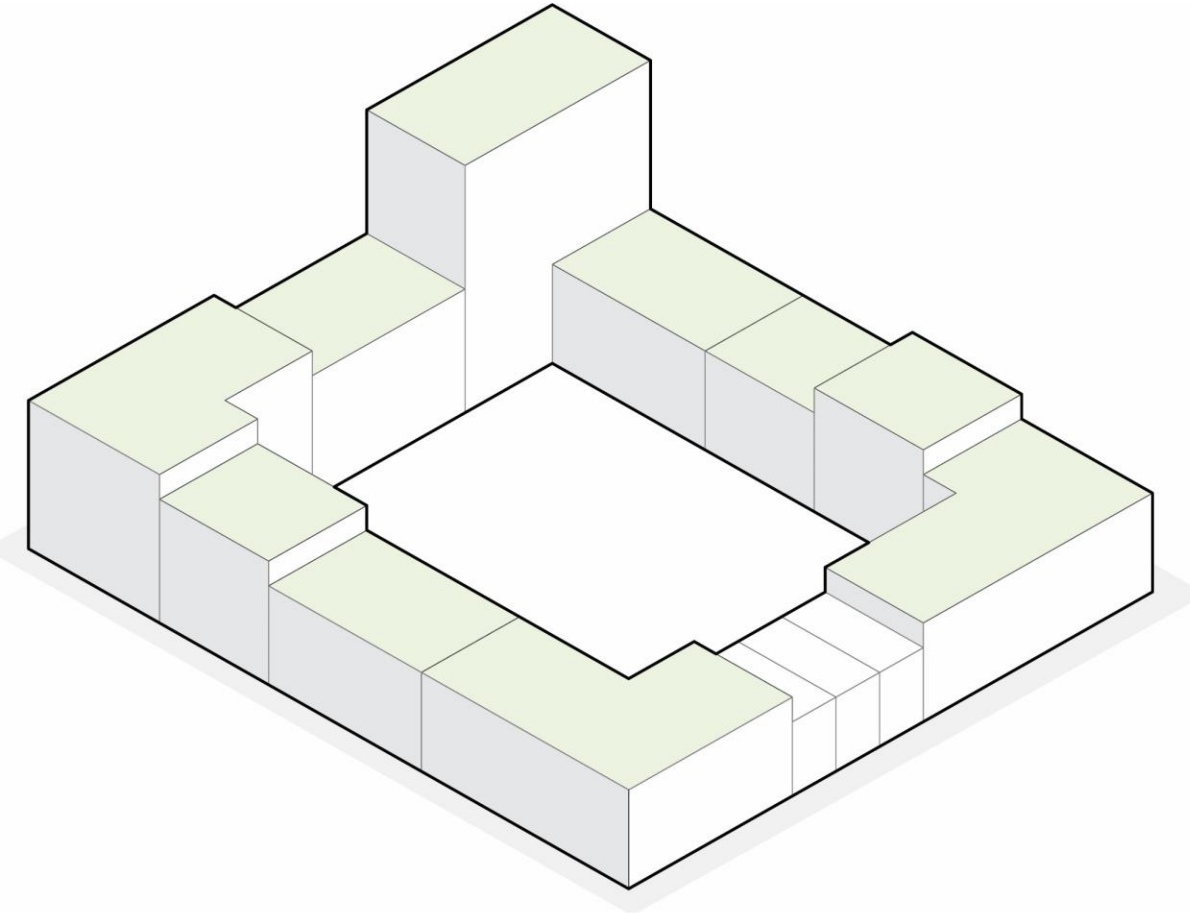
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# Housing and Block Level Diversity



# Complexity & Diversity Through Simplification





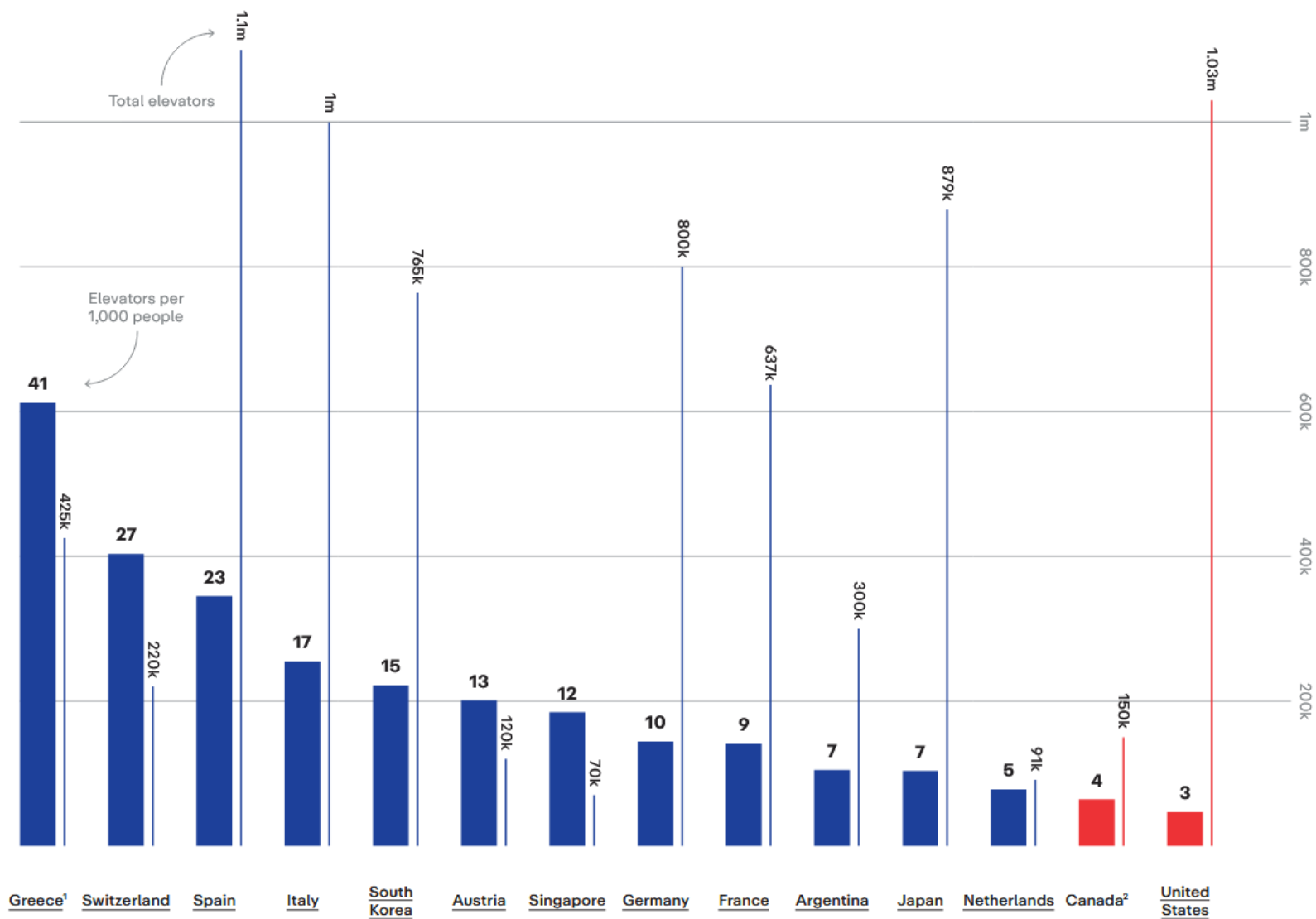
# Single Stair Reform Movement is Growing (19+ states)



Source: Center for Building in North America

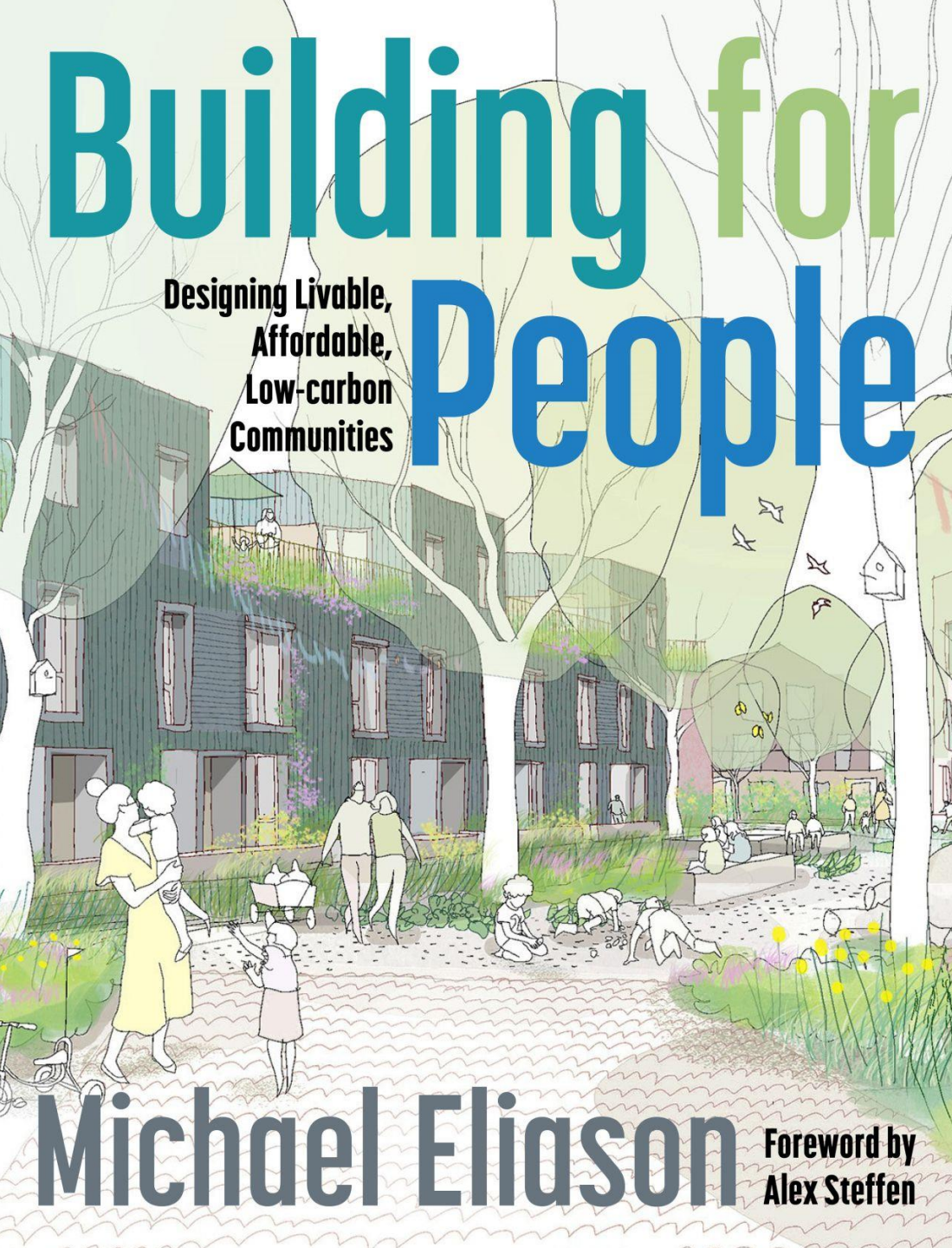
# Elevator reform will bring more accessible homes

Figure 1 National elevator stocks per capita



Source: Center for Building in North America





# Thank You!

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