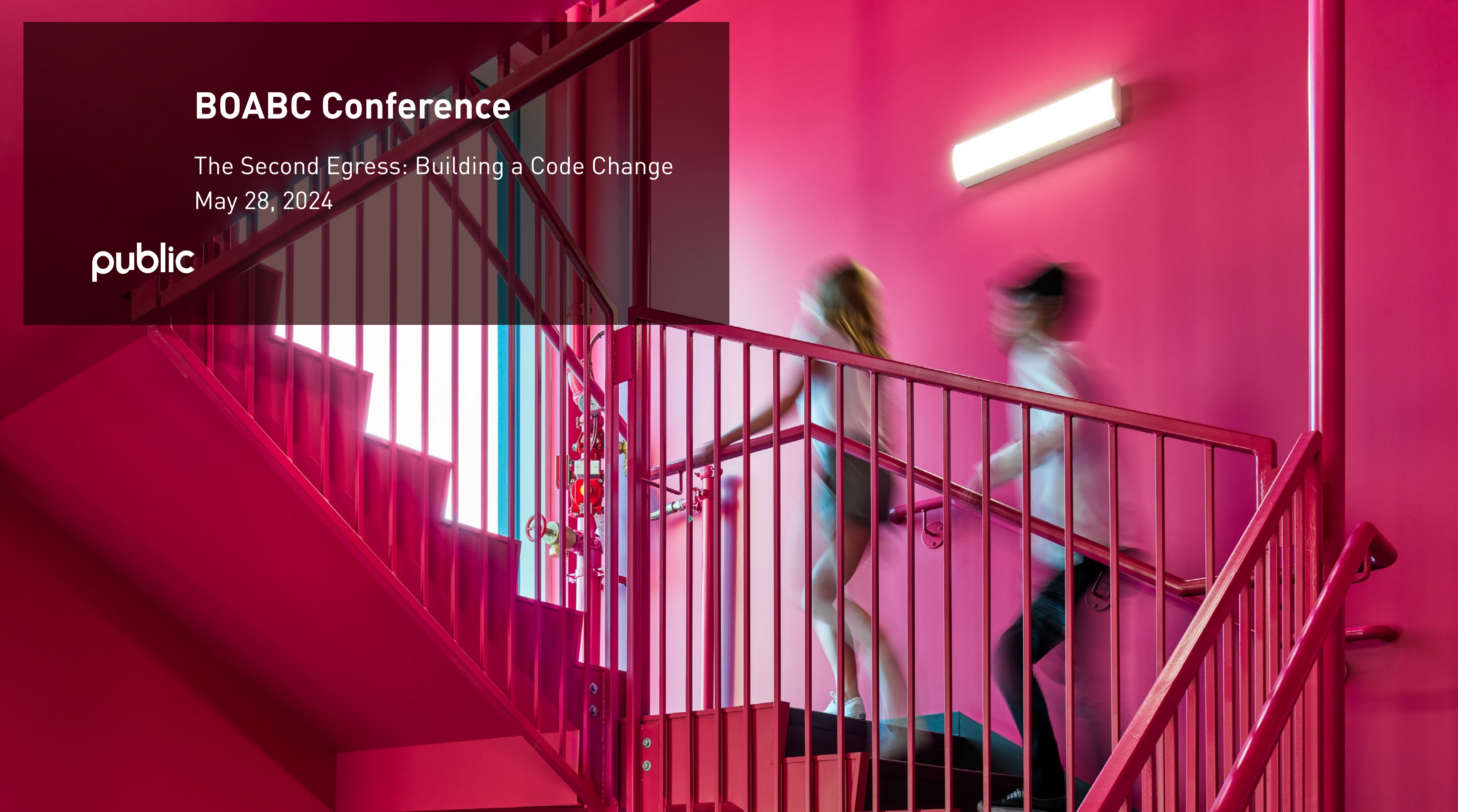


# BOABC Conference

The Second Egress: Building a Code Change  
May 28, 2024

public

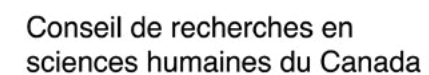


# Acknowledgements

## PROJECT TEAM



## FUNDING PARTNERS



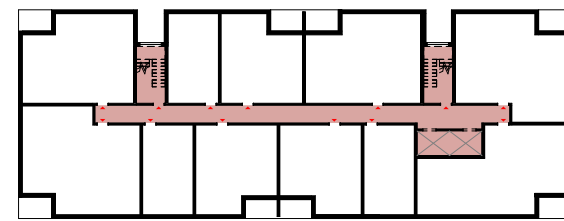
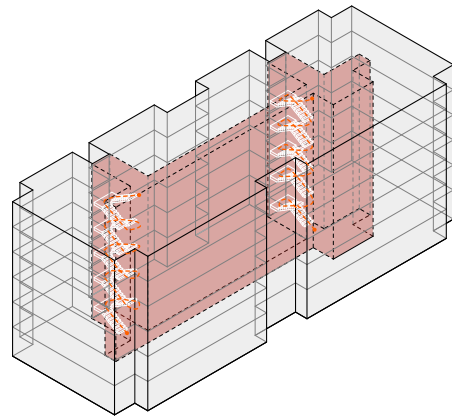
# Emerging policy



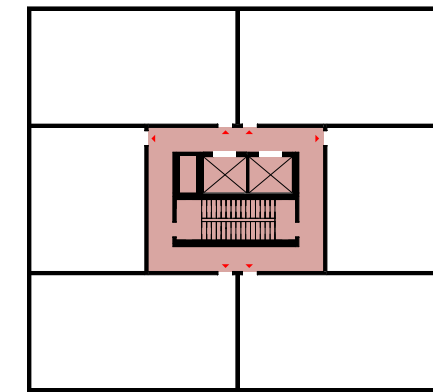
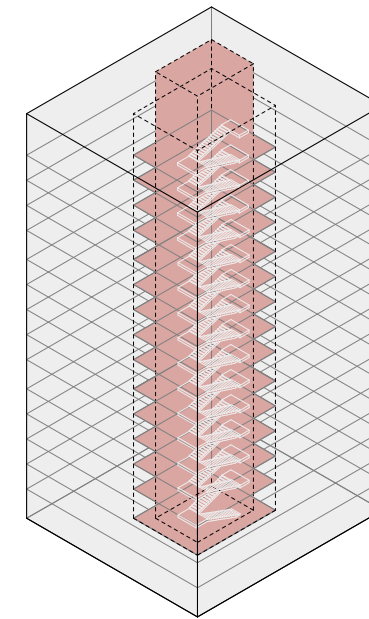
# MURB types



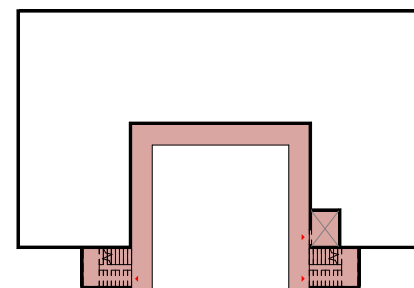
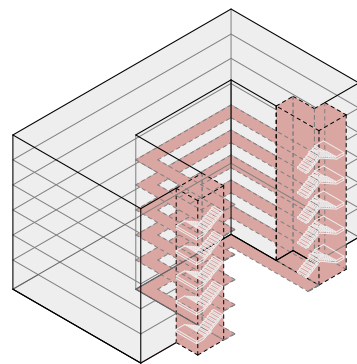
Double-loaded corridor



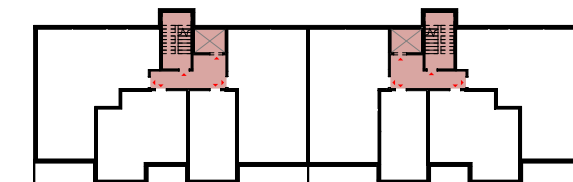
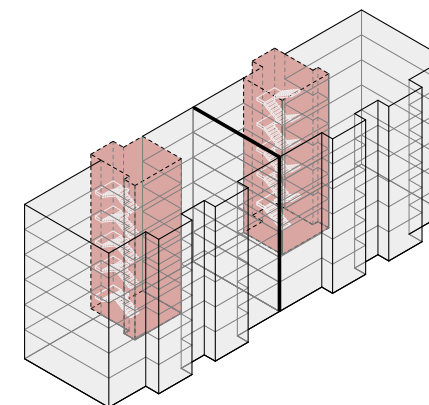
Point tower



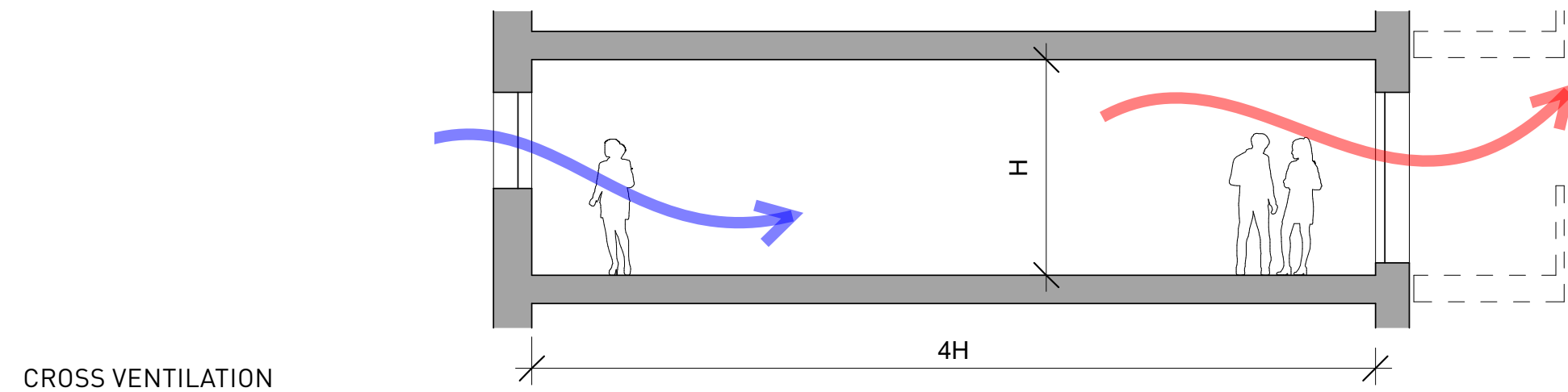
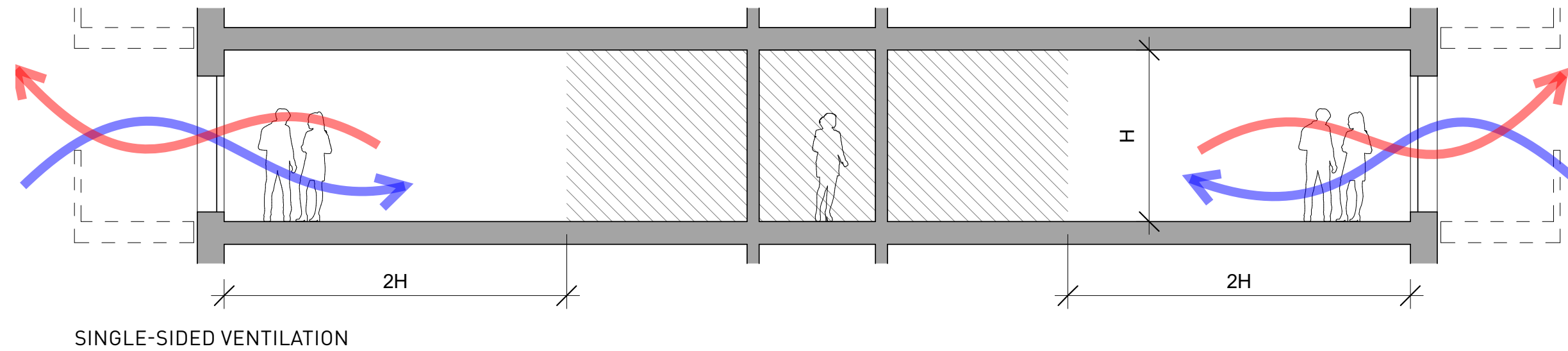
Single-loaded corridor



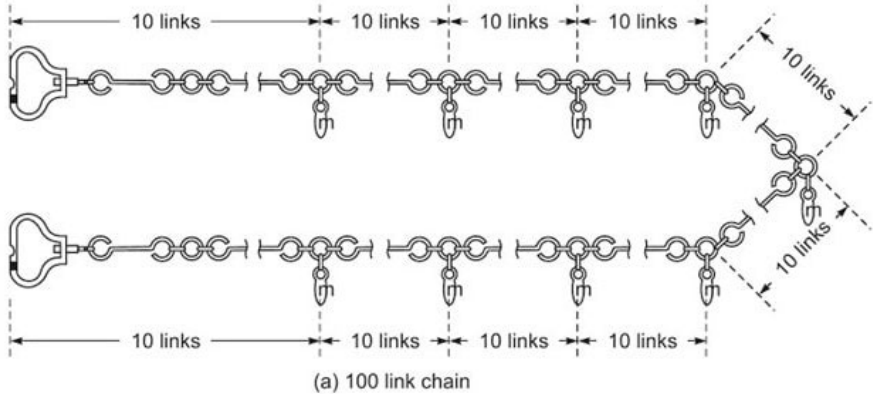
Point access block



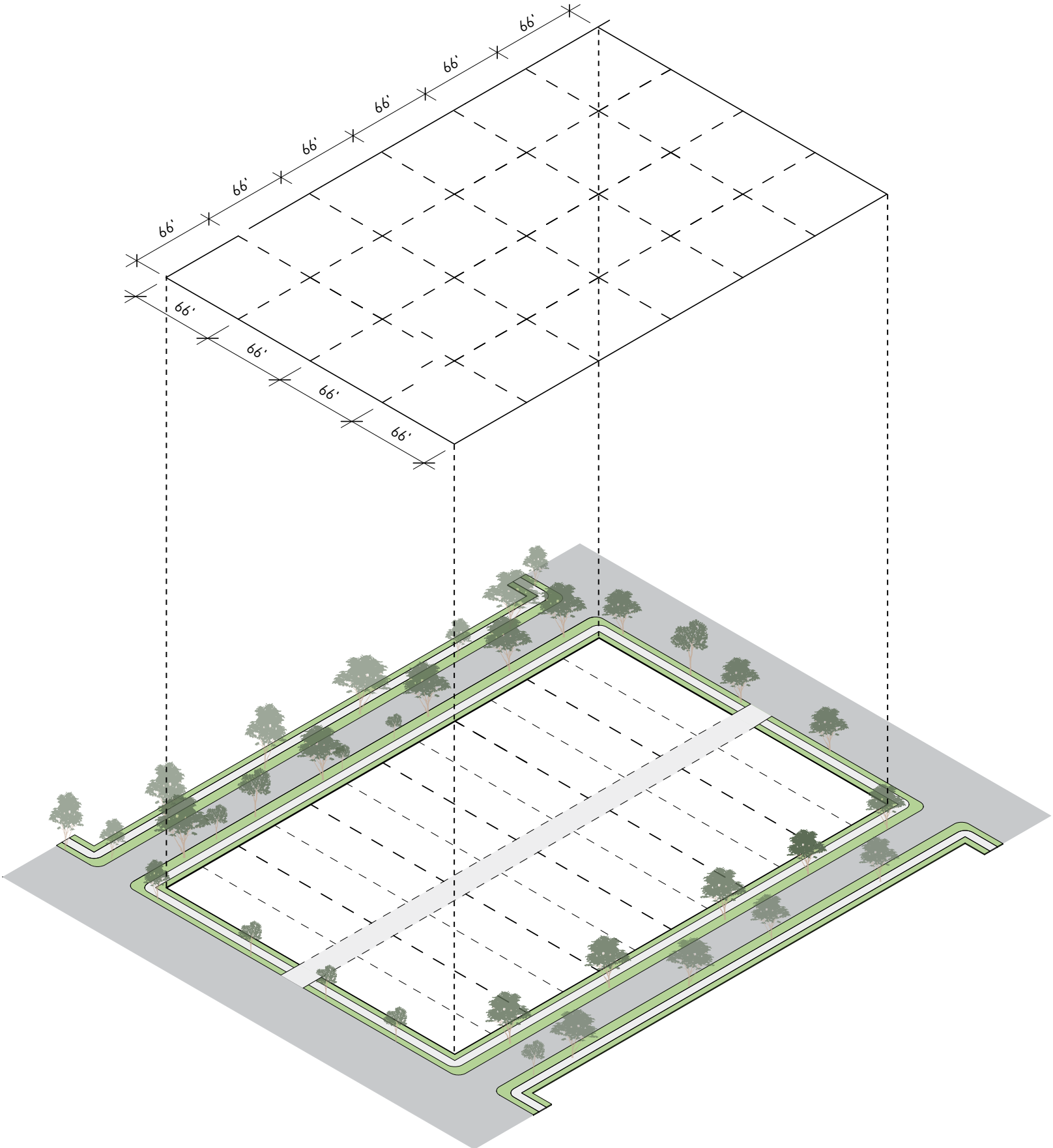
# Airflow & climate resilience



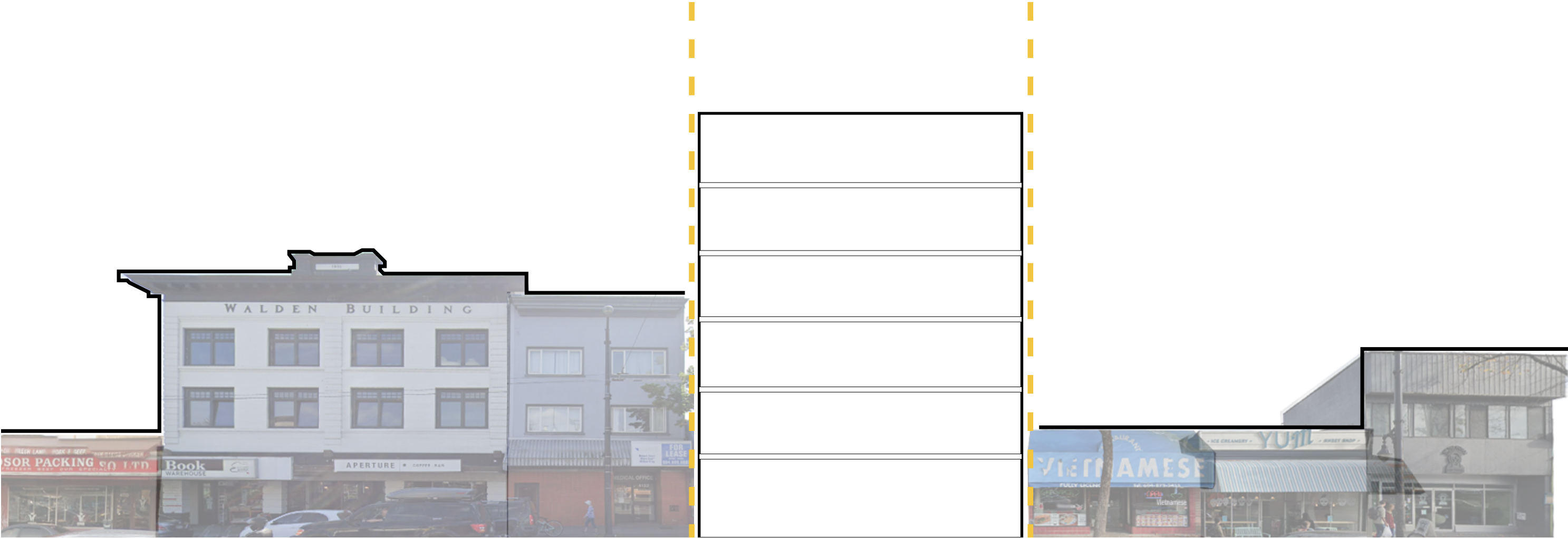
# Lot dimensions



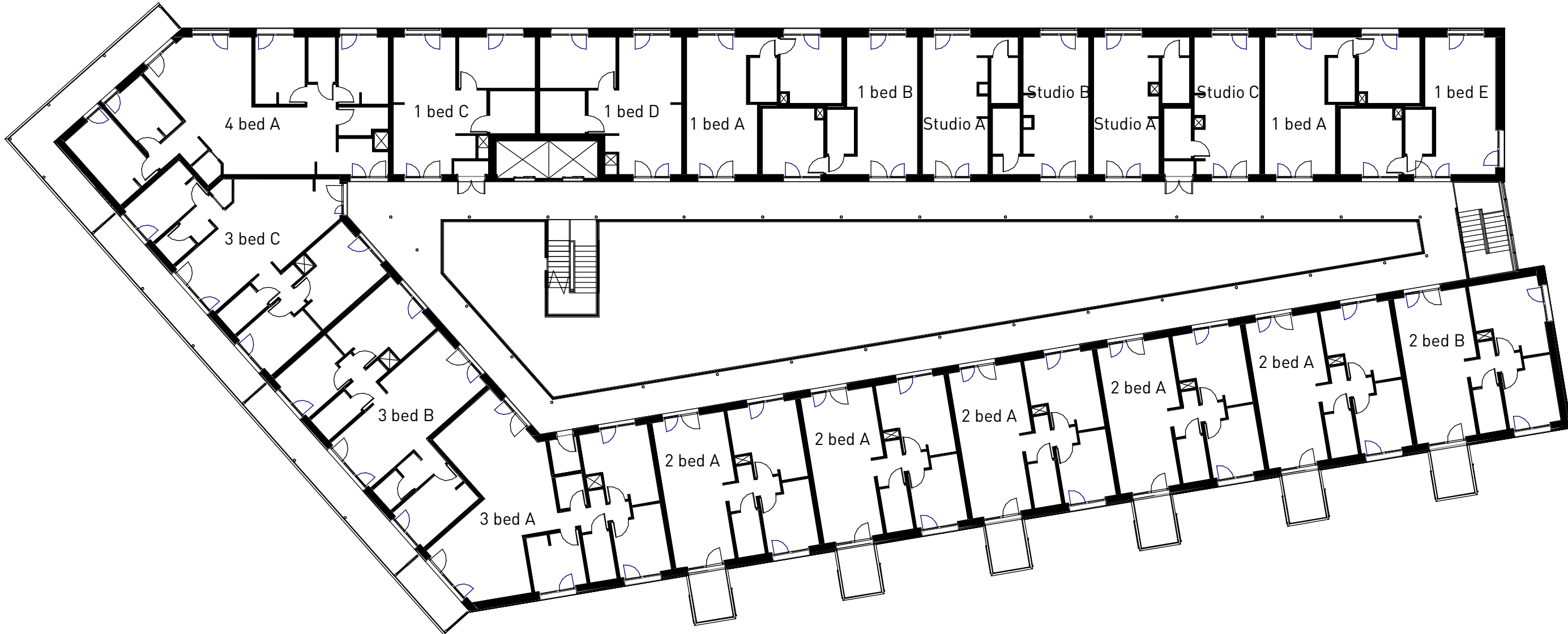
GUNTER'S CHAIN



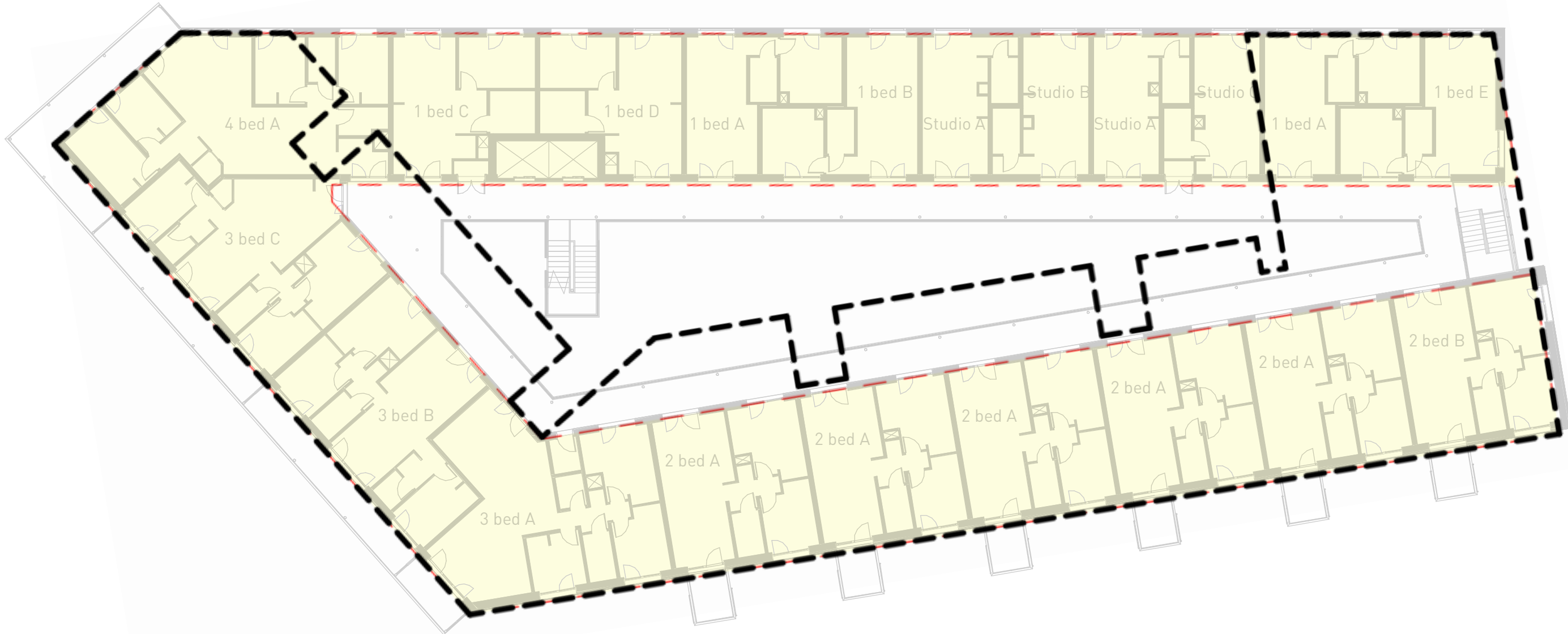
# Infill development



MAIN ST., VANCOUVER







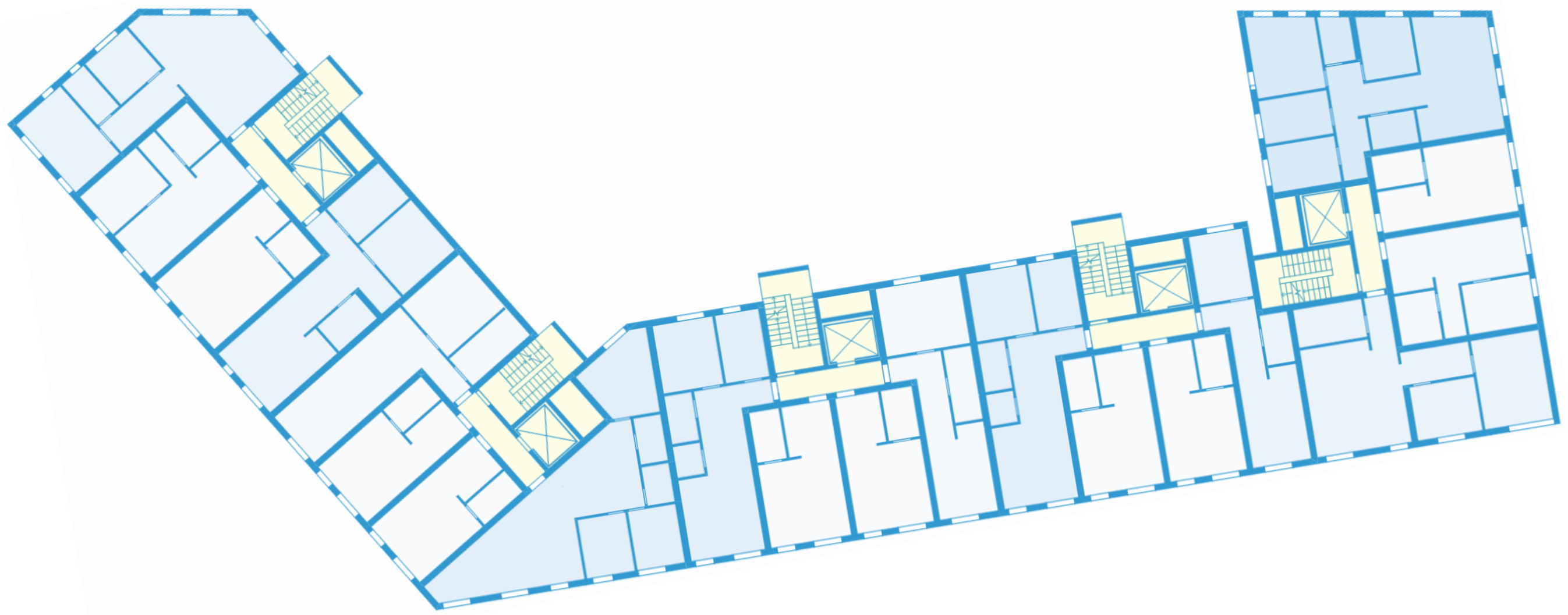


IMAGE: ELIASON, M. (2021). UNLOCKING LIVABLE, RESILIENT, DECARBONIZED HOUSING WITH POINT ACCESS BLOCKS

# Code analysis

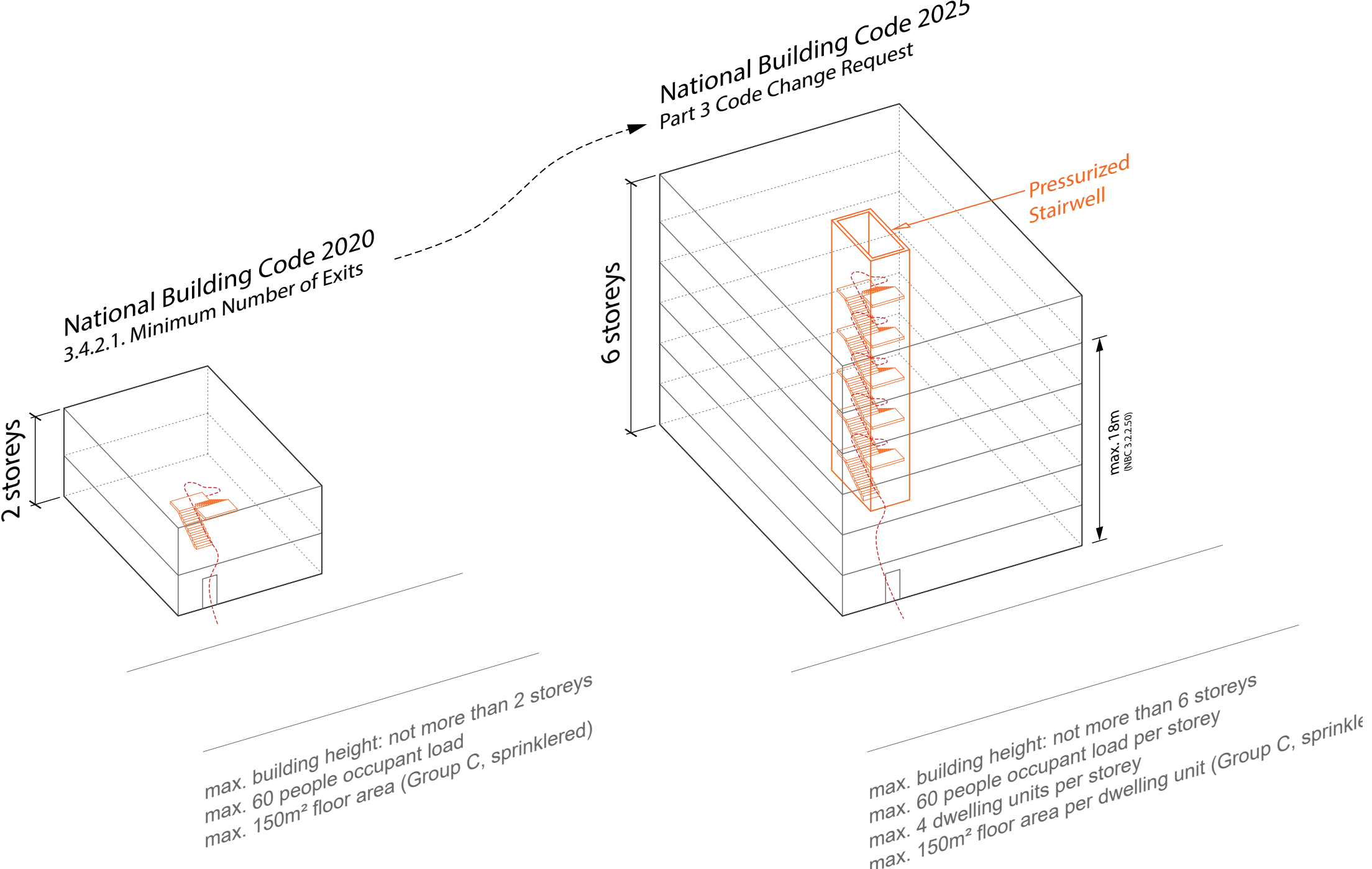
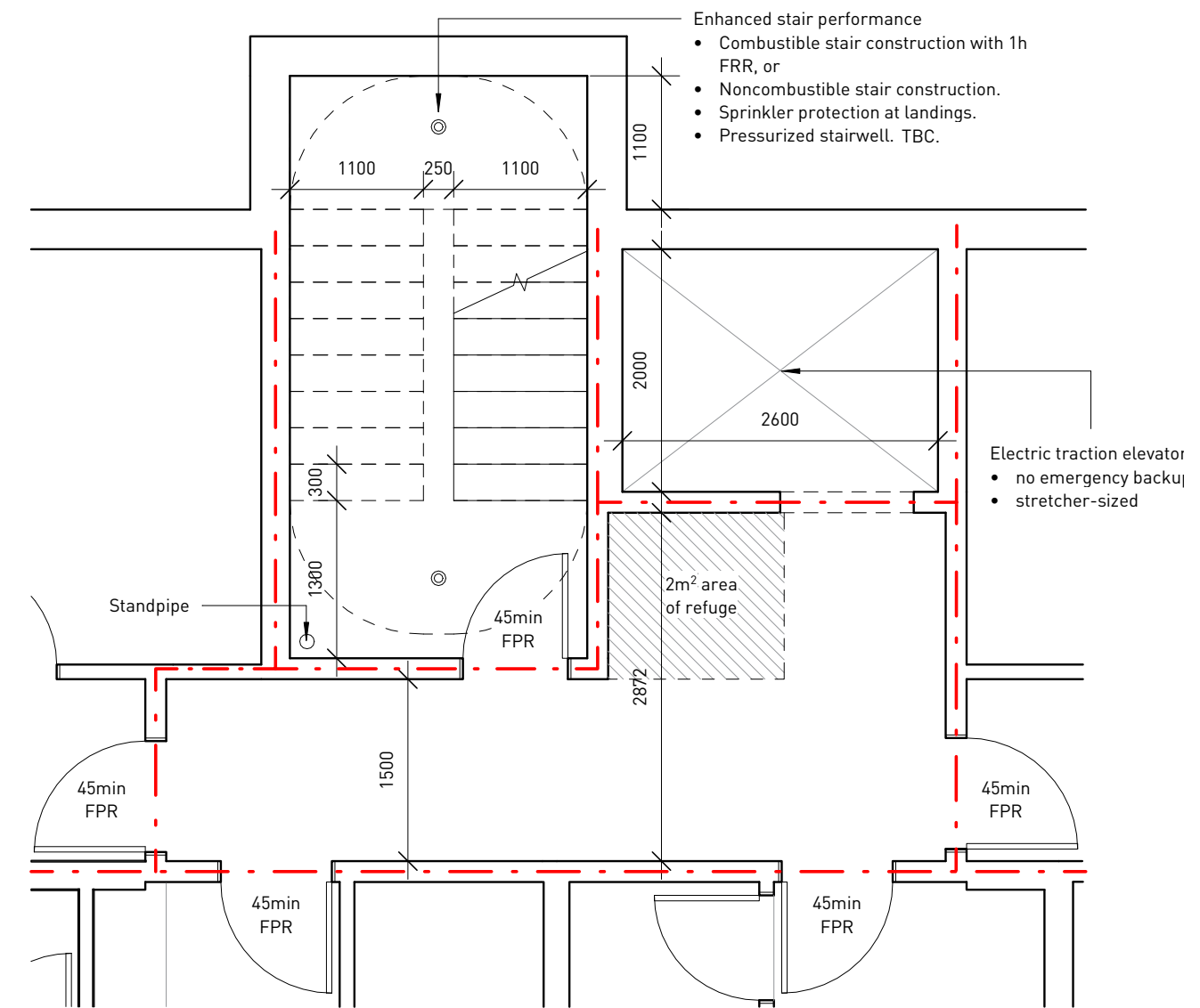
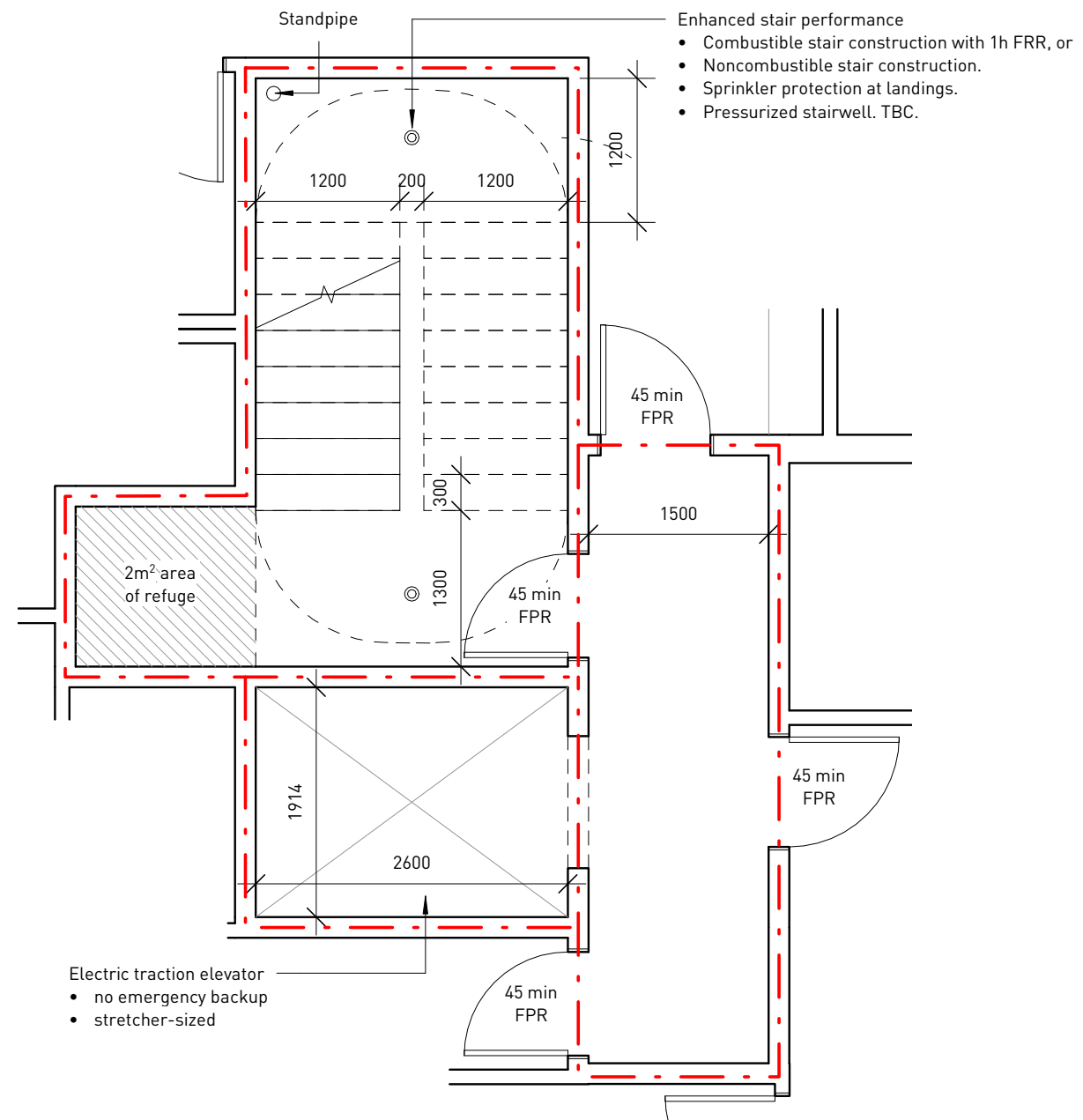


IMAGE: SPECKERT, C. (2022). CODE CHANGE INFOGRAPHIC. MCGILL SCHOOL OF ARCHITECTURE. RETRIEVED FROM [HTTPS://SECONDEGRESS.CA/](https://secondegree.ca/)

## Code analysis

- Code already assumes single point of egress from a residential suite - if egress compromised then suite functions as area of refuge.
- Evacuation from balconies via truck-mount ladder impractical in Canadian context.
- For persons in wheelchairs proposed code change provides similar level of performance as current code - remain in stair or suite to await assistance.
- Consider additional area of refuge in stair or corridor.
- Consider noncombustible or 1h FRR stair construction.
- Stairs to be sprinklered at each landing.
- 7-9 storeys could be feasible in future e.g. mass timber.
- Pressurization of stair with UPS battery backup, if > 6 storeys.
- Consider use of elevator for second means of egress, if > 6 storeys.

# Code analysis



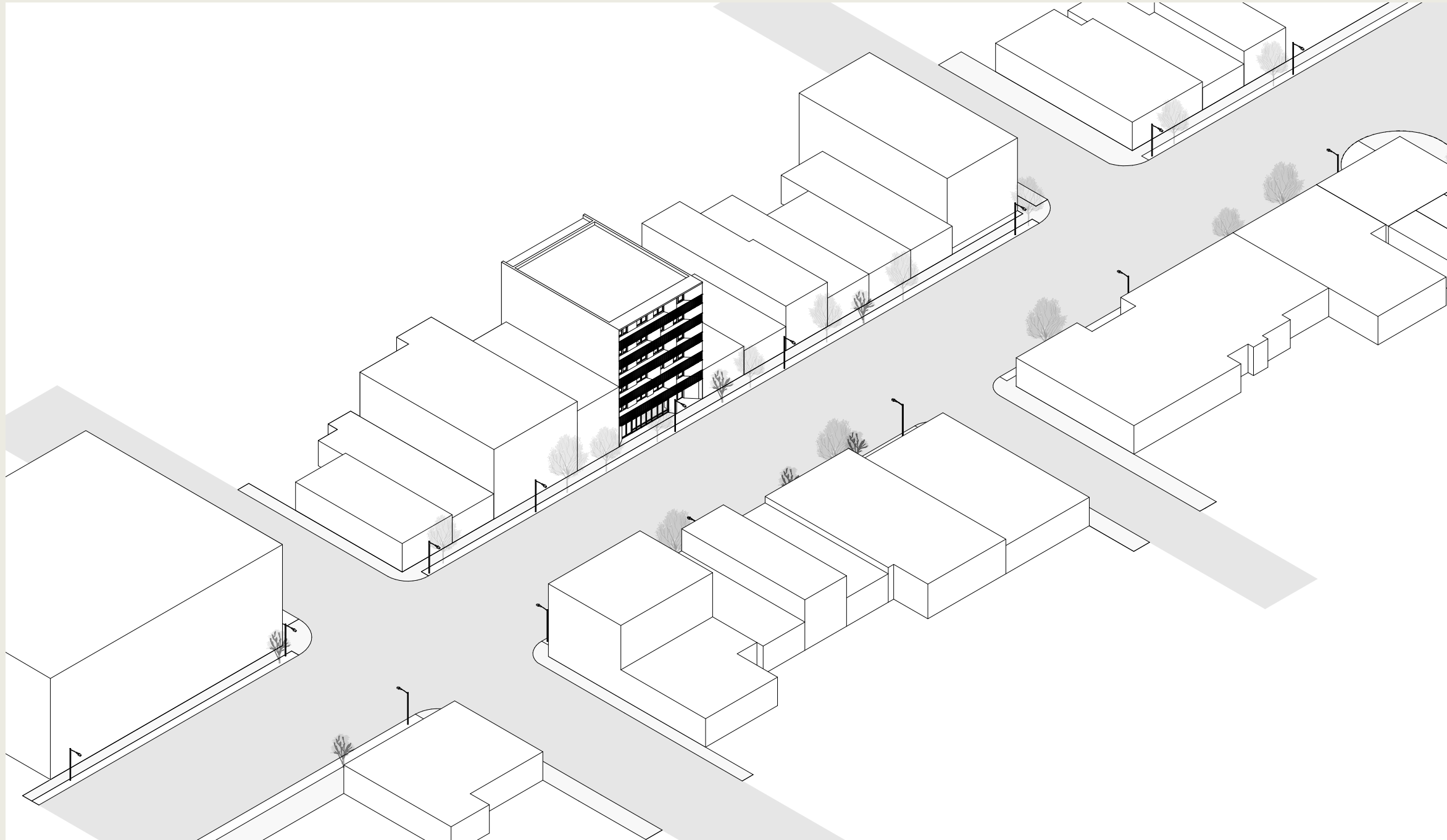
INDICATIVE CORE PLANS  
 1 hr. fire separation

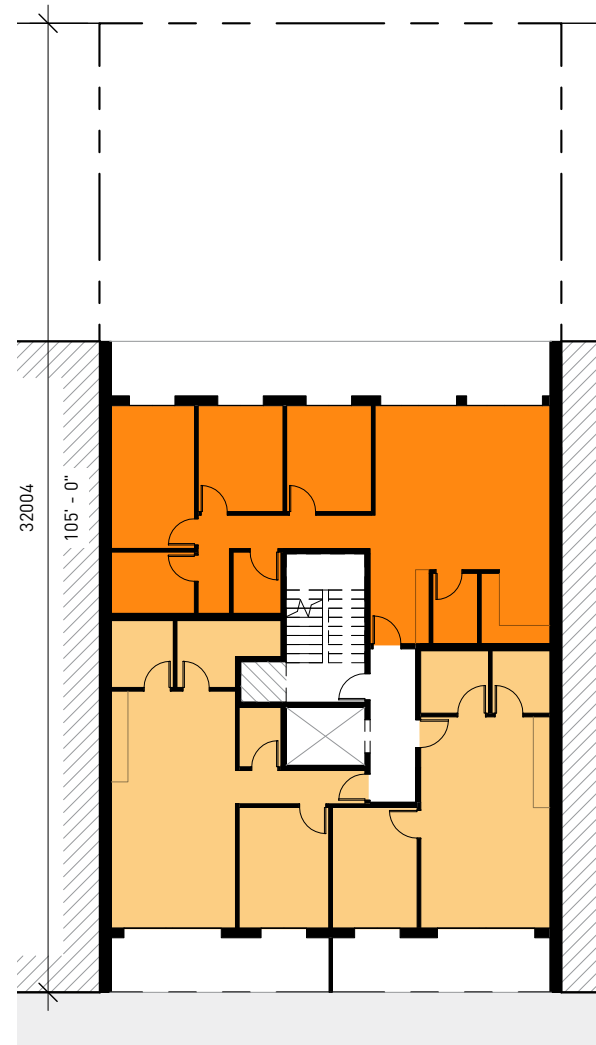
## Future analysis

- Building characteristics - height and area
- Comparative egress analysis
- Canadian fire dept performance
- Canadian sprinkler reliability
- Use of elevators for evacuation
- Appropriate smoke control measures

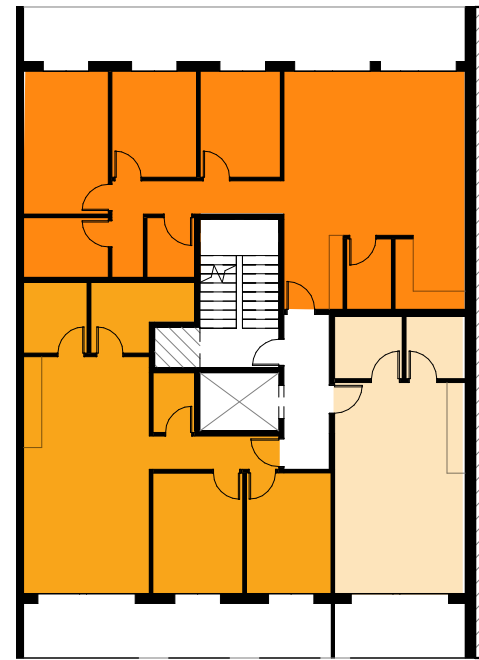
1

# 50ft lot on a commercial street

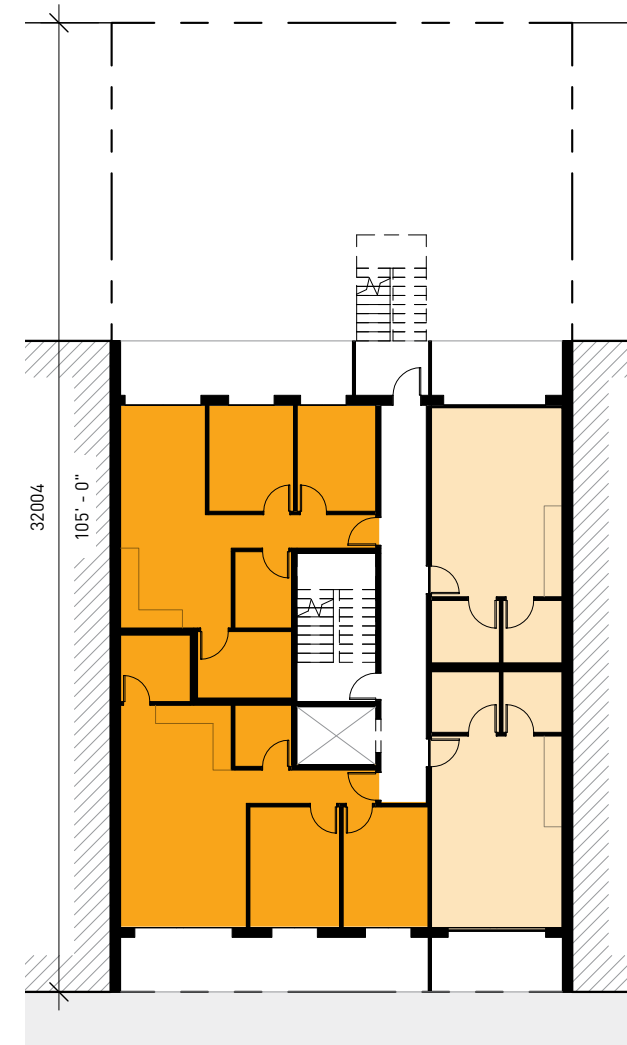




**SINGLE EGRESS STAIR**  
 EFFICIENCY: 84%

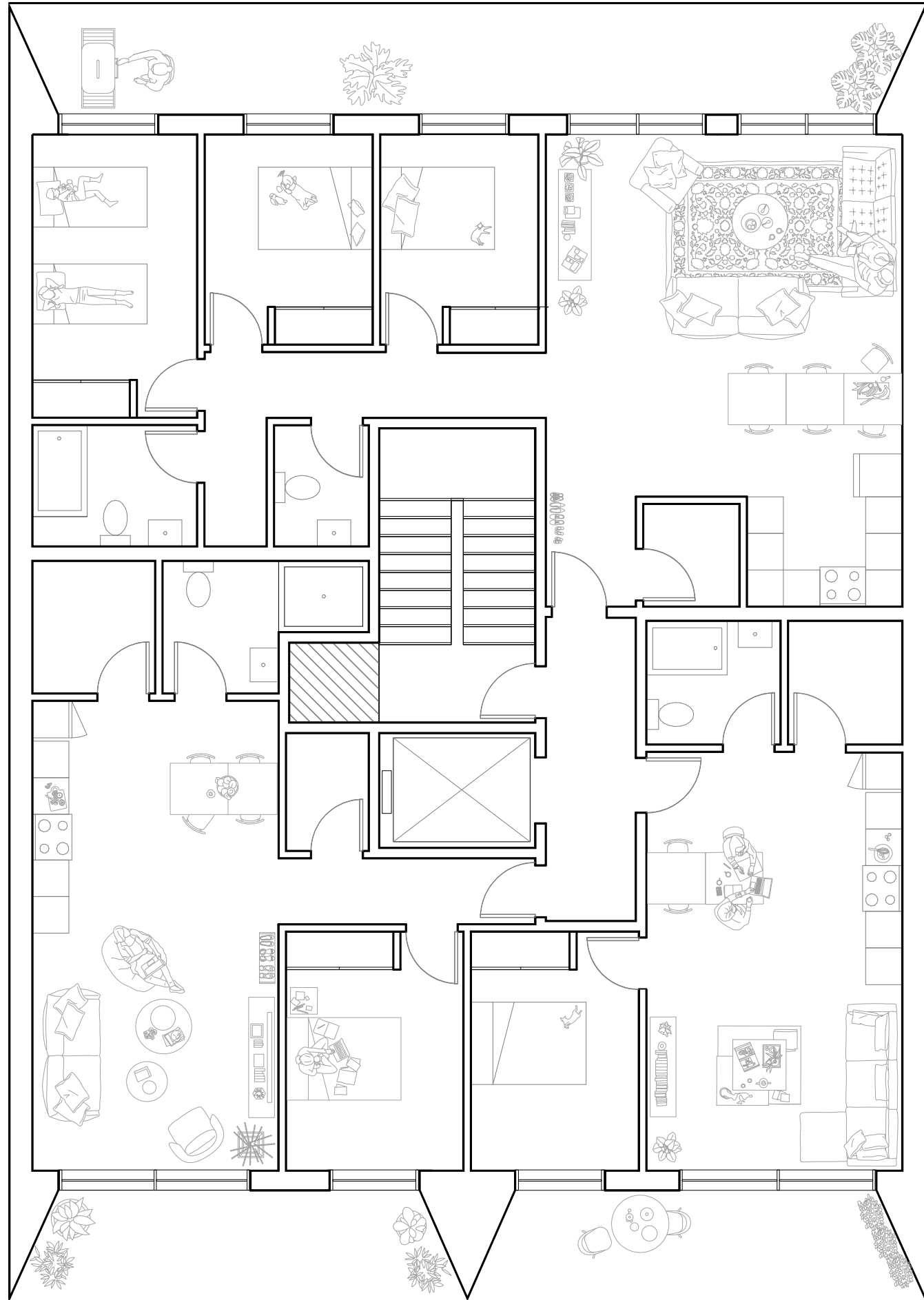


**TWO EGRESS STAIRS**  
 EFFICIENCY: 80%  
 COST PREMIUM: + 2%



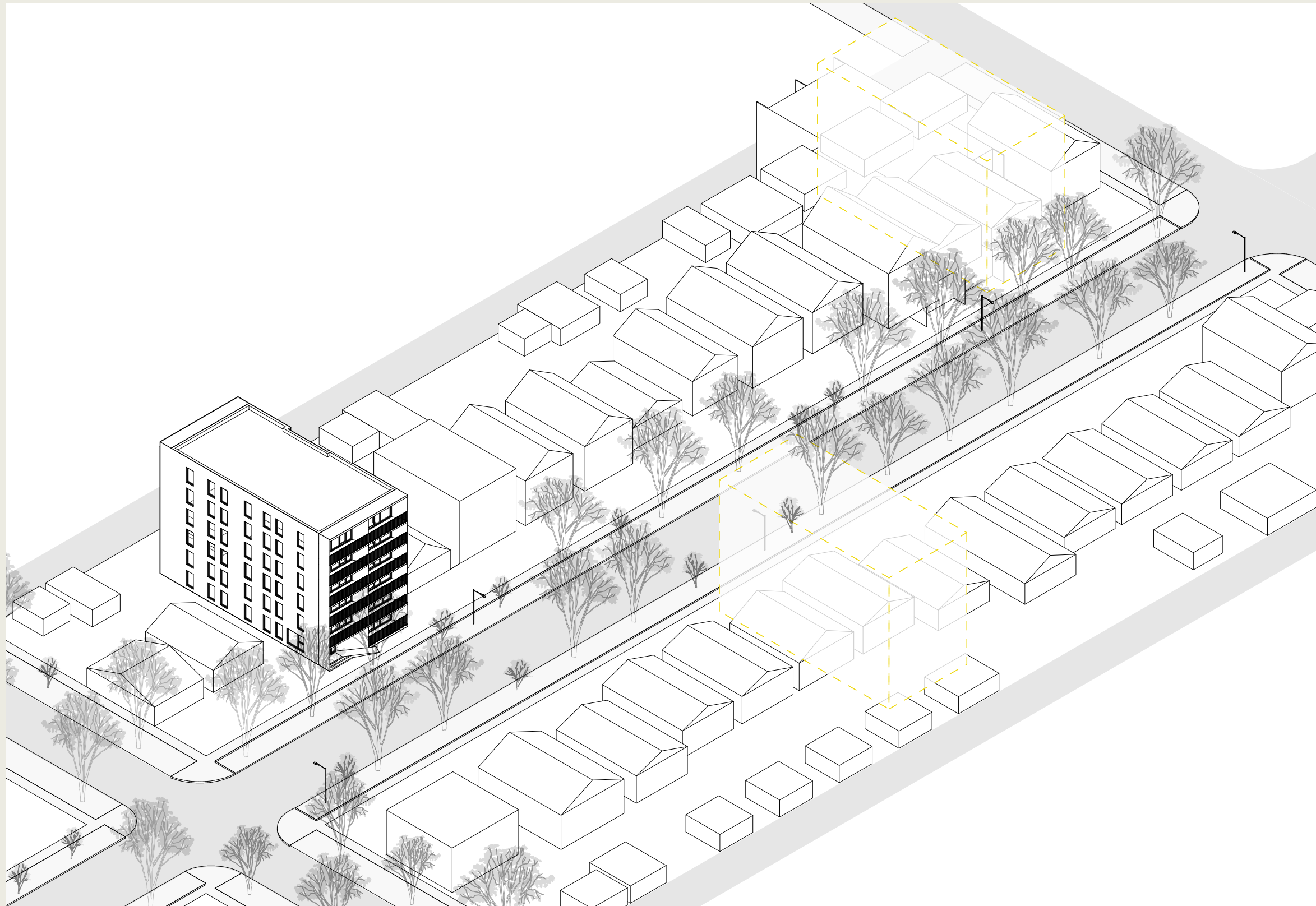
- Studio
- 1-bed
- 2-bed
- 3-bed





2

## Two 33ft lots on a residential street



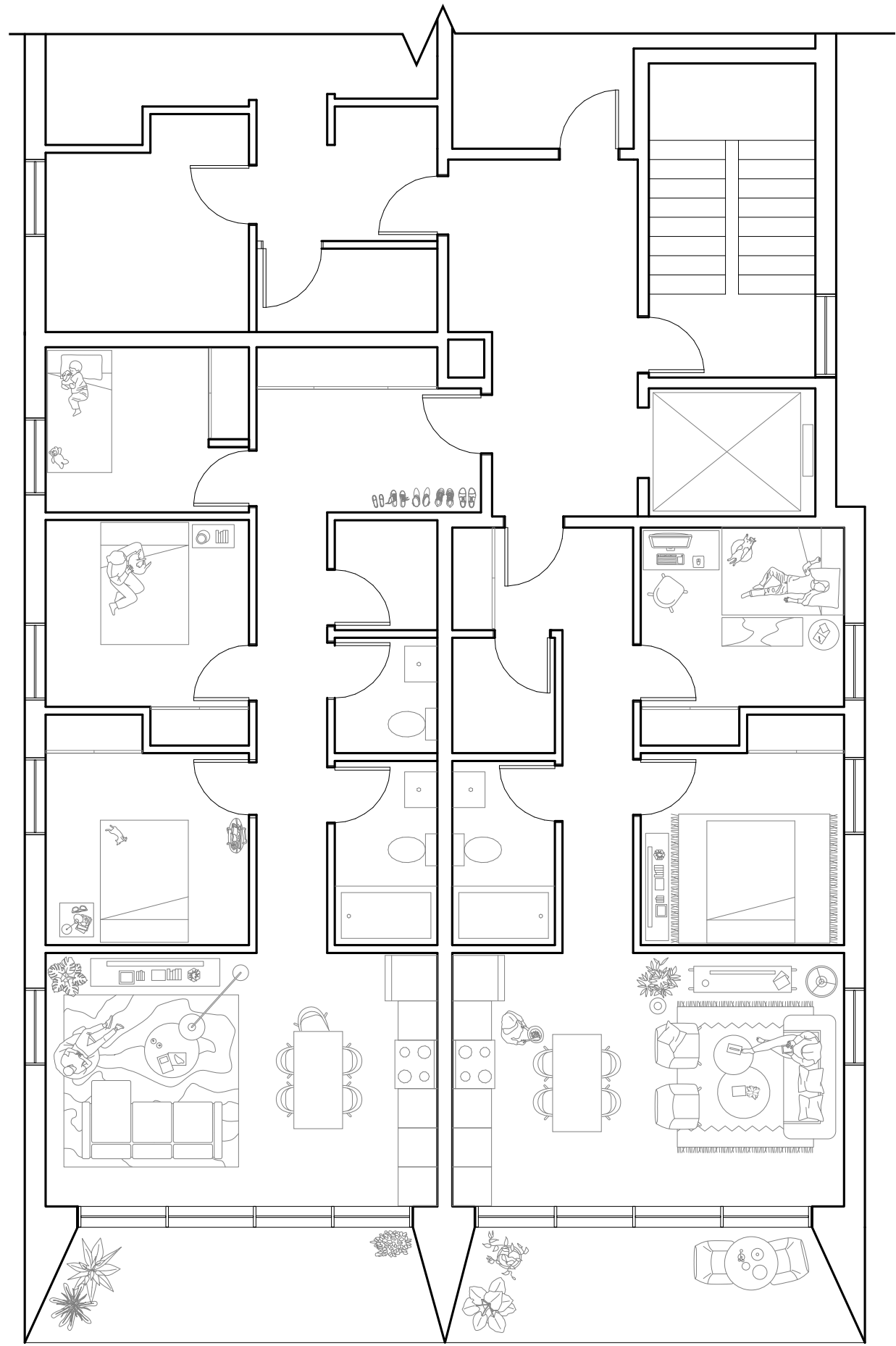


**SINGLE EGRESS STAIR**  
 EFFICIENCY: 84%



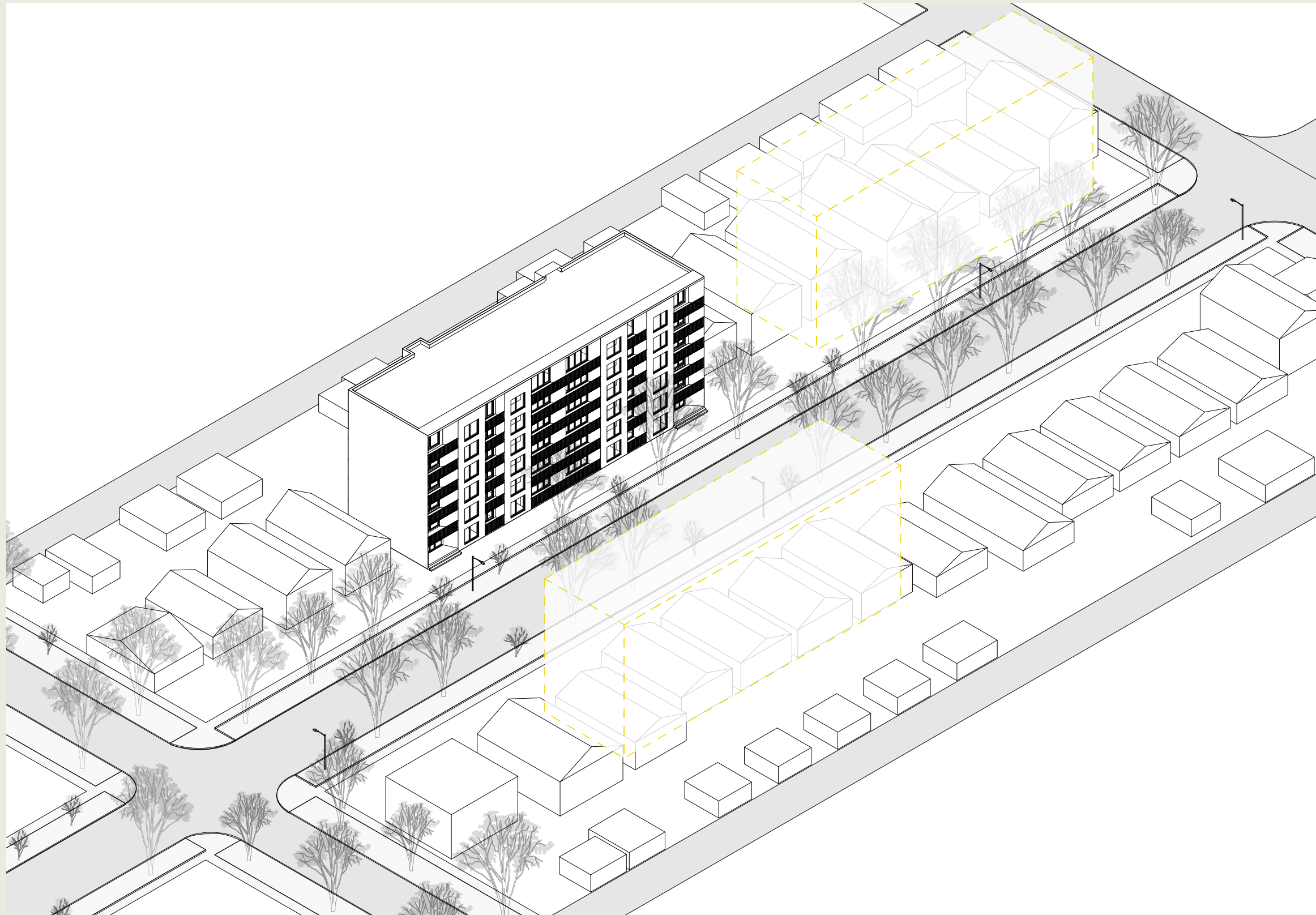
**TWO EGRESS STAIRS**  
 EFFICIENCY: 77%  
 COST PREMIUM: + 6%

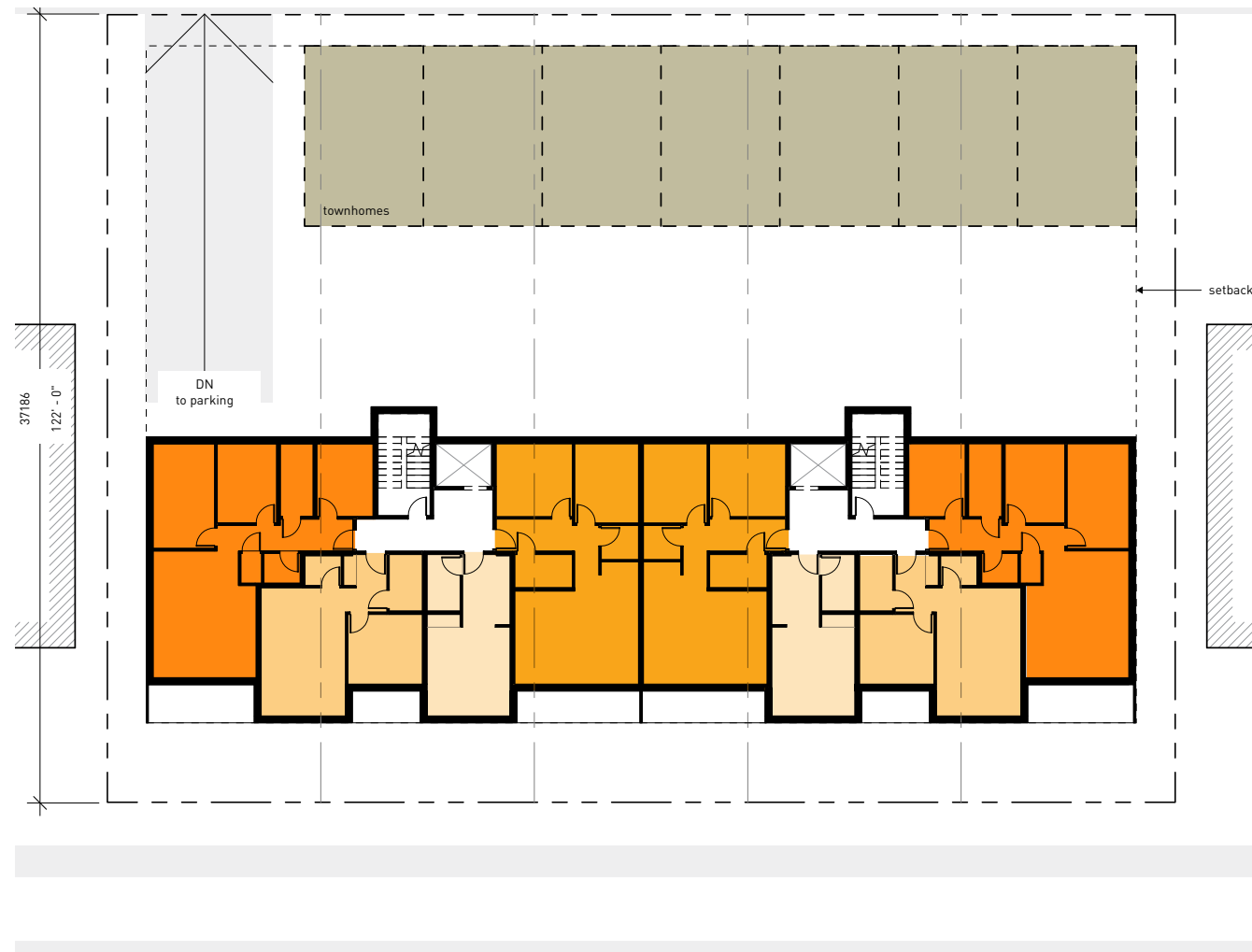
- Studio
- 1-bed
- 2-bed
- 3-bed



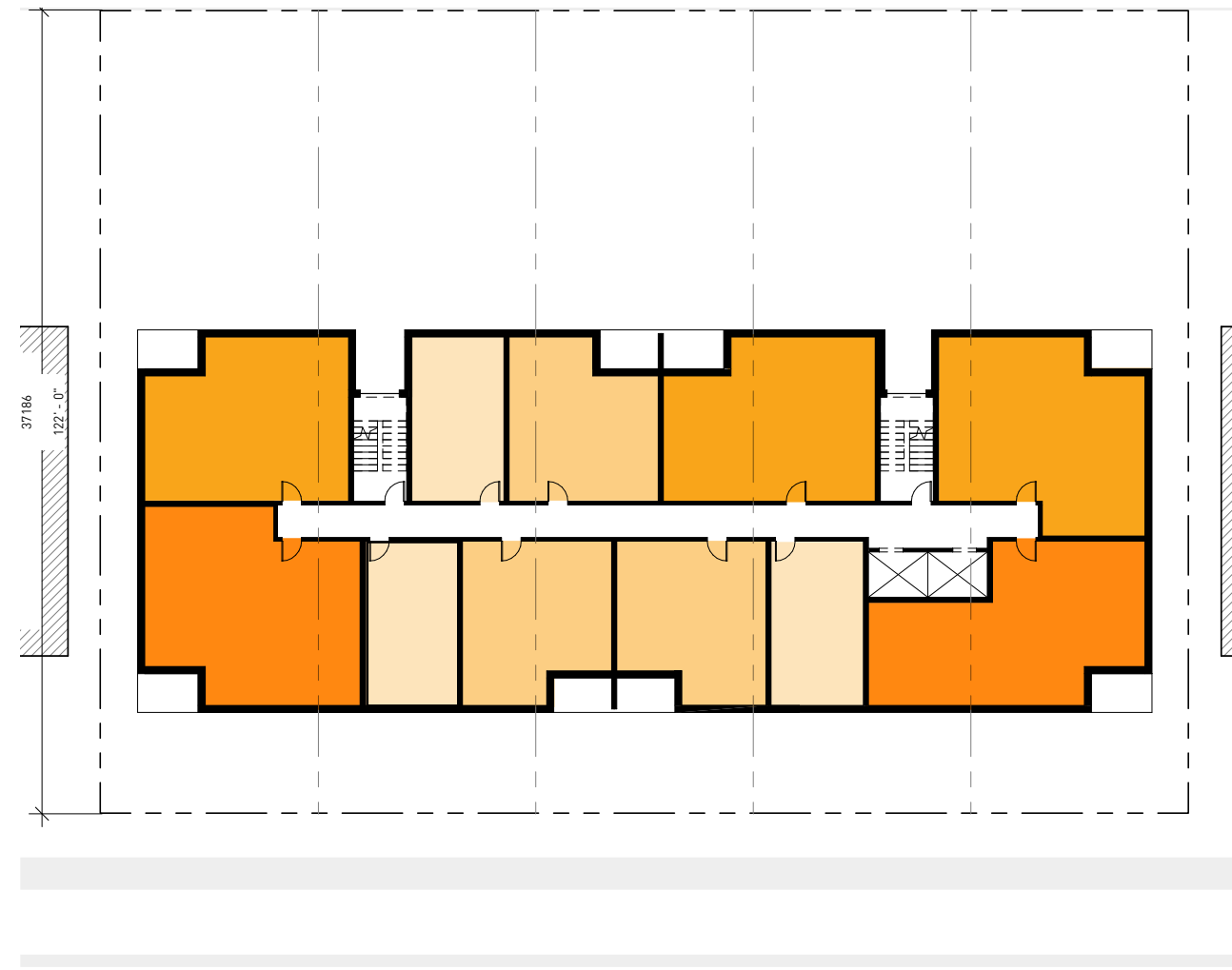
3

## Five 33ft lots on a residential street



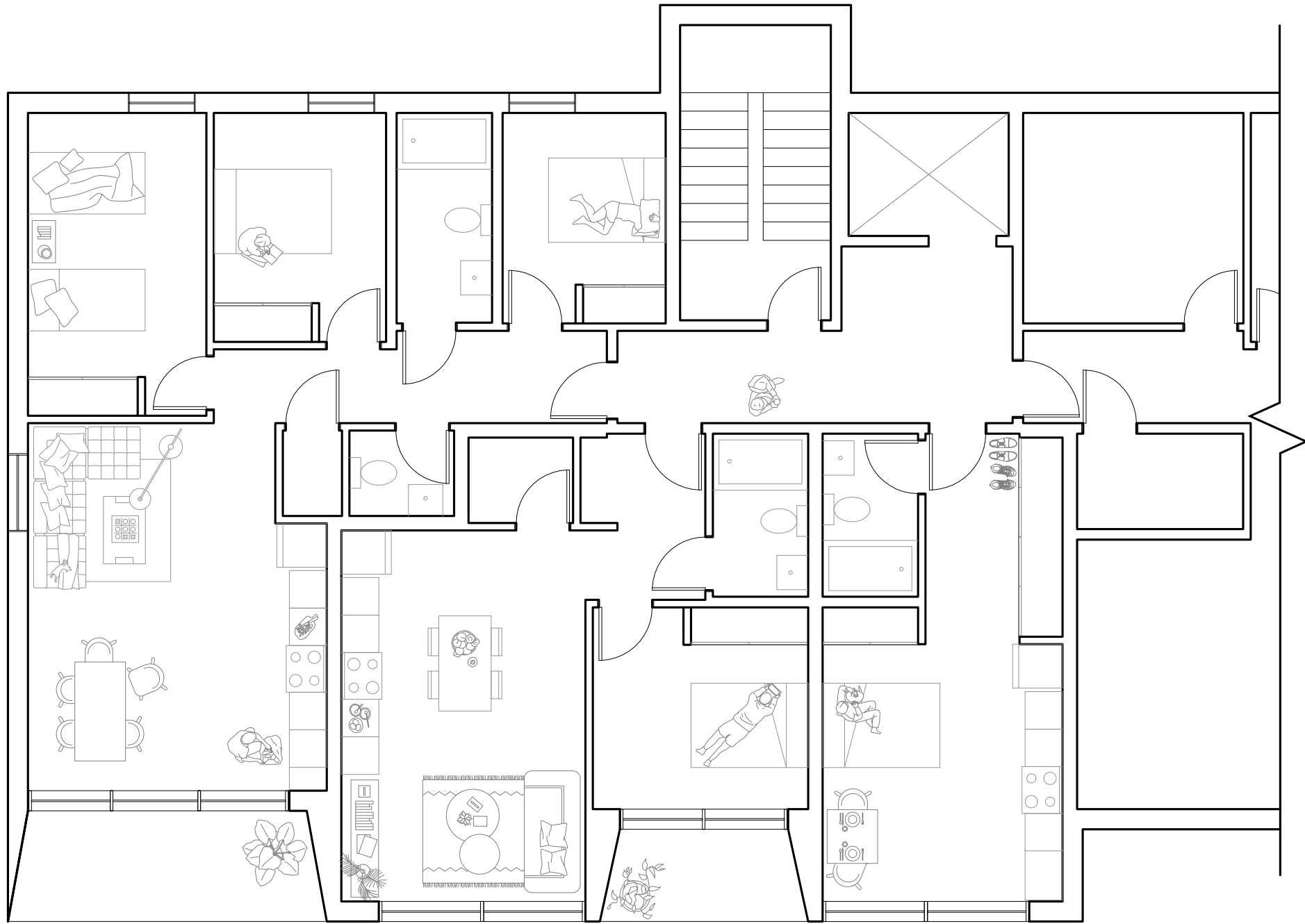


**SINGLE EGRESS STAIR**  
EFFICIENCY: 88%



**TWO EGRESS STAIRS**  
EFFICIENCY: 86%  
COST PREMIUM: + 24%  
FLOOR AREA: + 31%

- Studio
- 1-bed
- 2-bed
- 3-bed



## Single-stair apartment buildings

- Enhanced design flexibility and efficiency
- Unlock small sites for housing
- Incremental development vs wholesale redevelopment
- Additional stair protection measures can be cost-neutral
- Recommendation for demonstration projects



**Thank you!**

<https://research-library.bchousing.org/Home/ResearchItemDetails/8813>

**public**

