HANOK, STACKED: AN ALTERNATIVE URBAN HOUSING FOR THE NEW FAMILY

A Thesis Submitted to the Department of Architecture
Harvard University Graduate School of Design, by

GIO SHIN

In Partial Fulfillment of the Requirements for the Degree of
[Master of Architecture]

DECEMBER 2021

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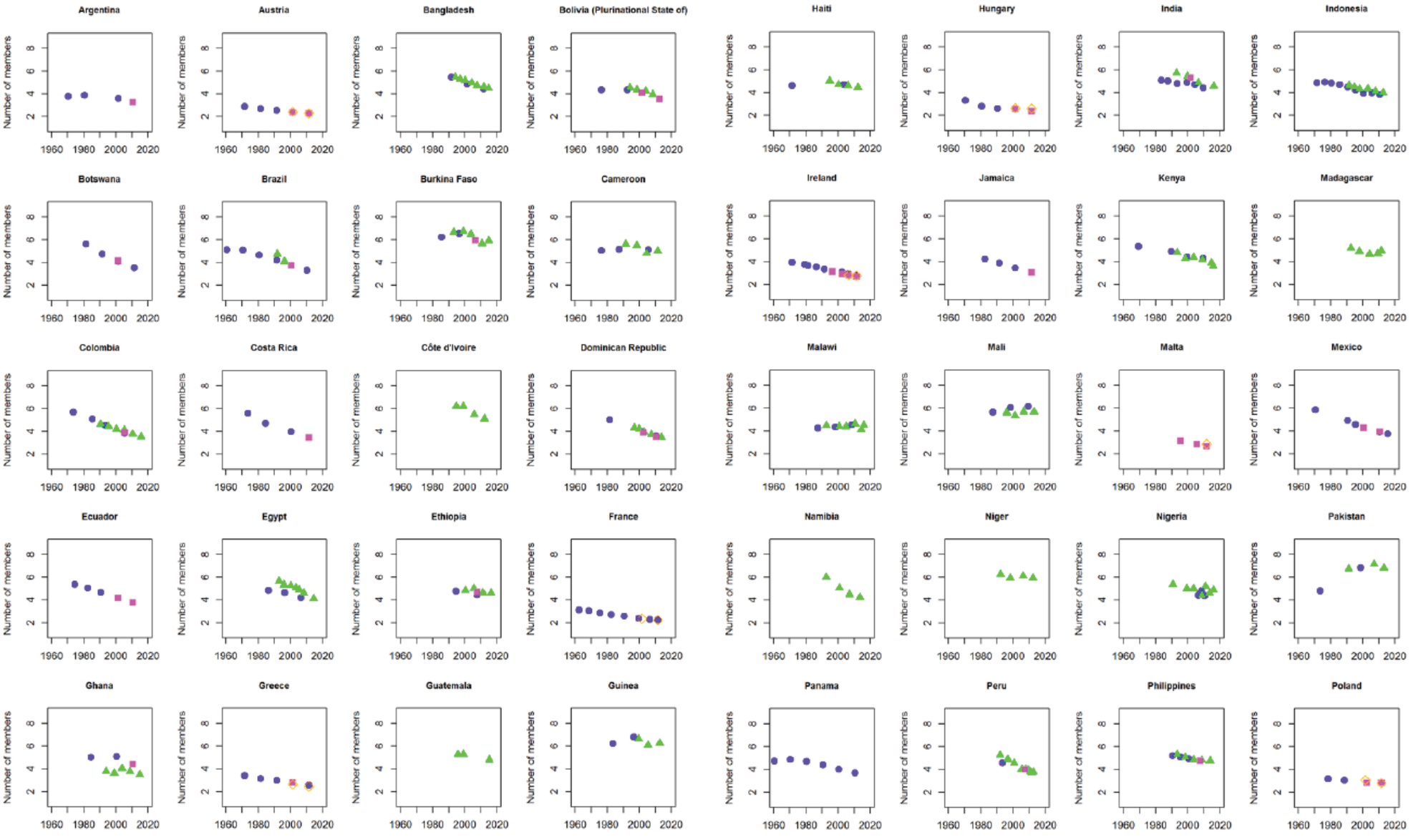
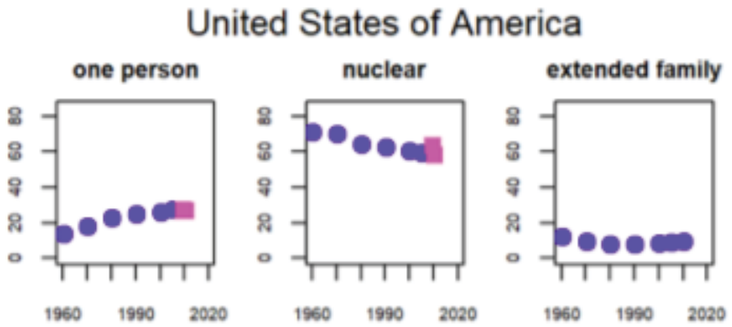
Gio Shin

Gio Shin

Scott Cohen



Trend in average houshold size around the world



1-person household

4-persons household

	1인 세대	2인 세대	3인 세대	4인 세대 이상
2021.3.	39.5%	23.6	17.3	19.6
2020	39.2%	23.4	17.4	20.0
2019	37.8%	22.8	17.8	21.6
2018	36.7%	22.4	18.1	22.9
2017	35.7%	21.9	19.3	24.1
2016	35.0%	21.5	18.4	25.1

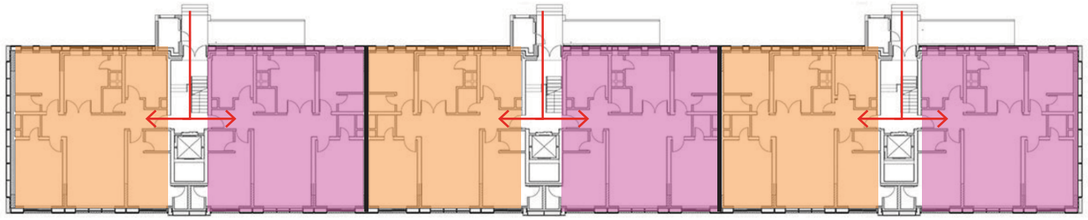
Trend in average household size, US and South Korea

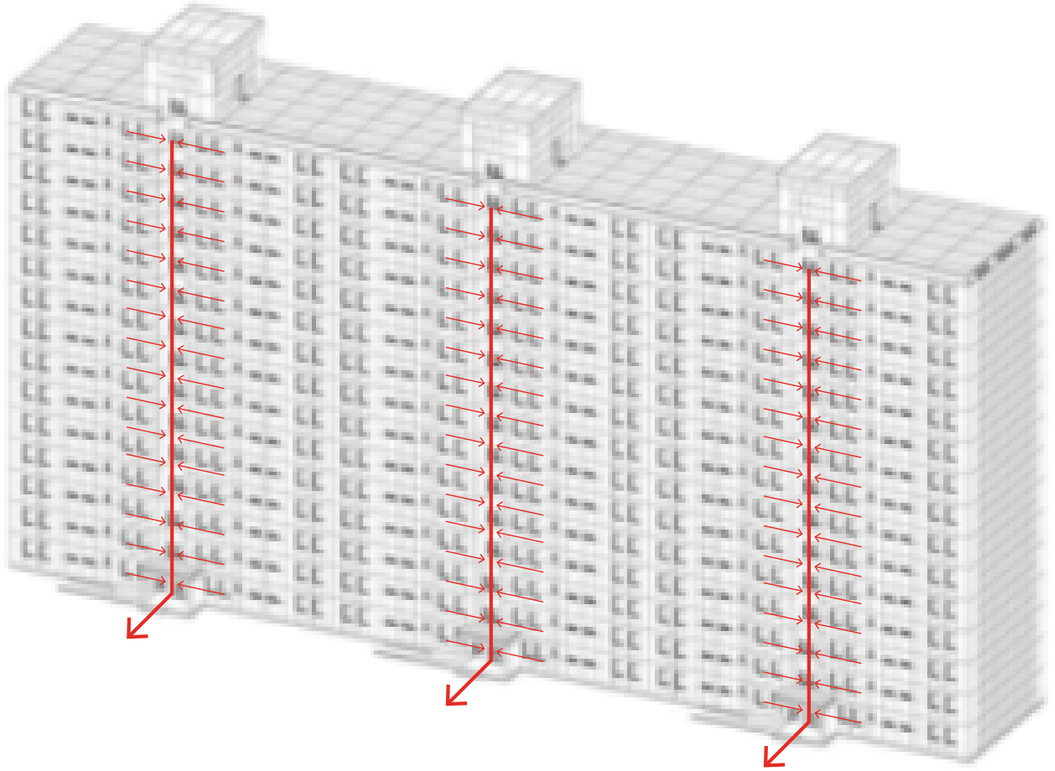
Korean apartments, 62% of all housing in Korea

Apartment construction boom starting in the 60s

4-person family campaign by the government

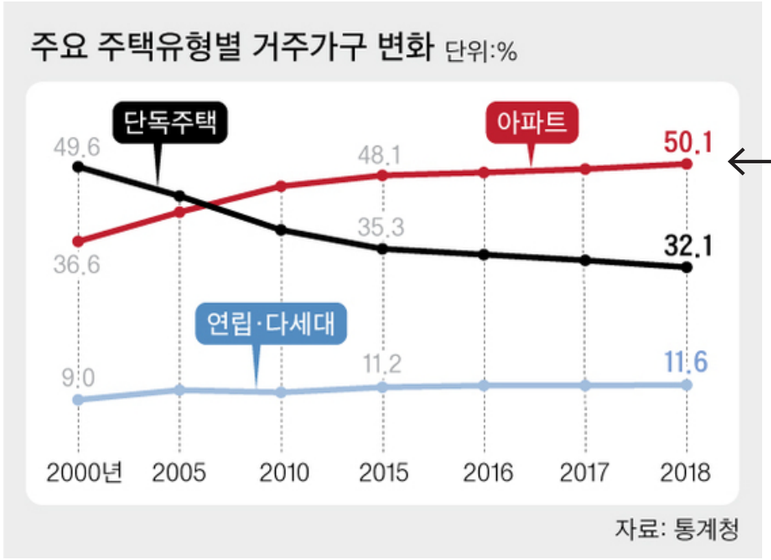
Homogeneous floor plans of Korean apartments



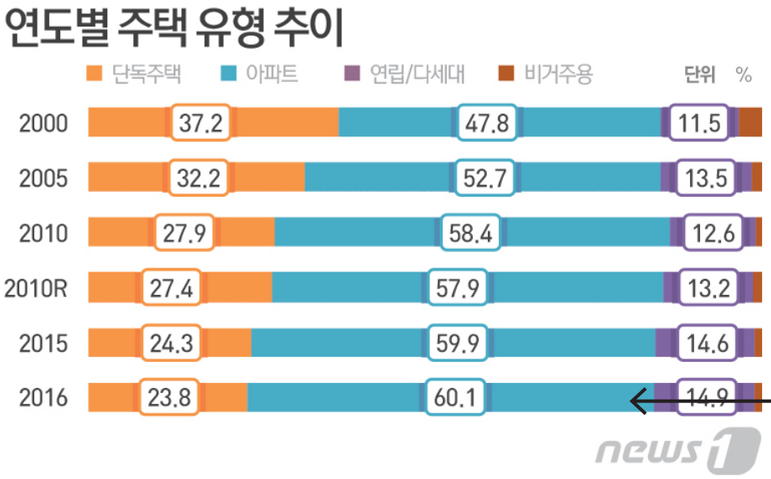


Typical apartment unit aggregation

Apartments as an asset and commodity

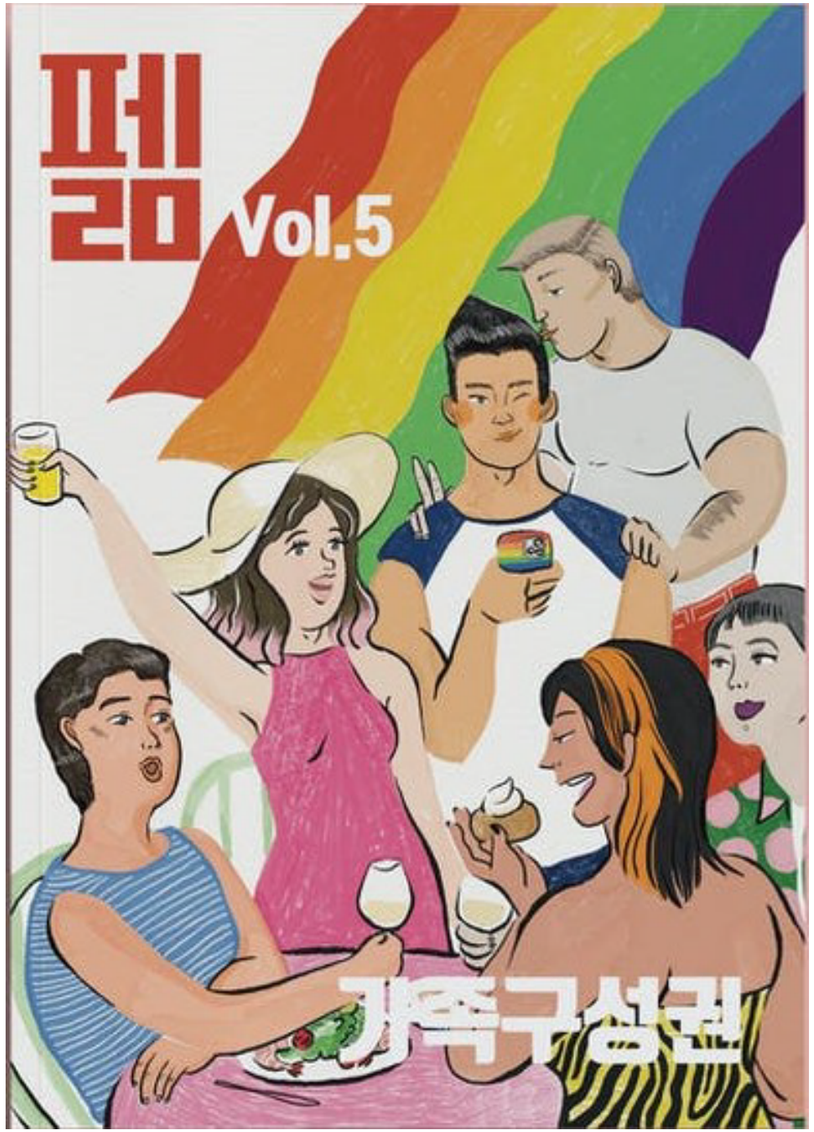


about 50% of the population live in apartments



60% of available housing units are apartments

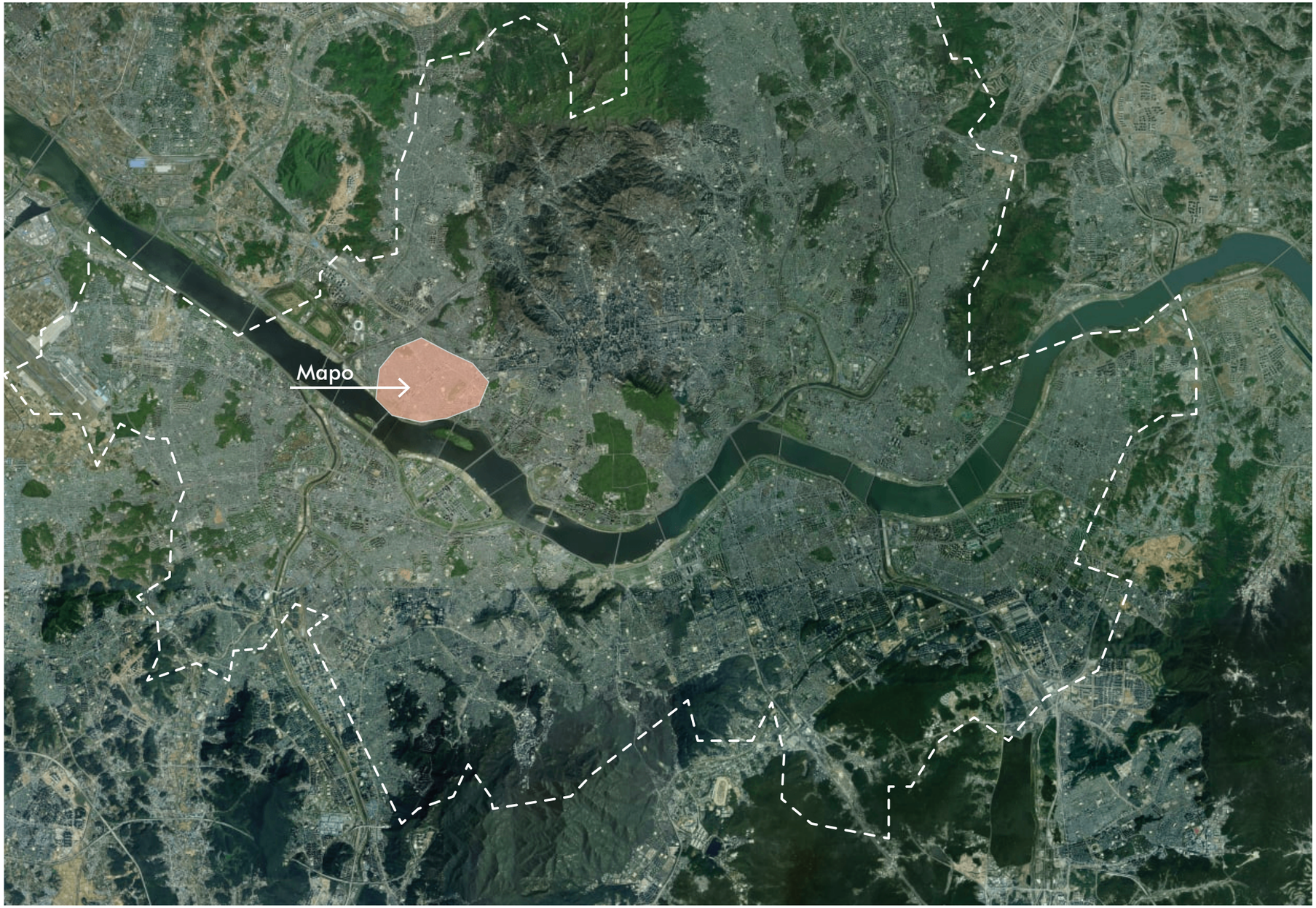
Current apartment trends



Civil Partnership Act

Family Formation Rights

Rising interests in alternative forms of family and lifestyle outside the apartments



District of Mapo, Seoul, Korea

District of Mapo, Seoul, Korea

Galleries, shops and artist workshops in Mapo

Queer communities’ migration to Mapo

DISABLED PEOPLES' INTERNATIONAL · VOX NOSTRA ·
DPI KOREA

GREENPEACE

생명의숲
FOREST FOR LIFE

무지개의원

Hüman+
나눔세상

환경정의

KaRa
(사)동물권행동카라

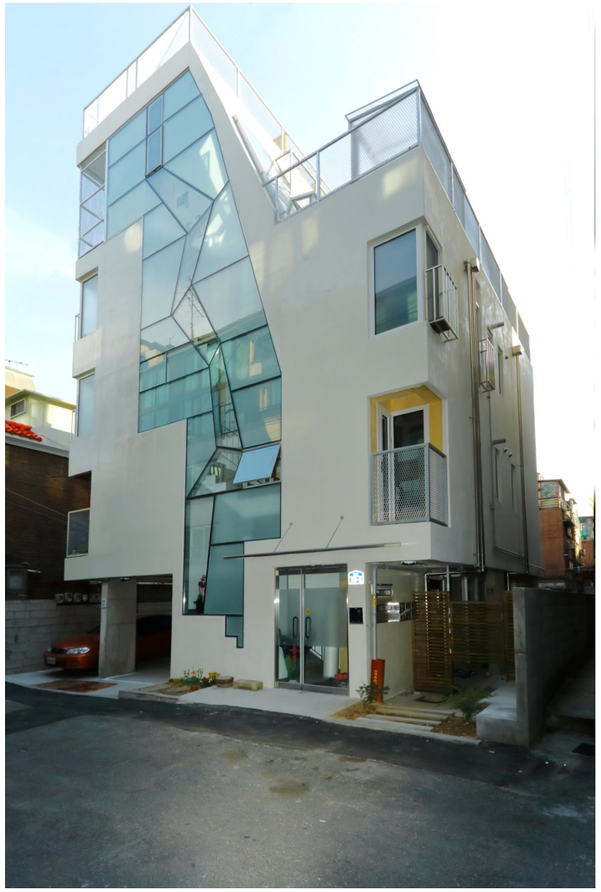
Seoul Street Performance

KOREAN NURSES MOVING WORLDWIDE!
국제한인간호재단
Global Korean Nursing Foundation

Civic organizations' migration to Mapo

Streetscapes of Mapo

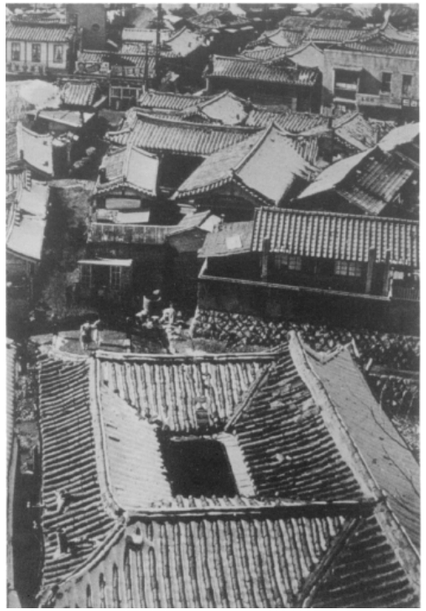
Gib-bun-gae = “house lightning” or informal meal sharing within queer communities



Rainbow House, a queer collective in Mapo

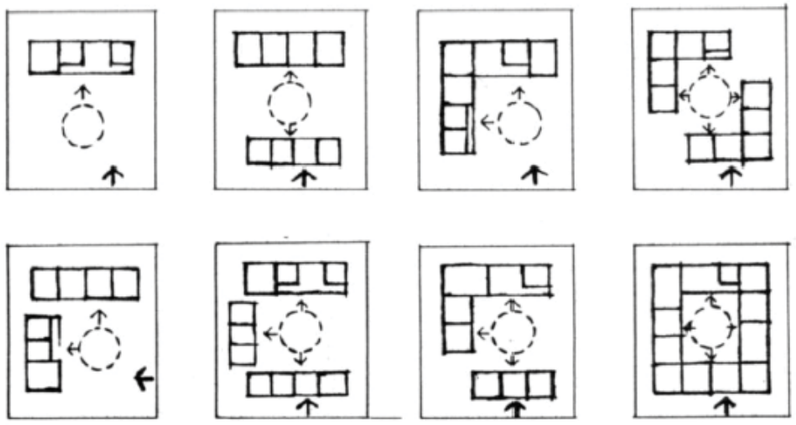
The People’s House (a neighborhood community space) and a local housing co-op meeting

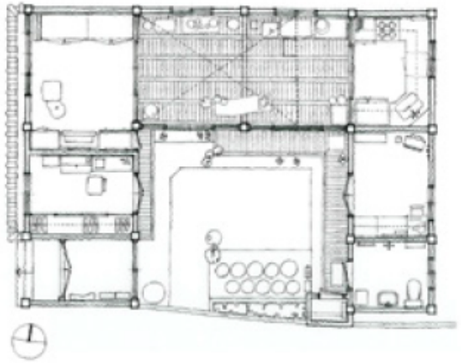
Pre-industrial lifestyle similar to that of Mapo residents

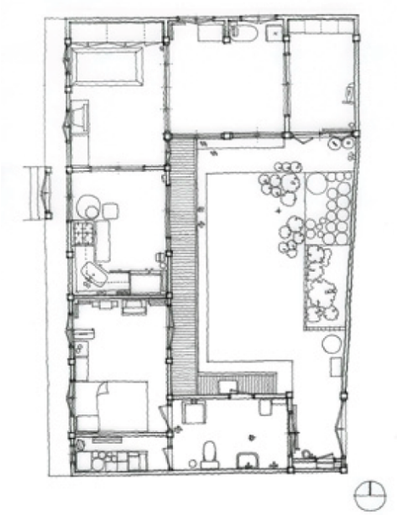


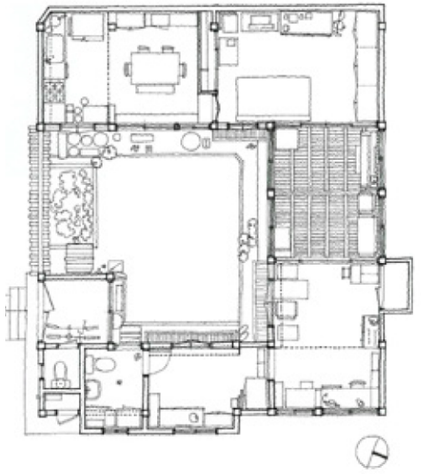
Hanok (traditional Korean house) villages

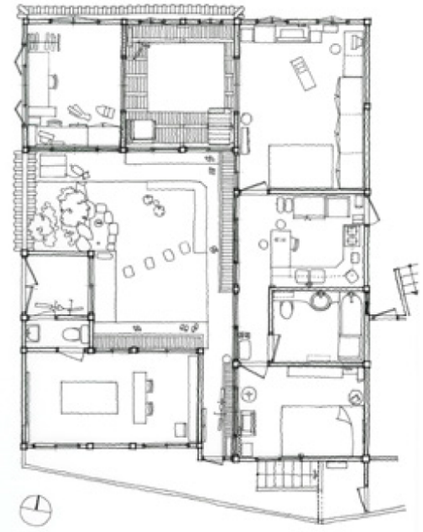
Typical *Hanoks*



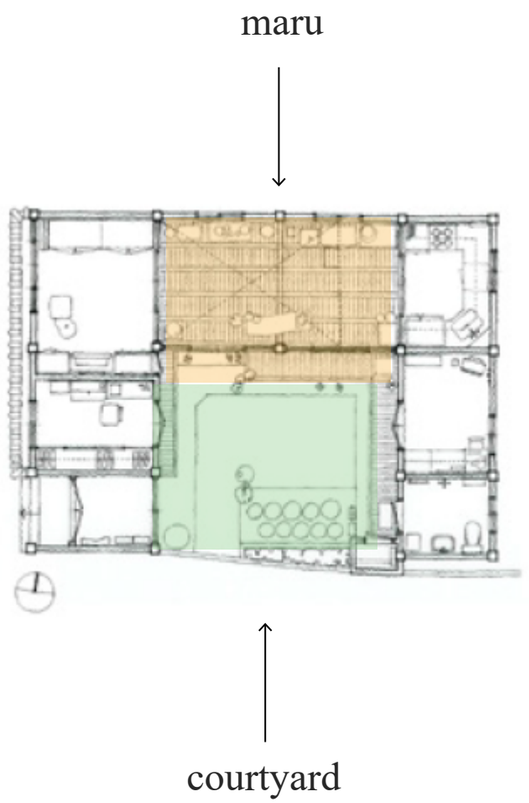


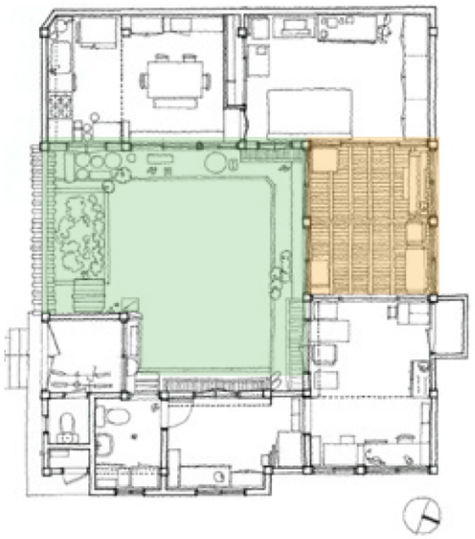


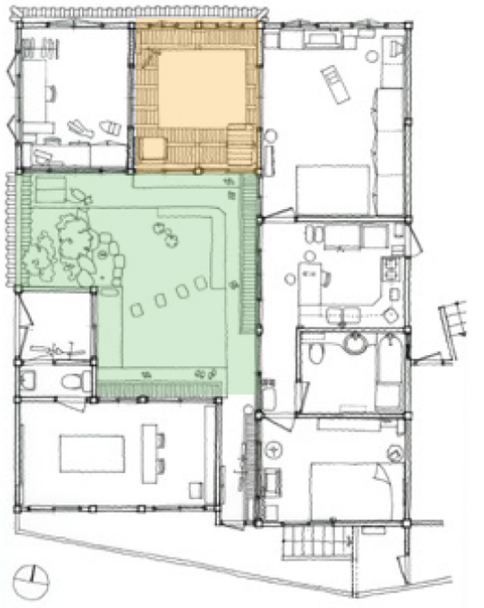




Typical *Hanok* configurations

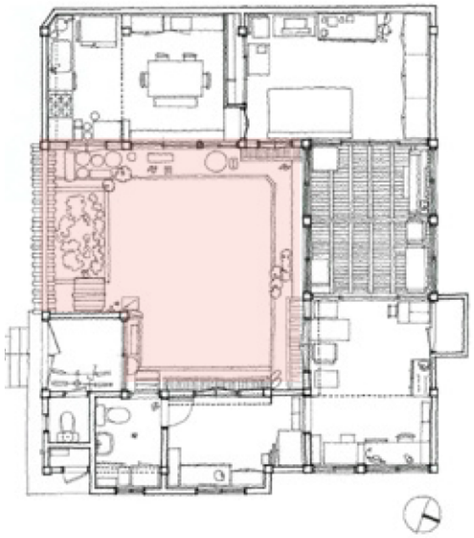






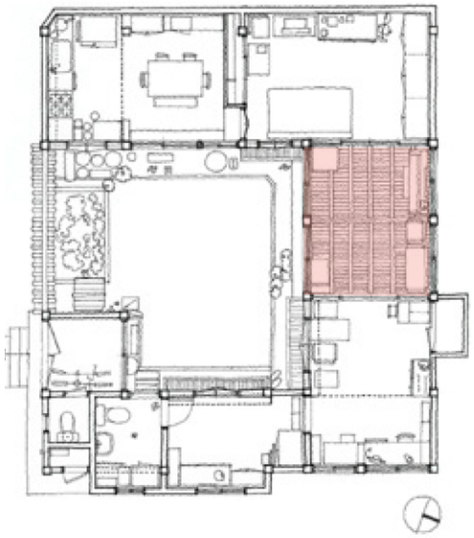
Typical *Hanok* configurations

Key spatial features of *Hanok*



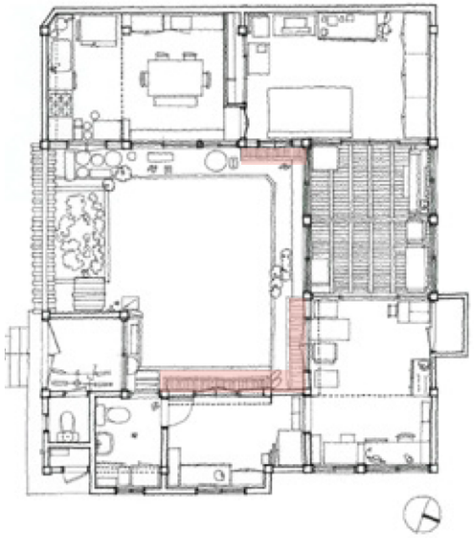
Madang (courtyard)

Key spatial features of *Hanok*



Maru (semi-indoor/outdoor intermediate space)

Key spatial features of *Hanok*



Different types of *maru*

Key spatial features of *Hanok*

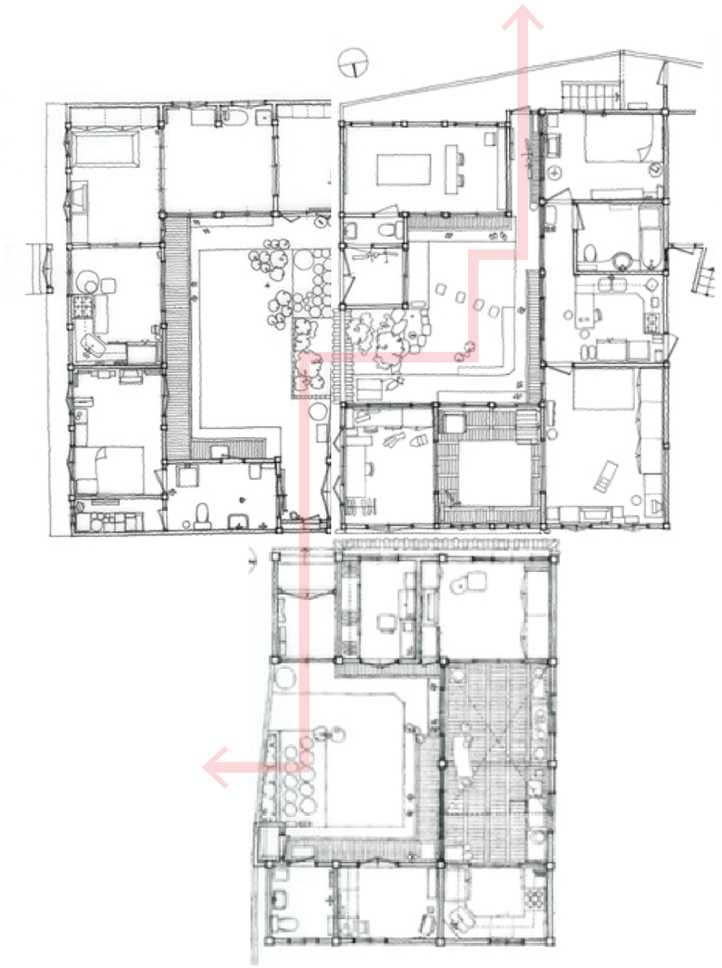
Numaru (flexible social space)

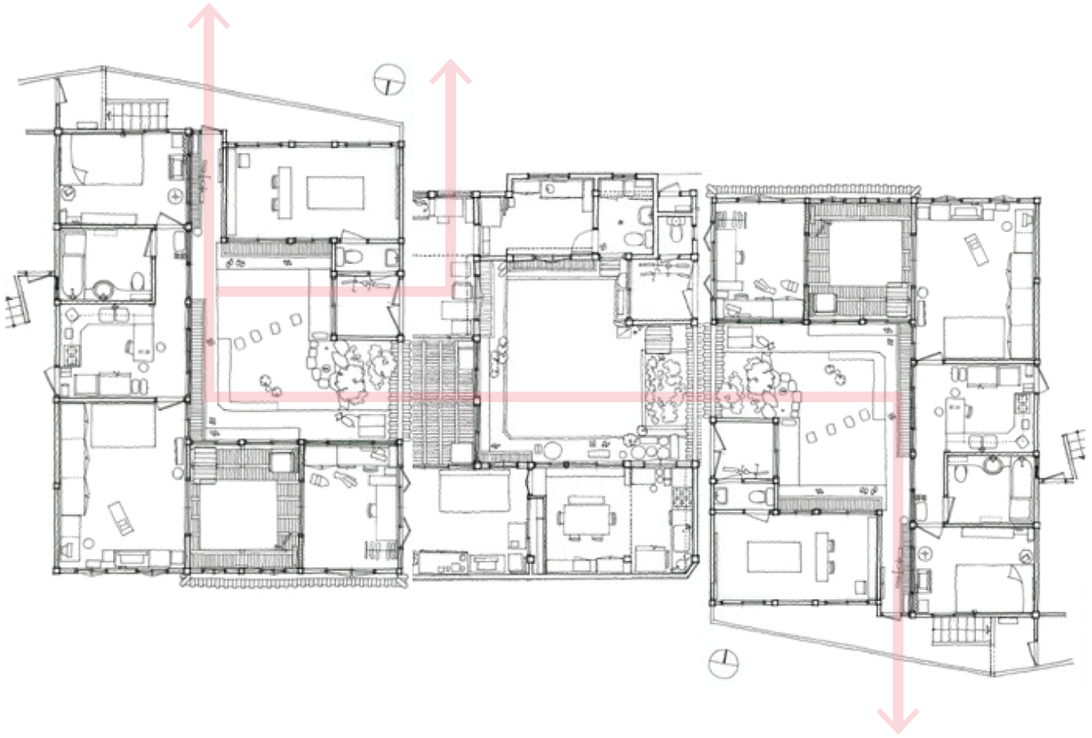
Key spatial features of *Hanok*

Apertures of *Hanok*

Key spatial features of *Hanok*

Bun-hop-mun, or lifted doors of *Hanok*





Concept collage: connected and flexbile aggregation of *Hanok*

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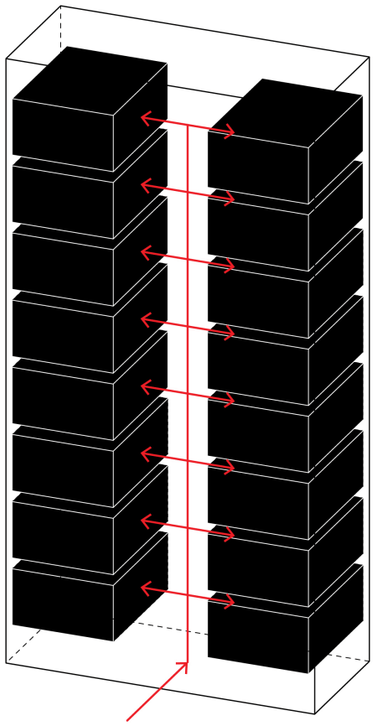
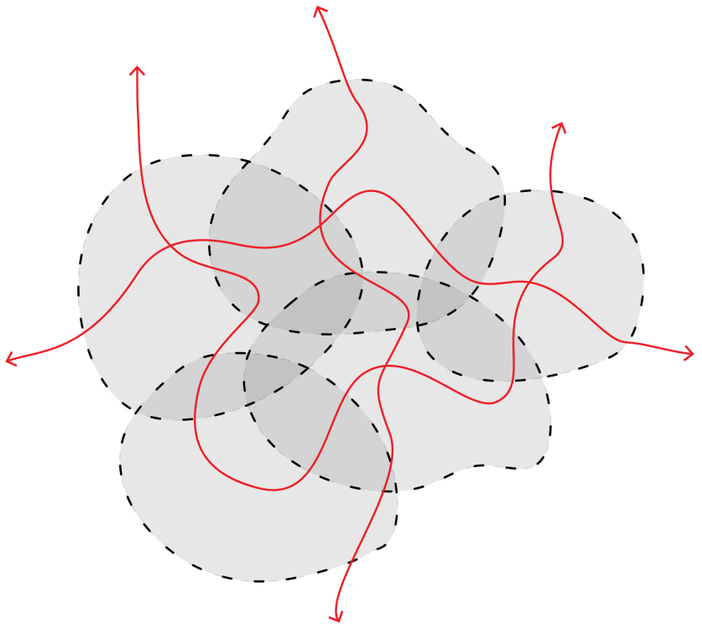


Typical apartment aggregation & circulation

- Clear boundary between units
- Clear separation between private and shared spaces
- Uniform unit plans and aggregation strategies

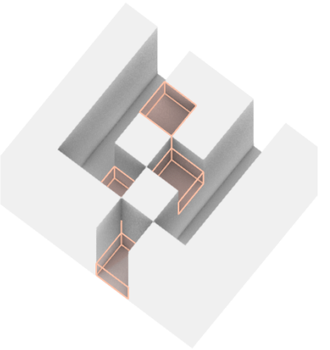


Proposed new housing typology (plan view)

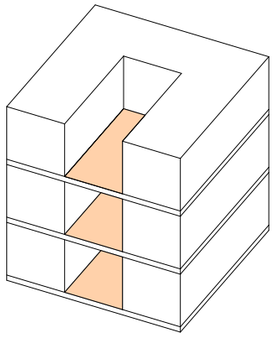
- Porous & overlapping units
- Circulation embedded within units
- Open boundary between private and shared spaces
- Flexible and dynamic unit plans

Stacking courtyards

Courtyard defintion:
outdoor space enclosed on three sides

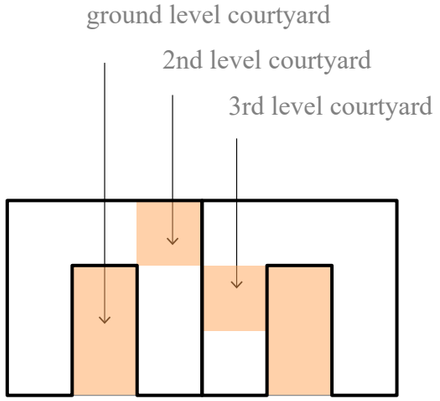


axon view



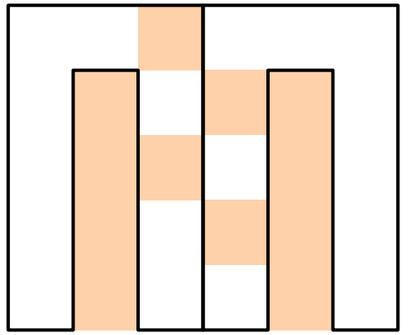
Simple vertical stacking:

lower levels without access to
open air above

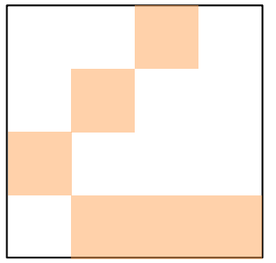


Zigzag stacking:

C-shaped units side-by-side,
courtyards stacked vertically
in a zigzag fashion



longer units allow
for more courtyards
to stack vertically



courtyard placement
in elevation view

Area proportion of courtyard/unit

1/9
(0.11)

<

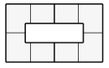
1/6
(0.17)

<

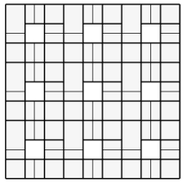
1/5
(0.2)

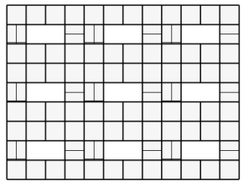
<

2/9
(0.22)

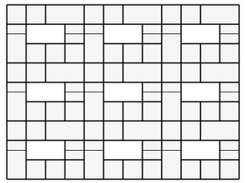


Max density/height
(stacked until no additional courtyards could be added)

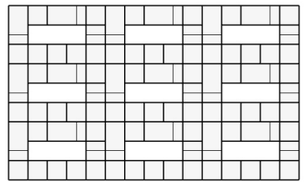


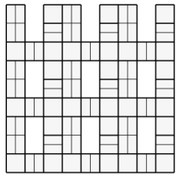


Variation 1

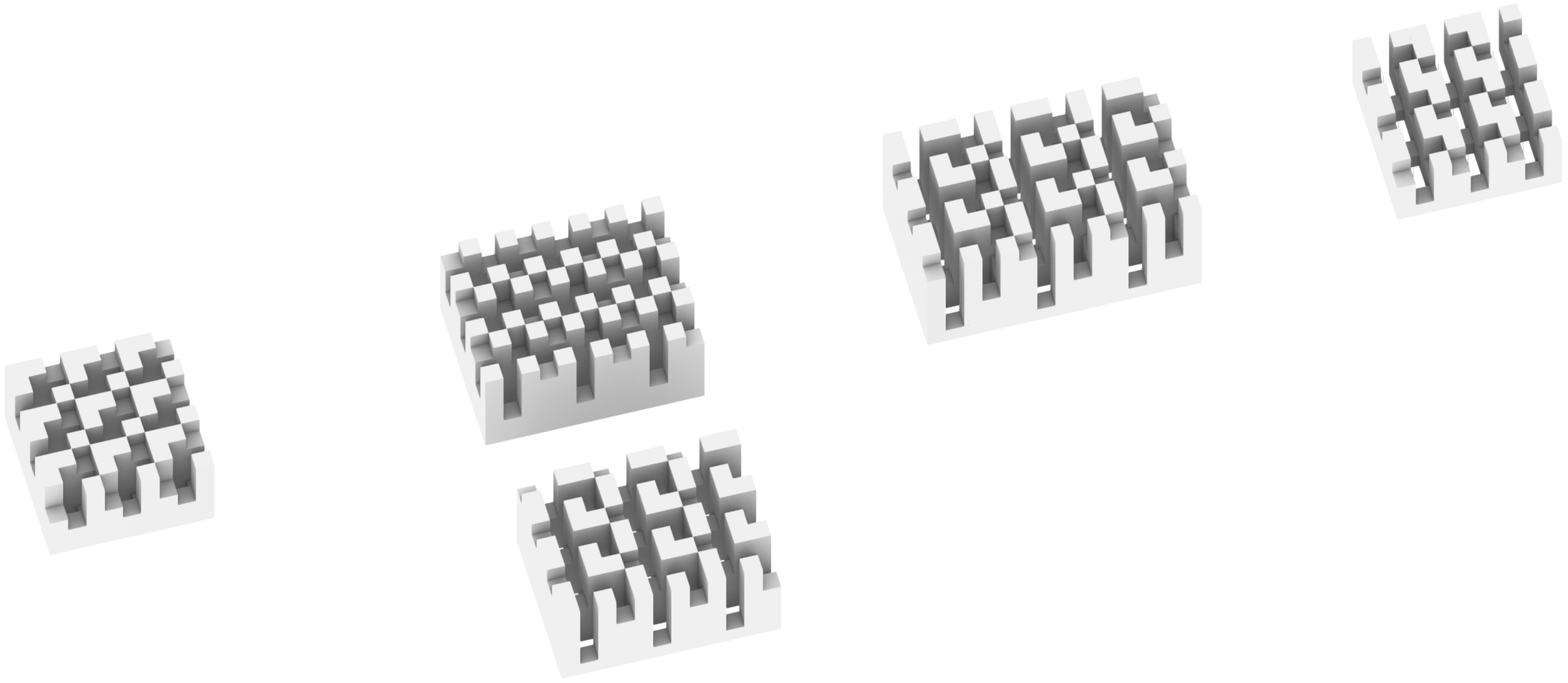


Variation 2

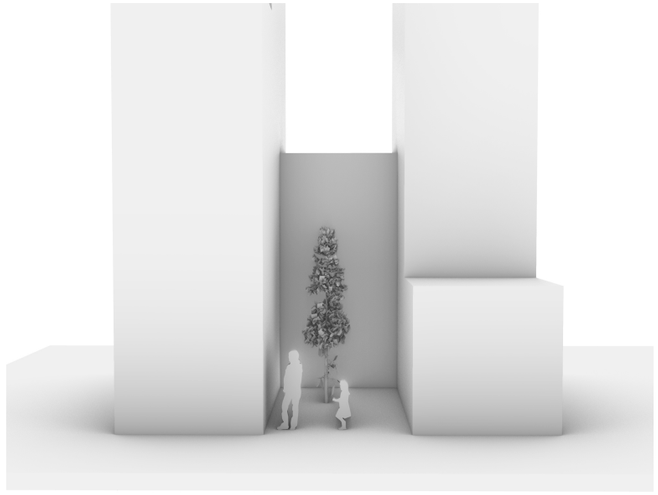




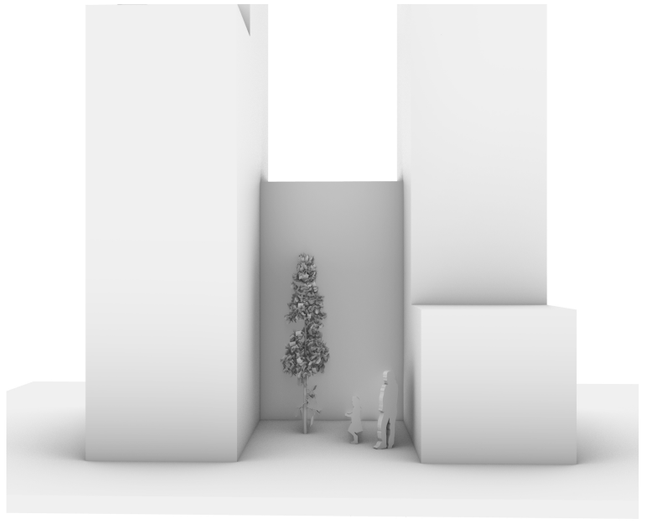
FAR & density studies



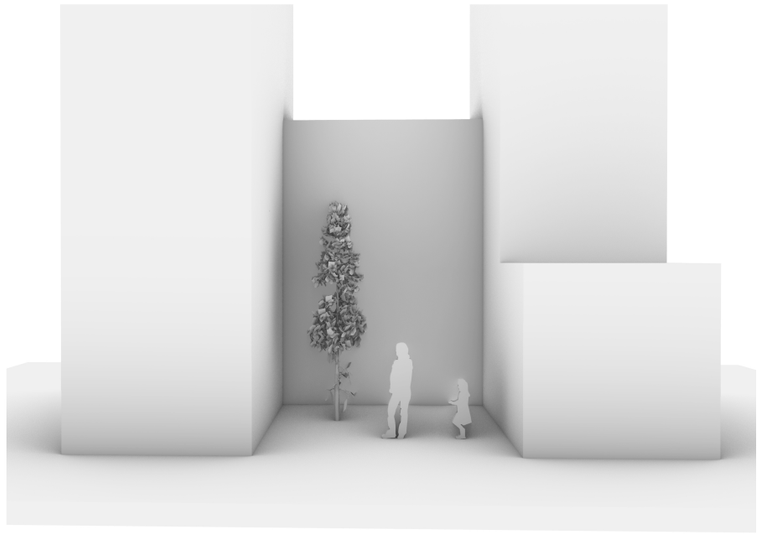
Different modes of stacking units



10ft wide

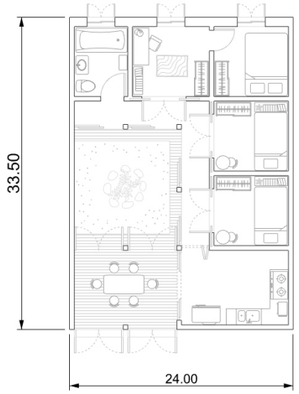


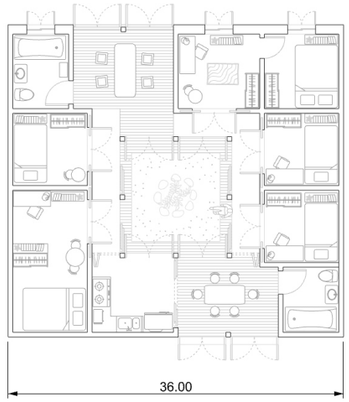
12ft wide

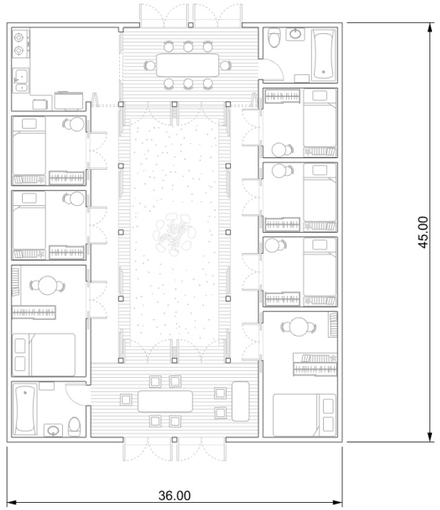


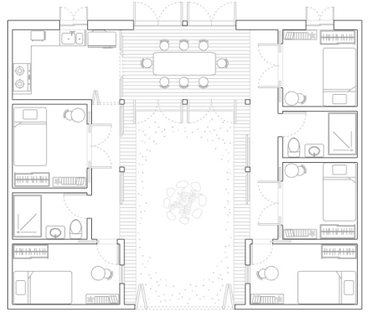
14ft wide

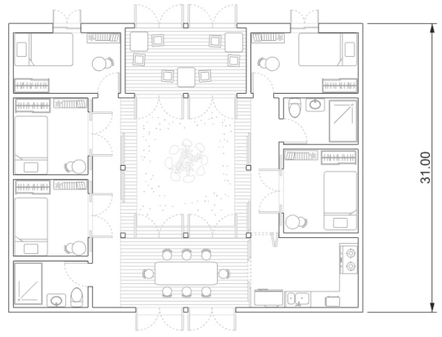
Courtyard dimension study











Unit dimension & configuration study

Proposed site, Mapo District, Seoul

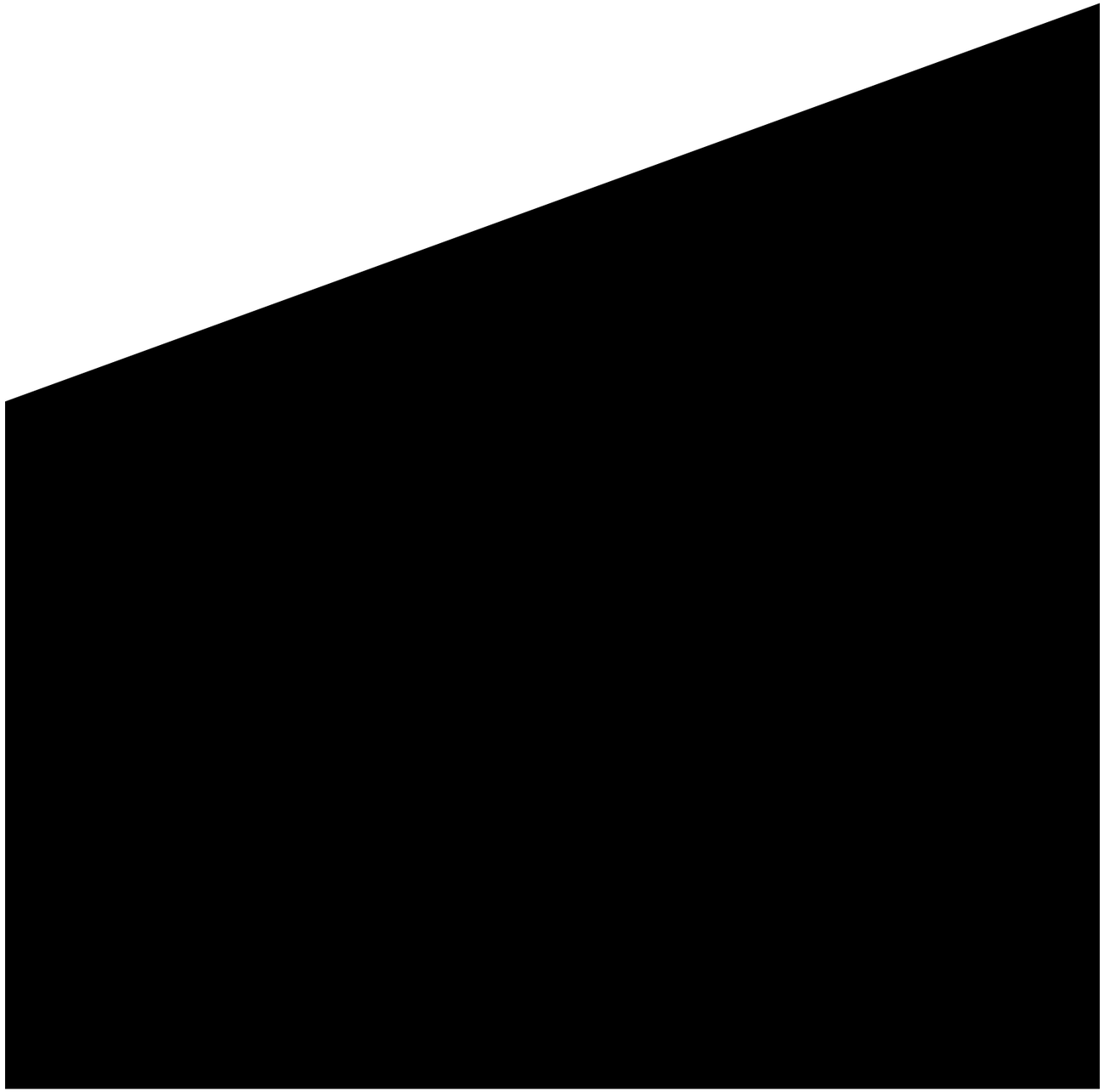
Hongik University

subway station

subway station

Proposed site, Mapo District, Seoul

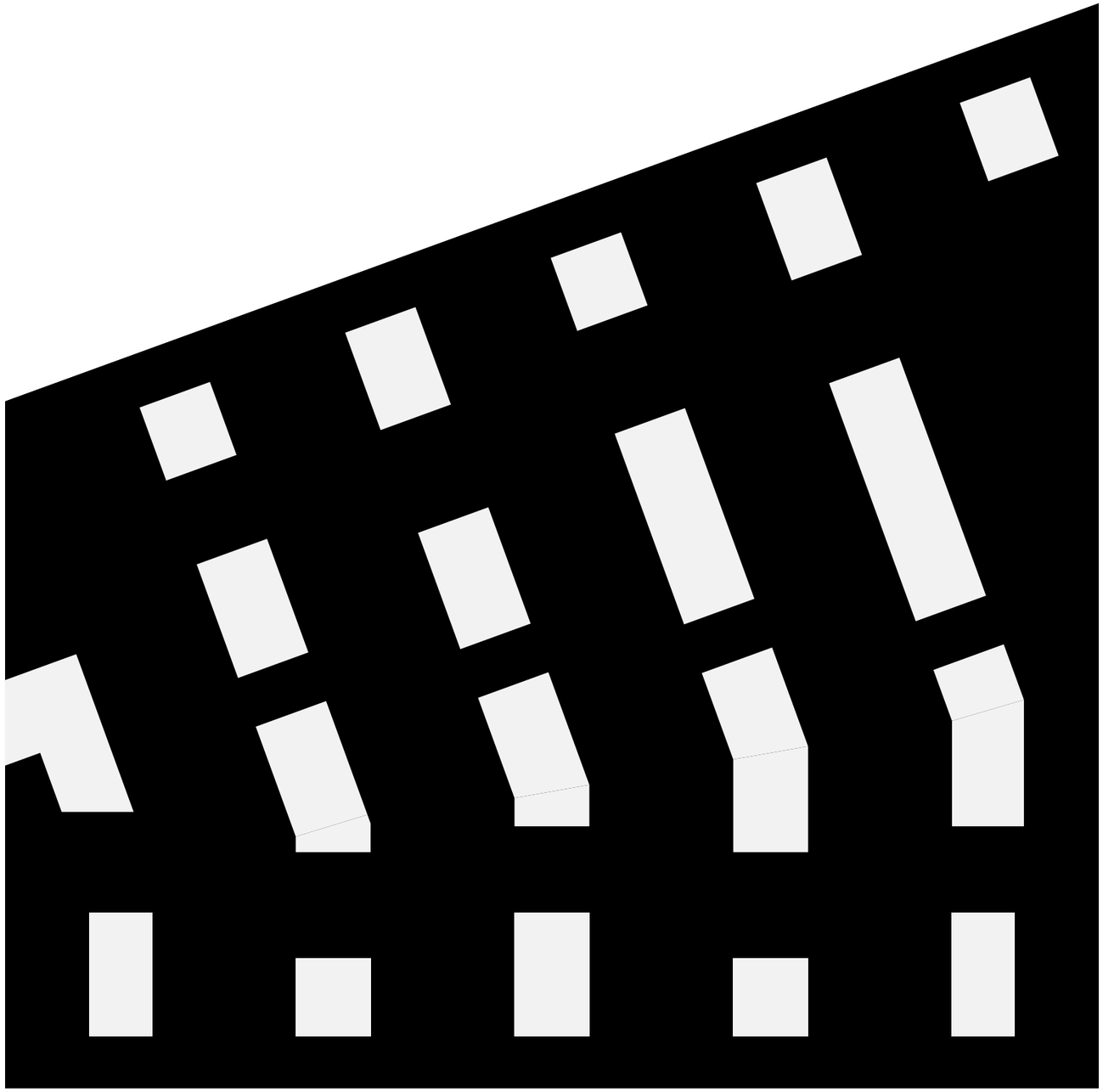
대유리
H.010-3729-5038



Housing 1st floor

Solids and voids

1st floor courtyards



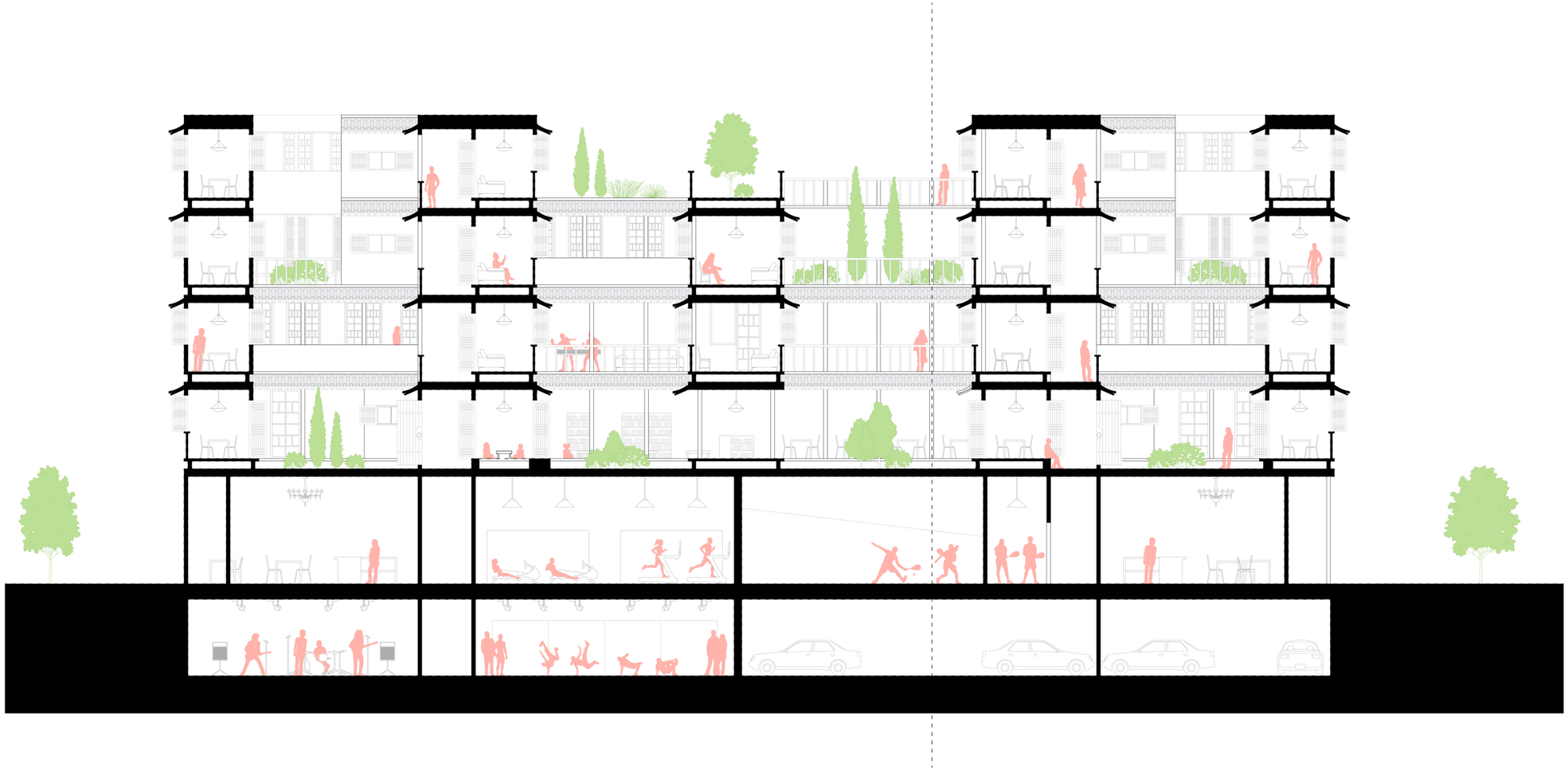
Housing 1st floor

Housing 1st floor

courtyards

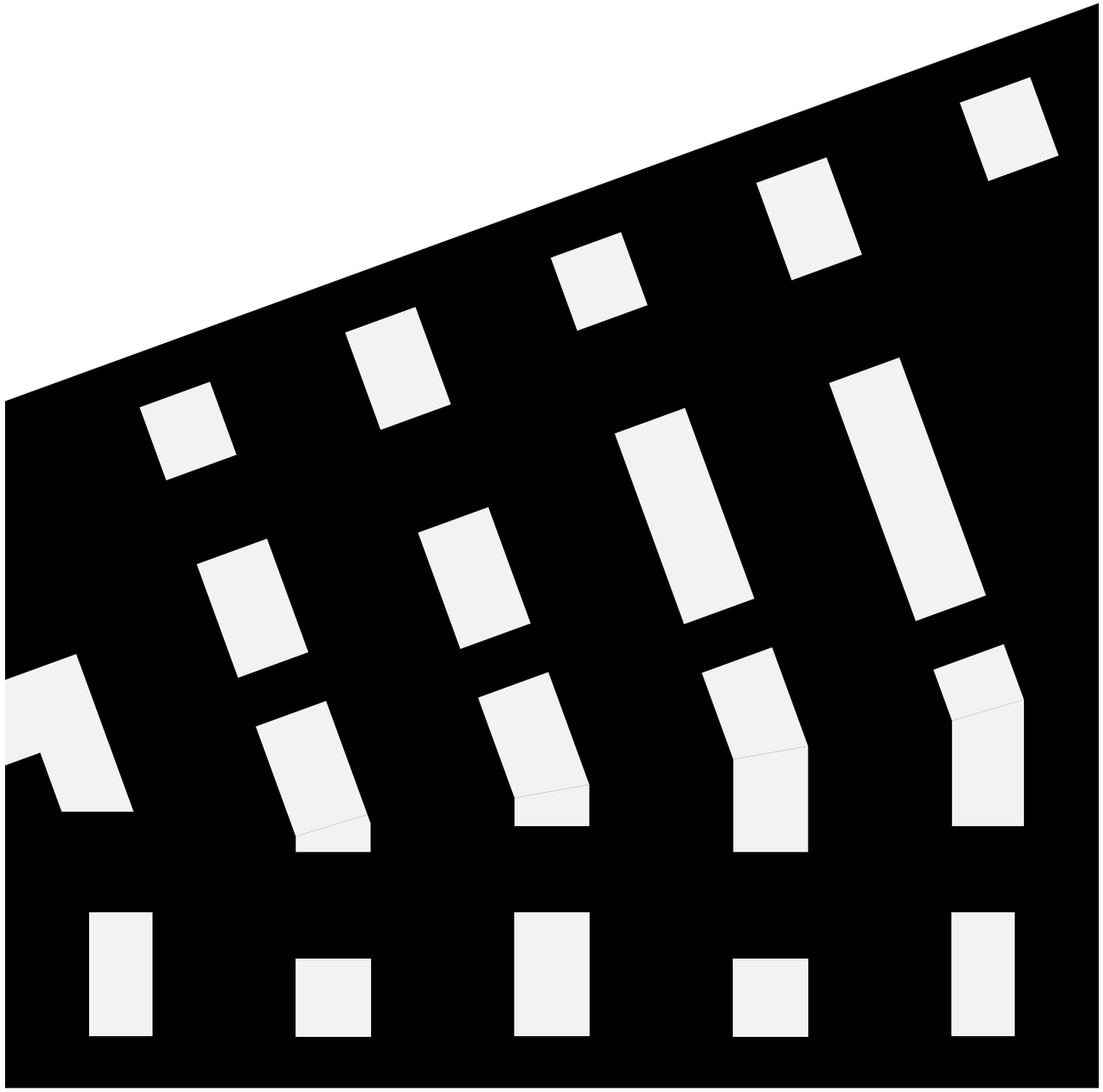
Housing 1st floor

Housing 1st floor



Solids and voids (1st floor)

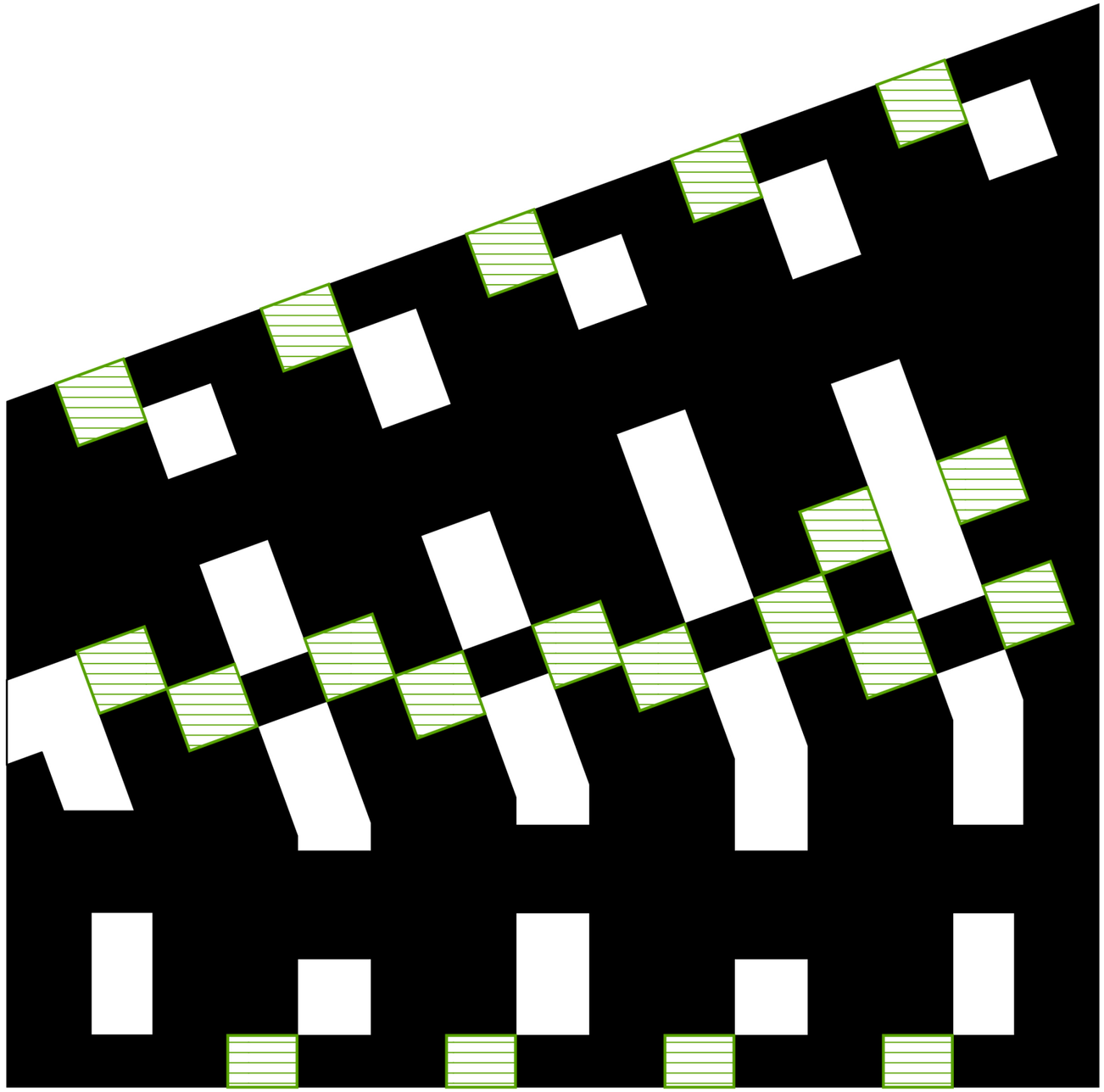
☐ 1st floor courtyards



Solids and voids (2nd floor)

1st floor courtyards

2nd floor courtyards



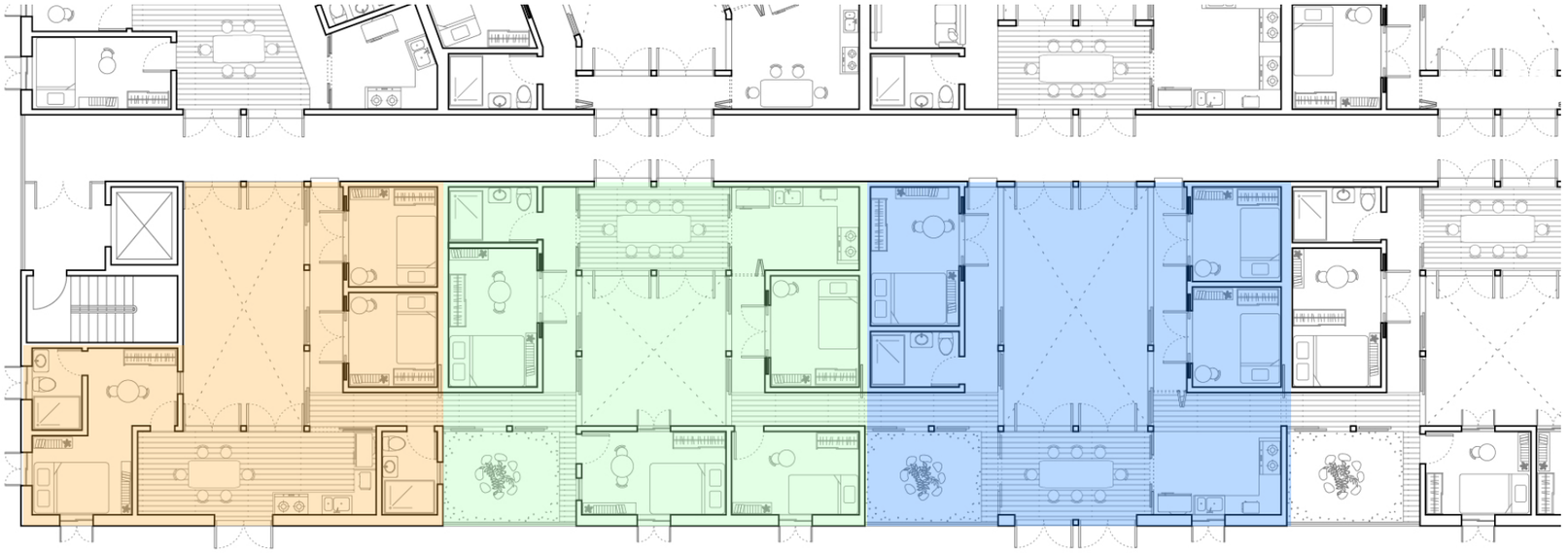
Housing 2nd floor

courtyards

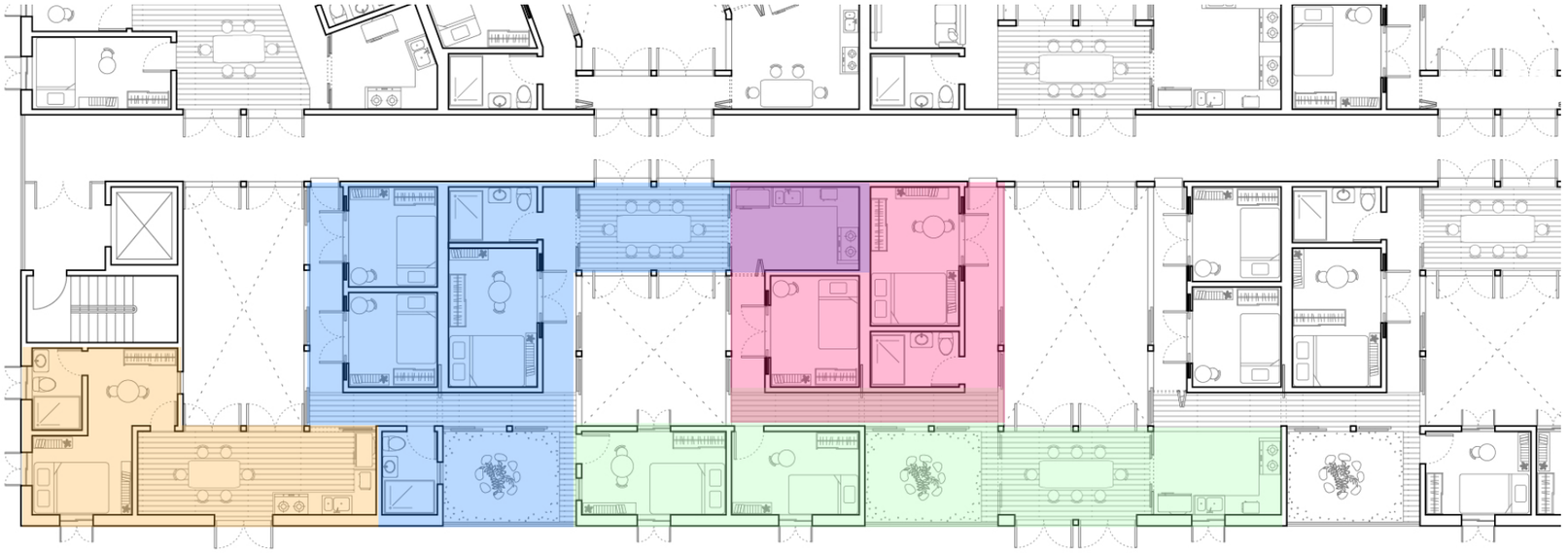
Housing 2nd floor

Visual & spatial connectivity

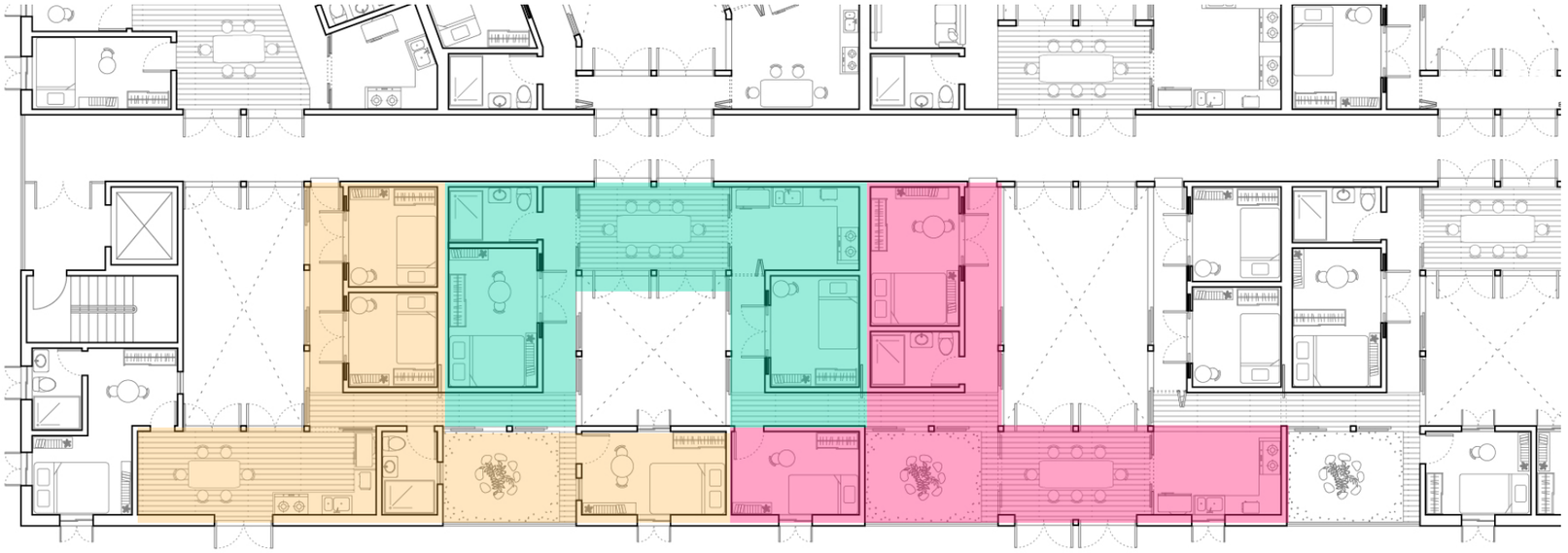
Housing 2nd floor



flexible unit configuration



flexible unit configuration

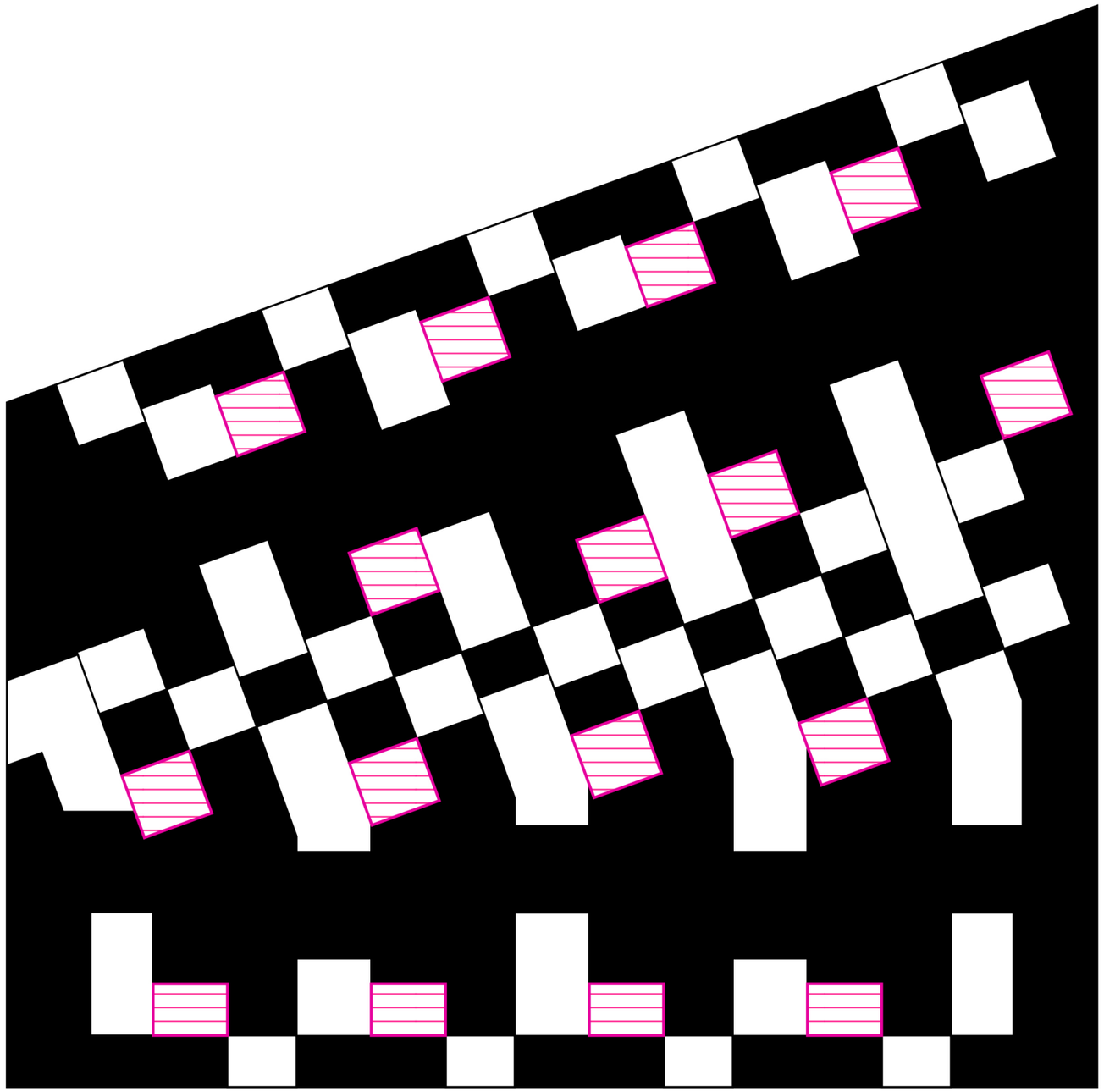


flexible unit configuration

Solids and voids (3rd floor)

1st & 2nd floor courtyards

3rd floor courtyards



Housing 3rd floor

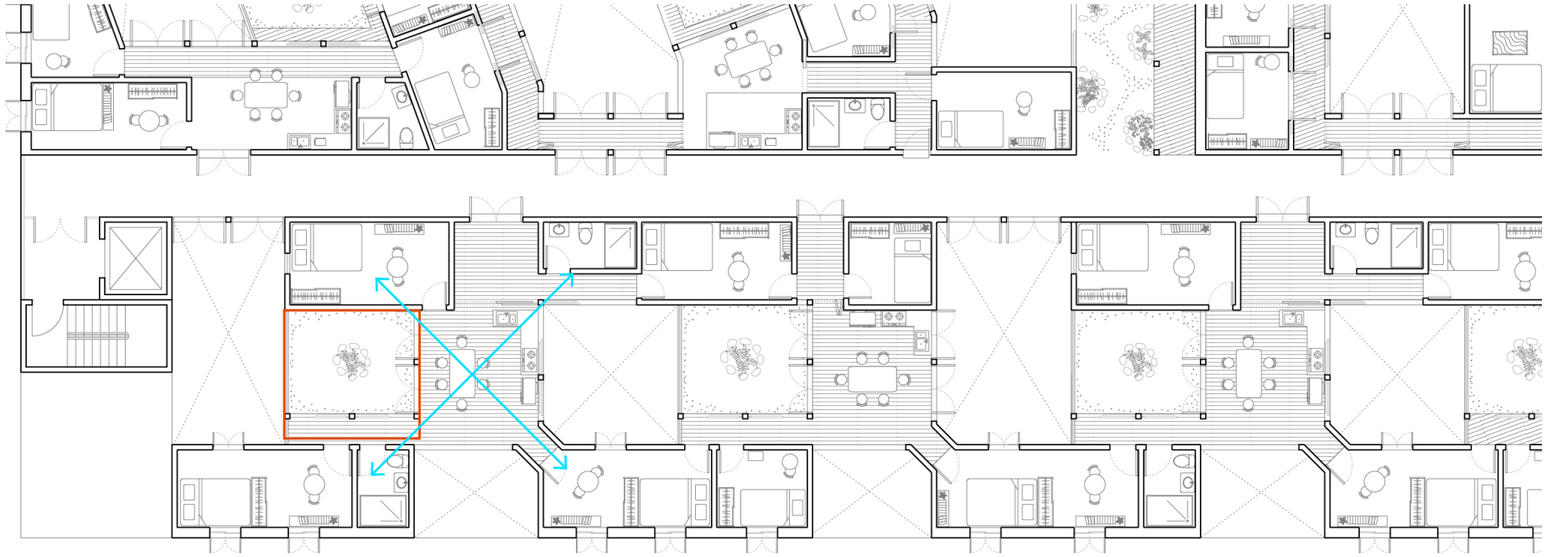
courtyards

Housing 3rd floor

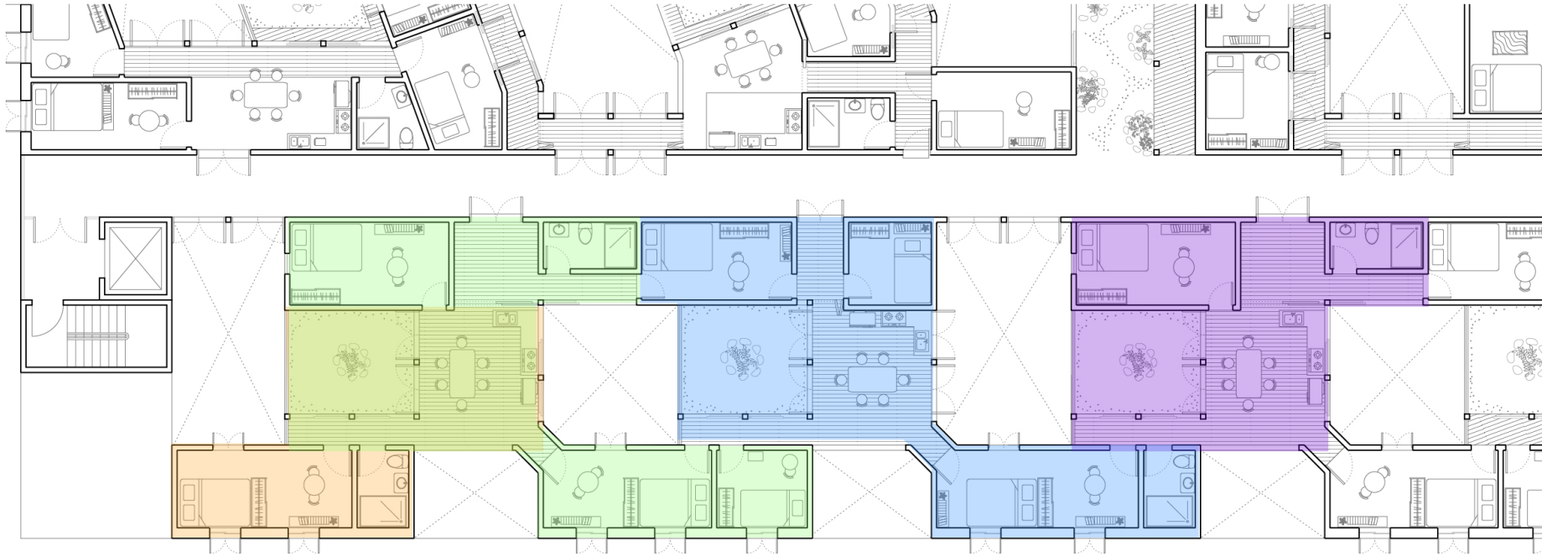
new groupings of rooms around
added courtyards

Visual & spatial connectivity
through
courtyard - maru - courtyard
sequence

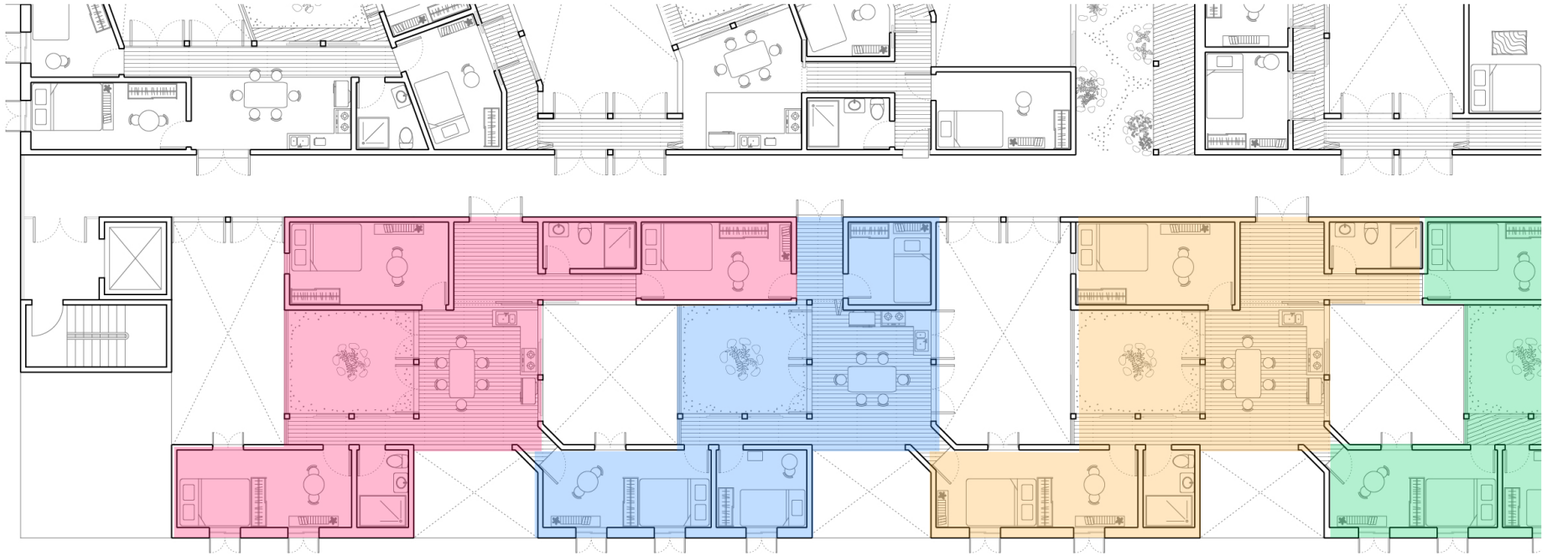
Housing 3rd floor



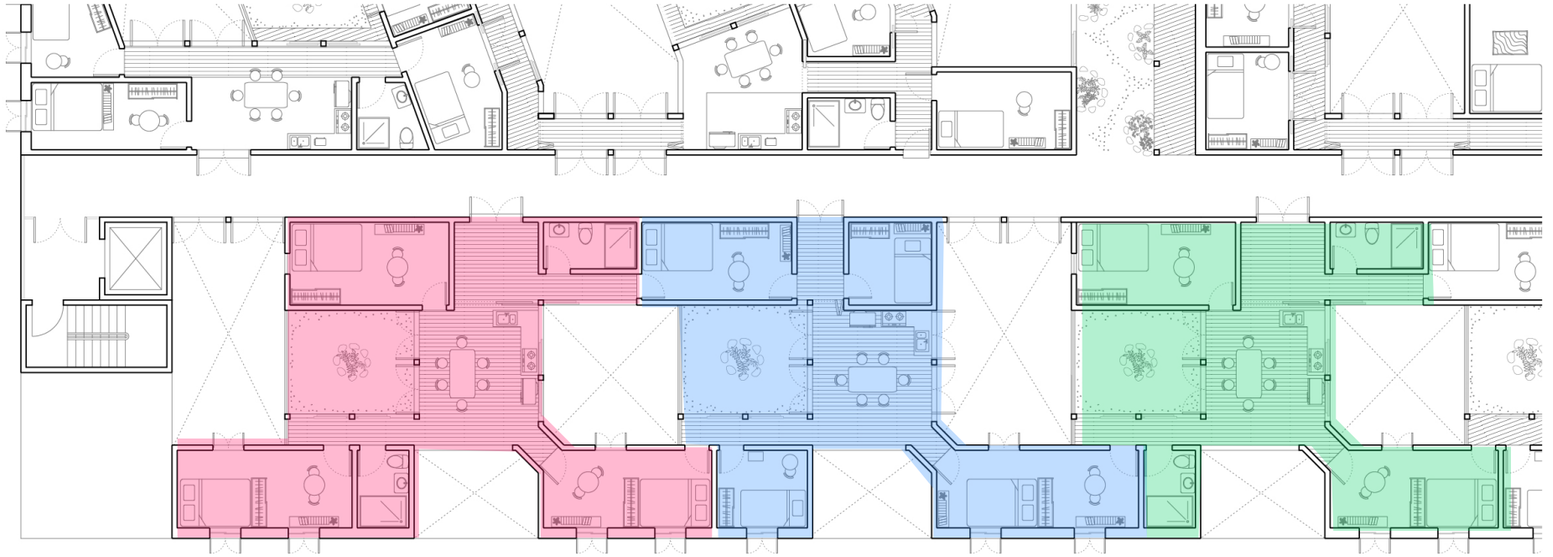
Housing 3rd floor



greater flexibility in unit configuration

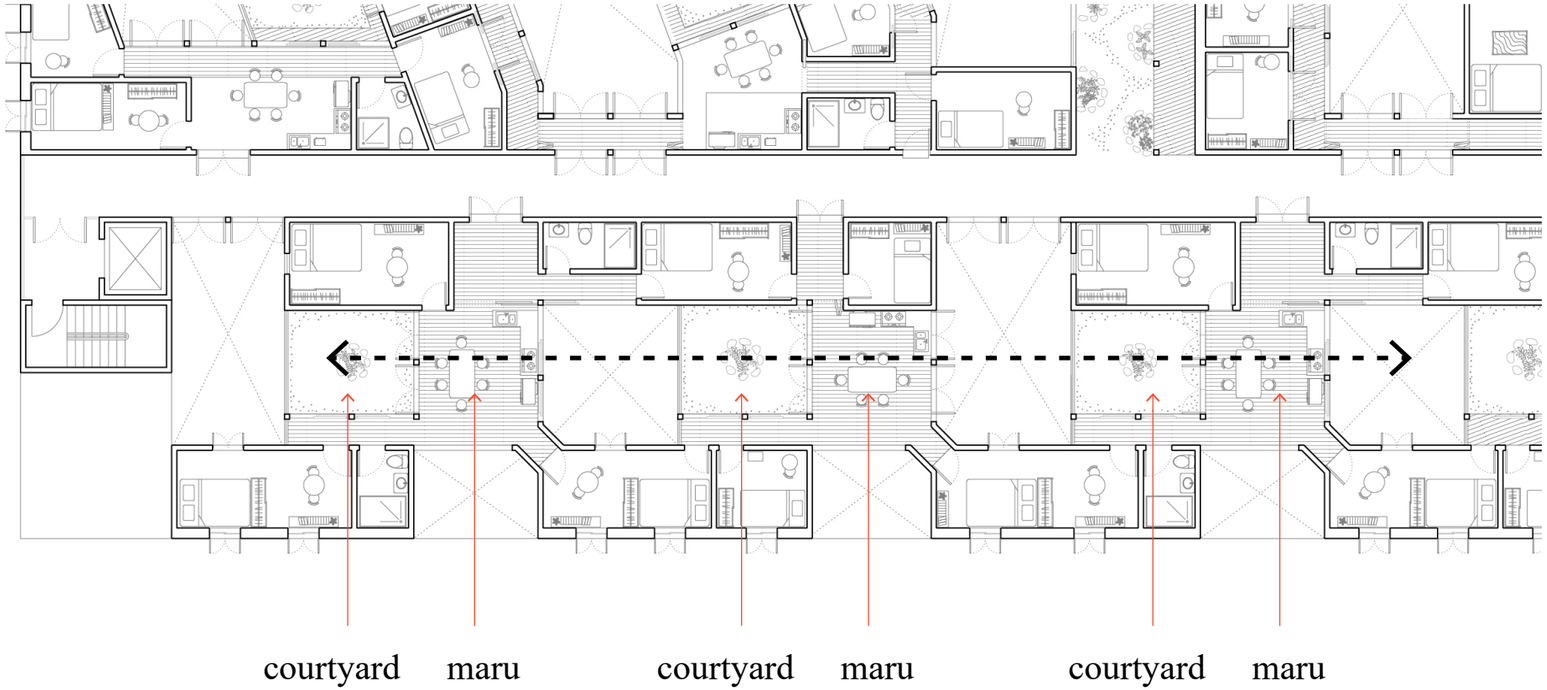


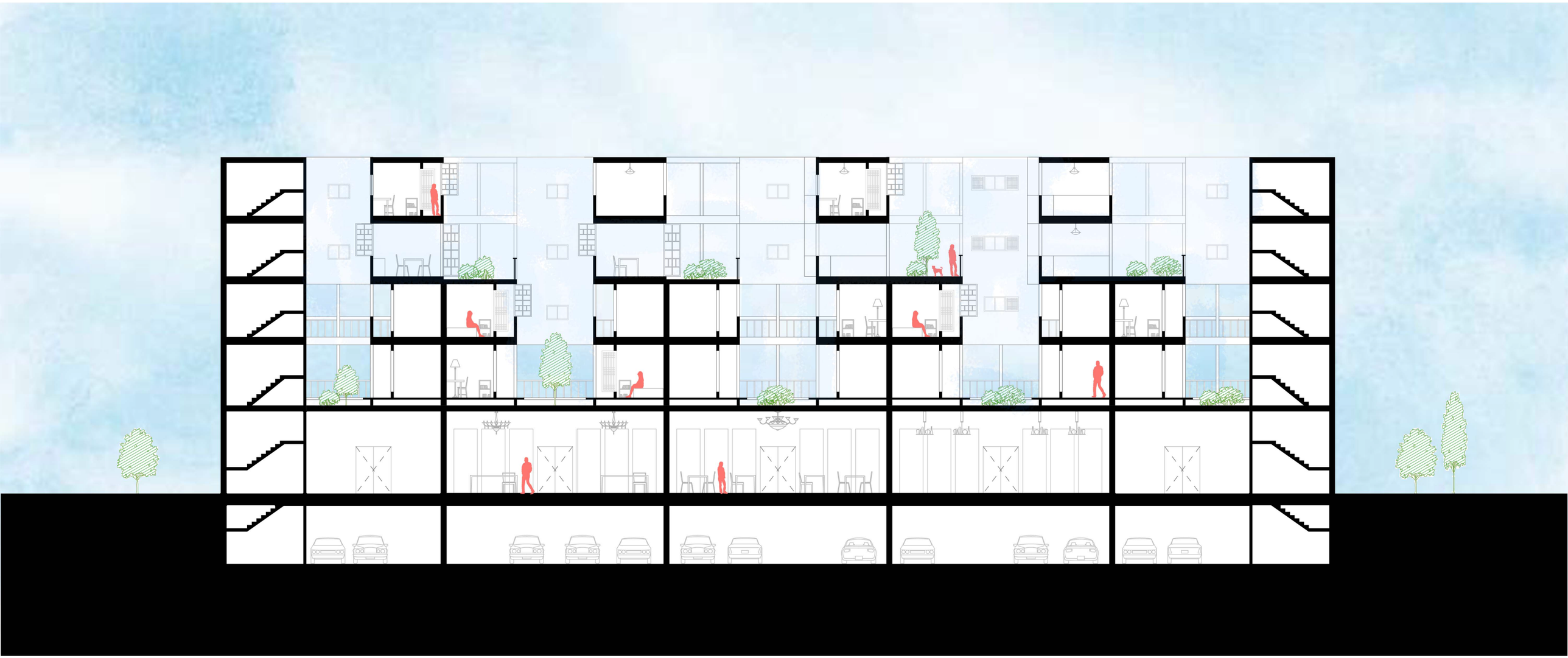
greater flexibility in unit configuration



greater flexibility in unit configuration

courtyard - maru - courtyard
sequence creating
visual/spatial connectivity

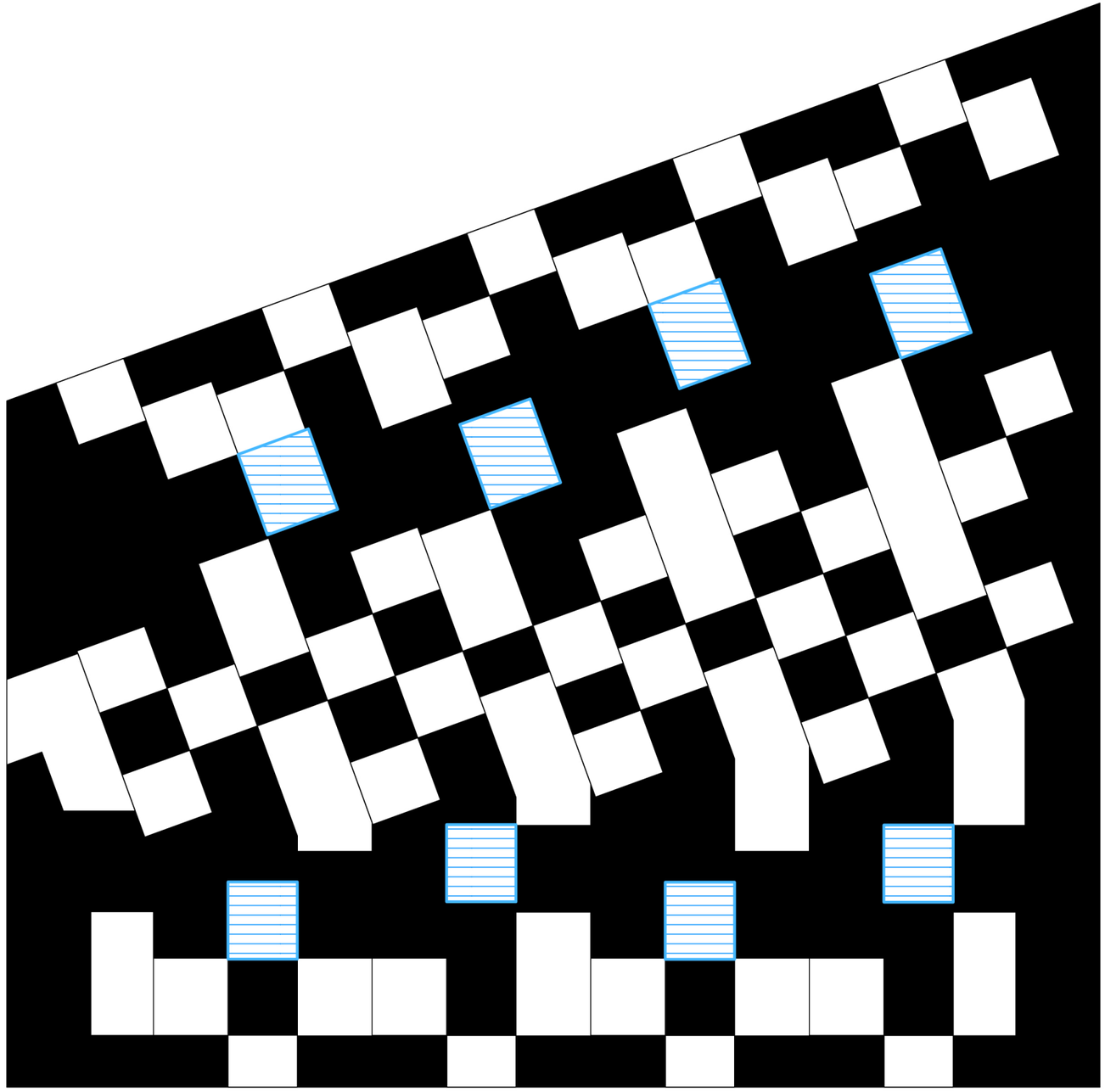




Solids and voids (4th floor)

1st, 2nd & 3rd floor courtyards

4th floor courtyards



Housing 4th floor

Housing 4th floor

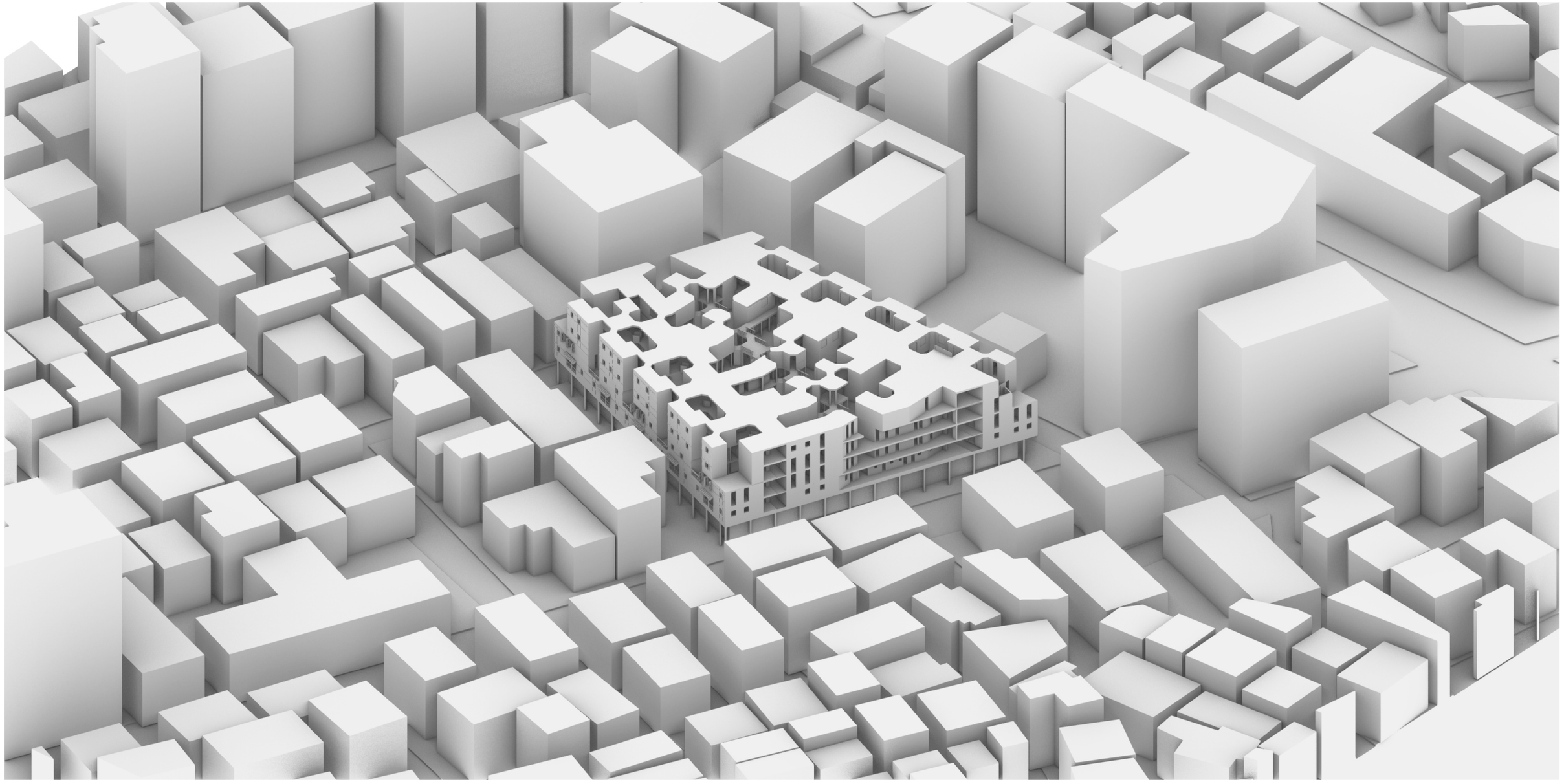
courtyards

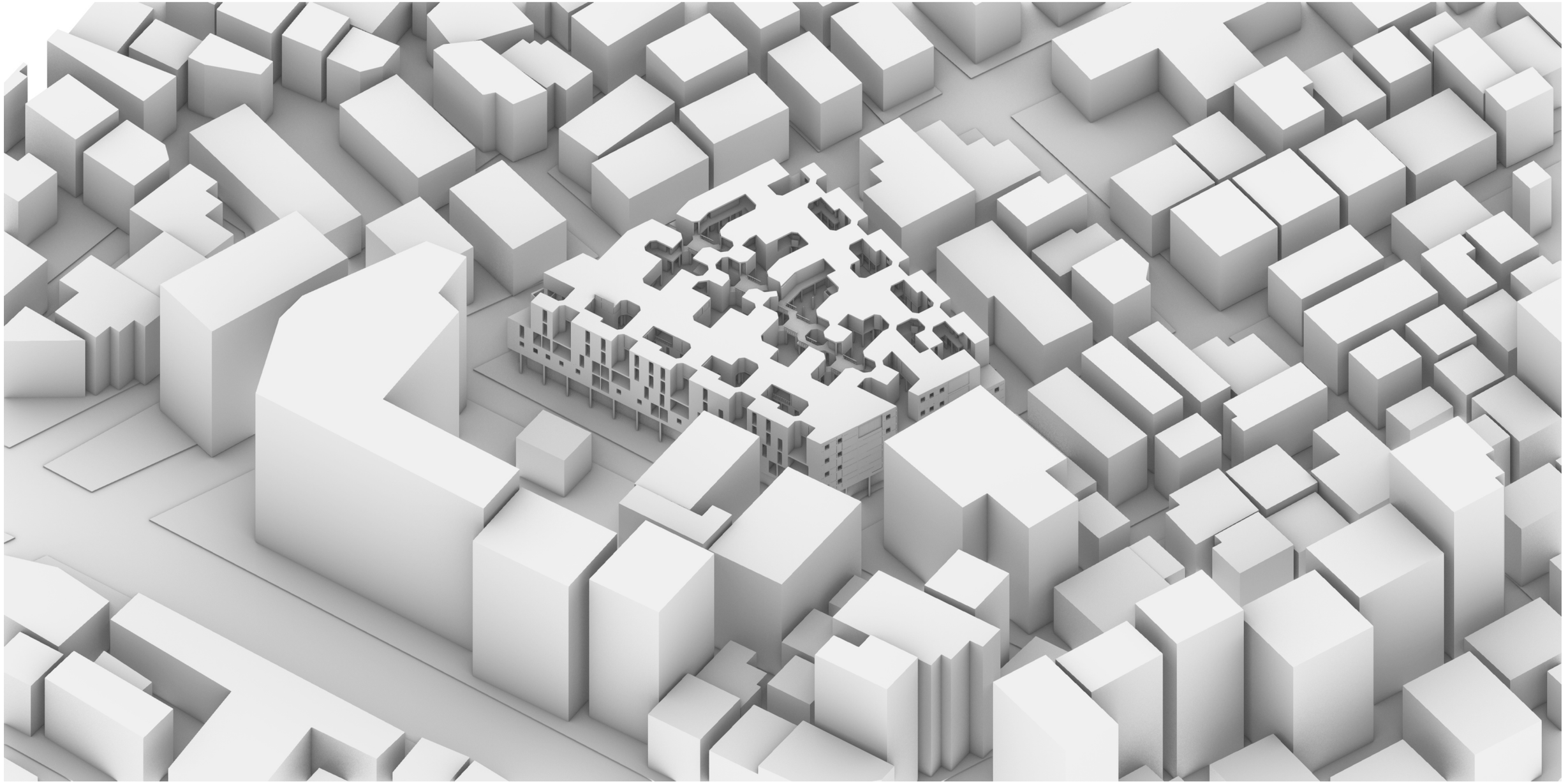
hallway embedded into
the courtyard - maru - courtyard
sequence

the new courtyards bridges the units
across the hallway

Housing 4th floor

walk-through video





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Labor

Perspective collages: Eunu Kim and Seoyoung Lee
3D animation: Eunu Kim

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