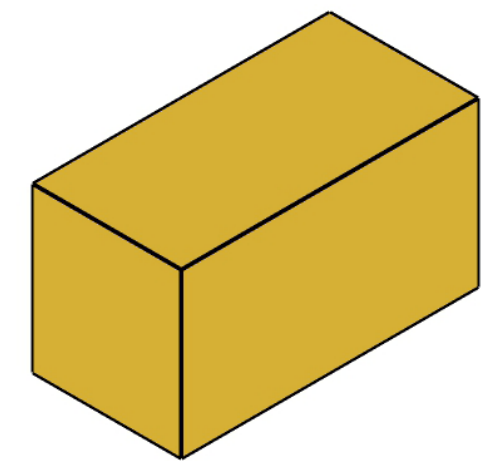
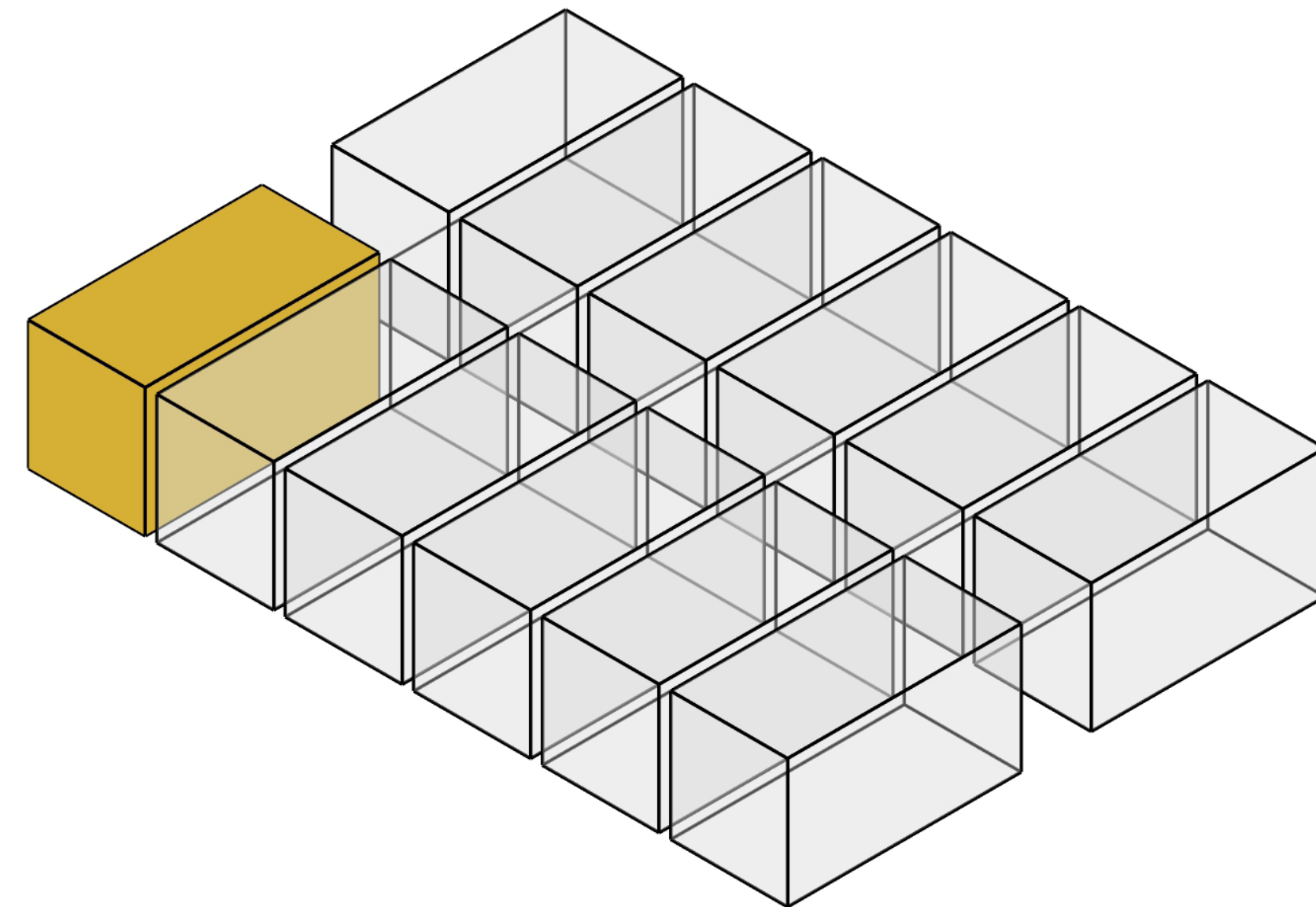
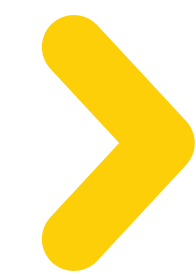
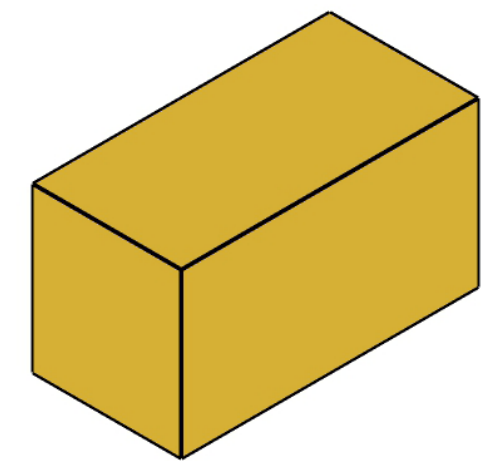
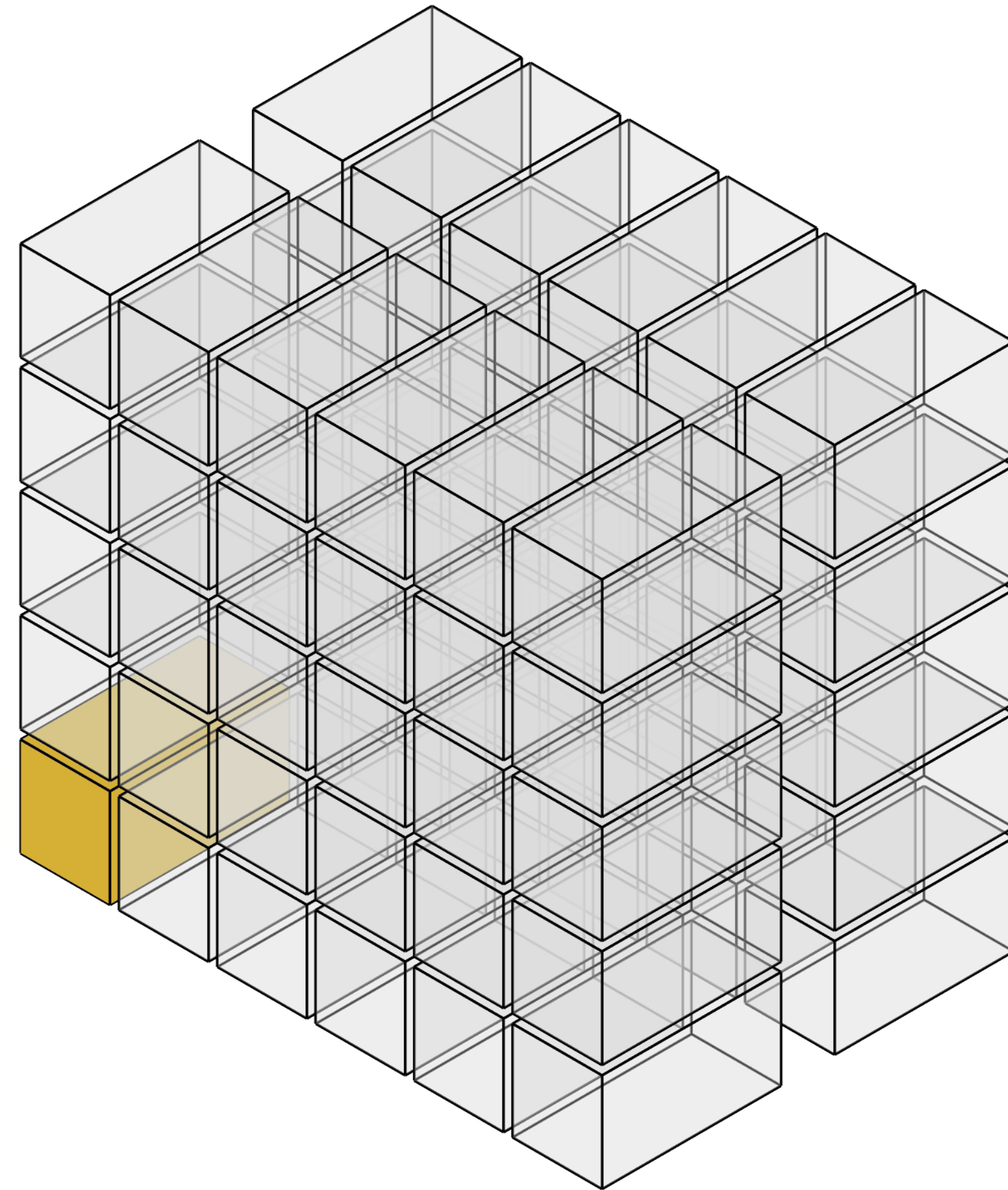
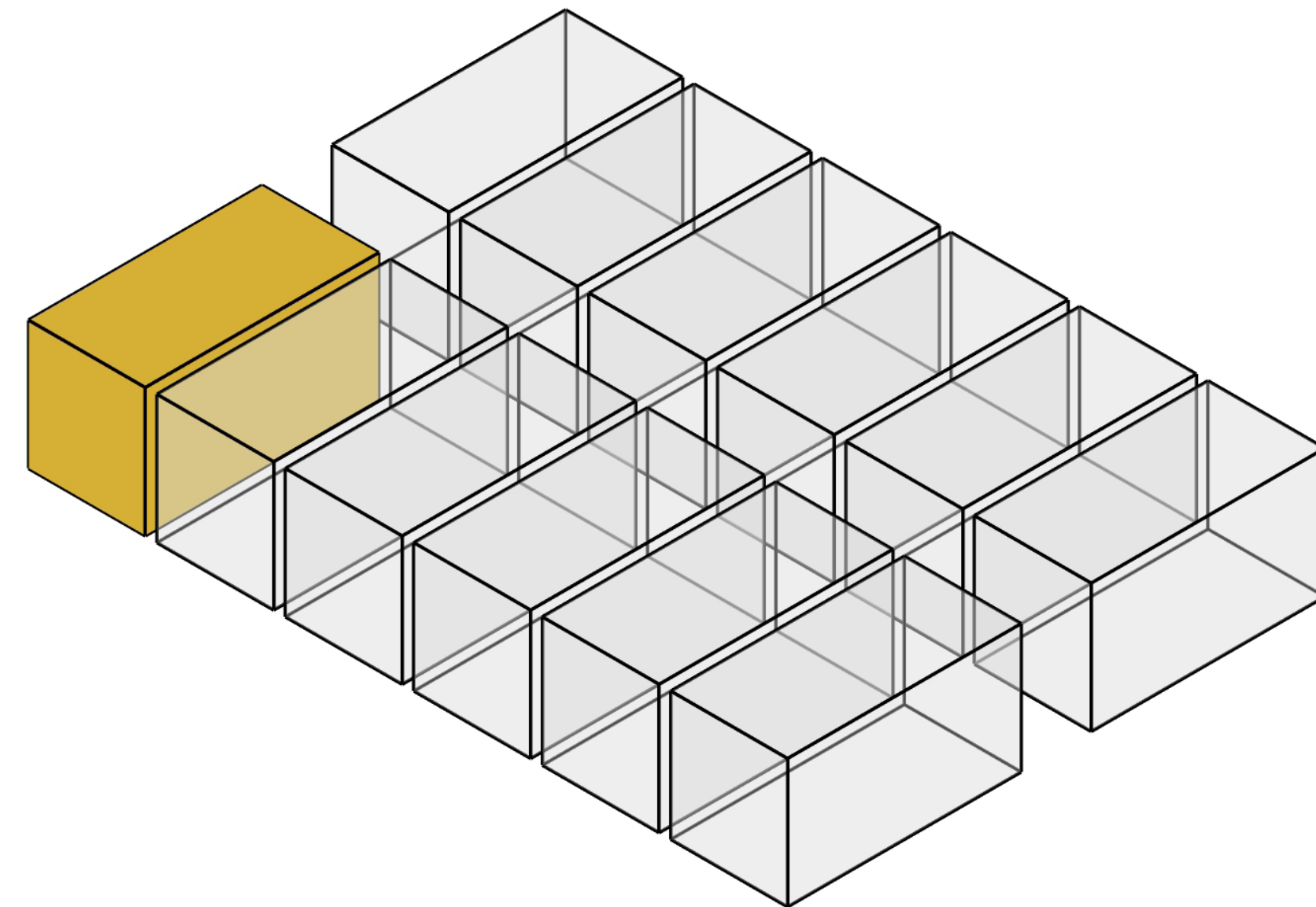
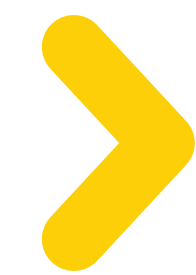
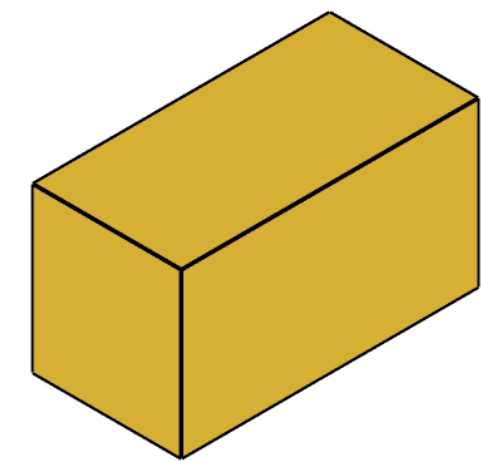


# Micro Apartments

Amelia Murphy + Ryan Kilgannon  
ARC503

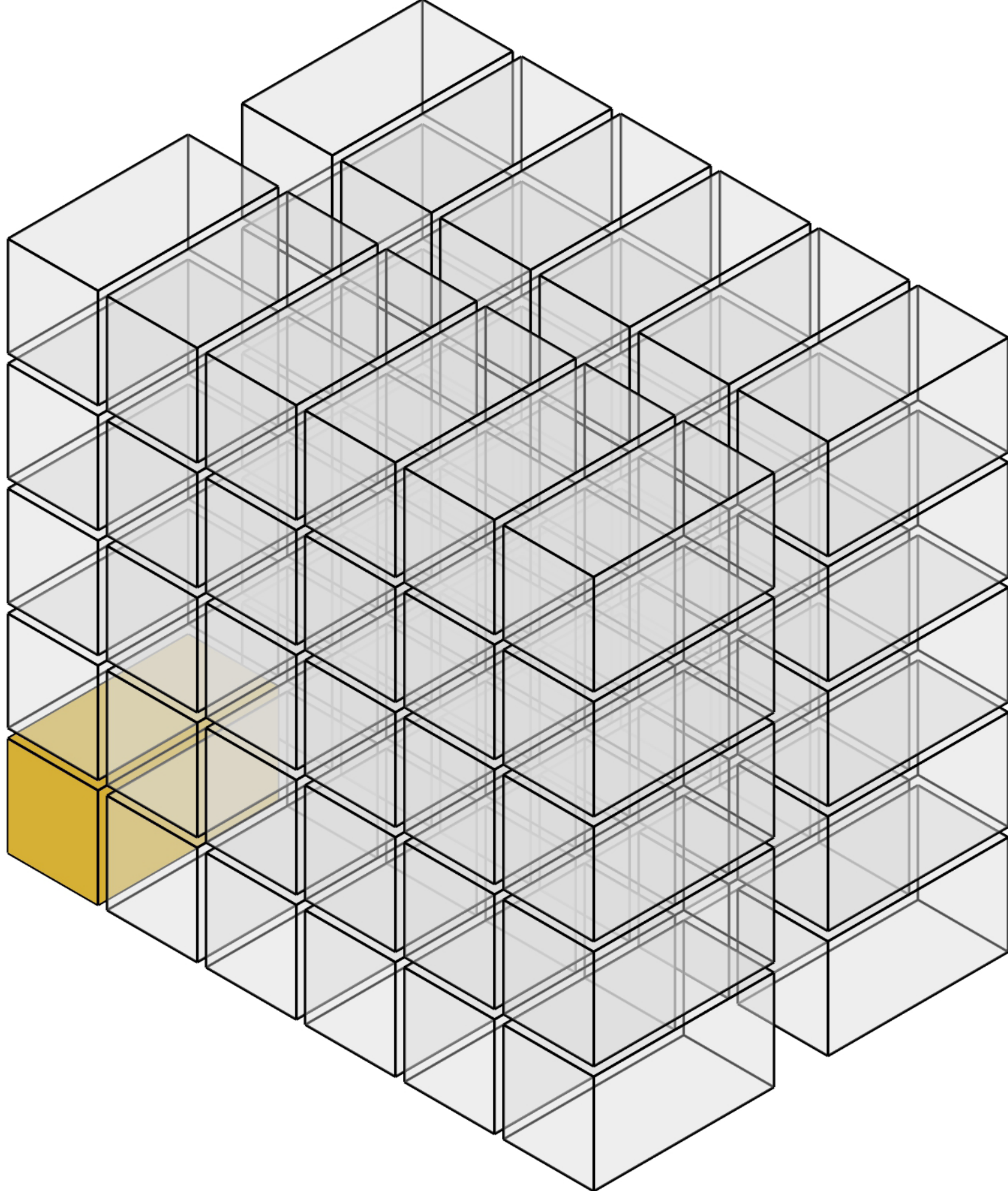








# Definition

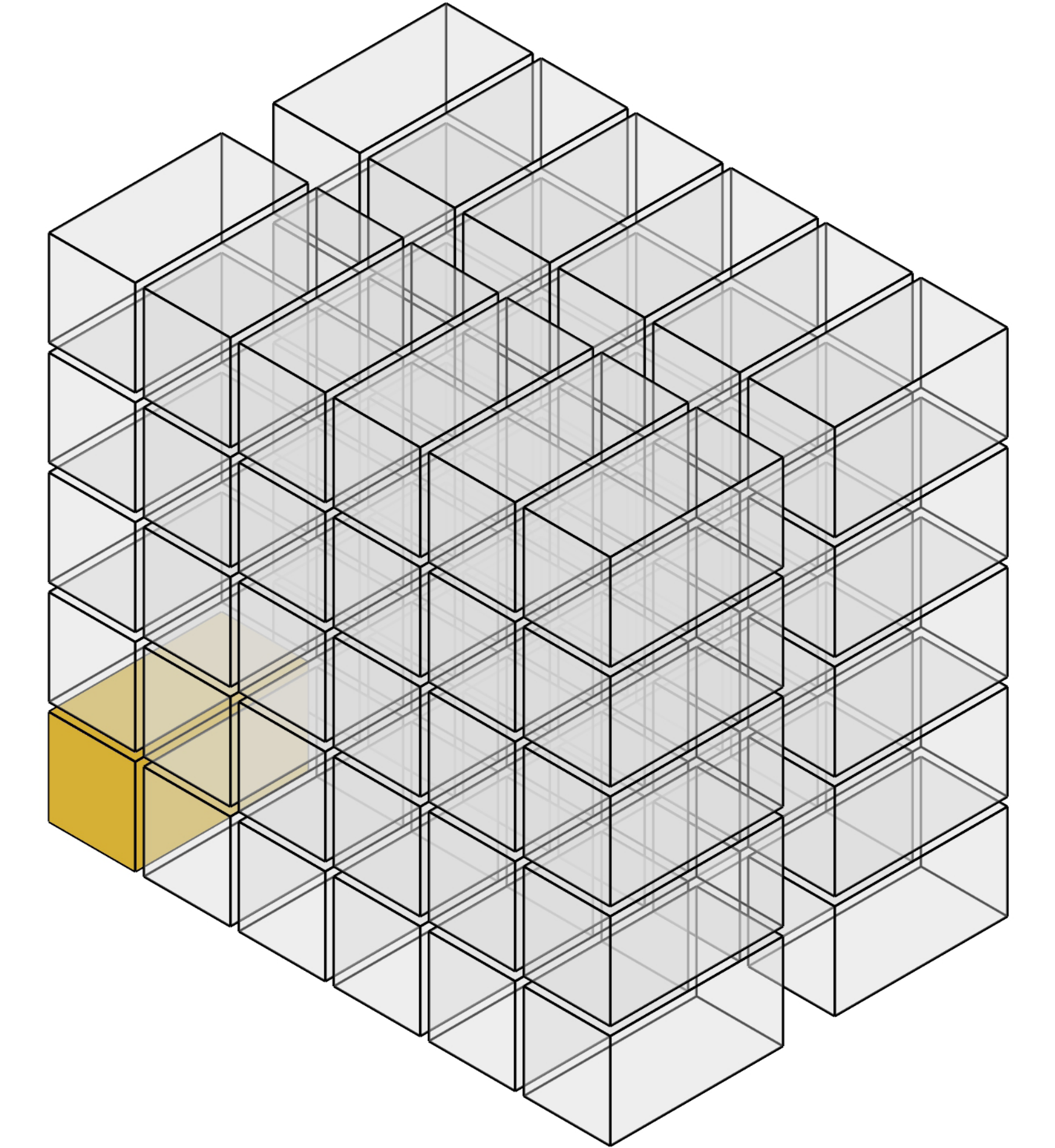


# Definition

## Micro Apartment

Through our research, we have found many ways to define the term **micro apartment**.

We believe a micro apartment is an **urban, multi-story, cluster, collection, or arrangement** of very small and efficient living units. It is a building which attempts to simultaneously **maximize living density** and living quality while **minimizing cost**.



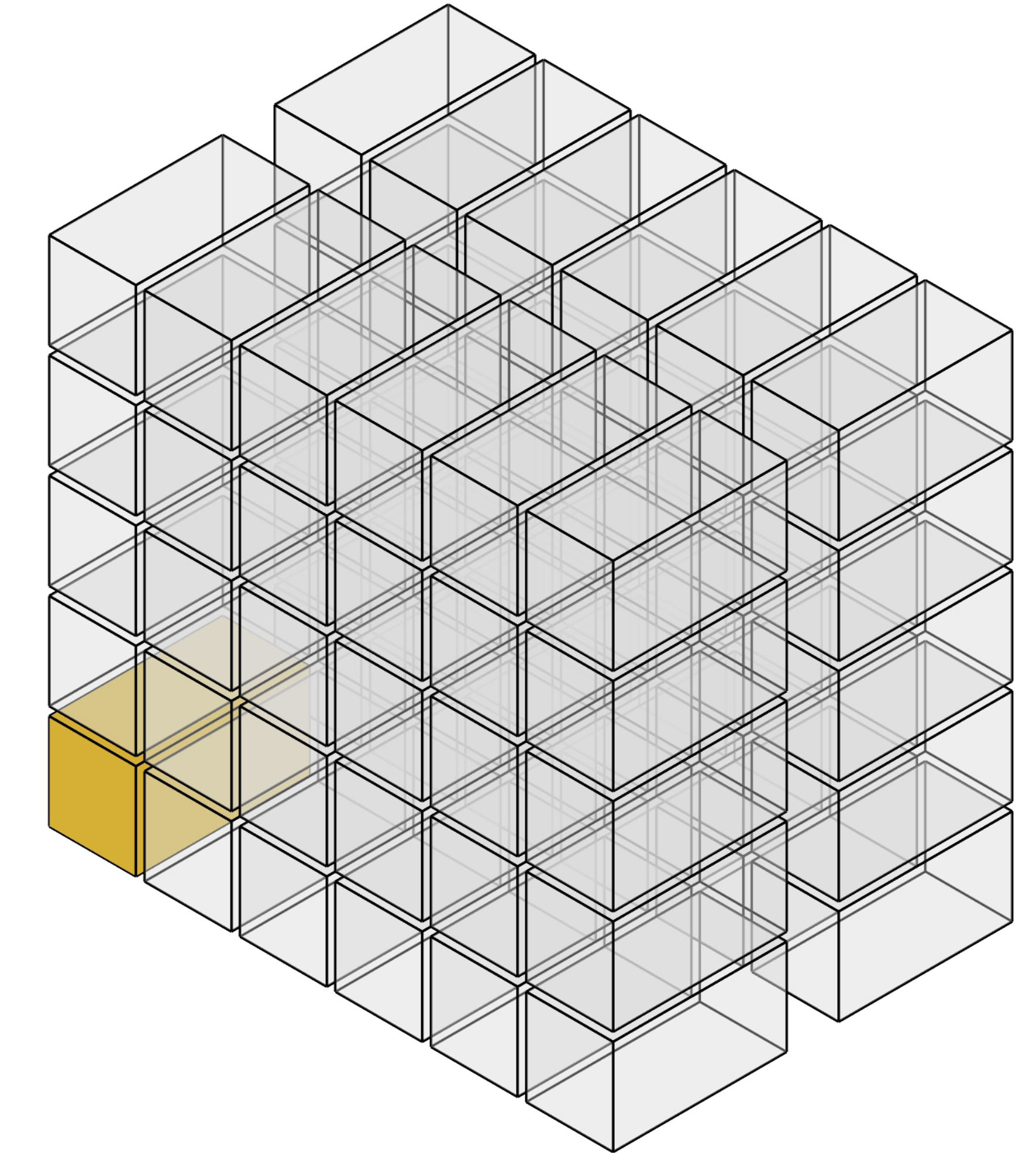


# Definition

## Micro Apartment

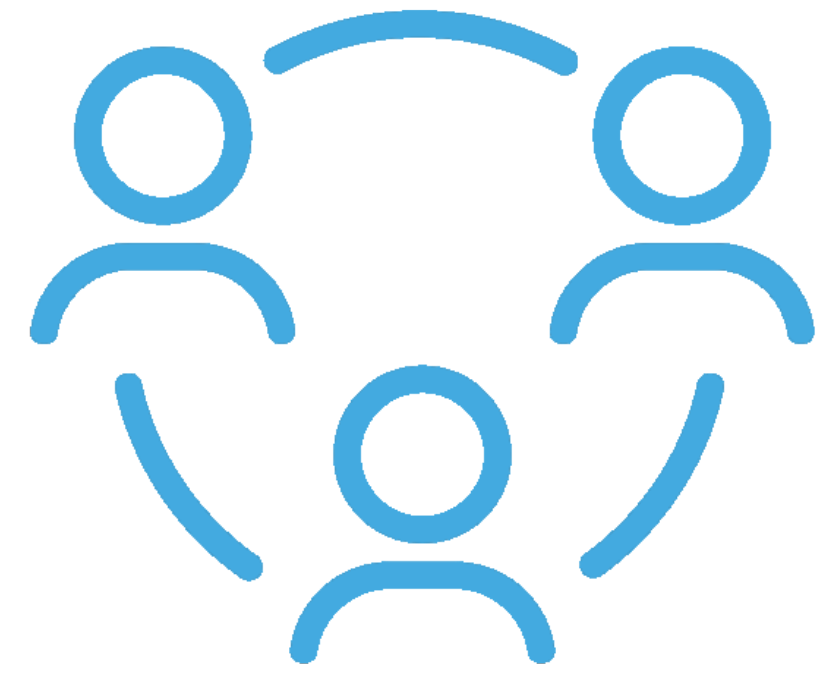
Through our research, we have found many ways to define the term **micro apartment**.

The ideal micro apartment is one which fosters a sense of **community** between its tenants. It is designed with **affordability** and **reusability** in mind. The units themselves and the arrangement of units are **adaptable**. And lastly, offers a **variety** of units which are **efficient** in their use of space and energy.

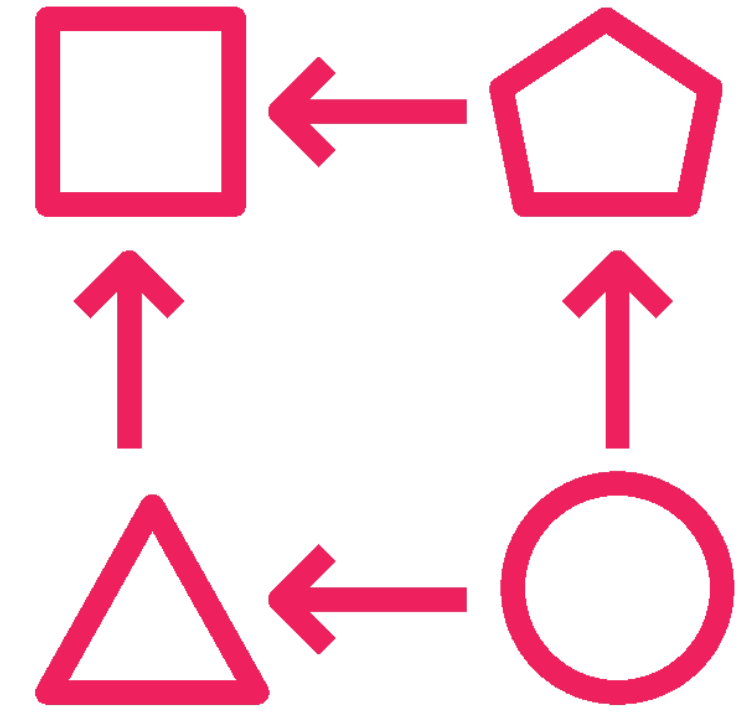


# Principles

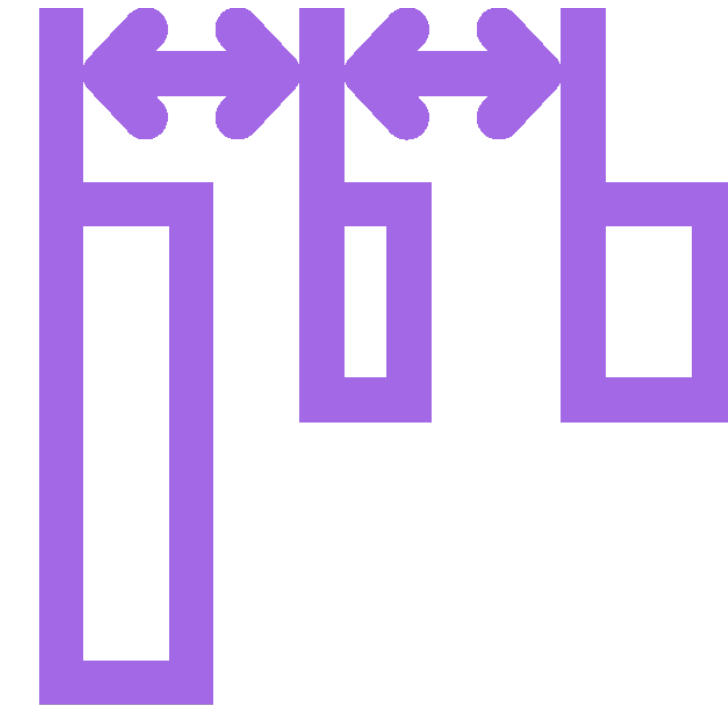
# Principles



Community



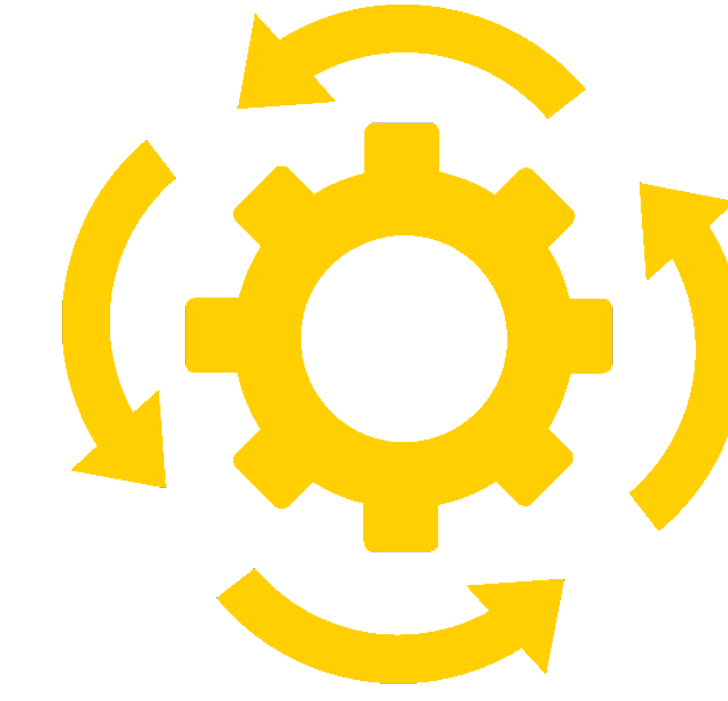
Adaptability



Variation



Affordability

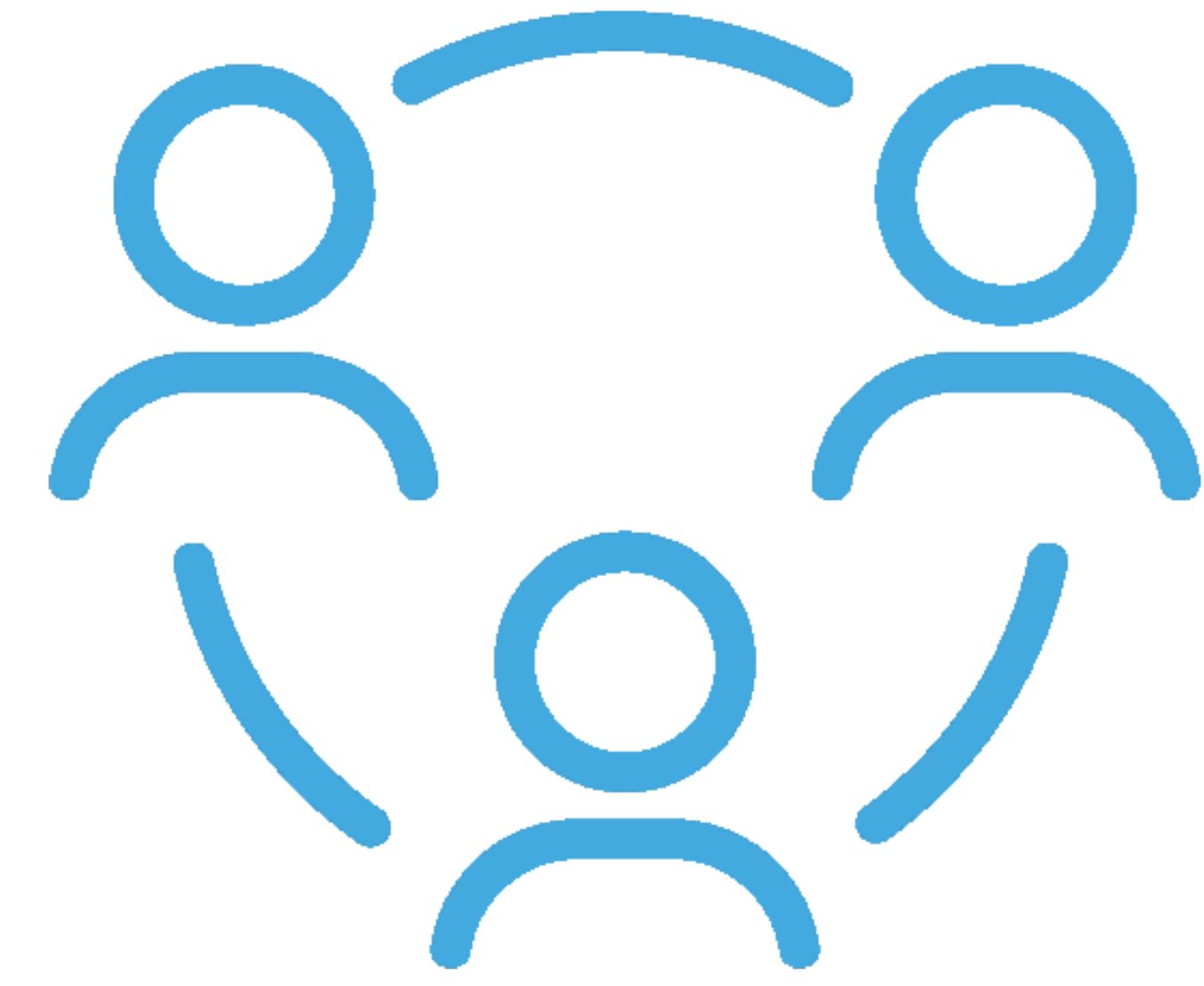


Efficiency



Reusability

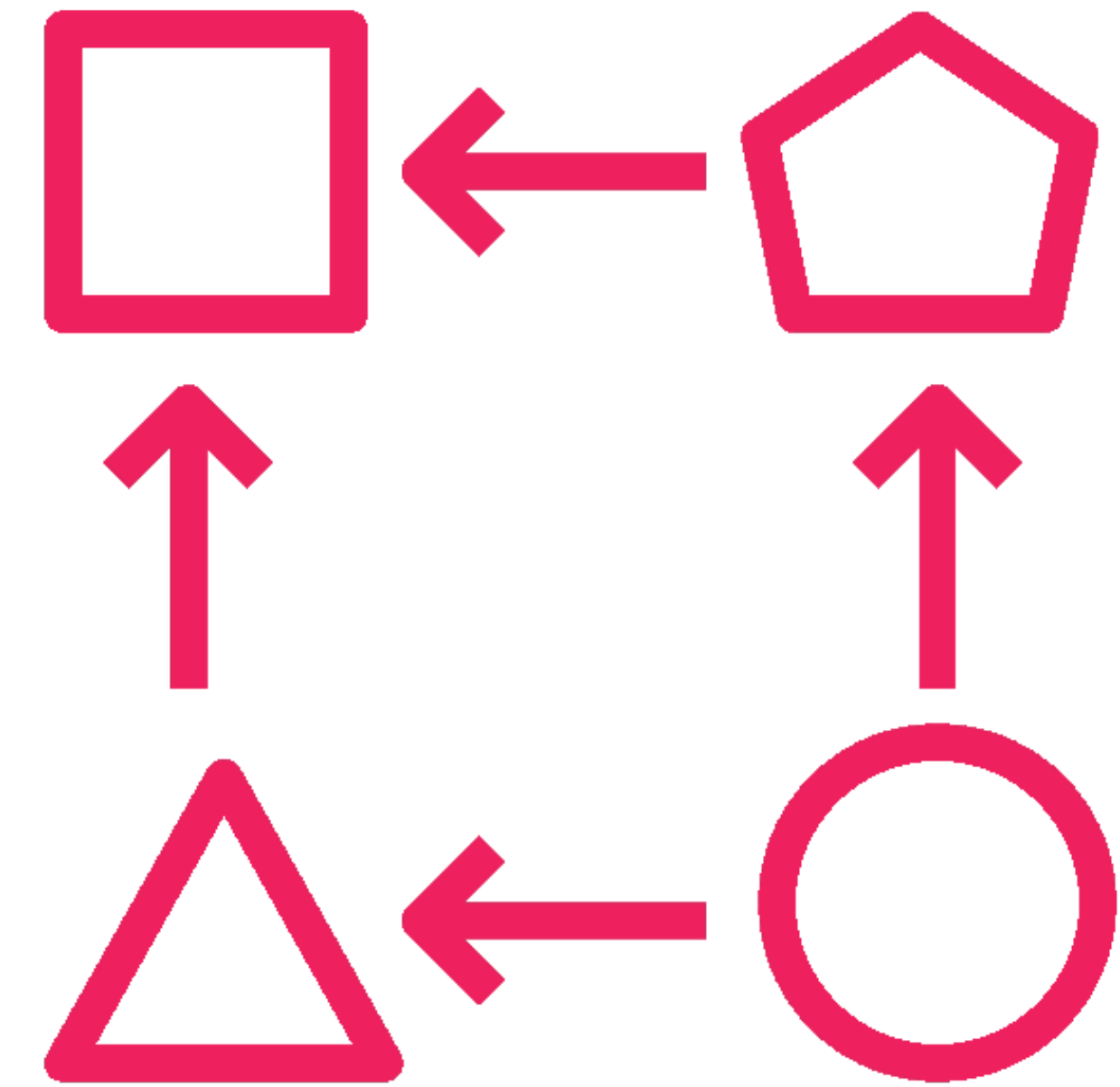




# Community

Encouraging **interactions** between residents and fostering a sense of **community**.



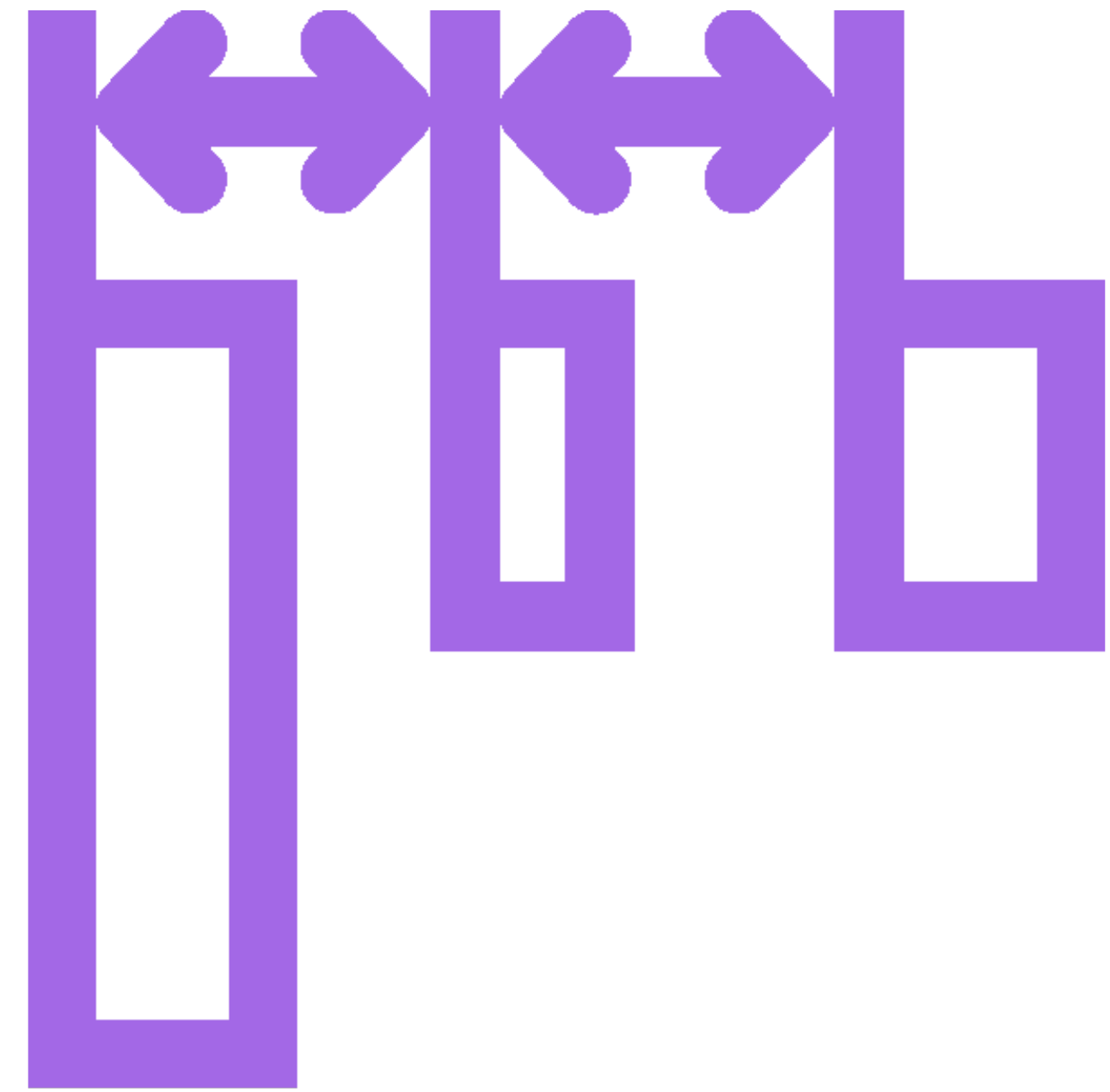


# Adaptability

Ability of units to be **rearranged** and **reshaped** to fit multiple site conditions, city fabrics, and resident needs.







## Variation

Offering spatial and aesthetic differences between units to foster a sense of **individuality** and **ownership**.

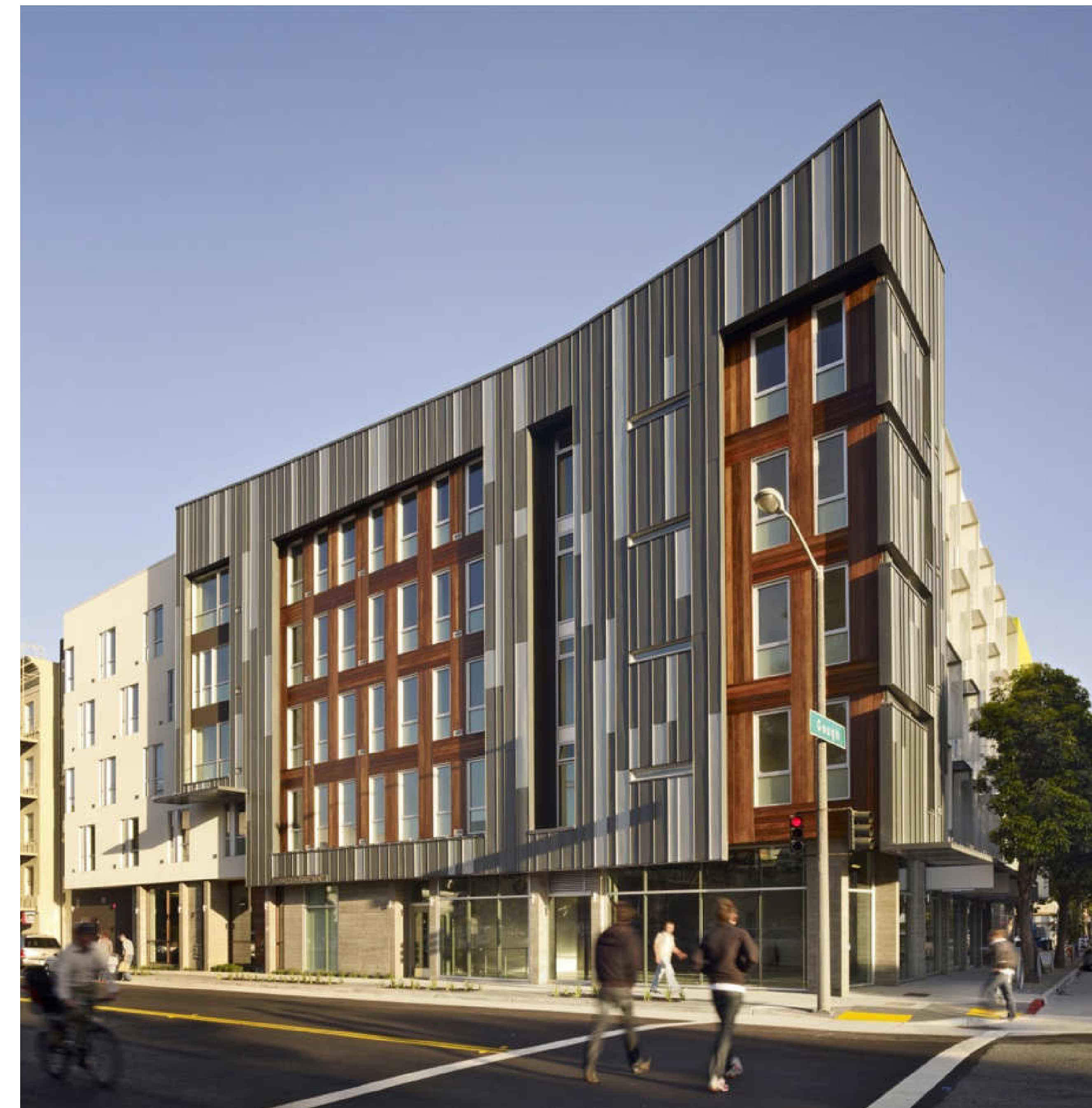


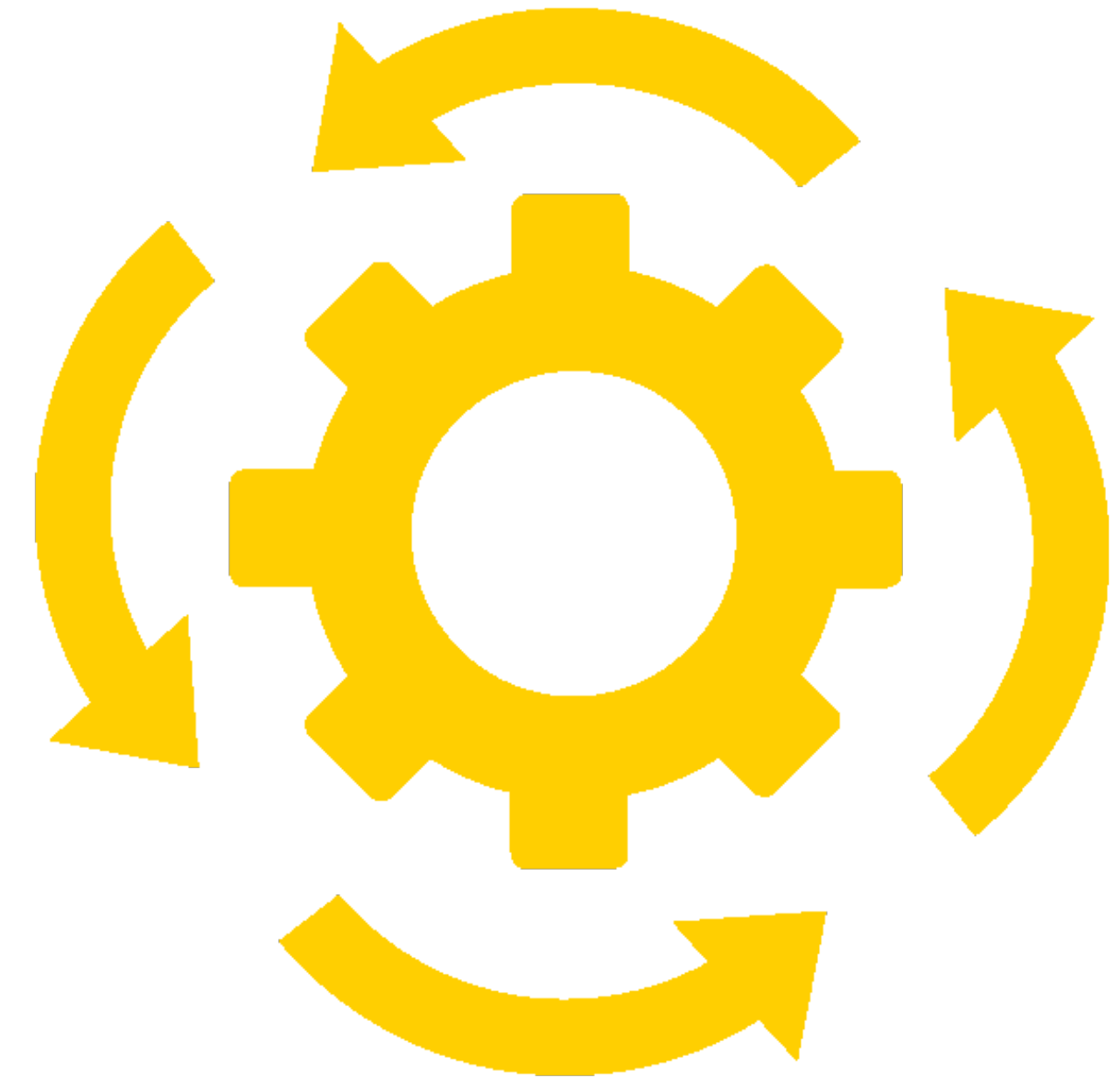




# Affordability

Designing in ways which **reduce construction costs**, through the use of prefabrication or modular systems, as well as **reducing tenant rent prices** through shared amenities and utilities.





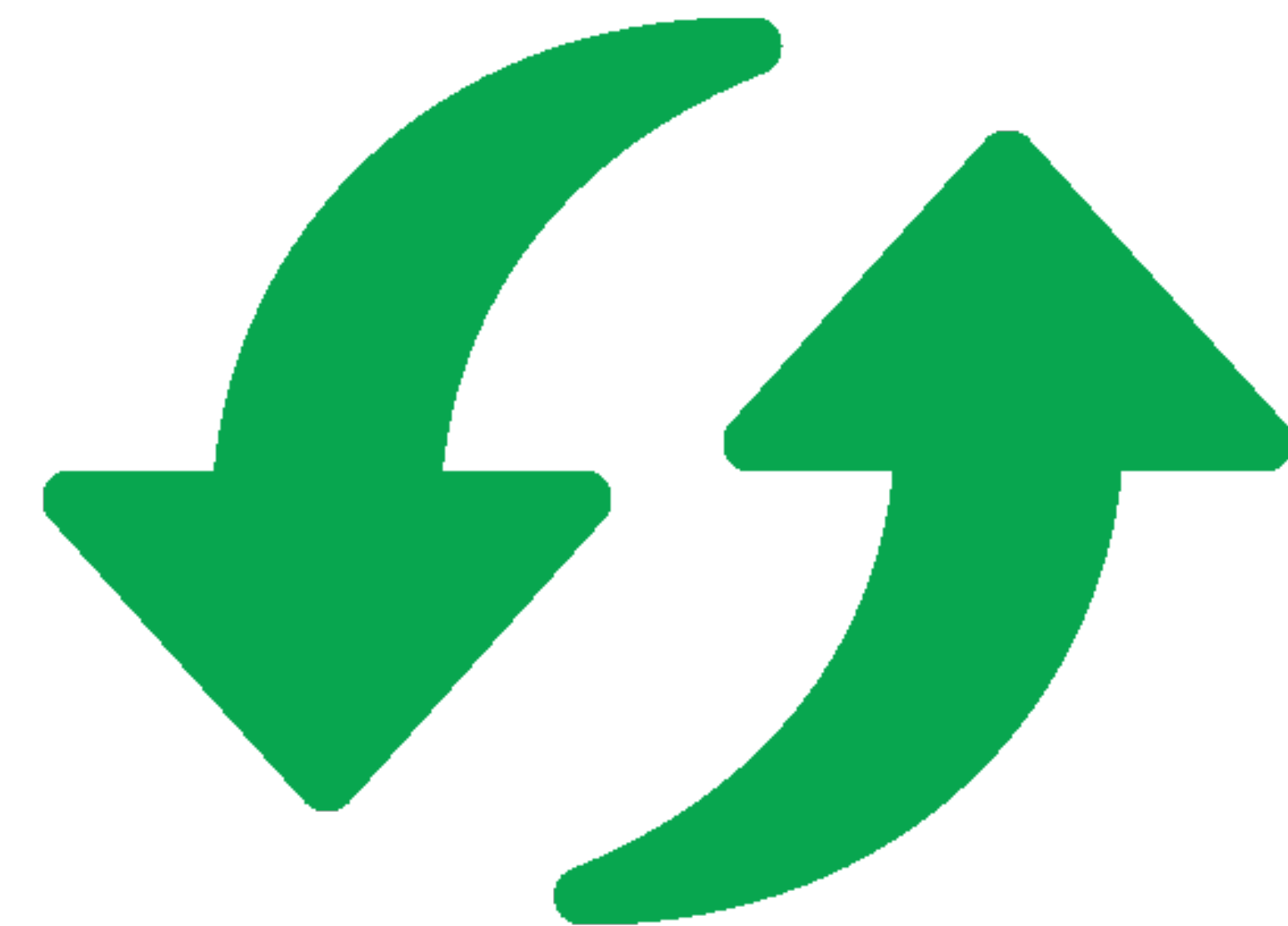
## Efficiency

Maximizing unit **density** on a site while still maintaining desirable living conditions.

Minimizing **energy** usage to achieve a high level of **sustainability**.







## Reusability

**Reusing** prefabricated materials to construct units, or fitting units into a **pre-existing structure**.



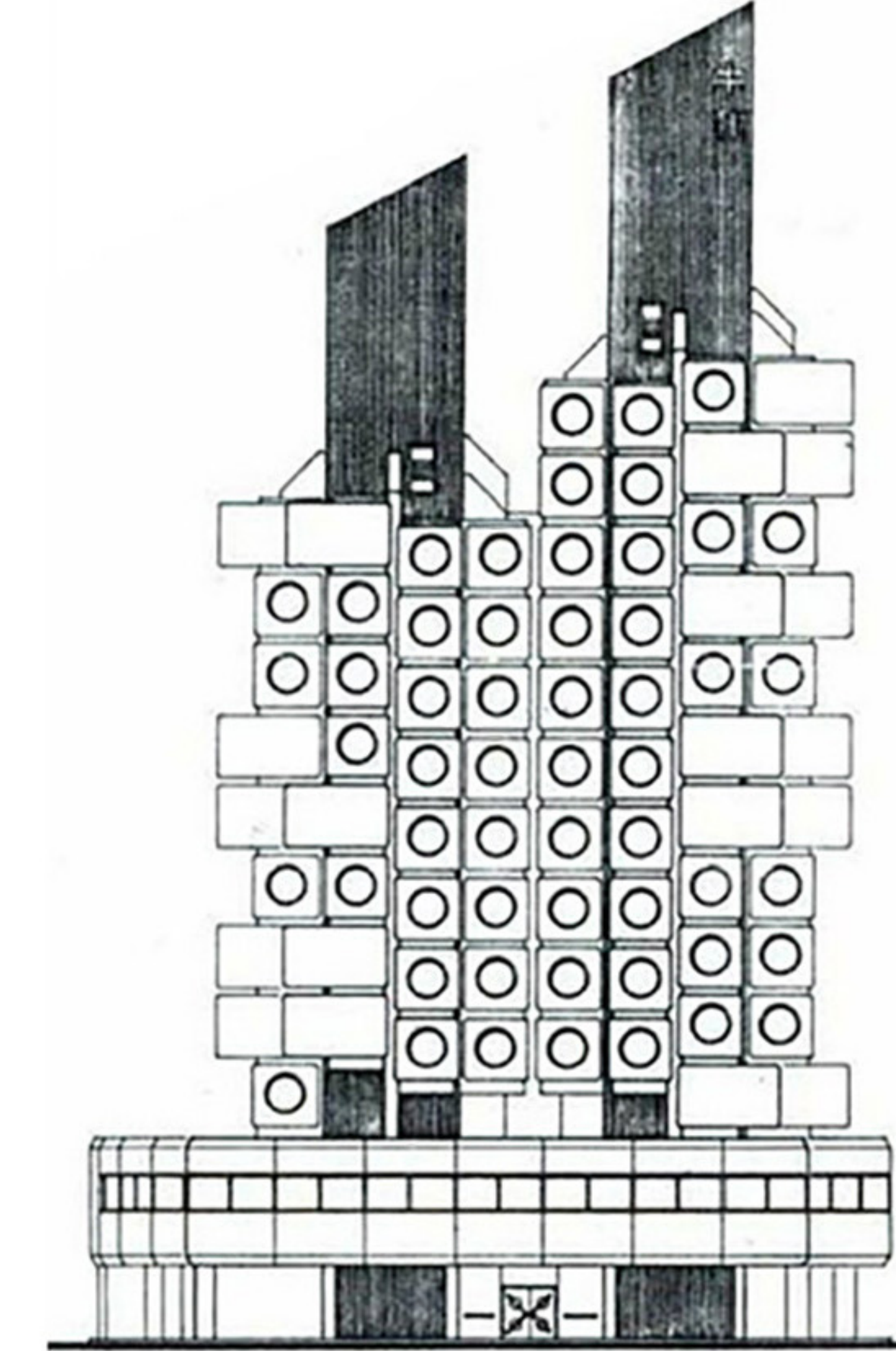
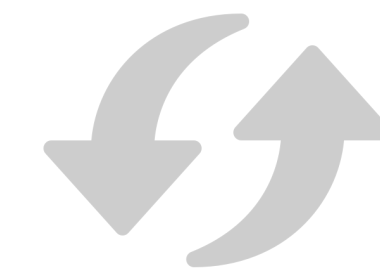
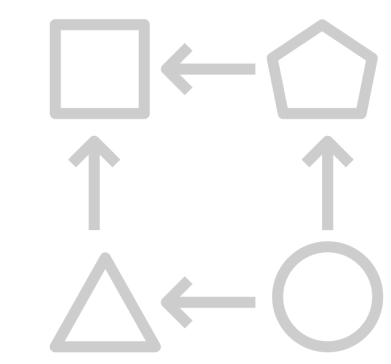
# Examples



# Nakagin Capsule

Kisho Kurokawa

140 Capsules | 172 sqft each

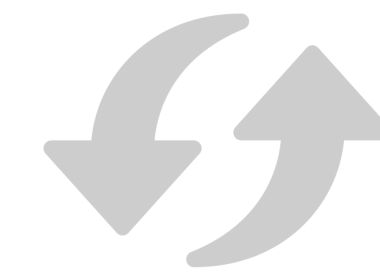
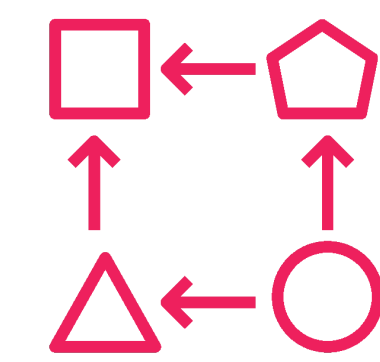




# Nakagin Capsule

Kisho Kurokawa

140 Capsules | 172 sqft each



## Adaptability

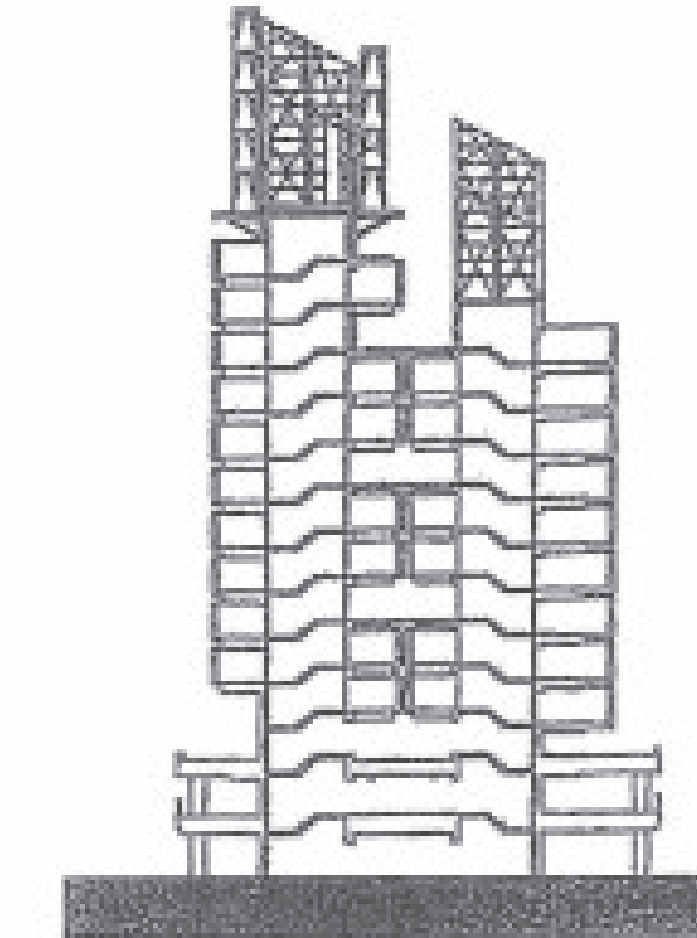
This tower was designed as a new housing typology, which was meant to be used in many other projects, but was never realized. The typology involved central concrete stair towers with varying numbers of capsule units bolted to the sides. This construction method allowed for many variations and arrangements of units to fit many different site conditions.



## 7. カプセル取替え工事作業手順 A (N) 棟・B (S) 棟2回に分けた場合

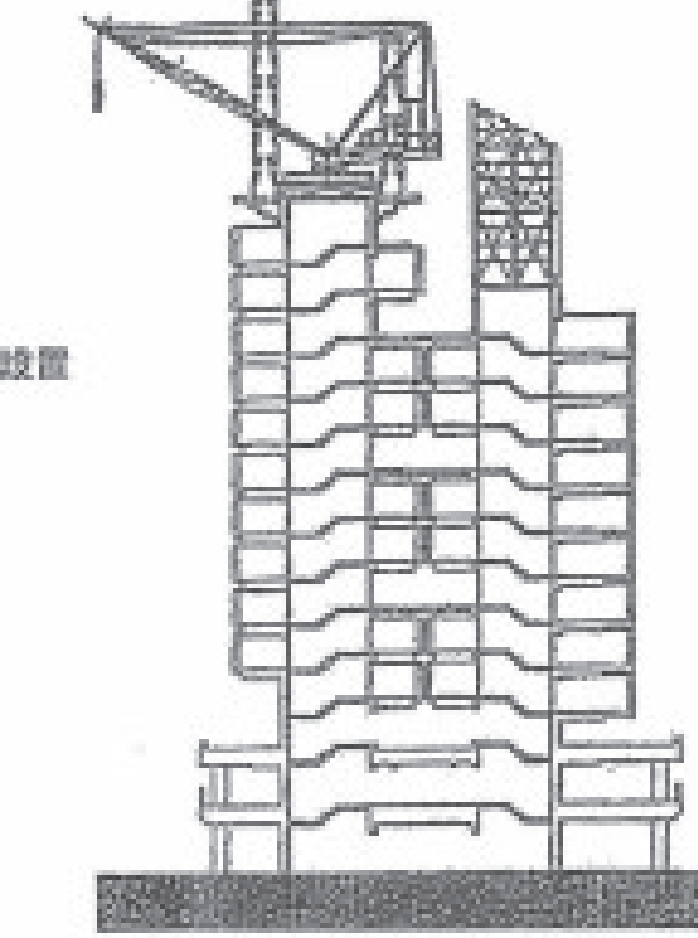
### Step1

給水方式切換え  
屋上設備調整  
ルーバー解体用足場掛け  
屋上ルーバー養生  
煙突解体



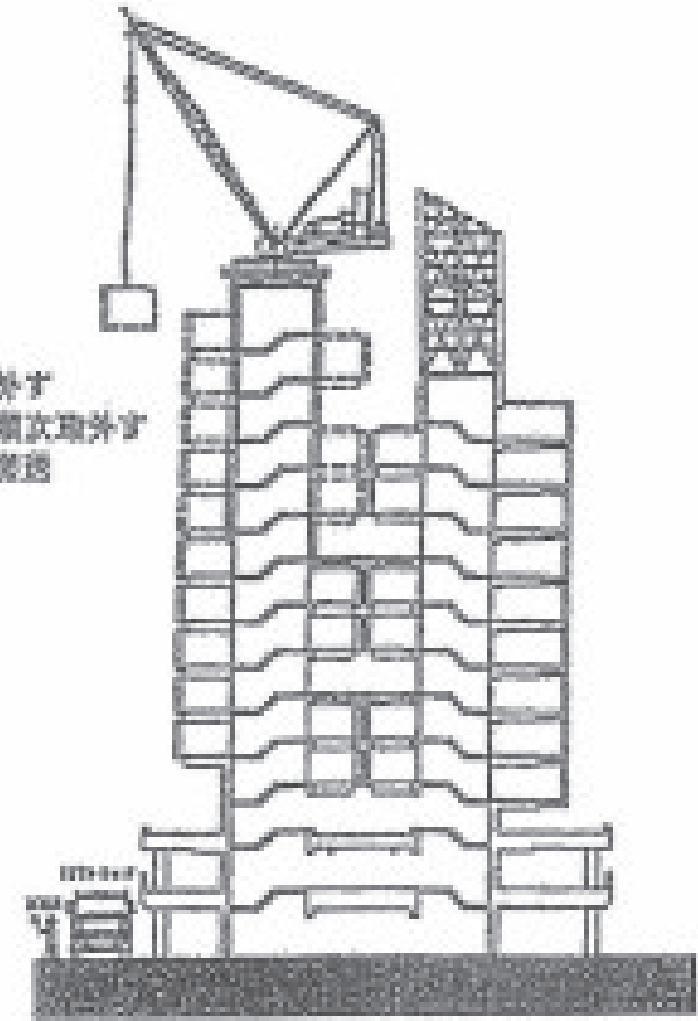
### Step2

クレーン基礎構築・躯体補強  
ルーバー解体用足場直し  
S棟屋上にジブクレーンE-60設置



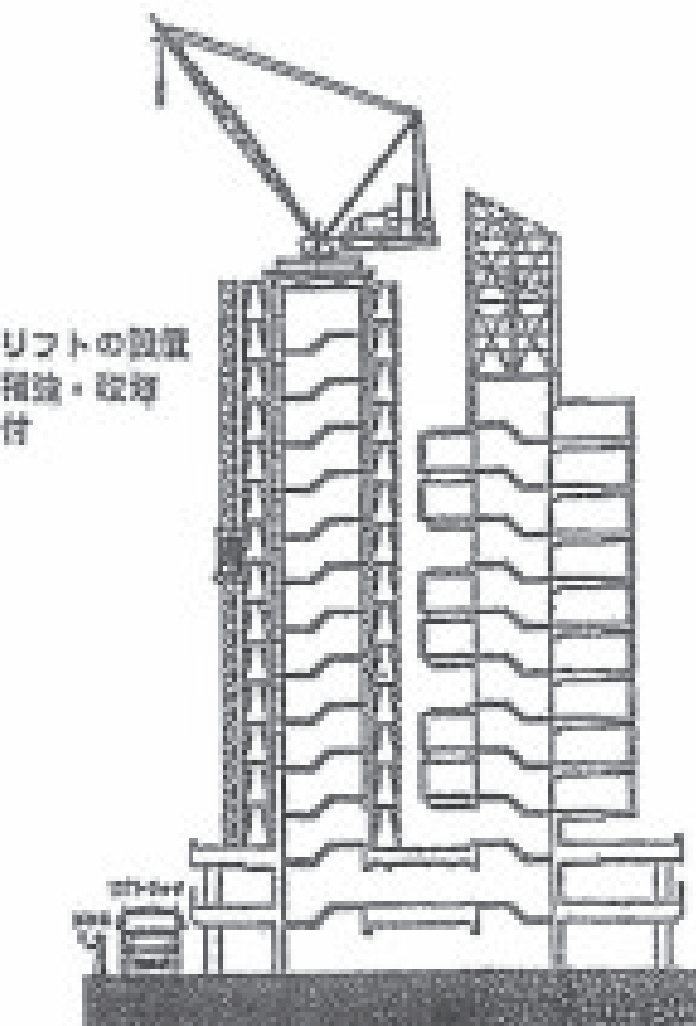
### Step3

カプセルを上層より順次取外す  
設備・メイン配管を上層より順次取外す  
煙突カプセルをメーカーへ搬送



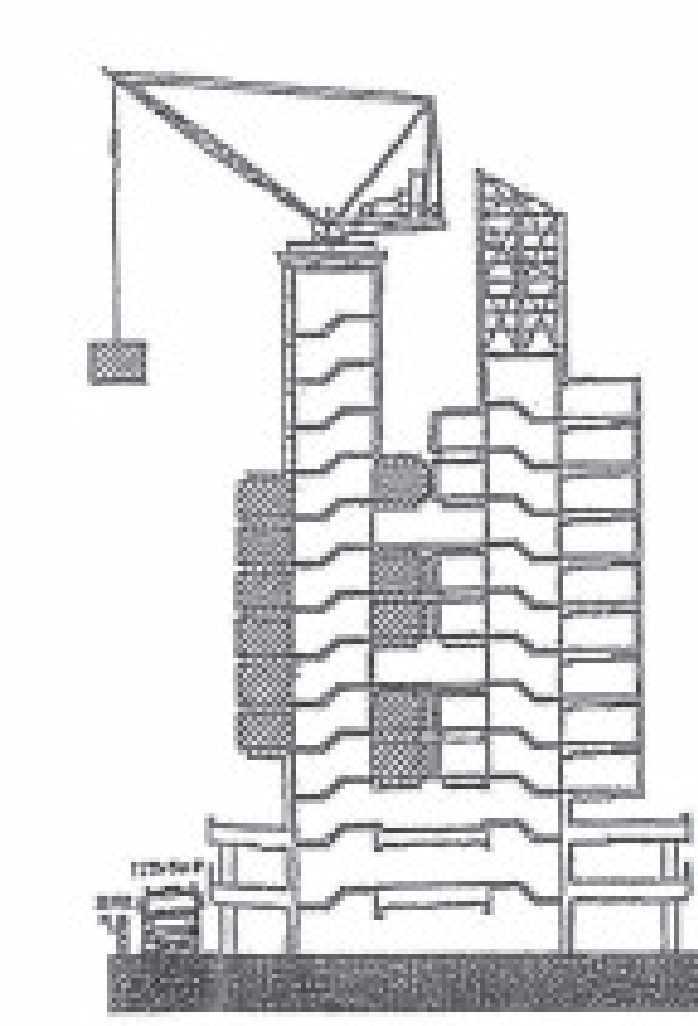
### Step4

コア廻りに外装足場、工事用リフトの設置  
カプセル固定用ファスナーの預入れ・仮付  
設備配管固定用ブラケット取付



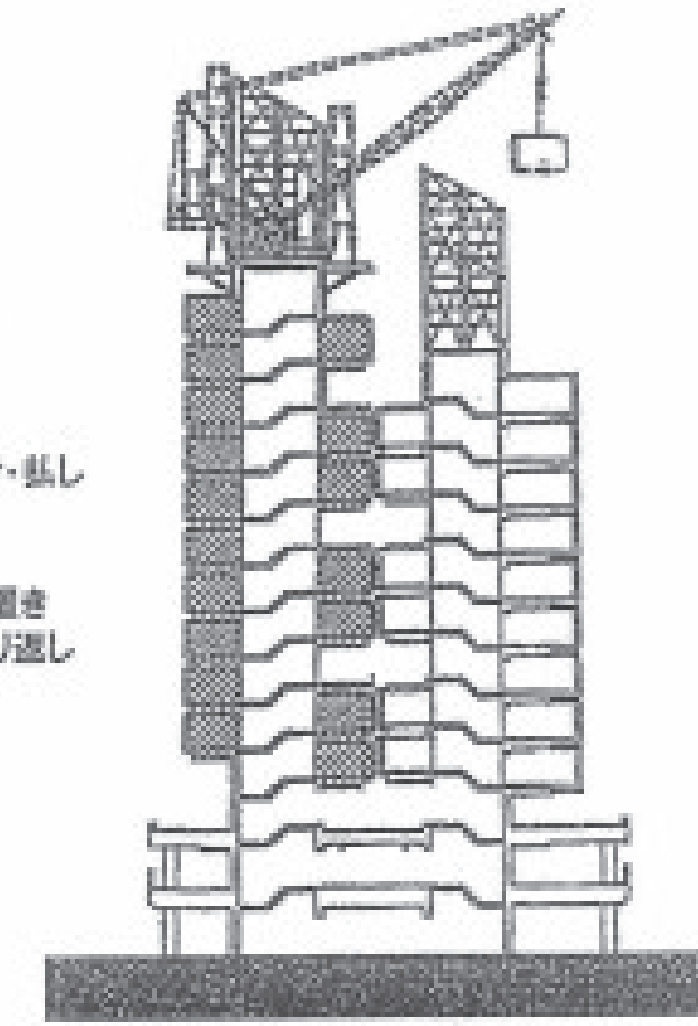
### Step5

外装足場解体  
カプセル搬入・取付  
設備・メイン配管確認  
各カプセルへ配管接続



### Step6

ジブクレーンE-60解体  
屋上設備機器撤去  
煙突撤去  
ルーバー撤去用足場掛け・直し  
屋上ルーバー撤去  
S棟改修後3ヶ月期間を置き  
N棟改修(Step1~6)繰り返し

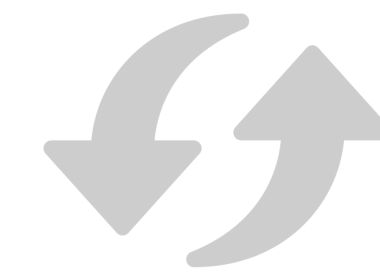
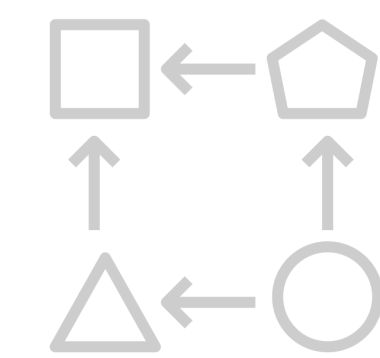




# Nakagin Capsule

Kisho Kurokawa

140 Capsules | 172 sqft each



## Affordability

Construction was completed in just 30 days, and the Capsule units were entirely prefabricated, this dramatically reduced construction costs. The units themselves were also inexpensive because of their extremely small size.

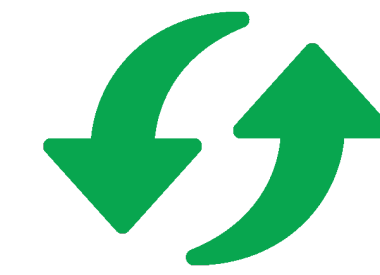
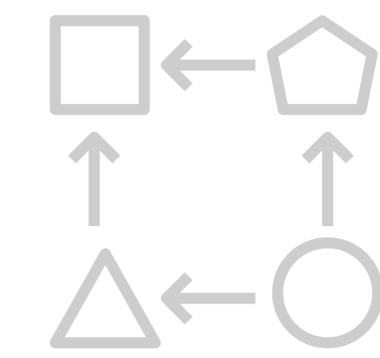




# Nakagin Capsule

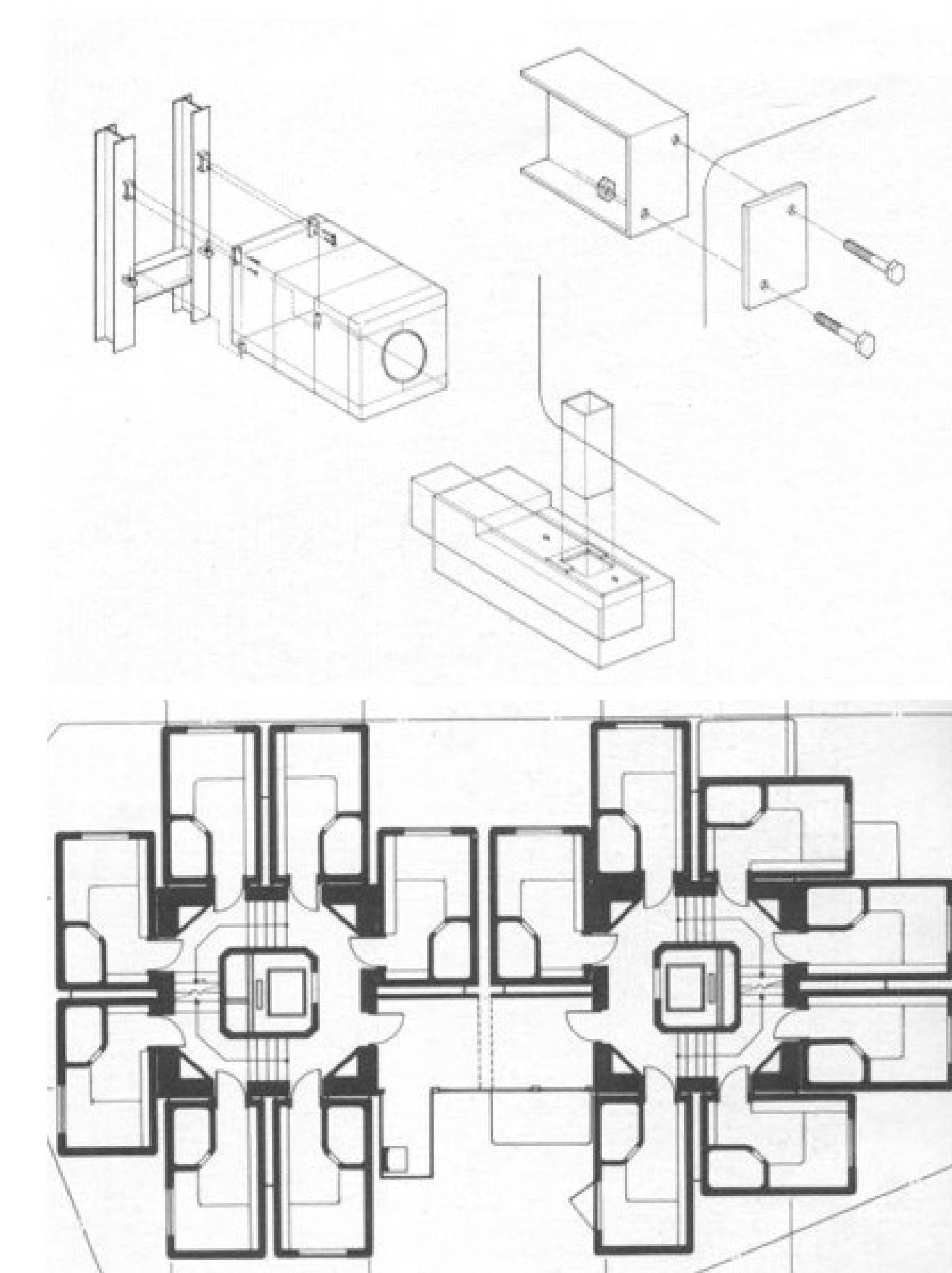
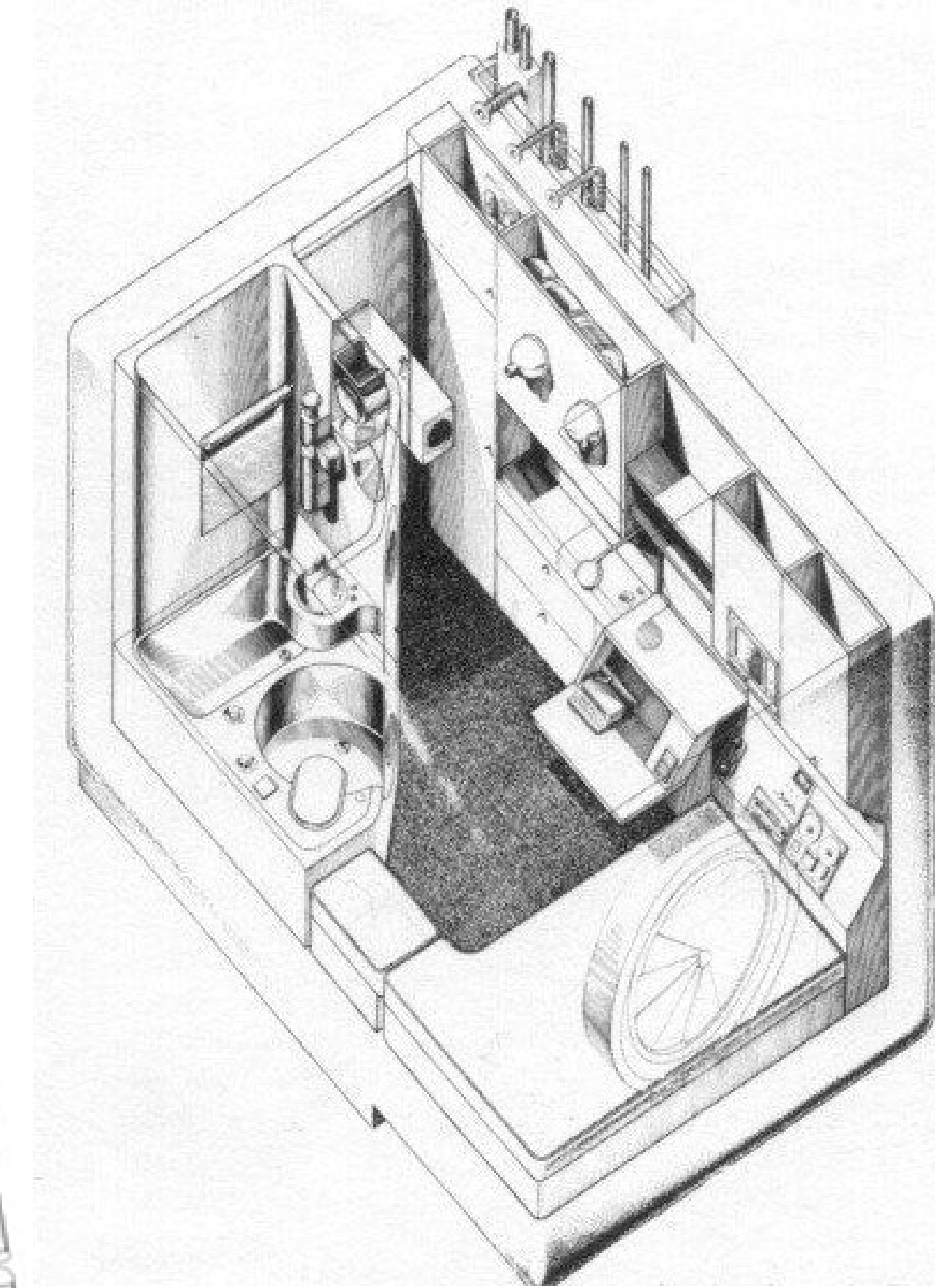
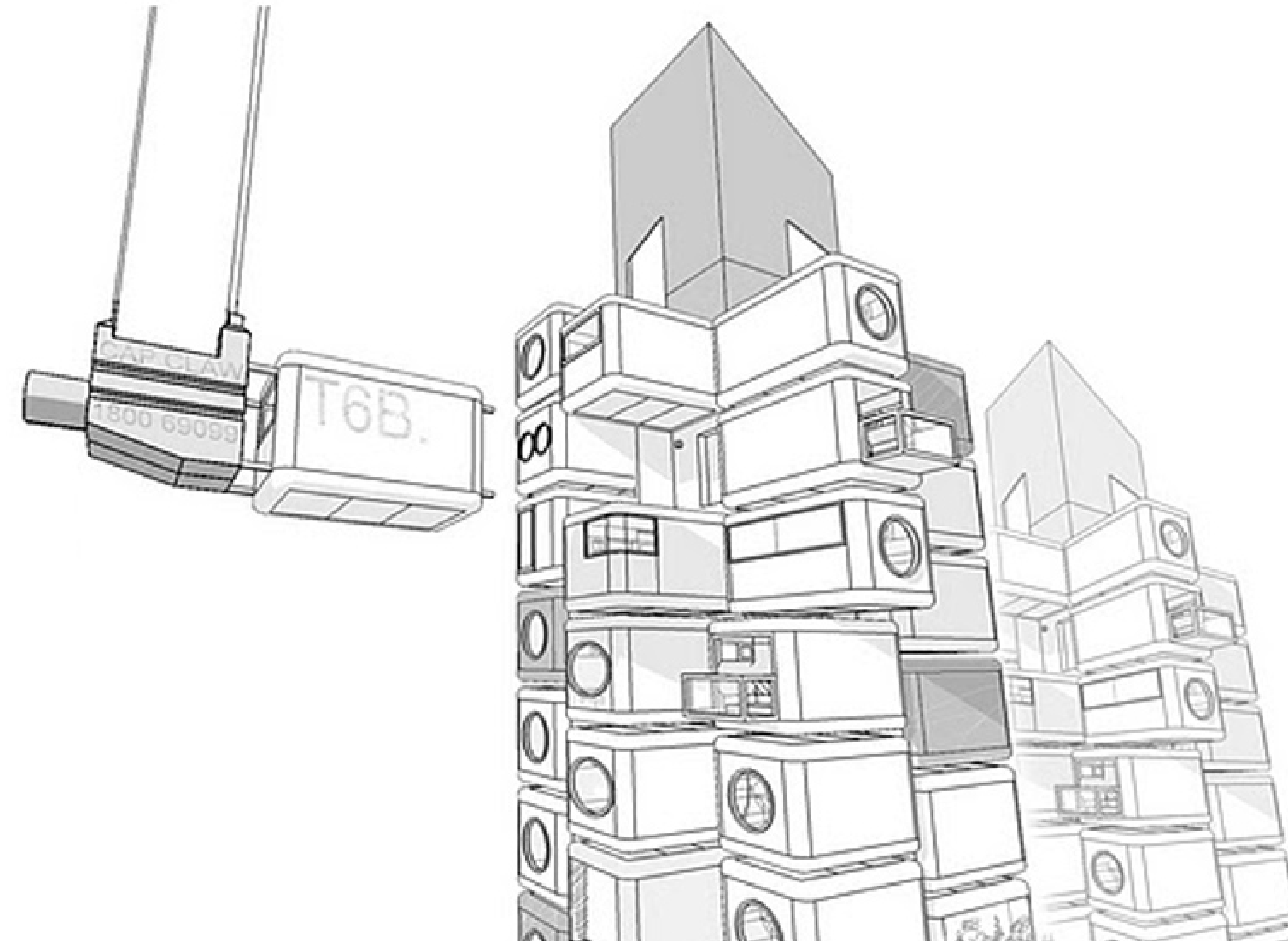
Kisho Kurokawa

140 Capsules | 172 sqft each



## Reusability

These capsule units were designed to be both easily installed, and easily removed. They were intended to be constantly interchanged and replaced to fit changing tenant needs.

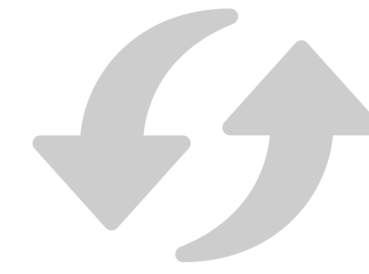
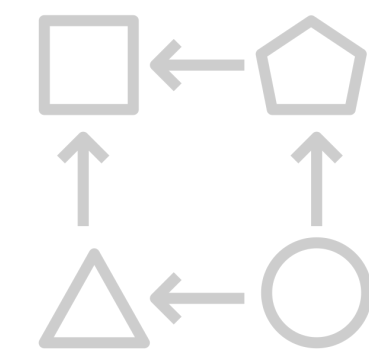




# KASITA

Jeff Wilson

9 Units | 320 sqft each

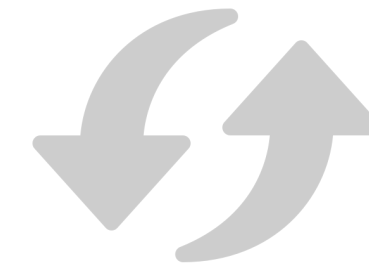
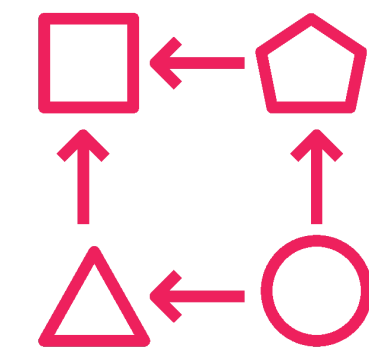




# KASITA

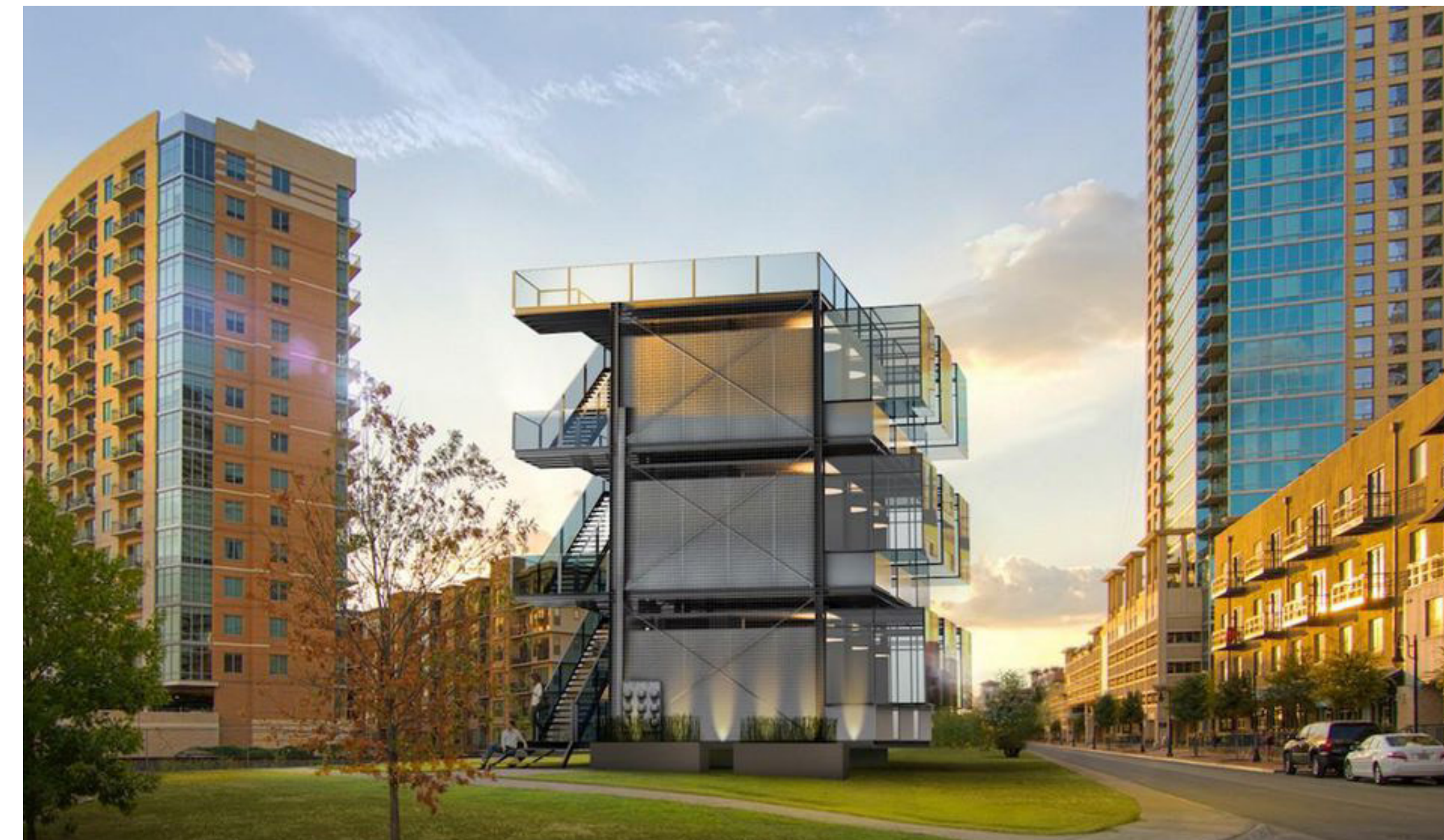
Jeff Wilson

9 Units | 320 sqft each



## Adaptability

This project offers an extremely adaptable method of living because the units can be inserted into a universal steel frame. This steel frame can be built in under a week on any open lot in any city up to ten stories high (for now).

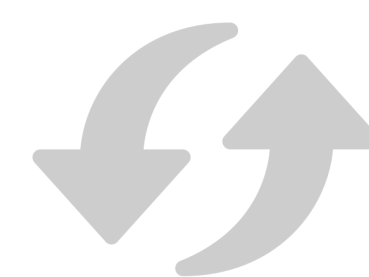
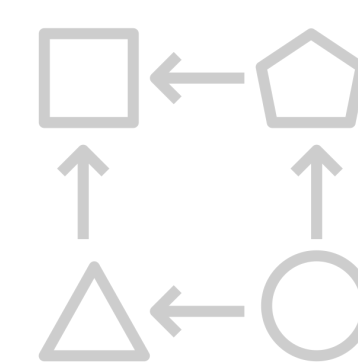




# KASITA

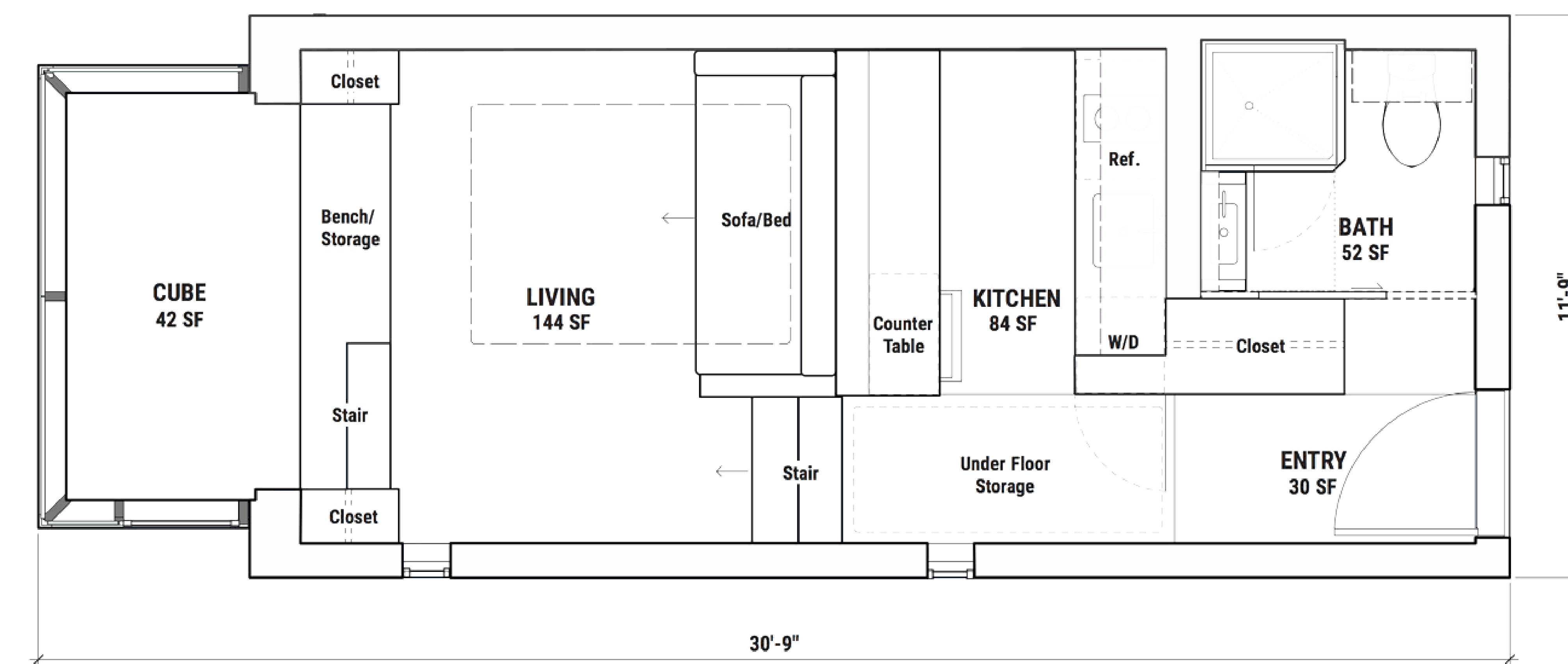
Jeff Wilson

9 Units | 320 sqft each



## Affordability

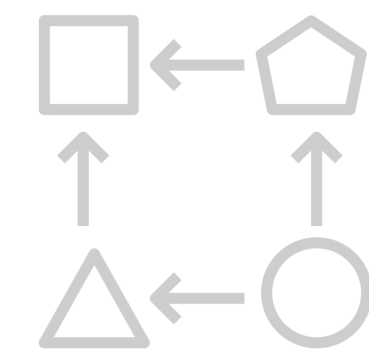
Kasita offers a more affordable way of life because tenants never have to move out to relocate, their entire unit can be moved with them. Unlike a typical trailer home, it can be stacked vertically to meet population density demands in large cities. The units are also prefabricated, so the only on-site construction is the steel supporting frame.



# KASITA

Jeff Wilson

9 Units | 320 sqft each



## Reusability

In this case, the units themselves are reusable. They can be easily moved and relocated, reducing the need for new residential construction and demolition.

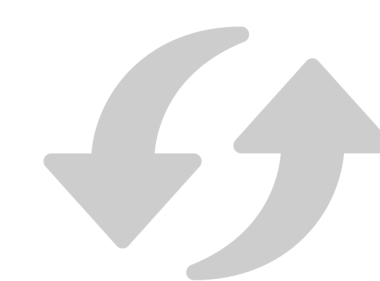
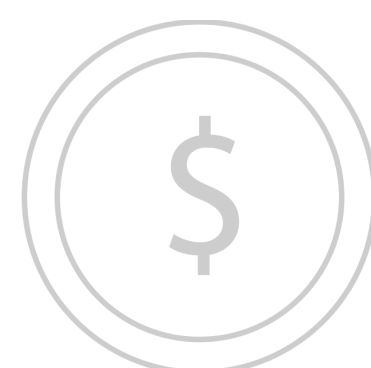
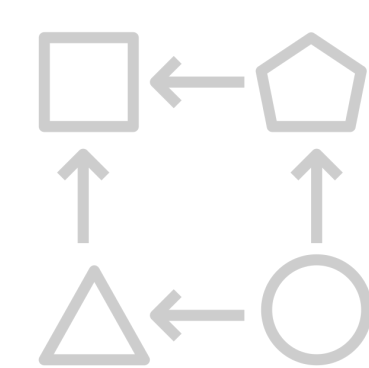




# OPod Tube House

James Law Cybertecture

100 sqft each

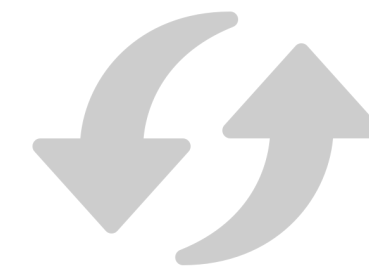
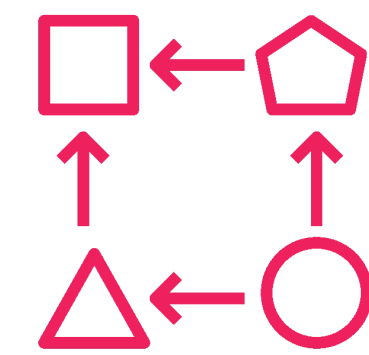




# OPod Tube House

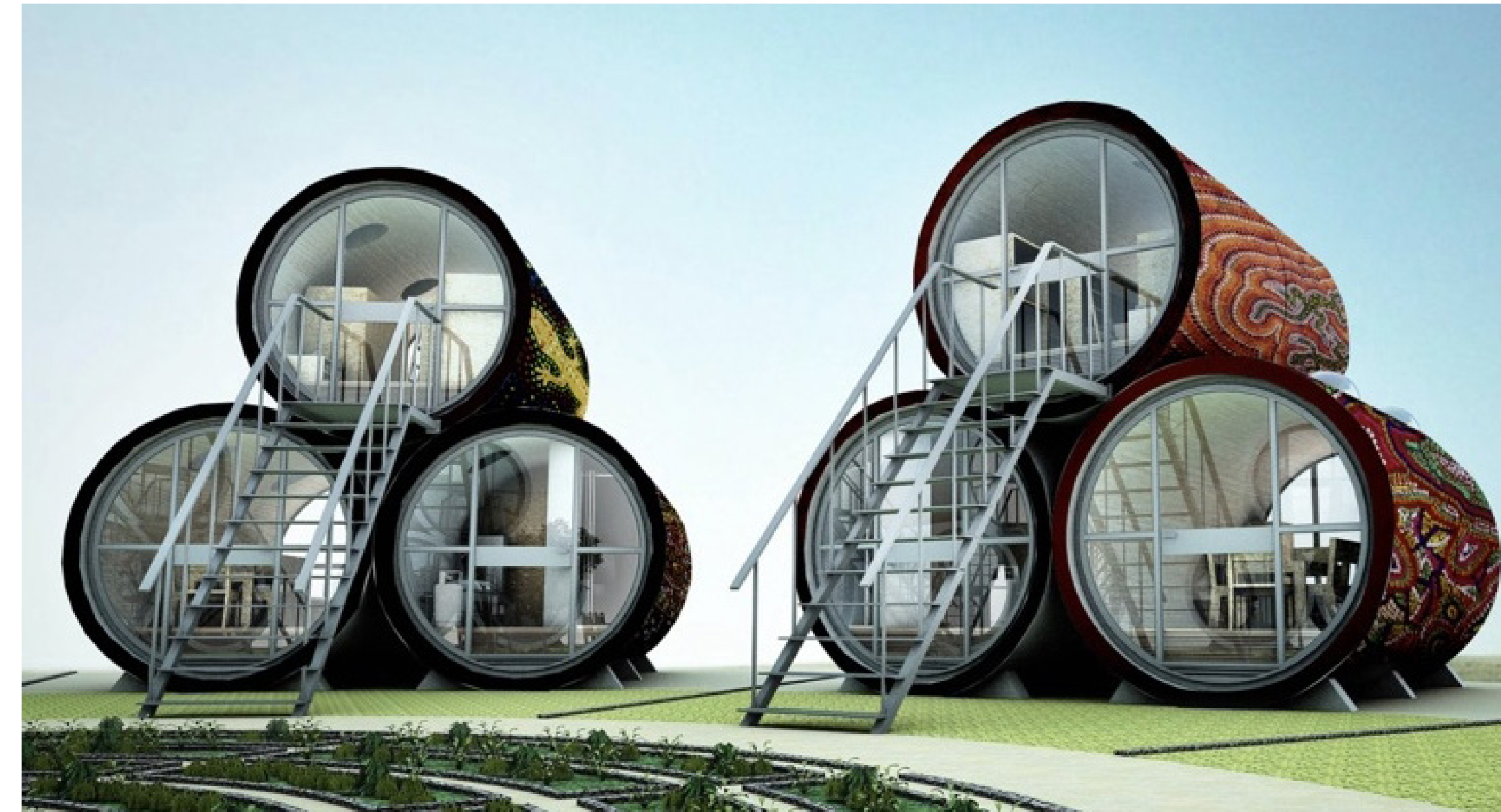
James Law Cybertecture

100 sqft each



## Adaptability

Each unit is 100 square feet, built like a concrete water pipe. Due to its size, it can slot into the spaces between buildings or be stacked in vacant lots.

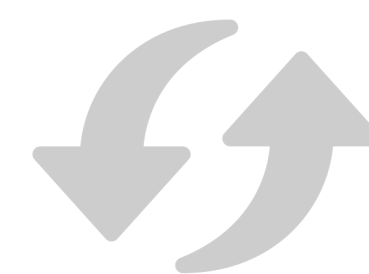
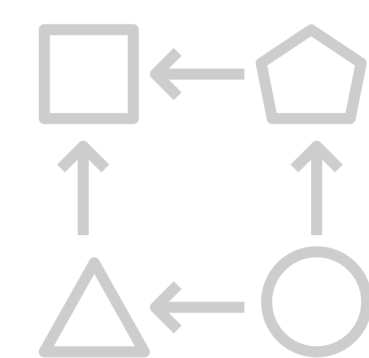




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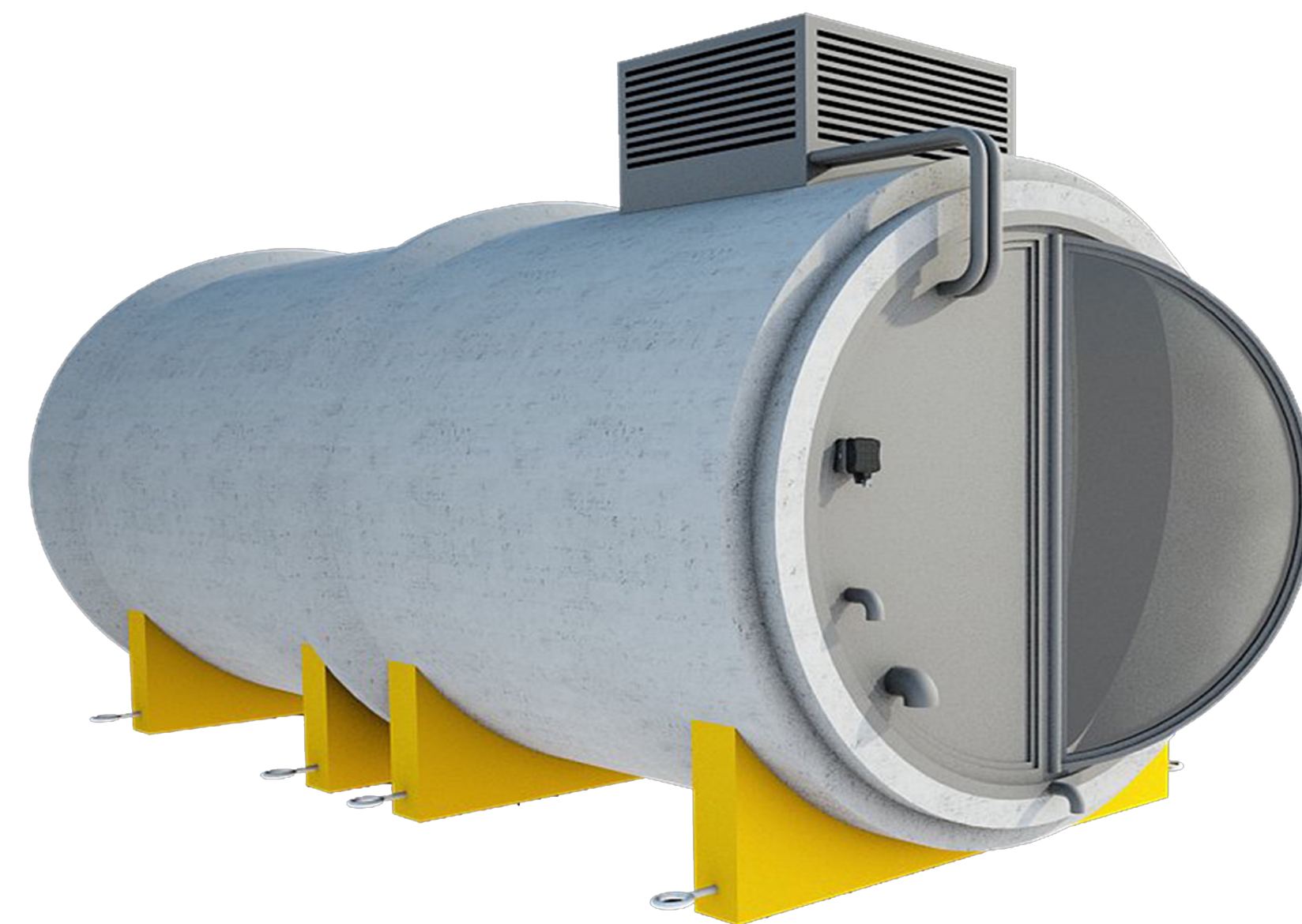
James Law Cybertecture

100 sqft each



## Affordability

The architect claims the units would appeal to “young people who can’t afford private housing who are looking for a temporary living situation for a year or two.”

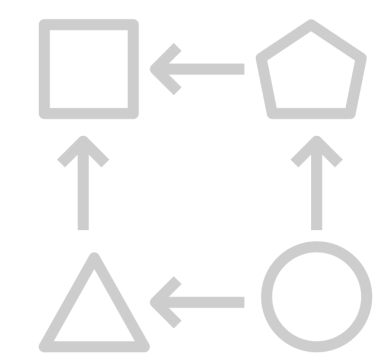




# OPod Tube House

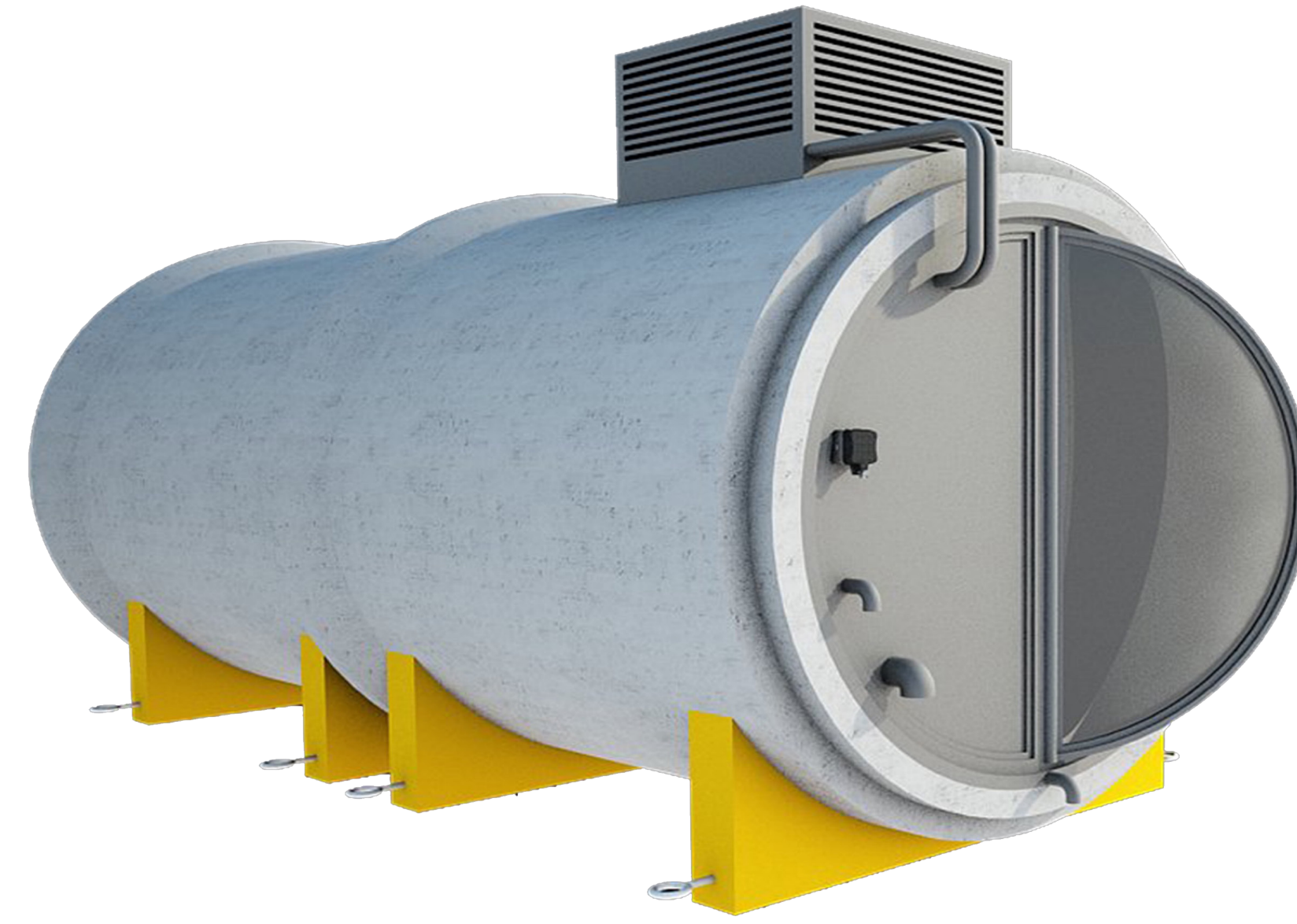
James Law Cybertecture

100 sqft each



## Reusability

Since the pipe units are structurally self sufficient, the structure could theoretically be disassembled and reconstructed elsewhere. The manufacturing process of these shells is also being reused since they are fabricating these with pre-existing manufacturing methods from concrete sewer pipes. Therefore, no new infrastructure needs to be created for their production.

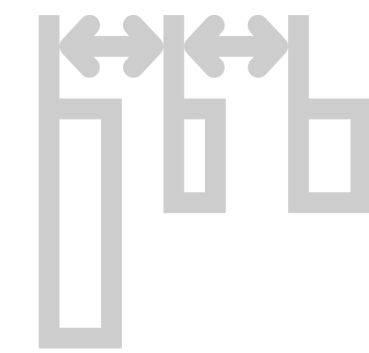
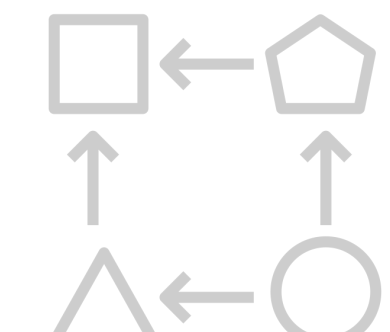




# Carmel Place

nARCHITECTS

55 Units | 250-370 sqft each

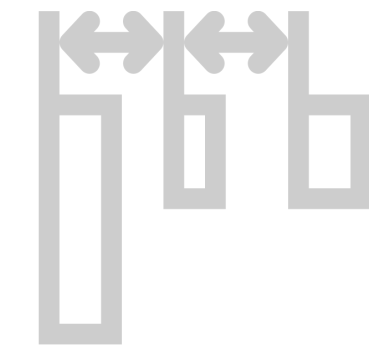
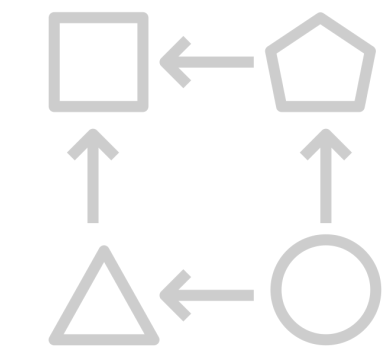
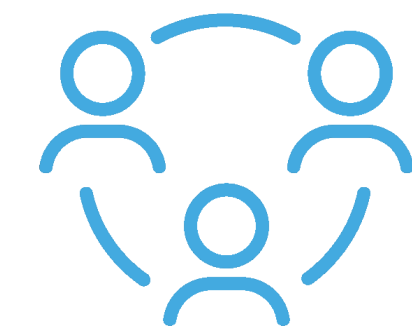




# Carmel Place

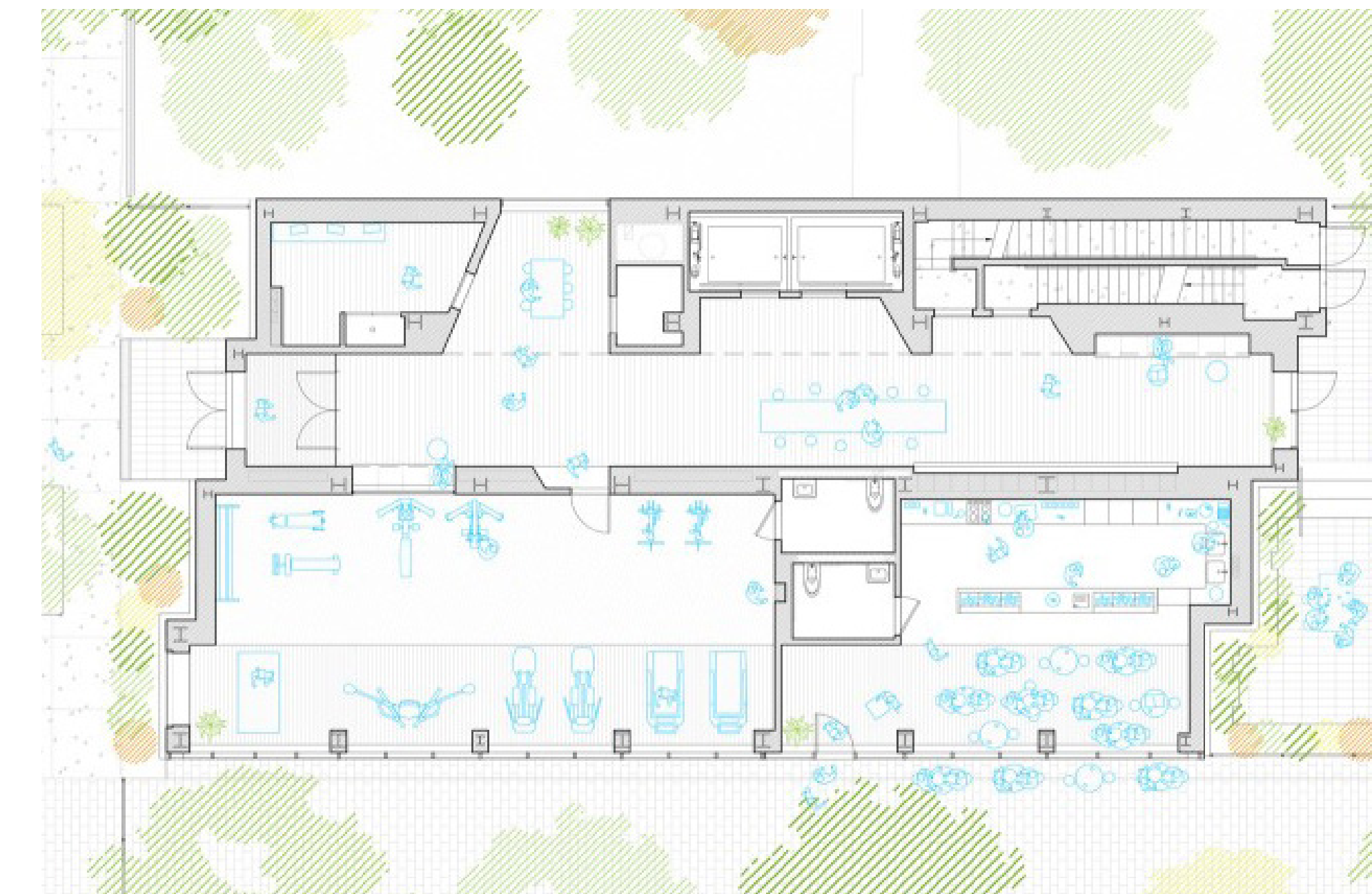
nARCHITECTS

55 Units | 250-370 sqft each



## Community

The building offers amenity floors on both the ground floor and roof to encourage social interactions between residents and also the surrounding community. Shared amenities include a gym, lounge, community room, and roof terrace. The building also offers bicycle storage, a tenant storage room, and storage lockers that are dispersed throughout the interior.

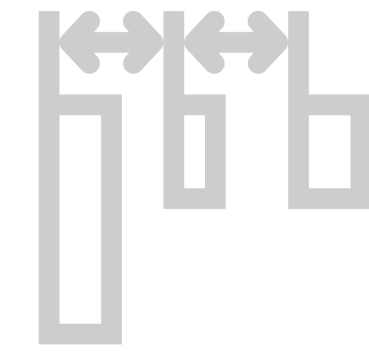
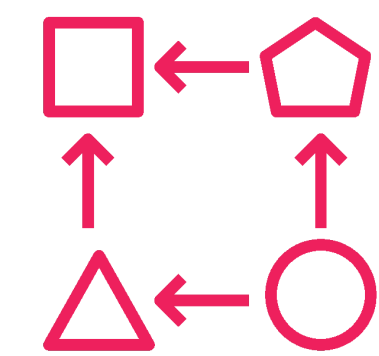




# Carmel Place

nARCHITECTS

55 Units | 250-370 sqft each



## Adaptability

Because the tower is constructed of prefabricated units, which can fit into multiple orientations, the building could successfully be constructed on a variety of different sites.

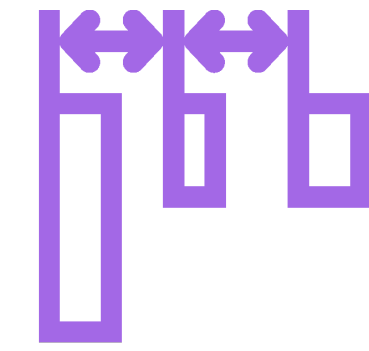
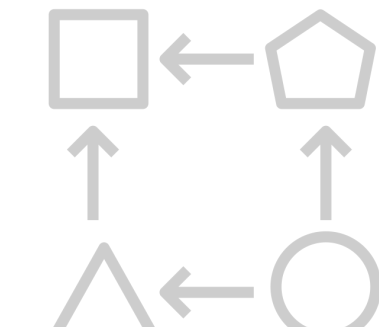




# Carmel Place

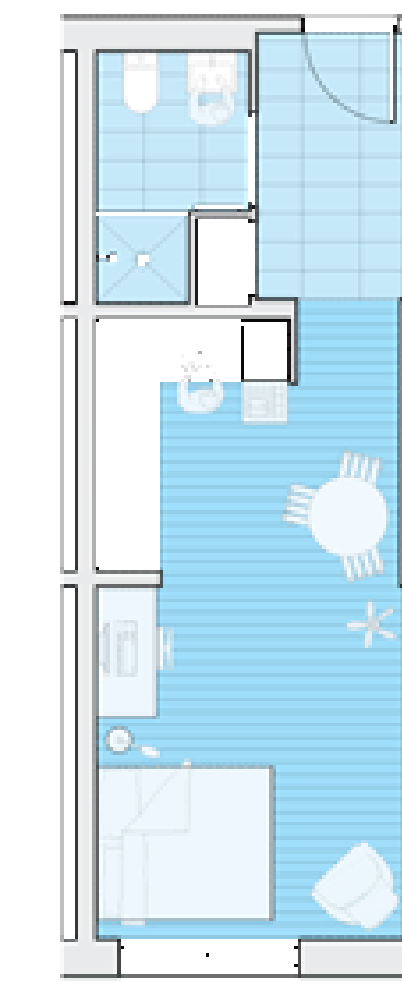
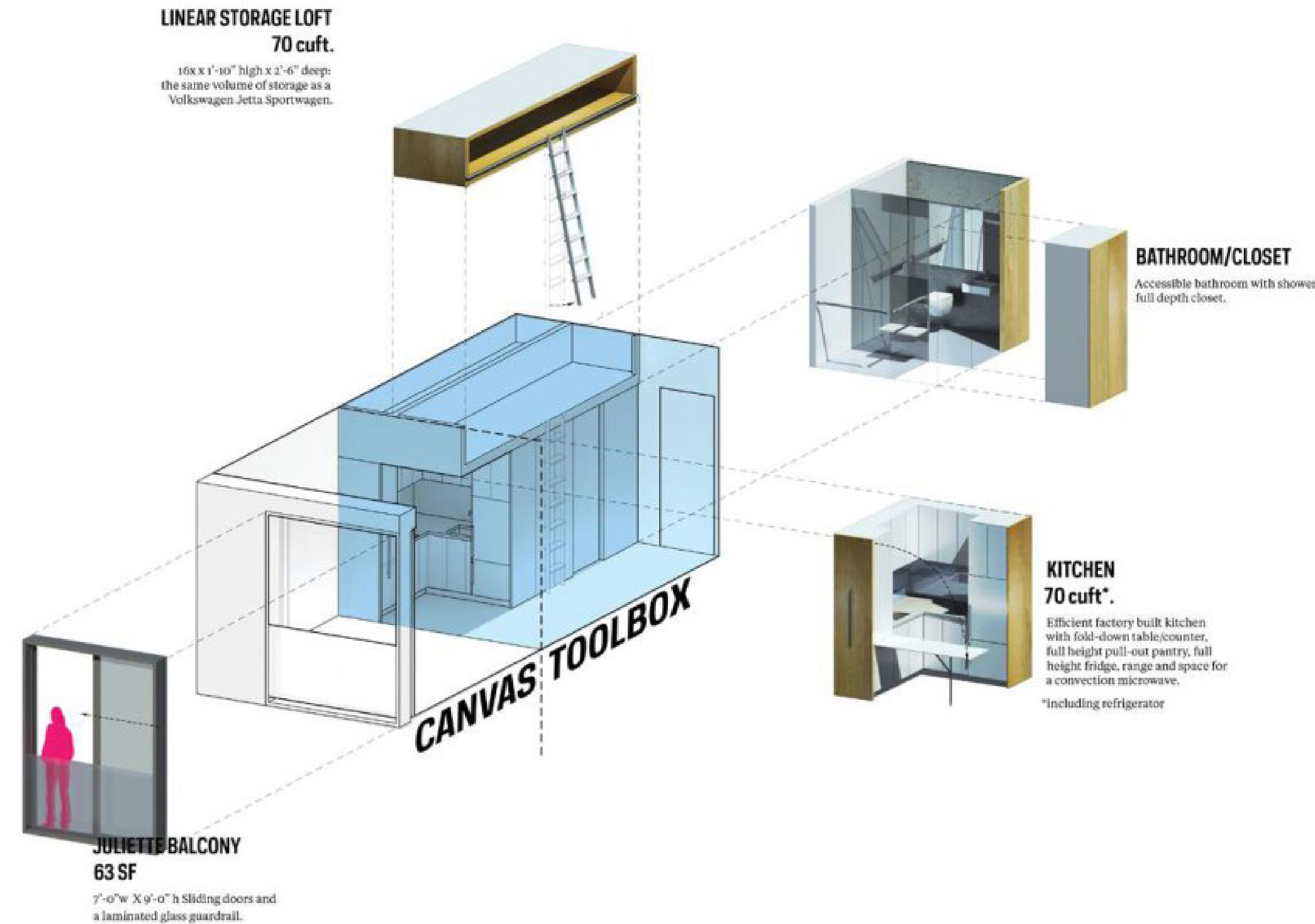
nARCHITECTS

55 Units | 250-370 sqft each

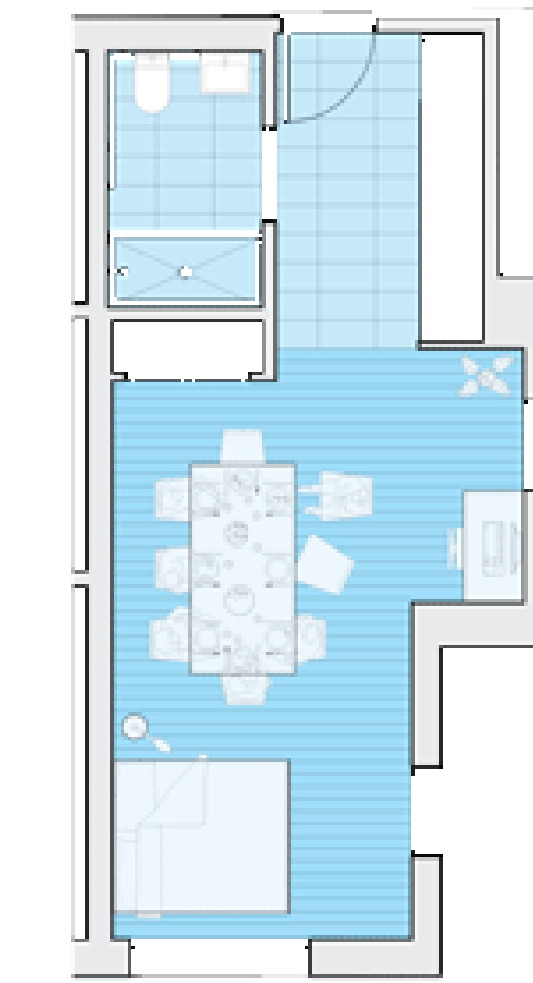


## Variation

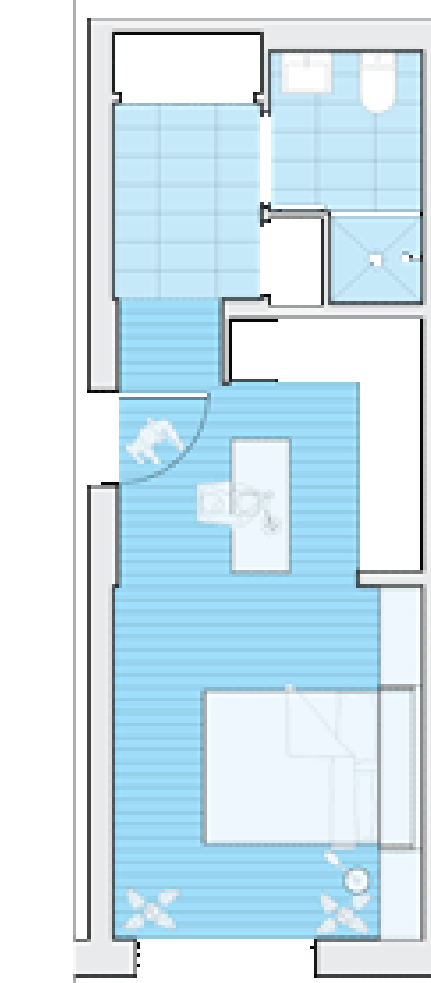
With the idea of prefabrication in mind, the architects realized it would be simple to create a few different layouts for the users. They designed seven different unit types, giving the occupant the opportunity of individuality and customization.



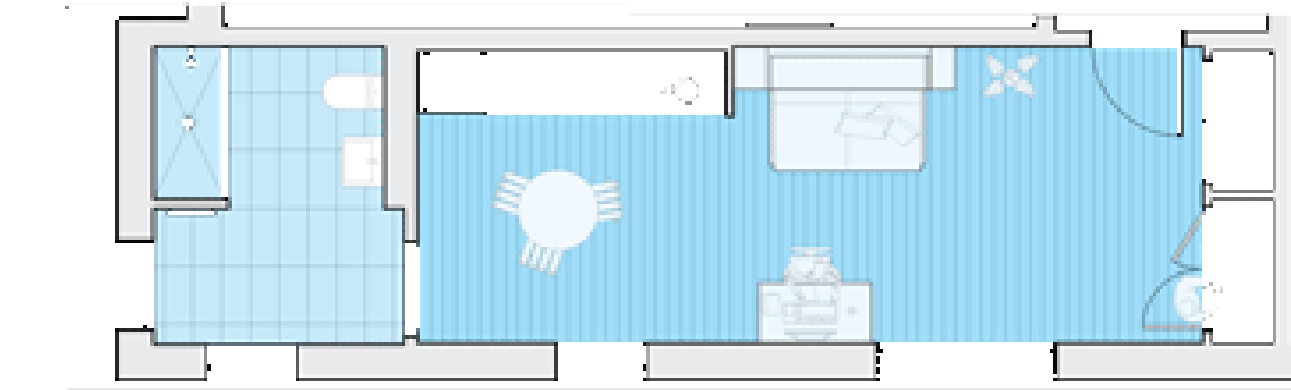
TYPE A (30 UNITS)  
302 SF (VARIES)



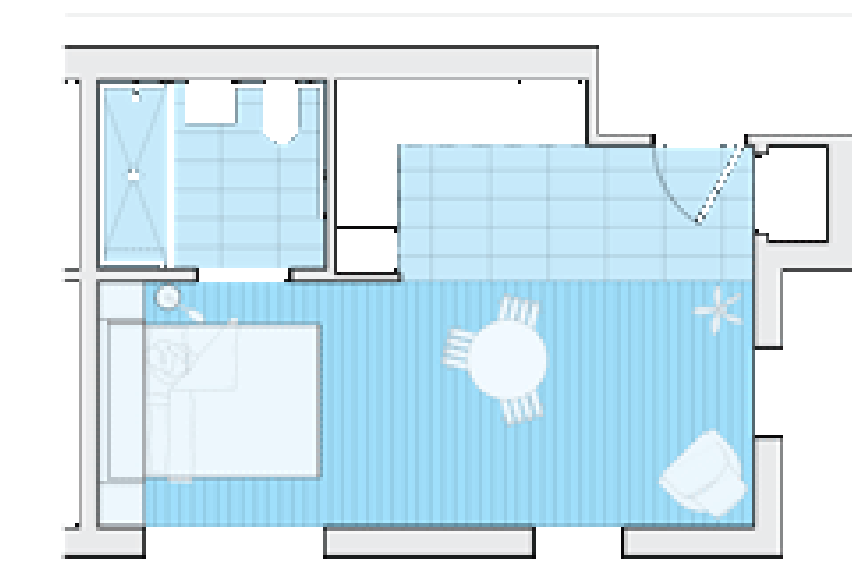
TYPE B (6 UNITS)  
355 SF



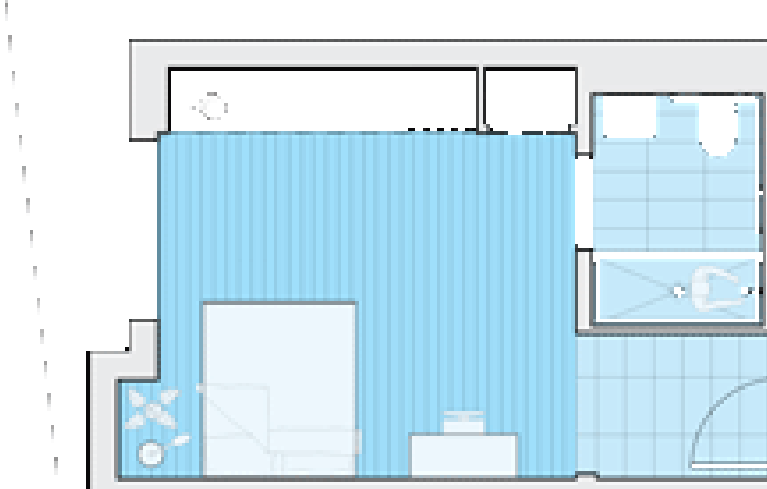
TYPE C (6 UNITS)  
302 SF



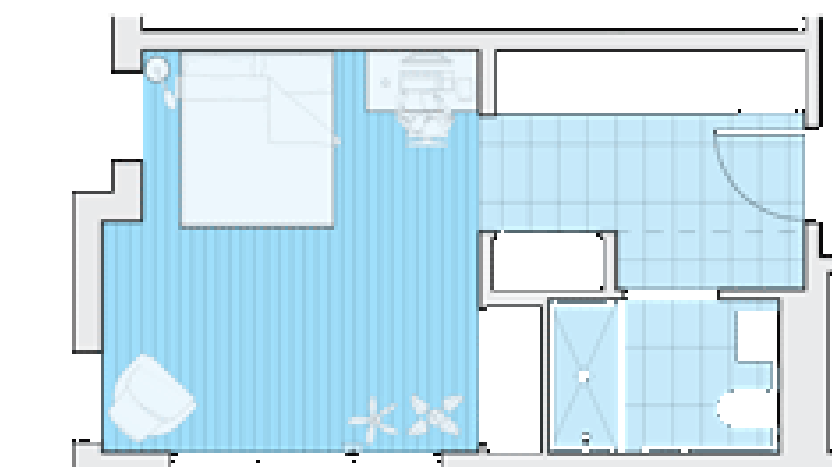
TYPE D (6 UNITS)  
360 SF



TYPE E (4 UNITS)  
323 SF (VARIES)



TYPE F (2 UNITS)  
273 SF



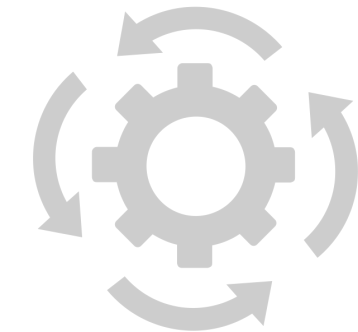
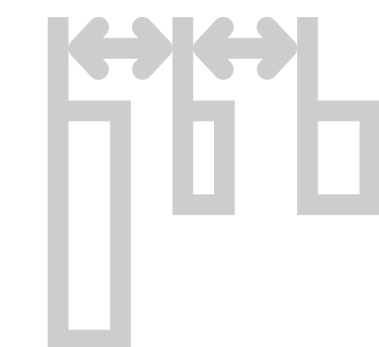
TYPE G (1 UNIT)  
300 SF



# Songpa Micro Housing

SSD Architecture

22 Units | 120-240 sqft each

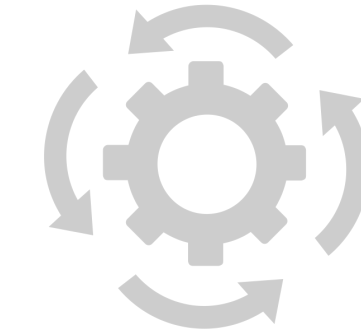
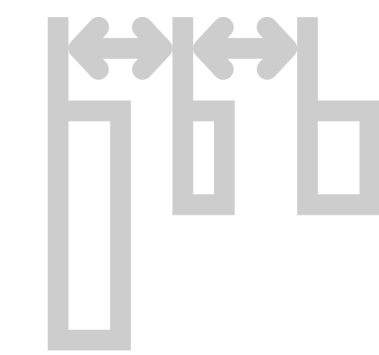
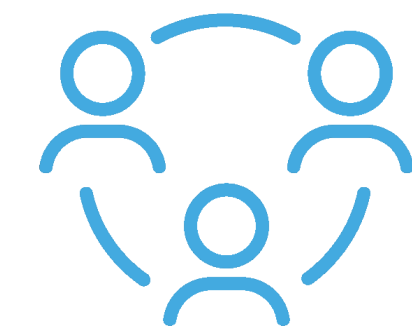




# Songpa Micro Housing

SSD Architecture

22 Units | 120-240 sqft each



## Community

This project utilizes large circulation space to act as public gathering areas between units on each floor. Movable seating and operable walls activate this central space and encourages social interactions among tenants. The open ground floor also encourages social interactions between tenants and the surrounding community.

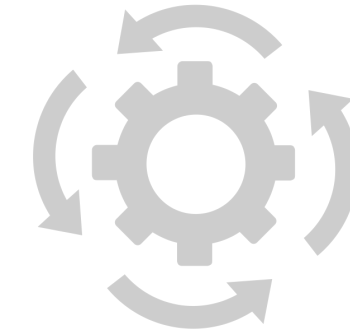
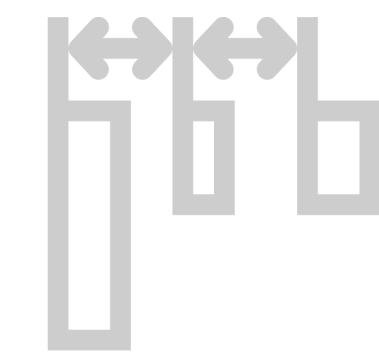
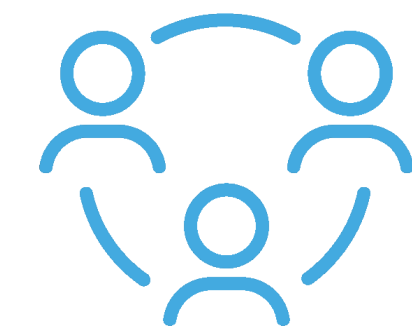




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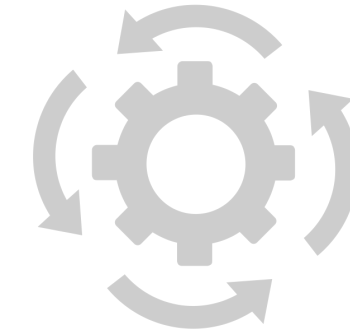
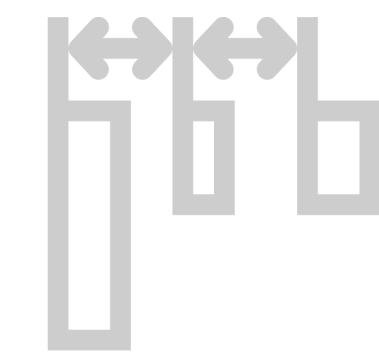
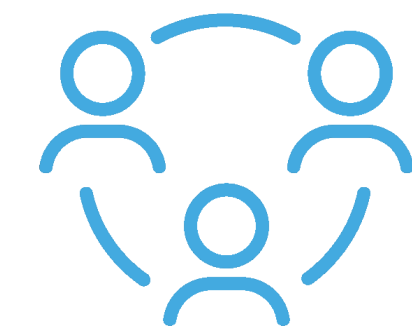




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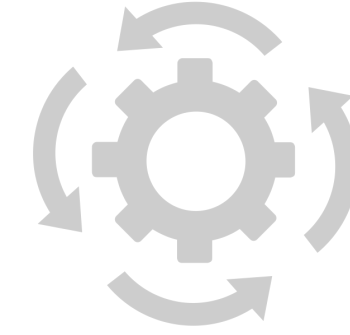
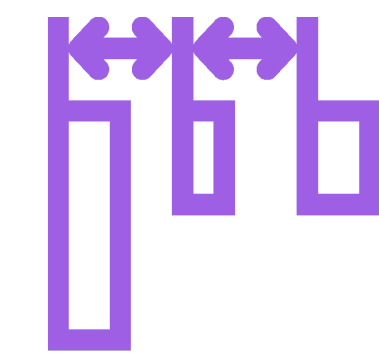




# Songpa Micro Housing

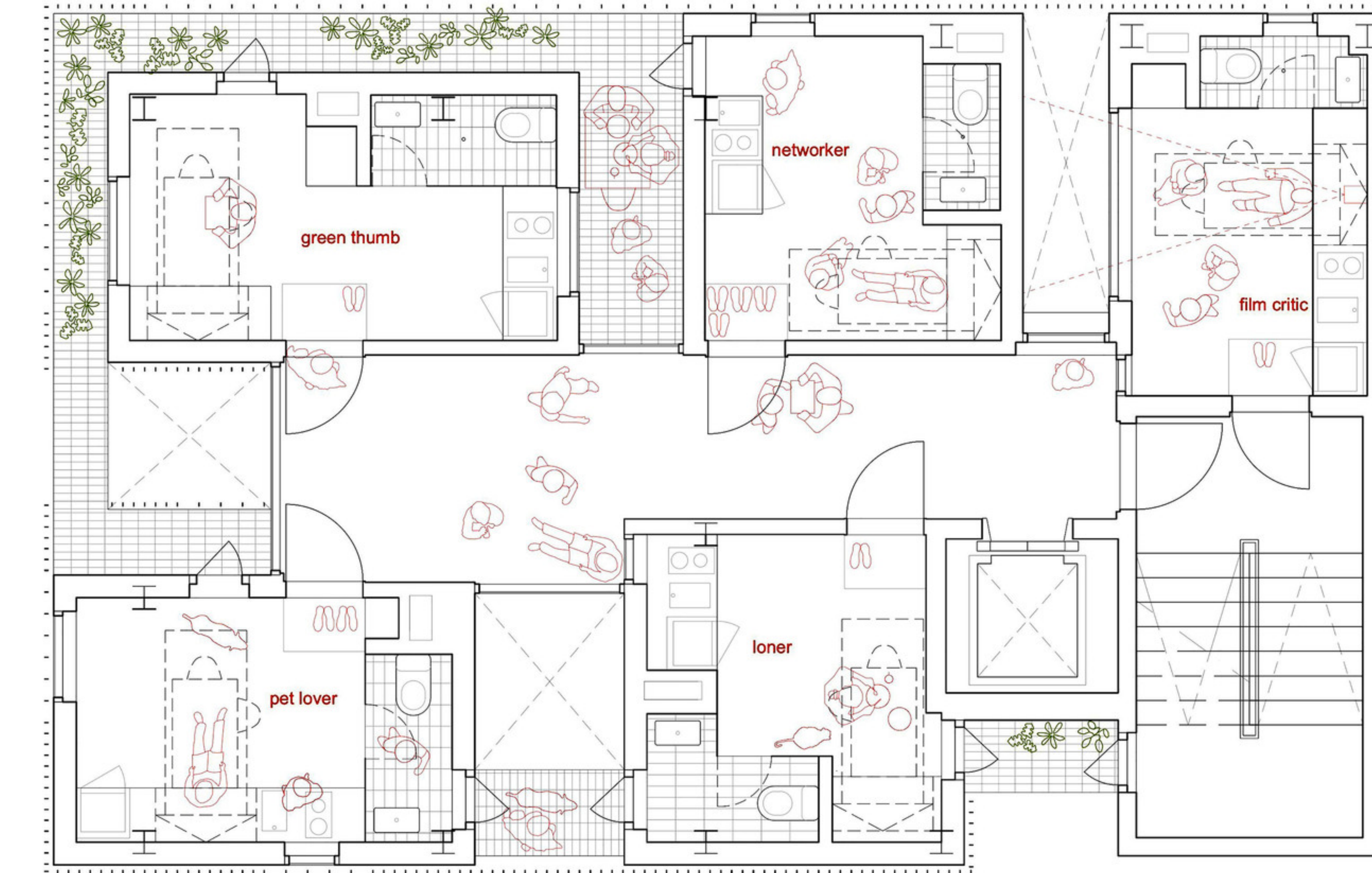
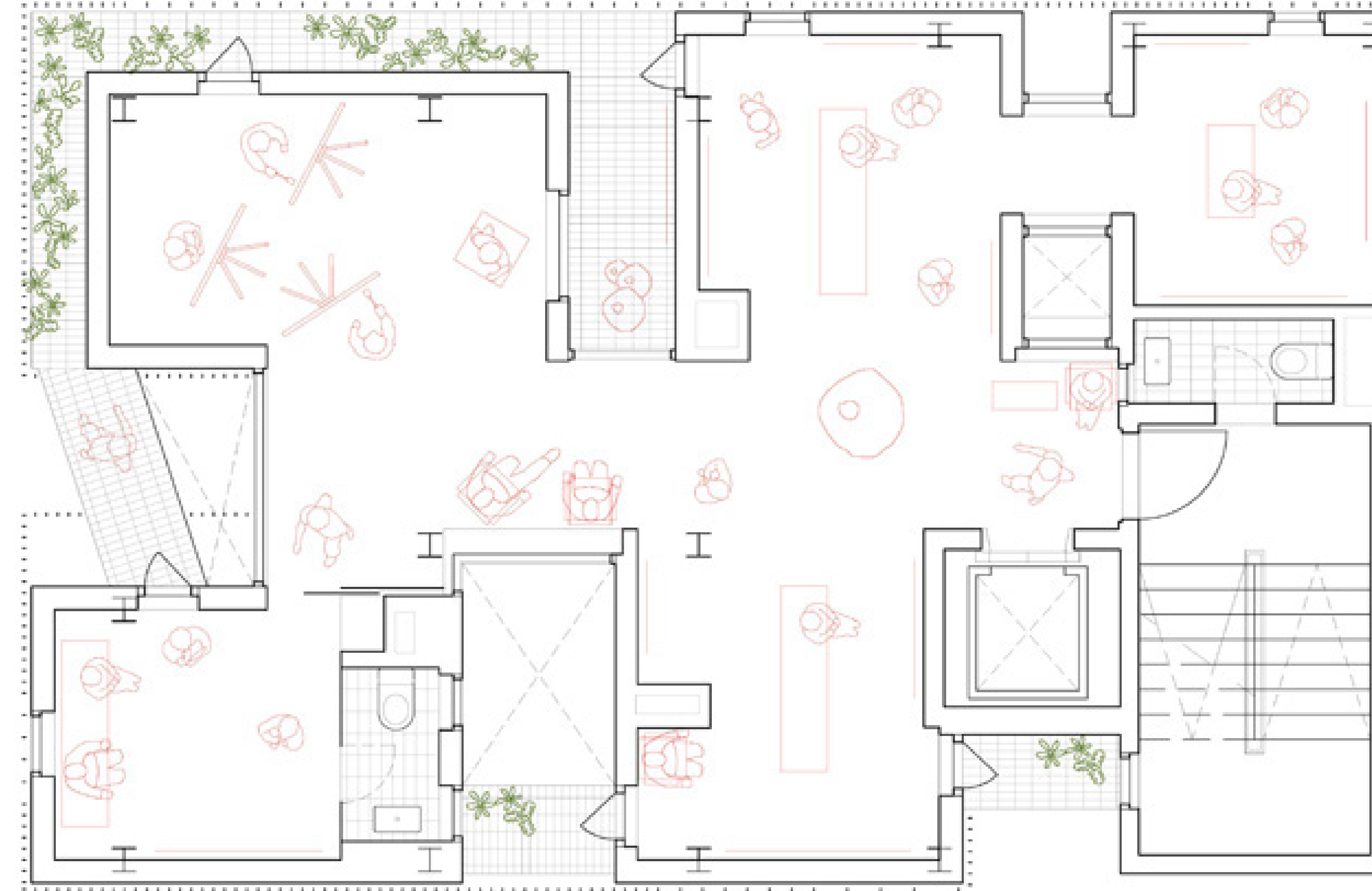
SSD Architecture

22 Units | 120-240 sqft each



## Variation

Since this project is built on site, it is able to achieve a much higher level of variation between units. Unit sizes, shapes, and orientations are all unique and can be chosen to best fit the users needs. Adjacent units can also be opened up to one another to form larger apartments.

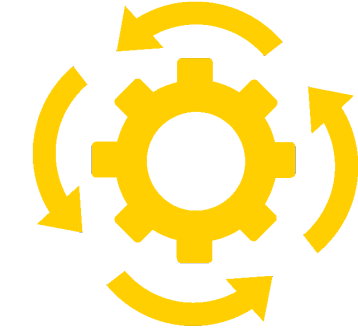
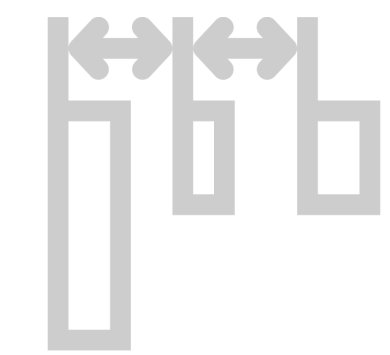




# Songpa Micro Housing

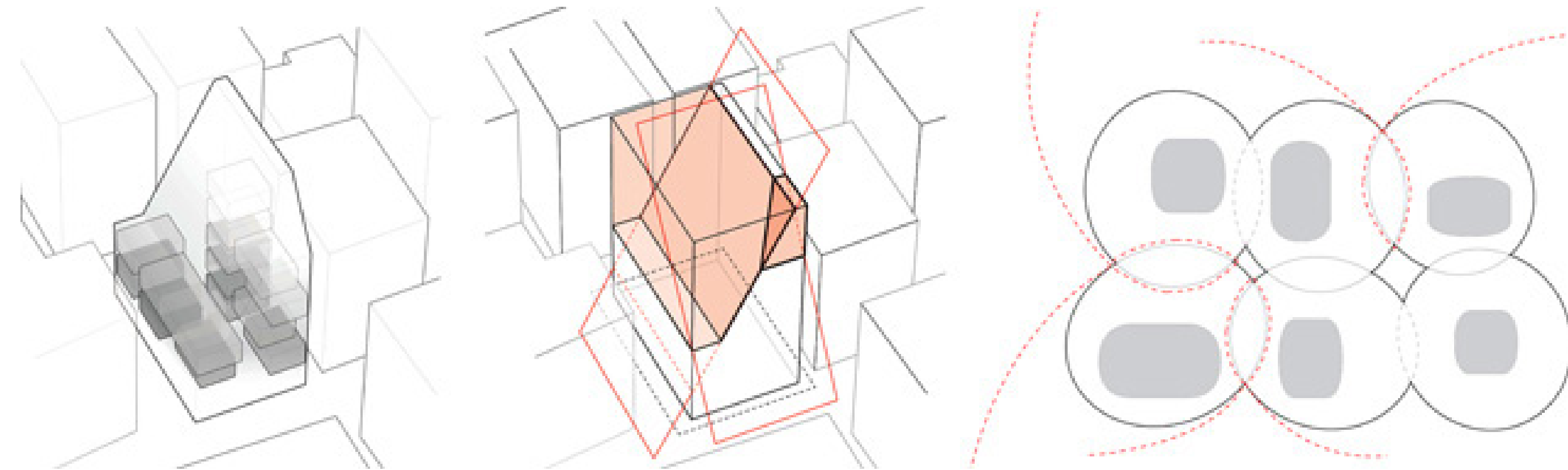
SSD Architecture

22 Units | 120-240 sqft each



## Efficiency

The Songpa Micro Housing Project is also very efficient in its use of space, the building shape is customized to fit the upper most zoning constraints of the site.

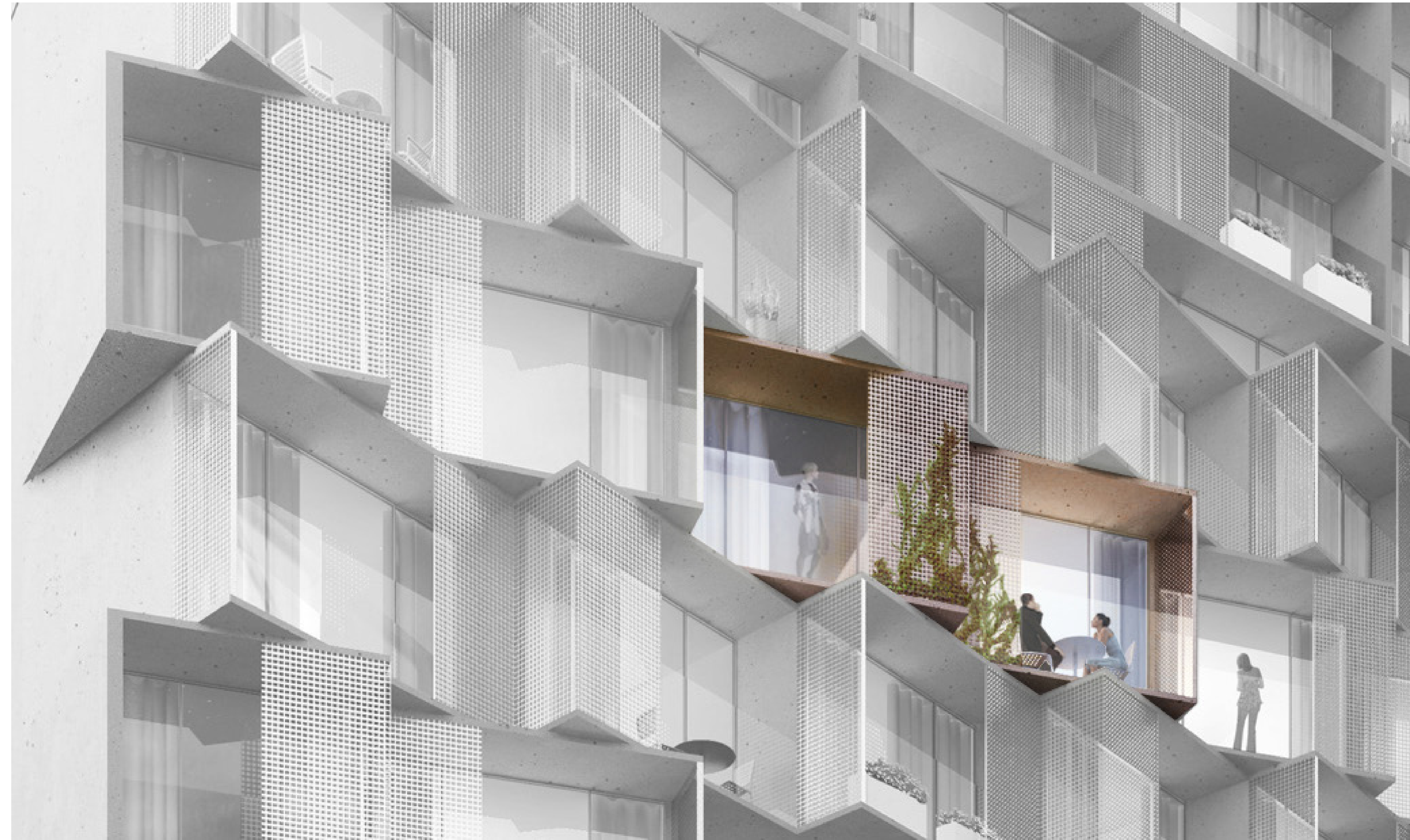
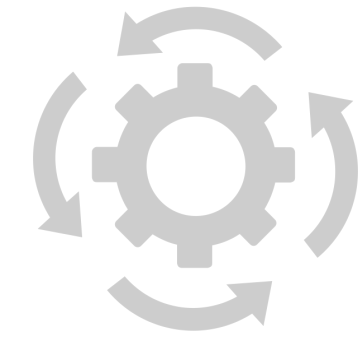




# Tandem Micro Unit

FE Architecture

80 Units | 265 - 300 sqft each

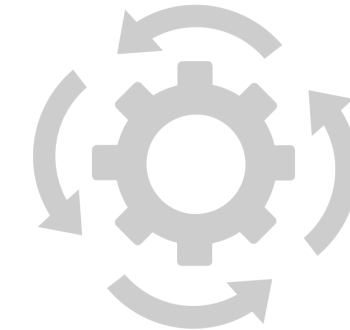
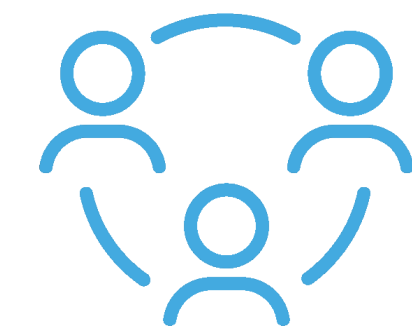




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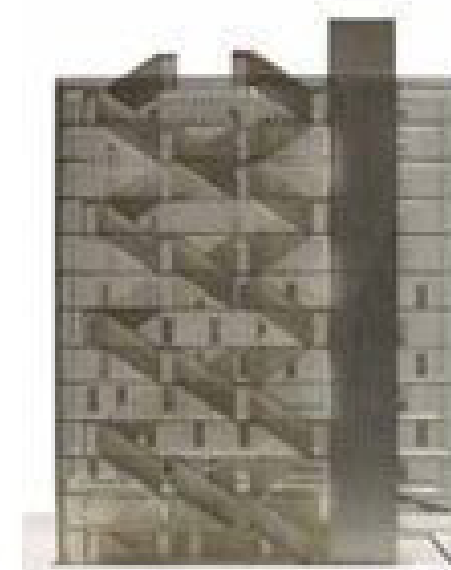


## Community

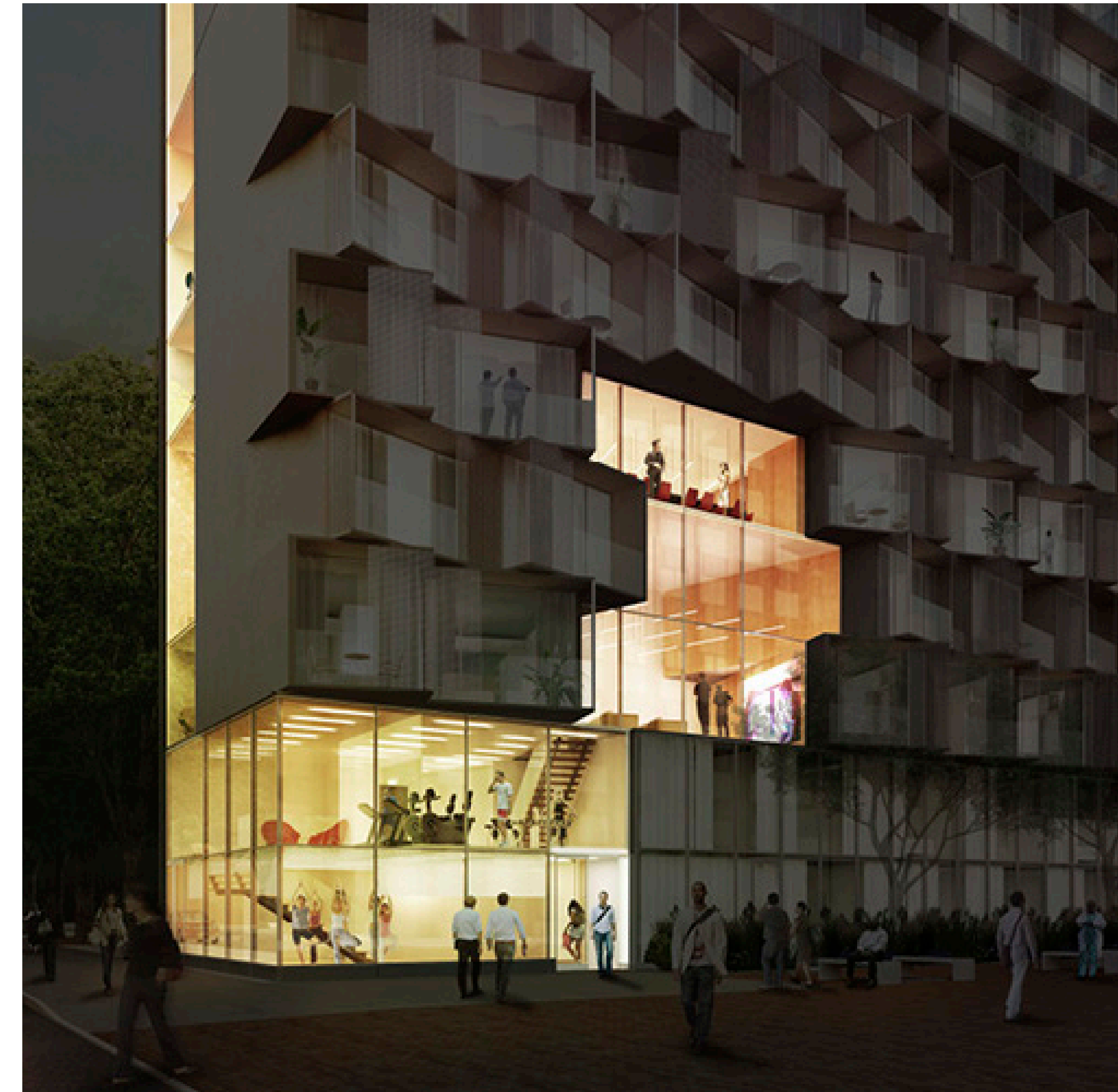
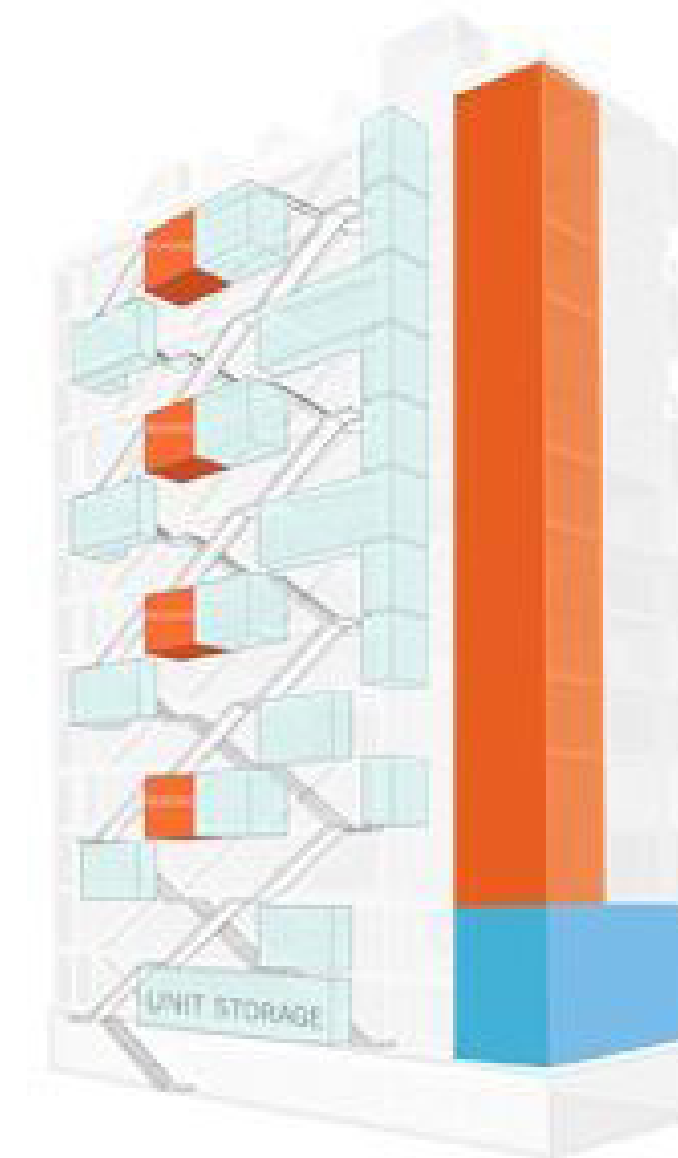
Tandem emphasizes a sense of community by splitting the floors into groups of three. These three floors share amenities as well as common areas for socializing and gathering, and in this way, no one unit is anymore than 2 floors way from a specific common area.



FRONT



BACK

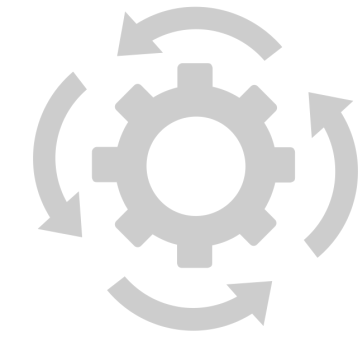




# Tandem Micro Unit

FE Architecture

80 Units | 265 - 300 sqft each



## Affordability

By splitting amenities such as laundry rooms, meeting rooms, and lounges across 3 floors of common areas, that amount of square footage is removed from each individual unit, and effectively splits the cost of rent of that space amongst all the residents of the building, helping to reduce rental prices.

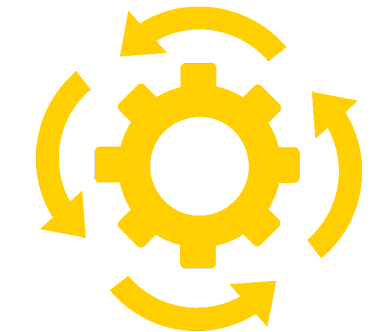




# Tandem Micro Unit

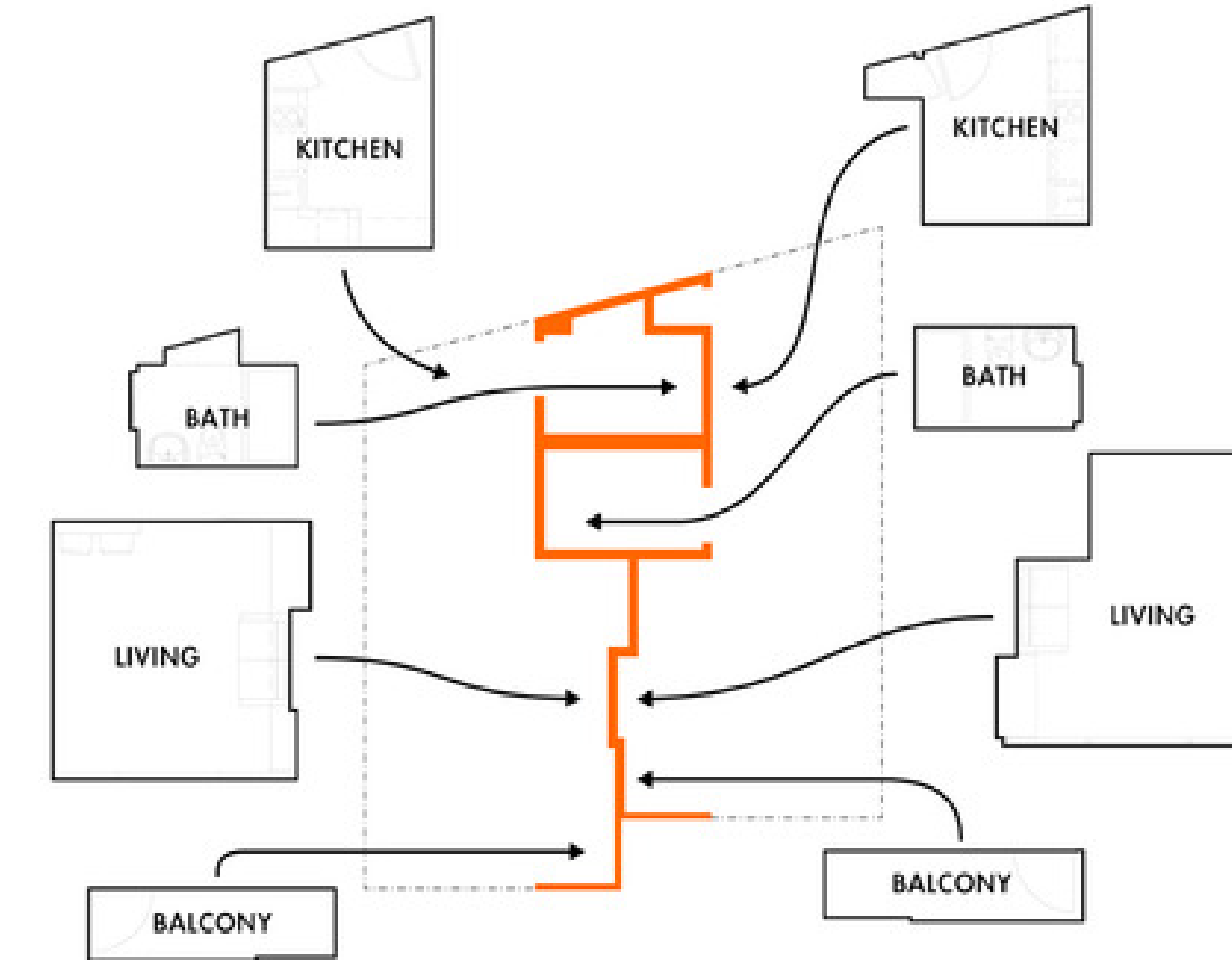
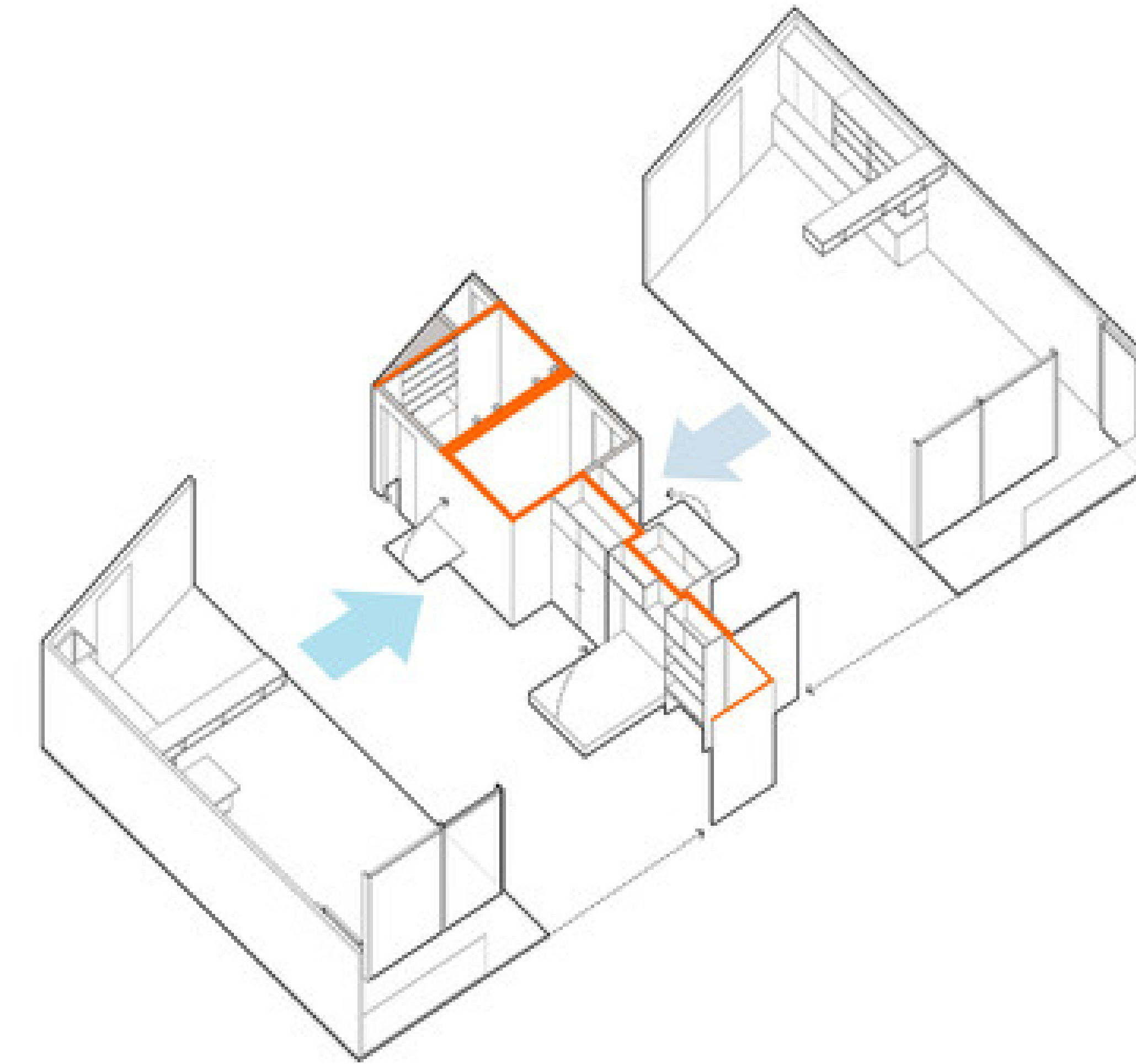
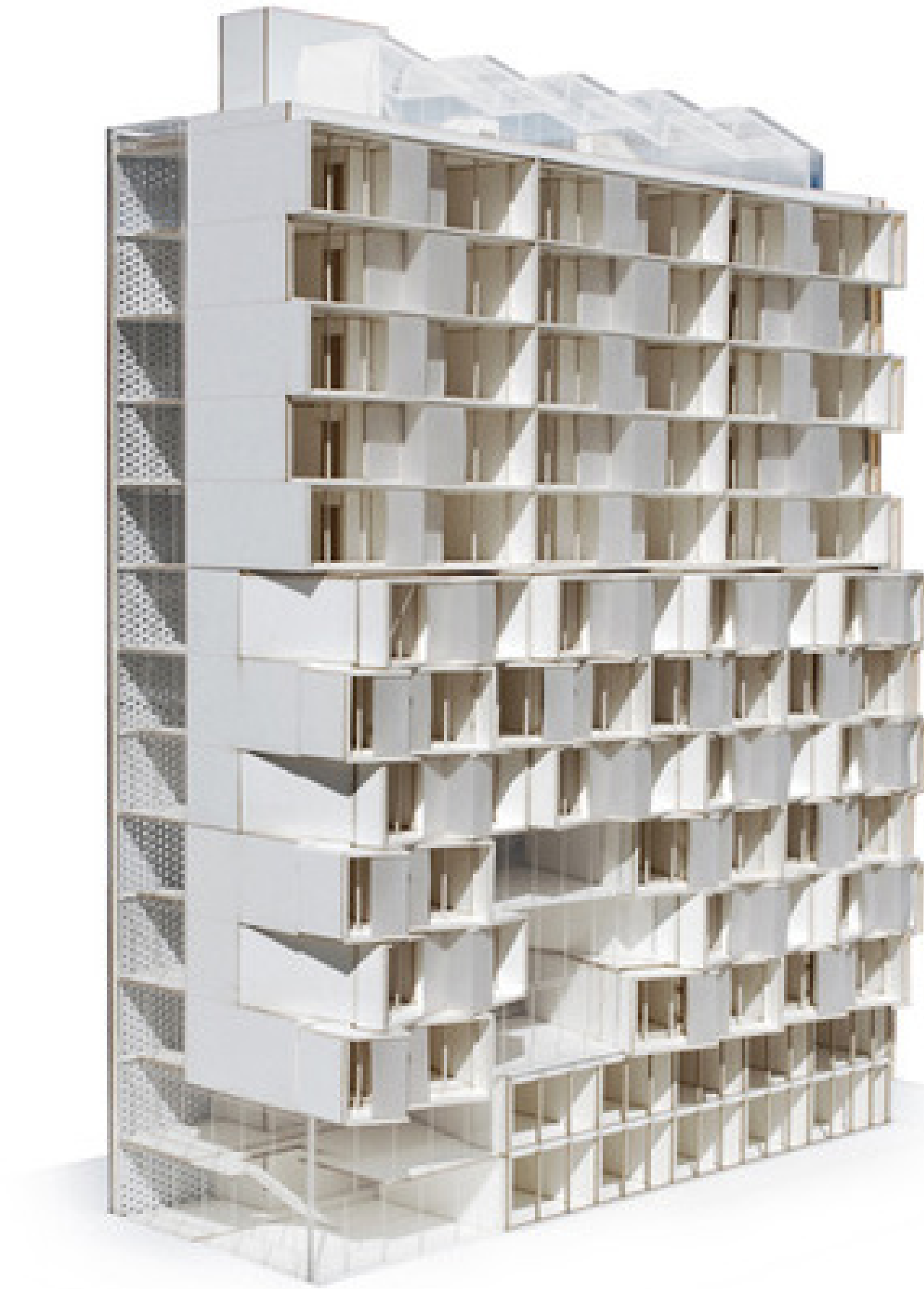
FE Architecture

80 Units | 265 -300 sqft each



## Efficiency

Tandem is very spatially efficient. Not only is space in the unit saved by expanding amenities to common areas, the units also overlap one another on a prefabricated central wall which houses structure, utilities, storage, and operable furniture.





# (W)ego Hotel

MVRDV

9 Rooms





# (W)ego Hotel

MVRDV

9 Rooms



## Adaptability

Unit geometries are able to be physically reoriented to fit changing internal user needs.

The collection of units can also be reconfigured to fit different site constraints.

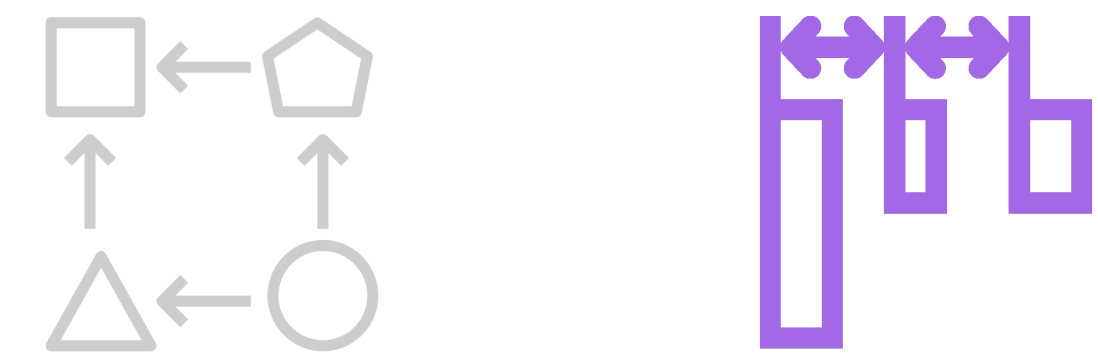




# (W)ego Hotel

MVRDV

9 Rooms



## Variation

The way units interlock one another allows each unit to be completely different from each other, both spatially and visually. This allows for specialized, individualized and personally recognizable units. The unique colors of each unit also add to the sense of ownership.

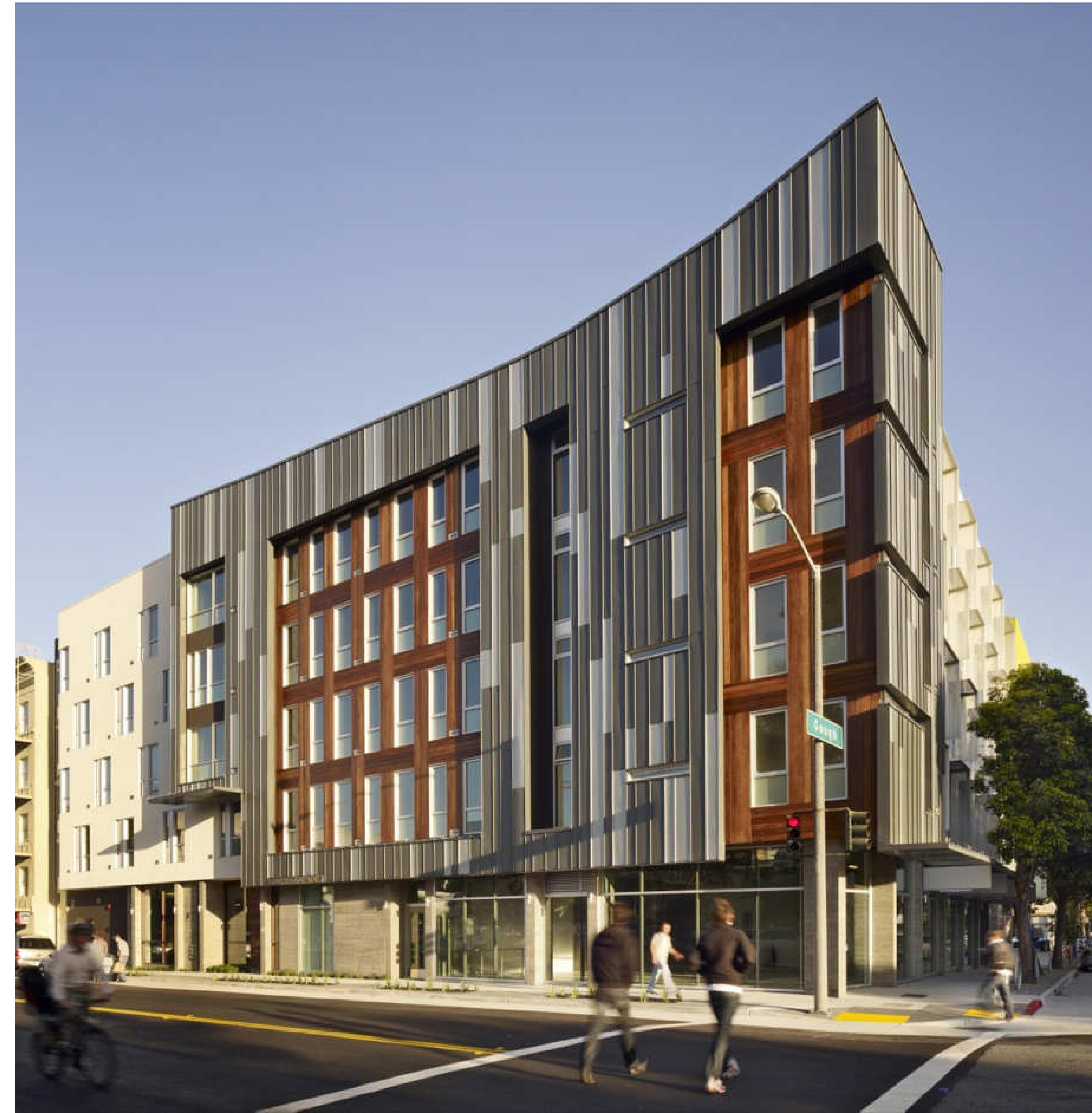
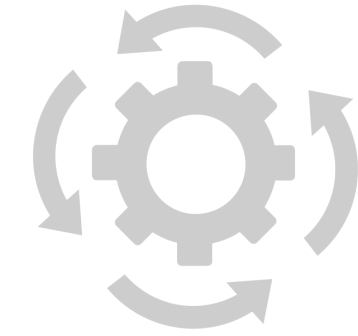




# Richardson Apartments

David Baker Architects

120 Units | 330 average sqft each

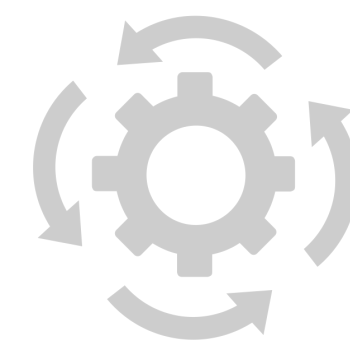




# Richardson Apartments

David Baker Architects

120 Units | 330 average sqft each



## Community

The Richardson Apartments fosters a strong sense of community through a variety of amenities. A landscaped south-facing central courtyard, along with an urban agriculture green roof offer outdoor communal amenities. An open-air staircase facing the courtyard discourages elevator use while encouraging resident interactions with one another.

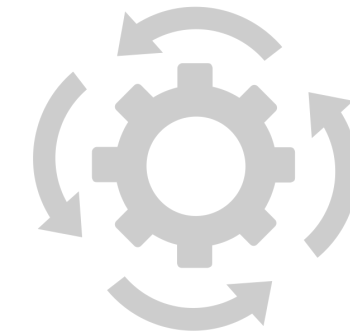




# Richardson Apartments

David Baker Architects

120 Units | 330 average sqft each



## Community

The ground floor is a host to multiple commercial businesses with storefront access to the surrounding community. Some of these businesses also offer job training and employment programs for the residents. The ground floor also houses many other supportive services such as an on-site medical clinic, a counseling center, a community room, and various resident lounges.

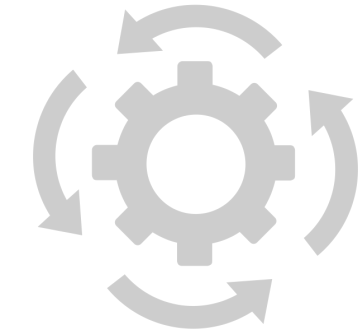




# Richardson Apartments

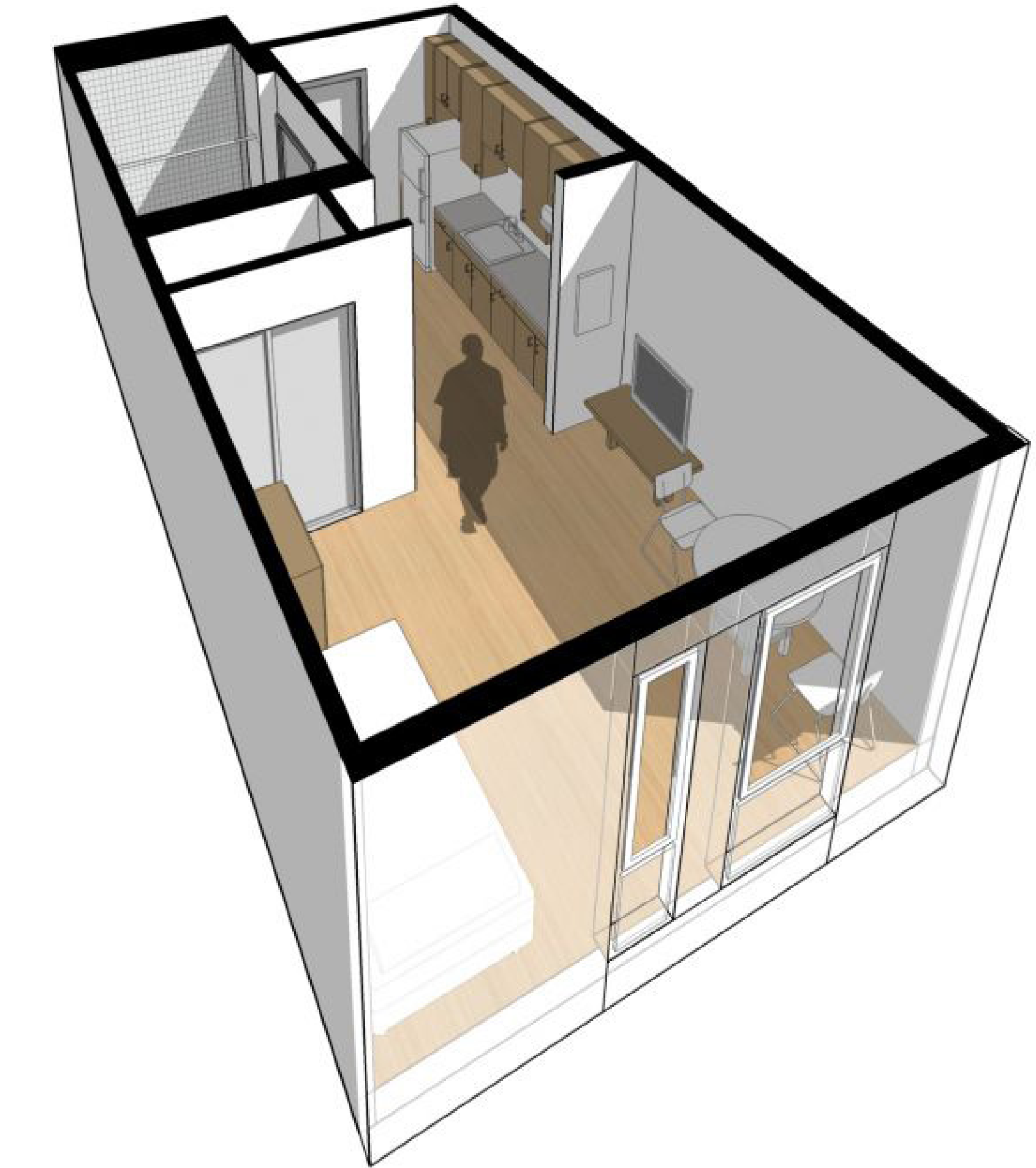
David Baker Architects

120 Units | 330 average sqft each



## Affordability

Richardson Apartments was designed as affordable, supportive, low-income housing. Also acts as transitional housing for the formerly homeless.

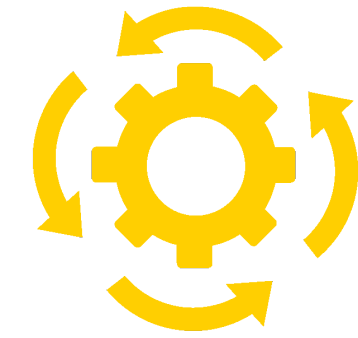




# Richardson Apartments

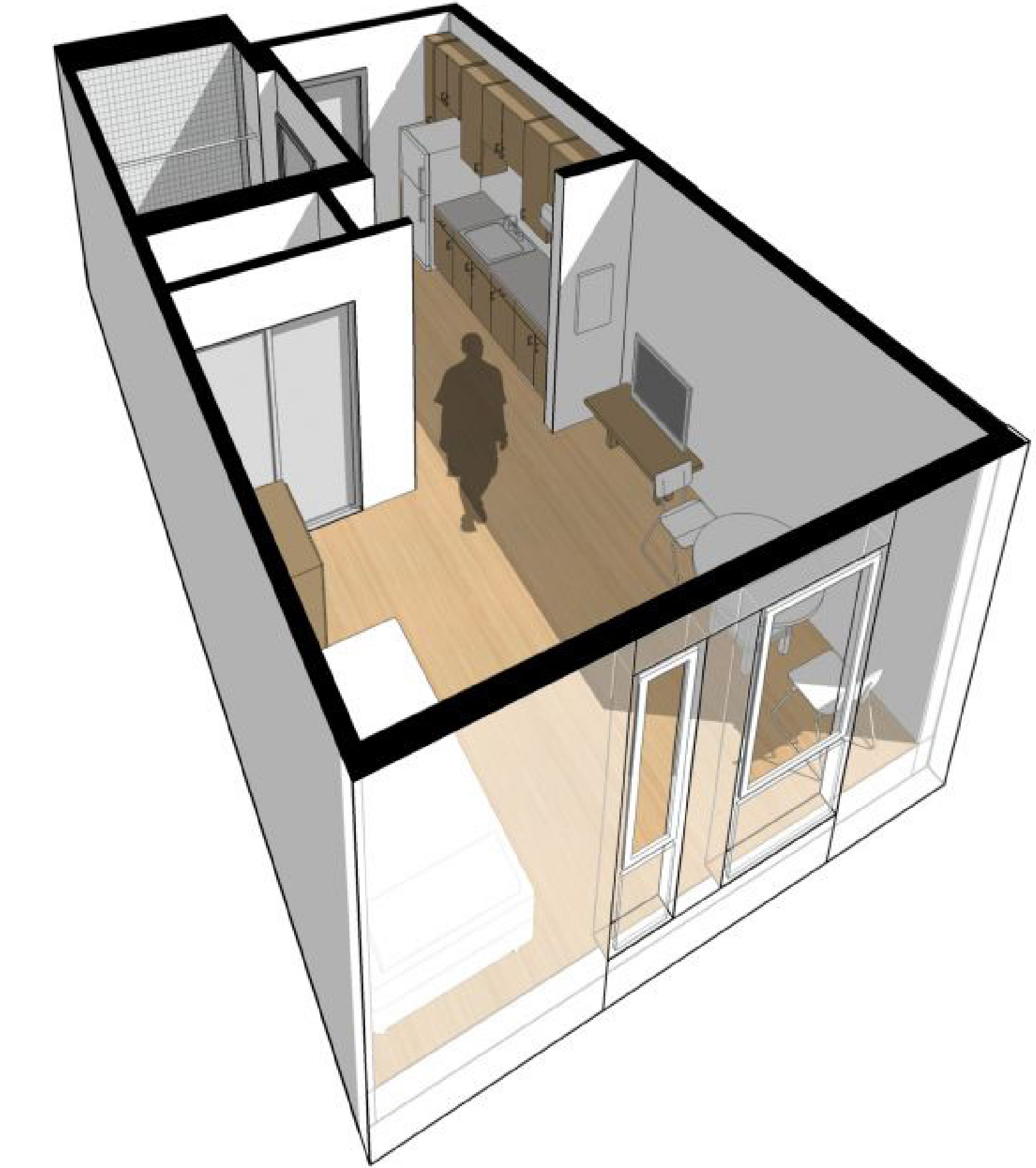
David Baker Architects

120 Units | 330 average sqft each



## Efficiency

The building is also made to be very energy efficient and green. These strategies include a green-roof, PV Solar panels, and various methods of stormwater retention within the open courtyard space to minimize runoff.



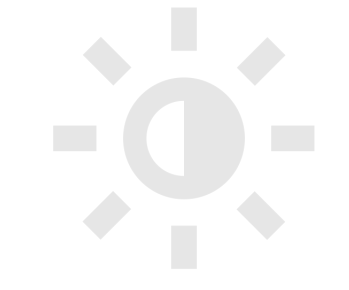


# Tool-Kit

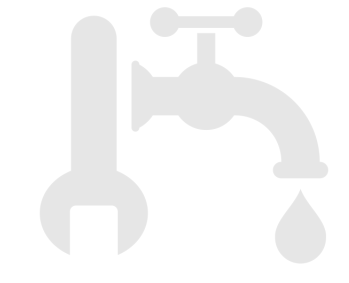




## Outdoor Space



Natural Light



Utilities



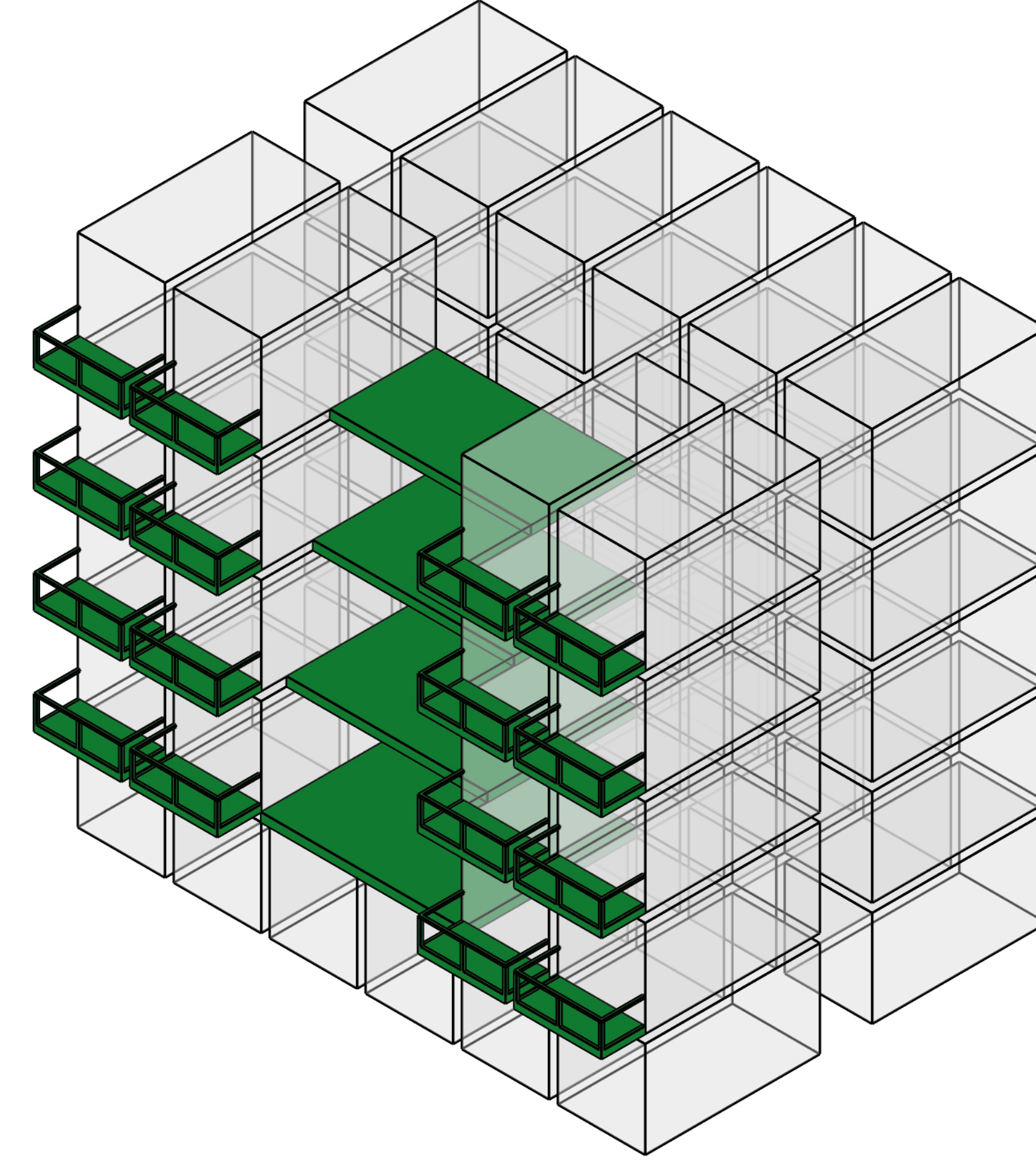
Community Space



Noise Reduction



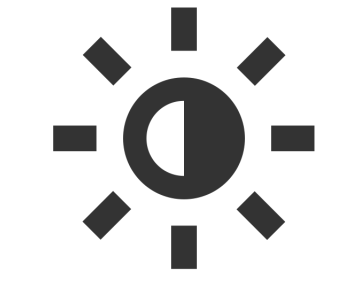
Individuality







Outdoor Space



**Natural Light**



Utilities



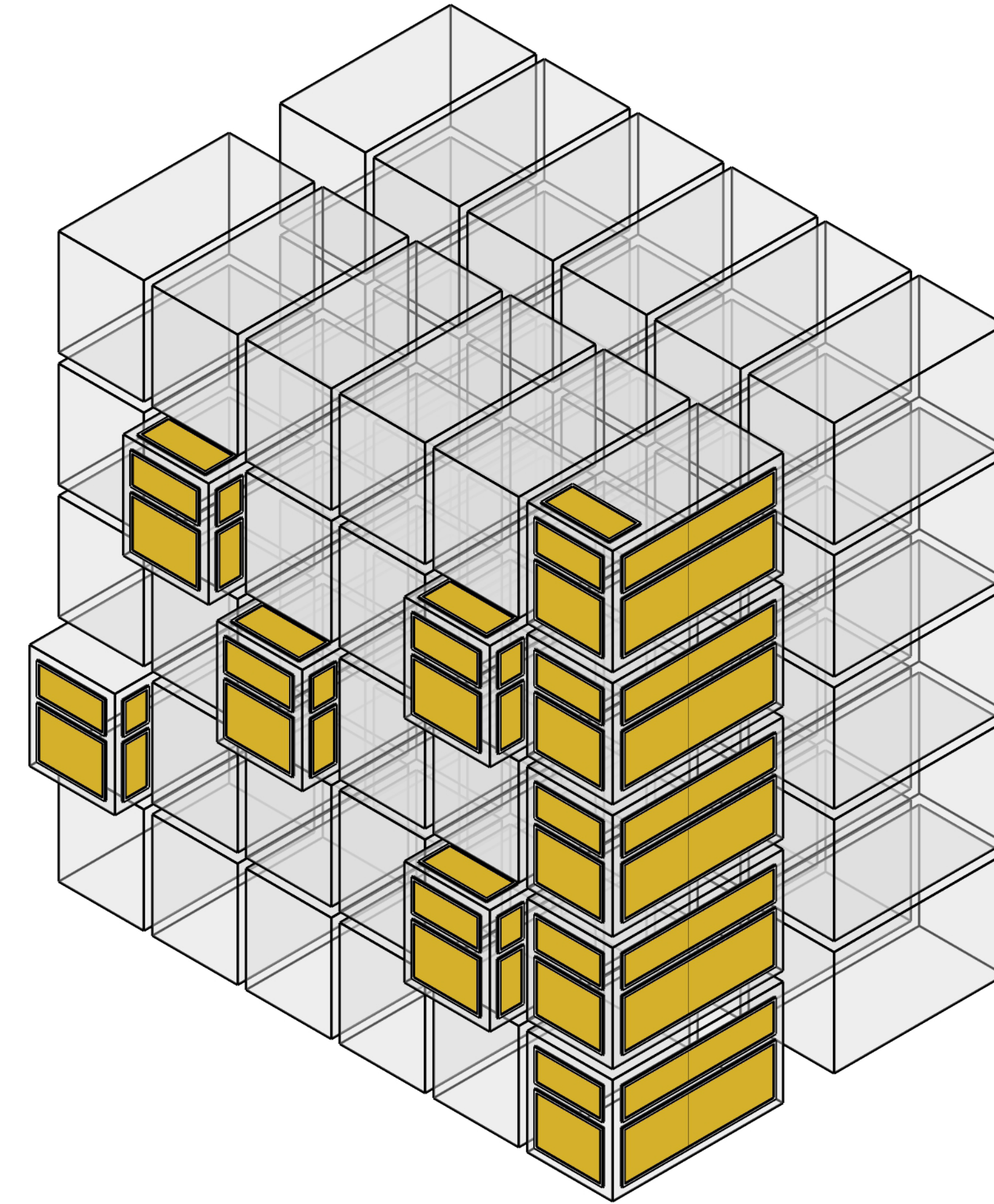
Community Space



Noise Reduction



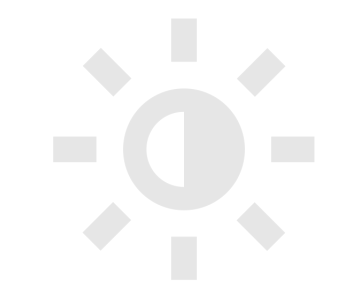
Individuality







Outdoor Space



Natural Light



**Utilities**



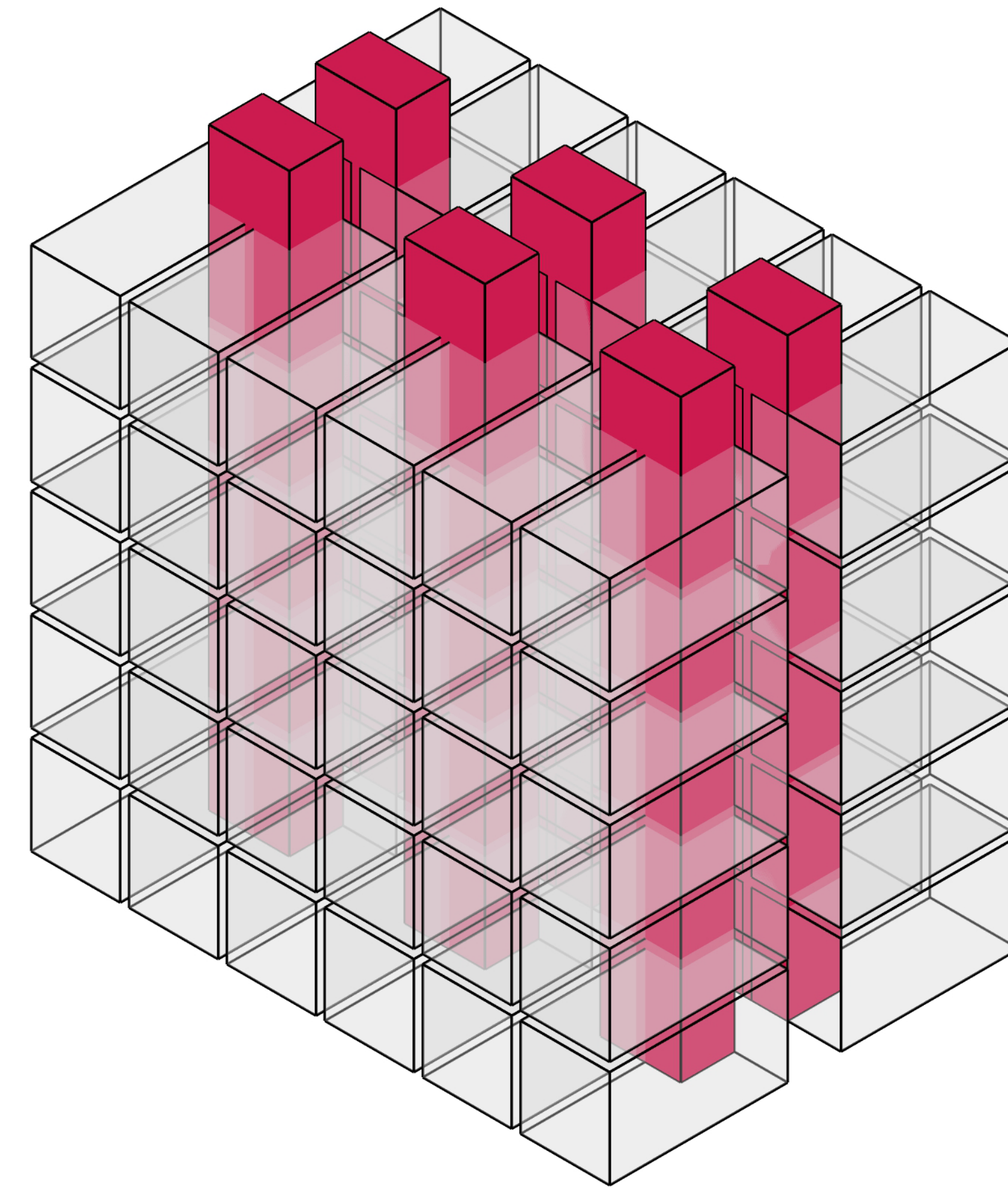
Community Space



Noise Reduction



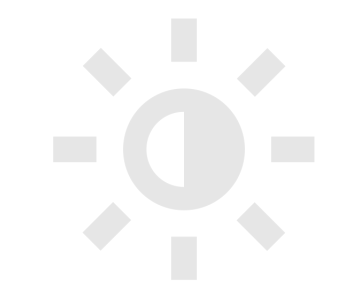
Individuality



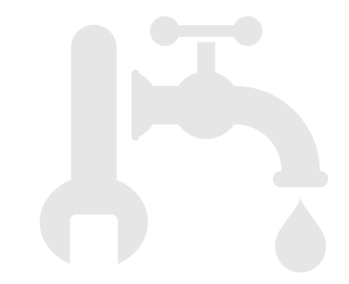




Outdoor Space



Natural Light



Utilities



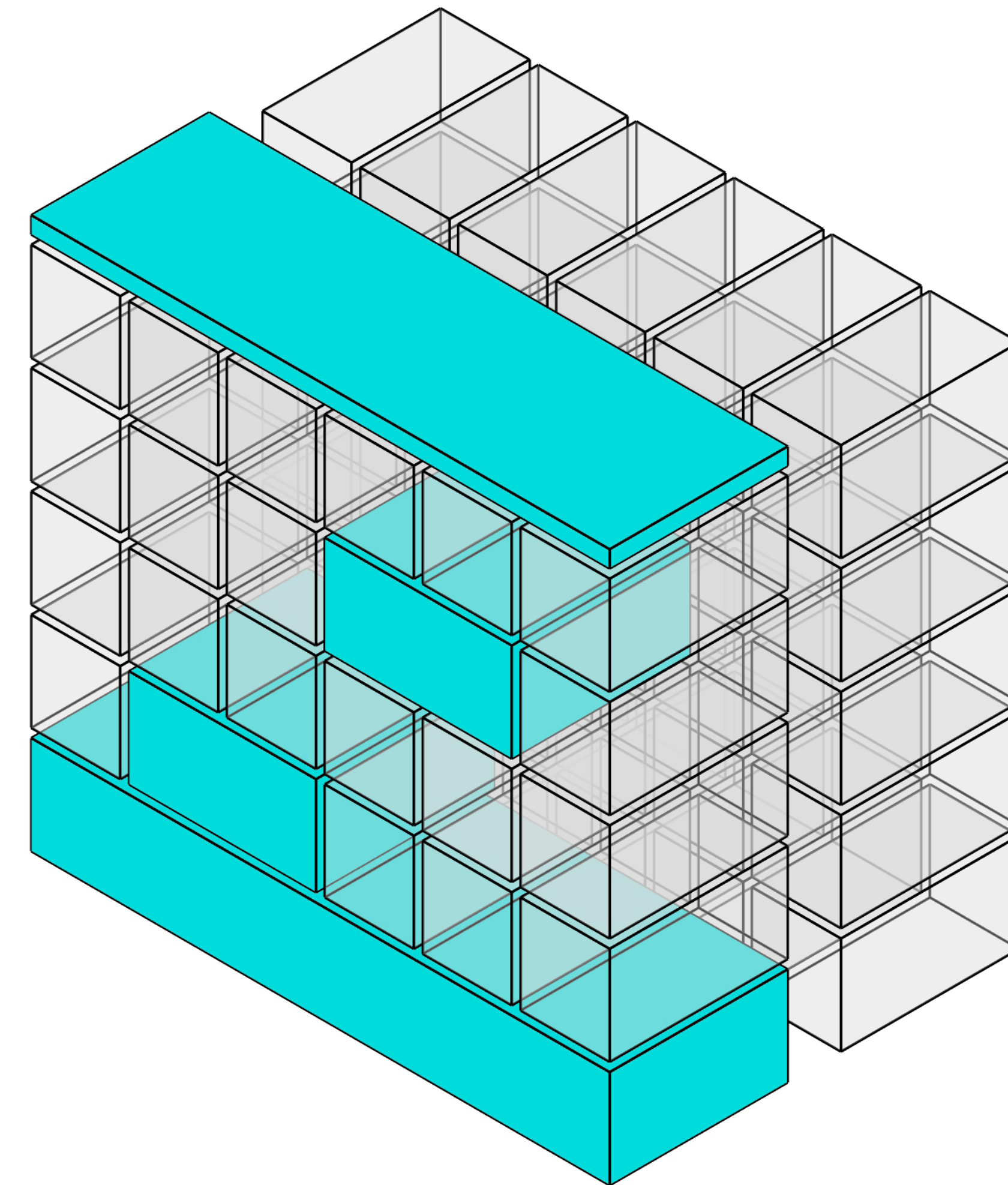
**Community Space**



Noise Reduction



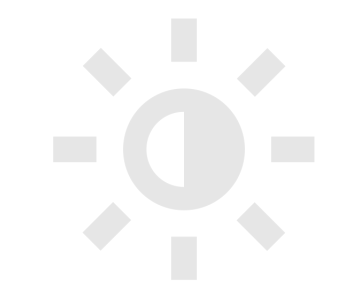
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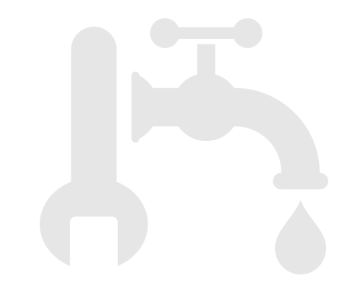




Outdoor Space



Natural Light



Utilities



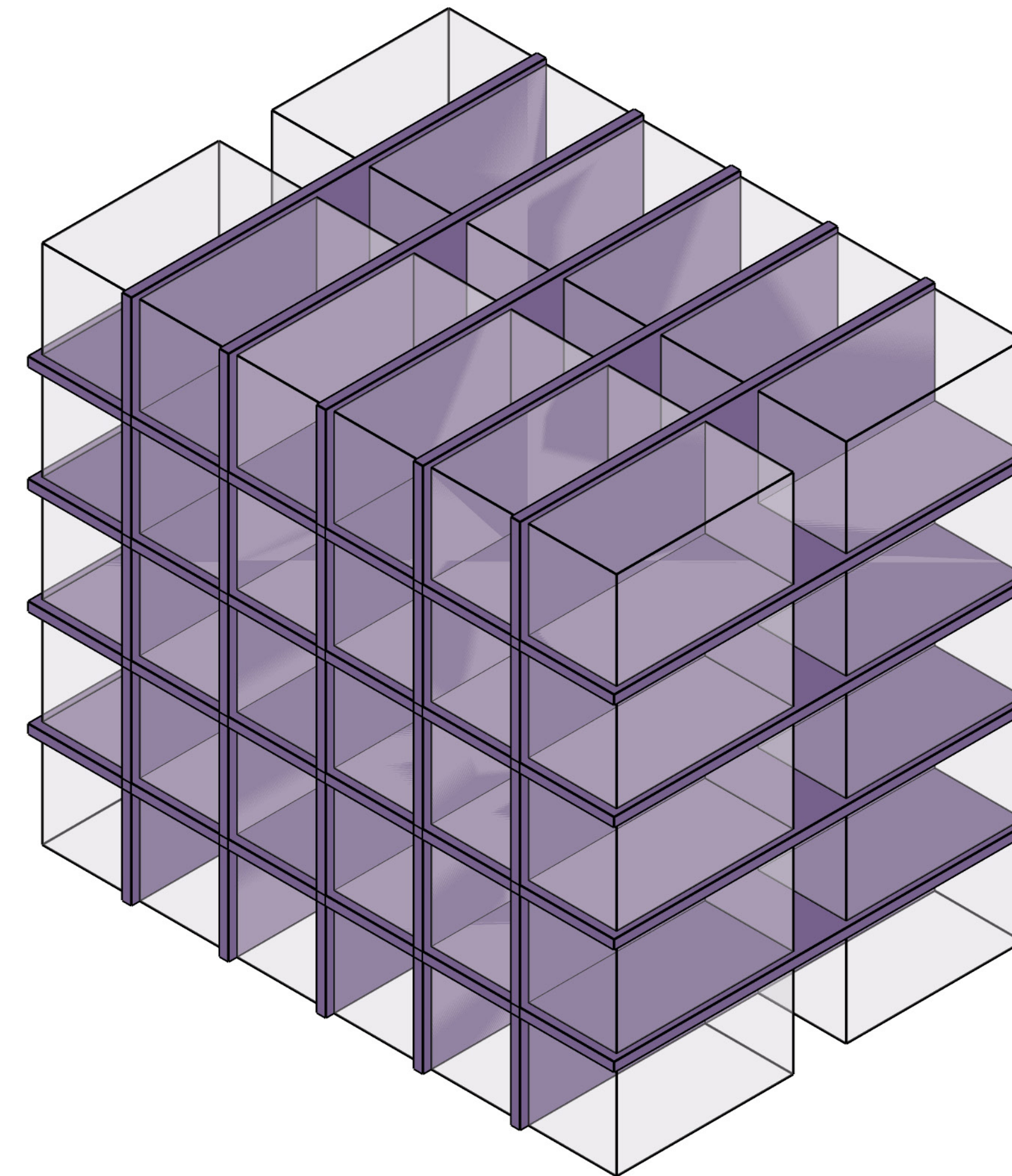
Community Space



**Noise Reduction**



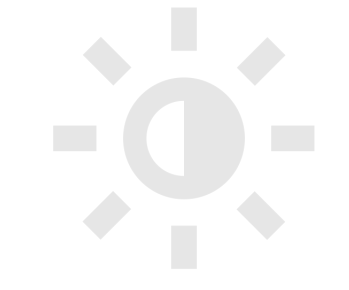
Individuality







Outdoor Space



Natural Light



Utilities



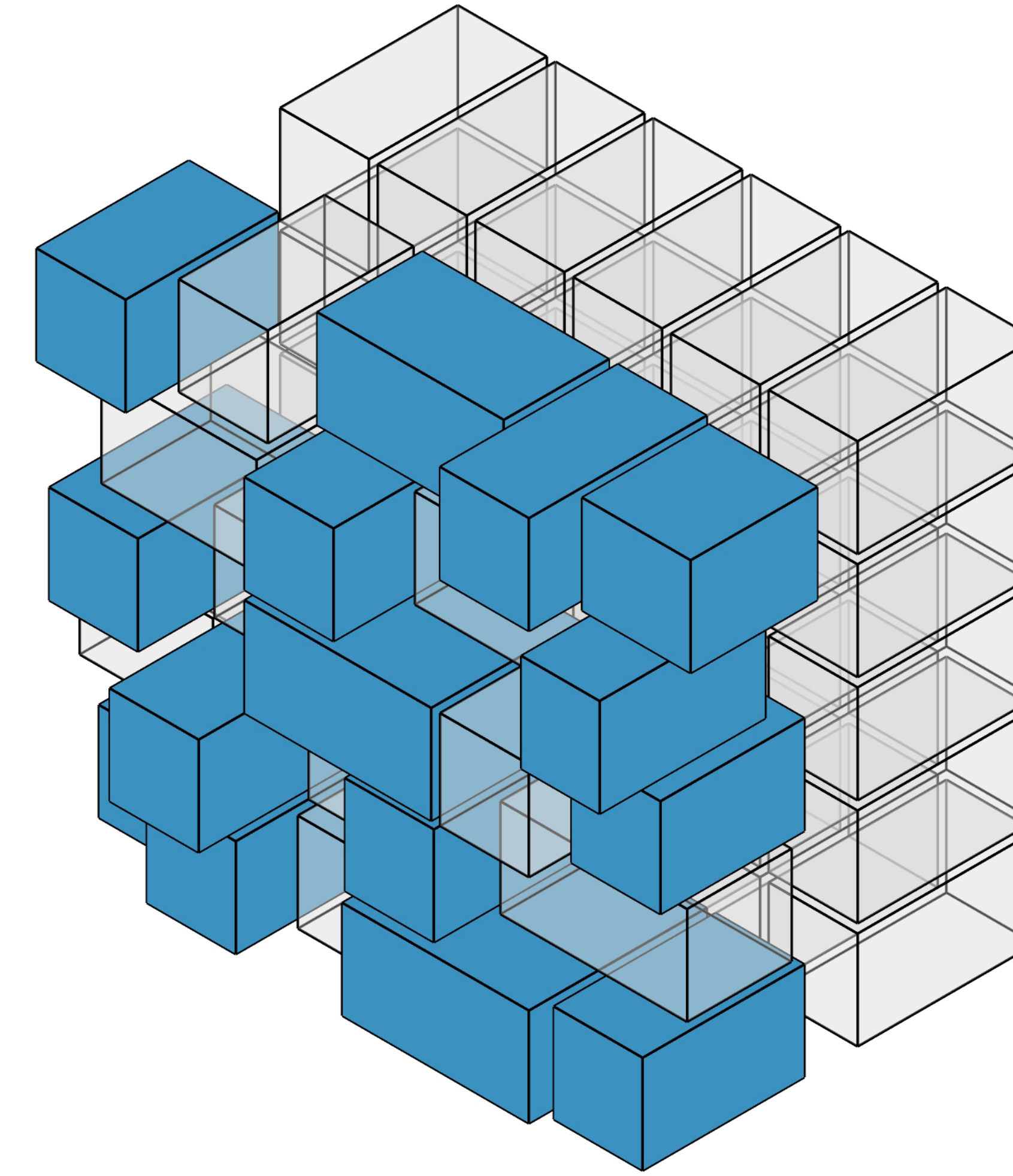
Community Space



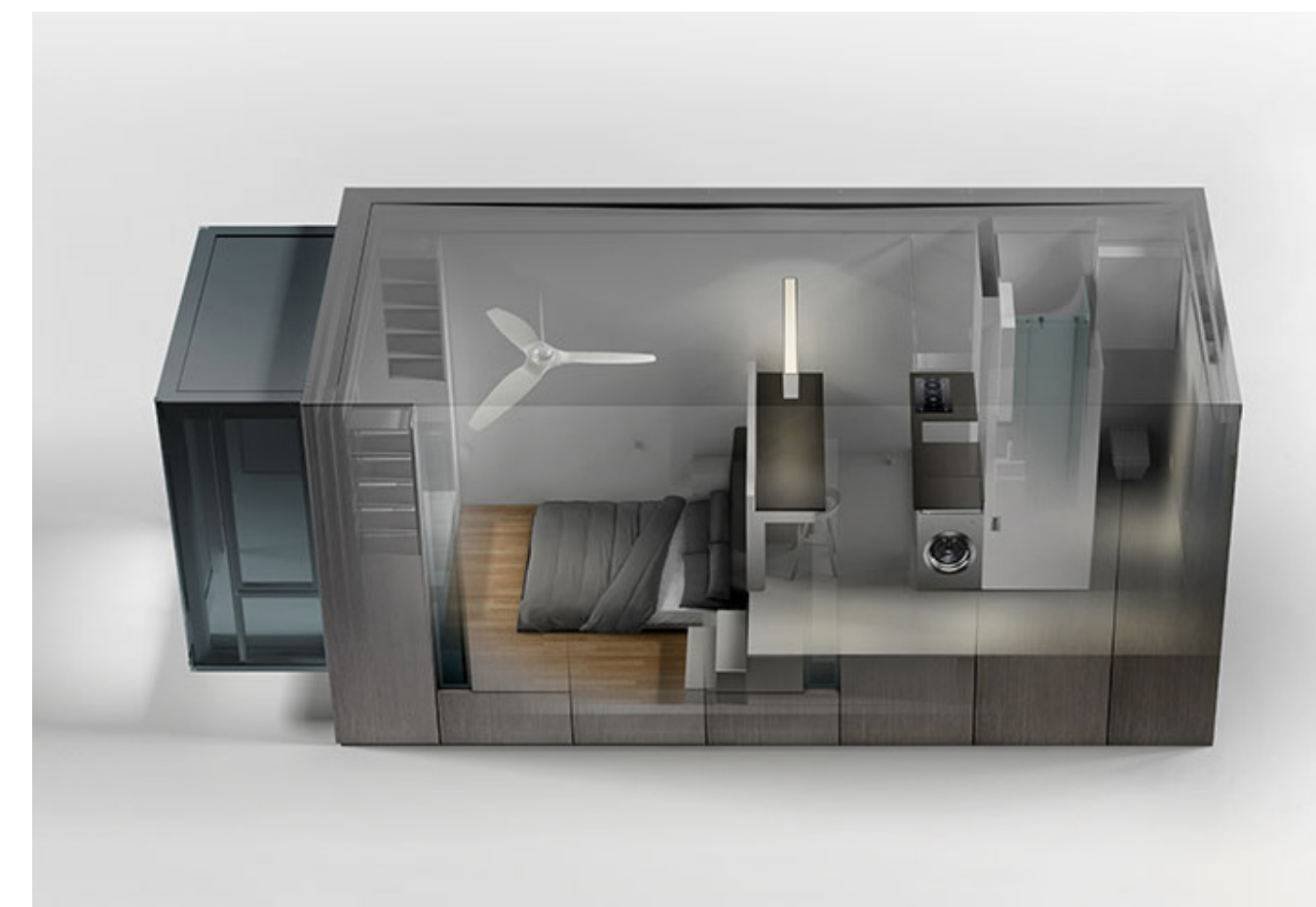
Noise Reduction



**Individuality**







# Questions?

