

An aerial photograph of the New York City skyline, featuring the Freedom Tower and other skyscrapers. A prominent building in the center-left is highlighted with a vibrant, multi-colored pixelated pattern. The sky is overcast with grey clouds.

Czech Republic

Czech Technical University, Prague

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Edgar street vertical

frequently asked questions on vertical cities



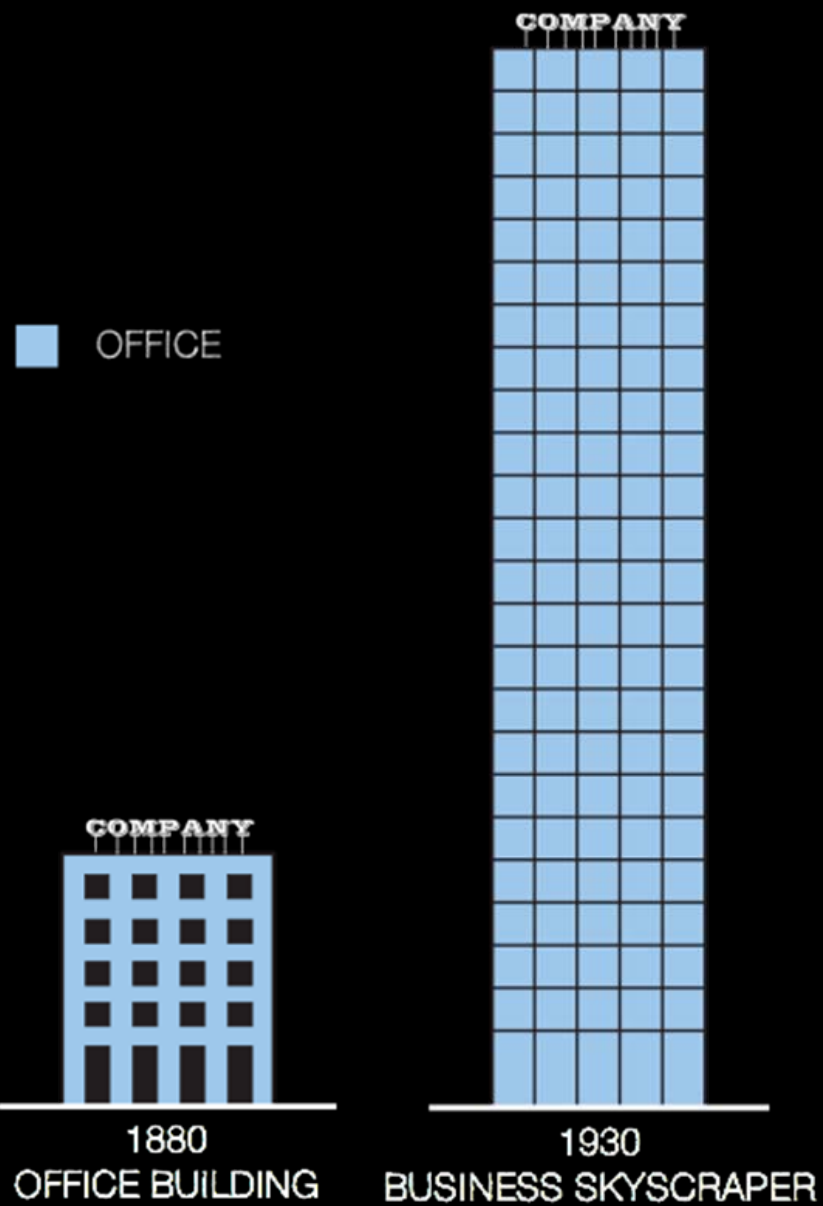
How to design a skyscraper
for the 21st century?

SKYSCRAPER DEVELOPMENT

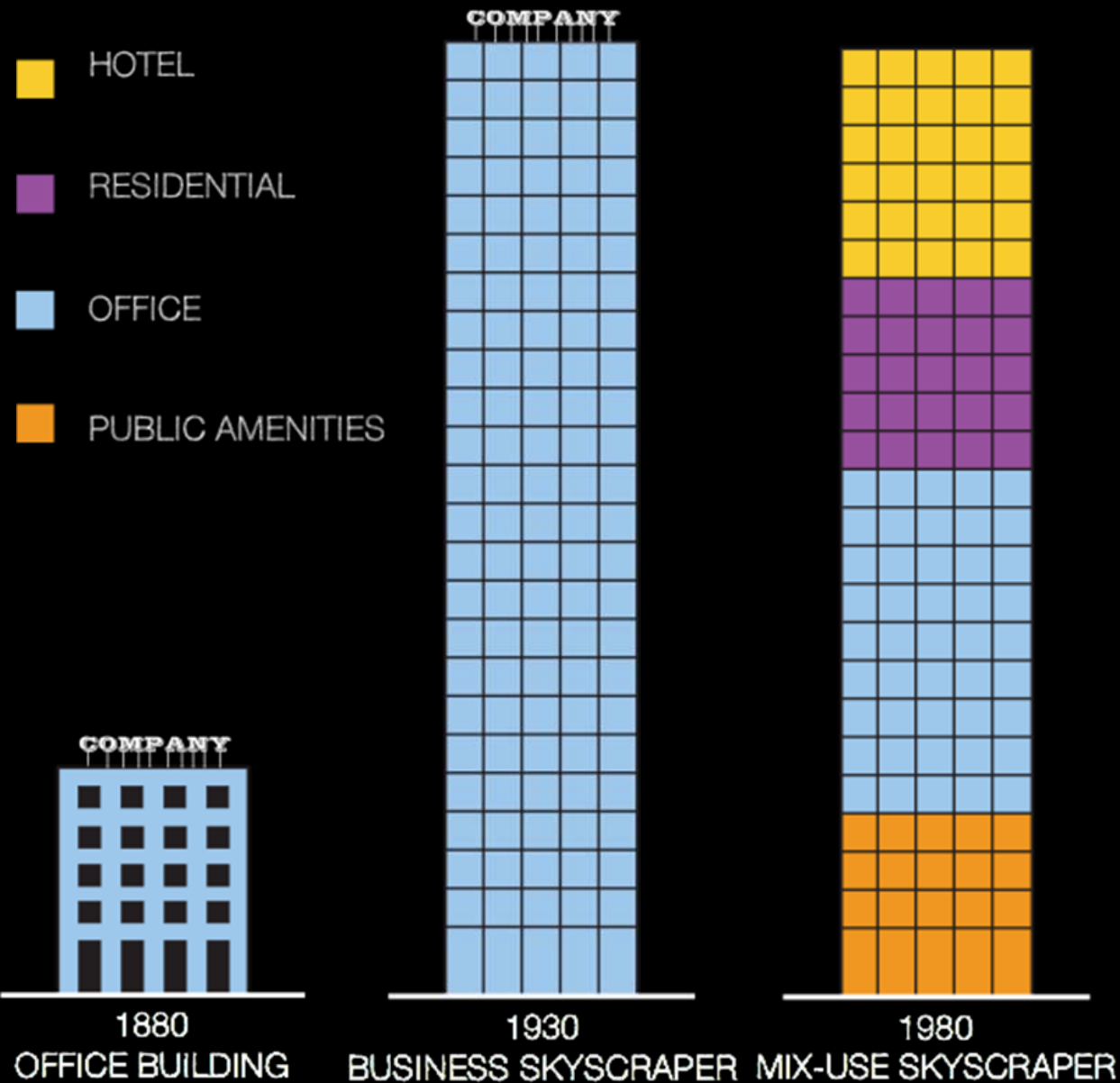
■ OFFICE



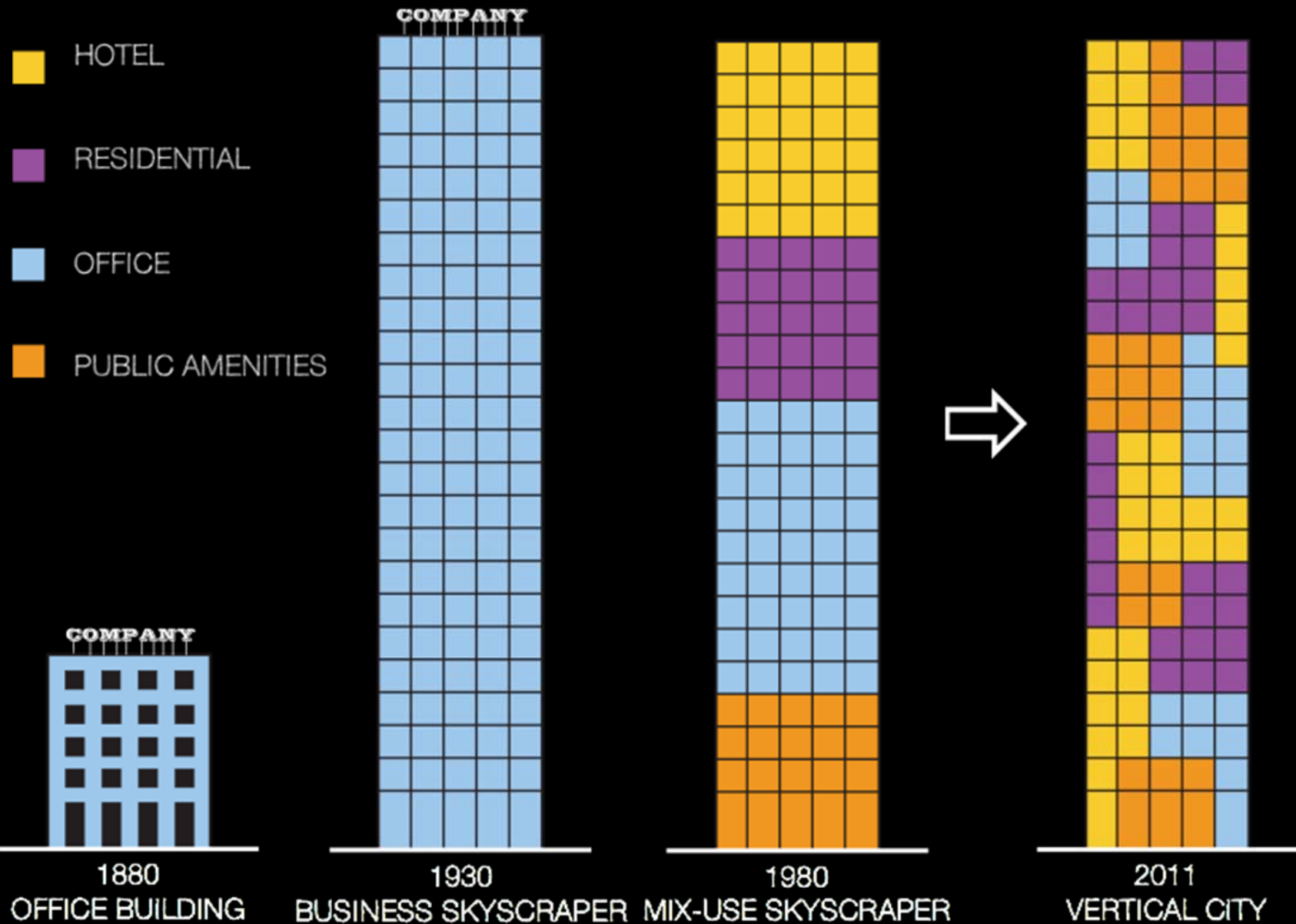
SKYSCRAPER DEVELOPMENT



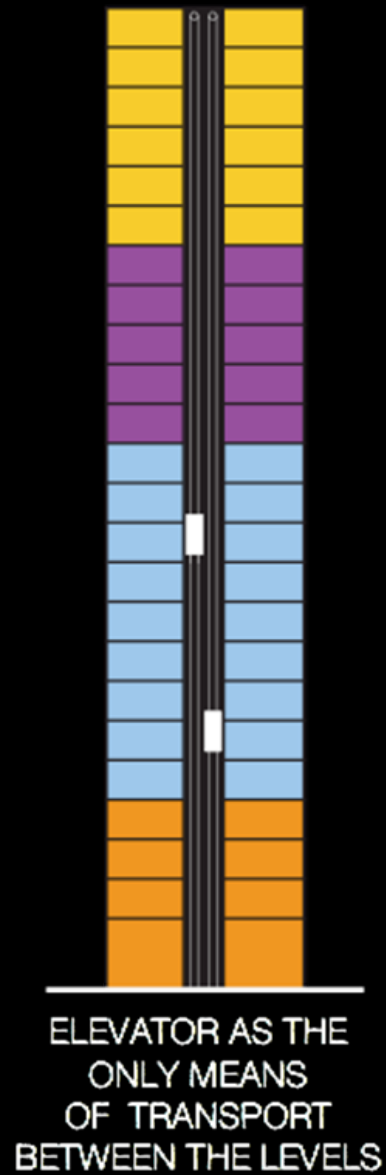
SKYSCRAPER DEVELOPMENT



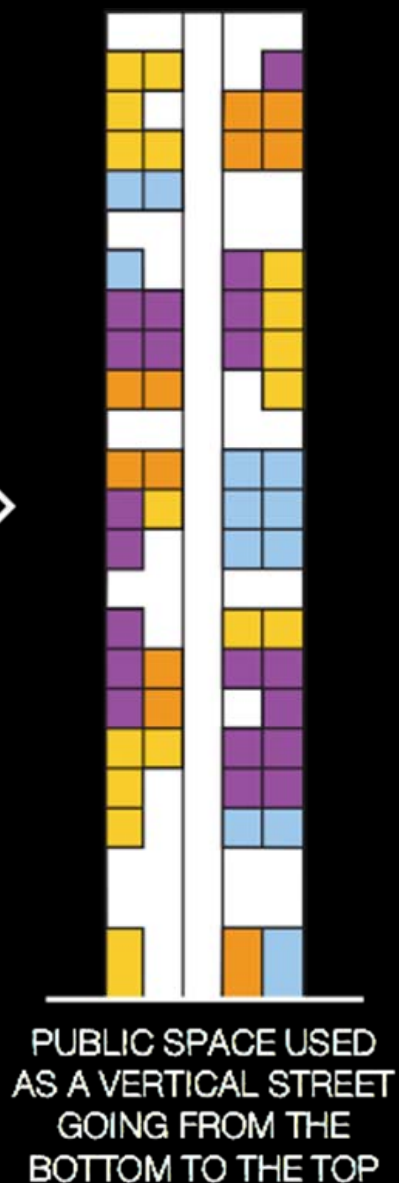
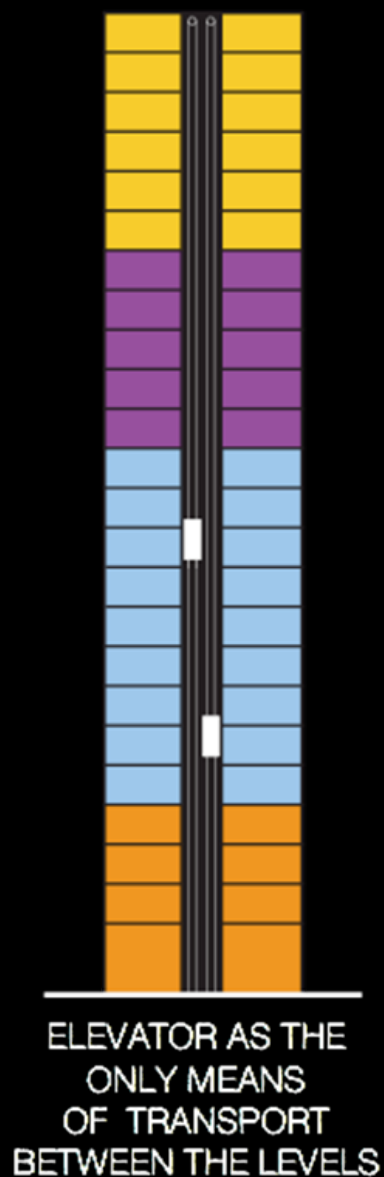
SKYSCRAPER DEVELOPMENT



VERTICAL COMMUNICATION

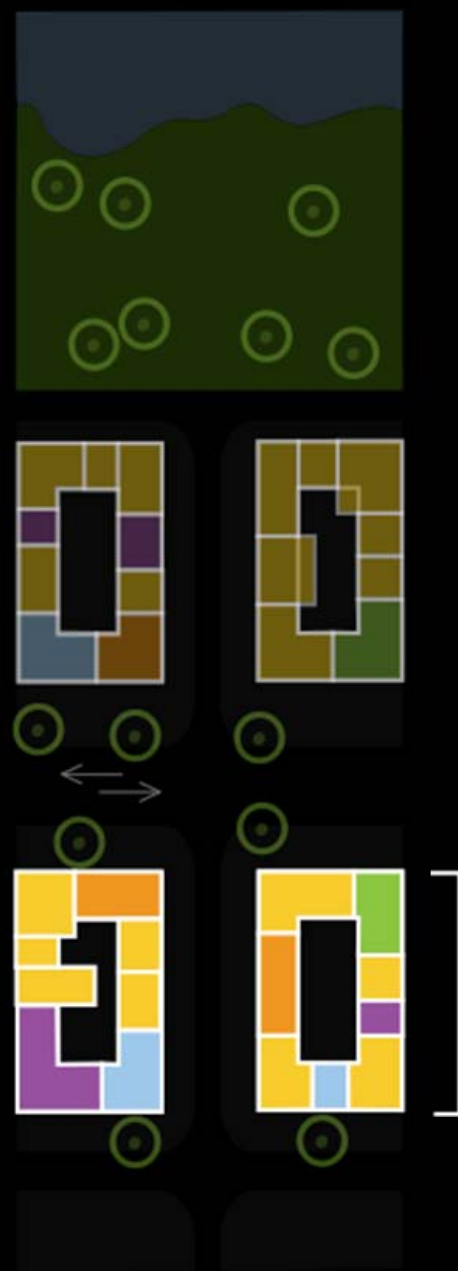


VERTICAL COMMUNICATION

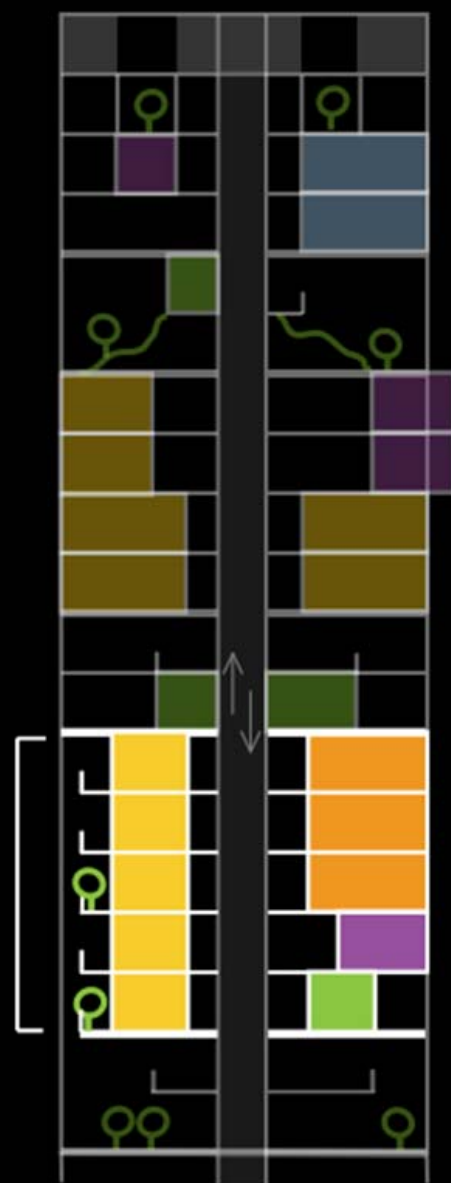


From which elements
is it assembled?

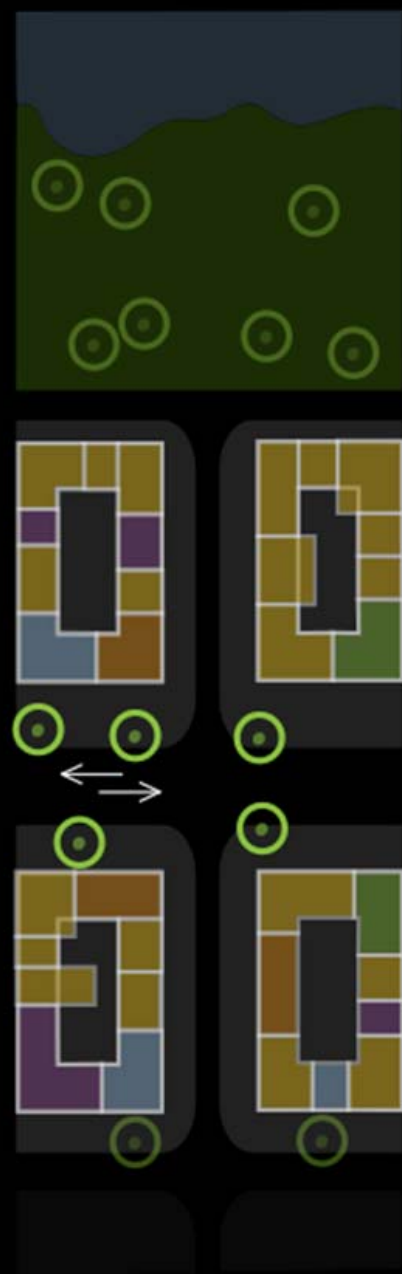
USUAL CITY



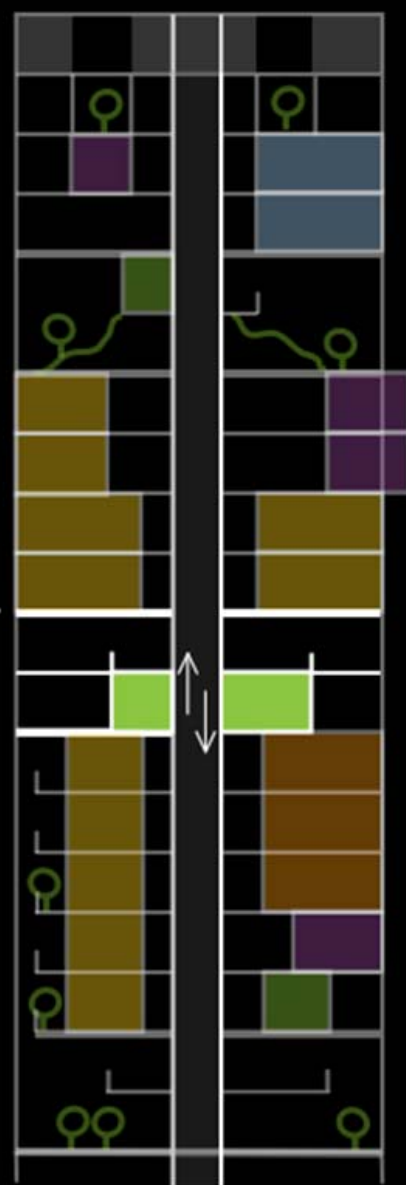
VERTICAL CITY



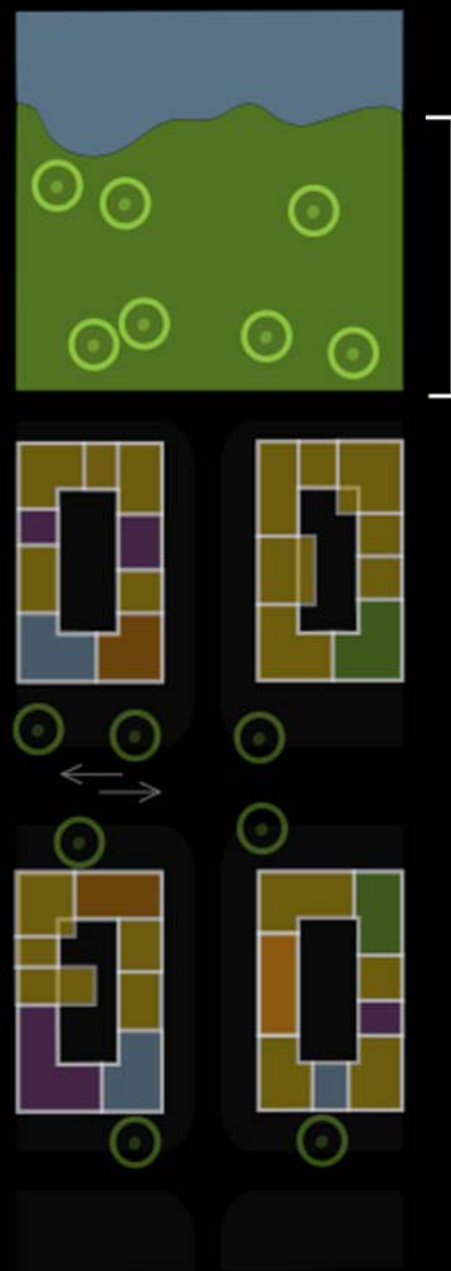
USUAL CITY



VERTICAL CITY

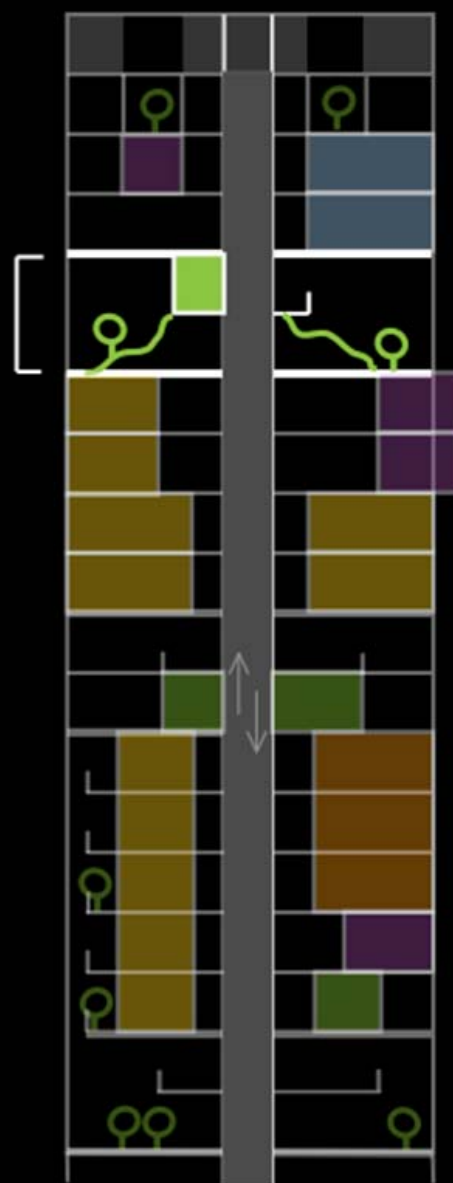


USUAL CITY

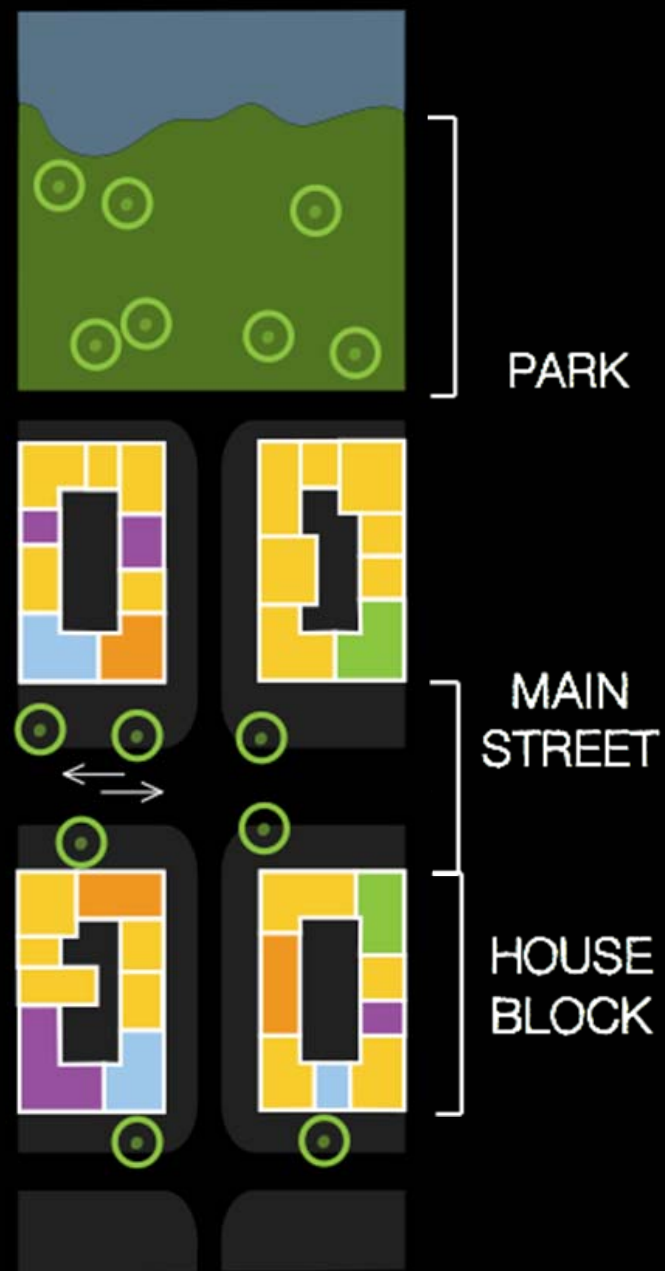


PARK

VERTICAL CITY



USUAL CITY

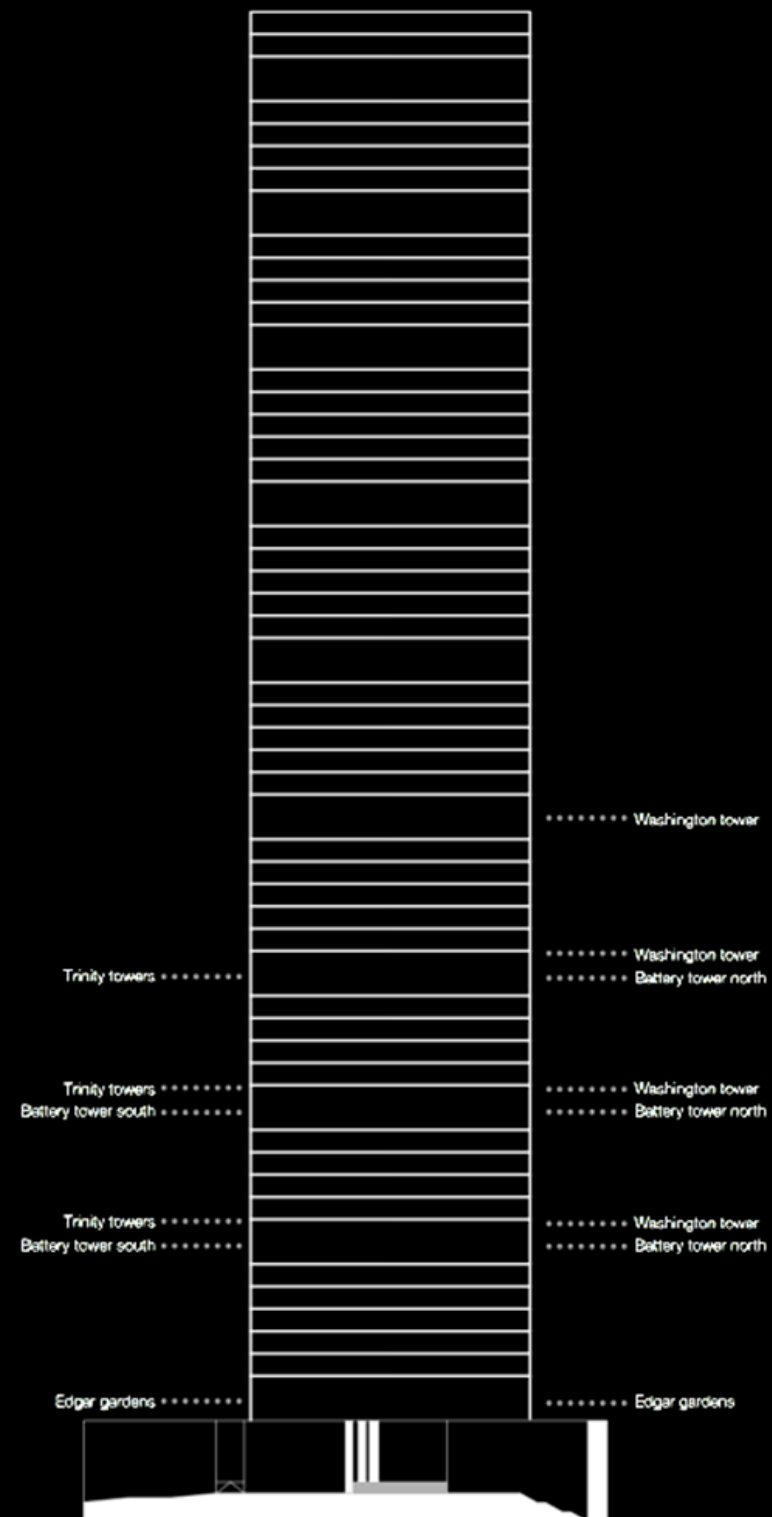


VERTICAL CITY





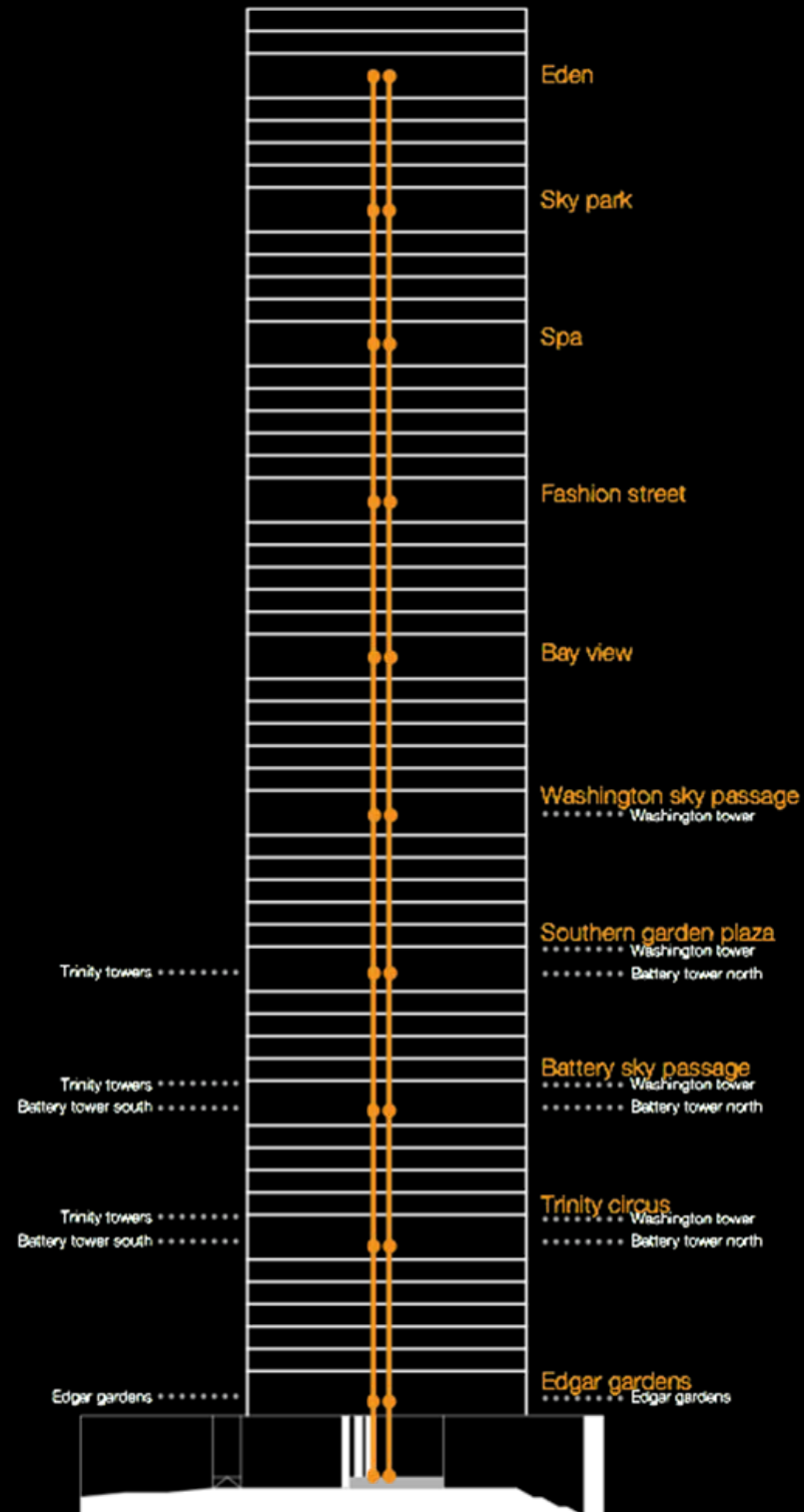
How can I move in the vertical city?





SKYBUS

2 X 80





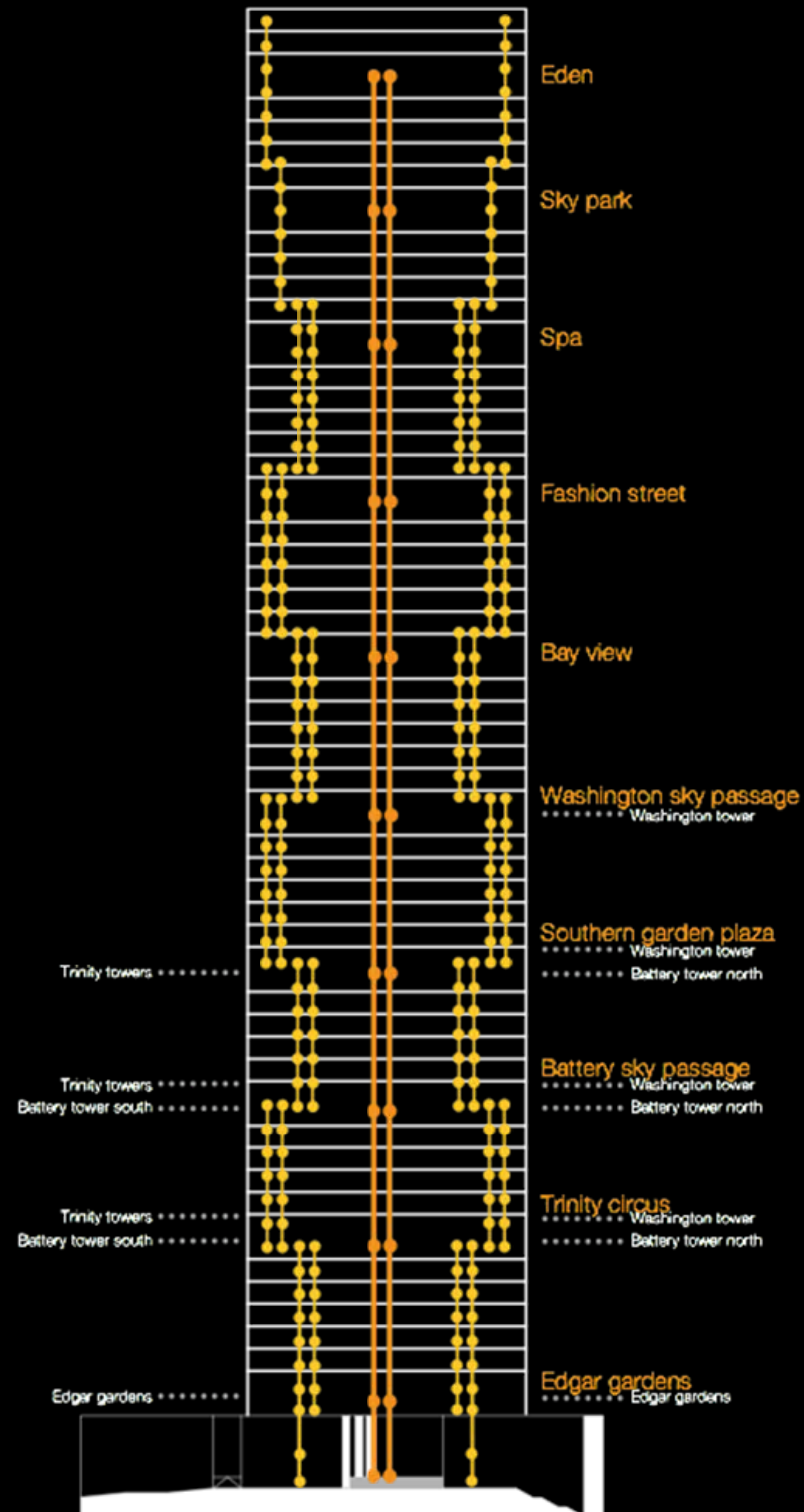
SKYBUS

2 X 80 

BLOCK ELEVATOR

2 X 12 

2 X 24 





SKYBUS

2 X 80 

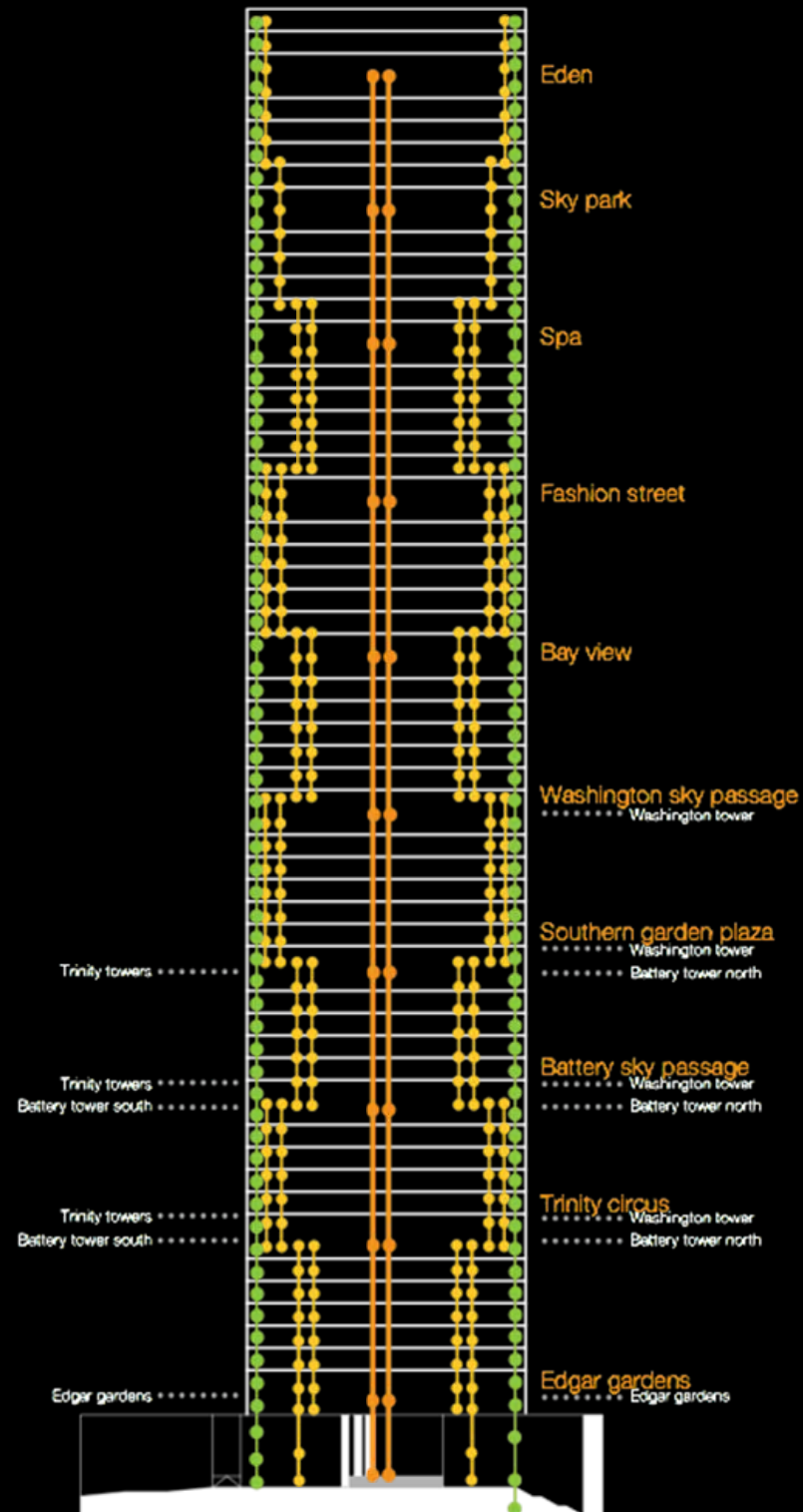
BLOCK ELEVATOR

2 X 12 

2 X 24 

TECHNICAL ELEVATOR

2 X 8 





SKYBUS

2 X 80 

BLOCK ELEVATOR

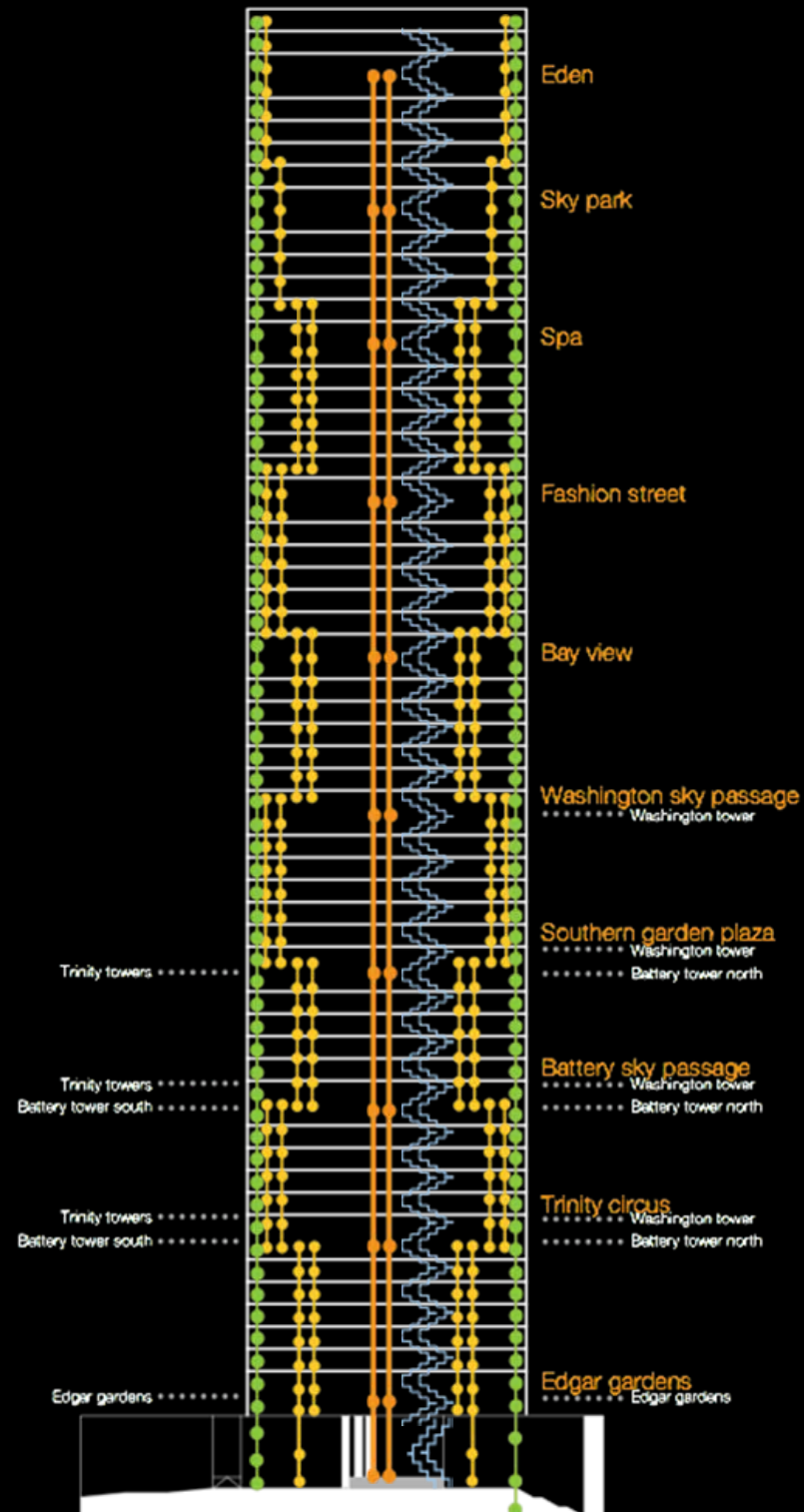
2 X 12 

2 X 24 

TECHNICAL ELEVATOR

2 X 8 

STAIRCASE





SKYBUS

2 X 80 

BLOCK ELEVATOR

2 X 12 

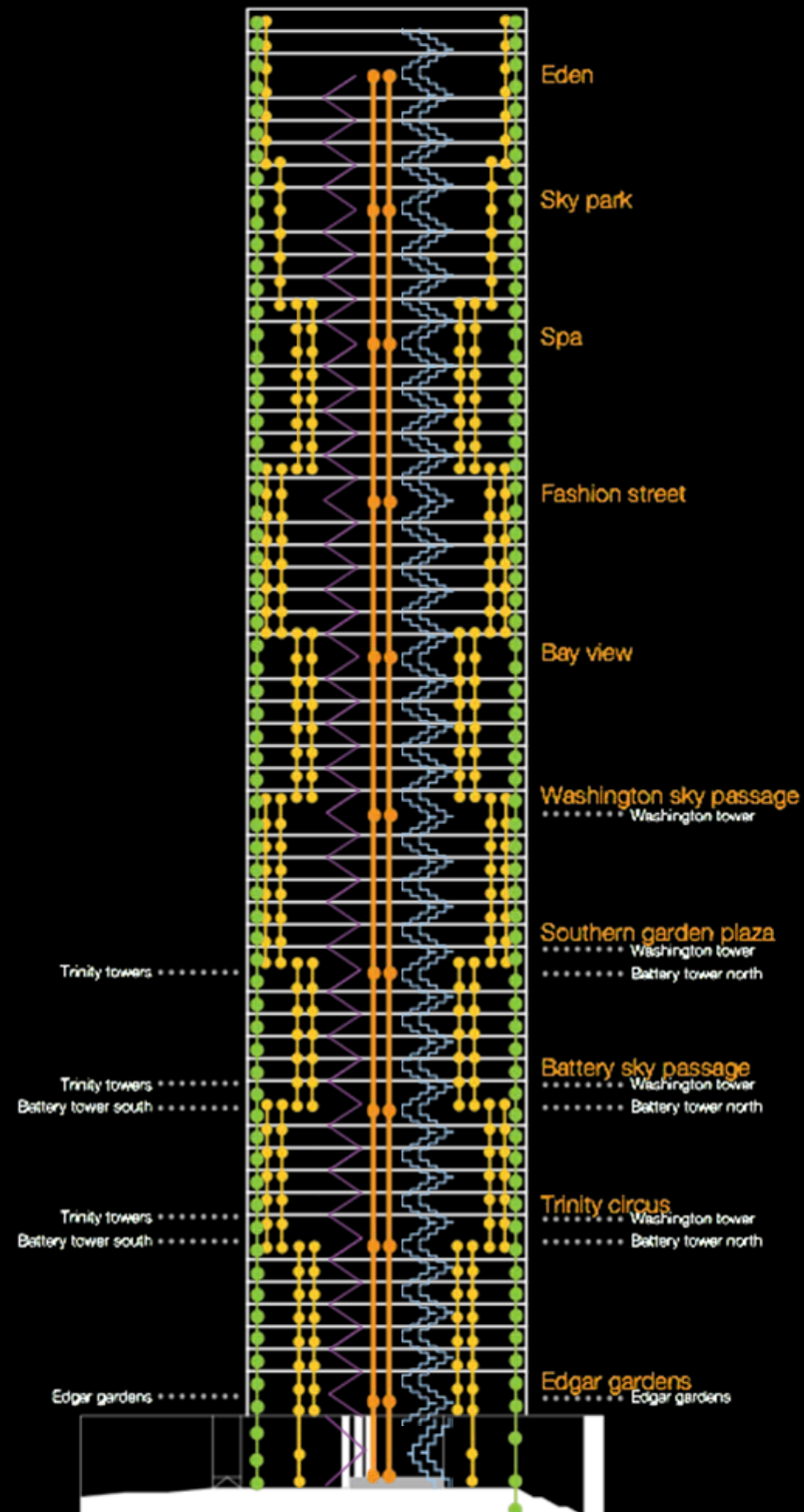
2 X 24 

TECHNICAL ELEVATOR

2 X 8 

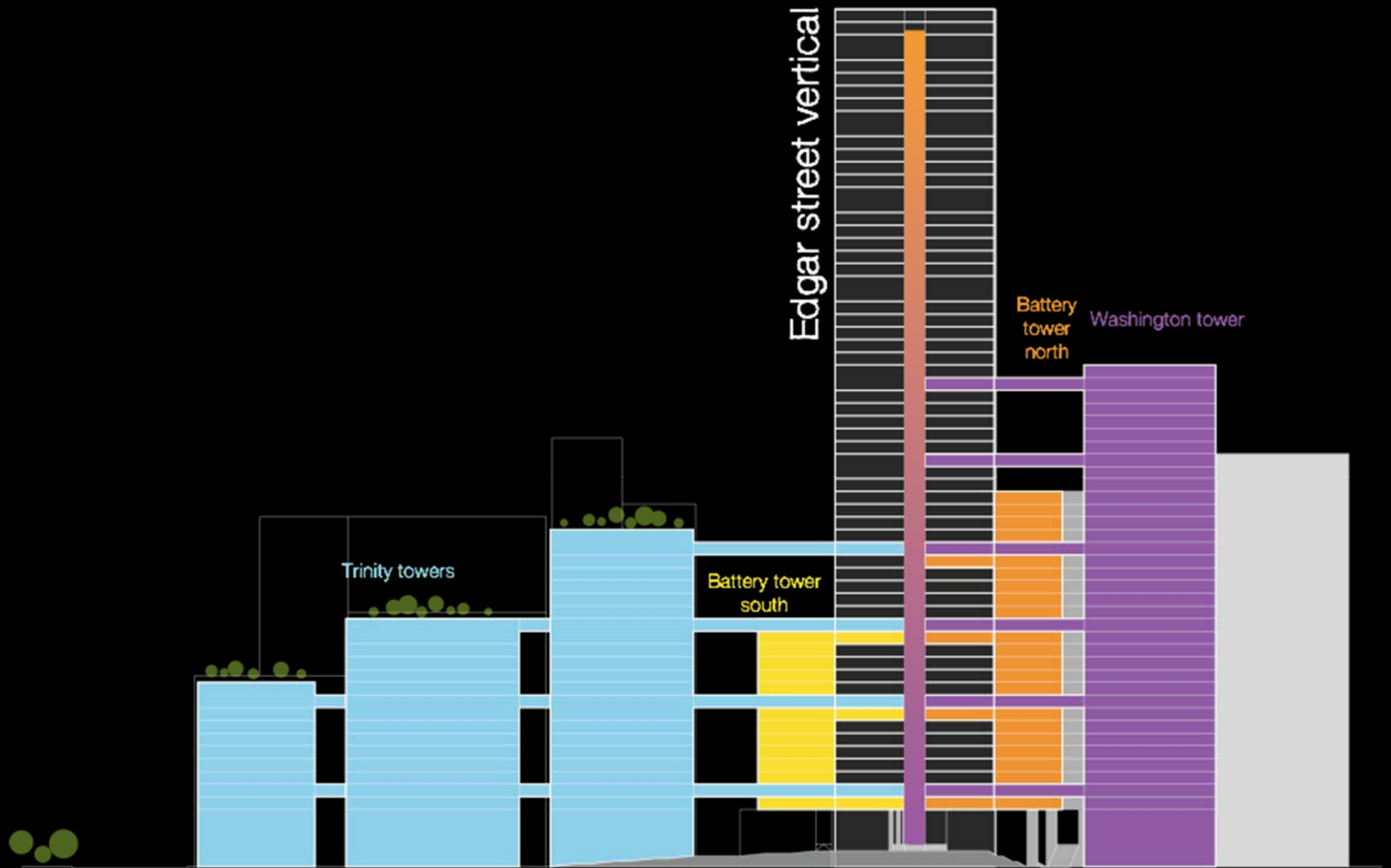
STAIRCASE

ESCALATOR

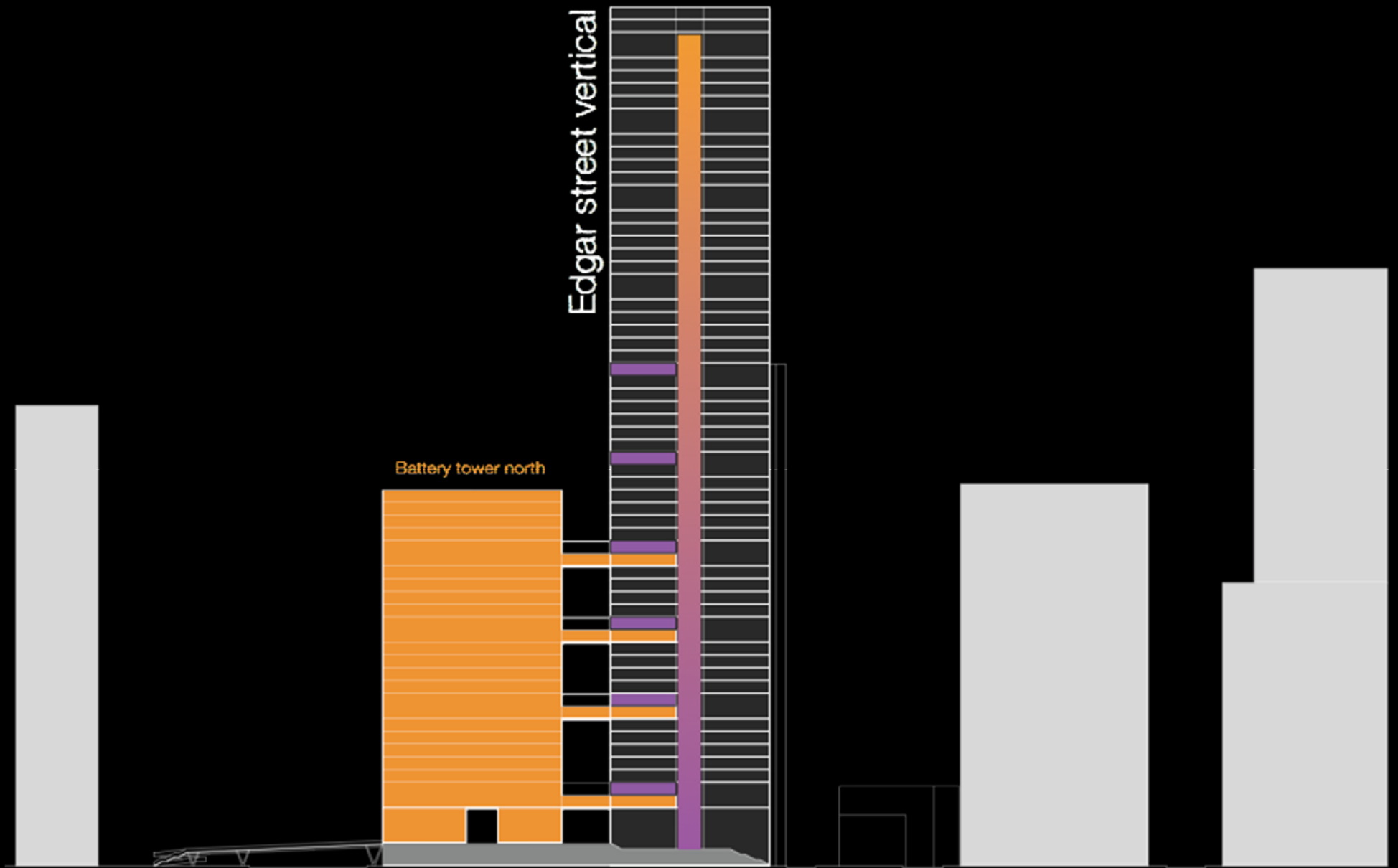




Can I go anywhere I want?



SOUTH-NORTH SECTION WITH CONNECTIONS

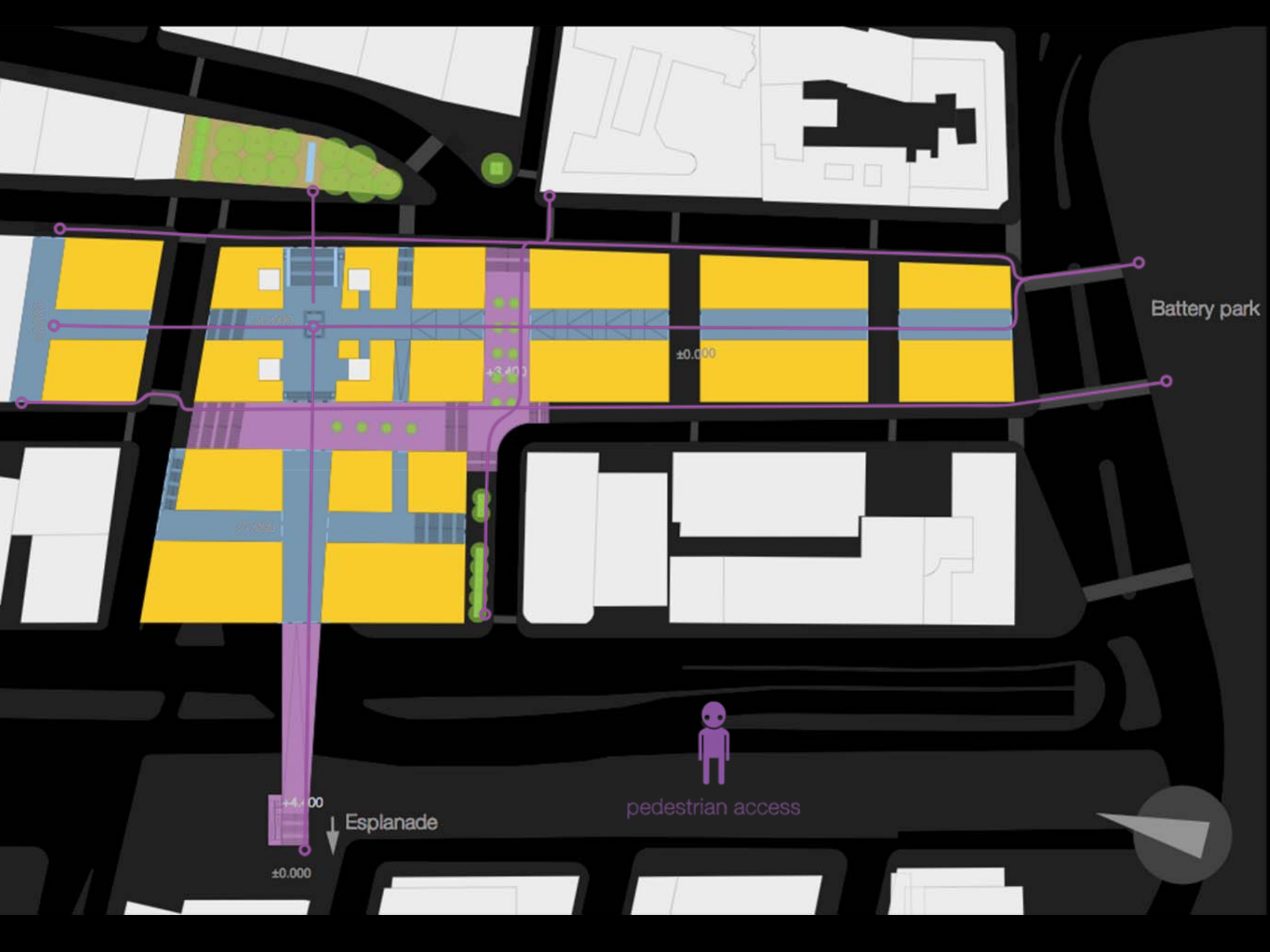


WEST-EAST SECTION WITH CONNECTIONS



What does the gate to the vertical city look like?





Battery park

pedestrian access

Esplanade

$+4.000$

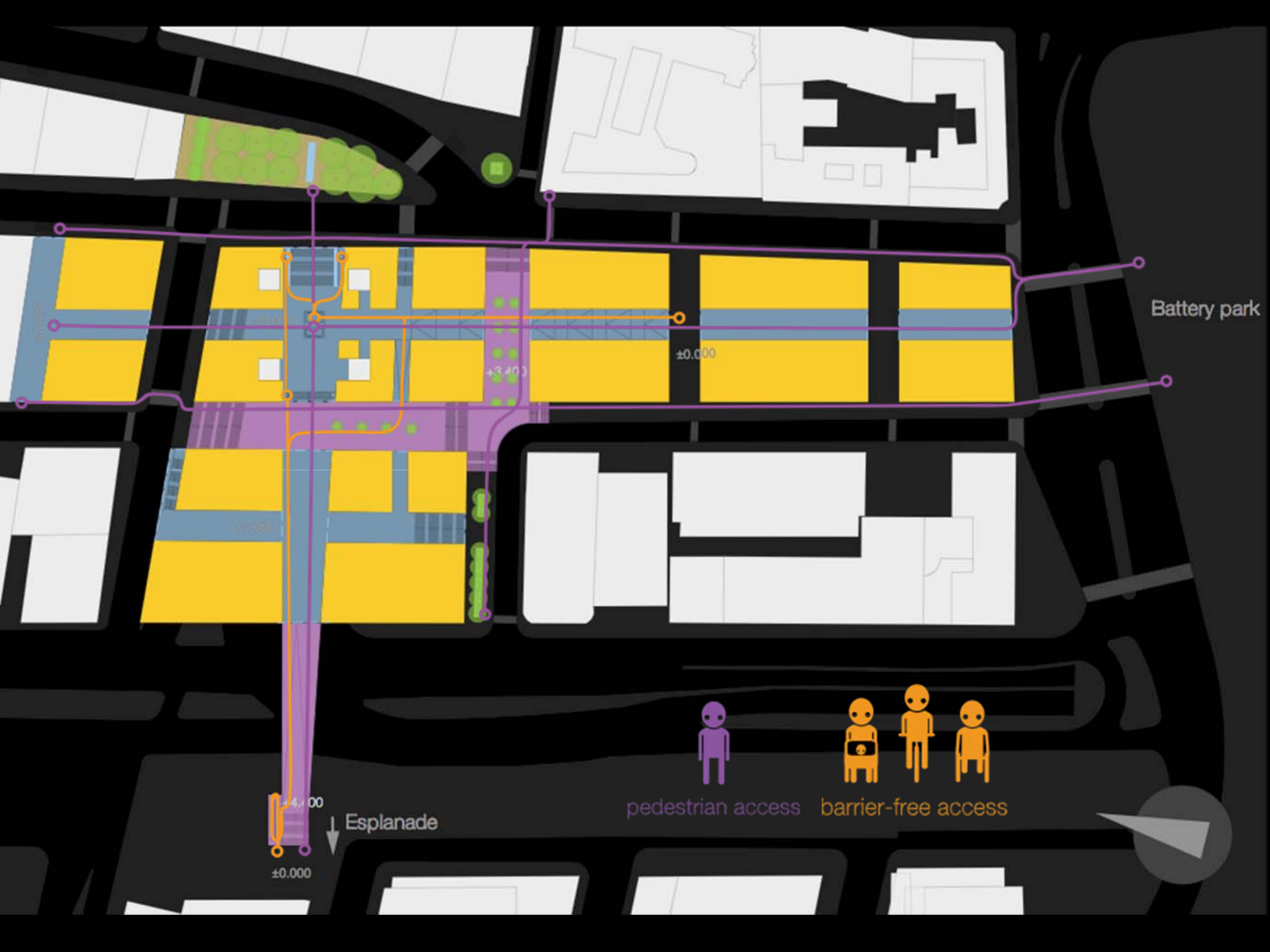
± 0.000

± 0.000

$+3.400$

$+0.000$

$+0.000$



Battery park

± 0.000

$+3.400$

$+4.000$

$+4.000$

± 0.000

Esplanade

pedestrian access

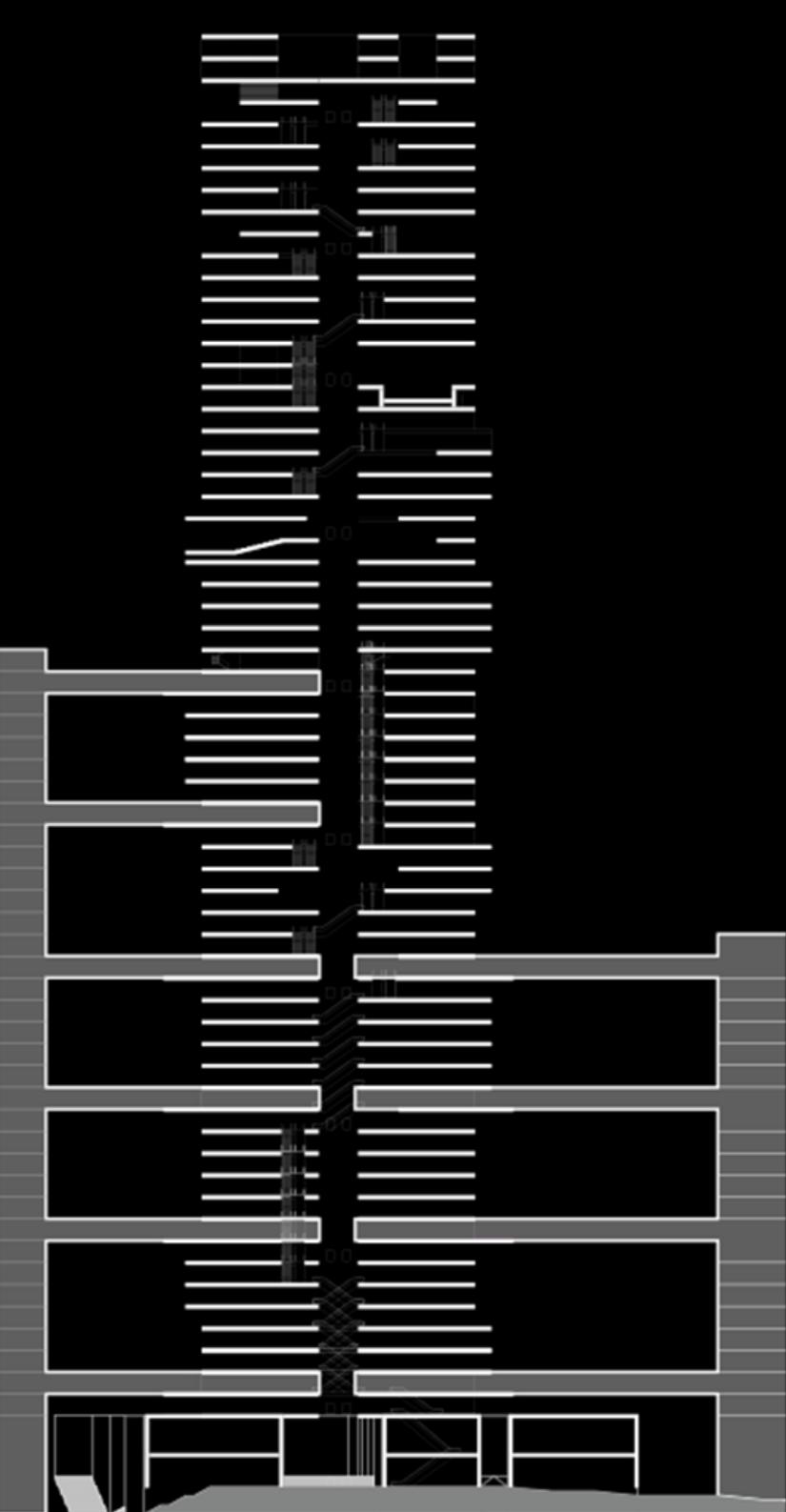
barrier-free access

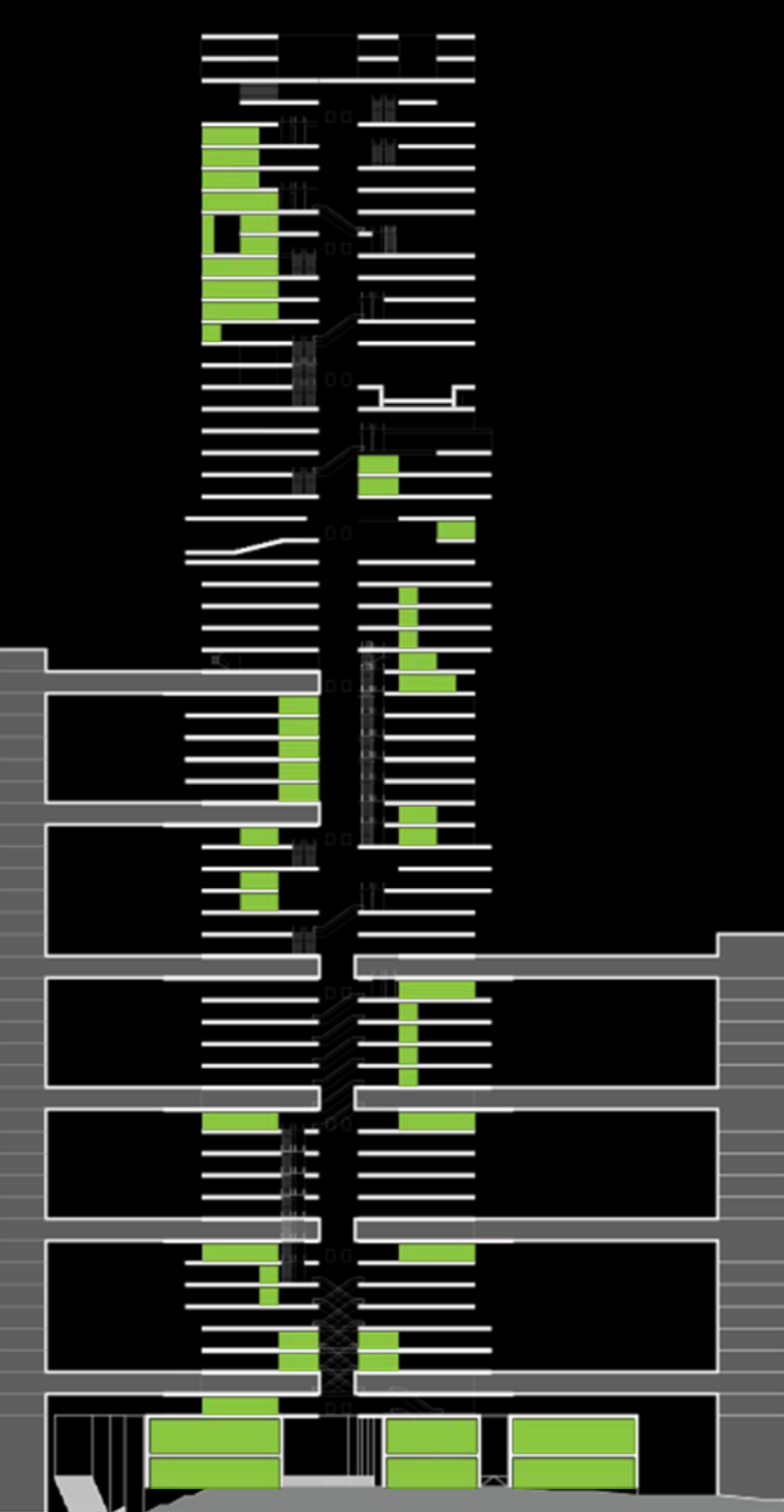




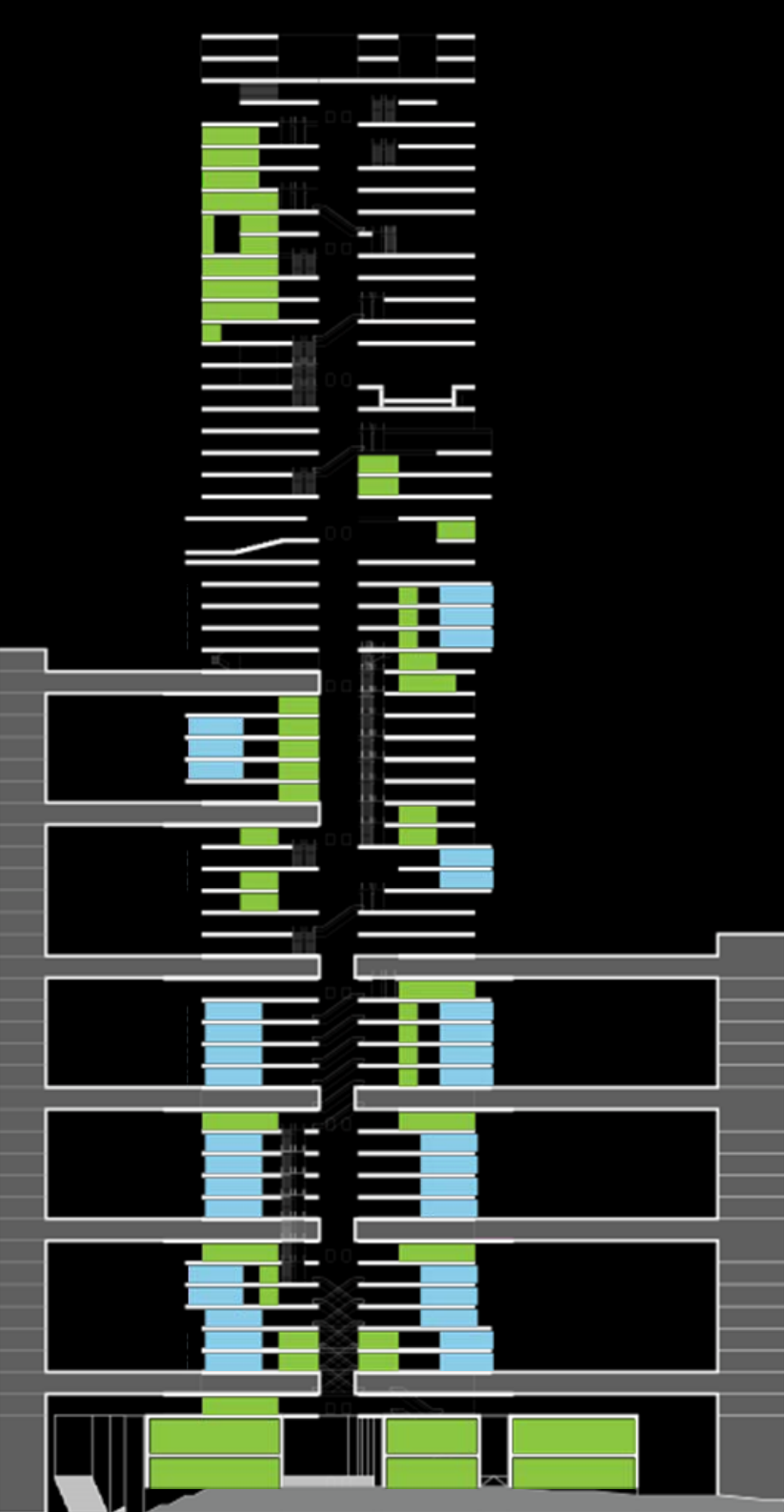


And what happens inside?



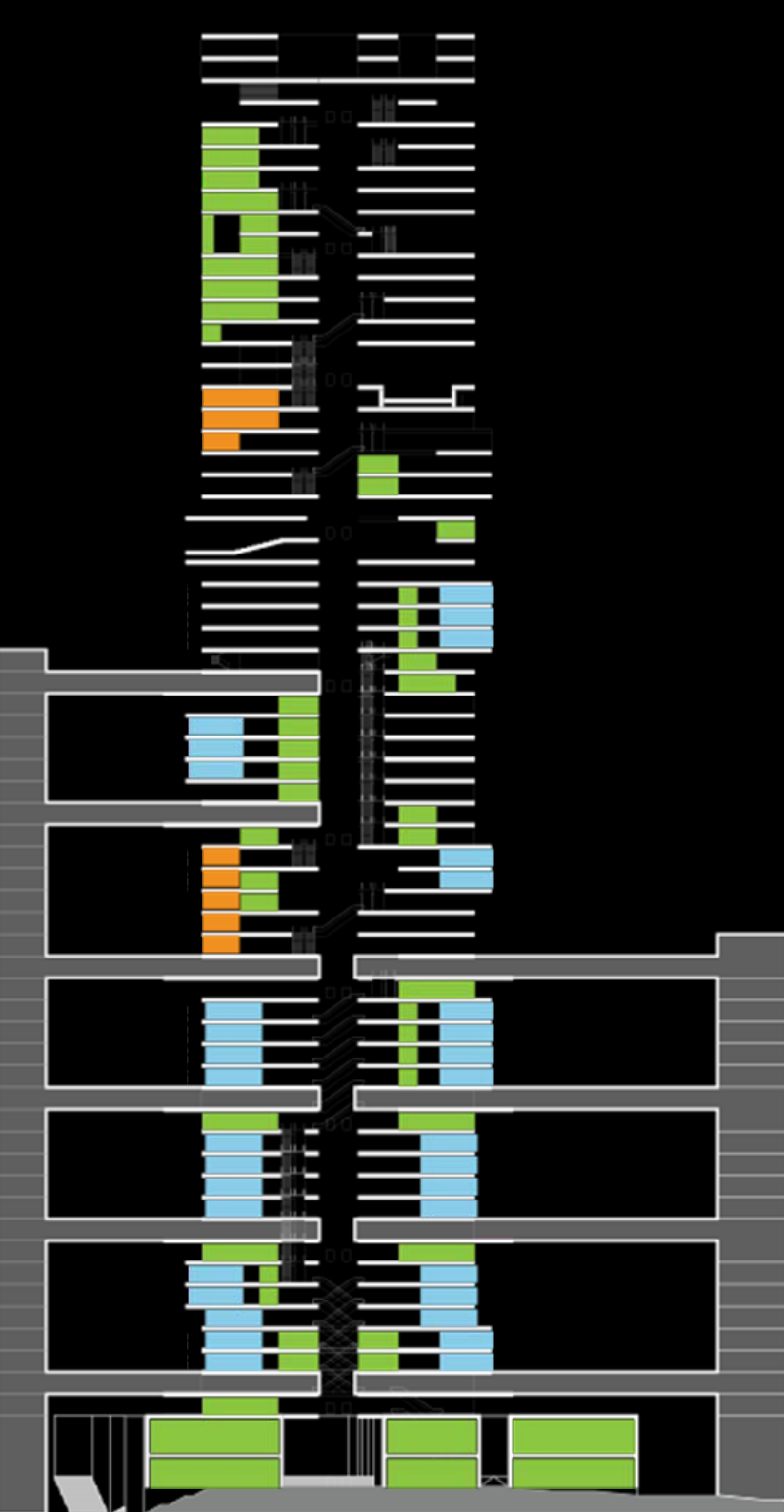


common amenities



student hotel

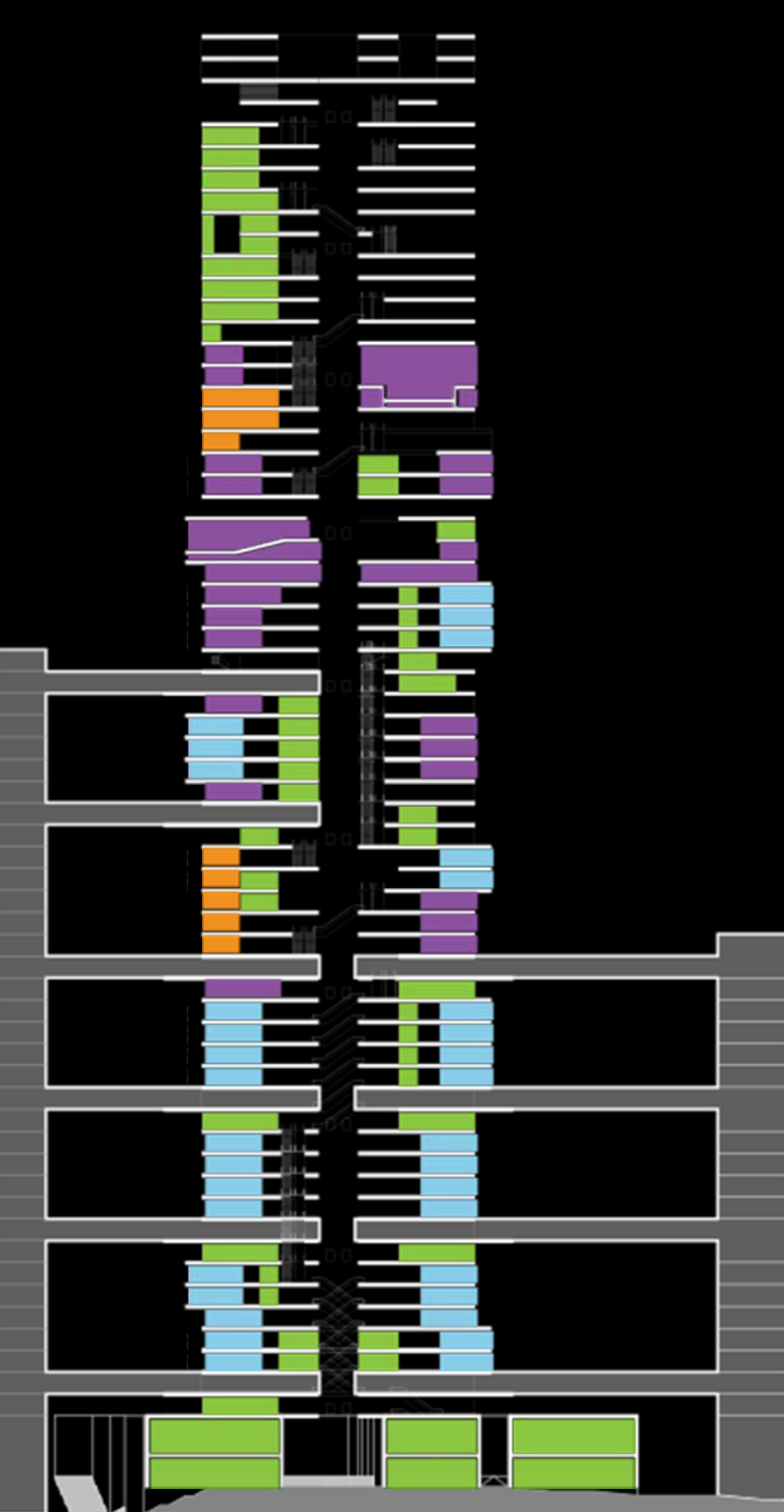
common amenities



offices

student hotel

common amenities

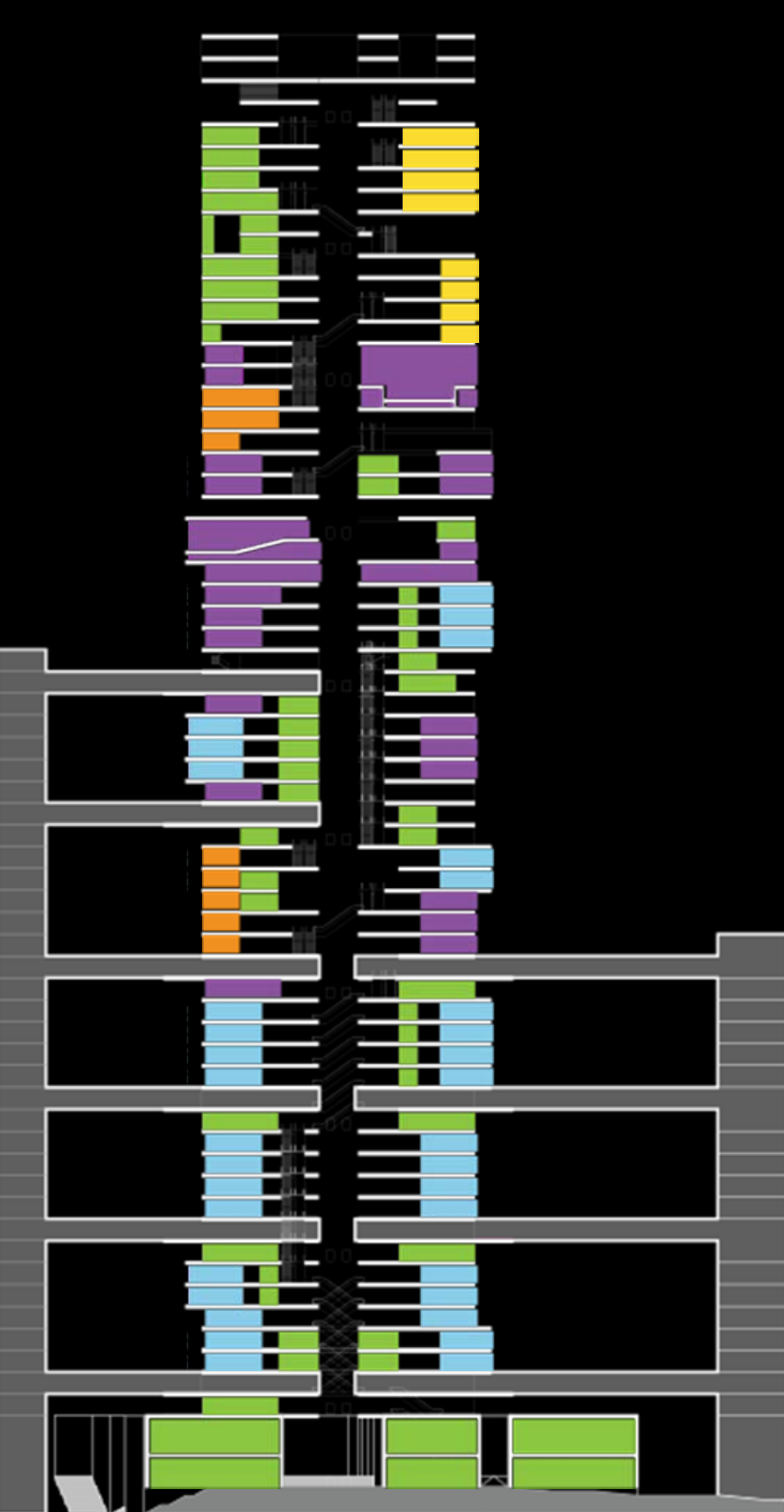


fashion and design hotel

offices

student hotel

common amenities



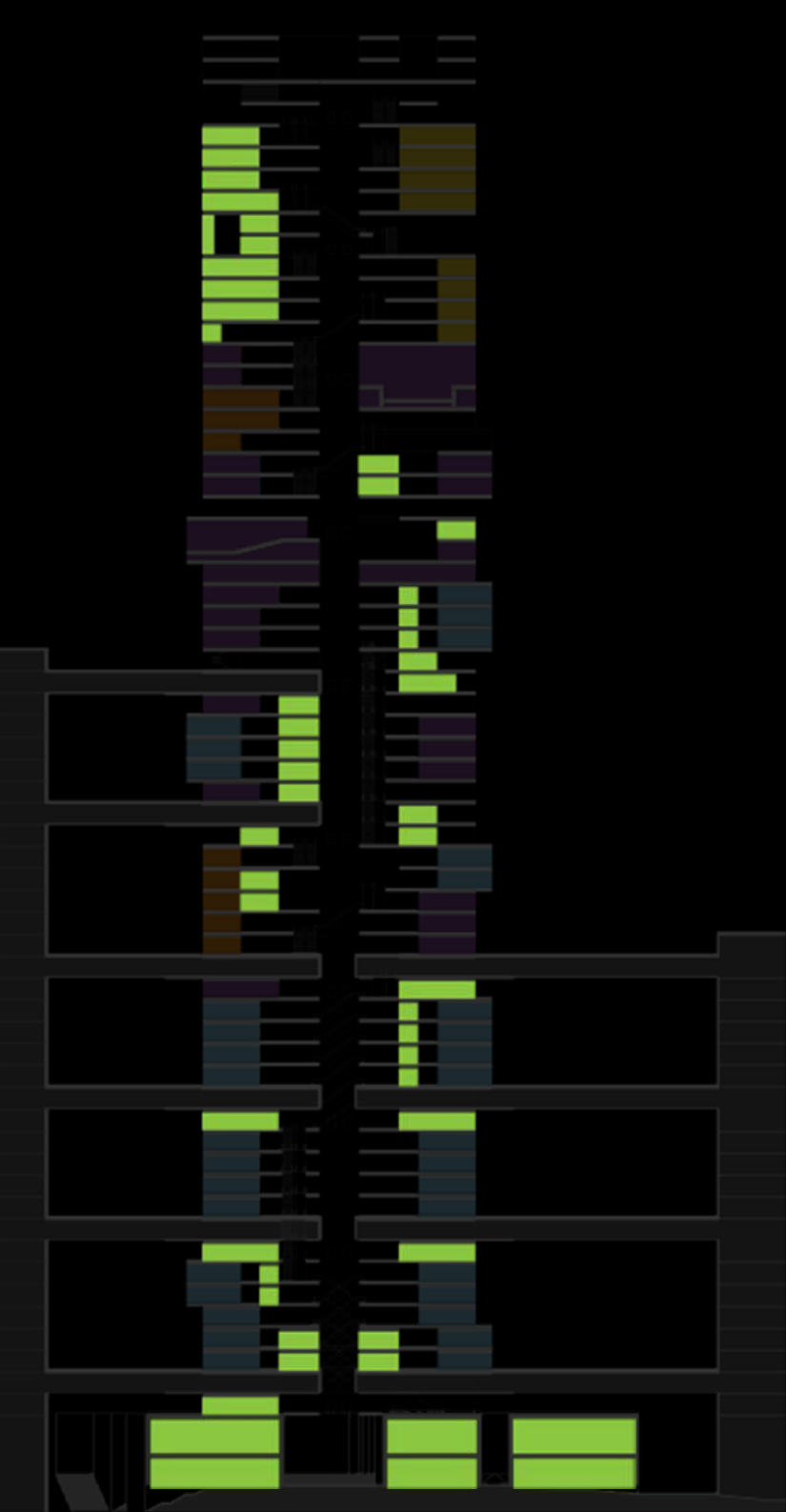
apartments

fashion and design hotel

offices

student hotel

common amenities



common amenities



common amenities



common amenities



common amenities



common amenities



common amenities

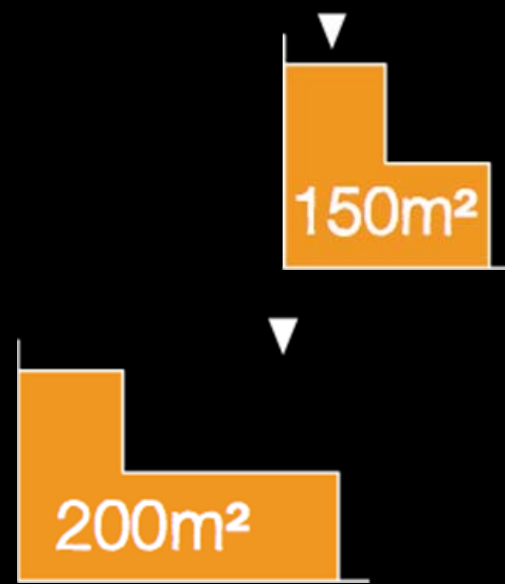


offices

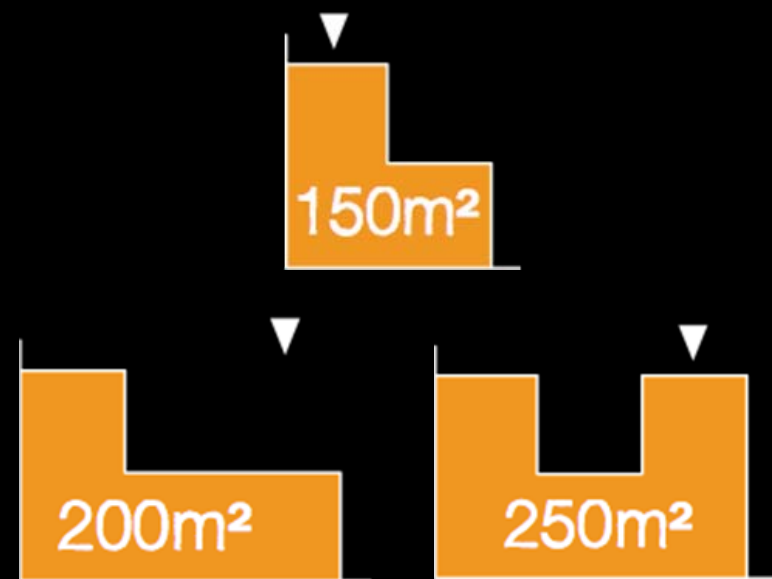


▼
150m²

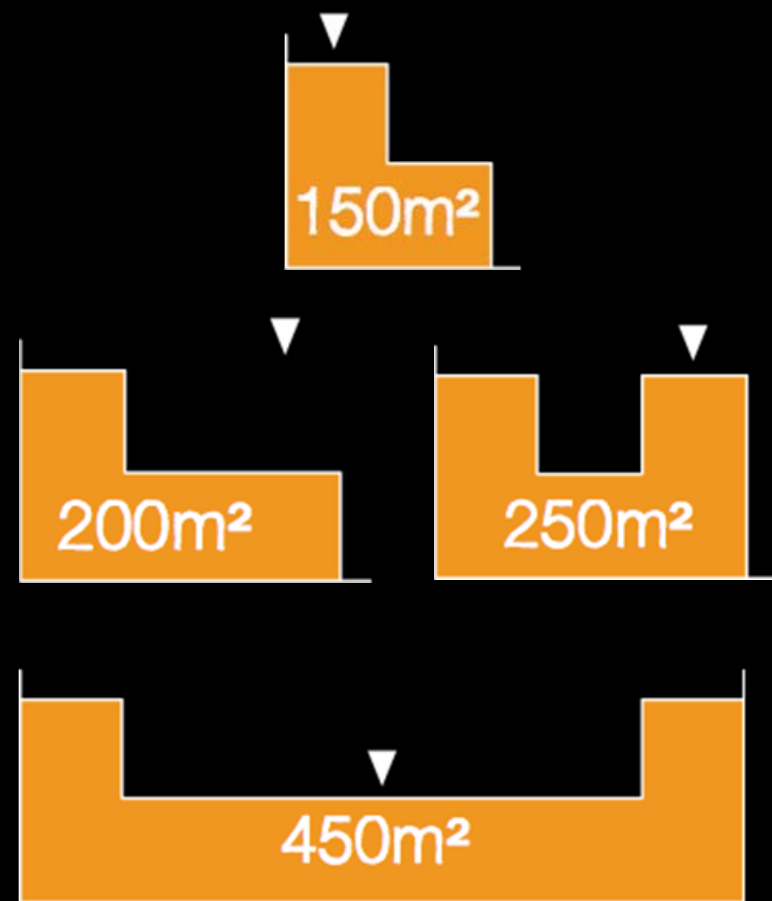
offices



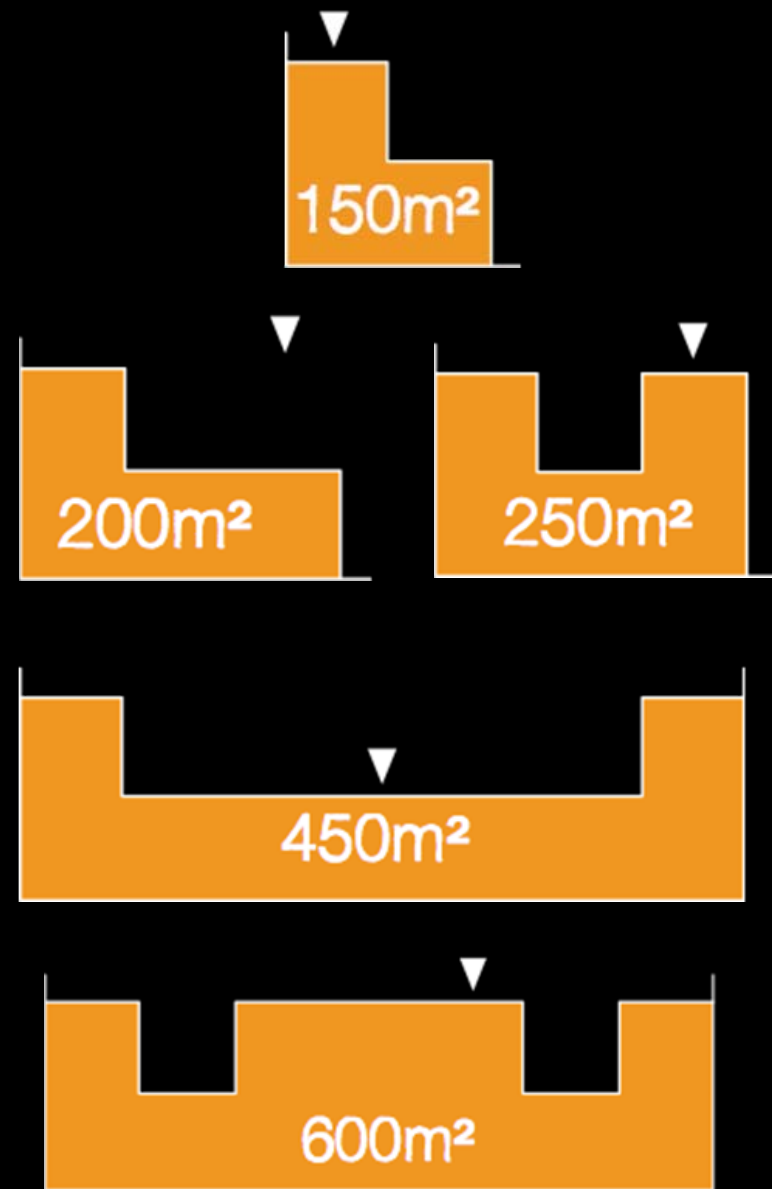
offices



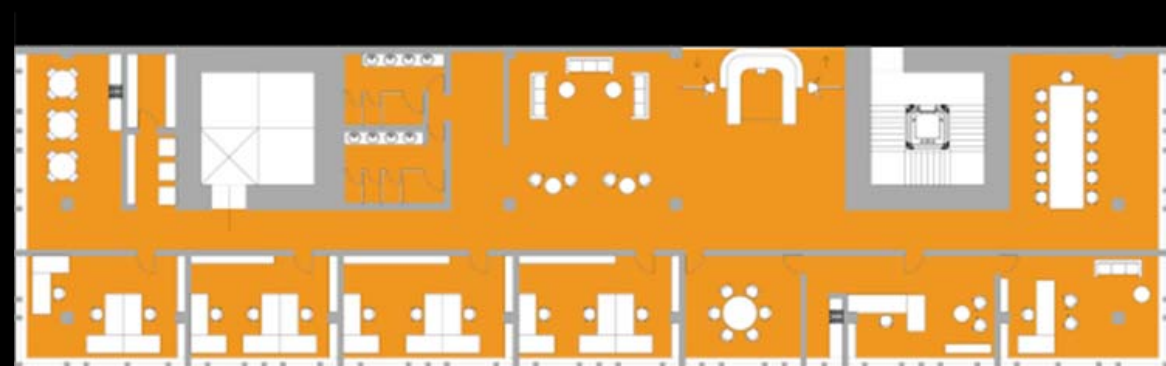
offices



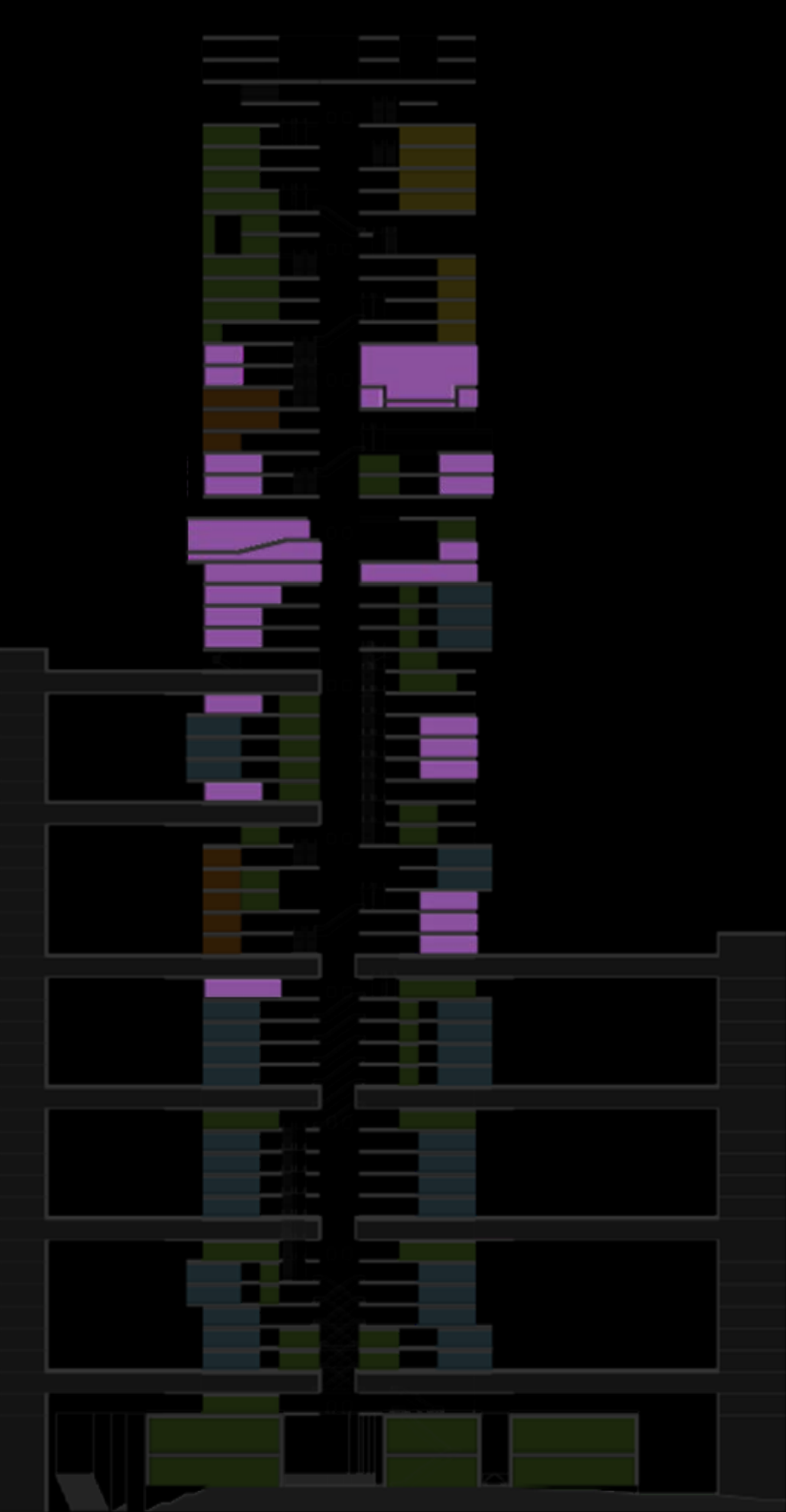
offices



offices

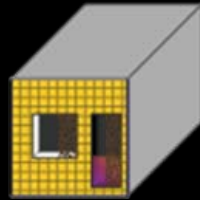


offices



fashion and design hotel

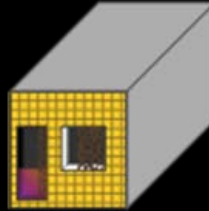
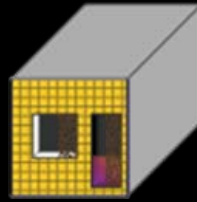
economy class
single room



fashion and design hotel

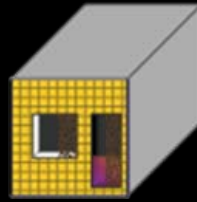
economy class
single room

economy class
double room

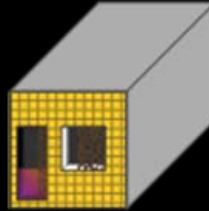


fashion and design hotel

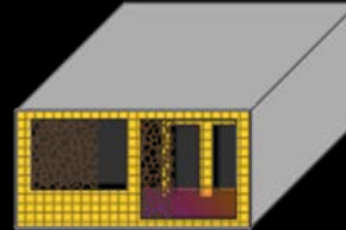
economy class
single room



economy class
double room



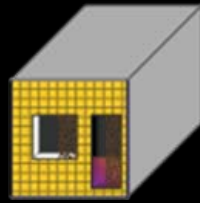
business class
double suite



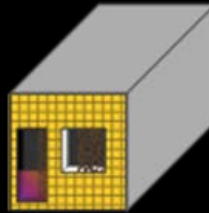
fashion and design hotel



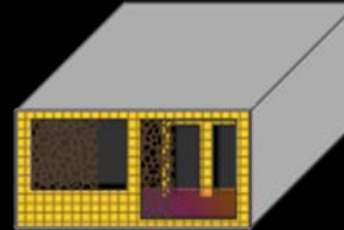
economy class
single room



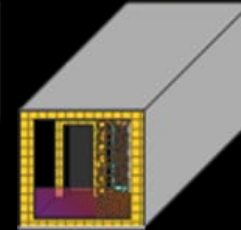
economy class
double room



business class
double suite



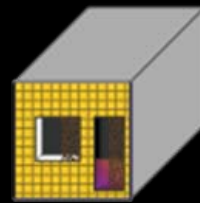
business class
single room



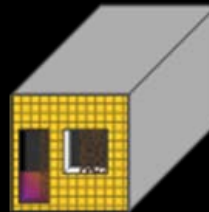
fashion and design hotel



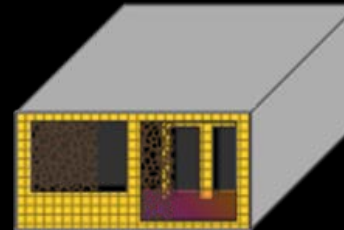
economy class
single room



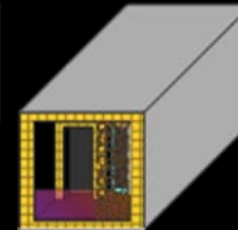
economy class
double room



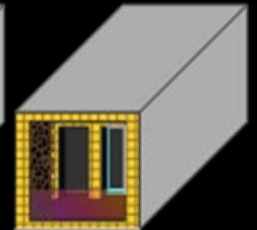
business class
double suite



business class
single room

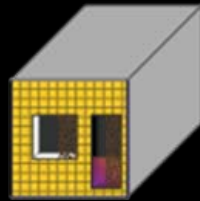


handicap accessible
room

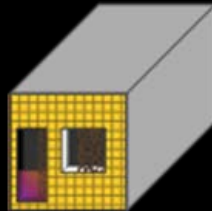


fashion and design hotel

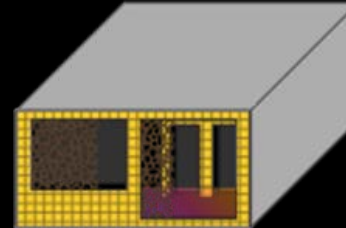
economy class
single room



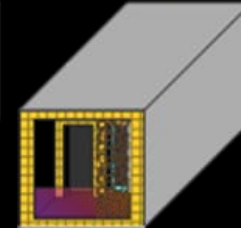
economy class
double room



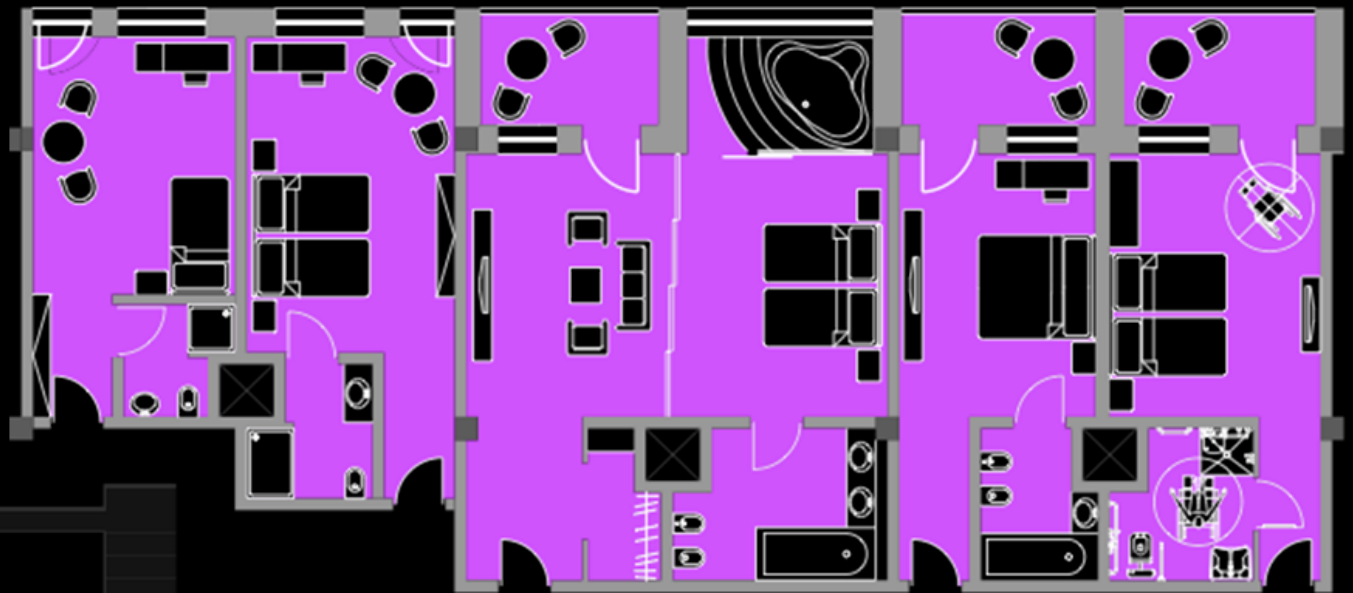
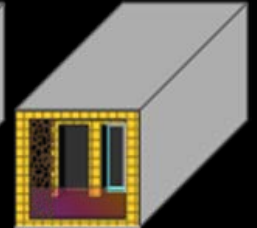
business class
double suite



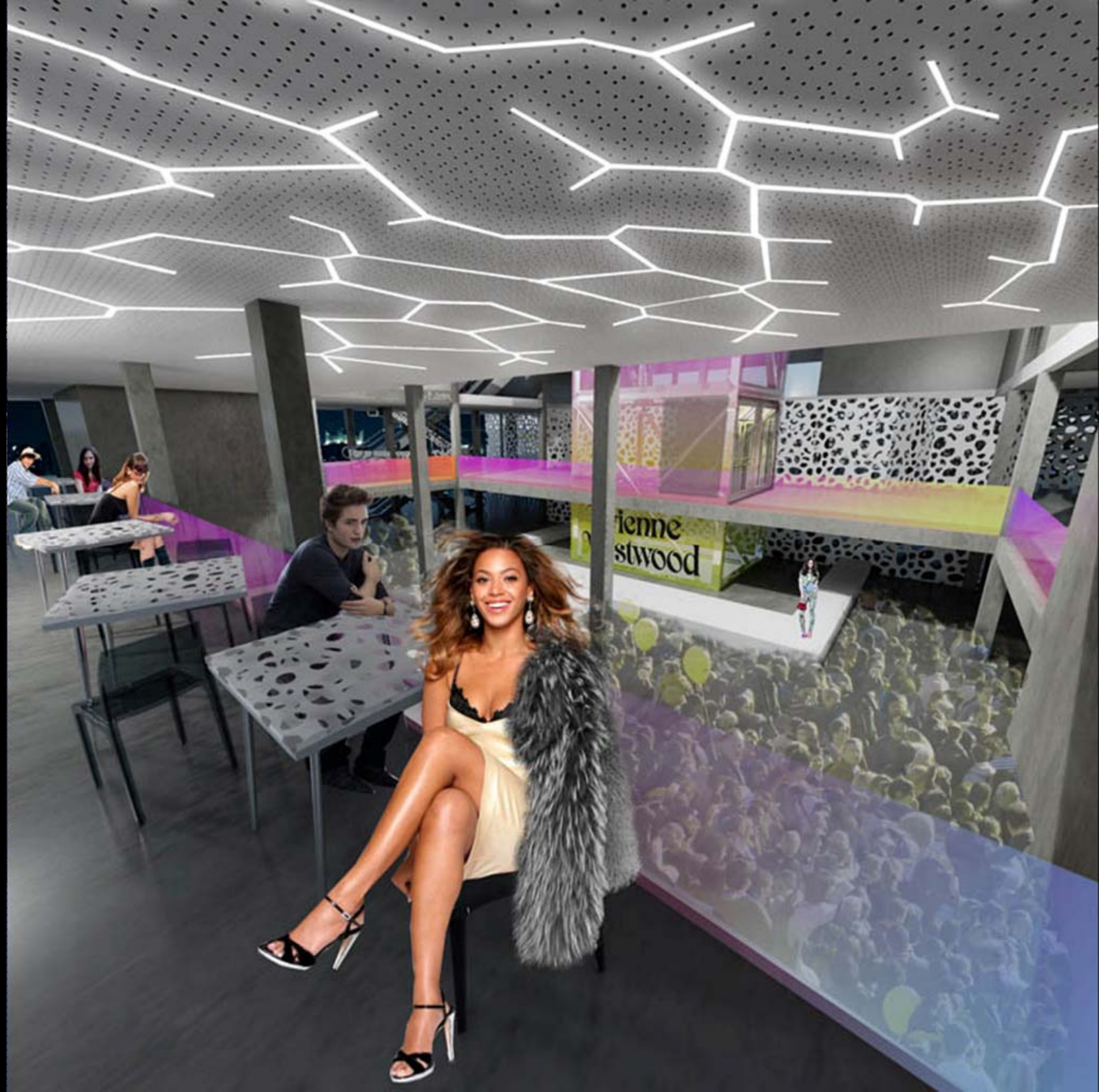
business class
single room

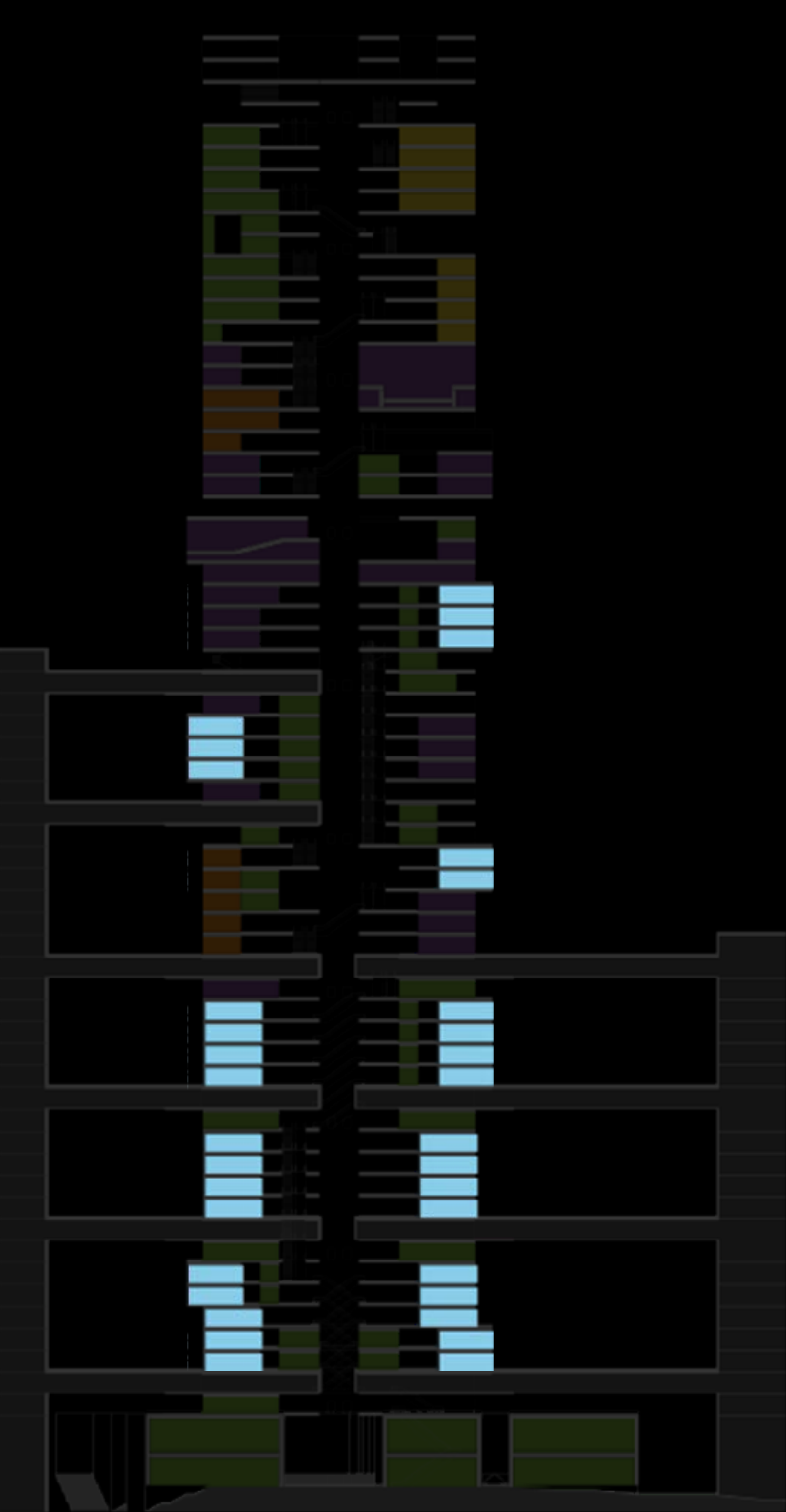


handicap accessible
room

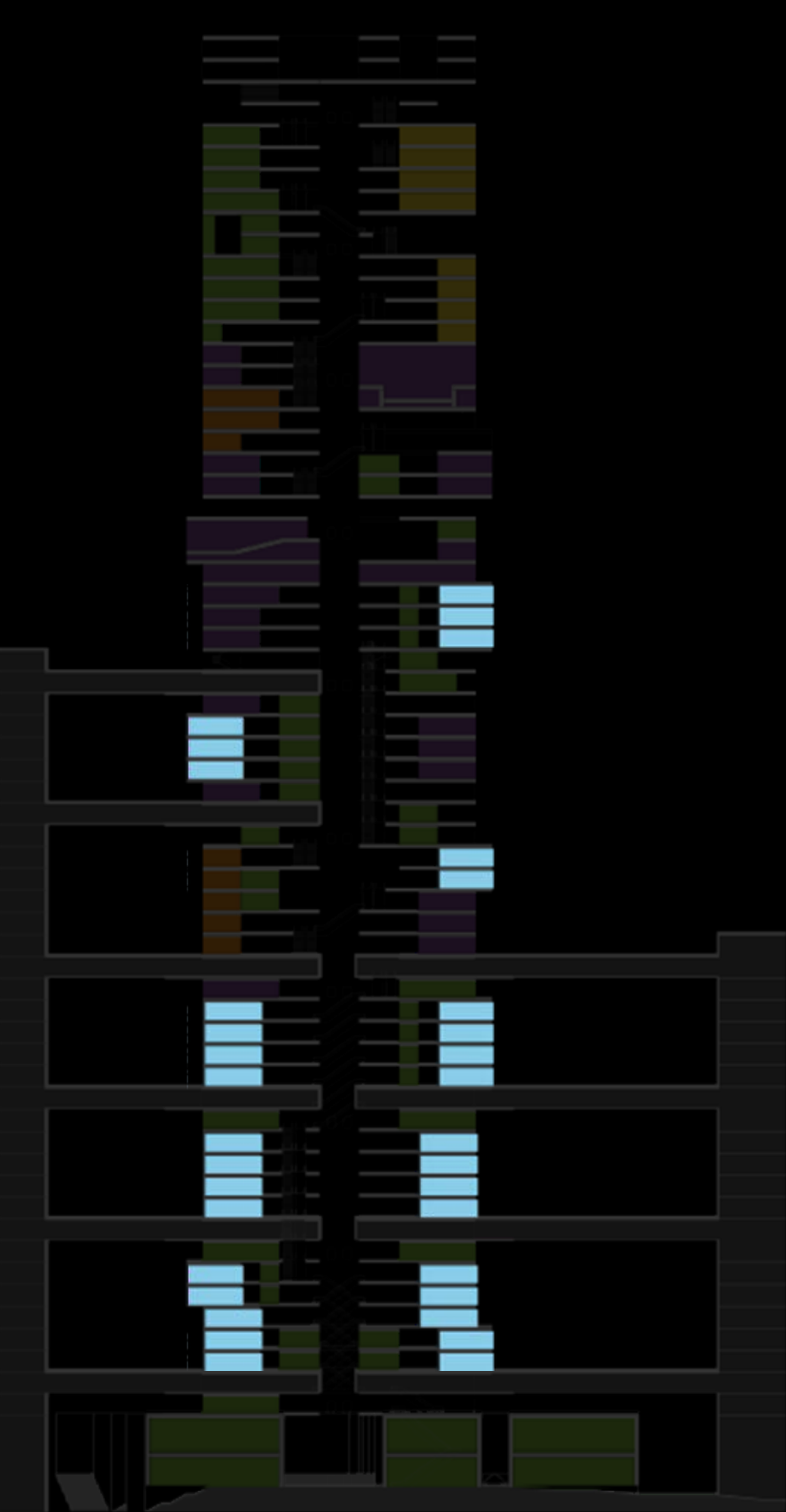


fashion and design hotel

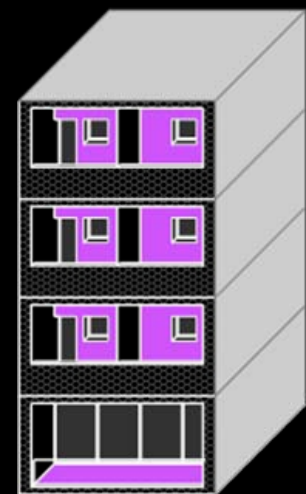
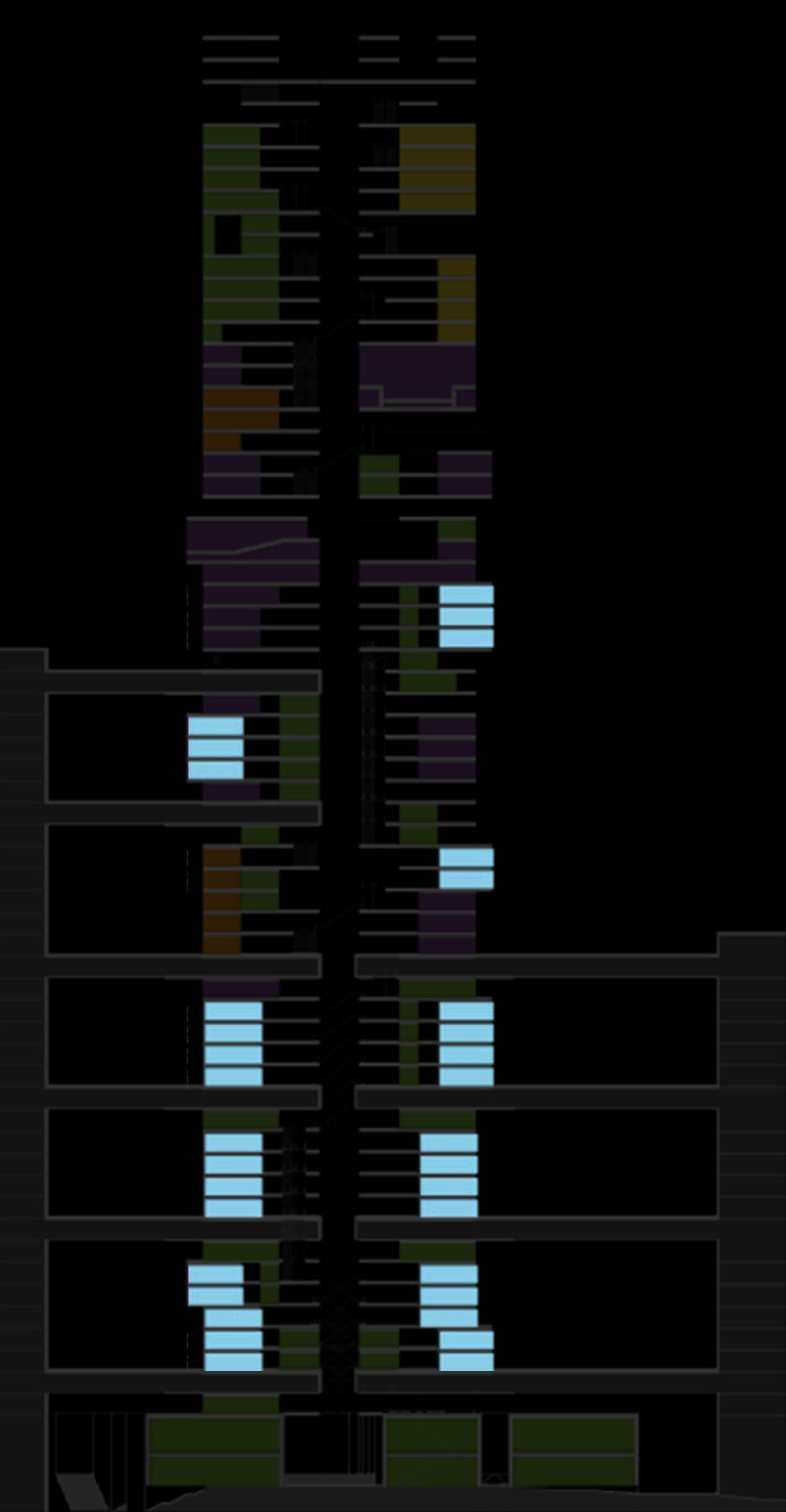




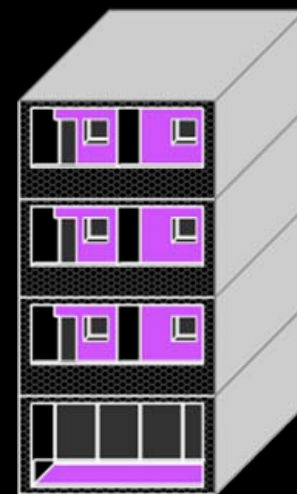
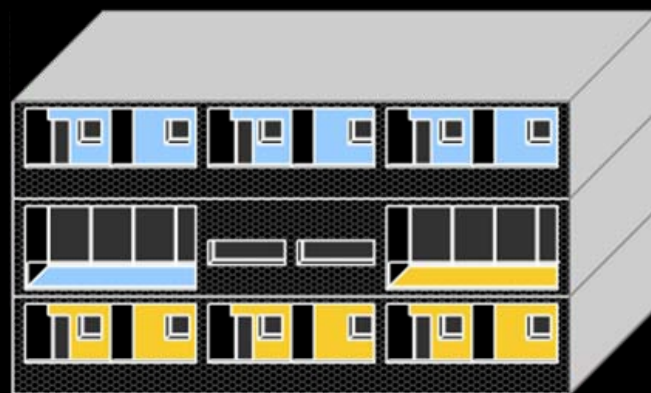
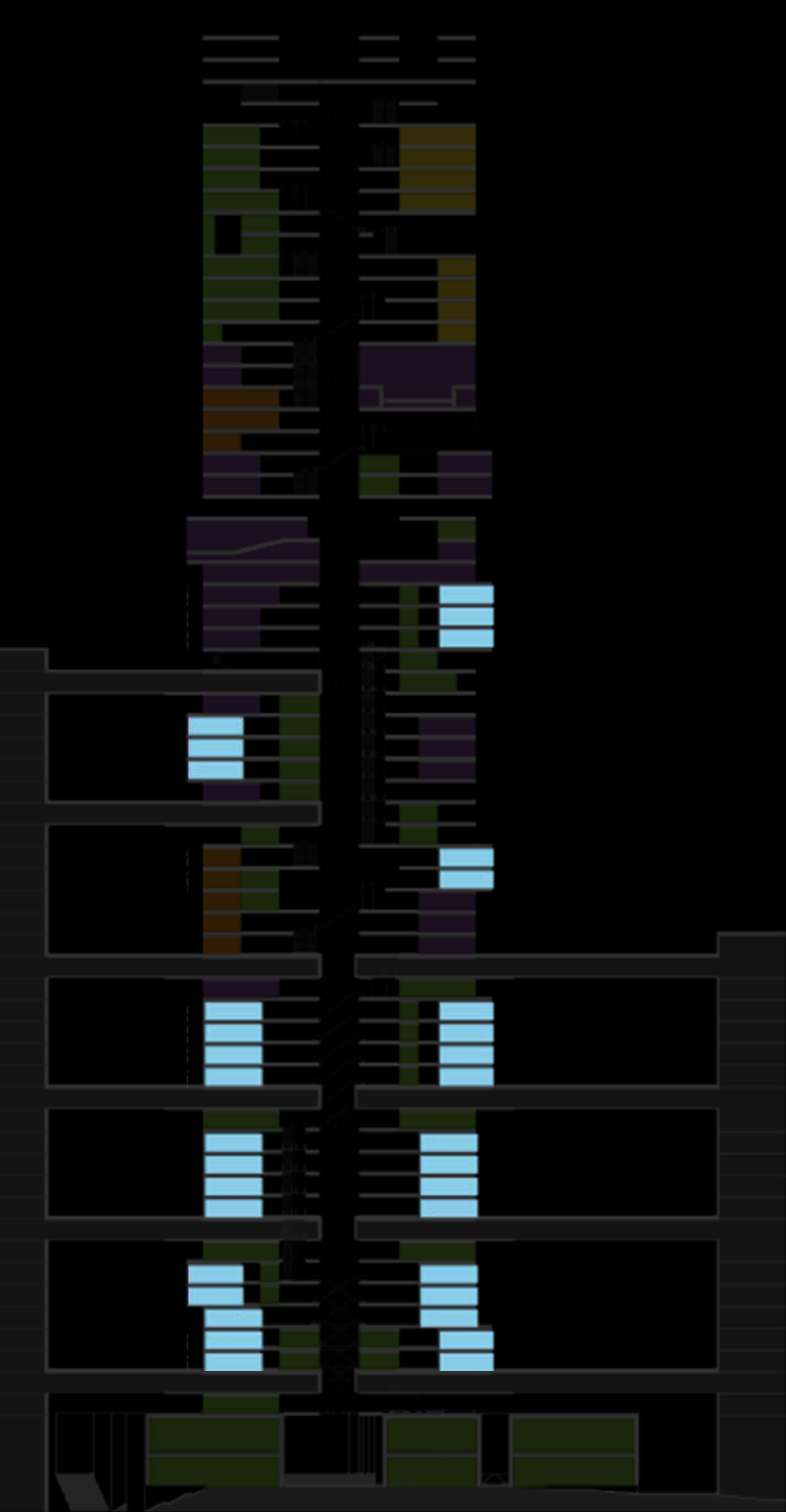
student hotel



student hotel

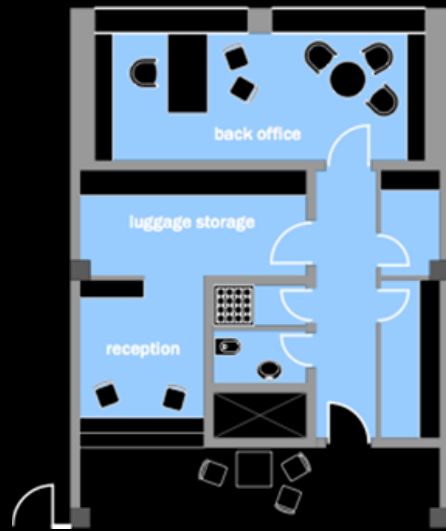


student hotel

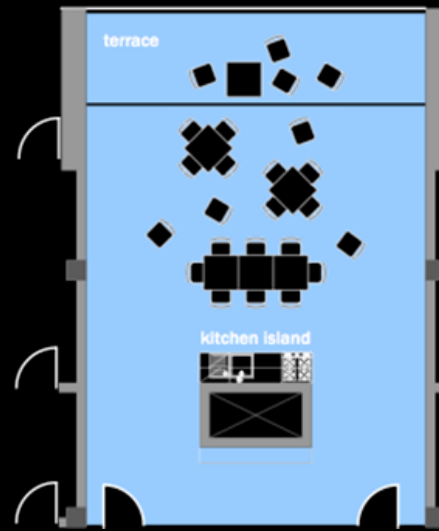


student hotel

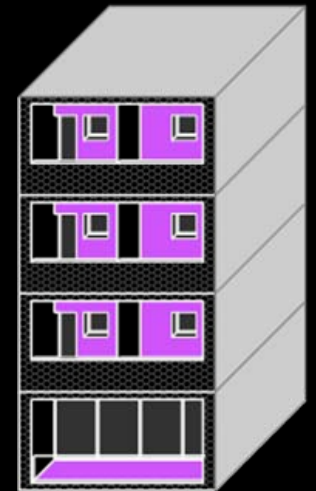
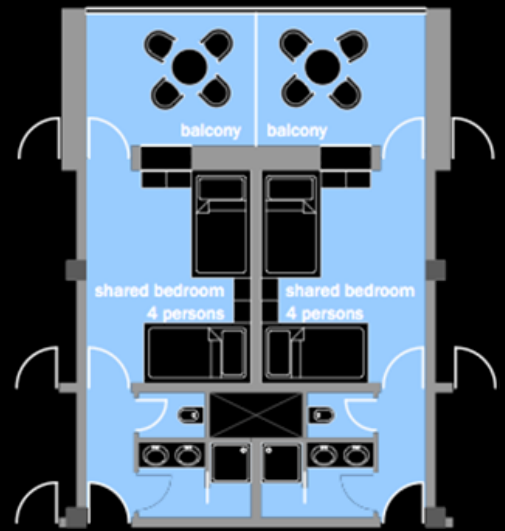
back house (reception, storage, etc.)



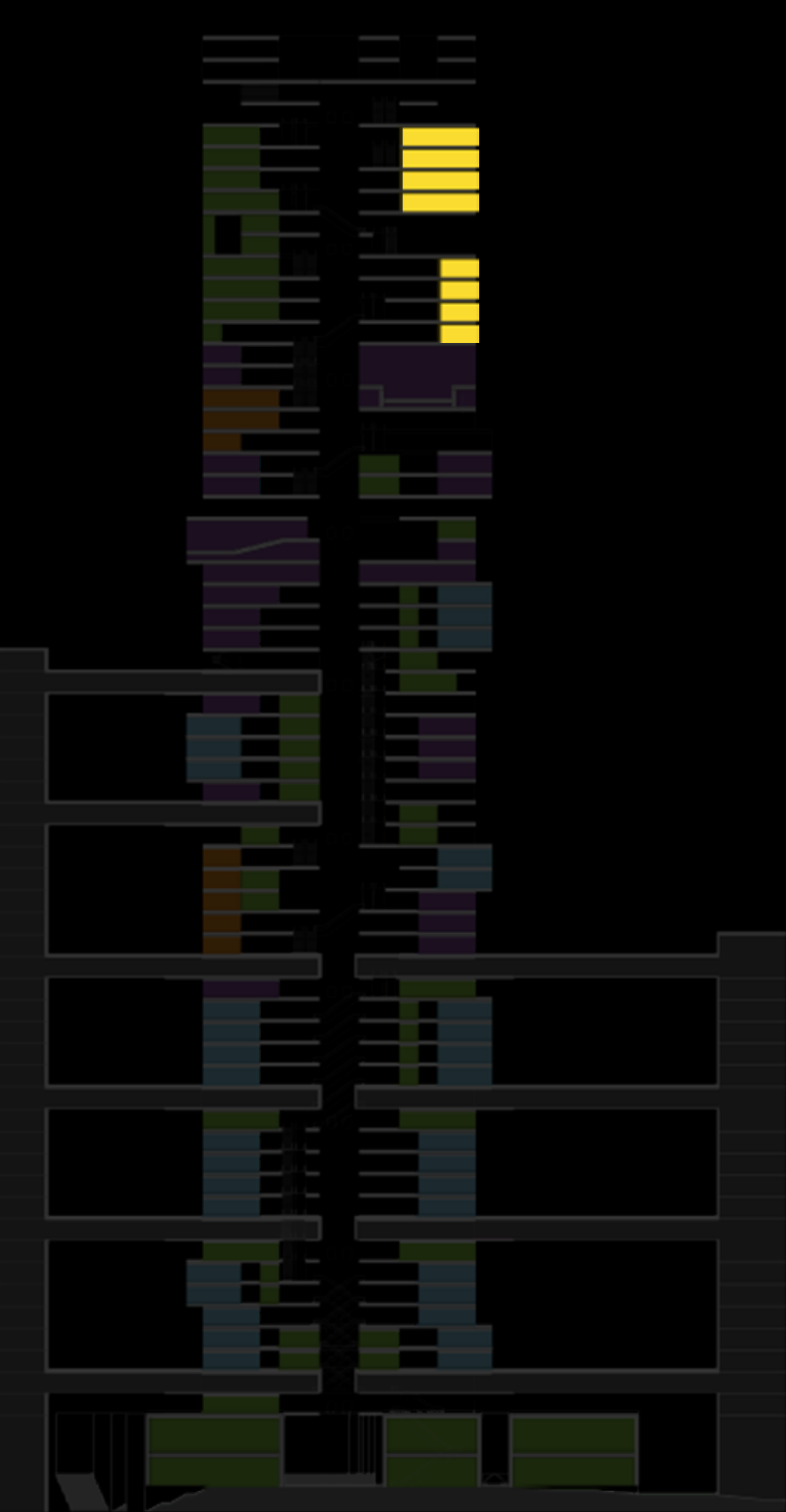
main living and dining area



bedrooms



student hotel



apartments

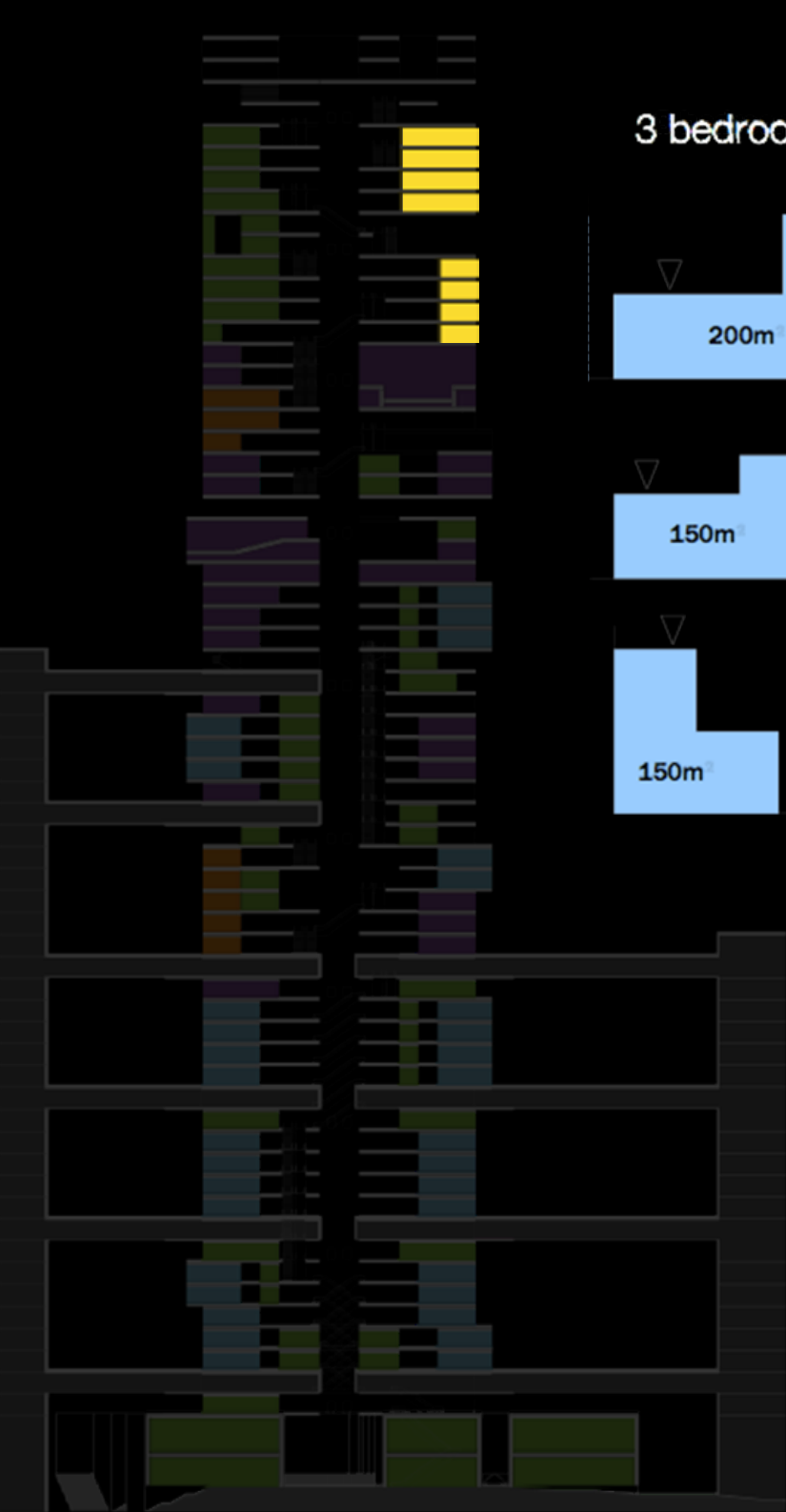
3 bedroom

200m²

150m²

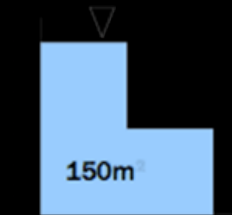
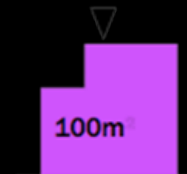
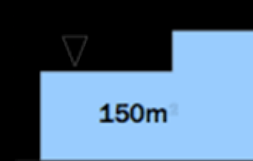
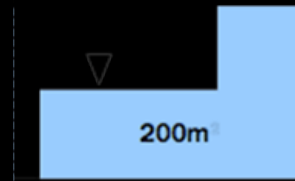
150m²

apartments

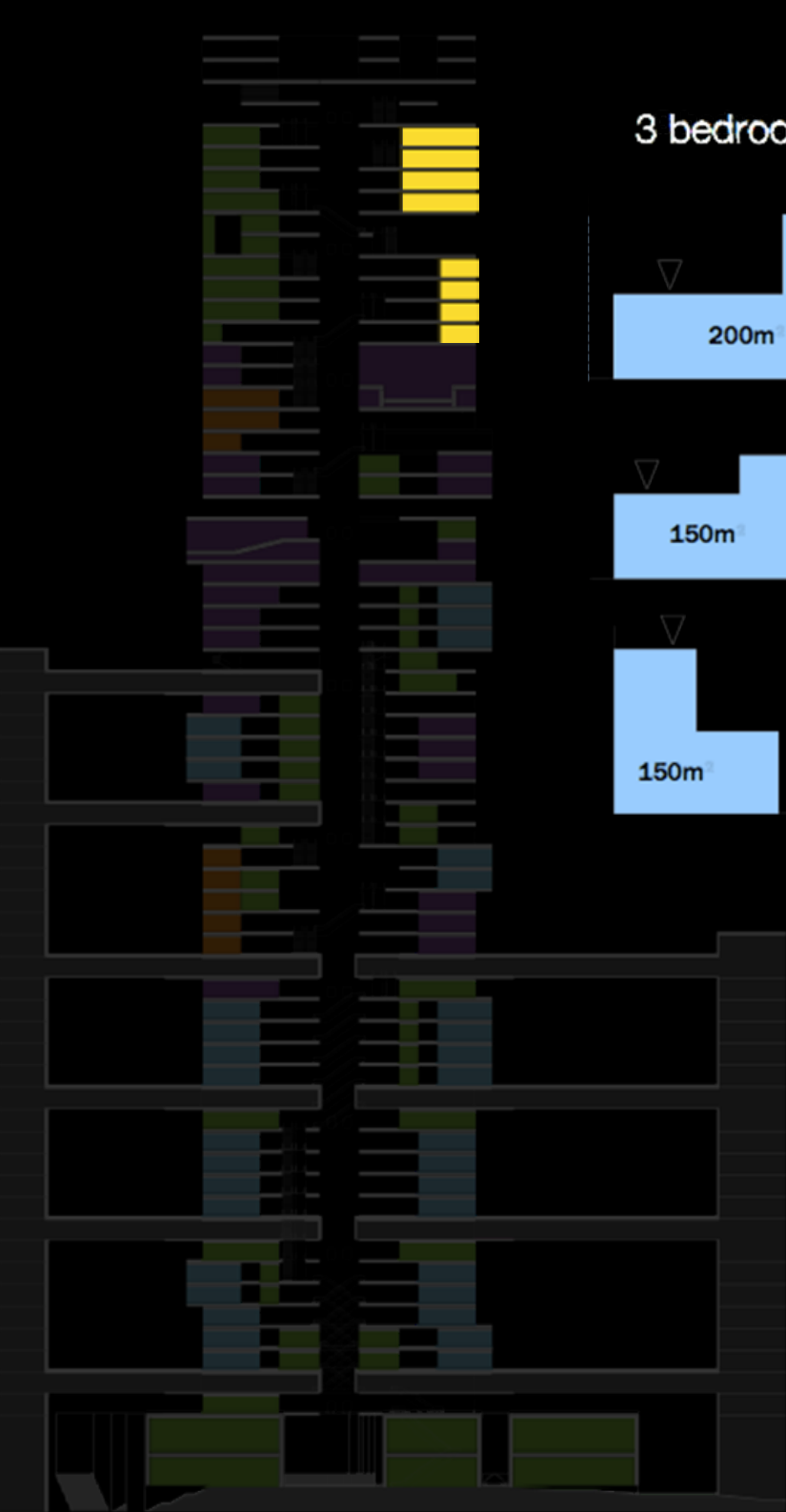


3 bedroom

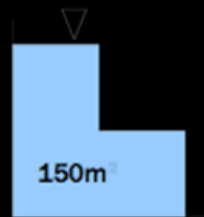
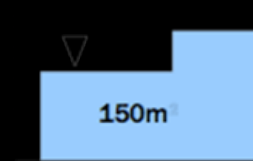
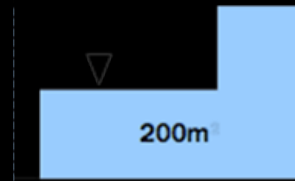
2 bedroom



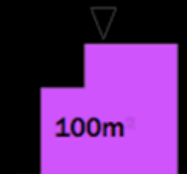
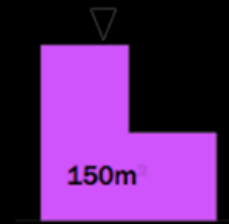
apartments



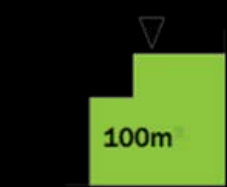
3 bedroom



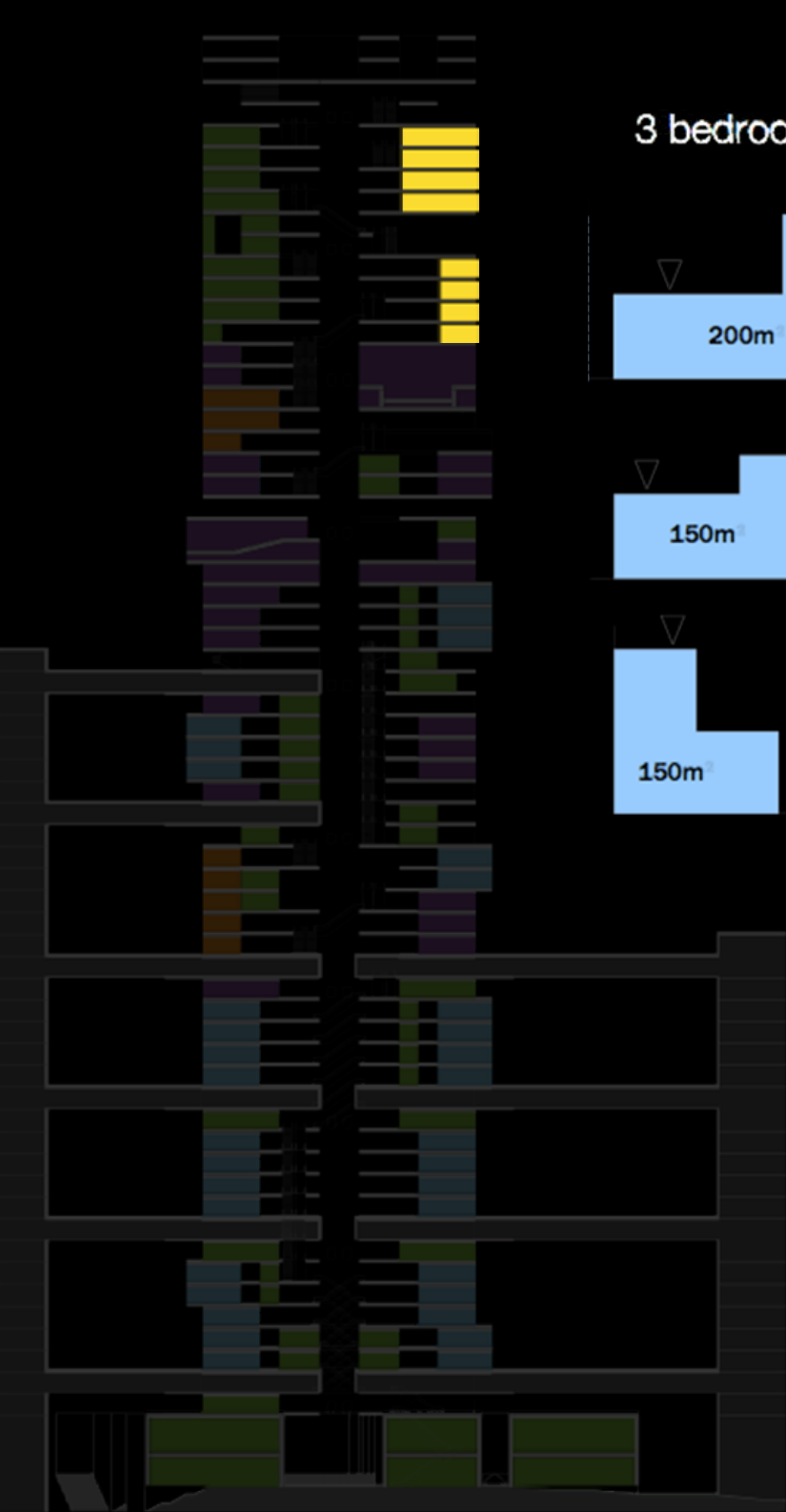
2 bedroom



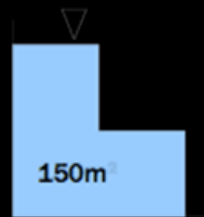
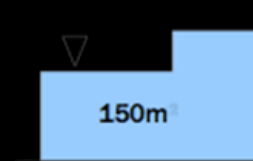
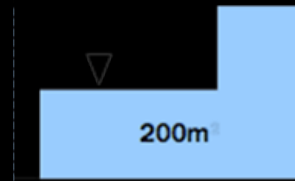
1 bedroom



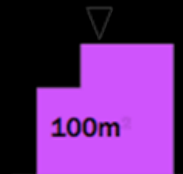
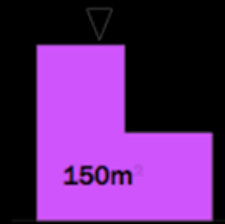
apartments



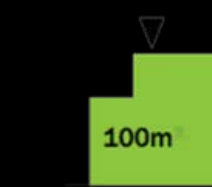
3 bedroom



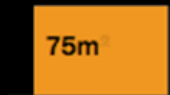
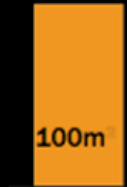
2 bedroom



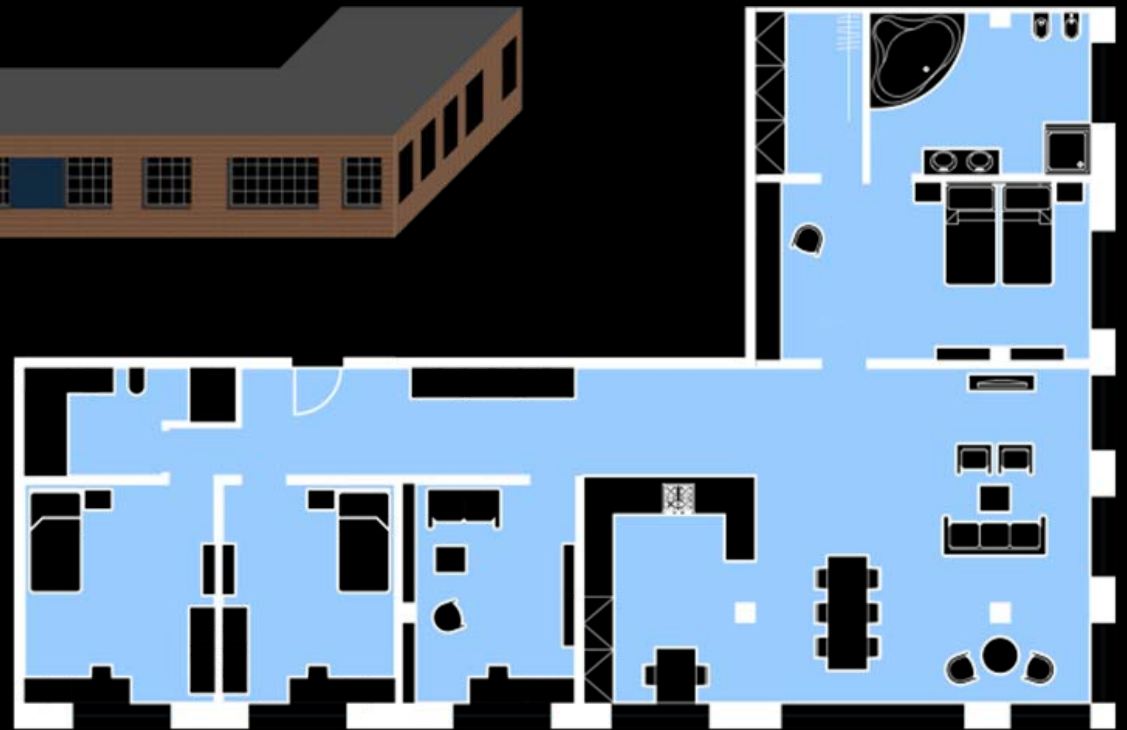
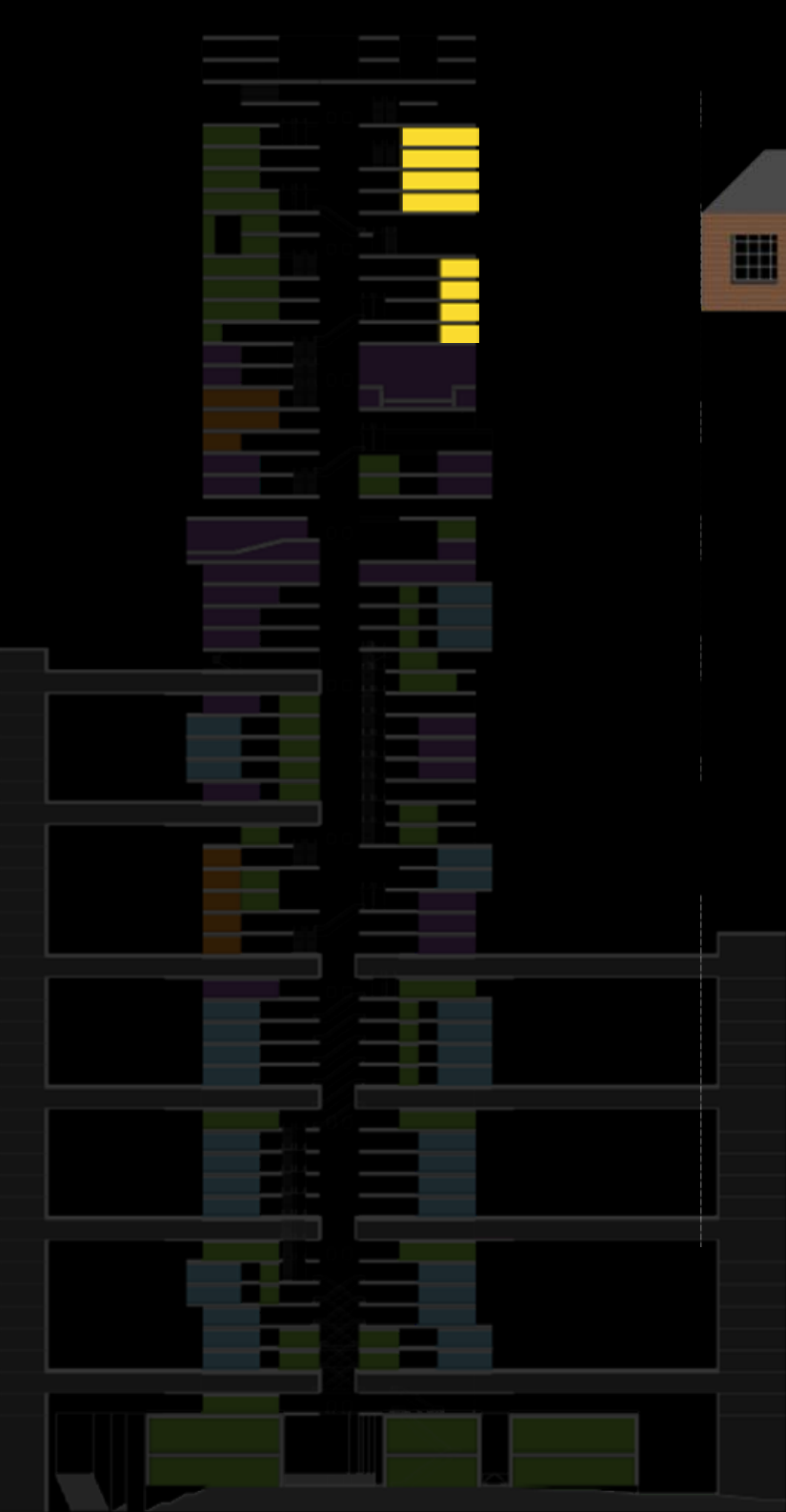
1 bedroom



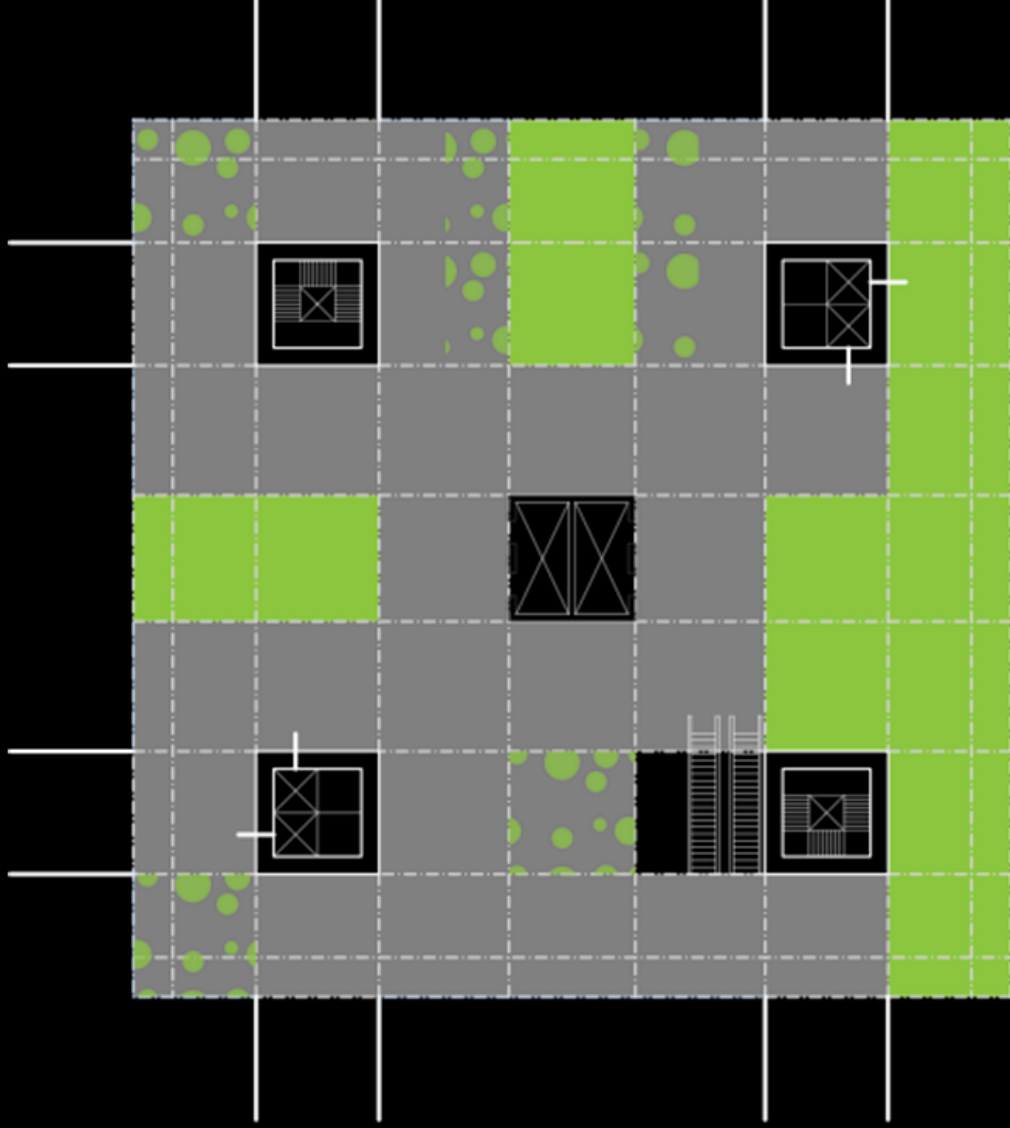
studio



apartments

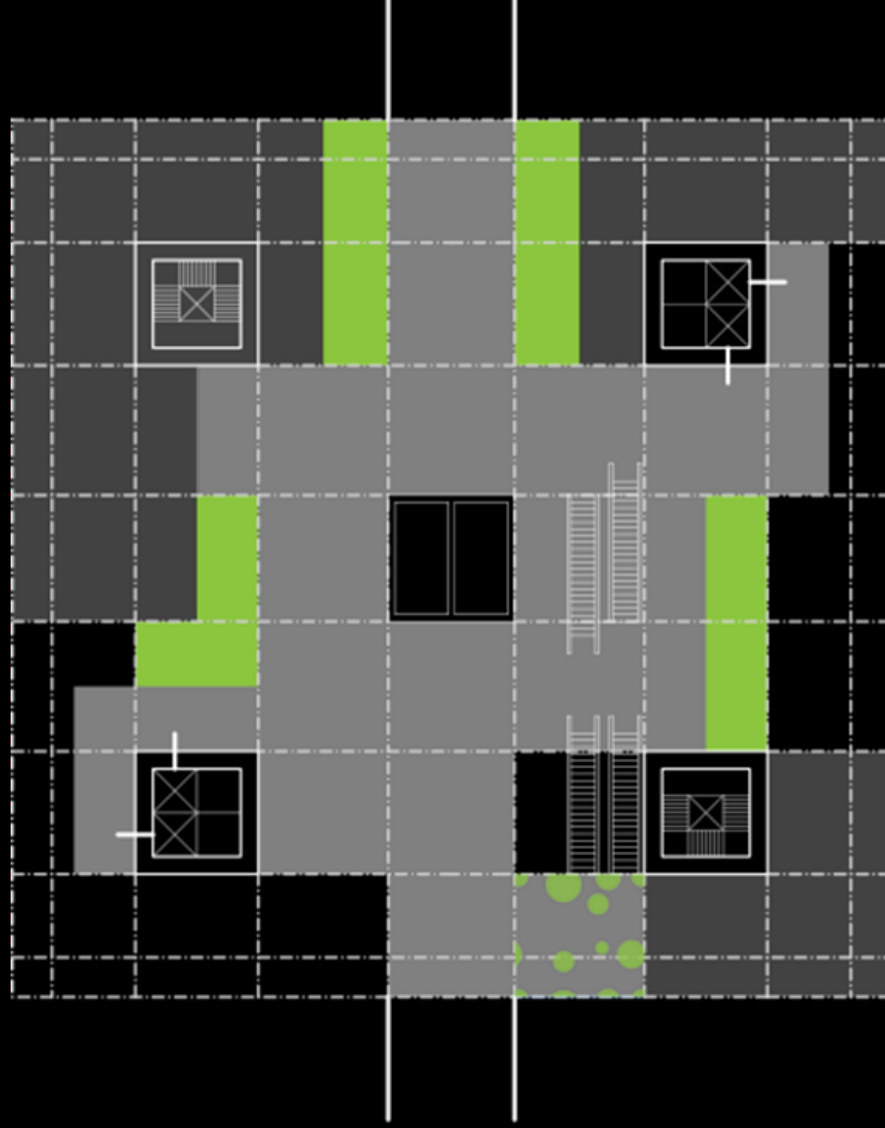


apartments



3

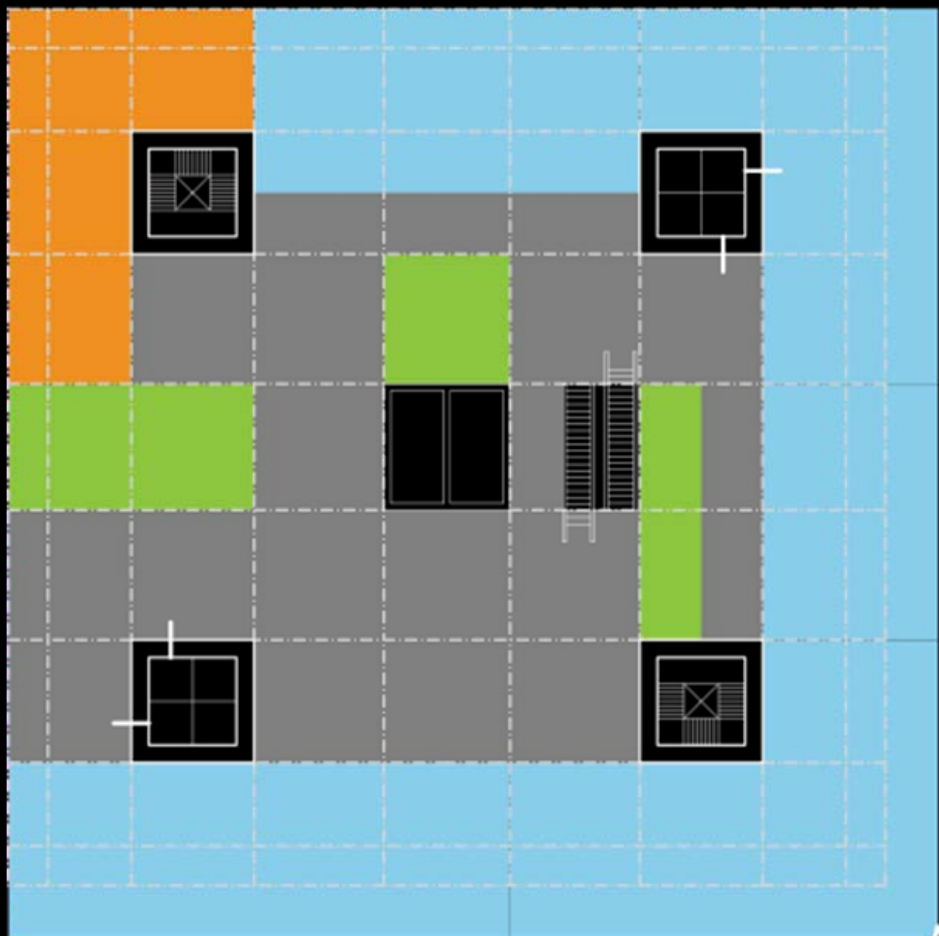
3



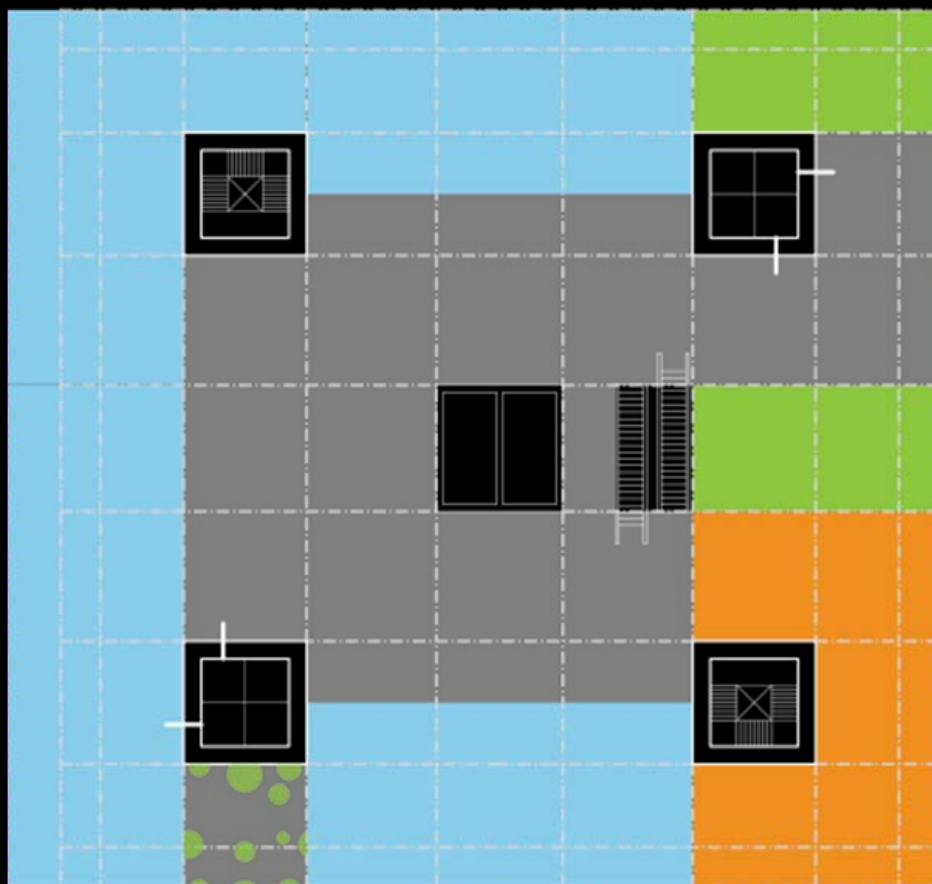
CHALLENGE

3+





5

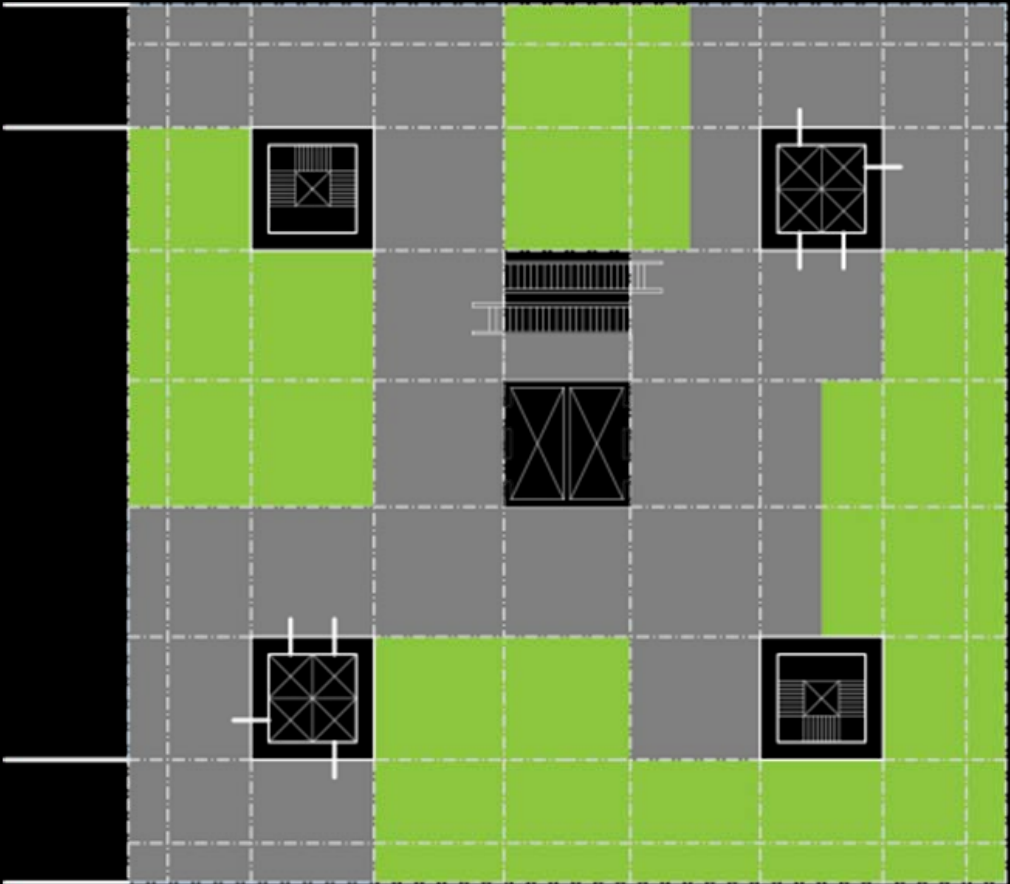


6



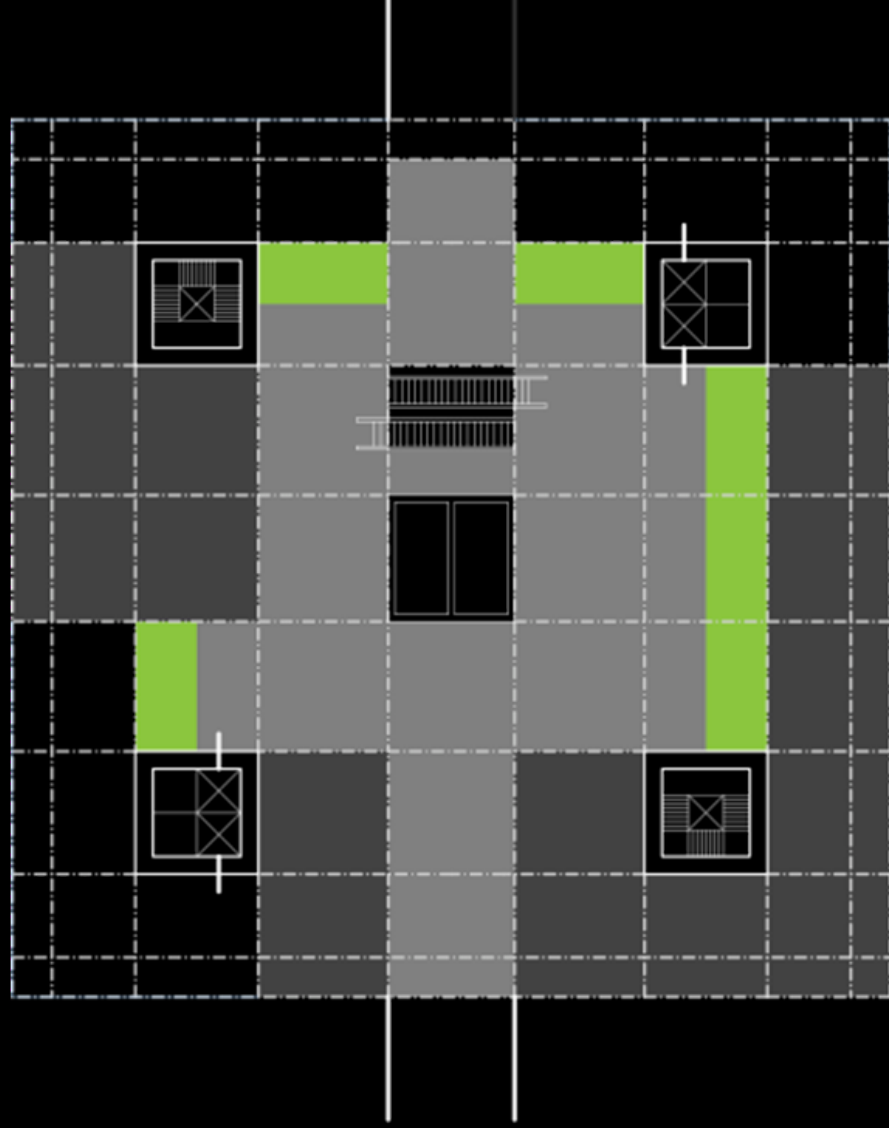
9

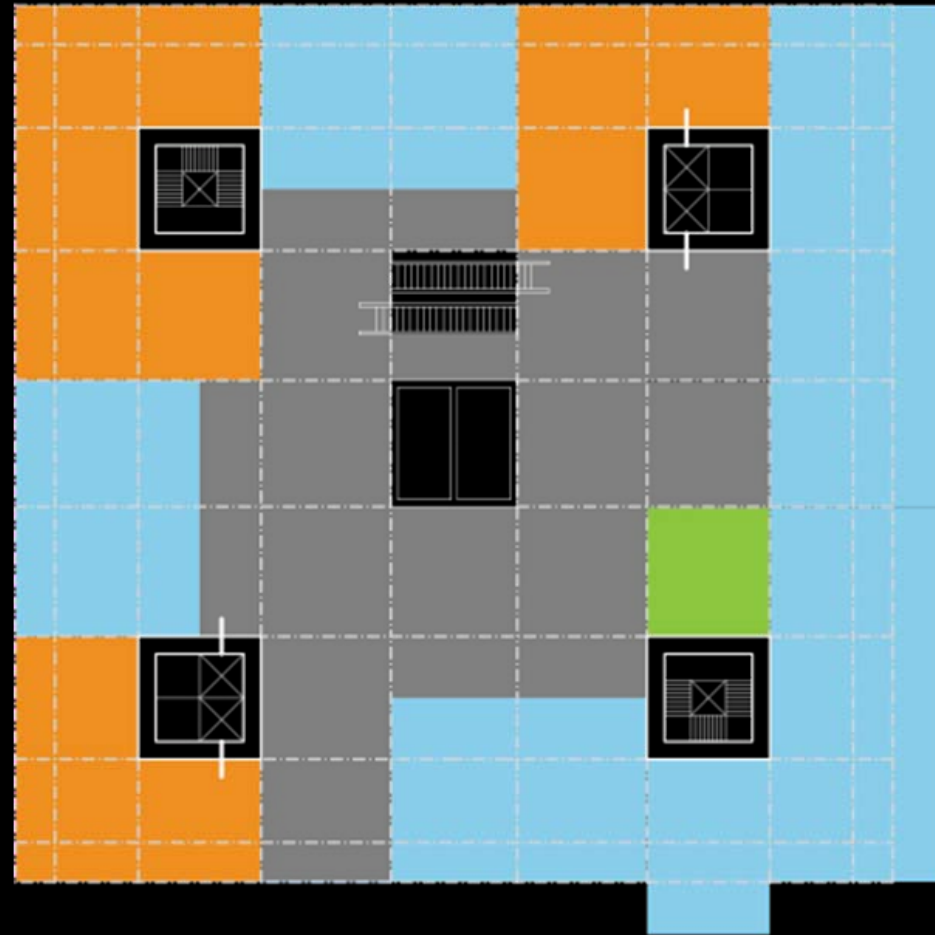
THE CHURCH OF THE FUTURE



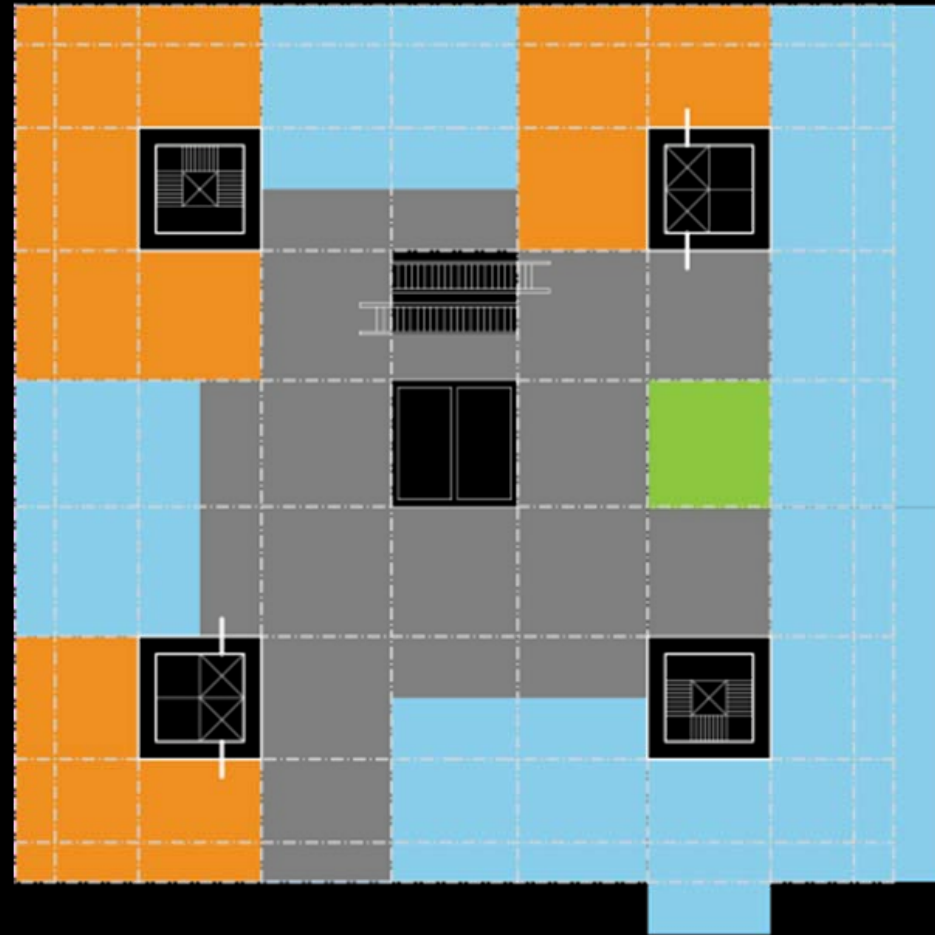
9+

empty squares are given

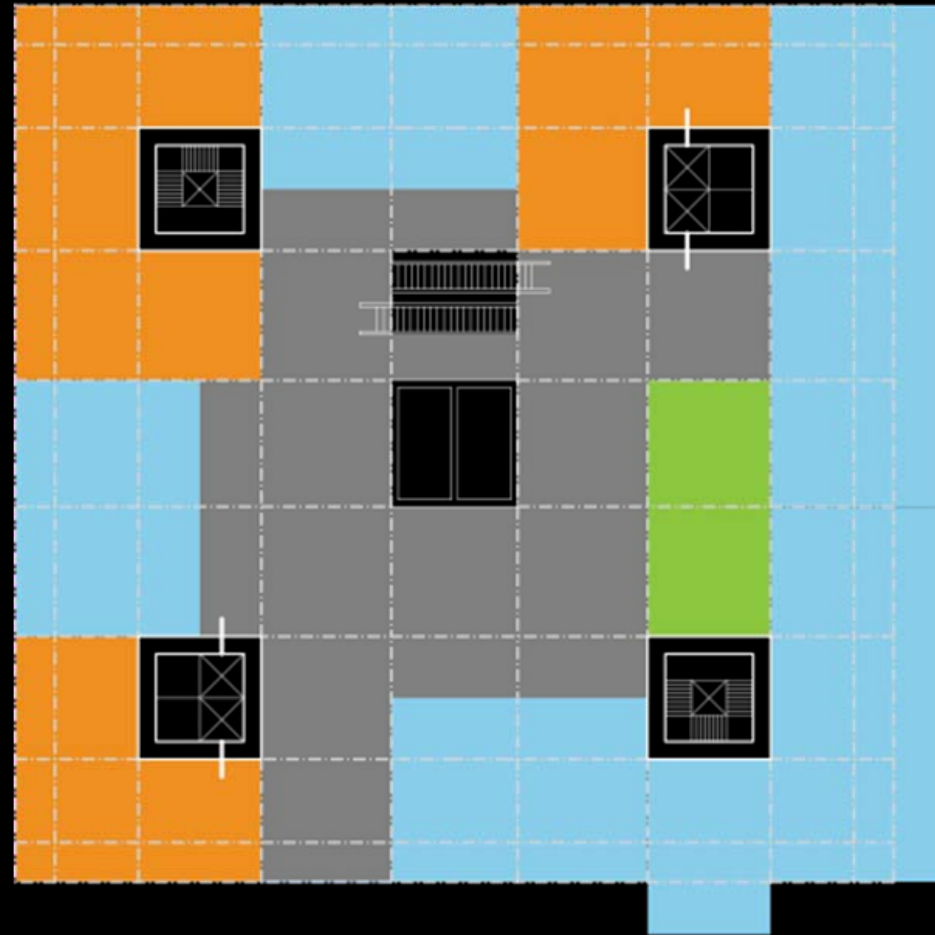




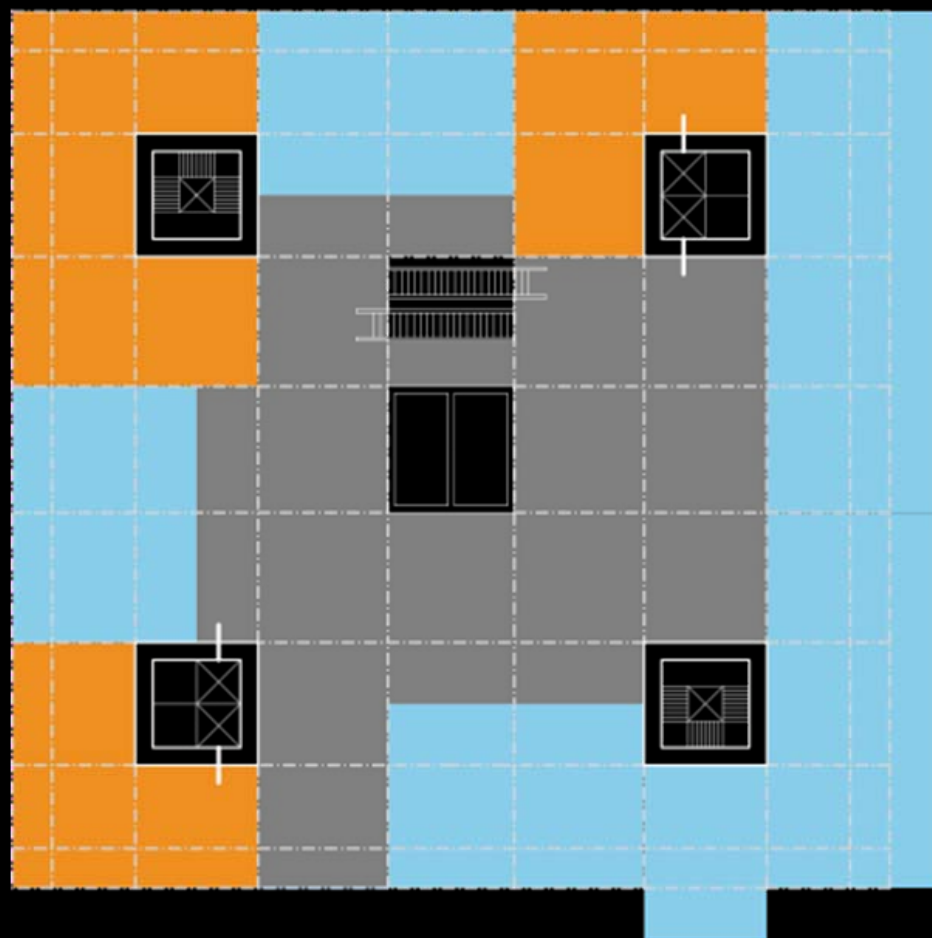
10



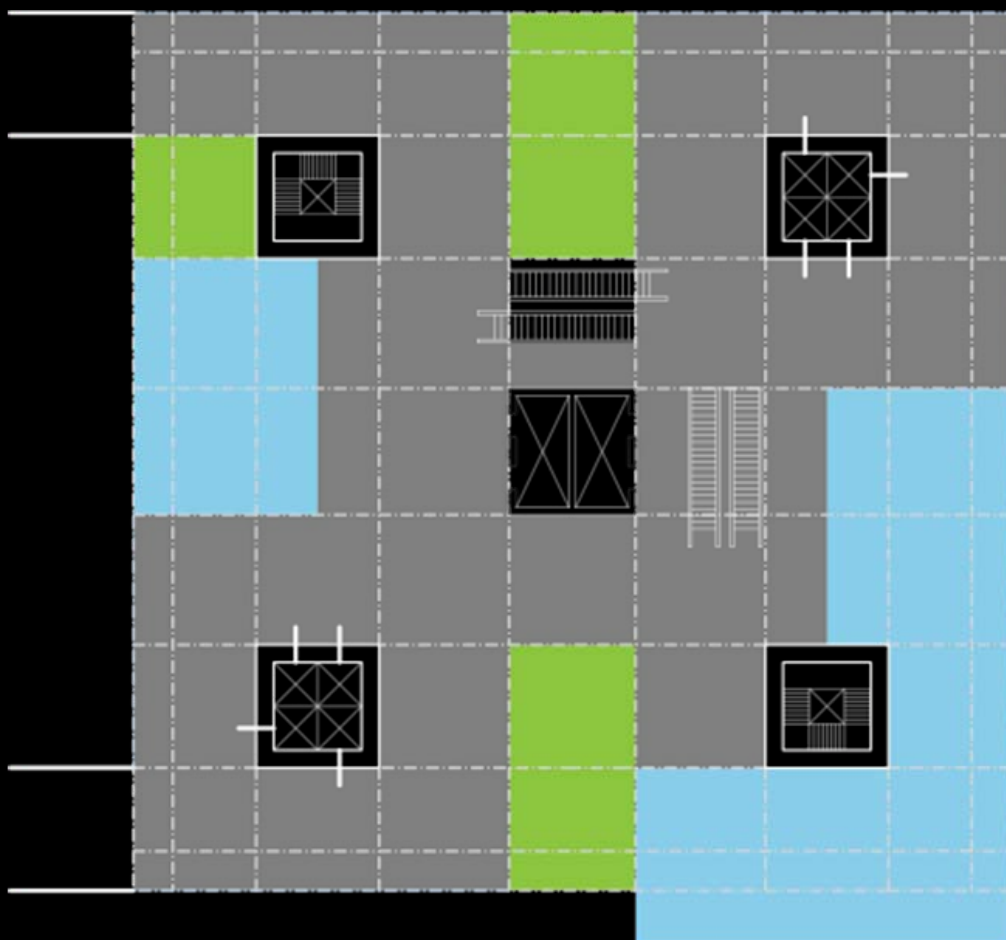
11



12

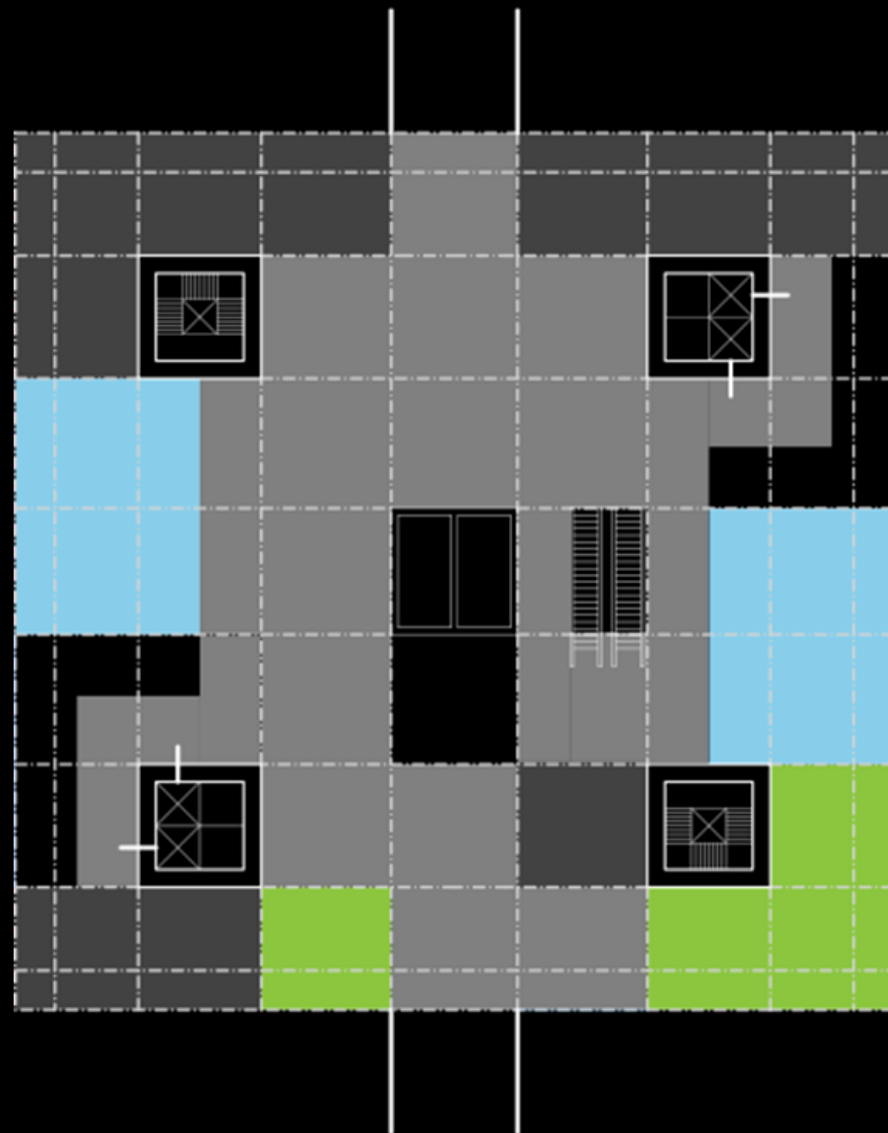


13



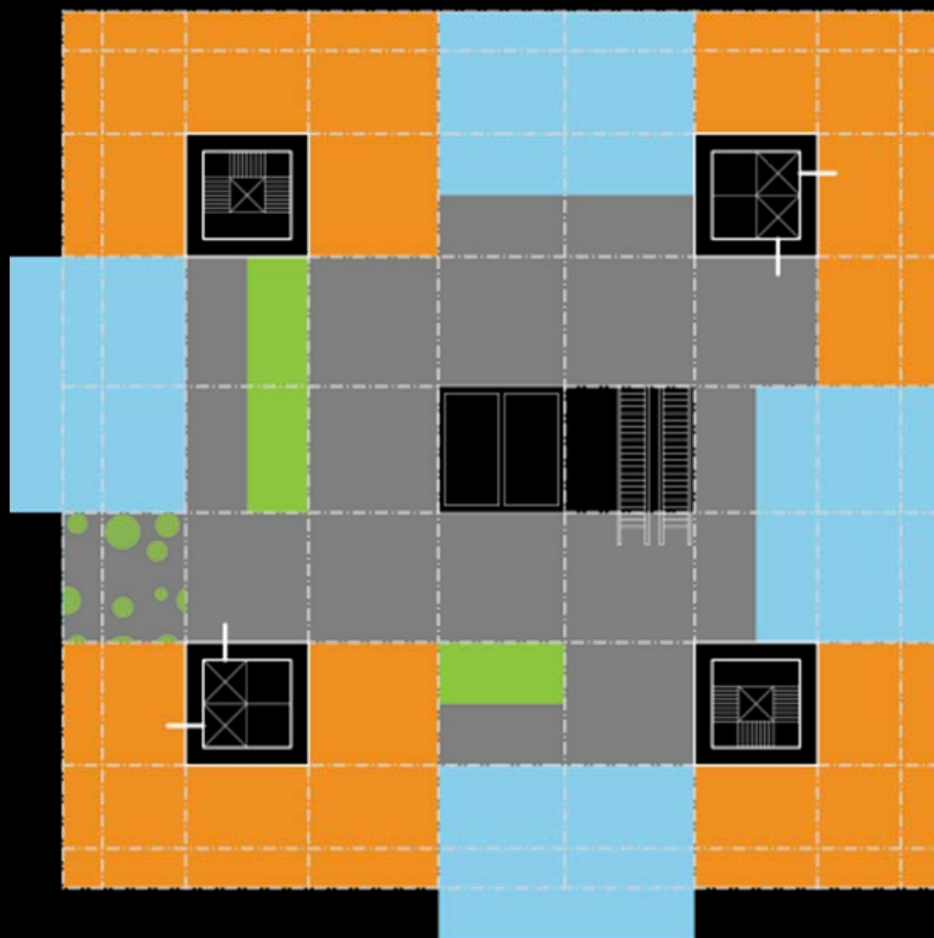
Southam Garden Plaza

14

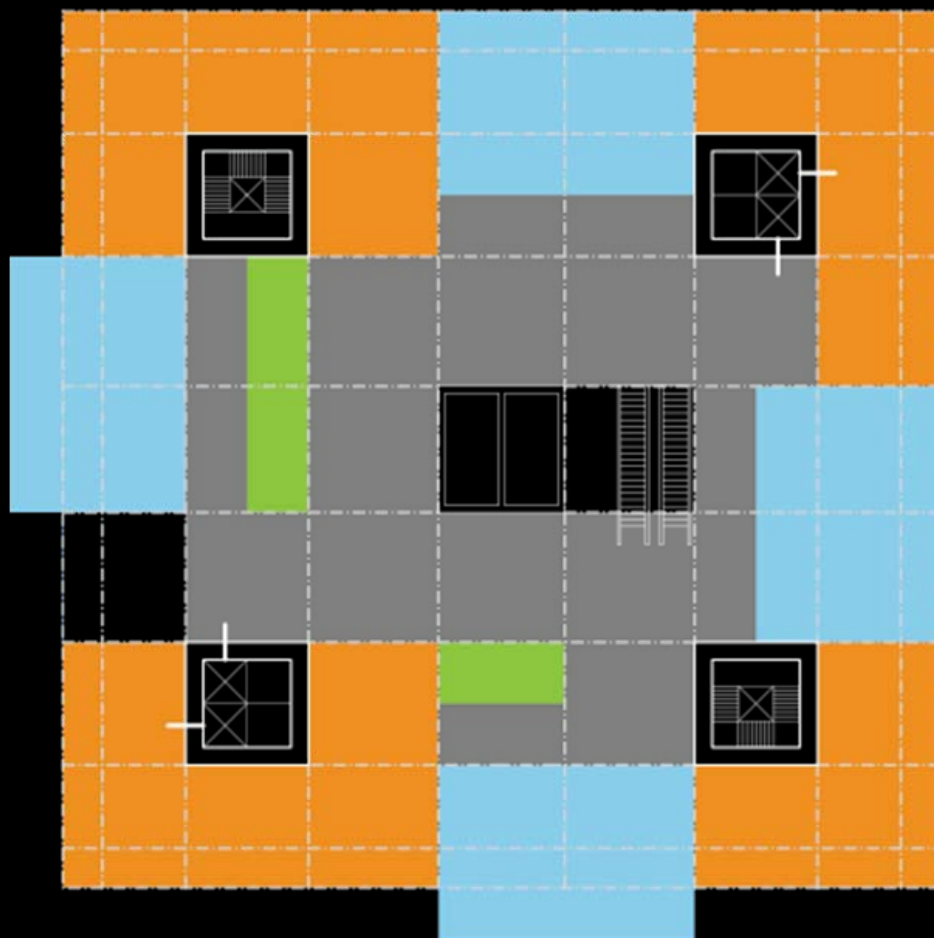


14+ (14+ is written vertically)

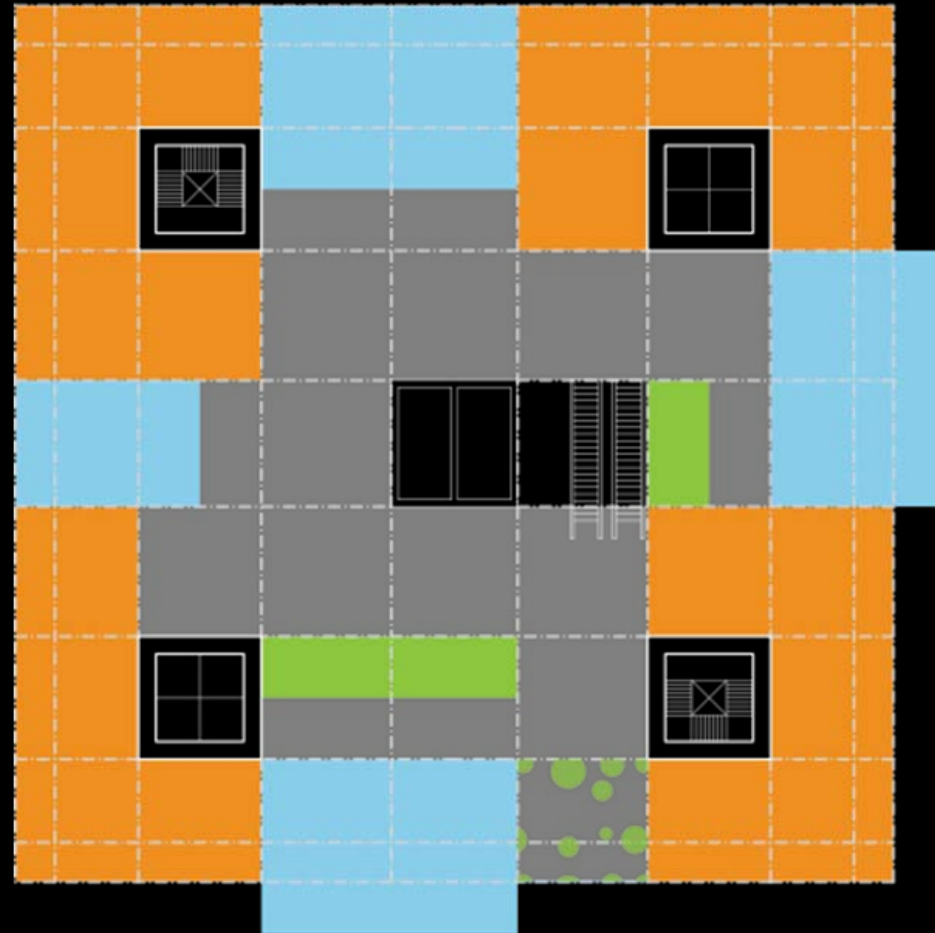
14+



15

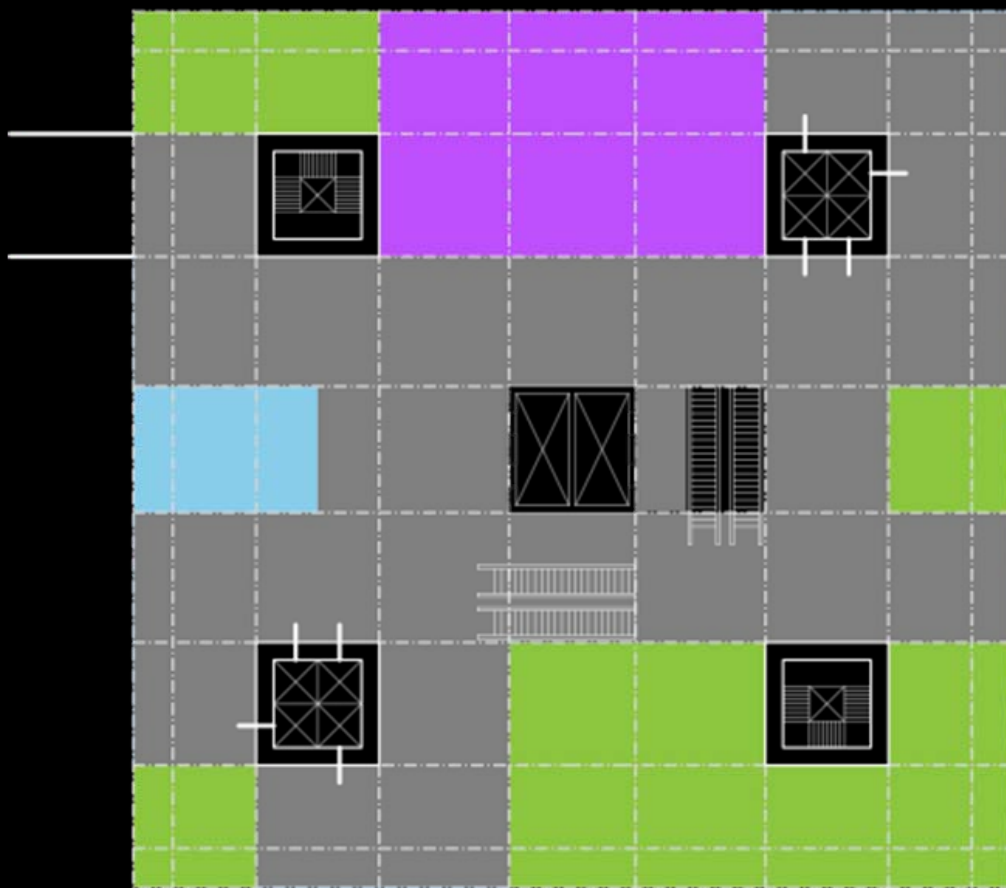


16



17

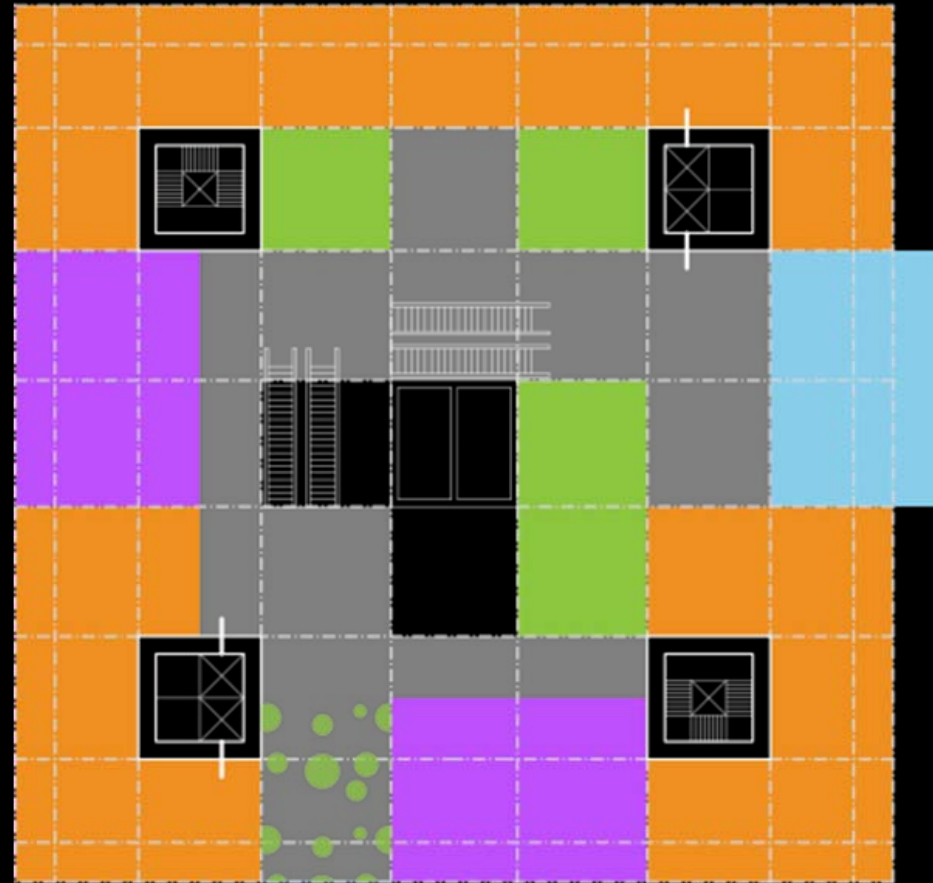




Boundary City Diagram

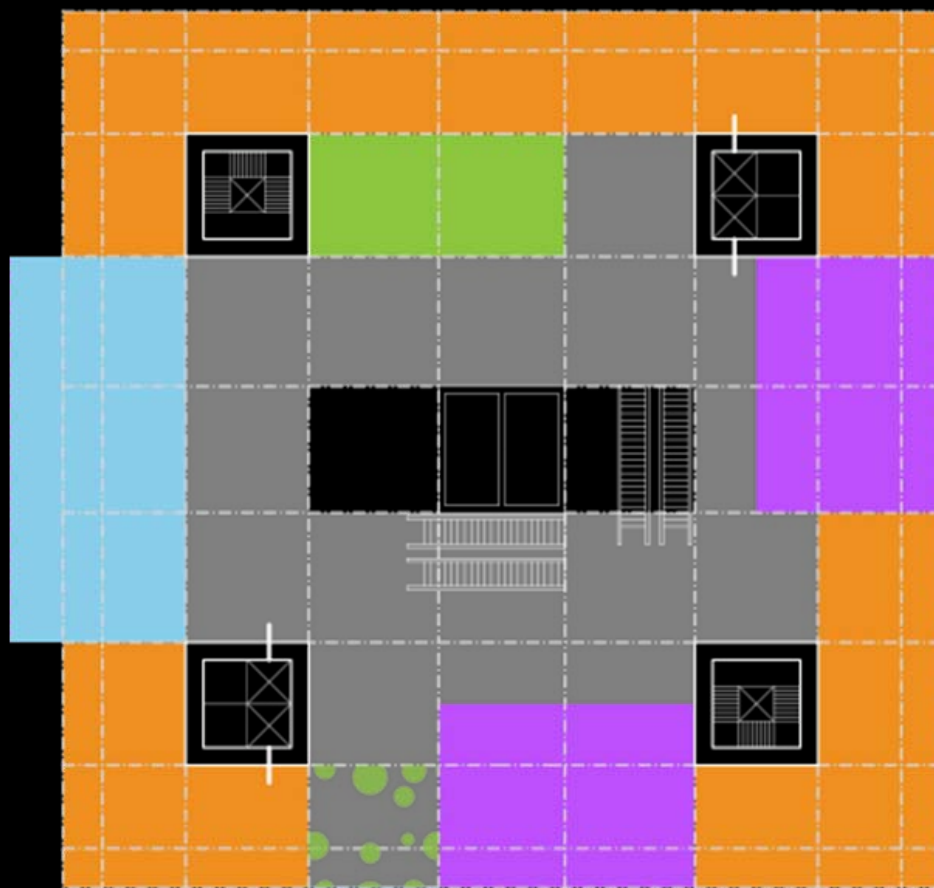
19

19+



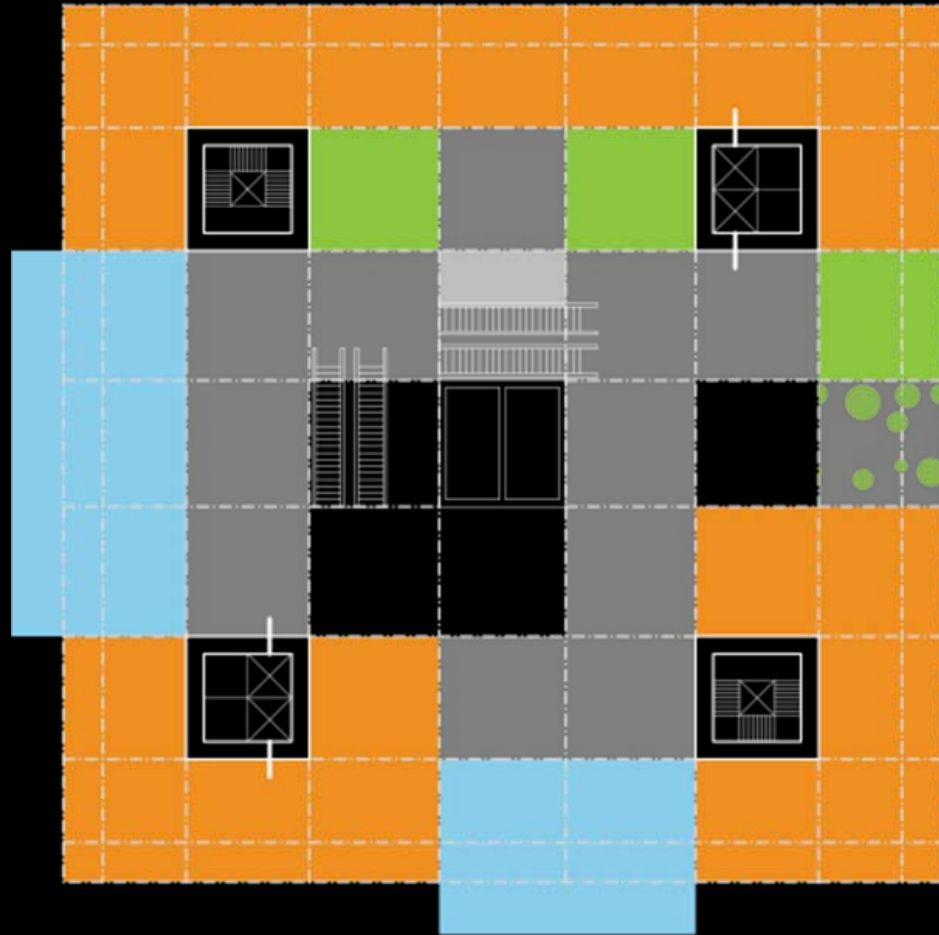
20



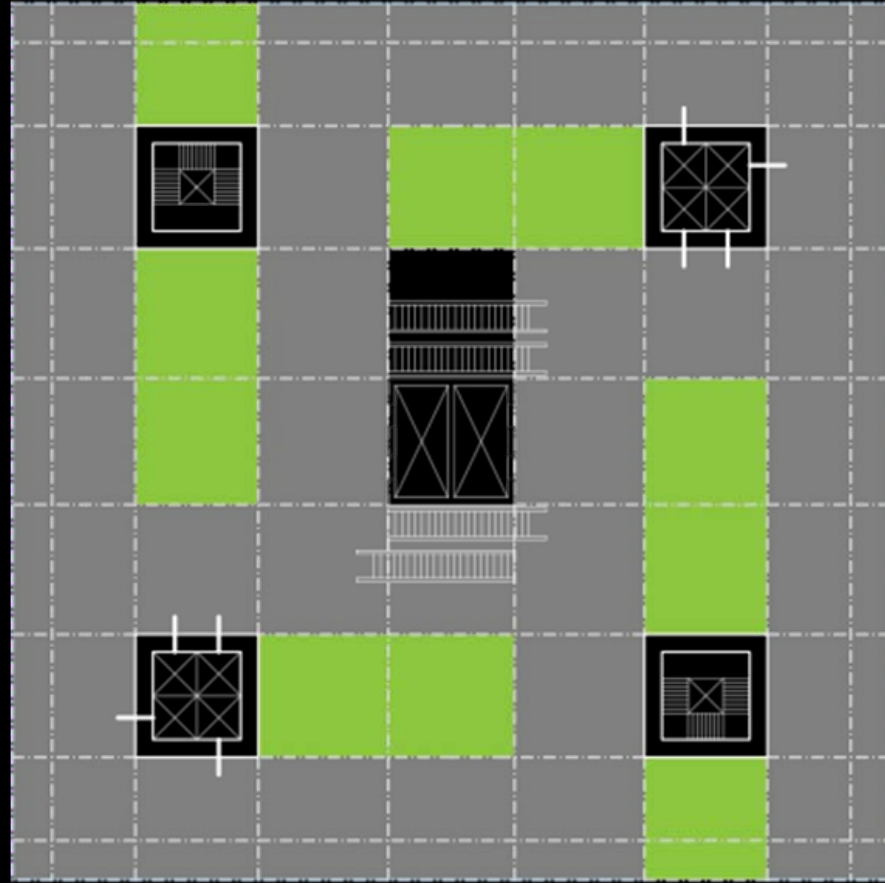


22



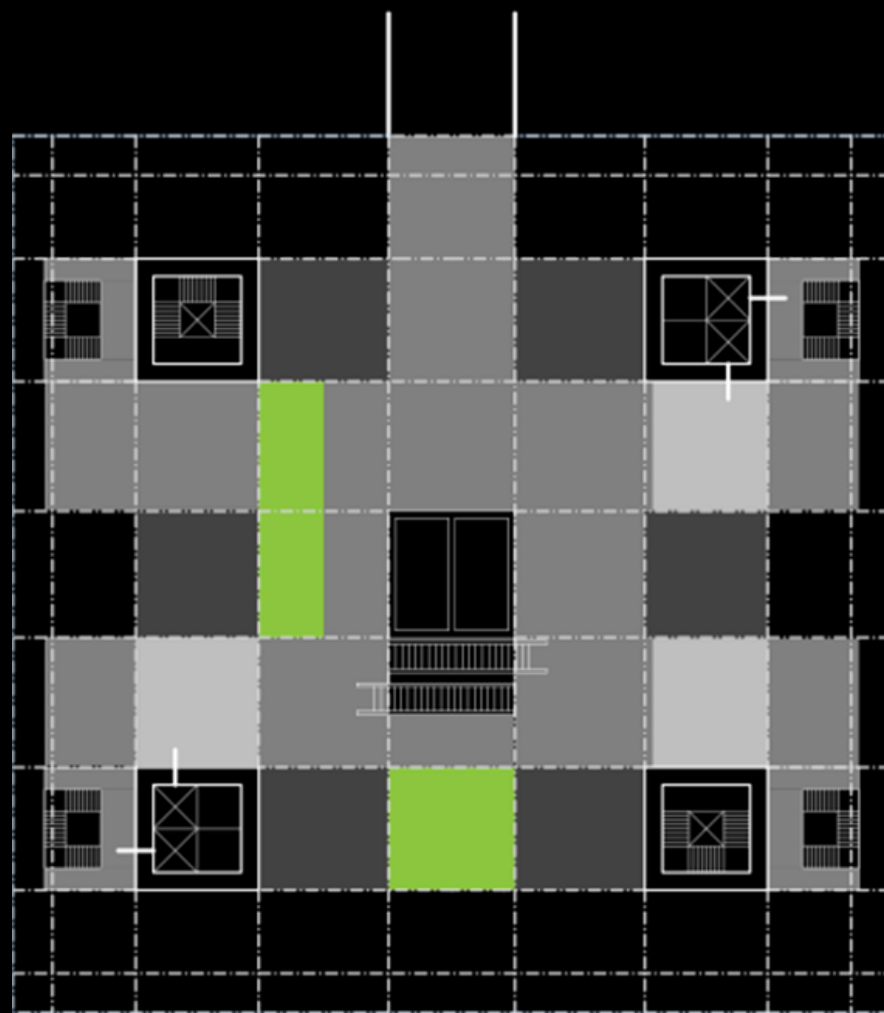


24



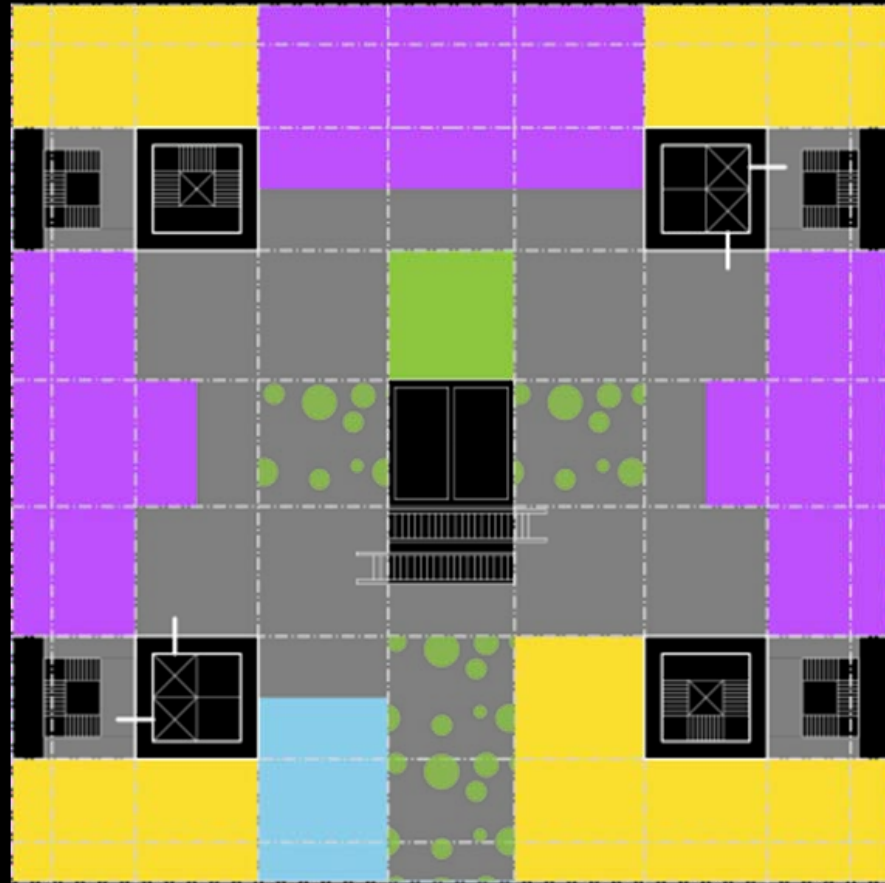
What happens if you change the grid?

25

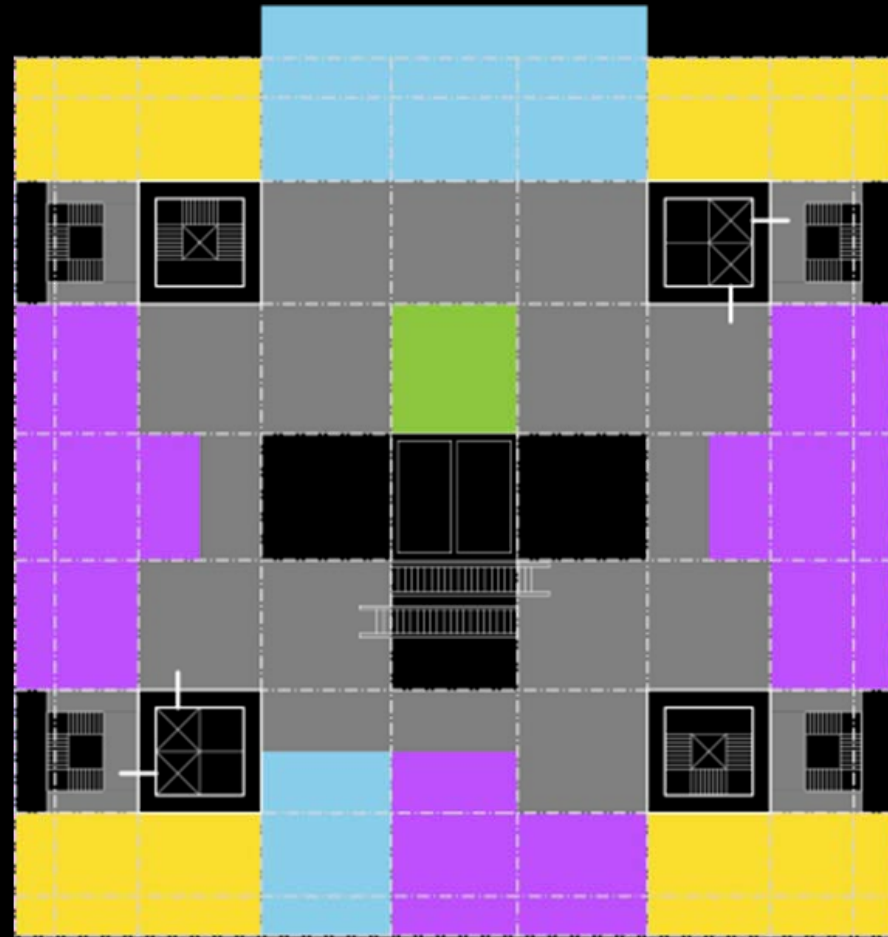


25+ 25+ 25+ 25+ 25+ 25+ 25+

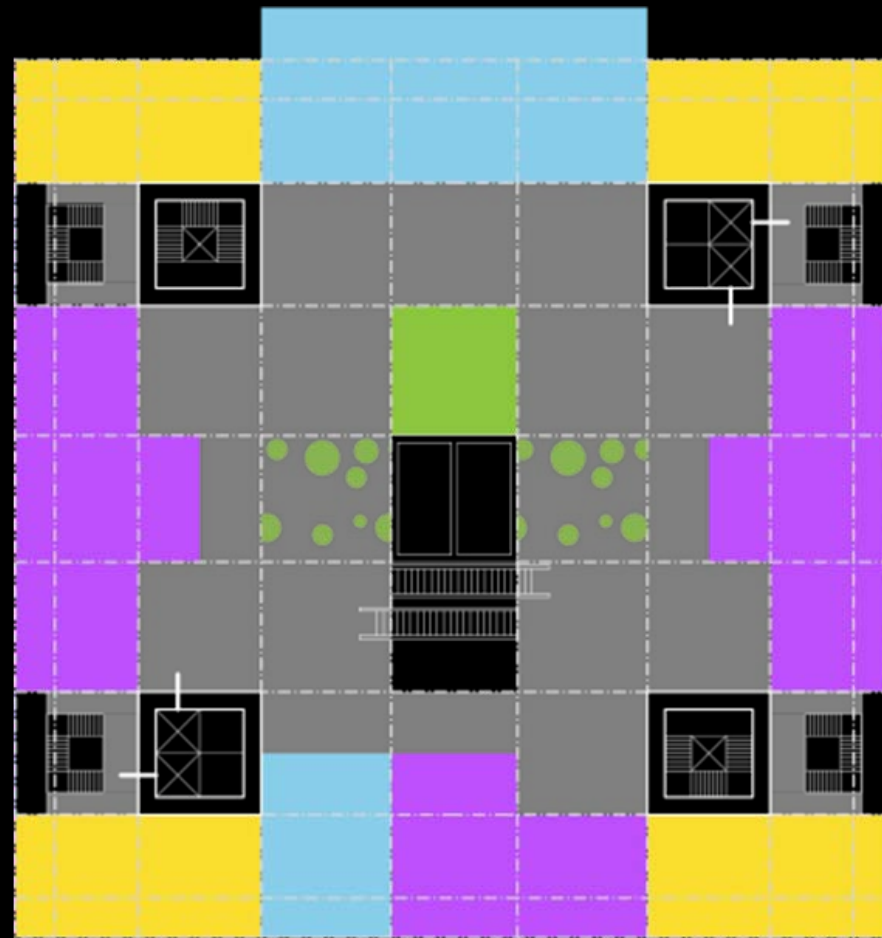
25+



26



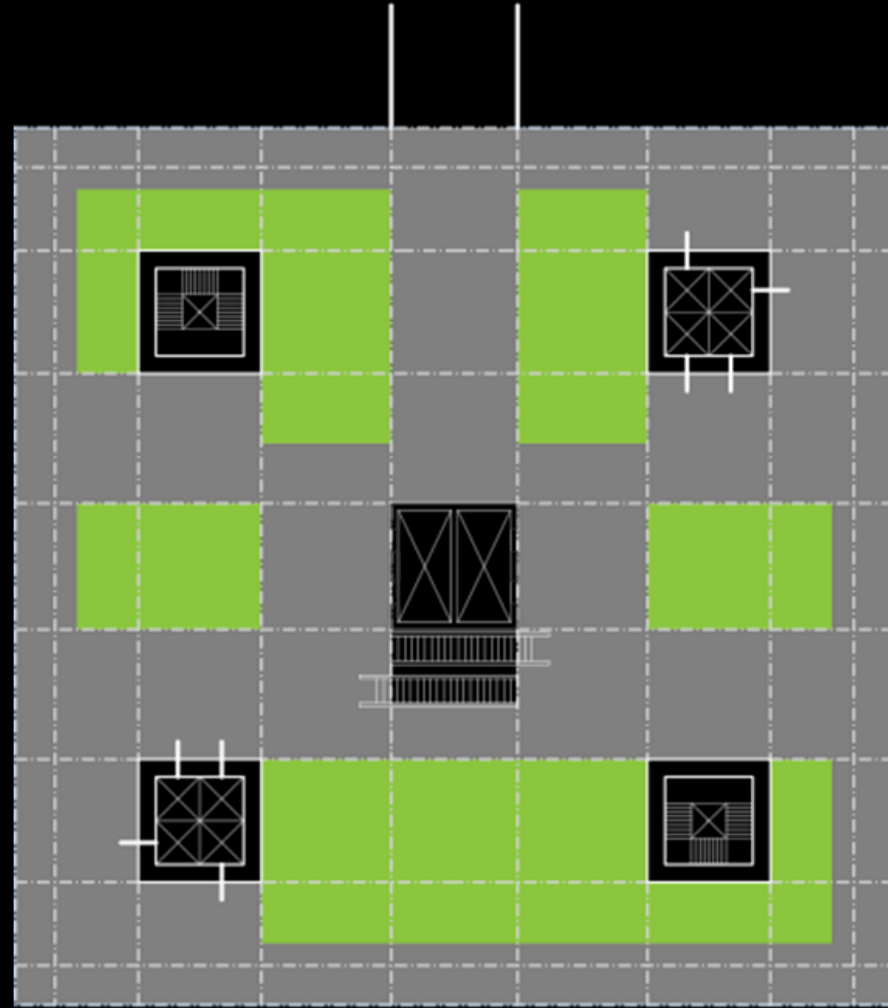
27



28

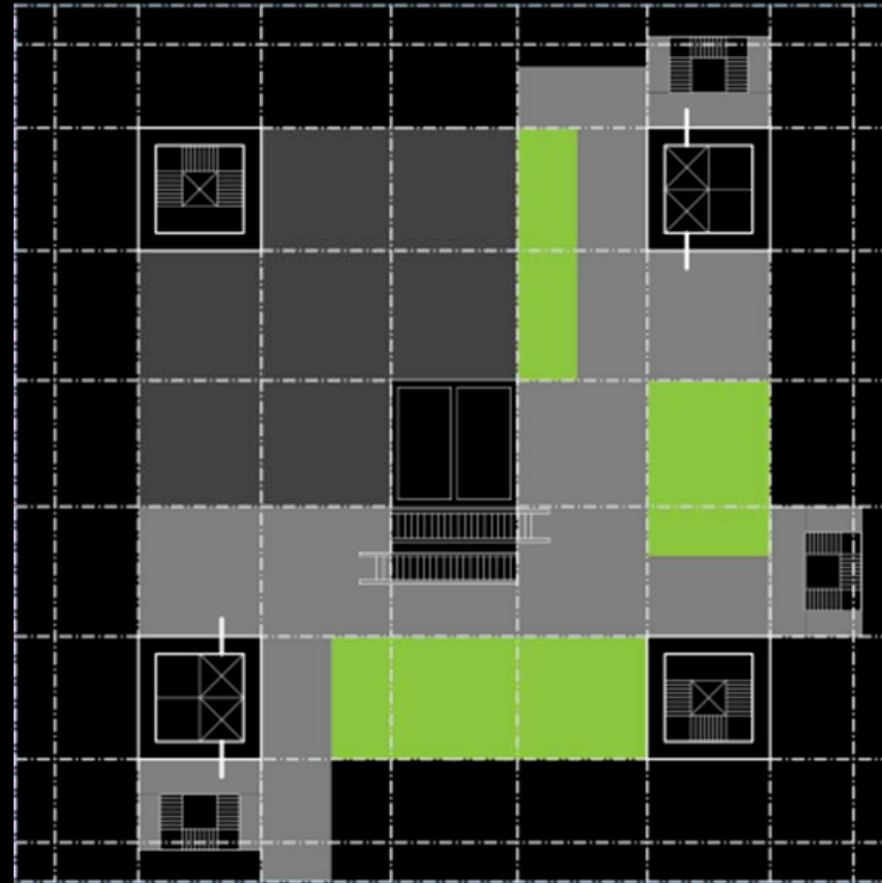






body view

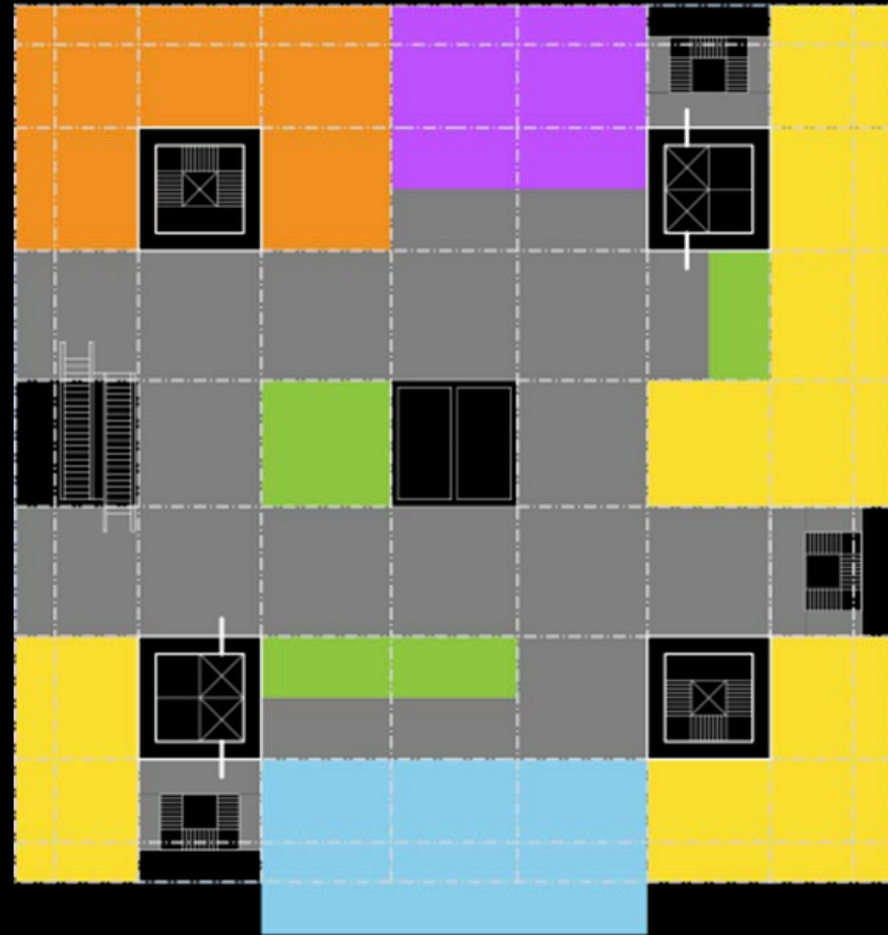
31



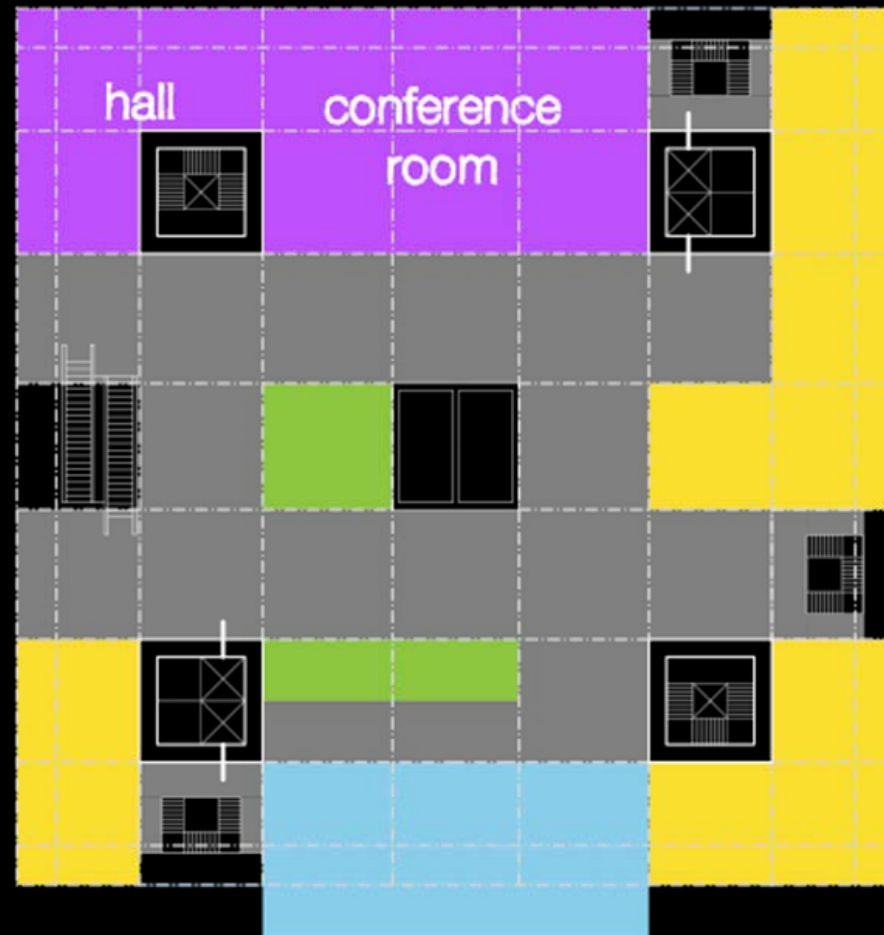
31+ 31+ 31+

31+

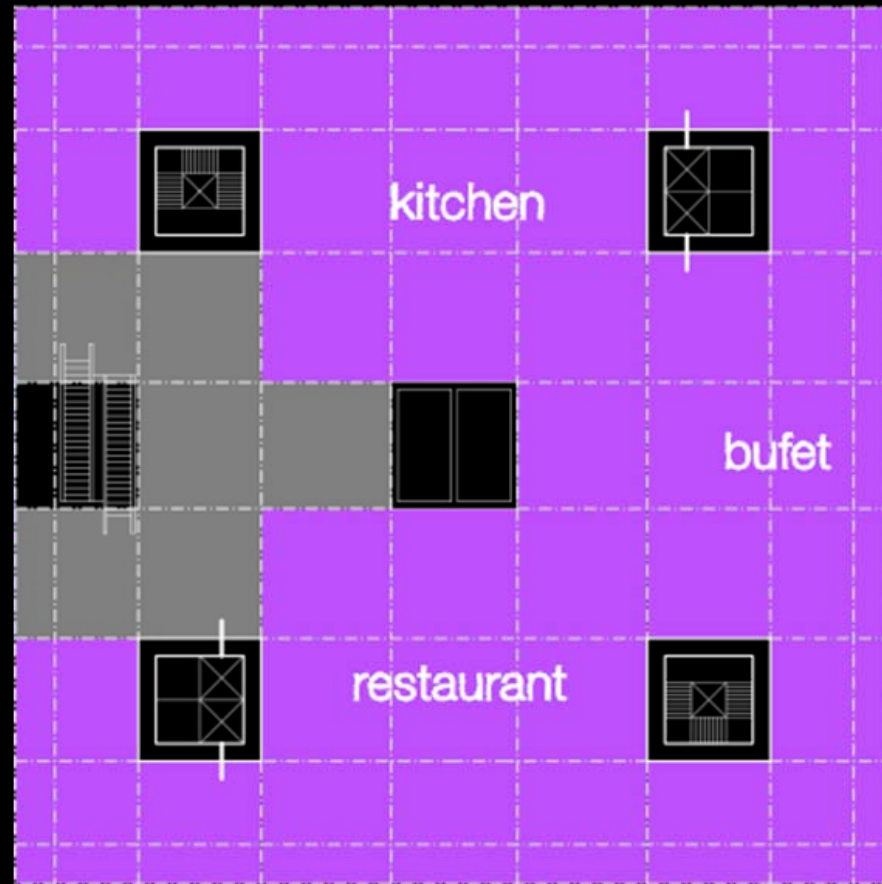




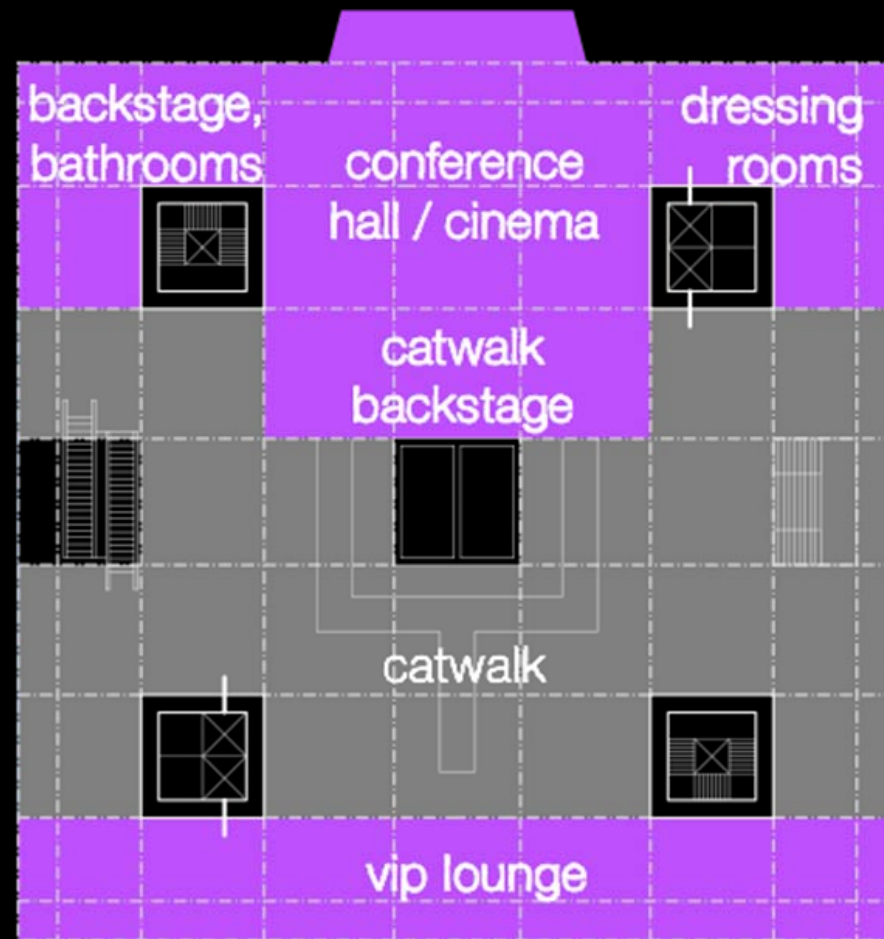
33



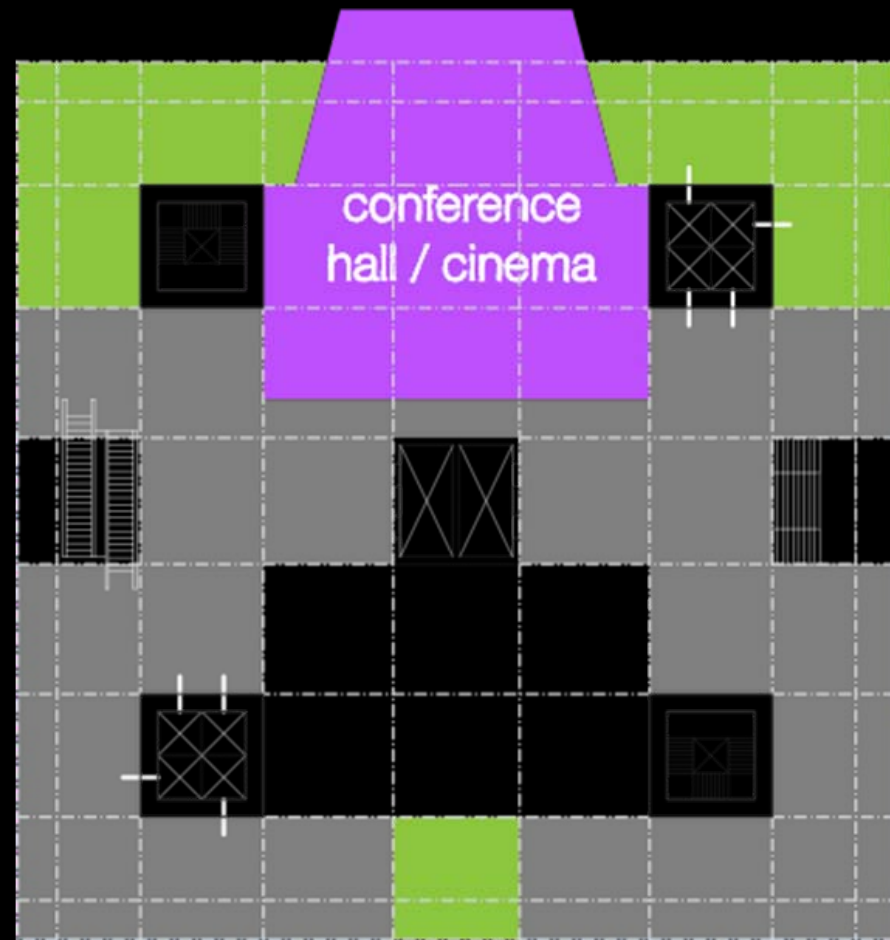
34



35

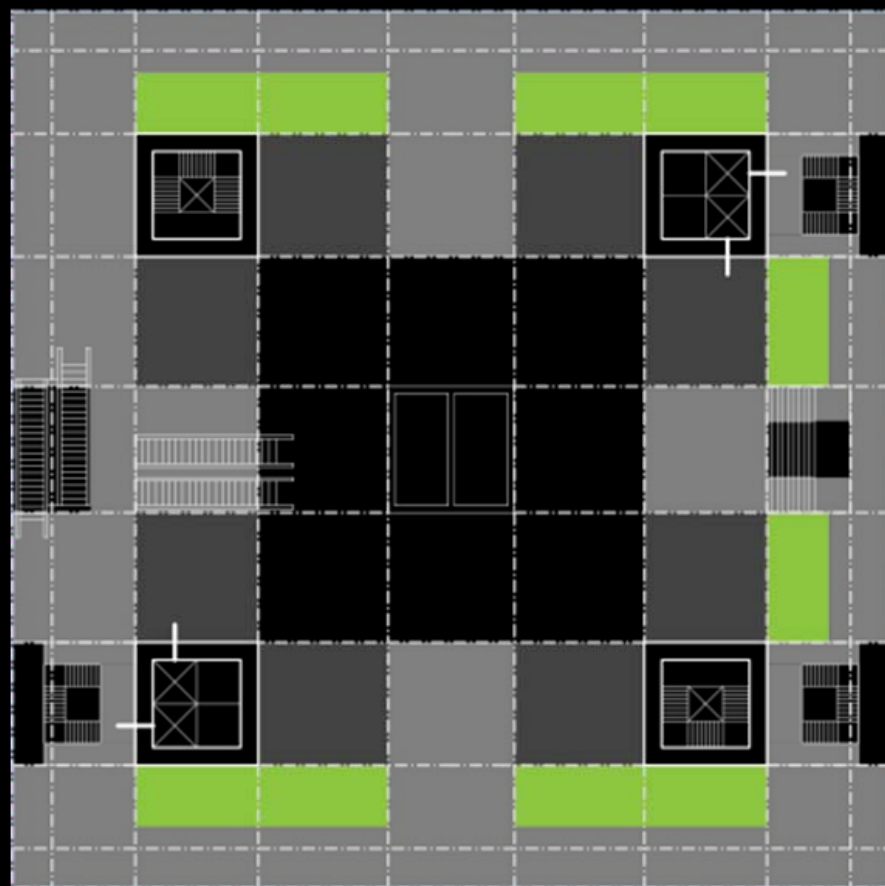


36



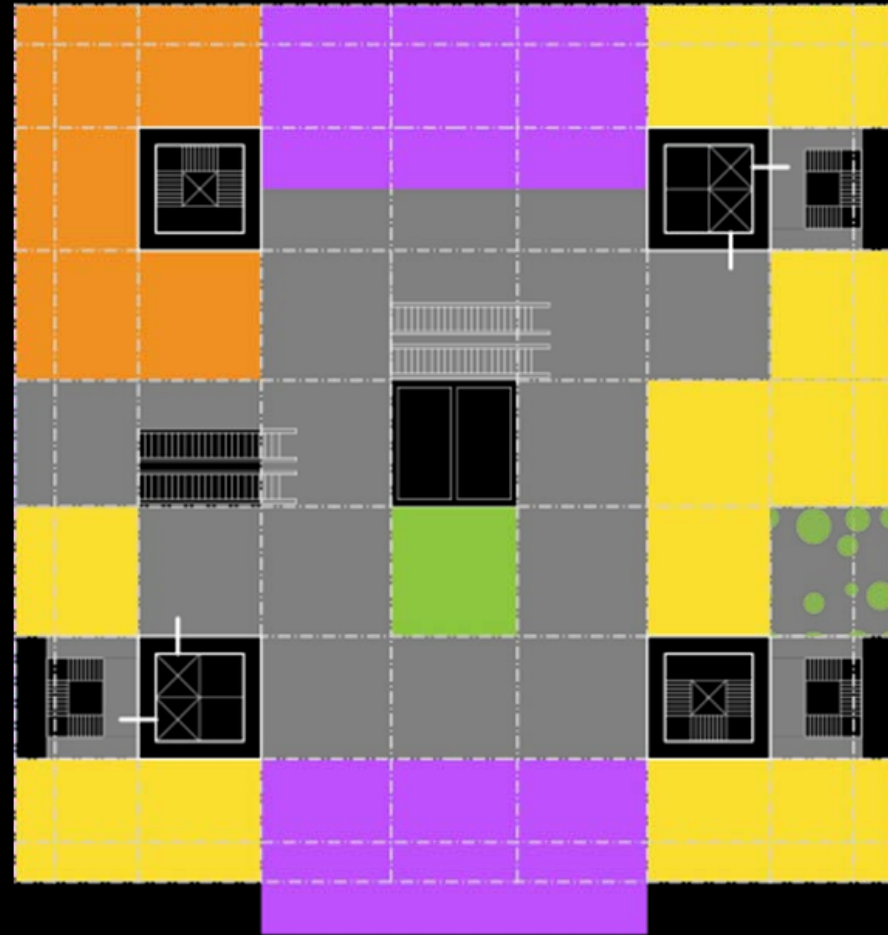
conference hall / cinema

37

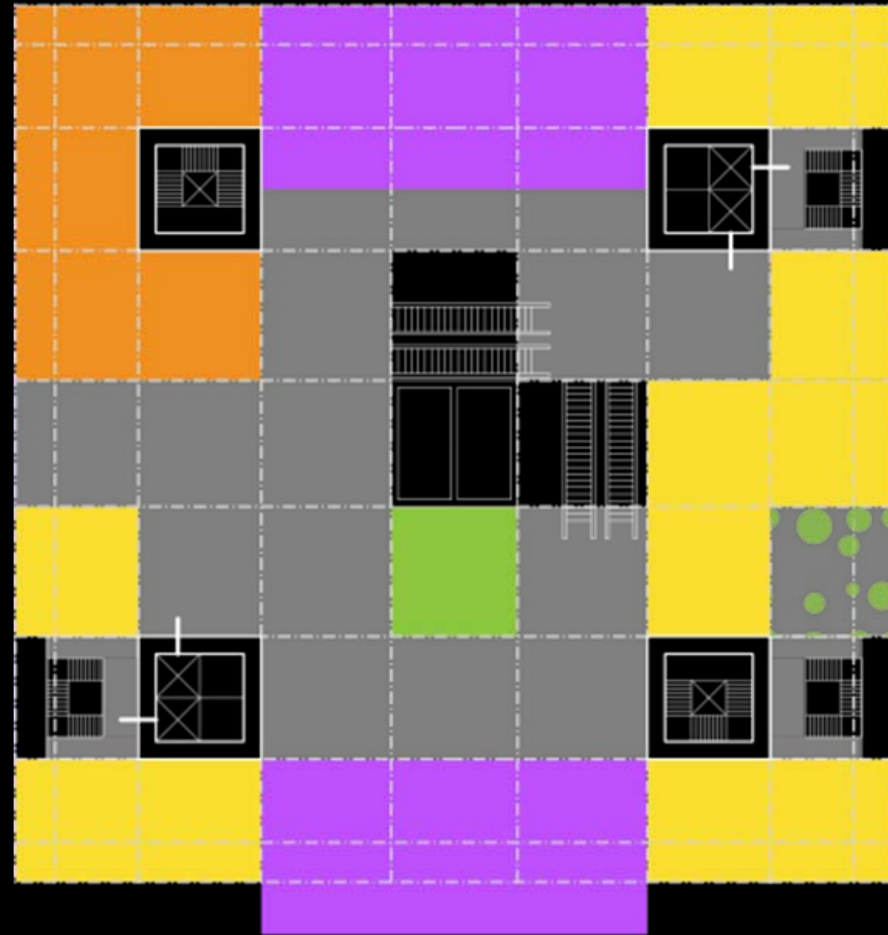


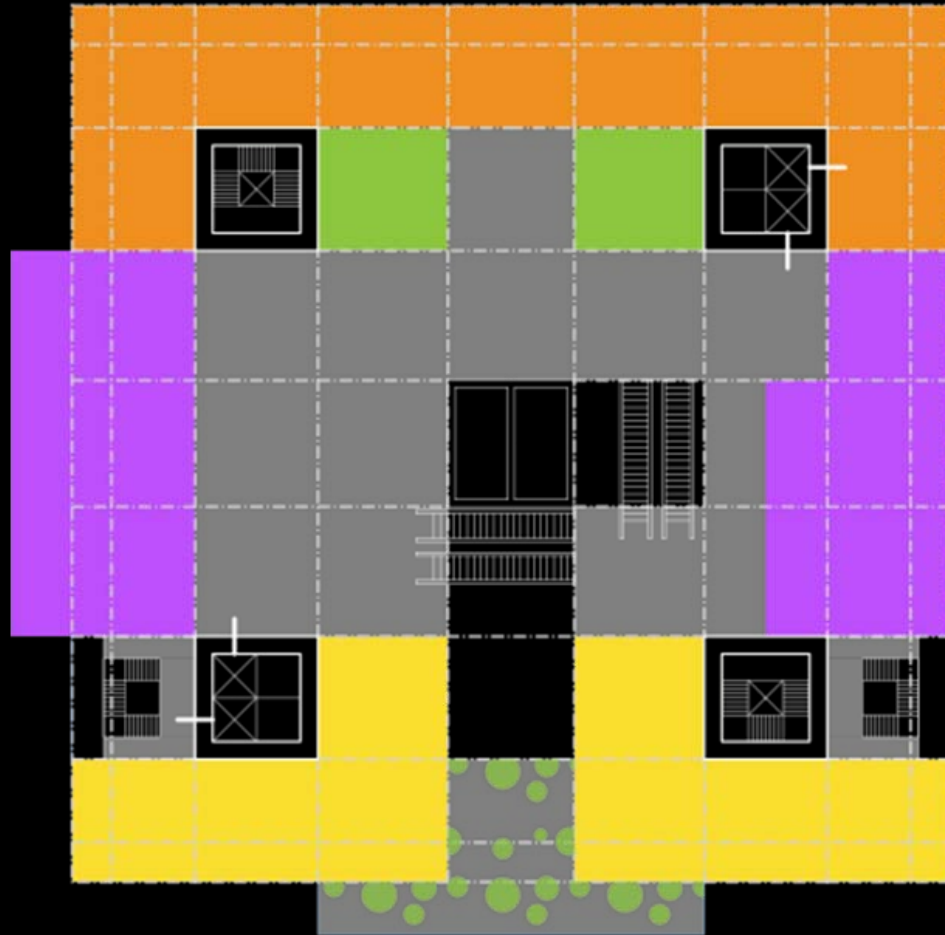
37+

37+

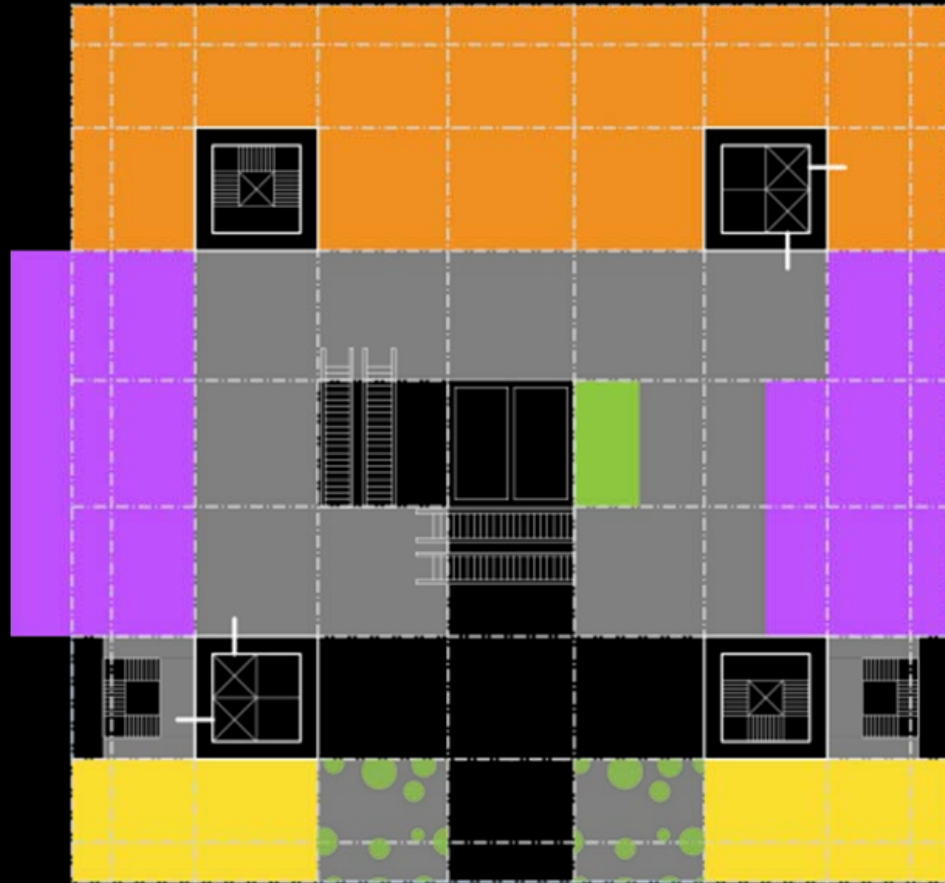


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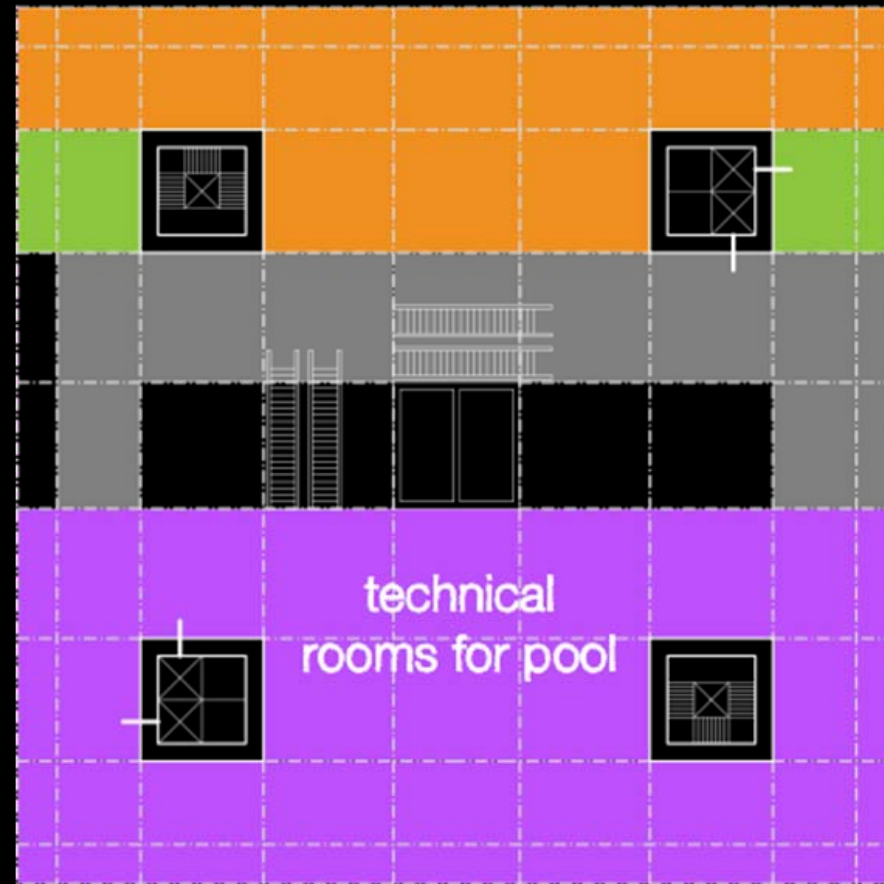


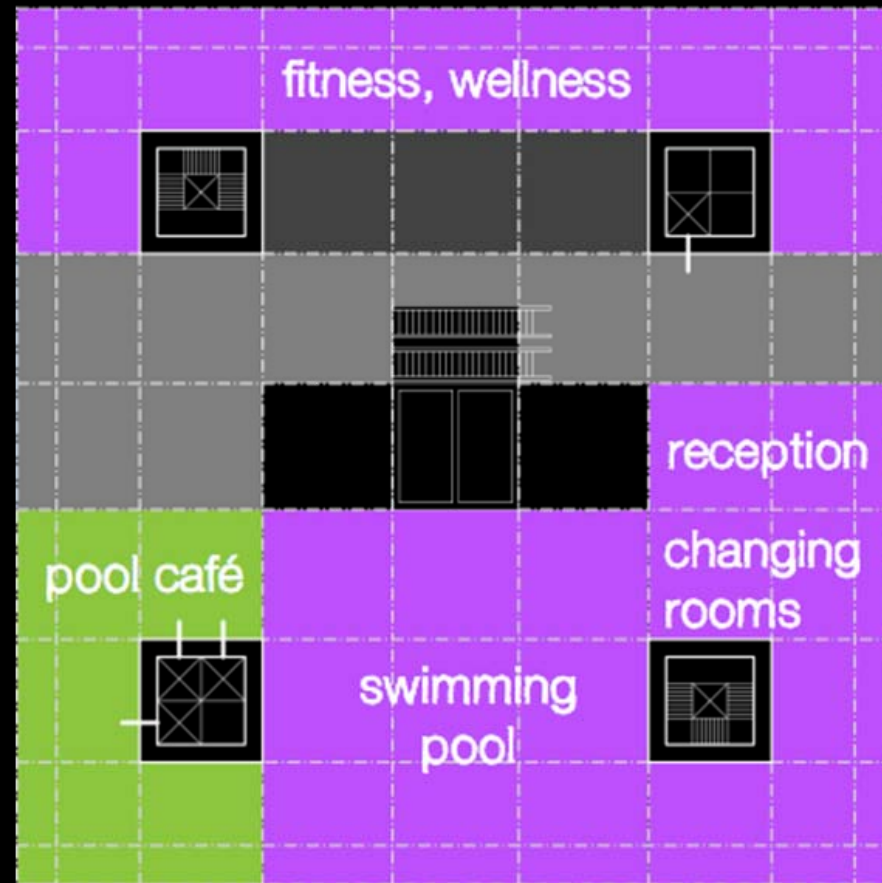


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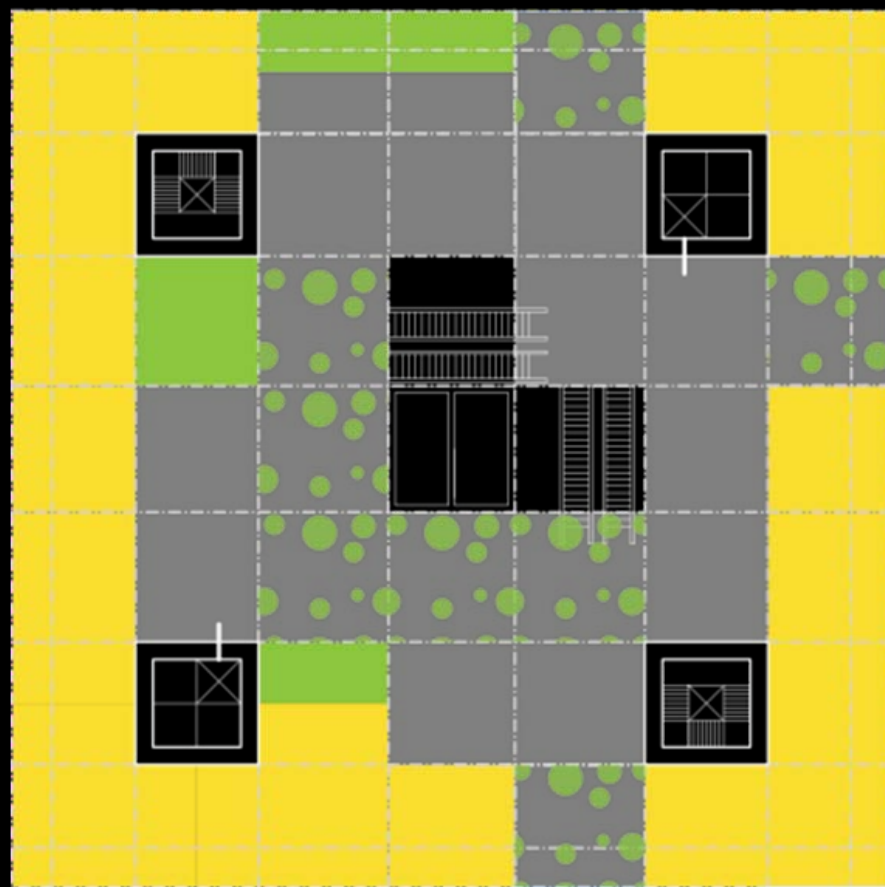


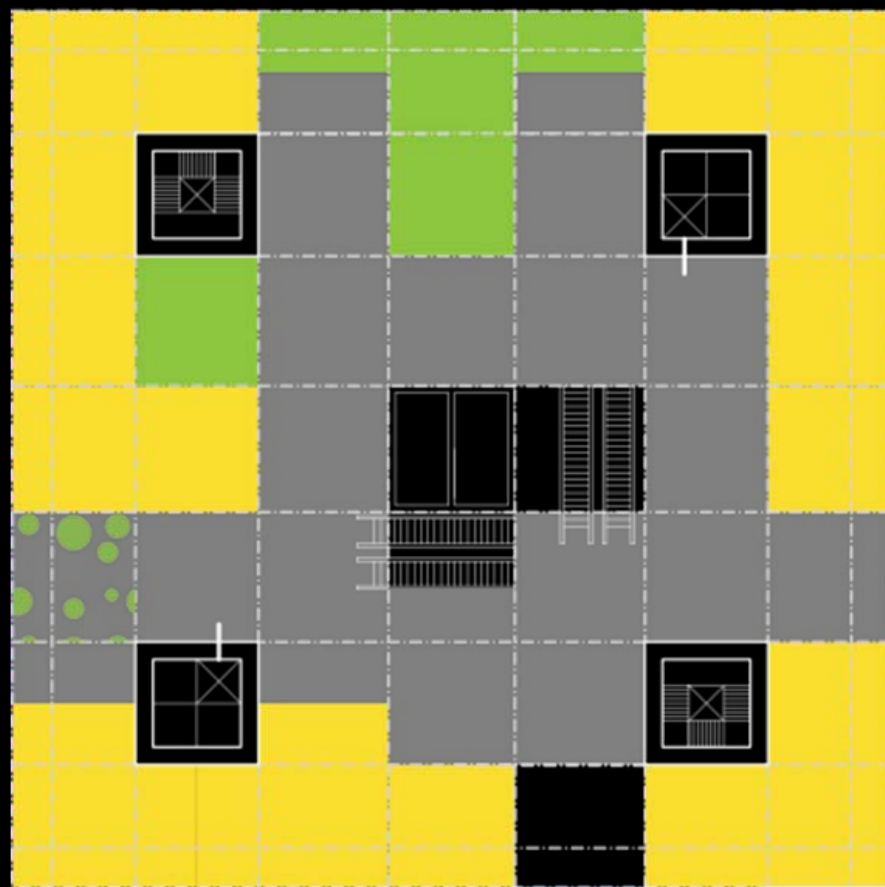
41



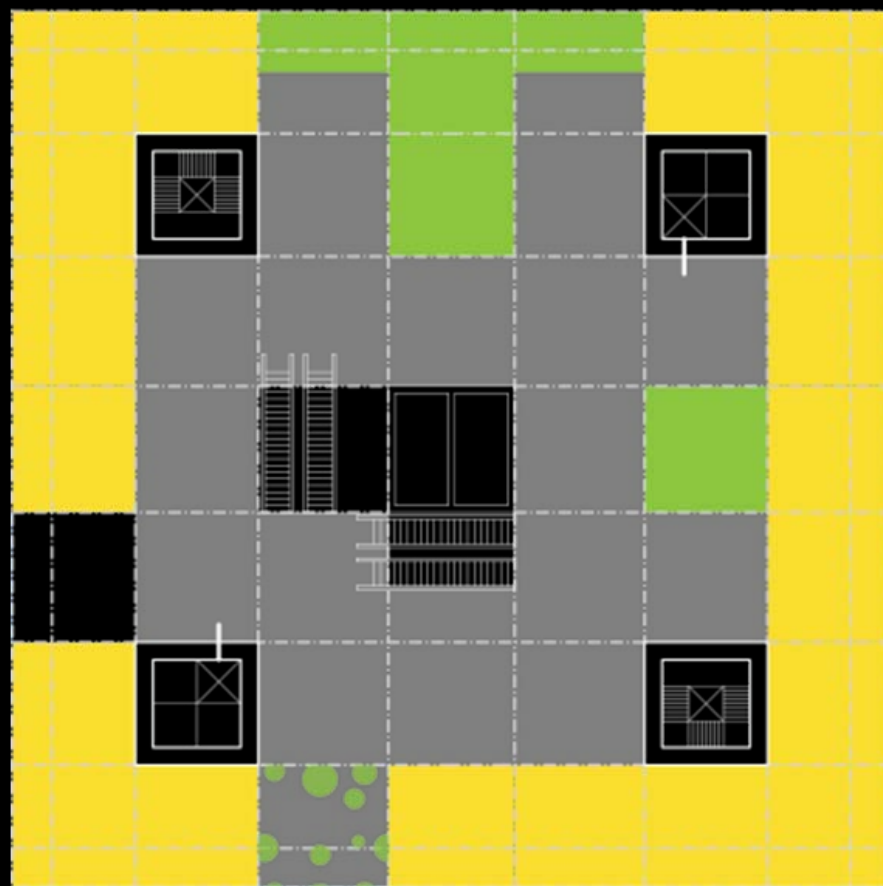


43+

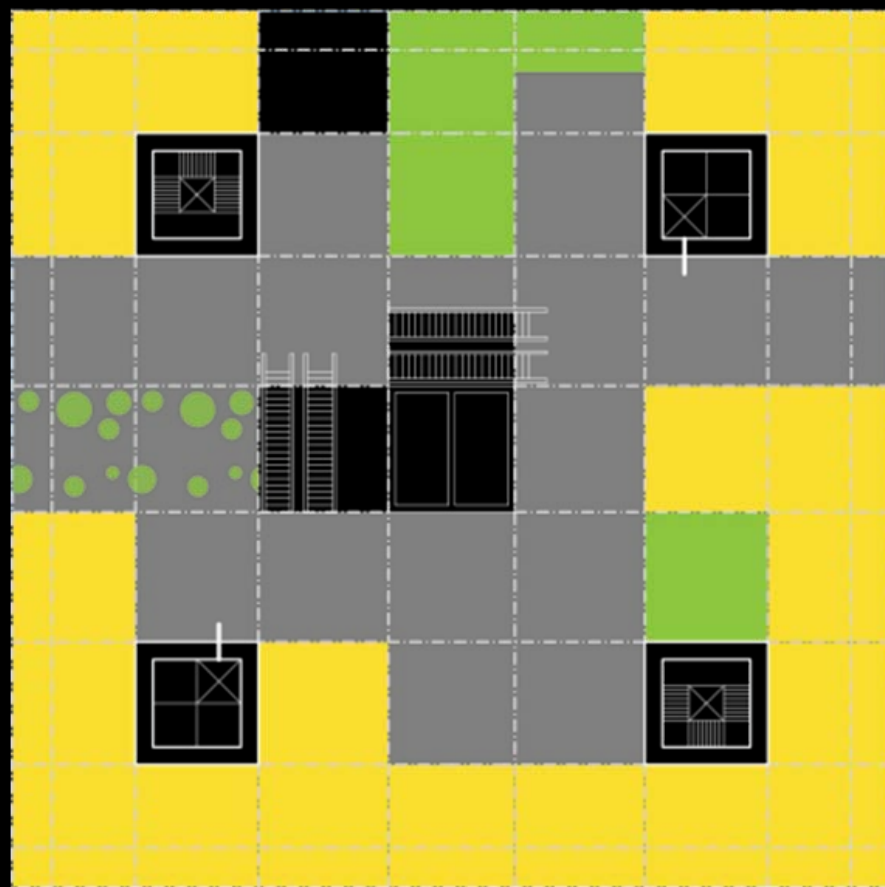




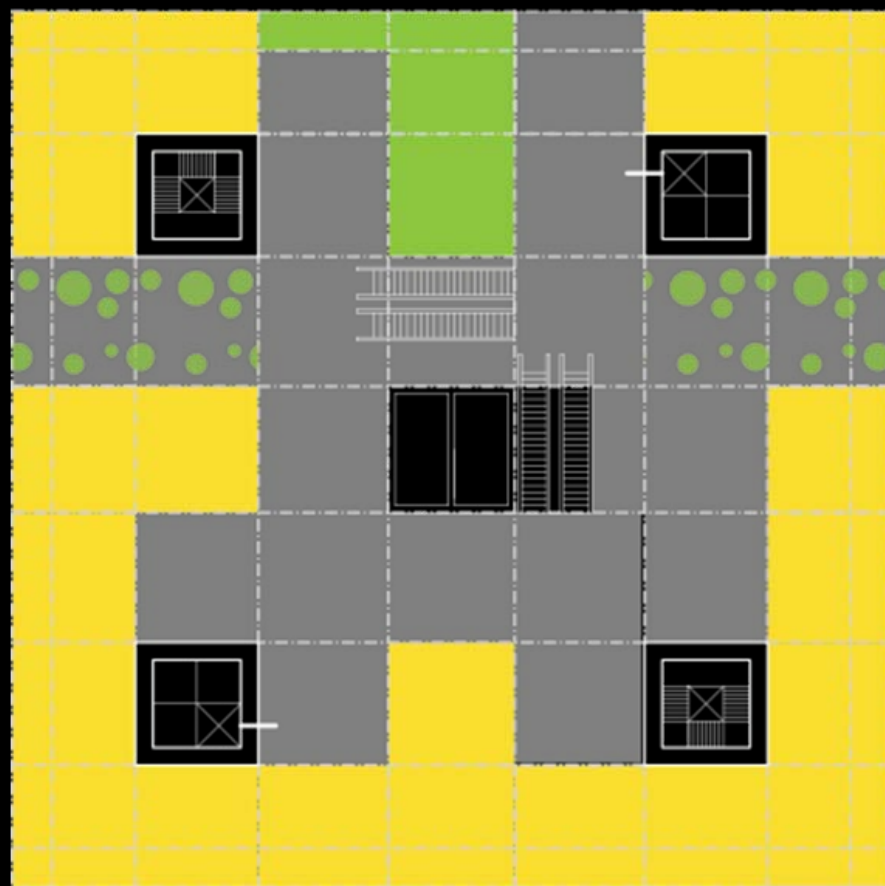
45



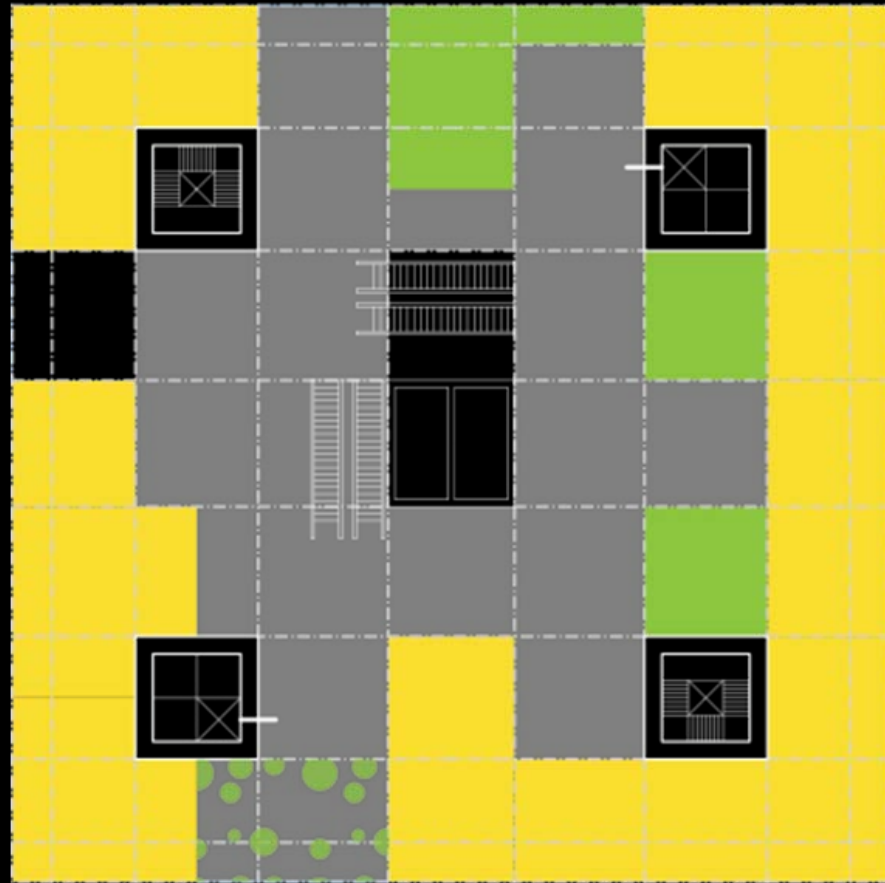
46



47

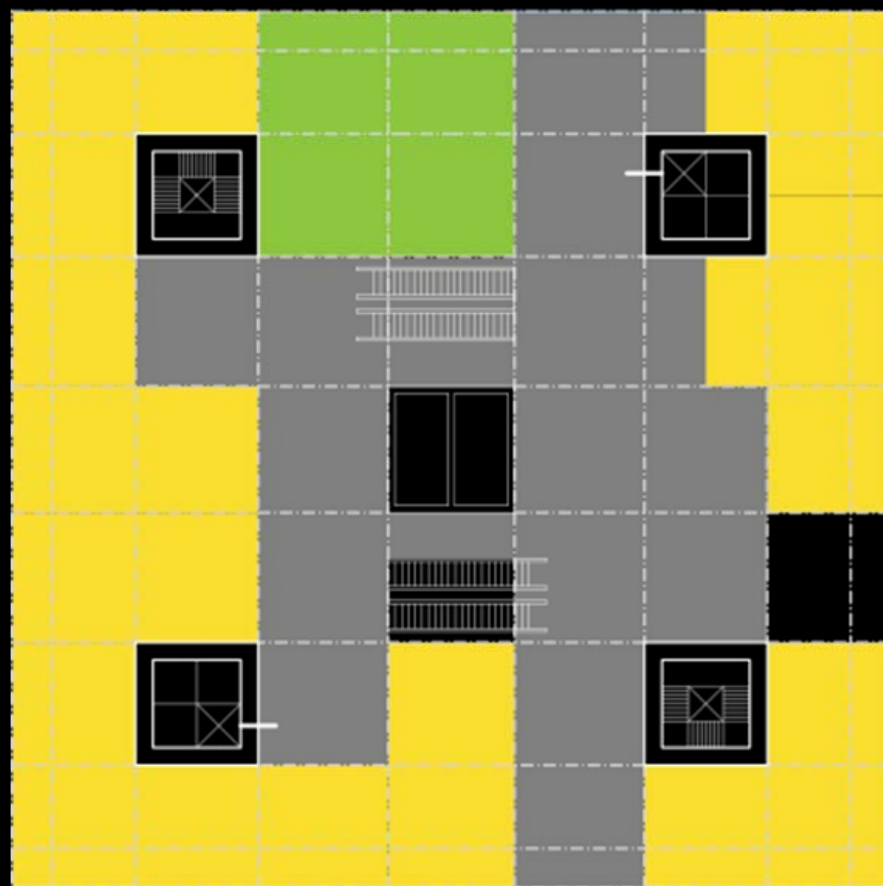


49



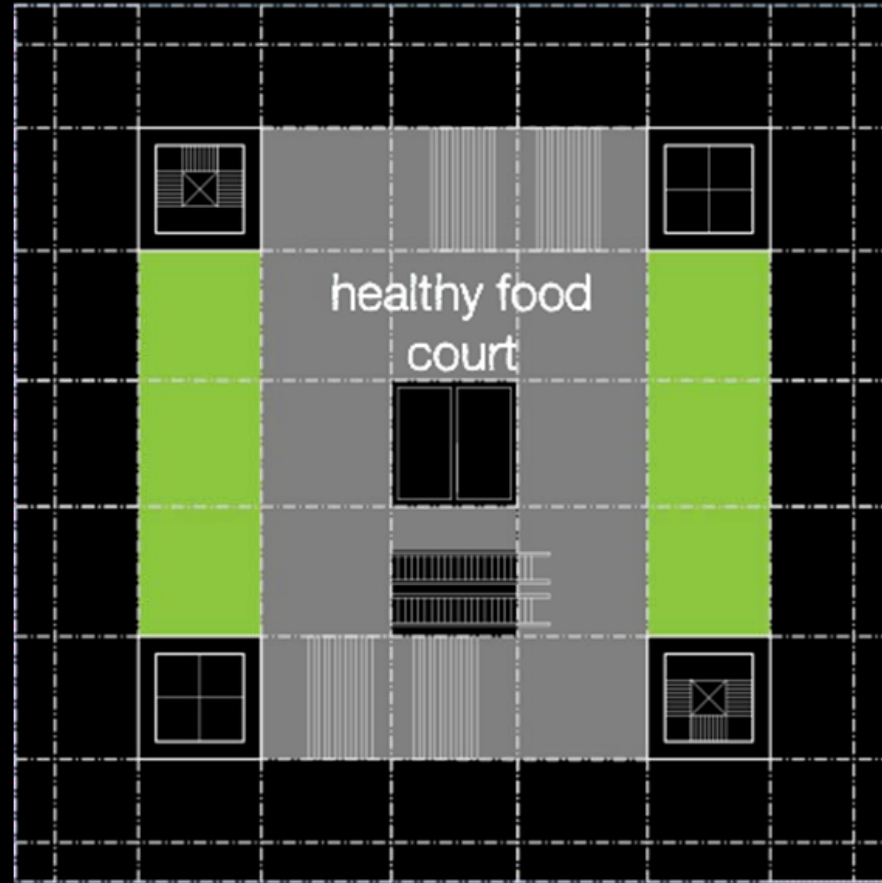
50





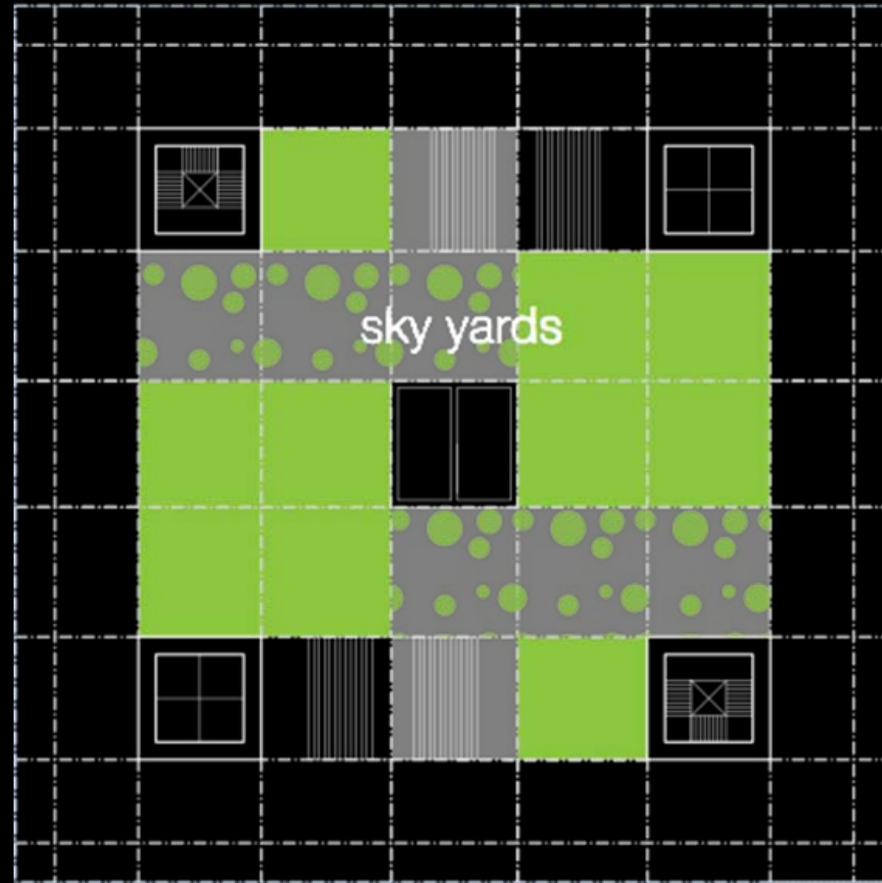
52

53

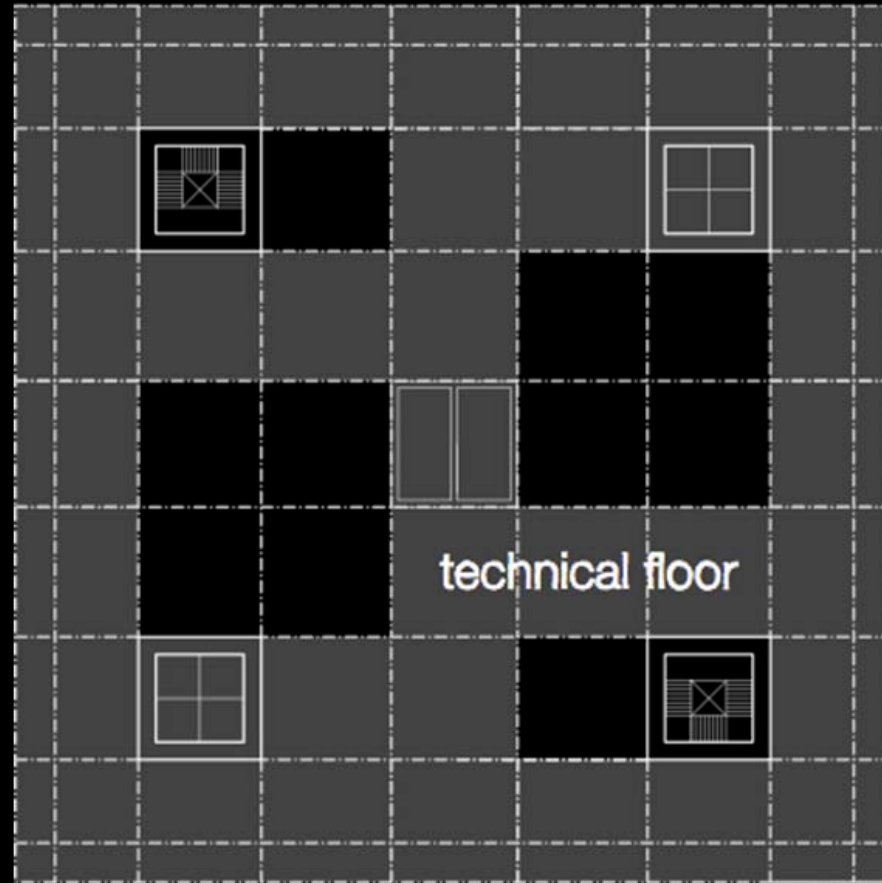


53+

53+

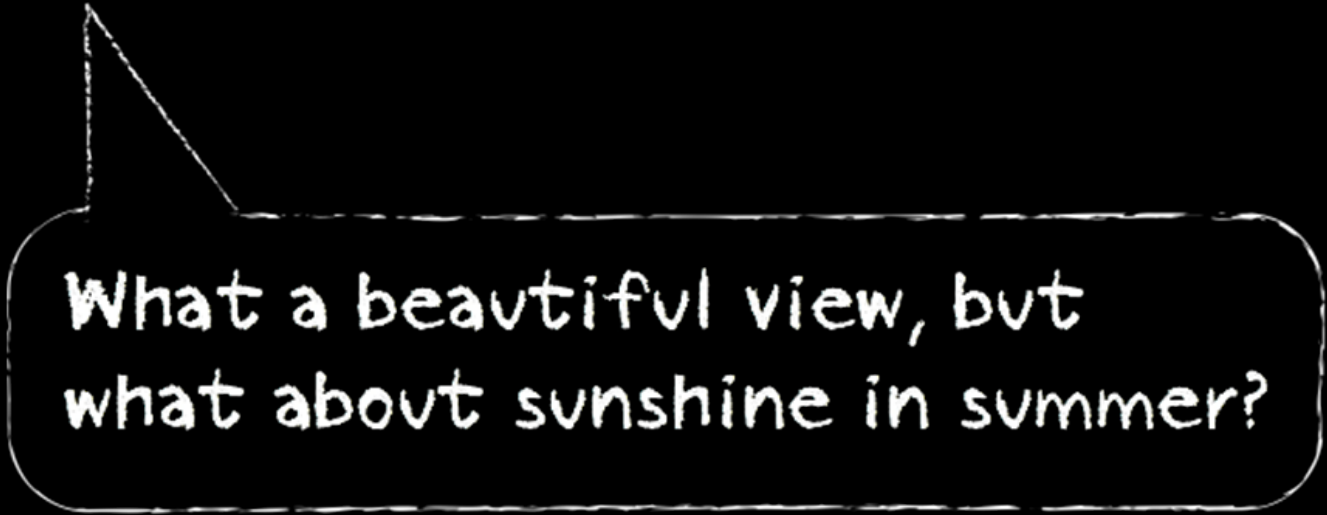


54

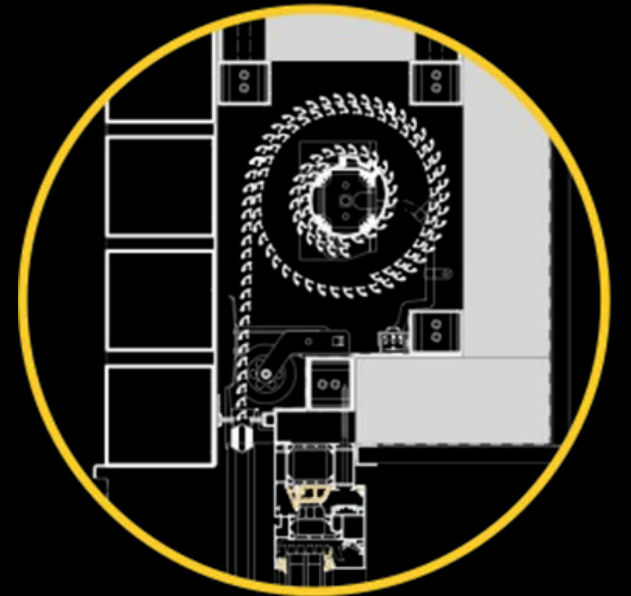
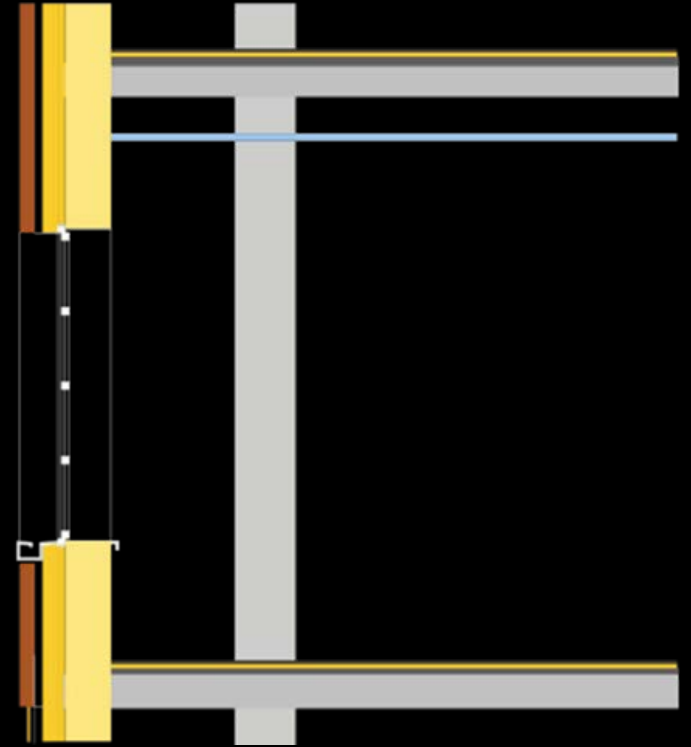
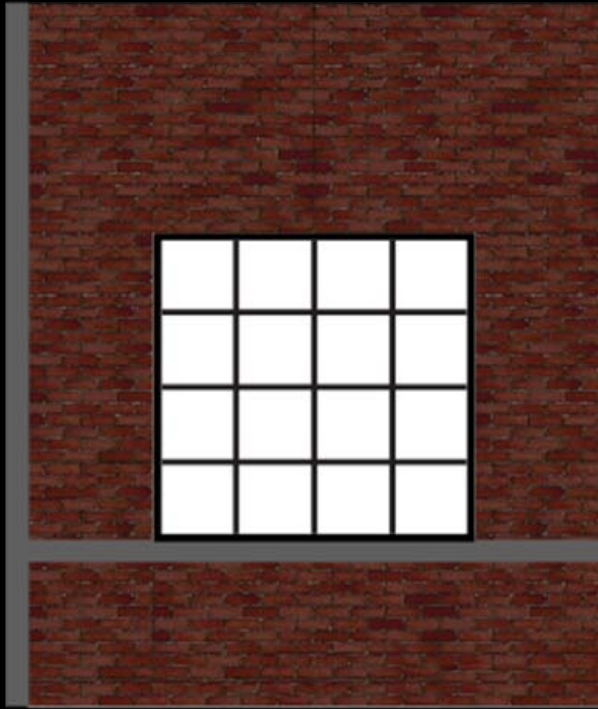


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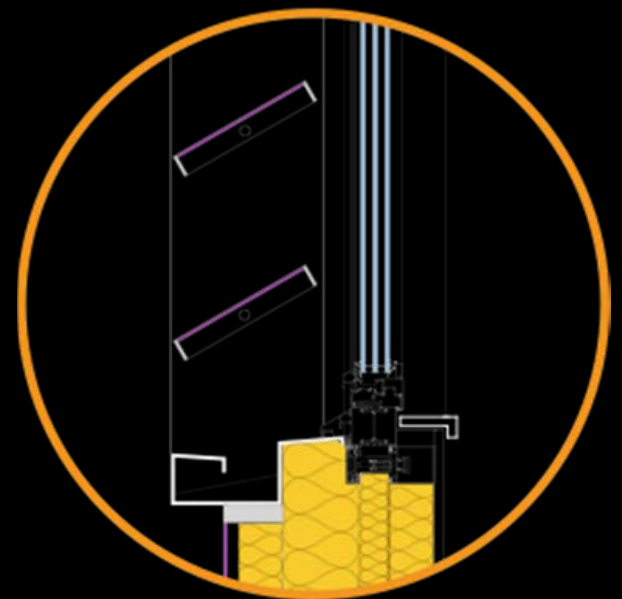
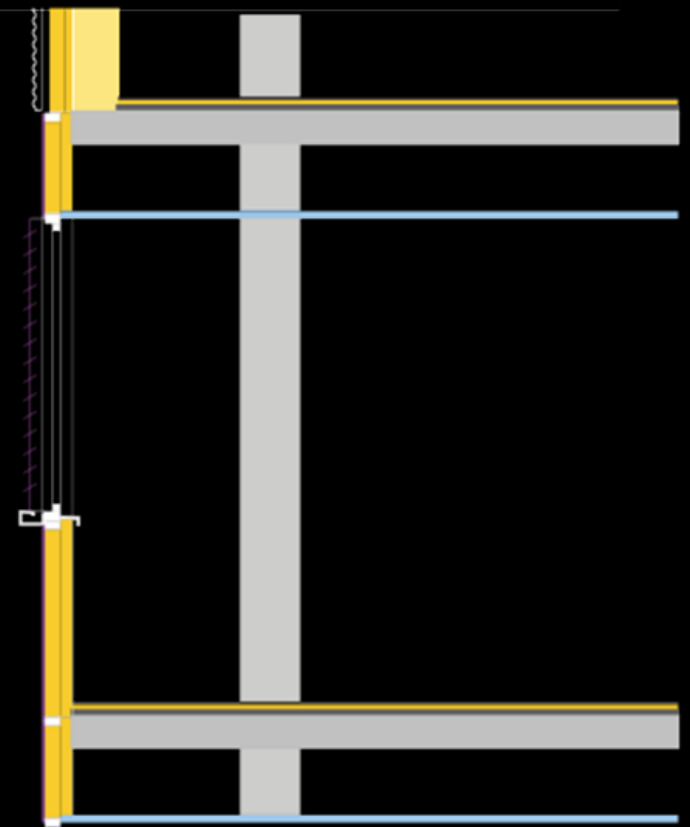




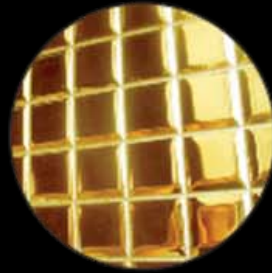
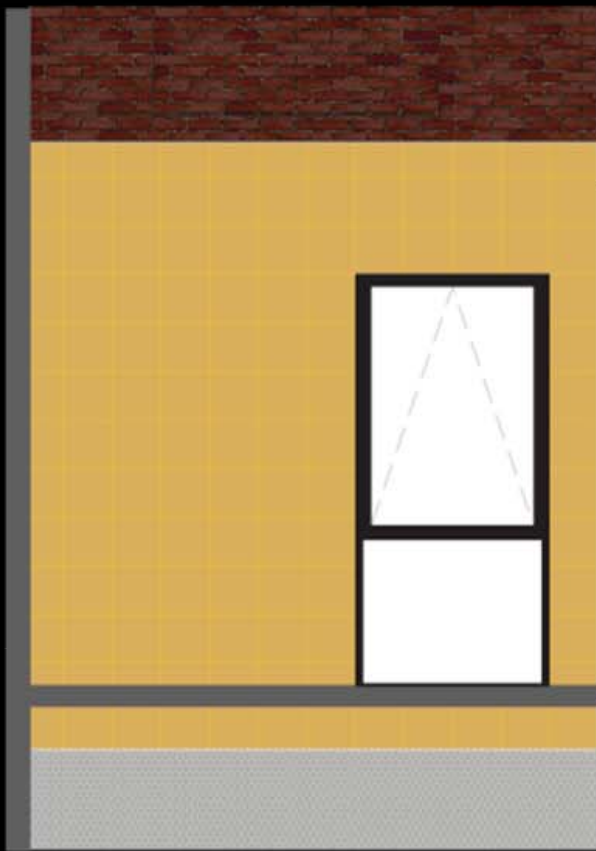
What a beautiful view, but
what about sunshine in summer?



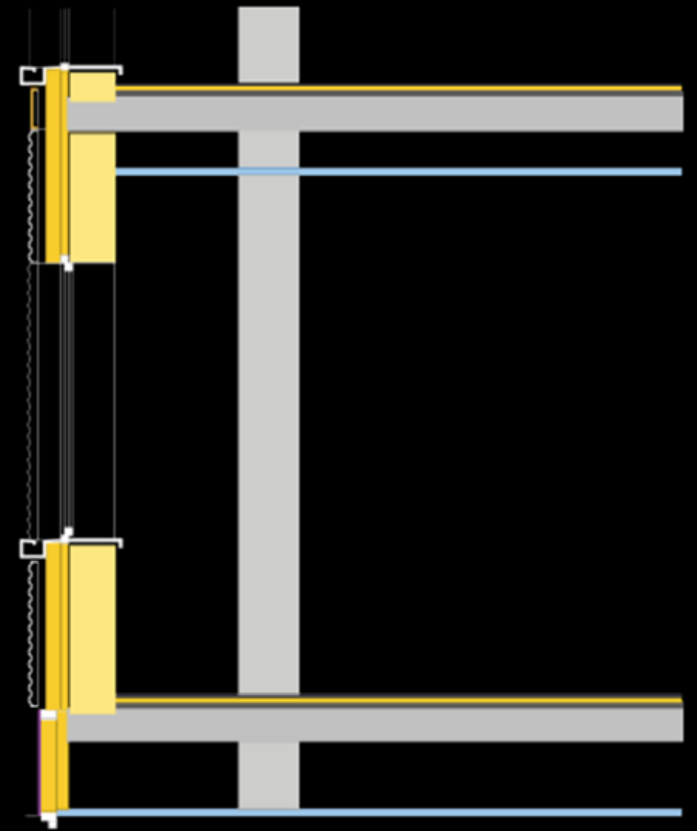
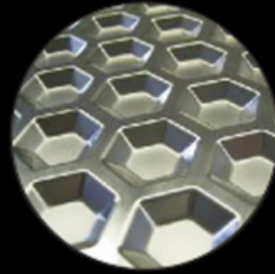
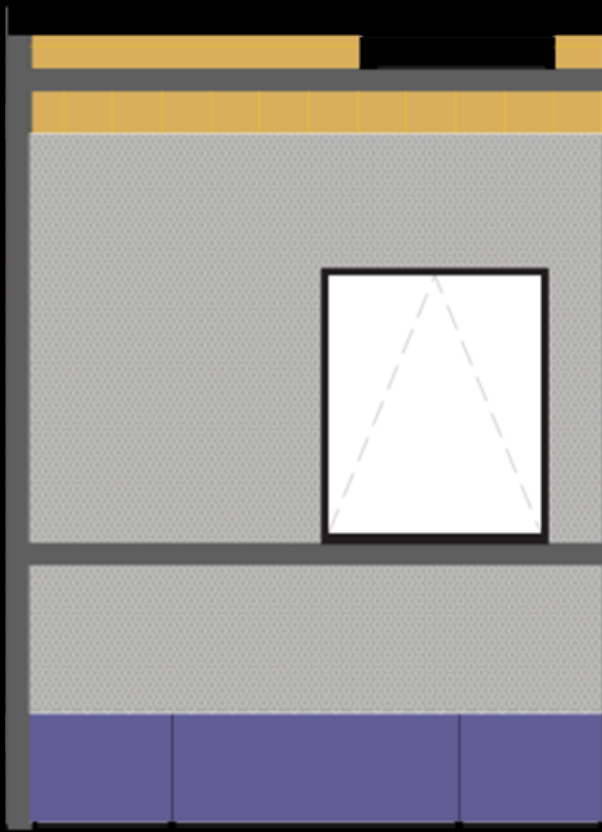
apartments



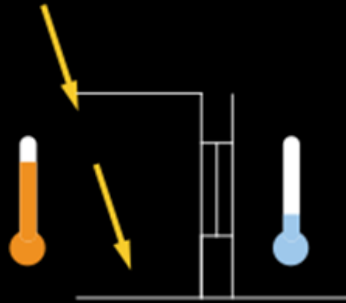
offices



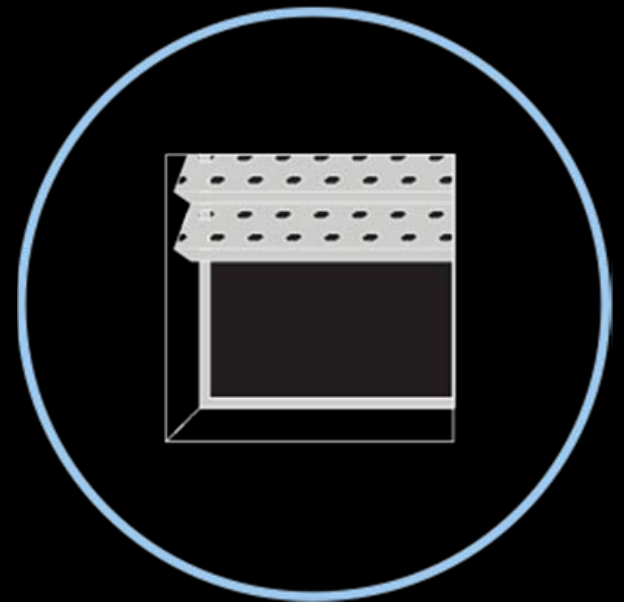
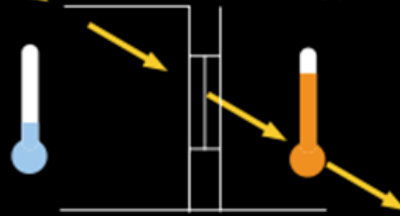
hotel



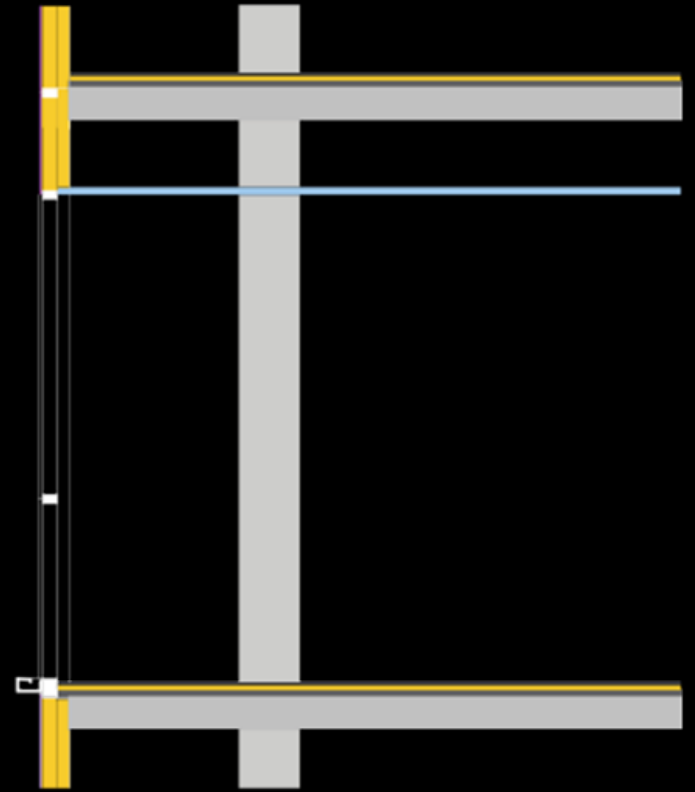
SUMMER



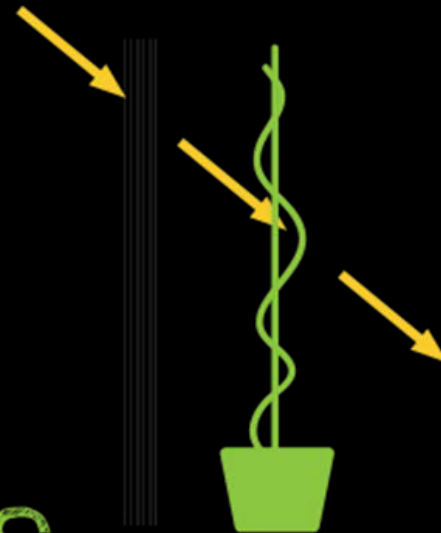
WINTER



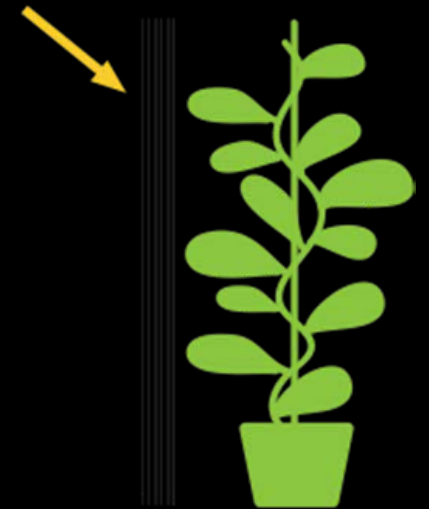
student hotel



common spaces



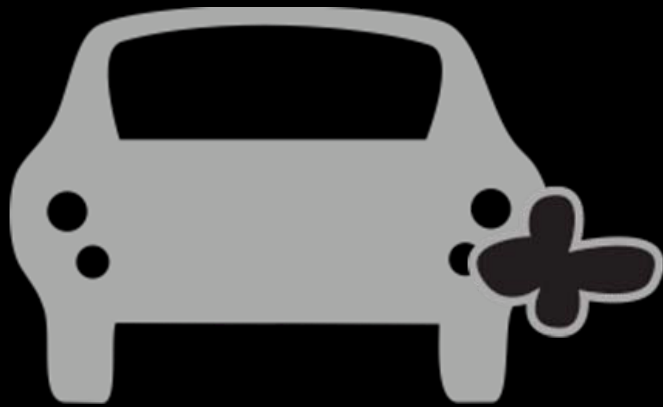
WINTER



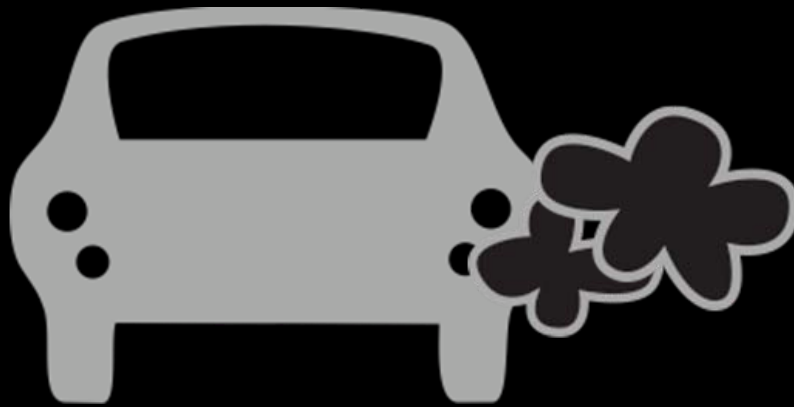
SUMMER



Are there any other smart ideas?



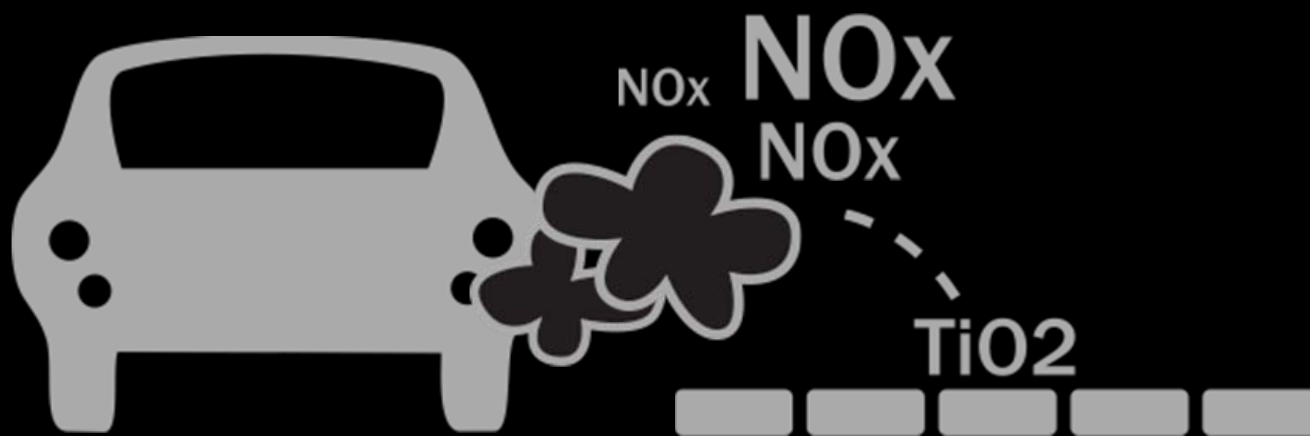
ACTIVE PAVEMENT



ACTIVE PAVEMENT



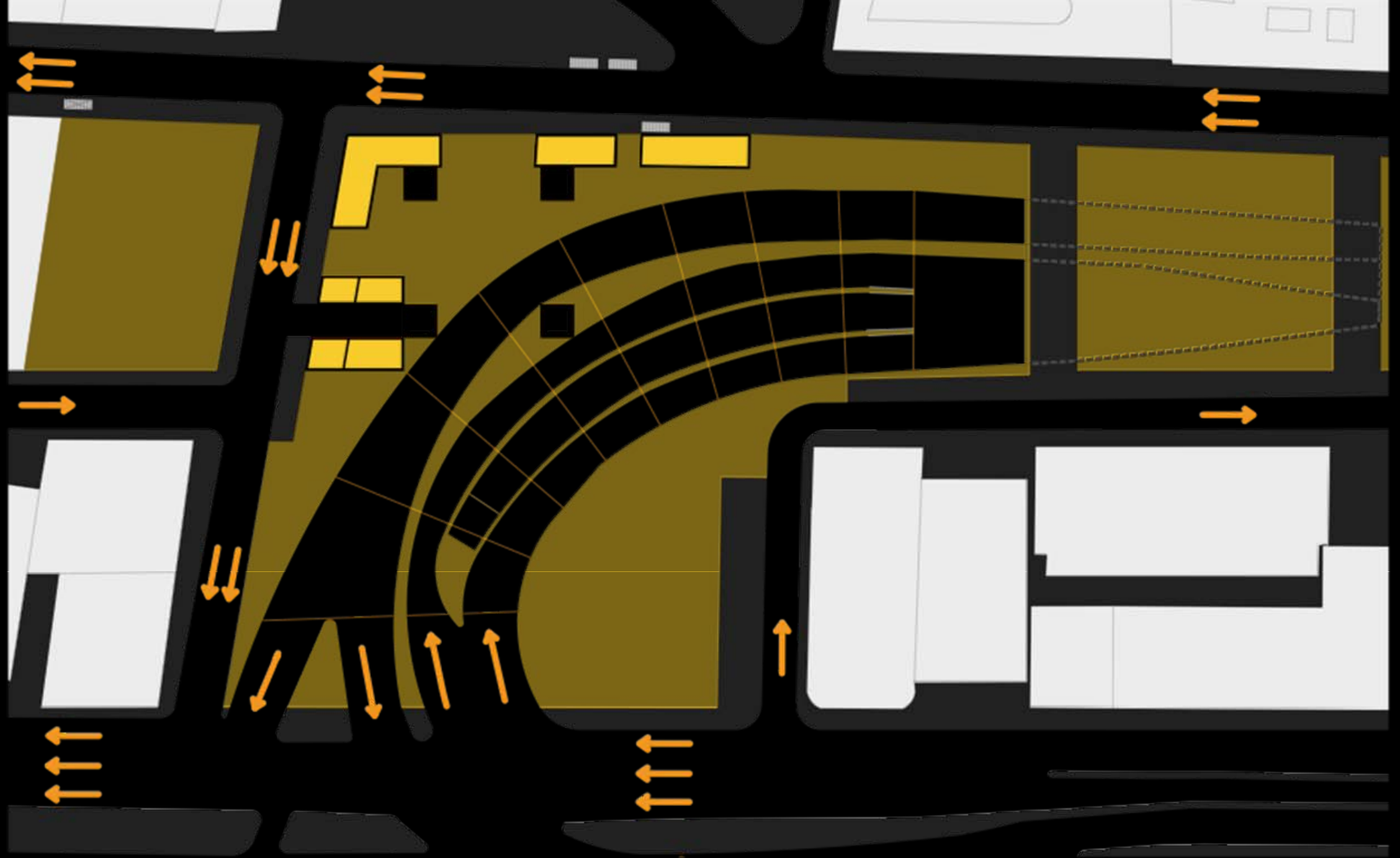
ACTIVE PAVEMENT



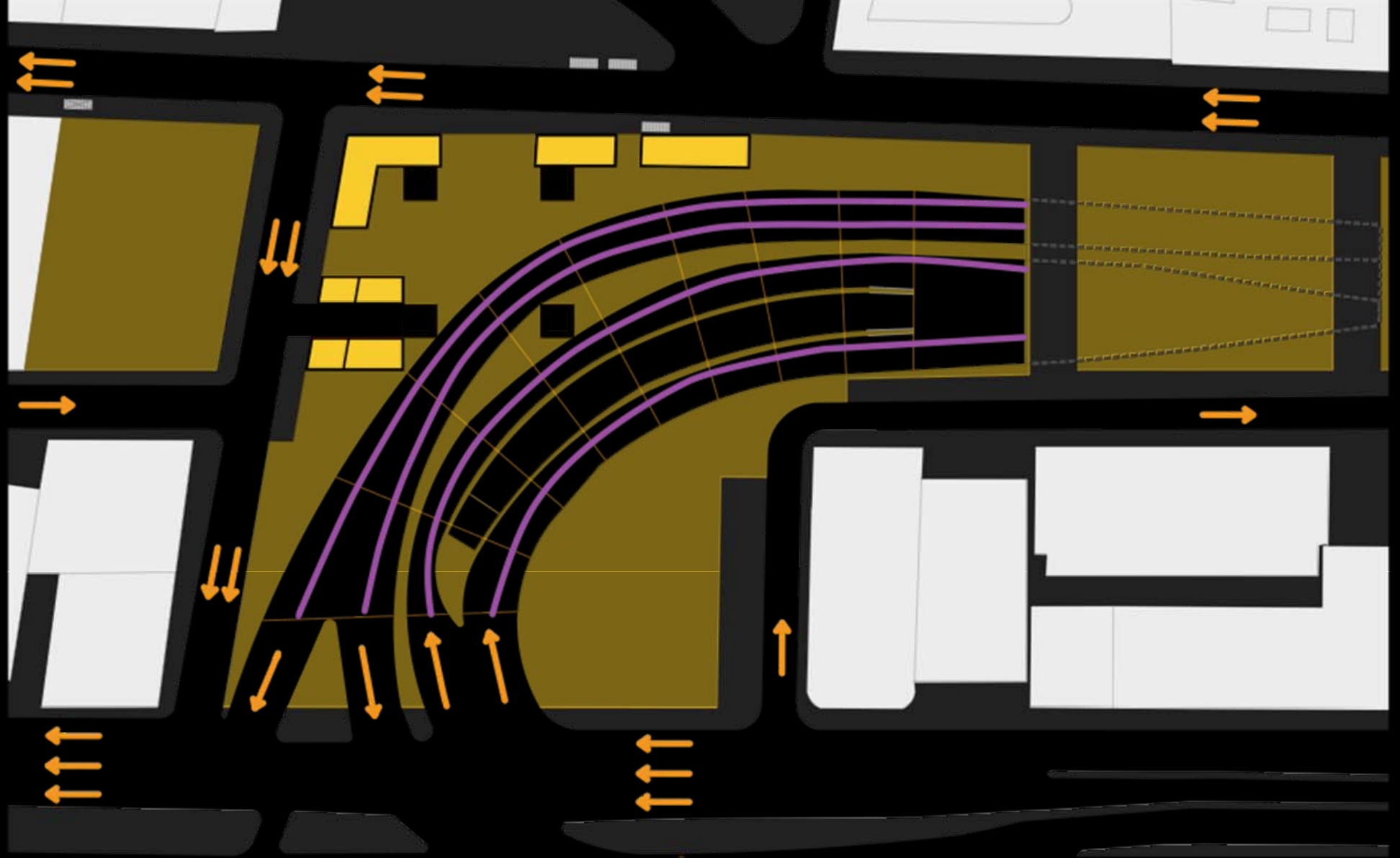
ACTIVE PAVEMENT



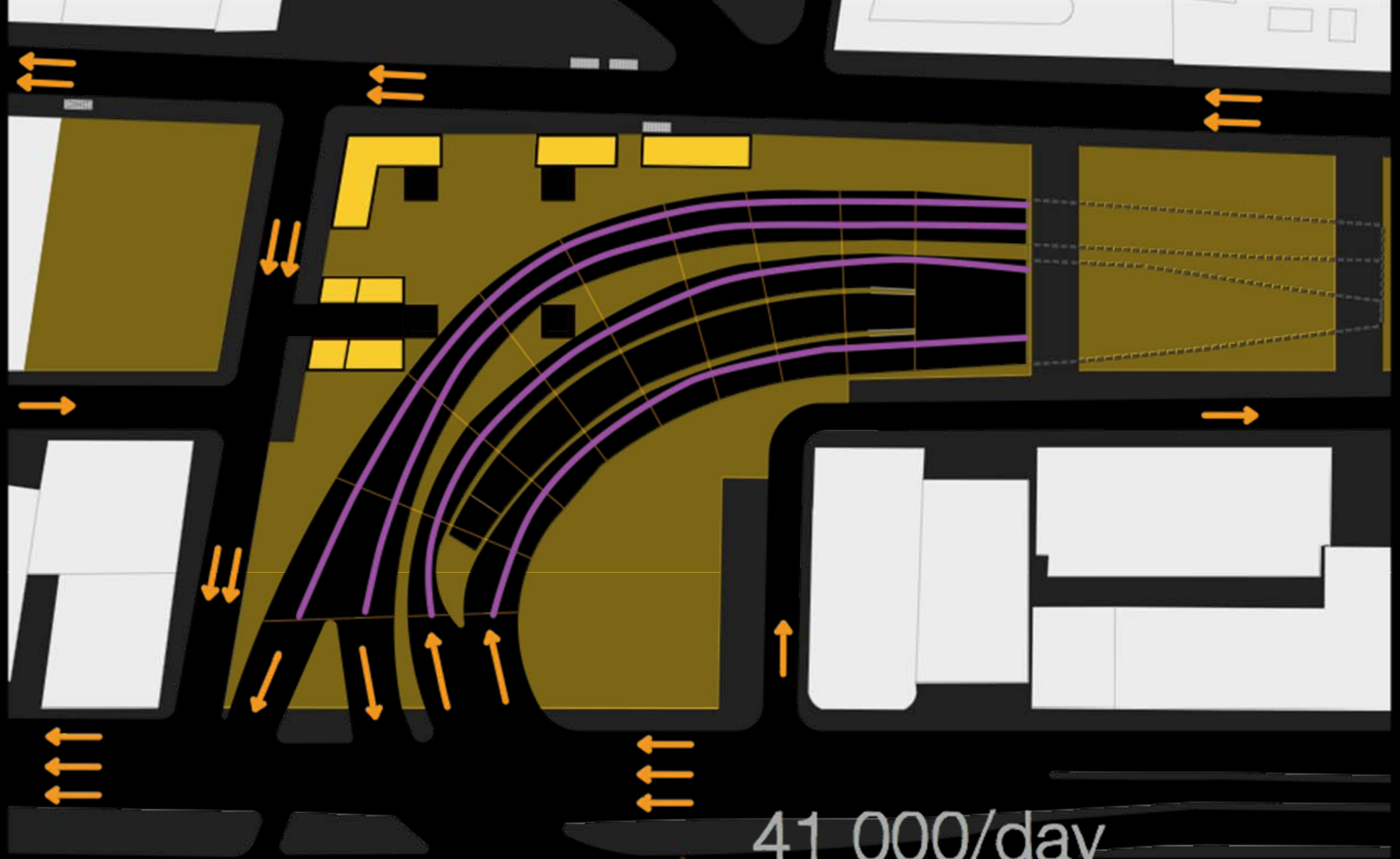
ACTIVE PAVEMENT



INNOWATTECH ENERGETIC
MODULES

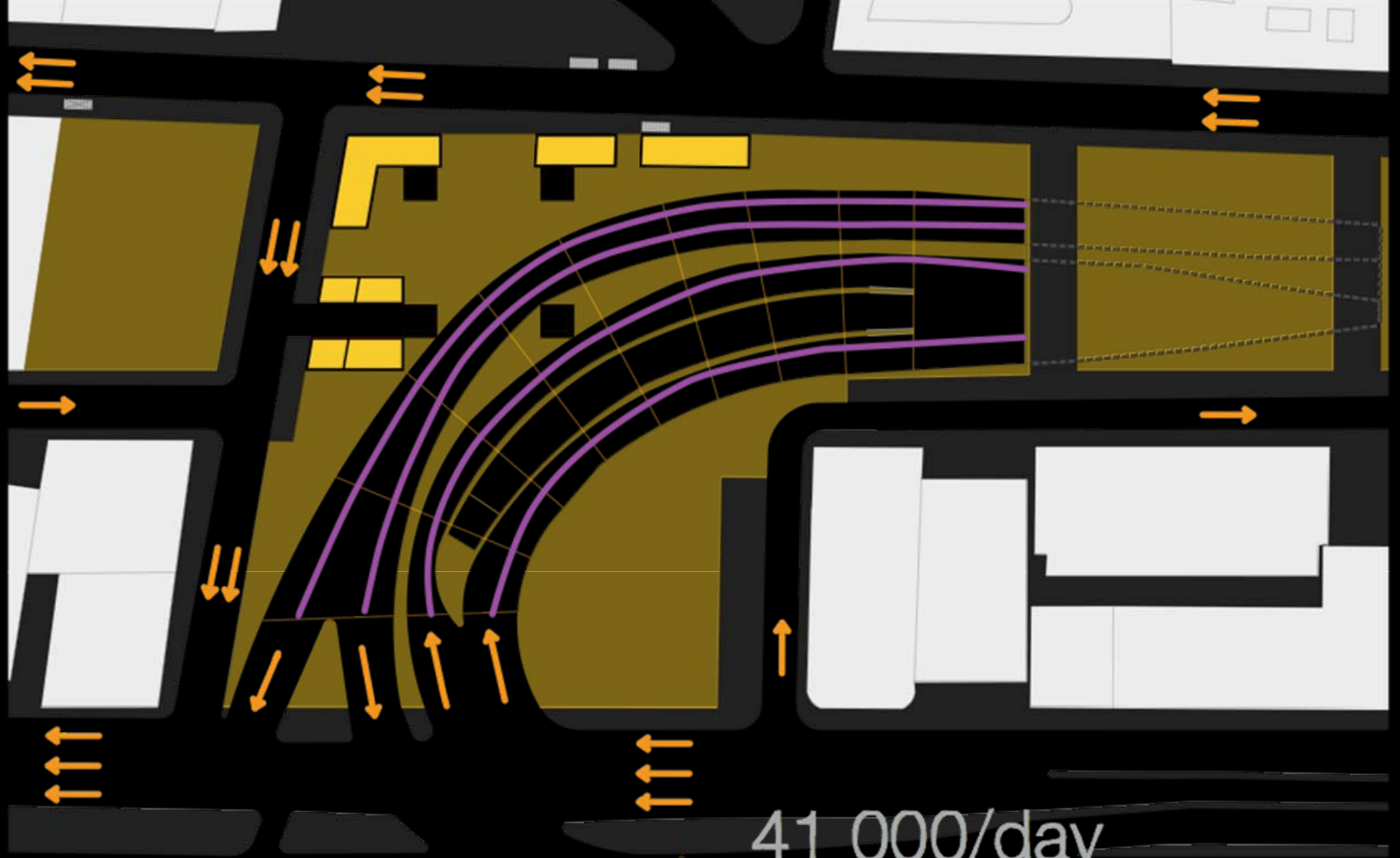


INNOWATTECH ENERGETIC
MODULES



INNOWATTECH ENERGETIC
MODULES

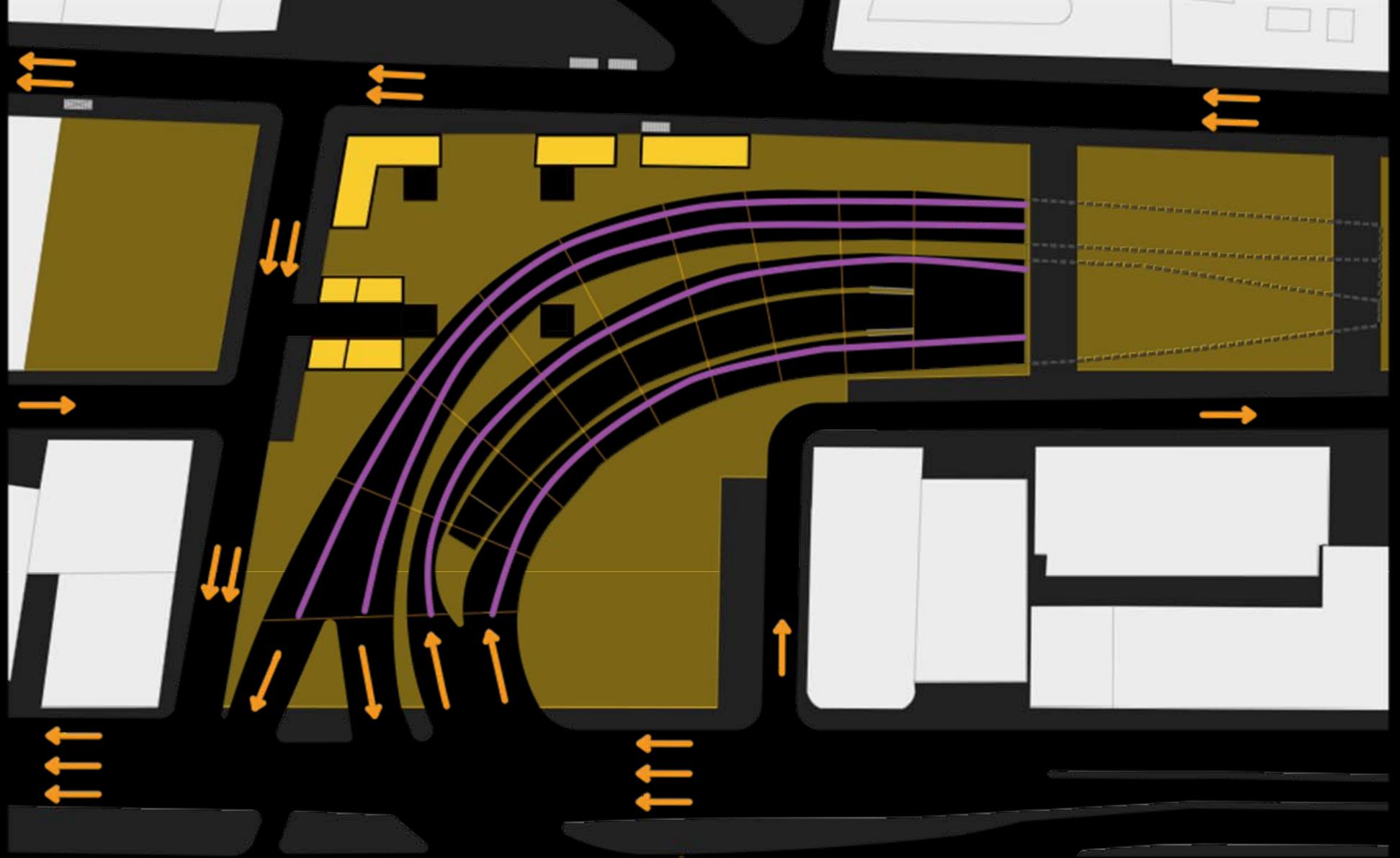




41 000/day



INNOWATTECH ENERGETIC
MODULES



INNOWATTECH ENERGETIC
MODULES

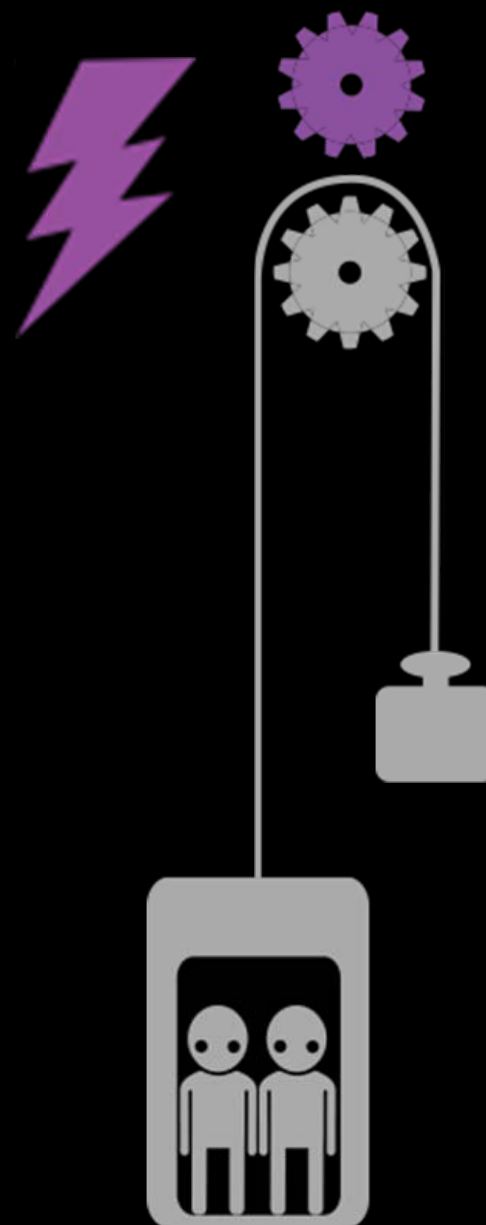


= 490 560 kWh/a. = 35%

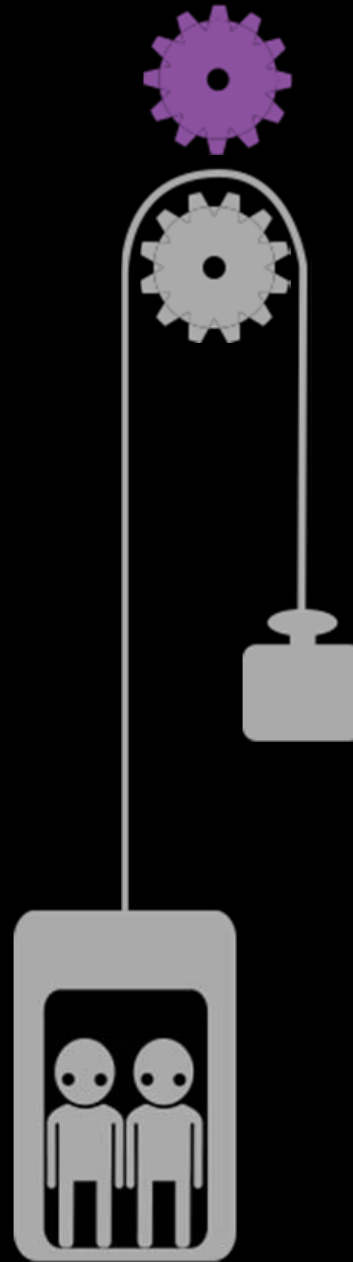
SMART ELEVATORS



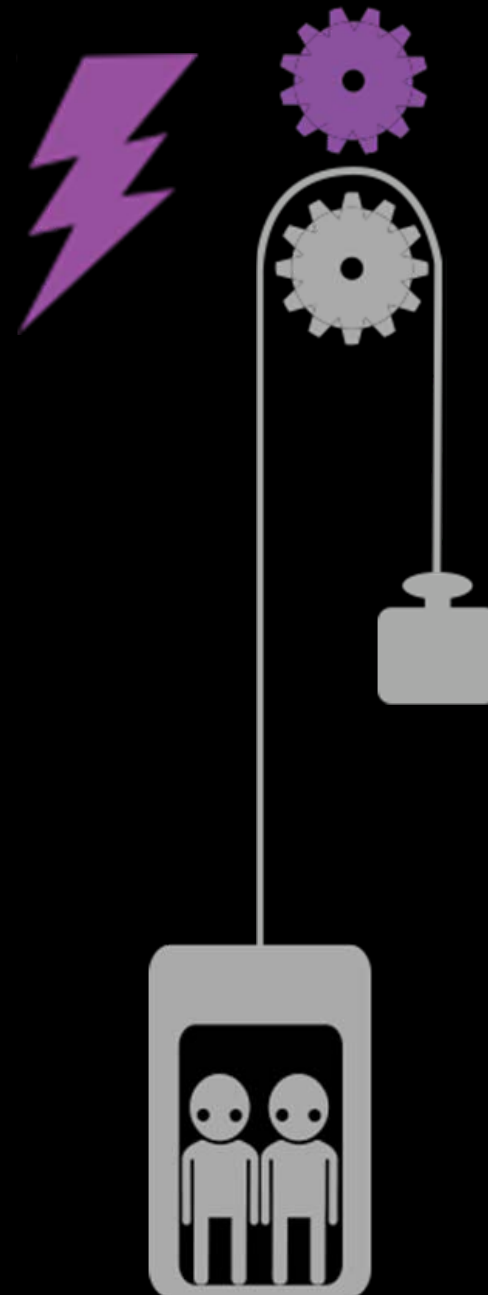
SMART ELEVATORS



SMART ELEVATORS



SMART ELEVATORS



PHOTOVOLTAICS





PHOTOVOLTAICS





PHOTOVOLTAICS





PHOTOVOLTAICS





PHOTOVOLTAICS





PHOTOVOLTAICS





PHOTOVOLTAICS





PHOTOVOLTAICS





PHOTOVOLTAICS





PHOTOVOLTAICS





SOLAR
COLLECTORS





SOLAR
COLLECTORS





SOLAR
COLLECTORS





SOLAR
COLLECTORS





SOLAR
COLLECTORS





SOLAR
COLLECTORS





1155 l/m²



RAINWATER CATCHMENT
FACADE SYSTEM





1155 l/m²



RAINWATER CATCHMENT
FACADE SYSTEM





1155 l/m²



RAINWATER CATCHMENT
FACADE SYSTEM





1155 l/m²



RAINWATER CATCHMENT
FACADE SYSTEM





1155 l/m²



RAINWATER CATCHMENT
FACADE SYSTEM





1155 l/m²



RAINWATER CATCHMENT
FACADE SYSTEM





1155 l/m²



5 000 000 l/a.



RAINWATER CATCHMENT
FACADE SYSTEM





1155 l/m²



5 000 000 l/a.



RAINWATER CATCHMENT
FACADE SYSTEM





1155 l/m²



5 000 000 l/a.



RAINWATER CATCHMENT
FACADE SYSTEM





1155 l/m²



= 500  /a.

5 000 000 l/a.



RAINWATER CATCHMENT
FACADE SYSTEM





REUSING WATER



REUSING WATER



 = 53 l/day

REUSING WATER



 = 53 l/day



REUSING WATER

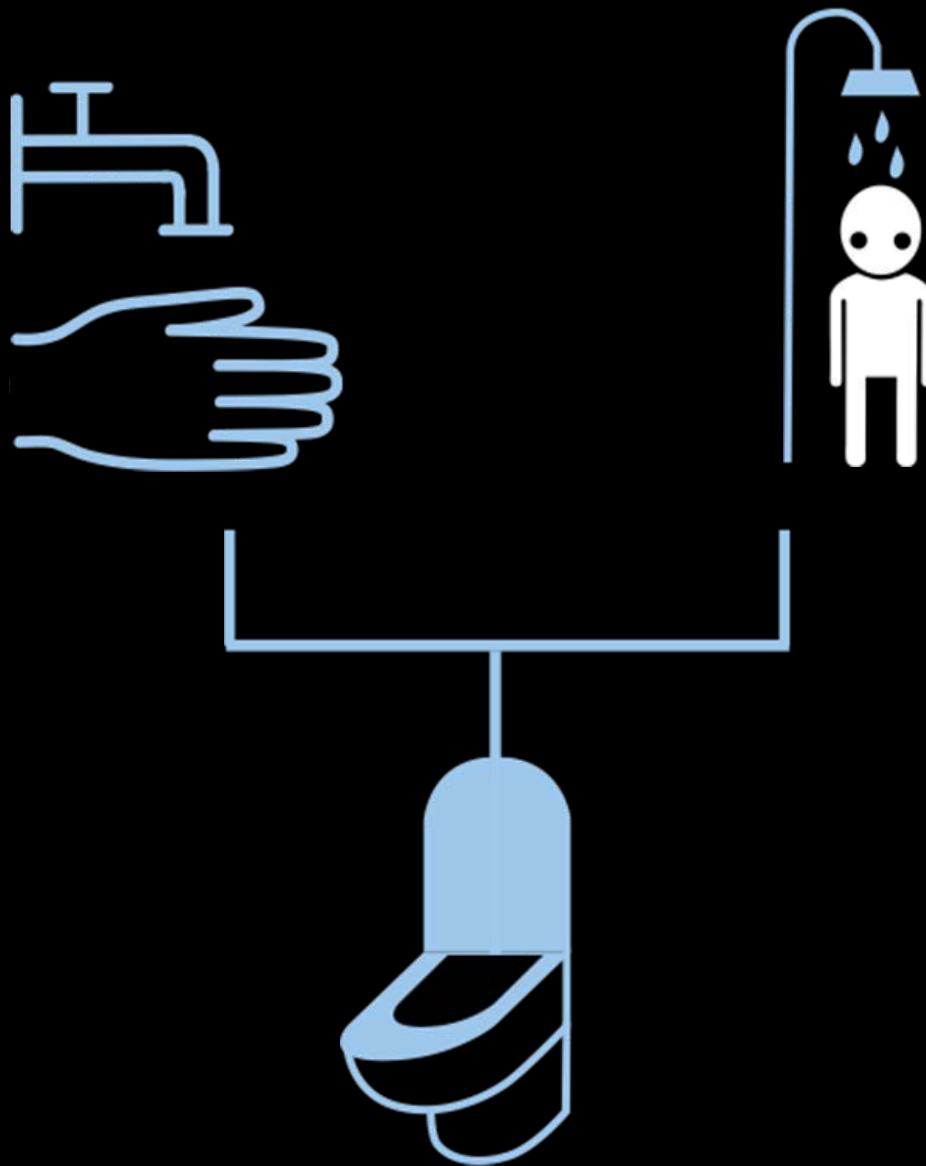


 = 53 l/day



 = 46 l/day

REUSING WATER

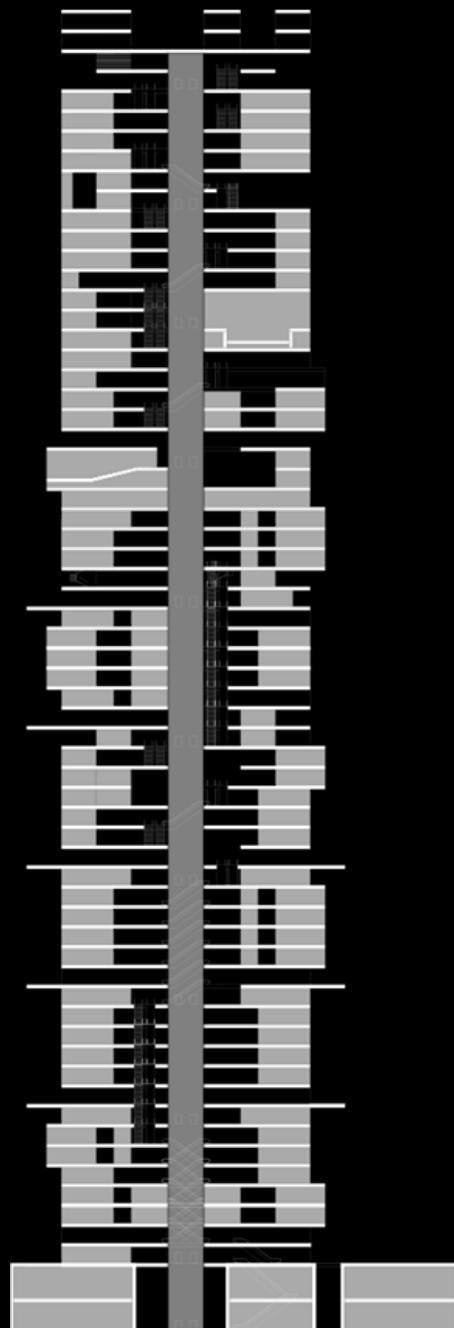


 = 53 l/day

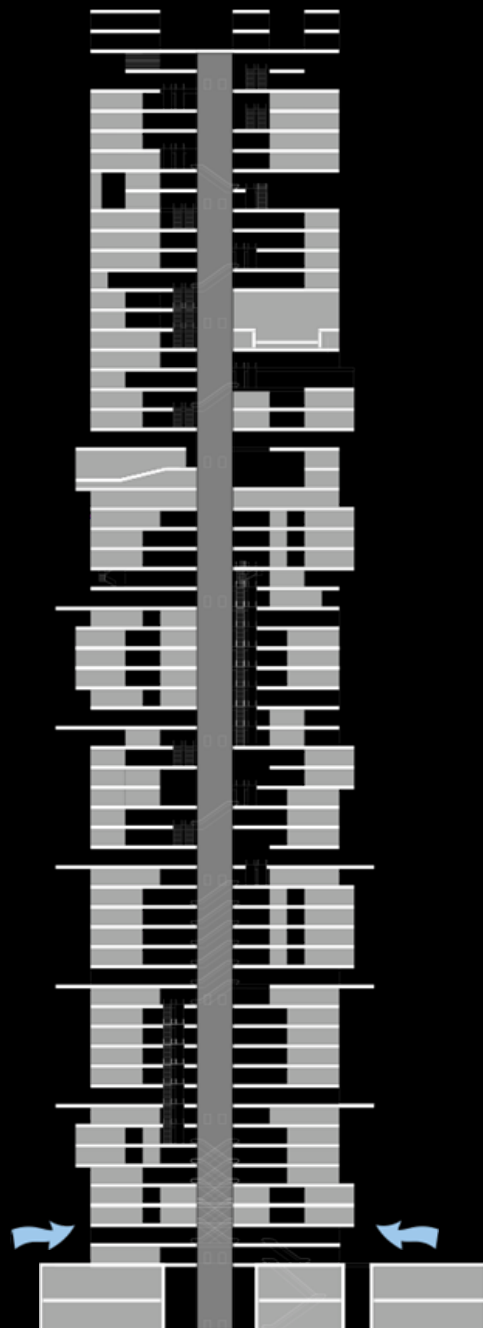
 = 46 l/day

REUSING WATER

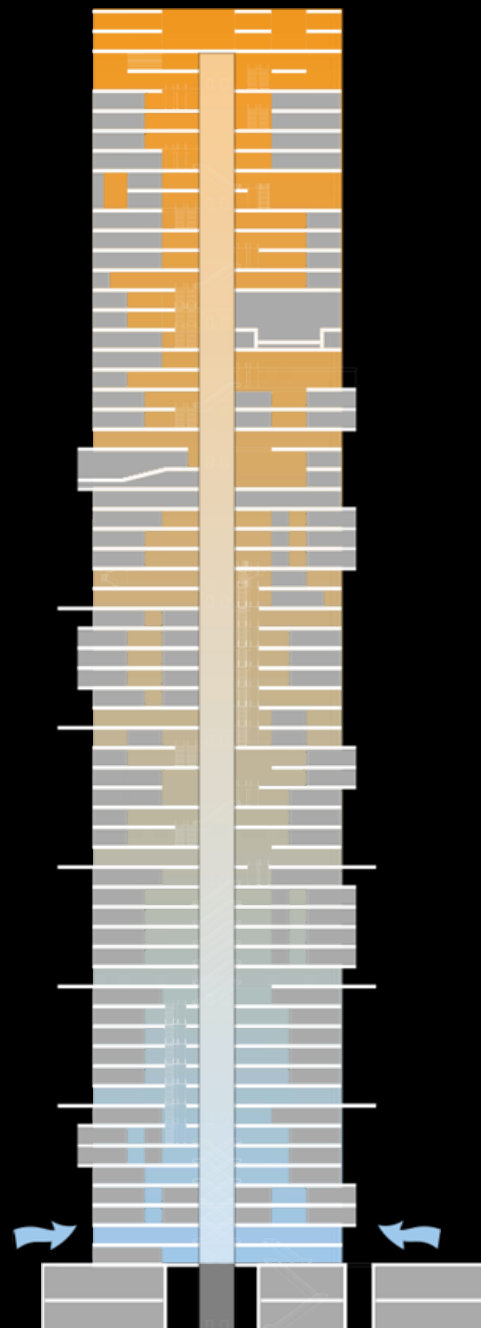
NATURAL VENTILATION
OF COMMON SPACES

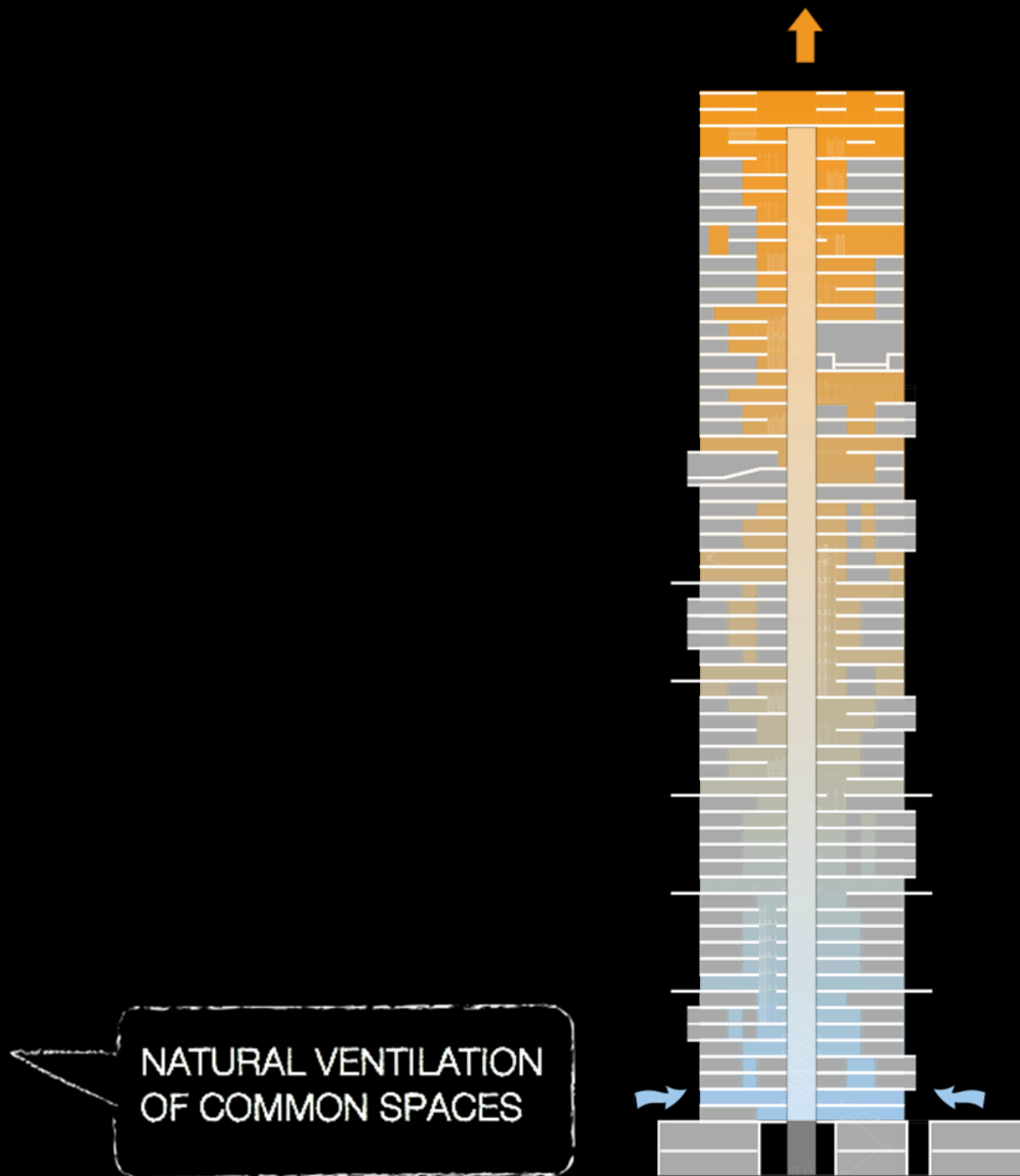


NATURAL VENTILATION
OF COMMON SPACES



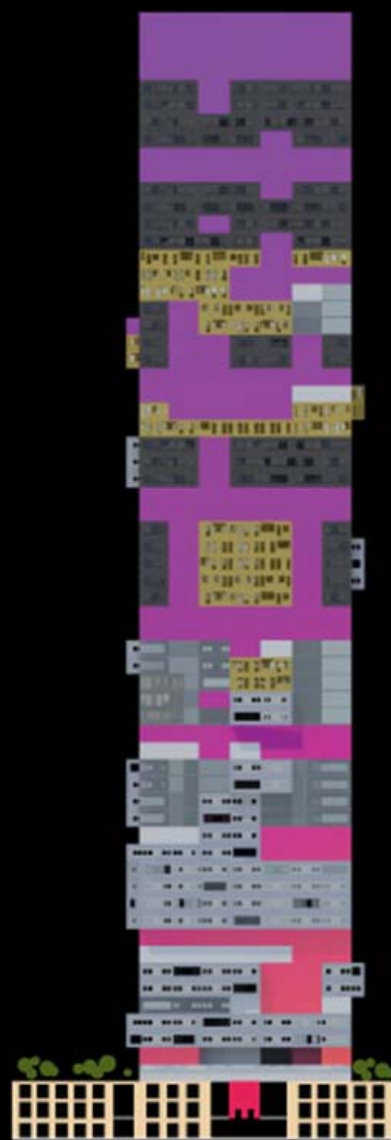
NATURAL VENTILATION
OF COMMON SPACES



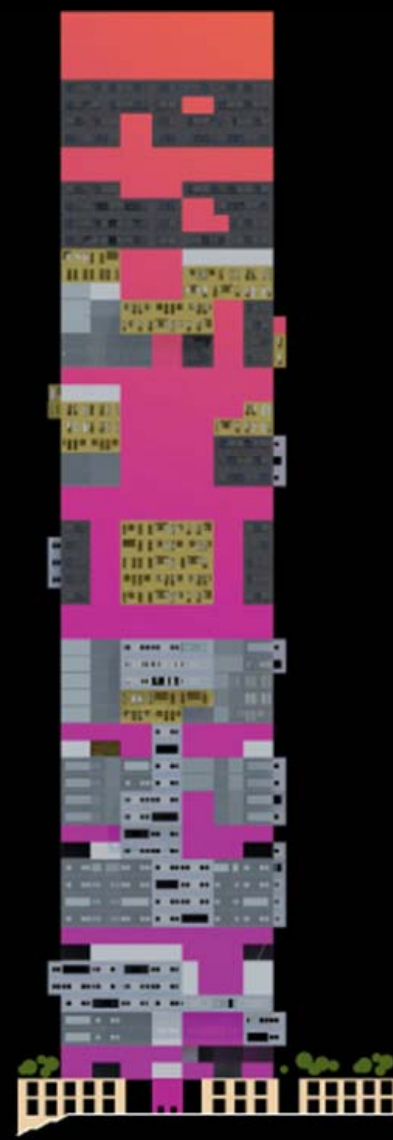




NORTHERN ELEVATION



EASTERN ELEVATION



WESTERN ELEVATION



SOUTHERN ELEVATION

Thank you for your attention!

Kateřina Blahutová & Veronika Kommová, CTU Prague