EMMA ELGOYHEN
JULIEN FOLCHER
MICHAELA PRESCOTT
TENG (TOM) GE
YOSHITAKE SASAI

GROUP A

TENKU NO SHIRO MILDURA

"Castle in the Sky"

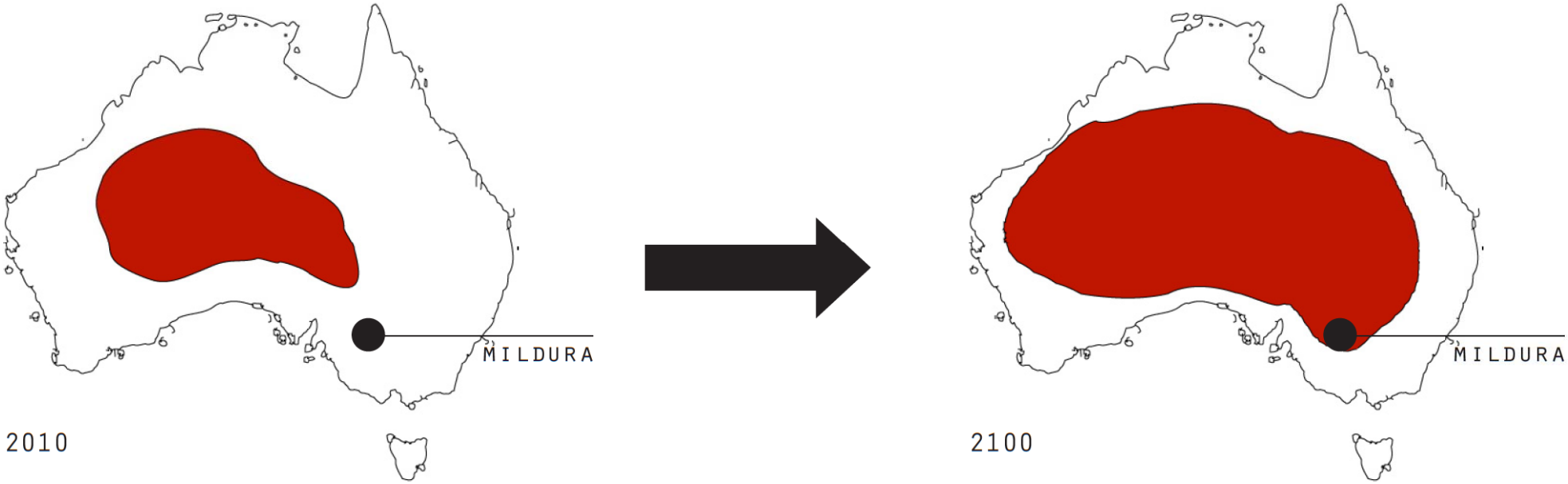
GROUP A

01 Identity:
Mildura is a Desert City

02 Population Growth:
containment

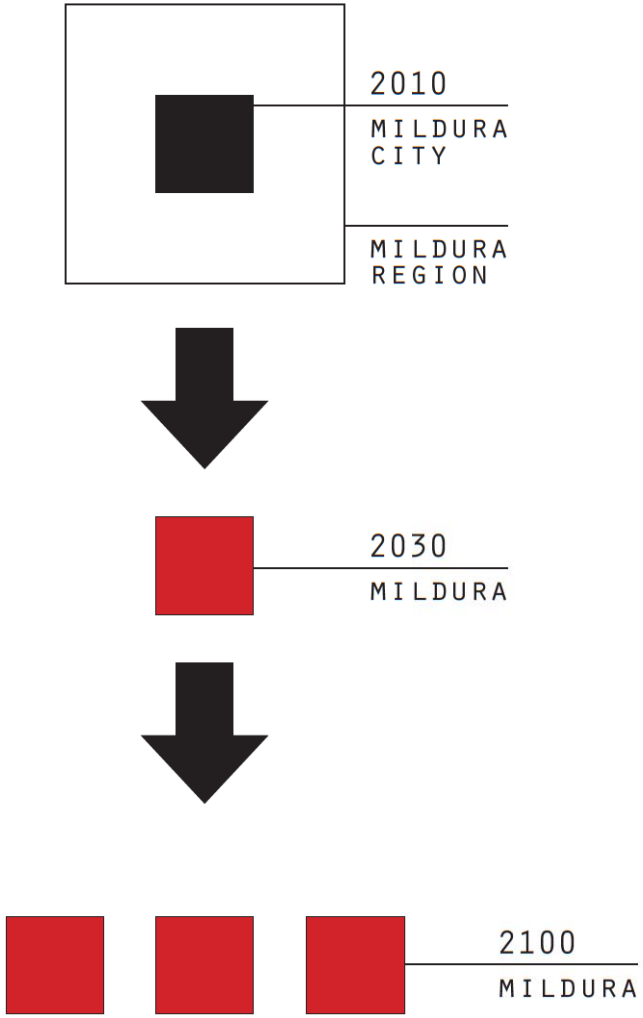
03 Death of Agriculture:
Exploit valuable resources
of Solar Aspect and Salinity

01 Identity: Mildura is a Desert City



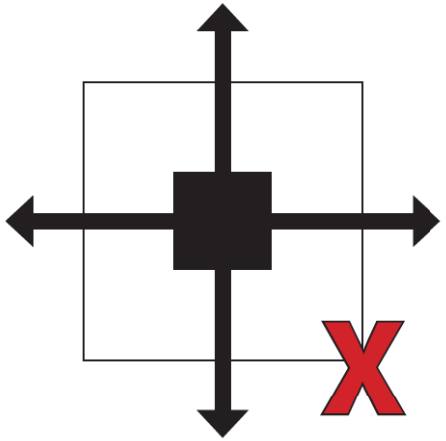
2100: the temperature rises, the desert expands, salinity increases ... Mildura is a Desert City.

02 Population Growth: containment



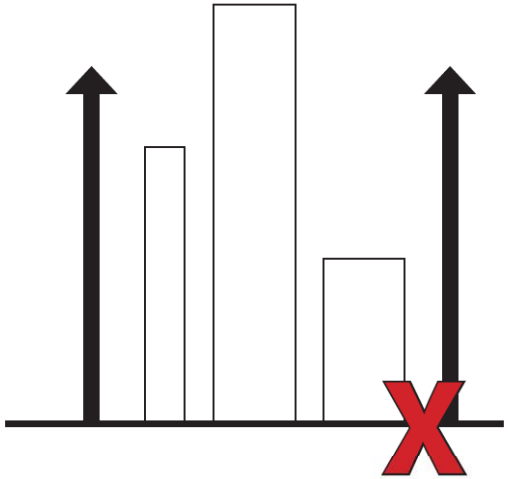
By 2100 regional Mildura has moved to the city of Mildura and the entire population has tripled.

(20000 + 30000)x 3 = 150000+



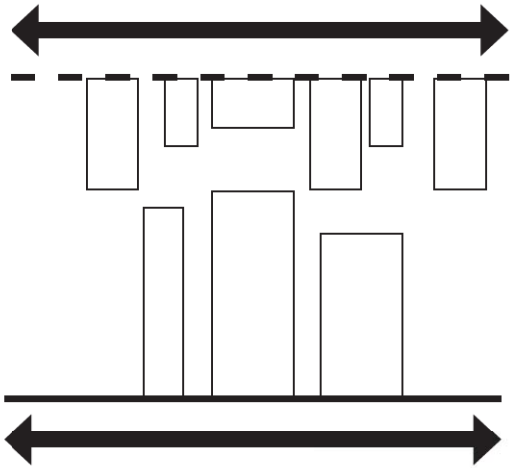
HORIZONTAL GROWTH

PLAN



VERTICAL GROWTH

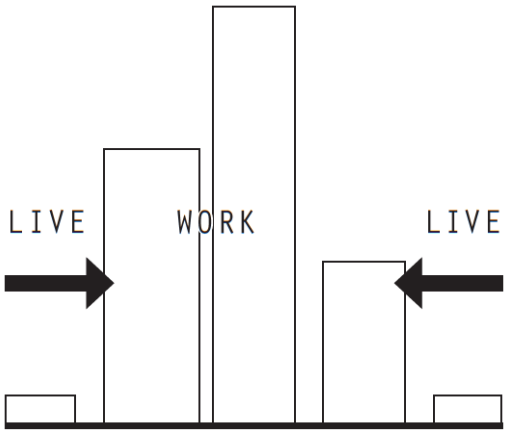
SECTION



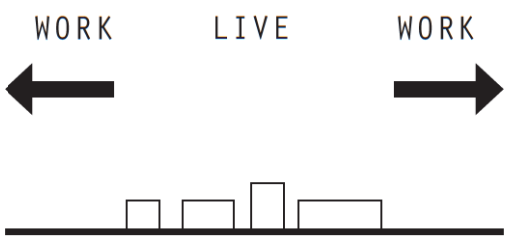
PARALLEL GROWTH

SECTION

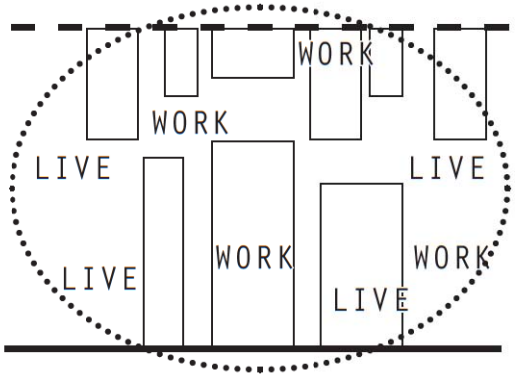
TENKU NO SHIRO MILDURA
"CASTLE IN THE SKY"



MELBOURNE
SECTION



MILDURA
SECTION



TENKU NO
SHIRO
MILDURA
SECTION

TENKU NO SHIRO MILDURA
"CASTLE IN THE SKY"

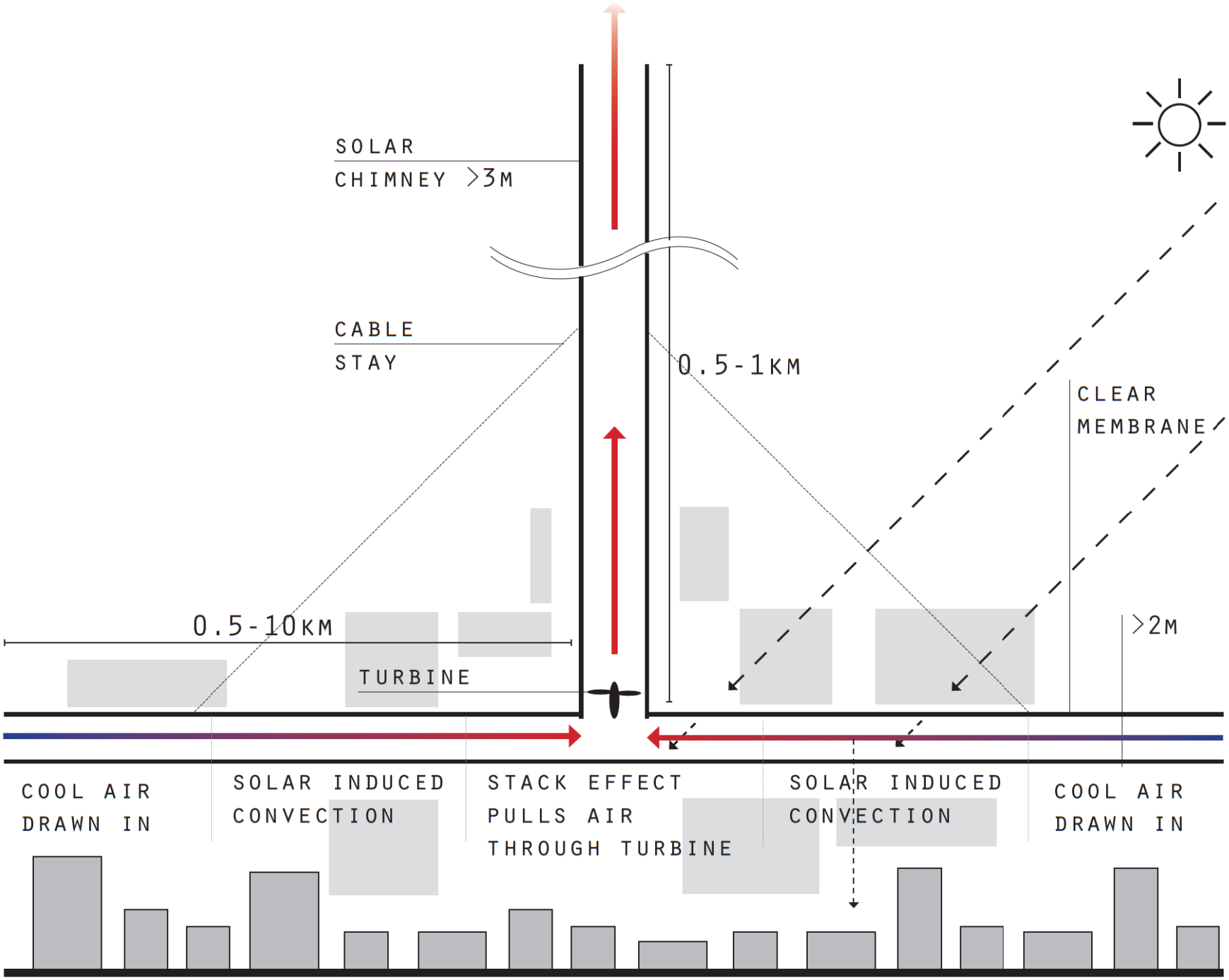
03 Death of Agriculture: Exploit valuable resources of Solar Aspect and Salinity

SOLAR

MILDURA HAS THE MOST DAYS OF SUN PER YEAR

EXISTING SOLAR ENERGY PROPOSALS

FUTURE INVESTMENT - INCREASE IN POULATION + INCREASE IN ECONOMY


SOLAR
CHIMNEY >3M
CABLE
STAY
0.5-1KM
CLEAR
MEMBRANE
0.5-10KM
>2M
TURBINE
COOL AIR
DRAWN IN
SOLAR INDUCED
CONVECTION
STACK EFFECT
PULLS AIR
THROUGH TURBINE
SOLAR INDUCED
CONVECTION
COOL AIR
DRAWN IN

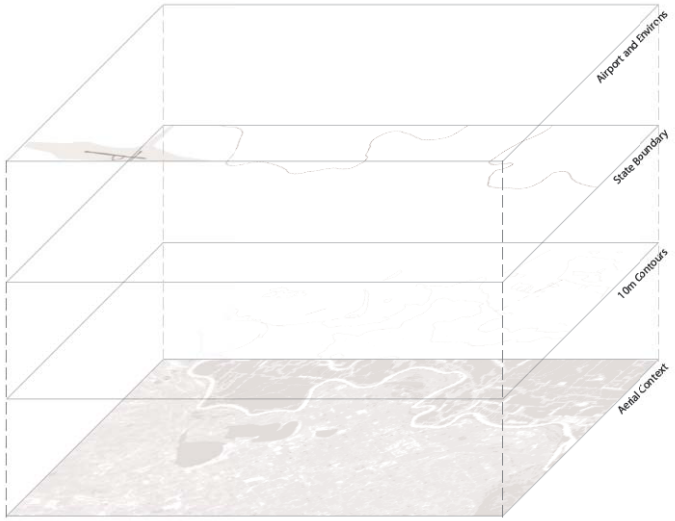
03 Death of Agriculture: Exploit valuable resources of Solar Aspect and Salinity

SALINITY

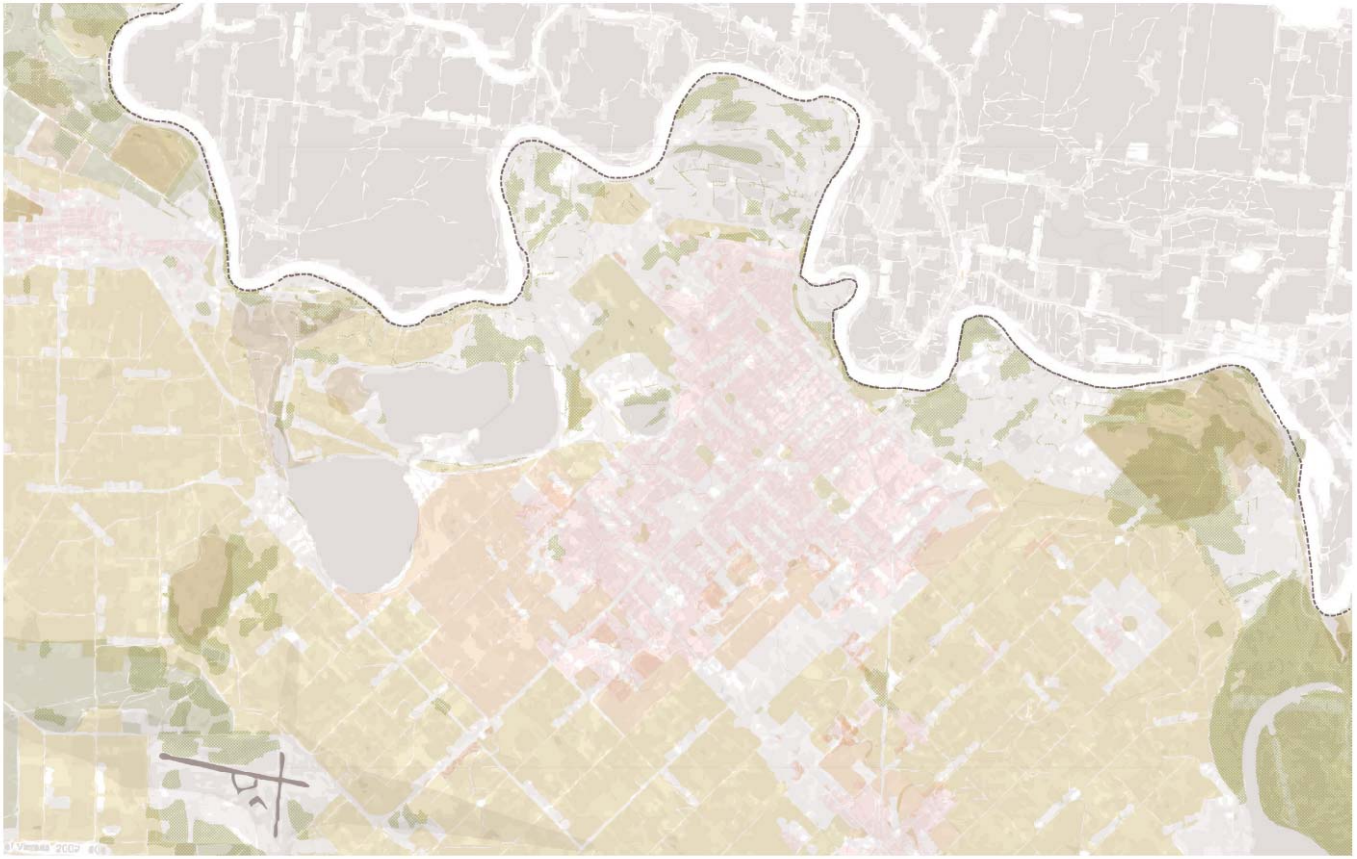
MILDURA IS EXPERIENCING INCREASED SALINITY DUE TO DEFORESTATION AND INTENSIVE AGRICULTURE

EXISTING SALT EXTRACTION INDUSTRIES IN HATTAH AND BURONGA

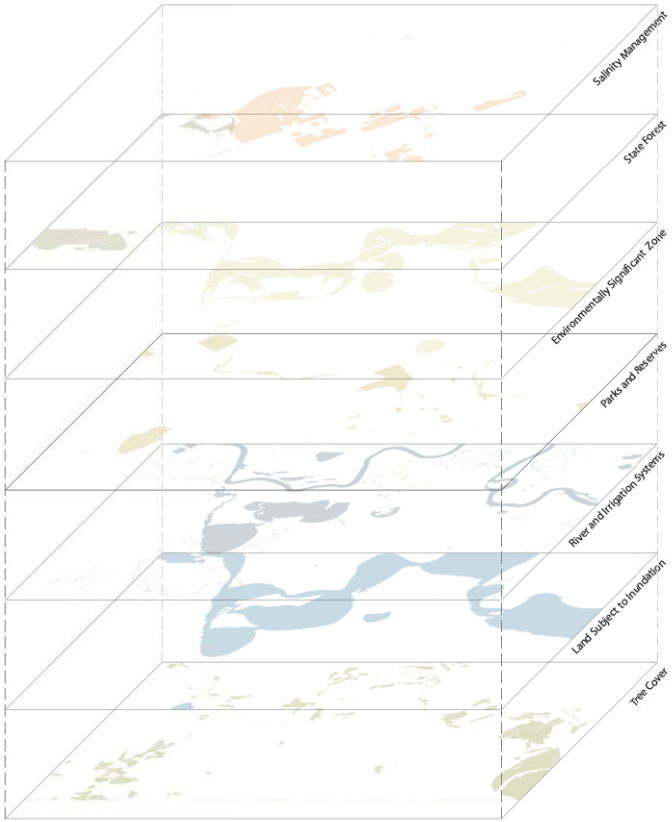
FUTURE INVESTMENT - INCREASE IN POULATION + INCREASE IN ECONOMY



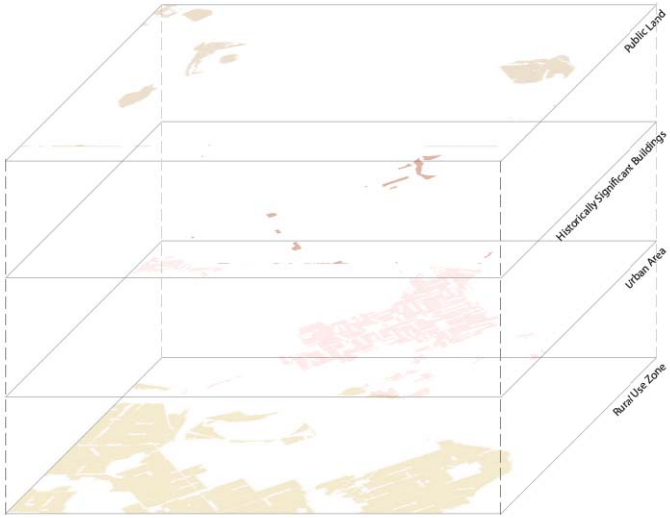
SITE CONDITIONS



ENVIRONMENT



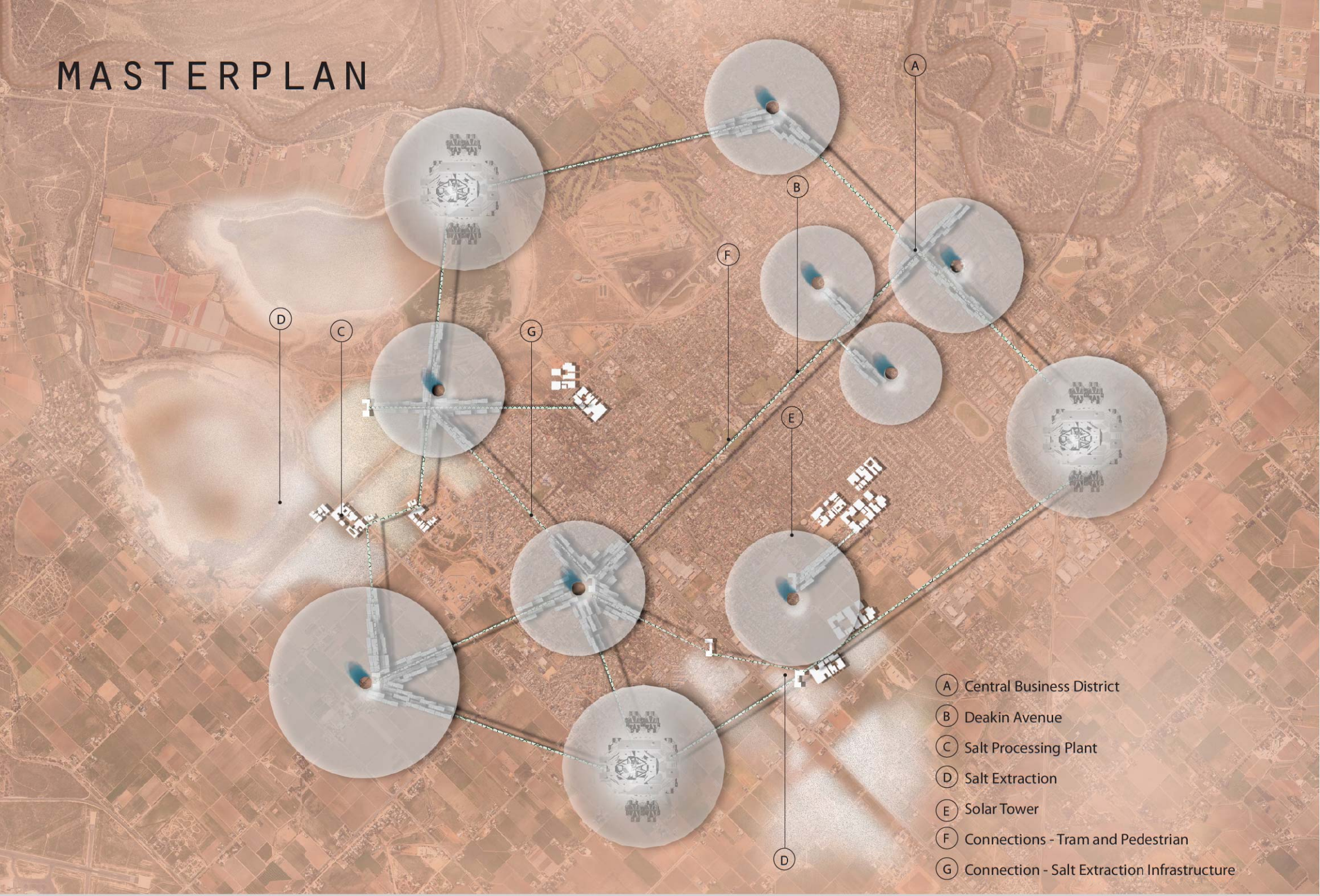
ENVIRONMENTAL CHARACTERISTICS



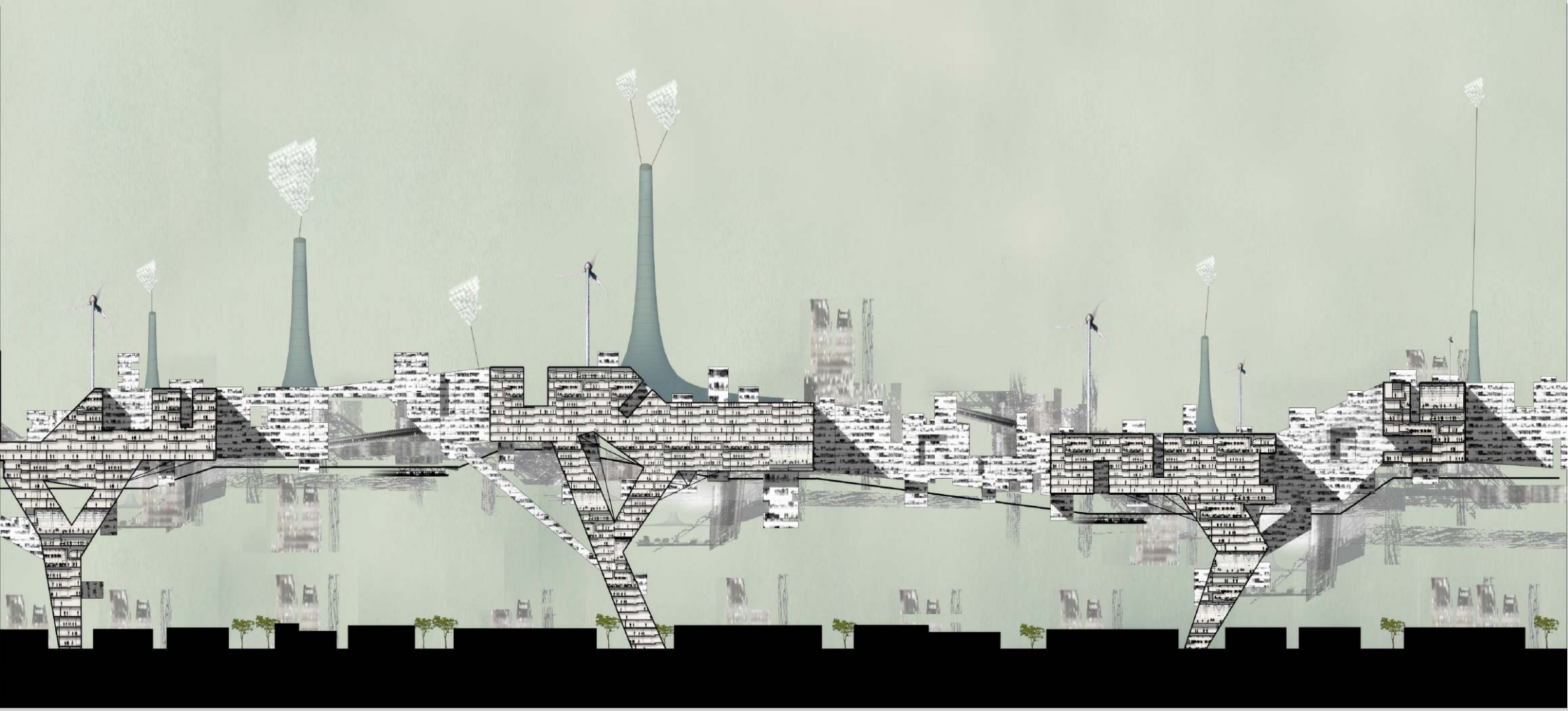
LAND USE / BUILT FORM

TENKU NO SHIRO MILDURA

MASTERPLAN


A
B
C
D
E
F
G
D
A Central Business District
B Deakin Avenue
C Salt Processing Plant
D Salt Extraction
E Solar Tower
F Connections - Tram and Pedestrian
G Connection - Salt Extraction Infrastructure

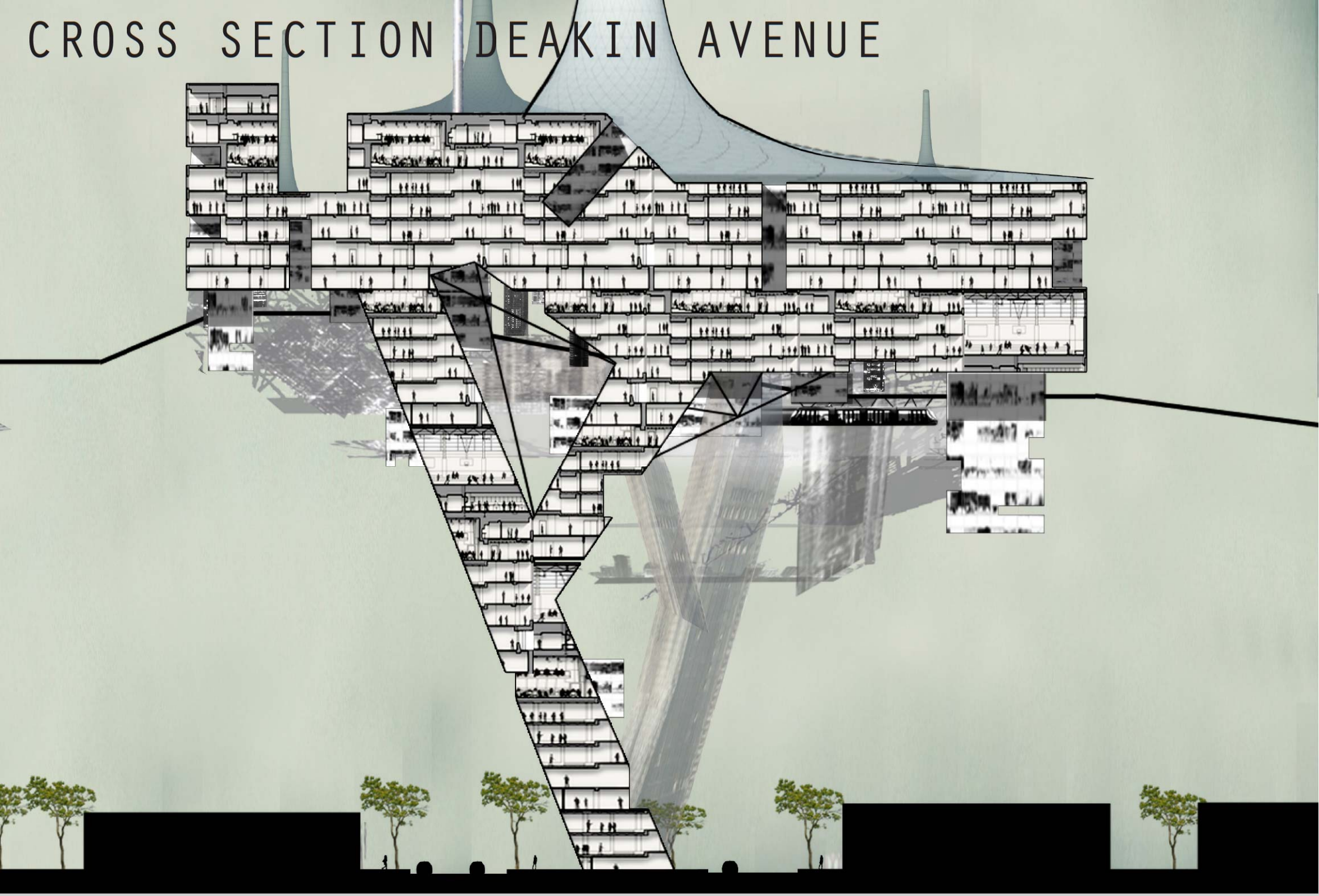
LONGITUDINAL CBD SECTION



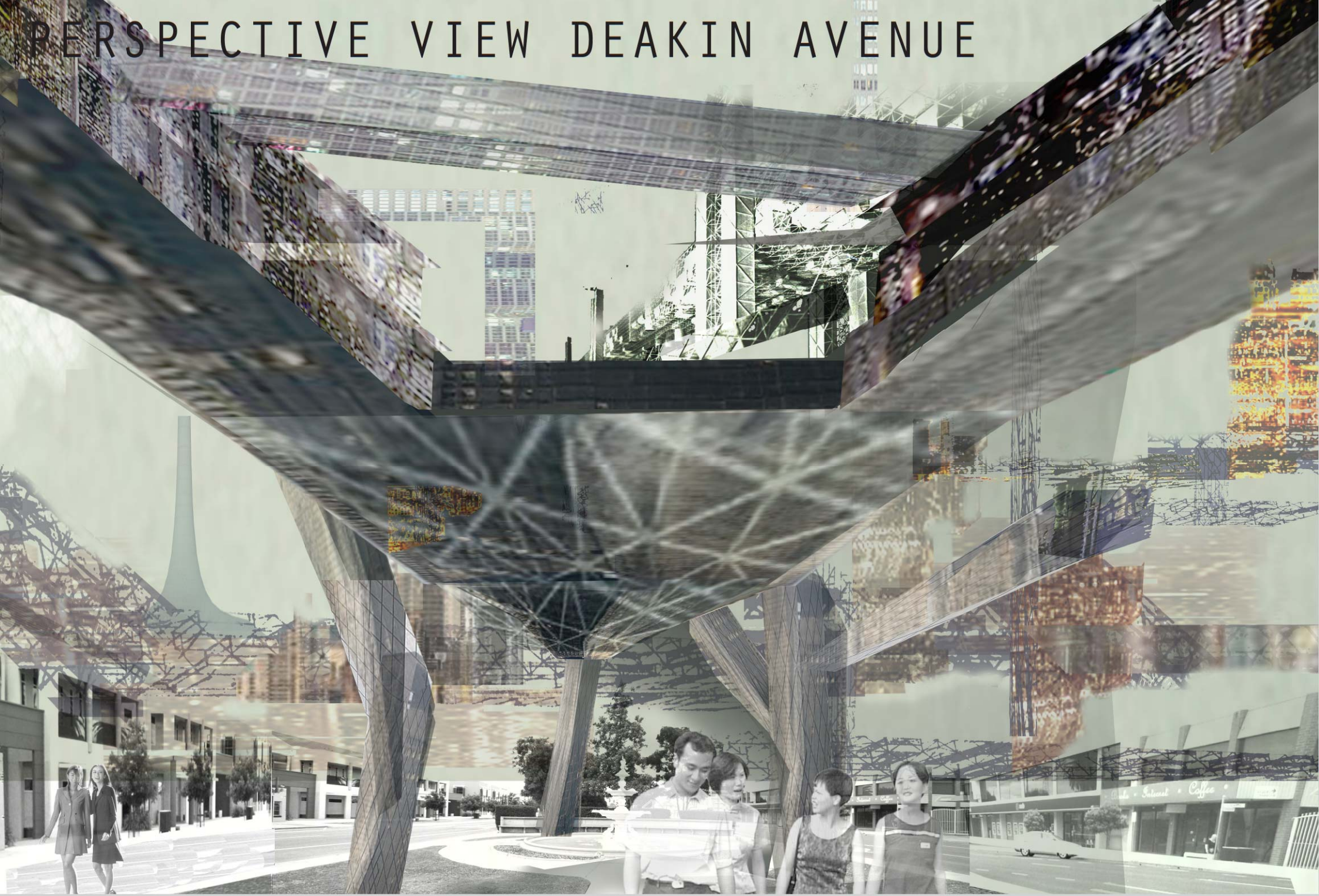
PERSPECTIVE VIEW CBD

TENKU NO SHIRO MILDURA

CROSS SECTION DEAKIN AVENUE

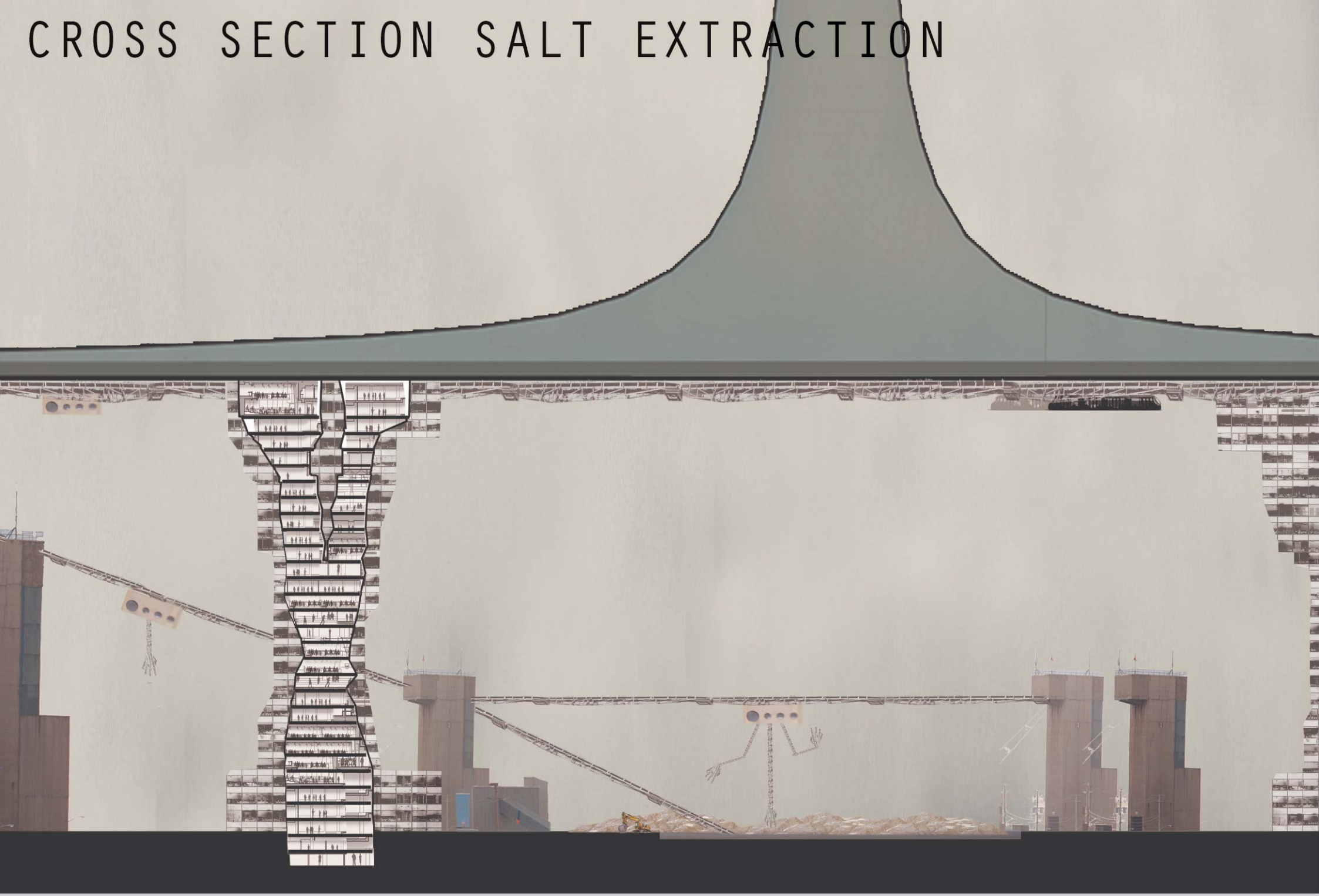


PERSPECTIVE VIEW DEAKIN AVENUE

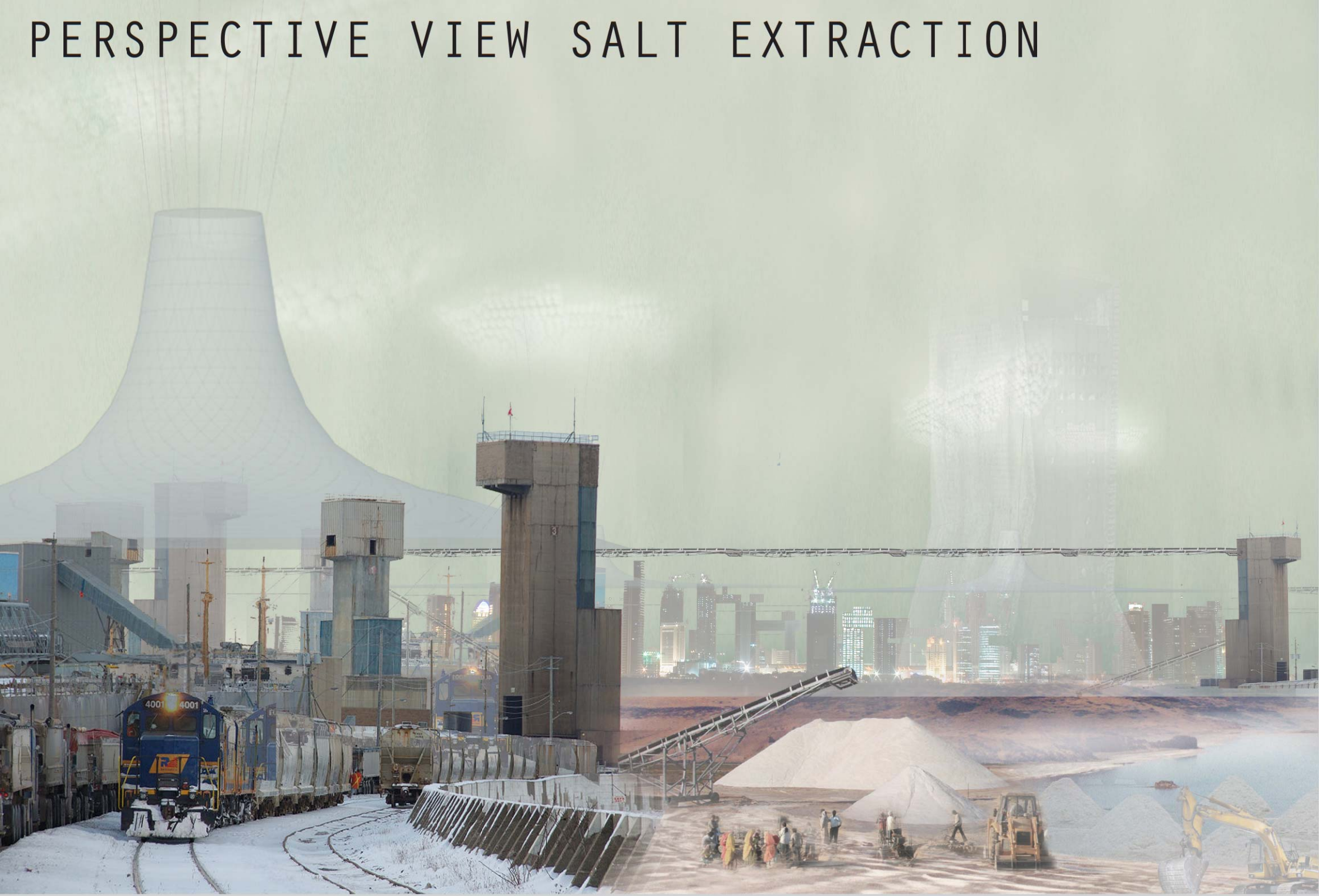


TENKU NO SHIRO MILDURA

CROSS SECTION SALT EXTRACTION



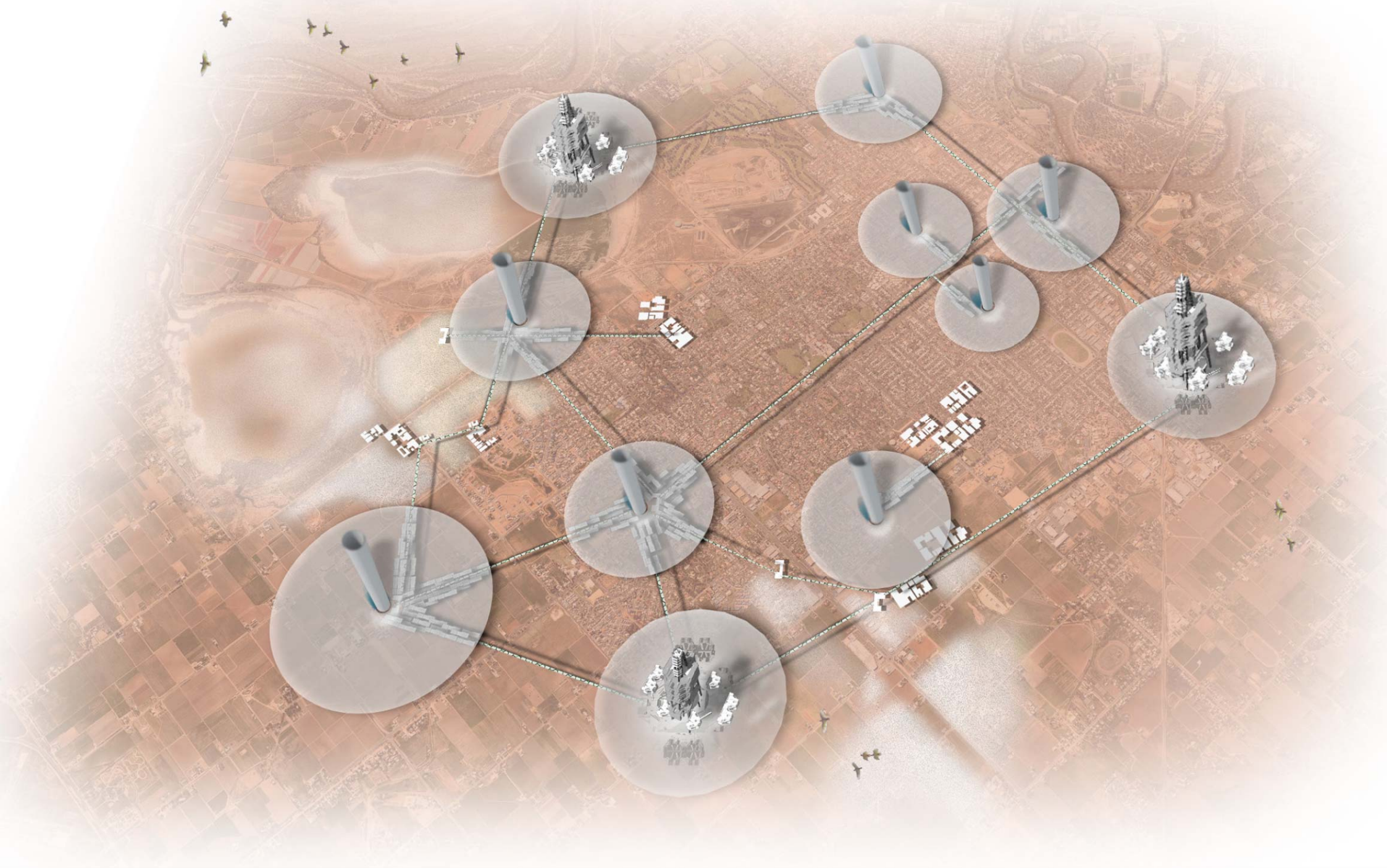
PERSPECTIVE VIEW SALT EXTRACTION



TENKU NO SHIRO MILDURA

CROSS SECTION HOUSING CLUSTER

AERIAL OVERVIEW



TENKU NO SHIRO MILDURA

01 Identity:
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containment

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01 Identity:
Mildura is a Desert City

2010 MILDURA

2100 MILDURA

2100: THE TEMPERATURE RISES, THE DESERT EXPANDS, SALINITY INCREASES ... MILDURA IS A DESERT CITY.

02 Population Growth:
containment

2010 MILDURA CITY
MILDURA REGION

2050 MILDURA

2100 MILDURA

By 2100 REGIONAL MILDURA HAS MOVED TO THE CITY OF MILDURA AND THE ENTIRE POPULATION HAS TRIPLED.

(20000 + 30000)x 3 = 150000+

HORIZONTAL GROWTH

VERTICAL GROWTH

PARALLEL GROWTH

MELBOURNE

MILDURA

TENKU NO SHIRO MILDURA

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FUTURE INVESTMENT - INCREASE IN POULATION + INCREASE IN ECONOMY

SOLAR CHIMNEY >5m

CABLE STAY

0,5-1km

CLEAR MORGRAGE

0,5-10km

TURBINE

>2k

COOL AIR DRAWN IN

SOLAR INDUCED CONVECTION

STACK EFFECT PULLS AIR THROUGH TURBINE

SOLAR INDUCED CONVECTION

COOL AIR DRAWN IN

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FUTURE INVESTMENT - INCREASE IN POULATION + INCREASE IN ECONOMY

SITE CHARTERS

SITE PLAN

ENVIRONMENTAL CHARACTERISTICS

LAND USE / SOLAR ZONE

MASTERPLAN

LONGITUDINAL CBD SECTION

PERSPECTIVE VIEW CBD

CROSS SECTION DEAKIN AVENUE

PERSPECTIVE VIEW DEAKIN AVENUE

CROSS SECTION SALT EXTRACTION

PERSPECTIVE VIEW SALT EXTRACTION

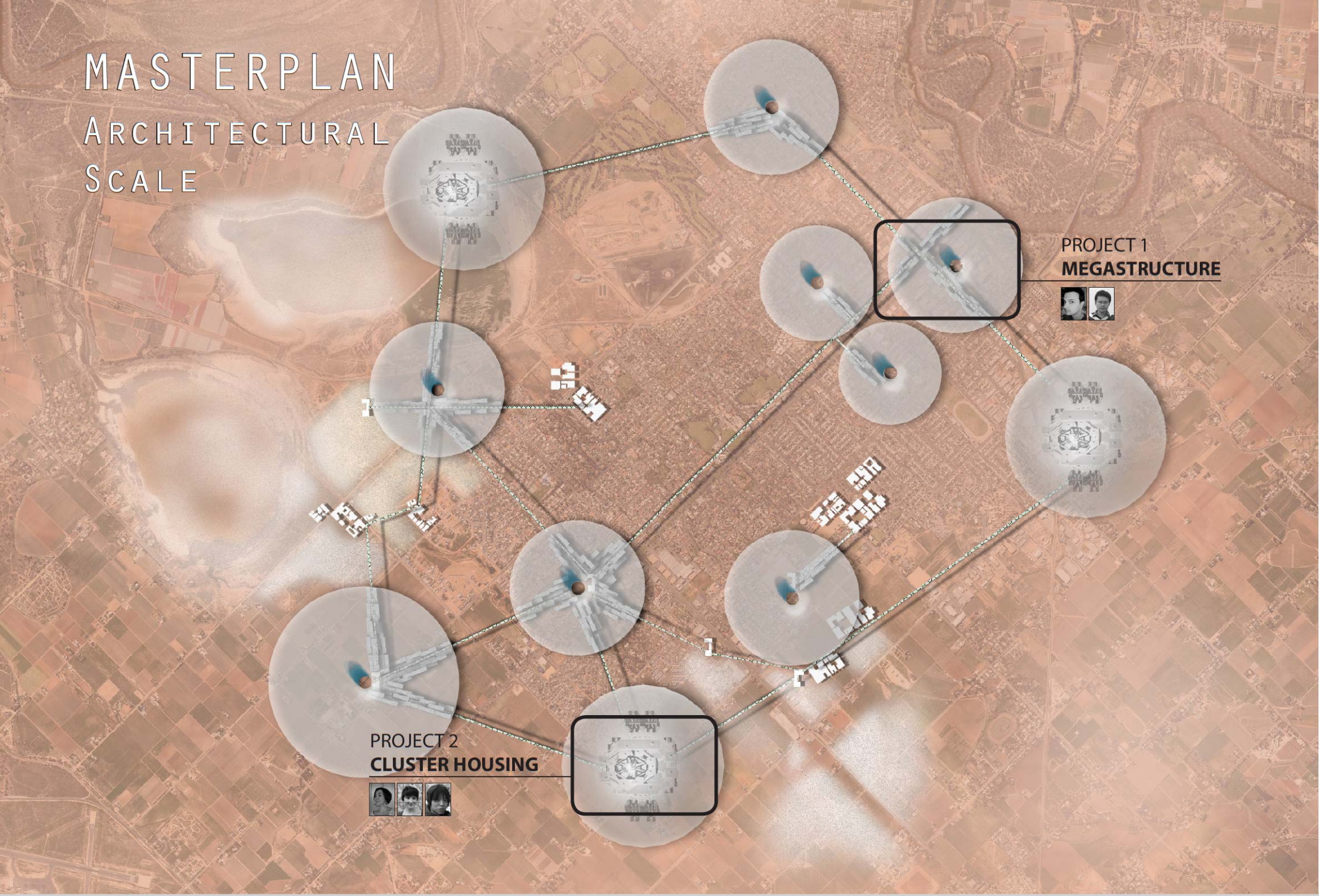
CROSS SECTION HOUSING CLUSTER

AERIAL OVERVIEW

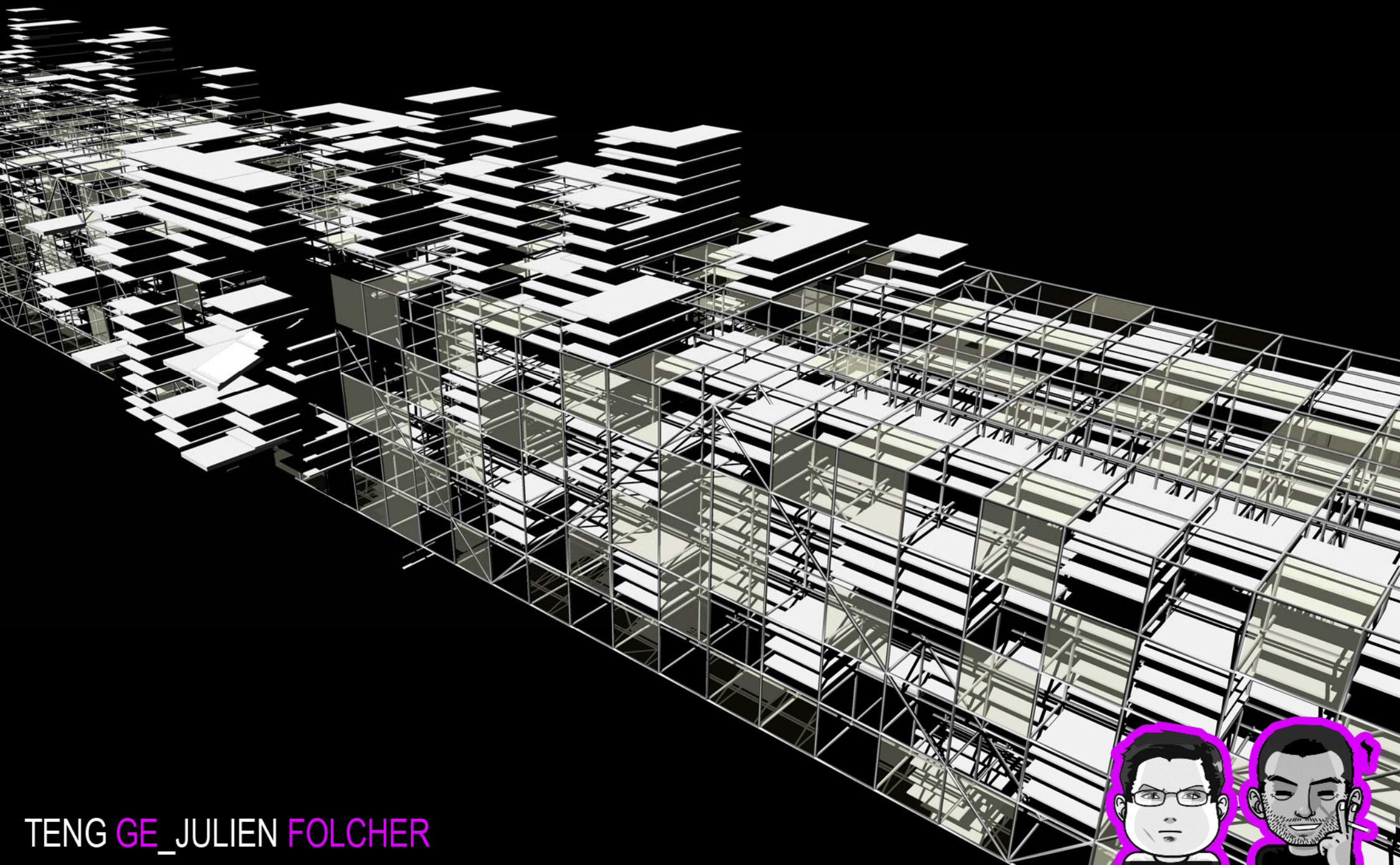
"Castle in the Sky"

MASTERPLAN

ARCHITECTURAL SCALE

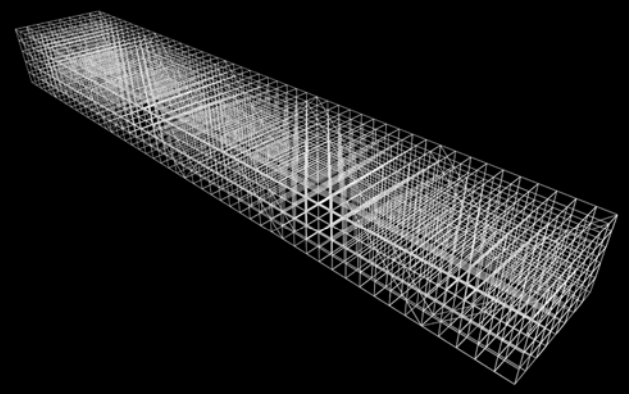


FROM OUTA SPACE

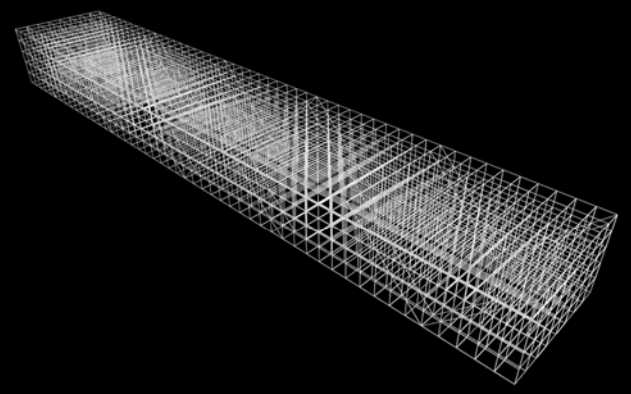


TENG GE_JULIEN FOLCHER

_3D FRAME

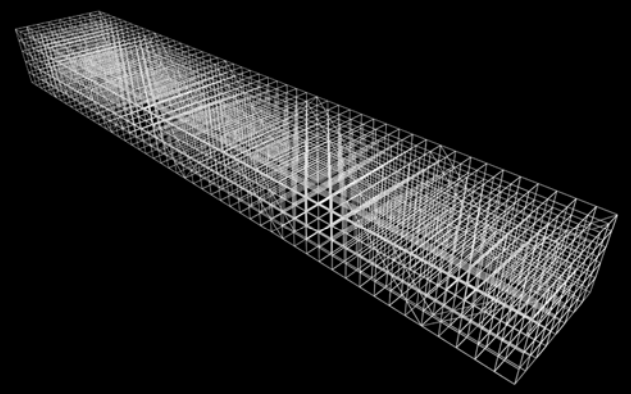


_3D FRAME



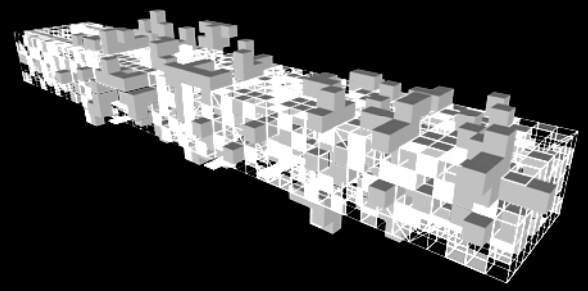
_CIRCULATIONS

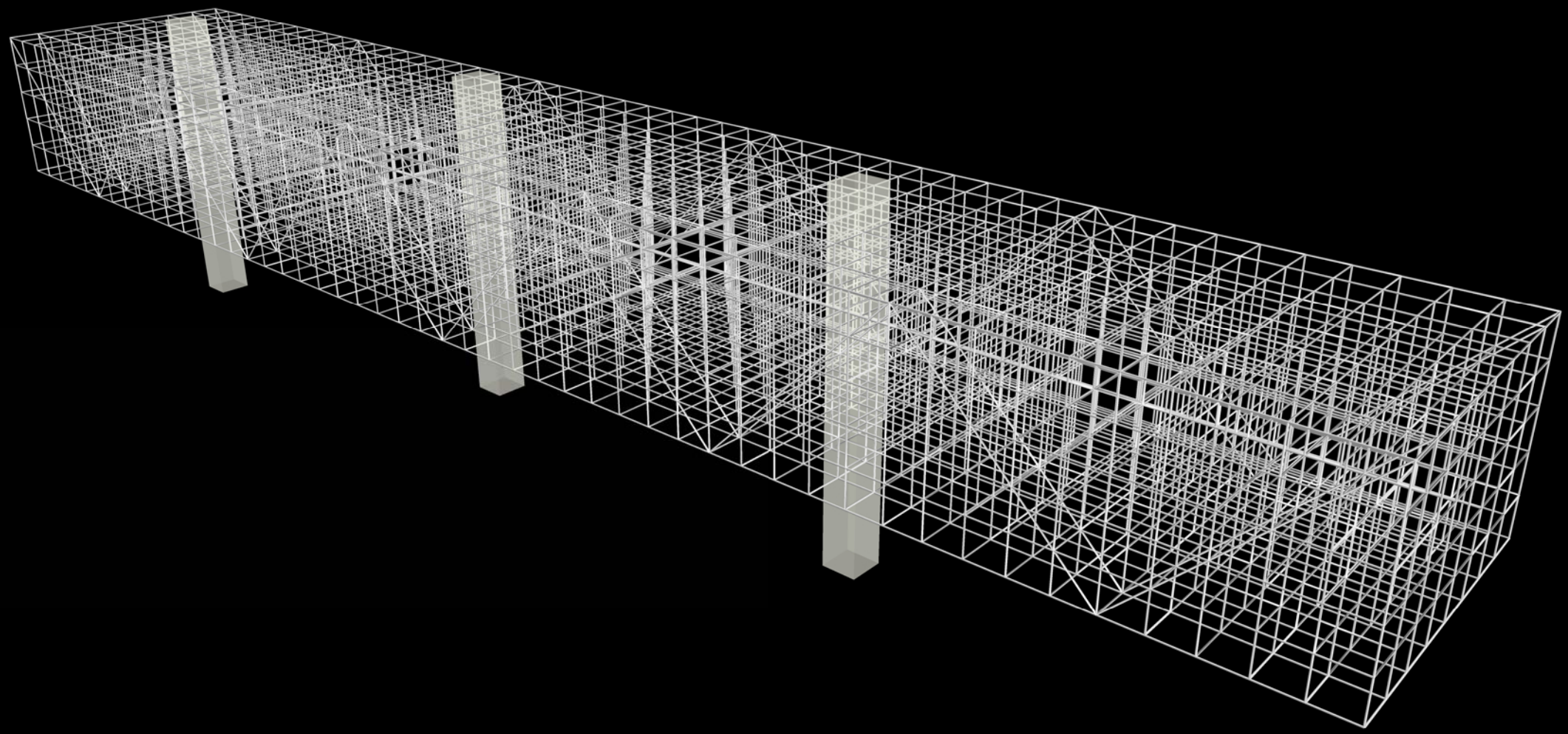
_3D FRAME



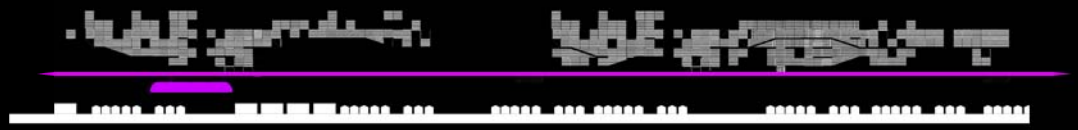
_CIRCULATIONS

_PROGRAM

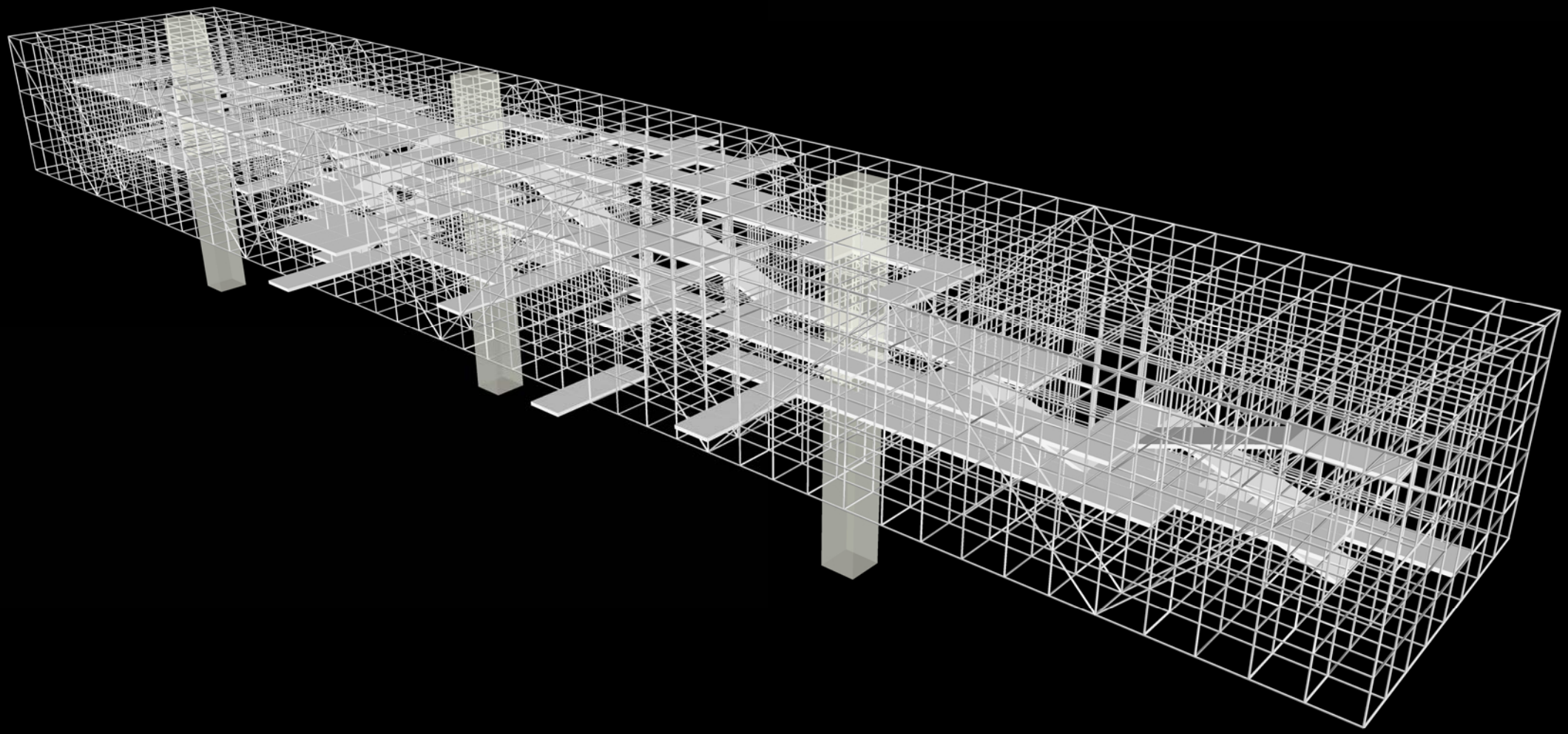




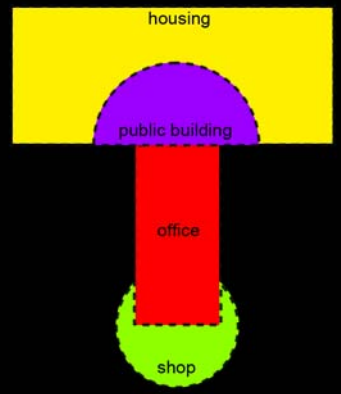
STRUCTURE_3D FRAME

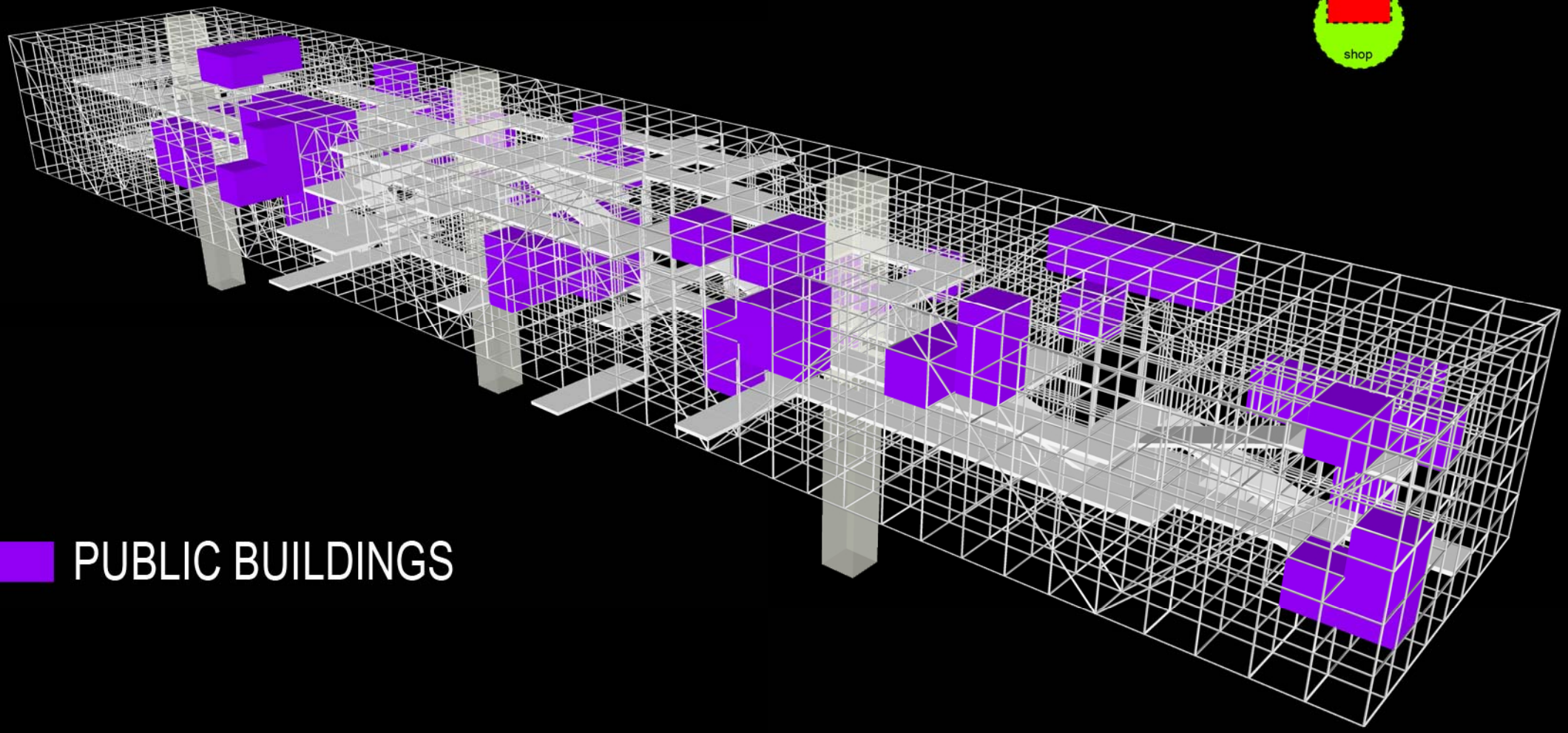


FLY_TRAM

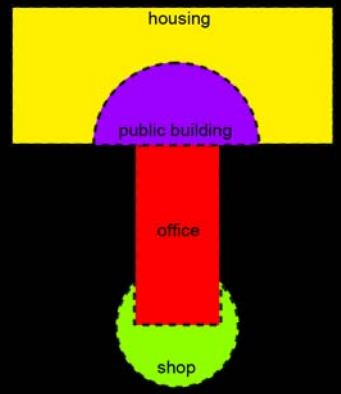


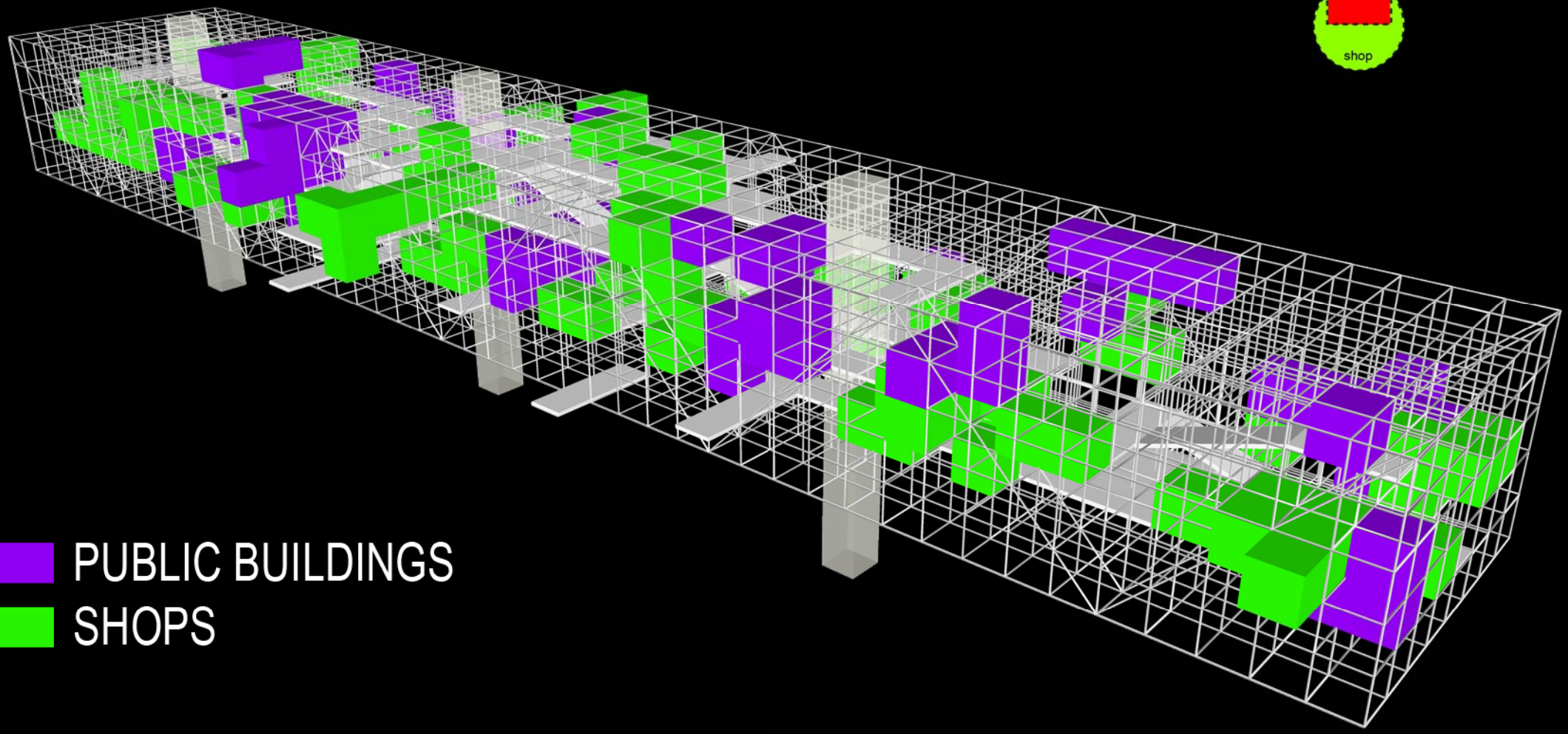
ACCESS_CONNECTIONS





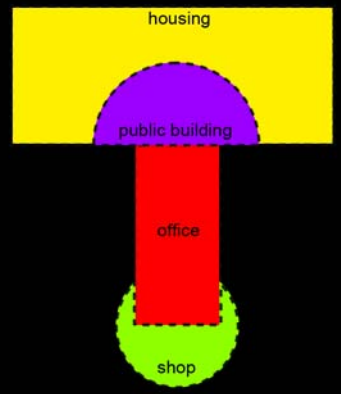
PUBLIC BUILDINGS

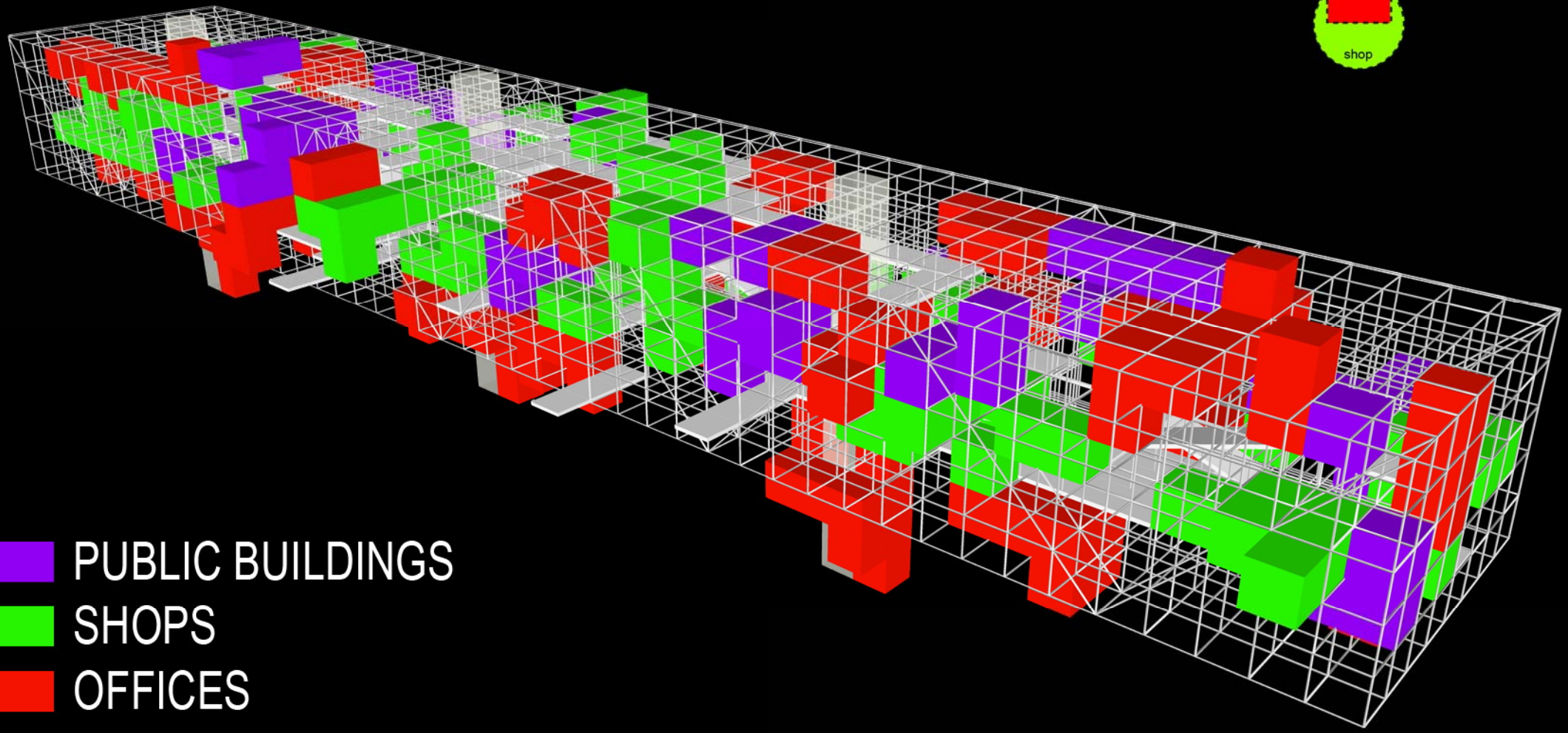




PUBLIC BUILDINGS

SHOPS

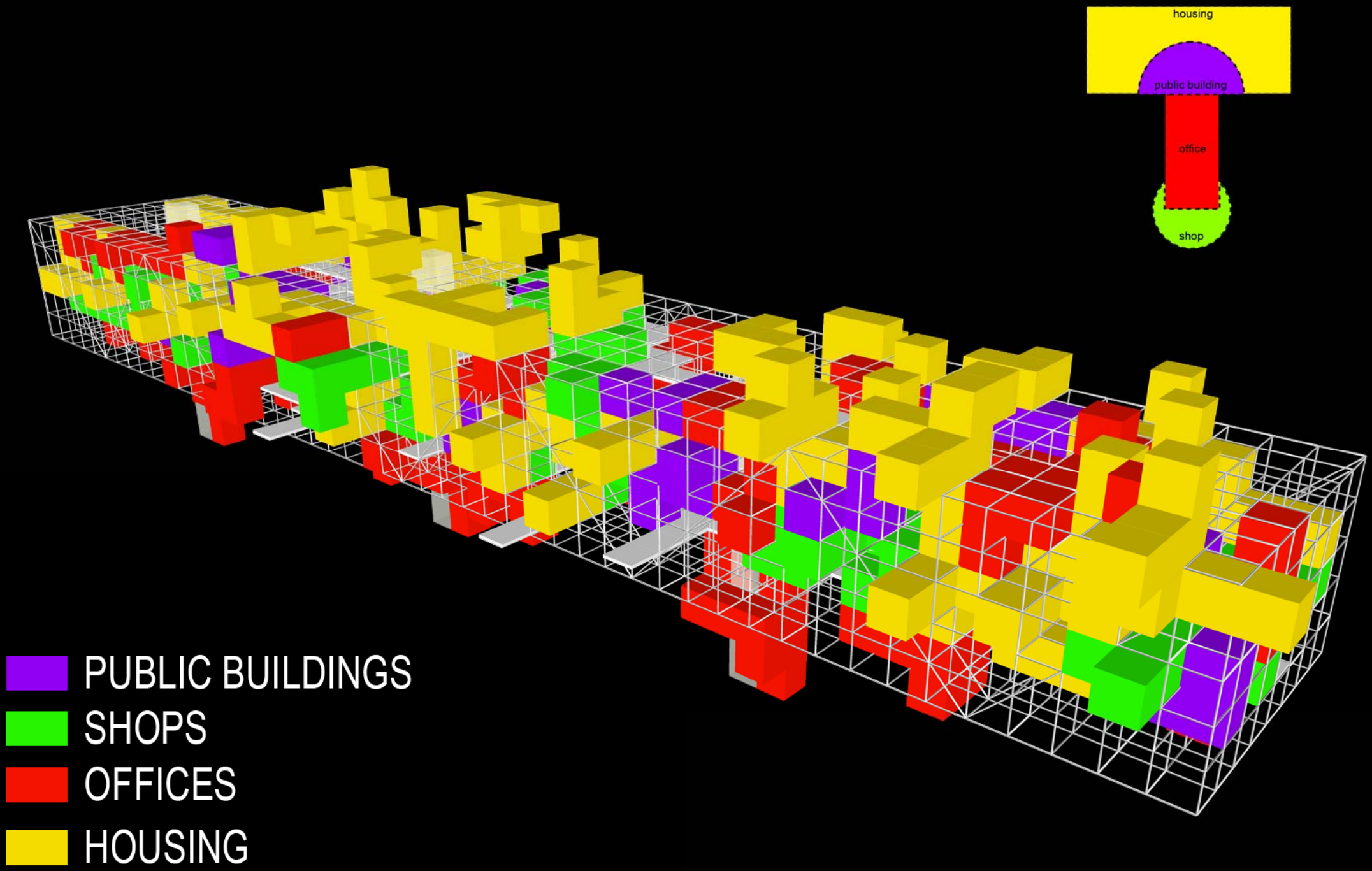


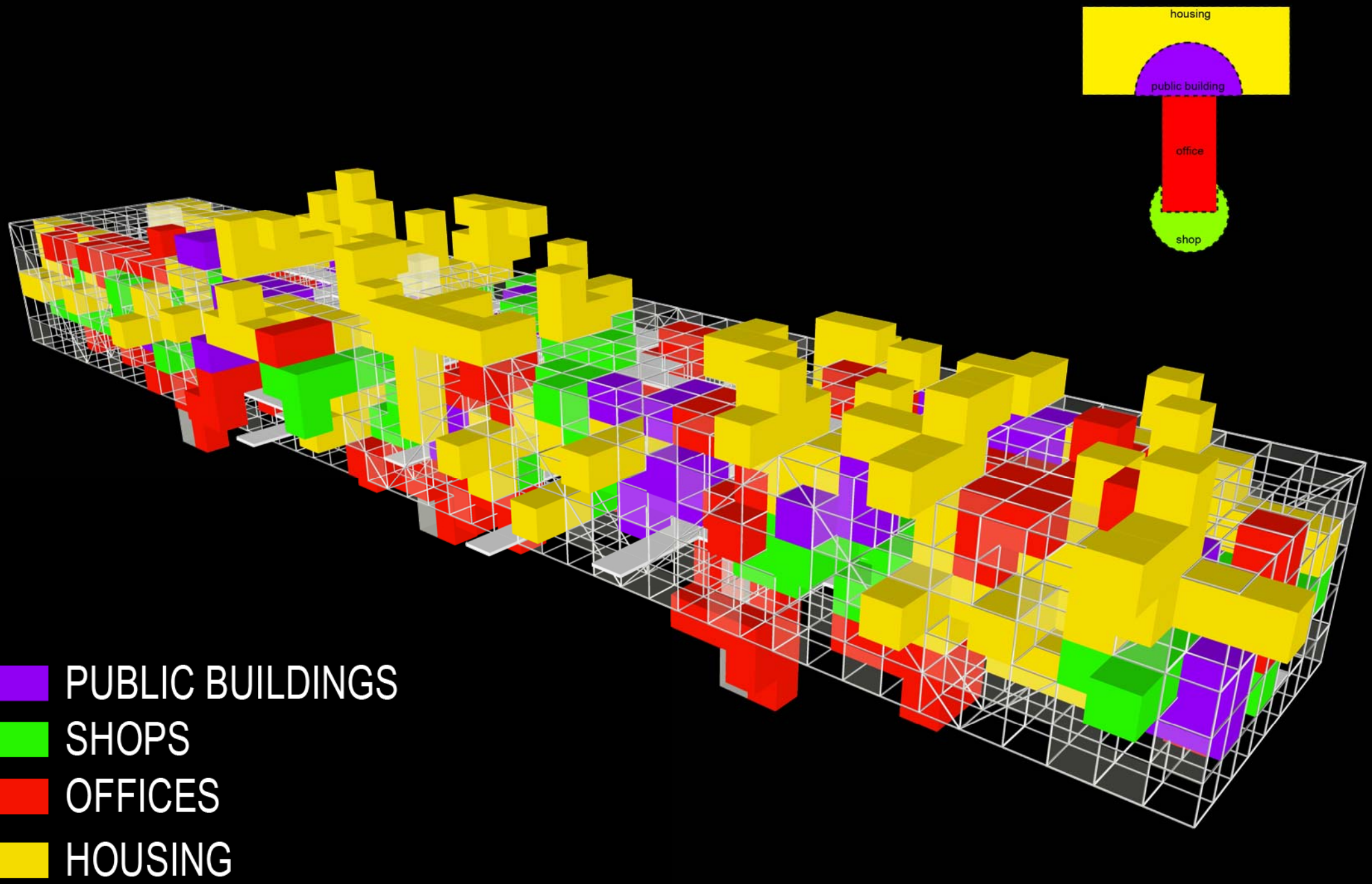


PUBLIC BUILDINGS

SHOPS

OFFICES


housing
public building
office
shop
PUBLIC BUILDINGS
SHOPS
OFFICES
HOUSING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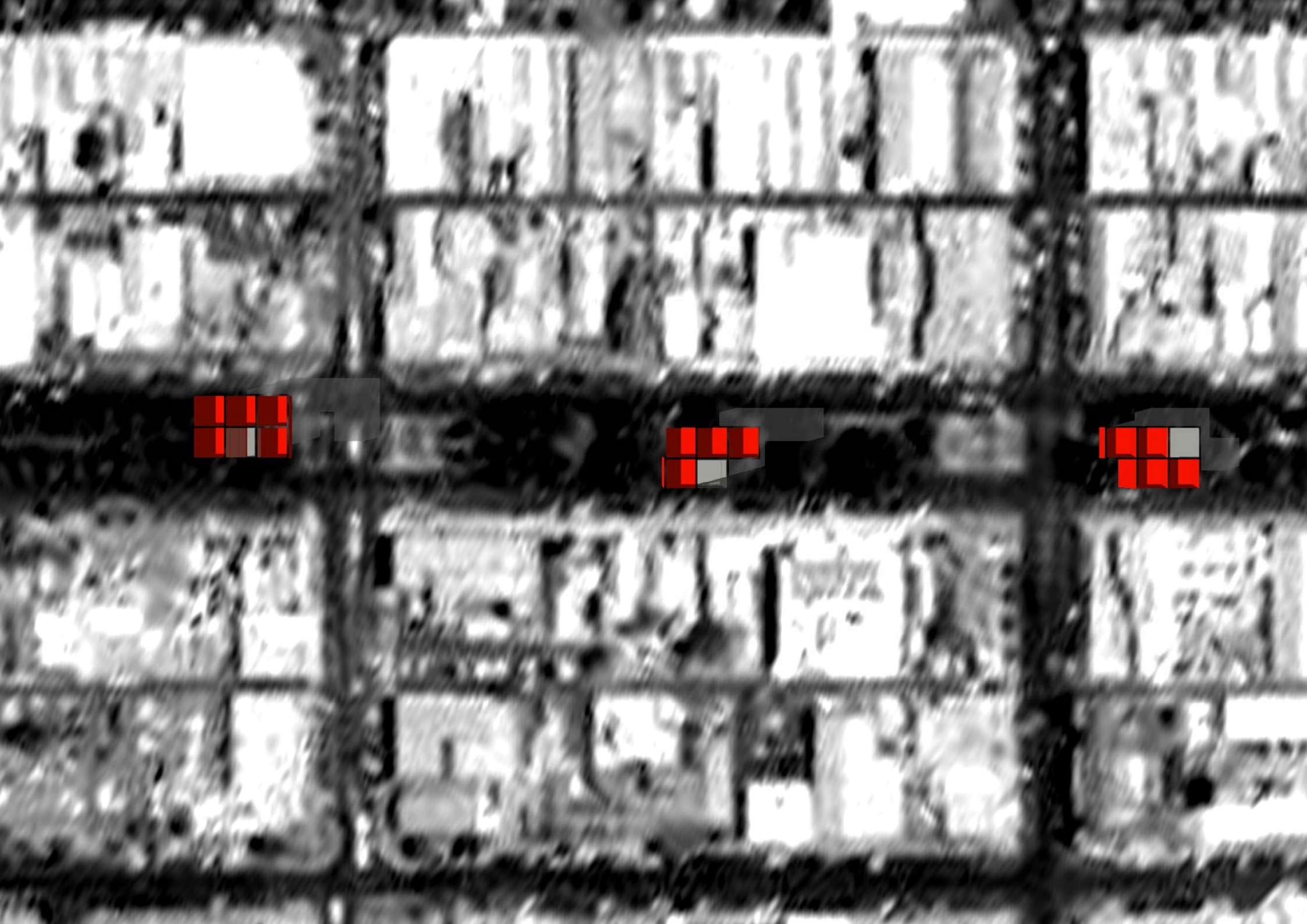
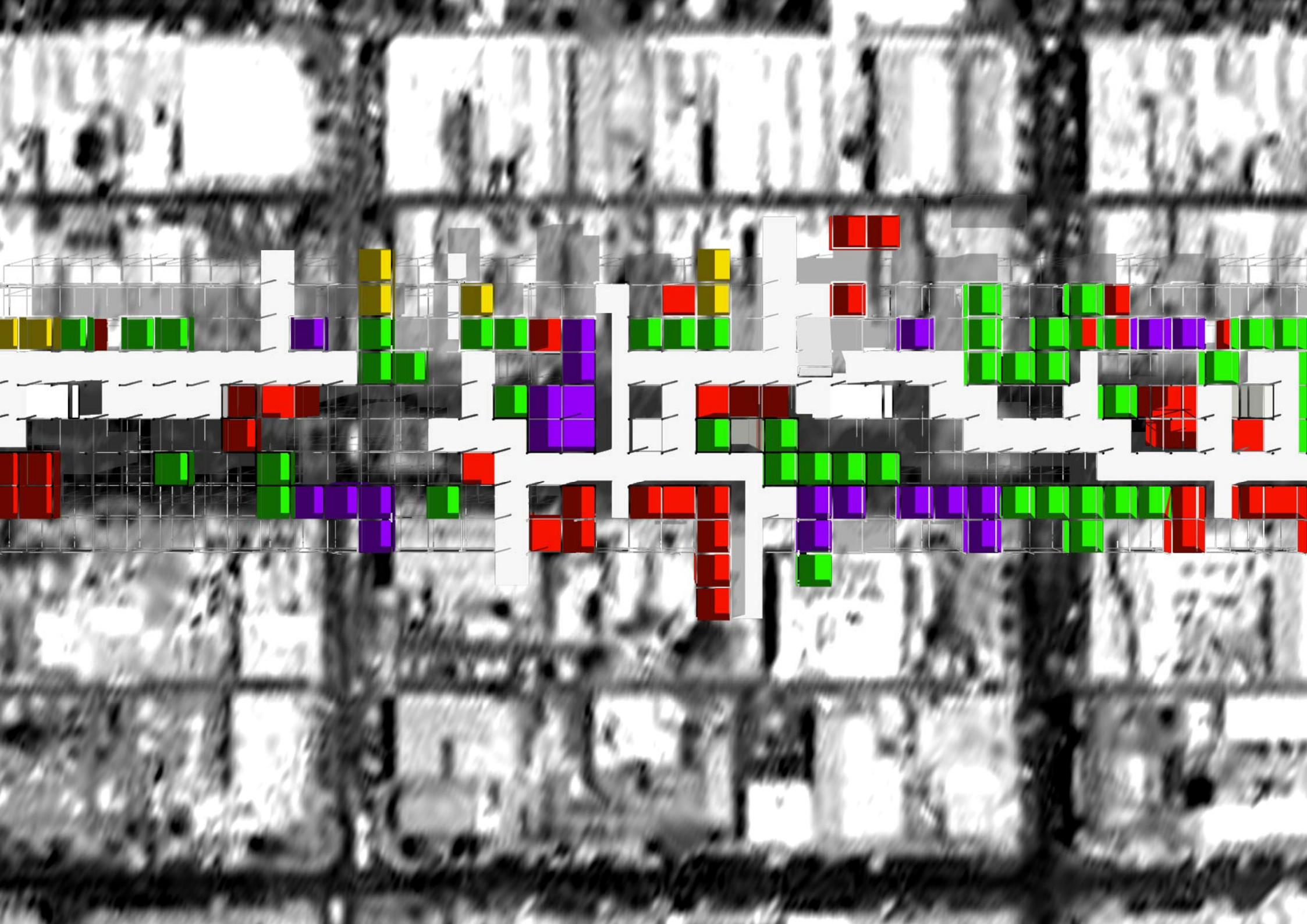
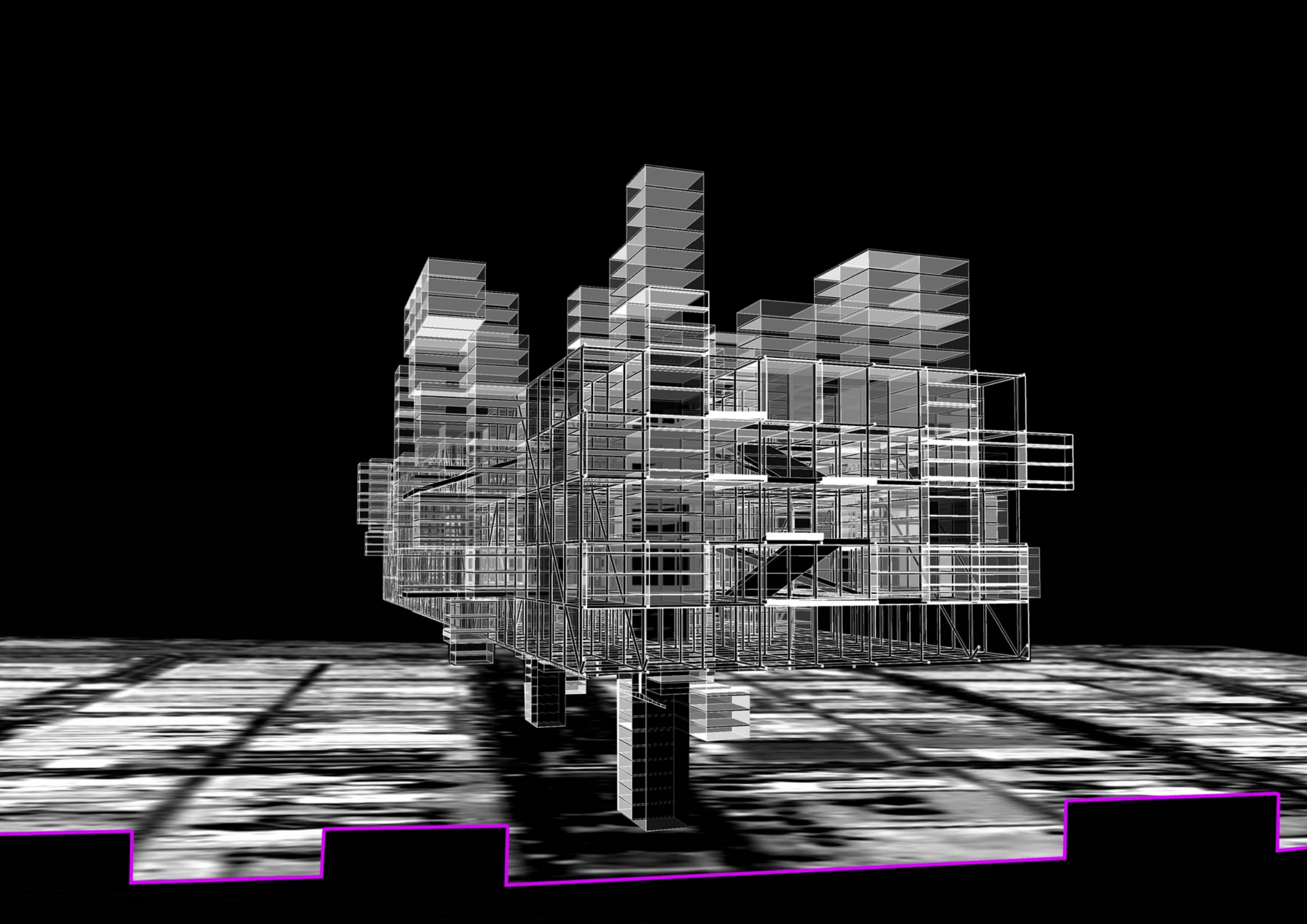
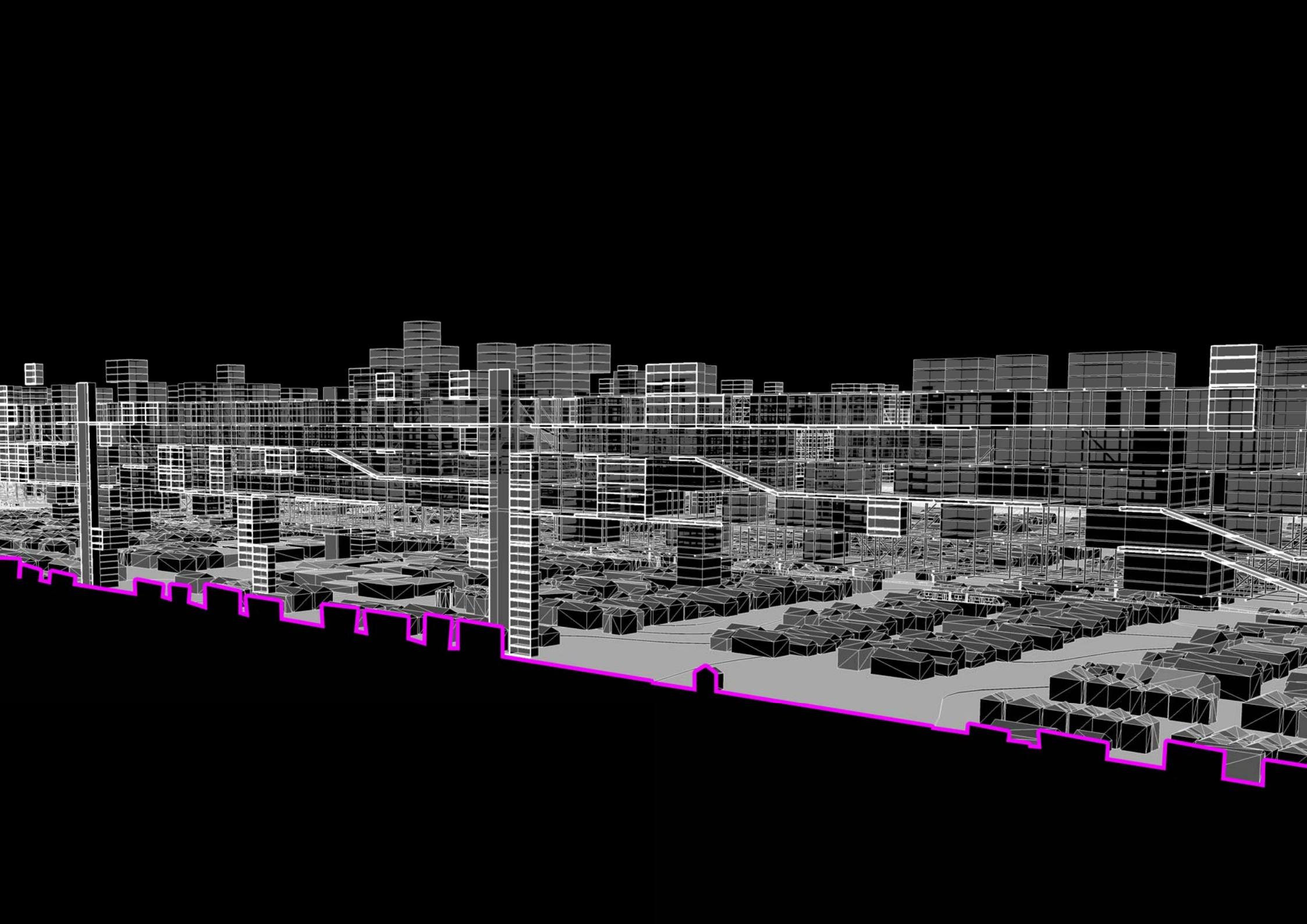
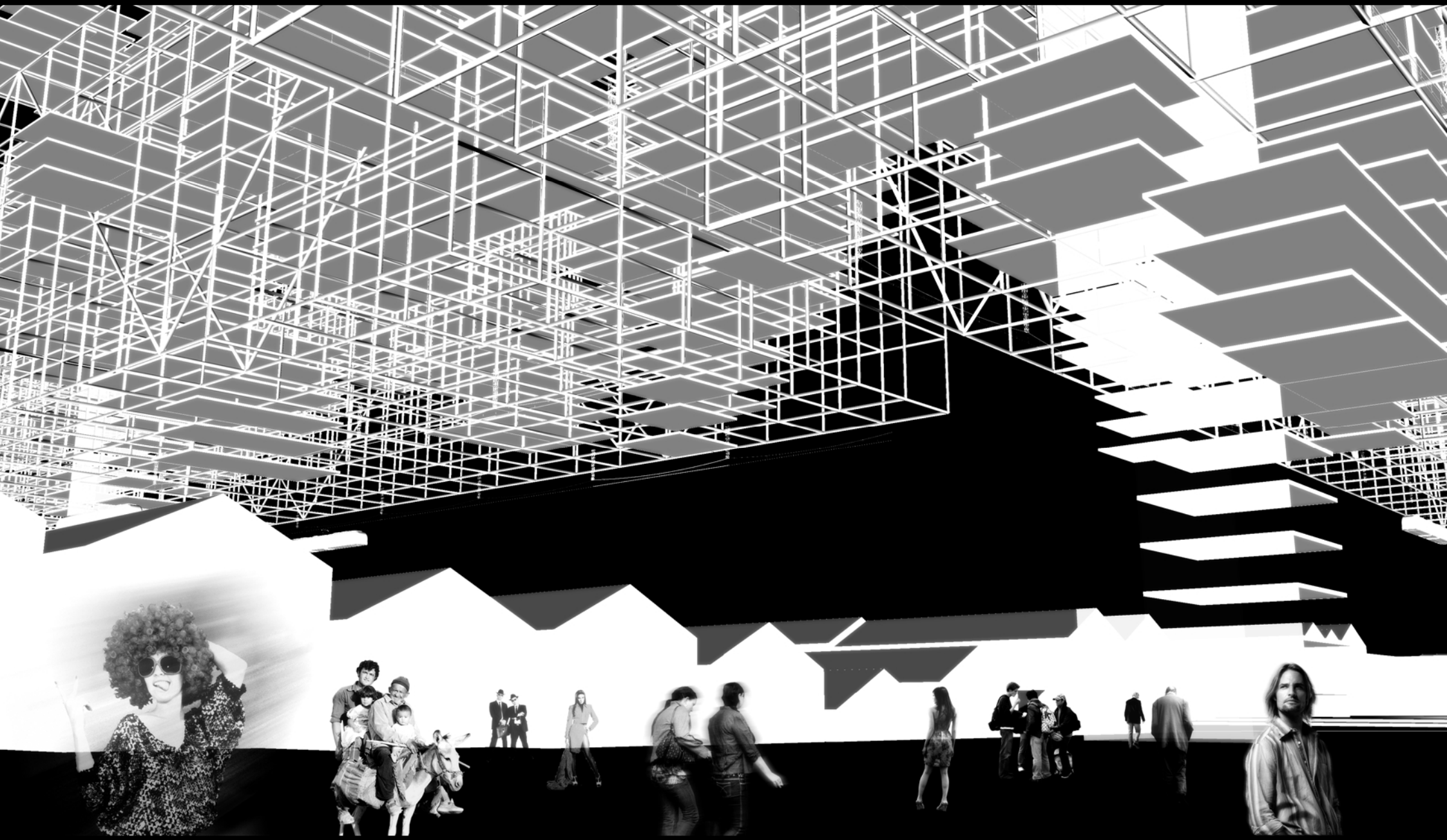
PUBLIC BUILDINGS
SHOPS
OFFICES
HOUSING

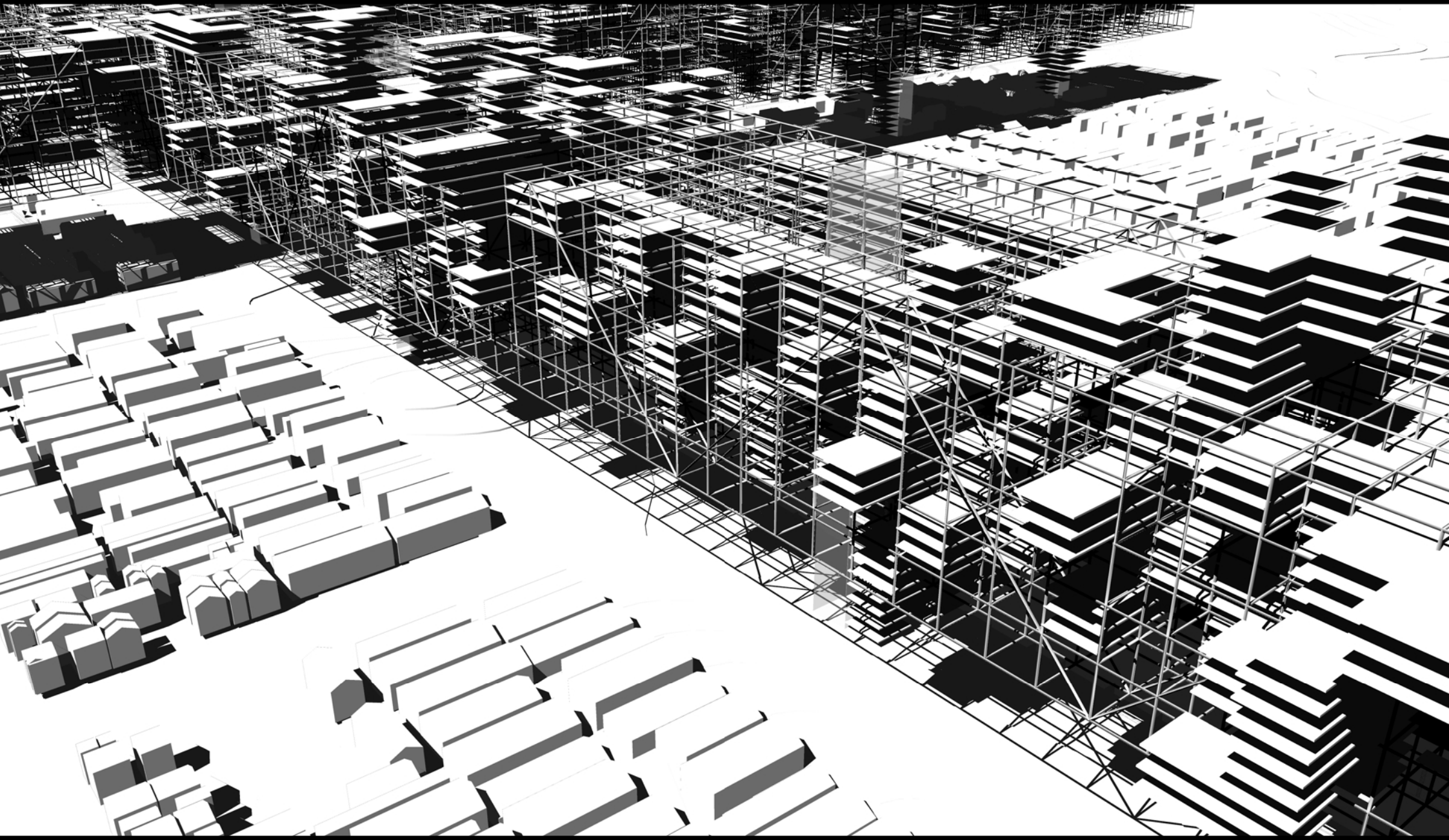


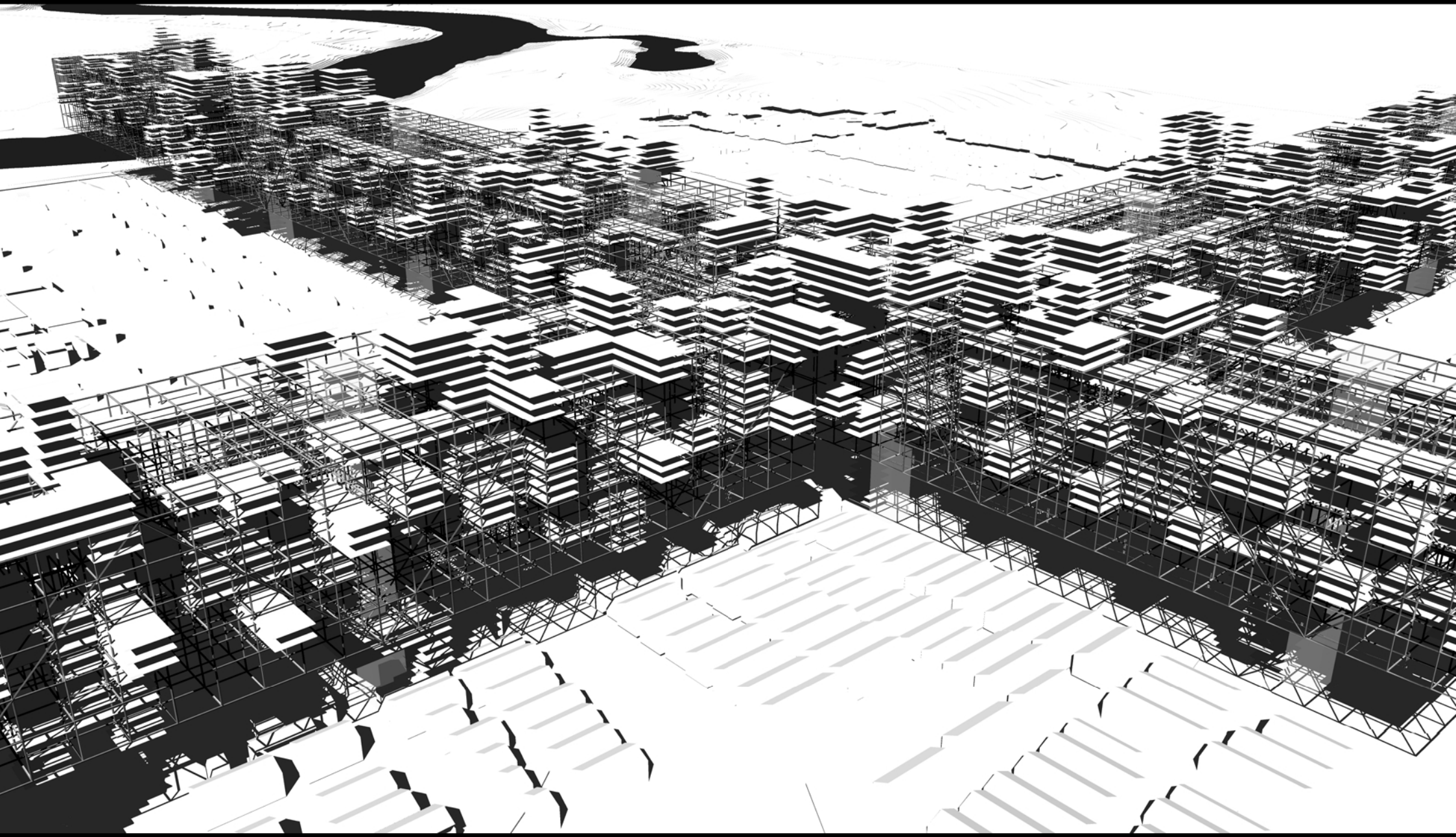




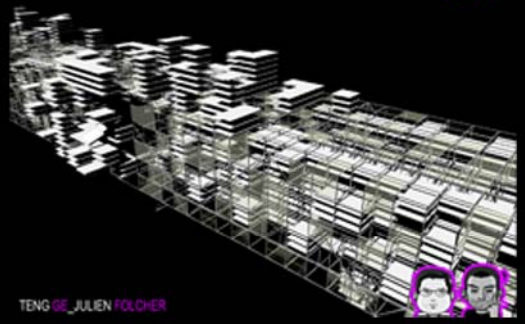






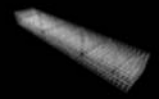


FROM OUTA SPACE



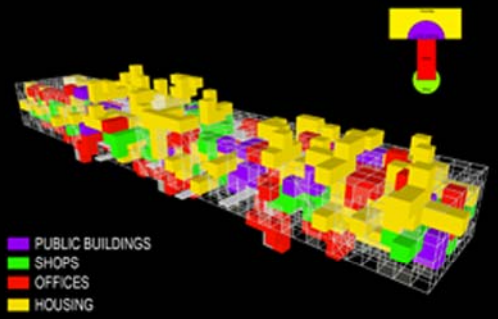
TENG GE_JULIEN FOLCHER

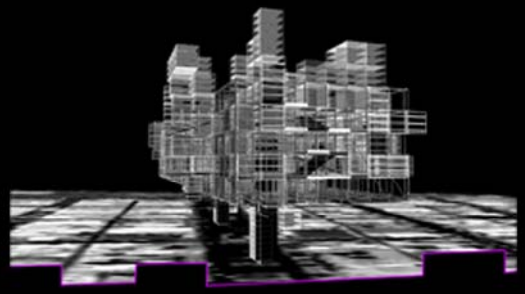
_3D FRAME

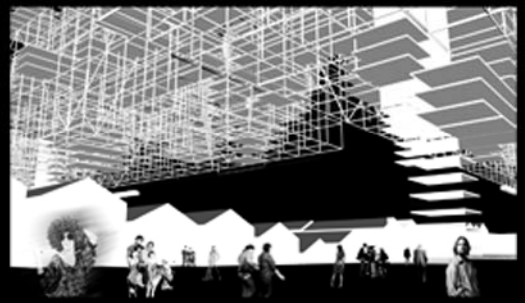


_CIRCULATIONS

_PROGRAM







EMMA ELGOYHEN
MICHAELA PRESCOTT
YOSHITAKE SASAI

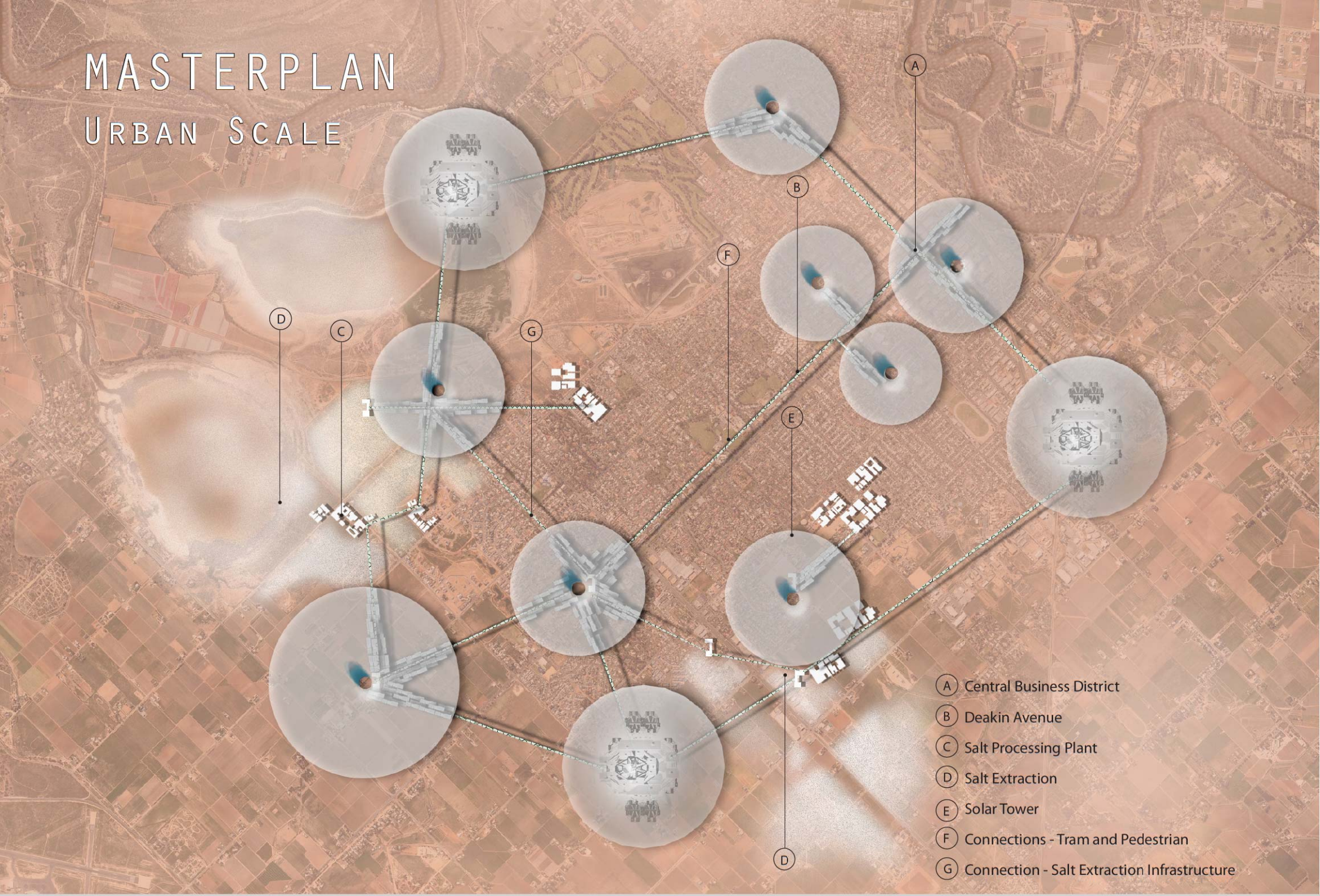
GROUP A/2

CLUSTER HOUSING
TENKU NO SHIRO MILDURA

"Castle in the Sky"

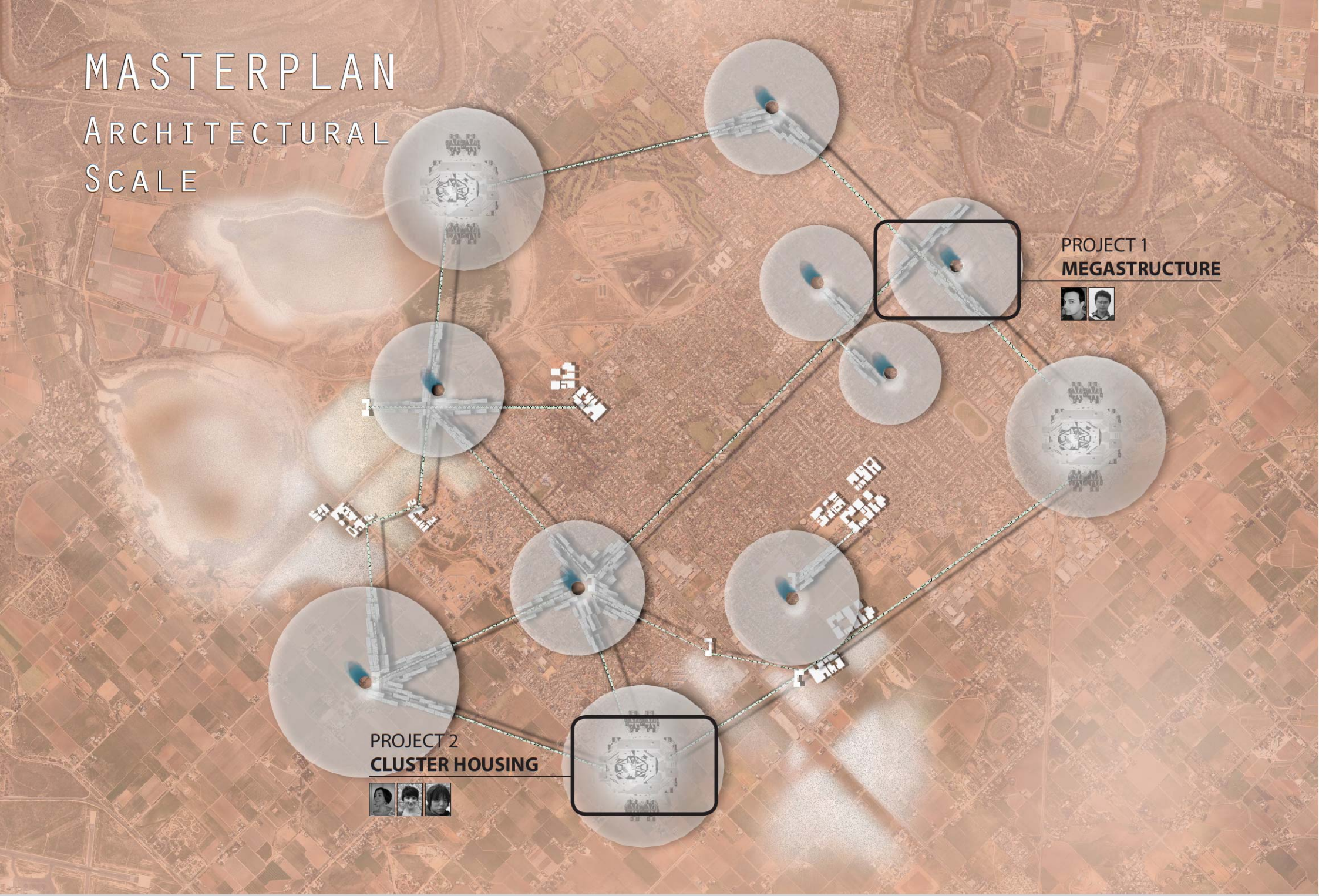
MASTERPLAN

Urban Scale



MASTERPLAN

ARCHITECTURAL SCALE



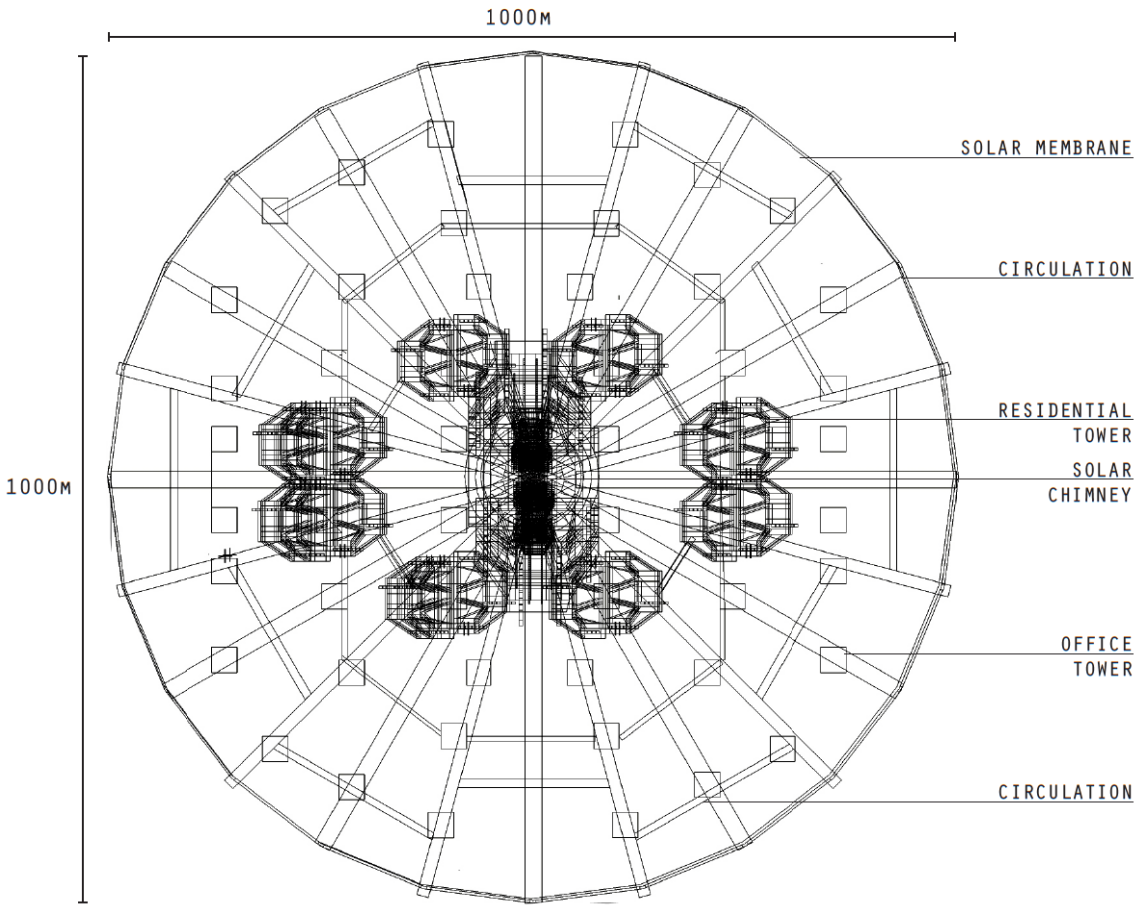
PROJECT 2
CLUSTER HOUSING

01 RELATIONSHIPS AND ORGANISATION OF SOLAR TOWER AND CITY

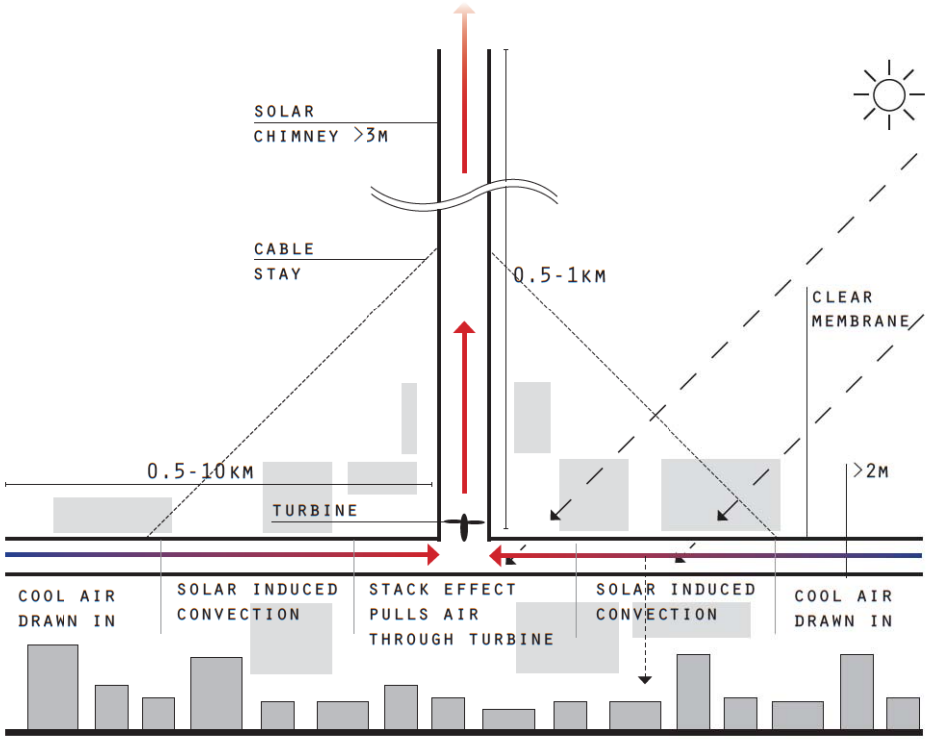
02 MOVEMENT AND CIRCULATION

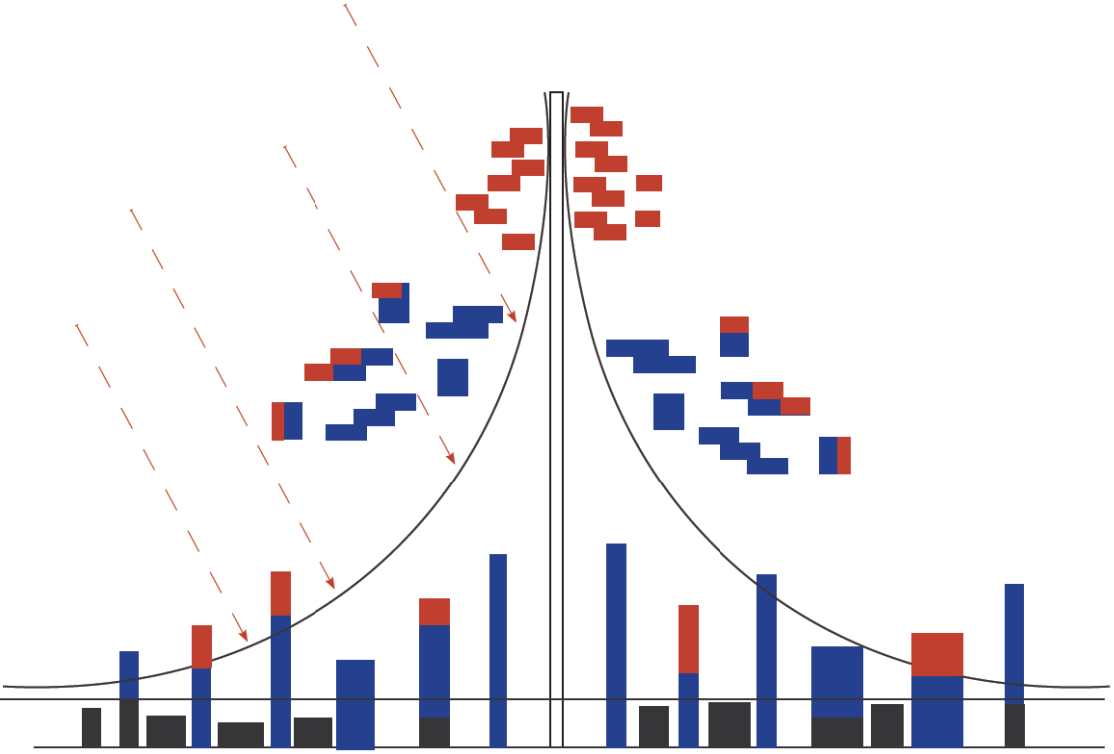
03 LIGHT-WELLS AND SPATIAL DIFFERENTIATION

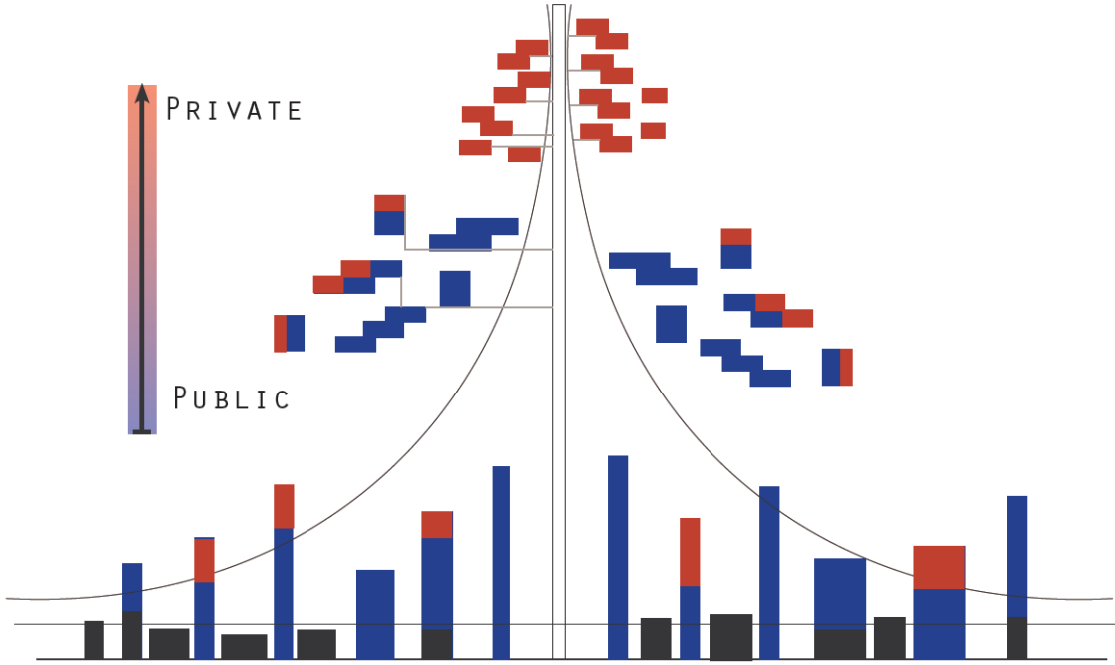
01 RELATIONSHIPS AND ORGANISATION OF SOLAR TOWER AND SOLAR CITY



TECHNICAL DIAGRAM

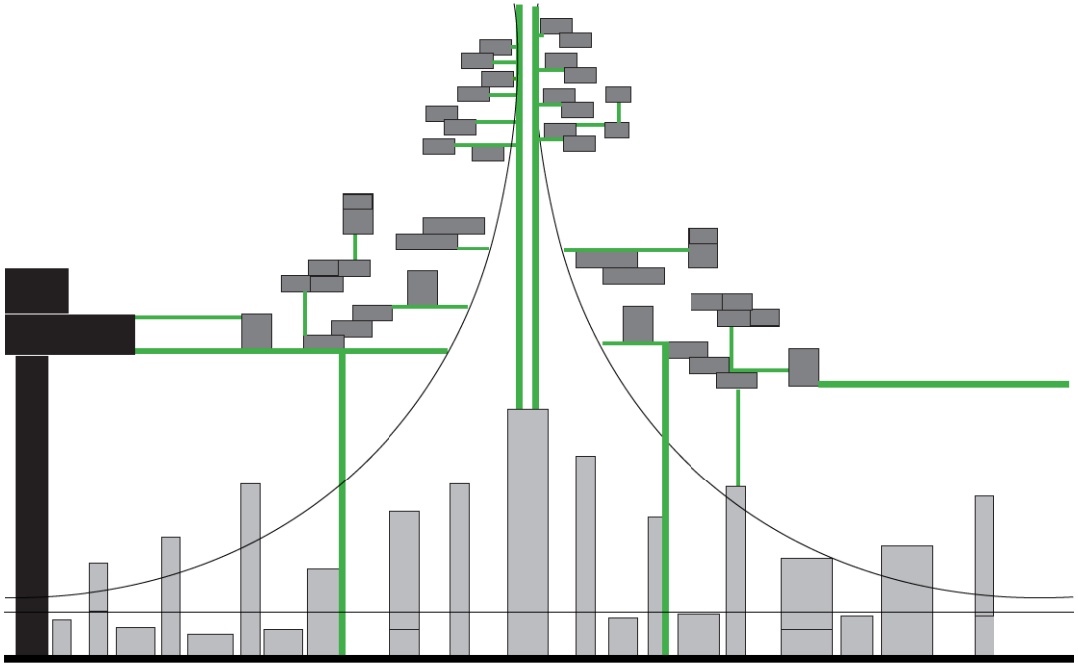






HOUSES
OFFICES
SHOPS

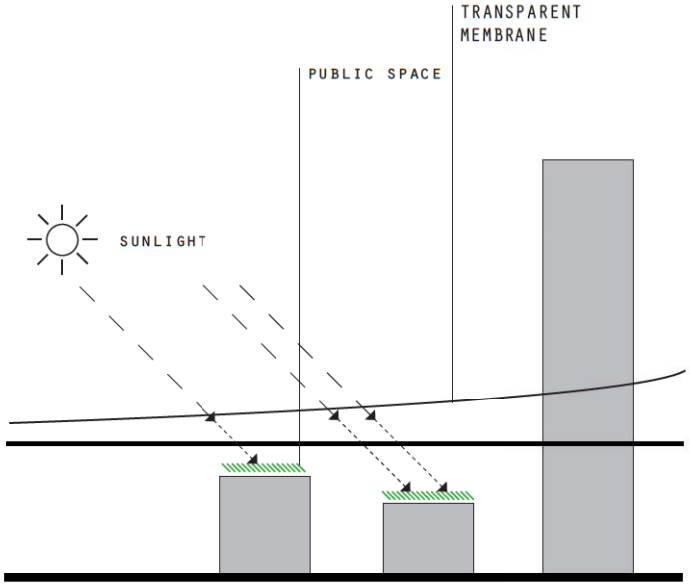
PROGRAMMATIC DIAGRAM



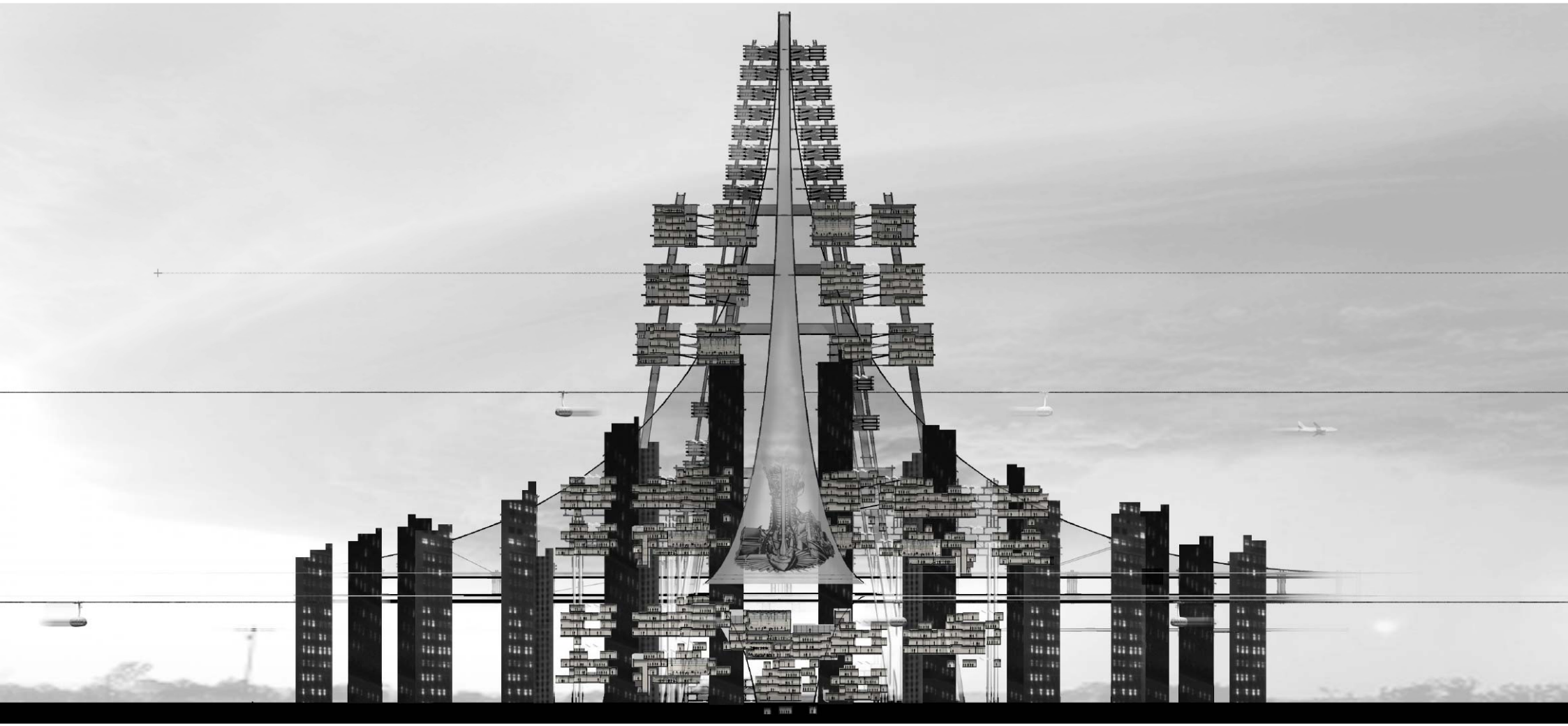
CONNECTIONS BETWEEN PROGRAMS AND COMPONENTS

LINKS

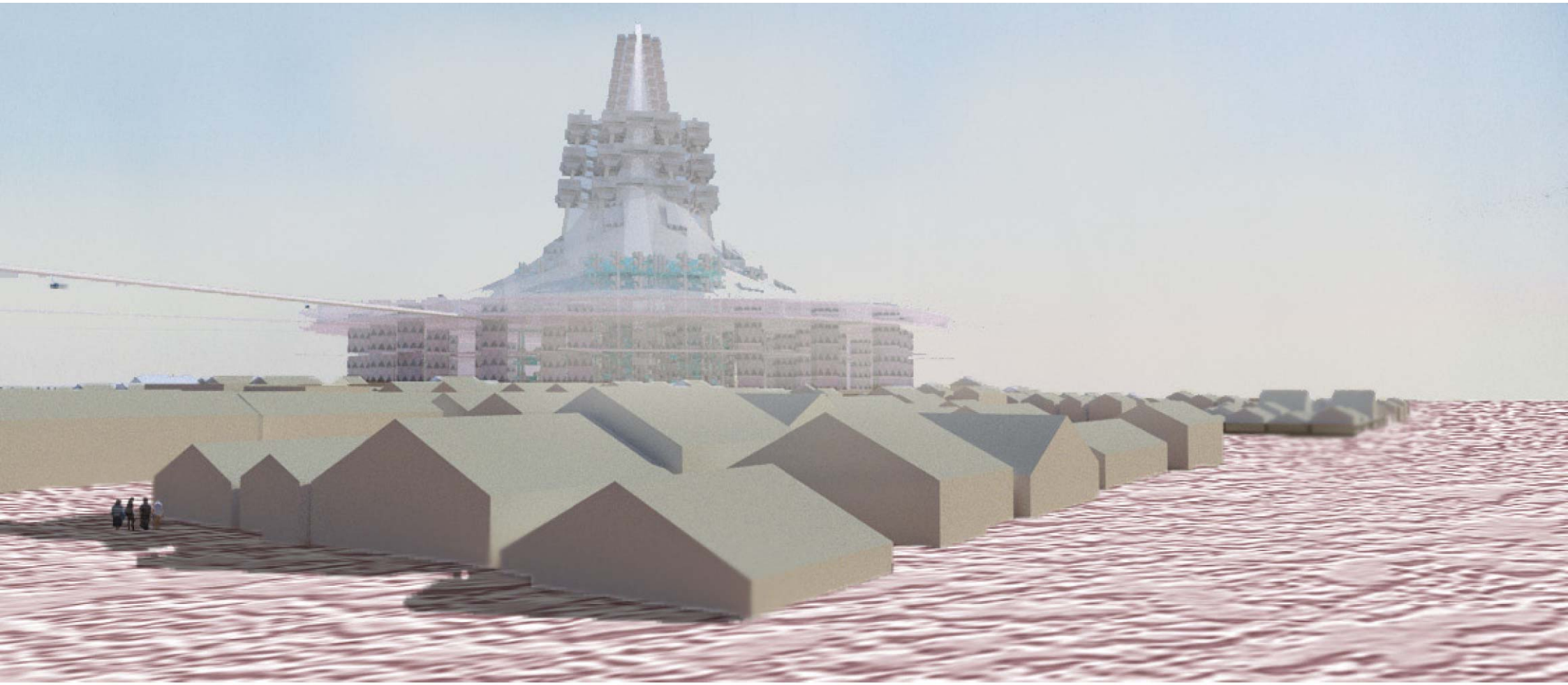
ORGANISATIONAL DIAGRAM



WITH THE TRANSPARENT MEMBRANE THE LIGHT IS FILTERED BELOW THE SOLAR TOWER, IN THIS MANNER IT IS POSIBLE TO THINK OF THE ROOFTOPS AS PUBLIC SPACES.

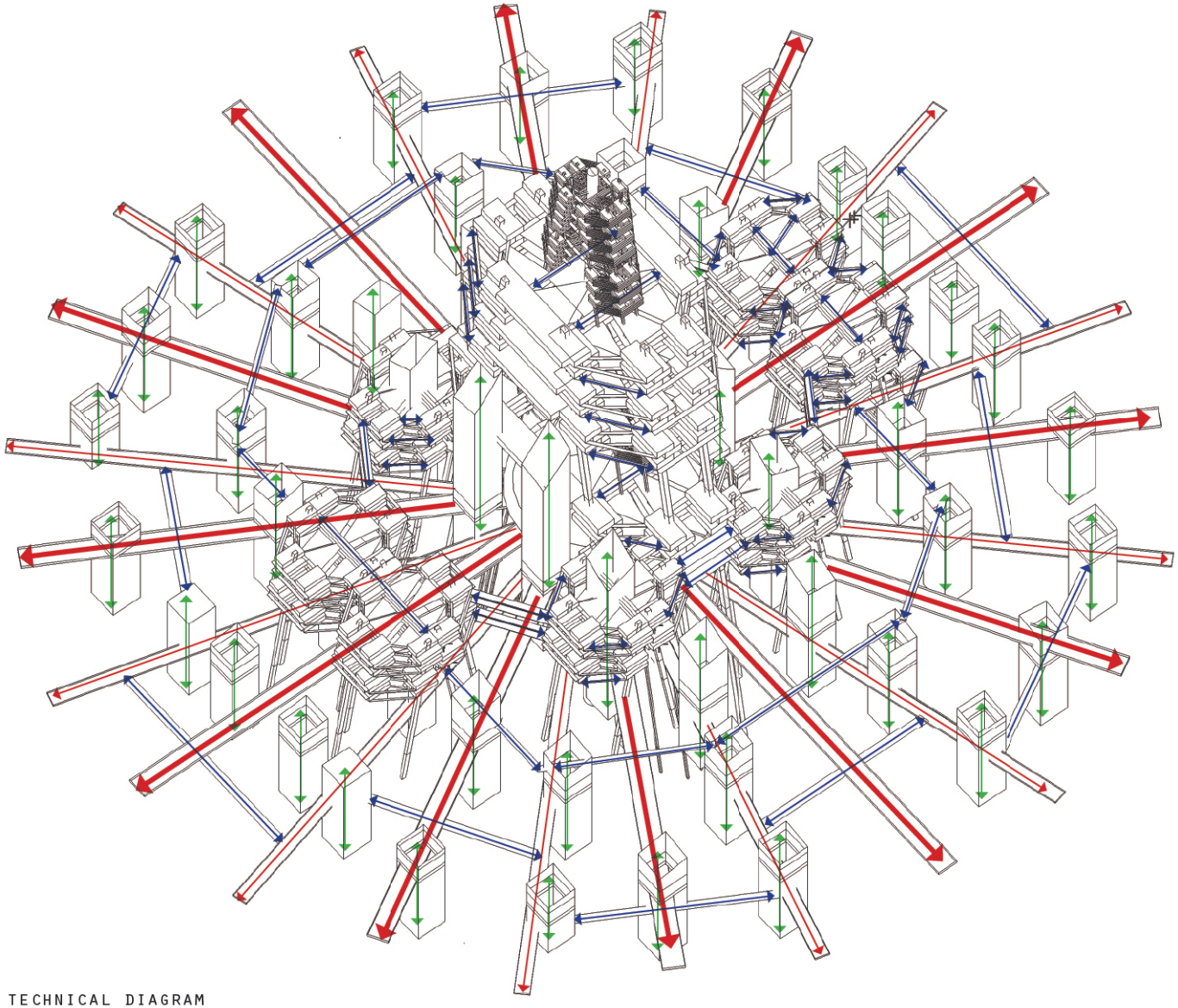


Section DD'



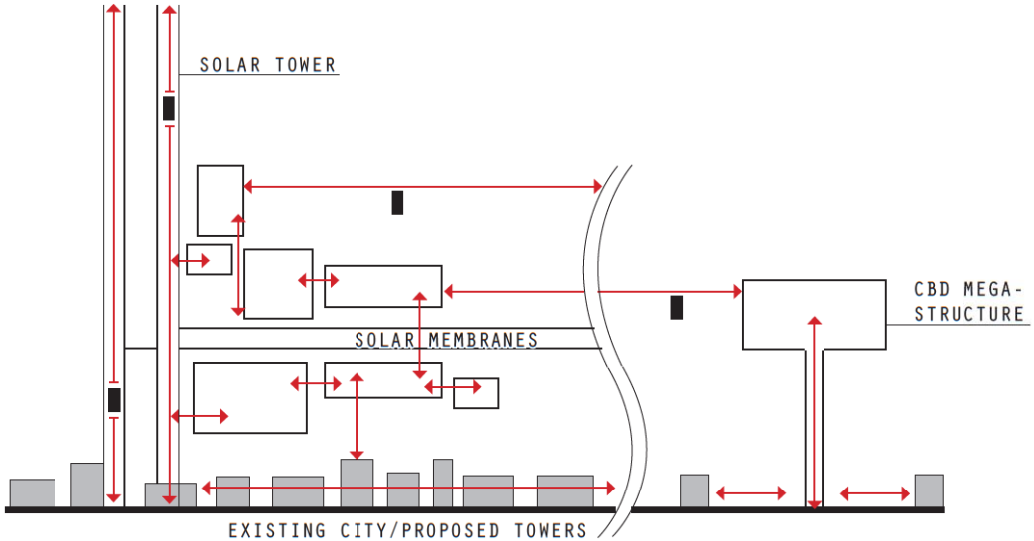
PERSPECTIVE D

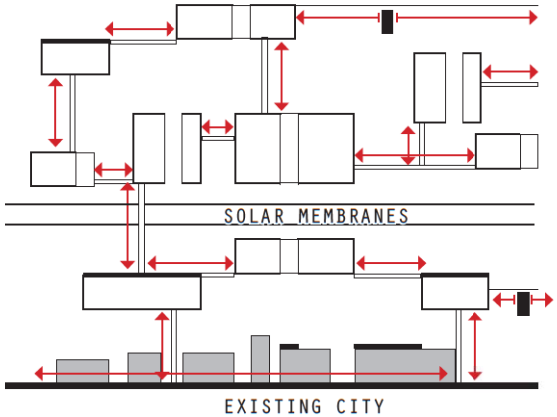
02 MOVEMENT AND CIRCULATION



TECHNICAL DIAGRAM

- Elevated Tram (upper level)
- Elevated Tram (lower level)
- Walking Connection
- elevator connection



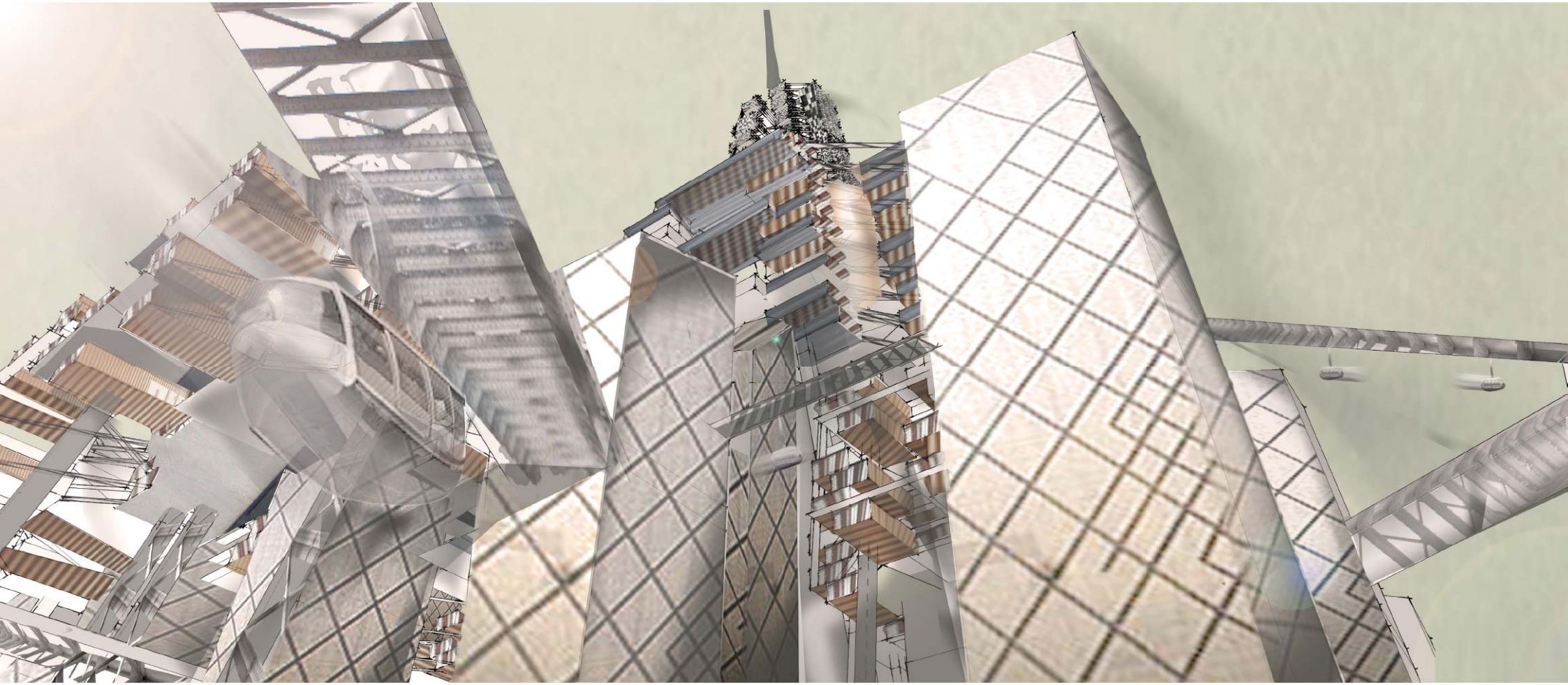


A MOVEMENT AND CIRCULATION BETWEEN THE SYSTEMS OF THE CITY ARE FACILITATED BY LIFTS, ELEVATED TRAMS, BUSES, AND WALKWAYS

SCHEMATIC SECTIONAL DIAGRAM

B LIFTS, TRAMS AND WALKWAYS BRIDGE SPACES BETWEEN THE BUILDINGS AND THE MEGASTRUCTURE. THE TRAM SYSTEM PROVIDES FAST ACCESS ACROSS LONGER DISTANCES

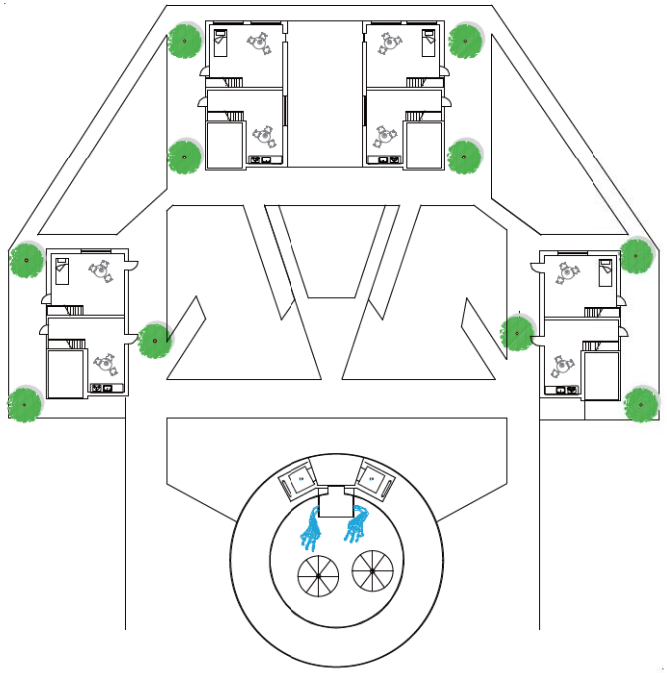
Section EE'



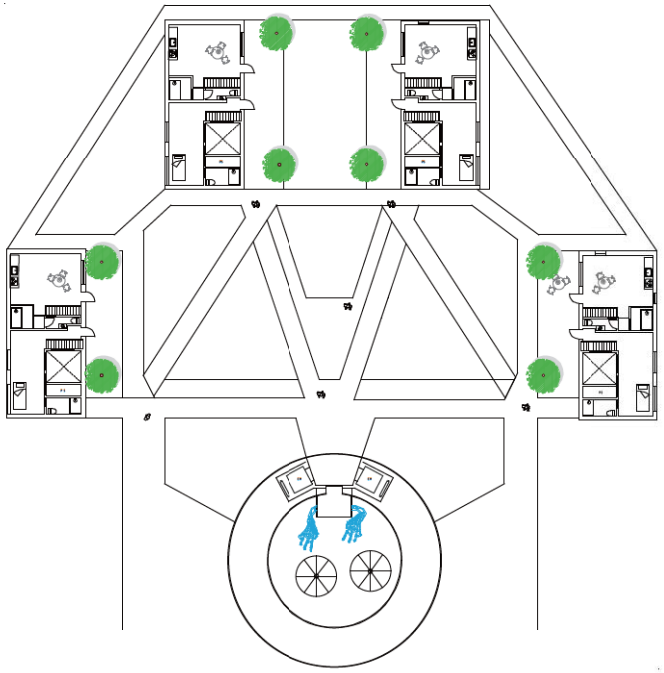
Perspective E1

Perspective E2

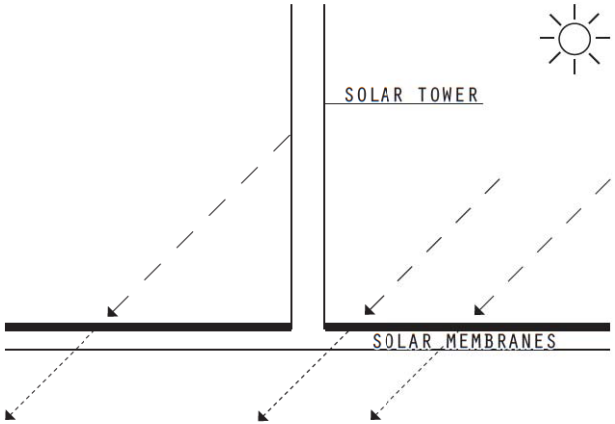
03 LIGHT-WELLS AND SPATIAL DIFFERENTIATION

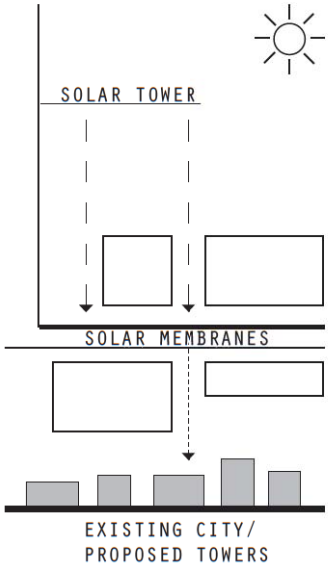


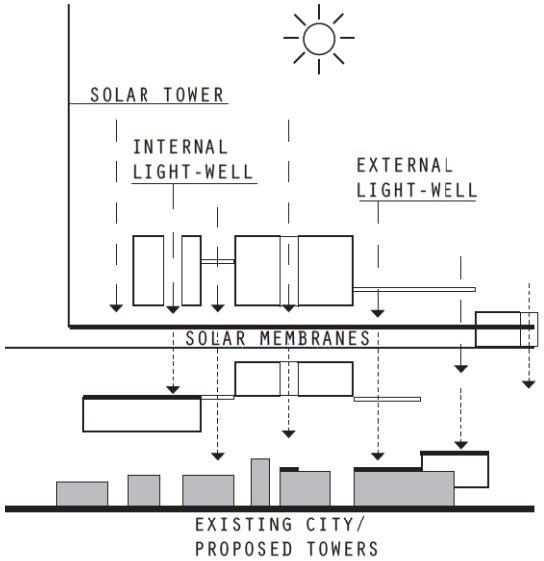
Floor Plan Level 1



Floor Plan Level 2





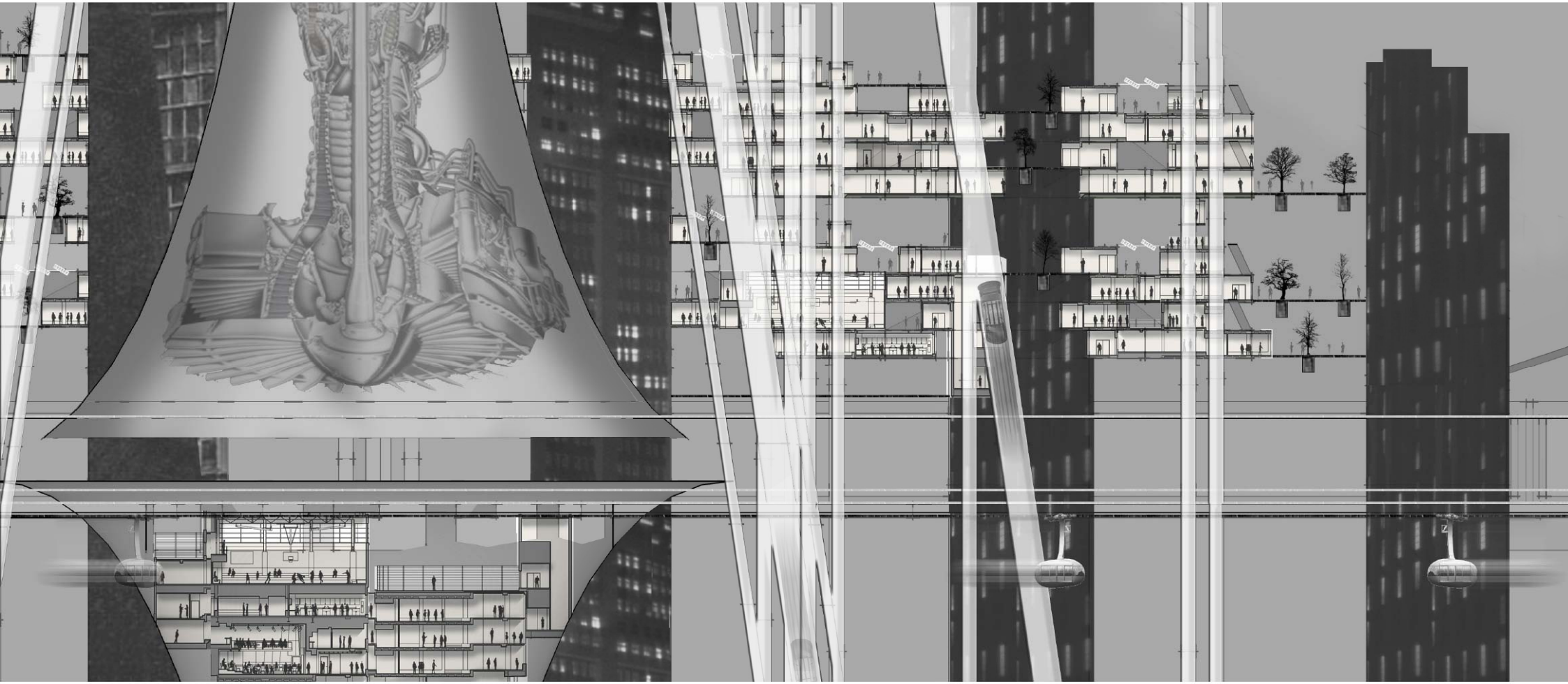


A SUNLIGHT NEEDS TO REACH TOP MEMBRANE FOR AIR TO HEAT AND ENERGY TO BE PRODUCED

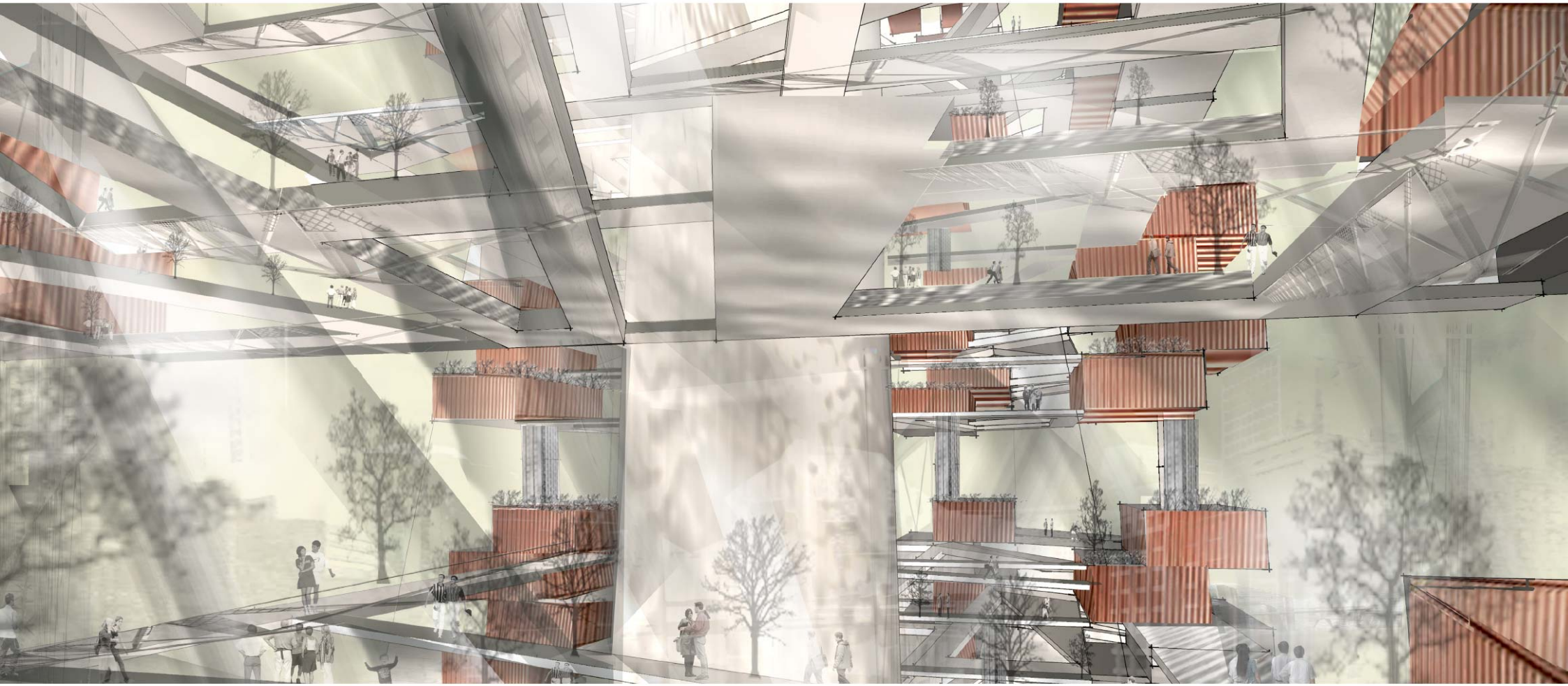
B SUNLIGHT PASSES THROUGH GAPS BETWEEN BUILDINGS TO REACH SOLAR MEMBRANE AND LOWER CITY

C SUNLIGHT PASSES THROUGH LIGHT-WELLS BETWEEN AND THROUGH BUILDINGS TO REACH SOLAR MEMBRANE AND LOWER CITY. EXTERNAL AREAS EXPOSED TO LIGHT BECOME OCCUPIABLE AS PUBLIC OPEN SPACE. SEMI-OPAQUE WALKWAYS BRIDGE SPACES BETWEEN THE BUILDINGS AND THE MEGASTRUCTURE

SCHEMATIC SECTIONAL DIAGRAM



SECTION FF'

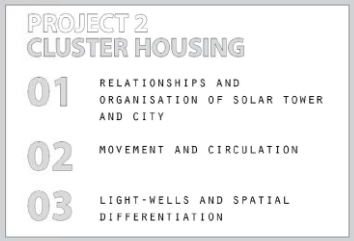


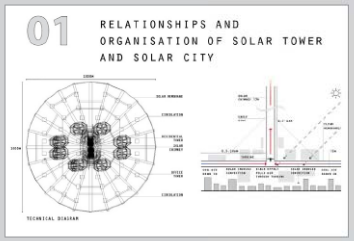
Perspective F

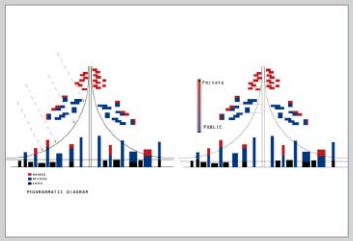
Perspective F

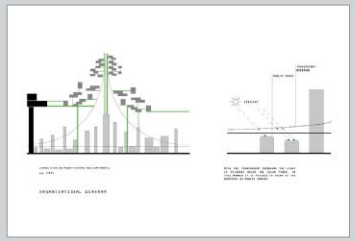

GROUP A/2
CLUSTER HOUSING
TENKU NO SHIRO MILDURA
"CASTLE IN THE SKY"

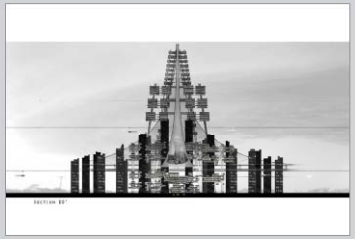

MASTERPLAN
URBAN SCALE


PROJECT 2
CLUSTER HOUSING
01 RELATIONSHIPS AND ORGANISATION OF SOLAR TOWER AND CITY
02 MOVEMENT AND CIRCULATION
03 LIGHT-WELLS AND SPATIAL DIFFERENTIATION

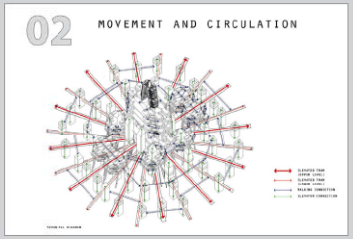

01 RELATIONSHIPS AND ORGANISATION OF SOLAR TOWER AND SOLAR CITY
TECHNICAL DIAGRAM

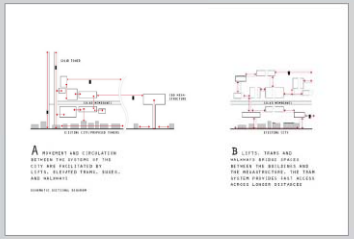

PRIVATE
PUBLIC
PROGRAMMATIC DIAGRAM


ORGANIZATIONAL DIAGRAM


SECTION BB'


PERSPECTIVE 3


02 MOVEMENT AND CIRCULATION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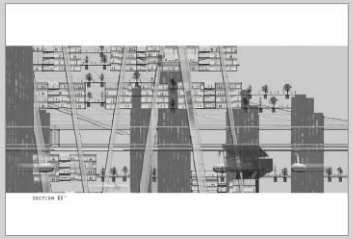
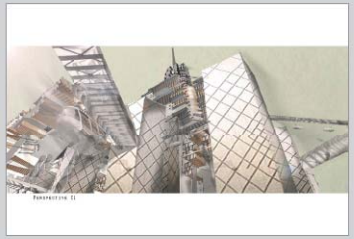
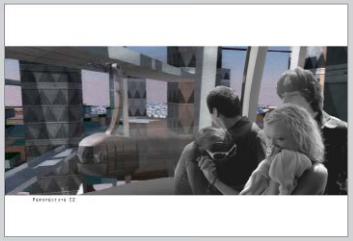
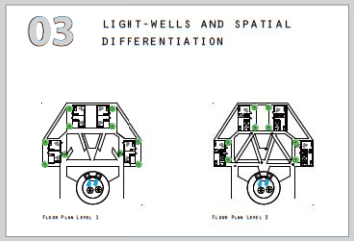
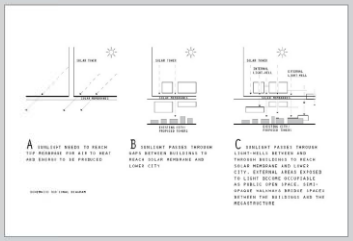

SECTION EE'


PERSPECTIVE 1


PERSPECTIVE 2


03 LIGHT-WELLS AND SPATIAL DIFFERENTIATION
FLOOR PLAN LEVEL 1
FLOOR PLAN LEVEL 2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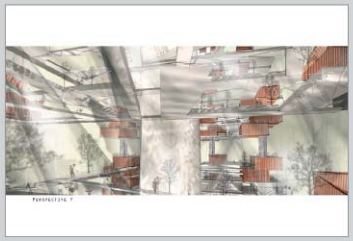
SECTION FF'


PERSPECTIVE 7


PERSPECTIVE 8

AERIAL OVERVIEW