BOXED HOUSING

Santa Monica

CALIFORNIA

CONTENT

ABSTRACT

This thesis will present a proposal in a conceptual approach, to even the unmet housing need of urban single-person households in the U.S. demographics. The existing architectural housing demand has been built largely based on the needs of family housing.

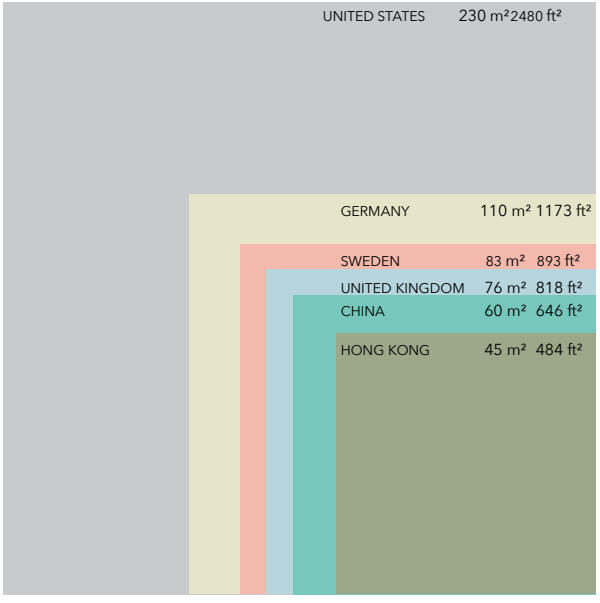
My proposal is the introduction of pre-fabricated micro-apartments. All units are self-contained units with self-ventilation and functions.

Given the radically increase in single-person households over the past few decades, a significant gap has formed in the availability of properly priced housing to meet the needs of people who would prefer to live alone. Whereas average household size in 1900 was 4.60 persons, today the average household size is 2.58.

I have worked with this housing demand as an opportunity for architecture to take strain off of family housing, and create innovative housing types that satisfy the needs of their fastest growing demographic and meet future demands. This thesis present micro-apartments as a logical approach to ease the strain on housing.

In conclution, the single person units are developed and assembled into a building system, easy to construct and put together on site. Micro-apartments are a viable solution to filling the supply gap for single-person households, and with land costs at an all-time high, apartments with less square footage will be beneficial.

AVERAGE NEW HOME SIZE BY COUNTRY

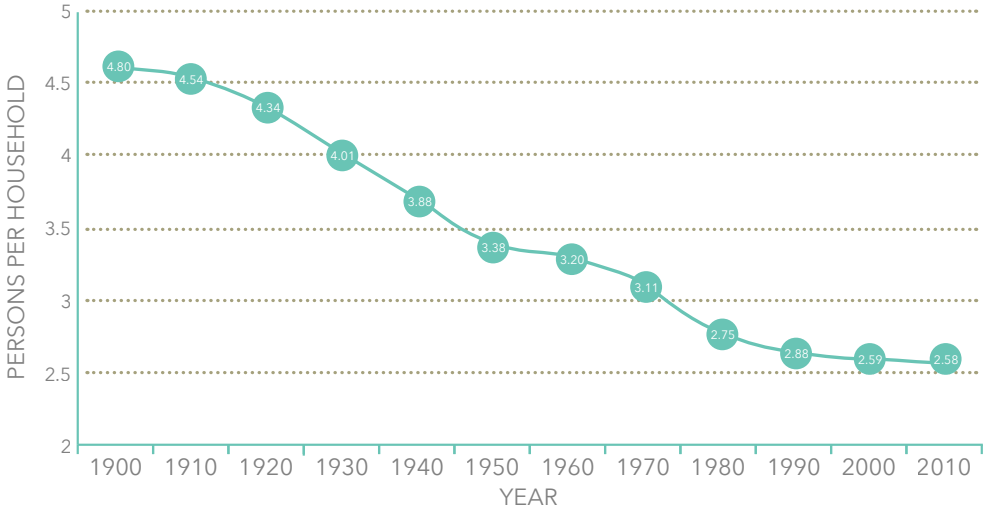


The U.S. demographics of today have changed radically in the past 50 years, from when the majority of our urban housing plan was constructed. As the presence of families continues to decline and single-person households increase, development patterns are not fully accommodating this remarkable demographic shift. Leading to a significant mismatch between housing supply and demand. Not only in the US, but as one of the countries with the biggest average new home size.

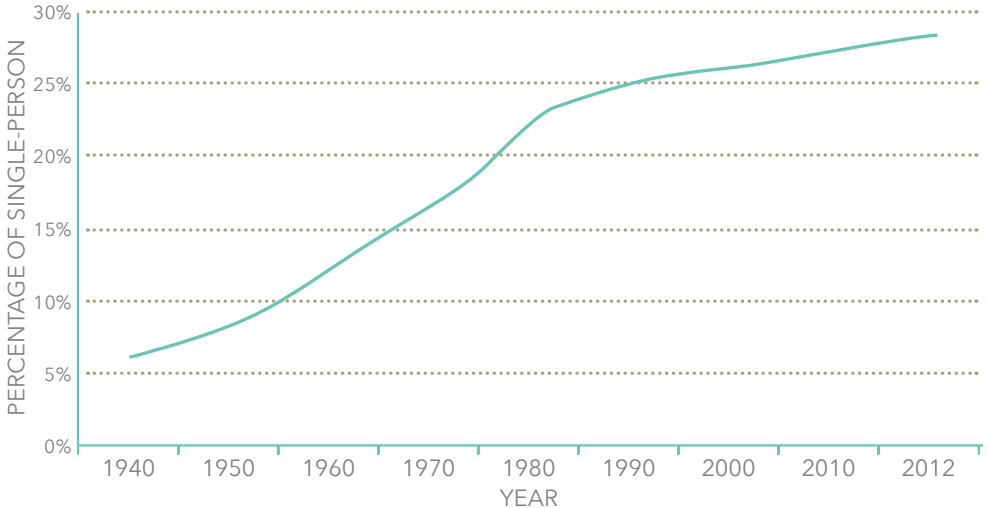
The U.S have a average home size by 2480 ft². (230 m2) Almost tree times more than Sweden with 893 ft².

I see this as a problem that they have all these square meters that the don't use efficiently , i propose to make it 30m^2

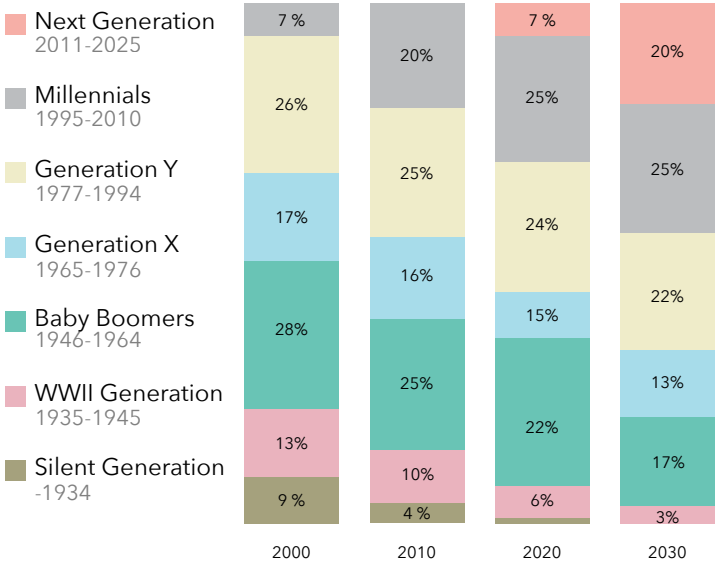
HOUSEHOLD SIZE 1990 - 2010



SINGLE PERSON HOUSEHOLD GROWTH IN THE UNITED



PERCENT OF POPULATION GENERATIONS



SHIFTING DEMOGRAPHICS

One change the have impact our housing demand over the past few decades in the United States is the rapidly shrinking household size. Where- as average household size in 1900 was 4.60 persons, today the average household size is 2.58.

6 IN 10 PEOPLE LIVE ALONE IN STOCKHOLM

THE RISE OF SINGLE-PERSON HOUSEHOLDS

The most remarkable demographic shift that has impacted housing demand, one that has had the most profound effect on the mismatch between housing supply and de- mand, is the rise of the single-person house- hold over the past fifty years.

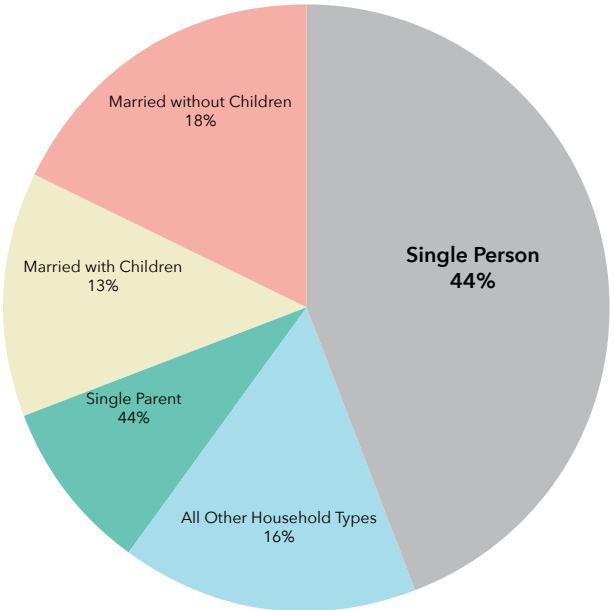
This demographic shift has resulted from young people delaying marriage until a later age, a divorce rate hovering around 50%, clearly a move away from traditional family structures, and more women are entering lifelong careers instead of pursuing stable a family. (Euromoni- tor International, 2013).

By 2025, the number of single households will equal the number of households containing families with children, each representing just below thirty percent of households (Leinberger, 2008).

This household type has come to be known as the SINKS (Single Income No Kids). In 1950, 9% of the U.S. population lived alone. Today, 27.6% of all households in the U.S.

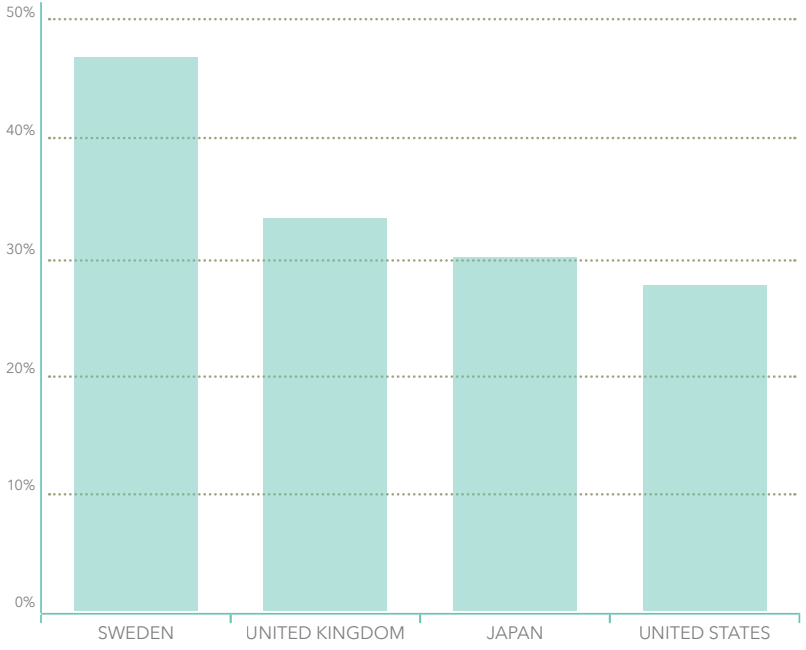
Single-Person Households Will Account for Almost Half of All Renter Growth Over the Next Decade

Share of Projected Renter Growth (Percent)

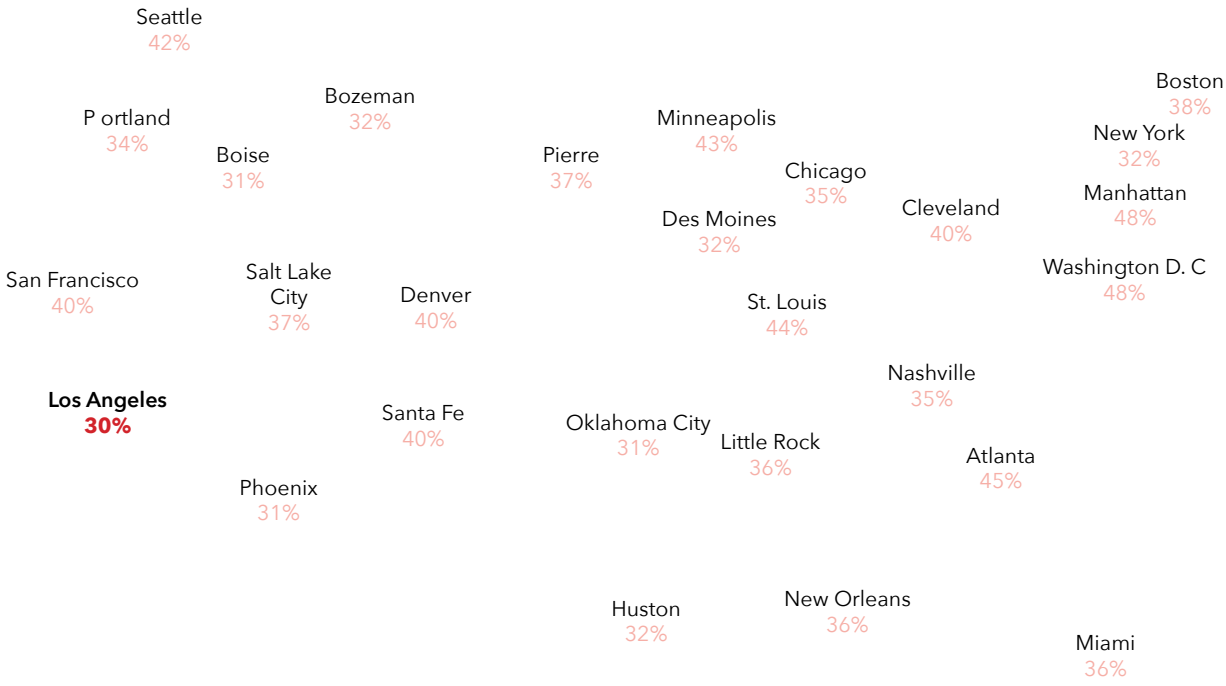


Total Growth: 3.6 Million Households

PERCENT SINGLE-PERSON HOUSEHOLDS BY COUNTRY

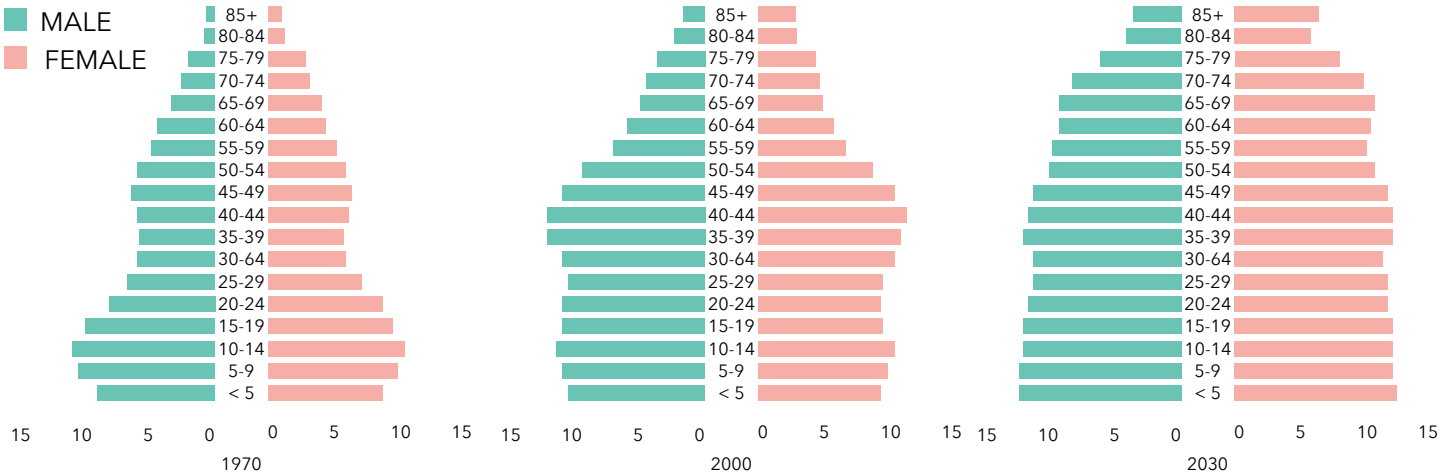


SINGLE-PERSON HOUSEHOLDS BUILT IN %

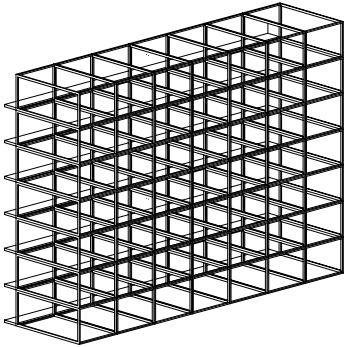


POPULATION DISTRIBUTION BY AGE,1970-2030

(Percent of total population)

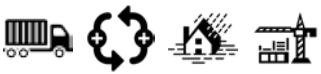


CONSTRUCTION AND CONCEPT

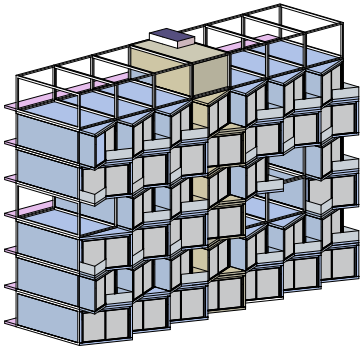


STEP 1

6*7 MODULE SYSTEM



COMPACT SYSTEM | RE-USE | WHEATHER RECISTENT | FAST ESAMBLE



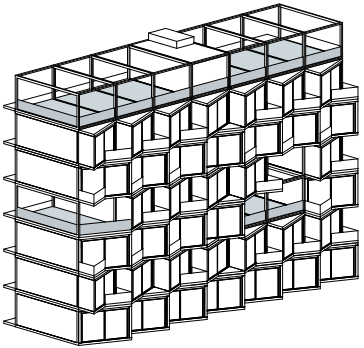
STEP 2

32 APARTMENTS MODULES

BALCONY ENTRANCENS

7 VERTICAL CONNECTION MODULES

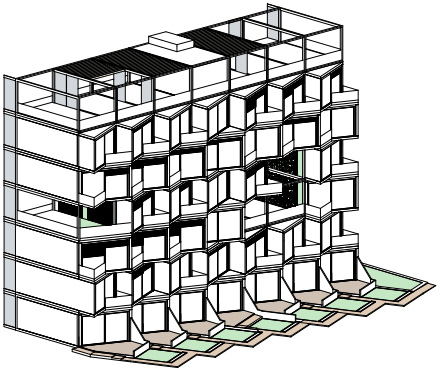
PREFAB TRANSPORT | MODULAR FLEXIBLITY | VARIATION | SAVES TIME



STEP 3

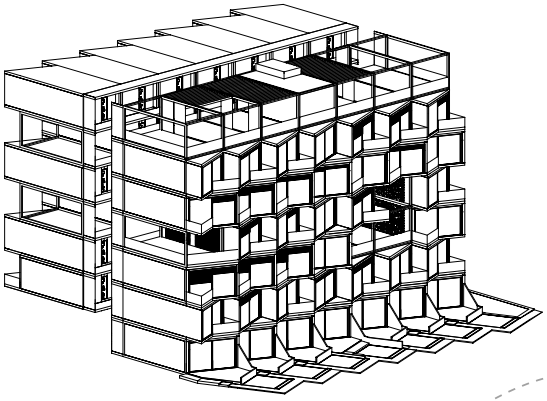
FILL VOID WITH NINE SHARED OUTSIDE AREAS

GO OUTSIDE | EXTRA SPACE | CIRCULATION | INTERACT



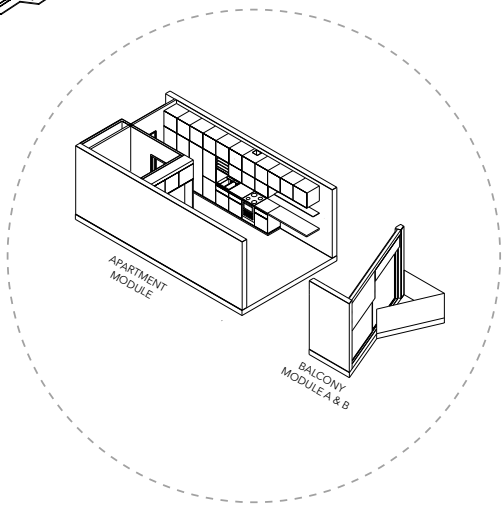
STEP 4

GREEN WALLS AND VEGITATION
SHADE PANELS
WIND PANELS
SIX GROUNDLEVEL GARDEN



STEP 5

FLIP SYTEM TO CREAT SHADED BACKYARD AND SEMI PRIVATE BALCONY ENTRANCENS
TOTAL 72 APARTMENTS



BOXED APARTMENTS


NEW
YORK
TOKYO
BERLIN
LONDON
PARIS

AXONOMETRIC 3D MODEL 30M²

3D MODULE INTERIOR A

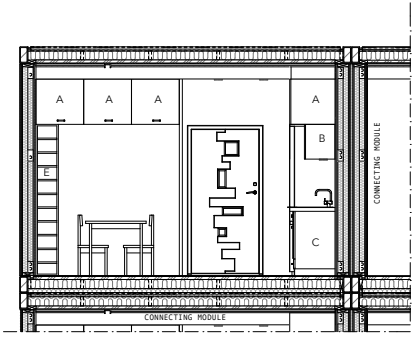
3D MODULE INTERIOR B

VARIATIONS

PLAN - VARIATIONS 1:100

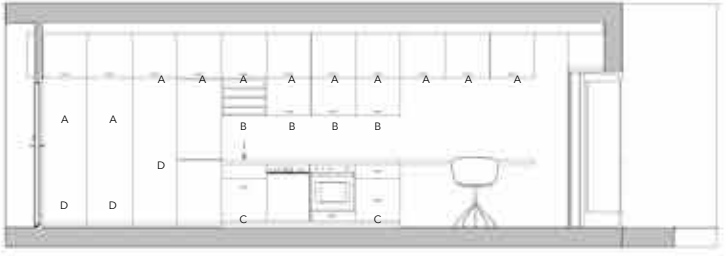
MATERIALS

FUNCTIONAL WALL - SECTION 1:50



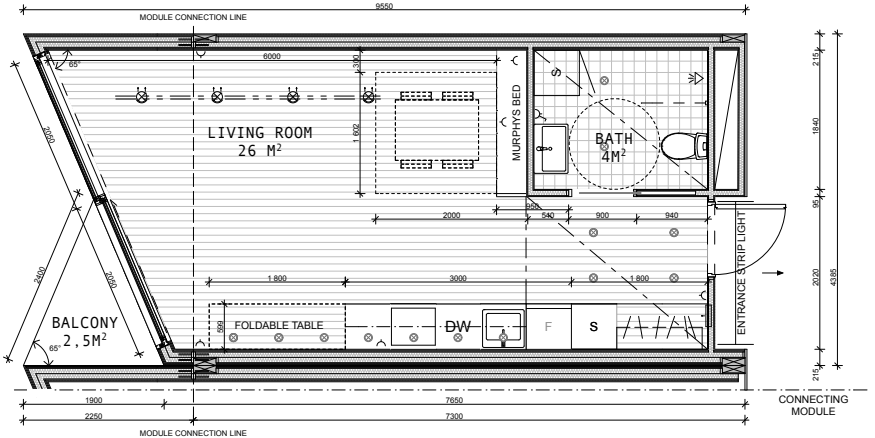
DETAILED MODULE A SECTION
STORAGE M³ A-E

1:100



TOTALT INTEGRATED STORAGE 7 M³ 1:100

BOX MODULE DETAL



SINGEL WALL

DUBLE WALL

SINGEL SWINGING DOOR

SINGEL SLIDING DOOR

FLOOR: PARQUET FLOORING
DIRECTION FOR LAYING

FLOOR: MOSAIC FLOOR
NOT SCALED

FOLDABLE FURNITURE

STOVE AND OVEN

SINGLE SINK

CONNECTION SHAFT

WHEELCHAIR TURNING SPACE

SPOTLIGTH

ADJUSTABLE SPOTLIGHT
ON TRACK

ELECTRIC SOCKET

S STORAGE UNIT

F FRIDGE / REFRIGERATOR

DW DISHWASHER

UPPER CABINET WITH BASE CABINET

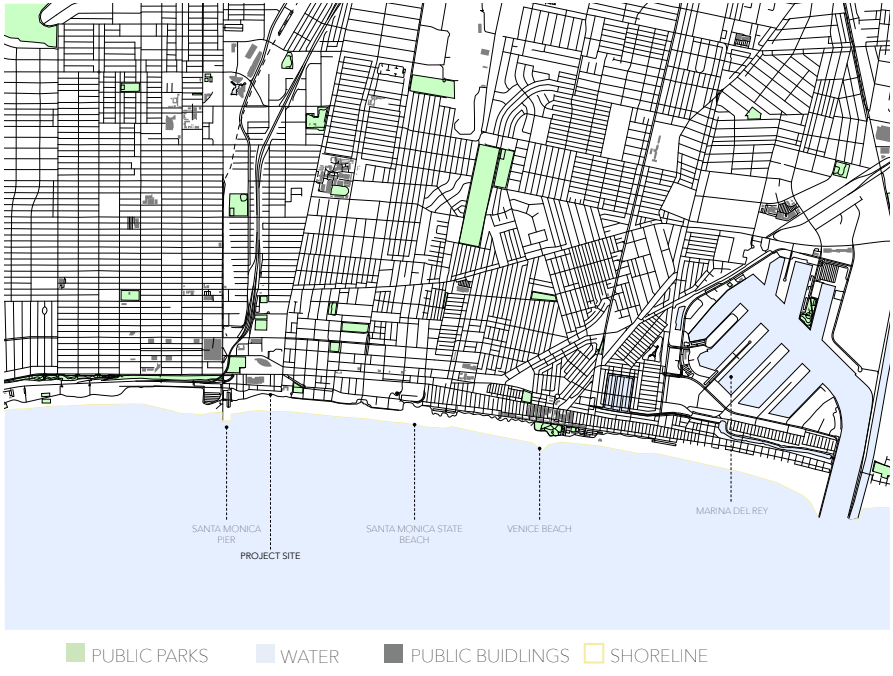
LOWERED CEILING HIGHT

MODULE CUT (NOT VISIBLE)

SPACE FOR FURNITURE

SANTA MONICA

SANTA MONICA AND SURROUNDINGS

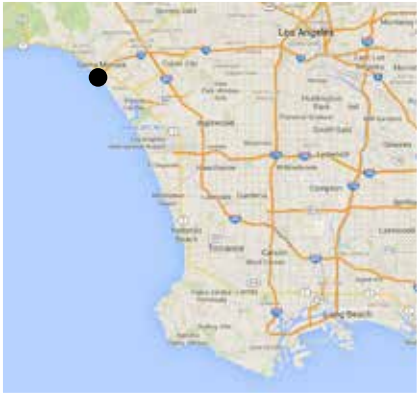


"Ocean breezes and miles of sandy beach distinguish this neighborhood, where the iconic SANTA MONICA PIER has stood for more than a century. Ocean Avenue is famous for the gem located at its southern end: The 106-year-old Santa Monica Pier, with its oft-photographed Ferris wheel, is justifiably popular with visitors thanks to a mix of amusement rides and games found at Pacific Park, the venerable theme park at its tip. Seafood restaurants and beaches ."

"SANTA MONICA STATE BEACH is an iconic destination that draws visitors from around the globe. It is 3 miles long, covering 245 acres of sand along Santa Monica Bay. With bike and walking pathsinspiring views of the Santa Monica Mountains year-round."

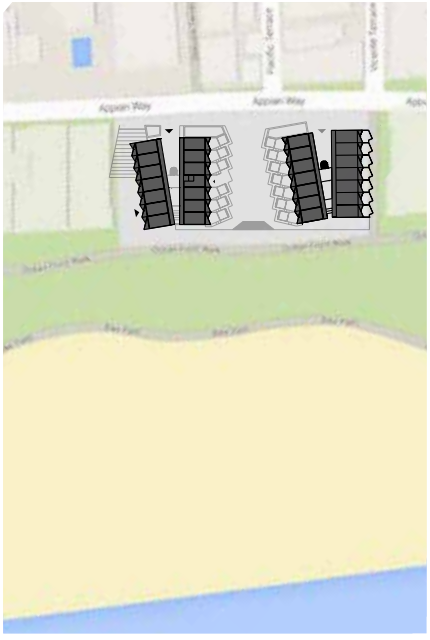
SITE INFO

LOS ANGELES



PROJECT SITE

SITUATUION PLAN 1.2000



1755-1785 Appian Way, Santa Monica, CA 90401

AXONOMETRIC 3D CUT SECTION

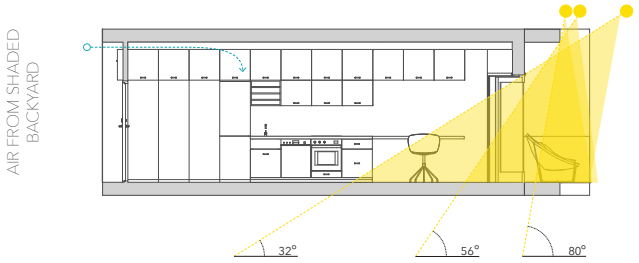
SYSTEM QUALITIES ON SITE

SHARED SHADED OUTSIDE AREA

UNDER GROUND AIR COOLING

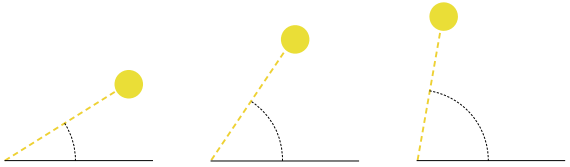
SHARED ROOFTOP AREA

SUN SECTION



SUN PLAN

SUN ANGLES
DURING THE YEAR IN LOS ANGELES



32°	56°	80°
Winter	Spring / Fall	Summer

JAN	FEB	MAR	APR	MAY	JUN
40°	48°	56°	64°	72°	80°

JUL	AUG	SEP	OCT	NOV	DEC
72°	64°	56°	48°	40°	32°

Figures shown in degrees from horizontal

TEMPERATURE
DURING THE YEAR IN LOS ANGELES

	JAN	FEB	MAR	APR	MAY	JUN
High in °C:	17.6	17.4	16.7	17.4	17.6	18.8
Low in °C:	10.1	10.7	11.2	12.2	13.6	15.2

	JUL	AUG	SEP	OCT	NOV	DEC
High in °C:	20.4	21.3	21.4	20.9	19.6	18.2
Low in °C:	16.7	17.3	17	15.2	12.4	10.3

California aims for net zero energy housing by 2020. Most material and contractors are certified by Santa Monica Green Building program (SMGBP). Mainly from the Santa Monica (SM) area and Los Angeles (LA) area.

CONCRETE AND WOOD STRUCTURES
Mostly recycled concrete and bricks and new forms are made from concrete that are a Green Mix solution from SM (SMGBP).
All wood structure are FSC certified lumber / plywood, from SM and LA (SMGBP).

THERMAL PROTECTION AND INSULATION are recycled fiberglass and Blown in Cellulose Insulation (SMGBP).
Energy Efficient Doors and high performance low -e Windows.

ALL ELEVATORS ARE Energy Efficient and from Cerritos.

ALL APARTMENTS have heat recovery ventilators that ventilate the apartment when needed and radiant floor heating system for colder winter days.

OUTDOOR WALL FINISHES are Green building fiber cement siding (SMGBP).
The roof do also have possibilities for Renewable Energy solutions like Roof Mounted Solar Panels from North Hollywood.
Vegetation are Biodegradable pots and plants.

ROOFTOP AND OUTDOOR AREAS have Sun control vegetated screens from LA.

INTERIOR FINISHES.
Hardwood Wood Flooring from Burbank (SMGBP).
Wall Finishes with Green Seal Zero VOC paint and coating rom SM and LA (SMGBP).
All Residential Equipment in Kitchen are Energy star rated and bathroom have High-Efficiency Toilets and showers (SMGBP).
All interior furniture are Manufactured Wood Casework with recycled materials from Los Angeles.

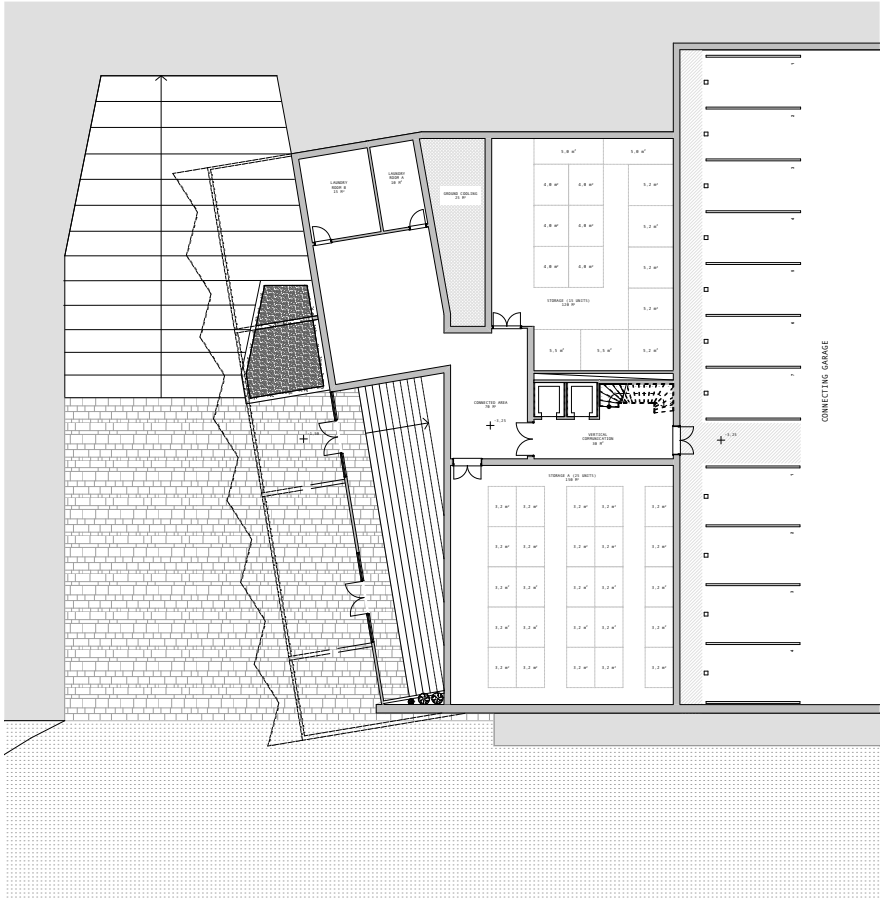
MARKET PRICE
Southern California

Medium Studio
722 Square Feet $3440 per month.
Requires salary of >
$122,500

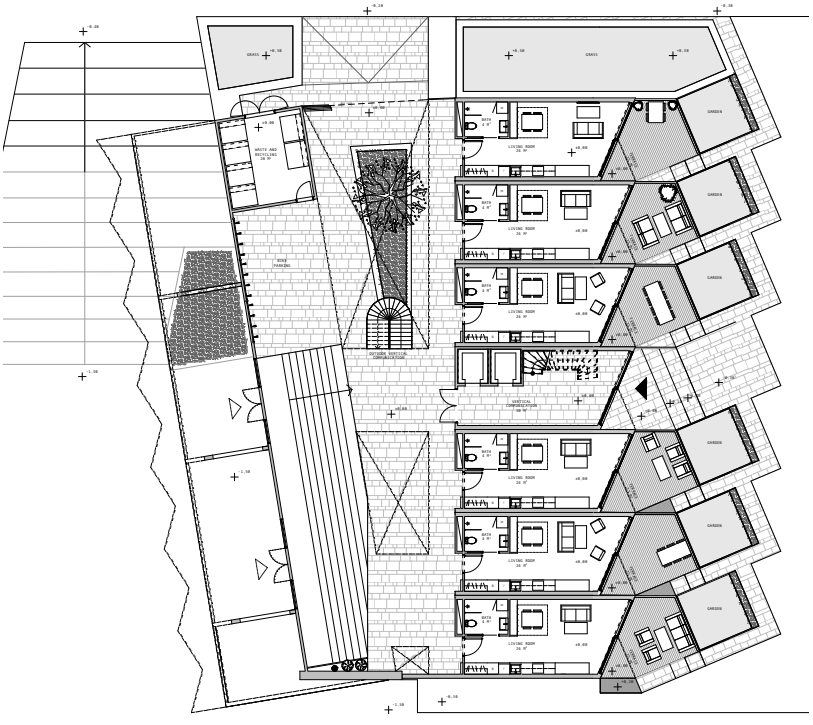
Small Studio
471 Square Feet
$2665 per month.
Requires salary of >
$95,000

BOX Apartment
300 Square Feet
$1500-$1800 per month.
Requires salary of >
$54,000

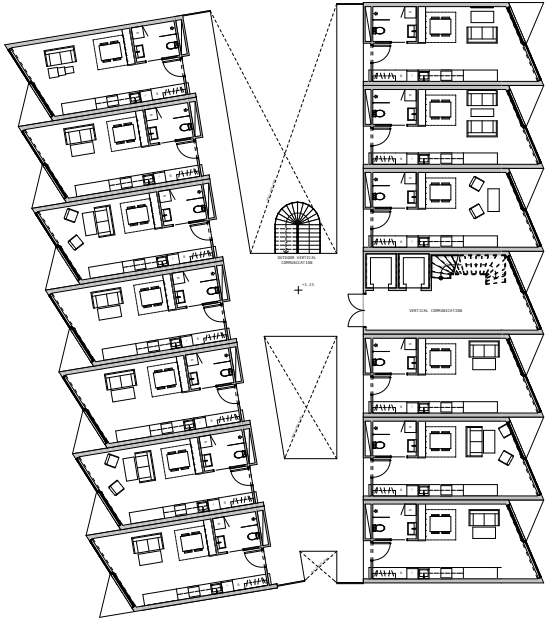
BEACH ENTRENCE & BASEMENT



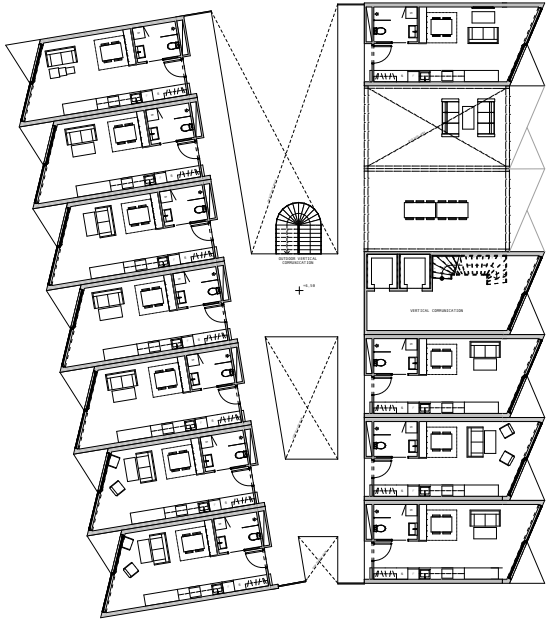
GROUND FLOOR



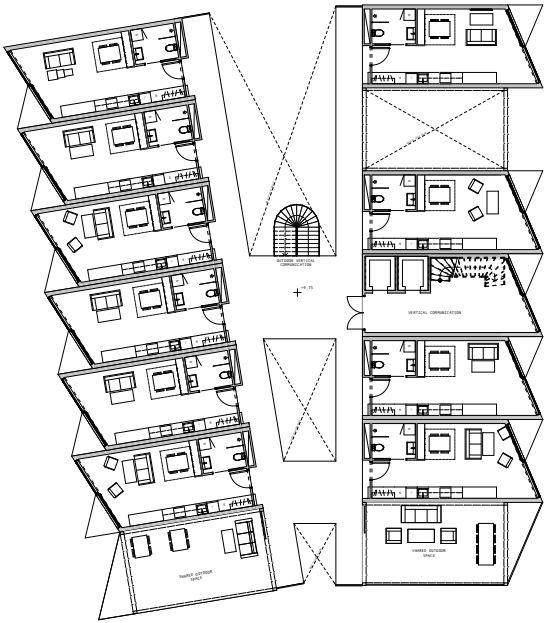
2ND FLOOR



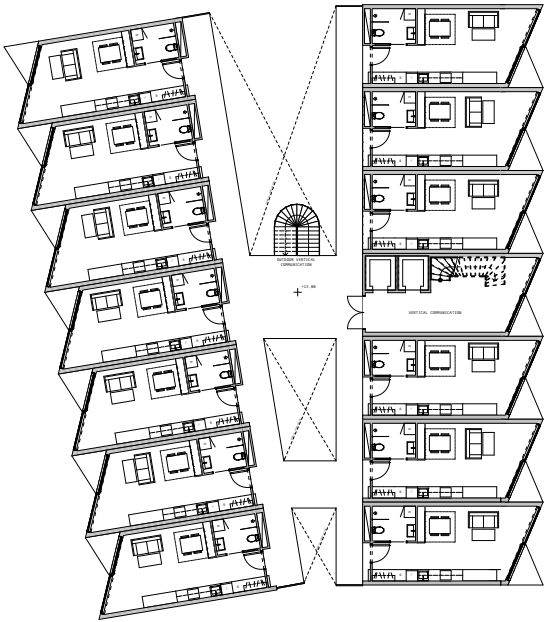
3ND FLOOR



4RD THIRDFLOOR



5TH FLOOR



6TH FLOOR

7 TH FLOOR / ROOFTOP TERRACE

7TH FLOOR
ROOFTOP TERRACE,
offers an incomparable vantage point for residents and guests to enjoy the sparkling ocean view over the bay area and the serene Santa Monica pier and Pacific Park skyline.

SECTION

SOUTH FACADE

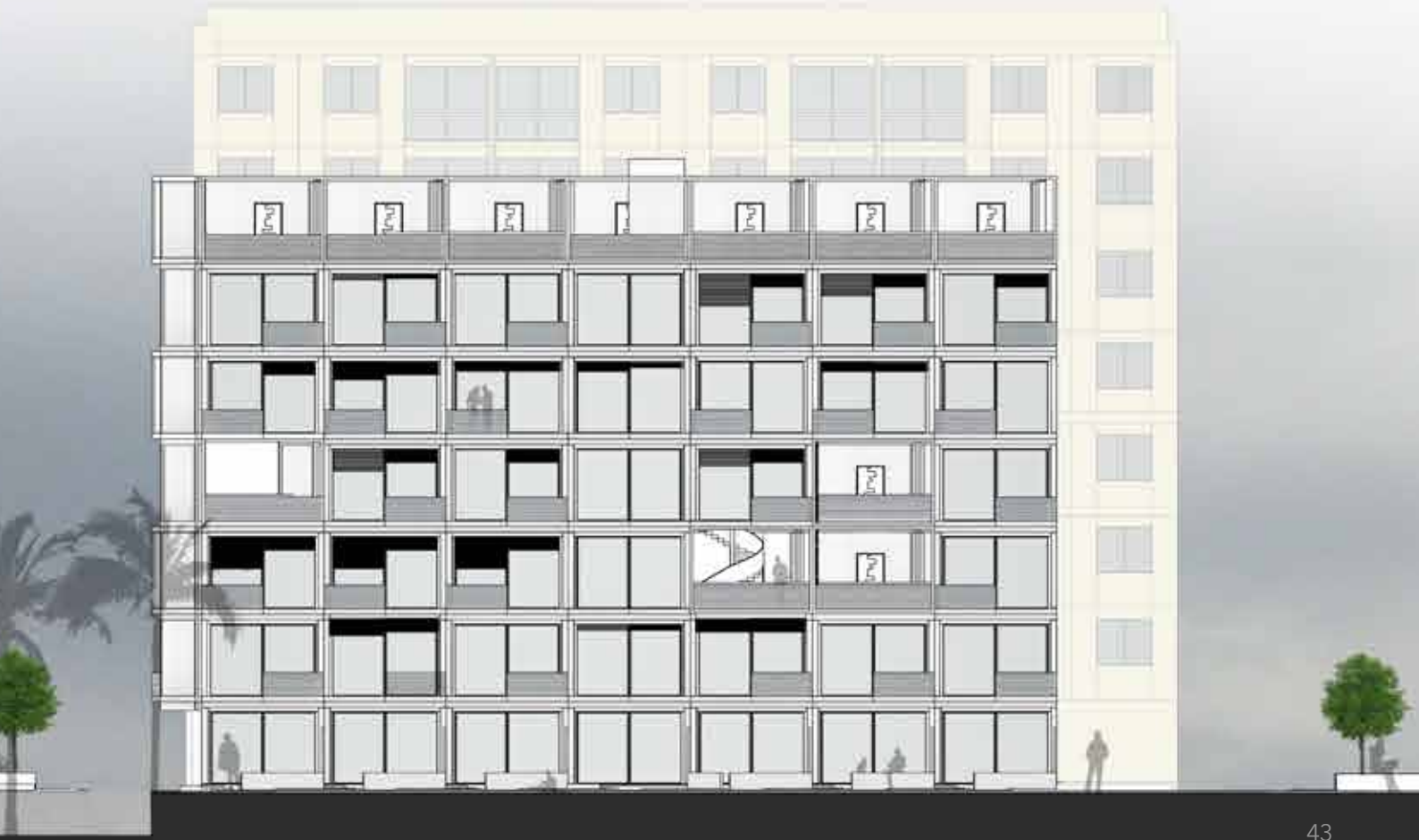
EAST FACADE

NORTH FACADE

WEST FACADE

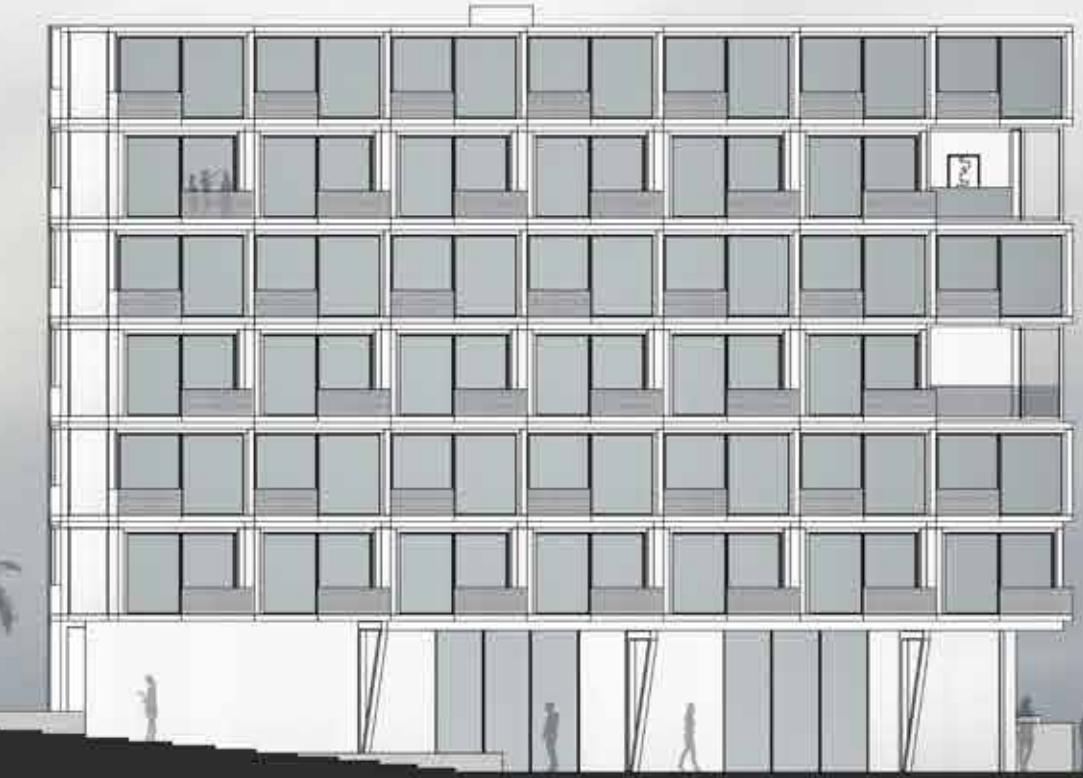
SOUTH FACADE

EAST FACADE



NORTH FACADE

WEST FACADE



THANK YOU FOR READING.

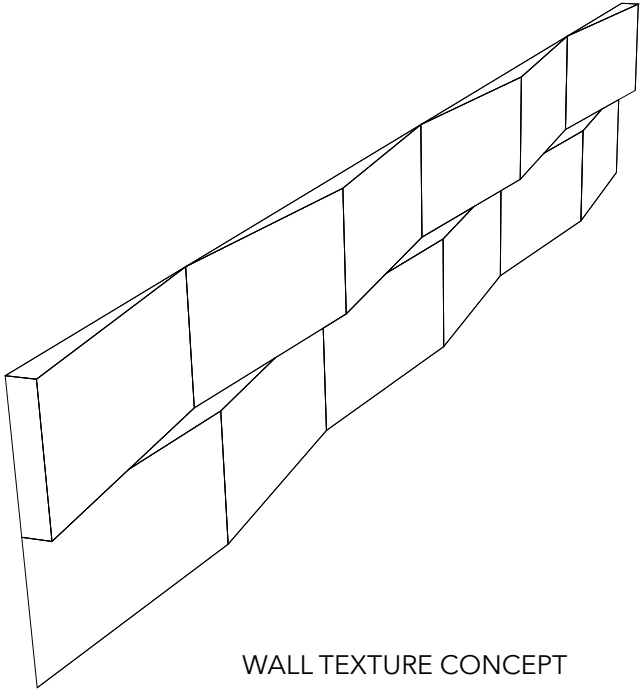
All rights by Martin Wallenborg

contact - Martin@designtown.eu
+46 (0) 707 522 97

Big thanks to:

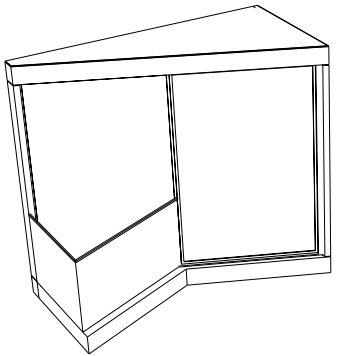
CTH

2015

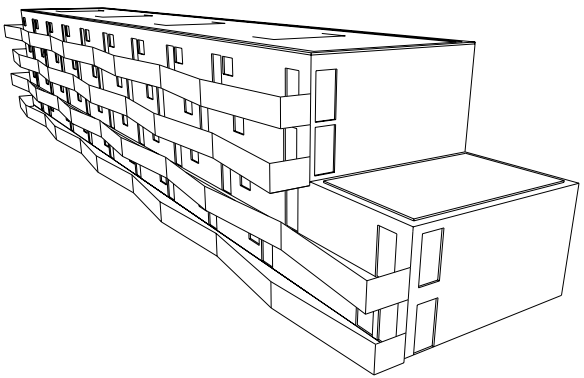


WALL TEXTURE CONCEPT

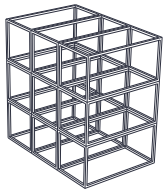
BALCONY MODULE

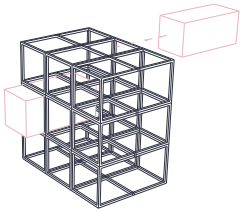


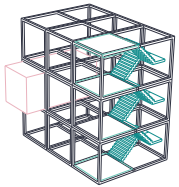
BALCONY ENTRANCE

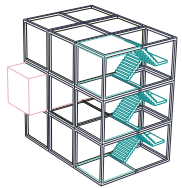


BOXFRAME CONCEPT

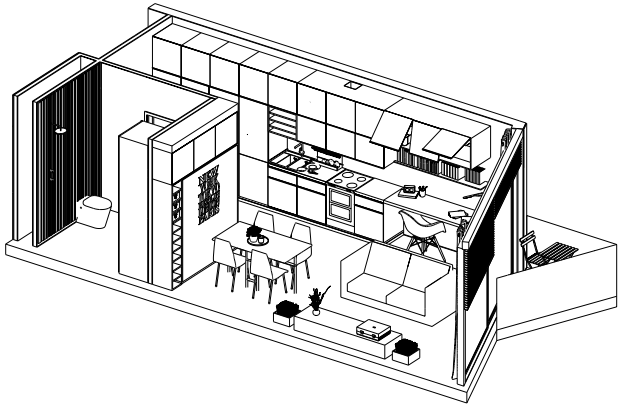


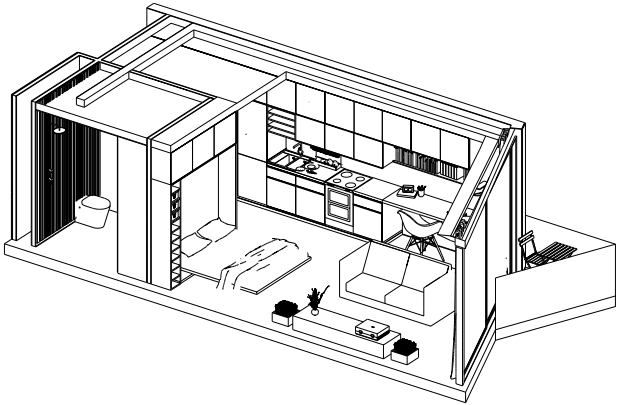






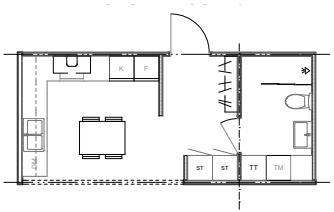
APARTMENT FOLDED IN AND OUT



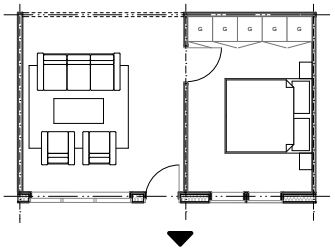


MODULAR PLANS

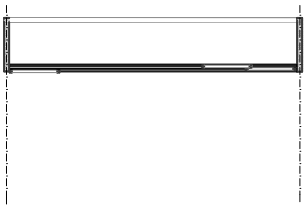
MODULE A

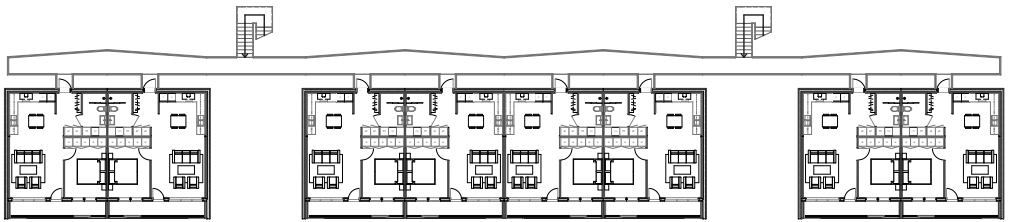


MODULE B

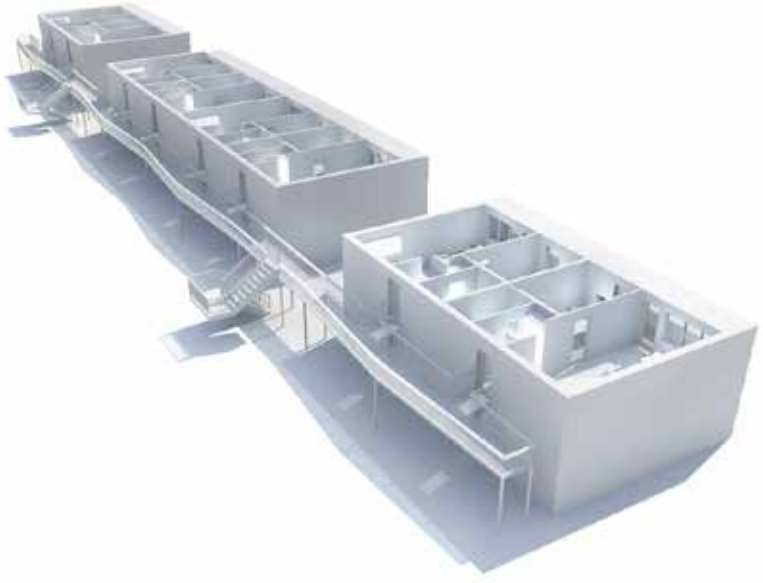


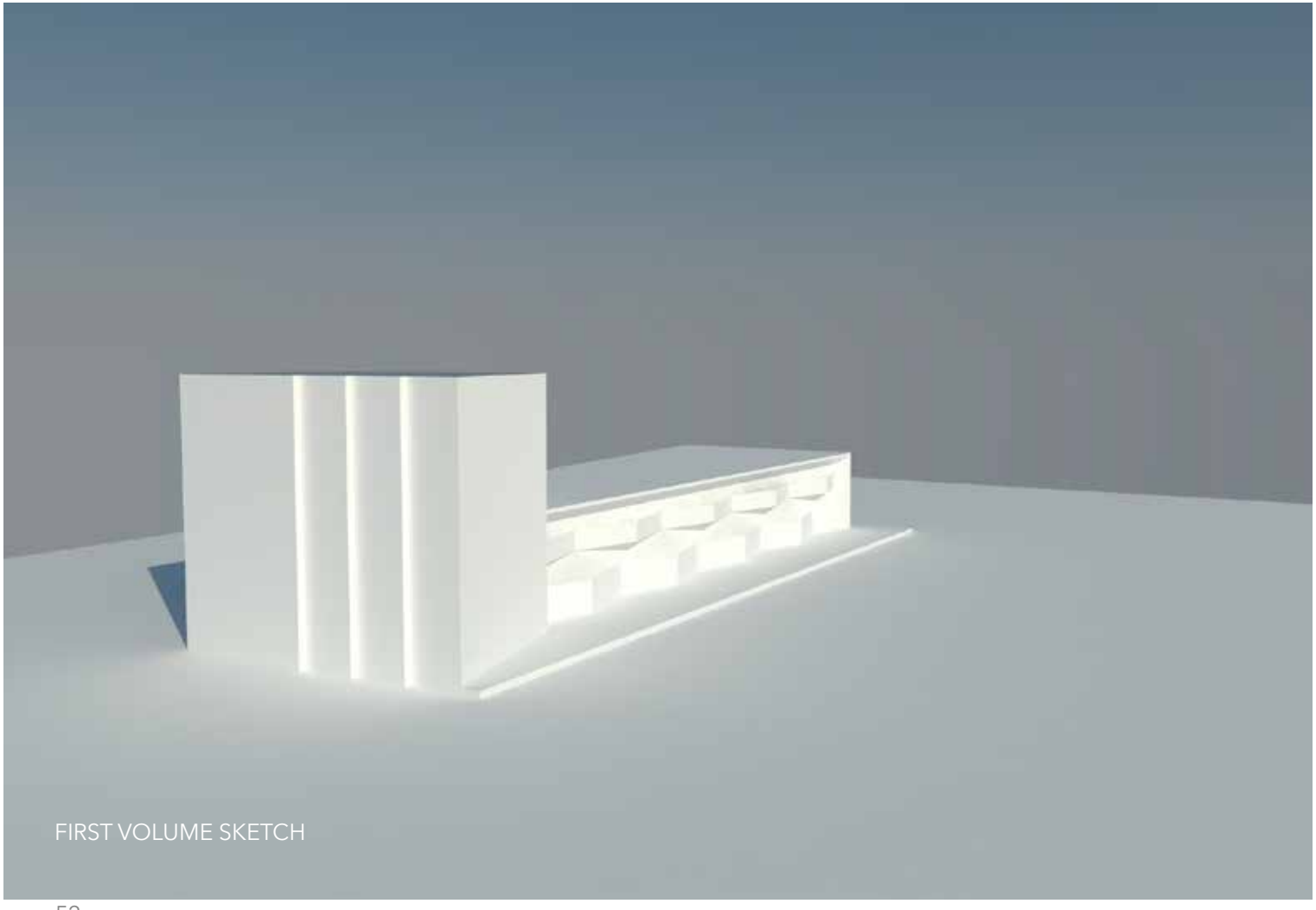
MODULE C



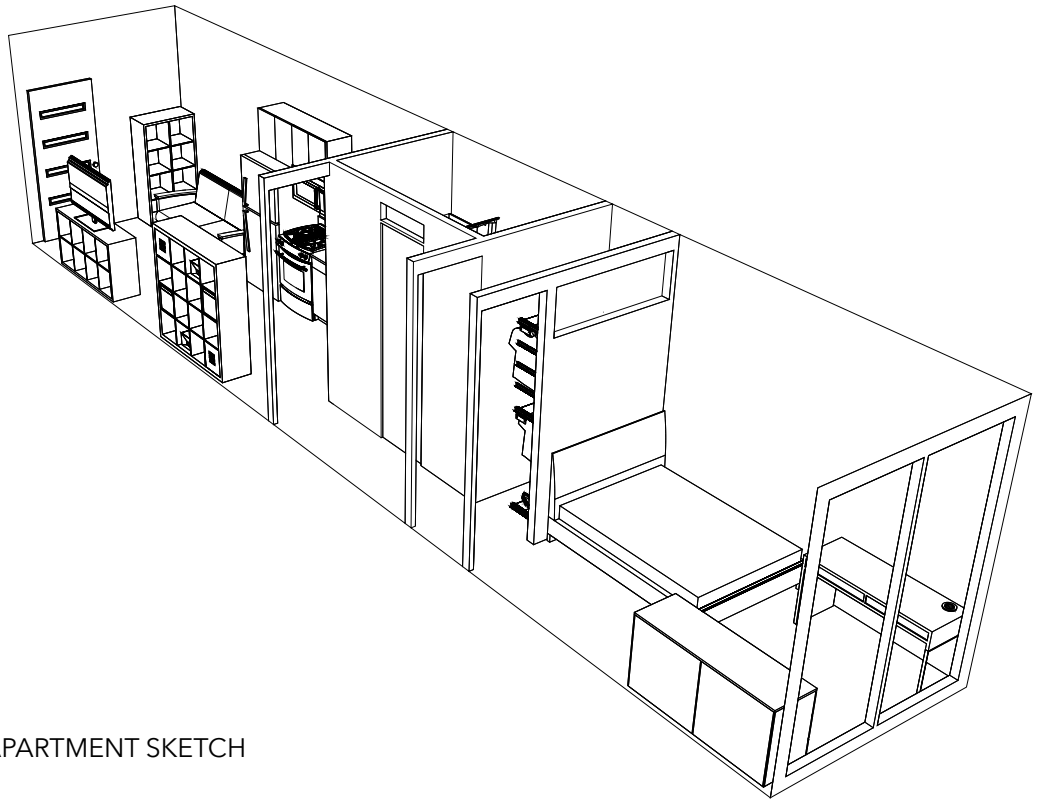


MODULAR VOLUME



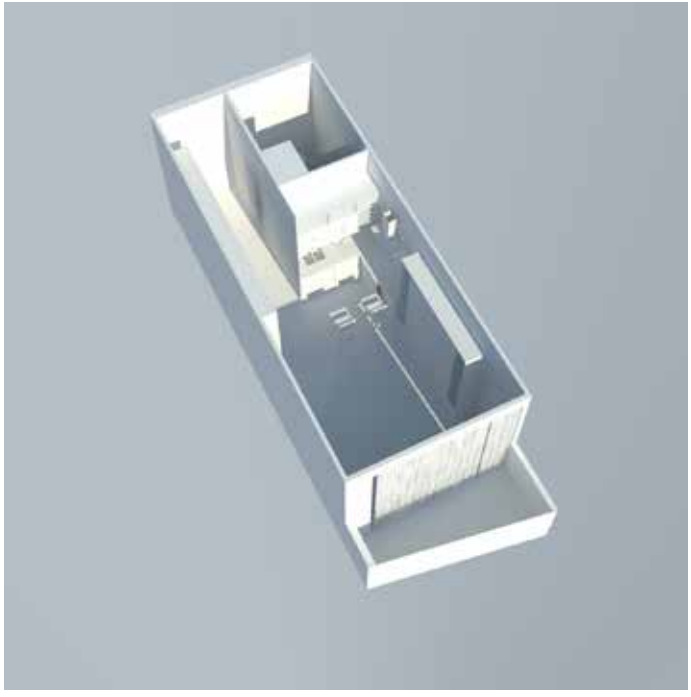


FIRST VOLUME SKETCH



APARTMENT SKETCH

APARTMENT SKETCH

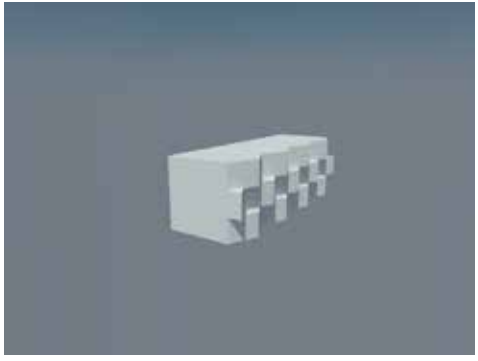


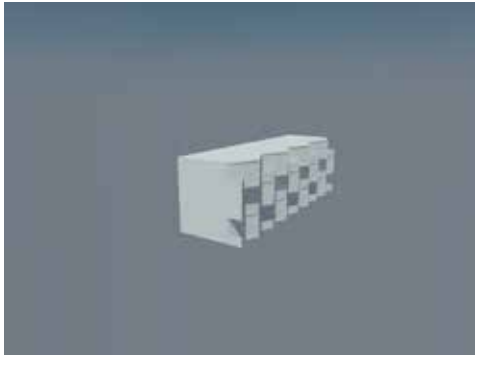
APARTMENT SKETCH FOLDED IN

APARTMENT SKETCH FOLDED OUT

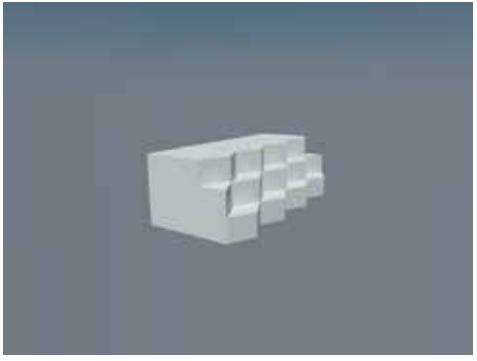
FASADE SKETCH

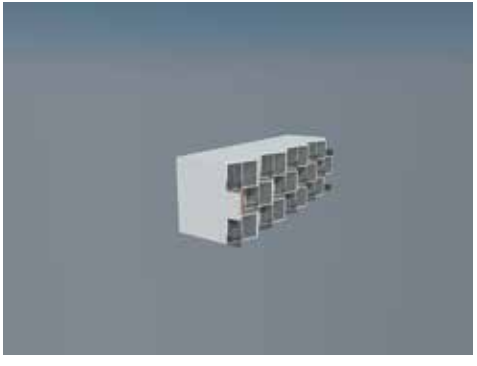
BULDING FASADE A



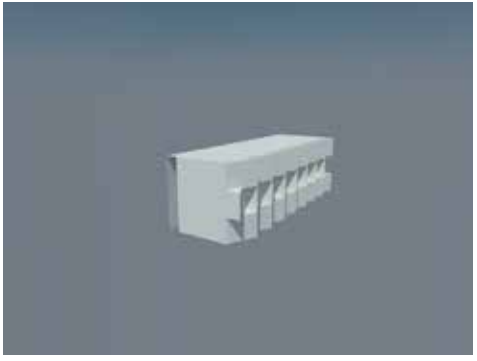


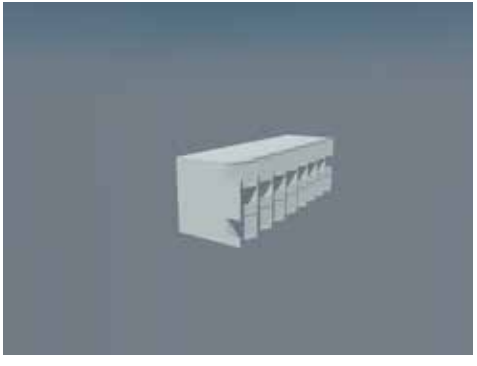
BULDING FASADE B





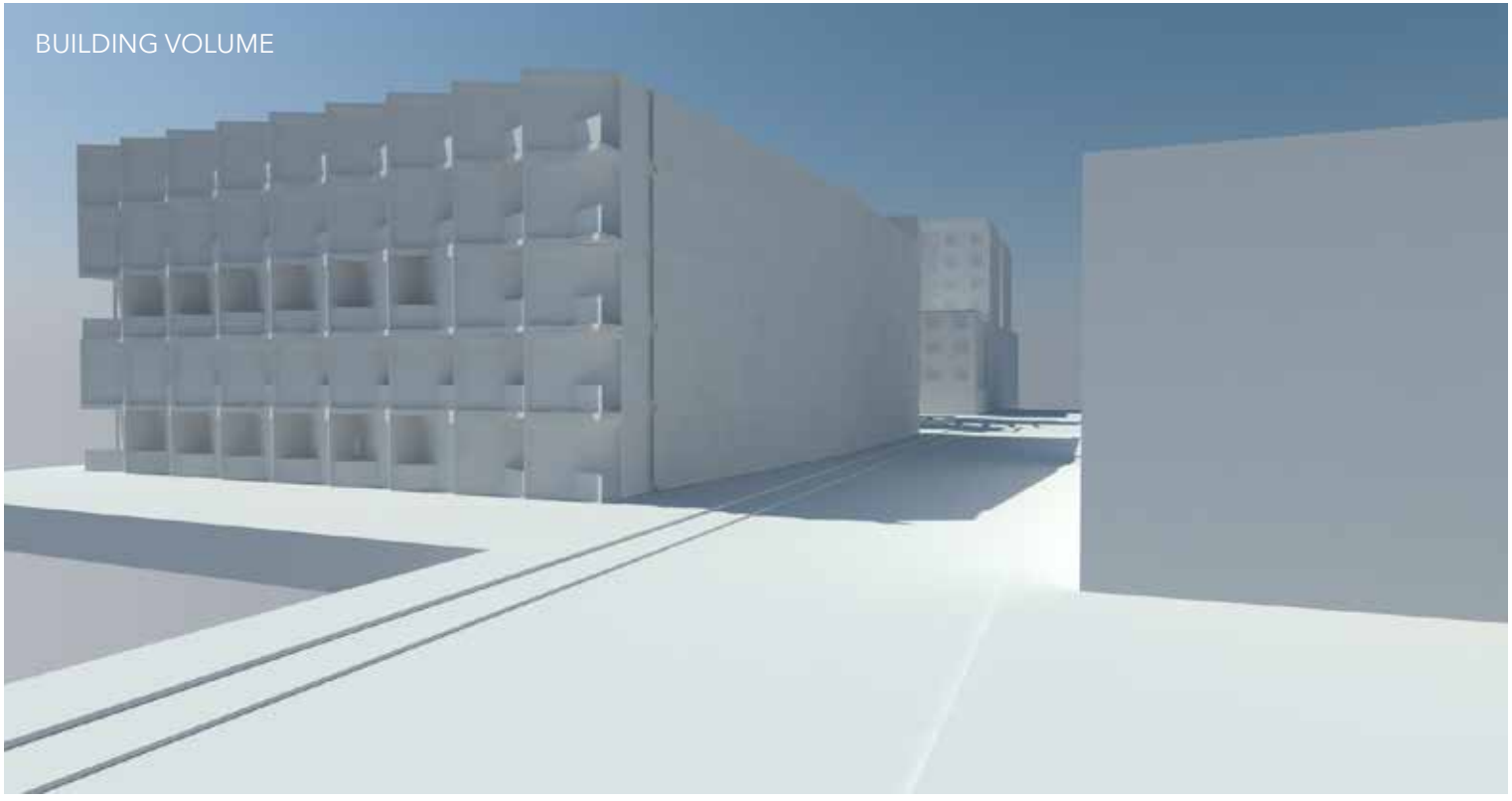
BULDING FASADE C





BUILDING VOLUME

BUILDING VOLUME


BUILDING VOLUME

CHALMERS
UNIVERSITY OF TECHNOLOGY

BOXED HOUSING SANTA MONICA

MARTIN WIDERSTRÖM

ARKX03 - MASTER'S THESIS IN ARCHITECTURE
MATTER, SPACE, STRUCTURE
2015

CHALMERS UNIVERSITY OF TECHNOLOGY
GOTHENBURG, SWEDEN -PHONE: +46 (0)31-772 10 00

WWW.CHALMERS.SE