BEFORE CIA
SOPHOMORE YEAR
JUNIOR YEAR
POP-UP RETAIL DESIGN
Senior Year
1 in 6 families in the US are considered severely cost burdened. This means they pay 50% or more of their income on housing.

WHAT IS AFFORDABLE HOUSING?

The term “affordable” is relative so affordable housing depends on the income of the individual or family.

The government defines affordable housing when it consumes no more than 30% of a household's income.

THE TERM IS RELATIVE, THE ISSUE IS CLEAR
Housing options for low income individuals and families are substandard in their design, functionality, and environmental impact. Additionally, an emerging housing crisis for renters is forming in major cities across the United States.
“We have been conditioned to think that basic rights are a luxury and a privilege... they are not.”

– Alexandria Ocasio-Cortez
WE NEED TO TALK ABOUT THE ISSUES

- ENVIRONMENTAL
- ECONOMIC
- STRUCTURAL
- SOCIAL
WHY ARE CITIES STRUGGLING?

COST OF CONSTRUCTION IS UP, WAGES ARE DOWN

Cities across the United States are dealing with widespread rental increases. Annual wage increases are not sufficient to cover the rising cost of living. Rents have dramatically outpaced wage growth, leading to more cost burdened households.

THE COST OF CONSTRUCTION MATERIALS

Source: U.S. Bureau of Labor Statistics

CHANGE IN RENT AND WAGES 1960 - 2016

Source: U.S. Bureau of Labor Statistics
LOCATION, LOCATION

AVERAGE HOUSING + TRANSPORTATION COSTS % INCOME

Being pushed out of a city means higher transportation costs. Comparing both housing and transportation costs shows the true nature of affordability among low-income renters.

TRANSPORTATION COSTS

The further someone has to drive to receive a decent wage, the less they have for rent.

- $10,455: Annual Cost of Transportation
- 1.48: Autos per Household
- 16,057: Average VMT (Vehicle Miles Traveled)
For every 100 low income renter households, there are only 30 affordable rental homes available.

Did you know?
LOCATION, LOCATION

GENETRIFICATION

THE POOREST AND MOST VUNERABLE SUFFER

As developers and city officials make decisions, often times profits are the main focus of the project. Vital community services and better opportunities to accumulate wealth and status are then only available to residents in higher income neighborhoods.
“Housing discrimination is as easy to see as bright red ink.”

- Elizabeth Warren
Years of systemic discrimination, redlining, and zoning restrictions have crippled low-income and minority communities. Bad policy has allowed developers to achieve incredible profits by changing the landscape and economic balance of many urban areas, while not contributing or giving back to the community in any way. This has drastically affected the rental market in many major US cities and has disproportionately affected black and Latino neighborhoods.

THE GAP

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DID YOU KNOW?

47% of adults have experienced insecure housing situations + 59% among low-income families
1929
The U.S. Housing Act is passed, addressing public housing.

1937
The Pruitt-Igoe Housing Project is built in St. Louis.

1954
HUD (Housing and Urban Development) is formed.

1965
The U.S. Housing Act puts 300,000 people out of their homes.
1973
Nixon Administration places moratorium on housing subsidies.

1985
Reagan Administration drastically cuts public housing assistance.

1987
Birth of the McMansion

1990
Bush Administration signs into law Americans with Disabilities Act.

2007
Financial crisis and the start of the Great Recession

2020
Tiny home sales surpass 10,000
“Good design is probably 98% common sense. Above all, an object must function well and efficiently...”

- Terence Conran
THE PROBLEM WITH QUALITY

LOWEST INCOME HOUSEHOLDS ARE MORE LIKELY TO FACE QUALITY ISSUES THAN THOSE WITH HIGHER INCOME.

Share of Occupied Rental Units Reporting Issue (Percent)

<table>
<thead>
<tr>
<th>Issue</th>
<th>Extremely Low Income</th>
<th>Very Low Income</th>
<th>Low Income</th>
<th>All Higher Incomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two or more breakdowns of heating equipment lasting at least 6 hours</td>
<td>100</td>
<td>90</td>
<td>80</td>
<td>70</td>
</tr>
<tr>
<td>Exposed electrical wiring</td>
<td>80</td>
<td>70</td>
<td>60</td>
<td>50</td>
</tr>
<tr>
<td>Shared plumbing facilities</td>
<td>60</td>
<td>50</td>
<td>40</td>
<td>30</td>
</tr>
<tr>
<td>Any toilet breakdowns in last 3 months</td>
<td>40</td>
<td>30</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>Holes in the floor</td>
<td>20</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Rats seen in unit recently</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Overcrowded conditions</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

SOURCE: JOINT CENTER FOR HOUSING STUDIES OF HARVARD UNIVERSITY
NEW CONSTRUCTION OF AFFORDABLE HOUSING IS DOWN ACROSS THE BOARD.

A slowdown in newly built affordable housing leaves low-income renters with fewer options in terms of finding a safe, clean, functional living space.

THE PROBLEM FOR FAMILIES

SOURCE: NYC OPEN DATA
INFRASTRUCTURE & HEALTH

ASBESTOS

LEAD

MOLD

CONTAMINATED WATER
WHY DOES AFFORDABLE MEAN BAD DESIGN?
BAD DESIGN IS BAD FOR THE ENVIRONMENT
GOING PREFAB & MODULAR

MODULAR CONSTRUCTION CUTS COSTS, BENEFITS THE PLANET

The benefits can be seen in:

- Reduced material waste
- Reduced disruption of building site
- Safer working conditions
- Reduced Operational Energy
- Reduction in transportation impact
CASE STUDY

- **Dortheavej Residence**, Copenhagen, Denmark 2018
  [Image of the building]

- **Savonnerie Heymans**, Brussels, Belgium 2012
  [Image of the building]

- **Monsignor Anthony J. Barrettta Apartments**, Brooklyn, New York 2013
  [Image of the building]
Savonnerie Heymans is a social housing project in Brussels, Belgium that was once a former soap factory. After a clean and a clever renovation by MDW Architecture, the project now offers 42 accommodations with a strong focus on sustainability and energy efficiency. New insulation, glass loggias for each apartment, solar power, rainwater collection and much more all combine to make this adaptive reuse project an inspiring place to live.
THE GOAL

Provide efficient, spacious, well equipped housing.

Offer flexibility and variation with units and surrounding environment.

Provide ample space for retail, storefront, and community services.

Incorporate park space, various seating areas, and natural landscaping throughout.
Prefabricated modules can be manufactured in a facility and then assembled on site for maximum cost savings. This also allows for flexible and configurable spaces as the modules can be customized in a variety of different sizes and floor plans. They then can be organized and stacked together to fit the needs of the particular project which allows for easy additions or expansions if required at a future date.
950 SQ FT
ONE BEDROOM
ONE BEDROOM W/ STUDY

1800 SQ FT
TWO BEDROOM

1800 SQ FT

LIVING
DINING
KITCHEN
MASTER BEDROOM
GUEST BEDROOM
BATHROOM
WC
LAUNDRY
WORK STATION
ENTRANCE
COVERED TERRACE
3600 SQ FT
FOUR BEDROOM FIRST FLOOR

LIVING
DINING
ENTRANCE
COVERED TERRACE
KITCHEN
CLOSET
MASTER BEDROOM
BATHROOM
WC
WORK STATION
WORK

COVERED TERRACE
ISOMETRIC PLAN
THE MOD
ISOMETRIC PLAN
THE MOD GYM
COMPONENTS & MATERIALS

MATERIALS FOR COST SAVINGS AND SUSTAINABILITY

- Reclaimed & Recycled Wood
- Concrete
- Water Collection System
- Green Roof/Solar Panels
- Mesh Privacy Barrier
DESIGN AND BALANCE

A traditionally constructed base, aligned to a curve provides an open floor plan that can be configured for retail space, storefront, community services, or indoor parking and acts as a center spine that houses utilities, corridors, stairwells, and elevators.
The result of placing two of these structures in proximity with each other creates an intimate and engaging space that is isolated from the city beyond it while still open on either side. The gentle slope of the structures works as an invitation and path finder, helping to navigate traffic in and out of the center.
This site plan shows a typical city block (approximately 330 ft x 900 ft). Each building is facing outward to take full advantage of the storefront space along the ground level and to provide generous green space and vegetation that weaves through the center of the plan.
THANK YOU!