



## DENVER LOW-RISE: NEW DOMESTIC FORMS OF COLLECTIVE LIVING

**Denver Low-Rise: New Domestic Forms of Collective Living** is the second foundational design studio in the 3-Year M.Arch program at the University of Colorado Denver College of Architecture and Planning. The course focuses on a spatial investigation of shared domestic spaces, speculating on a new paradigm of collective housing driven by the studio's collective research on "Missing Middle" housing typologies.

Today, mid-sized and large American cities, such as Denver, Seattle, Albuquerque, Minneapolis, and Richmond, all have in common problems with housing affordability, gentrification, and homelessness. Denver, for instance, has one of the nation's worst housing shortages, with the city having a deficit of approximately 70,000 units. This housing problem is even exacerbated by the predominant single-family housing model. With less land for building houses and with soaring prices for rent and mortgages, low- and moderate-income households have been displaced, which has diminished housing equity by intensifying the existing social and racial segregation. Moreover, the insistence on the idealized single-family housing has championed the privatization of public spaces, such as swimming pools and gardens, attenuating the advantage of sharing spaces and resources among a more diverse constituency, such as child-free couples and multi-generational households. With less flexible arrangements, the current housing model fails to engage a wider variety of living demands, creating more barriers to expand the measures of affordability and collectivity celebrated by the real dwellers of contemporary cities.

Responding to these conditions, this studio asks: how could we **update the existing framework of "Missing Middle" housing** and **create new typologies** that engage the diverse constituents of growing American cities? Thinking through new technologies and cultural shifts that inspire contemporary dwelling changes, what **domestic forms**—such as shared living rooms, collective kitchens, and communal laundry facilities—**could be updated, reinvented, and collectivized to enable a common ground?**

According to Denver's new 5-year housing plan, policies have been made to suggest new paths of expanding housing options by allowing more Accessory Dwelling Units and "Missing Middle" housing development in low-rise neighborhoods and low-medium scale residential areas. While both options are economically and spatially effective, the "Missing Middle" housing offers broader social benefits, proposing shared, collective forms of architecture that bolster a sense of community and resilience with an improved ability to age in place. Through different degrees of sharing spatial and social resources, the "Missing Middle" housing establishes a common ground where the relationships between individual, collective, community, city, gender, race, and public health are socially defined.

In these ways, the projects arising from this studio speculate on reinvented types of "Missing Middle" housing schemes, fostering architectural developments for which equity, diversity, inclusion, accessibility, and quality are materially investigated. With a representational emphasis on line drawings and model photographs, the outcomes for this studio render visible the material forces that make up the new paradigm of collective housing in Denver and other American cities in the twenty-first century.

# FOUNDATIONAL STUDIO LEARNING SEQUENCE

## PROJECT 01 PRECEDENT

Collect materials regarding the pre-selected precedents that present qualities of "Missing Middle" Housing. Develop a series of analytical and speculative drawings, including diagrams and collages, to document and represent the aesthetic, logic, and organization of each project.

## PROJECT 02 RESEARCH

Working collaboratively as a group, conduct a series of site analyses to dissect the social, environmental, and cultural layers that constitute the natural and built environment of the neighborhood. Research "Missing Middle" housing and common domestic spaces. Complete a 1/8" site model.

## PROJECT 03 SCHEME

Following analysis and research, each student develops schemes that reinterpret a "Missing Middle" housing typology, and which conceive new forms of domestic living better aligned with contemporary dwelling needs. 1/8" massing models are required in response to the site.

## PROJECT 04 DEVELOPMENT

The last part of the course requires students to work in pairs on a single design proposition, consisting of 8 units that are complemented by a 'common ground,' which integrates collective living through programs such as communal kitchens and reimagined laundry facilities. Placing an emphasis on the clarity of two- and three-dimensional representations, this assignment intends to help students develop cohesive approaches to articulate their design intentions.

WK 01 WK 02 WK 03 WK 04 WK 05 WK 06 WK 07 WK 08 WK 09 WK 10 WK 11 WK 12 WK 13 WK 14 WK 15

### DIGITAL TOOL

Develop a series of digital-making and physical-making skills through learning different software, including Rhino and Adobe Suite.

### SITE

Develop a series of analytical and representational skills to dissect the social, political, environmental, and cultural layers that constitute the natural and built environment of the neighborhood. How is a site represented, constructed, and manipulated?

### ORGANIZATION

Develop a clear understanding of a spatial organization that composes fundamental elements to generate a cohesive idea for housing. Understand the relationship between the inside and outside, exterior and interior, public and private, etc.

### PROGRAM

Develop a clear understanding of domestic programs related to affordable and collective housing, and establish creative and critical thoughts on defining the roles of collectivity and affordability in response to contemporary housing problems. What is the measure of affordability and collectivity in the context of the site? How could the blurring of normative boundaries between different domestic programs produce new sets of social and spatial benefits?

### REPRESENTATION

Collect materials regarding a series of pre-selected precedents that present qualities of "Missing Middle" Housing. Polish the representational skills to produce drawings, diagrams, physical models that document the aesthetic, logic, and organization of each project.

### RESEARCH

Develop comprehensive analytical skills to dissect the themes of domesticity, architectural contemporary culture, site conditions, design methods deployed in precedents by different architects in different architectural contexts.

### STRUCTURE & MATERIAL

Develop a foundational understanding of different structural systems, such as wood framing, steel framing, and concrete framing, and explore design opportunities that integrate the project's space, structure, form, and material, etc.

### CRITICAL THINKING

Develop a set of self-evaluation and critical thinking skills on examining their own projects and their positioning through situating the design problems amidst private and public spheres as catalysts for social change.



## IMMERSIVE WORKSHOPS

### “Table Manners: Housing Geostories”

Through a combination of **immersive events and workshops**, students got to experience first-hand the ways in which **simple architectural means**—such as the use of furniture, lights, and food—could **radically change spaces** and the **outcomes of social interactions**.



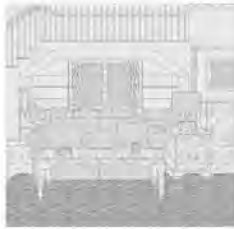
## REPRESENTATION LECTURE SERIES

### “Representing A House”

Over the course of the semester, several designers working on visual representation were invited to **share their work** and **teach tools to produce striking architectures** through varied drawing and modeling techniques.

*Desired Objects:  
Narratives of Domesticity*

Lecturer  
Sam Schuermann



Date  
1 p.m., Monday  
February 20

Place  
3rd Floor  
Gallery

Zoom  
933 4571 7483

Host

*Paper/Space;  
Image/Space*

Lecturer  
Ekin Erar



Date  
3 p.m., Monday  
March 6

Place  
3rd Floor  
Gallery

Zoom  
933 4571 7483

Host

*Construction Rehearsal*

Lecturer  
Alex Yueyan Li



Date  
1 p.m., Monday  
February 6

Place  
3rd Floor  
Gallery

Zoom  
933 4571 7483

Host

*Remote Works*

Lecturer  
salazarsequeromedina



Date  
1 p.m., Thursday  
April 6

Place  
3rd Floor  
Gallery

Zoom  
933 4571 7483

Host

*Type Type*

Lecturer  
Shawn Lutz



Date  
1 p.m., Thursday  
April 20

Place  
3rd Floor  
Gallery

Zoom  
933 4571 7483

Host

*Final Representation*

Lecturer



Date  
1 p.m., Thursday  
April 27

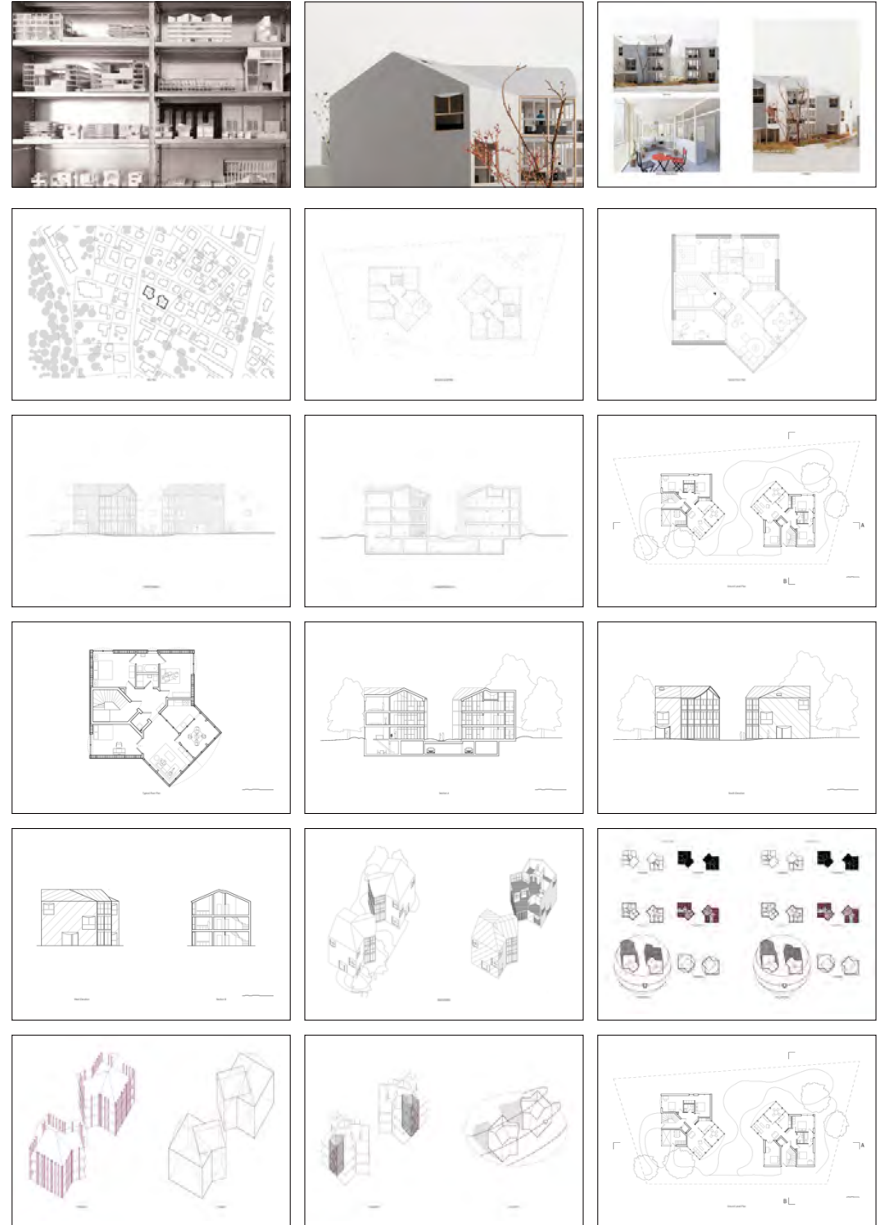
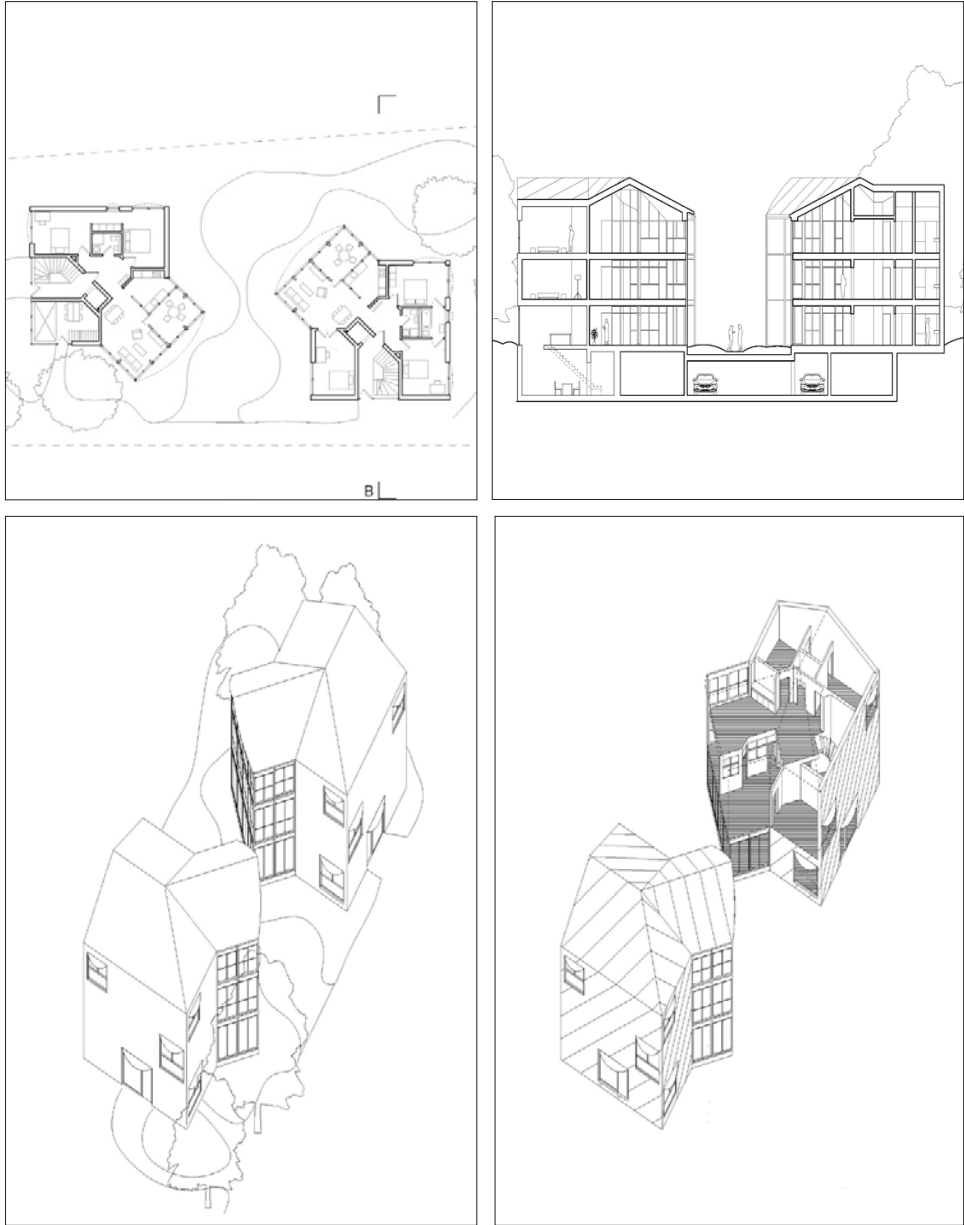
Place  
3rd Floor  
Gallery

Zoom  
933 4571 7483

Host

# PROJECT 01 PRECEDENT

Students worked individually to develop a comprehensive set of 2D drawings, making **case study booklets** as a way of sharing knowledge with others. Additionally, they **developed a series of analytical and speculative drawings that distilled design methodologies.**



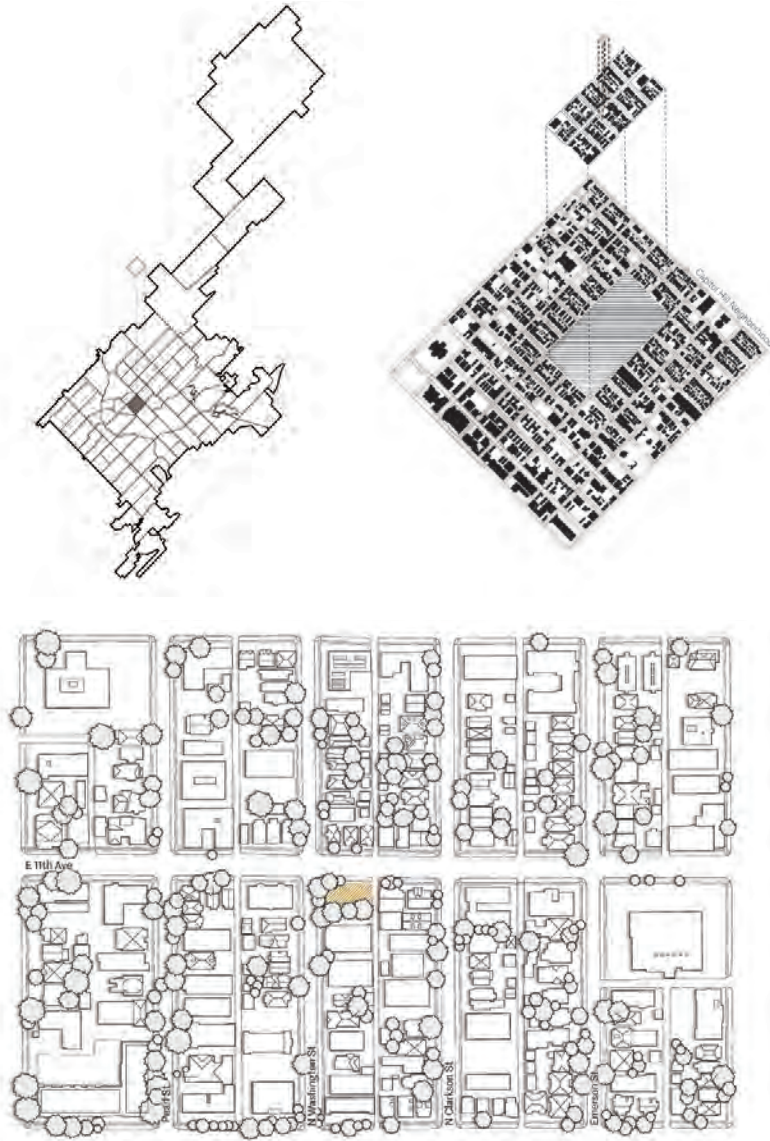
# PROJECT 01 PRECEDENT

After drawing their case studies and producing booklets, students created 'chunk models' that reimaged the material reality of existing works, and which reinterpreted space through furniture, partitions, and other minimally invasive techniques.

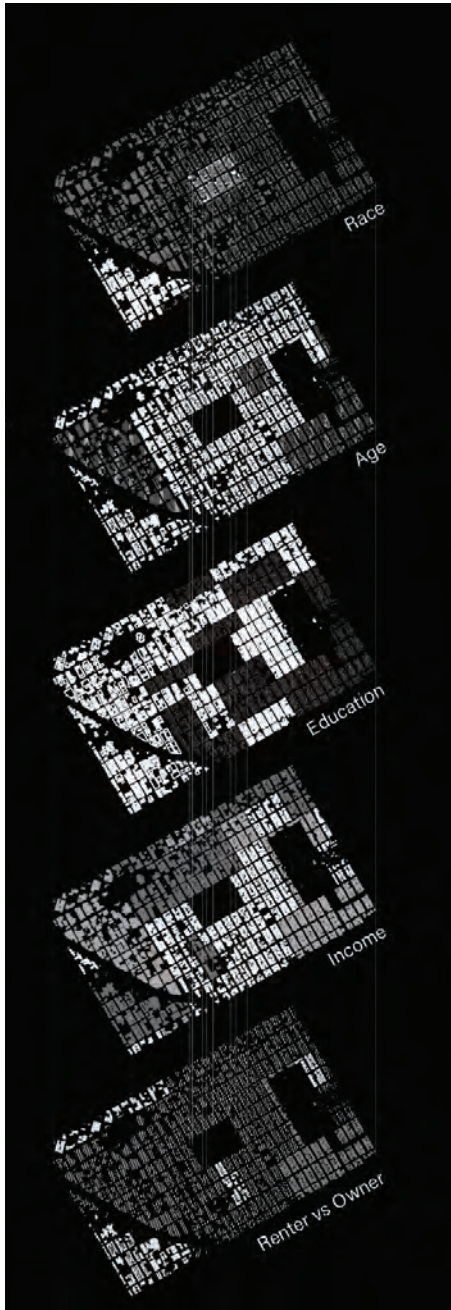


# PROJECT 02 RESEARCH - SITE

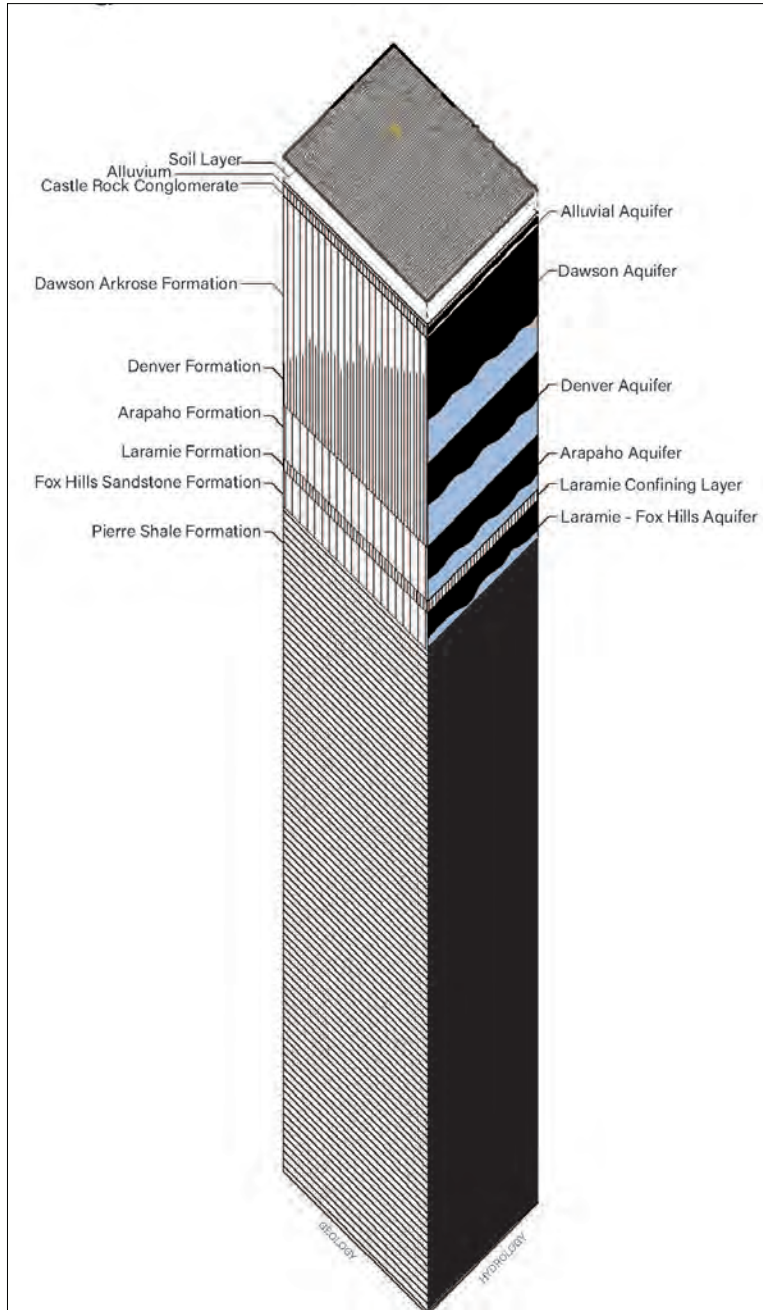
Looking at a site in Denver's Capitol Hill neighborhood, students **revealed the historical, social, environmental, geologic, and other layers that make up the city.** With these studies, they **speculated on programs for their 'common grounds'** that could serve all city dwellers.



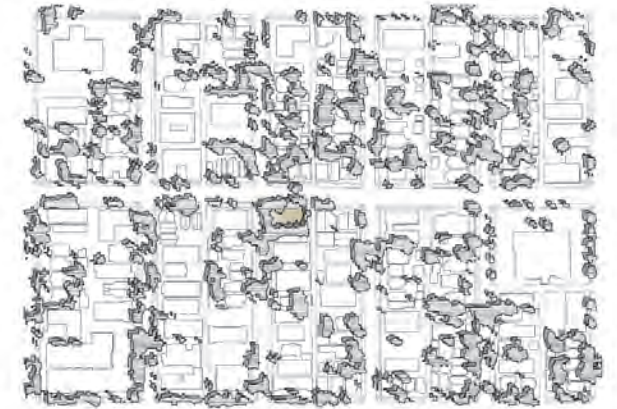
PROJECT 02  
RESEARCH - SITE



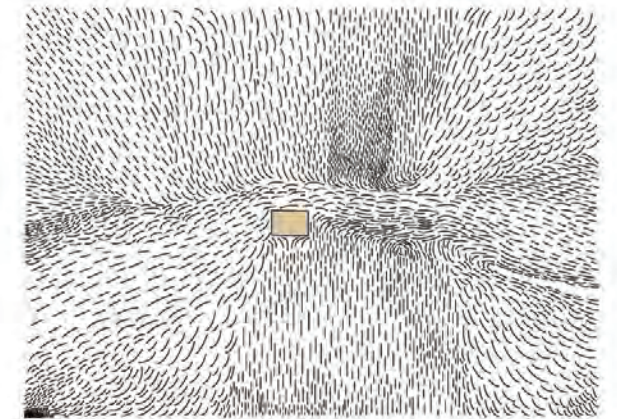
Demographics



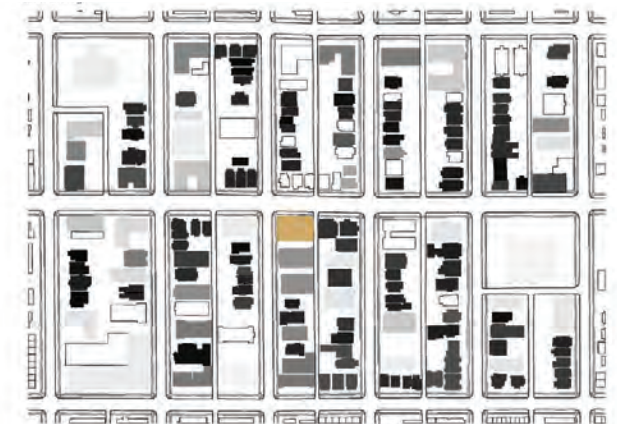
Geology



Tree Canopy



Wind



Building Age

# PROJECT 02

## RESEARCH - MISSING MIDDLE HOUSING

The students also collected information about **"Missing Middle" housing typologies**, tracking the **locations of existing examples of these types across their site's neighborhood**, looking at **zoning restrictions**, and **contextualizing them in local and national policy**.

MISSING  
MIDDLE  
HOUSING  
TYPOLOGY

### DUPLEX

Height, Building Form, & Siting Constraints

A. Max Height	3 Stories, 30'
B. Min Zone Lot Width	30' (10,000 sqft)
C. Min Side Setback	5'
D. Side Street Setback	7'
E. Primary Street Setback	50'
F. Rear Alley/No Alley Setback	12,500'

### FOURPLEX

Height, Building Form, & Siting Constraints

A. Max Height	3 stories, 30'
B. Min Zone Lot Width	30' (10,000 sqft)
C. Min Side Setback	5'
D. Side Street Setback	7'
E. Primary Street Setback	50'
F. Rear Alley/No Alley Setback	12,500'

### COURTYARD BUILDING

Height, Building Form, & Siting Constraints

A. Max Height	3 stories, 30'
B. Min Zone Lot Width	30' (10,000 sqft)
C. Min Side Setback	5'
D. Side Street Setback	7'
E. Primary Street Setback	50'
F. Rear Alley/No Alley Setback	12,500'
G. Max Courtyard Width	30'

### COTTAGE COURT

Height, Building Form, & Siting Constraints

*Single-Dwell to multi-kinship (extended family) zoning categories, as regulated and then updated in recent years providing for the development of this typology. An early, early zoning setback precedent in the city plan.*

A. Max Height	3 stories, 30'
B. Min Zone Lot Width	30' (10,000 sqft)
C. Min Side Setback	5'
D. Side Street Setback	7'
E. Primary Street Setback	50'
F. Rear Alley/No Alley Setback	12,500'
G. Max Courtyard Width	30'

### TOWNHOUSE

Height, Building Form, & Siting Constraints

A. Max Height	3 stories, 30'
B. Min Zone Lot Width	30' (10,000 sqft)
C. Min Side Setback	5'
D. Side Street Setback	7'
E. Primary Street Setback	50'
F. Rear Alley/No Alley Setback	12,500'
G. Max Courtyard Width	30'

### MULTIPLEX MEDIUM

Height, Building Form, & Siting Constraints

A. Max Height	3 stories, 30'
B. Min Zone Lot Width	30' (10,000 sqft)
C. Min Side Setback	5'
D. Side Street Setback	7'
E. Primary Street Setback	50'
F. Rear Alley/No Alley Setback	12,500'
G. Max Courtyard Width	30'

### MULTIPLEX: MEDIUM

Height, Building Form, & Siting Constraints

A. Max Height	3 stories, 30'
B. Min Zone Lot Width	30' (10,000 sqft)
C. Min Side Setback	5'
D. Side Street Setback	7'
E. Primary Street Setback	50'
F. Rear Alley/No Alley Setback	12,500'
G. Max Courtyard Width	30'

### STACKED TRIPLEX

Height, Building Form, & Siting Constraints

A. Max Height	3 stories, 30'
B. Min Zone Lot Width	30' (10,000 sqft)
C. Min Side Setback	5'
D. Side Street Setback	7'
E. Primary Street Setback	50'
F. Rear Alley/No Alley Setback	12,500'
G. Max Courtyard Width	30'

### LIVE WORK

Height, Building Form, & Siting Constraints

A. Max Height	3 stories, 30'
B. Min Zone Lot Width	30' (10,000 sqft)
C. Min Side Setback	5'
D. Side Street Setback	7'
E. Primary Street Setback	50'
F. Rear Alley/No Alley Setback	12,500'
G. Max Courtyard Width	30'

### CONTEXT

Height, Building Form, & Siting Constraints

### DUPLEX

### FOURPLEX

### COURTYARD BUILDING

### COTTAGE COURT

### TOWNHOUSE

### MULTIPLEX MEDIUM

### STACKED TRIPLEX

### LIVE WORK

### ZONING

AIA/ACSA 2024 Housing Design Education Award

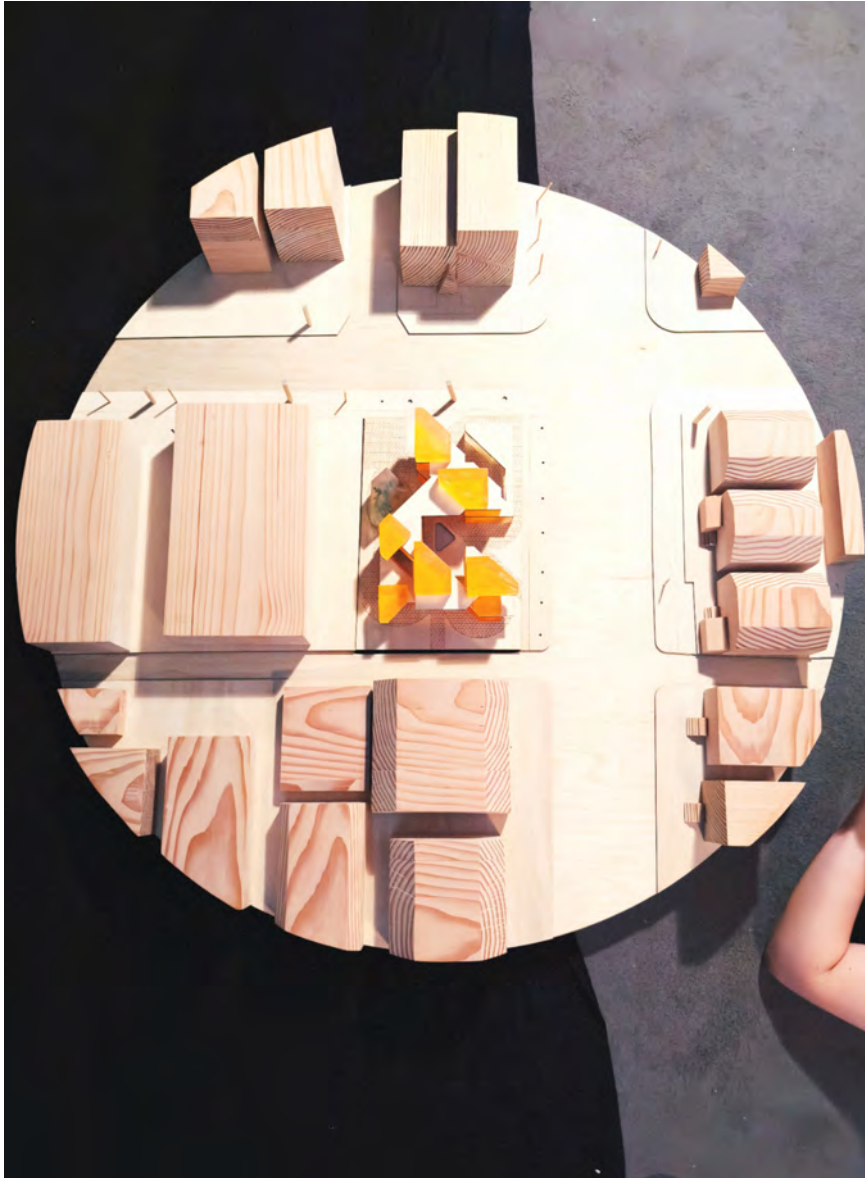
Denver Low-Rise: New Domestic Forms of Collective Living (Li + Ibarra) [ 08/20 ]



# PROJECT 03

## SCHEME

Following analysis and research, each student developed **several possible schemes that reinterpreted a "Missing Middle" housing typology**, and which conceived new forms of domestic living better aligned with **contemporary dwelling needs**.



## PROJECT 04 DEVELOPMENT

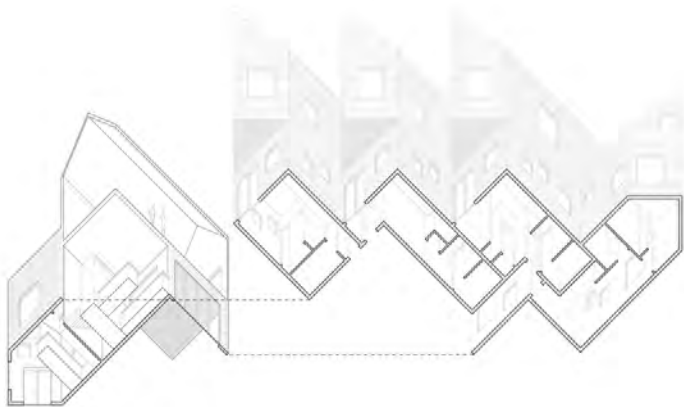
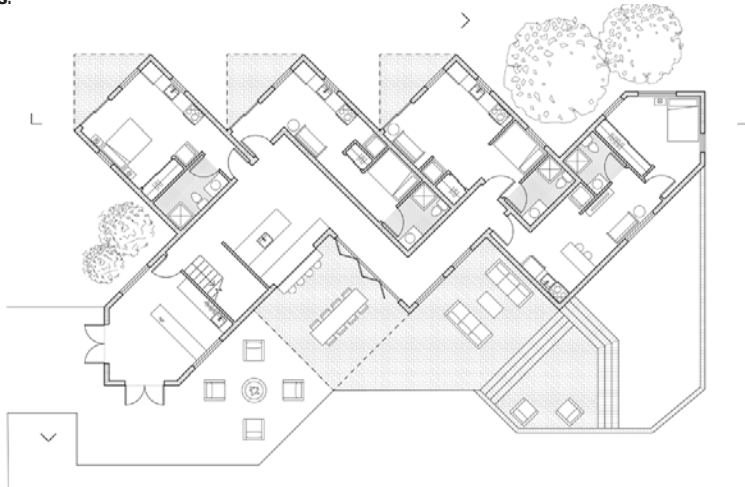
Finally, students worked in pairs on a single design proposition, consisting of **8 units that were complemented by a 'common ground,'** which integrated **collective living** through programs such as **communal kitchens, shared terraces, and reimagined laundry facilities.**



# REINVENTED DOMESTIC FORMS

## GROUP 1: TOWNHOUSE TYPE

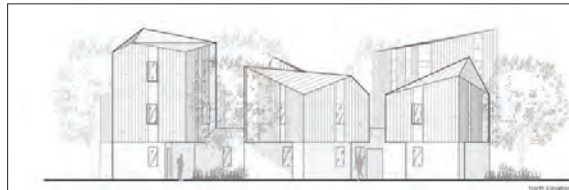
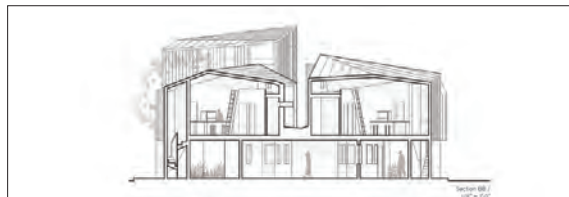
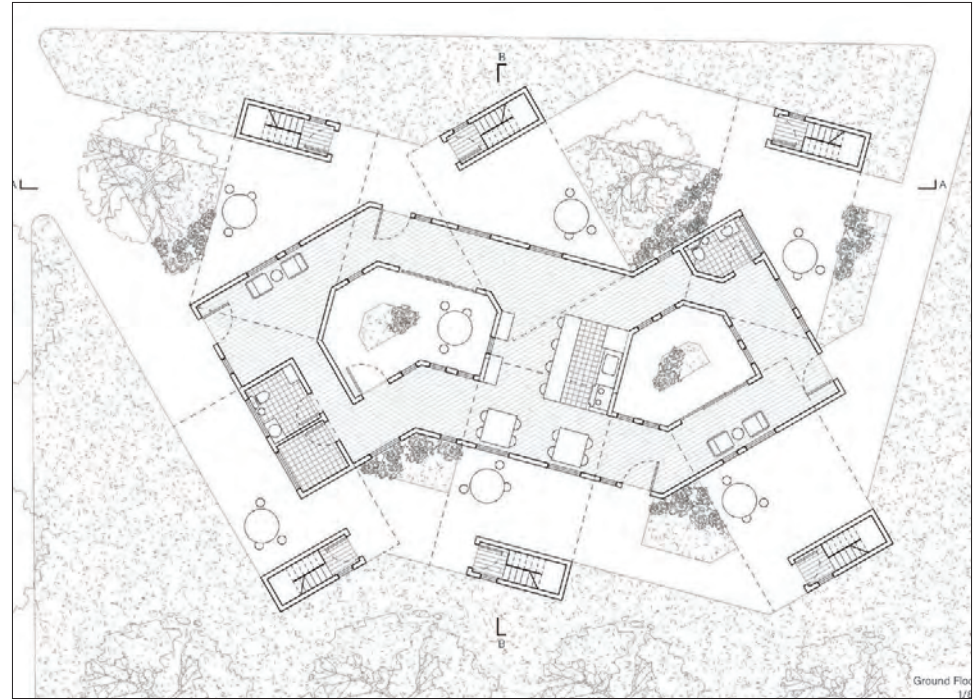
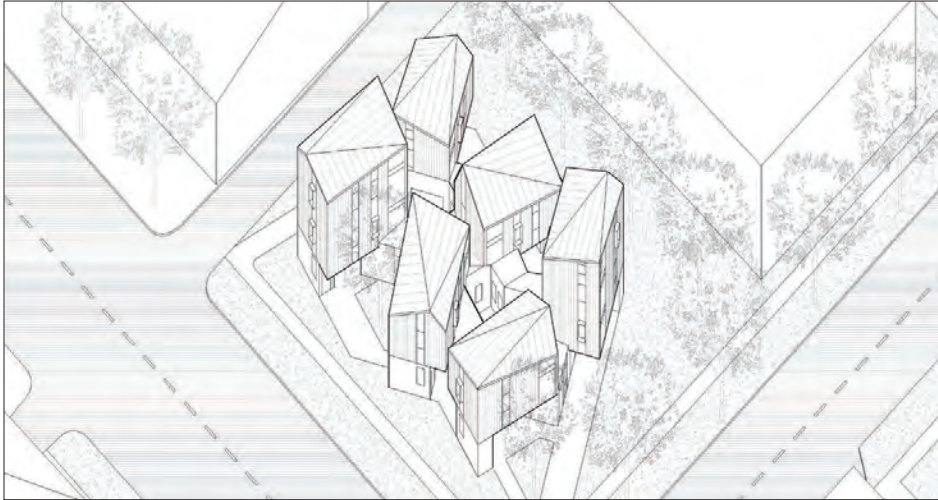
This reinvented townhouse type creates **gradients of public, collective, and private space**, offering **large recreation areas for the neighborhood, work/study areas for selected community members, shared kitchens for its residents, and private bathrooms and bedrooms.**



# REINVENTED DOMESTIC FORMS

## GROUP 2: COTTAGE COURT TYPE

This reimagined cottage court building proposes a **shared kitchen for all its residents**, along with **private interior courtyards**, where residents can choose to interact with one another from their windows, while maintaining privacy through the **precise orientation of unit walls**.



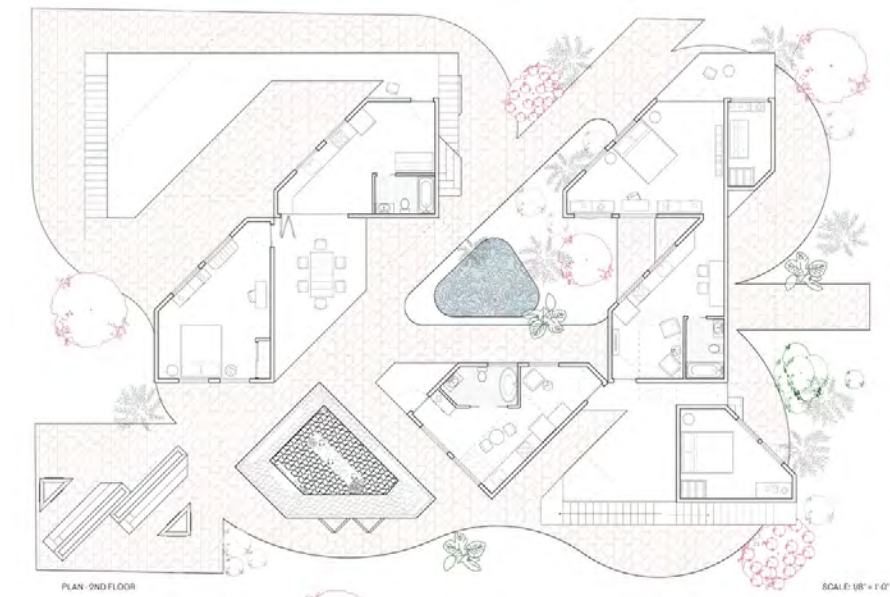
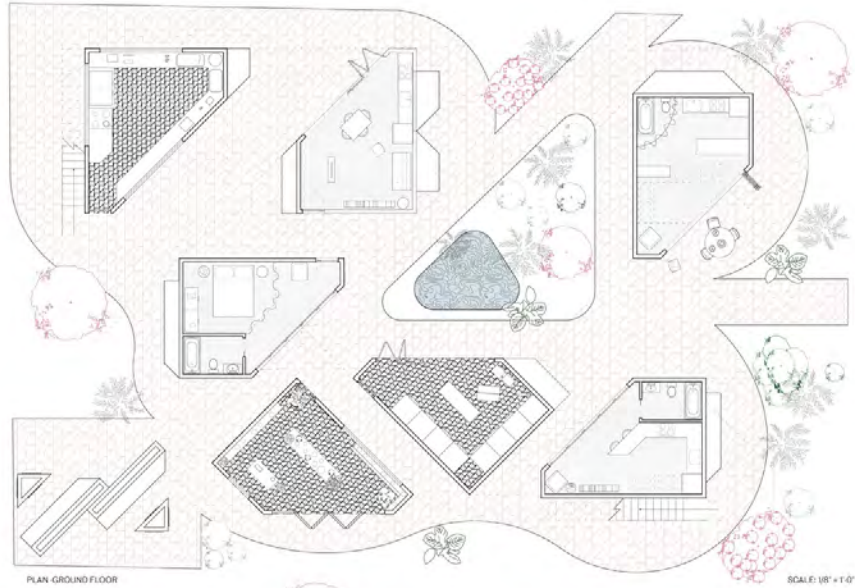
REINVENTED DOMESTIC FORMS  
GROUP 2: COTTAGE COURT TYPE



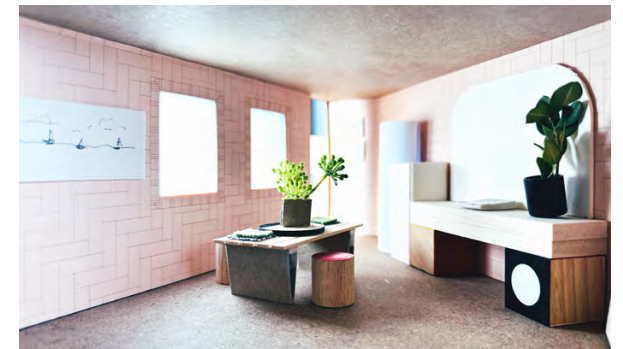
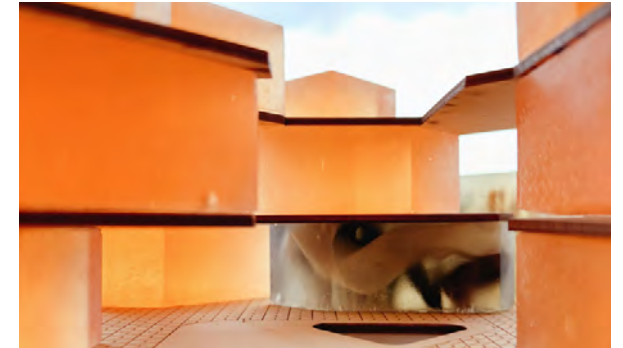
# REINVENTED DOMESTIC FORMS

## GROUP 3: COTTAGE COURT TYPE

This housing complex provides **eight residential units anchored around a central social hub**: a **laundromat** that uses a **greywater system** to sustain a **plant shop** and **food crops grown on site** as provisions for a corner café.



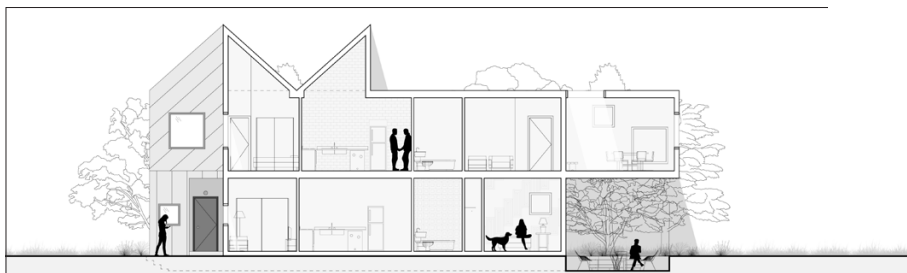
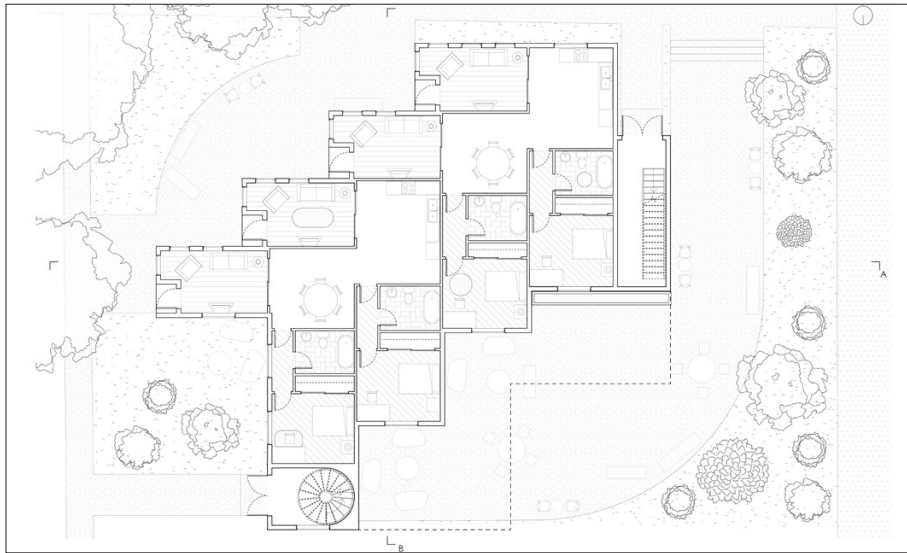
REINVENTED DOMESTIC FORMS  
GROUP 3: COTTAGE COURT TYPE



# REINVENTED DOMESTIC FORMS

## GROUP 4: MULTI-PLEX TYPE

This **collective student housing** project elevates the traditional dormitory model through a **nested design concept**, where residents can maintain their **individuality and privacy**, while having the **freedom to access communal indoor and outdoor areas**.





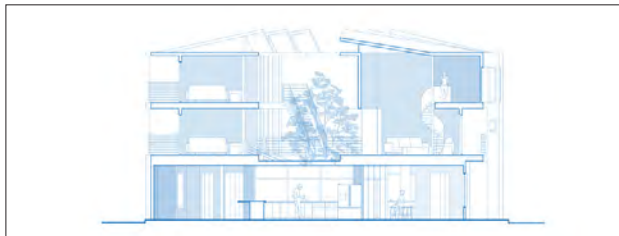
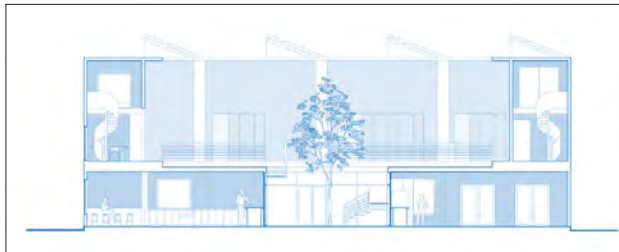
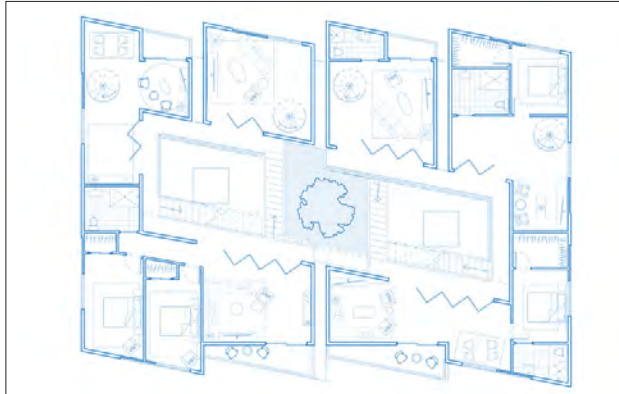
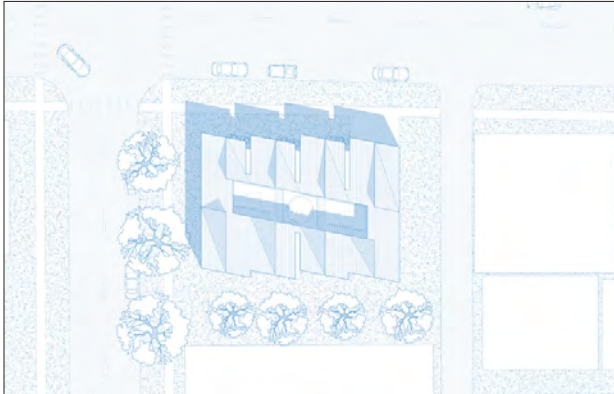
REINVENTED DOMESTIC FORMS  
GROUP 4: MULTI-PLEX TYPE



# REINVENTED DOMESTIC FORMS

## GROUP 5: LIVE-WORK TYPE

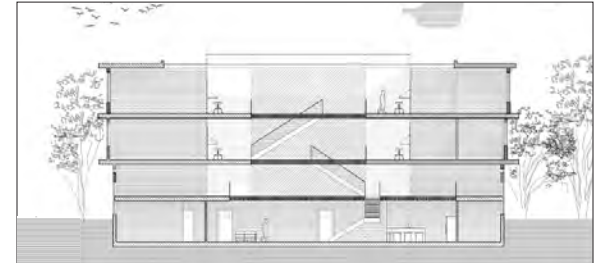
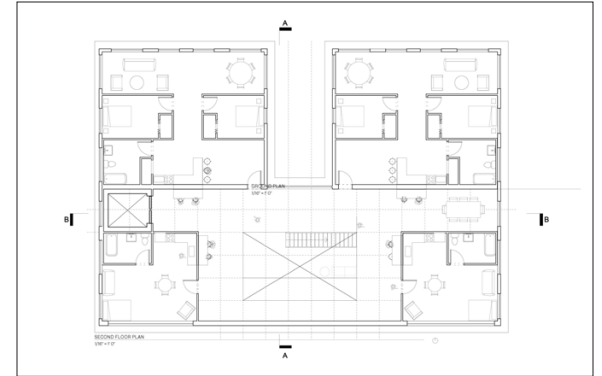
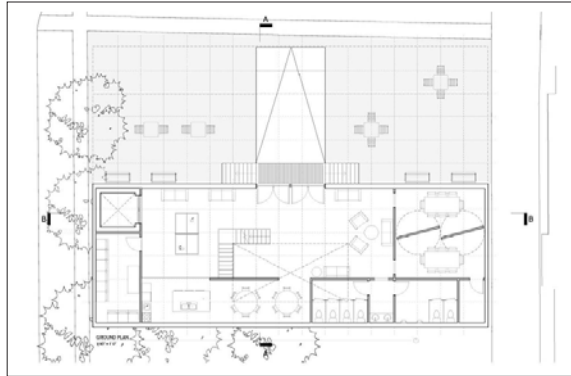
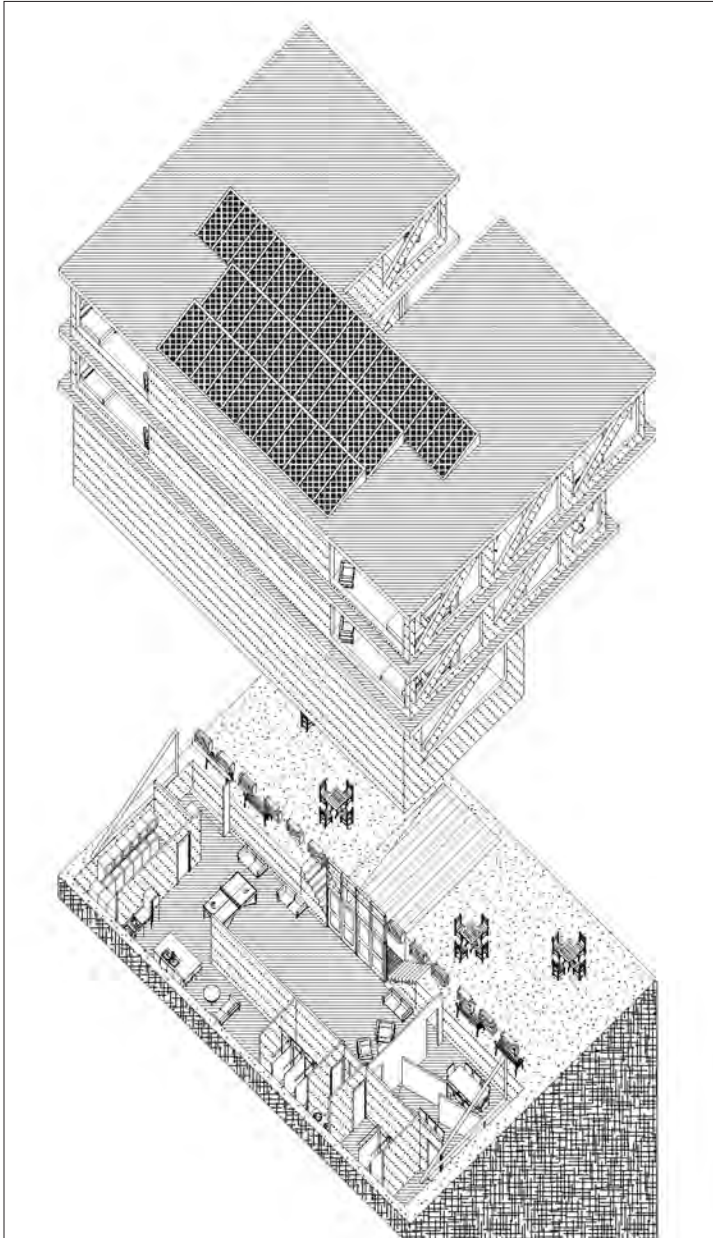
This live-work project radicalizes its typology by **shearing north- and south-facing walls**, and **creating gaps between different units**. This maximizes **solar orientation**, while allowing **ample room for air to travel through** the units and into ground-floor shared spaces.



# REINVENTED DOMESTIC FORMS

## GROUP 6: LIVE-WORK TYPE

This housing scheme for living and working maximizes its footprint on the neighborhood by creating a **sunken plaza**, welcoming passersby to its **public cafés and restaurants**, while enabling ample private space for dwelling.





## Reflection

*Denver Low-Rise: New Domestic Forms of Collective Living* proposed an impossible task: to **rethink housing in Denver** by looking at **small-scale domestic forms**, and their positioning amidst private and public spheres, as catalysts for social change. In addition, this studio—which featured an exceptionally large number of students—was taught in the second semester of the 3-Year Master of Architecture program, for students with no background in architecture.

The students' integrity, intensity, and insistence on **resolving the social issues of the built environment** did not go unnoticed. Some of them used kitchens and dining areas as **collective spaces to bring people together**. Others paid attention to the ongoing environmental crisis and the possibilities to **reduce waste in housing schemes**, repurposing water for edible gardens, or refuse for material-making. Some students tried to **blur the boundaries between city and building**, while others exacerbated those edges in their attempts to give more than was expected to their surrounding communities. In all instances, this intense dedication and continuous questioning left two things unanswered: **what is preventing professional practice from reinvigorating housing with collective spaces**, and **what role in policy-making should architects play?**

While we have no specific answers to these questions yet, we hope to continue to look at our surrounding environments, finding **beauty in the ordinary**, and using **architecture as an avenue for bringing justice, equity, diversity, and inclusion to the built environment**.

## Month/Year Completed

May 2023

## Role of Nominees

Leyuan Li, Assistant Professor, coordinated this course and taught one section of 15 students. José Ibarra, Assistant Professor, taught a second section of 16 students.

## Collaborators and Funding Sources Expenses

No collaborators or funding venues were engaged for this project. All physical models were produced and funded by the students.

## Student Compensation

Matthew Hayes worked as a paid teaching assistant for 10 hours per week.

31 students contributed to this project for a 6-credit studio course: Abdullah Alrumaihi, Berenice Avina Ibarra, Geoffrey Bremer, Blake Brooks, Fritz Carpenter, Stephanie Clouse, Joseph Colella, Desiree Domingo, Sarah Donato, Luke Duarte-Silva Barry, Zachary Duncan, Matthew Epperly, Dreen Fincham, Alexander Gardiner, Martina Grbac, Jordan Hall, Kayla Hart, Michael Hirsch, Theresa Khoury, Abraham Martin, Claire Messer, Fatima Montano, Irina Murphy, Patrick O'Hara, Sophia Ostendorf, Abhinav Sahariah, Knisely Sautel, Alejandro Trejo Gorocica, Meredith Vanderloon, Hunter Wahlgren, and Joanna Walker.

## Acknowledgment

We are extremely grateful to our guest critics, Assia Crawford, Brian Dale, Kae Donahue, Liz Gálvez, Bernardo Garcia, Sarah Hearne, Kevin Hirth, Ozayr Saloojee, Matt Shea, Connor Sullivan, Doris Kim Sung, Nora Wendl, for their insightful feedback during the final review. Professor Li would also like to extend his infinite gratitude to Jason Logan and Rafael Beneytez-Durán for their generous guidance and support in the development of his teaching methodologies throughout his time at the University of Houston.

## Photo Credits

Matthew Hayes, CAP VRC, and students.