

# 2017-2018 Design-Build

## Waldo Duplex

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32011

Waldo is a diverse and dynamic neighborhood in Kansas City, Missouri. Once the southern extent of the city's former streetcar line, Waldo doesn't play by the rules of conventional urbanism, but has flourished nonetheless. The major commercial and industrial corridor along Wornall Road is flanked by established neighborhoods of single-family bungalows and shotgun homes. In this "anything goes" neighborhood exist opportunities for typological experimentation and architectural innovation.

The Waldo Duplex was designed and built to be a solution to a significant, if unexpected problem in Metropolitan Kansas City. Rent is rising at a rate higher than the national average, negatively impacting lower-income neighborhoods like Waldo. Targeting only households making less than 80% of area median income and implementing rent controls, this project is home for two moderately low-income families that want to live and work in Waldo, but otherwise could not afford to. This project suggests that a maligned architectural typology — the duplex — can be built affordably without sacrificing architectural integrity. With an "all in" budget of \$290,000 (not including the cost of land), the project provides affordable rents while satisfying the clients' economic pro-forma.

The building challenges both the historic and the modern typology of the duplex. This building type was conceived to meet housing needs in lower-income municipalities and neighborhoods. While developers today use the duplex model in a way that creates suburban neighborhoods with negative identity, the Waldo Duplex looks to the inherent benefits of duplex construction to redefine the typology. Traditional duplexes isolate their tenants on either side of a partition wall. The Waldo Duplex unites them through the contextual tradition of the front porch. In a larger sense, this project seeks to understand why affordable housing solutions often fall short. Typical affordable housing design advances perceptions of inequality. This project suggests that affordability and thoughtful architecture are not mutually exclusive. It is the beginning of an important conversation.

The accommodation of a range of incomes by the Waldo Duplex continues the diversity that defines this neighborhood today. Projects like this ensure that Waldo maintains its unique character long into the future.

The Waldo Duplex was designed and built by a group of 5th year architecture students from a nearby university. Students worked alongside a licensed architect leading the studio, professional engineers and an architect-contractor. They participated in all aspects of the process from schematic design through construction documentation and shop drawings, schedule and budget management to assisting with framing, siding and flashing detailing, site work, interior finishes, electrical work and technology. The students self-performed all work associated with the porch (concrete work, steelwork, lighting installation), casework and translucent interior panels. A handful of students became AWS-certified structural steel welders. Plumbing, interior concrete work, mechanical installation and landscaping were handled by subcontractors. The students learned to work as a cooperative design-make atelier, with the results speaking for themselves. Equally important to learning the “how to,” the students learned “why it matters” and “who the work is for.”



7509A

7509B

**THE WALDO  
DUPLEX**

*Pennsylvania Avenue elevation in the evening*



**Waldo is a diverse neighborhood in southern Kansas City that doesn't play by the rules of traditional urbanism, but has flourished nonetheless.**

The major commercial and industrial corridor along Wornall Road is immediately flanked by established neighborhoods of single-family bungalows and shotgun homes. Here, opportunities are found for typological experimentation and architectural innovation.

The Waldo Duplex was designed and built to be a solution to a significant problem in Metropolitan Kansas City.

Rent is rising at a rate higher than the national average, negatively impacting lower-income neighborhoods like Waldo. Most intriguingly, the Waldo Duplex was designed and built by a group of 5th year architecture students from a nearby university as part of their final year studio project.

Targeting only households making less than 80% of area median income and implementing rent controls, this project will be home for two families that want to live and work in Waldo, but otherwise could not afford to. More importantly, this project suggests that a maligned architectural typology – the duplex - can be built affordably without sacrificing

architectural integrity. With an "all in" budget of \$290,000 (not including the cost of land), the project sought to provide affordable rents while satisfying the clients' economic model.

In a larger sense, this project seeks to understand why affordable housing solutions often fall short. Typical affordable housing design only advances perceptions of inequality rather than fights them. This project suggests that affordability and thoughtful architecture are not mutually exclusive. It is the beginning of an important conversation. Can we build affordably, satisfy a strict economic model, and support the dignity of the residents?



*"the urban wilderness of Waldo"*

1/4 MILE RADIUS 5-6 minute walk

500 FOOT RADIUS 2-3 minute walk

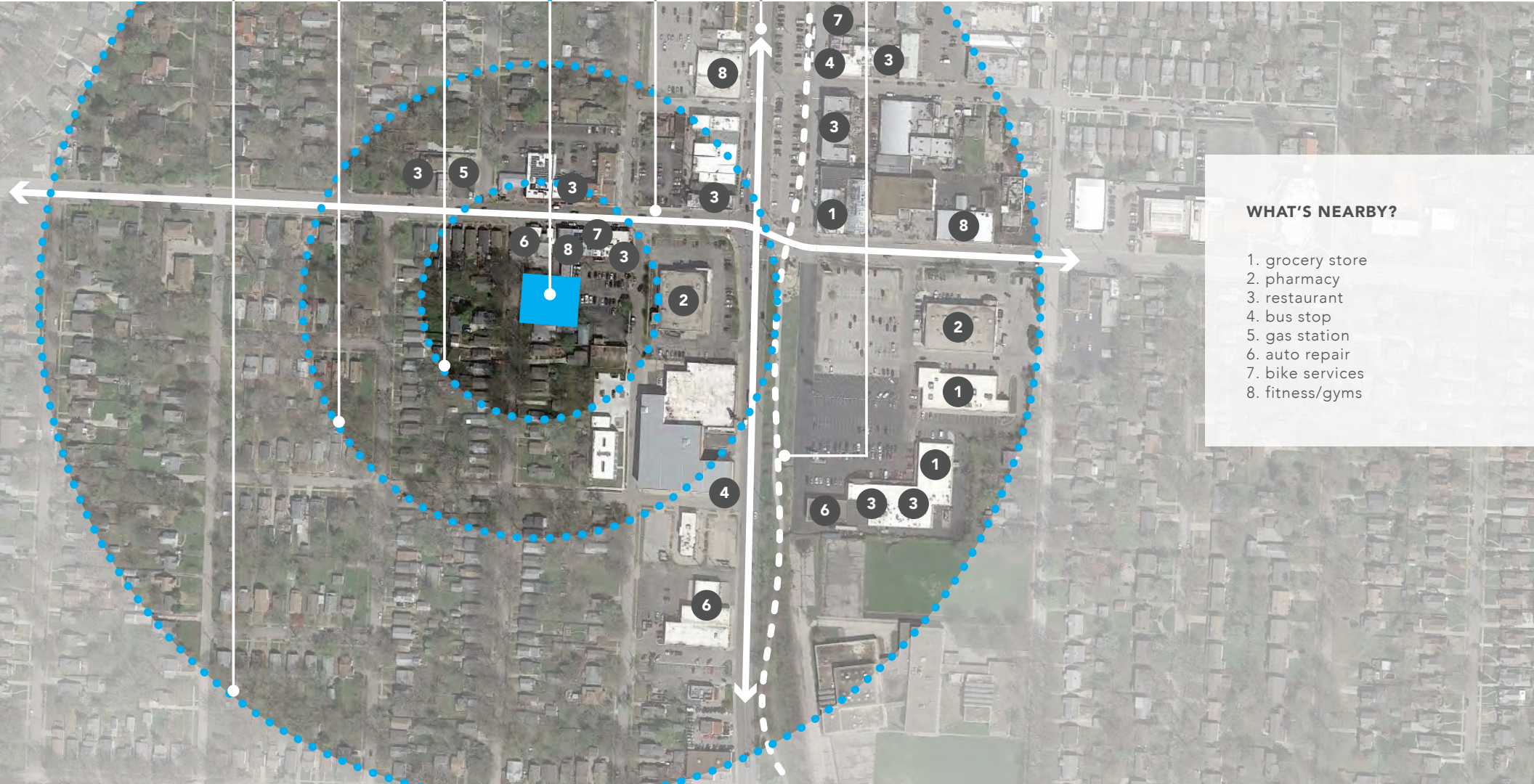
250 FOOT RADIUS 1-2 minute walk

### THE WALDO DUPLEX at 7509 pennsylvania avenue

75TH STREET major east/west local street

WORNALL ROAD major commercial corridor

TROLLEY TRACK TRAIL major recreational corridor



#### WHAT'S NEARBY?

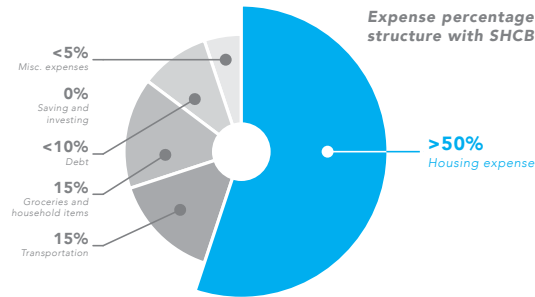
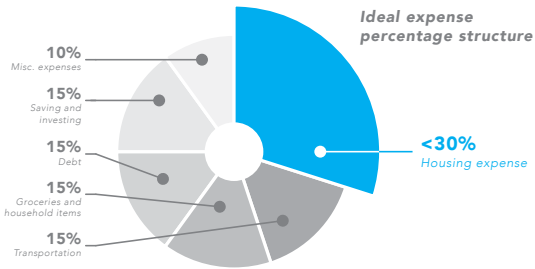
1. grocery store
2. pharmacy
3. restaurant
4. bus stop
5. gas station
6. auto repair
7. bike services
8. fitness/gyms



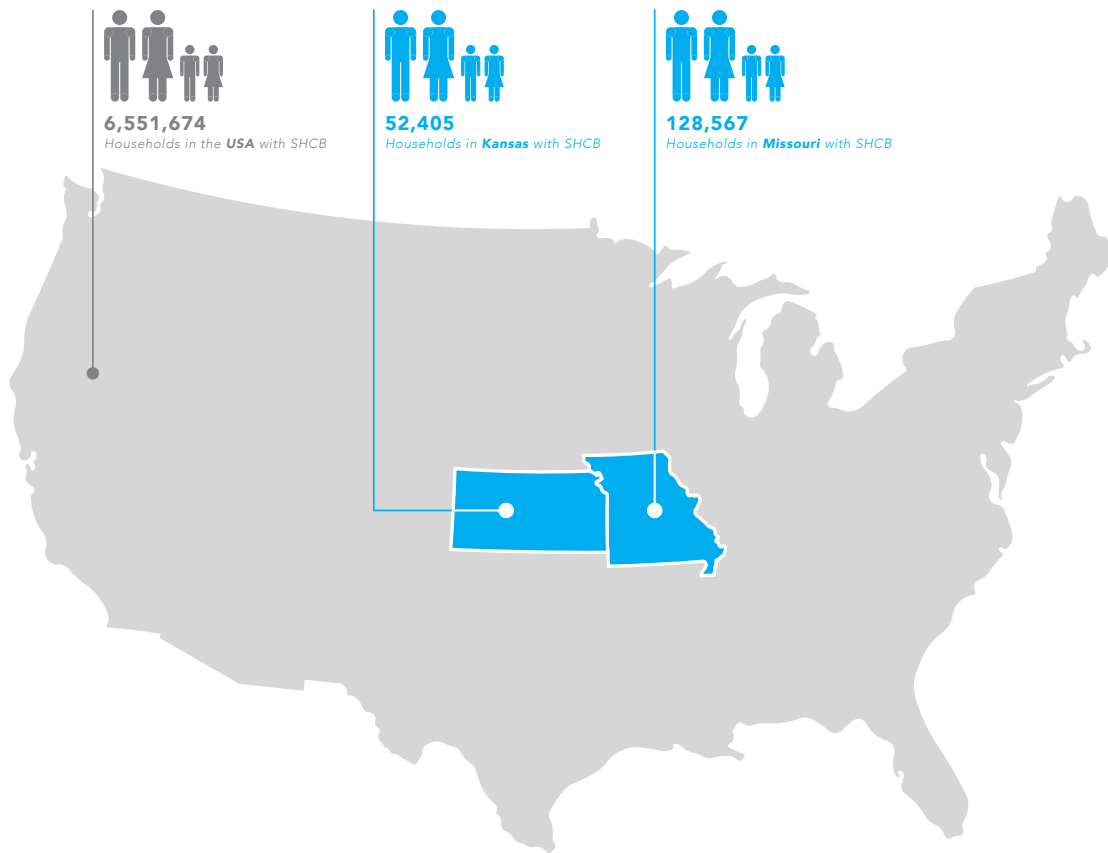
*Students were a part of every facet of construction, working alongside the contractor and other professional consultants. This included fabricating all elements for the front porch and building this portion of the project in it's entirety.*







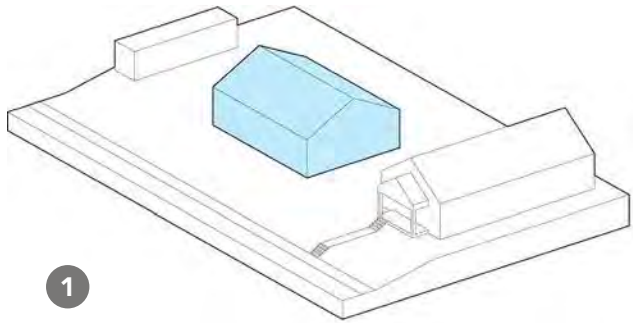
## Households With **SEVERE HOUSING COST BURDEN**



In Kansas and Missouri, there were 180,972 households in 2014 that paid more than 50% of their annual salary for housing. Spending an amount this disproportionate on housing is an unsustainable, undesirable lifestyle. It places these households at much greater risk of becoming homeless.

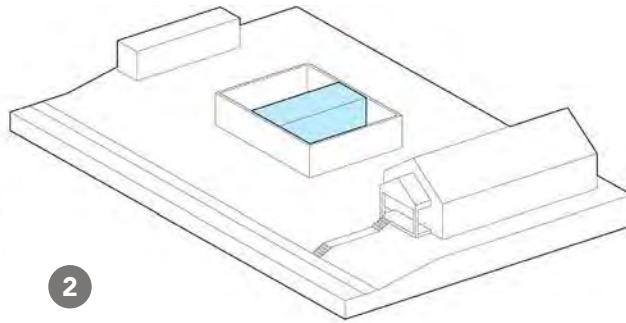
This isn't as visible of a problem as homelessness. It often goes unnoticed by the outside world. The Waldo Duplex is one solution to this problem.

Two households making less than 80% of average median income (AMI) will find a home here for 30% of their monthly wages, a well-established standard for affordable housing cost.



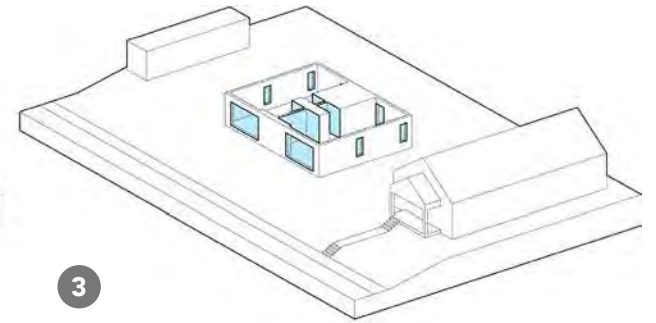
1

*erect affordable and simplified enclosure*



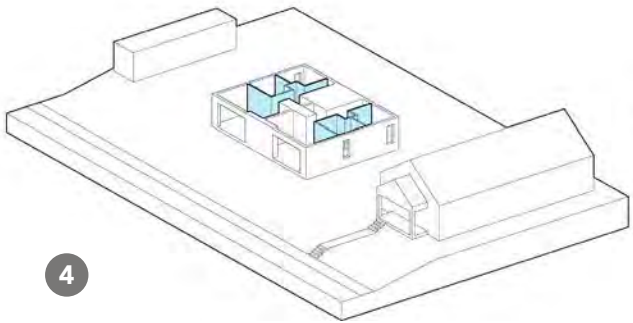
2

*place efficient infrastructure*



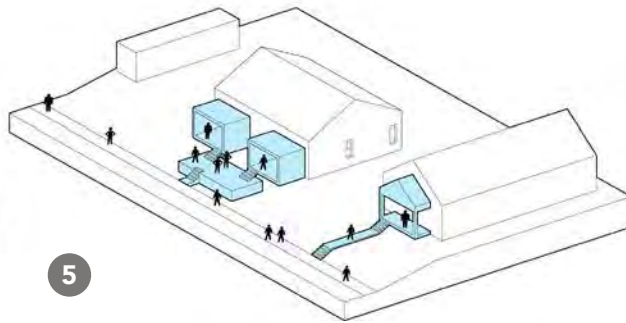
3

*maximize open floor space and opportunities for light*



4

*partition spaces for privacy only as necessary*



5

*contextualize and adapt to the local building typology*

Steps Toward  
**AFFORDABILITY**



*rear elevation in the evening*



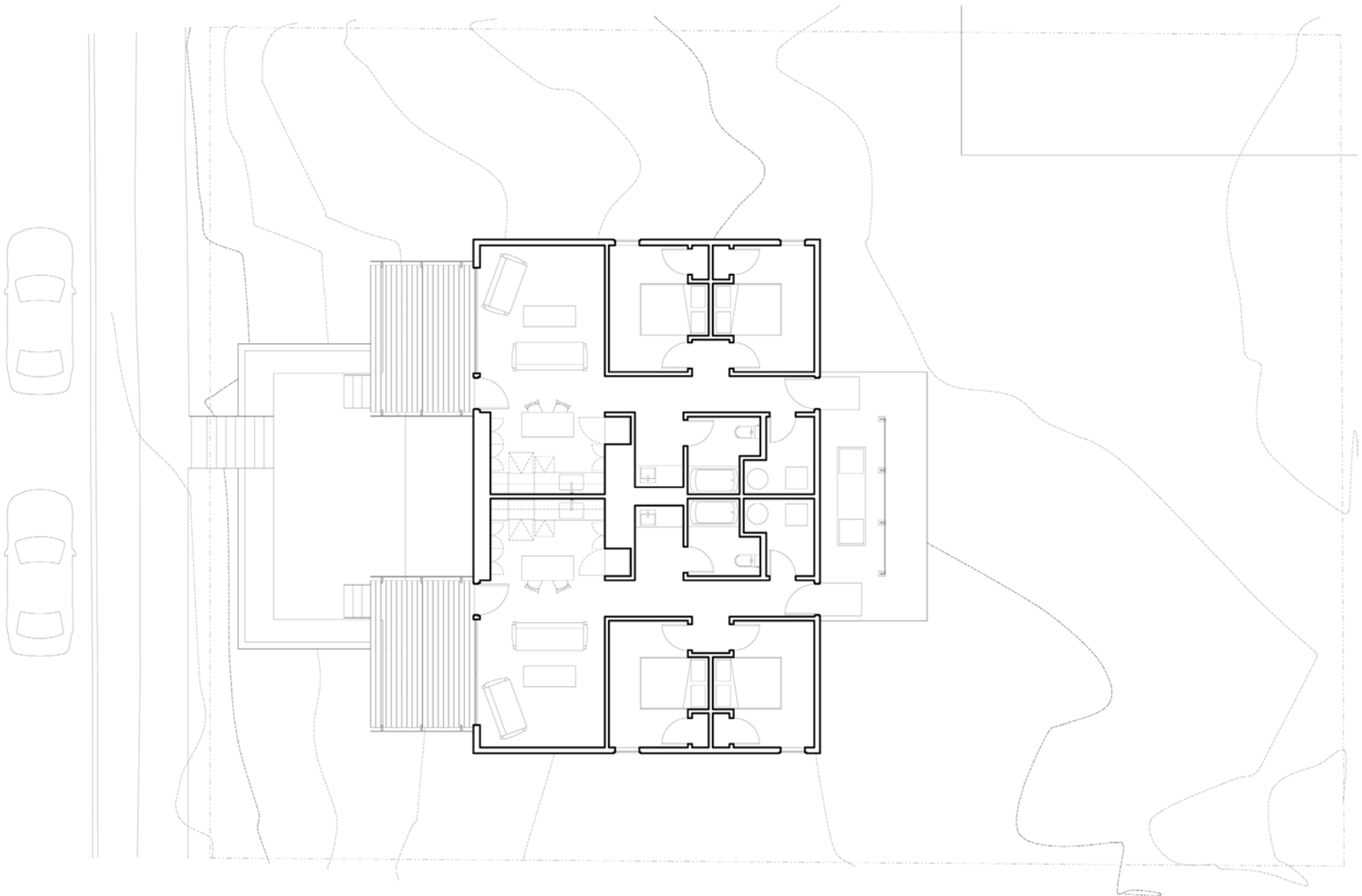
*Traditional duplexes isolate their tenants on either side of a partition wall. The Waldo Duplex unites them through the tradition of the front porch.*



*the contextual front porch*



*exterior details and textures*

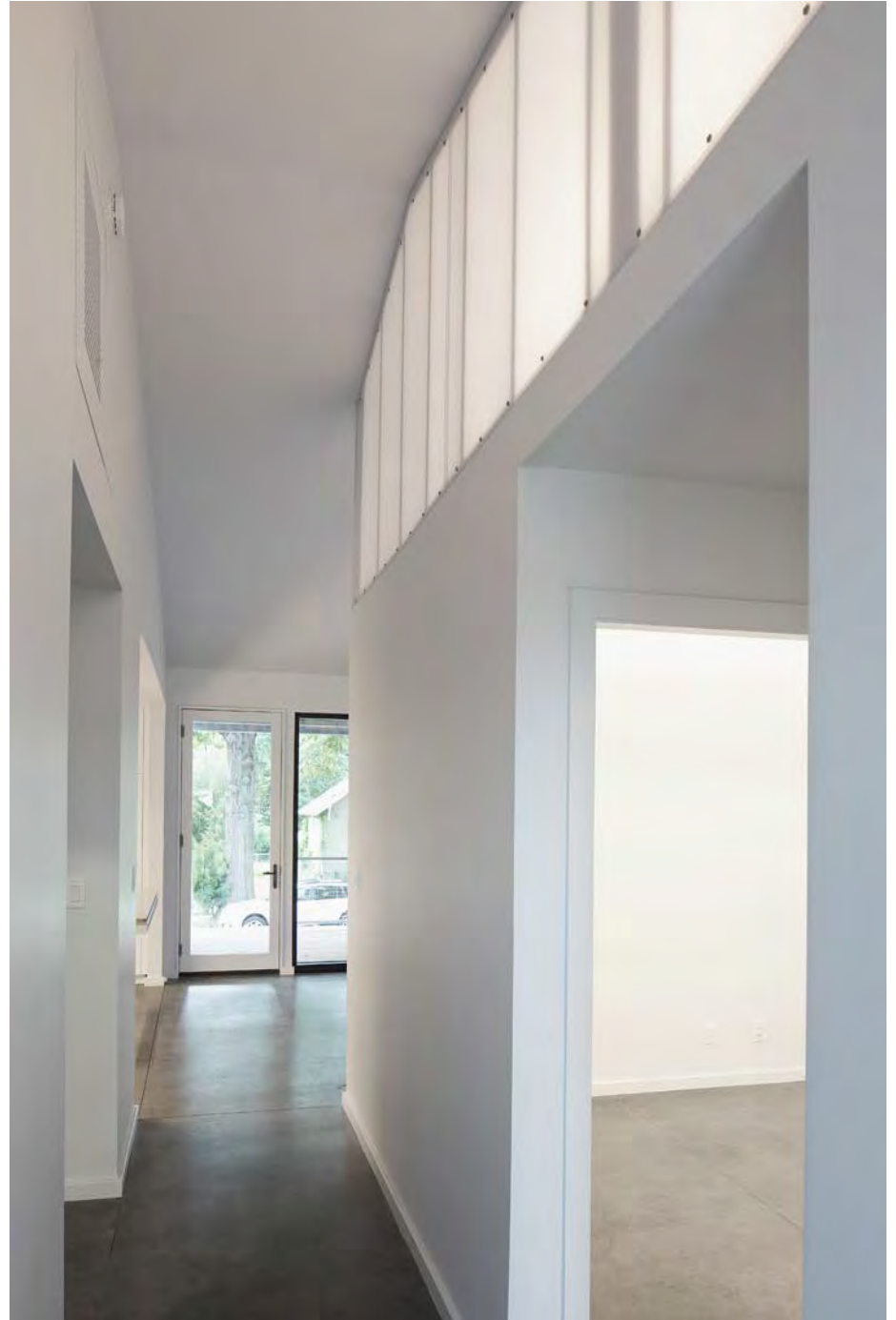


floor plan

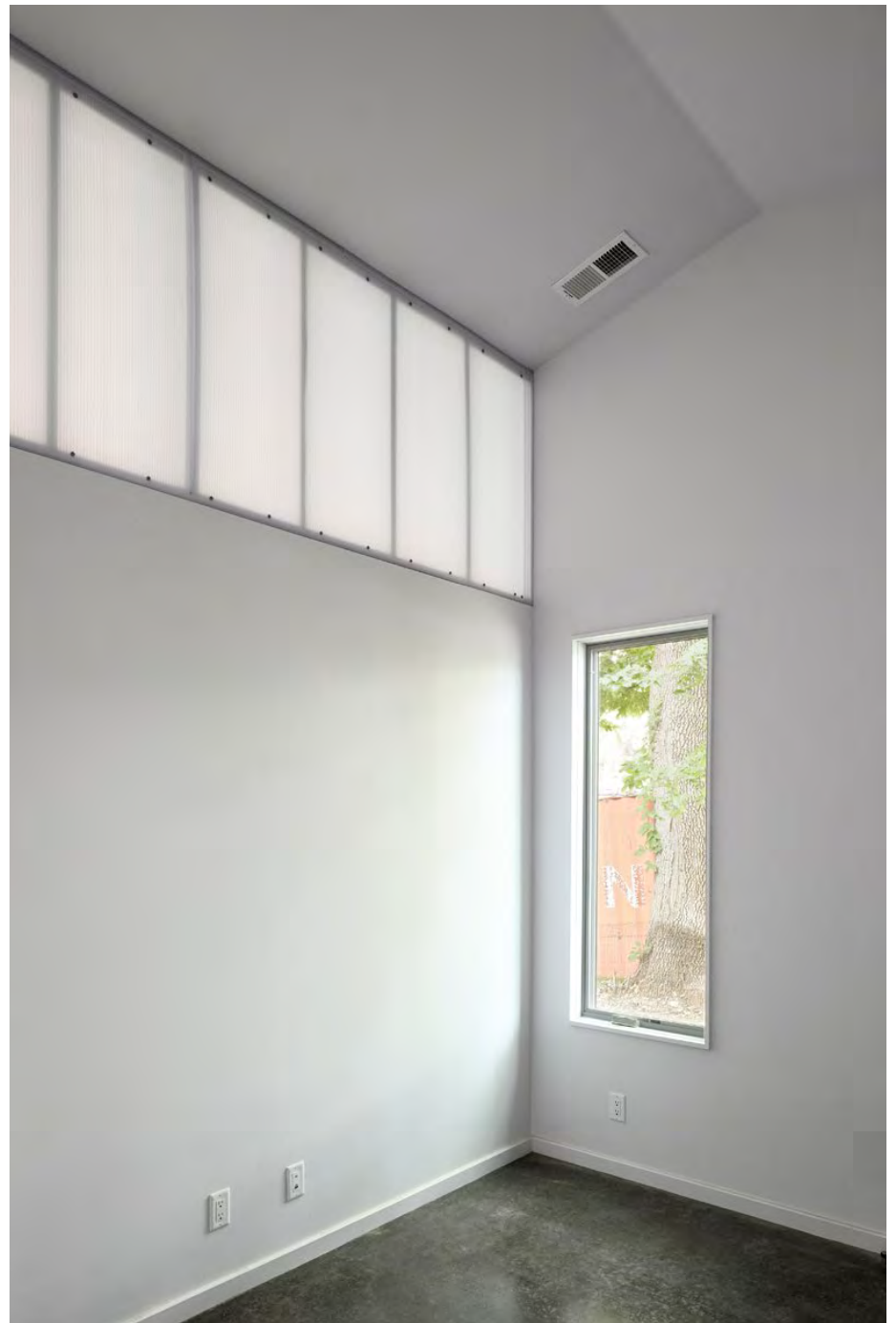


*south unit living room and porch*





*lighting strategies, both natural and artificial*



*borrowed light in the bedrooms*



*custom cabinetry fabricated and installed by the students*





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*Pennsylvania Avenue elevation in the evening*