

# PRESENTATION

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## DESIGN

## APPROACH

To most effectively communicate the innovative design and sustainable building practices used in the Alley House, Cardinal Studio created easy-to-follow diagrams, detailed graphics, engaging renderings, and a written and verbal presentation structure that is memorable, informative, and educational for the audience. The presentation style clearly communicates the project's goals and objectives, materials selection and assessment criteria, and technical strategies used to reach a net-zero, two-family home concept. Cardinal Studio also used icons, diagrams, and a color-coded hierarchy to tell the story of the Alley House and its energy-efficient and renewable design solutions.

# CONTEST OVERVIEW



The design and build of the Alley House for the Solar Decathlon competition was achieved by Cardinal Studio, a team comprising students and faculty from Ball State University's College of Architecture and Planning (CAP) in Muncie, Indiana, and BSU's CAP: Indy campus, in partnership with representatives from several community organizations and industry partners. The Alley House is located at 201 N. Temple Avenue Indianapolis, Indiana. Cardinal Studio's primary partner was Englewood Community Development Corporation, which supports and revitalizes the community of Englewood through economic development, affordable housing and support programs. From the start, Cardinal Studio made community engagement a priority. Its partnership with Englewood CDC enabled the team to organize several community outreach activities in 2022 and 2023 to inform project planning, and project partners participated in as many of these events as possible. In fall 2023 working with Cedar Street Builders as a partner in the build of the Alley House, we also hosted events to celebrate the work of the contractors, sub-contractors, and student collaborators.

## EDUCATIONAL OPPORTUNITIES

Part of the location choice criteria for Alley house was based on the amount of exposure community members would have with the innovative net-zero energy design. The team determined the combination of the liveliness of porch culture of Temple Avenue and the pedestrian connection along the east-west alley to the south of the Alley House were factors that contribute to the education of the community.

The Alley House is a unique design being that it contains two-family home with two units located front to back along the south facing alley. The West Unit net-positive with solar panels as renewable energy, while the east unit is above code-compliant design. This not only offers great research opportunities but also some visual learning opportunities. While walking past the Alley House community members are exposed to the numerous high-performance building design features like;

- The 8.8 kW solar PV array along the roof of the west unit
- The 5 inch offset of the west and east unit indicating the increased amount of continuous insulation in the west unit
- Shading strategies like larger roof overhangs and first floor pergola to help prevent heat gains from summer sun
- Sustainable SITE features such as accessible planters, rain barrels and native plants
- EV Charging



View from east-west alley Looking at the South Facade of the Alley House



Northeast view of east unit showing parking pad and EV charger located on the north corner of the building

# SCHEDULE OF PUBLIC EXHIBIT

## COMMUNITY EXHIBITION STRATEGIES PLANNED

Cardinal Studio's public exhibit will impact its target audience by demonstrating clearly the work of its incredible team of students, faculty, advisors, consultants, contractors, sub-contractors, community partners, and industry sponsors who have contributed their time and energy to making the Alley House a success as an affordable net positive energy, two-family home. During the Grand Opening Celebration on April 4, 2023, Cardinal Studio will thank this dedicated team. Over 200 individuals are expected to attend.

Working with Ball State University's Office of Marketing and Communications, Cardinal Studio invited alumni from the seven departments in the College of Architecture and Planning (CAP): Architecture, Landscape Architecture, Urban Planning, Urban Design, Historic Preservation, Construction Management, and Interior Design. From the first, the design and build of the Alley House has been an interdisciplinary project involving collaboration between students, faculty, professionals, and alumni from all these disciplines. Cardinal Studio targeted this audience to provide valuable opportunities for the student team both to share its work and to network with successful and prominent CAP alumni during the CAP Alumni Tour Day on April 5.

Public tours highlighting the sustainability and renewable energy aspects of the Alley House will be given on April 4-18, with a few days set aside for private tours. On weekend public tour dates, Cardinal Studio will host numerous community-based events and fun, family-friendly activities. The schedule lists specific tour dates, times, and activities with events of interest for media coverage.

April 4, Tuesday | 4 pm – 8 pm

Alley House Grand Opening Celebration

April 5, Wednesday | 4 pm – 8 pm

Ball State CAP Alumni Day Tour

April 6, Thursday | 4 pm – 6 pm

American Institute of Architects (AIA) Presentation and Tour

\*Presentation at the CAP: Indy Center, 25 N. Pine Street, followed by Alley House Tour, 201 N. Temple Avenue. Continued Education Units (CEUs) for Professionals will be provided.

April 8, Saturday | 10 am – 4 pm

Alley House Neighborhood Party and Tour

\*This family-friendly event will feature food, music, an Easter egg hunt with small prizes for children, and a tour of the duplex. Information about The Alley House will be available.

April 10-12, Monday and Wednesday | 11 am – 3 pm

Neighborhood School Tours

Paramount Middle School, Arsenal Tech, and Purdue Polytechnic High School Alley House Tour and Educational Event (Invited Guests)

April 11, Tuesday | 4 pm – 6 pm

Neighborhood Association & Local Non-Profit Organizations

April 14, Friday | 1 pm- 3 pm

RQAW Architectural and Engineering Firm

\*Sustainability Team (Invited Guests)

April 14, Friday | 3:30 pm – 5:30 pm

CAP Students & Admitted M. Arch Student Day Tour

April 15, Saturday | 10 am – 4 pm

Ball State Day at The Alley House

\*This day will feature games, music, food, and educational tours. This event is open to the public. It will also be a special opportunity for Ball State faculty, staff, students, and alumni to gather in celebration of The Alley House. Guest speakers expected to be in attendance include President Mearns, Dean Ferguson, faculty leads, and student team leads.

April 16, Sunday | Noon – 4 pm

Open to the public

April 17, Monday | 4 pm – 6 pm

Guidon Design Tour

\*Sustainability Team (Invited Guests)

April 18, Tuesday | 3 pm – 5 pm

Department of Architecture Faculty

\*Faculty Retreat followed by Capstone Closing Event of Public Tour of the Alley House and send-off of Solar Decathletes to travel to Golden, Colorado.

## PUBLIC EXHIBIT

Our approach to reaching a target audience for our public exhibit begins with the incredible team of students, faculty, advisors, professionals, consultants, contractors, subcontractors, community partners, and industry sponsors that have contributed their time and energy to making the Alley House a successful net-zero energy, two-family, affordable home.

Our **Grand Opening Celebration** on April 4th from 4:00 – 8:00 pm will give heartfelt thanks to this team of 200+ individuals, evidenced by the spreadsheets for invitations the team has sent out!

## SIGNAGE

Working with the Ball State marketing department the team has developed several versions of information files and investigations to multiple events through this competition. We also developed on-site signage to help thank our sponsors for this project. We could not have completed this project without them.

Along with mailing and emailing fliers students have taken a hands on approach by walking throughout the neighborhoods to meet community members and invite them to come check out the high-performance home being built.

Coordination with local schools have also started to take place to encourage classes to come take tours to learn more about the design.



Image Title

# SAVE THE DATE

## TO TOUR THE ALLEY HOUSE!



**Tours begin  
April 4th thru 18th**  
201 N. Temple Avenue  
Indianapolis, Indiana



The U.S. Department of Energy Solar Decathlon Build Team from Ball State University's R. Wayne Estopinal College of Architecture and Planning invites you to come tour the student designed Alley House.

The students will guide you through their two-family home built on an infill lot in Indianapolis' Near Eastside with community partners Englewood Community Development Corporation and Cedar Street Builders.

### Join us for one of our tours.

Tours begin April 4<sup>th</sup> thru the 18<sup>th</sup>

Visit Weekdays | 4:00 pm to 6:00 pm  
Saturdays | 10:00 am to 4:00 pm  
Sundays | noon to 4:00 pm

**201 N. Temple Avenue, Indianapolis, Indiana**

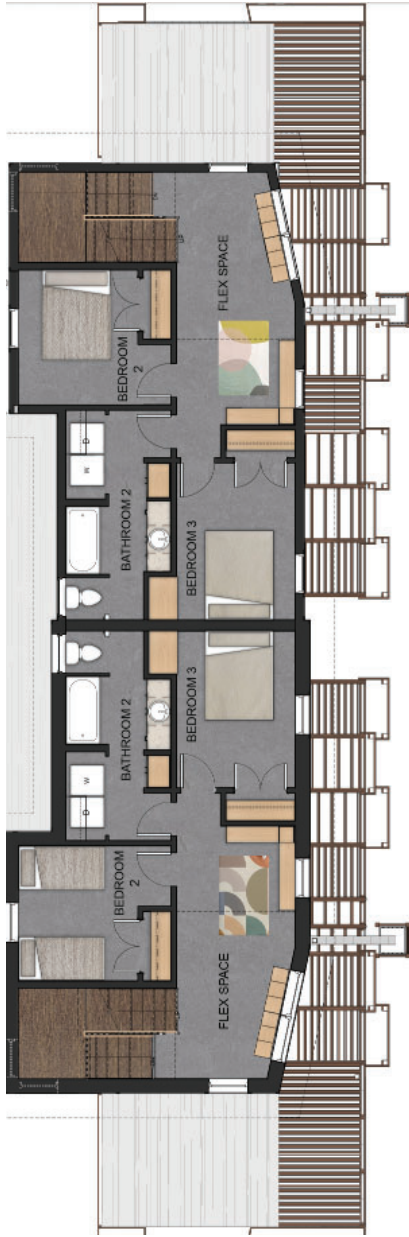
### Special Days of the Alley House Tours:

Design-Build Team of the Alley House: Grand Opening Celebration, April 4<sup>th</sup> 4:00  
With all students, faculty, advisors, professionals, consultants, contractors, sub-contractors, community partners, and industry sponsors of Alley House!

Ball State Alumni Day and One Ball State Day of Giving, April 5<sup>th</sup> 4:00 - 6:00 pm  
With all College of Architecture and Planning (CAP) Alumni invited!



Cardinal Studio sharing their design and progress on the project



Second Floor Tour Route



First Floor Tour Route

# CARDINAL STUDIO

## SUMMARY OF EVENTS

### COMMUNITY ENGAGEMENTS, PRESENTATIONS AND MORE

From day one Cardinal Studio has engaged with the community in several ways. The next few pages highlight the successful events which started in Fall 2021 and continue until today.

2021

#### OPEN HOUSE

Cardinal Studio hosted an Open House on **October 18, 2021**. Approximately 50 people attended, and Cardinal Studio students presented a variety of initial design ideas and building strategies for what would become the Alley House.

The goal of the Open House was to solicit feedback from members of the Englewood community and recruit industry partners for the Alley House. The feedback provided informed the design development of the project. During the Open House, a groundbreaking ceremony was announced for the following year, and community residents and potential investors were invited to attend that event.



Community members and industry professionals Listened to and Gave Feedback on Several Design Ideas (2021)

2022

#### DAYCARE EVENT

In June 2022, Cardinal Studio visited Daystar Childcare and Infant Learning Center, a three-minute walk from the Alley House site on 201 N. Temple Avenue. This event was organized by Englewood CDC and Cardinal Studio.

The team brought the full-scale mock-ups of the proposed storage units and cabinets to observe how children interacted with them and to gather additional feedback. Students played with the children and asked parents for their opinions of the cabinetry designs. It was important to gather both types of feedback in order to create designs that were simple and easy-to-use for both parents and children.



Student Engaged with Local Children to Receive Feedback On Their Storage Unit Design (2022)

2022

## GROUND BREAKING

Cardinal Studio and Englewood CDC held a groundbreaking celebration July 2022 to engage with the community and share with them the design of the Alley House sited in their neighborhood.

The team set up educational stations at the 201 N. Temple Avenue site so that for community members could learn more about the Alley House as a high-performance dwelling and participate in the collection of soil samples. Community members gathered information from fliers and the renderings and floor plans displayed on-site. Children especially loved digging up soil samples.

The team stayed on-site for most of the day, interacting with neighborhood residents members of a local church. By the end of the day, about 70-100 people and members of local businesses, churches, and non-profit organizations had come to the site to learn of the two-family housing unit that would become the Alley House, have fun, and eat some good food. The groundbreaking was an enjoyable success both for the community and for Cardinal Studio.



Attendees Listed To Future Plans And Engaged In The Collection Of Soil Samples To Mark The Ground-Breaking (July 2022)

2022

## DAY OF ACTION

Ball State University participates in the United Way Day of Action every fall semester to encourage students to engage in a number of volunteer opportunities in the community. In fall 2022, Cardinal Studio welcomed new undergraduate architecture students to the Alley House team. A small group of undergraduate, graduate, and faculty returned to MadJax to continue working on kitchen cabinetry, and other woodworking projects, such as the media center built-ins and work/play space built-ins, would be built in MadJax in Muncie by Cardinal Studio.



Students From All Disciplines Volunteered To Help Build Cabinetry For The Alley House (2022)

2022

## TOPPING OUT CELEBRATION

A “Topping Out” Celebration of the Alley House was held on Monday, December 19th. Originally a Scandinavian Tradition, the practice of “topping out” a new building can be traced to the ancient rite of placing a tree atop a new building to appease the tree-dwelling spirits displaced in its construction. For the Alley House ceremony, each member of the framing crew and the visitors were given a ribbon to tie around the tree. A Scandinavian mulled spice drink and refreshments were served following in the spirit of the “Topping Out” tradition.



Students and Framing Crew Joined to Celebrate The Project With A “Topping Out” Celebration (2022)

2022

## CARDINAL STUDIO PRESENTATIONS

Cardinal studio has taken opportunities to present the Alley House to a variety of groups that include an AIA Indiana Continuing Education Unit (CEU) Webinar, the Ball State University’s Board of Trustees, Government officials at Indiana’s CAP and BSU Day at the Statehouse and Ball State University Committee on the Environment (COTE).



CAP and BSU Day at the Indiana Statehouse



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Faculty and Student Presentation at CAP



# ON-SITE INVOLVEMENT

## STUDENT INVOLVEMENT

As construction on the Alley House continued, students have had many active roles and responsibilities on site. Students checked have continuously been on site to check on construction, participate in installation of HVAC and insulation. Students also designed, built and installed the cabinetry in both units.



MEP Installation



Second Floor Framing Review



Blown-In Insulation Installation



Installation of Student Built Cabinetry



Installation Stair Railing



## WEB SITE & SOCIAL MEDIA

With the development of the [Alley House Website](#), information about the project continues to become more accessible to larger audiences and individuals located around the country.

The launch of the Alley House website (<https://sites.bsu.edu/sd-buildindy/>) has disseminated information about the project to larger audiences and individuals worldwide.



### Join us for a Tour of the Alley House!

We are excited to invite you to tour the Solar Decathlon Build Challenge competition project, Alley House, a sustainable and innovative home designed by a team of students from the College of Architecture and Planning at Ball State.

The Solar Decathlon Alley House is a student-led project showcasing a sustainable net-zero energy home that incorporates features such as solar panels, energy-efficient appliances, rainwater harvesting, and much more. The house is designed to be beautiful, comfortable, and environmentally responsible, providing a glimpse into the future of sustainable living.

We would love for you to join us for a tour of the Alley House and learn more about our team's vision and the features of this unique home. You'll have the opportunity to see firsthand how we've integrated sustainable practices into every aspect of the design and construction.

Join us for a tour of the Alley House!  
201 N. Temple Avenue, Indianapolis, Indiana

[ALLEY HOUSE TOUR SCHEDULE](#)

### About Solar Decathlon

#### ALLEY HOUSE

Design Approach  
Neighborhood Alleys  
Team & Contributors  
Our Client

#### CONTACT & SUPPORT

OTHER SOLAR DECATHLON DESIGN COMPETITIONS  
Attached Housing Design Challenge  
Education Building Design Challenge  
Office Building Design Challenge

#### FOLLOW OUR PROGRESS

#### BLOG STORIES

CAP Students Design and Build a House  
Ball State Students Advance to Build Their House and Place Second in Design Challenge  
Ball State CAP Celebrated the Future Build of the Eco-Friendly Duplex, Alley House  
Ball State Solar Decathlon Project History  
College of Architecture and Planning  
Student Teams Advance to Finals of Solar Decathlon Competition  
Ball State Places in the Solar Decathlon Competition

bsu\_master\_architecture 20m



Cardinal Studio has used Instagram as a platform to aid in spreading awareness about the high-performance design and the Alley House progress:

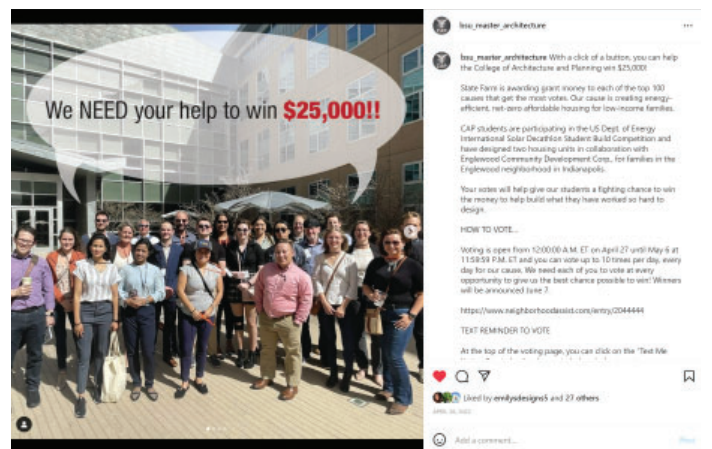
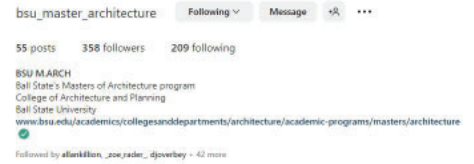
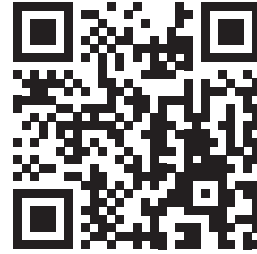


**FOLLOW US ON OUR SOCIAL NETWORK**



@bsu\_master\_architecture

**SCAN ME FOR MORE UPDATES & INFO**



# THE ALLEY HOUSE

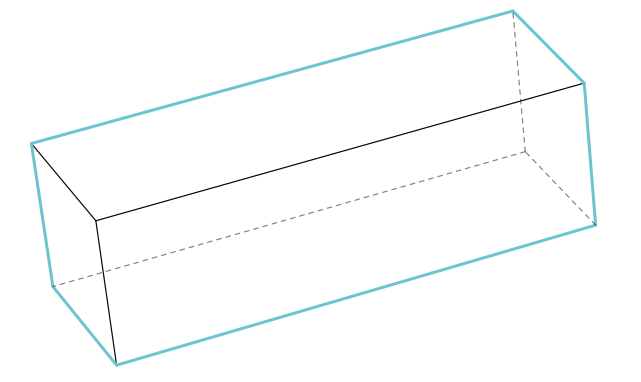
201 N TEMPLE AVE.,  
INDIANAPOLIS, IN 46202

Just east of downtown Indianapolis is the lively neighborhood of Englewood, a multi-cultural, multi-generational place to live, work, worship, learn, and play. Like many post-industrial communities in the Midwest, Englewood has experienced population decline, reduced rates of educational attainment, decreasing median household incomes, and high vacancy rates. The recent affordable housing crisis and deteriorating existing building stock have made this neighborhood a target for outside developers who are building at a fast pace using low-quality construction materials and are contributing to rising property values. Higher property values bring a positive impact such as an influx of capital into the area and increased beautification efforts in the neighborhood; however, they also negatively impact residents in the displacement of original households and by changing in the social character of the neighborhood. Although affordable senior housing has been developed in the Near Eastside (NES) of Indianapolis, this has not effectively addressed the shortage of affordable housing for families.

Research indicates that vacant and abandoned properties in the Near Eastside neighborhood continue to disturb the communities' economy, health, welfare, and safety. Indianapolis is not sheltered from these harsh realities. Yet, communities often respond to difficulties by finding opportunities. One such opportunity is the plan of Cardinal Studio and Englewood Community Development Corporation (ECDC) to re-engage this neglected community by constructing multiple family housing units on vacant lots owned by Englewood CDC.

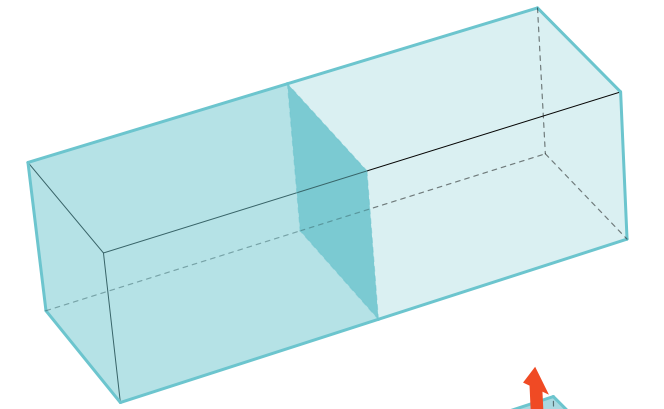
## INITIAL VOLUME

Long south face toward alley



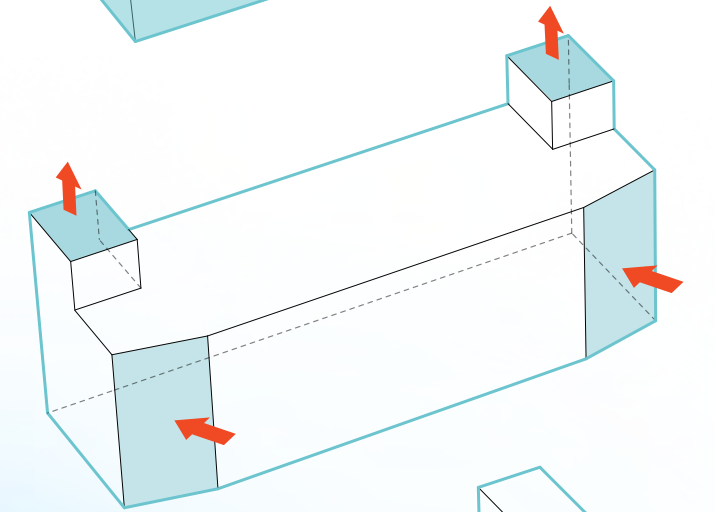
## CREATE TWO UNITS

Short demising wall between units



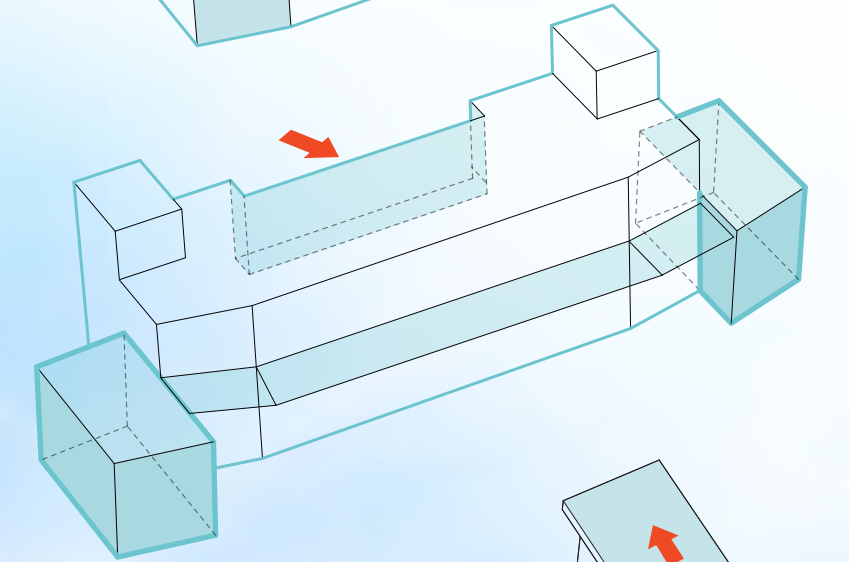
## EXTEND STAIR CORE & ACTIVATE THE ALLEY

Elevate stair angled wall for view to alley



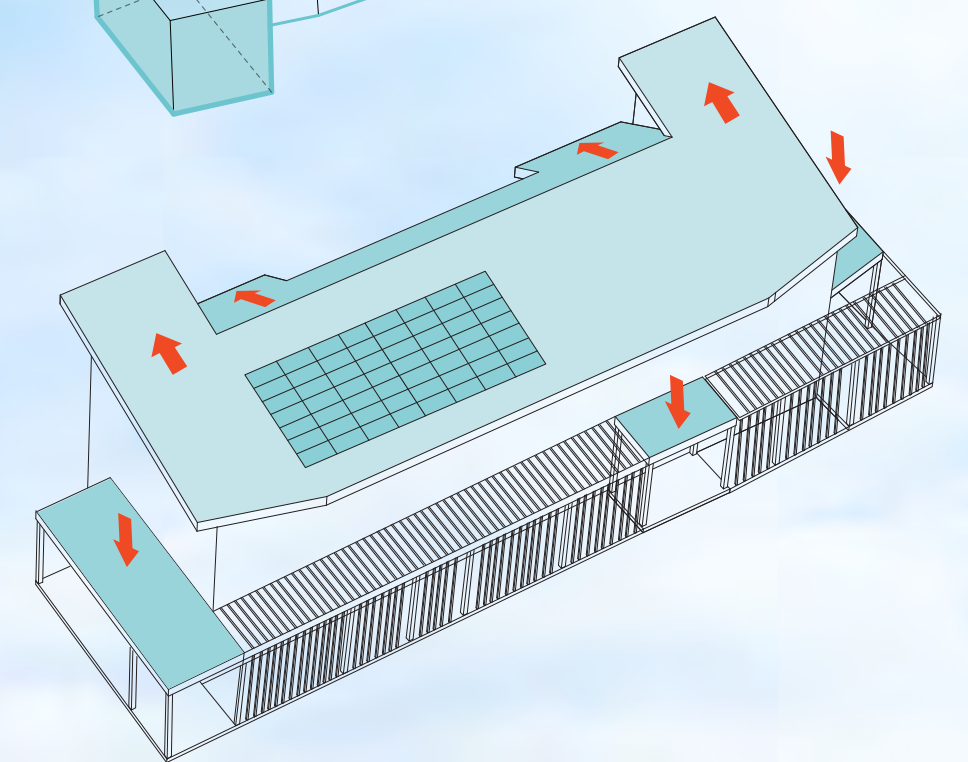
## DEFINING ENTRANCES & SECOND FLOOR SPACES

Porch placement and secondary entries



## ROOF PITCH STUDY & ADDITION OF EAST AND WEST PORCHES

Addition of PV array on 4/12 pitch facing south



SOUTHWEST PERSPECTIVE



NORTHWEST PERSPECTIVE



SOUTHWEST BIRDS EYE PERSPECTIVE

201  
N. Temple Ave

KEY

- Lots
- Existing Buildings
- Roadways
- East-West Alley
- Alley House Site

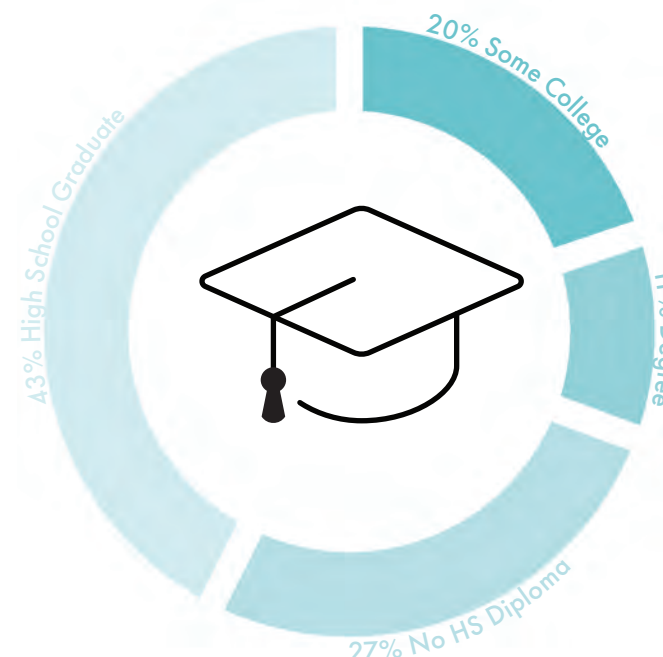
Vacant Lot

Vacant Lot - Part of Englewood CDC's Infill Project

**\$25K**  
Median Household Income

**\$12K**  
Median Net Worth

**\$11K**  
Per Capita Income



The Alley House is a two-family home, located in the Englewood Neighborhood of the Near East Side of Indianapolis. In conjunction with the Englewood Community Development Corporation, the Cardinal Studio has designed a home that directly responds to the needs, wants, and concerns of the community. Its **impactful and affordable** design and construction practices allow for future **adaptation and replicability** throughout the neighborhood. Part of Englewood CDC's larger plan to redevelop 20 vacant lots in the neighborhood, the Alley House strives to establish an **affordable and attainable** housing option within the neighborhood. Cardinal Studio, along with Englewood CDC, strives to create a **safe, adaptable** place for families to grow while combating local gentrification.

53.5%  
FEMALE



46.5%  
MALE



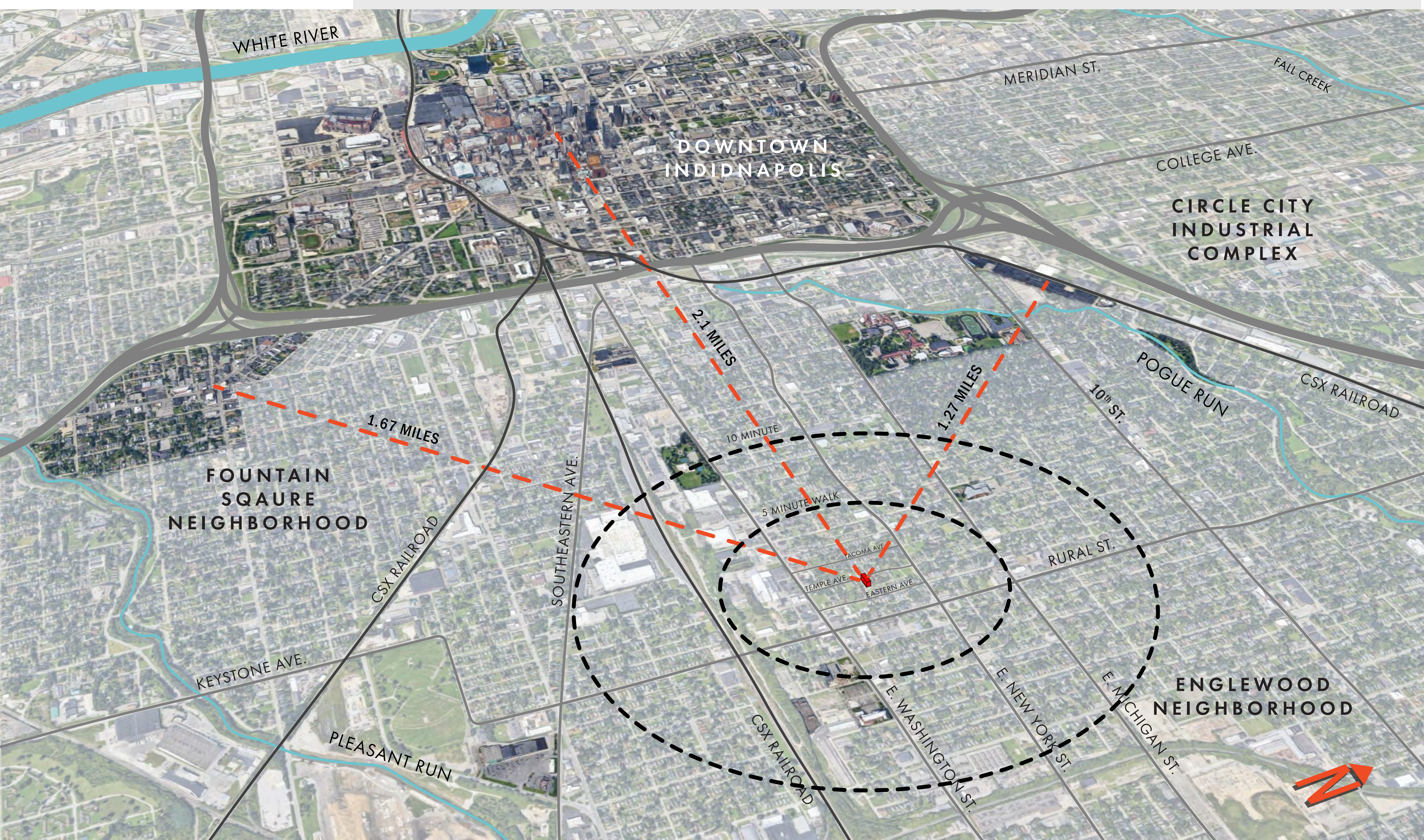
Walkability Score

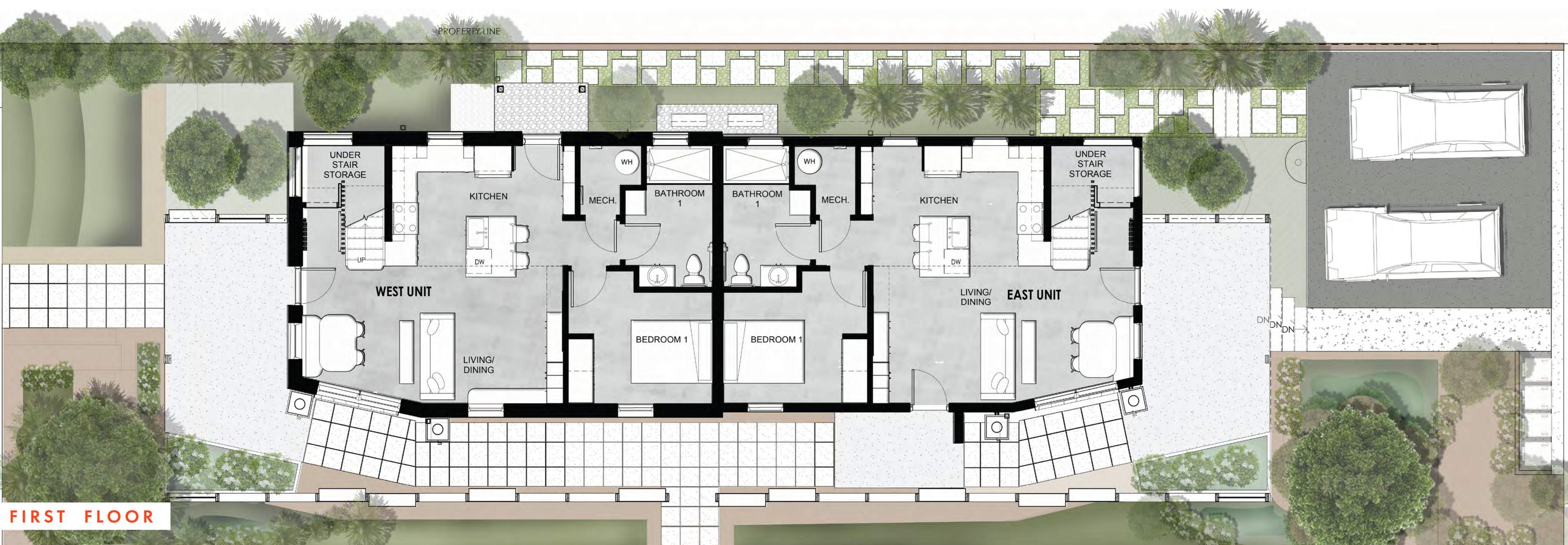
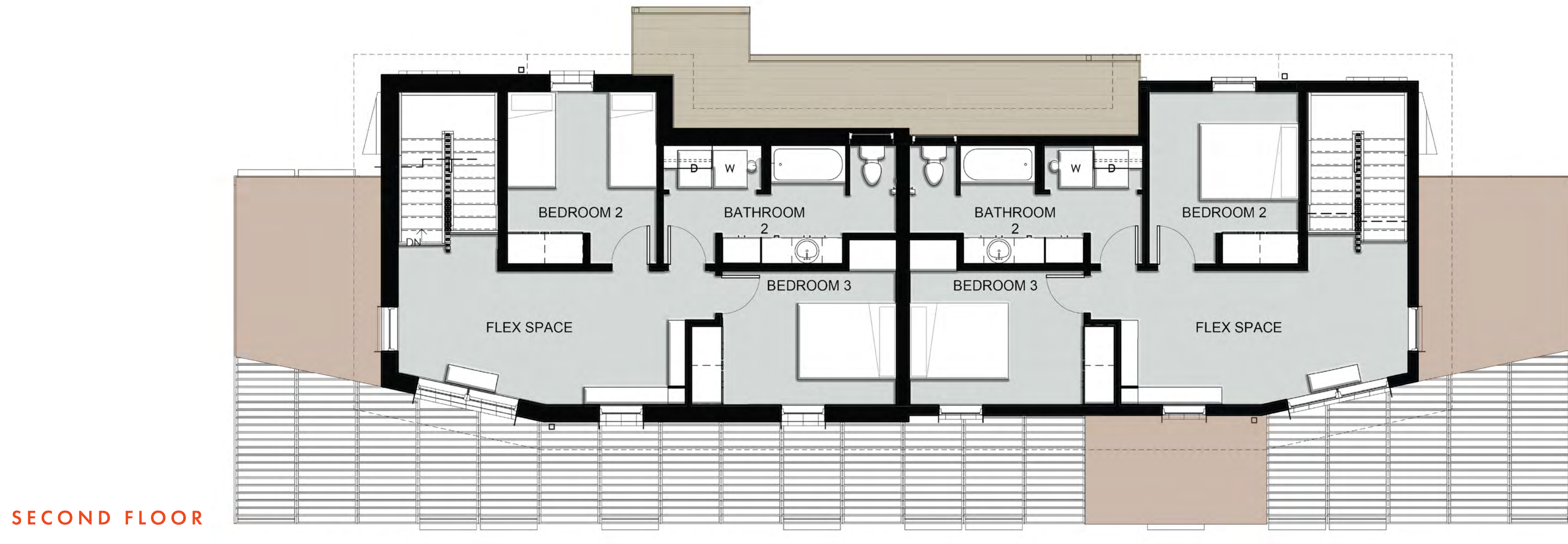
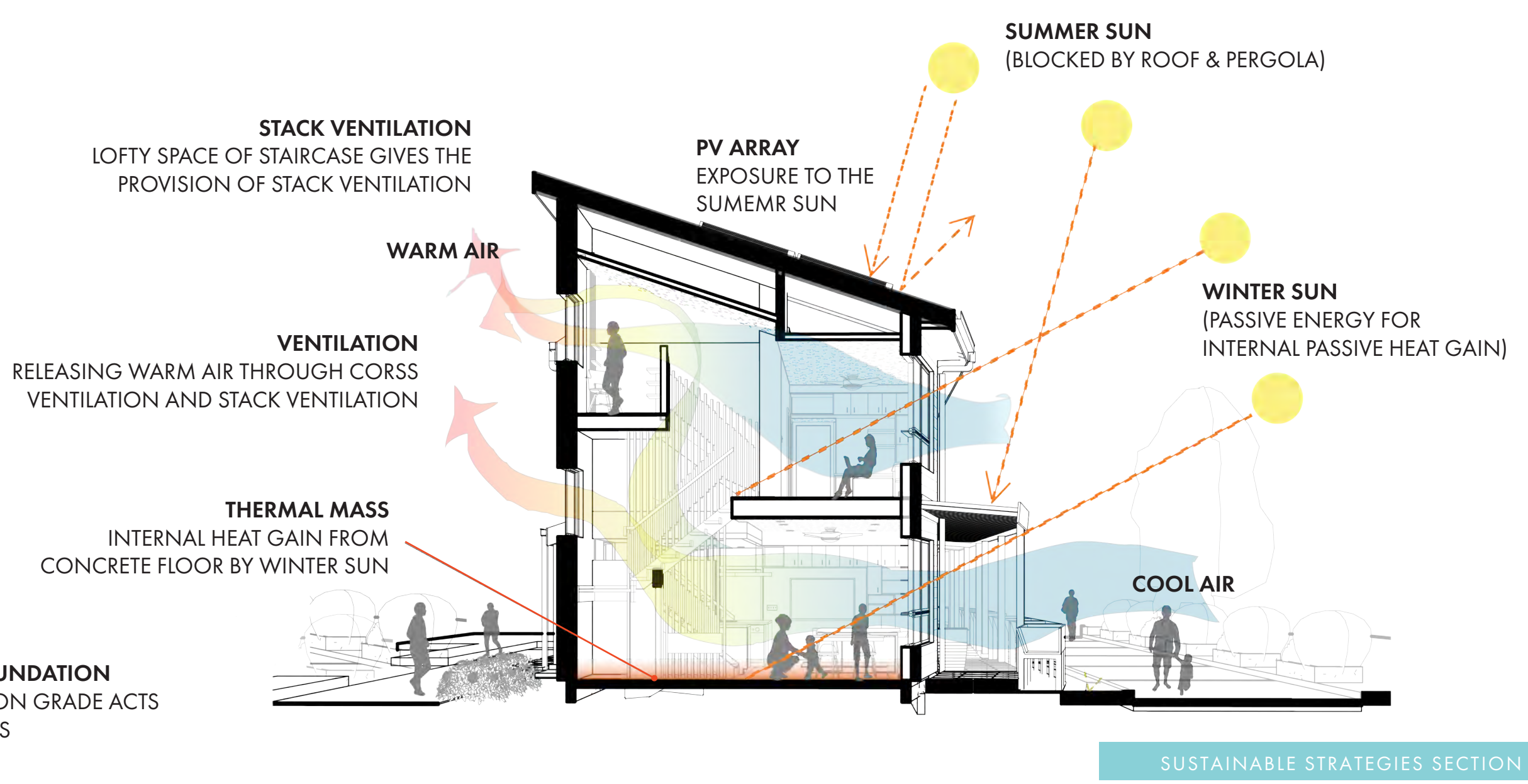
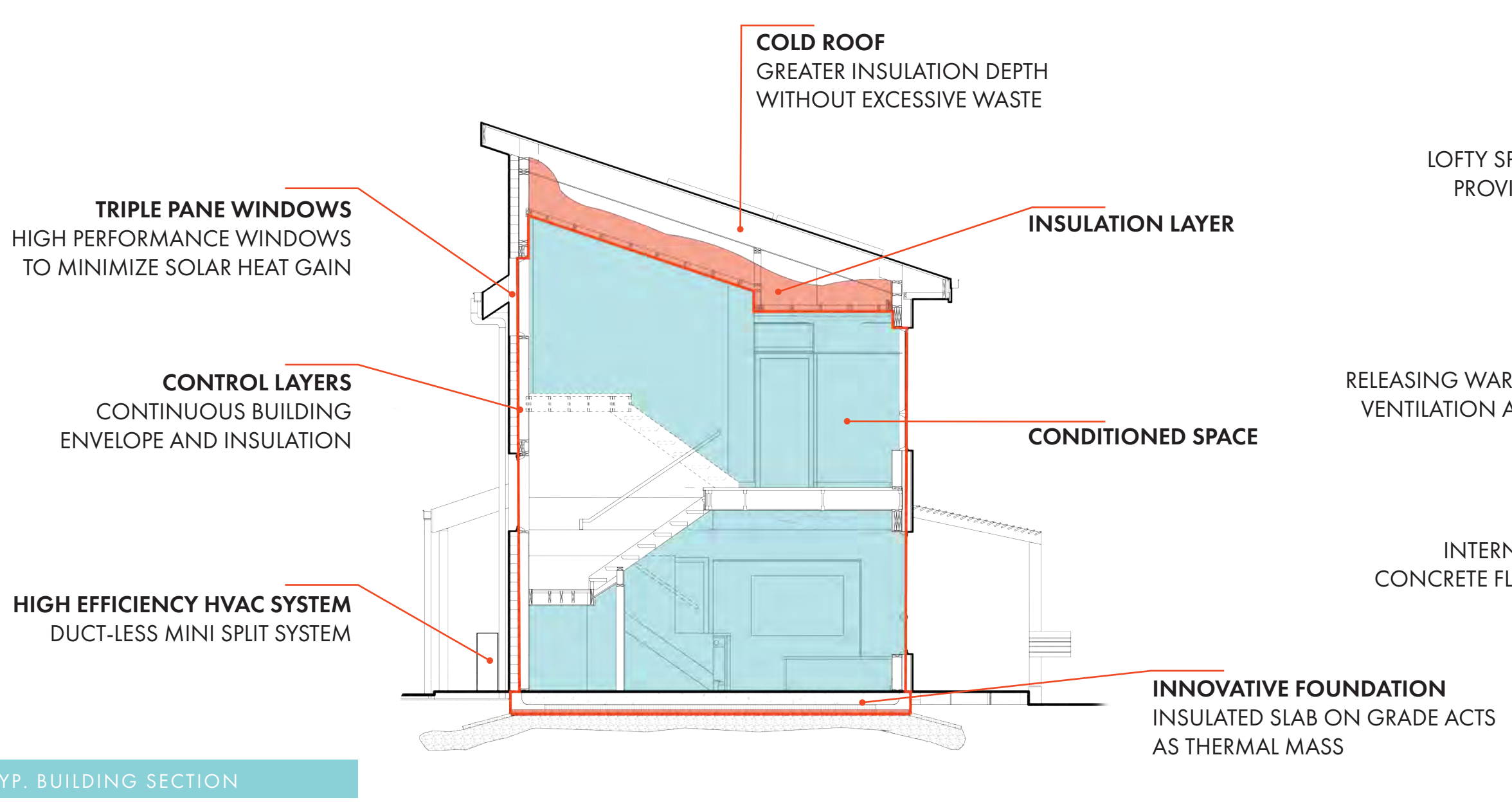
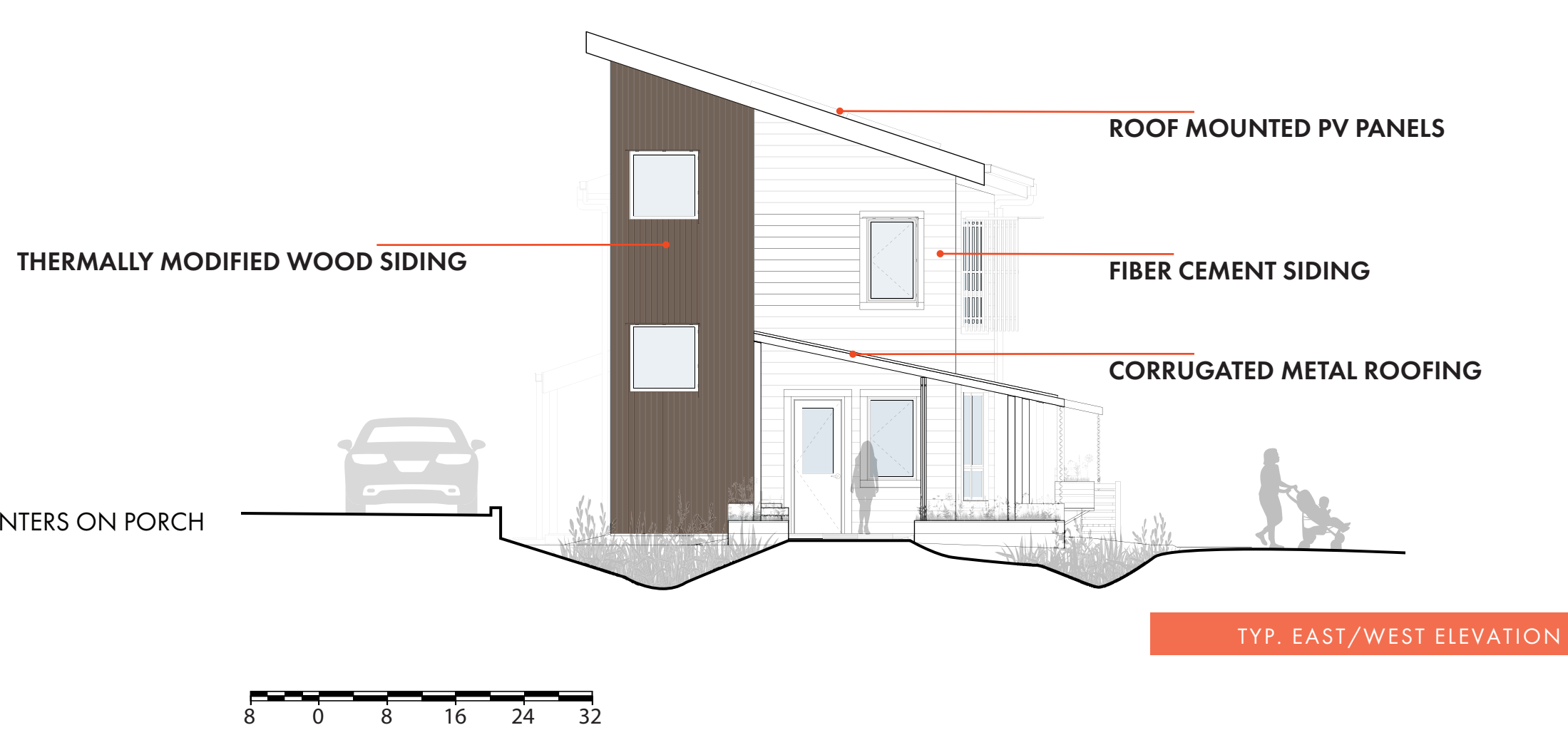
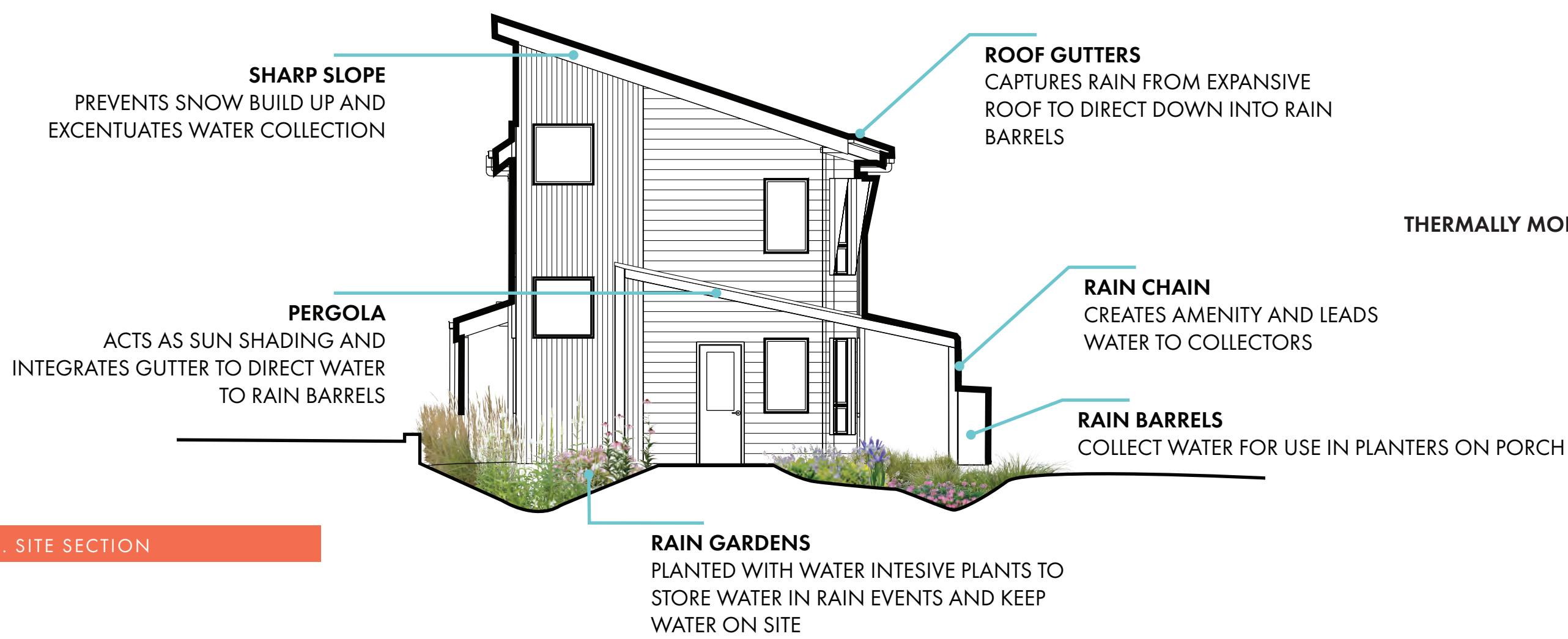


Transit Score

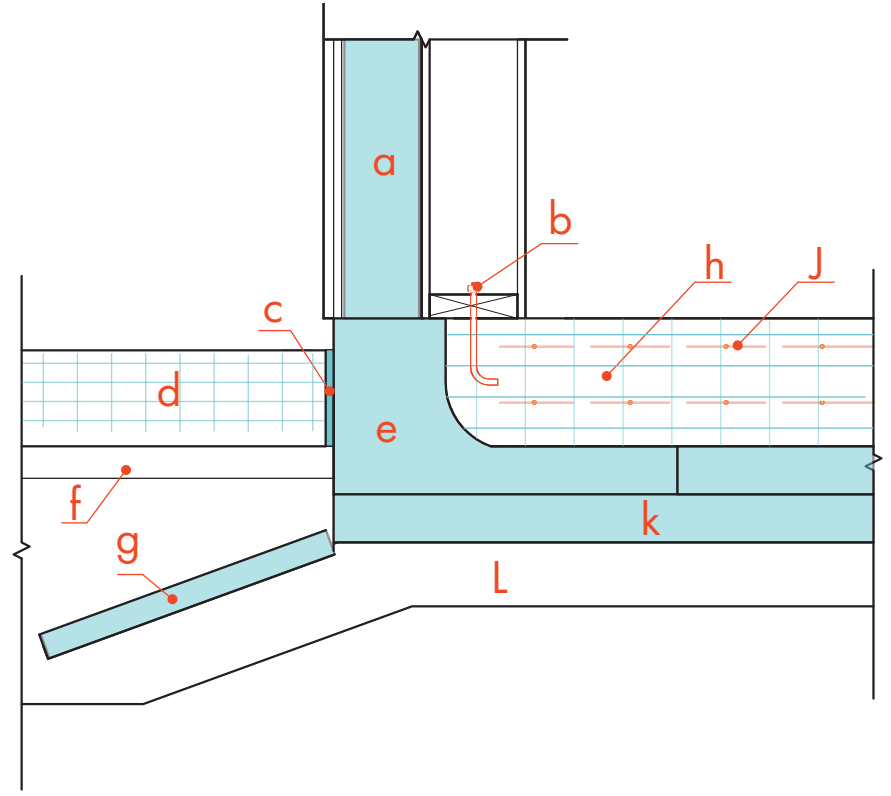


Bike Score





- a) Exterior Mineral Wool insulation
- b) "J" Bolt Anchor
- c) 1/2" EPS Insulation
- d) 6" Concrete Porch Slab
- e) Legalett Slab Edge
- f) 4" Aggregate
- g) Rigid Insulation Skirt
- h) 8" Concrete Slab (3500 psi)
- J) #4 Rebar
- k) Min. 6" EPS Rigid Insulation
- L) Compacted Grave



**SHALLOW FROST PROTECTED SLAB**

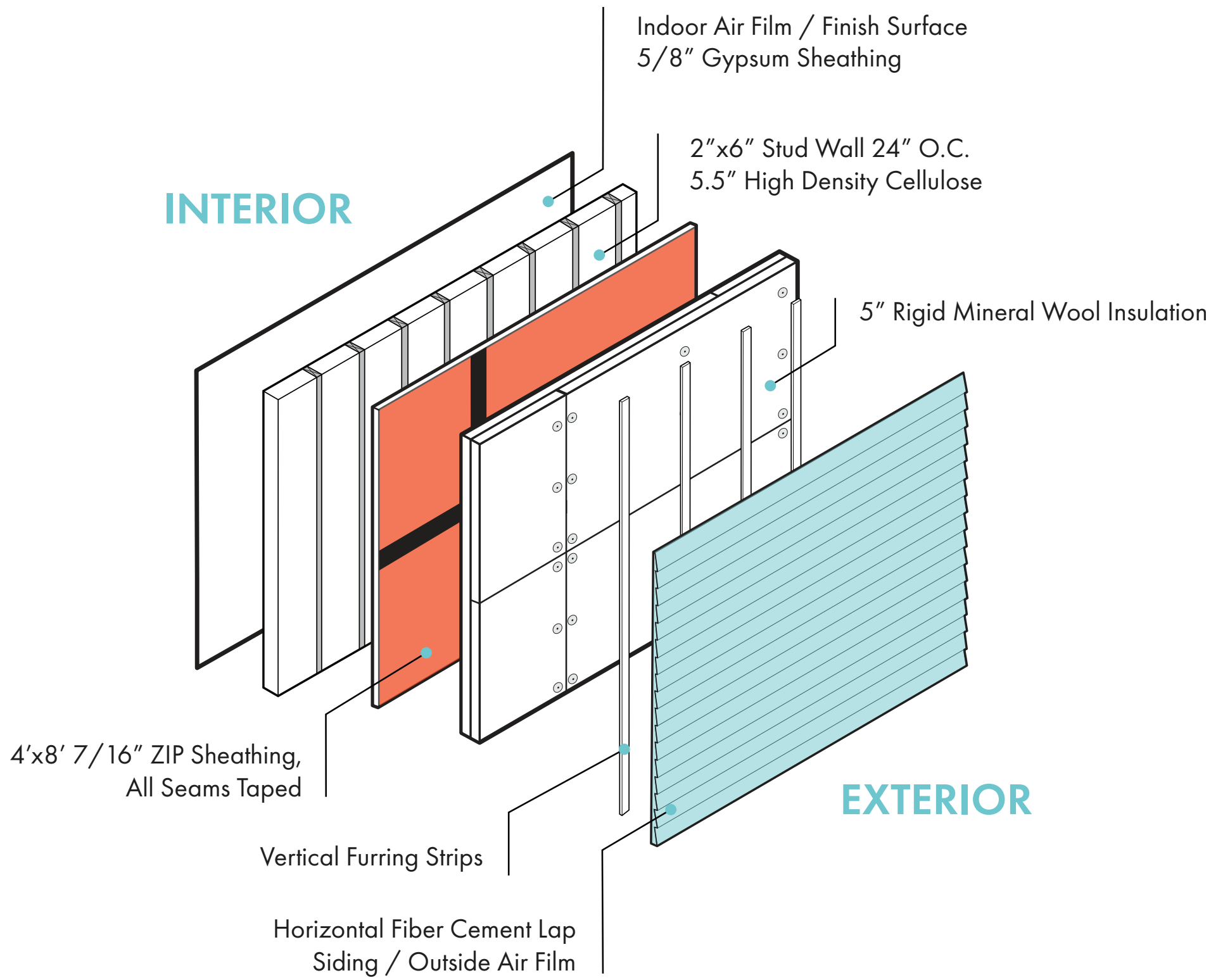
**CODE MINIMUM HOUSE**

	ANNUAL COST:
ELECTRICITY	\$1,875.31
NATURAL GAS	\$498.24
WATER	\$203.28
SEWAGE	\$543.84
GARBAGE	PAID THROUGH TAXES
CABLE/INTERNET	\$599.88
<b>TOTAL:</b>	<b>\$3,720.55</b>

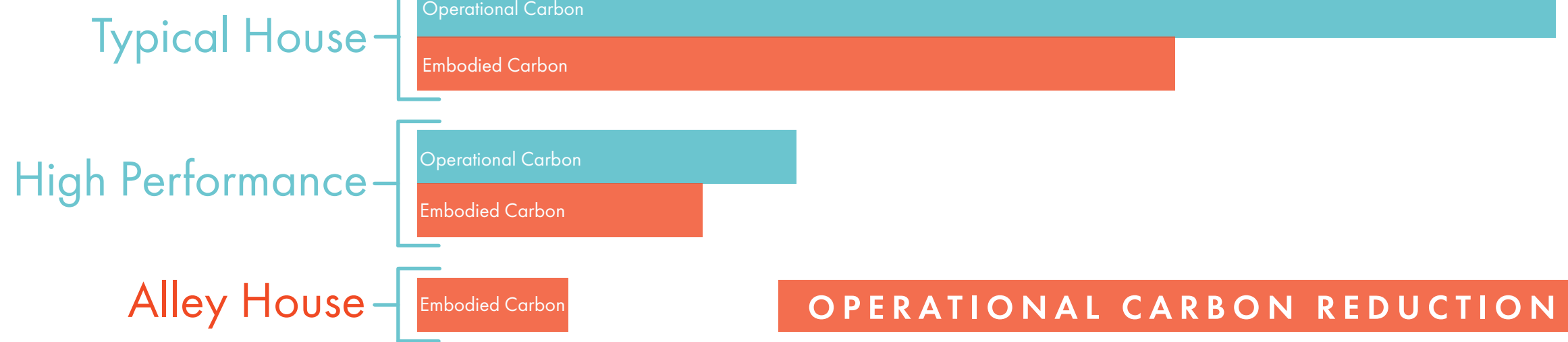
**THE ALLEY HOUSE**

	ANNUAL COST:
ELECTRICITY	\$453.73
NATURAL GAS	N/A
WATER	\$203.28
SEWAGE	\$543.84
GARBAGE	PAID THROUGH TAXES
CABLE/INTERNET	\$599.88
<b>TOTAL:</b>	<b>\$1,800.73</b>

**~4 Months of Rent per Year**

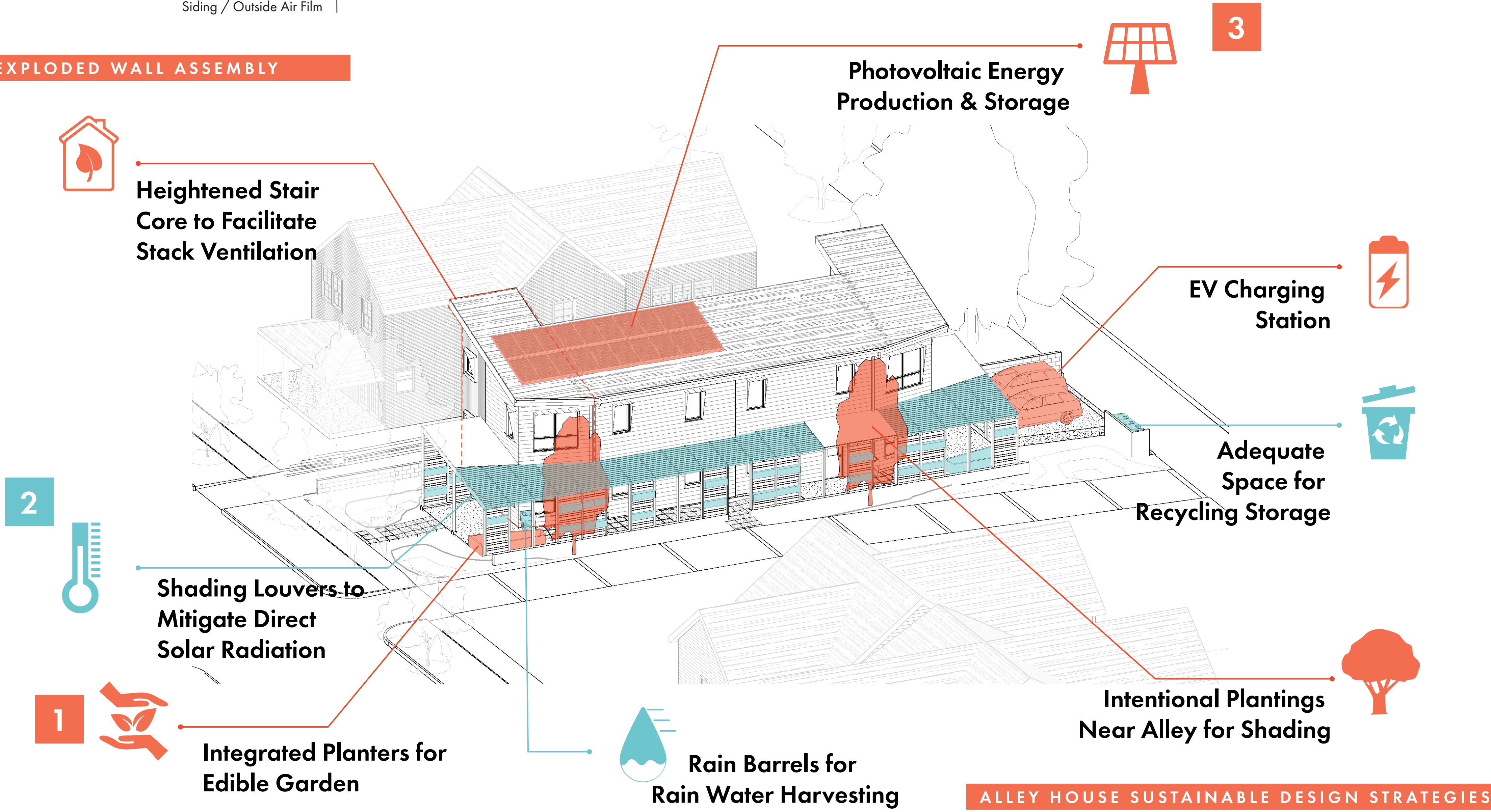


**EXPLODED WALL ASSEMBLY**

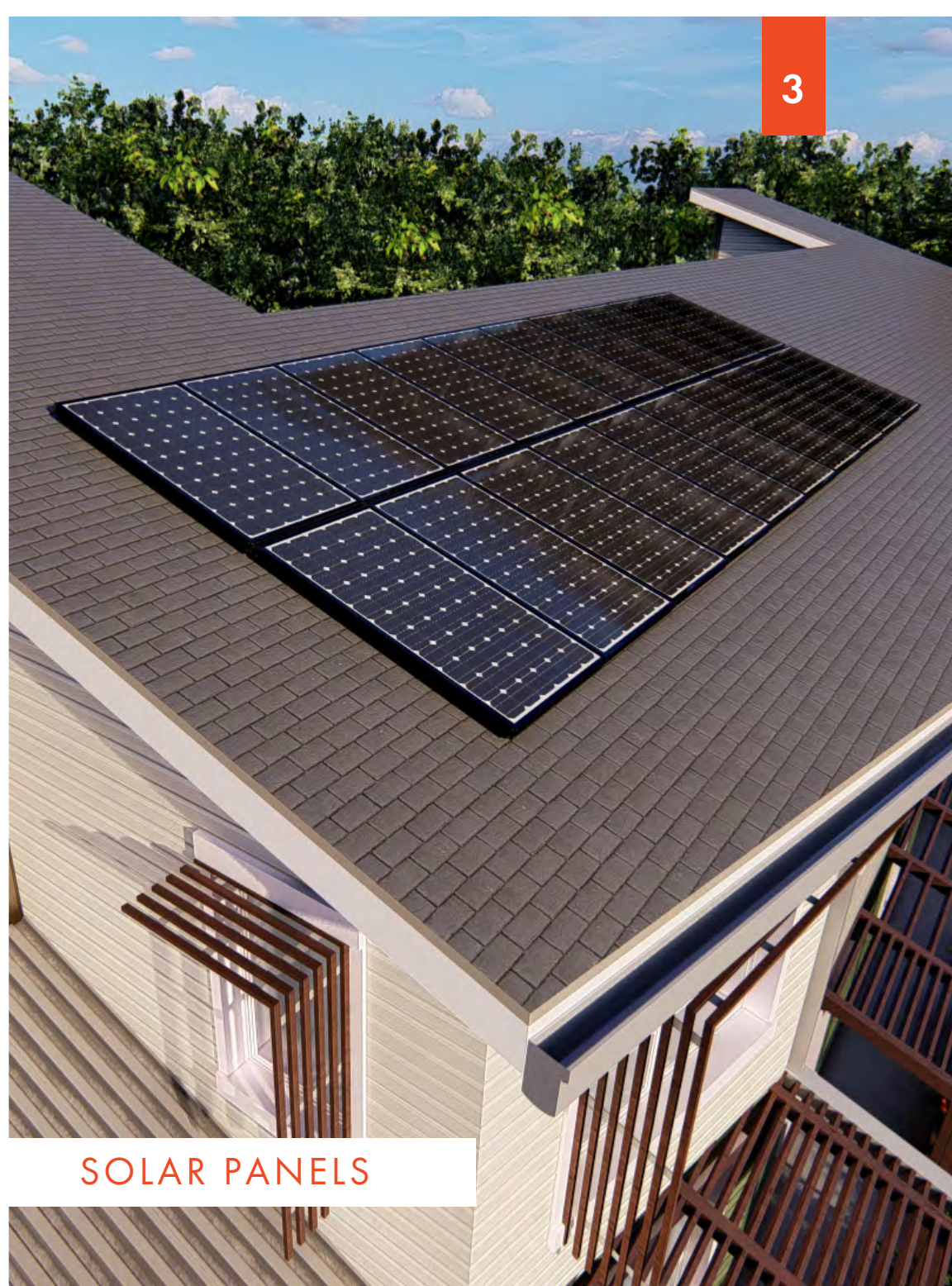


**A NEW STANDARD OF CONSTRUCTION**

THE DUPLEX IS ORIENTED ALONG THE EAST-WEST AXIS, ALLOWING EACH UNIT TO BENEFIT FROM MAXIMUM SOUTHERN EXPOSURE. PASSIVE STRATEGIES FOR DIRECT GAIN HEATING AND NATURAL CROSS AND STACK VENTILATION FOR COOLING ARE ACHIEVED WITH THIS ORIENTATION. AMPLE DAYLIGHTING IS ACHIEVED THROUGH STRATEGICALLY PLACED TRIPLE-GLAZED WINDOWS, AND A SOUTHERN PERGOLA SHADING DEVICE PREVENTS SOLAR HEAT GAIN IN THE SUMMER. WE HAVE GROUPED THE SERVICE SPACES ALONG THE NORTHERN FACE WITH THE HEAT PUMP WATER HEATER, ENERGY RECOVERY VENTILATION (ERV), AND SOLAR ARRAY CONTROL PANEL IN THE MECHANICAL ROOM.



**ALLEY HOUSE SUSTAINABLE DESIGN STRATEGIES**





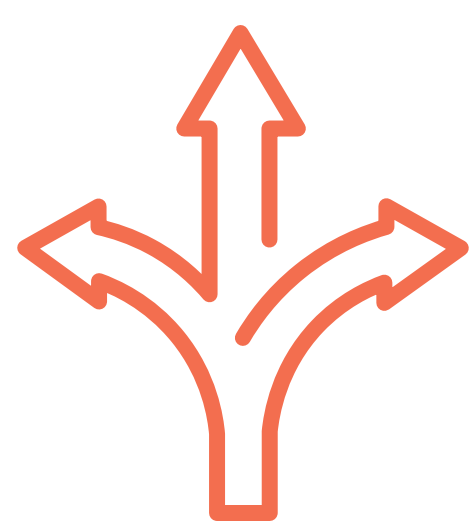
UPSTAIRS PLAY AREA



UPSTAIRS WORK AREA



UPSTAIRS HOMEWORK AREA



## FLEXIBILITY

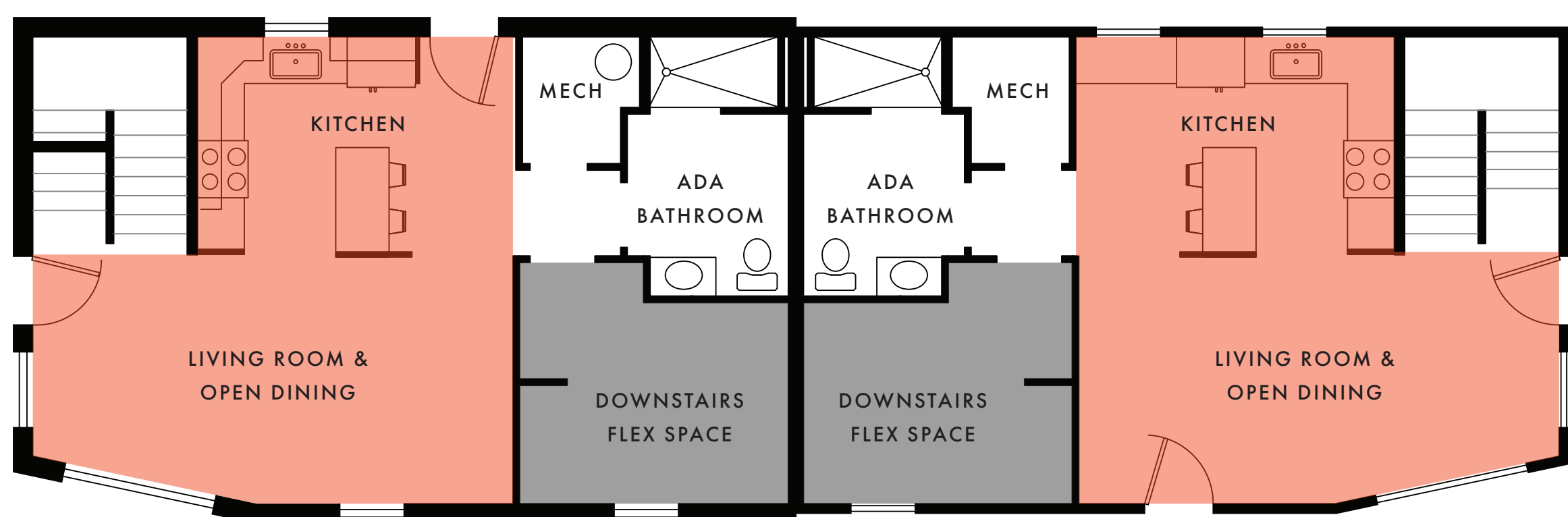
ONE OF THE DESIGN GOALS FOR THE ALLEY HOUSE WAS TO PROVIDE A HOME THAT A FAMILY COULD EXPERIENCE ALL STAGES OF LIFE IN. FROM THE NEWLYWEDS JUST MOVING INTO THEIR FIRST HOME WHERE THEY WILL BE WORKING FROM HOME A LOT, TO A SINGLE MOM WHO WANTS A SAFE SPACE FOR HER CHILDREN TO PLAY IN, THE ALLEY HOUSE PROVIDES A SPACE FOR EVERYONE.

THE FIRST FLOOR IS DESIGNED WITH A FLEXIBLE ROOM JUST OFF THE MAIN LIVING SPACE. THIS ROOM CAN BE USED AS A HOME OFFICE, AN EXTRA BEDROOM, A SAFE PLAY ROOM, A RECOVERY ROOM FOR AN ELDERLY PARENT OF THE RESIDENT, AND MANY MORE USES THAT CAN BE TAILORED TO THE CURRENT RESIDENCES NEEDS. THIS ROOM HAS BEEN DESIGNED WITH ACCESSIBILITY IN MIND AS TO ALLOW THE UNOBSTRUCTED USE OF A TYPICAL, SELF-PROPELLED WHEELCHAIR. WITH THE ROOM BEING LOCATED JUST OFF THE MAIN LIVING SPACE, THIS ROOM PROVIDES A SAFE YET PRIVATE PLAY AREA FOR CHILDREN WHILE A PARENT CAN ATTEND TO THE DAILY FUNCTIONS OF HOME OWNERSHIP.

THE SECOND FLOOR IS DESIGNED WITH ALMOST AS MUCH FLEXIBILITY AS THE DOWNSTAIRS FLEX SPACE. BECAUSE IT IS UPSTAIRS IN A HOME WITHOUT AN ELEVATOR, IT IS NOT AS ACCESSIBLE FOR THOSE WHO HAVE A HARD TIME GOING UP AND DOWN STAIRS. THEREFORE THE BEST USES FOR THIS SPACE ARE A DESIGNATED HOMEWORK AREA FOR THE SCHOOL AGED CHILDREN LIVING HERE, A SECONDARY OFFICE FOR IF BOTH RESIDENTS WORK FROM HOME, AND ANOTHER SAFE PLAY AREA FOR WHEN THE DOWNSTAIRS FLEX SPACE NEEDS TO BE USED AS A BEDROOM.



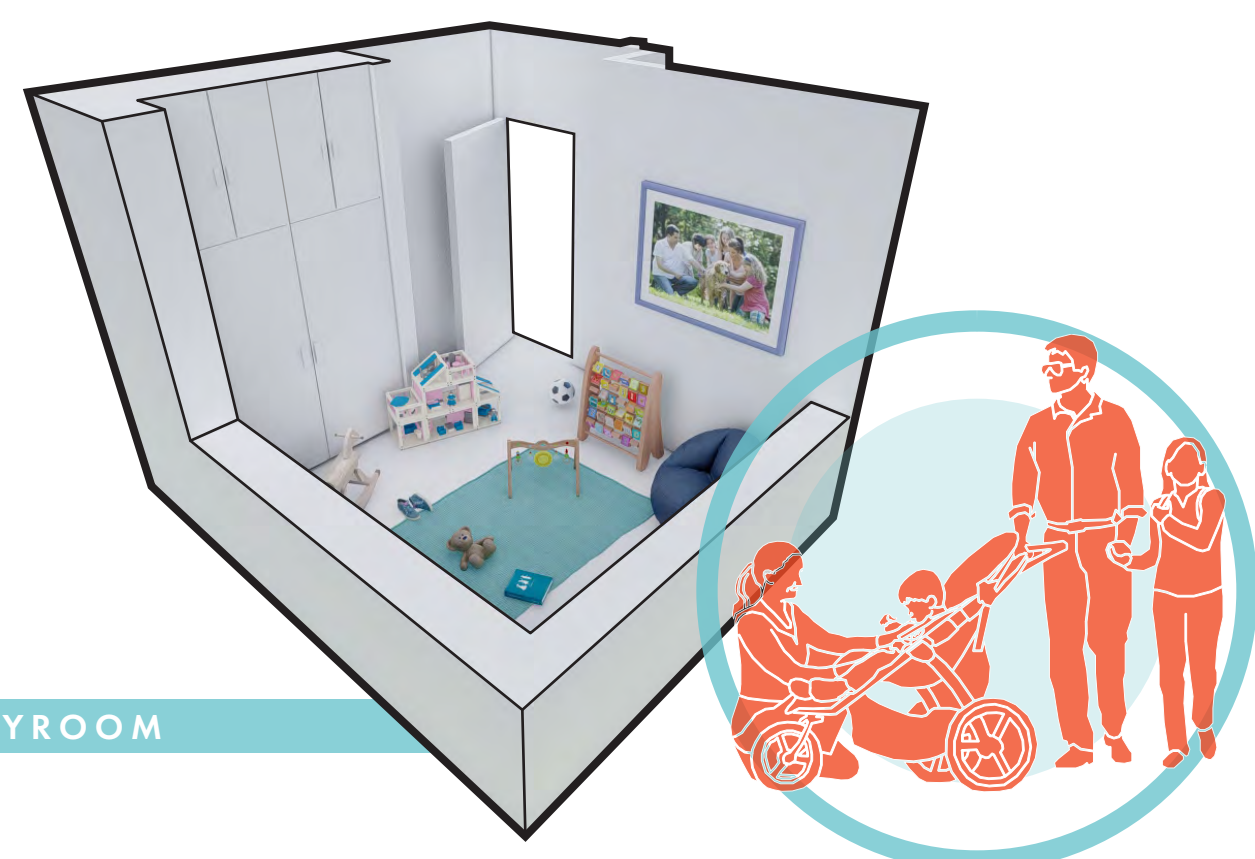
SECOND FLOOR FLEXIBILITY PLAN



FIRST FLOOR FLEXIBILITY PLAN



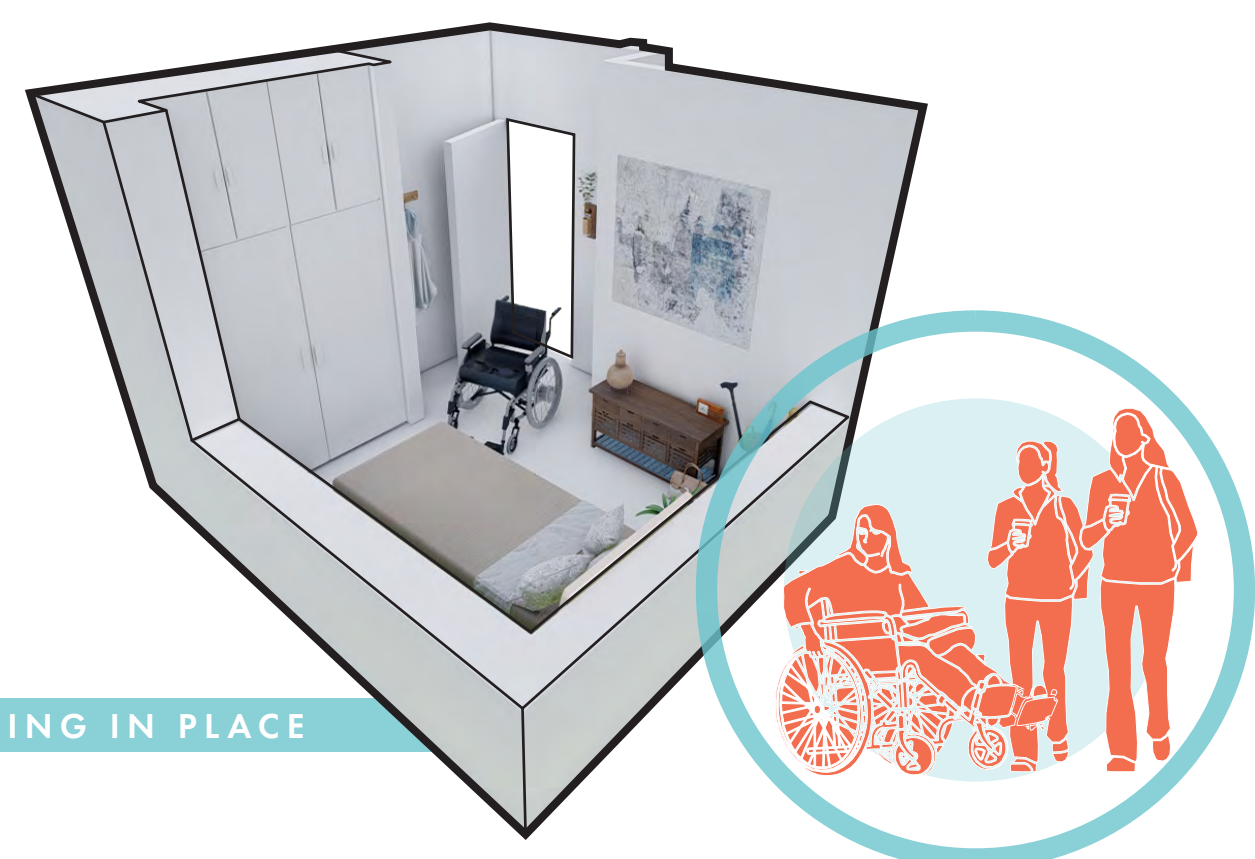
HOME OFFICE



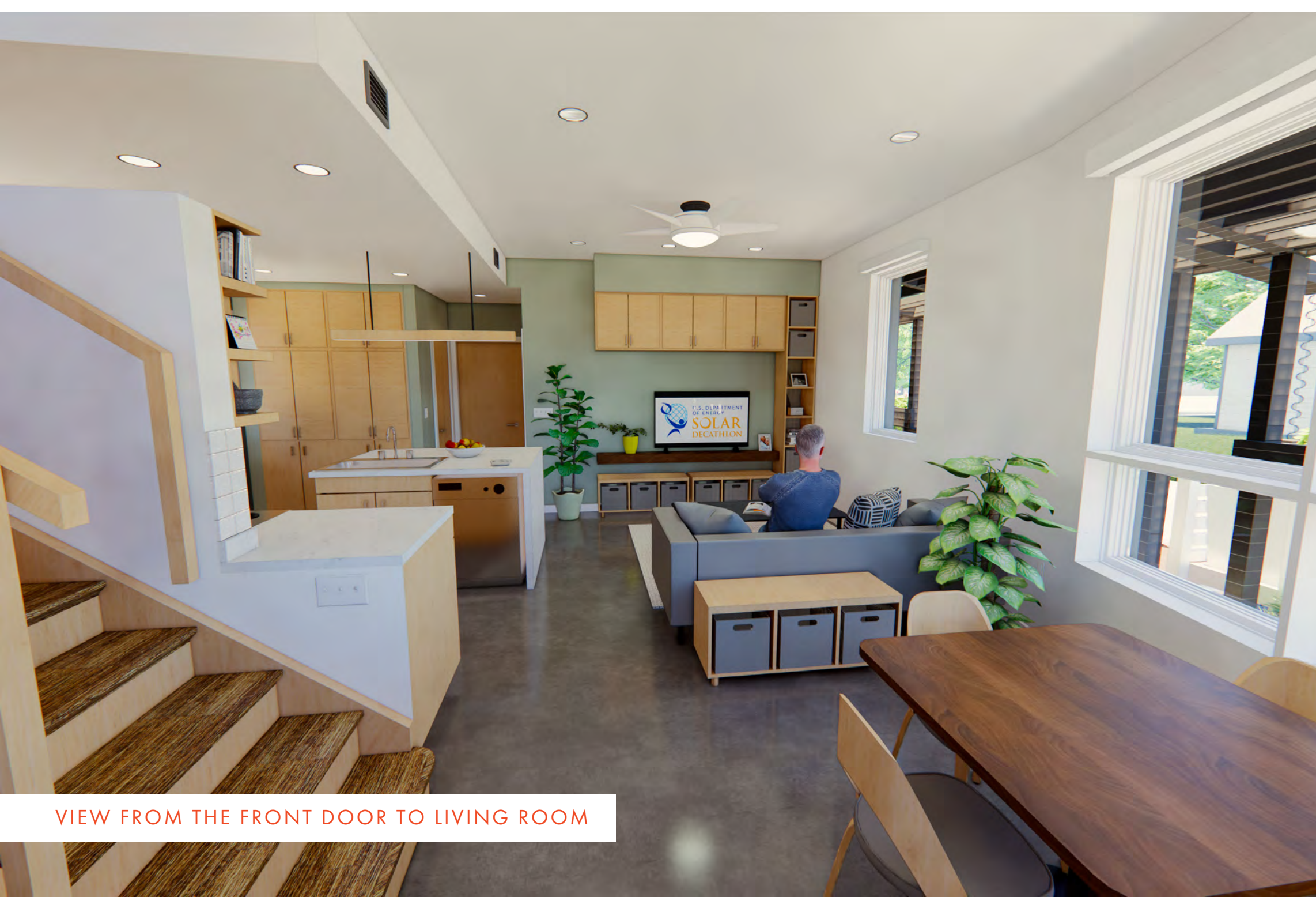
PLAYROOM



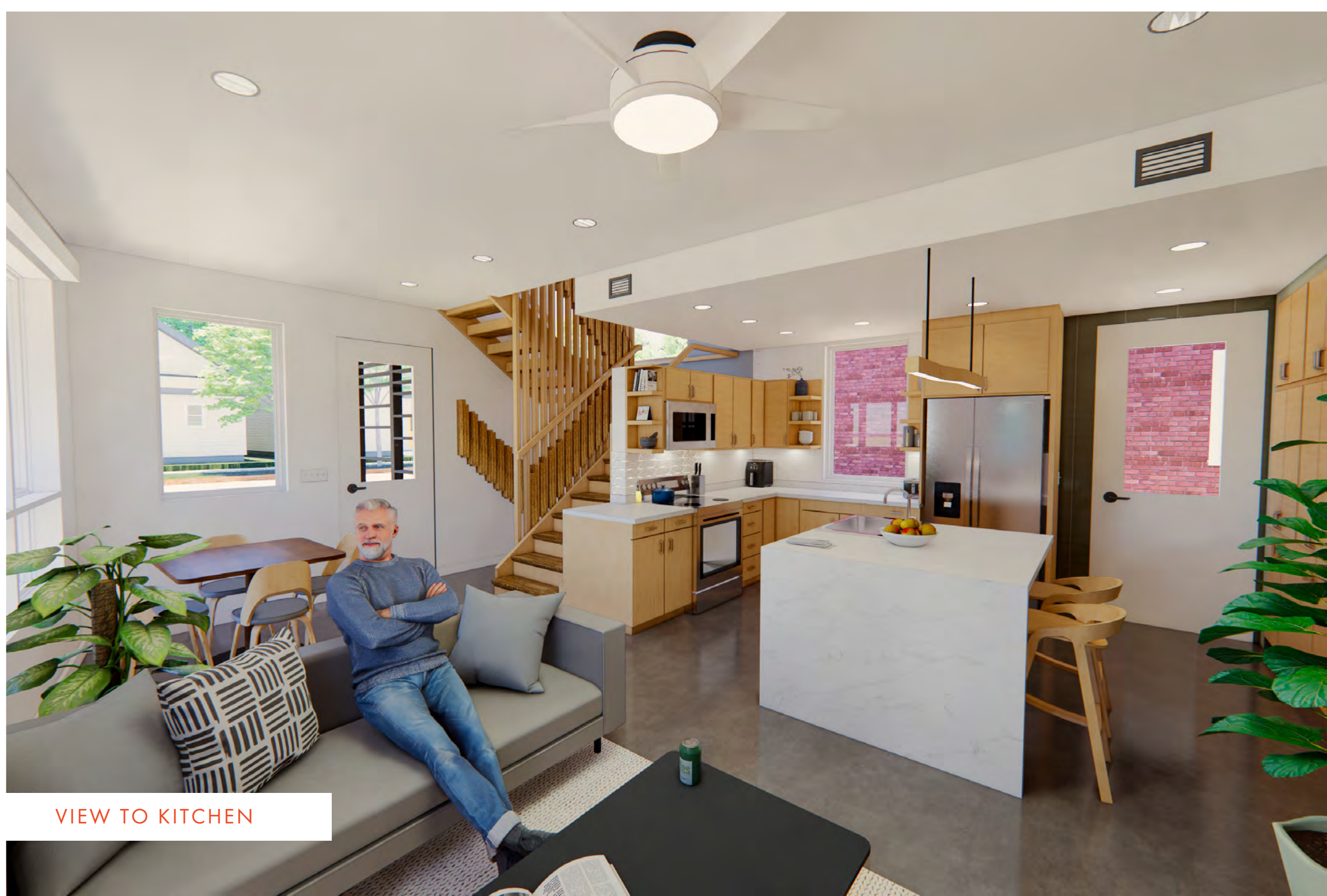
EXTRA BEDROOM



AGING IN PLACE

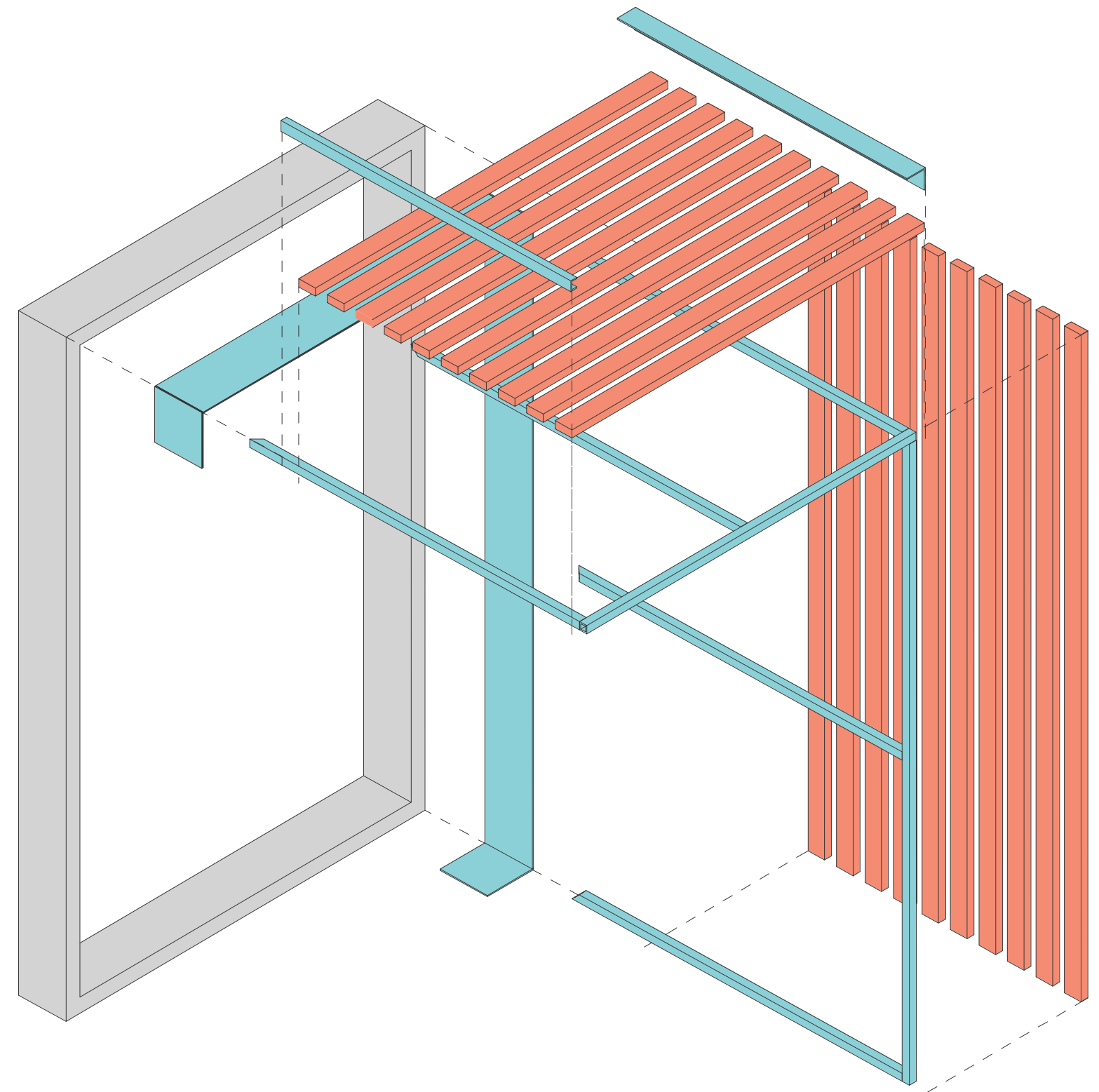
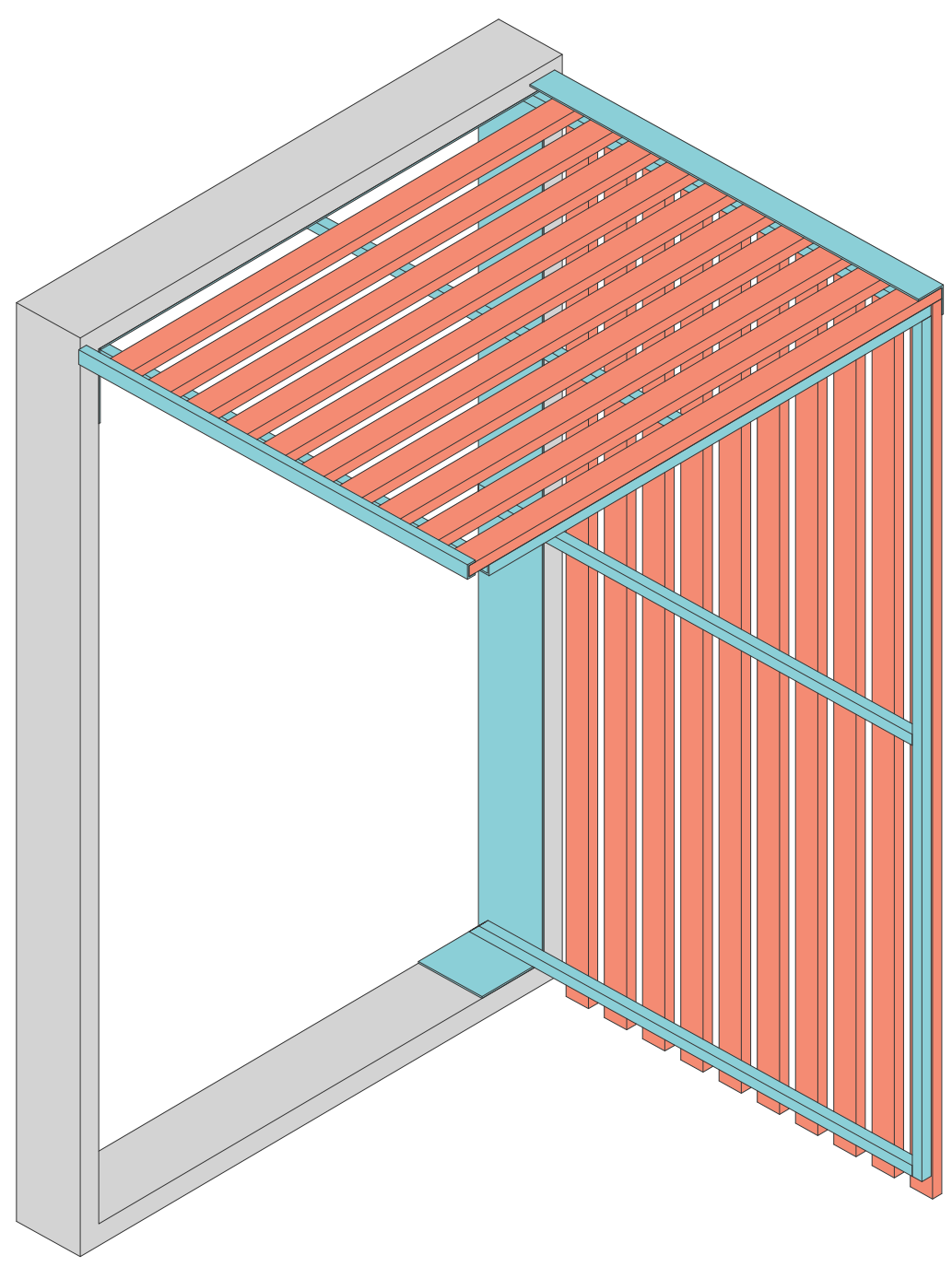


VIEW FROM THE FRONT DOOR TO LIVING ROOM



VIEW TO KITCHEN

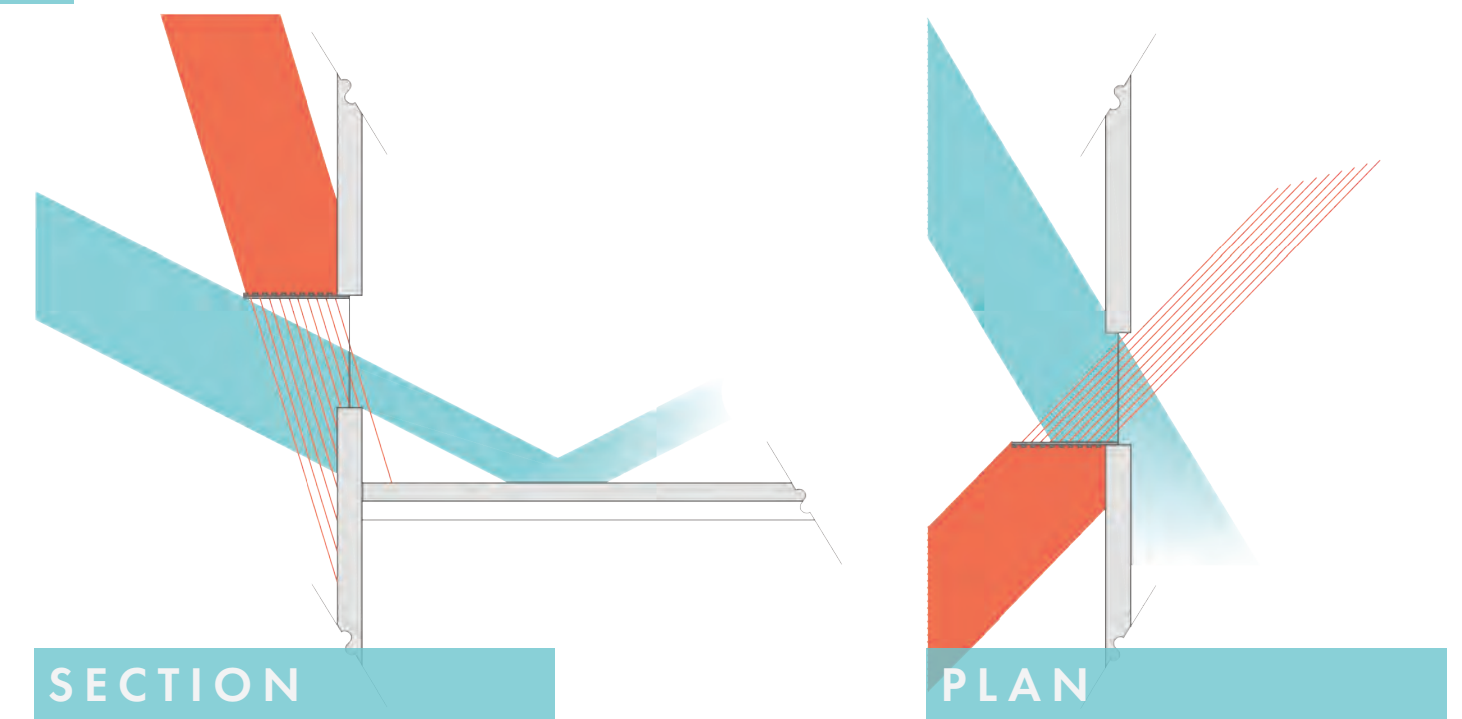
# SHADING DEVICE AND PERGOLA



AXON



EXPLODED VIEW



SECTION

PLAN

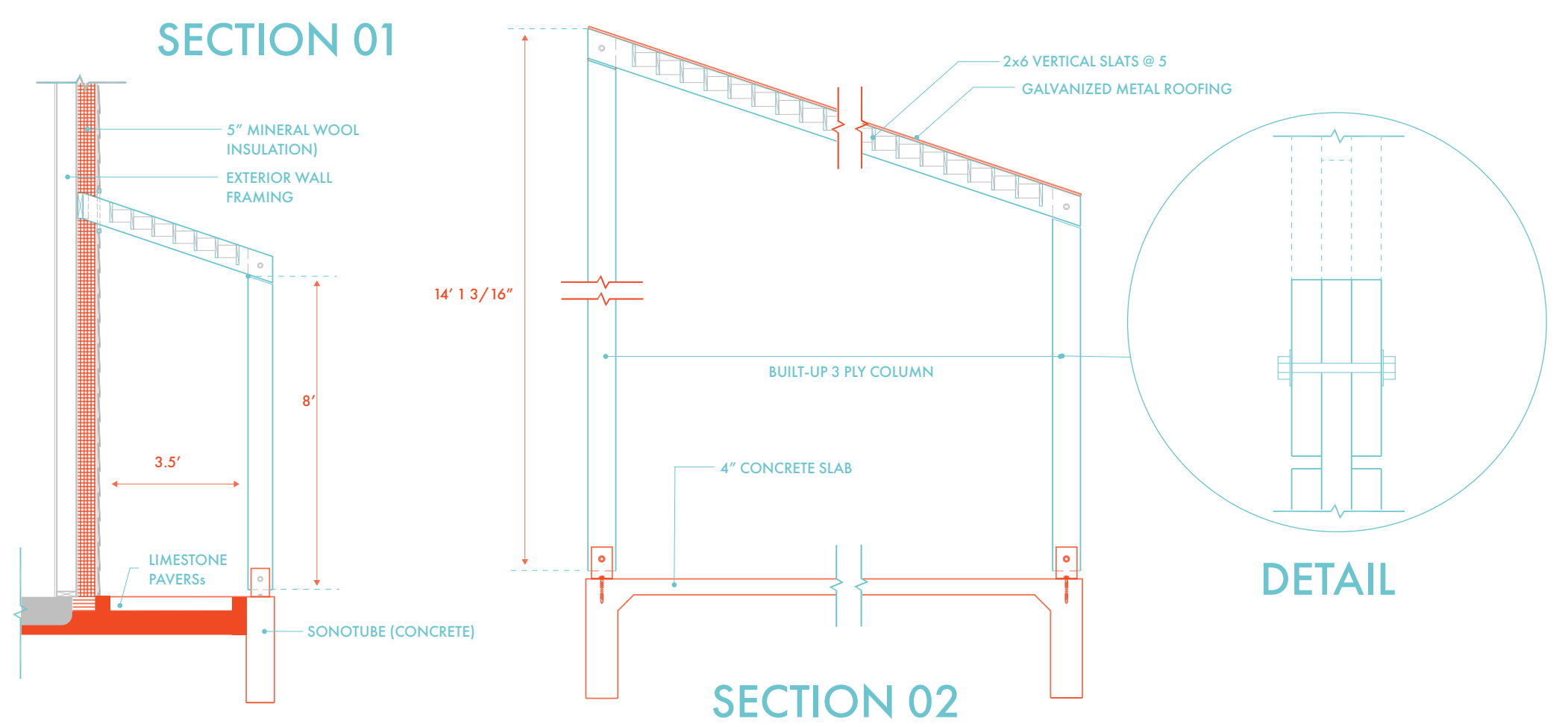
## SHADING DEVICE

The team has chosen specific windows on which to place the shading devices, creating not only a function design, but also a learning opportunity for the residents of the units and the community. The forms are determined by analyzing data to find the most thermally uncomfortable days and using those sun angles on those days to design overhangs and fins that will block the sun most during of those times.

The attachment of the shading device to the window frame was a challenge. The team had to design with many constraints including a structural challenge, thermal bridging concerns, cost, and embodied carbon considerations of the materials being used. The result is a shading device that is affordable, effective, strong, and uses minimal amounts of steel to provide structural support.

## PERGOLA

The pergola is designed to be an additional source of shading while accentuating the aesthetic values of the Alley House. The 12-degree angle we utilized provides the optimal amount of shading to the south façade and works well with the roof pitch to provide an inviting addition. It is constructed of thermally modified lumber manufactured locally by EcoVantage just north of Fort Wayne, Indiana. With the integration of planters and bench seating on the east and west sides of the home near the entrances. The planters are also located along the south façade with the integrated rain collection barrels. The 3-ply construction of the columns provides optimum stability. At each end there is a corrugated metal roof to give the occupant an outdoor space to enjoy.



SECTION 01

SECTION 02

DETAIL





# CONSTRUCTION PHOTOS



Grading



Plumbing Installation



Insulation Installation



Concrete Pour



First Floor Framing



First Floor Sheathing



Second Floor Framing and Truss Installation



Stair Tower Rafter Installation

## **Plan to Reach Target Audience with Public Exhibit**

First, Cardinal Studio's public exhibit will impact its target audience by clearly demonstrating the work of its incredible team of students, faculty, advisors, professionals, consultants, contractors, sub-contractors, community partners, and industry sponsors who have contributed their time and energy to making the Alley House a successful net-zero energy, two-family, affordable home. During the Grand Opening Celebration on April 4, 2023, from 4:00 – 8:00 p.m., Cardinal Studio will thank this team of over 200 individuals who are expected to attend.

Second, Cardinal Studio worked with Ball State University's Office of Marketing and Communications to invite alumni from the seven departments in of the College of Architecture and Planning (CAP): Architecture, Landscape Architecture, Urban Planning, Urban Design, Historic Preservation, Construction Management, and Interior Design. The Alley House has been an interdisciplinary project involving collaboration between students, faculty, professionals, and alumni from all seven disciplines, and Cardinal Studio targeted this audience, highlighting opportunities for the student build team both to share their work and to network with successful and prominent CAP alumni during the CAP Alumni Tour Day on April 5; this day coincides with One Ball State Day, an event that encourages alumni and other supporters to contribute to the Solar Decathlon and other causes, celebrating the spirit of community and giving. This Public Exhibit will be open from 4:00 – 8:00 p.m.

On April 6 from 4:00 – 6:00 p.m., the Cardinal Studio team will give a presentation and tour of the Alley House to representatives from the American Institute of Architects (AIA) Indianapolis. Students also will share the innovative and sustainable house design with the AIA members in a presentation for continuing education units (CEUs) at the Ball State University's CAP: Indy Center on the Near Eastside of Indianapolis, then travel less than a mile to 201 N. Temple Avenue to tour the Alley House. Cardinal Studio also has invited collaborators in ASHRAE and ASLA to join activities on this day.

Cardinal Studio will host free public tours of the Alley House Eastside duplex on Saturday, April 8 and Saturday, April 15. The Alley House Neighborhood Party on April 8 is a family-friendly event and will feature food, music, an Easter egg hunt with prizes for children, and a tour of the duplex. Information about the design and construction of the Alley House will be available onsite. The neighborhood association presidents of Englewood and Westminster St. Philip Neri are inviting a multi-generational group of community members who have watched construction of the Alley House and are eager to see the completed structure. Many of these community members attended the Groundbreaking Celebration in July, 2022, and are excited to have followed the project to its completion. Cardinal Studio expects over 100 people to participate in public tours on April 8.

With Ball State University's President Geoffrey S. Mearns, Cardinal Studio designated Saturday, April 15, as Ball State Day at the Alley House. President Mearns and the Dean of the R. Wayne Estopinal College of Architecture and Planning (CAP), Dave Ferguson, both will be guest speakers at this event. Cardinal Studio invited the Mayor of Indianapolis, and City Council Chair

Vop Osili and the Director of Sustainability Morgan Michelson will speak on behalf of the City's initiatives supporting the Alley House. The day also will feature games, music, food, and educational tours. It will be a special opportunity for Ball State faculty, staff, parents, and alumni to gather in celebration of the Alley House.

Cardinal Studio employed a multi-dimensional approach to sharing the work of The Alley House. Its press release invited media coverage, and a few correspondents have already contacted the team for special features.

The team set up special days for all neighborhood schools to bring classes to tour the Alley House. These include Daystar Daycare, Thomas Gregg Neighborhood Elementary School, Paramount Middle School, and Purdue Polytechnic High School. Schools received a flexible schedule showing two days and four times for taking groups through the Alley House. Teachers and administrations are engaged with this project and are aware of the importance it plays in bringing quality of life to their walkable community, especially the ability to walk to the Alley House using the east-west alley as a community connector. Cardinal Studio also contacted Arsenal Tech High School, a magnet school for the technical arts, to facilitate educational opportunities related to architecture, Alley House tours, and collaboration in advocacy.

Cardinal Studio's primary target audience is the Englewood Community. As a leader in the Near Eastside redevelopment, the Near Eastside features 21 neighborhood associations working together to create a multi-cultural, multi-generational place to live, work, worship, learn, and play. Like many post-industrial communities in the Rust Belt, Englewood has experienced population decline, reduced rates of educational attainment, decreasing median household incomes, and high vacancy rates. The recent affordable housing crisis and deteriorating existing building stock have negatively impacted the community. The Alley House is one of 20 duplex homes financed through low-income tax credits and is part of Englewood Community Development Corporation's plan to re-engage this neglected community by constructing multiple family housing units on vacant lots bought through its land bank and now owned by Englewood CDC. Cardinal Studio will discuss this effort of Englewood Homes and other initiatives with the Near Eastside Community, and the team will use the Alley House as a kickstart conversation about how to reinvest in their community.

Finally, on April 18, a faculty discussion of the Solar Decathlon competition and a designated Net Zero Design Curriculum in the Department of Architecture will be a featured topic during a retreat on educational initiatives. The retreat will conclude with a celebration and tour of the Alley House.

## **TOUR THE ALLEY HOUSE!**

### **201 N. Temple Ave, Indianapolis**

It's been two years researching, designing, and building the Alley house and it's finally ready! The Solar Decathlon team is excited to invite you to tour the student design-build duplex. The schedule for the public tours highlighting the sustainability and renewable energy aspects of The Alley House is as follows...

#### **April 4 - Alley House Grand Opening Celebration** – Tuesday, April 4 | 4 p.m. – 8 p.m.

This opening ceremony for our faculty, students, design advisors, contractors, sub-contractors, and industry sponsors who worked on the Alley House will celebrate its completion with special thanks, toasts, and native planting in the rain garden.

#### **April 5 – Ball State CAP Alumni Day** – Wednesday, April 5 | 4 p.m. – 8 p.m.

A special tour for all CAP alumni to tour and celebrate the Alley House and One Ball State Day! This is a unique opportunity to see our students innovative and sustainable house design while also celebrating the spirit of community and giving.

#### **April 6 – AIA Presentation and Tour** – Thursday, April 6 | 4 p.m. – 6 p.m.

Alumni will be given a presentation at CAP: Indy starting at 4 p.m. followed by a tour of the Alley House at 5 p.m. This AIA event is set up to receive Continuing Education Units (CEUs).

#### **April 8 - Alley House Neighborhood Party** - Saturday, April 8 | 10 a.m.- 4 p.m.

This family-friendly event will feature food, music, an Easter egg hunt with small prizes for children, and a tour of the duplex. Information about The Alley House will be available.

#### **April 10 - Neighborhood School Tours** – (Invited Guests)

**April 11 – Neighborhood Association & Organization** - Tuesday, April 11 | 4 p.m. – 6 p.m.  
Community tours for non-profit organizations and neighborhood association.

#### **April 12 – Neighborhood School Tours** – (Invited Guests)

**April 14 – RQAW Architectural and Engineering Firm** – Friday, April 14 | 1 p.m.- 3 p.m.

**April 14 – CAP Students & Admitted Student Day Tour** – Friday, April 14 | 3:30 - 5:30 p.m.

#### **April 15 - Ball State Day at The Alley House** – Saturday, April 15 | 10 a.m. – 4 p.m.

This day will feature games, music, food, and educational tours. This event is open to the public. It will also be a special opportunity for Ball State faculty, staff, students, and alumni to gather in celebration of The Alley House. Guest speakers expected to be in attendance include President Mearns, Dean Ferguson, faculty leads, and student team leads.

#### **April 16 - Open to the public** – Sunday, April 16 | Noon – 4 p.m.

#### **April 17 - Guidon Design Tour** – Monday, April 17 | 4 p.m. – 6 p.m.

#### **April 18 – Department of Architecture Faculty** – Tuesday, April 18 | 3 p.m. – 5 p.m.

Faculty Retreat followed by Capstone Closing Event with Public Tour of the Alley House and send-off of Solar Decathletes to travel to Golden, Colorado.

# SAVE THE DATE

## TOUR THE ALLEY HOUSE!

The U.S. Department of Energy Solar Decathlon Build Team from Ball State University's R. Wayne Estopinal College of Architecture and Planning invites you to come tour the student-designed Alley House.

The students will guide you through their two-family home built on an infill lot in Indianapolis' Near Eastside with community partners Englewood Community Development Corporation and Cedar Street Builders.

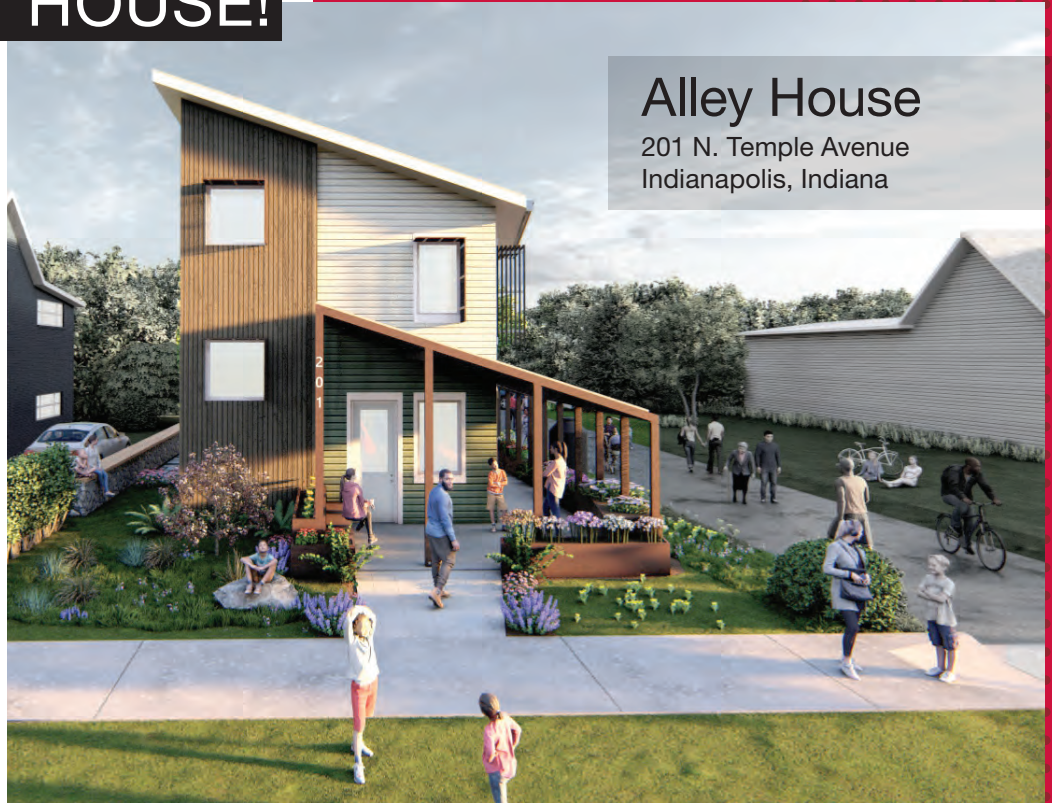
### Tours begin April 4th thru 18th

Visit Week Days | 4:00 pm - 6:00 pm

Saturdays | 10:00 am - 4:00 pm

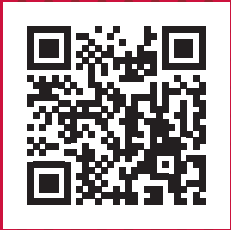
Sundays | 12:00 pm - 4:00 pm

201 N. Temple Avenue  
Indianapolis, Indiana



### Alley House

201 N. Temple Avenue  
Indianapolis, Indiana



**Learn more about Alley House  
and follow its progress.**

<https://sites.bsu.edu/sd-buildindy/>

**Questions about the  
tours contact**

Pam Harwood, NCARB, AIA  
Professor of Architecture  
[pharwood@bsu.edu](mailto:pharwood@bsu.edu)



**BALL STATE  
UNIVERSITY**

**R. Wayne Estopinal  
College of Architecture  
and Planning**

Muncie, IN 47306-0300



# SAVE THE DATE

## TO TOUR THE ALLEY HOUSE!



**BALL STATE  
UNIVERSITY**

**Tours begin  
April 4th thru 18th  
201 N. Temple Avenue  
Indianapolis, Indiana**



The U.S. Department of Energy Solar Decathlon Build Team from Ball State University's R. Wayne Estopinal College of Architecture and Planning invites you to come tour the student designed Alley House.

The students will guide you through their two-family home built on an infill lot in Indianapolis' Near Eastside with community partners Englewood Community Development Corporation and Cedar Street Builders.

**Join us for one of our tours.**

Tours begin April 4<sup>th</sup> thru the 18<sup>th</sup>

Visit Weekdays | 4:00 pm to 6:00 pm

Saturdays | 10:00 am to 4:00 pm

Sundays | noon to 4:00 pm

**201 N. Temple Avenue, Indianapolis, Indiana**

**Special Days of the Alley House Tours:**

Design-Build Team of the Alley House: Grand Opening Celebration, April 4<sup>th</sup> 4:00  
With all students, faculty, advisors, professionals, consultants, contractors,  
sub-contractors, community partners, and industry sponsors of Alley House!

Ball State Alumni Day and One Ball State Day of Giving, April 5<sup>th</sup> 4:00 - 6:00 pm  
With all College of Architecture and Planning (CAP) Alumni invited!

Near Eastside Neighborhood Alley Party and House Tour, April 8<sup>th</sup> 12:00-4:00 pm  
Easter egg hunt, Student-led tours, Alley House games, and local food  
Friends and family welcome!

With Sincere Gratitude,

Pam Harwood and Tom Collins



# SAVE THE DATE

## TO TOUR THE ALLEY HOUSE!



BALL STATE  
UNIVERSITY

**Grand Opening Celebration**  
**April 4th | 4:00 to 8:00 PM**

**201 N. Temple Avenue**  
**Indianapolis, Indiana**



The U.S. Department of Energy Solar Decathlon Build Team from Ball State University's R. Wayne Estopinal College of Architecture and Planning invites you to come tour the student designed Alley House.

The students will guide you through their two-family home built on an infill lot in Indianapolis' Near Eastside with community partners Englewood Community Development Corporation and Cedar Street Builders.

**Join us for the Grand Opening celebration!**

**April 4<sup>th</sup> | 4:00 to 8:00 p.m.**

**201 N. Temple Avenue, Indianapolis, Indiana**

•••

Design-Build Team of the Alley House: Grand Opening Celebration  
With all students, faculty, advisors, professionals, consultants, contractors, sub-contractors, community partners, and industry sponsors of Alley House!

**Please RSVP to this email if you can attend.**

**Additional tours begin April 5th thru the 18<sup>th</sup>**

Visit Weekdays | 4:00 pm to 6:00 pm

Saturdays | 10:00 am to 4:00 pm

Sundays | noon to 4:00 pm

**With sincere gratitude,**

**Community Engagement Officer**

Reshma Talukder

**Student Co-Leads**

Emily Rheinheimer

Nik Seiber

**Faculty Co-Leads**

Pam Harwood

Tom Collins



Hello Preferred ,

We are excited to invite you on a tour of the 2023 Solar Decathlon Build Competition Alley House on April 5th during [One Ball State Day](#). This is a unique opportunity to see our students innovative and sustainable house design while also celebrating the spirit of community and giving.

The [Solar Decathlon Build Challenge](#) is a net-zero energy competition project, The Alley House, that students from the College of Architecture and Planning are a part of. The international competition is sponsored by the US Department of Energy, and it challenges student teams to design and build a net-zero energy home that generates at least as much energy onsite as it consumes on an annual basis using sustainable building techniques and renewable energy technologies.

**We want to celebrate and share the Alley House with you!**

**Join us for a tour of the house.**

201 N. Temple Avenue, Indianapolis, IN 46201

April 5, 2023 | 4:00 p.m. - 8:00 p.m.

If you can't be there, you can still support our students by participating online during One Ball State Day. Follow the link below on April 5th to support our students. If you wish to give to the Alley House project, select the College of Architecture and Planning button and select the designated fund in the drop down list.

**DONATE TO CAP ON APRIL 5TH**

We hope to see you there!

**Pamela Harwood, NCARB, AIA**  
Professor of Architecture  
CAP President's Immersive Learning Fellow  
Community Engagement Faculty Learning Community



**BALL STATE  
UNIVERSITY**

Alumni Association

2800 W. Bethel Ave. Muncie, IN 47304

Phone: 765-285-8312 | [bsualumni@bsu.edu](mailto:bsualumni@bsu.edu)



[Visit Our Website](#) | [Privacy Policy](#) | [Unsubscribe](#)

# Alley House



# ONE Ball State DAY

*Celebrating the Spirit of  
Community and Giving.*

## CAP Alumni

We are excited to invite you on a tour of the 2023 Solar Decathlon Build Competition Alley House on **April 5th** during One Ball State Day.

The Alley House is the student designed net-zero two-family home built on an infill lot in Indianapolis' Near Eastside.

**Hope you can make it!**



U.S. DEPARTMENT OF ENERGY

**Solar Decathlon**

**Can't make it?**

That's ok, you can support our students online during One Ball State Day April 5th.

## Alley House

201 N. Temple Avenue  
Indianapolis, Indiana

**APRIL 5th**

# CAP ALUMNI

Join us for a tour  
of the **Alley House!**

**APRIL 5th**

April 5th | 4 PM - 8 PM  
201 N. Temple Ave.  
Indianapolis, IN



If you can't be there, you can still support our students by participating online during the One Ball State Day of giving event on APRIL 5th.



**ONE**  
Ball State  
**DAY**  
APRIL 5th

Celebrating the  
Spirit of Community  
and Giving.

# CAP ALUMNI

Join us for a tour of the  
**Alley House!**

JOIN US  
201 N. Temple Ave.  
Indianapolis, IN  
4 PM - 8 PM

## APRIL 5th



**Can't make it?**  
Support our students  
online during  
One Ball State Day  
**April 5th.**



**ONE**  
**Ball State**  
**DAY**

Celebrating the  
Spirit of Community  
and Giving.

# SAVE THE DATE APRIL 5, 2022

## ONE BALL STATE DAY!

# Solar Decathlon Build Challenge Fund

We ask for your help in supporting ECAP's Solar Decathlon Build Challenge Competition where over 100 undergraduate and graduate students design and build the "Alley House" The Alley House is an affordable, two-family Net-Zero project located in Indianapolis' Near Eastside. To guarantee that it will be built in the low-income Englewood neighborhood of Indianapolis, the team has set a goal to raise a critical \$150,000.

## Project Facts:

- Community partner is Englewood Community Development Corporation of Indianapolis
- Not only is it a Net-Zero design but it will be Passive House Institute US (PHIUS) and Sustainable Sites Certified
- Alley House is to be constructed on a vacant, infill lot and will serve as a pre-eminent model of green residential design in the world today
- This is a multidisciplinary team with students from Architecture, Landscape Architecture, Construction Management and Interior Design, and Urban Planning
- Construction to begin Mid-June 2022 and Complete in late February 2023



### Any Questions Contact:

Pam Harwood | [pharwood@bsu.edu](mailto:pharwood@bsu.edu)  
765-749-6379

Tom Collins | [tdcollins@bsu.edu](mailto:tdcollins@bsu.edu)  
617-721-8713

SCAN TO DONATE →

OR

LINK TO DONATE:

<https://oneballstate.bsu.edu/amb/CAP>







**ONE**  
Ball State  
**DAY**

**APRIL 5th**

**Celebrating the spirit of  
community and giving.**



**Help support future Solar  
Decathlon Build Challenges.**



# Alley House

201 N. Temple Avenue  
Indianapolis, Indiana

Apr 06



## AIA Indy Special Program - The Alley House

AIA Indy Special Program - The Alley House: Ball State University's U.S. Department of Energy Solar Decathlon Build Project

Free

Reserve a spot

Follow

### When and where

**Date and time**  
Thu, April 6, 2023,  
4:00 PM – 6:00 PM EDT

**Location**  
**Ball State University CAP:**  
**INDY** 25 North Pine Street  
Indianapolis, IN 46202  
[Hide map ^](#)



#### How to get there



Free

The U.S. Department of Energy Solar Decathlon Build Team from Ball State University's R. Wayne Estopinal College of Architecture and Planning invites you to come tour the student-designed Alley House.

The students will guide you through their net-zero energy, low-impact, two-family home built on an infill lot in Indianapolis' Near Eastside with community partners Englewood Community Development Corporation and Cedar Street Builders.

Following this student driven program all are invited to visit the Alley House project site at 201 N. Temple Avenue, Indianapolis, Indiana. Street parking is available.

**AIA HSW LU Approval of this program is pending.**



## Tags

Free

**Presentation Event Title: *The Alley House: Towards Social and Environmental Justice in an Affordable, Net-Zero Energy Two-Family Dwelling***

**Tour: The Alley House Duplex: 201 and 203 N. Temple Avenue, Indianapolis**

**Event Description:** Students and faculty from Ball State University R. Wayne Estopinal College of Architecture and Planning (ECAP) will be presenting issues and challenges of implementing high performance building design, environmental stewardship, and sustainability efforts at a local level in the Solar Decathlon Build Challenge (SDBC) net-zero energy competition project, *The Alley House*, that upper-level undergraduates and graduate students from ECAP are a part of.

The SDBC is an international student design competition sponsored by the U.S. Department of Energy (USDOE) that challenges student teams to design and build a net-zero energy home that generates at least as much energy onsite as it consumes on an annual basis using sustainable building techniques and renewable energy technologies. SDBC leverages the work of students and universities to inspire homebuyers and the building industry to pursue high-performance, healthy, and affordable housing solutions, and it provides students with opportunities for real-world, hands-on learning in preparation for sustainability-related careers in design and construction.

This session is geared towards a discussion around issues and challenges of implementing high performance building design, environmental stewardship, and sustainability efforts at a local level. We present our ongoing research and a design-build student-driven project on affordable, net zero energy, “missing middle housing” design – *The Alley House*, a deployment towards social and environmental justice. It exemplifies one of the few pioneering net-zero energy projects that involve a community effort to address affordable housing in the state of Indiana and will be the first PHIUS Certified duplex in the state. Two prime objectives of this presentation are to (a) demonstrate community engagement in mitigating global issues around climate change and affordable housing and (b) present the design, construction, and public exhibit presentation and evaluation efforts for a pilot project. The Alley House project authors will discuss the ongoing commitment of a community that includes faculty, community partners, and industry partners to educate the students and users on the climate crisis and net-zero energy built environments. The presentation is divided into three parts: (1) alley house design process at the nexus of high-performance building and affordable urban housing involving cutting-edge technologies such as and not limited to frost-protected shallow foundations, energy recovery ventilation (ERV), and advanced framing; (2) alley house construction process involving permits, construction, contractors and developers, and funding, and (3) potential works on our public tour, educational advocacy on net zero energy design and build, public exhibit, research on post-occupancy evaluation, and occupant behavior towards this collective effort.

**Key Goals (Learning Points) of this Presentation / Tour Session including Health Safety Welfare (HSW):**

1. Understand the importance of community engagement to address global issues. Recognize and support the mission and values of community partners and neighborhood associations to achieve high impact practices and products.
2. HSW Credit: Demonstrate the integration of cutting-edge technologies and systems for sustainable, high-performance building design in affordable housing. Participants will learn the opportunities and barriers to net-zero energy affordable housing and approaches to improve affordability in net-zero energy housing in the Midwest US. Accessibility, acoustics of internally generated noise, energy efficiency, interior light levels, mechanical, plumbing, electrical, and ventilation system, and sustainable materials will be discussed and showcased in the tour.
3. HSW Credit: Demonstrate the process involving the educational institution’s role in social and environmental stewardship. Pilot sustainability initiatives and building innovations, leveraging the work of students, faculty, and professionals to inspire the design and building industry to pursue high-performance, low-carbon, healthy, and affordable housing solutions.
4. HSW Credit: Illustrate and identify strategies towards the impact of occupant behavior on energy use intensity. Participants will learn of strategies to engage future occupants in the effective use of design strategies to improve indoor air quality, comfort and performance in net-zero rental housing.
5. HSW Credit: Describe and quantify the PV system that is used, describing the electricity generated by the house’s PV system, and the opportunity to understand the electricity generated as well as the electricity consumed by the building. Back-up battery will be discussed in terms of current codes, regulations, natural hazards in Indiana, and life safety resiliency.



BALL STATE UNIVERSITY

R. Wayne Estopinal College of Architecture and Planning  
Department of Architecture



Solar Decathlon

The U.S. Department of Energy Solar Decathlon Build Team from Ball State University's R. Wayne Estopinal College of Architecture and Planning invites you to come tour the student-designed Alley House.

The students will guide you through their two-family home built on an infill lot in Indianapolis' Near Eastside with community partners Englewood Community Development Corporation and Cedar Street Builders.

**Near Eastside Neighborhood Alley House Party and Tour**  
April 8th 10:00 am-4:00 pm

**Easter egg hunt, Student-led tours, Family-friendly games, and local food.**  
Friends and family welcome!

# ALLEY HOUSE PARTY

FAMILY | FRIENDS | CHILDREN

LEARN ABOUT THE NET ZERO ENERGY ALLEY HOUSE  
TWO-FAMILY HOME IN THE ENGLEWOOD VILLAGE  
NEIGHBORHOOD

201 N. TEMPLE AVENUE

OPEN FOR ALL

APRIL  
8TH

10:00 AM-4:00 PM



(For more info)



# Ball State Day at the Alley House!

**GAMES MUSIC FOOD TOURS**

Faculty, staff, students,  
and families join us for  
this special opportunity  
to gather in celebration  
of the student- designed  
net-zero duplex the  
Alley House at

**201 N. Temple Ave.,  
Indianapolis, IN**

**Saturday, April 15th  
10 AM - 4 PM**



# Join Us for Ball State Day at the Alley House!

Friends and family  
join us on a tour of  
the student-designed  
net-zero duplex.

**ALLEY HOUSE**  
201 N. Temple Ave  
Indianapolis, IN



**SATURDAY, APRIL 15th | 10 AM to 4 PM**



# Join Us for Ball State Day at the Alley House!



## **TOUR THE ALLEY HOUSE!**

**201 N. Temple Ave, Indianapolis  
Saturday, April 15th | 10 am – 4 pm**

**Games • Music • Food • Tours**

Faculty, staff, students, and families join us for this special opportunity to gather in celebration of the student designed net-zero duplex the Alley House.

Guest speakers begin at 1:00 and will include President Mearns, Dean Ferguson, faculty leads, and student team leads.

## **For Immediate Release**

March 21, 2023

### **Media Contact**

Greg Fallon  
Chief Digital Marketing & Communications Officer  
Ball State University  
765-285-0048  
[gmfallon@bsu.edu](mailto:gmfallon@bsu.edu)

## **Ball State to Host Public Tours of Net-Zero Energy, Affordable Indianapolis East Side Duplex Designed by CAP Students**

MUNCIE, Indiana – Ball State University’s [R. Wayne Estopinal College of Architecture and Planning](#) (CAP) is hosting free public tours of an affordable, net-zero energy, sustainable duplex family home in Indianapolis designed by a team of Ball State’s CAP students and faculty. Located at 201 N. Temple Ave, in the Westminster/St. Philip Neri neighborhood on the city’s Near Eastside, the duplex—referred to as “The Alley House”—eventually will be home for two families.

Public tours highlighting the sustainability and renewable energy aspects of The Alley House will be given April 4-16, except for Easter Sunday (April 9) and a few days set aside for private tours. On some public tour dates, there will be numerous community-based events and fun, family-friendly activities. Please see the online schedule for specific tour dates, times, and activities. Events of specific interest for media coverage are listed below.

This duplex is an example of how Ball State students and faculty make positive impacts—solving problems in ways that help people and strengthen communities.

“If we are going to be successful as planners, architects, engineers, financiers, and community developers, we must make it possible for under-resourced populations to access zero-energy, high-performance, quality-built residences such as the Ball State student-designed Alley House,” professor of Architecture Pamela Harwood said. “The students working on The Alley House are committed, engaged, thoughtful, and talented. Their professionalism, and balanced building-centered and human-centered design knowledge is inspirational.”

Ball State CAP students, with faculty leads, designed the net-zero energy Alley House for the [U.S. Department of Energy Solar Decathlon® 2023 Build Challenge](#). The competition challenges student teams to design net-zero energy homes that generate at least as much energy onsite as it consumes on an annual basis using sustainable building techniques and renewable energy technologies.

The Alley House work was also part of Ball State's [Immersive Learning projects](#)—high-impact learning experiences that involve collaborative student-driven teams, guided by faculty mentors. Students earn credit for working with community partners such as businesses, nonprofits, and government agencies to address community challenges through the creation of a product that has a lasting impact. Over the last 21 years, Ball State students and faculty have engaged in more than 3,300 Immersive Learning projects focused on solving community challenges.

CAP's community partners on The Alley House are Englewood Community Development Corporation and Gratus Development. The Alley House will be part of Englewood Homes' housing development on the city's the Near Eastside. The Alley House will be the only net-zero energy home in this development.

Read this [Ball State blog post](#) to learn more about The Alley House, the Solar Decathlon Immersive Learning project, and the CAP students' commitment to keeping people at the forefront when planning and designing structures. CAP also maintains a [Solar Decathlon site](#) with additional information about The Alley House.

### **Activities that might be of special interest for media coverage include:**

#### **Alley House Neighborhood Party**

10 a.m.-4 p.m.  
Saturday, April 8

This family-friendly event will feature food, music, an Easter egg hunt with small prizes for children, and a tour of the duplex. Information about The Alley House will be available onsite.

#### **Ball State Day at The Alley House**

10 a.m.-4 p.m.  
Saturday, April 15

This day will feature games, music, food, and educational tours. This event is open to the public. It will also be a special opportunity for Ball State faculty, staff, students, and alumni to gather in celebration of The Alley House.

- Guest speakers expected to be in attendance at Ball State Day at The Alley House include:
  - Ball State University President Geoffrey S. Mearns
  - Dave Ferguson, dean of Ball State's University's R. Wayne Estopinal College of Architecture and Planning (CAP)

- Team faculty leads for The Alley House/Solar Decathlon project: CAP professors Pam Harwood and Tom Collins
- Student team leads

*Additional speakers may be added to the April 15 event. Check the online schedule for possible updates to this and other tour events.*

With reasonable notice, a few tours specifically for the media may be scheduled. Additionally, Ball State's Marketing and Communications Division staff will work to facilitate media requests for pre-arranged interviews with Dean Ferguson; one of the team faculty leads, professors Harwood or Collins; or one of the CAP students involved with the Alley House.

**To request a media tour or a pre-arranged interview—or if you intend to cover any of the events during the public tour dates—please contact Lorell “Landa” Bagley, Content Strategist and Writer, at [lorell.bagley@bsu.edu](mailto:lorell.bagley@bsu.edu), or 765-285-1568.**

### **About Ball State**

Founded in 1918 and located in Muncie, Ball State University is one of Indiana's premier universities and an economic driver for the state. Ball State's 20,000 students come from all over Indiana, the nation, and the world. The 790-acre campus is large enough to accommodate first-rate facilities and 19 NCAA Division I sports, but our welcoming and inclusive campus is small enough to ensure the friendliness, personal attention, and access that are the hallmarks of the University. Destination 2040: Our Flight Path establishes Ball State's ambitious goals for our second century. We Fly!

Follow Ball State University:

Website: [www.bsu.edu](http://www.bsu.edu)

Twitter: [@BallState](https://twitter.com/BallState)

Facebook: [www.facebook.com/ballstate](https://www.facebook.com/ballstate)

LinkedIn: [www.linkedin.com/school/ball-state-university](https://www.linkedin.com/school/ball-state-university)

Instagram: [@ballstateuniversity](https://www.instagram.com/ballstateuniversity)

January 12, 2023

## Ball State University Students Build Zero Energy House of the Future

*The Ball State University College of Architecture and Planning Solar Decathlon Build team is competing with more than a dozen national and international collegiate teams to design and build the most sustainable, cutting-edge house powered by renewables.*



*Students at Ball State University share their work on the design for a zero energy home in the Near Eastside of Indianapolis, which includes passive strategies of stack ventilation, daylighting, passive heating, and optimized building design with a high performance building envelop and renewable energy provided through solar photovoltaics on south facing mono-pitch roof.*

Students from Ball State University aren't waiting to tackle climate change; they are starting while still in school by designing and building a zero energy, low carbon house as part of the U.S. Department of Energy [Solar Decathlon](#)<sup>®</sup>.

"We didn't create the systems in our world that led to climate change, but we know that we can be the ones to fix them," said Emily Rheinheimer, team co-lead. "75% of the electricity use in the U.S. goes to our buildings. That isn't sustainable or necessary, and our innovative, affordable, two-family Alley House design will prove it."

- [More than a dozen finalist teams](#), including Ball State University, each earned \$50,000 in prize funding from the U.S. Department of Energy (DOE) to build and exhibit their ground-breaking, zero energy buildings in their home communities before competing for contest and grand prizes in April 2023.



Neighborhood children work with Ball State Students on collecting dirt in Ball jars during ground breaking event

- The team from Ball State University had a ground-breaking ceremony on July 13 with a community interactive event. In this family-centered event, children were given a trowel to shovel dirt from the corners of the future dwelling's footprint and put it into honorific Ball jars for future soil testing. Over 60 neighbors, community members, professionals, students and faculty were in attendance. A series of small installations allowed the public to learn about the future construction of the Alley House.



- A “Topping Out” Celebration of the Alley House was held on Monday, December 19th. Originally a Scandinavian Tradition, the practice of “topping out” a new building can be traced to the ancient rite of placing a tree atop a new building to appease the tree-dwelling spirits displaced in its construction. For the Alley House ceremony, each member of the framing crew and the visitors were given a ribbon to tie around the tree. A Scandinavian mulled spice drink and refreshments were served following in the spirit of the “Topping Out” tradition.



The Ball State University Alley House design stands out among the international competitors because the “Alley House,” is designed in a unique way that the duplex home engages a series of underutilized urban alleys adjacent to the project site for better visual, physical, and solar access. Two compact, 1,350 SF, 2-story units with 3-bedrooms, 2 full baths, and ground floor accessibility are arranged front and back instead of side-by-side so that each has plentiful southern solar access. Transitional spaces such as porches, trellises, and garden areas offer opportunities to connect with neighbors. The west unit is our designated SDBC competition unit and is designed to be high-performance and net-zero energy while the east unit is designed to be better than code compliant, which offers a useful side-by-side performance comparison. The home uses an innovative frost-protected shallow

foundation system, which reduces high-carbon concrete use and limits site excavation. Advanced framing reduces thermal bridging in the exterior envelope due to less wood in the wall. Cellulose, a low-carbon insulation, is used throughout, and it is complimented by continuous mineral wool in the super-insulated west unit. HVAC is provided by high-efficiency, multi-zone, short-ducted heat pump units. The west unit includes continuous, balanced ventilation with an ERV. High-performance windows allow ample daylighting while minimizing thermal heat loss and gain. All rainwater and runoff is handled onsite with raingardens and a rainwater catchment system. The home will be certified under the PHIUS Core Prescriptive Standard and will also be Sustainable SITES certified. The design incorporates many residential design features uncommon in affordable residential construction in Indiana. The General Contractor for Alley House is Cedar Street Builders, a local company specializing in high-performance homes.

“For 20 years, DOE’s Solar Decathlon has harnessed the ingenuity and enthusiasm of America’s students to generate cutting-edge climate solutions,” said U.S. Secretary of Energy Jennifer M. Granholm. “The innovative building designs developed by this year’s competitors demonstrate how clean energy technologies can be applied to households across the country, including slashing costs for American families, modernizing energy infrastructure, and decarbonizing the building sector.”

The team plans to hold a public exhibition in April 2023 to educate the community on ways to increase energy efficiency for their own homes and to showcase what homes of the future could look like. For more information on the project and the public exhibition, visit the Ball State Solar Decathlon website: <https://sites.bsu.edu/sd-buildindy/>. To follow the Solar Decathlon Challenge of the 16 teams competing in the Build Challenge review this website <https://www.solardecathlon.gov/event/2023-build-challenge-teams.html>



Signage developed by our Community Engagement Officer with feedback from our Community Partner Englewood CDC and Cedar Street Builders showcases the Solar Decathlon Local Build two-family, net zero energy Alley House!





BALL STATE  
UNIVERSITY

# 2023 Solar Decathlon

Partnership with Englewood CDC

## Open House Feedback Session



ESTOPINAL COLLEGE OF ARCHITECTURE AND PLANNING

This feedback session is open to **ALL** who would like to see the work in progress for the Solar Decathlon design + build challenge 2023.



## October 18, 2021

25 North Pine Street  
Indianapolis, IN 46202

4:00 - 6:00 pm anytime  
[refreshments]

Help the College of Architecture  
and Planning Students  
Win **\$25,000** With Your VOTE.

It's as simple  
as clicking a  
button.



**VOTING LINK IN OUR BIO**

## **WHO**

State Farm is awarding \$25,000  
to the top 100 causes that get  
the most VOTES.

2023

# Solar Decathlon

Partnership with Engelwood CDC  
Open House FeedBack Session



BALL STATE  
UNIVERSITY



This feedback session is open to ALL who would like to see the work in progress for Solar Decathlon design + build challenge 2023

## ESTOPINAL COLLEGE OF ARCHITECTURE AND PLANNING



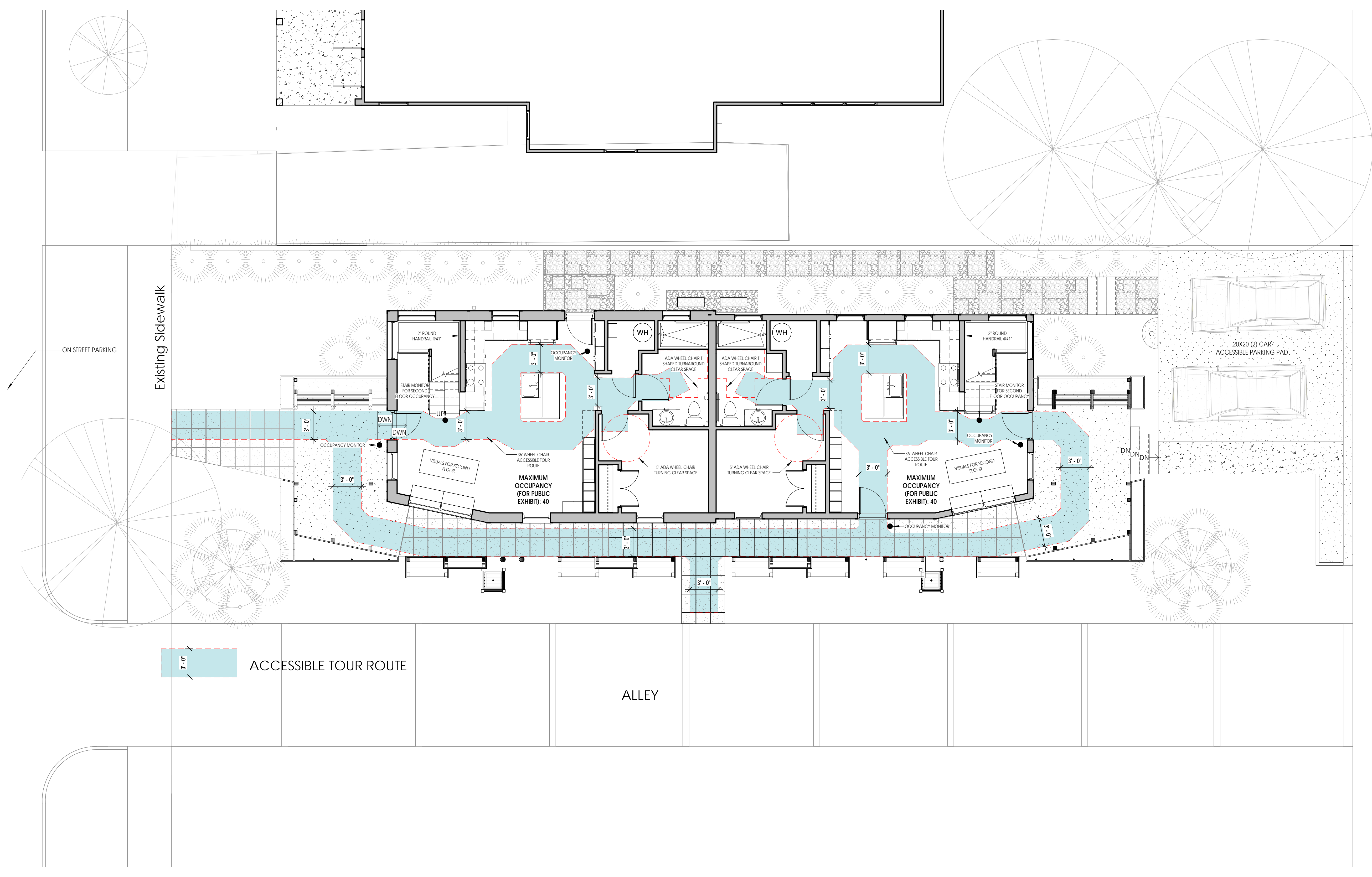
## NOVEMBER 16, 2022

25 North Pine Street  
Indianapolis, IN 46202

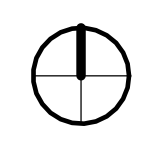
1:30 - 5:30 pm anytime  
[refreshments]



BALL STATE  
UNIVERSITY



**1** ACCESSIBLE TOUR ROUTE  
SCALE: 3/16" = 1'-0"



**CLIENTS:**  
 US DEPARTMENT OF ENERGY  
 SOLAR DECATHLON  
 BUILD CHALLENGE 2023  
 WWW.SOLARDECATHLON.GOV

**U.S. DEPARTMENT OF ENERGY**  
**SOLAR DECATHLON**

ENGLEWOOD COMMUNITY DEVELOPMENT CORPORATION  
 WWW.ENGLEWOODCDC.COM

**ENGLEWOOD**  
 COMMUNITY DEVELOPMENT CORPORATION

**BALL STATE UNIVERSITY**  
**R. Wayne Estopinal**  
**College of Architecture and Planning**

**ALLEY HOUSE**

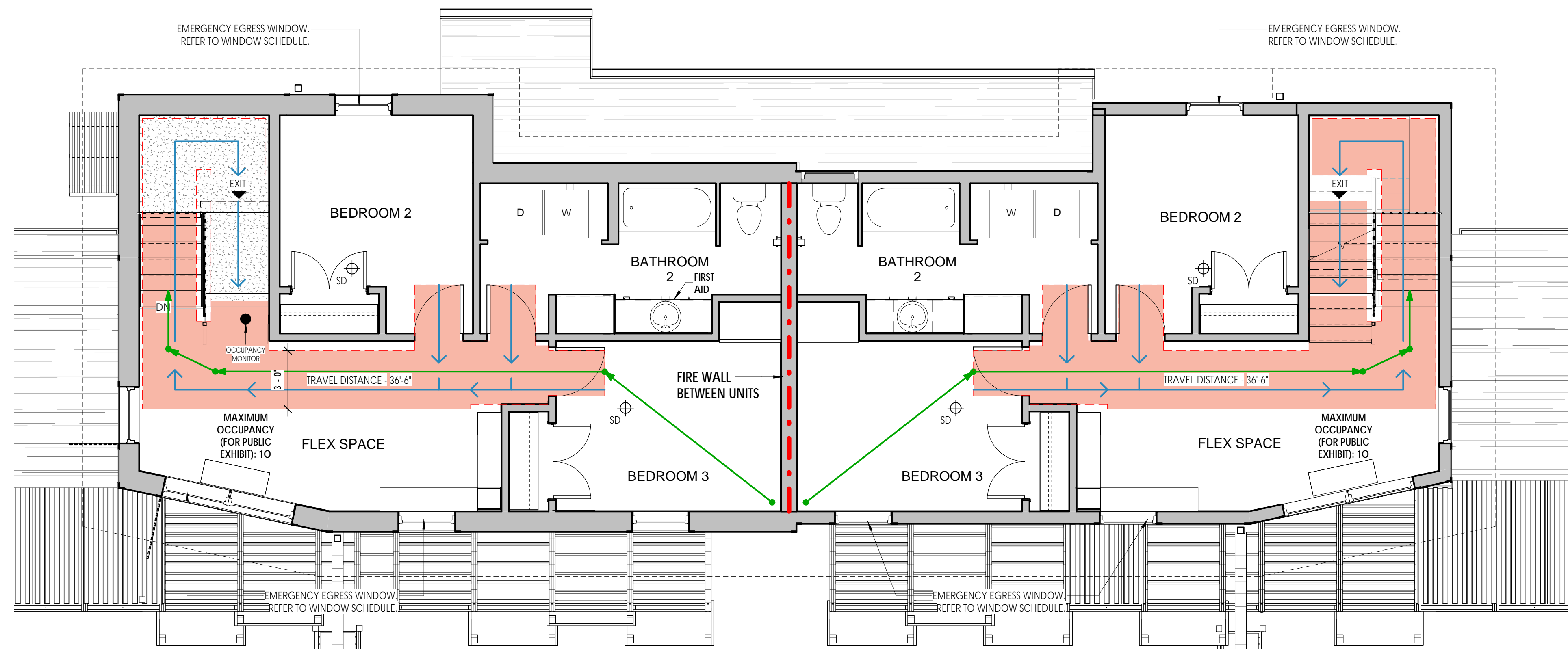
**REVISIONS:**

#	DESCRIPTION	DATE
1	PERMIT SET REVISION 01	08/26/2022

NOT FOR CONSTRUCTION

ACCESSIBLE TOUR ROUTE

**G003**  
 ISSUE DATE: MARCH 18, 2023



**2 SECOND FLOOR LIFE SAFETY PLAN**  
SCALE: 1/4" = 1'-0"

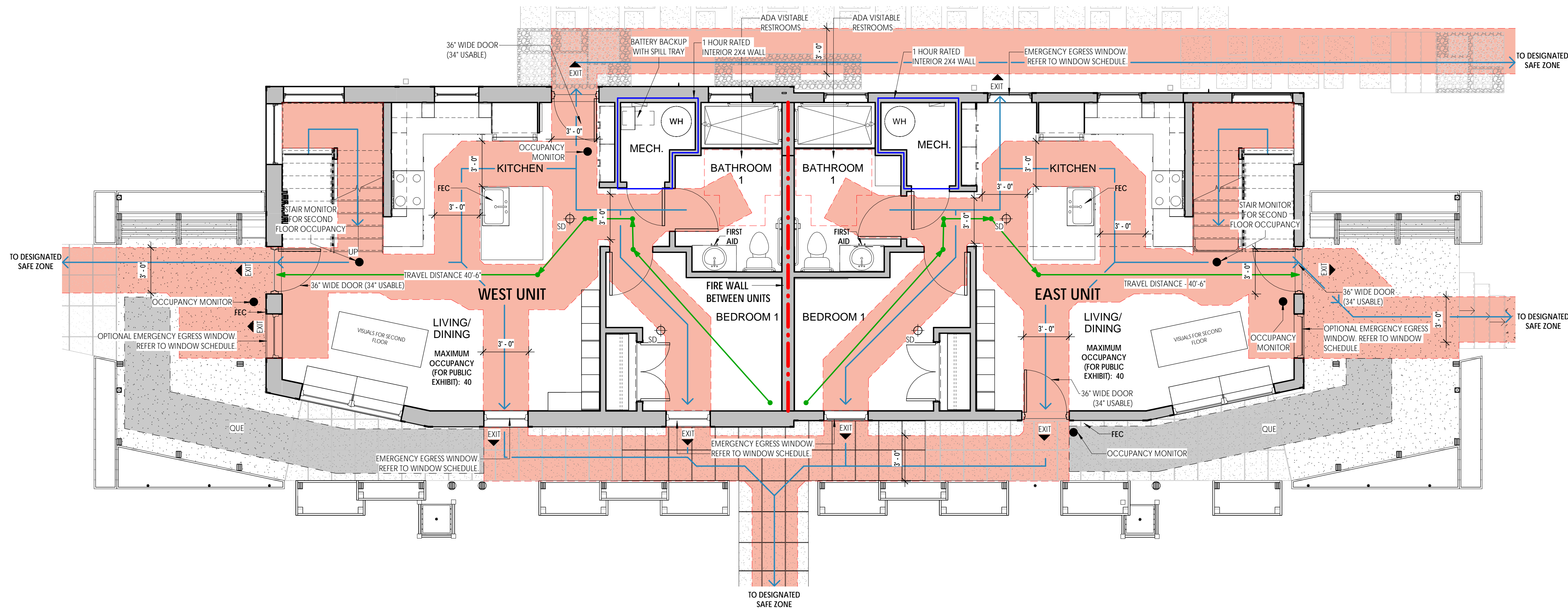
**LIFE SAFETY PLAN KEYED NOTES**

1. PROVIDE 1 HOUR RATED SEPERATION WALL BETWEEN EAST AND WEST UNIT AS NOTED.
- FEC FIRE EXTINGUISHER IN MECH CLOSET AND FIRE BLANKET UNDER KITCHEN SINK.
- S.D. SMOKE DETECTORS

**EVENT SAFETY EVACUATION PLAN NOTES:**

1. ELECTRICAL AND HVAC EQUIPMENT IS SECURED IN MECHANICAL ROOM.
  2. STAIRS ARE IDENTIFIED AS A SLOW AND POTENTIALLY HAZARDOUS EGRESS PATH. THEREFORE, OCCUPANCY IS LIMITED TO 10 TO MINIMIZE RISK.
  3. ELECTRICAL AND HVAC EQUIPMENT IS SECURED IN MECHANICAL ROOM.
  4. IN THE EVENT OF AN EMERGENCY THE EVENT TEAM WILL USE A CODE WORD TO SIGNAL TO EACHOTHER THAT AN EMERGENCY IS TAKING PLACE. THE TEAM WILL THEN CALMLY ESCORT THE GUEST OFF THE SITE AND TO DESIGNATED SAFE AREA.
- CODE WORD: CARDINAL
5. A LIST OF EMERGENCY SERVICE NUMBERS WILL BE PROVIDED TO EACH MEMBER OF THE EVENT TEAM.

NOTE: \*\*R313.1 APPLICATION IN CLASS 2 STRUCTURES, AUTOMATIC FIRE SPRINKLER SYSTEMS ARE OPTIONAL; HOWEVER, IF INSTALLED, THEY SHALL BE INSTALLED IN ACCORDANCE WITH SECTION R313.2. WHEN THE INDIANA BUILDING CODE ALLOWS THE USE OF THIS CODE AS THE MINIMUM CONSTRUCTION STANDARD FOR CLASS 1 STRUCTURES, AUTOMATIC FIRE SPRINKLER SYSTEMS SHALL BE INSTALLED IN THE MANNER SPECIFIED IN THE REFERRING SECTION OF THE INDIANA BUILDING CODE.



**1 FIRST FLOOR LIFE SAFETY PLAN**  
SCALE: 1/4" = 1'-0"

**CLIENTS:**

US DEPARTMENT OF ENERGY  
SOLAR DECATHLON  
BUILD CHALLENGE 2023  
WWW.SOLARDECATHLON.GOV



ENGLEWOOD COMMUNITY  
DEVELOPMENT CORPORATION  
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**BALL STATE UNIVERSITY**  
R. Wayne Estopinal  
College of Architecture  
and Planning

**ALLEY HOUSE**

**REVISIONS:**

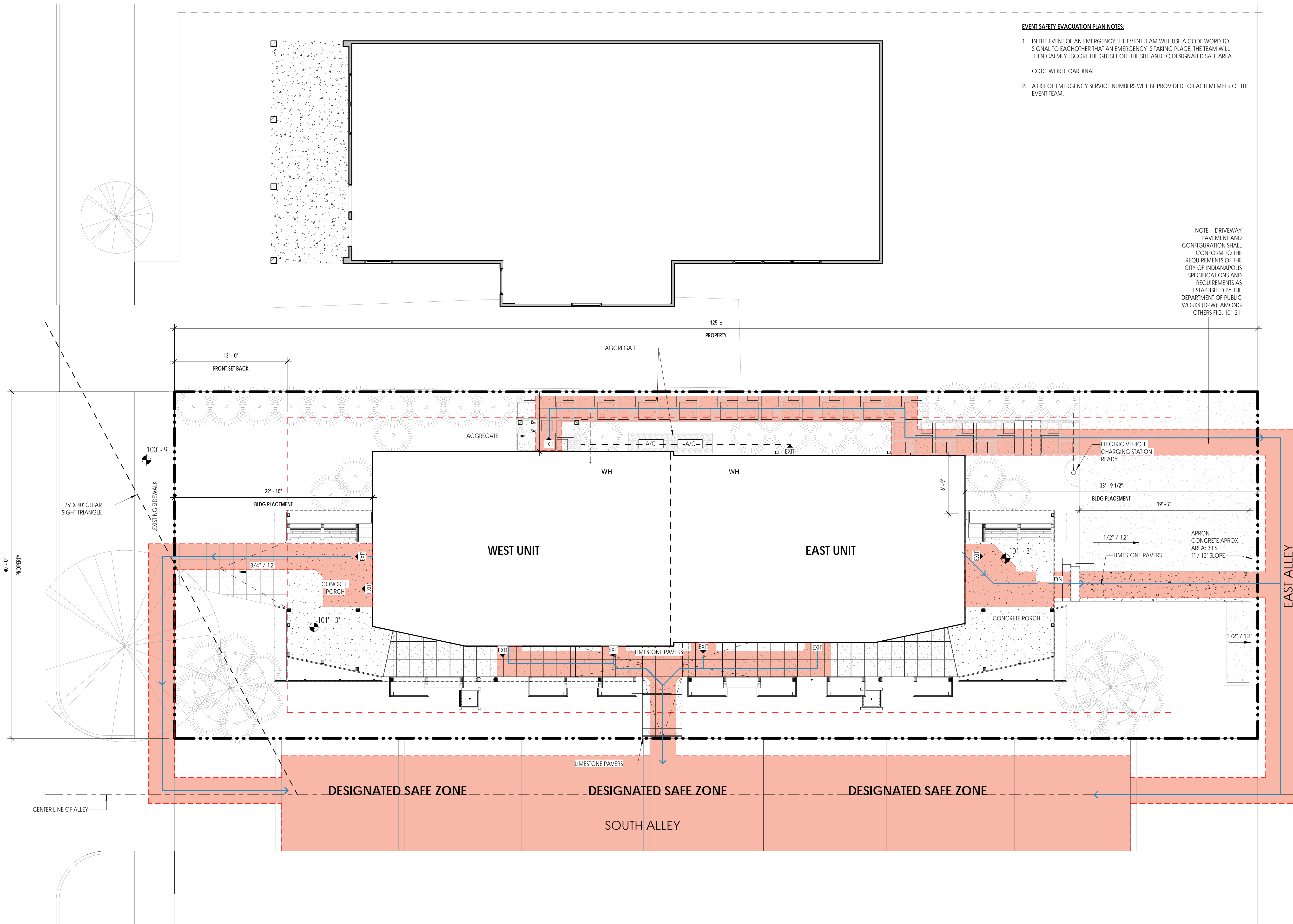
#	DESCRIPTION	DATE
1	PERMIT SET REVISION 01	08/26/2022

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CONSTRUCTION

FIRST & SECOND FLOOR  
LIFE SAFETY PLAN/  
EVACUATION PLAN

**G004**

ISSUE DATE: MARCH 18, 2023



**EVENT SAFETY EVACUATION PLAN NOTES:**

1. IN THE EVENT OF AN EMERGENCY THE EVENT TEAM WILL USE A CODE WORD TO SIGNAL TO EACHOTHER THAT AN EMERGENCY IS TAKING PLACE. THE TEAM WILL THEN CALMLY ESCORT THE GUEST OFF THE SITE AND TO DESIGNATED SAFE AREA.  
CODE WORD: CARDINAL
2. A LIST OF EMERGENCY SERVICE NUMBERS WILL BE PROVIDED TO EACH MEMBER OF THE EVENT TEAM.

NOTE: DRIVEWAY PAVEMENT AND CONFIGURATION SHALL CONFORM TO THE REQUIREMENTS OF THE CITY OF INDIANAPOLIS SPECIFICATIONS AND REQUIREMENTS AS ESTABLISHED BY THE DEPARTMENT OF PUBLIC WORKS (DPW), AMONG OTHERS FIG. 101.21.

**CLIENTS:**  
 US DEPARTMENT OF ENERGY  
 SOLAR DECATHLON  
 BUILD CHALLENGE 2023  
 WWW.SOLARDECATHLON.GOV

**U.S. DEPARTMENT OF ENERGY**  
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ENGLEWOOD COMMUNITY DEVELOPMENT CORPORATION  
 WWW.ENGLEWOODCDC.COM

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 COMMUNITY DEVELOPMENT CORPORATION

**BALL STATE UNIVERSITY**  
**R. Wayne Estopinal**  
**College of Architecture and Planning**

**ALLEY HOUSE**

**REVISIONS:**

#	DESCRIPTION	DATE
1	PERMIT SET REVISION 01	08/26/2022

NOT FOR CONSTRUCTION

SITE LIFE SAFETY PLAN/  
 EVACUATION PLAN

**G005**  
 ISSUE DATE: MARCH 18, 2023







## LINKS in Solar Decathlon Build Project\_2023

Although this is brief, this [write-up in \*The Herald Bulletin\*](#) (Anderson, Ind.) is a good placement. It achieves one of the main communications goals—which is to inform the public about the basics of Alley House, its key features, and tell the community in our region about the upcoming public tours.

Here's the direct link to the HB story:

[https://www.heraldbulletin.com/news/local\\_news/briefs/good-morning-duplex-designed-by-ball-state-cap-students/article\\_aa3eca92-c7fd-11ed-9a61-6bb12b31f30c.html](https://www.heraldbulletin.com/news/local_news/briefs/good-morning-duplex-designed-by-ball-state-cap-students/article_aa3eca92-c7fd-11ed-9a61-6bb12b31f30c.html)

**Subject:** Alley House Solar - Public View Link

<https://monitoringpublic.solaredge.com/solaredge-web/p/kiosk?guid=7d97c530-1609-4af1-8c4a-4f22a5dec5a8>

**Max Kennerk** | Solar Account  
Manager

Mobile/Text: 317.457.6247

Office: 317.418.3917

Email [Max@JeffersonElectricLLC.com](mailto:Max@JeffersonElectricLLC.com)

2950 East Hanna Avenue Indianapolis, IN

Digital Corps pulled together [all of the videos](#) they have worked on so far. These videos should all have timecode on them, so if you have any changes for us you can refer to the exact spot that needs addressed.

Exhibit Press Release

<https://bsu.edu/news/press-center/archives/2023/03/ball-state-to-host-public-tours-of-affordable-indianapolis-duplex-designed-by-cap-students>

Photos of Solar Decathlon Project with students

<https://ballstate.photoshelter.com/galleries/C00005Brmd2NihSI/G0000EsVM03MtKII/23-MC-48503>

The video is uploaded to our YouTube channel. It is also on the SD website.

<https://www.youtube.com/watch?v=qO0tvCZzmc>

Solar Decathlon update on 2023 Challenge Teams

Solar Decathlon Website: <https://sites.bsu.edu/sd-buildindy/>

Solar Decathlon Landing Page:

<https://www.bsu.edu/academics/collegesanddepartments/architecture/student-experience/solar-decathlon>

Solar Decathlon Videos Created by Digital Corps:

[SD\\_Intro\\_CV.mp4](#)

[Neighborhood\\_CV.mp4](#)

Barn Owl Daily Photographs!

<https://www.barnowl.tech/>

login

email : [Ndavis@bsu.edu](mailto:Ndavis@bsu.edu)

password: CAPcharlie

click on the 3 dots and go to image gallery

Solar Decathlon Communication Outreach and Storytelling!

Kelly MacGregor, Engagement, Thursday, Oct 27, 11:00 am ET, Connecting with School districts

Maria Payan, Latino students to shine on the SD Build project

[maria.payan@ee.doe.gov](mailto:maria.payan@ee.doe.gov) to discuss story ideas

To shine light on students individually, team members, the project, the neighborhood, what this is about, tell the stories of people, students, with children working with us, how the child goes on to study architecture, to tell the story of what we are doing.

Who to shine the spotlight on in building the houses:

Who can record market communication expert:

5 minutes of fine video of your team processing and building the house:

What makes you different from everyone else:

Future deliverables ask for video footage!

Ask for local media contacts too to do the pitch and get them involved in showing them to community.

### **Current Links on Solar Decathlon Alley House Project\_2021\_22**

*NewsLink Indiana discusses Solar Decathlon, 2021,*” Interviewed by Alex Almanza. NewsLink Indiana.

<https://www.facebook.com/NewsLinkBSU/videos/614697503294983/>

Deans Blog on CAP under Architecture News:

<https://blogs.bsu.edu/cap/2022/11/01/deans-update/>

Net Zero Energy Design Designation:

<https://bsu.edu/news/press-center/archives/2022/10/ball-state-university-architecture-and-planning-students-faculty-earn-national-recognition>

<https://www.energy.gov/eere/buildings/us-doe-zero-energy-design-designation-programs>

Groundbreaking Ceremony <https://blogs.bsu.edu/cap/2022/07/16/ball-state-cap-celebrated-the-future-build-of-the-eco-friendly-duplex-alley-house/>

[https://www.linkedin.com/posts/passive-house-institute-us-phius-congratulations-to-the-alley-house-team-on-activity-6953800497141100544-](https://www.linkedin.com/posts/passive-house-institute-us-phius-congratulations-to-the-alley-house-team-on-activity-6953800497141100544-R8LT/?utm_source=linkedin_share&utm_medium=member_desktop_web)

[R8LT/?utm\\_source=linkedin\\_share&utm\\_medium=member\\_desktop\\_web](https://www.linkedin.com/posts/passive-house-institute-us-phius-congratulations-to-the-alley-house-team-on-activity-6953800497141100544-R8LT/?utm_source=linkedin_share&utm_medium=member_desktop_web)

Department of Architecture [Solar Decathlon](#) webpage and Solar Decathlon website

<https://sites.bsu.edu/sd-buildindy/>

<https://blogs.bsu.edu/cap/2022/04/14/college-of-architecture-and-planning-student-teams-advance-to-finals-of-solar-decathlon-competition/>

The duplex, referred to as the “Alley House,” was designed by a group of students and faculty of Ball State University’s [R. Wayne Estopinal College of Architecture and Planning](#) (CAP) for the five-semester-long project for the [U.S. Department of Energy Solar Decathlon® 2023 Build Challenge](#), an international competition.

[CAP's Solar Decathlon Build Team](#) for the Alley House project was recently selected as one of 14 (out of 28) teams to advance to the construction stage of the competition. Ball State CAP's Build Team was awarded \$50,000 from the U.S. Department of Energy for the build.

Read this [Ball State blog post](#) to learn more about The Alley House, the Solar Decathlon immersive learning project, and the CAP students' commitment to keeping people at the forefront when planning and designing structures.

CAP also maintains a [Solar Decathlon site](#) with more information on the Alley House project.

This Solar Decathlon effort is one of Ball State's [immersive learning projects](#)—high-impact learning experiences that involve collaborative student-driven teams, guided by faculty mentors.

The Alley House project has been selected as one of the top 200 causes/projects (out of 4,000 submitted) for the [State Farm Neighborhood Assist®](#) program and was recently awarded \$25,000 as a top 100 cause in the United States through the [Online voting for the Alley House project](#) completed on May 6. The Alley House Net-Zero Home won \$25,000 from State Farm <https://www.neighborhoodassist.com/entry/2044444> And \$50,000 from the U.S. Department of Energy!

The Alley House duplex “will be part of a much larger initiative of our community partner Englewood CDC, and Gratus Development,” said [Pam Harwood](#), professor of Architecture at Ball State.

Project and students also a part of the Solar Decathlon 2022 Video  
<https://www.youtube.com/watch?v=GmOtZbBV-M4>

<https://www.ballstatedaily.com/article/2022/01/news-ball-states-college-of-architecture-and-planning-takes-part-in-the-international-solar-decathlon-build-competition>

And featured in Indianapolis Building Journal (IBJ) attached and Building Excellence to follow

# BALL STATE ECAP PARTICIPATES IN SOLAR DECATHLON COMPETITION



The U.S. Department of Energy's prestigious Solar Decathlon Build Challenge competition (SDBC), now in its 20th year, invites student teams from around the world to design and construct a net-zero energy home with the help of local community partners and sponsors. The Solar Decathlon includes both a design phase to develop innovative net-zero energy solutions, and a later build/construction phase to demonstrate compliance with measured competition criteria and to showcase the home.

A net-zero energy home is one that makes at least as much energy onsite as it uses on an annual basis and is the pre-eminent

model of green residential design in the world today. The Ball State student-designed Solar Decathlon Build home, called the "Alley House," is an affordable, two-family project located in Indianapolis' Near Eastside.

## Who is participating in Ball State's Solar Decathlon student team?

The student team includes approximately 100 undergraduate and graduate students in Ball State's Estopinal College of Architecture and Planning (ECAP). By design, the multidisciplinary team includes students from five ECAP programs: Architecture, Landscape Architecture, Urban Planning, Construction Management, and Interior Design.

## What is Ball State's past success in the Solar Decathlon?

Ball State has a longstanding involvement with the Solar Decathlon program since collaborating with the University of Louisville on a Build Challenge project in 2013. From 2017 to 2022, the college has engaged over 25 teams in the Design Challenge winning six international awards. Beginning in Fall 2021, Ball State again entered the Build Challenge for 2023. In April 2022, the student team competed with 28 national and international Solar Decathlon Build teams and was one of 14 teams awarded a Proceed to Construction and \$50,000 of funding from the U.S.

Department of Energy (USDOE) for the construction of the "Alley House."

## Who is Ball State's community partner?

The student team's community partner is Englewood Community Development Corporation (CDC) with Gratus Development of Indianapolis the construction management team for the build of Englewood Homes. The "Alley House", one of the 20 duplex homes that are part of the Englewood Homes project will be constructed on a vacant, infill lot at 201 North Temple Avenue in Indianapolis. Englewood CDC has cat-

## > BUILDING EXCELLENCE MEDIA

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alyzed neighborhood groups working together to revitalize the Near East-side of Indianapolis, an area that has experienced significant disinvestment, and to imagine a flourishing future. It strives to create vitality and walkability, maintain a diverse population, and provide equitable housing, educational, economic, and leisure opportunities for residents through management of affordable housing buildings, economic development activities, public parks and spaces for residents, and comprehensive planning activities.

Englewood CDC has experience designing and building net-zero energy buildings as part of its portfolio and has supported neighborhood professional partners that work in sustainability areas, such as Jefferson Electric, a solar photovoltaic (PV) installer. Together with Gratus Development, Englewood CDC recently secured \$8 million funding in low-income housing tax credits for Englewood Homes, a 40-unit affordable housing development on 20 scattered infill sites. "Alley House" net-zero energy home, will be one of the 20 duplex projects constructed.

#### When will construction begin?

Construction is expected to begin in early July 2022 and will be complete in early April 2023. K.P. Meiring is the general contractor for the Englewood Homes project. Dan Porzel of Cedar Street Builders is working with Ball State students and faculty on the design and construction of the Alley House.

When the Alley House is complete, Ball State students will host in-person and vir-

tual tours, digital activities, and site visits to effectively communicate the design strategies for a net-zero energy home and inspire professionals, industry leaders, and the public at-large to pursue energy efficiency and renewable energy opportunities.

#### How does the Solar Decathlon help students in design and construction fields and Ball State?

ECAP is committed to providing students with both knowledge and practical experience in net-zero, green, affordable housing design concepts, methodologies, materials, and technologies. Working with community and industry partners allows Ball State to provide students with hands-on, experiential learning to increase their skills and facilitate their entry into the professional workforce and perhaps to be high-performance building leaders and advocates in their careers.

The Solar Decathlon also allows Ball State to contribute to community engagement and improvement efforts outside its campus and promote its degree programs in design fields on both national and international stages.

#### How does the Solar Decathlon impact professionals in design and construction fields?

The Solar Decathlon competition leverages work by students and universities to inspire the building industry to incorporate sustainable building practices and materials as well as provides students with opportunities for real-world, hands-on learning in preparation in sustainability-related careers.

#### How can your organization support the student team in the Solar Decathlon?

Sponsorship, donations, and contributions from community organizations and industry groups/professionals is critical to the success of Ball State's Solar Decathlon entry. As such, Ball State sees a number giving opportunities that will benefit the construction including cash, materials, labor, and professional expertise.

#### How will you and your organization be recognized for your contributions to Ball State's Solar Decathlon team?

- Gold: Your name will be placed on a plaque displayed outside the house and at CAP on the Solar Decathlon Donor Wall. You will also be formally acknowledged with a special invitation to the Open House.
- Silver: Your name will be placed on a plaque displayed outside the house and at CAP on the Solar Decathlon Donor Wall.
- Bronze: Your name will be placed on a plaque displayed on the CAP Solar Decathlon Donor Wall.

#### Who are the Faculty and Administrative Advisors for the student team?

- Pam Harwood, Tom Collins, Dan Overbey – Department of Architecture
- Chris Marlow – Department of Landscape Architecture
- Donna Browne – Center for Energy

Research | Education | Service (CERES)

- Sarah Alfaro and Sherif Attallah – Department of Construction Management and Interior Design
- John West – Department of Urban Planning

#### What does the funding look like so far?

- 2022 U.S. Department of Energy Solar Decathlon award for the Alley House
- 2022 Community Block Grant for the Alley House
- 2021-22 Ball State Immersive Learning Provost Grant – Pilot Project
- 2022-23 Ball State Sustained Immersive Learning Grant – 3 years
- College of Architecture and Planning Solar Decathlon Foundation
- Englewood Community Development Corporation Tax Credit Funding

#### Who can you contact for more information about the Alley House and the Solar Decathlon competition?

- Pam Harwood, Department of Architecture: [pharwood@bsu.edu](mailto:pharwood@bsu.edu), 765-749-6379
- Tom Collins, Department of Architecture: [tdcollins@bsu.edu](mailto:tdcollins@bsu.edu), 617-721-8713

Photos courtesy of Samantha Blankenship



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**BALL STATE  
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R. Wayne Estopinal  
College of Architecture  
and Planning

# THE ALLEY HOUSE.... *Coming Spring 2023*



U.S. DEPARTMENT OF ENERGY  
**SOLAR DECATHLON**  
2021-2023 BUILD CHALLENGE



**ENGLEWOOD**  
COMMUNITY DEVELOPMENT CORPORATION



**GRATUS**  
DEVELOPMENT

**K.P. Meiring**  
COMPANY  
Development and Construction





**BALL STATE  
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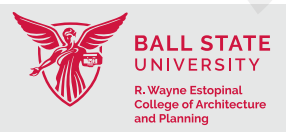
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# THANK YOU TO OUR SPONSORS





2023 SDBC Alley House project describes the unique way that the duplex home engages a series of underutilized urban alleys adjacent to the project site for better visual, physical, and solar access. Two compact, 1,350 SF, 2-story units with 3-bedrooms, 2 full baths each, are arranged front and back instead of side-by-side so that each unit has plentiful southern solar access. Ample daylighting and passive solar heating and cooling with a stack ventilation stair tower are carefully considered in the design. Transitional spaces such as porches, trellises, and garden areas offer opportunities to connect with neighbors.



# ALLEY HOUSE

The Alley House work was a part of Ball State's Immersive Learning projects—high impact learning experiences that involve collaborative student-driven teams, guided by faculty mentors. Students earn credit for working with community partners such as businesses, nonprofits, and government agencies to address community challenges through the creation of a product that has a lasting impact. Over the last 21 years, Ball State students and faculty have engaged in more than 3,300 Immersive Learning projects focused on solving community challenges.

Solar Decathlon Build Challenge 2023-Project Alley House was designed by the students from Ball State University's R. Wayne Estopinal College of Architecture and Planning which is a net-zero, sustainable, high performance, affordable two-family home built on an infill lot in Indianapolis' Near Eastside with community partners Englewood Community Development Corporation and Gratus Development



# pamphlet



Net Zero

High-Performance Building



Second Floor Plan



First Floor Plan

The west unit is the designated SDBC competition unit and is designed to be high-performance and net-zero energy while the east unit is designed to be better than code compliant, which offers a useful side-by-side performance comparison. The home will be certified under the PHIUS Core Prescriptive Standard and Sustainable SITES.

The home uses an innovative frost-protected shallow foundation system, which reduces high-carbon concrete use and limits site excavation. Advanced framing reduces thermal bridging in the exterior envelope due to less wood in the wall. Cellulose, a low-carbon insulation, is used throughout, and it is complimented by continuous mineral wool in the super-insulated west unit.



SPONSORS





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## ALLEY HOUSE



**pamphlet**







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**Solar  
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**ALLEY HOUSE**

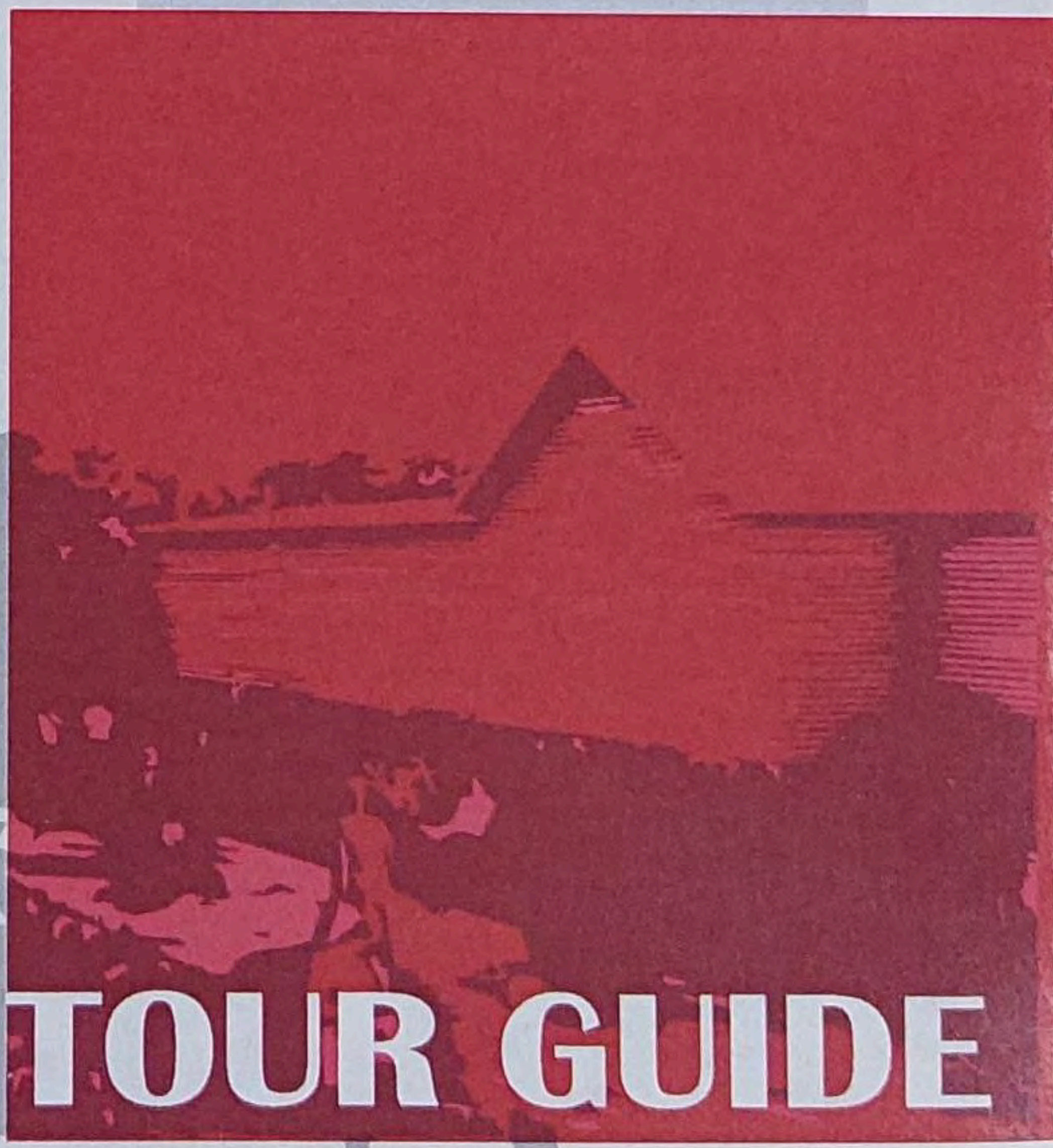
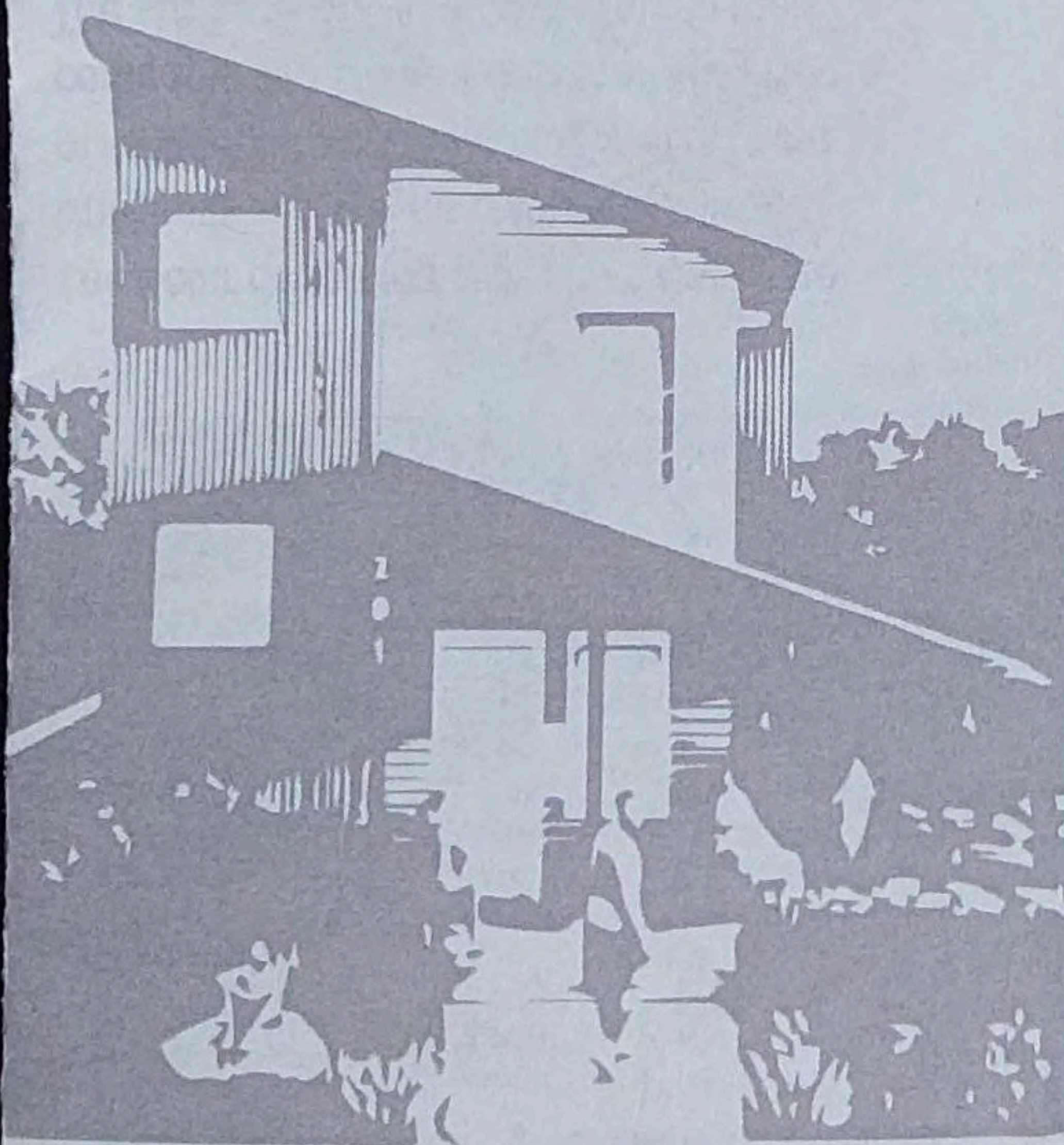
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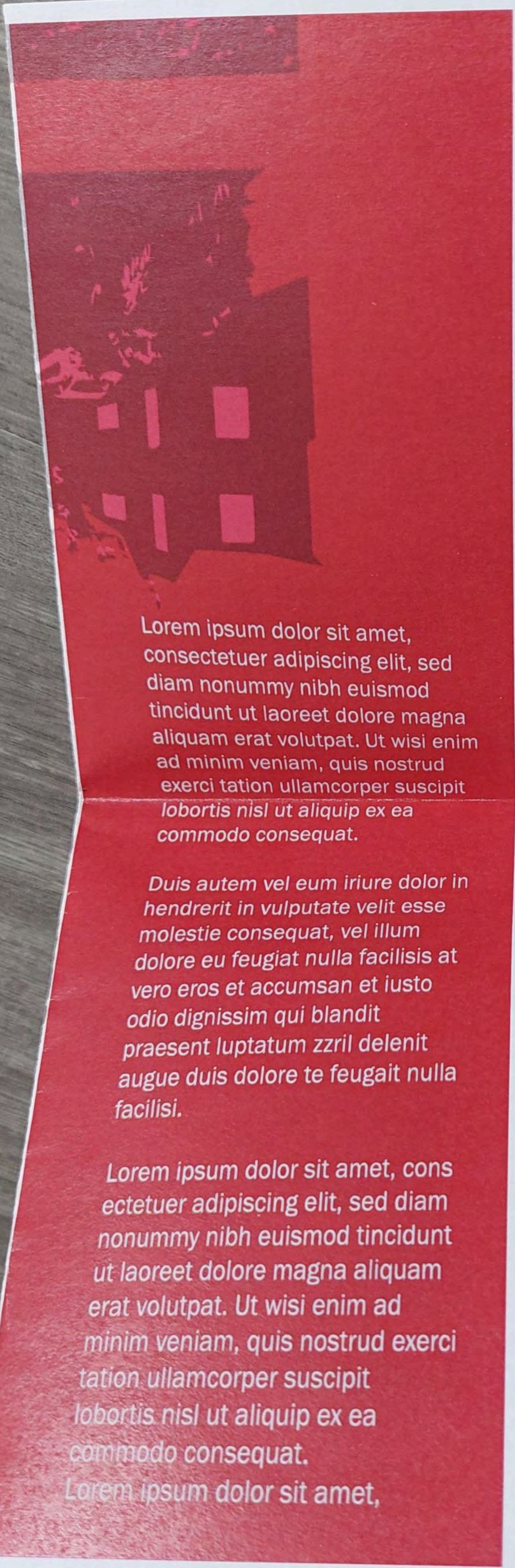


## ALLEY HOUSE



## TOUR GUIDE

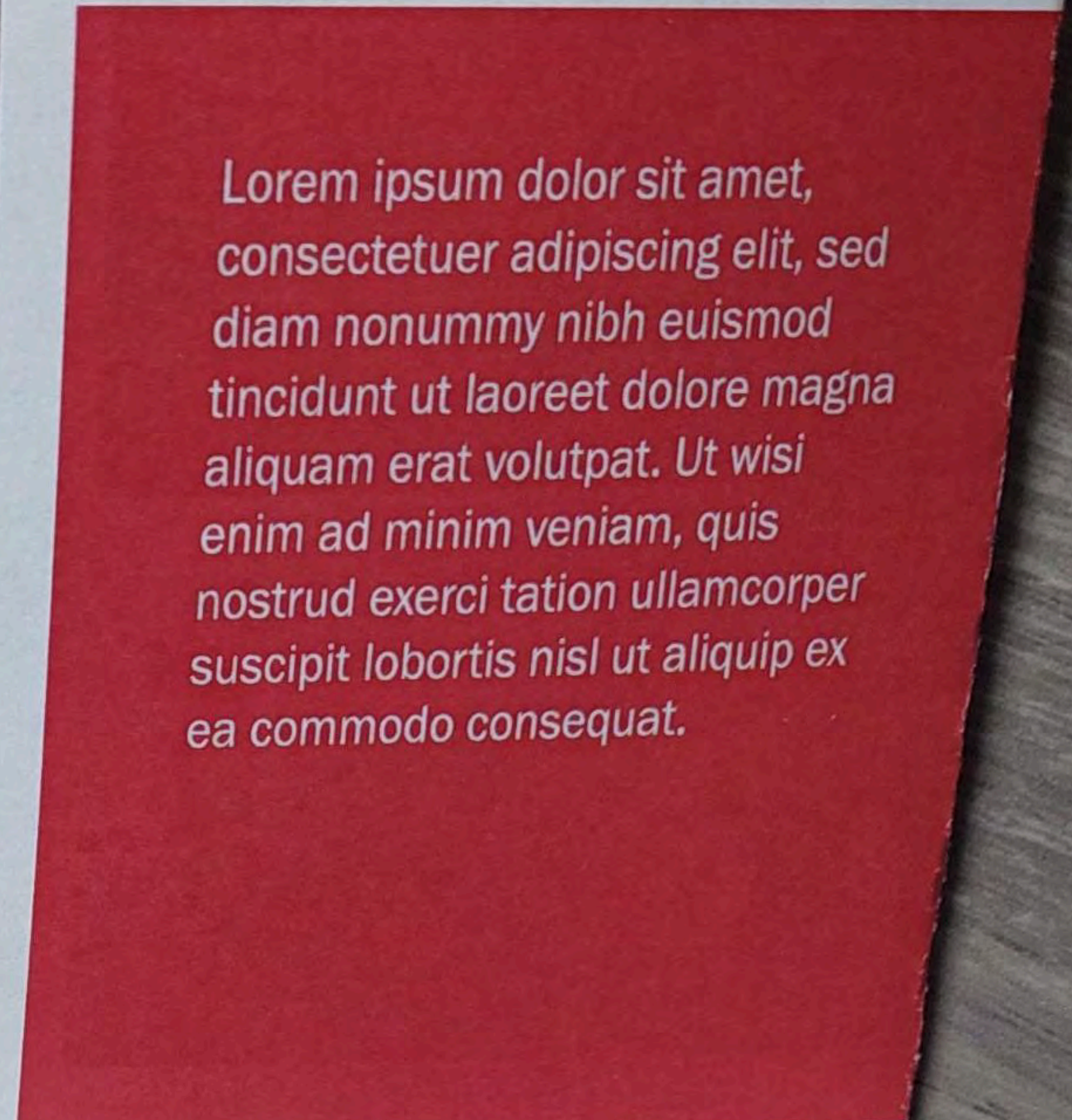




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U.S. DEPARTMENT OF ENERGY  
 **SOLAR DECATHLON**  
 2021-2023 BUILD CHALLENGE

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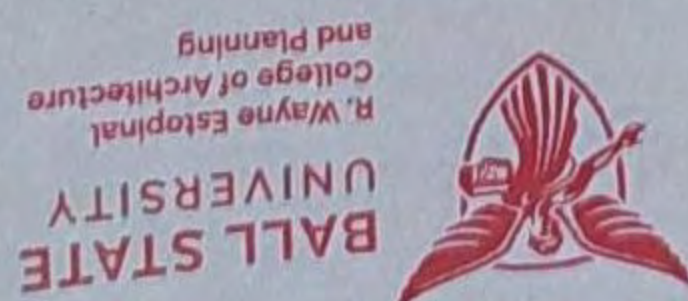
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