AIA BLUE RIDGE/CITY OF ROANOKE

ADU DESIGN BOOK

AARP Community Challenge Grant

ROANOKE

The AIA Blue Ridge / City of Roanoke Accessory Dwelling Unit Competition Design Book was produced by The City of Roanoke with graphic design and editing by r4 llc (a Roanoke, Virginia company) and made possible by a generous grant from AARP. The project ideas in this publication were primarily contributed by architects, designers, and creatives from the Roanoke community. All entities and individuals that contributed concepts to this publication retain rights to their work. Contributing to the AIA Blue Ridge / City of Roanoke Accessory Dwelling Unit Competition, and by extension this publication, provides the City of Roanoke the right to reproduce and distribute this information.

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ACKNOWLEDGMENTS

The City of Roanoke is grateful to the following organizations and individuals for their generous support in making this Accessory Dwelling Unit Competition possible.

AIA Blue Ridge

Since 1857, the AIA has represented the professional interests of America's architects. As AIA members, over 98,000 licensed architects, emerging professionals, and allied partners express their commitment to excellence in design and livability in our nation's buildings and communities. Members adhere to a code of ethics and professional conduct that assures the client, the public, and colleagues of an AIA-member architect's dedication to the highest standards in professional practice.

Founded in the 1970s, the AIA Blue Ridge chapter is geographically the largest component of the American Institute of Architects in Virginia, serving members from throughout Southwest Virginia from Bristol to Lynchburg to the West Virginia border.

AIA Blue Ridge has over 200 members and afilliated members. The organization seeks to be the authoritative source for information on the built environment and the credible voice of the profession.

2023 AIA Blue Ridge Board of Directors Team

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AARP Community Challenge Grant

The AARP Community Challenge grant program is part of the nationwide AARP Livable Communities initiative that helps communities become great places to live for residents of all ages. The program is intended to help cities, towns, villages, and rural areas make immediate improvements and jump-start long-term progress.

As part of this effort, AARP staff and volunteers engage and mobilize residents, deliver technical assistance and expertise to local leaders and organizations, and support the work of the communities and states that have enrolled in the AARP Network of Age-Friendly States and Communities.

In 2023, the program received more than 3,600 applications. Over $3.6 million was distributed to 310 grant projects.

Community Members

Amazetta Anderson

Brian Clark

Sunni Purviance

Taylor Stone

Housing within the City of Roanoke

In 2023, the City of Roanoke, Virginia, in partnership with the Blue Ridge Chapter of the American Institute of Architects (AIA Blue Ridge), organized an Accessory Dwelling Unit Competition to provide new solutions to the growing need for affordable housing within the City of Roanoke.

Funded in part by AARP, the competition invited designers to submit innovative concepts for Accessory Dwelling Units (ADUs) that would contribute to positive transformation within the city's neighborhoods.

About Accessory Dwelling Units

ADUs offer a versatile housing option that supports various needs within the community, including affordable housing, multi-generational living, and income generation. The City of Roanoke recognizes the significance of ADUs in meeting these demands and has updated its zoning ordinance to allow ADUs by-right in all residential-zoned districts.

With an aging population and a rising demand for affordable housing, the City envisions ADUs as a vital tool in promoting accessible and adaptable housing, while providing residents with options to age in place.

The Competition

To facilitate the creation of ADUs, the City of Roanoke/AIA Blue Ridge collaboration organized an urban design competition that encouraged the design of ADUs in a manner that is respectful of the existing urban fabric.

The competition began with a community-wide announcement in the summer of 2023. AIA Blue Ridge recruited design professionals to participate and hosted education events to engage the community and prepare people for completing the basic requirements of design work.

Design submittals were accepted during September 2023. Twenty-one submissions were received from design professionals and college students throughout the country.

A committee of community members and design professionals selected the winning projects in October 2023, and AIA Blue Ridge hosted an awards ceremony in November, where winners introduced their projects.

Competition winners produced construction documents for their ADU plans, which are now available for the public to use free-of-charge via the City of Roanoke ADU website (https://planroanoke.org/accessory-dwellings/).

Our vision

This collaborative effort between the City of Roanoke, AIA Blue Ridge, and AARP underscores the commitment of each organization to fostering livable communities that create positive, lasting change within the city and cater to the needs of residents of all ages.

Our vision is to make the creation of ADUs more attainable for everyone by incentivizing innovative ADU designs, promoting awareness through educational materials and events, and providing inspiration through the creativity presented in this document.

Accessory Dwelling Unit Competition Design Prompt

The Challenge

The City of Roanoke has an aging population and a growing need for affordable housing options. Accessory Dwelling Units (ADUs) can provide affordable housing opportunities, allow individuals to age in place, provide extra space for guests, facilitate the care of loved ones, or generate income from renting to a tenant. Understanding that ADUs are an important tool in supporting affordable, accessible housing, the City has updated zoning ordinances to allow ADUs by-right in all the residential-zoned districts.

The competition asks the question, how does one create an ADU on a site with an existing single-family home in an urban neighborhood in the City of Roanoke?

ADUs can be designed in a variety of styles, sizes, and construction materials to fit within single-family lots in a manner respectful of the surrounding community. Designs can be single or two-story detached units, garage apartments, and more.

AIA Blue Ridge and the City partnered to increase public awareness of ADUs as a housing option and to encourage the implementation of ADU supportive policies.

AIA Blue Ridge and the City of Roanoke were awarded a 2023 AARP Community Challenge Grant to host a competition for accessory dwelling unit design to create preapproved ADU plans for public use free-of-charge, making the creation of ADUs more attainable for everyone in the community.

Submission Criteria

Participants submitted architectural and construction drawings for one or each of the following projects on a site with an existing single-family home:

- A detached single-story ADU for a Traditional Urban Neighborhood (lot size 50ftX130ft)
- A detached 2-story ADU for a Traditional Urban Neighborhood (lot size 50ftX130ft)
- A detached single-story ADU for a Suburban Neighborhood (lot size 60ftX150ft)

Submittals had to conform with applicable zoning and building regulations for the construction of an accessory dwelling unit in the City of Roanoke. Selected plans received a zoning and construction review and were revised accordingly.

Judging: Designs were judged by a team of community members and design professionals using the following criteria:

- Appropriateness of the design for neighborhood's sense of place (20 pts)
- Universal Design (20 pts)
- Sustainability & energy efficiency (20 pts)
- Ease of construction (20 pts)
- Estimated construction cost, including professional services (10 pts)
- Readiness for permitting (10 pts)

Legal Disclaimers

Rights to build the designs included in this document are retained by the original designer, except the City of Roanoke shall have the right to share the winning designs in this design book and on the city website with individuals and not-for-profits as an architectural set only.

All permits, surveys, approvals, or other construction related requirements are the responsibility of the property owner.

The property owner, or consultant of the property owner, are held responsible to follow all regulations that may include architectural, engineering, drainage, utilities, landscaping, parking, etc.

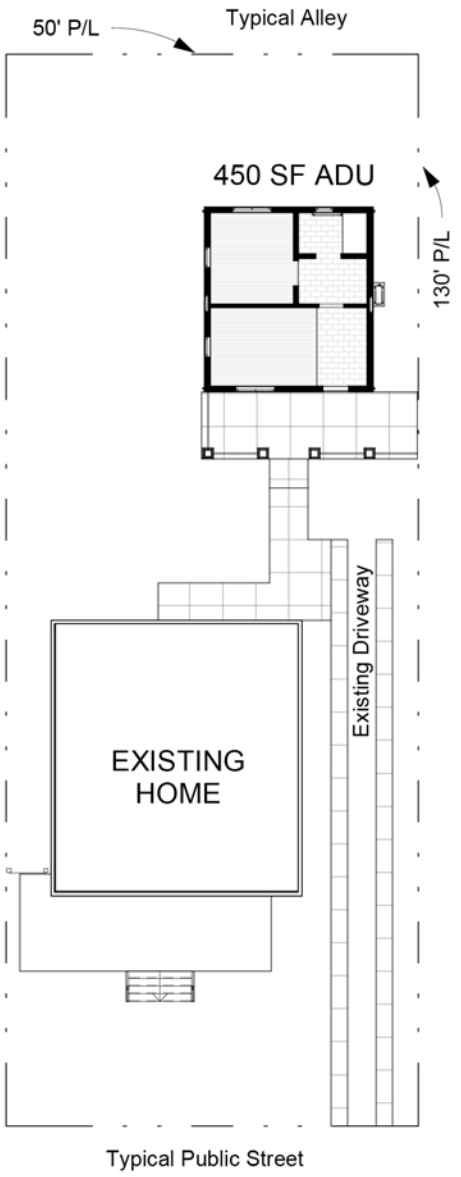
WINNING DESIGNS

First Place Design

Steve Sunderman | Terrazia PC Architecture

About Terrazia PC Architecture

Terrazia PC is an architectural consulting firm that specializes in value-based high performance commercial and residential projects. Using an innovative systems approach to design, the firm elevates quality of life and capitalizes on proven resilient and sustainable design and construction methods. The firm is passionate about creating "Disaster-Proof" custom homes crafted to protect and enhance living within a super-efficient, durable, low maintenance, healthy, safe and comfortable indoor environment.

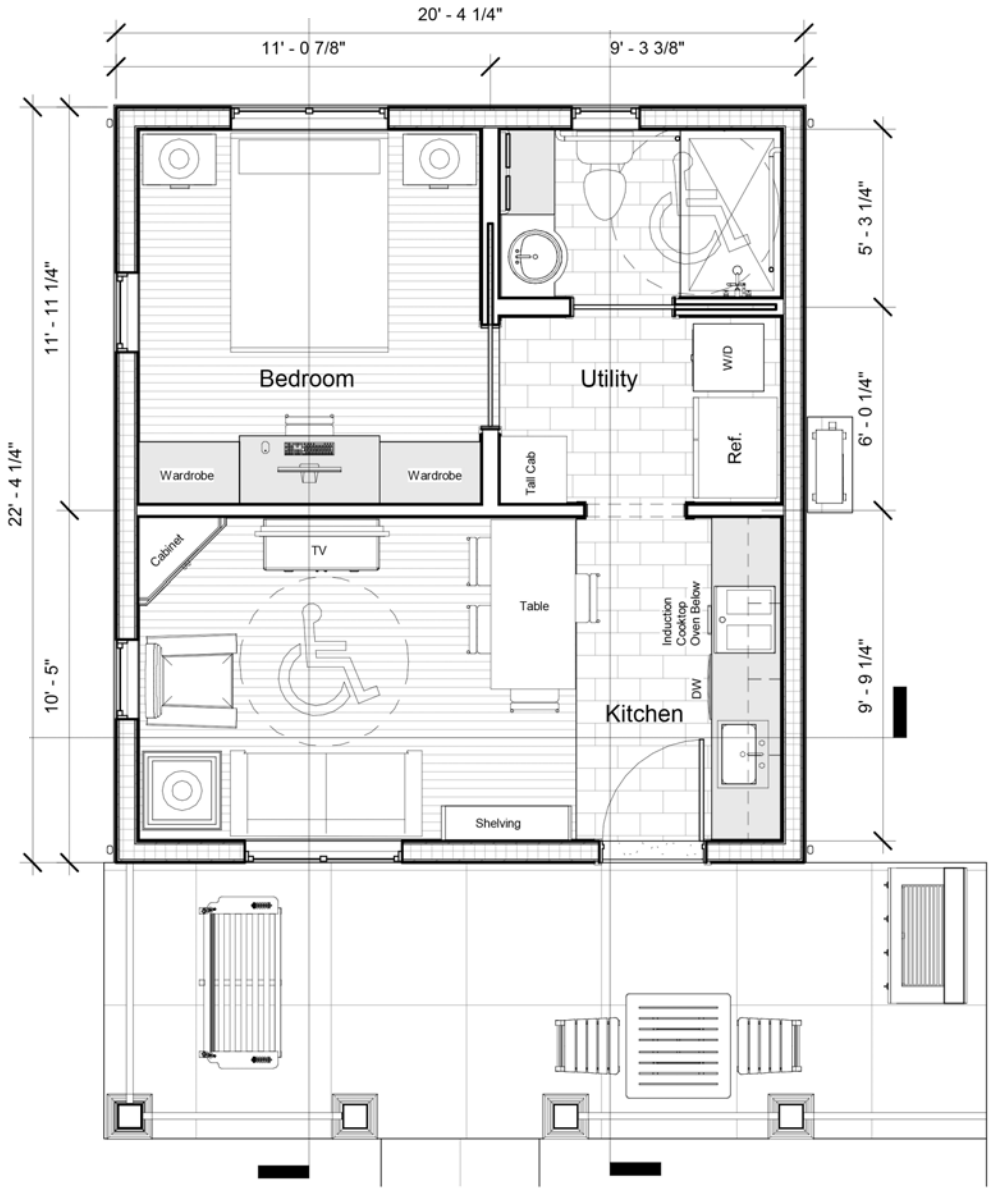


SITE PLAN

Design Information

This new, detached, approximately 450 SF single-story, one-bedroom accessory building is sized for a typical attached/detached two-car garage to be renovated to accommodate the basic floor plan with only minor modifications.

- The design is sympathetic to Roanoke's existing homes and can be modified to accommodate neighborhood character existing site/building conditions, owner preferences, and budget constraints.
- Property shown is a typical 50' x 130' residential lot in Roanoke, Virginia, with an existing two-story wood frame home.
- The ADU is accessed via the public street or the alley, depending on site conditions and owner preferences.
- The design is fully accessible with Universal Design principles used throughout.



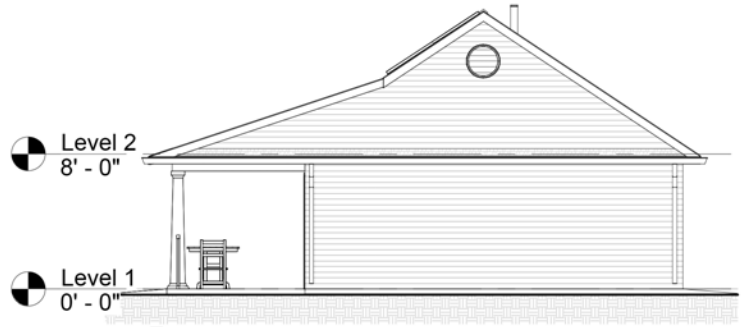
FLOOR PLAN

Drawings not to scale.

The roof design should be based on building orientation; south facing slope can accommodate solar panels and provide window protection. Solar PV Panels are owner option that can provide infrastructure for a future installation.

Site specific window placement allows for ample daylight and, when desired, effective passive ventilation throughout.

Design elements such as slopes, railings, columns, shutters, windows, etc., should reflect elements of the existing home.



EAST ELEVATION

NORTH ELEVATION

WEST ELEVATION

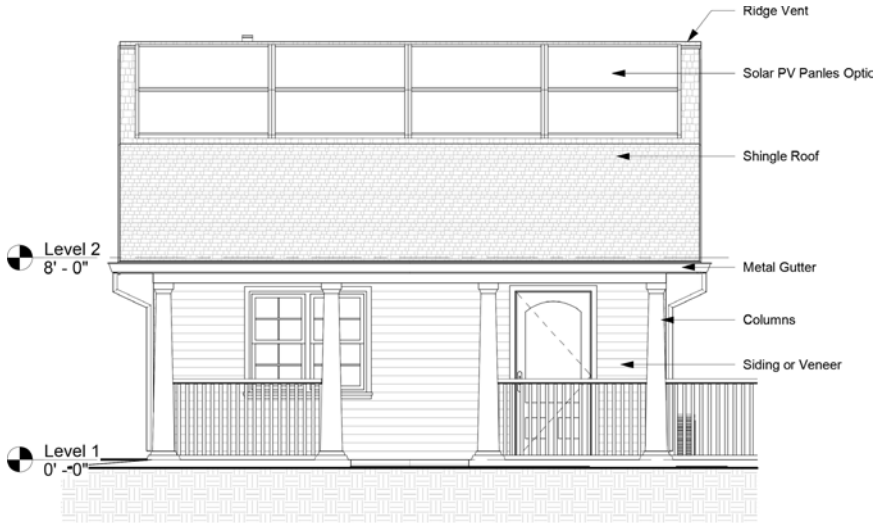
Drawings not to scale.

The all-electric building employs extensive Passive House and Resilient Design principles to achieve high energy efficiency, user health/ comfort, durability, and annual return on investment of some 15%.

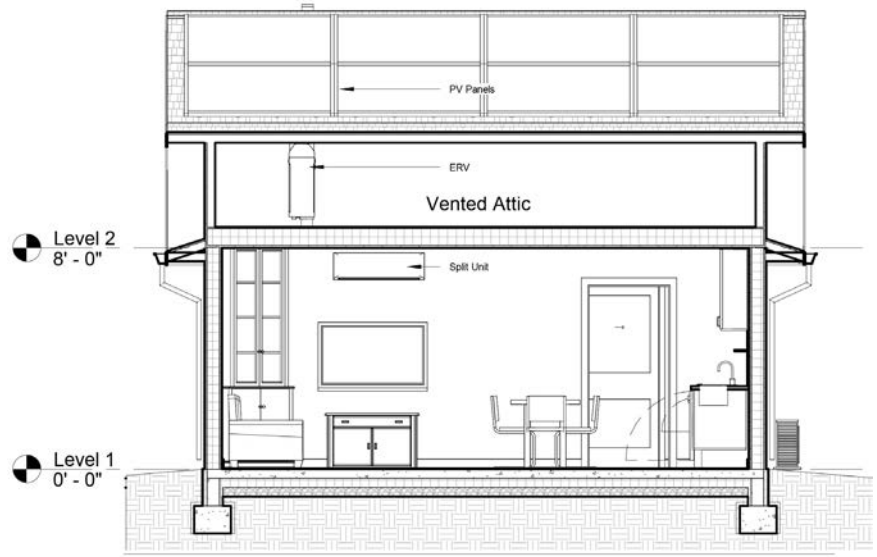
Features include Structural Insulated Panels (SIPs) for the building envelope (walls/ceiling), continuous air and thermal barriers with no thermal bridging, high efficiency door & windows with seasonal solar shading, tankless water heater, energy recovery ventilator (ERV), ductless split heat pump and optional roof mounted solar PV energy system.

Plumbing, electrical and mechanical systems are selected and arranged for maximum life cycle cost efficiency. The attic space maximizes passive ventilation for efficiency and durability and provides for storage as well as the ERV ducts within the thermal envelope.

Construction is highly efficient due to use of regionally manufactured SIPs wall and ceiling elements, slab on grade, and a simple configuration of the building's plan/elevations.

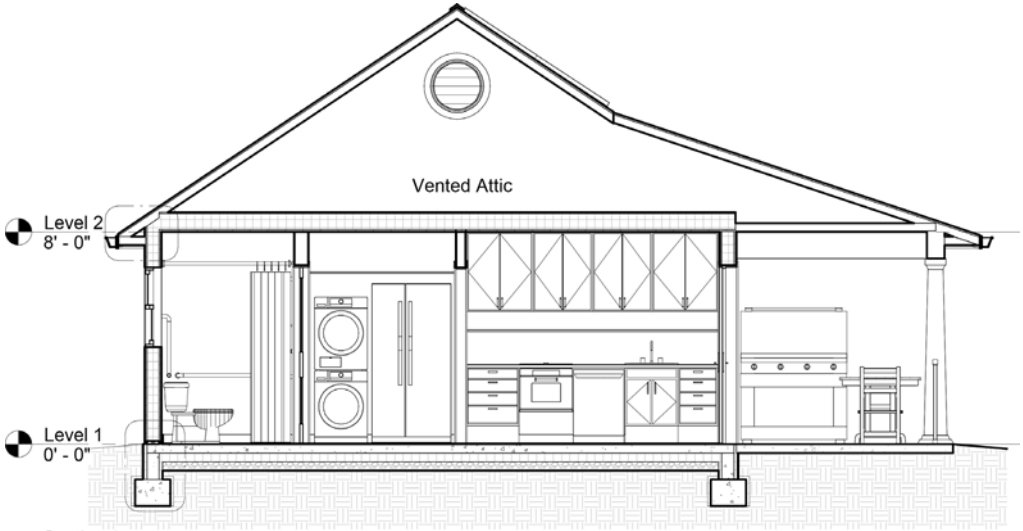


SOUTH (ENTRY) ELEVATION

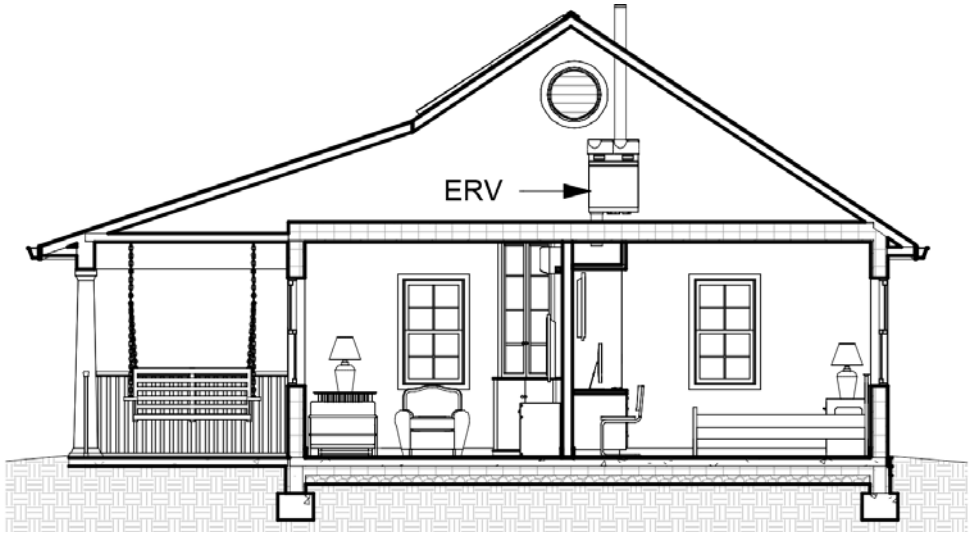


SECTION

Drawings not to scale.



SECTION BACK-TO-FRONT



SECTION FRONT-TO BACK

DESIGN ALTERNATIVES

A new home in Roanoke averages $100/SF at the time of the competition. Final cost varies due to design options and selections. Similar high-performance buildings can be constructed for a 0% to 8% premium over the average code-built building.

Drawings not to scale.

Second Place Design

Derek B. Cundiff | Cundiff Architecture, Inc.

Cundiff Architecture, Inc.

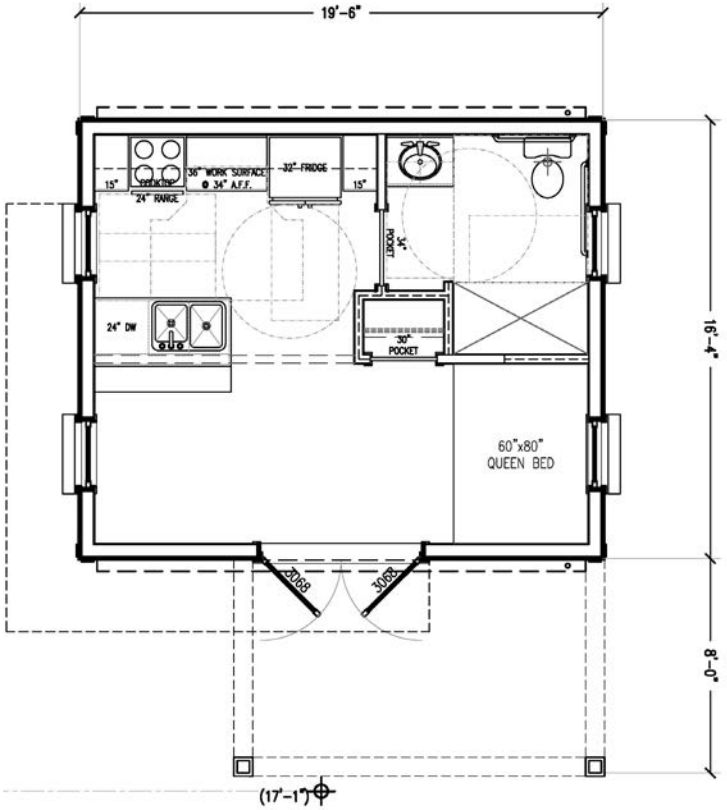
Cundiff Architecture, Inc. is founded in the belief that it is preferable to maintain a community's built environment, finding within it a new purpose and usefulness, rather than continuing a short-sighted cycle of construction and quickly antiquated structures. This approach often leads to more cost-effective design solutions and buildings that enable a community to remain grounded in its past while making the changes necessary for the future. Work includes the renovation and restoration of buildings of local importance and historical significance with an emphasis on restoring the building's watertight integrity while maintaining existing building character.

Design Information

The design concept for this detached, single-story ADU started in the spring of 2013 to construct an accessory dwelling building on a remote parcel of land in Roanoke county.

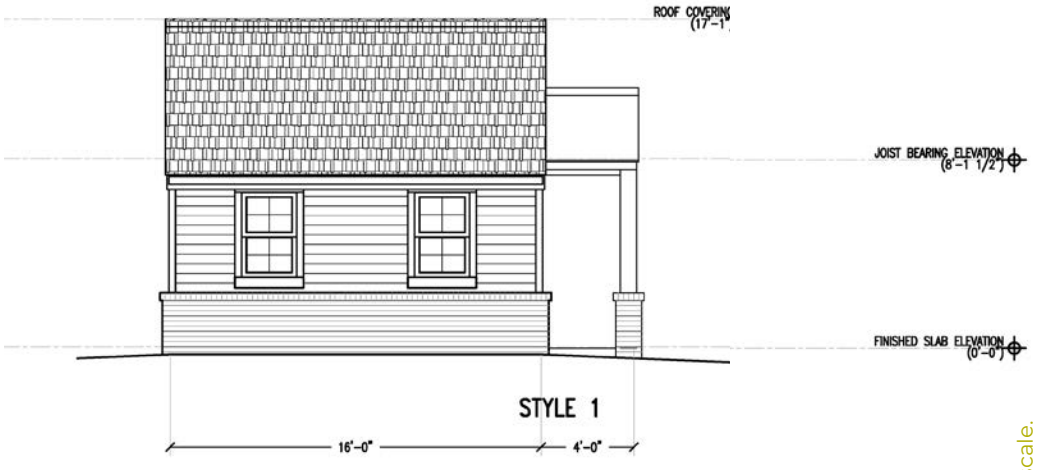
SIDING DETAIL

The structure, undertaken by one individual using common hand tools, reflects a desire for simplicity, ease of construction, and connection with the site.



FLOOR PLAN (ADA)

FRONT ELEVATION

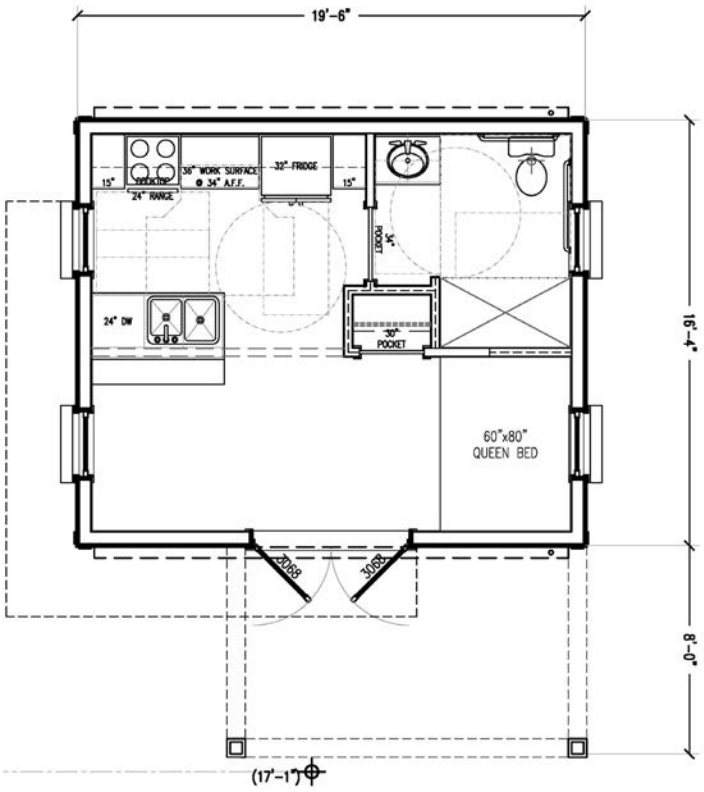


SIDE ELEVATION

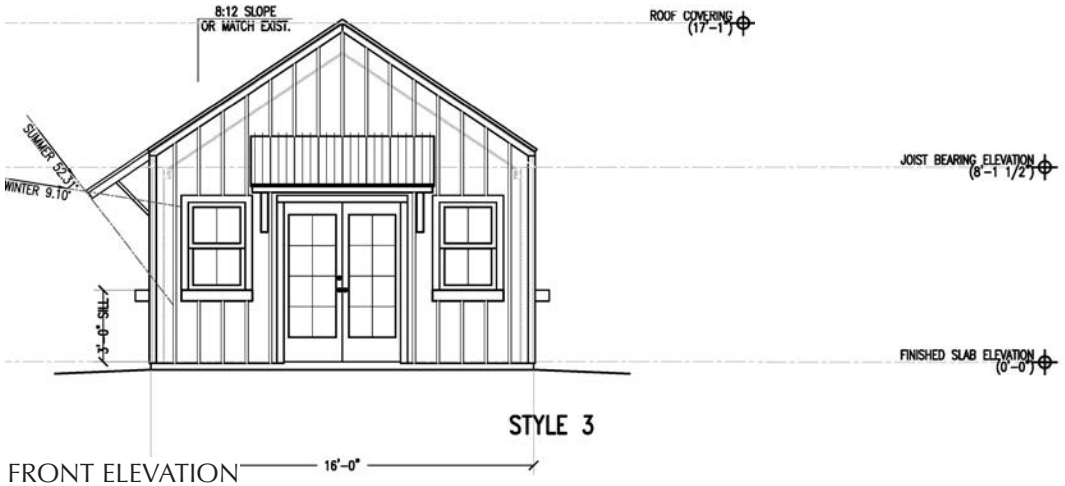
Drawings not to scale.

Through the process, opportunities for improvement were revealed resulting in the concepts shown here. Additional opportunities may be explored by the designer.

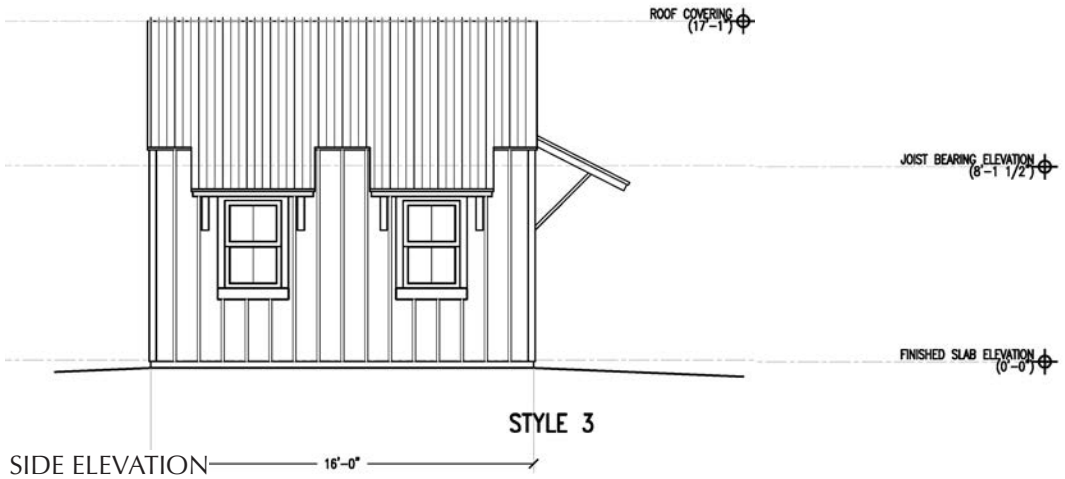
The ADU's style and finish may be adjusted as desired to compliment the style and finish of the primary dwelling.



FLOOR PLAN (ADA)

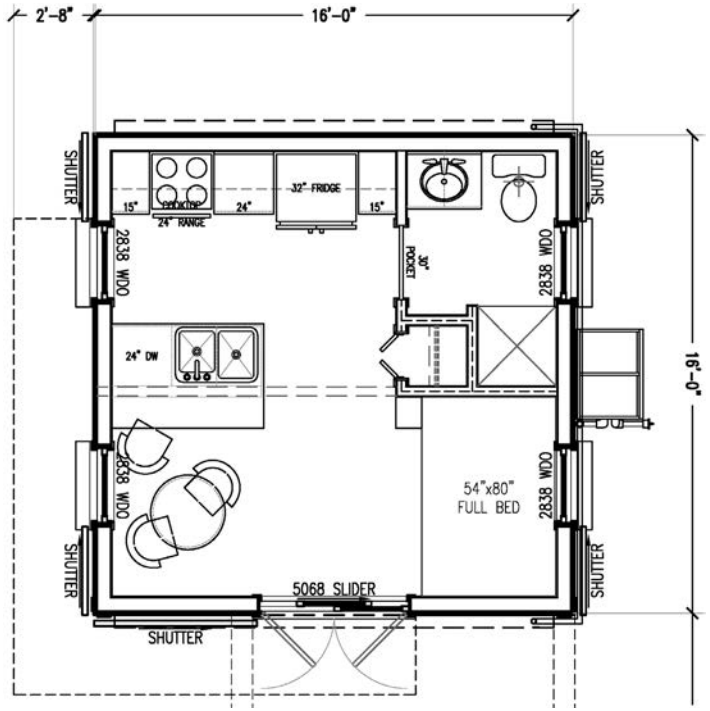


FRONT ELEVATION

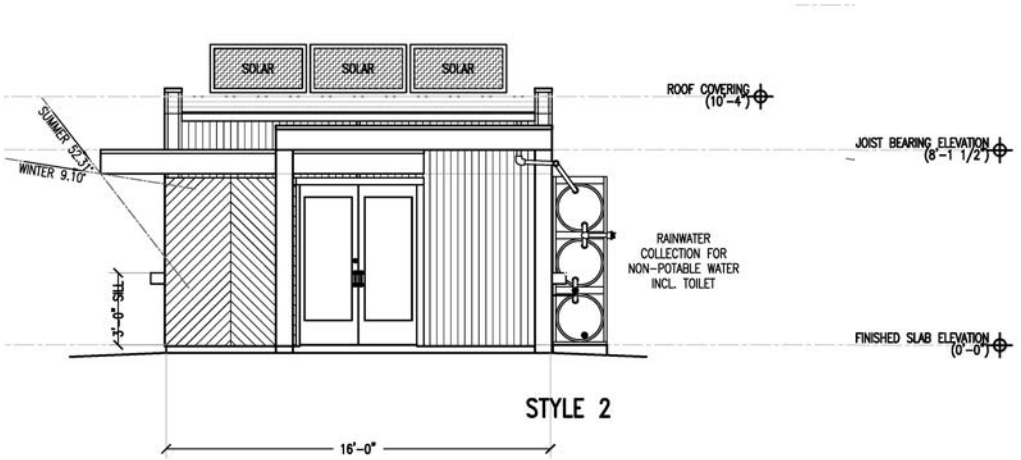


SIDE ELEVATION

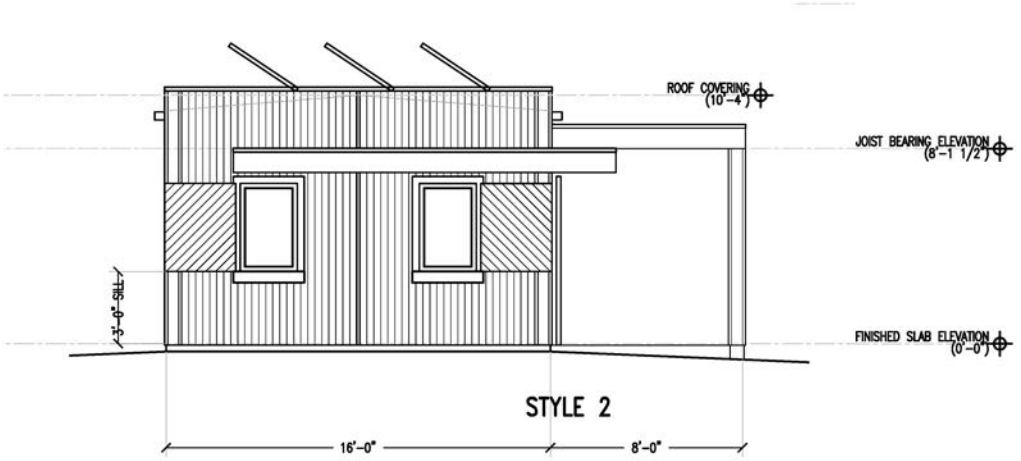
Drawings not to scale.



FLOOR PLAN (BASE)



FRONT ELEVATION



SIDE ELEVATION

Notes

- 2x6 exterior walls (min. R-19)
- 2x12 joists/rafters (min. R-38)
- Exterior finishes, doors/windows 10
- Compliment primary dwelling
- Windows/overhangs (passive cooling/ heating) location(s)/depth to be adjusted based on site orientation
- Rainwater collection (non-potable)
- Solar (auxiliary electric)
- Option for concrete floor slab w/ radiant floor heat

This ADU's design features cost approx. $150.00/ SF at the time of the competition (not including appliances/furnishings).

Drawings not to scale.

Third Place Design – Tie

Haley Kellam | Dwell Design Studio

Dwell Design Studio (Richmond, VA office)

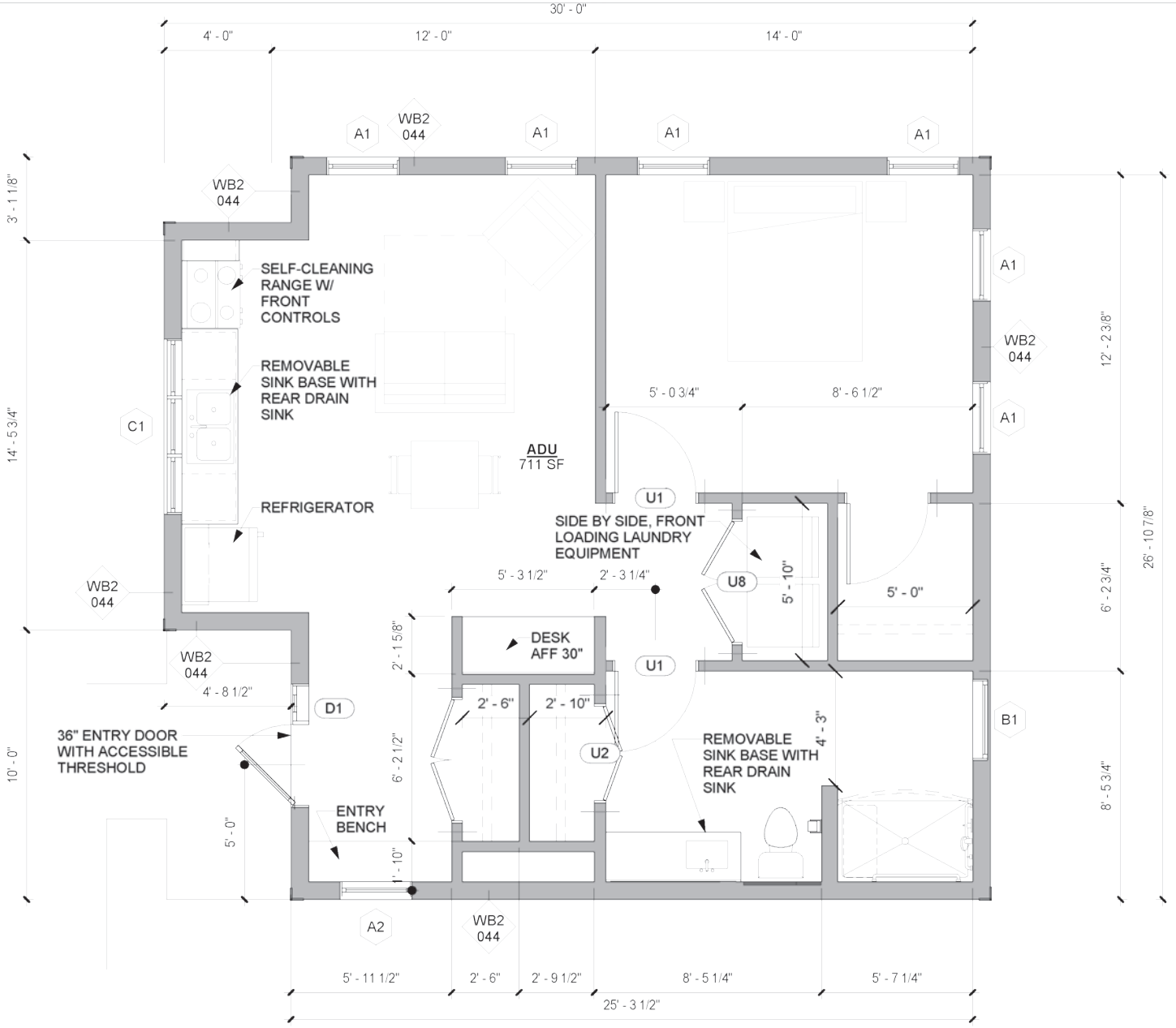
Dwell Design Studio is here to save communities from bad design, boring ideas, and faulty execution. The firm focuses on achieving notorious accuracy, producing some of the cleanest documents this side of the galaxy. Their work is methodically unconventional: designing clever spaces that aren't outlandish or lacking purpose. Dwell prides itself in being easy to work with, fun to be around and void of pretension.

Design Information

This 711 SF ADU was meticulously crafted to answer the unique needs and desires of an aging client facing mobility challenges who values shared living and accessibility. It also reflects the welcoming community of Roanoke, Virginia.

The design emphasizes universal design principles beyond accessibility to ensure the space is welcoming and functional for all individuals to promote an inclusive, adaptable environment.

ROANOKE, VIRGINIA



FLOOR PLAN

By incorporating features such as accessible doorways, open living spaces, and thoughtful storage solutions, the ADU provides a comfortable living space for the aging client but also a model of inclusivity for all.

Accessible features include door and path clearances, turnarounds, and ADA compliant space for appliances. These thoughtful features ensure the ADU is usable by everyone, regardless of mobility challenges, aligning with a commitment to inclusivity.

Drawings not to scale.

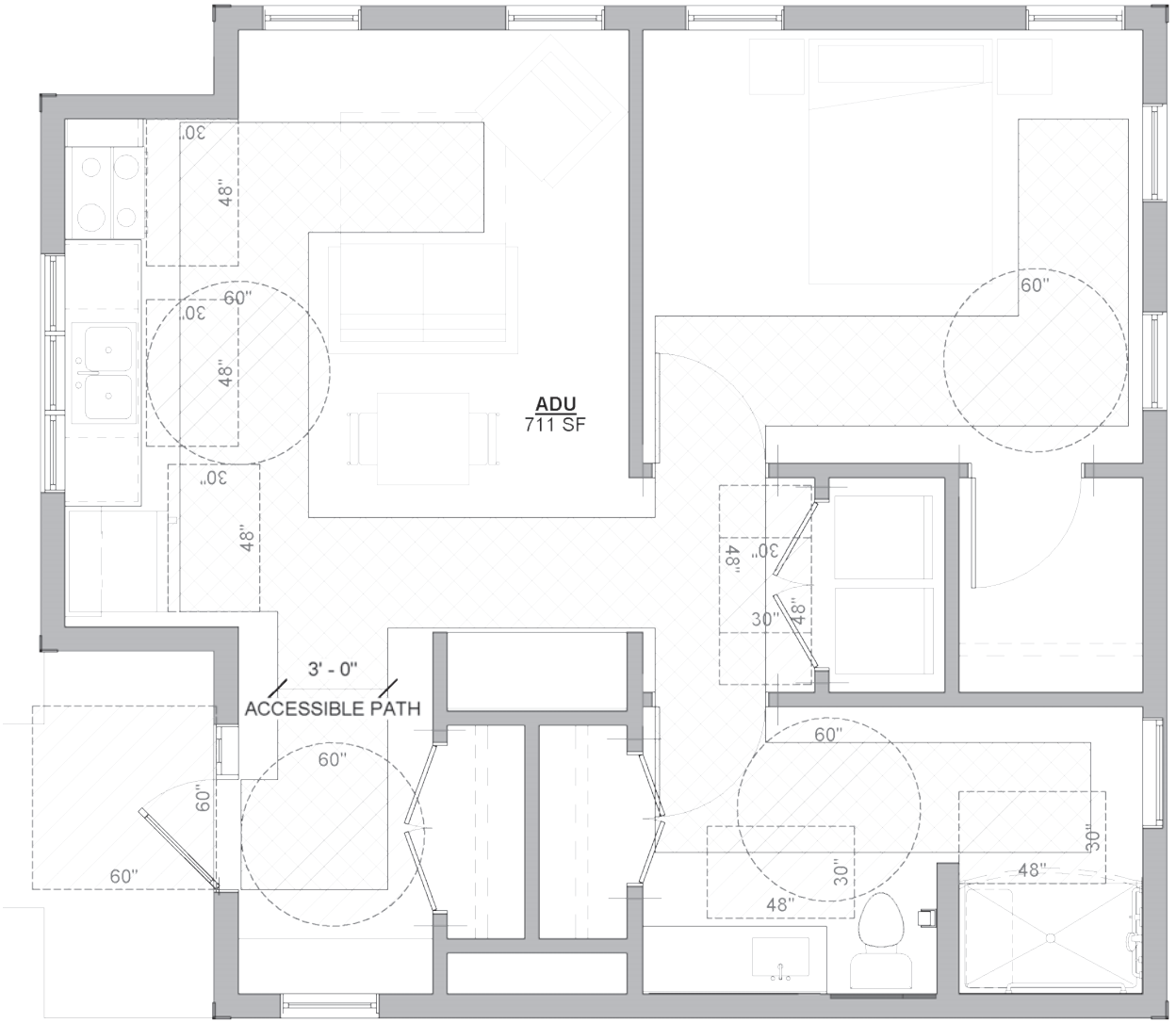
One of the ADU's defining characteristics is its capability for hosting. On entry, a formal and elegant sense of arrival expresses a warm welcome and creates clear demarcation between the living area and private spaces. The layout ensures guests do not have to traverse through the bedroom to access the bathroom, preserving the privacy of occupants and their visitors.

In the living space, a versatile desk serves multiple purposes, doubling as a buffet or bar during gatherings.

Storage was another essential consideration in the design; the ADU incorporates a coat closet, linen closet, and adaptable desk. These elements add functionality and enhance overall organization for efficient living.

The living space has been thoughtfully designed to remain open, ensuring flexibility for various gatherings, whether a formal dinner or a casual get-together. Large windows throughout bring in ample natural light, connecting the interior with the scenic beauty of Roanoke's surroundings, reinforcing the city's intrinsic charm and appeal.

The bedroom is spacious with a generous closet for organized storage to reduce the risk of clutter and minimize the risk of falls and accidents. Additionally, the bedroom accommodates an ADA turnaround, ensuring usability as the resident ages.



ADA FLOOR PLAN

Drawings not to scale.

On the exterior, the architecture is inviting and charming. Trim work and a garden box make the unit homey, giving it character and warmth.

Exterior details reflect the local spirit of Roanoke while enhancing the overall appeal of the ADU.

EAST ELEVATION

WEST ELEVATION

Drawings not to scale.

The design of this ADU is a reflection of Roanoke's core values—inclusiveness, hospitality, and practicality. The building opens its doors to warm gatherings, is designed for thoughtful use and storage, and embraces the inclusivity of all community members. Its design represents a harmonious addition to Roanoke's unique character and enriches the city's architectural diversity.

NORTH ELEVATION

SOUTH ELEVATION

Drawings not to scale.

Third Place Design – Tie

Helen Jadlowski & Laura Parrish | SFCS Architects

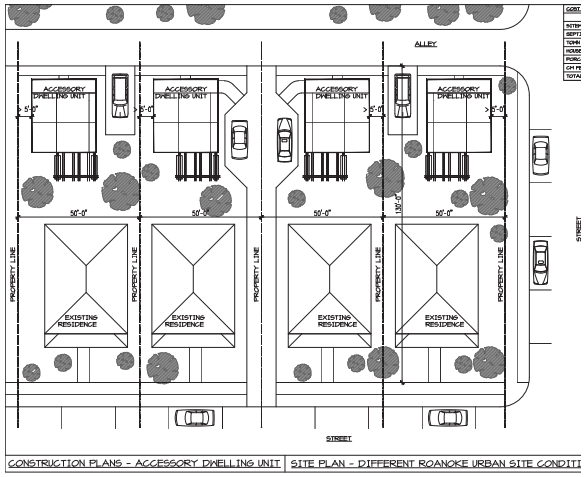
SFCS

Founded in 1920, SFCS is a senior living, education and civic/public architecture, engineering, and interior design firm that creates solutions for positive change and elevates the human experience.

Design Information

The Blue Ridge Bungalow ADU was designed for an aging client to achieve independent living for as long as possible by adding a new building on an existing property, allowing the owner to downsize and gain rental income from the larger home.

The site plan shows the potential for a new row of dwellings along the alley in different finishes and colors to expand the neighborhood fabric of Roanoke's Old Southwest neighborhood.

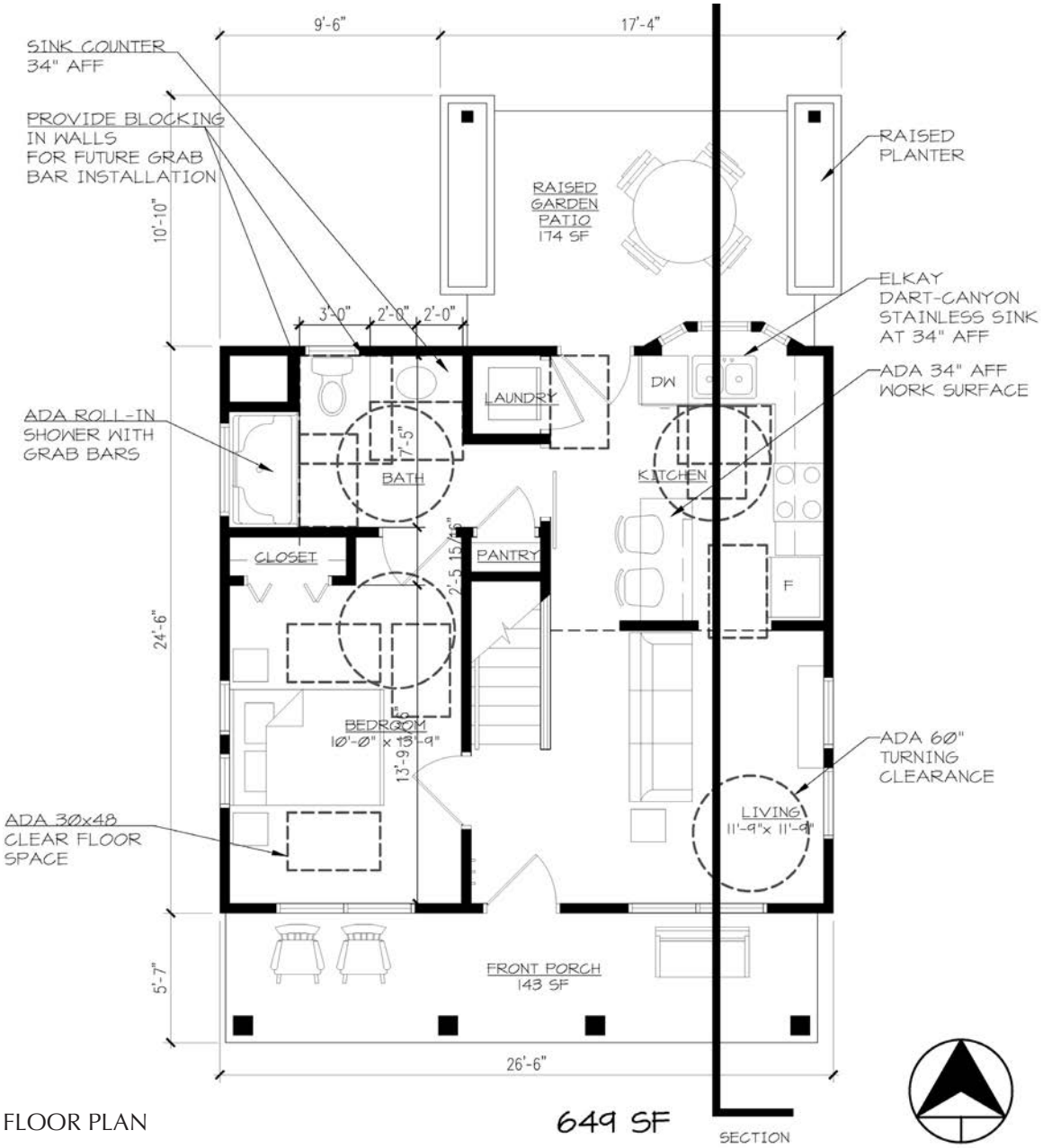


SITE PLAN

Reflecting Roanoke's many craftsmen style homes, a wide welcoming front porch, shed dormers, and a peaceful backyard patio with raised planters that allow for a garden.

BACK VIEW

Drawings not to scale.

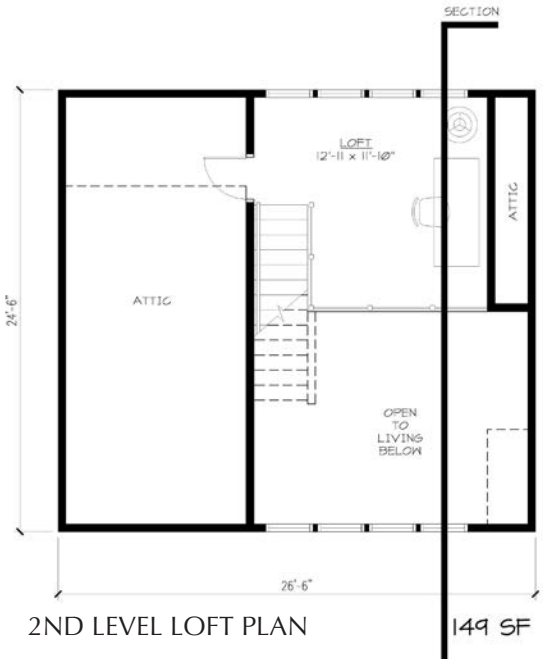


FLOOR PLAN

The efficient and functional 798 SF floor plan includes a first floor and a loft space, which creates a high, open ceiling above the living room.

Clerestory windows in the dormers bring natural daylight into the interior.

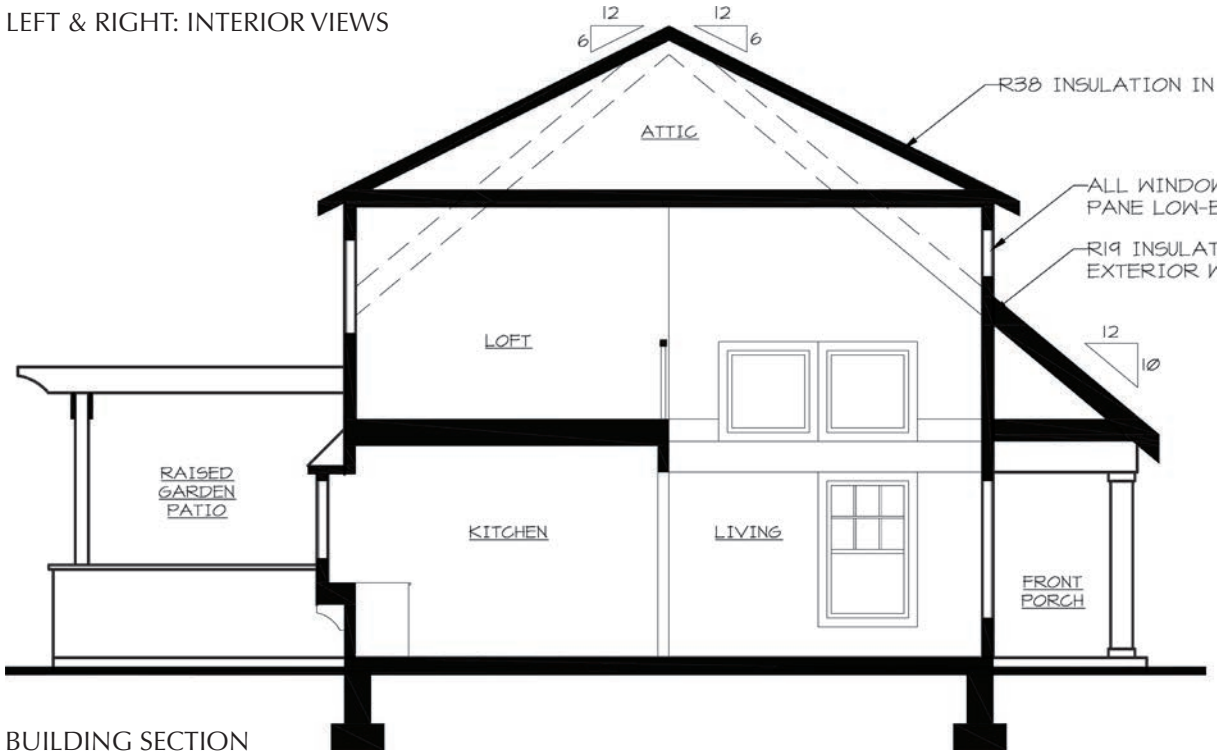
The first floor bedroom, kitchen and full bathroom ensure ADA accessibility with aging in mind.



2ND LEVEL LOFT PLAN 149 SF

Drawings not to scale.

LEFT & RIGHT: INTERIOR VIEWS



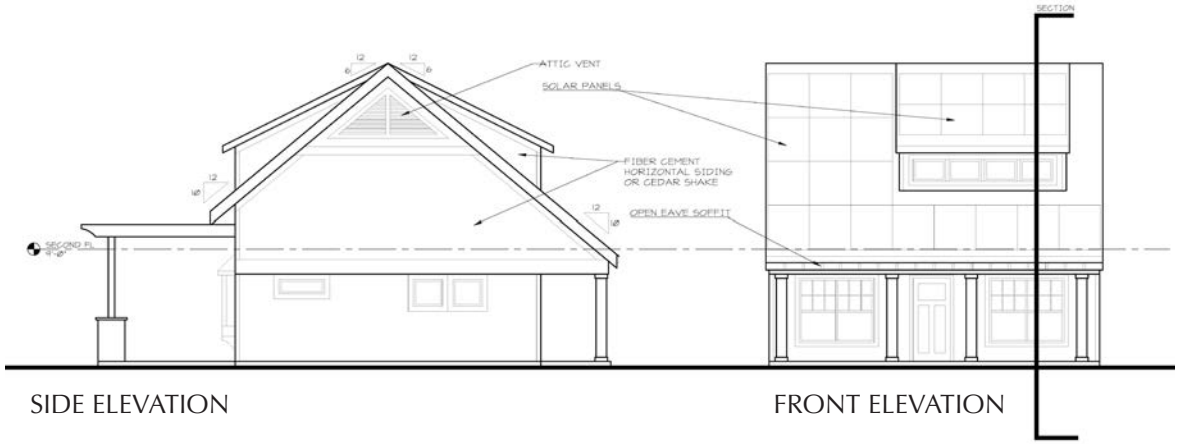
BUILDING SECTION

Energy star appliances, mechanical, low-E double glazed windows, and R-19 wall insulation and R-38 roof insulation reduce utility demands and costs.

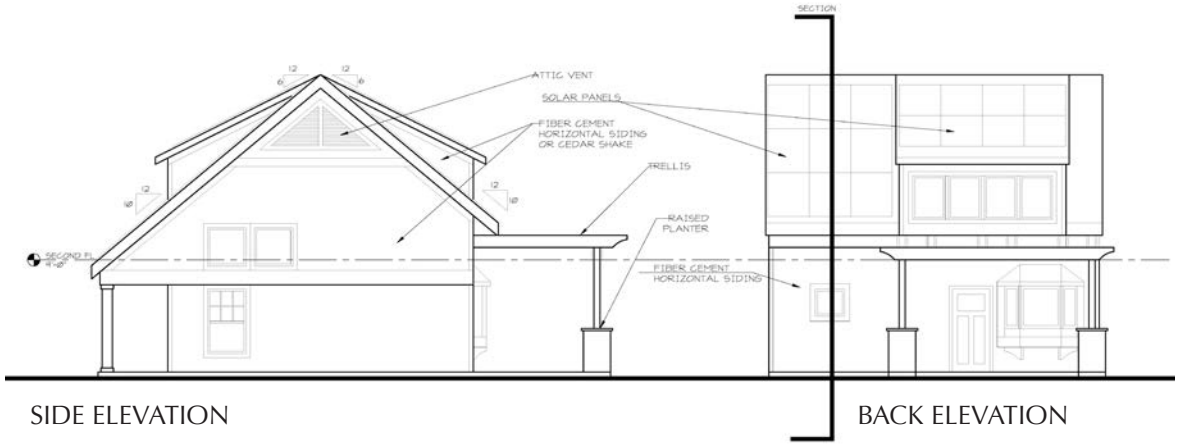
Drawings not to scale.

The ADU is oriented with an alley-facing front door for a public entrance. A patio with trellis and garden faces the back yard of the existing home with an optional parking pad. Orienting north-south optimizes use of roof solar panels.

MATERIAL PALETTE OPTIONS



SIDE ELEVATION FRONT ELEVATION



SIDE ELEVATION BACK ELEVATION

This wood-frame construction ADU uses local materials and trades. Total cost including sitework and professional fees at the time of the competition was $289/SF.

Drawings not to scale.

HONORABLE MENTIONS

Honorable Mention

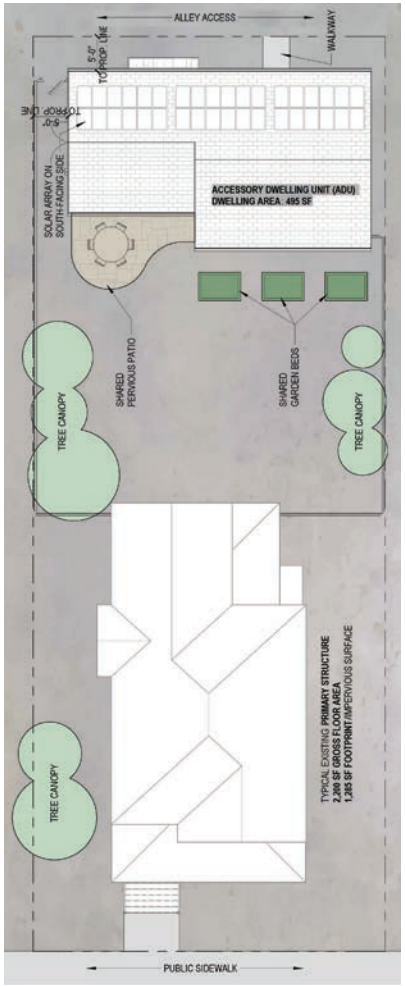
Lindsey Jones | Balzer & Associates

Balzer & Associates

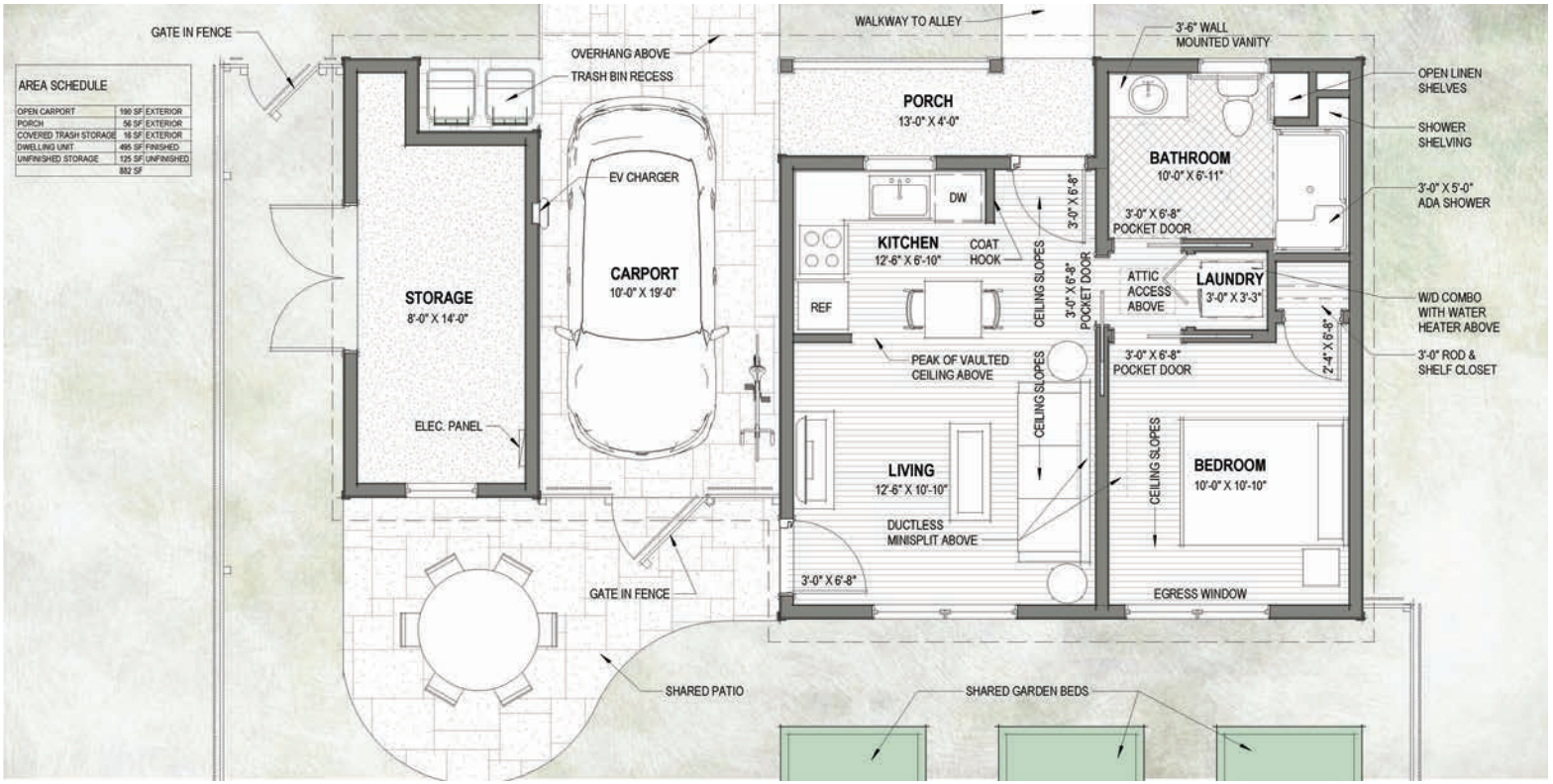
Serving clients from initial site selection through completion of design development and construction, Balzer and Associates, Inc. offers over 50 years of service throughout Virginia and surrounding states, with offices in Richmond, Roanoke, Shenandoah Valley, and New River Valley.

Design Information

ADUlar Living's design provides simplicity with a resourceful program for an ADU to address the needs of the city, occupant, homeowner, and the environment.



SITE PLAN



FLOOR PLAN

ADUlar;s design assumes no steps at entrances for accessibility needs and smooth, level flooring at the entrances and transitions between rooms.

All doorways are 3′-0″ wide and include lever handles for ease of use. The design includes pocket doors for optional added privacy and easy access.

An open living space ensures easy maneuverability and versatile furniture arrangement.

An ADA compliant bathroom uses grab bars and a wall-mounted vanity with roll-under sink. The unit also includes a space-saving combination washer/dryer.

A pocket door separating the bedroom suite from the living area adds a layer of privacy and allows guests to use the restroom without passing through the bedroom.

Drawings not to scale.

BACK VIEW

The design is compatible with the existing residence's color and materials and is in style with older surrounding homes. Its massing is separate from the primary residence with its own front porch, windows, and doors to appear as a warm, welcoming home.

The main entrance is from the alley, which does not have available on-street parking. An adjacent carport helps satisfy parking needs.

The interior includes sloping ceilings in the living areas and bedroom. The porch adds a sense of independence from the primary residence.

ZONING INFORMATION:
PER ROANOKE CITY ZONING ORDINANCE
FOR ZONING AREAS: R-3, RM-1, RM-2, RMF

MINMIMUM LOT AREA PER DWELLING UNIT:
3,000 SF MINIMUM (LOWEST THRESHOLD FOR APPLICABLE ZONING AREAS LISTED ABOVE)

ACCESSORY STRUCTURE **MINIMUM SETBACK** FROM REAR AND SIDE LOT LINES: **0 FT**

TREE CANOPY COVERAGE: **15% MINIMUM** (HIGHEST THRESHOLD FOR APPLICABLE ZONING AREAS LISTED ABOVE)

IMPERVIOUS SURFACE: 60% MAXIMUM (LOWEST THRESHOLD FOR APPLICABLE ZONING AREAS LISTED ABOVE)

LOT SIZE: 130' X 50' = 6,500 SF

TYPICAL EXISTING PRIMARY STRUCTURE
GROSS FLOOR AREA: 2,200 SF
FOOTPRINT: 1,285 SF

PROPOSED ACCESSORY DWELLING UNIT
PROPOSED **DWELLING AREA**: **495 SF**
- **22.5%** OF PRIMARY STRUCTURE (LESS THAN 80% and LESS THAN 800 SF PER 36.2-402(d))

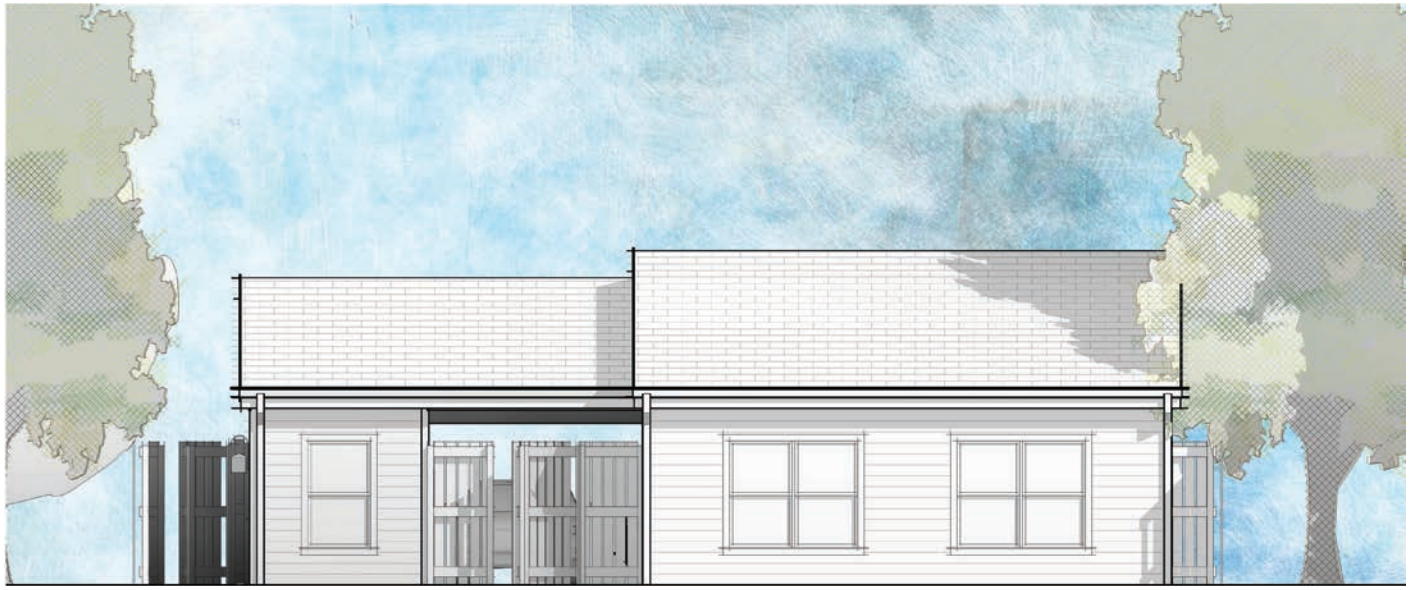
PROPOSED **ACCESSORY STRUCTURE**
FOOTPRINT: 882 SF
- **69%** OF PRIMARY STRUCTURE (LESS THAN 75% PER 36.2-403 (6A)
- NOTE: MINIMUM PRIMARY STRUCTURE FOOTPRINT TO ALLOW FOR PROPOSED ACCESSORY STRUCTURE IS 1,176 SF

TOTAL **IMPERVIOUS SURFACE**: 2,167 SF
- **34%** OF TOTAL LOT AREA (LESS THAN 60% PER 36.2.312)

A long roof with solar panels on the south-facing side provides efficient utility use with ductless minisplit units, a tankless water heater, energy star doors and windows, and a fully insulated slab on grade. Windows and doors optimize cross ventilation.

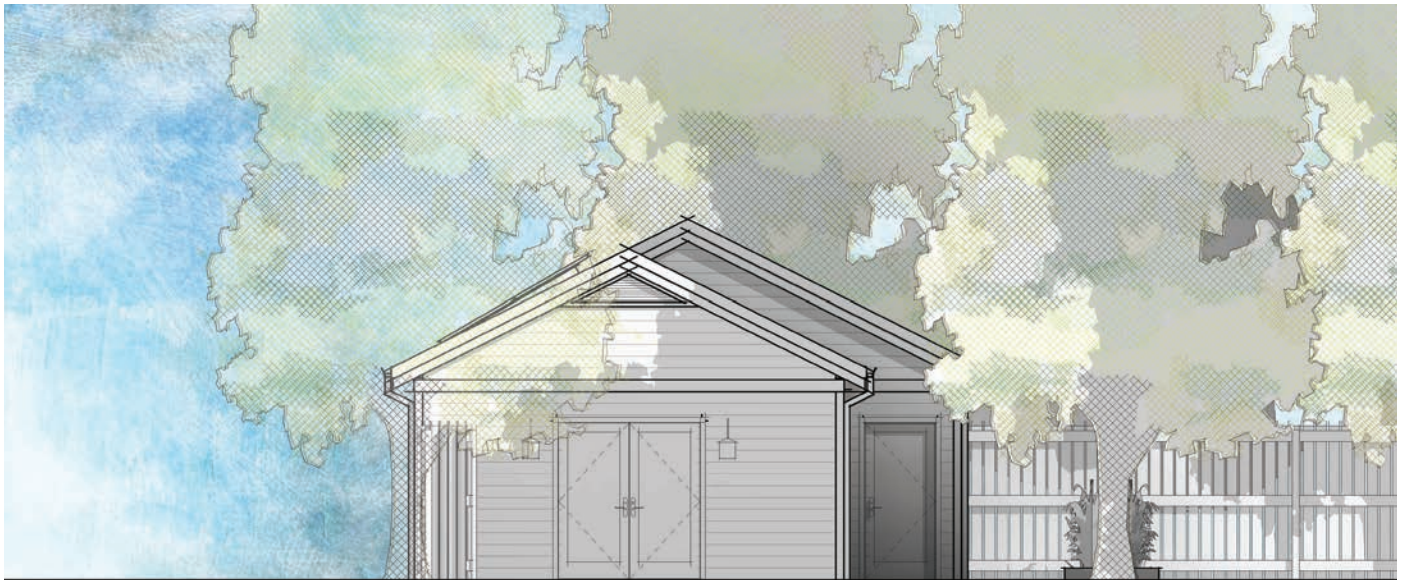
A convenient recycling bin, an electric vehicle charging station, and shared garden beds complete the simple and functional solution to high housing demand.

FRONT (ALLEY-SIDE) ELEVATION



BACK ELEVATION

Drawings not to scale.



RIGHT ELEVATION

LEFT ELEVATION

The structure is less than 500 SF. The simple construction and roof form with standard regional construction details lower construction costs. Standard windows and doors reduce cost.

Drawings not to scale.

Honorable Mention

Chris McGill & Akshata Dusa | SFCS Architects

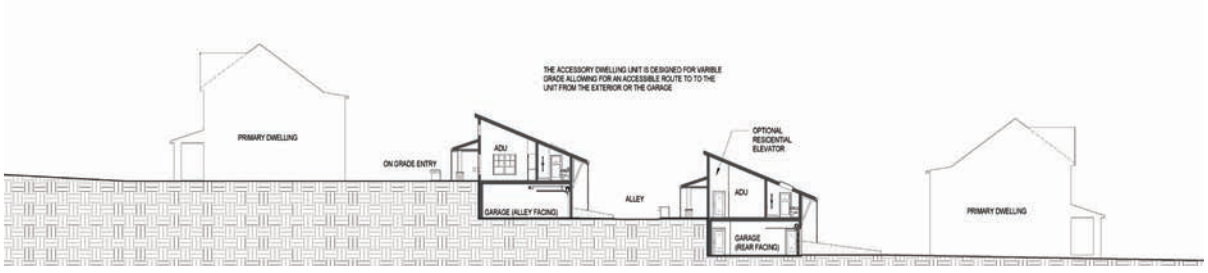
Design Information

The Two-Story Carriage House embraces a core philosophy of accommodating different and changing needs over time.

The design meets the needs of many neighborhoods made up of sloping sites. The ADU works with the terrain to create an accessible connection on each level.

SFCS

Founded in 1920, SFCS is a senior living, education and civic/public architecture, engineering, and interior design firm that creates solutions for positive change and elevates the human experience.



SITE SECTION

Insulated concrete forms create three sides of a two-car garage nested into the landscape. Excavated soil can be used to adjust grade between the primary home and the ADU, creating an accessible connection with usable gardening and social gathering space.

While traditional two-story carriage houses challenge access for people with limited mobility, this design's alley-facing garage allows adaptation to different sites. A dividing wall creates two bays for use by the ADU, the primary home, or both. This allows rental agreements to be tailored to the needs of both parties while maintaining the independence and privacy of each.

NEIGHBORHOOD OVERVIEW

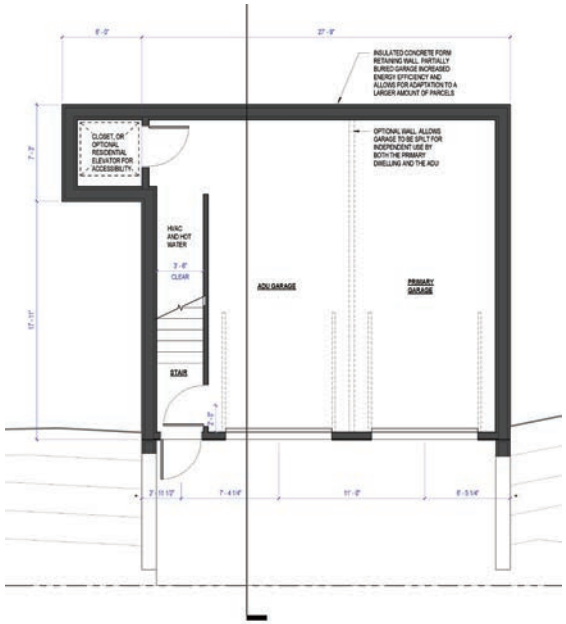
GARAGE SIDE VIEW

SITE GRADING PLANS

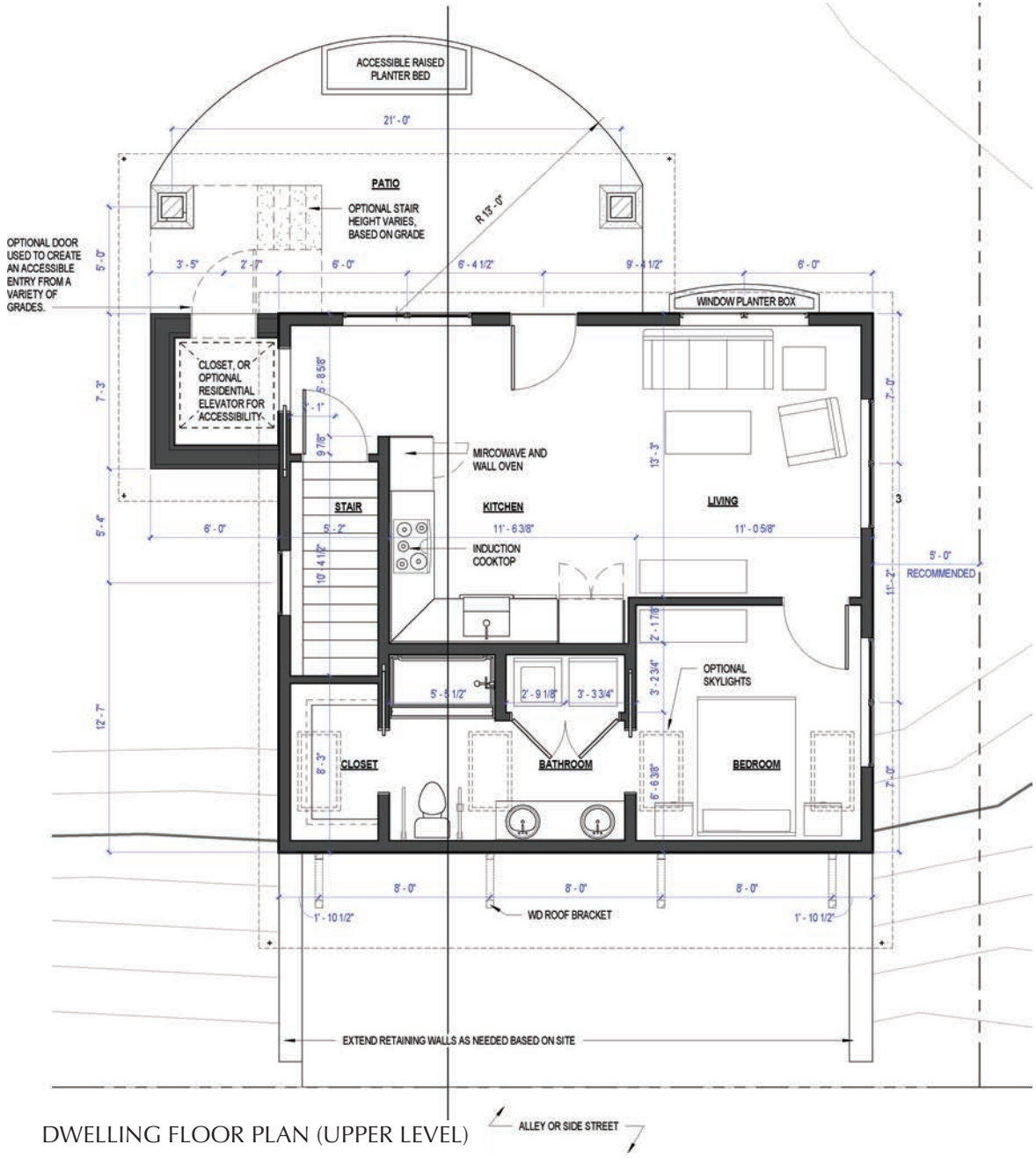
Drawings not to scale.

Each floor includes a closet large enough for a residential elevator, which could be added at construction or as the need arises. An exterior elevator door creates a stair-free entrance on sites with less than a full story of grade change.

Inside, many features of universal design are incorporated. Kitchen sinks and bathroom vanities have removable cabinet bases. All appliances have easy to reach front controls; an induction cooktop adds safety. A low-threshold trench drain shower provides roll-in access. Bathroom walls are reinforced for grab bar installation as needed. Waterproof luxury vinyl plank or tile is installed throughout to eliminate need for flooring transitions. These features provide flexibility to accommodate future needs such as aging in place.



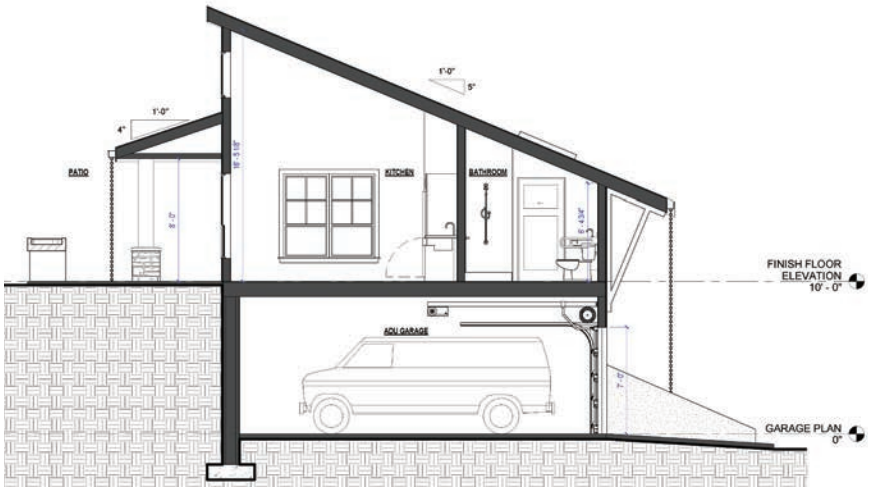
GARAGE FLOOR PLAN (LOWER LEVEL)



DWELLING FLOOR PLAN (UPPER LEVEL)

Drawings not to scale.

LIVING AREA



BUILDING SECTION

BEDROOM

The simple shed-roof form balances bright, airy, public spaces with clerestory windows and private areas with optional skylights.

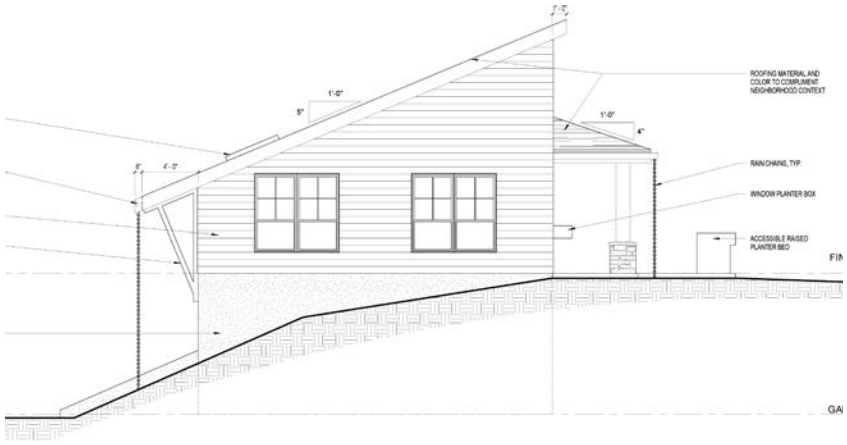
Drawings not to scale.

ENTRY ELEVATION

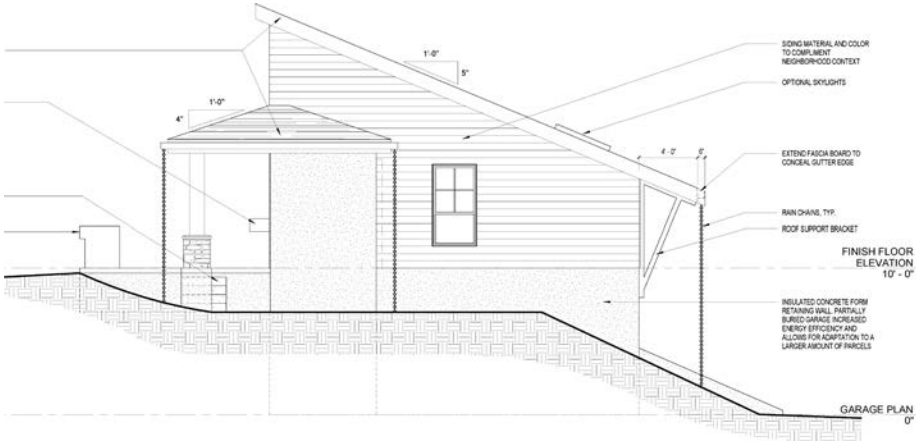
ALLEY ELEVATION

The design lowers the cost of construction and reduces the scale of the garage façade while providing a covered entry.

2x6 framing allows for insulated energy efficient walls with lap siding designed to fit any neighborhood.



SIDE ELEVATION



SIDE ELEVATION

Drawings not to scale.

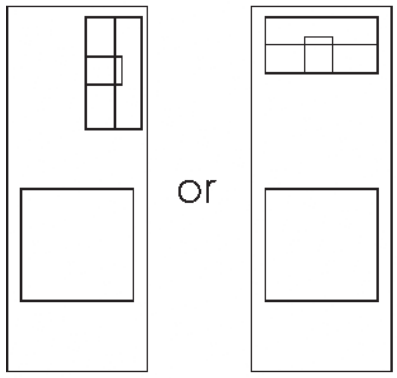
Honorable Mention

Chutian Liang

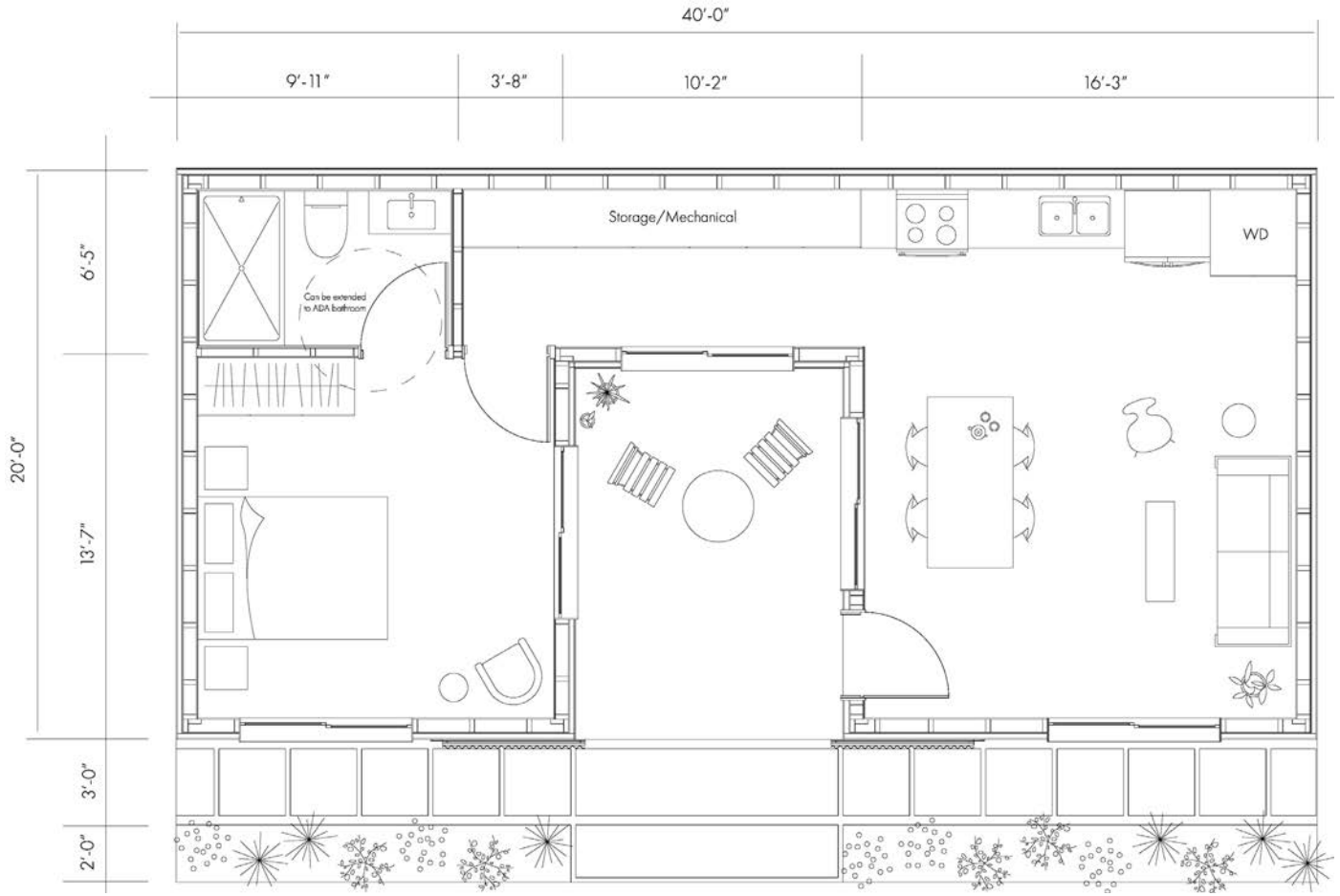
Design Information

The detached single-story Notch House ADU is designed for both traditional urban and suburban neighborhoods. The 800 SF ADU consists of a living area, a bedroom with bathroom, and a connecting winter garden.

The design employs a pitched roof open gable with a notch outdoor space in the center. This simple rectangular form integrates well into urban and suburban neighborhoods.



BUILDING SITE ORIENTATION OPTIONS



Living Area: 15'-1"x 18'- 6"
Bedroom: 12'- 7"x 12'- 6"
Bathroom: 9'- 0"x 5'- 5"
Winter Garden: 9'- 4"x13'- 0"
Floor to Ceiling Height: 8'-0"
Overall Height: 12'- 10"

FLOOR PLAN

Drawings not to scale.

BEDROOM

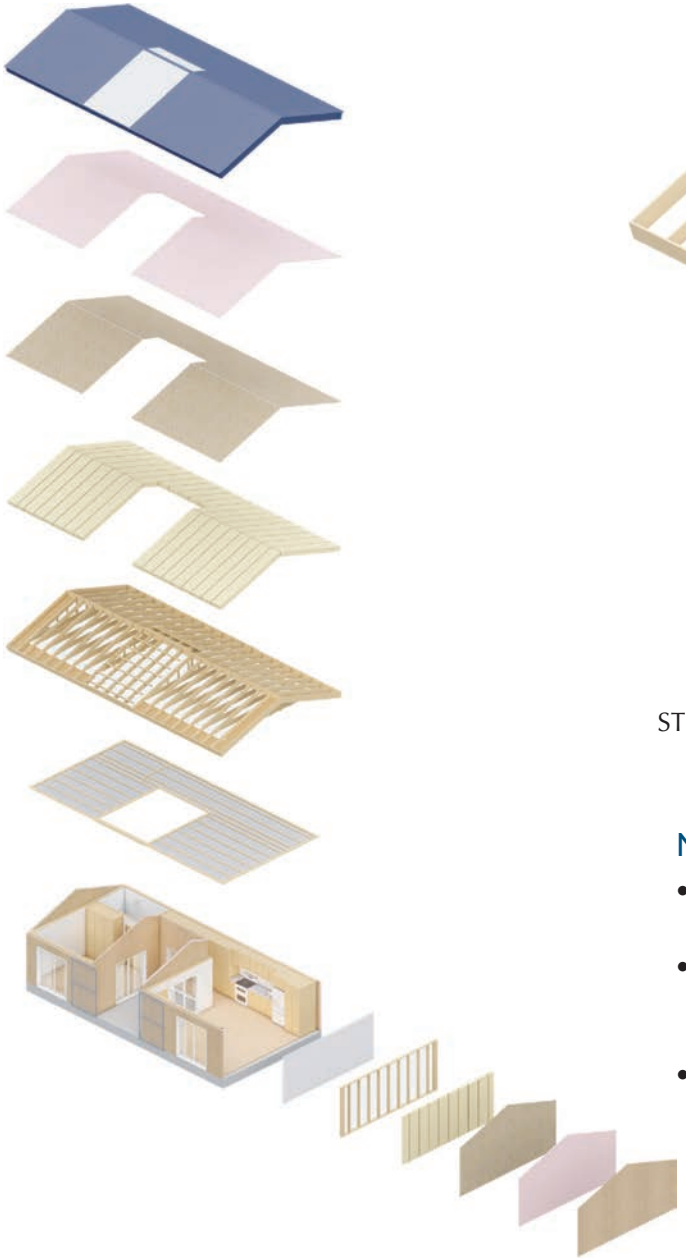
LIVING AREA

WINTER GARDEN VIEW

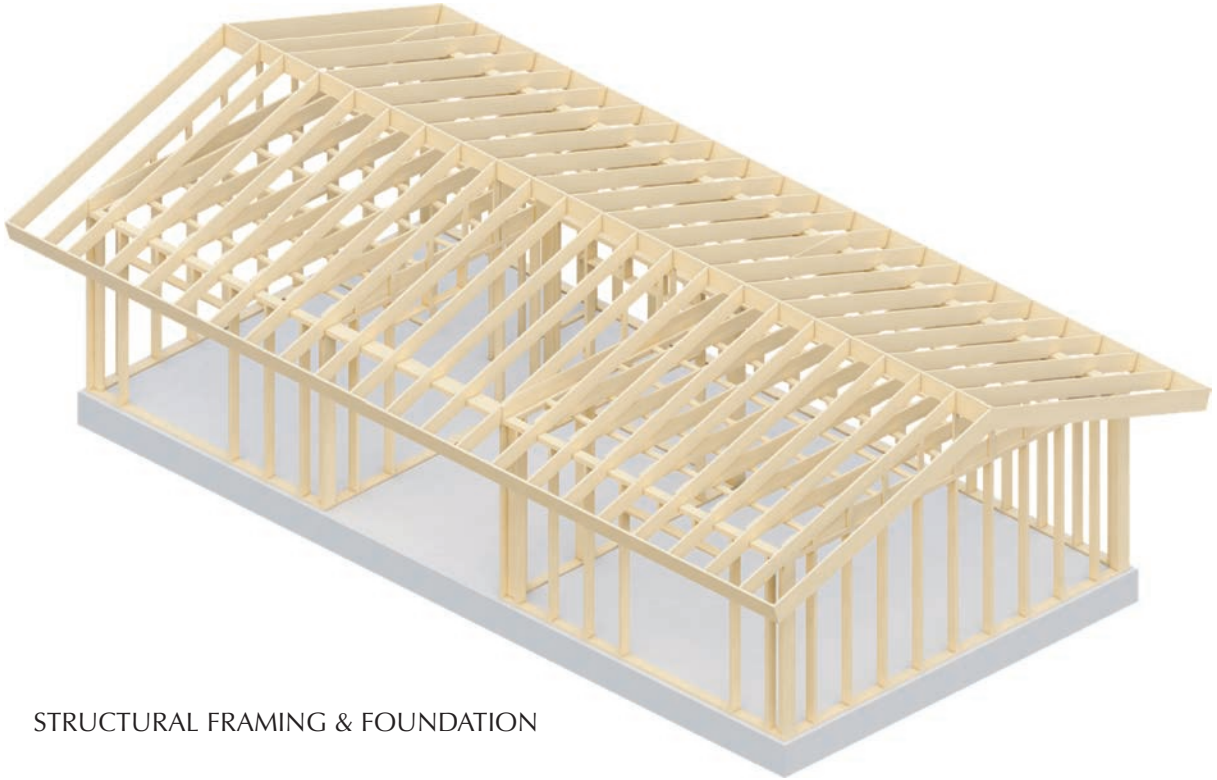
The building volume is divided into three: the living space containing living room, kitchen, and dining room; the connection space containing the winter garden and aisle; the bedroom with bathroom.

The winter garden is a semi-outdoor space which provides natural light, privacy, visual connection, and thermal comfort for the house. It can serve as a porch with the transparent polycarbonate sliding doors open or as a mini greenhouse with the sliding doors closed during colder months. The winter garden can also be used as an extension of the bedroom or living area with the glass sliding door open. With its concrete floor, the winter garden also helps regulate temperature shifts from day to night.

Drawings not to scale.



STRUCTURE & FINISH DETAIL



STRUCTURAL FRAMING & FOUNDATION

Notes

- 2x6 main structure framing on a monolithic insulated concrete slab.
- Batt insulation between studs and continuous rigid insulation maximize thermal comfort.
- Exterior walls are finished with wood siding.
- The roof is painted corrugated metal sheets with transparent polycarbonate panels above the winter garden.
- Interior spaces are finished in drywall and hardwood flooring.
- All materials are common products in home improvement stores to lower cost and increase ease of construction.

Drawings not to scale.

HONORABLE MENTION - Chutian Liang

OVERHEAD VIEW

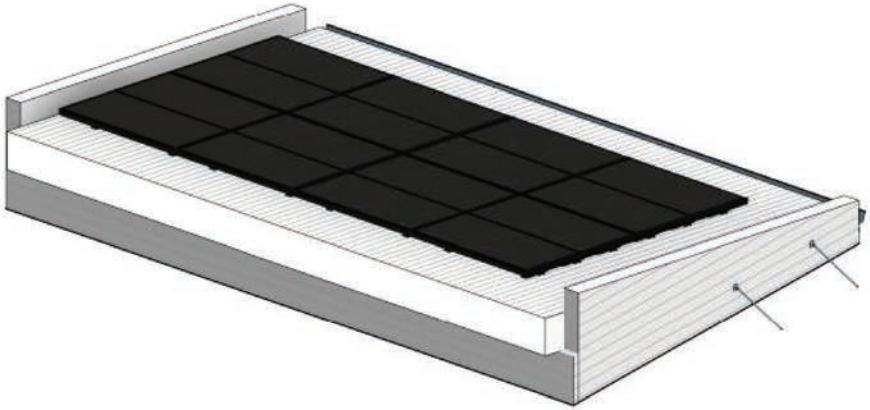
The building's three zones are visually and spatially connected with sliding glass doors surrounding the winter garden.

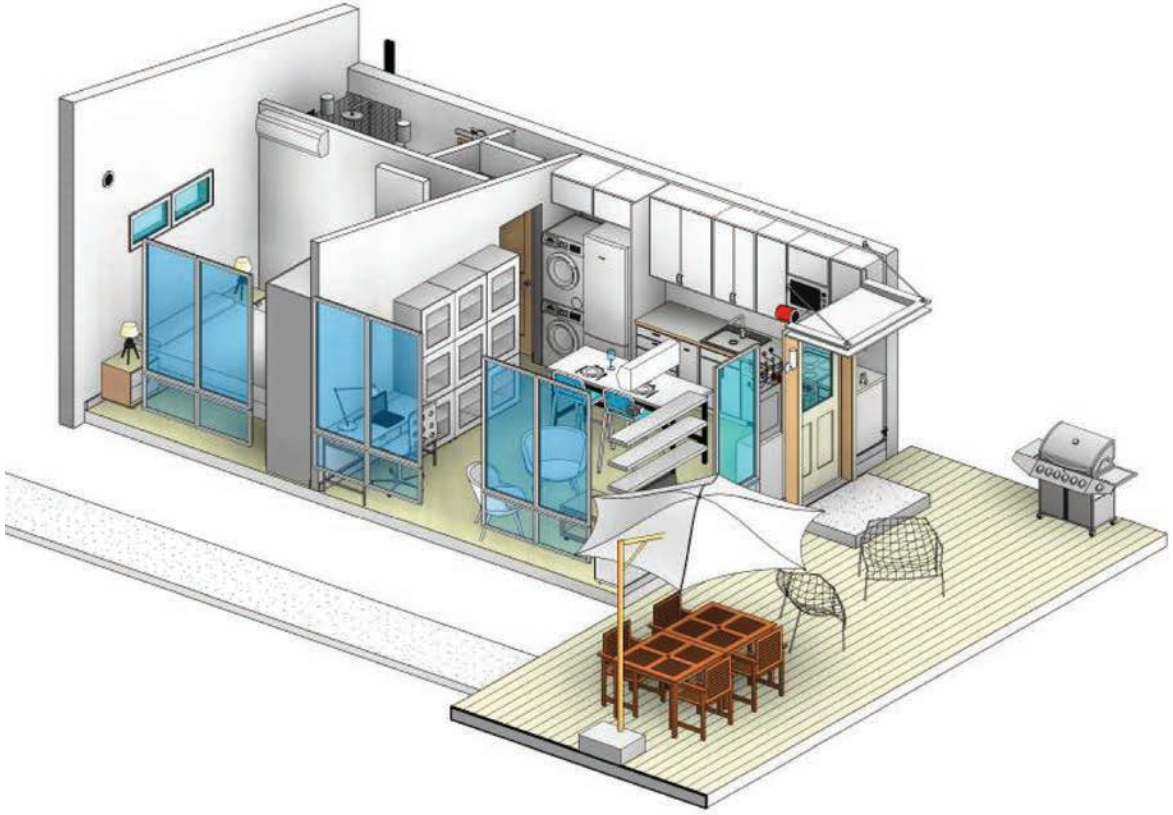
Drawings not to scale.

COMPETITION ENTRIES

Competition Entry

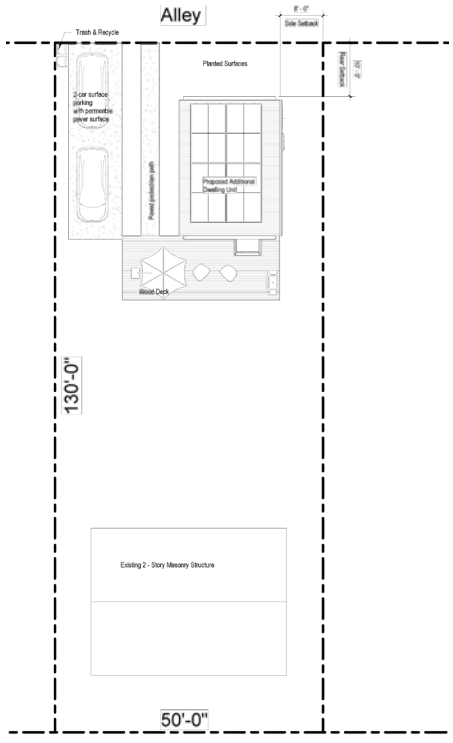
Ileana Schinder, PLLC



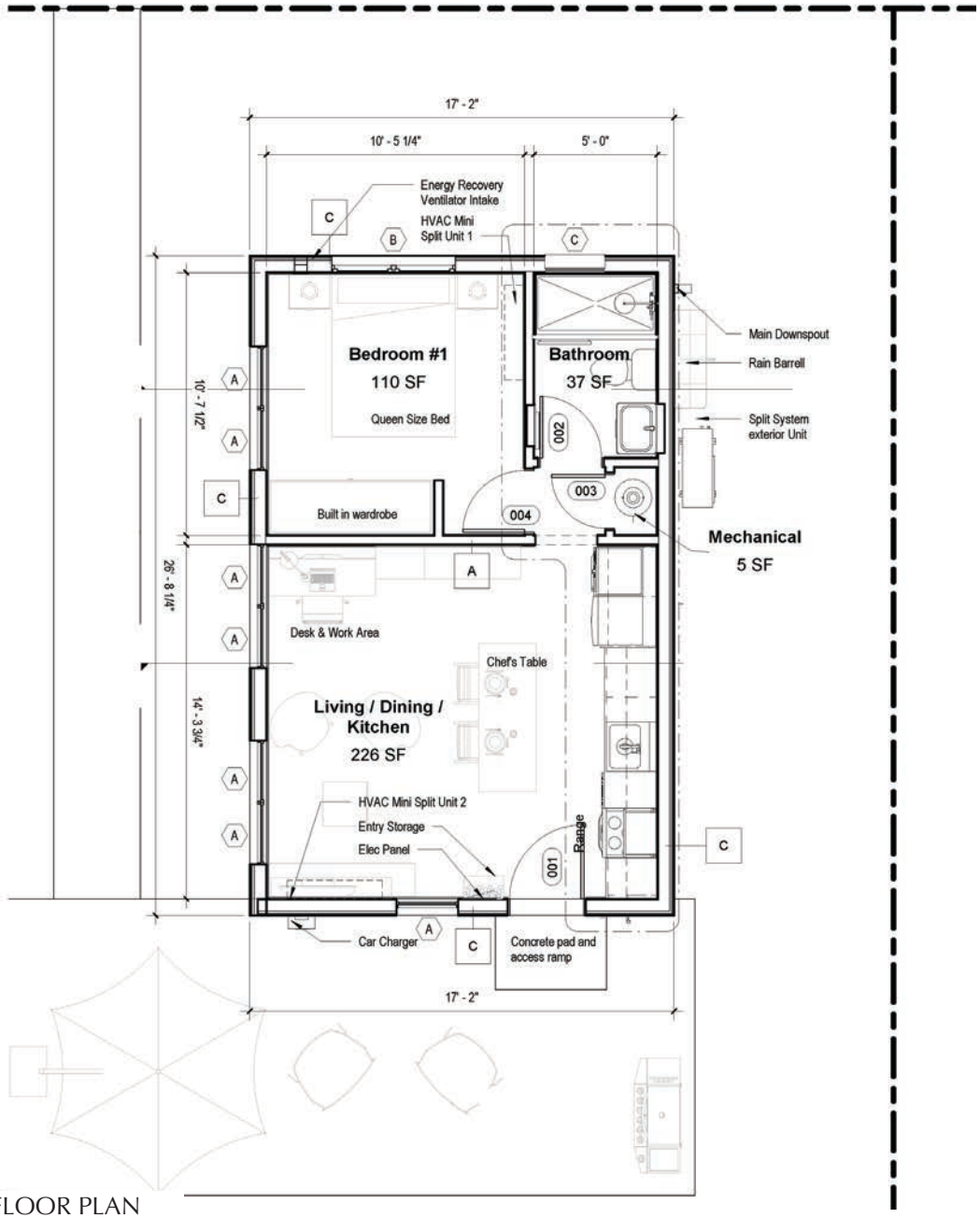


Design Information

Anne's Compact ADU is custom designed for the cost-conscious consumer seeking an affordable housing solution on a compact lot. The design prioritizes barrier-free living for individuals of all abilities and ages with wide doorways, zero-step entries, and accessible bathroom fixtures. Its configuration is ideal for small urban lots looking to add a secondary dwelling following local zoning requirements in Roanoke.



SITE PLAN

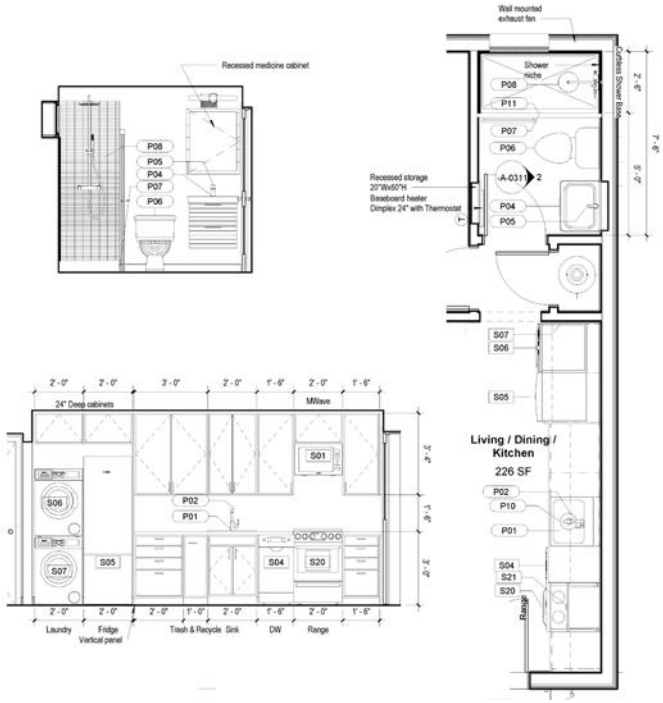


FLOOR PLAN

High-efficiency windows installed throughout minimize heat loss in winter, prevent heat gain in summer, and maximize natural light.

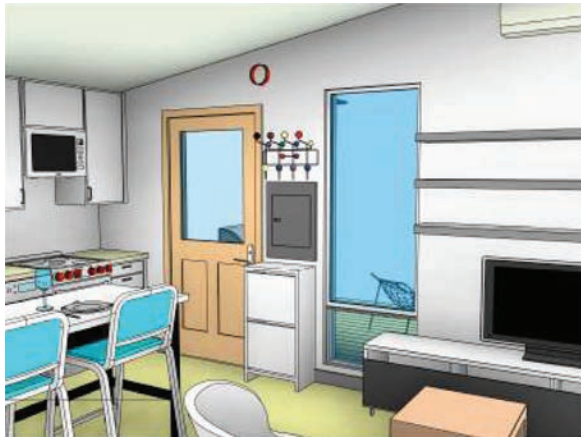
A minisplit HVAC system provides precise temperature control, excellent air quality, and energy-efficient operation.

An energy recovery ventilator (ERV) ensures a constant supply of fresh air while recovering heating or cooling air to contribute to a healthy and comfortable living environment for occupants.



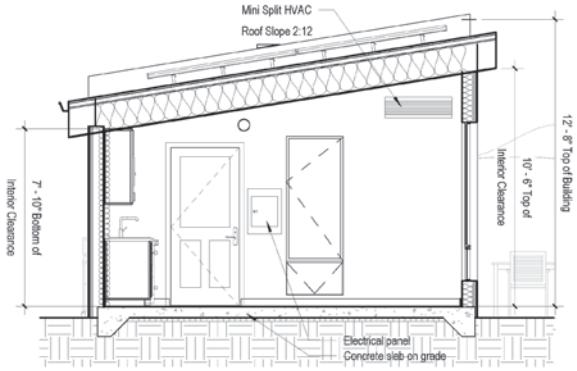
INTERIOR ELEVATIONS & DETAILS

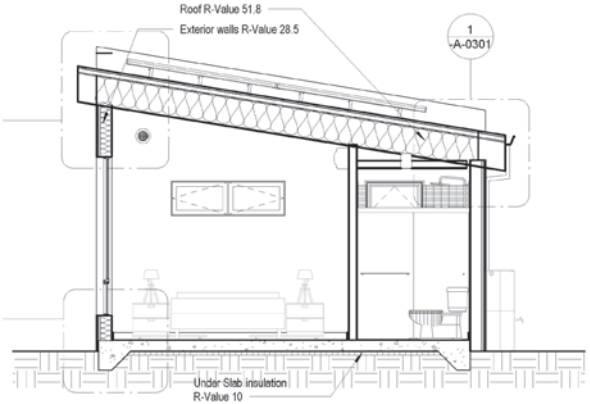
Drawings not to scale.



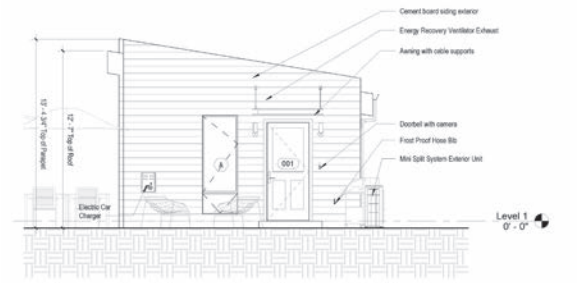
LEFT: INTERIOR VIEWS

A traditional construction system with exterior walls of 2x6-stud construction with ample space for mineral wool insulation for thermal performance and sound insulation. Cement board siding adds durability. A standing seam metal roof adds high durability and low maintenance.

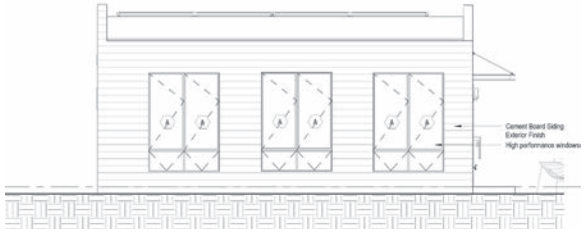




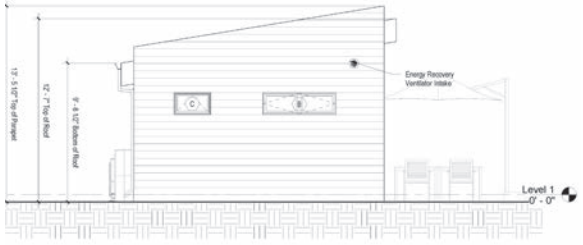
INTERIOR SECTIONS



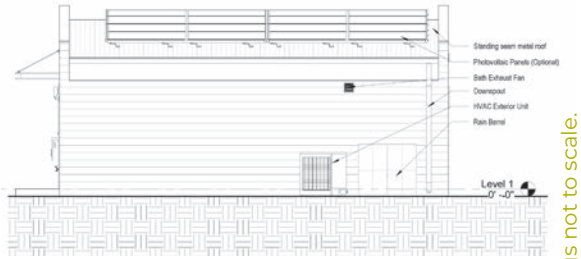
FRONT ELEVATION



LEFT SIDE ELEVATION



BACK ELEVATION



RIGHT SIDE ELEVATION

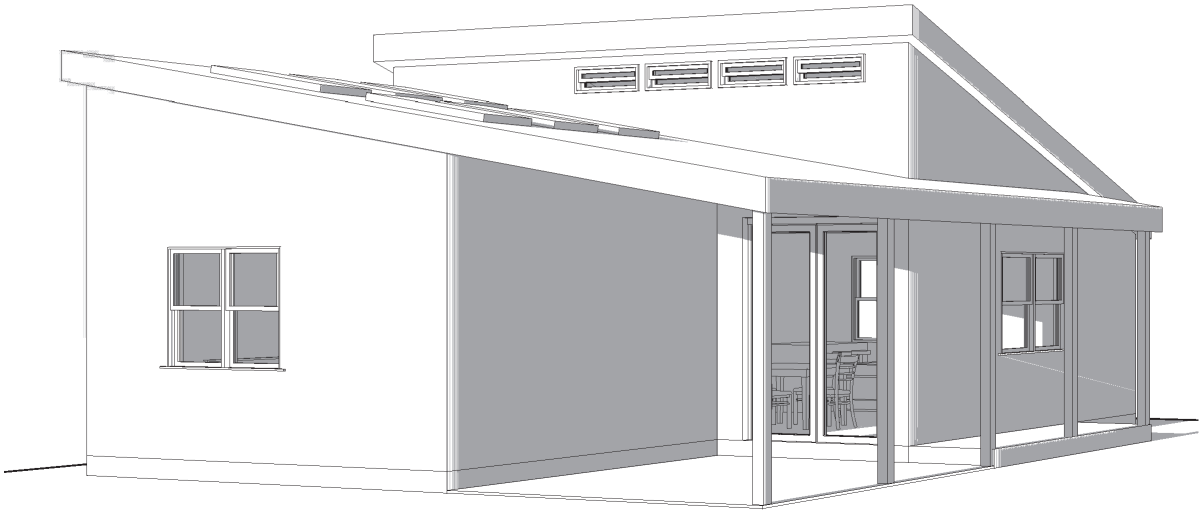
Drawings not to scale.

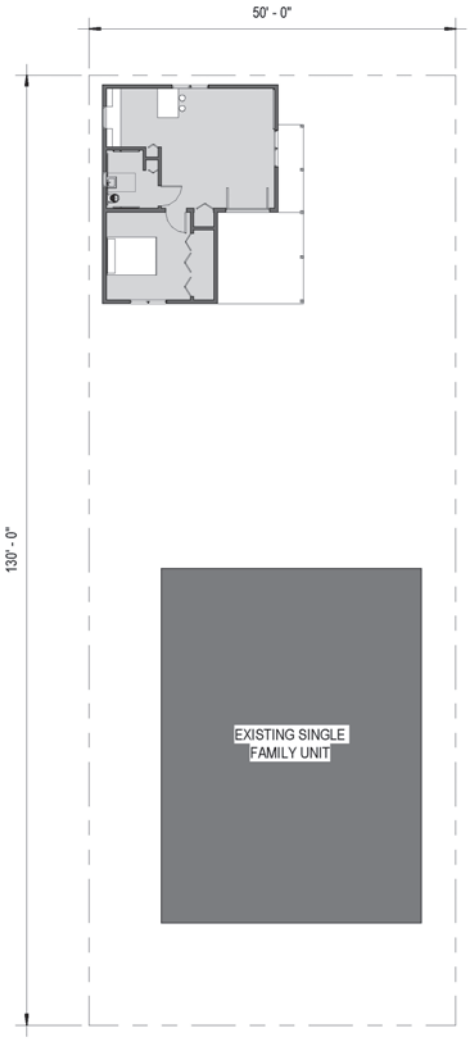
Competition Entry

Matias Hendi with Arimise Architects, LLC

Design Information

Granny's Home is a 620 SF ADU for residents investing in the future by constructing an additional dwelling unit on their property.

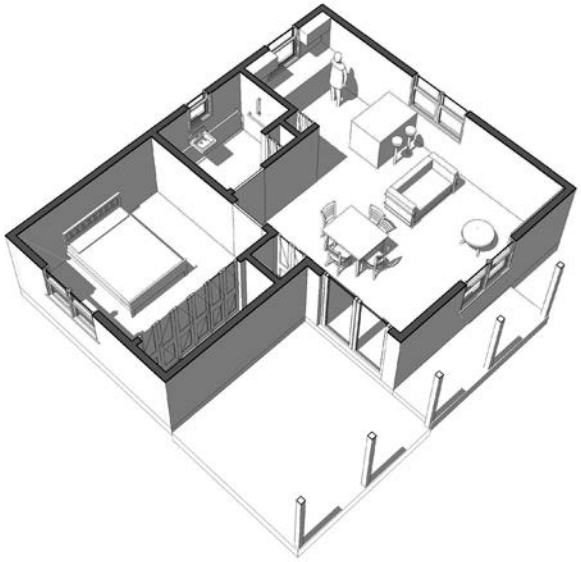




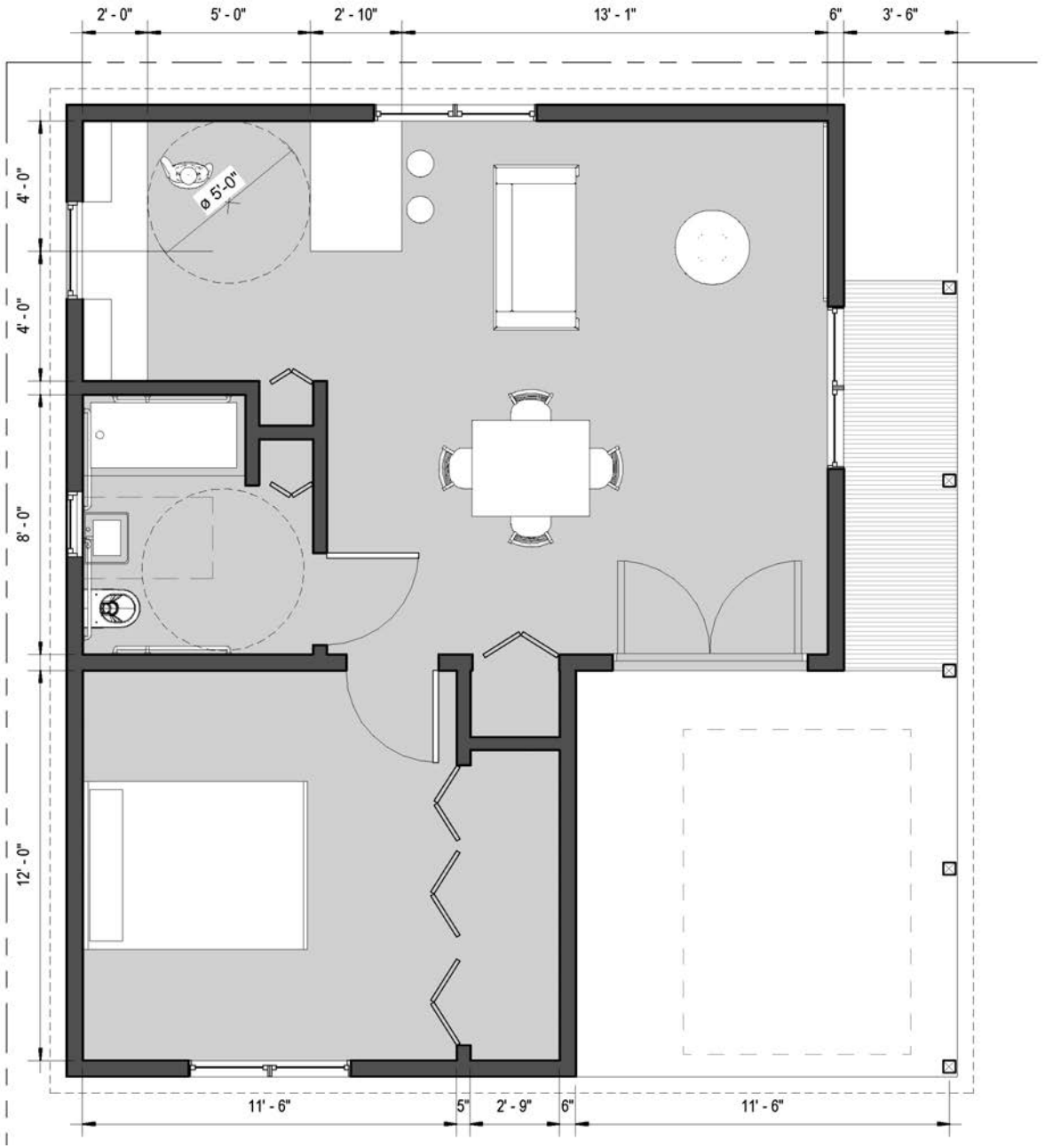
SITE PLAN

ADA friendly and prepped for solar panels, this 1 bedroom /1 bath home comes equipped with a full kitchen, covered parking space, and private deck.

Ample open plan living and dining spaces leave room for family heirloom furniture to transform an ADU into a home.



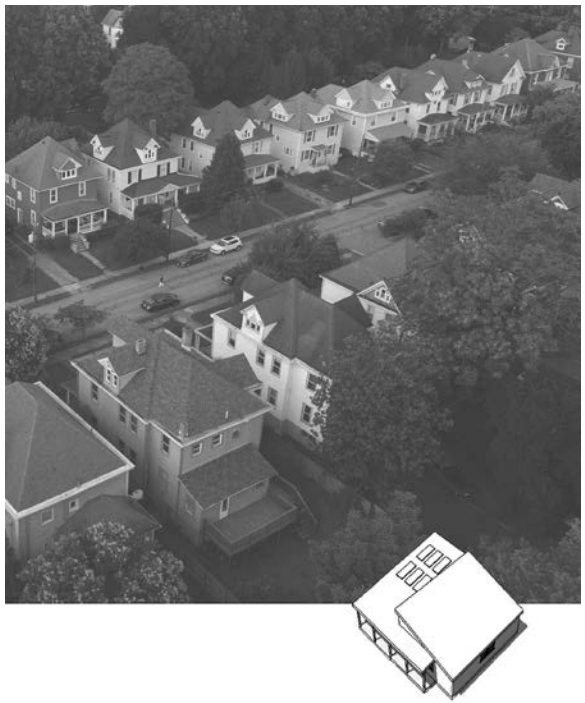
INTERIOR VIEW



FLOOR PLAN

Drawings not to scale.

ELEVATIONS



Equally functional as a rental unit, Granny's Home can welcome a new community member to the neighborhood and ensure their needs for a home are met with economy and energy efficiency.

DOWNTOWN ROANOKE NEIGHBORHOOD (TYPICAL)

Drawings not to scale.

Competition Entry

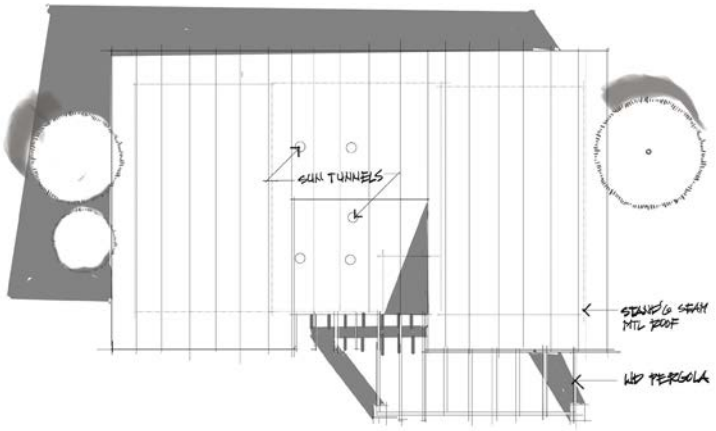
Peter VanderPoel | VanderPoel Architecture

Design Information

The design is a single level unit with entry at grade. A patio with pergola provides for outdoor relaxation and opportunities to be closer to nature in a comfortable setting.

The standing seam metal roof can host solar panels without penetrations by clamping them onto the standing seams. Generous overhangs provide shade in the summer and allow the low winter sun to enter.

Natural ventilation is increased as roof overhangs allow windows to remain open during rain.



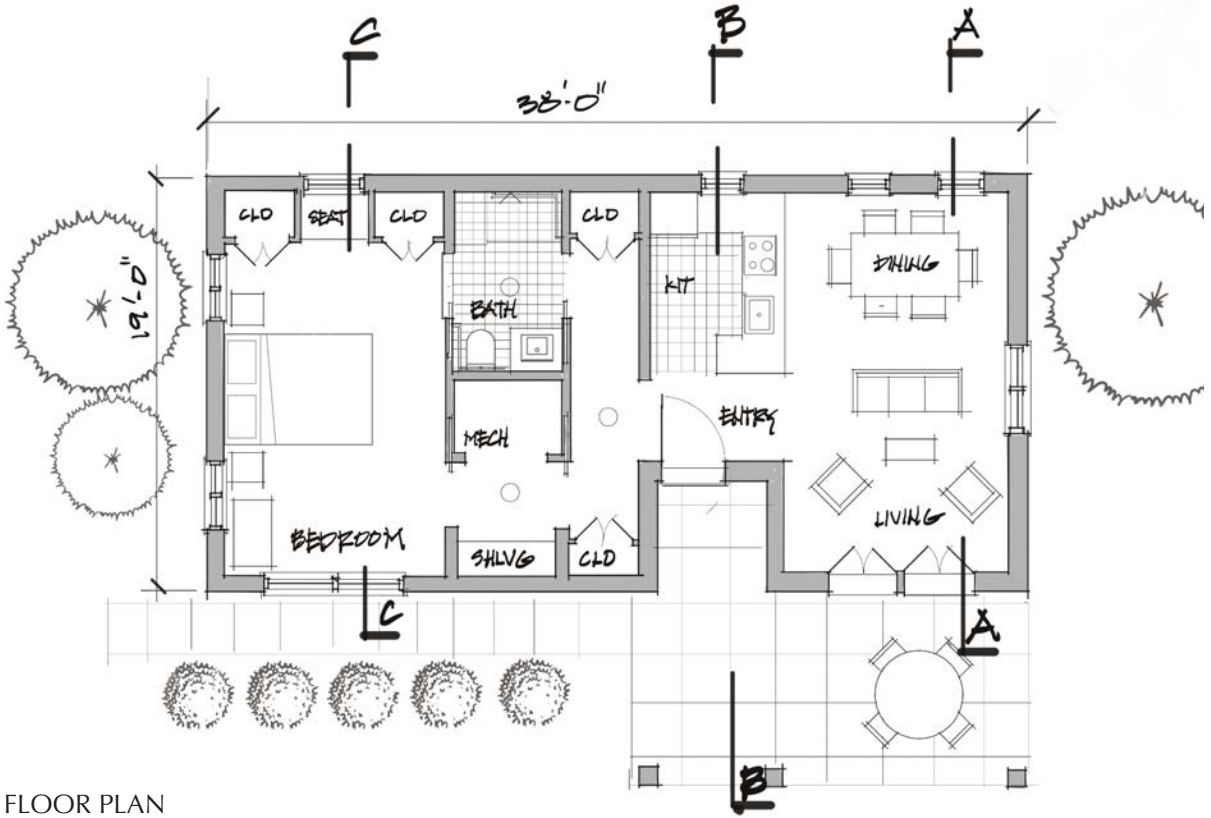
ROOF PLAN

The mechanical, storage/closet, and bathroom spaces divide private areas (bedroom/bath) from living, kitchen and dining spaces. This allows living and bedroom spaces to benefit from natural light and views outside. Sun tunnels with electric lighting in this central area bring in natural light from above.

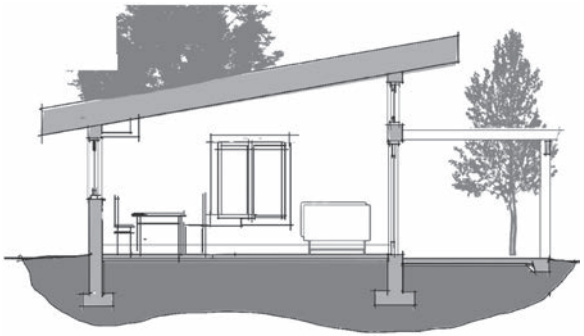
Three-foot wide doors to allow easy access; a roll-in shower with bench seat and grab bars increase safety.

Notes

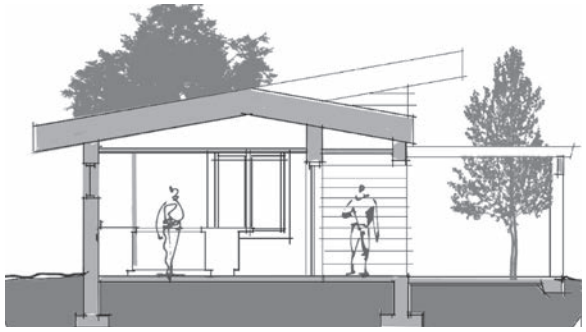
- Concrete slab on grade floor uses an underlayment and perimeter of rigid insulation.
- Standard 2x6 walls for increased insulation
- Continuous layer of rigid insulation in roof
- Alpen Zenith ZR-6, a high-efficiency, American made windows meet the Passive House Standard.
- Ductless minisplits heat or cool interior air
- An ERV takes heat and humidity out for energy savings.



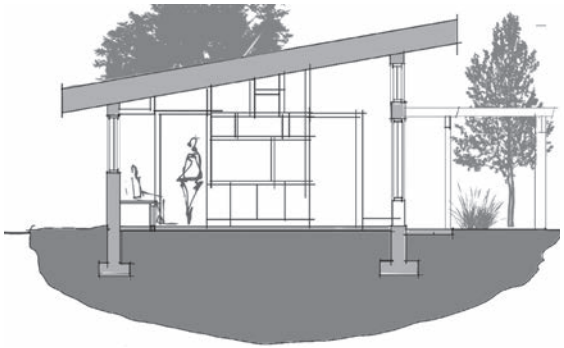
FLOOR PLAN



SECTION A



SECTION B

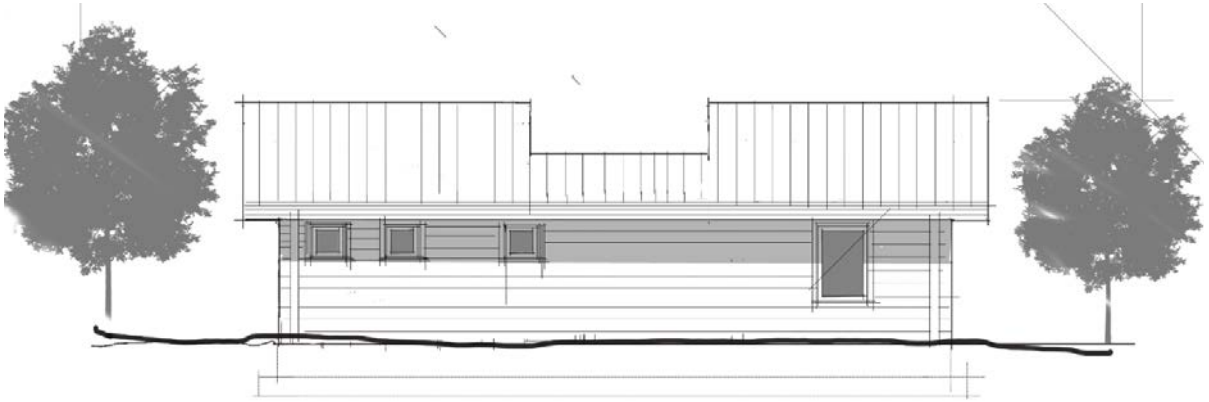


SECTION C

Drawings not to scale.

A durable, efficient exterior envelope, built to a Passive House standard, and a modest, up front increase of 5-10% in constructions costs could provide a near 80% reduction in energy use and energy costs compared with standard residential construction.

FRONT ELEVATION



BACK ELEVATION

LEFT ELEVATION

RIGHT ELEVATION

Drawings not to scale.

Competition Entry

Lisa M. Tucker, AIA

KITCHEN AND DINING AREA VIEWS

Design Information

This ADU design draws from traditional houses in Roanoke on the exterior. An efficient building footprint contains a kitchen, living and dining areas, and a bedroom with bathroom. Multiple Universal Design features accommodate aging in place.

The universally designed kitchen eliminates upper cabinets for ease of use. Lower cabinets include lazy Susan's and pull-out shelves. Dishwasher drawers, an under-counter microwave, and a double door refrigerator all contribute to universal design. Kick-space sensor lights contribute to resident safety.

A universally designed kitchen and bath uses clearances for wheelchair or walker throughout fitted with controls designed for ease of use, including cabinet pull-handles, levered doors, and rocker-type light switches. Installed grab bars match other finishes.

A high-efficiency heat pump, on-demand water heater, energy efficient windows and doors, and the potential for rooftop solar panels reduce energy consumption. Insulated walls, roof, and slab meet PassiveHaus standards to further reduce energy demands. All unit lighting is LED.

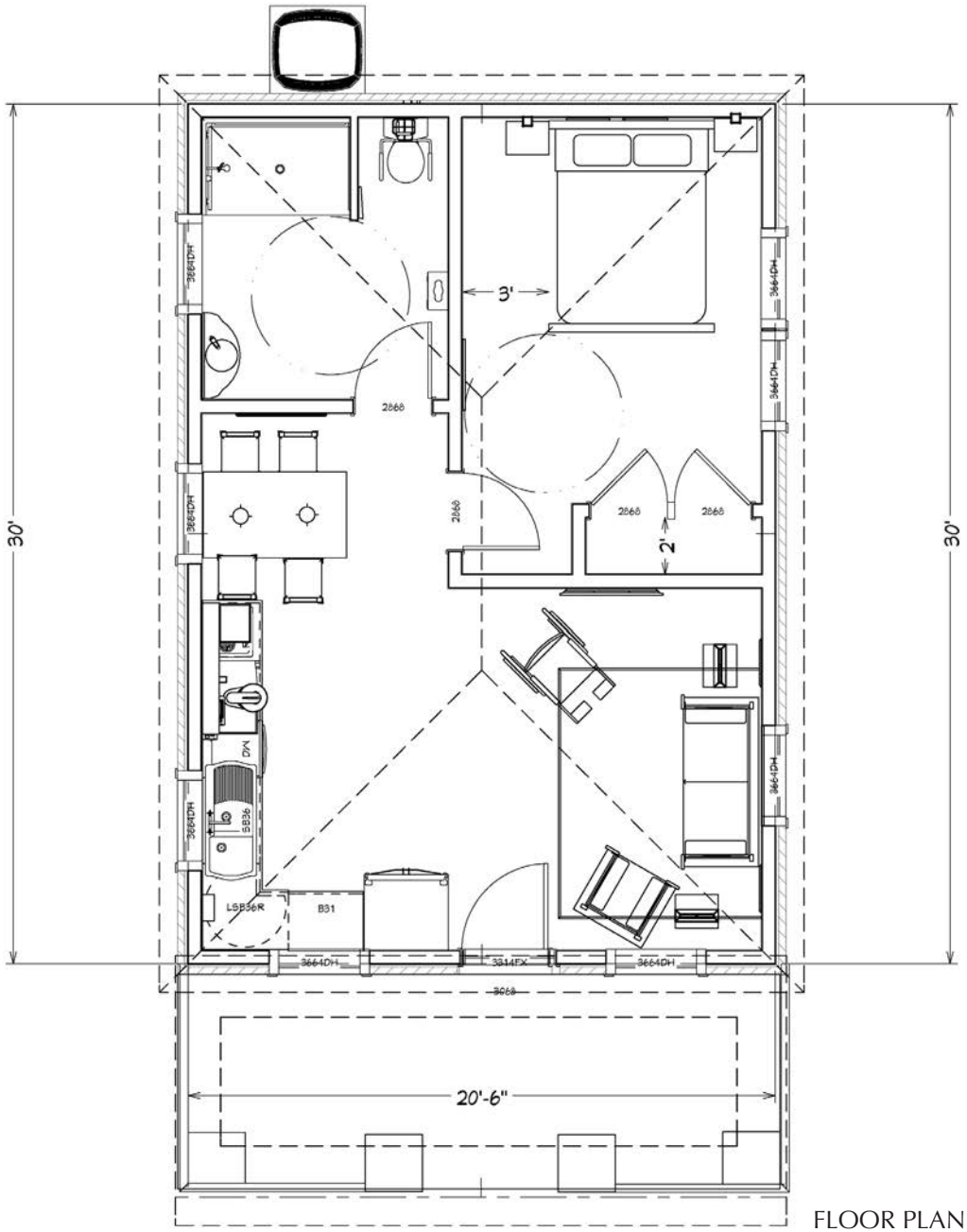
Sustainable, nontoxic, and low- or no-VOC elements include SFC wood, cabinetry, ceramic tile, and a stone countertop, with all materials sourced within a 500-mile radius of the site.

Notes

1. High efficicency heat pump
2. Solar panels on south facing roof
3. Tankless hote water heater
4. Interior Finishes:
   SFC Maple Wood Flooring
   SFC Maple window casing and trim
   Slip resitance sustiable cermaic tile in bathroom
5. All lighting LED

Universal Design Notes

1. Level thresholds
2. 36" doors with level handles
3. Sensor controlled lighting with rocker switches
4. Turn tables in all cabinets
5. Motion sensor lights in cabinet kick space

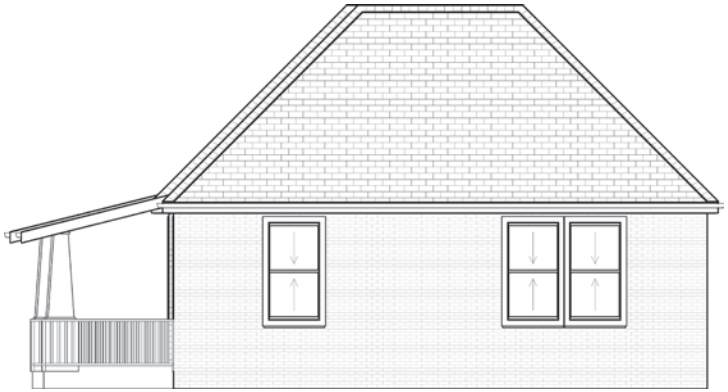


FLOOR PLAN

Drawings not to scale.

ABOVE: INTERIOR VIEWS

BOARD AND BATTEN SIDING OPTION



BRICK SIDING OPTION

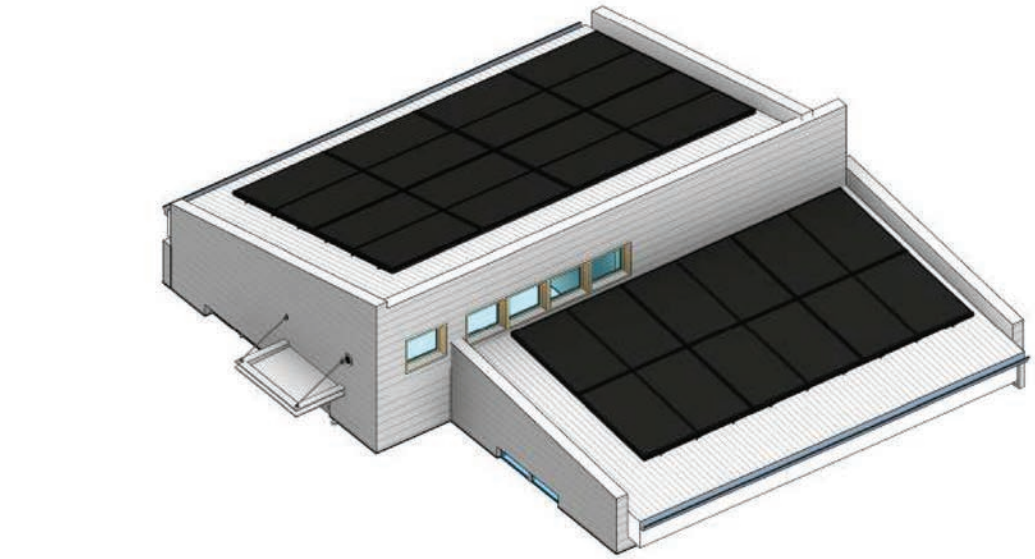
A steeply pitched, hipped roof and front porch are reminiscent of surrounding houses. The style of the unit fits into traditional Roanoke neighborhoods with the ADU located at the back of the lot.

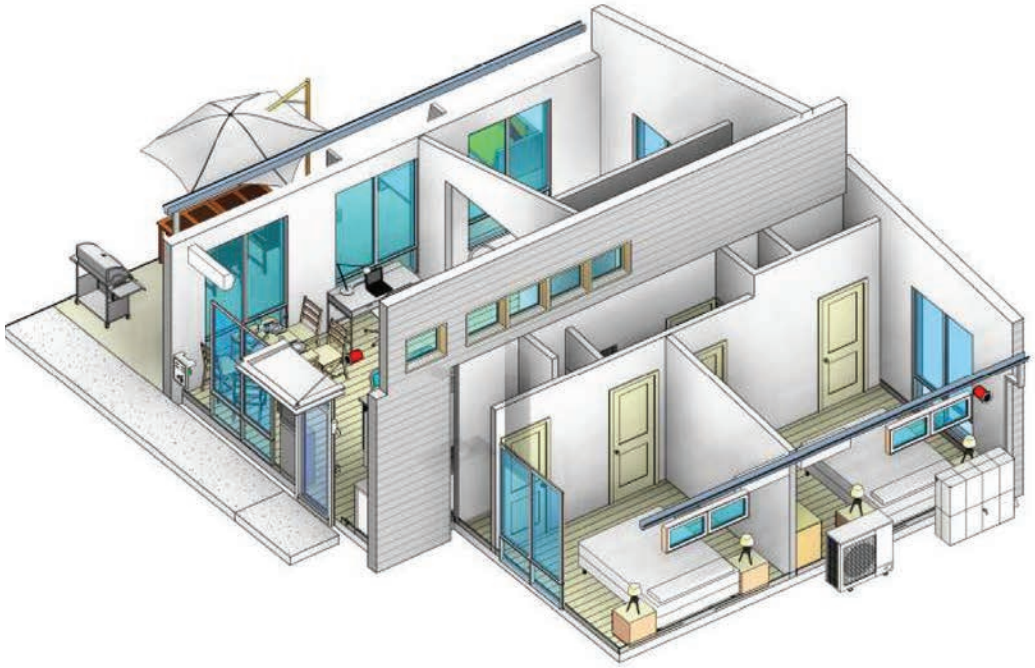
To provide maximum year-round comfort, a front porch shades the entry door and windows. Two exterior cladding options—wood siding or brick—allow the unit to be harmonious with the main house. Roofing options include standing seam metal or architectural shingles.

Drawings not to scale.

Competition Entry

Ileana Schinder, PLLC

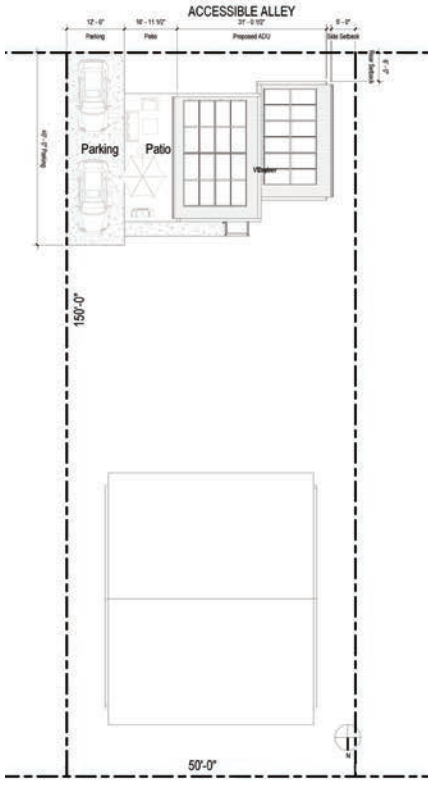




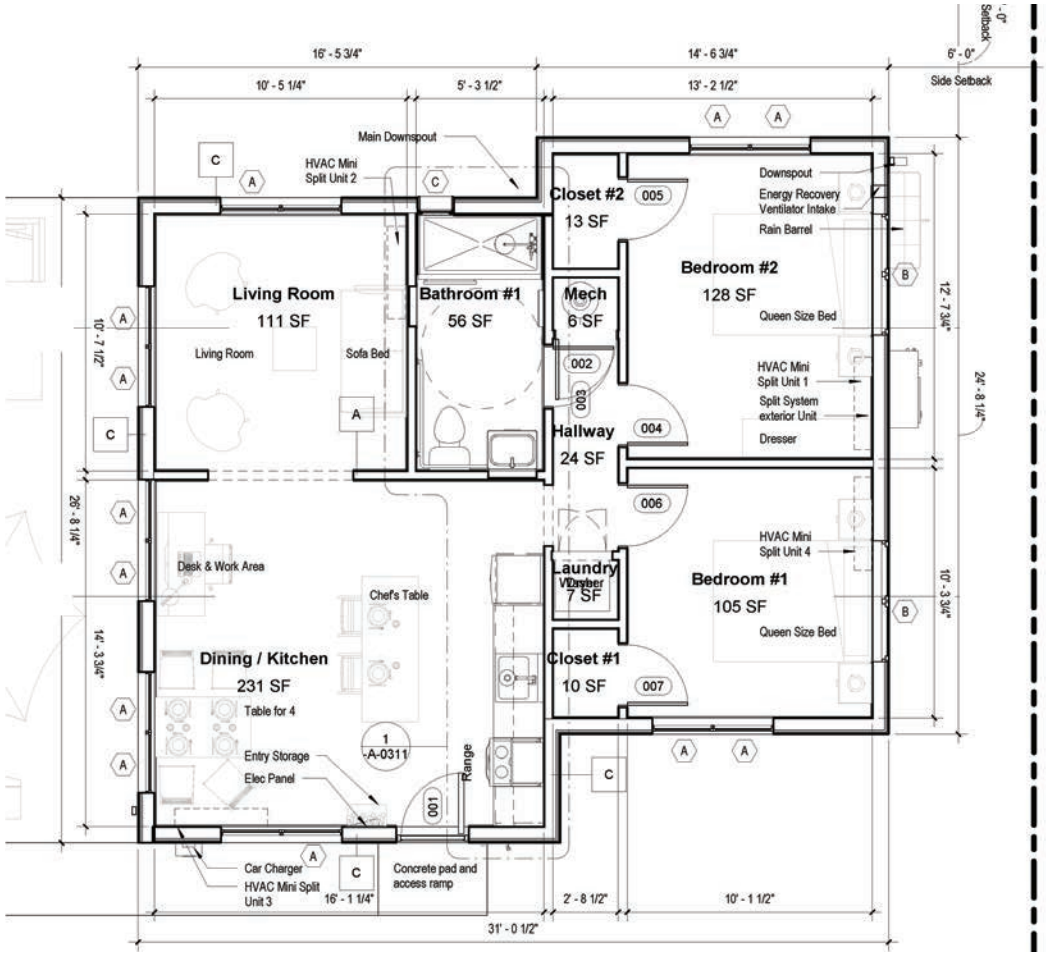
Design Information

Charlie is a single-level, fully accessible ADU designed to provide flexibility, security, and a comfortable living space within an existing suburban neighborhood.

The design features two bedrooms, one bathroom—which can be modified for additional storage if desired—an open kitchen, and a welcoming living area.



SITE PLAN

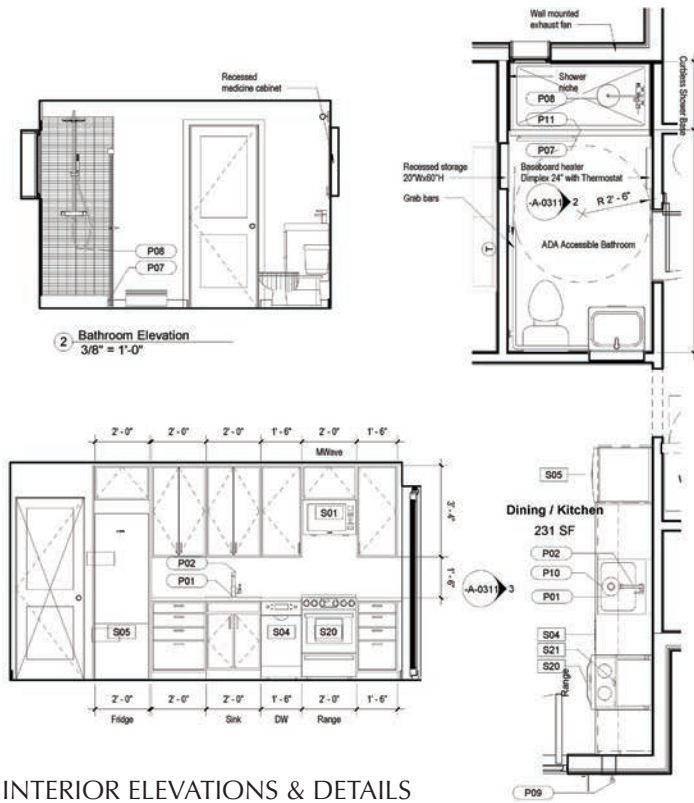


FLOOR PLAN

High-efficiency windows installed throughout minimize heat loss in winter, prevent heat gain in summer, and maximize natural light.

A mini-split HVAC system provides precise temperature control, excellent air quality, and energy-efficient operation.

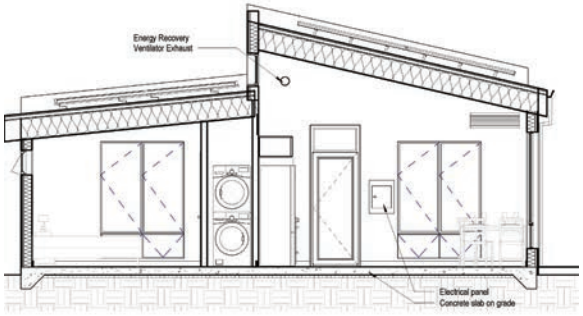
An energy recovery ventilator (ERV) ensures a constant supply of fresh air while recovering heating/cooling air to contribute to a healthy and comfortable living environment.

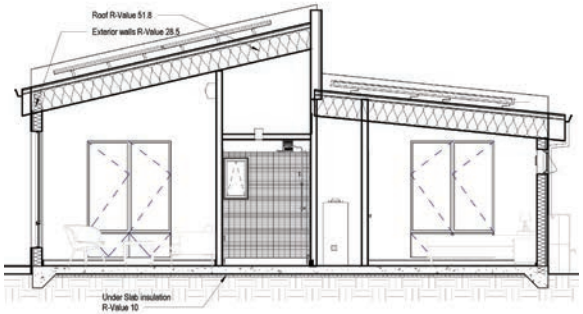


INTERIOR ELEVATIONS & DETAILS

Drawings not to scale.

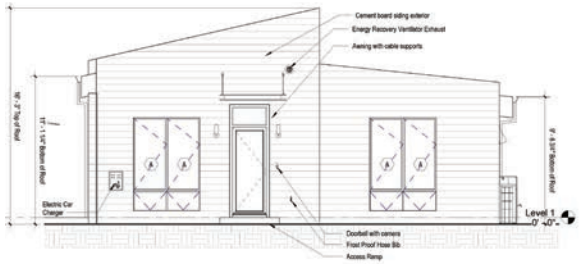
A traditional construction system with exterior walls of 2x6-studs provides ample space for mineral wool insulation for thermal performance and sound insulation. Cement board siding adds durability. A standing seam metal roof adds high durability and low maintenance.



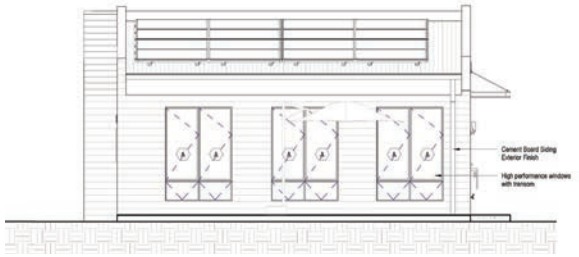


INTERIOR SECTIONS

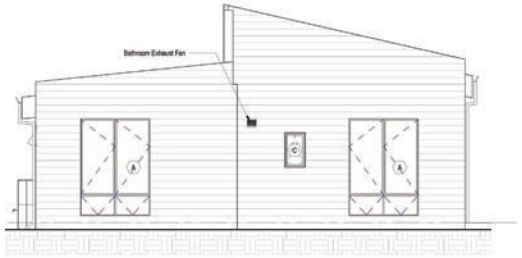
LEFT: INTERIOR VIEWS



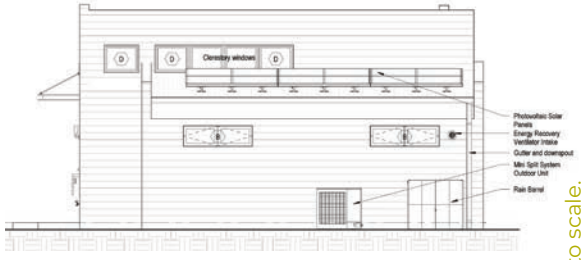
FRONT ELEVATION



LEFT SIDE ELEVATION



BACK ELEVATION



RIGHT SIDE ELEVATION

Drawings not to scale.

Competition Entry

Amal Thabet Almalkawi & Ahmed Emad Meselhy

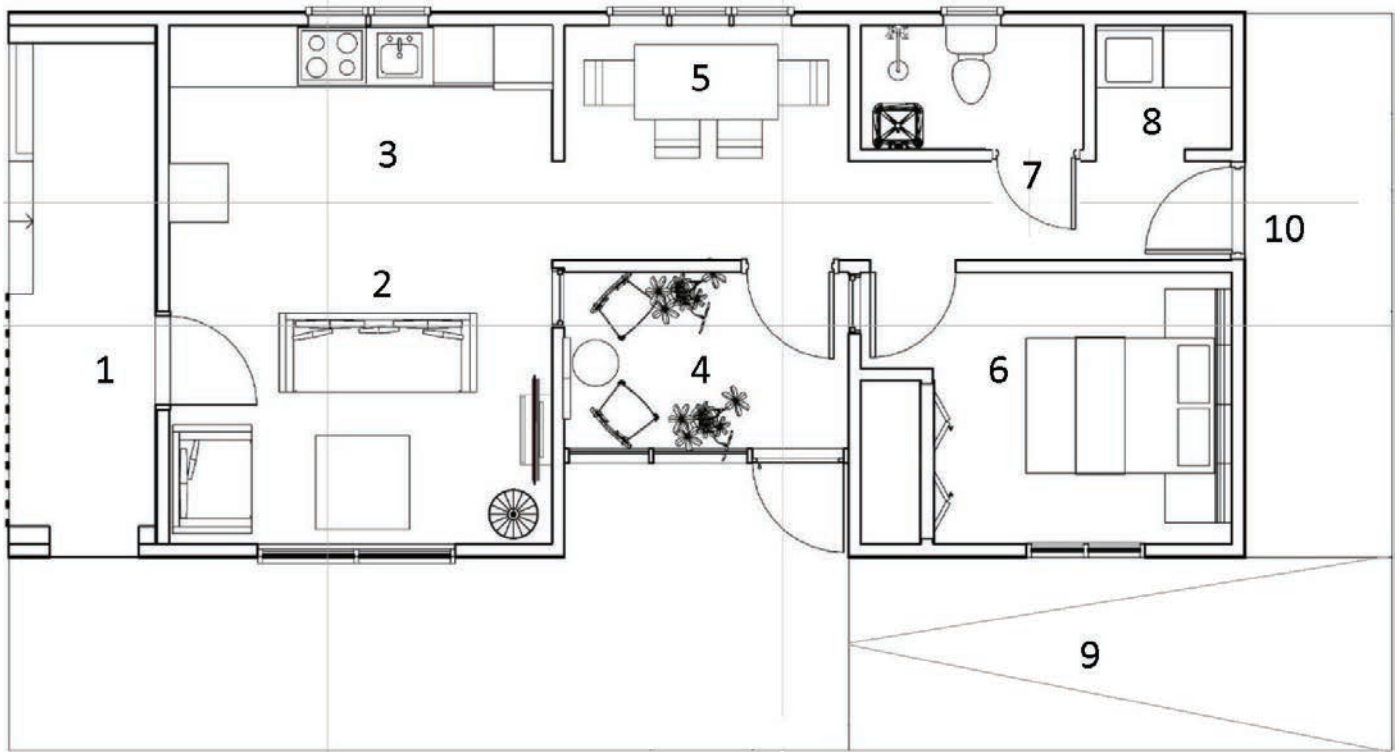
Design Information

The FEEL HOME 650 SF ADU transcends mere shelter to create an affordable, universally designed dwelling. This detached single-story home is designed for a traditional urban lot size of 50ftX130ft.

On the exterior, the building pays homage to the main house it accompanies with rooflines that extend from the primary residence. Local, common materials echo the character of Roanoke's residential architecture.

The linear form harmonizes with the scale of a typical neighborhood site.

CONTEXTUAL REFERENCE

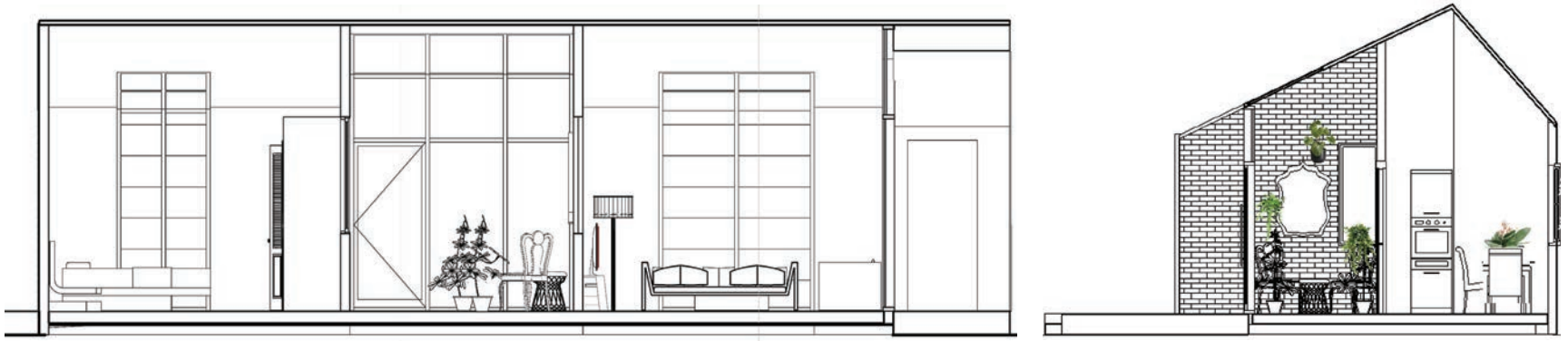


FLOOR PLAN

Spaces

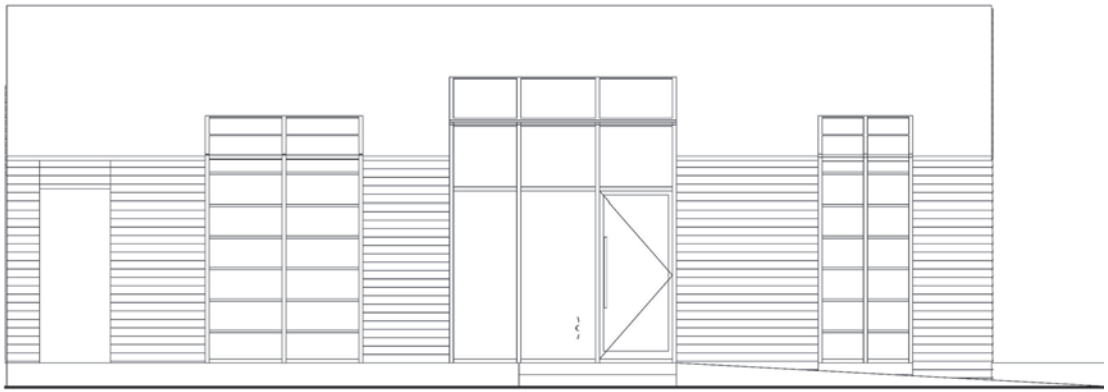
1- Entrance (Porch)
2- Living Room
3- kitchen
4- Sunspace
5- Dining and Studying Area
6- Bedroom
7- Bath
8-Laundry
9- Handicap Entry (Ramp)
10- Entry for Future Expansion

The one-story ADU design prioritizes safety and accessibility by eliminating stairs. Door widths, window heights, and exterior ramp ratios, comply with ADA standards.

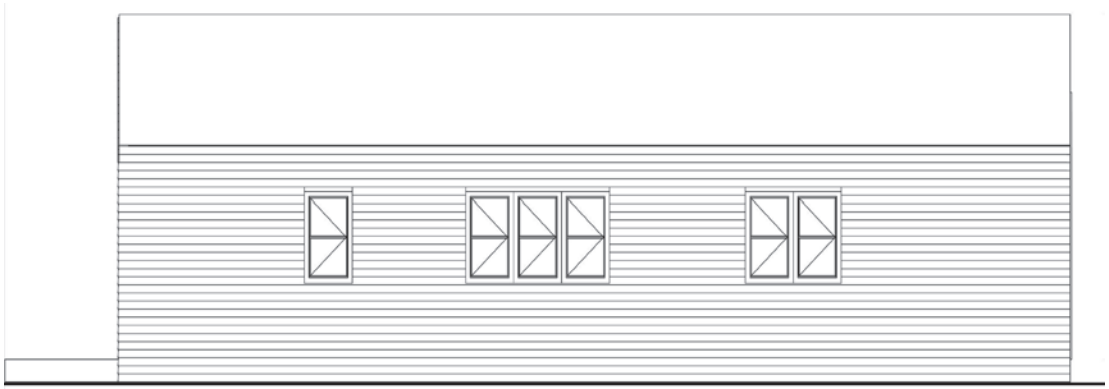


INTERIOR SECTIONS

Drawings not to scale.

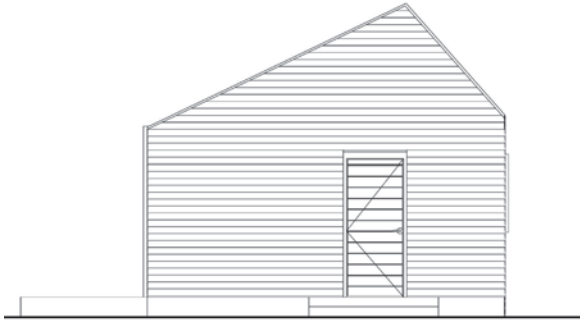


SOUTH ELEVATION



NORTH ELEVATION

WEST ELEVATION

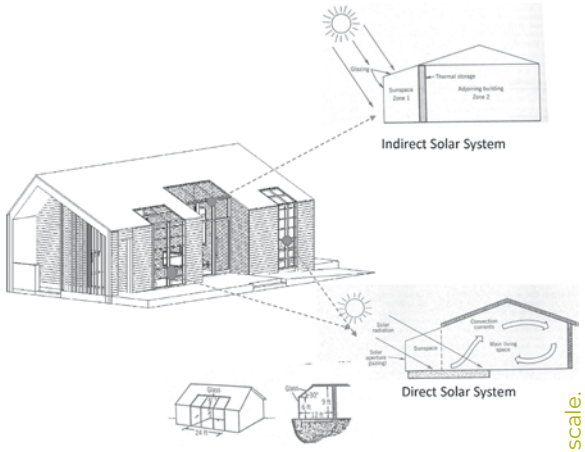


EAST ELEVATION

The high-performance, net-zero energy home, leverages passive strategies like natural daylight, direct and indirect solar gain, thermal mass, and natural ventilation.

Innovative long term affordability features include:

- Net-zero features slash utility costs to zero
- Extensive natural light ensure ample vitamin D intake for residents
- Double-glazed, low-e-coated windows reduce solar heat gain and harmful UV rays
- Thorough energy analysis confirmed the skylights play a vital role in reducing energy consumption
- A sunspace features a thermal mass wall and double-glazed, low-e-coated windows
- Strategically positioned openings allow natural ventilation



SOLAR DESIGN ELEMENTS

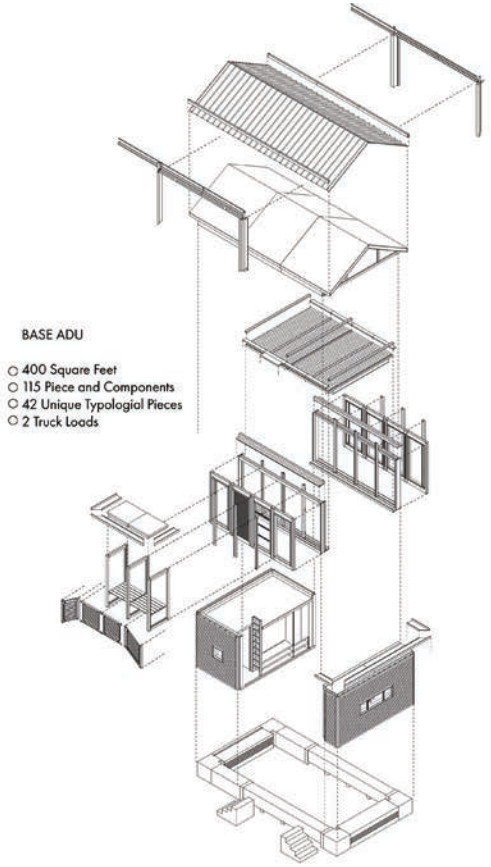
Drawings not to scale.

Competition Entry

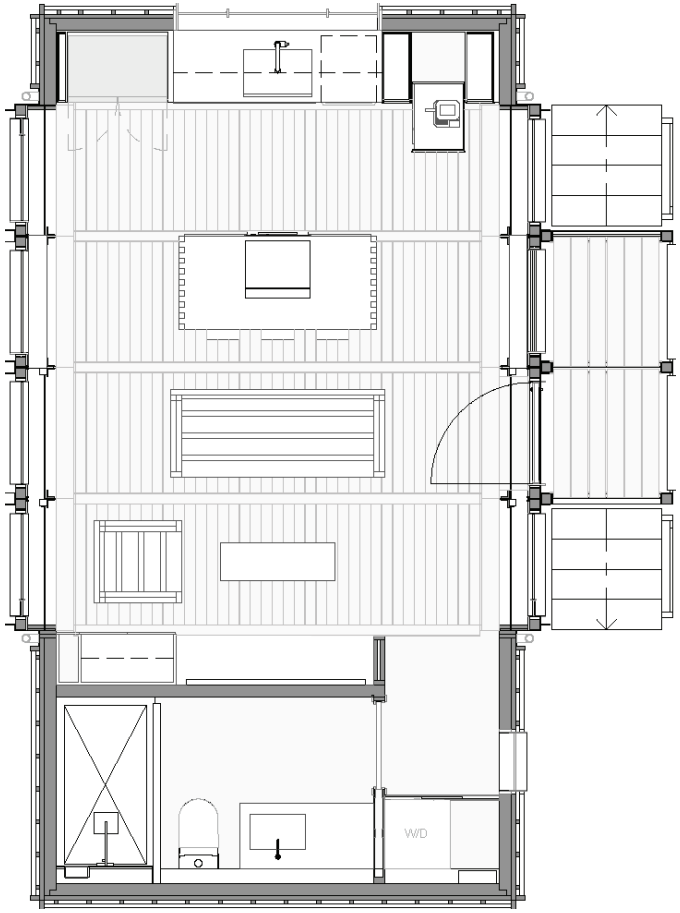
Blake Norris

Design Information

The design's "pod and panel" system breaks into service spaces (kitchen, utility, bathroom, entertainment) and living spaces (living, dining, and bedroom). These modules can form studio, 1 bedroom/1bath or 2 bedroom/2 bath options for Virginians to add cost-effective housing to their community. Panels connect to a light skeleton structural system.

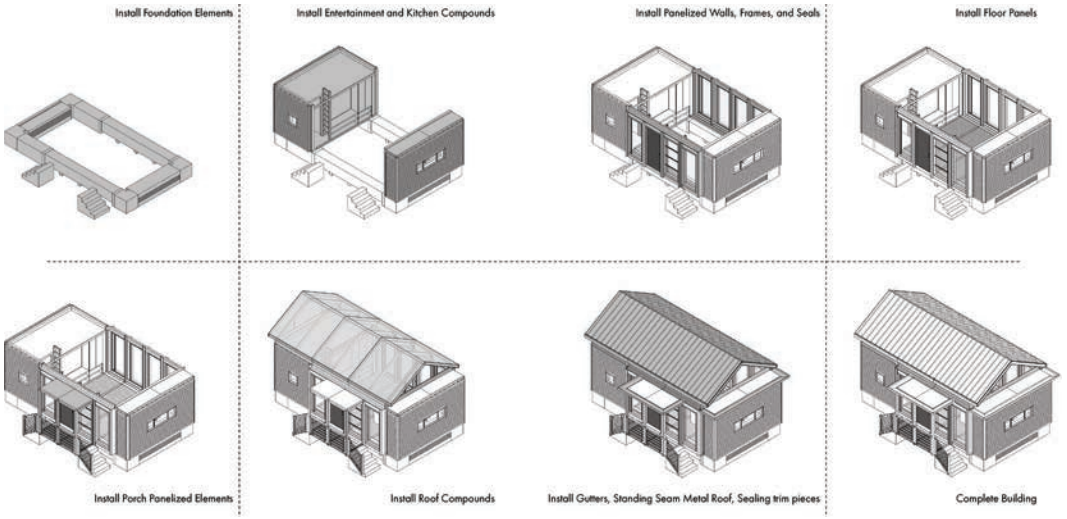


PANEL ASSEMBLY SYSTEM

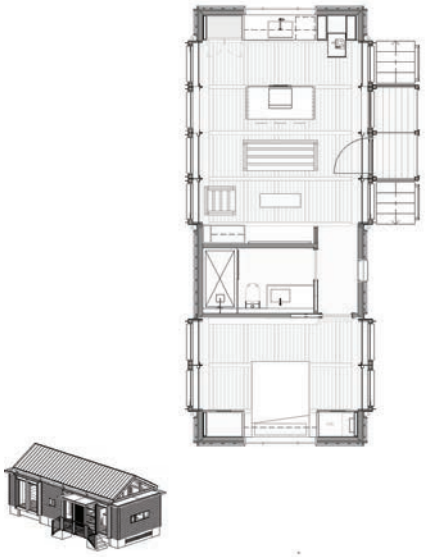


FLOOR PLAN (BASE STUDIO W/ LOFT)

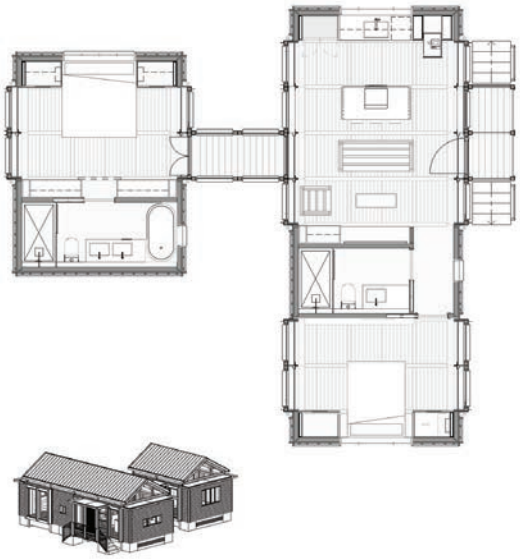
The structure can be placed on a series of precast concrete blocks, which house all ducts, plumbing, and electrical. The 400 SF base studio design includes a lofted bedroom. The main blocks are a kitchen and a bathroom, utility closet, and entertainment wall combined block constructed using cross laminated timber panels framed traditionally for cost savings.



PANEL AND FRAME CONSTRUCTION



1 BEDROOM/1 BATH 575 SF



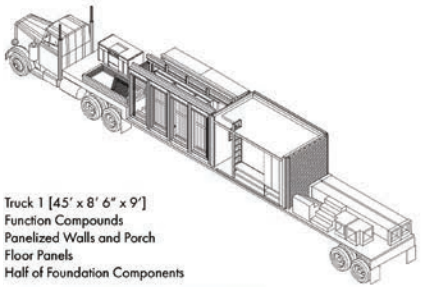
2 BEDROOM/2 BATH 875 SF

Drawings not to scale.

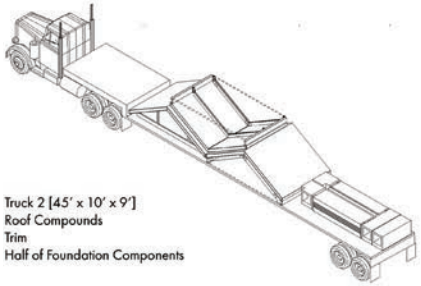
A ladder connects to a lofted bedroom space over the bath to frame living and dining spaces using insulated wood frames. Windows, attach to a light steel frame that connects to the roof assembly.

An exterior wood rain screen, gabled roof, and porch help the unit blend into any neighborhood.

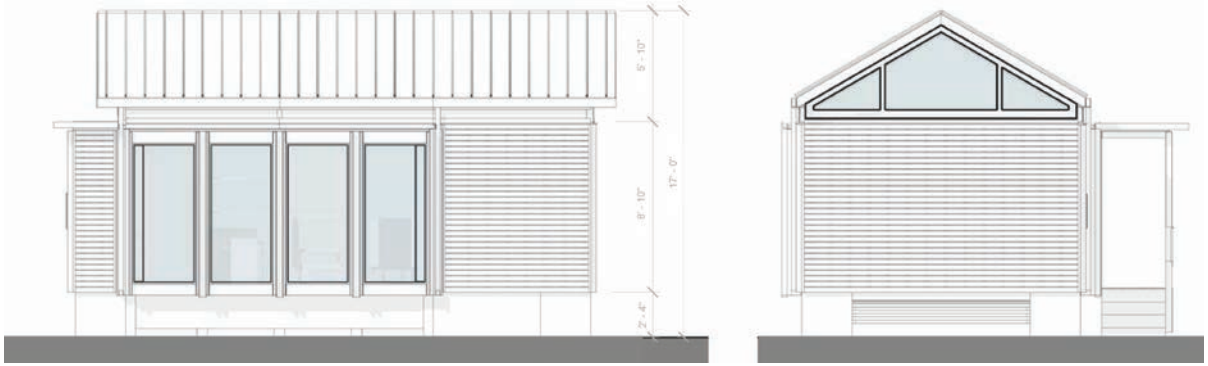
INTERIOR SECTIONS



Key Transportation Parameters



TRANSPORT SYSTEM



SOUTH AND EAST ELEVATIONS

WEST AND NORTH ELEVATIONS

Drawings not to scale.

Competition Entry

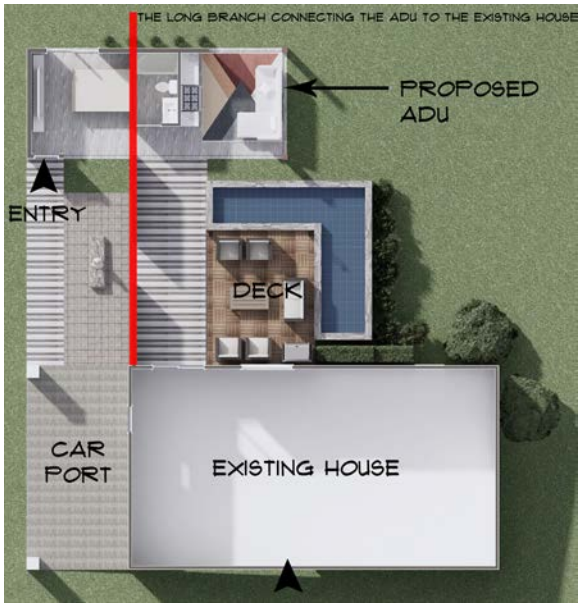
Bo Jayatilake, Manoj Sundaramoorthy, Mary McGovern | Dwell Design Studio

Design Information

The Long Branch Link ADU is sited in the suburb of Long Branch in Fairfax County, Virginia. The design mimics the character and aesthetics of a traditional suburban home using similar materials, such as stone, brick, and asphalt.

A gabled roof connects the unit to the existing house. The low profile backyard location allows the front yard to maintain its character on the street and within the neighborhood.

A covered pathway connects the ADU to the house to allow for privacy and a relationship between the users of the different households.



SITE PLAN

FLOOR PLAN

The layout fulfills the needs of residents. The ground floor unit is built slab on grade, so all entrances and amenities are accessible. Other details such as 2'10" counter height, a roll-in shower, a fold-down shower seat, and 67-inch turnaround space throughout allow the design to be utilized by everyone.

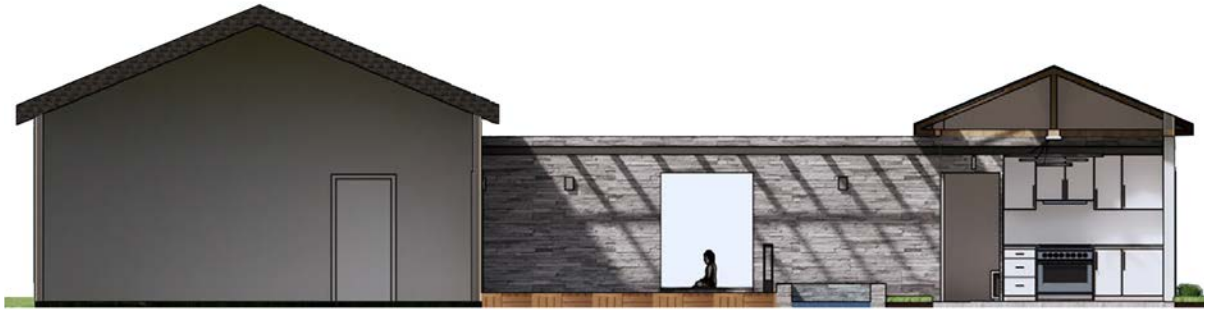
The design uses an east west access to promote passive solar design with southern facing solar roof panels receiving maximum sun exposure.

INTERIOR TO EXTERIOR VIEW

BUILDING SECTION

Drawings not to scale.

ABOVE: EXTERIOR VIEWS



ABOVE: ELEVATION VIEWS

2x6 wood studs are joined to form 6x6 columns at all posts, which are clad with metal to hide joints. Fixed glass panes with wood frames appear on all sides.

Materials such as wood and recycled glass contribute to the design's sustainability. Rain harvested from the adjacent reflecting pond waters plants and provides gray water for flushing.

ROOF PLAN

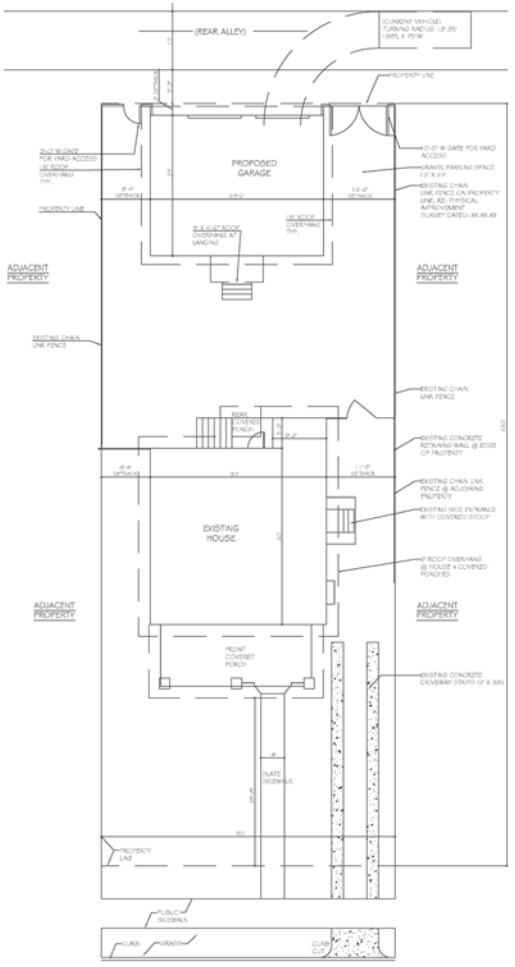
Drawings not to scale.

Competition Entry

Olivia Hartberger

Design Information

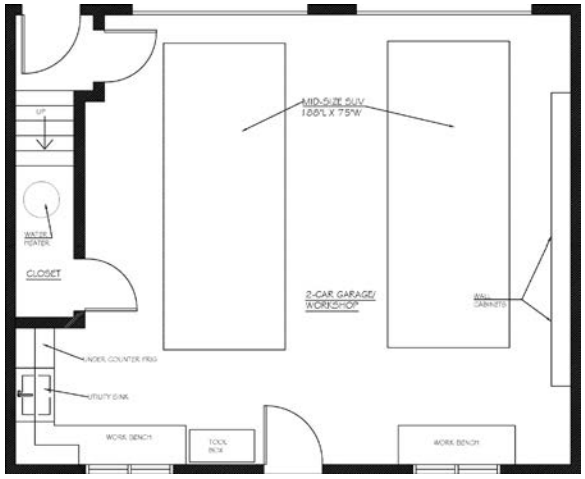
Inspired by neighborhood carriage houses, the design of this two-story structure fits seamlessly with the main home and respects its surroundings.



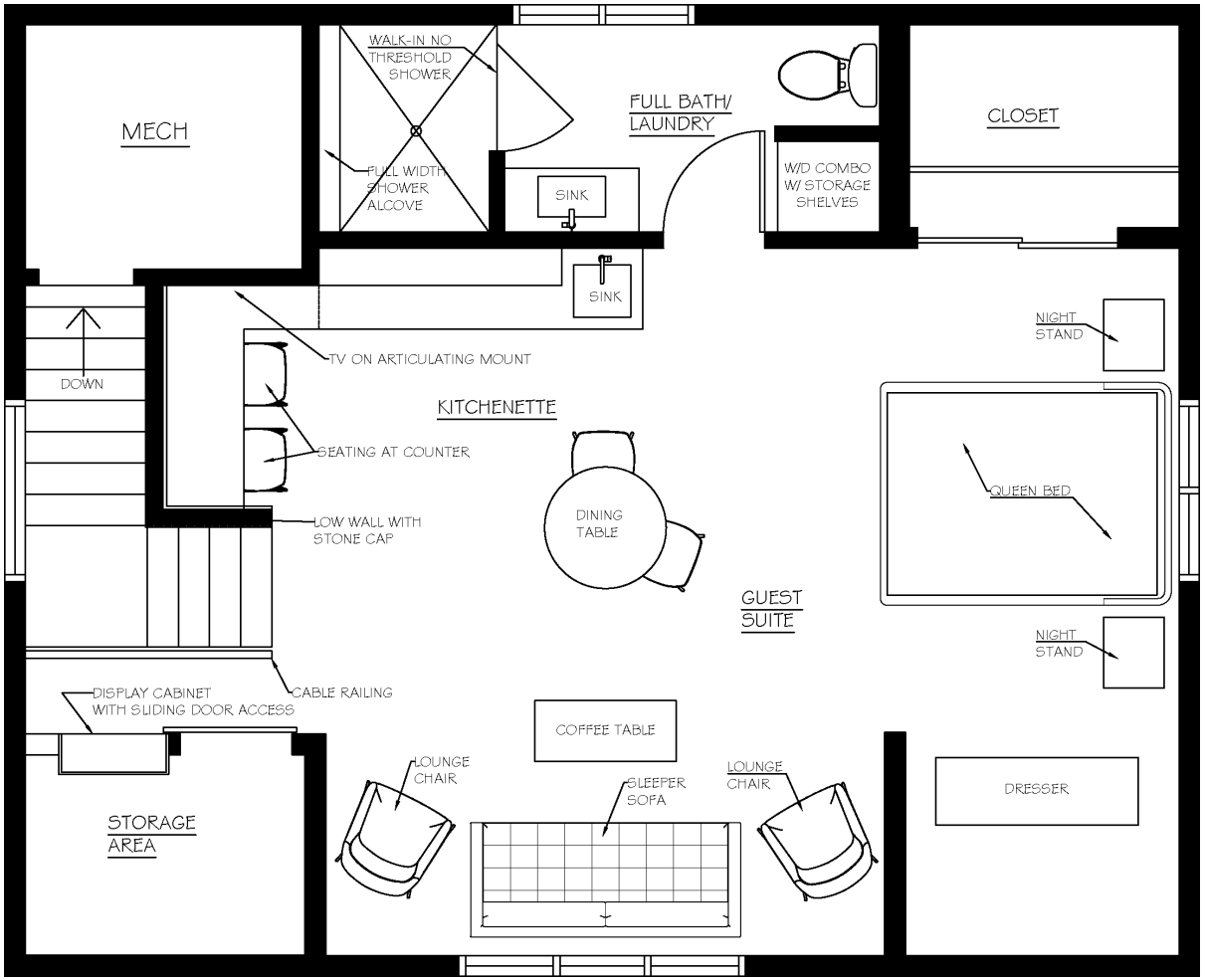
SITE PLAN

To take advantage of the site's rear alley access and to maintain as much lawn space as possible, the building is sited at the back of the property, adjacent to the alley, which allows vehicle entry and parking.

A stairway leads to the second floor from a first-floor vestibule. White oak beams at the ceiling trace the structure of the front. Rear dormers provide the perfect balance of warmth and visual interest. Engineered, wide, oak plank flooring offers a nod to the flooring used throughout the main home. A kitchenette in the main living area provides modern conveniences with an under-counter refrigerator and microwave. A full bath uses tile flooring that flows into a no-threshold walk-in shower. Plumbing and venting for a future all-in-one washer/dryer combination are also installed.



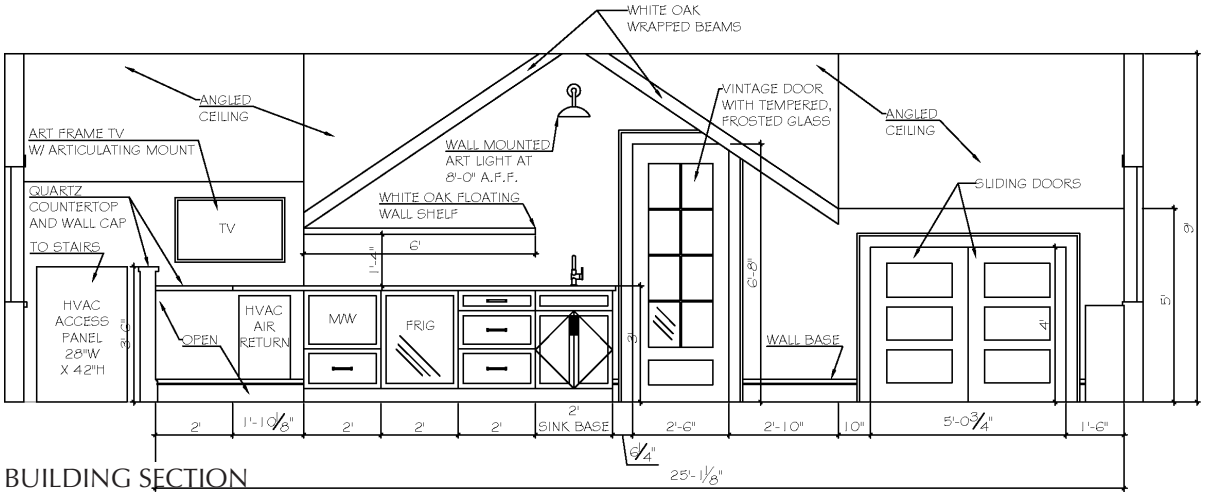
GARAGE LEVEL PLAN



SECOND FLOOR PLAN

Drawings not to scale.

ALLEY-SIDE VIEW

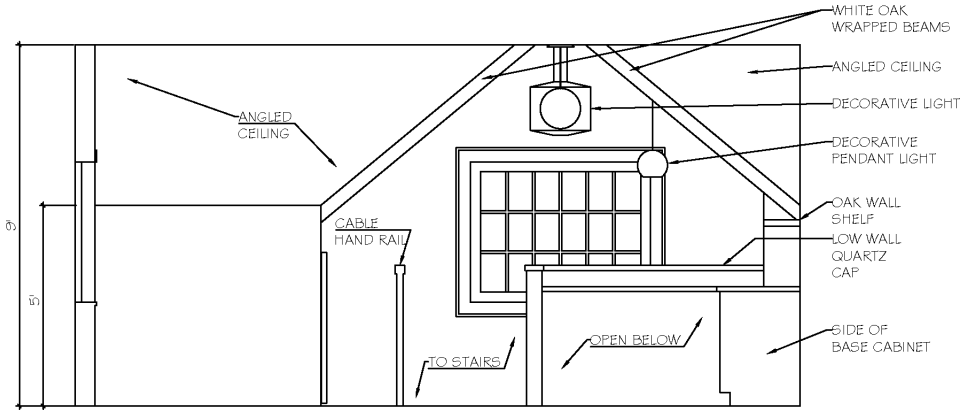


BUILDING SECTION

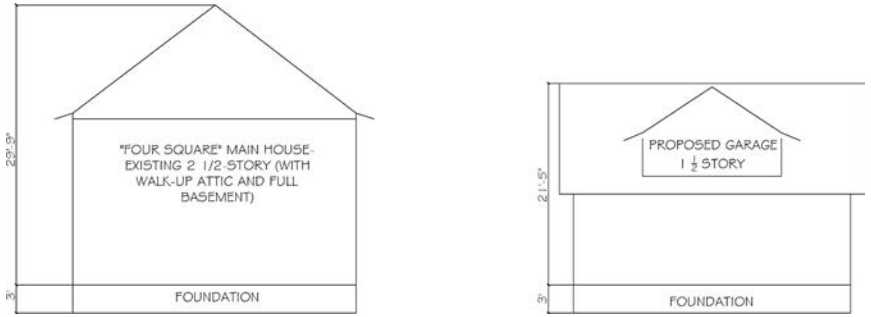
The design's architectural details—dovetail roof lines, covered porches with exposed rafter tails, and wood beadboard soffits and overhangs—reflect the main house. Engineered wood siding respects the era of the existing home and provides durability. The trim is made from poly-ash composite of 70% recycled material.

Energy-efficient windows emulate the main home's proportions and are wired for motorized shades to control solar heat gain and reduce energy costs throughout the year. Dimmable LED lighting can be controlled from a smartphone and reduces energy costs.

The two-car garage is accessed from the alley with an exterior passage door facing the house. An alley-side exterior door provides a separate entrance to the second-floor dwelling unit.



BUILDING SECTION

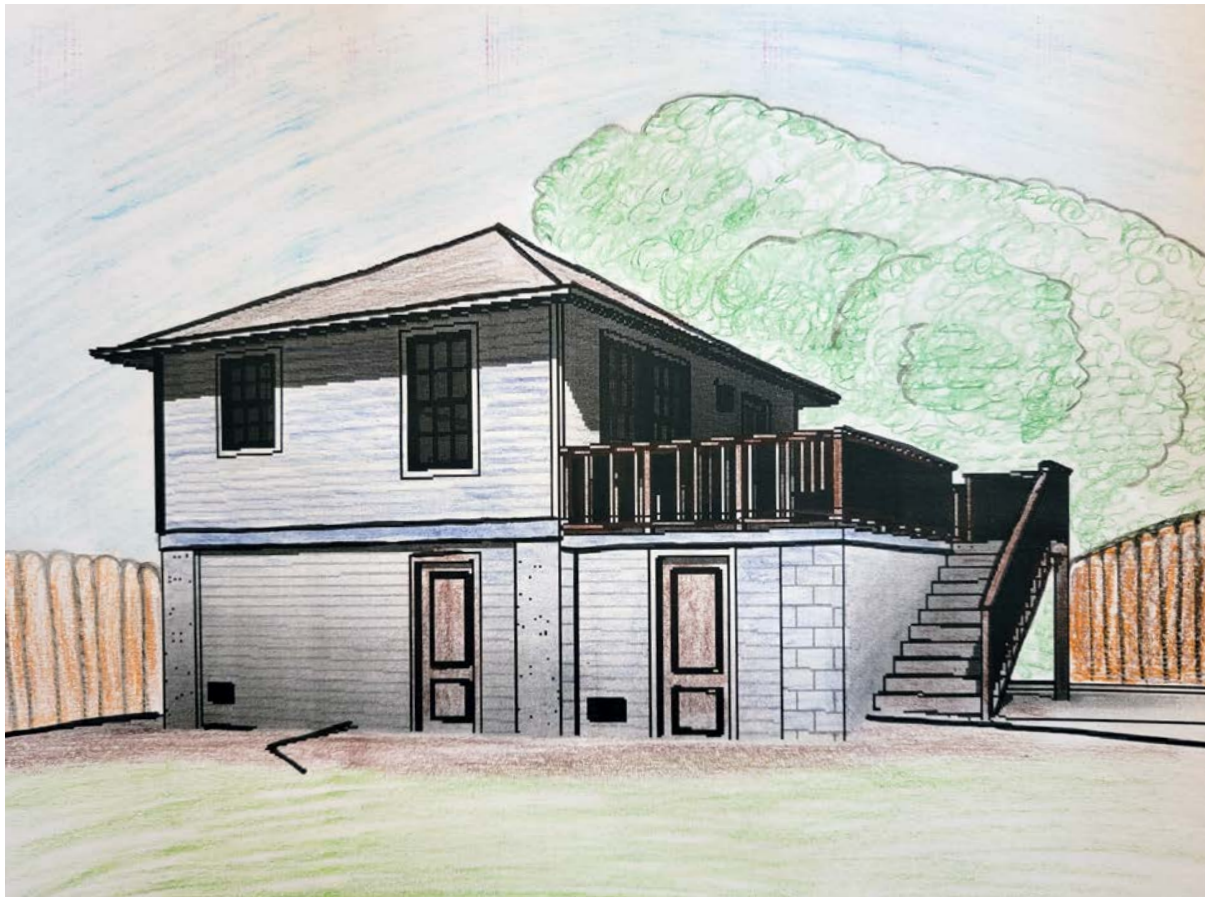


SCALE COMPARISON BETWEEN EXISTING HOME (LEFT) AND ADU (RIGHT

Drawings not to scale.

Competition Entry

John Black



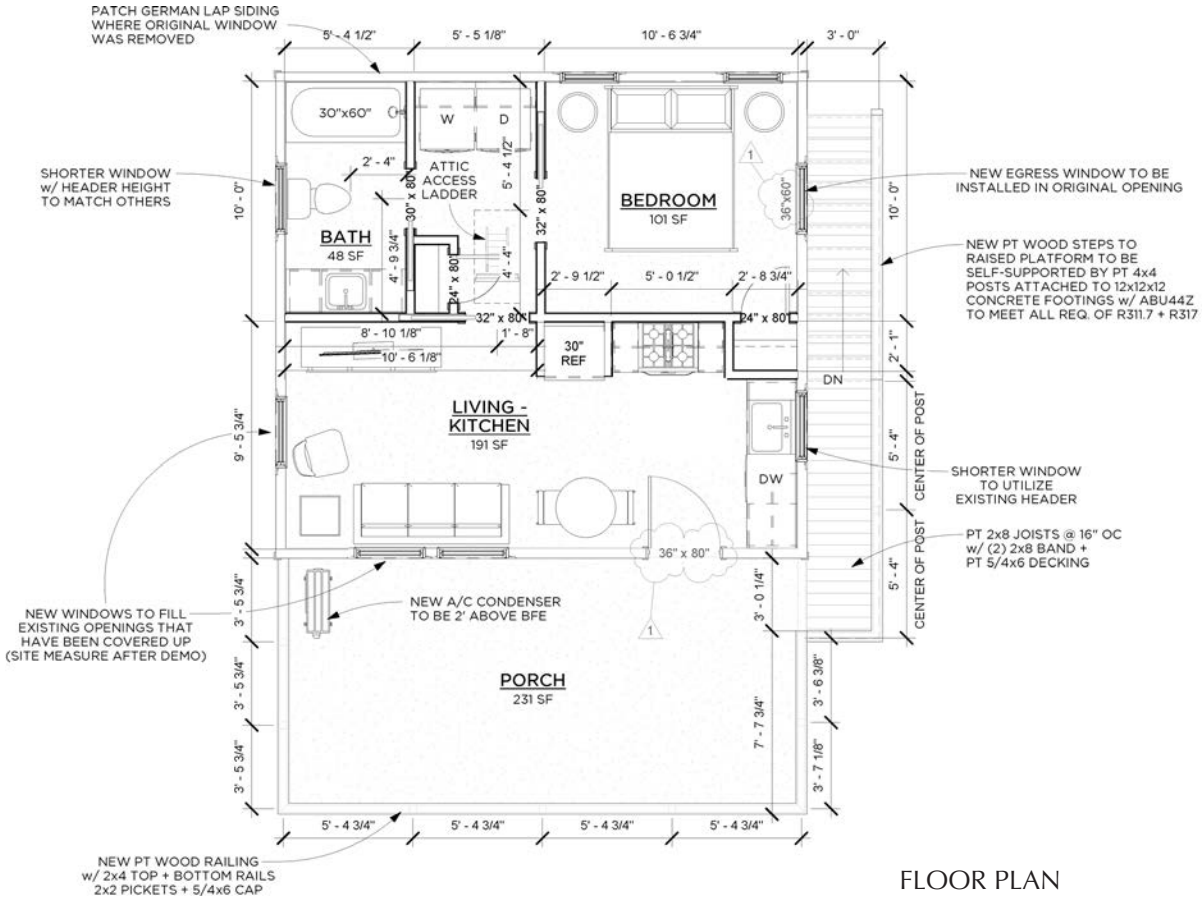
Design Information

This detached two-story ADU is a complete interior remodel of an existing structure in the backyard of a single-family home in a quiet urban neighborhood. Occupying the opposite side of a backyard, it may have previously been used as a carriage house or garage.

The location has easy access to public transportation, walking trails, blueways, and the city center. Situated within a mile of Carilion Roanoke Memorial Hospital, it is also attractive to medical personnel relocating to the city.

A large refinished cement patio at the front entrance provides ample space for transitioning to the indoors from outside.

FRONT AND BACK VIEWS



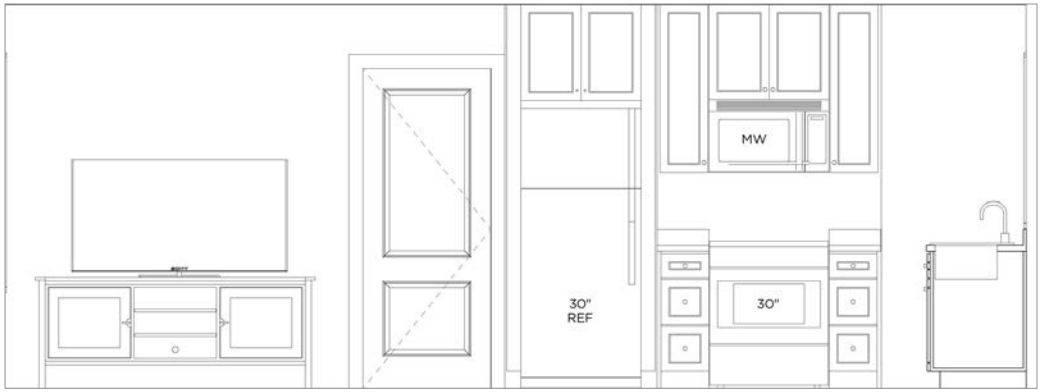
FLOOR PLAN

On the second story, the remodel provides a 400 SF, one-bedroom apartment with a kitchenette open to a living room/dinette, a full bathroom with a tub/shower combo, and a hallway with a linen closet and laundry room.

Large windows let in plentiful light, and high vaulted ceilings in the kitchen and living areas make the common area feel spacious. Pocket doors maximize usable space.

The patio is adjacent to the kitchen, making it ideal for outdoor cooking and dining.

The small footprint minimizes construction supplies and utilities, increasing the home's affordability and operating costs.



LEFT: LIVING AREA SECTION

RIGHT: KITCHEN SECTION

Drawings not to scale.

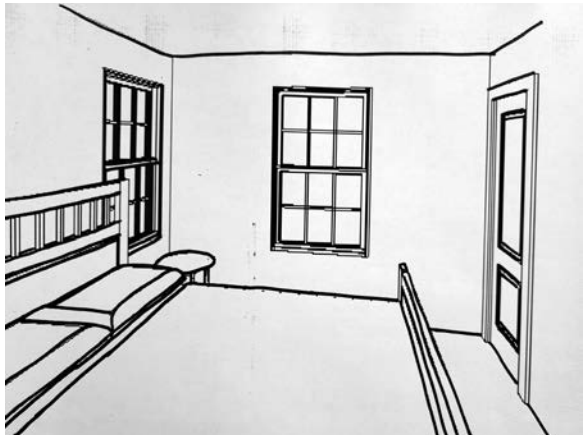
Spray foam insulation provides maximum R-value for the attic and vaulted ceiling. Floating vinyl floors are easy to install, cost effective, and easy to clean and maintain.

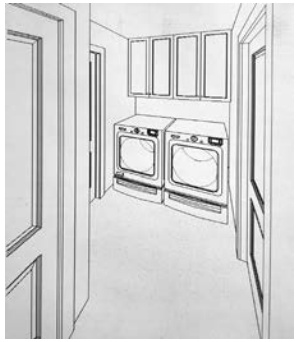
Mini-splits in each room provide energy-efficient heating and cooling.

A pleasant stone-blue vinyl siding will cover second story exterior walls, replicating deteriorated Dutch lap wood siding original to the structure.

Faux stone siding accents appear around the front door and awning. The lower level is clad in painted cement walls with shrubbery plantings.

Off-street, fenced-in parking adjacent to the structure is accessed by an alleyway.





CLOCKWISE FROM UPPER LEFT: KITCHEN, LIVING AREA, BEDROOM & EXTERIOR VIEWS

LAUNDRY ROOM VIEW

Drawings not to scale.

Competition Entry

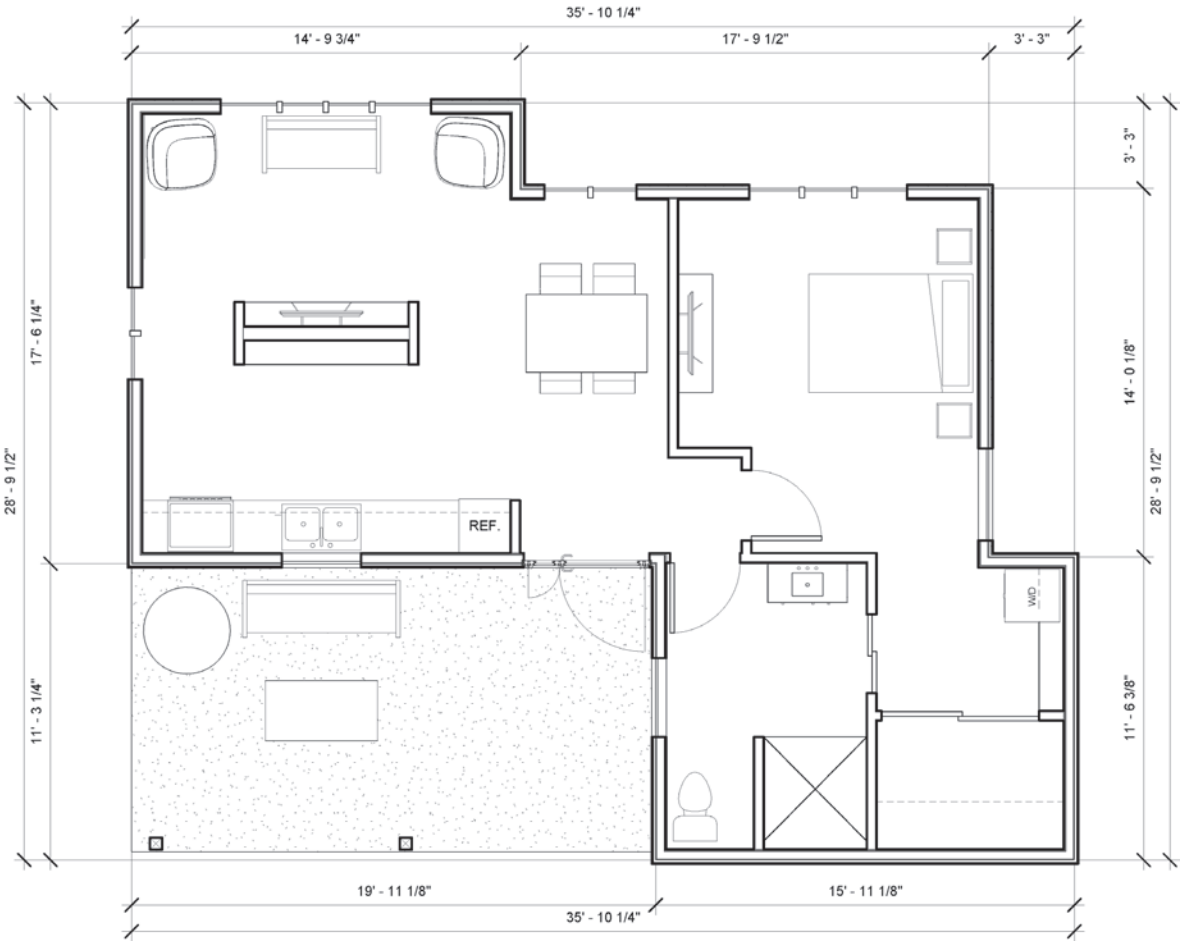
Tyler Brown

This single-story ADU design accommodates for all generations and seamlessly blends into different neighborhoods. The design integrates ease of construction, cost-consciousness, and sustainability to shape a testament to harmonizing comfort with environmental responsibility.

Green design strategies include all kitchen equipment refrigerant to be equal to or less than R-410A with an ozone depletion potential of zero, Energy Star certified appliances, and water sense labeled plumbing fixtures. Building to green standards increases construction cost of the unit by only 2-3%.

Exterior walls use insulated panels (SIP) provide energy efficiency, quicker construction, strength, structural integrity, noise reduction, and reduced materials waste. These structural panels can be shipped to a site cut to the exact size needed and include a layer of insulation sandwiched between two structural layers. This continuous, and well insulated barrier minimizes thermal bridging and reduces energy consumption. All interior walls are light wood framing.

BACK VIEW



FLOOR PLAN

SOUTH ELEVATION

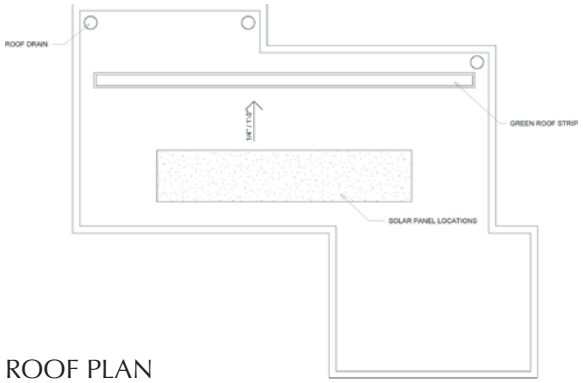
NORTH ELEVATION

Drawings not to scale.

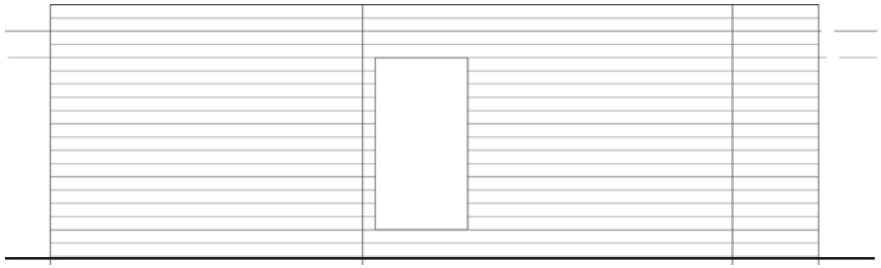
OVERHEAD VIEW

The design's attention to sustainability allows floor to ceiling height windows that serve as both a portal to the outdoors and a source of abundant natural light inside, reducing the need for artificial lighting. A small green strip on the roof extends green elements to the front of the home. This feature also soaks up natural rainwater from low-slope roof with corner drains.

With its eco-friendly materials and innovative approach, the design inspires building ADUs with a greener, more energy conscious approach to urban infill.



ROOF PLAN



EAST ELEVATION

WEST ELEVATION

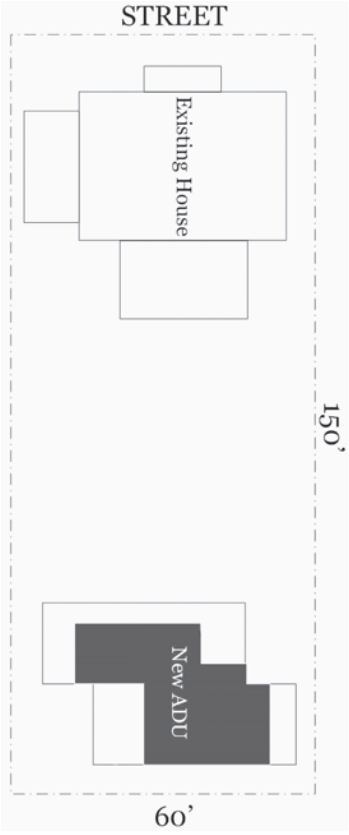
Drawings not to scale.

Competition Entry

Adam Ainslie, Jack Becker, Andrew Linn | BLDUS

Design Information

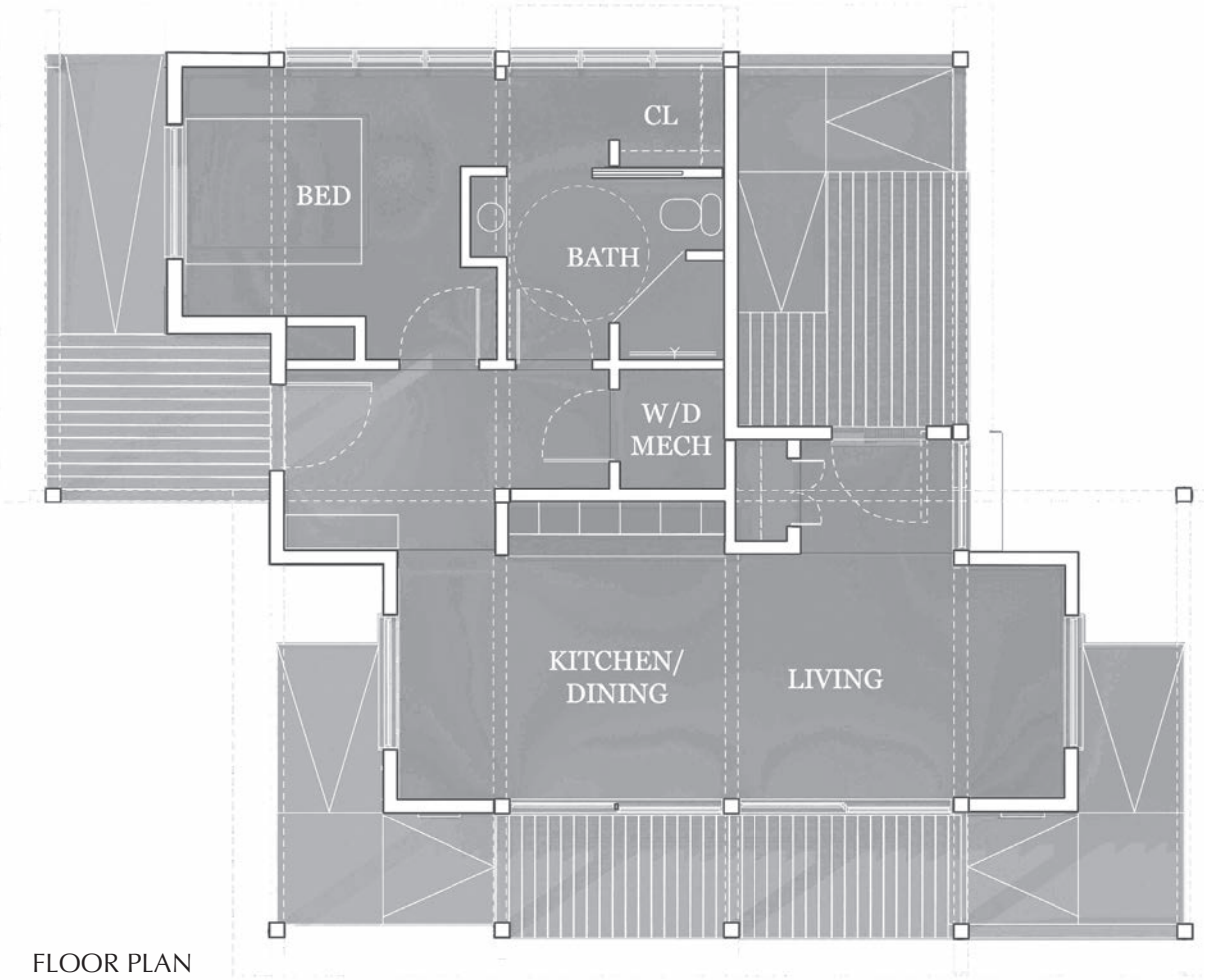
The Sweet Dignity accessory dwelling unit is adaptable to various site conditions, orientations, and relationships with the existing neighborhood. The sloped gabled roof covers three ramps and porches on all sides of the building. Entryways and a series of sliding doors look out to a covered porch to make the small space feel open and permeable. All rooms are ADA compliant.



SITE PLAN

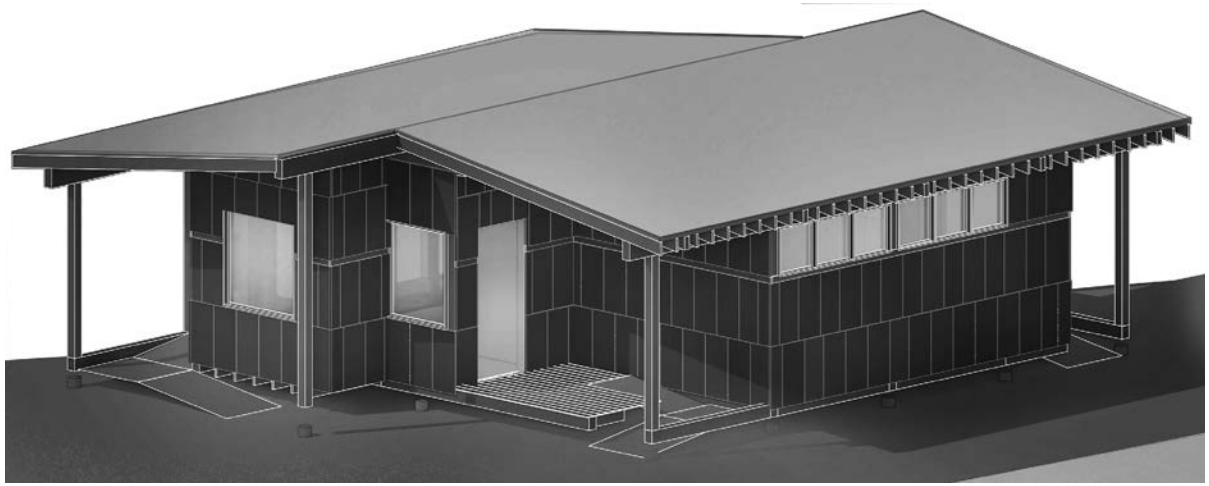
A small galley kitchen anchors the main space. The washer, dryer, and mechanical rooms buffer the kitchen and bathroom and comprise compact mechanical and plumbing systems.

Access is provided from multiple sides of the design for site adaptability. The doors provide opportunity for cross ventilation and close connection to the outside. Extended eaves protect the porches from the elements. For residents with limited mobility, this weather protected exterior space can include built-in seating to enhance connection to the outdoors.

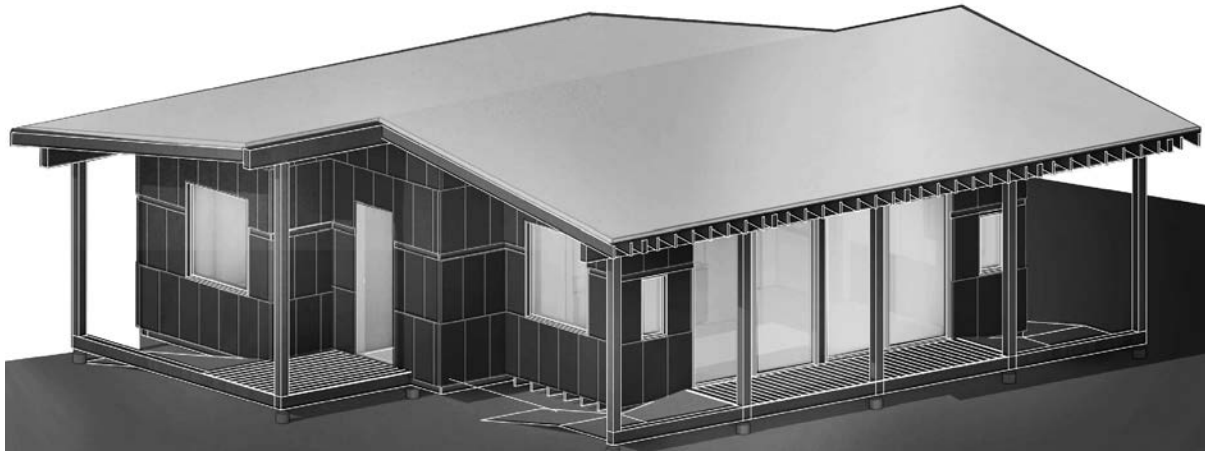


FLOOR PLAN

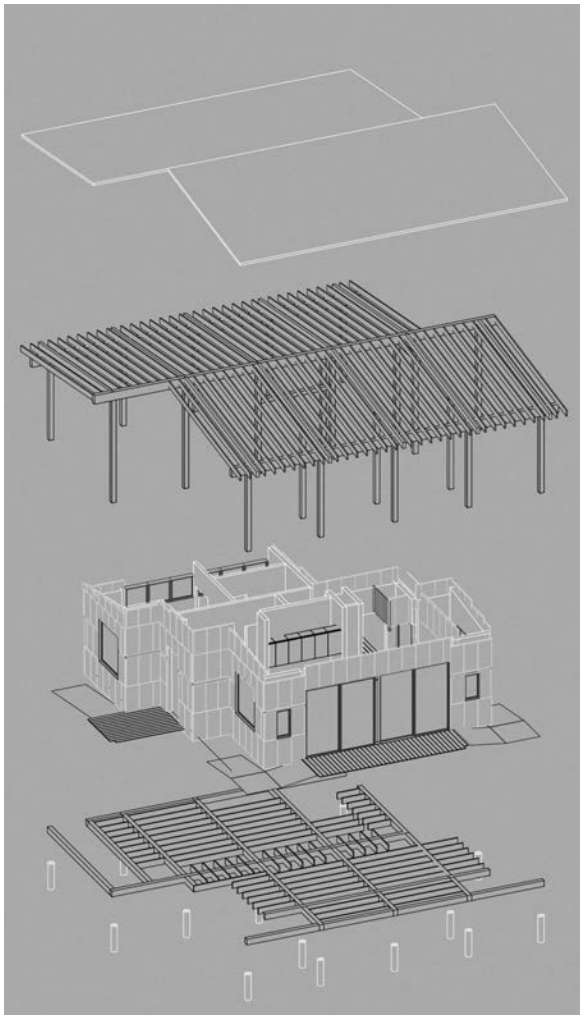
Drawings not to scale.



EXTERIOR ENTRANCE 1



EXTERIOR ENTRANCE 2



EXPLODED STRUCTURAL AXONOMETRIC

The design uses healthy materials like cork cladding, wood insulation, and a bamboo structural system called BamCore. These features provide a healthier living environment and less CO2 emissions for the planet.

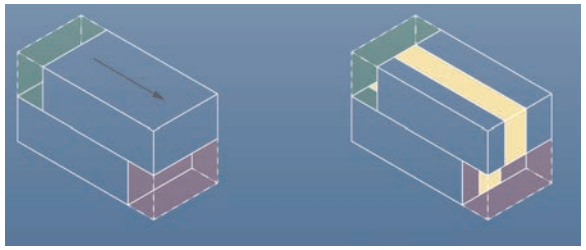
Drawings not to scale.

Competition Entry

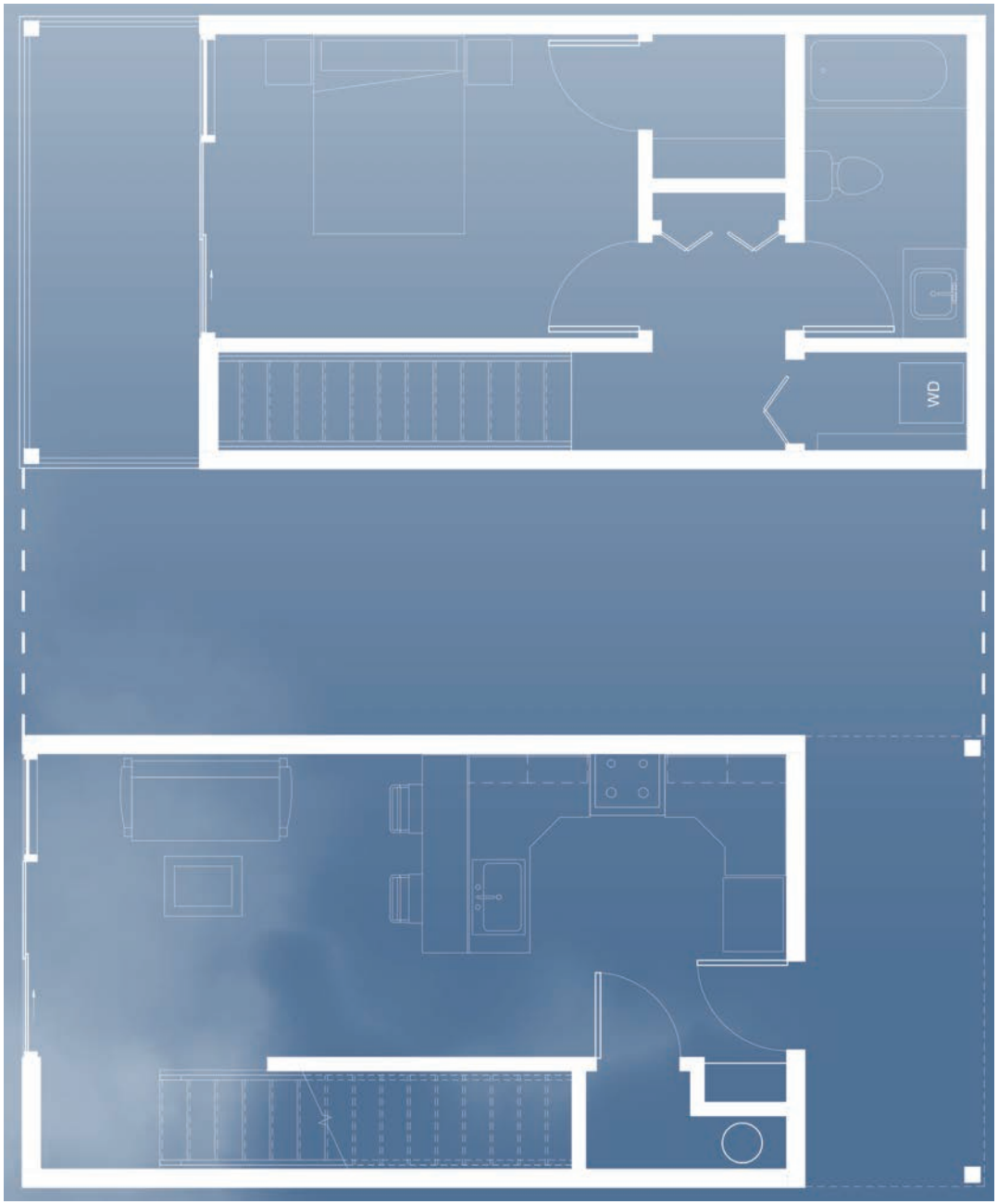
Nathan Swords, Kostya Yeshcheulov

This 780 GSF Architecture Design Unit (ADU) culminates from a simple concept: rectangular prism sliced in half longitudinally. The lower half of the prism slides to the left and the upper half slides right. This horizontal shift creates a covered entryway on the ground floor and a covered porch on the second floor.

The front faces the site's primary dwelling and is void of windows, offering both residences privacy from each other.



THE DESIGN'S SLIDING VOLUMES



Beyond the covered entry, a bench and coat closet provide a place to take off shoes and shed layers. This closet also contains the access point for the mechanical room. A linear hall defines a circulation axis through the first floor. On the second floor, this axis reappears to facilitate connection between the bathroom, the bedroom, and the porch. Service spaces—the stairwell, laundry room, storage closet, mechanical room, and bathroom—are located along the solid wall. Eight-foot ceilings are found throughout the interior.

A generously sized kitchen uses an ergonomic "U" configuration. Open bar style seating connects the kitchen to the living room. Floor to ceiling windows bring in natural light. A small window illuminates the stairway from above. On the upper landing, doors lead to a laundry room sized for a stack unit and a linen closet, bathroom, and bedroom.

The bathroom has three small windows to allow light to enter while maintaining privacy. The bedroom fits a queen bed with dual nightstands. An oversized walk-in closet accommodates a dresser and clothing rack. Floor to ceiling sliding glass doors open onto the porch.

The design uses a dimensional lumber structure with primary members being 2x4s, 2x6s, and 2x12s and a slab on grade foundation. Vertical wood siding reduces cost. A low slope roof drains into a gutter system.

All plumbing fixtures are within close proximity to each other with vertical chases.

FLOOR PLAN

Drawings not to scale.

BUILDING ELEVATIONS

Drawings not to scale.