



# THE ADU RESOURCE PACKET



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# THE ADU DESIGN & PERMITTING PROCESS

While every ADU is unique—and every ADU development project presents its own set of challenges—there are certain steps that just about everyone has to go through. In the pages ahead, we'll outline those steps.

# THE ADU DESIGN & PERMITTING PROCESS

1. Funding: Ensure that you have ready access to sufficient
2. With rough budget in mind, brainstorm project scope
3. Talk to a city planner to determine feasibility. Read up on municipal ADU by-laws.
4. Uncover any major property specific design/cost red flag issues, including:
  - A buried oil tank or cess pool. These systems may have to be removed if they are close to where a foundation will be placed.
  - Poor sewer line. If the existing sewer line is in a state of deferred maintenance, the ADU could trigger the need to update it. Sewer work in the public right of way is notoriously expensive.
  - Depending on the location and deed of the property, there may be special restrictions that go beyond the restrictions listed in the standard municipal zoning ADU code. These may include, but are not limited to deed restrictions, homeowners associations with Covenants, Conditions & Restrictions, historic design overlays, conservation or wetland overlay districts.

# THE ADU DESIGN & PERMITTING PROCESS

5. Rough sketch ideas for site plans
6. Talk to neighbors for early feedback, identify objections or potential conflicts
7. Interview architects or designers. Optimally, select professionals who have a passion for, or knowledge about small space residential design or have experience with ADU design.
8. Find reputable builders or general contractors and subs. If owner is acting as the general
9. contractor, identify a licensed plumber, mechanical, electrical subcontractor. You may base your assessment of them on costs, references, and communication skills.
10. Access financing as needed for the design and permitting phase

# THE ADU DESIGN & PERMITTING PROCESS

11. Architect draws up schematic drawing (or 3D models) based on your project goals
12. Integrated Design Build Process- Meet with designer, builder, and subs to talk through objectives and schematics to get input and feedback about the schematic design.
13. Review heating and cooling and utility connection needs with the subs.
14. Designer refines schematics
15. Designer builds a 3D model of the design
16. Designer finalizes design from owner and builder
17. In accordance with code requirements, designer develops drawings and structural engineering calculations and other documentation to support permit application
18. Submit drawings to the City or County for permit
19. Obtain permits

# BUDGETING FOR AN ADU

What's it going to cost? That's the question that is almost always at the top of the list of concerns people have when considering building an ADU. On the page that follows, you'll find estimates based on the 2015 "Costs of Constructing a Home" survey from the National Association of Home Builders.

*From National Association of  
Home Builders, 2015*

While the costs listed here for a 2,800 sq ft home may not be applicable, the percentages are useful to understand where money will be spent during construction. To understand how much ADUs may actually cost, we recommend that you read the *Calculating Costs* posts on [BuildinganADU.com](http://BuildinganADU.com)

**Table 1. Single Family Price and Cost Breakdowns**

**2015 National Results**

Average Lot Size: 20,129  
 Average Finished Area: 2,802

<b>I. Sale Price Breakdown</b>	<b>Average</b>	<b>Share of Price</b>
A. Finished Lot Cost (including financing cost)	\$85,139	18.2%
B. Total Construction Cost	\$289,415	61.8%
C. Financing Cost	\$6,285	1.3%
D. Overhead and General Expenses	\$26,345	5.6%
E. Marketing Cost	\$3,739	0.8%
F. Sales Commission	\$15,104	3.2%
G. Profit	\$42,292	9.0%
<b>Total Sales Price</b>	<b>\$468,318</b>	<b>100%</b>
<b>II. Construction Cost Breakdown</b>	<b>Average</b>	<b>Share of Construction Cost</b>
<b>I. Site Work (sum of A to E)</b>	<b>\$16,092</b>	<b>5.6%</b>
A. Building Permit Fees	\$3,601	1.2%
B. Impact Fee	\$1,742	0.6%
C. Water & Sewer Fees Inspections	\$4,191	1.4%
D. Architecture, Engineering	\$4,583	1.6%
E. Other	\$1,975	0.7%
<b>II. Foundations (sum of F to G)</b>	<b>\$33,447</b>	<b>11.6%</b>
F. Excavation, Foundation, Concrete, Retaining walls, and Backfill	\$32,576	11.3%
G. Other	\$871	0.3%
<b>III. Framing (sum of H to L)</b>	<b>\$52,027</b>	<b>18.0%</b>
H. Framing (including roof)	\$44,640	15.4%
I. Trusses (if not included above)	\$3,884	1.3%
J. Sheathing (if not included above)	\$1,238	0.4%
K. General Metal, Steel	\$1,272	0.4%
L. Other	\$993	0.3%
<b>IV. Exterior Finishes (sum of M to P)</b>	<b>\$43,447</b>	<b>15.0%</b>
M. Exterior Wall Finish	\$20,717	7.2%
N. Roofing	\$10,069	3.5%
O. Windows and Doors (including garage door)	\$12,127	4.2%
P. Other	\$534	0.2%
<b>V. Major Systems Rough-ins (sum of O to T)</b>	<b>\$37,843</b>	<b>13.1%</b>
O. Plumbing (except fixtures)	\$12,302	4.3%
R. Electrical (except fixtures)	\$12,181	4.2%
S. HVAC	\$12,623	4.4%
T. Other	\$738	0.3%
<b>VI. Interior Finishes (sum of U to AE)</b>	<b>\$85,642</b>	<b>29.6%</b>
U. Insulation	\$6,467	2.2%
V. Drywall	\$11,744	4.1%
W. Interior Trims, Doors, and Mirrors	\$12,409	4.3%
X. Painting	\$9,002	3.1%
Y. Lighting	\$3,517	1.2%
Z. Cabinets, Countertops	\$16,056	5.5%
AA. Appliances	\$4,463	1.5%
AB. Flooring	\$13,367	4.6%
AC. Plumbing Fixtures	\$4,465	1.5%
AD. Fireplace	\$2,760	1.0%
AE. Other	\$1,393	0.5%
<b>VII. Final Steps (sum of AF to AJ)</b>	<b>\$19,567</b>	<b>6.8%</b>
AF. Landscaping	\$6,156	2.1%
AG. Outdoor Structures (deck, patio, porches)	\$4,349	1.5%
AH. Driveway	\$6,240	2.2%
AI. Clean Up	\$2,054	0.7%
AJ. Other	\$768	0.3%
<b>VIII. Other</b>	<b>\$1,349</b>	<b>0.5%</b>
<b>Total</b>	<b>\$289,415</b>	<b>100%</b>



## **TYPE OF CONSTRUCTION CONTRACTS**

The relationship you have with your builder will become one of the most important relationships you have in this period of your life. And the basis for that relationship is the contract you sign with him. There are myriad contract types, and on the pages ahead we detail different forms of fixed-price contracts.

# TYPES OF CONTRACTS

<b>Lump Sum Contract</b>	<p>With this kind of contract the engineer and/or contractor agrees to do the a described and specified project for a fixed price. Also named "Fixed Fee Contract". Often used in engineering contracts.</p> <p>A Fixed Fee or Lump Sum Contract is suitable if the scope and schedule of the project are sufficiently defined to allow the consulting engineer to estimate project costs.</p>
<b>Unit Price Contract</b>	<p>This kind of contract is based on estimated quantities of items included in the project and their unit prices. The final price of the project is dependent on the quantities needed to carry out the work.</p> <p>In general this contract is only suitable for construction and supplier projects where the different types of items, but not their numbers, can be accurately identified in the contract documents.</p> <p>It is not unusual to combine a Unit Price Contract for parts of the project with a Lump Sum Contract or other types of contracts.</p>

# TYPES OF CONTRACTS

<p><b>Cost Plus Contract</b></p>	<p>A contract agreement wherein the purchaser agrees to pay the cost of all labor and materials plus an amount for contractor overhead and profit (usually as a percentage of the labor and material cost). The contracts may be specified as</p> <ul style="list-style-type: none"> <li>Cost + Fixed Percentage Contract</li> <li>Cost + Fixed Fee Contract</li> <li>Cost + Fixed Fee with Guaranteed Maximum Price Contract</li> <li>Cost + Fixed Fee with Bonus Contract</li> <li>Cost + Fixed Fee with Guaranteed Maximum Price and Bonus Contract</li> <li>Cost + Fixed Fee with Agreement for Sharing Any Cost Savings Contract</li> </ul> <p>This types of contracts are favored where the scope of the work is indeterminate or highly uncertain and the kinds of labor, material and equipment needed are also uncertain. Under this arrangement complete records of all time and materials spent by the contractor on the work must be maintained.</p>
<p><b>Cost + Fixed Percentage Contract</b></p>	<p>Compensation is based on a percentage of the cost.</p>
<p><b>Cost + Fixed Fee Contract</b></p>	<p>Compensation is based on a fixed sum independent the final project cost. The customer agrees to reimburse the contractor's actual costs, regardless of amount, and in addition pay a negotiated fee independent of the amount of the actual costs.</p>

# TYPES OF CONTRACTS

<b>Cost + Fixed Fee with Guaranteed Maximum Price Contract</b>	Compensation is based on a fixed sum of money. The total project cost will not exceed an agreed upper limit.
<b>Cost + Fixed Fee with Bonus Contract</b>	Compensation is based on a fixed sum of money. A bonus is given if the project finish below budget, ahead of schedule etc.
<b>Cost + Fixed Fee with Guaranteed Maximum Price and Bonus Contract</b>	Compensation is based on a fixed sum of money. The total project cost will not exceed an agreed upper limit and a bonus is given if the project is finished below budget, ahead of schedule etc.
<b>Cost + Fixed Fee with Agreement for Sharing Any Cost Savings Contract</b>	Compensation is based on a fixed sum of money. Any cost savings are shared with the buyer and the contractor.

# TYPES OF CONTRACTS

## Incentive Contracts

Compensation is based on the engineering and/or contracting performance according an agreed target - budget, schedule and/or quality.

The two basic categories of incentive contracts are

- Fixed Price Incentive Contracts
- Cost Reimbursement Incentive Contracts

Fixed Price Incentive Contracts are preferred when contract costs and performance requirements are reasonably certain.

Cost Reimbursement Contract provides the initially negotiated fee to be adjusted later by a formula based on the relationship of total allowable costs to total target costs. This type of contract specifies a target cost, a target fee, minimum and maximum fees, and a fee adjustment formula. After project performance, the fee payable to the contractor is determined in accordance with the formula.

# SAMPLE CONSTRUCTION PLANS

Like a lot of things on life, ADU success is all about planning. In the pages that follow, you'll find sample site plans, floor and foundation plans, section drawings and building elevation drawings. These sample plans show what types of drawings and details are required for permitted new construction.

# SAMPLE PLANS

## A Sample Site Plan

### For Successful New Single Family Residential (NSFR) Project Submittals

Instructions: This sample site plan provides an example of how to prepare a site plan. Your submittal must include a site plan that includes all of the existing and proposed conditions included on this sample site plan.

**Your site plan must be drawn on 11"x17" or larger paper and drawn to a scale of 1" = 10'.**

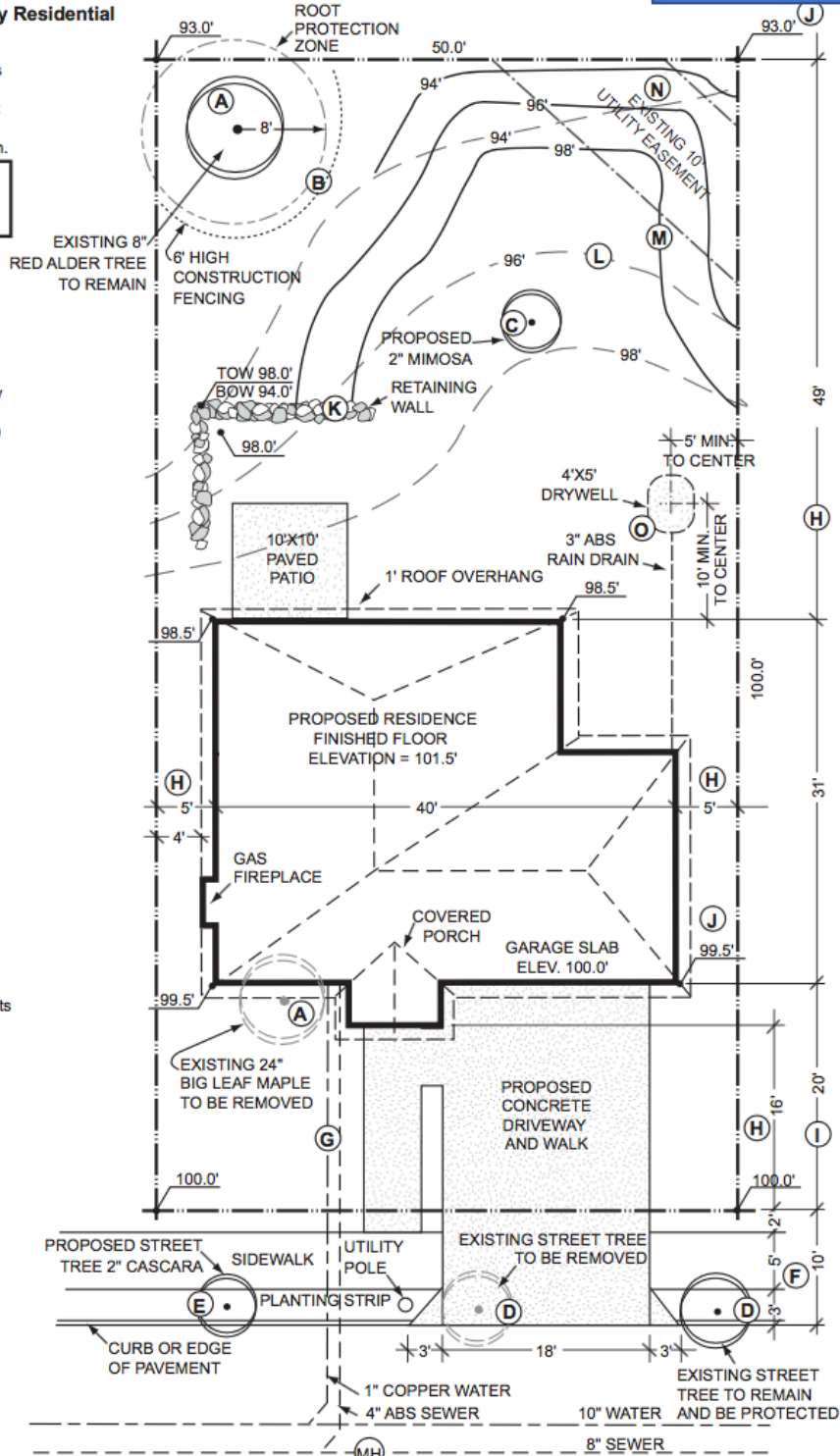
Please be aware that since every project is unique there may be some situations where you will be asked to provide additional information.

- (A) Existing on-site tree to be retained or removed
- (B) Root protection zone/fencing - typically 1 foot radius per inch of tree diameter (measured 4 1/2 feet above the ground)
- (C) Proposed on-site new tree with species and size
- (D) Existing street tree to be retained or removed
- (E) Proposed street tree
- (F) Right-of-way configuration (sidewalk, planting strip, curb and street name)
- (G) Existing and proposed locations of underground utilities
- (H) Distance from building to property lines
- (I) Distance from garage entry to property line
- (J) Finished grade elevations at property corners and building corners
- (K) Retaining wall with top of wall (TOW) elevation and bottom of wall (BOW) elevations
- (L) Two foot grade elevation contours, existing
- (M) Two foot foot grade elevation contours, proposed
- (N) Location and size of existing easements
- (O) Stormwater disposal type and size
- (P) White space for City stamps

LOT AREA .....	5,000 SQ FT
<b>IMPERVIOUS AREA</b>	
DRIVEWAY .....	360 SQ FT
PATIO .....	100 SQ FT
WALK .....	90 SQ FT
ROOF AREA (INCL. OVERHANG) .....	1,334 SQ FT
TOTAL .....	1,884 SQ FT
<b>BUILDING COVERAGE</b>	
BUILDING FOOTPRINT .....	1,196 SQ FT

**LEGAL DESCRIPTION**  
 PARCEL 1,  
 PARTITION PLAT 1992-X,  
 R-12345X

**PROJECT ADDRESS**  
 3030 SE NEIGHBORHOOD STREET  
 PORTLAND, OR 97207



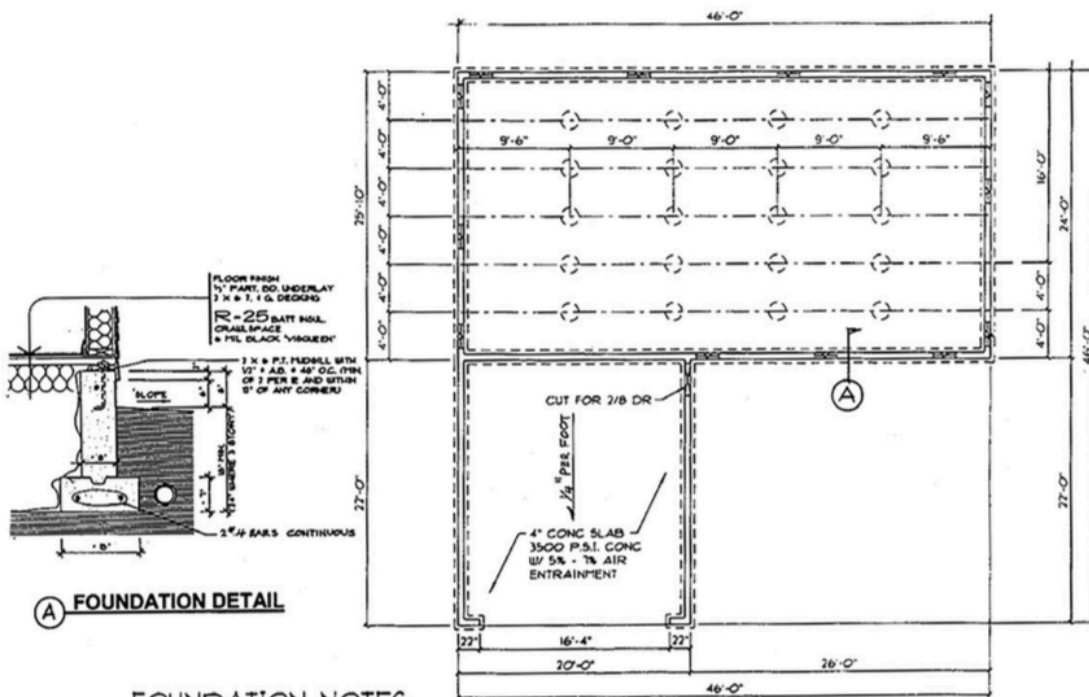
BuildinganADU.com  
**SITE PLAN** SCALE 1" = 10'





# SAMPLE PLANS

- A floor plan for each level of the building being constructed or remodeled must show the location of all full and partial height walls, the size and proposed use of all rooms affected by the work and a north arrow.
- The location, size and type of each window must be shown on the floor plan.
- The location of bearing walls, headers and beams supporting loads from above must also be shown on the floor plans or shown on separate framing plans. Floor plans must show all steps and stairs.
- Plumbing fixtures, heating and cooling equipment, electrical outlets, switches, etc. are typically shown on the floor plan, but can be shown on separate plans.
- The floor plan must also show the location of all smoke detectors.



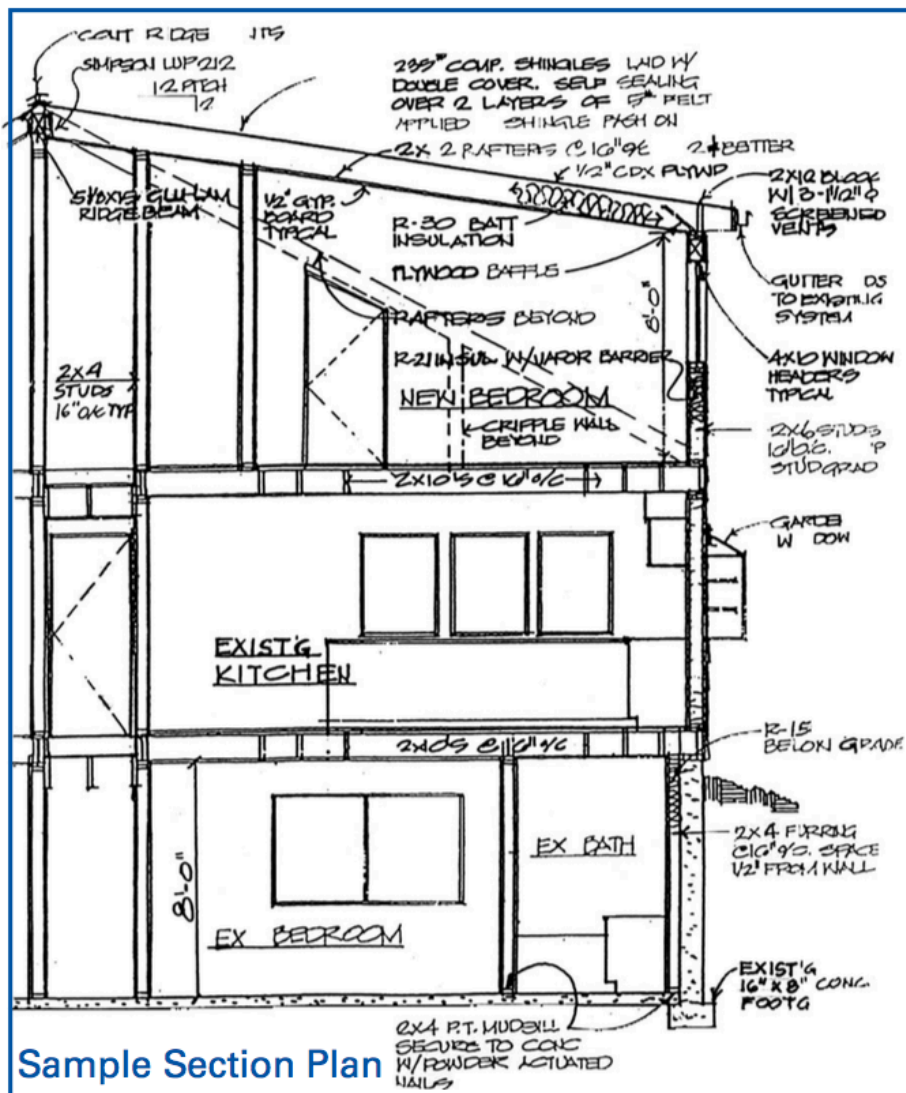
## FOUNDATION NOTES

ALL CONC SHALL BE MIN 3500 P.S.I.  
 DESIGN SOIL BEARING PRESSURE = 1500 P.S.F.  
 FLOOR BEAMS ARE 4x8 ON 4x4 POSTS ON 18" x 8" CONC FTGS.  
 PROVIDE 1/2" AIRSPACE AT SIDES AND ENDS OF BEAMS IN POCKETS & FLASH POCKET BOTTOMS  
 EXCAVATE 18" MIN. BELOW BEAMS  
 FND. VENTS SHOWN ARE 24"x6" SCREENED W/ 1/4" MESH GALV HOUE. CLOTH  
 AND PROVIDE 1 SQ.FT. OF VENT AREA FOR EA. 150 SQ. FT. OF CRAWL SPACE  
 SLOPE UNDERFLOOR AREA TO DRAIN

# SAMPLE PLANS

## Section drawings

- Section drawings, sometimes called cross sections, are what you would see if you cut vertically through a building from the tip of the roof down through the ground, and then looked at what the cut exposed.
- Section drawings are a useful way of displaying structural information and information about construction materials that are needed to do our code review. Full sections for residential construction are usually drawn at a scale of at least 1/4 inch = 1 foot and wall section and details at a scale of at least 1/2 inch = 1 foot. Partial sections may be drawn at a larger scale to show something in detail such as footings, overhangs and stairs.
- To get a building permit for new construction or an addition, you must provide section drawings that show typical building conditions.
- For simple projects, a single section drawing showing:
  - the size of the footing and the distance between ground level and the bottom of the footing;
  - the size of the foundation wall and how high it will rise above the ground;
  - the size and spacing of structural members such as beams, joists, studs and rafters which are not shown on other drawings;
  - wall, ceiling and roof coverings and finishes;
  - wall, floor and ceiling insulation;
  - ceiling heights;
  - eaves, decks and other projections.



Sample Section Plan

- For more complex buildings or additions, full sections through the work in multiple directions and at different locations may be required to fully explain the work. Separate structural section drawings or details may be required, in addition to building or architectural sections, to show the structural connections.
- For buildings containing new or revised stairways, stair details must be provided which indicate the construction materials, structural support and dimensional relationships to surrounding construction.
- The purpose of building plans is to provide the City of Portland with a complete and accurate description of your proposed project. If there is something you think you will need to explain when you come to the Development Services Center, please put it on the drawings.

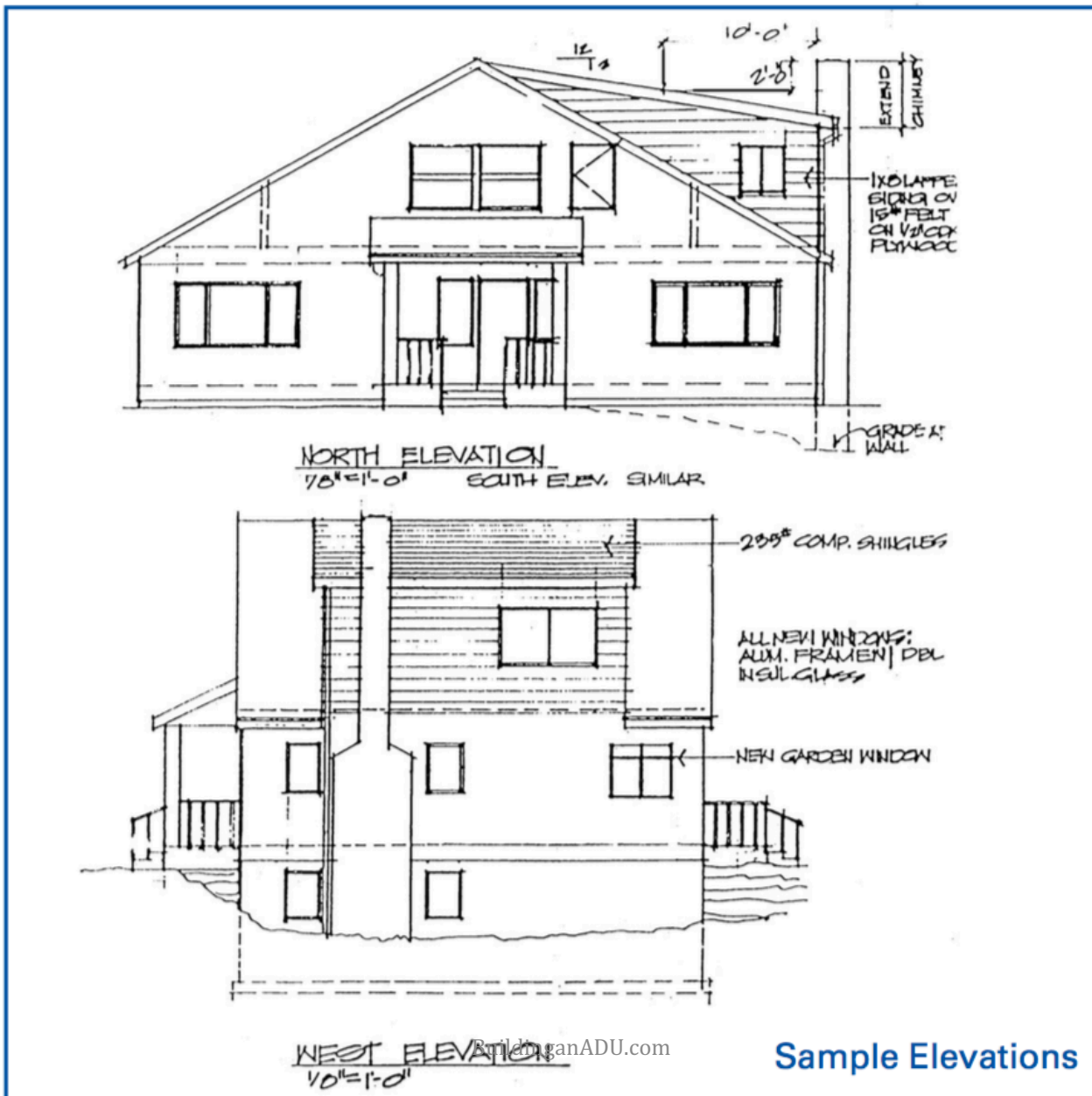
# SAMPLE PLANS

## Building elevation drawings

Building elevation drawings are exterior views of the building, sometimes identified as front, rear, left, right; or north, south, east, west. Any project that requires a change in the exterior of the building must have building elevation drawings.

Elevations must be drawn to scale,  
1/4 inch = 1 foot  
is the normal scale.

Elevations show the level at which the ground meets the building, the slope of the ground where it meets the building, the vertical location, size of windows and doors, the type of siding and roofing, the height and configuration of guard-rails and similar features on the exterior of the building.



# ADU CONFIGUR- ATIONS

ADUs come in a variety of shapes and sizes. They also can have a variety of relationships with the main dwelling. In this section, we'll explain the more common arrangements.

# ADU CONFIGURATIONS

Here are the six most common configurations for ADUs:

1. Detached, stand-alone ADU
2. Basement ADU
3. Garage conversion ADU
4. Above-garage ADU
5. Internal ADU
6. Bump-out ADU

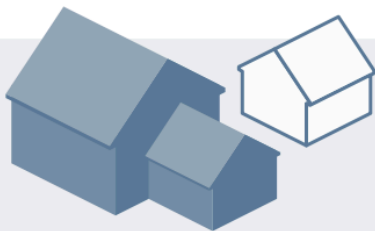


Figure 1

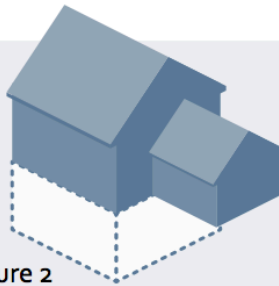


Figure 2

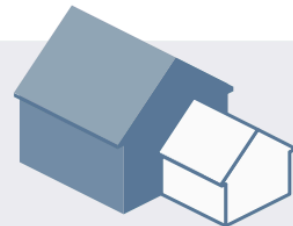


Figure 3

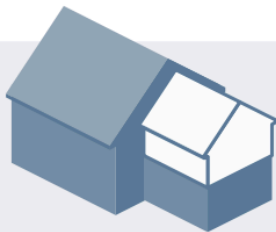


Figure 4

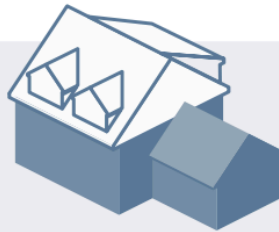


Figure 5

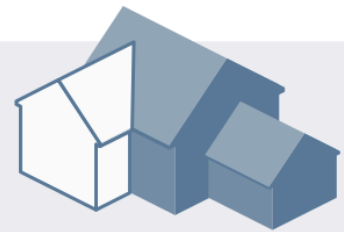


Figure 6



External ADU



Basement ADU



Garage conversion ADU



Bump-out ADU



Above-garage ADUs



Internal ADU

# ADU SURVEY INSIGHTS

Portland, Oregon, has been at the forefront of the ADU movement. We analyzed the results from a 2013 survey of Portland ADU owners. Survey responses provided the first statistically valid information about some common claims and question about the impacts of ADUs on neighborhoods and cities.

*From the Oregon Department  
of Environmental Quality 2013  
Survey of ADUs*

# ADU SURVEY INSIGHTS

1. ADUs do **provide housing**. At any one time about 80% of ADUs are in use as long-term residences. The remaining 20% have alternative uses, but can be converted to housing with no further construction or permitting. Changing uses is part of the attraction for owners.
2. Most properties with ADUs (64%) are **occupied by their owner**, even though Portland has no requirement they do so.
3. ADUs seem to be at least **as attractive to renters as apartments** in multifamily buildings, and may be preferred by them.
4. ADUs are likely to have a **low environmental impact** compared to other dwellings. Their median area per resident is 44% lower than newly constructed single family residences, and some ADUs have a notable number of above-code green features.



5. ADUs are associated with an average of **0.93 cars per dwelling**, lower than the Portland average of 1.31 for all new rentals. Of those 0.93, an average of 0.46 are parked on the street. Since ADUs are also extremely rare, ADUs have had negligible impact on parking conditions citywide. ADUs may be as effective in reducing vehicles owned per household as transit-oriented developments.
6. ADUs do **serve older persons**, both as places to live and assets to own, but not to a greater extent than other forms of housing. However, many Portland ADUs are owned by 55-64 year-olds, who will be 65+ in a decade. The beneficial effect of ADUs for older persons will likely be larger then.
7. ADUs **support the community economically** through one-time construction costs, averaging \$78,760 per unit, and ongoing property taxes, estimated to average \$1134/yr (using recent tax levy rates).

8. The claim that ADUs provide **affordable rental housing is a complex** one to evaluate. Housing affordability has been defined in many ways, and ADUs have unusual properties as rentals. 18% of Portland ADUs are occupied for free or extremely low cost. This unregulated, “volunteer” affordable housing has been created with little subsidy or intervention from the government. Meanwhile, about 80% of ADUs rent for market rates, or a slight premium, compared to apartments of similar size and location.
9. **Financial gain through rental income** is the most common motivation for the homeowner-developers who create ADUs, followed by housing for a family member or helper. Construction costs, design constraints and financing are the most common barriers to ADU development.

Overall, ADUs seem to differ from other housing in the individualistic ways they are created, owned, and managed by typical homeowners rather than developers and investors. In Portland, this “grassroots,” non-professionalized kind of development appears to be providing a variety of benefits to owners and community.

## MORE ADU RESOURCES

While ADUs are only starting to be embraced in many major metropolitan areas, information about them is somewhat limited. But here are a few excellent resources:

### **AccessoryDwellings.org**

A one-stop source for ADU information

### **BuildinganADU.com**

A site for homeowners who want to build an ADU on their property

### **pdxadu.blogspot.com**

In-depth personal ADU project blog

### **AccessoryDwellingStrategies.com**

ADU consulting, speaking, classes, tours

Book coming soon....

***Backdoor Revolution:***

***The Definitive Guide to ADU  
Development***