



**Building Permit Application**  
**City of Portland, Oregon - Bureau of Development Services**  
 1900 SW 4th Avenue, Portland, Oregon 97201 • 503-823-7310 • TTY 503-823-6868 • www.portlandoregon.gov/bds

13-159347-RS

<b>Type of work</b>	
<input type="checkbox"/> New construction	<input checked="" type="checkbox"/> Addition/alteration/replacement
<input type="checkbox"/> Demolition	<input type="checkbox"/> Other
<b>Category of construction</b>	
<input checked="" type="checkbox"/> 1 & 2 family dwelling	<input type="checkbox"/> Commercial/Industrial
<input type="checkbox"/> Multifamily	<input type="checkbox"/> Master builder
<input type="checkbox"/> Accessory building	<input type="checkbox"/> Other
<b>Job site information and location</b>	
Job no. 254-001	Job address 7514 SE 19th
City/State/ZIP Portland, OR 97202	
Suite/bldg /apt no.	Project name 7514 SE 19th Remodel
Cross street/directions to job site:	
Subdivision: WEST MORELAND, Block 22 Lot no. 10 FIVE ETE Tax map/parcel no. TL5 R1E	
<b>Description of work</b>	
DEMO Existing Roof, Add second story. Add 2 story 9'x14' addition in rear of house	
Provide RS Permit no	
<input checked="" type="checkbox"/> Property owner <input type="checkbox"/> Tenant	
Name: Modern Transformations, Inc	E-mail: moderntransformations@gmail.com
Address: 8725 SE Spencer Dr.	
City/State/ZIP Happy Valley, OR 97086	
Phone: 503 553 9167	FAX: N/A
Owner Installation: This installation is being made on property that I own, which is not intended for sale, lease, rent, or exchange.	
Owner signature:	Date:
<input type="checkbox"/> Contractor	
Business name: CKW Construction	E-mail: CKWConstruction173@gmail.com
Address: 8725 SE Spencer Dr.	
City/State/ZIP Happy Valley, OR 97086	
Phone: 503 553 9167	FAX: N/A
CCB lic. no. 198076	
Authorized signature: Amanda Williams, Member	Date: 5-23-13
<input type="checkbox"/> Applicant <input type="checkbox"/> Contact Person	
Business name	
Contact name	
Address	
City/State/ZIP	
Phone	FAX
E-mail	
Authorized signature	
Print name	Date

This permit application expires if a permit is not obtained within 180 days after it has been accepted as complete.

<b>Office Use Only</b>	
Permit no:	
Date received:	5-24-13
By:	[Signature]

<b>Required Data: One and Two Family Dwelling</b>	
Permit fees* are based on the value of the work performed. Indicate the value (rounded to the nearest dollar) of all equipment, materials, labor, overhead, and the profit for the work indicated on this application.	
Valuation:	\$50,000
Number of bedrooms:	3
Number of bathrooms:	3
Total number of floors:	2, plus basement
New dwelling area:	252 square feet
Garage/carport area:	264 square feet
Covered porch area:	234 square feet
Deck area:	6 square feet
Other structure area:	square feet

<b>Required Data: Commercial Use</b>	
Permit fees* are based on the value of the work performed. Indicate the value (rounded to the nearest dollar) of all equipment, materials, labor, overhead, and the profit for the work indicated on this application.	
Valuation:	
Existing building area:	square feet
New building area:	square feet
Number of stories:	
Type of construction:	
Occupancy groups	
Existing:	
New:	

**Notice**  
 All contractors and subcontractors are required to be licensed with the Oregon Construction Contractors Board under ORS 701 and may be required to be licensed in the jurisdiction in which work is being performed.

**Statement of Fact:** I certify that the facts and information set forth in this application are true and complete to the best of my knowledge. I understand that any falsification, misrepresentation or omission of fact (whether intentional or not) in this application or any other required document, as well as any misleading statement or omission, may be cause for revocation of permit and/or certificate of occupancy, regardless of how or when discovered.

I acknowledge that work related to this Building Permit Application may be subject to regulations governing the handling, removal and/or disposal of asbestos and/or lead-based paint (initials)

<b>Building Permit Fees*</b>	
Please refer to fee schedule	
Fees due upon application	
Amount received	
Date received	

Residential Combo permit subcontractor submittals only can be faxed to 503-823-7693 or e-mailed to BDSCombInspSec@portlandoregon.gov.

# CHAPTER 11

## ENERGY EFFICIENCY

### PART I ENERGY CONSERVATION

#### SECTION N1101 SCOPE

**N1101.1 General.** The provisions of this chapter regulate the exterior envelope, as well as the design, construction and selection of heating, ventilating and air-conditioning systems, lighting and piping insulation required for the purpose of effective conservation of energy within a building or structure governed by this code.

All conditioned spaces within residential buildings shall comply with Table N1101.1(1) and two additional measure from Table N1101.1(2).

**Exceptions:**

1. Application to existing buildings shall comply with Section N1101.2.
2. Application to additions shall comply with Section N1101.3.

**N1101.2 Application to existing buildings.** Alteration and repairs, historic buildings and change of use or occupancy to buildings, structures or portions thereof shall comply with the requirements in Sections N1101.2.1 through N1101.2.3.

**N1101.2.1 Alteration and repair.** Alterations and repairs affecting energy conservation measures shall conform to the requirements specified in this chapter.

Alterations or repairs which affect components of existing conditioned spaces regulated in this chapter, those components shall comply with this chapter.

**Exception:** The minimum component requirements as specified in Table N1101.2 may be used to the maximum extent practical.

**N1101.2.2 Historic buildings.** The building official may modify the specific requirements of this chapter for historic buildings and require in lieu thereof alternative requirements that will result in a reasonable degree of energy efficiency. This modification may be allowed for those buildings specifically designated as historically significant by the state historic preservation office(r) or by official action of a local government.

**N1101.2.3 Change of occupancy or use.** Definition of "Change of use" for purposes of N1101.2.3 is a change of use in an existing residential building and shall include any of the following: any unconditioned spaces such as an attached garage, basement, porch, or canopy that are to become conditioned spaces; any unconditioned, inhabitable space that is to become conditioned space, such as a large attic.

**N1101.2.3.1 Change of use.** A building that changes use, without any changes to the components regulated in

this chapter, is required to comply with Table N1101.2 to the greatest extent practical.

**N1101.2.3.2 Change of occupancy.** Alteration and repair of nonresidential buildings, such as a small church or school, that are changing occupancy to residential shall use Table N1101.2 to the greatest extent practical.

**Exception:** The minimum component requirements shall be disregarded when thermal performance calculations are completed for change of use to Group R occupancy.

**TABLE N1101.2  
EXISTING BUILDING COMPONENT REQUIREMENTS**

BUILDING COMPONENTS	REQUIRED PERFORMANCE	EQUIV. VALUE
Wall insulation	U-0.80	R-15
Flat ceiling	U-0.025	R-49
Vaulted ceiling > 10 inches nominal rafter depth	U-0.040	R-25
Vaulted ceiling > 8 inches nominal rafter depth	U-0.047	R-21
Underfloor > 10 inches nominal joist depth	U-0.028	R-30
Underfloor > 8 inches nominal joist depth	U-0.032	R-25
Slab edge perimeter	F-0.52	R-15
Windows	U-0.35	U-0.35
Skylights	U-0.60	U-0.60
Exterior doors	U-0.20	R-5
Exterior doors w/> 2.5 ft <sup>2</sup> glazing	U-0.40	R-2.5
Forced air ducts	n/a	R-8

For SI: 1 inch = 25.4 mm, 1 square foot = 0.0929 m<sup>2</sup>.

**N1101.3 Additions.** Additions to existing buildings or structures may be made without making the entire building or structure comply if the new additions comply with the requirements of this chapter.

**N1101.3.1 Large additions.** Additions that are equal to or more than 40 percent of the existing building heated floor area or 600 square feet (55 m<sup>2</sup>) in area, whichever is less, shall be required to comply with Table N1101.1(2).

**N1101.3.2 Small additions.** Additions that are less than 40 percent of the existing building heated floor area or less than 600 square feet in area, whichever is less, shall be required to select one measure from Table N1101.1(2) or comply with Table N1101.3.

**Exception:** Additions that are less than 15 percent of existing building heated floor area or 200 square feet (18.58 m<sup>2</sup>) in area, whichever is less, shall not be required to comply with Table N1101.1(2) or Table N1101.3.

**TABLE N1101.1(1)  
PRESCRIPTIVE ENVELOPE REQUIREMENTS\***

BUILDING COMPONENT	STANDARD BASE CASE		LOG HOMES ONLY	
	Required Performance	Equiv. Value <sup>b</sup>	Required Performance	Equiv. Value <sup>b</sup>
Wall insulation-above grade	U-0.060	R-21 <sup>c</sup>	Note d	Note d
Wall insulation-below grade <sup>e</sup>	F-0.565	R-15	F-0.565	R-15
Flat ceilings <sup>f</sup>	U-0.031	R-38	U-0.025	R-49
Vaulted ceilings <sup>g</sup>	U-0.042	R-38 <sup>g</sup>	U-0.027	R-38A <sup>h</sup>
Underfloors	U-0.028	R-30	U-0.028	R-30
Slab edge perimeter	F-0.520	R-15	F-0.520	R-15
Heated slab interior <sup>i</sup>	n/a	R-10	n/a	R-10
Windows <sup>j</sup>	U-0.35	U-0.35	U-0.35	U-0.35
Window area limitation <sup>j,k</sup>	n/a	n/a	n/a	n/a
Skylights <sup>l</sup>	U-0.60	U-0.60	U-0.60	U-0.60
Exterior doors <sup>m</sup>	U-0.20	U-0.20	U-0.54	U-0.54
Exterior doors w/ > 2.5 ft <sup>2</sup> glazing <sup>n</sup>	U-0.40	U-0.40	U-0.40	U-0.40
Forced air duct insulation	n/a	R-8	n/a	R-8

For SI: 1 inch = 25.4 mm, 1 square foot = 0.0929 m<sup>2</sup>, 1 degree = 0.0175 rad.

- a. As allowed in Section N1104.1, thermal performance of a component may be adjusted provided that overall heat loss does not exceed the total resulting from conformance to the required *U*-value standards. Calculations to document equivalent heat loss shall be performed using the procedure and approved *U*-values contained in Table N1104.1(1).
- b. *R*-values used in this table are nominal for the insulation only in standard wood framed construction and not for the entire assembly.
- c. Wall insulation requirements apply to all exterior wood framed, concrete or masonry walls that are above grade. This includes cripple walls and rim joist areas. R-19 Advanced Frame or 2 x 4 wall with rigid insulation may be substituted if total nominal insulation *R*-value is 18.5 or greater.
- d. The wall component shall be a minimum solid log or timber wall thickness of 3.5 inches (90 mm).
- e. Below-grade wood, concrete or masonry walls include all walls that are below grade and do not include those portions of such wall that extend more than 24 inches (609.6 mm) above grade.
- f. Insulation levels for ceilings that have limited attic/rafter depth such as dormers, bay windows or similar architectural features totaling not more than 150 square feet (13.9 m<sup>2</sup>) in area may be reduced to not less than R-21. When reduced, the cavity shall be filled (except for required ventilation spaces).
- g. The maximum vaulted ceiling surface area shall not be greater than 50 percent of the total heated space floor area unless area has a *U*-factor no greater than U-0.031. The *U*-factor of 0.042 is representative of a vaulted scissor truss. A 10-inch (254 mm) deep rafter vaulted ceiling with R-30 insulation is U-0.033 and complies with this requirement, not to exceed 50 percent of the total heated space floor area.
- h. A = Advanced frame construction, which shall provide full required insulating value to the outside of exterior walls.
- i. Heated slab interior applies to concrete slab floors (both on and below grade) that incorporate a radiant heating system within the slab. Insulation shall be installed underneath the entire slab.
- j. Sliding glass doors shall comply with window performance requirements. Windows exempt from testing in accordance with Section NF1111.2, Item 3 shall comply with window performance requirements if constructed with thermal break aluminum or wood, or vinyl, or fiberglass frames and double-pane glazing with low-emissivity coatings of 0.10 or less. Buildings designed to incorporate passive solar elements may include glazing with a *U*-factor greater than 0.35 by using Table N1104.1(1) to demonstrate equivalence to building envelope requirements.
- k. Reduced window area may not be used as a trade-off criterion for thermal performance of any component.
- l. Skylight area installed at 2 percent or less of total heated space floor area shall be deemed to satisfy this requirement with vinyl, wood or thermally broken aluminum frames and double-pane glazing with low-emissivity coatings. Skylight *U*-factor is tested in the 20 degree (0.35 rad) overhead plane in accordance with NFRC standards.
- m. A maximum of 28 square feet (2.6 m<sup>2</sup>) of exterior door area per dwelling unit can have a *U*-factor of 0.54 or less.
- n. Glazing that is either double pane with low-e coating on one surface, or triple pane shall be deemed to comply with this U-0.40 requirement.

TABLE N1101.1(2)  
ADDITIONAL MEASURES

Envelope Enhancement Measure (Select One)	1	<b>High efficiency walls &amp; windows:</b> Exterior walls—U-0.047/R-19+5 (insulation sheathing)/SIPS, and one of the following options: Windows—Max 15 percent of conditioned area; or Windows—U-0.30
	2	<b>High efficiency envelope:</b> Exterior walls—U-0.058/R-21 Intermediate framing, and Vaulted ceilings—U-0.033/R-30A <sup>d,e</sup> , and Flat ceilings—U-0.025/R-49, and Framed floors—U-0.025/R-38, and Windows—U-0.30; and Doors—All doors U-0.20, or Additional 15 percent of permanently installed lighting fixtures as high-efficacy lamps or Conservation Measure D and E
	3	<b>High efficiency ceiling, windows &amp; duct sealing: (Cannot be used with Conservation Measure E)</b> Vaulted ceilings—U-0.033/R-30A <sup>d,e</sup> , and Flat ceilings—U-0.025/R-49, and Windows—U-0.30, and Performance tested duct systems <sup>b</sup>
	4	<b>High efficiency thermal envelope UA:</b> Proposed UA is 15% lower than the Code UA when calculated in Table N1104.1(1)
	5	<b>Building tightness testing, ventilation &amp; duct sealing:</b> A mechanical exhaust, supply, or combination system providing whole-building ventilation rates specified in Table N1101.1(3), or ASHRAE 62.2, and The dwelling shall be tested with a blower door and found to exhibit no more than 1. 6.0 air changes per hour <sup>f</sup> , or 2. 5.0 air changes per hour <sup>f</sup> when used with Conservation Measure E, and Performance tested duct systems <sup>b</sup>
	6	<b>Ducted HVAC systems within conditioned space: (Cannot be used with Conservation Measure B or C)</b> All ducts and air handler are contained within building envelope <sup>i</sup>
Conservation Measure (Select One)	A	<b>High efficiency HVAC system:</b> Gas-fired furnace or boiler with minimum AFUE of 90% a, or Air-source heat pump with minimum HSPF of 8.5 or Closed-loop ground source heat pump with minimum COP of 3.0
	B	<b>Ducted HVAC systems within conditioned space:</b> All ducts and air handler are contained within building envelope <sup>i</sup>
	C	<b>Ductless heat pump:</b> Replace electric resistance heating in at least the primary zone of dwelling with at least one ductless mini-split heat pump having a minimum HSPF of 8.5. Unit shall not have integrated backup resistance heat, and the unit (or units, if more than one is installed in the dwelling) shall be sized to have capacity to meet the entire dwelling design heat loss rate at outdoor design temperature condition. Conventional electric resistance heating may be provided for any secondary zones in the dwelling. A packaged terminal heat pump (PTHP) with comparable efficiency ratings may be used when no supplemental zonal heaters are installed in the building and integrated backup resistant heat is allowed in a PTHP
	D	<b>High efficiency water heating &amp; lighting:</b> Natural gas/propane, on-demand water heating with min EF of 0.80, and A minimum 75 percent of permanently installed lighting fixtures as CFL or linear fluorescent or a min efficacy of 40 lumens per watt as specified in Section N1107.2 <sup>c</sup>
	E	<b>Energy management device &amp; duct sealing:</b> Whole building energy management device that is capable of monitoring or controlling energy consumption, and Performance tested duct systems <sup>b</sup> , and A minimum 75 percent of permanently installed lighting fixtures as high-efficacy lamps
	F	<b>Solar photovoltaic:</b> Minimum 1 watt/sq ft conditioned floor space <sup>g</sup>
	G	<b>Solar water heating:</b> Minimum of 40 ft <sup>2</sup> of gross collector area <sup>h</sup>

For SI: 1 square foot = 0.093 m<sup>2</sup>, 1 watt per square foot = 10.8 W/m<sup>2</sup>.

- a. Furnaces located within the building envelope shall have sealed combustion air installed. Combustion air shall be ducted directly from the outdoors.
- b. Documentation of Performance Tested Ductwork shall be submitted to the building official upon completion of work. This work shall be performed by a contractor certified by the Oregon Department of Energy's (ODOE) Residential Energy Tax Credit program and documentation shall be provided that work demonstrates conformance to ODOE duct performance standards.
- c. Section N1107.2 requires 50 percent of permanently installed lighting fixtures to contain high efficacy lamps. Each of these additional measures adds an additional percent to the Section N1107.2 requirement.
- d. A = advanced frame construction, which shall provide full required ceiling insulation value to the outside of exterior walls.
- e. The maximum vaulted ceiling surface area shall not be greater than 50 percent of the total heated space floor area unless vaulted area has a U-factor no greater than U-0.026.
- f. Building tightness test shall be conducted with a blower door depressurizing the dwelling 50 Pascal's from ambient conditions. Documentation of blower door test shall be submitted to the Building Official upon completion of work.
- g. Solar electric system size shall include documentation indicating that Total Solar Resource Fraction is not less than 75 percent.
- h. Solar water heating panels shall be Solar Rating and Certification Corporation (SRCC) Standard OG-300 certified and labeled, with documentation indicating that Total Solar Resource Fraction is not less than 75 percent.
- i. A total of 5 percent of an HVAC systems ductwork shall be permitted to be located outside of the conditioned space. Ducts located outside the conditioned space shall have insulation installed as required in this code.

**TABLE 1101.1(3)  
VENTILATION AIR REQUIREMENTS, cfm**

FLOOR AREA (ft <sup>2</sup> )	BEDROOMS				
	0-1	2-3	4-5	6-7	> 7
< 1500	30	45	60	75	90
1501-3000	45	60	75	90	105
3001-4500	60	75	90	105	120
4501-6000	75	90	105	120	135
6001-7500	90	105	120	135	150
> 7501	105	120	135	160	185

For SI: 1 square foot = 0.0929 m<sup>2</sup>.

**TABLE N1101.3  
SMALL ADDITION ADDITIONAL MEASURES (Select one)**

1	Increase the ceiling insulation of the existing portion of the home as specified in Table N1101.2.
2	Replace all existing single-pane wood or aluminum windows to the U-value as specified in Table N1101.2.
3	Insulate the floor system as specified in Table N1101.2 & install 50 percent of permanently installed lighting fixtures as CFL or linear fluorescent or a min. efficacy of 40 lumens per watt as specified in Section N1107.2.
4	Test the entire dwelling with a blower door and exhibit no more than 7.0 air changes per hour @ 50 Pascals.
5	Seal and performance test the duct system.
6	Replace existing 78 percent AFUE or less gas furnace with a 92 percent AFUE or greater system.
7	Replace existing electric radiant space heaters with a ductless mini split system with a minimum HSPF of 8.5.
8	Replace existing electric forced air furnace with an air source heat pump with a minimum HSPF of 8.5.
9	Replace existing water heater for a natural gas/propane water heater with a minimum EF of 0.67.
10	Install a solar water heating system with a minimum of 40 ft <sup>2</sup> of gross collector area.

**N1101.4 Information on plans and specifications.** Plans and specifications shall show in sufficient detail all pertinent data and features of the building and the equipment and systems as herein governed, including, but not limited to: exterior envelope component materials; R-values of insulating materials; HVAC equipment efficiency performance and system controls, lighting and other pertinent data to indicate conformance with the requirements of this chapter.

**SECTION N1102  
DEFINITIONS**

**AFUE (ANNUAL FUEL UTILIZATION EFFICIENCY)** is the energy output divided by the energy input, calculated on an annual basis and including part load and cycling effects. AFUE ratings shall be determined using the U.S. Department of Energy test procedures (10 CFR Part 430) and listings in the Gas Appliance Manufacturers Association (GAMA) Consumer Directory of Certified Furnace and Boiler Efficiency Ratings.

**ASHRAE** is the American Society of Heating, Refrigerating and Air-conditioning Engineers, Inc.

**AUTOMATIC** is self-acting, operating by its own mechanism when actuated by some impersonal influence, such as a change in current strength, pressure, temperature or mechanical configuration. (See also "Manual.")

**BASEMENT WALL** is the opaque portion of walls which encloses a basement and is partially or totally below grade walls.

**BELOW GRADE WALLS** are the walls or the portion of walls entirely below the finished grade or which extend 2 feet (610 mm) or less above the finish grade.

**BTU (British Thermal Unit)** is the amount of heat required to raise the temperature of 1 pound (0.454 kg) of water (about 1 pint) from 59°F to 60°F (15°C to 16°C).

**BUILDING ENVELOPE** is that element of a building which encloses conditioned spaces through which thermal energy may be transmitted to or from the exterior or to or from unconditioned spaces.

**C (Thermal Conductance).** See "Thermal conductance."

**CONDITIONED SPACE** is a space within the building, separated from unconditioned space by the exterior envelope which by introduction of conditioned air, by heated and/or cooled surfaces, or by air or heat transfer from directly conditioned spaces is maintained at temperatures of 55°F (13°C) or higher for heating and/or 85°F (29.4°C) or below for cooling. (Enclosed corridors between conditioned spaces shall be considered as conditioned space. Spaces where temperatures fall between this range by virtue of ambient conditions shall not be considered as conditioned space.)

**COOLED SPACE** is a space within a building provided with a mechanical cooling supply.

**ENERGY MANAGEMENT DEVICE** is a device which is installed within a dwelling that can provide near real-time data on whole dwelling energy consumption or an integrated control system that is intended to operate energy consuming appliances and/or devices for a dwelling in order to reduce energy consumption. Consumption control systems are also known as Building Automation Control (BAC) or Building Management Control Systems (BMCS).

**EXTERIOR DOOR** is a permanently installed operable barrier by which an entry is closed and opened. Exterior doors

## Recommended Street Tree List For 6 to 8 Foot Planting Strips Without Overhead Power Lines\*

Common Name (Scientific Name)	Shape	Size (height by width)	Features	Description
Accolade Elm ( <i>Ulmus japonica</i> x <i>wilsoniana</i> 'Morton')	Vase	70' x 60'		Disease resistant. Lovely shape with arching limbs.
Autumn Purple Ash ( <i>Fraxinus americana</i> 'Junginger')	Round	45' x 40'		Vibrant reddish-purple fall color.
Bur Oak ( <i>Quercus macrocarpa</i> )	Oval	55' x 45'		Large tree with beautiful dark green foliage.
Dawn Redwood ( <i>Metasequoia gypotstroboides</i> )	Pyramid	75' x 30'		Due to strong leader it should not be planted in the presence of any wires.
European Hornbeam ( <i>Carpinus betulus</i> )	Oval	50' x 35'		Golden-yellow fall color.
Glenleven Linden ( <i>Tilia cordata</i> 'Glenleven')	Pyramid	50' x 30'		Yellow fall color. Fast growing.
Green Vase Zelkova ( <i>Zelkova serrata</i> 'Green Vase')	Vase	45' x 30'		Vivid orange fall color and graceful vase shape.
Hackberry ( <i>Celtis occidentalis</i> )	Broad	45' x 35'		Yellow fall color and interesting rough corky bark.
Legacy Sugar Maple ( <i>Acer saccharum</i> 'Legacy')	Oval	50' x 35'		Glossy dark green summer foliage and bright red to orange fall color.
Metro Gold Hedge Maple ( <i>Acer campestre</i> 'Panacek')	Oval	35' x 20'		Hardy tree in urban environments. Spectacular golden fall color.
Red Sunset Maple ( <i>Acer rubrum</i> 'Franksred')	Oval	45' x 35'		Brilliant red to orange fall color.
Redmond Linden ( <i>Tilia americana</i> 'Redmond')	Pyramid	40' x 25'		Rough ridged bark.
Rivers Purple Beech ( <i>Fagus sylvatica</i> 'Riversii')	Oval	50' x 40'		Beautiful purple summer foliage and interesting silver-grey bark in the winter.
Sawtooth Oak ( <i>Quercus acutissima</i> )	Round	40' x 40'		Fast growing with a spreading shape. Yellow fall color.
Scarlet Oak ( <i>Quercus coccinea</i> )	Oval	50' x 40'		Brilliant shades of red fall color.
Sunburst Honeylocust ( <i>Gleditsia triacanthos</i> 'Sunburst')	Irregular	40' x 35'		New foliage growth is a striking bright yellow.
Sourwood ( <i>Oxydendrum arboreum</i> )	Pyramid	20' x 15'		Creamy colored clusters of flowers and vivid fall color.
Swamp White Oak ( <i>Quercus bicolor</i> )	Round	45' x 45'		Deep green summer foliage. Adapted well to wet soils.
Turkish Filbert ( <i>Corylus colurna</i> )	Pyramid	40' x 30'		Winter characteristics includes male catkins.
Urbanite Ash ( <i>Fraxinus pennsylvanica</i> 'Urbanite')	Pyramid	50' x 40'		Deep green leathery summer foliage and bronze fall color.
Village Green Zelkova ( <i>Zelkova serrata</i> 'Village Green')	Vase	40' x 40'		Fast growing cultivator with dark red fall color.

\* For other cultivars or varieties that are similar in size, contact your area tree inspector at Urban Forestry, 503-823-4489, for approval.

Features	
	Fall Color
	Texturized bark
	Showy Flowers
	Evergreen
	Fruits/Nuts for Wildlife

Photographs courtesy of OSU's Patrick Breen  
<http://oregonstate.edu/dept/ldplants>



Legacy Sugar Maple



European Hornbeam

## Tree Selection Guidelines

**Building Setback:** The crown of a tree at maturity should not be in serious conflict with the neighboring structures.

**Clearance over streets and sidewalks:** As trees grow, they will need pruning to provide clearance of a least 7 1/2 feet over sidewalks, 11 feet over residential streets, and 14 feet over main arterial streets.

**Size of Tree When Planted:** Standard tree size is 2" caliper or larger for single-family residential and 3.5" caliper or larger for non-residential sites and sites prone to vandalism.

**When selecting a healthy tree, look for these characteristics:**

- Strong, well-developed leader with good trunk taper
- Wide-angle branch/trunk crotches for strength
- Bright, healthy bark
- Low branches are good for aiding taper development and promoting trunk caliper growth. Low branches should be removed from street trees, however, to meet clearance requirements.
- Healthy buds
- Trunk & limbs free of insect or mechanical injury
- Branches well distributed around trunk and of considerably smaller caliper than trunk.
- If bareroot: abundant root growth, with numerous fibrous roots.
- Ideal spacing between branches of at least 8-12" for most species
- If balled & burlapped: firm soil with trunk securely tied. Do not accept a tree with a broken ball.

From Tree City USA Bulletin #1

## Tree Location Guidelines

\* Mature height must be at least 5' under overhead high voltage power lines

20' from stop signs  
25' from intersections

10' from fire hydrants

25' from street lamps

At least 2' from property lines

5' from water meter or driveway

\* Overhead high voltage power lines are typically the wires found above the transformer.

**PORTLAND PARKS & RECREATION**

Healthy Parks, Healthy Portland

City Nature Urban Forestry  
10910 N Denver Avenue  
Portland, OR 97217  
[www.portlandonline.com/parks/trees](http://www.portlandonline.com/parks/trees)



**Portland's Trees Work 24/7!**

- Filtering our water
- Cleaning our air
- Cooling the city
- Providing wildlife habitat
- Enhancing livability
- Increasing property value

City Arborist:

Phone #:

# City of Portland Recommended Street Tree List

- **6 to 8 Foot Planting Strips**
- **Without Overhead Power Lines**



Scarlet Oak  
*Quercus coccinea*



**PORTLAND PARKS & RECREATION**  
Healthy Parks, Healthy Portland

## Why Plant Trees?

Because they:

- Filter our water
- Clean our air
- Cool the city
- Provide wildlife habitat
- Enhance livability
- Increase property value

## Help Us Make Portland Greener!

Maximize the benefits of trees by:

- Planting more trees
- Increasing our canopy
- Planting the right tree in the right place
- Planting the largest tree for the space

This recommended street tree list identifies the most size-appropriate trees for your planting strip AND will improve the health of the urban forest by increasing overall diversity.

## Steps to Planting a Street Tree

 **Request a Planting Inspection**  
Call City Nature Urban Forestry  
503-823-4489

 **Inspection**  
A City Arborist will mark the curb to indicate planting locations

 **Choose and Reserve a Tree**  
Select a tree species from the following list and reserve it at your local nursery

 **Request a Permit**  
Call your City Arborist

 **Permit is Issued**  
After receiving your permit in the mail, you are ready to plant!

## City Nature Urban Forestry

Portland Parks & Recreation  
10910 N Denver Avenue, Portland, OR 97217  
ph: 503-823-4489 fax: 503-823-4493  
email: [Trees@ci.portland.or.us](mailto:Trees@ci.portland.or.us)

Street tree planting • Pruning and removal permits • General street tree information • Tree cutting ordinance issues • Park tree care • Emergency tree response

For more details about Portland's recommended street trees you can visit the City Nature Urban Forestry web site at: [www.portlandonline.com/parks/trees](http://www.portlandonline.com/parks/trees)

### Additional Resources

- Call Before You Dig** 503-246-6699  
Location of underground utilities
- Portland General Electric** 503-736-5460
- PacifiCorp** 888-221-7070  
Trees and power lines
- Friends of Trees** 503-282-8846  
Community and natural area planting programs
- Bureau of Development Services** 503-823-7526  
Trees on private property that are being, or could be developed
- Bureau of Maintenance** 503-823-1700
- Sidewalk Repair 503-823-1711
- Blocked traffic/street signs 503-823-5211

### Other Helpful Brochures

- **Pruning and Care of Young and Mature Trees**  
How to make a proper pruning cut, safety and visibility, tips for hiring an arborist, common tree diseases
- **Street Tree Planting and Establishment Guidelines**  
Permit process, how to select a healthy tree, street tree planting location, proper planting and establishment care

To request a brochure, contact Urban Forestry!

## PORTLAND PARKS & RECREATION

Healthy Parks, Healthy Portland  
[www.PortlandParks.org](http://www.PortlandParks.org)  
Commissioner Nick Fish  
Director Zari Santner



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