



Arborist Report

**100 Portland Avenue
Portland Oregon
September 13, 2021**

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Executive Summary & Table of Contents

Introduction and Assignment. Page 3

Portland Architects LLC is designing a remodel of a commercial building in Portland, OR. The project is in the design phase and designers are trying to determine how the planned construction will impact the existing trees and what tree protection measures to plan for. Portland Architects asked Nidus Consulting to prepare an Arborist Report for the project for submission to the City of Portland as part of the development application. This report is designed to help the design team, property owner and City make important decisions about trees and construction.

Tree and Site Observations. Page 4

Five trees were included in the assessment. Data for each tree is shown in the [Tree Data](#) (Page 8) and locations are shown on the [Tree Map](#) (Page 9). Four trees (#1-4) included in this report are regulated by the City of Portland, off-site trees on private property are not regulated by the City but are important to protect during construction.

Impacts to Trees. Page 5

Overall, the project will attempt to preserve all five trees. None of the trees are directly within areas of construction, but all trees will likely experience at least minor impacts from construction.

Tree Protection Measures. Page 6

The goal of tree preservation on construction projects is to have healthy trees that are valuable assets to the site for years into the future. Trees that do not have sufficient Root Protection Zones or are not adequately protected during construction can become liabilities rather than assets. These Tree Protection Measures are designed to help increase the chances of having healthy trees many years after construction is complete.

Methods. Page 7

Ryan Gilpin (Certified Arborist WE10268A, Tree Risk Assessment Qualified) assessed all trees on or with canopy overhanging the property.



The property owner and City of Portland are the decision makers about these trees. I have provided information which I hope will be helpful to those parties in making decisions. Please contact me with any questions or comments about my observations and recommendations.



Ryan Gilpin
Principal Consultant
Nidus Consulting

Introduction and Assignment

Portland Architects LLC is designing a remodel of a commercial building in Portland, OR. The project is in the design phase and designers are trying to determine how the planned construction will impact the existing trees and what tree protection measures to plan for. Portland Architects LLC asked Nidus Consulting to prepare an Arborist Report for the project for submission to the City of Portland as part of the development application.

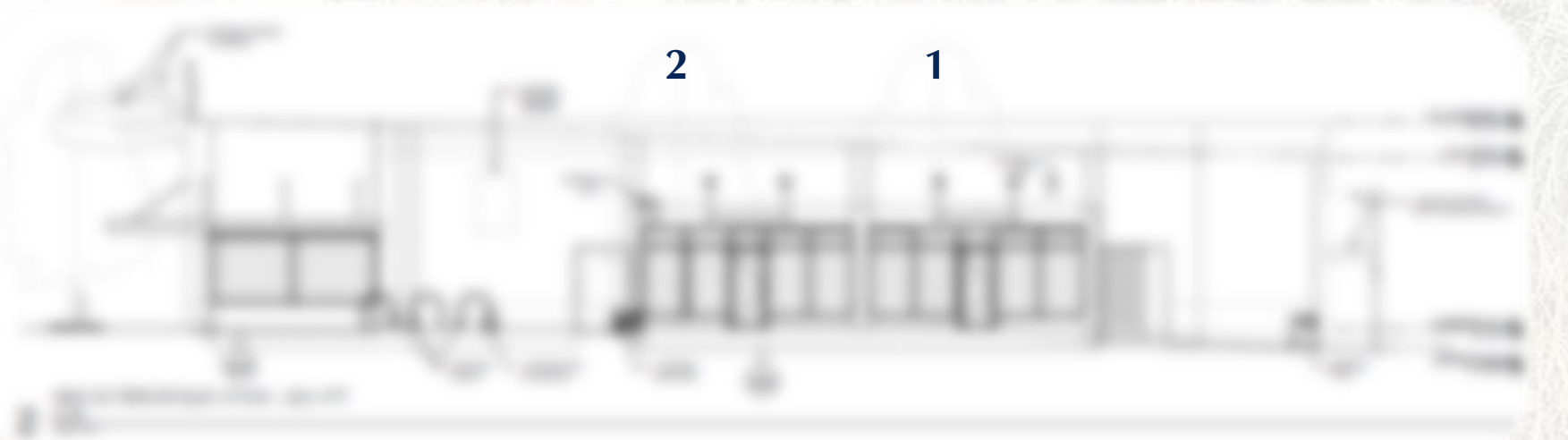
The site was most recently occupied by a restaurant but is currently vacant. It is at 100 Portland Avenue near downtown Portland, OR. The private property is completely filled with the building with only street trees and off-site trees potentially affected by the remodel. This report is designed to help the design team, property owner and City make important decisions about trees and construction.

Tree Preservation in Portland, OR

On construction projects, the City of Portland regulates the removal and protection of trees 12" and greater on private property and trees of any size within the public right-of-way with municipal code [Chapter 11.50 Trees in Development Situations](#). The City prefers that projects follow the Prescriptive Path for tree preservation in which the Root Protection Zone is established for each tree as 1 foot radius for every 1 inch trunk diameter. Construction cannot encroach within more than 25% of the Root Protection Zone and cannot encroach closer to the trunk than the Root Protection Zone radius.

For projects attempting to preserve trees that cannot meet these requirements, an alternative option called the Performance Path is available. A Consulting Arborist recommends tree protection measures and monitors the trees during construction.

To encourage property owners to preserve trees during construction projects, the City has fees associated with removing trees. The fee for removing trees greater than 20 inches in diameter or more than 2/3 of the trees on a property is \$450.00 per inch diameter.



2

1

Tree and Site Observations

Five trees were included in the assessment. Data for each tree is shown in the [Tree Data](#) (Page 8) and locations are shown on the [Tree Map](#) (Page 9). Four trees (#1-4) included in this report are regulated by the City of Portland, off-site trees on private property are not regulated by the City but are important to protect during construction.

Two *Acer rubrum* cvs (red maple cultivars) were growing within the public right-of-way along Portland Avenue. They were in fair condition with trunk diameters of 16 (tree #1) and 17 inches (tree #2). The grade around these trees was elevated, likely from root growth in a confined area bulging the soil and hardscape. The sidewalk was lifted significantly and the curb had been recently replaced where it was likely damaged by root growth.

Two small *Acer griseum* (paperbark maples) were growing within the public right-of-way along Portland Avenue. They had trunk diameters of 3 (tree #3) and 2 inches (tree #4). Tree #4 was further north and in poor condition with basal wounds and half of the crown removed. Tree #3 was in good condition, but the crown was contacting the awning.



A *Quercus rubra* (red oak) was growing off-site in a neighboring private property. The base was approximately 5 feet northwest of the restaurant and the crown extended 20 feet over the building. This *Q. rubra* was in good condition.

Impacts to Trees

I evaluated impacts to trees using *Site Plan* and *Utility Plan* created by Portland Architects LLC dated June 21, 2021. These plans show the building largely staying in-tact with significant remodeling changes dividing the building into more separate units. Impacts to trees from these types of projects can be difficult to anticipate.

Overall, the project will attempt to preserve all five trees. None of the trees are directly within areas of construction, but all trees will likely experience at least minor impacts from construction.

The most difficult trees to preserve are trees #1 and 2. Increasing the number of units will require creating new entrances to the building near the trees, but the biggest problem is the sidewalk grade. The sidewalk will be repoured between trees #1 and 2 and the building. Based on the lifting of the sidewalk, I predict there will be many large roots near the soil surface after the sidewalk is removed. To create an ADA compliant sidewalk that slopes perfectly into these new entrances will likely require the removal of most of these roots. The Project Arborist should evaluate the situation once the sidewalk has been removed with the construction team and recommend whether these trees can be preserved at that time.

The sidewalk near trees #3 and 4 is not being replaced and these trees should be able to survive construction.

Tree #5 is unlikely to be impacted by construction except for the work occurring on the roof. It was difficult to see what type of pruning would be required to work on the roof, but I believe a small amount of pruning would be necessary to complete the planned work to the roof.

Longer-term Management Decisions

Whether trees will survive construction is not the only consideration when determining whether to preserve trees on construction sites. All four street trees are *Acer* (maple), and no *Acers* are on the [City of Portland Approved Street Tree List](#) because they are over-populated throughout the City. This is not reason enough to remove them, but trees #1 and 2 are likely to be significantly impacted by construction and difficult to manage over time as conflicts continue. Tree #4 is in poor condition, and while tree #3 is healthy, it is small and easy to replace now.

While it would be a difficult decision to remove and replace these trees as part of this project. There is an opportunity to plan for longer-term than just this project. Those decisions should be made together by the City of Portland and property owner.



Tree Protection Measures

The goal of tree preservation on construction projects is to have healthy trees that are valuable assets to the site for years into the future. Trees that do not have sufficient Root Protection Zones or are not adequately protected during construction can become liabilities rather than assets. These Tree Protection Measures are designed to help increase the chances of having healthy trees many years after construction is complete.

Design Phase

1. As plans change or when final plans are approved, forward to the Project Arborist for review.

Pre-Construction Phase

2. Schedule a meeting with the Project Arborist and contractors working on site to discuss construction activities, Tree Protection Measures, and monitoring schedule.
3. Install tree protection fencing to protect the Root Protection Zone at the edge of the three tree wells to protect the existing street trees. Signs shall be prominently secured to each fence designating the Root Protection Zone, penalties for violations and contact information for the Project Arborist.
4. The following activities are prohibited within the Root Protection Zone:
 - a. Ground disturbance or construction activity including vehicle or equipment access
 - b. Storage of equipment or materials including soil, temporary or permanent stockpiling
 - c. Proposed buildings, impervious surfaces, underground utilities
 - d. Excavation or fill, trenching or other work activities.
5. Assess whether pruning tree #5 is required to complete roof work, a Certified Arborist shall complete any required pruning.

Construction Phase

6. Tree Protection Fencing shall remain in place and not be moved without prior approval from the Project Arborist and/or City. No construction activities are allowed within the Root Protection Zone.
7. Use the smallest equipment possible to carefully demolish the sidewalk. Keep equipment on the concrete and avoid damaging any existing roots during demolition. The Project Arborist shall monitor the sidewalk removal and excavation.
8. The Project Arborist shall evaluate visible root damage and evaluate the health and structural stability of the tree.
9. Cut all roots cleanly with a saw before being broken or ripped by equipment. If clean cuts cannot be achieved, additional hand digging to expose healthy roots may be necessary.
10. Stop construction activities in the area and contact the Project Arborist anytime a root larger than 2" is encountered.
11. Contact the Project Arborist any time a tree is injured to evaluate the health and structural stability of the tree.
12. Do not store, dump or clean any materials or equipment within the Root Protection Zone. No waste water, concrete, paint, etc. shall be dumped in the Root Protection Zone.

Post-Construction Phase

13. Prior to removing tree protection fencing, the Project Arborist shall conduct a final inspection and report on the health and impacts to trees during construction.

Methods

Ryan Gilpin (Principal Consultant, Certified Arborist WE10268A, Tree Risk Assessment Qualified) assessed all trees on or with canopy overhanging the property. The following data were collected for each tree:

1. Tree genus and species
2. Trunk diameter at 54" height
3. Tree condition, see table to right based on the *Guide for Plant Appraisal* (Council of Landscape Appraisers 2019). Health, structure and form were assessed independently, and the lowest rating equals the overall condition rating.
4. Suitability for preservation considers future factors affecting the tree's ability to be an asset to the future site.
 - **High**, tree is likely to be an asset of the future site and should be the focus of preservation efforts.
 - **Moderate**, tree may be an asset of the future site and should be considered for preservation.
 - **Low**, tree is unlikely to be an asset to the project and should be considered for removal when near construction.

Suitability for preservation includes species specific factors such as:

- species success in region,
- species susceptibility to root loss and other construction impacts,
- typical species longevity, and
- species invasiveness

Suitability for preservation also includes factors of the individual tree such as:

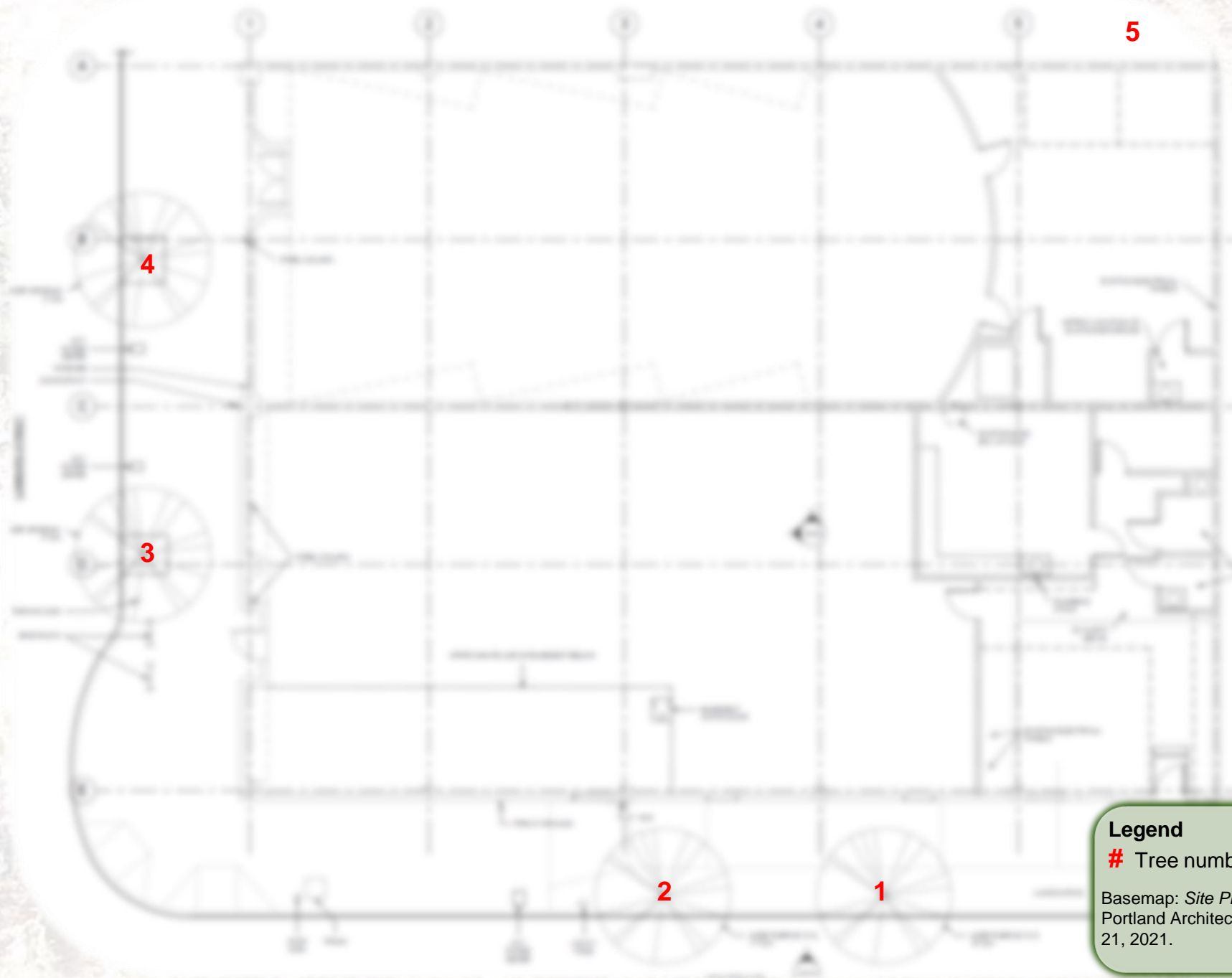
- current tree condition
- existing infrastructure around trees,
- structural features that do not affect stability today but are likely to in the future, and
- forest stand dynamics as neighboring trees are removed.

	Health	Structure	Form
Excellent	Vigor nearly perfect with little or no twig dieback, discoloration or defoliation.	Strong branch attachments with few or no features affecting tree or branch stability.	Tree shape highly functional and aesthetic in landscape.
Good	Typical vigor with minor twig dieback, defoliation or discoloration.	Good branch attachments with minor and correctable features affecting tree or branch stability.	Tree shape functional and aesthetic in landscape.
Fair	Reduced vigor with moderate twig dieback, defoliation, and/or discoloration.	A single feature significantly affecting or multiple features moderately affecting tree or branch stability that would not be practical to correct or would require multiple treatments over several years.	Tree shape compromises function and/or aesthetics in landscape.
Poor	Compromised vigor with extensive twig and/or branch dieback and defoliation.	A single feature seriously affecting or multiple features significantly affecting tree stability that cannot be corrected.	Tree shape significantly detracts from function and/or aesthetics to a significant degree.
Very Poor	Poor vigor with little live foliage or branches.	Multiple features seriously affecting tree stability that cannot be corrected.	Tree shape provides little to no function and is visually unappealing in landscape.
Dead	No live foliage or branches	Tree failed.	-

Tree Data

Tree #	Species	Diameter	Status	Condition			Suitability for Preservation	
1	<i>Acer rubrum</i> cvs.	16	Street Tree	Fair	Good	Dense green crown	Moderate Asphalt replaced, sidewalk lifting	
				Structure	Fair	Trunk bulges at attachment, 18" basal wound		
				Form	Fair	Multiple trunks arise from 8', narrow cultivar		
2	<i>Acer rubrum</i> cvs.	17	Street Tree	Fair	Good	Dense green crown	Moderate Asphalt replaced, sidewalk lifting	
				Structure	Fair	8" & 4" basal wounds		
				Form	Fair	Multiple trunks arise from 8', narrow cultivar		
3	<i>Acer griseum</i>	3	Street Tree	Good	Excellent	Vigorous growth	Crown contacting building	
				Structure	Good	6" trunk wound	Moderate awning may create future conflict	
				Form	Excellent	Typical young tree		
4	<i>Acer griseum</i>	2	Street Tree	Poor	Fair	Moderate growth, fewer leaves than typical	Low Poor condition	
				Structure	Poor	24" basal wound, 60% of basal cambium dead		
				Form	Poor	Half of crown removed		
5	<i>Quercus rubra</i>	18	Off-site	Good	Excellent	Dense green crown	High Base 5' from wall, crown extends 20 feet over building.	
				Structure	Good	Difficult to see branch attachments		
				Form	Good	Multiple trunks arise from 20'		

Tree Map



Legend

Tree number

Basemap: *Site Plan* created by Portland Architects LLC dated June 21, 2021.