



D. Clark Arboriculture

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Certified Arborist PN-6523A

TRAQ Certified

ISA Tree Risk Assessor CTRA 459

Arborist Report for Development Purposes

Re: Proposed Demolition/Construction

Site Location: 1417 May St., Victoria BC

Darryl Clark PN-6253A TRAQ Certified

August 20, 2017

August 23, 2017

For Biophililia Design Collective Ltd.
813 Fort St. Victoria BC V8W 1H6

Re: Proposed Demolition/Construction
1417 May St. Victoria BC V8S 1C2

Scope of Work

D. Clark Arboriculture has been retained by Biophililia Design Collective Ltd. to provide comments on trees impacted by a potential house demolition, and a Tree Protection Plan for the property at 1417 May St. as per the requirements of the City of Victoria.

Summary

Demolition of a building, and construction of a new multi-unit dwelling at 1417 May St. will impact the Protected Root Zone of 1 bylaw protected tree on the property, 1 non-bylaw protected tree on the property to the east at 1425 May St. and 1 city owned boulevard tree. The tree at 1425 May requires tree protection measures for retention including tree protection fencing, root zone barriers and supervision of activities in the protected root zone the tree. 1 protected tree on the property at 1417 May will require removal. A city owned boulevard tree at the front of 1417 May will require removal. All other vegetation will be removed from the site during demolition, including a number of unprotected trees. Demolition and construction can proceed following the recommendations in this report.

Introduction and Methodology

I (Darryl Clark) visited the site on Aug. 21, 2017 at 11:30 to perform an assessment of protected trees on-property and off-property that could potentially be impacted by proposed development. Site conditions surrounding affected trees were dominated by overgrown grass at the front and the rear of the property. The yard is largely unmanaged and unmaintained. A design provided by our client indicates building and landscaping changes including modifications to the existing driveway on the east side of the residence, an addition of a covered parking area at the easterly midpoint of the property, and various landscaping elements in addition to a multi-unit dwelling. This report was completed on August 23, 2017.

Tasks performed include:

- An aerial site map was marked indicating tree locations
- visual inspection of (1) on-property and (1) off-property "protected" trees was performed, and notes were collected on health and structural condition
- Photos were taken to document the site and affected on-property and off-property trees
- Tree height was estimated to the nearest metre.
- Crown spread was measured to the nearest metre

Tree Inventory

Tree Inventory									
Tag #	Species	cm/DBH	Height/m	PRZ/m	Canopy/m	Structure	Health	Retain/Remove	Bylaw Protected
1	Acer saccharinum	83	20	10	14x14	Poor	Fair	Remove	Yes
2	Acer saccharinum	79	16	9	12x12	Fair	Fair	Retain	No
15105	Prunus blireana	14	4	2	1x1	Poor	Poor	Remove	City Owned

DBH-Diameter at Breast Height. Measured at 1.4m from the point of germination. Where the tree is multi-stemmed at 1.4m, the DBH shall be considered 100% of the largest stem and 60% of the sum of the remaining stems, rounded to the nearest cm.

PRZ-Protected Root Zone. The PRZ shall be considered 12x the DBH, rounded to the nearest whole meter.

N/I = not tagged

Impacts of Demolition and Construction



from the north and are not expected to impact tree #2. A new driveway will impact the protected root zone of tree #2.

Tree Protection Plan

The Protected Root Zone (PRZ) of all protected trees recognized in this report shall be 12 times the diameter of the tree.¹

During construction protection fencing will be installed, the construction and location of which will be approved by the project arborist. Tree protection fencing must be anchored in the ground and made of 2x4 or similar material frame, paneled with securely affixed orange snow fence or plywood and clearly marked as TREE PROTECTION AREA- NO ENTRY (See appendix A for an example). The area inside the fence will be free of all traffic and storage of materials. Areas outside the tree protection fence but still within the protected root zone (PRZ) may be left open for access, as work areas and for storage of materials. These areas will be protected by vehicle traffic with either 3/4" plywood or a minimum 20cm of coarse wood chips (see Site Plan for suggested locations of each). Tree protection measures will not be amended in any way without approval from the project arborist. Any additional tree protection measures will be documented in a memo to Victoria and the developer. The existing fence between 1417 and 1425 May St. provides a reasonable barrier to tree #2. Orange snow fence should be affixed to the existing fence to make everyone aware that this is a tree protection area.

Excavation inside the Protected Root Zone of any tree identified in this plan for any reason will take place under the supervision of the project arborist or their designate. Working radially inward toward the tree, the excavator will remove the soil incrementally with a non-toothed shovel allowing any exposed roots to be pruned to acceptable standard by the project arborist. Any excavation of the stump of a tree inside a PRZ must be supervised by the project arborist. As well, any excavation for underground services inside a PRZ will be supervised by the project arborist. Where applicable, a hydro-vac or Airspade® may be employed to expose critical roots and services.

Demolition will involve the existing house. All areas exposed to possible compaction from machines and equipment as well as waste bins must be armoured by a minimum 20cm of woodchips or ¾" plywood. Any changes to the TPP layout or expectations must first be approved by the project arborist. Any changes will be documented in a memo to Victoria and the developer.

Any pruning of protected trees will be performed by an ISA (International Society of Arboriculture) certified arborist, to internationally recognised best management practices.

Excavation for two foundations, services and paved surfaces will be occurring in the PRZ of protected trees. Any excavation within or adjacent to the PRZ at any depth for any reason must be supervised by the project arborist. This includes excavation for all underground services, driveways and sidewalks, and structural foundations and the removal of any stumps in the PRZ by an excavator or similar machine. Working radially inward toward the tree, the excavator will remove the soil incrementally with a non-toothed shovel allowing any exposed roots to be pruned to acceptable standard by the project arborist.

¹Best Management Practices (BMP) - Managing Trees During Construction, Second Edition By Kelby Fite and E. Thomas Smiley

Roots that have been pruned are to be covered with a layer of burlap and kept damp for the duration of the project.

The excavation and construction of the garage will occur very close to tree #2. The garage impacts the southeast corner of the PRZ of this tree. The foundation will be slab on grade with a shallow excavation for base material. It is suggested that an exploratory non-invasive excavation with an Airspade® be undertaken prior to excavation to ensure that no critical structural roots are compromised. Should critical structural roots be discovered alternative construction methods (grade beam construction) or tree removal may be considered.

All paved surfaces that are new and inside the PRZ of protected trees will employ alternative construction methods including loadbearing geotextile fabric or a geogrid/geocell system (see Appendix B for examples). The current plan for the entire driveway area south of the proposed dwelling calls for a permeable paved surface. The materials used to achieve permeability may be acceptable inside the PRZ of tree #2, provided that excavation for base material does not negatively impact the PRZ.

Role of the Project Arborist

No aspect of this Tree Protection Plan will be amended in whole or in part without the permission of the project arborist. Any amendments to the plan must be documented in memorandums to the Municipality and the developer.

The project arborist must approve all tree protection measures before demolition and/or construction is to begin.

A site meeting including the project arborist, developer, project supervisor and any other related parties to review the tree protection plan will be held at the beginning of the project.

The developer may keep a copy of the tree protection plan on site to be reviewed and/or initialed by everyone working inside or around the PRZ of trees.

The project arborist is responsible for ensuring that all aspects of this plan, including violations, are documented in memorandums to the municipality and the developer.

Replacement Trees

Victoria requires two replacement trees be planted for every bylaw protected tree removed.

Replacement tree locations will be determined when a landscape plan is finalized, and a map of those locations will be submitted to Victoria and the developer in a memo before the completion of the project. Should suitable locations not be available, the developer may seek to donate the trees to a location determined by the municipality.

Thank you for the opportunity to comment on these trees.

Should any issues arise from this report, I am available to discuss them by phone, email or in person.
Regards,


Daryl Clark

Certified Arborist PN-6523A
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Disclosure Statement

An arborist uses their education, training and experience to assess trees and provide prescriptions that promote the health and wellbeing, and reduce the risk of trees.

The prescriptions set forth in this report are based on the documented indicators of risk and health noted at the time of the assessment and are not a guarantee against all potential symptoms and risks.

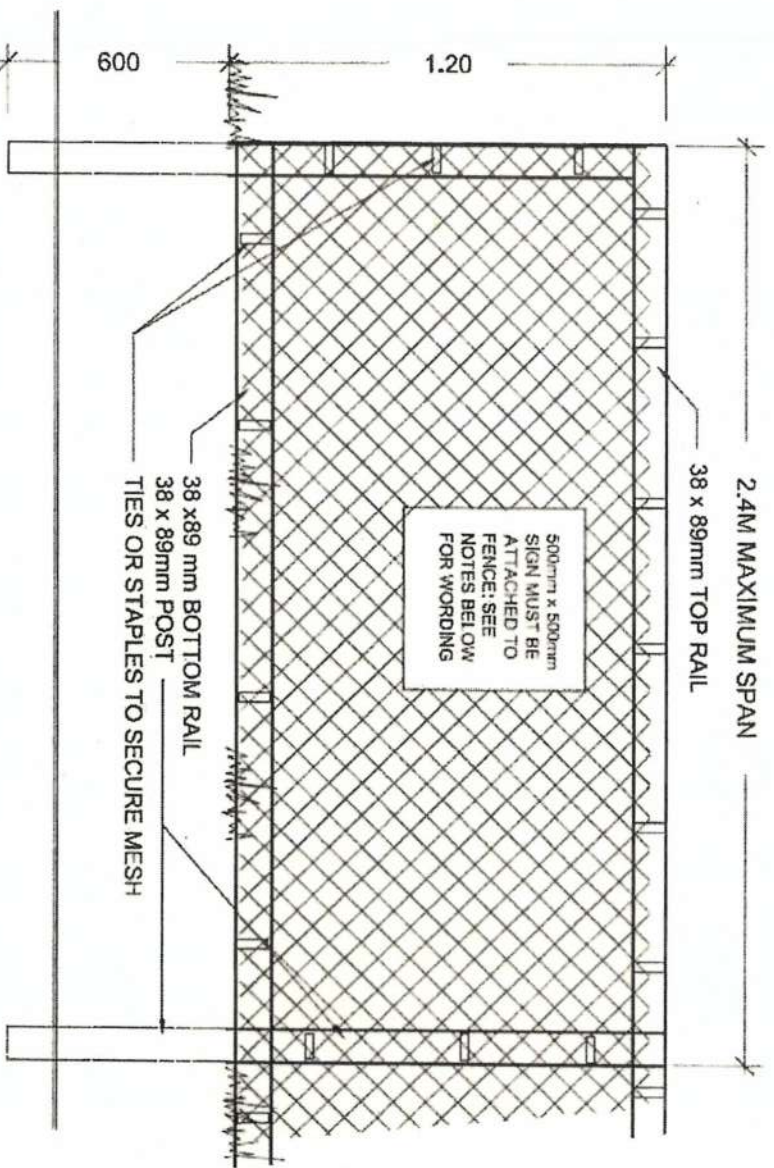
Trees are living organisms and subject to continual change from a variety of factors including but not limited to disease, weather and climate, and age. Disease and structural defects may be concealed in the tree or underground. It is impossible for an arborist to detect every flaw or condition that may result in failure, and an arborist cannot guarantee that a tree will remain healthy and free of risk.

To live near trees is to accept some degree of risk. The only way to eliminate the risks associated with trees is to eliminate all trees.

Assumptions and Limiting Conditions

- Altering this report in any way invalidates the entire report.
- The use of this report is intended solely for the addressed client and may not be used or reproduced for any reason without the consent of the author.
- The information in this report is limited to only the items that were examined and reported on and reflect only the visual conditions at the time of the assessment.
- The inspection is limited to a visual examination of the accessible components without dissection, excavation or probing, unless otherwise reported. There is no guarantee that problems or deficiencies may not arise in the future, or that they may have been present at the time of the assessment.
- Sketches, notes, diagrams, etc. included in this report are intended as visual aids, are not considered to scale except where noted and should not be considered surveys or architectural drawings.
- All information provided by owners and or managers of the property in question, or by agents acting on behalf of the aforementioned is assumed to be correct and submitted in good faith. The consultant cannot be responsible or guarantee the accuracy of information provided by others.
- It is assumed that the property is not in violation of any codes, covenants, ordinances or any other governmental regulations.
- The consultant shall not be required to attend court or give testimony unless subsequent contractual arrangements are made.
- The report and any values within are the opinion of the consultant, and fees collected are in no way contingent on the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, or any finding to be reported.

Appendix A



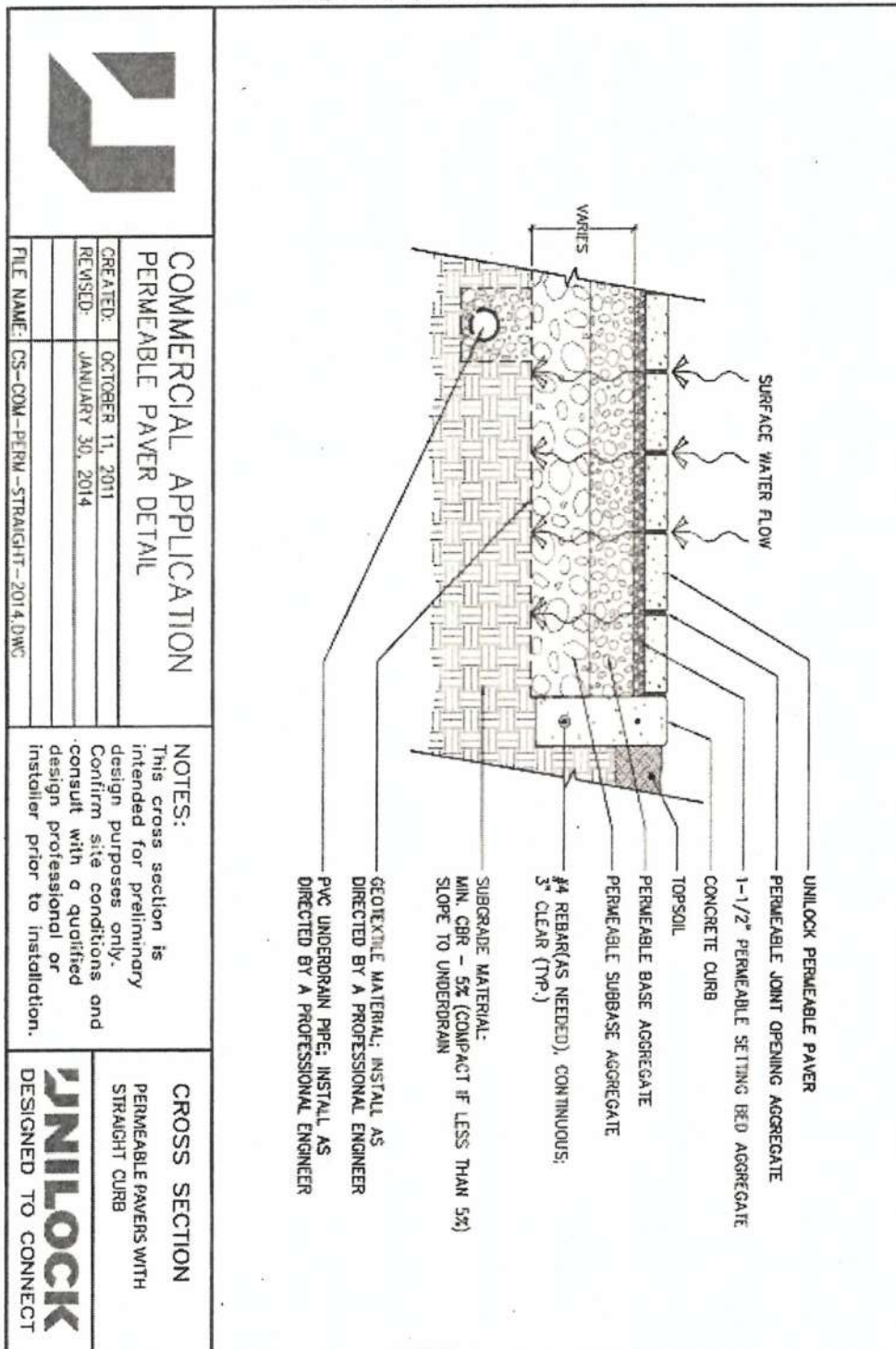
TREE PROTECTION FENCING

Tree Protection Fencing Specifications:

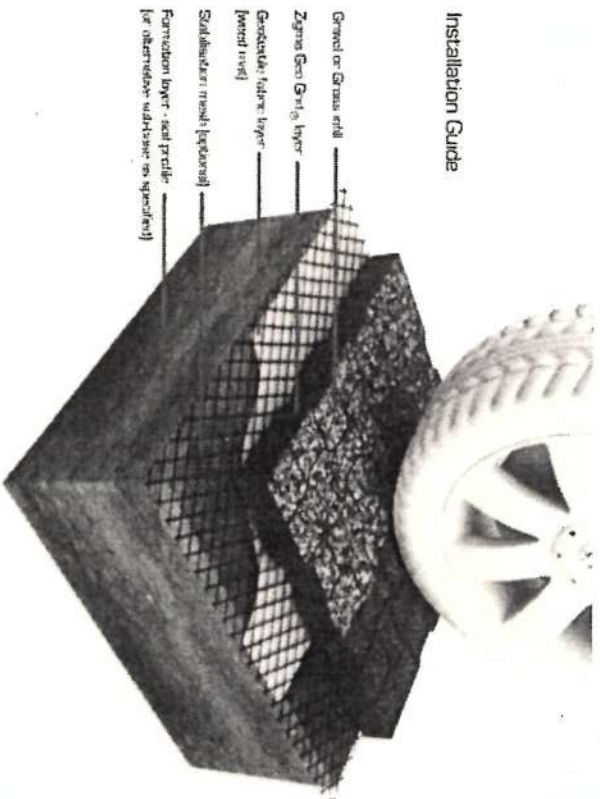
1. The fence will be constructed using 38 x 89 mm (2" x 4") wood frame:
 - Top, Bottom and Posts. In rocky areas, metal posts (t-bar or rebar) drilled into rock will be accepted
 - Use orange snow fencing mesh and secure to the wood frame with "zip" ties or galvanized staples. Painted plywood or galvanized fencing may be used in place of snow fence mesh.
2. Attach a roughly 500 mm x 500 mm sign with the following wording: **TREE PROTECTION AREA- NO ENTRY**. This sign must be affixed on every fence face or at least every 10 linear metres.

Appendix B

Examples of Special Driveway Design

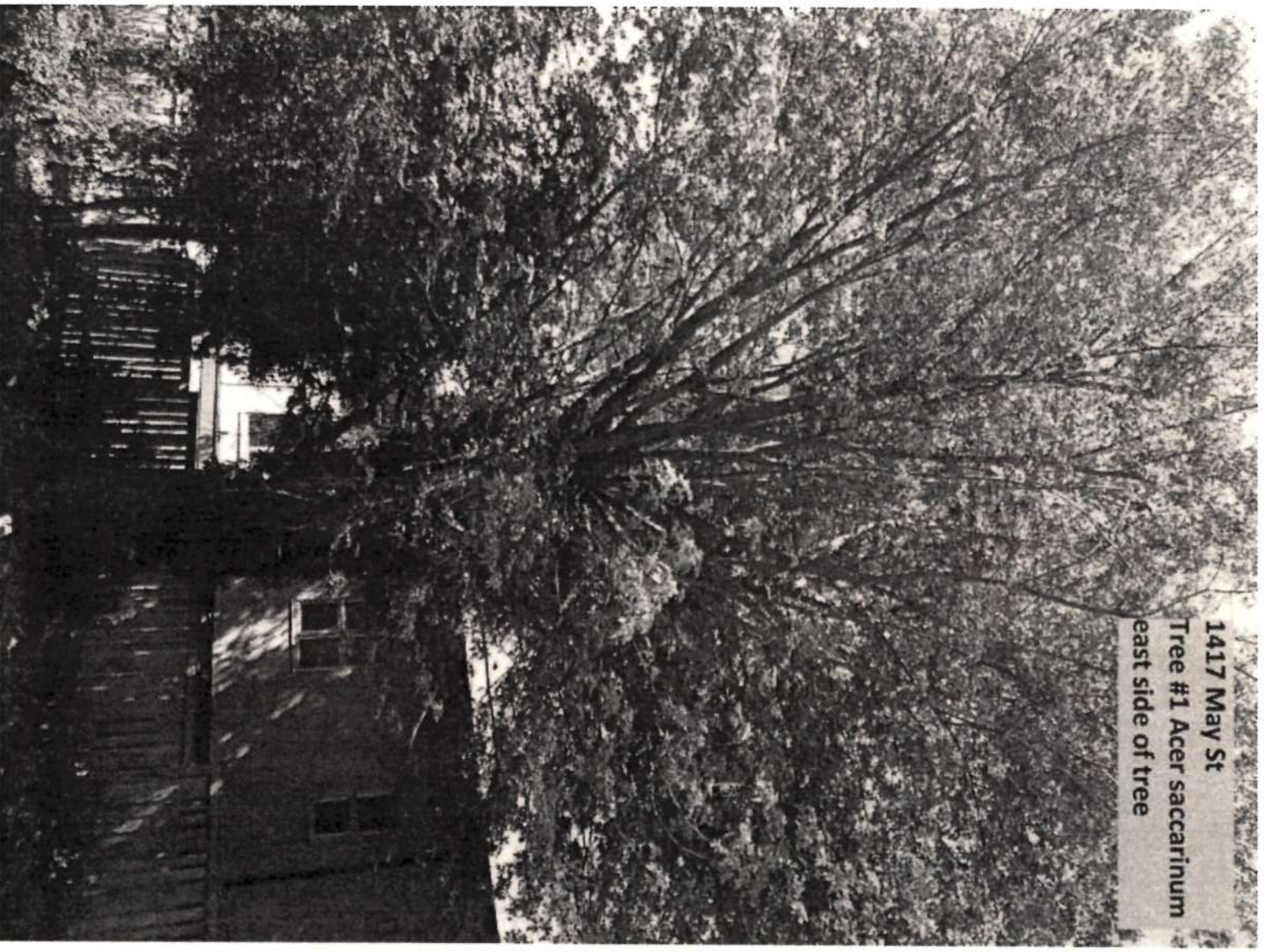


Installation Guide



From <http://acessterrain.com/product/geo-grid/>

Images



1417 May St
Tree #1 *Acer saccharinum*
east side of tree

Tree #2
Acer saccharinum
west side of tree



Tree 15105
Prunus blireana
east side of tree

