Nate Torenvliet – ISA Certified Arborist ISA# ON-1782A April 14, 2021

ATT: Mario Patitucci
adesso design inc.
218 Locke Street, 2nd floor
Hamilton, ON L8P 4B4

Subject: 40 – 70 Plains Road East Tree Preservation Plan

Mario,

This letter is to confirm that I have undertaken the field work and assessment for the existing vegetation on the abovementioned property. The assessment included all vegetation on site and within 3 meters of the property line measuring 15cm or greater Diameter at Breast Height (DBH). The evaluation has taken into consideration and documented the DBH, Canopy Spread, Health, and structural condition of all of the trees and the potential impact of the proposed development. I have also recommended to adesso design inc. the appropriate Tree Protection Zones (TPZ).

The information provided to adesso design inc. complies with the following Town of Oakville Bylaws and Guidelines:

- City Tree by-law 068-2013
- And those privately-owned trees protected by the Private Tree By-law 02-2020

The assessment presented for use on the Tree Protection Plan is only valid at the time of inspection. Tree risk assessments rely on identifying and assessing the structural condition of trees to determine weak points and failure potential. Assessment and management of tree risk is based on the science of biomechanics — the way trees grow for structural support and biological function. It must be understood that trees are dynamic, living organisms that are subject to internal and external changes over time.

Similarly, tree management relies on forecasting potential construction impacts and the ability of trees to withstand stresses due to compaction, excavation, filling and mechanical damage. The success of tree protection requires adherence to minimum standards as set forth by the municipality and best management practices by the contractor. The willingness of the owner to comply is also a mitigating factor.

We have made reasonable efforts to assess the overall condition of the trees on or adjacent to the subject property. No guarantee or warranty is offered, expressed or implied, that these trees or any of their parts will remain intact or in stable condition. We cannot predict or be held responsible for the behaviour of any tree regardless of its condition at the time of assessment.

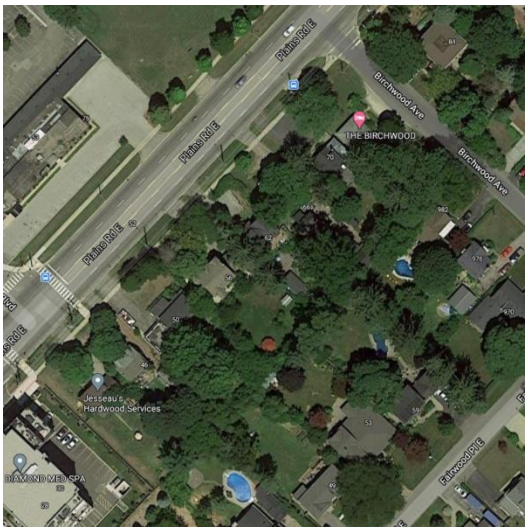
To reduce risk to trees, human life or property we recommend ongoing inspections and evaluations during construction. Post construction evaluation and remediation should also be considered to promote the long term health of trees.

Submitted by:

Nate Torenvliet
ISA Certified Arborist ON-1782A

ARBORIST REPORT

40-70 Plains Road East
City of Burlington, Ontario







April 14, 2021

Prepared For:
adesso design inc.
218 Locke Street South, 2nd Floor
Hamilton, ON L8P 4B4

Prepared By:
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Introduction

Adesso Design Inc., the project Landscape Architect, has requested the preparation of this arborist report for the planned site alterations at the sites of 40-70 Plains Road in Burlington, Ontario. The intention of the site alteration is to construct a residential apartment complex with underground parking.

This report provides an inventory and assessment of the 18 retained trees on and relating to the subject site and outlines their preservation requirements based on the site plans provided by Adesso Design Inc and in accordance with the current City of Burlington private and town tree By-laws.

This report is supplemental and should be understood in conjunction with related project plans prepared by Adesso Design Inc.

Method of Evaluation

Site observations were made on August 27, 2020 to evaluate and inventory all trees on and within 3m of the site. All trees on City land, and all trees >/=10cm dbh on private property were inventoried. The trees were visually assessed in this evaluation for overall health, structure, and vigor, as well as confirming their locations in relation to planned site alterations and ownership.

Tree inventory, as included in Appendix 1 is outlined according to the following categories:

- **Ownership** – indicates whether the tree is public, private, or shared ownership;
- **Species** – botanical and common names are provided for each tree;
- **DBH** – 'diameter at breast height' (1.37 m above grade) for each tree in centimeters;
- **Canopy Width (CW)** – an estimation of the average diameter of the tree canopy in meters;
- **Condition** – an assessment of the overall health and quality of the tree rated on an ascending scale of poor-fair-good;
- **Comments** – general comments and/or site observations;
- **Recommendation** – Preserve or remove relative to planned site alterations, and width of the Minimum Tree Protection Zone, in meters, as required by the City of Burlington's Tree Protection and Preservation (SPEC NO. SS12A). MTPZ is based on DBH and may vary according to existing site conditions.

Table 1: Tree Inventory Chart

Tree/Unit #	Owner	Common Name	Botanical Name	DBH (cm)	Canopy (m)	Condition	Comments	Recommendation
6	Private - Neighbouring site	Norway Spruce	*Picea abies*	13	3	Fair	Off Property	Preserve with 2.4m TPZ
7	Private - Neighbouring site	White Cedar	*Thuja occidentalis*	12, 5, 10	3	Fair	Off property, poor form - bald on north side.	Preserve with 2.4m TPZ
8	Private - Neighbouring site	White Cedar	*Thuja occidentalis*	8	3	Fair	Off property, poor form - bald on north side.	Preserve with 2.4m TPZ
9	Private - Neighbouring site	White Cedar	*Thuja occidentalis*	15, 20	3	Fair	Off property, poor form - bald on north side.	Preserve with 2.4m TPZ
10	Private - Neighbouring site	White Cedar	*Thuja occidentalis*	10, 15, 20	3	Fair	Off property, poor form - bald on north side.	Preserve with 2.4m TPZ
11	Private - Neighbouring site	White Cedar	*Thuja occidentalis*	15, 15, 22	3	Fair	Off property, poor form - bald on north side.	Preserve with 2.4m TPZ
12	Private - Neighbouring site	White Cedar	*Thuja occidentalis*	10, 15, 15	3	Fair	Off property, poor form - bald on north side.	Preserve with 2.4m TPZ
14	City of Burlington	Littleleaf Linden	Tilia cordata	62	8	Good	Off property.	Preserve with 4.2m TPZ
15	City of Burlington	Littleleaf Linden	Tilia cordata	45	8	Good	Off property.	Preserve with 3.0m TPZ
35	Private - Neighbouring site	Siberian Elm	Ulmus pumila	60	12	Good	Off property.	Preserve with 3.6m TPZ
37	Private - Neighbouring site	Siberian Elm	Ulmus pumila	38	10	Good	Off property.	Preserve with 2.4m TPZ
53	Private - Neighbouring site	Silver Maple	Acer saccharinum	96	26	Good	Off property.	Preserve with 6.0m TPZ
55	Private - Neighbouring site	Norway Maple	Acer platanoides	34	18	Good	Off property.	Preserve with 2.4m TPZ
57	Private - Neighbouring site	Norway Maple	Acer platanoides	42, 22	18	Good	Off property.	Preserve with 3.0m TPZ
59	Private - Neighbouring site	Norway Maple	Acer platanoides	46	16	Good	Off property.	Preserve with 3.0m TPZ
60	Private - Neighbouring site	Norway Maple	Acer platanoides	33	10	Fair	Off property.	Preserve with 2.4m TPZ
65	Private - Neighbouring site	Norway Maple	Acer platanoides	12, 10	6	Fair	Off property.	Preserve with 2.4m TPZ
67	City of Burlington	Japanese Tree Lilac	Syringa reticulata	24	5	Good	In city ROW.	Preserve with 2.4m TPZ

Discussion

Proposed Works

The intention of the site alteration is to construct a residential apartment complex with underground parking. Retained trees on and relating to the site will require protection measures for the proposed construction to occur.

Tree Ownership

- **Trees 14, 15, and 67:** are City-owned and located in the City ROW along Plains Road.
- **Trees 6 – 12, 35, 37, 53, 55, 57, 59, 60, 65:** are privately owned and located on neighbouring properties.

Tree Preservation

All (18) trees should be preserved according to City of Burlington requirements. **Minimum Tree Protection Zone** (MTPZ) measures according to City guidelines are required, as prescribed in Table 1, and shown in Appendix 2.

Conflicts Requiring Tree Injury

A Tree Permit is required for removal or injury of trees on private property within the Urban Planning Area Boundary of the City of Burlington, in accordance with the Private Tree Bylaw 20-2020.

Encroachment into the MTPZs will result in injury to the following trees listed below. Tree injury will require mitigative measures to increase survivability and ensure the long term health of each tree. Specific measures for each tree are outlined below, in addition to the recommendations and suggested measures following that will help ensure the health and survival of the preserved trees.

Tree #6 – Norway Spruce (*Picea abies*) DBH: 13cm

This tree is in fair condition and located on adjoining private property. Excavation for the planned underground parking will require encroachment into its TPZ.

Due to its small size and the fibrous roots of this species, this tree should tolerate the proposed TPZ encroachment with minor injury sustained. Injury mitigation measures for this tree should include:

- Roots larger than 2.0 cm in diameter that require cutting should be properly pruned by a certified arborist using clean hand tools only. Shovels, picks or other construction tools should not be used to prune roots.

A Permit to Injure is required, and neighbour permission is required as this tree is on neighbouring property.

Trees #7 – 12: White Cedar (*Thuja occidentalis*) DBH: 8 - 20cm

These trees are in fair condition and located on adjoining private property. Excavation for the planned underground parking will require encroachment into their TPZ.

Due to their small size and the fibrous roots of this species, these trees should tolerate the proposed TPZ encroachment with minor injury sustained. Injury mitigation measures for these trees should include:

- Roots larger than 2.0 cm in diameter that require cutting should be properly pruned by a certified arborist using clean hand tools only. Shovels, picks or other construction tools should not be used to prune roots.

Permits to injure are required, and neighbour permission is required as these trees are on neighbouring property.

Trees #14, 15, and 67: Littleleaf Linden (*Tilia cordata*)/ Japanese Lilac DBH: 62, 45, and 24cm

These trees are in good condition and located within the Plains Road ROW. Excavation for the planned underground parking and adjacent concrete surfacing will require encroachment into their TPZs.

Injury mitigation measures for these trees should include:

- Spread 5 – 10 cm thick layer of shredded pine mulch in the area of the MTPZ.
- Roots larger than 2.0 cm in diameter that require cutting should be properly pruned by a certified arborist using clean hand tools only. Shovels, picks or other construction tools should not be used to prune roots.
- Watering during dry periods is strongly recommended to alleviate construction stress.
- Deep root fertilizing should be provided in the fall seasons for three years after injury.

Permits to injure are required, and City approval is required as these trees are on City property.

Trees #35 and 37: Siberian Elm (*Ulmus pumila*) DBH: 60 and 38cm

These trees are in good condition and located on adjoining private property. Excavation for the planned underground parking will require encroachment into their TPZ.

These trees would be expected to retain over 70% of their root mass following excavation and should therefore tolerate encroachment injury reasonably well.

Injury mitigation measures for these trees should include:

- Roots larger than 2.0 cm in diameter that require cutting should be properly pruned by a certified arborist using clean hand tools only. Shovels, picks or other construction tools should not be used to prune roots.
- Watering during dry periods is strongly recommended to alleviate construction stress.

Permits to injure are required, and neighbour permission is required as these trees are located on neighbouring property.

Trees #53: Silver Maple (*Acer saccharinum*) DBH: 96cm

This tree is in good condition and located on adjoining private property. Excavation for the planned underground parking will require encroachment into its TPZ.

This tree would be expected to retain over 70% of its root mass following excavation and should therefore tolerate encroachment injury reasonably well. Additionally, the existing asphalt surfacing should already limit root growth on the construction side of the tree.

Injury mitigation measures for this tree should include:

- Roots larger than 2.0 cm in diameter that require cutting should be properly pruned by a certified arborist using clean hand tools only. Shovels, picks or other construction tools should not be used to prune roots.
- Watering during dry periods is strongly recommended to alleviate construction stress.

A Permit to Injure is required, and neighbour permission is required as this tree is located on neighbouring property.

Trees #55, 57, 59, 60, and 65: Norway Maple (*Acer platanoides*) DBH: 10 and 46cm

These trees are in fair to good condition and located on adjoining private property. Excavation for the planned underground parking will require encroachment into their TPZ.

These trees would be expected to retain over 70% of their root mass following excavation and should therefore tolerate encroachment injury reasonably well.

Injury mitigation measures for these trees include:

- Roots larger than 2.0 cm in diameter that require cutting should be properly pruned by a certified arborist using clean hand tools only. Shovels, picks or other construction tools should not be used to prune roots.
- Watering during dry periods is strongly recommended to alleviate construction stress.

Permits to injure are required, and neighbour permission is required as these trees are located on neighbouring property.

Recommendations

Included here are general recommendations and suggested measures that will help ensure the health and survival of the preserved trees during and, most importantly, after the construction process is complete;

- MTPZ's are suggested minimums, and as such it is recommended to keep all equipment and vehicular movement as far away from existing trees as possible;
- Any tree work such as trimming and branch removals should be carried out according to sound arboricultural practices, and should be performed by a certified arborist;
- All excavation near existing trees should be carried out in a sensitive manner – that is with keen attention to tree roots and soil movement. Large roots should be removed with a saw and by a certified arborist to minimize the damage to the tree as much as possible.

Recommendations to help reduce damage, and increase recovery success of preserved trees include:

- **Pre-construction:**
  - Erect plywood MTPZ hoarding along limit of construction/excavation and out to maximum MTPZ distance where possible.
  - Spread 5 – 10 cm thick layer of shredded pine mulch in the area of the MTPZ.

- **During Construction:**
  - Preferred methods of root-sensitive excavation include: airspade, directional boring, and hand digging.

- The zone of construction/excavation must be strictly enforced. No excavation or storage of equipment outside this area is allowed.
- Roots larger than 2.0 cm in diameter that require cutting should be properly pruned by a certified arborist using clean hand tools only. Shovels, picks or other construction tools should not be used to prune roots.
- Prolonged exposure of tree roots must be avoided. Shortly after and during excavation exposed roots should be kept moist with soil, mulch or irrigation.
- MTPZ barriers should be monitored regularly for integrity
- Watering during dry periods is strongly recommended to alleviate construction stress.

- **Post Construction:**
  - Preserved trees should be monitored regularly during their recovery period for signs of construction-induced stress, which may last 5 – 10 years post construction.
  - Broken or dead branches should be properly pruned, and soil decompaction and/or decontamination should be undertaken if recommended by the consulting arborist.

Minimum Tree Protection Zones (MTPZ's)

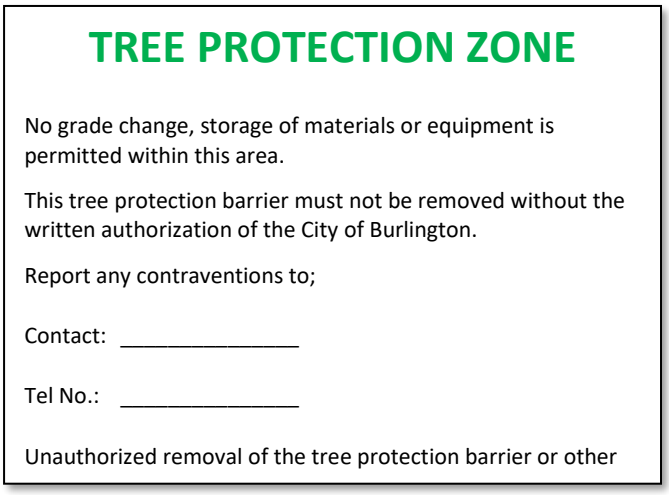
Prior to issuance of the Tree Permit, Site Alteration Permit, tree protection measures for all retained trees must be in place and must remain in place during the entire construction period. These protection measures must be in accordance with City standards.

Trees within or adjacent to a construction site must be protected during construction by means of a barrier installed in accordance with City standards and meet the following specifications;

- No unauthorized activities may take place within the MTPZ of a tree covered under any municipal permit process or agreement;
- If fill or excavated material must be temporarily located near the MTPZ, a wooden barrier shall be used to ensure no material enters the MTPZ;
- MTPZ fencing shall consist of framed construction or snow fencing, and be supported by solid wood framing;
- All MTPZ locations should be clearly marked on site project plans;
- An informational sign should be mounted on MTPZ hoarding and remain throughout the duration of the project. Example below.

Trees and MTPZs should be monitored regularly by a consulting arborist throughout the duration of the project.

Figure 1, Tree Protection Signage



Tree Risk

No trees on the site posed any unacceptable level of risk at time of assessment.

Permit Requirements

Pursuant to City Tree by-law 068-2013, and those privately-owned trees protected by the Private Tree By-law 02-2020, private tree removals, and MTPZ requirements on this site are subject to the conditions and approvals as required for a site plan approval.

General Limitations of Tree Assessment

The assessment presented in this report is only valid at the time of inspection.

Tree risk assessments rely on identifying and assessing the structural condition of trees to determine weak points and failure potential. Assessment and management of tree risk is based on the science of biomechanics — the way trees grow for structural support and biological function. It must be understood that trees are dynamic, living organisms that are subject to internal and external changes over time.

Similarly, tree management relies on forecasting potential construction impacts and the ability of trees to withstand stresses due to compaction, excavation, filling and mechanical damage. The success of tree protection requires adherence to minimum standards as set forth by the municipality and best management practices by the contractor. The willingness of the owner to comply is also a mitigating factor.

We have made reasonable efforts to assess the overall condition of the trees on or adjacent to the subject property. No guarantee or warranty is offered, expressed or implied, that these trees or any of their parts will remain intact or in stable condition. We cannot predict or be held responsible for the behaviour of any tree regardless of its condition at the time of assessment.

To reduce risk to trees, human life or property we recommend ongoing inspections and evaluations during construction. Post construction evaluation and remediation should also be considered to promote the long-term health of trees.

Submitted by:



Nate Torenvliet OALA CSLA
ISA Certified Arborist ON-1782A
Landscape Architect

Appendix 2: Site Photographs



Figure 1: Trees 6-13



Figure 2: Trees 14, 15.

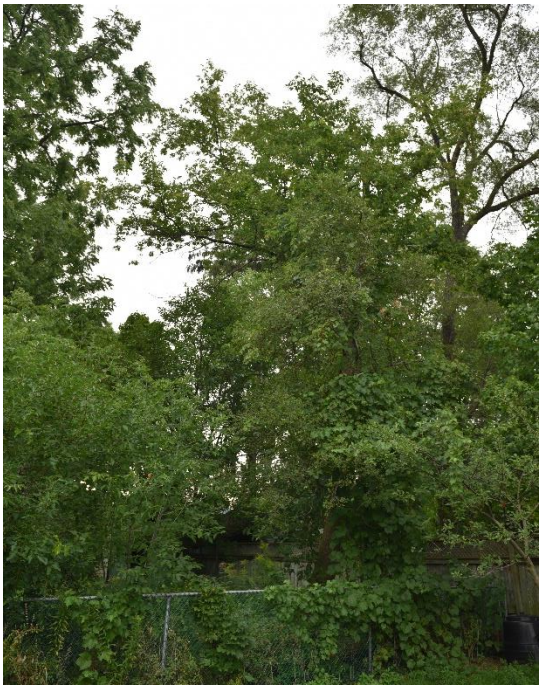


Figure 3: Trees 35, 37

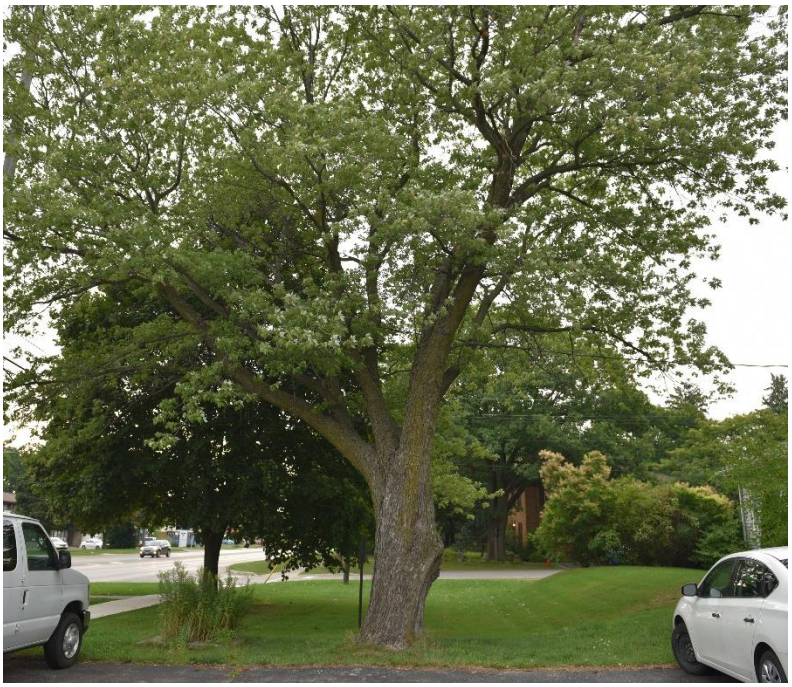


Figure 4: Tree 53



Figure 5: Trees 55-60



Figure 6: Tree 67