

1.0 **GENERAL**

1.1 **Scope**

- .1 This guideline addresses the protection and care of existing trees, shrubs and plantings that have been designated for retention on, or adjacent to, new building sites and landscape sites on the UBC Campus.

1.2 **Coordination**

- .1 Coordinate as early as possible in the conceptual and design development phases with UBCO Facilities Management.
- .2 Coordinate throughout construction phases with UBCO Manager of Custodial & Landscape Services regarding any site changes, potential damages or pruning required to existing trees to be retained.
- .3 Coordinate with UBCO Manager of Custodial & Landscape Services during construction regarding any impacts or potential damages to any existing shrubs or plantings designated for retention.

1.3 **Standards**

- .1 Tree and Development: A Technical Guide to Preservation of Trees During Land Development, Matheny and Clark.
- .2 Canadian Landscape Standard, current addition.

1.4 **Definitions**

- .1 The Critical Root Zone of a tree is an arboricultural rule of thumb for establishing minimum area for tree root protection. It is applied in this guideline for determining Tree Protection Zones and location of tree protection fencing (see 2.1.1 and Fig. 1 below).
- .2 Tree Protection Zone is equivalent to the Critical Root Zone and is defined and enclosed by the Tree Protection Fencing for an individual tree designated for tree preservation and protection.

1.5 **Related Work:**

- .1 Section 32 91 00 Planting Preparation
- .2 Section 32 93 00 Plants
- .3 Section 32 93 05 Relocation of Existing Plant Material

2.0 MATERIALS AND DESIGN REQUIREMENTS

2.1 Tree Relocation and Protection Plans

- .1 For trees to be relocated and/or retained on site, the Project Landscape Architect should provide Tree Protection/Relocation Plans indicating surveyed grades at base of trunks, DBH, extents of drip lines and location of Tree Protection Fencing. Specifications and cross-sectional details for applicable preservation strategies including, but not limited to, requirements covered in this general guideline must be included in construction documents.

2.2 Consulting Arborists and UBCO Manager of Custodial & Landscape Services

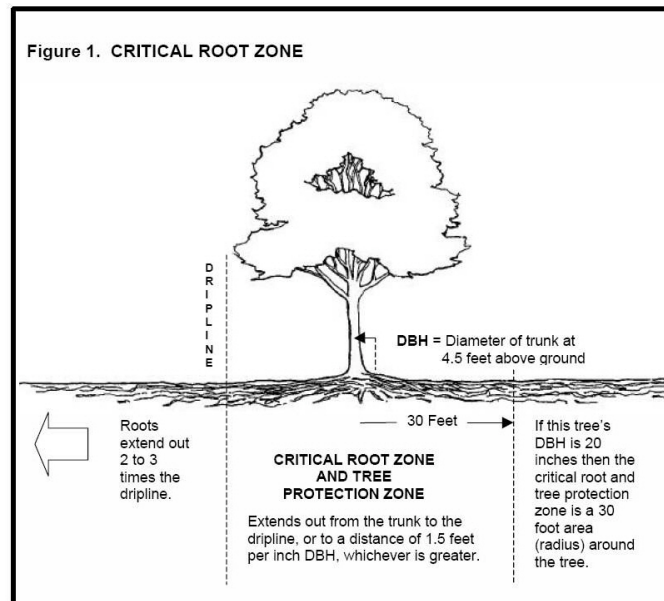
- .1 Where significant heritage trees, or complex tree preservation strategies are anticipated, UBCO recommends that a project-specific, ASCA Registered Consulting Arborist be retained as an integral member of the design development team. The Consulting Arborist is to advise on specific pre- and post-development strategies or to provide expert analysis, details and/or specifications required to optimize tree retention and preservation.
- .2 The UBCO Manager of Landscape & Building Services will be UBCO's representative on Campus and will advise on related Campus tree issues with consultants, project managers and site supervisors as required.

2.3 Approvals, Inspections and Supervision

- .1 The Campus Landscape Architect, Project Landscape Architect, Consulting Arborist, and UBCO Manager of Landscape & Building Services shall coordinate as early as possible in the project to identify trees to be retained, protected, transplanted or removed and clearly establish tree preservation measures and significant design criteria.
- .2 Contractor to meet with Project Landscape Architect, Consulting Arborist, and UBCO Manager of Custodial & Landscape Services as required for review of Tree Protection Plan prior to any fencing or hoarding on site.
- .3 During the construction phase, the Contractor shall contact UBCO Manager of Custodial & Landscape Services immediately regarding any changes impacting tree preservation on site or to trees immediately adjacent to site boundary.
- .4 Tree Protection Fencing must be approved by the UBCO Manager of Custodial & Landscape Services prior to the commencement of site work.

2.4 Tree Protection

- .1 Tree Protection Fencing must be erected before the onset of construction in relationship to each tree's Critical Root Zone (see fig.1 below). To be as follows:
 - .1 To be orange snow fencing securely fastened to metal stakes or a 50 x 100 mm (2" x 4") wood frame with uprights driven into the ground. Fencing will be 1.8m (4') in height and extend to at least the dripline, or to a distance of 1.0m (1.5') of DBH (diameter breast height) radius for every 1.8cm (1") of trunk diameter at DBH (diameter breast height), whichever is the greater (see fig. 1 below).
 - .2 Tree Protection Fencing for woodlots or groups of plantings, shall be placed at least 1.0 meter beyond the dripline of outer canopies.



- .2 If site constraints or tree characteristics make the above specifications impractical or impossible, either site design or building layout must be revised, or an alternative fencing layout and/or trunk-root protection strategy must be developed and approved in consultation with the Project Consulting Arborist or UBCO Manager of Custodial & Landscape Services prior to initiation of construction and hoarding activities.

2.5 Tree Protection Signage

- .1 Tree Protection Fencing should be signaged at reasonable intervals to discourage hoarding, grade changes and heavy equipment intrusions into Tree Protection Zones. Use either UBC standard signage shown below or an approved equivalent. For significant, heritage or high value trees, signage may be required to display appraised tree value.



2.6 Root Curtain

- .1 A temporary Root Curtain shall be required to cover exposed roots along the cut face of excavations made adjacent to Tree Protection Zones. The Root Curtain is intended to minimize root damage and soil erosion and conserve moisture within the soils and roots. The Root Curtain is to consist of heavy wire mesh lined with burlap and supporting posts.

2.7 Tree Mulch and Antidesicant

- .1 Based on scope of site disturbance and/or adverse drought conditions, the Consulting Arborist or UBCO Manager of Custodial & Landscape Services may require that mulch or antidesicant shall be applied to trees either at the beginning or at any time during the construction process.
- .2 Tree chip mulch, including parts of the leaf, twig, bark and stem wood should be free of pests or diseases and should not contain Western Red Cedar or Black Walnut.
- .3 Antidesicant shall be specified by the Project Consulting Arborist UBCO Manager of Custodial & Landscape Services, and applied by a Certified Arborist according to manufacturer's recommendations.
- .4 Provide a sample of the proposed tree mulch and source, and/or antidesicant for approval by UBCO Manager of Custodial & Landscape Services.

2.8 Site Work

- .1 All underground utilities, drainage and irrigation lines shall be routed outside the Tree Protection Zone. If utility lines must traverse the Tree Protection Zone, they shall be air-spaded or tunneled under the tree at depths and distances recommended by Project Arborist.
- .2 Any pruning required prior to or during construction must be performed by a Certified Arborist.
- .3 Any injury or tree damage during construction must be reported immediately to UBCO Manager of Custodial & Landscape Services who will recommend remedial actions as required to be carried out.
- .4 Any grading, construction or other work that is expected to encounter tree roots must be monitored by the Project Consulting Arborist or UBCO Manager of Custodial & Landscape Services.
- .5 Erosion control devices such as silt fencing, debris basins and water diversion structures shall be installed to prevent siltation and/or erosion within the Tree Protection Zones.
- .6 Any roots damaged during construction shall be exposed to sound tissue and cut cleanly with proper pruning equipment. Under no circumstances shall roots be severed by unqualified personnel using excavation equipment or inappropriate tools.
- .7 If temporary access roads must pass over the root area of trees to be retained, a road bed of 6"-10" wood-chip mulch with a supportive mat of boards or other rigid material shall be created to protect the roots and soil. The road bed shall be replenished as necessary to maintain a 6-10" depth. Consult with Consulting Arborist or UBCO Manager of Custodial & Landscape Services for site-specific recommendations.

- .8 Spoil from trenches, building basements, or other excavations shall not be placed within the Tree Protection Zones.
- .9 No burn piles or debris pits shall be placed in the Tree Protection Zone. No ashes, drywall concrete tailings or other debris or garbage may be dumped or buried within the Tree Protection Zone.

2.9 Care and Treatment of Retained Trees

- .1 During the construction process, the Contractor will ensure adequate watering is provided within the Tree Protection Zone of each tree so designated. The Contractor will consult with UBCO Manager of Custodial & Landscape Services for recommendation on a watering schedule.
- .2 Contractor will exercise due diligence, stop work immediately and contact Project Landscape Architect, Consulting Arborist, and/or UBCO Manager of Custodial & Landscape Services should any unforeseen site changes impact the success of tree preservation on site.

*****END OF SECTION*****