

British Columbia Landscape Standard

7th Edition

Published by:

**British Columbia Society
of Landscape Architects**

**British Columbia Landscape
and Nursery Association**

The British Columbia Landscape Standard

Published jointly by:

British Columbia Society of Landscape Architects
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Table of Contents

Preface	i
Introduction	ii
A Guide to the Use of This Standard	iv
1 General.....	1
2 General Requirements	11
3 Site Preparation and Protection of Existing Site Elements.....	21
4 Grading and Drainage	35
5 Irrigation Systems	43
6 Growing Medium.....	59
7 Lawns and Grass	73
8 Turfgrass Sod.....	82
9 Plants and Planting.....	91
10 Mulching	110
11 Landscape Over Structures	115
12 Container Grown Plants	123
13 Establishment Maintenance	141
14 Landscape Maintenance	153
15 Interior Plantscapes	192
16 Integrated Pest Management and Plant Health Care	198
Appendix A: Tables & Figures	213
Appendix B: Glossary	215
Appendix C: Reference Publications	225
Appendix D: Winter Damage to Plant Material and Related Issues.....	229
Appendix E: Integrated Pest Management (IPM) and Integrated Vegetation Management (IVM).....	232
Appendix F: Index.....	235

Preface

The British Columbia Landscape Standard

7th Edition, Published

The 7th edition of the BC Landscape Standard has been prepared by a joint committee of the BC Society of Landscape Architects (BCSLA), and the BC Landscape & Nursery Association (BCLNA). Since its initial publication in 1982, the BC Landscape Standard has evolved and expanded with the voluntary efforts of a wide range of individuals and organizations. The committee wishes to thank everyone who has contributed their time to offer comments and criticisms, and help with the research and organization of the 7th edition as well as previous editions of this Standard.

The purpose of this Standard is to document acceptable landscape construction practices for the Province of British Columbia as agreed upon by the BCSLA, the BCLNA, government authorities and other industry associations. This Standard sets guidelines and makes recommendations for all major aspects of the landscape industry. It is intended that Landscape Architects, Parks Departments, and all other specifiers of landscape work in the province will refer to this Standard as the basis for their specifications. Acceptance of this Standard has grown with each past edition allowing for more uniform enforcement of performance levels.

The revised edition has allowed for thorough review of all sections of this Standard by the BCSLA and BCLNA Landscape Standard Committee. The experience of the previous editions has proven that the document reflects the “best practices” of the industry and it is hoped that the additions and improvements to this edition will assist in gaining further support of this Standard.

Some of the highlights of the 7th edition are:

- Expanded glossary and update of reference publications
- Additional Appendices
- Reformatting for ease of reading
- Addition of 2 new Sections: Interiorscaping, and Integrated Pest Management and Plant Health Care

Comments, criticisms and suggestions for improvements to this Standard are welcomed and can be forwarded to the Landscape Standard Committee, in care of either:

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Endorsements

The 7th edition of the BC Landscape Standard is endorsed by the BC Society of Landscape Architects and the BC Landscape & Nursery Association.

Introduction

Standards and Specifications

This document is not a Specification. The Webster dictionary defines a “Specification” in part as a “...detailed, precise statement of legal particulars...” related to a particular item; and defines a “Standard” in part as “...constituting or conforming to a Standard established by custom or law...widely recognized as acceptable...”

This Standard

This Standard has adopted existing trade standards wherever possible and has, in addition, documented existing successful practices. It has therefore become a widely accepted reference for normal, acceptable performance in the landscape industry of British Columbia. But as it is a standard, it has not necessarily been written with detailed and precise wording. Therefore the use or representation of this document as a Specification for landscape work is not recommended.

Applicable Federal and Provincial legislation is referenced to help ensure that all landscape work is carried out in compliance with applicable legislation.

As with many published standards, this Standard result’s from the effort of a group of manufacturers, producers, and trades professionals seeking simplification and efficiency or the assurance of a reasonable level of quality. This Standard has two basic objectives:

1. to establish minimum levels of quality that may be recognized by the Owner, User, Specifier, Approver or Buyer of a material, product, plant, design, system or installation procedure and;
2. to standardize, or simplify such variables as dimensions, varieties or other characteristics of specific products or plants in order to minimize variation in manufacture, production and/or use.

Living Material

In contrast with most construction and product standards, this Standard deals primarily with living materials and products.

First, many of the materials and products utilized are not manufactured, rather they are organic elements present on sites where the Work will take place or they are produced by the management of organic components. These materials and products are therefore more widely varied in structure and not as easily quantified as manufactured products. This Standard strives to standardize as far as possible definitions of materials and products and their acceptable, recognizable levels of quality.

Second, and most important, handling of these living materials and products must be done with a full understanding of their vital nature. Mishandling can destroy the structure of a soil built up over centuries of natural processes; a lapse in providing for the needs of plants can cause irreparable damage. Recognition of these factors is integral to this Standard.

A Flexible Document

This Standard is designed to be capable of change and expansion. It will be reviewed regularly in the light of changes in trade practices, emerging scientific findings, evolving techniques, new products, municipal bylaws, and industry user comments. Amendments, supplements, and new sections will be published, to keep this Standard as current and effective as possible.

Preview Only

A Guide to the Use of This Standard

Administration Recommendations

This Standard does not attempt to distribute responsibility for enforcement of its provisions, or to predetermine methods of use by Specifiers, Municipalities or other Users. This Standard can be readily applied by a variety of Users through the referencing of, or the adoption of, appropriate sections. If necessary, procedures based on Section 1 General, and Section 2 General Requirements, may also be adopted. Determining the suitability of this Standard for each User's purposes remains the responsibility of that User.

A written Standard cannot cover the specific requirements of all projects. This Standard is therefore intended to set a level of quality that shall be equal to or bettered in the construction documents for each project. Where specifications set out in the Working Documents conflict with this Standard in order to meet unique site conditions or requirements, or where they exceed those set out by this Standard, the Working Documents shall govern the Work.

Format

The layout and language of this Standard are based on guidelines from the Canadian Standards Association for compatibility with widely recognized published standards.

For ease of cross-referencing by construction specifiers, individual sections are in the universal three-part format: General, Products, and Execution.

1 General

1.1. *Scope of This Standard*

1.1.1 This Standard addresses work that is conventionally termed as landscaping. 'Landscaping' for this Standard has been outlined as work described by but not limited to the following sections:

- .1 Site Preparation and Protection of Existing Site Elements
- .2 Grading and Drainage
- .3 Irrigation Systems
- .4 Growing Medium
- .5 Lawns and Grass
- .6 Turfgrass Sod
- .7 Plants and Planting
- .8 Mulching
- .9 Landscaping Over Structures
- .10 Container Grown Plants
- .11 Establishment Maintenance
- .12 Landscape Maintenance
- .13 Interior Plantscapes
- .14 Integrated Pest Management and Plant Health Care

1.1.2 This Standard also applies to the areas of administration, planning, design, and review that affect the above sections.

1.1.3 While not specifically dealt with in this Standard, there are many other areas of work considered to be landscaping that may have their own standard and may be covered by municipal bylaws, or will be dealt with in future editions or addenda.

The intention of this Standard applies to landscape related items and should be considered such.

Items include, but are not limited to:

- .1 landscape lighting
- .2 paving (unit pavers, natural stone paving, decorative paving, etc.)
- .3 outdoor structures and other hardscape elements (arbours, pergolas, trellises, decks, play equipment, retaining walls, fencing, water features), and site furnishings.

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2 General Requirements

2.1. General

2.1.1 Planning and Design

- .1 Professionals having expertise appropriate to the needs of each project should be engaged in the planning and designing of the landscape work. Professionals who might be engaged include, but are not limited to:
 - .a Landscape Architects
 - .b Certified Horticulturist (CLD, CLP, CHT)
 - .c Urban Foresters
 - .d Certified Arborists
 - .e Environmental Engineers or Consultants
 - .f Soils Specialists
 - .g Agronomists
 - .h Integrated Pest Management Specialists
- .2 The planning, design and documentation of the landscape Work shall be such that all municipal bylaws, legislation, applicable codes, regulations and standards, including this Standard, can be met during landscape construction and maintenance phases, and upon completion of the Work. This includes horticultural element preservation, protection and replacement bylaws, as well as invasive species control bylaws.
- .3 The presence of invasive species existing on the site and/ or the potential for the establishment of invasive species should be assessed by a qualified professional and the findings should be reflected in the preliminary planning and design development.
- .4 The potential for retaining existing site elements should be thoroughly examined during preliminary assessments and planning for all sites. Preliminary planning and subsequent design development should include and be based on the findings of a review of existing site elements by a qualified professional.
- .5 The Owner shall be responsible for ensuring that the provisions of Section 2.1.1 are met, and shall ensure that its consultants, agents and contractors for the Work comply with all municipal bylaws, legislation, codes, regulations and standards, including this Standard.

2.1.2 Changes and Substitutions

- .1 The Authority shall require that all substantial changes in design, materials, or existing conditions from those shown in the approved Working Documents be reported in writing to the Authority, and shall be resolved in a manner not detrimental to the quality or intent of the design or the Work.

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3 Site Preparation and Protection of Existing Site Elements

3.1. General

3.1.1 Intent

The intent of this Section is to ensure that the site to be developed is prepared in such a manner that it meets the needs of the landscape plan, adheres to all local or municipal bylaws and ensures worker and public safety.

It is also intended that prior to commencing work all horticultural and non-horticultural elements contained within the site are assessed for removal, or in the case of preservation, are subsequently managed in order to preserve or enhance their pre-construction condition. The objective for elements designated for retention and scheduled for relocation is that they are handled appropriately to ensure a successful move.

It is expected that horticultural elements deemed noxious or invasive in their locale be brought under a reasonable measure of control, based on specifications provided, and with management practices that reflect the local or municipal bylaws.

3.1.2 Related References, Standards and Legislation

- .1 WorkSafeBC – Occupational Health and Safety Regulation www.worksafebc.com
- .2 Municipal Bylaws: Vegetation management for invasive plants and contaminated soils
- .3 BC Heritage Conservation Act
- .4 BC Wildlife Act, section 34 - Birds, nests and eggs

- .5 *Land Development Guidelines for the Protection of Aquatic Habitat*, Fisheries and Oceans Canada, September 1993
- .6 International Society of Arboriculture, *Best Management Practices: Trees and Building Sites, Management of Trees in Proximity to Buildings*. www.isa-arbor.org
- .7 Municipal Tree Preservation/Protection Bylaw
- .8 BC Ministry of Environment
- .9 *Trees and development: A Technical Guide to Preservation of Trees During Land Development*, Nelda Matheny & James R. Clark, International Society of Arboriculture, Champaign, IL, 1998
- .10 Canadian Environmental Assessment Act
- .11 Canadian Environmental Protection Act
- .12 Weed Control Act (Federal and Provincial)
- .13 BC Ministry of Agriculture and Lands

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4 Grading and Drainage

4.1. Grading General

4.1.1 Intent

Grading provides suitable topography for buildings and other land use purposes. It controls surface run-off and shall be designed to minimize erosion and sedimentation both during and after construction.

4.1.2 Related References, Standards and Legislation

- .1 *Canadian Master Specification*, Construction Specifications Canada
- .2 *National Master Specification*, Construction Specifications Canada

4.1.3 Grading

- .1 In this Standard, 'grading' refers to both the finish and subgrade conditions.

- .2 Grading should take place when soils are dry preventing damage to soil structure.

4.1.4 Subgrades

- .1 Subgrades are achieved through rough grading and filling. Subgrading provides a smooth, solid soil base that will allow for the placing of growing medium to appropriate specified depths while meeting all the requirements of applicable building codes.
- .2 Finished subgrades or transitions of subgrade surfaces shall be free of irregular surface changes, debris and foreign materials, and provide for growing medium depths shown in Table 6-5: Minimum Depths of Growing Medium.
- .3 Subgrades shall be such that ponding or pooling of water does not occur.

4.1.5 Tolerances

- .1 Tolerances for finish grades may be specified in the contract documents and are usually use dependant.
- .2 Accuracy of subgrade elevations should be within the tolerances shown in Table 4-1: Tolerances for Subgrade Elevations in Soft Landscapes, unless otherwise specified.

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5 Irrigation Systems

5.1. General

5.1.1 Introduction

This Section is based on the *Standards for Landscape Irrigation Systems*, January 2008 Edition, by the Irrigation Industry Association of BC (IIABC).

The BC Landscape Standard Committee has inserted recommendations with regard to additional requirements. These recommendations are by the BC Landscape Standard Committee, not IIABC, and all are italicized and clearly identified. The recommendations address:

- .1 site and element protection
- .2 scheduling

- .3 safety
- .4 water for irrigation
- .5 documentation and reporting
- .6 protection of growing medium during irrigation installation
- .7 documentation and reporting,
- .8 maintenance of irrigation systems
- .9 general product requirements
- .10 controllers
- .11 valve boxes
- .12 backfill material
- .13 coordination of irrigation system with planting layout
- .14 adjustment
- .15 settlement of irrigation trenches

5.1.2 Intent

This Section has been developed by the Irrigation Industry Association of British Columbia to reflect the current minimum Standards for the industry and to provide guidance to its members as a benchmark for their performance. The principles embodied in these Standards apply to all landscape irrigation systems but the special circumstances of some owners or installations may require the development of more customized specifications related to the project.

The use of these Standards is intended to encourage efficient and responsible water management and result in irrigation systems that are economical, practical, and sustainable.

[FIRST PAGE OF CH. 5 SHOWN ONLY]

6 Growing Medium

6.1. General

6.1.1 Intent

The intent of this Section is to act as a guide in meeting the growing medium needs of various applications in the installation of turf areas, planting beds, aquatic and restoration areas, container planters and green roofs while taking into account a variety of required maintenance levels. As such, this Standard sets out a range of measurable physical and chemical properties as being acceptable in a growing medium.

Before adopting this Standard for Growing Medium, the growing medium should be reviewed by the Landscape Architect, or soils specialist assigned to the project as the selection of planting medium should respond to regional climatic and geographic conditions as well as the demands of the proposed planting.

6.1.2 Related References, Standards and Legislation

- .1 *Canadian Master Specification*, Sections: Top soil Placement and Grading, Top soil Placement for Vegetated Roofs.
- .2 *The Canadian System of Soil Classification*, 3rd edition, 1998.
- .3 BC Ministry of Agriculture and Lands

6.1.3 Growing Medium

- .1 Growing medium consists of any on-site or imported soil, soil substitute, or mixture whose chemical and physical properties fall within the ranges set out by this Standard or by specification for identified application and Maintenance Level as per Section 14 Landscape Maintenance.
- .2 Growing medium should be certified as to its origin and be virtually free of invasive plant seeds, their reproductive parts and roots.
- .3 Growing medium shall be virtually free of plants or their roots, building materials, invasive or noxious plants and their reproductive parts, non composted wood, wood waste, insect pests, plant pathogenic organisms, chemical pollutants or substances at levels toxic to plants, and other extraneous materials that detract from the desirable physical and chemical properties required for landscaping purposes.
- .4 Death of plants during the first year that can be attributed to plant pathogenic organisms or toxic materials in the growing medium may be an indication that the growing medium did not meet this Standard's requirements at the time of installation, and may result in a requirement that the contractor remove and replace affected plants and faulty growing medium.

Excessive weed and invasive plant growth (as determined by the maintenance guide in Section 14 Landscape Maintenance, for the specified level) in a growing medium during

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7 Lawns and Grass

7.1. General

7.1.1 Intent

Establishment of grass can occur in a range of conditions from highway and industrial use to fine residential lawns. The intent of this Section is to provide guidelines for the successful installation and basic maintenance needs of grass seed in various lawn area classes.

Both Section 7 Lawns and Grass and Section 8 Turfgrass Sod are intended to be read, and interpreted, in conjunction with each other and with and all other sections of this Standard.

7.1.2 Related References, Standards and Legislation

- .1 Federal Seed Act
- .2 Federal Fertilizer Act

7.1.3 Lawns and Grass Classes

The following three classes and corresponding standard characteristics are recommended for identifying and designating the standard required for a particular project or area contained within a landscape site. These class levels are to act as minimum standards.

FIRST PAGE OF CH. 7 SHOWN ONLY

8 Turfgrass Sod

8.1. General

8.1.1 Introduction

This Section was prepared by a joint committee of the BC Society of Landscape Architects, the BC Landscape & Nursery Association, and Western Canada Turf Association.

8.1.2 Intent

The intent of this Section is to state standard requirements for quality grades and other classifications of grass types in turfgrass sod so that the desired quality can be specified, defined and installed for each application.

Both Section 7 Lawns and Grass and 8 are intended to be read, and interpreted, in conjunction with each other and all other sections of this Standard.

8.1.3 Related References, Standards and Legislation

- .1 Federal Seed Act
- .2 Federal Fertilizer Act
- .3 Provincial Weed Control Act
- .4 *Guideline Specifications to Turfgrass Sodding, 2006*, Turfgrass Producers International

8.1.4 Turfgrass Quality Grades

- .1 This Standard divides turfgrass sod into the following quality grades:
 - .a Nursery (Cultivated) Turfgrass Sod
 - .b No. 1 Premium Grade
 - .c No. 2 Standard Grade
 - .d No. 3 Commercial Grade
 - .e Field (Pasture) Turfgrass Sod
- .2 Reference Section 8.2 Products for quality requirements for each grade

8.1.5 Specifying and Identifying Turfgrass

- .1 Turfgrass sod should be specified by reference to the quality grades in this Standard, and should be fully specified with regard to the following characteristics:
 - .a Mix of Grass Types:
 - .i Unless otherwise specified, the mix of grass species in the sod shall be the producer's standard mix and shall meet the requirements of this Standard for the quality grade appropriate to the location.

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9 Plants and Planting

9.1. General

9.1.1 Intent

The intent of this section is to provide recommendation regarding handling and planting practices for all plant material and is intended to be used in conjunction with all other sections of this Standard. This Standard recognizes trees as a uniquely important component of the landscape because of their environmental, social and economic benefits.

9.1.2 Related References, Standards and Legislation

- .1 Canadian Nursery Landscape Association, *Canadian Standards for Nursery Stock*, current edition
- .2 ANSIA30: *Tree Care Operations - Tree, Shrub, and Other Woody Plant Maintenance - Standard Practices*
- .3 *Principles and Practice of Planting Trees and Shrubs*, Gary W. Watson & E.B. Himelick, current edition
- .4 PLANET, *Installation; Landscape Training Manual for Installation Technicians*, current edition
- .5 PLANET, *Maintenance; Landscape Training Manual for Maintenance Technicians*, current edition

9.1.3 Plant Material

- .1 The requirements of the *Canadian Standards for Nursery Stock* shall apply except as and where modified by the requirements of this Standard or Authority specification.
- .2 The Contractor shall be responsible for ensuring that plant materials delivered to the site are true to the specification of the Working Documents.
- .3 There shall be no substitutions of plants without prior written approval from the Authority, Owner or Reviewer. Note: there may be instances where it may be

necessary to obtain approval of substitutions from the municipality or other Authority.

9.1.4 Transporting Plants to Site

.1 All Dormant Plants

- .a Roots of plant material should be protected, at all times, from frost, wind and sun.
- .b Where trees are being transported, roots should be protected with wet straw or other suitable moisture retaining material over the roots.
- .c Where plant material is transported via refrigerated truck, temperatures shall be maintained as uniformly as possible, and at all times, to prevent frost damage to roots. Appropriate temperature range shall be between 0°C (32°F) and 10°C (50°F).

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10 Mulching

10.1. General

10.1.1 Intent

- .1 Mulch is a desirable, aesthetic ground cover treatment applied to planting beds at the time of planting and as a part of an ongoing maintenance and soil conservation program. Mulch is not intended to replace vegetation as a sole ground cover, nor is it to be used as a growing medium in landscape applications.

10.1.2 Objectives of Mulching

- .1 Protect the soil from structural damage that results from the effects of winter freezing.
- .2 Insulate growing mediums and rootballs from extreme temperature fluctuations by maintaining uniform soil temperatures.
- .3 Discourage the germination and growth of weeds and invasive plants, and make their removal easier.

- .4 Reduce compaction, crusting of soil surfaces, erosion of soil and leaching of nutrients resulting from persistent, heavy rains
- .5 Reduce growing medium moisture loss by minimizing evaporation.
- .6 Provide a source of organic matter for the soil as it decays thus improving soil structure and tilth.
- .7 Aesthetically improve or augment the landscape by providing a neater and more finished appearance through a cover of uniform colour and interesting textural component.
- .8 Protect trees in lawn areas from damage from mowers or line trimmers.

10.1.3 Mulching materials shall be virtually free of invasive and noxious seeds and reproductive parts, soil, stones, salts or other harmful chemicals, or other extraneous matter that would prohibit seed germination or the healthy development of plant material.

10.2. Products

10.2.1 Mulches

- .1 Mulches can be divided into two basic categories: organic and inorganic.
 - .2 Organic mulches are composed of plant or animal residues and decompose over time and may improve the structure or nutrient value of the soil.
 - .3 Inorganic mulches are natural or man-made materials that do not readily decompose and are not beneficial to plants.

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11 Landscape Over Structures

11.1. General

11.1.1 Intent

Landscape over structures refers to landscaping on roof slabs or in contained planters. Depending on the environmental and aesthetic intent of the design, roof slab landscapes may be categorized as intensive or extensive roof top designs, or green roofs. Typically, intensive roof top designs provide for physical access and site

use whereas access to extensive green roofs is limited to maintenance purposes. This section deals exclusively with intensive green roofs. Extensive green roofs are specifically addressed in the BC Standard for Extensive Green Roofs, current edition.

The intent of this section is to provide guidelines regarding design considerations for plant selection, structural components, growing medium, drainage and irrigation, and maintenance standards in the development of landscapes over structures.

11.1.2 Related References, Standards and Legislation

- .1 *BC Standard for Extensive Green Roofs*, current edition
- .2 American Society for Testing Material (ASTM)
- .3 Municipal By-Laws and Zoning

11.1.3 Qualified Professional

- .1 All designers and installers of landscapes over structures shall be skilled in the tasks being performed and may include, but not be limited to the following:
 - .a Landscape Architects
 - .b Manufacturer of Green Roof Materials or Representative
 - .c Architects
 - .d Envelope and Structural Engineers
 - .e Certified Horticulturist (CLD, CLP, CHT)
 - .f Landscape Horticultural Journeyman with a Certificate of Qualification by the Industry Training Authority of BC
 - .g Soil Specialists
 - .h Environmental Consultants
 - .i Roofing Contractors and Manufacturers

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12 Container Grown Plants

12.1. General

12.1.1 Introduction

This section was developed by a committee of the Grower's Group of the BC Landscape & Nursery Association in cooperation with the BCSLA / BCLNA Joint Landscape Standards Committee.

This Section is to be used in conjunction with all other sections of this Standard.

Canadian Standards for Nursery Stock requirements shall apply except as and where modified by the requirements of this Section.

12.1.2 Intent

The purpose of this Section is to set out standard methods of measurement and grading for container-grown plants, as accepted both in the Nursery Trade and by Landscape Architects.

12.1.3 Related References, Standards and Legislation

- .1 Canadian Nursery Landscape Association, *Canadian Standards for Nursery Stock*, current edition
- .2 American Nursery & Landscape Association, ANSI Z60.1 - 2004, *American Standard for Nursery Stock*

12.1.4 Requirements for Container Grown Plants

- .1 Plants shall have a well-established root system, reaching the sides of the container to maintain a firm ball when removed from the container, but shall not be root bound.
- .2 Plants in containers shall not be grown in the same class container for longer than two (2) growing seasons, unless species allows otherwise, and providing that the root system does not become root bound, does not develop girdling roots, or other characteristics detrimental to normal plant development.
- .3 At the time of potting, all containers shall be filled to within 2.5cm (1in) of the top of the container.
- .4 Decomposition and settling may reduce the depth of growing medium while the plant is in the container, however once potted no growing medium should be added or be removed from the container.

12.1.5 Recommendations

- .1 Specimen plants should be identified in the plant list. Plants designated as "Specimen" or plants having a unique desirable character should be pre-selected and may be pre-purchased or incorporated by other special agreements.

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13 Establishment Maintenance

13.1. General

13.1.1 Intent

The intent of an establishment maintenance program is to implement horticultural sound practices into newly installed landscapes for a specified period of time to ensure the chances of long-term success of the planting or work.

The objective is to foster adaptation of plants to a new site obtaining the desired effect from the planting and design while reducing the rate of failure and unnecessary work associated with improper establishment maintenance practices.

This section is not meant to be, nor is it intended to replace a maintenance contract, and shall be used in conjunction with all other sections of this Standard.

Establishment maintenance procedures should be applied to all areas of planting that have not completed a maximum of two (2) full growing seasons (spring to fall), or a specified period, since final acceptance or installation.

13.1.2 Related References, Standards and Legislation

- .1 Federal Fertilizer Act
- .2 Federal Weed Control Act
- .3 Provincial Weed Control Act
- .4 BC Ministry of Environment, *Integrated Pest Management Manual for Home and Garden Pests in BC*
- .5 WorkSafeBC
- .6 Municipal and local authorities' legislation and requirements: All work shall be done in accordance with local legislation and requirements, which may restrict or prohibit certain activities such as application of pesticides, herbicides, and insecticides.
- .7 Invasive Plant Council of British Columbia

13.1.3 Maintenance Concept

- .1 The maintenance concept for each site shall be based on the site's intended use, design, and present condition.
- .2 Maintenance practices for newly established sites should be focused on nurturing healthy plant growth toward mature forms and sizes, and to minimizing the establishment of invasive plants from adjacent areas or in growing medium.
- .3 Maintenance programs developed for each site should support the intended maintenance concept as agreed to by the Owner or Owner's Representative.

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14 Landscape Maintenance

14.1. General

14.1.1 Intent

The intent of a continuing landscape maintenance program is to care for all aspects of the landscape, both horticultural and non-horticultural, including established plants and grass areas that have completed one (1) year of growth since installation, site features, hard surfaces and irrigation systems. A good maintenance program, as recommended by this Standard, would ensure that plants are healthy and thriving, the site is clean and aesthetically pleasing, hardscapes are in good repair and all elements are kept in a condition that enhances the design and the intended use of the site.

Maintenance operations should follow the ecologically sound practices of an Integrated Pest Management plan, and Plant Health Care program, composting organic litter, applying organic mulch to conserve water and suppress invasive plants, and reducing dependence on non-renewable resources.

This section is not meant to be, nor shall it replace a maintenance contract. This Section shall be used in conjunction with all other sections of this Standard in the development of a landscape maintenance program suitable to a specific site or project.

14.1.2 Related References, Standards and Legislation

- .1 International Society of Arboriculture Guide for Establishing Values of Trees and Other Plants, a Guide to Plant Appraisal, and Best Management Practices.

- .2 *ANSIA300 Tree Care Operations - Tree, Shrub, and Other Woody Plant Maintenance - Standard Practices*
- .3 Field Guide to Noxious Weeds and Other Selected Invasive Plants of British Columbia, Ministry of Agriculture and Lands.
- .4 *Guide to Weeds in BC and Seven Steps to Managing your Weeds*, Weeds BC.
- .5 Federal Pest Control Products Act
- .6 Federal Plant Quarantine Act
- .7 Federal Fisheries Act
- .8 Federal Migratory Bird Regulations
- .9 Federal Food and Drug Act
- .10 Federal Pesticide Residue Compensation Act
- .11 Provincial Integrated Pest Management Act
- .12 Provincial Plant Protection Act
- .13 Provincial Wildlife Act

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15 Interior Plantscapes

15.1. General

15.1.1 Intent

The purpose of this section is to establish and illustrate the methods of measurement and grading, potting and general maintenance for installed interior plants.

15.1.2 Related References, Standards and Legislation

- .1 *Guide to Interior Landscape Specifications*, current edition.

15.1.3 General Requirements

- .1 Measurements: The imperial unit of inches shall define pot size, height and spread (width).
- .2 Plants

- .a Shall be correct as to the botanical name and of the size or grade indicated thereon.
- .b All nursery stock must be viable, free from pests, pathogens and undamaged.
- .3 All nursery stock shall have an adequate fibrous root system that has been properly developed via cultivation practices, particularly transplanting or root pruning. Roots must not be exposed to drying winds, sun or frost, between digging and delivery.
- .4 Root balls must be free from harmful perennial, invasive and noxious plants.

15.1.4 Waiver of Contractor's Plant Replacement Warranty

- .1 The contract should include the clauses listed below in the event of any of the listed situations occurring. This shall release the Contractor from the plant replacement warranty (if any):
 - .a occurrence of significant changes in plant location(s) without the Contractor's prior consent
 - .b occurrence of vandalism or theft; accidental or malicious damage by employees, cleaning crews or other personnel to either plants or containers
 - .c prolonged absence of light or malfunction of the HVAC (Heating, Ventilating and Air Conditioning) systems
 - .d prolonged absence of hot and cold running water at the project premises
 - .e occurrence of temperatures below 13°C (55°F) or above 32°C (90°F) or humidity extreme
 - .f lack of access to the project premises

FIRST PAGE OF CH. 15 SHOWN ONLY

16 Integrated Pest Management and Plant Health Care

16.1. General

16.1.1 Introduction

Integrated Pest Management (IPM) is a multidisciplinary, ecological approach to the management of pest infestation, founded on sound horticultural practices, and relying on the appropriate and integrated use of biological, physical, cultural, mechanical, behavioural and chemical management tools. In ideal IPM programs chemicals are used only as a last resort and when all preferred methods fail.

Plant health care, as a basis of IPM is a comprehensive approach which incorporates an array of practices such as pruning, nutrient management, water management, and IPM, among others, into an overall approach to the care of the variety of plants in landscaping. Plant health care focuses on maintaining healthy plants, enhancing their natural ability to tolerate, defend or ward off pest attack and infestation.

Combining the methodologies and philosophy of IPM and plant health care in landscape management ultimately leads to healthier plants, trees and turf in the landscape, elimination of unwarranted pesticide and a healthier environment.

16.1.2 Intent

Intent of this section is to encourage and support the implementation of IPM and plant health care practices in the landscape. The goal of an IPM program is to maintain pest populations at acceptable levels through the use of complementary management techniques (physical/mechanical, cultural, biological, behavioural, and chemical). This is accomplished through regular monitoring of pest populations, and evaluation of the results and make necessary adjustments.

16.1.3 Related References, Standards and Legislation

- .1 Canadian Environmental Assessment Act
- .2 Canadian Environmental Protection Act
- .3 Federal Pest Control Products Act
- .4 Federal Pesticide Residue Compensation Act
- .5 Provincial Environment and Land Use Act
- .6 Provincial Integrated Pest Management Act
- .7 *Integrated Pest Management Manual for Home & Garden Pests in BC*, 2005, BC Ministry of Environment
- .8 *Handbook for Pesticides Applicators and Dispensers*, 2005, BC Ministry of Environment
- .9 *IPM Manual for Landscape Pests*, BC Ministry of Environment

FIRST PAGE OF CH. 16 SHOWN ONLY