

DETAILING FOR LANDSCAPE ARCHITECTS

Aesthetics, Function, Constructibility

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Detailing for Landscape Architects spans across three major areas of landscape architectural detailing - aesthetics, function and constructibility - to demonstrate how powerful design patterns can transform thematic ideas into built realities.

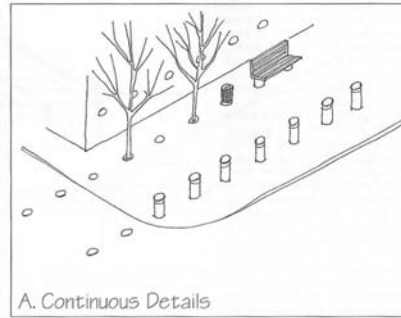
Detailing for Landscape Architects shows how details can:

- Actively contribute to the overall form or geometry
- Be designed to be durable and adaptable
- Gracefully accommodate the natural growth of plant materials
- Anticipate maintenance needs to minimize future disruptions
- Maximize cost effectiveness while meeting functional needs.

Continuous and Discontinuous Details

Element profiles or patterns can be repeated in a family of details. The continuity or discontinuity of this repetition can be used to reinforce design ideas.

1. A stone bollard can be mimicked in a paving pattern, in a wall insert, and in bench supports all following an overriding pattern and/or module in the design. As the pattern of stone elements overlays the landscape, they can morph into bollards, benches, light posts, and so forth with all these elements sharing details that are applied continuously over the site (see A).
2. An element can also be detailed to accentuate its differences with its surrounding. Discontinuous details introduce contrast to the landscape, accentuating its difference. When the prevailing pattern of the landscape is not followed, it draws attention to the uniqueness or importance of the discontinuous element (see B).

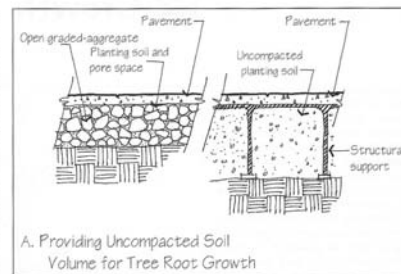


A. Continuous Details

Root Zone Growth

Roots grow and expand as the tree ages both in length and in girth. They do not grow uniformly because the medium they grow in is never uniform. They are opportunistic, extending into areas where there is physical volume and available moisture and nutrients. They also grow in a symbiotic relationship with many microorganisms. These microorganisms include fungi, bacteria, nematodes, protozoa, mites, and amoebae, which assist plants in absorbing nutrients. The growing media usually consists of inorganic particles (sand, silt, and clay), organic material, trace elements, moisture, and pore space between the particles. The roots require sufficient pore space in the soil to have room to grow. Large inorganic particle soils (sands) by themselves have a lot of pore space, but hold little moisture. Small particle soil (silts and clays) and soils with a mix of particle sizes (loams), where the small particles fill the voids between the large particles, tend not to have much void space and hold moisture. In evaluating or designing the soil mixes, the specifier must balance the pore space and drainage capacity of the soil against its water-holding capacity. Detailing tree pits, planters, greenroof sections, and other conditions that include root zones use these patterns to provide for a healthy environment for root growth.

1. Tree roots must have a growing medium with sufficient pore space to

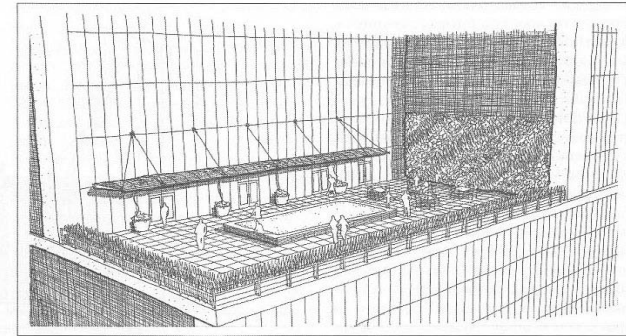


A. Providing Uncompacted Soil Volume for Tree Root Growth

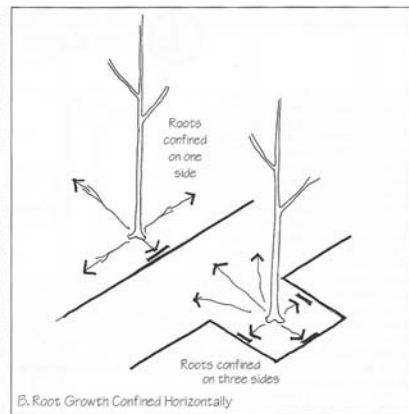
be usable and must also have enough volume of that soil to allow for its growth. There has been much research in recent years into the volumes of soil needed to support an urban tree. Insufficient tree root volumes can limit tree growth and life span. Very generous tree pits with upwards of 400 cubic feet (11.5 cubic meters) of soil will limit tree growth in less than two decades and eventually lead to a premature death. The detailer should be including alternate paths to available soil volume in the detailing of tree pits and planting areas. Structural

planting mixes that use large gravels or stone to supply structural support for pavers and large pore spaces to facilitate plant growth. Similarly, structural support systems that allow for uncompacted soil below structural paving systems can be used to provide additional soil volume under pavements. To be successful, both methods must have adequate soil volume, enough moisture but not be saturated and sufficient aeration for roots to grow. The detailer should include site-specific accommodations for root growth for each tree planting (see A).

Detailing a Rooftop Garden



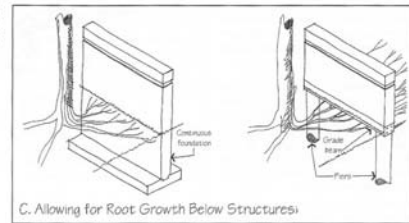
2. Tree roots generally grow in a radial pattern when they are young. This can be altered in the nursery if a small tree is twisted when it's planted, but in general that radial tendency should be reflected in the plant pit detail. A tree pit with its roots confined along one edge will grow faster than a tree with roots confined in two or more. Ideally, the available soil should be as balanced on all sides of the tree to provide for good root growth (see B).



B. Root Growth Confined Horizontally

3. Tree roots can be manipulated and kept away from susceptible pavements, curbs, and walls by the use of root barriers. In warm climates root barriers are sometimes required to prevent roots from lifting sidewalks. These barriers are usually heavy plastic sheets sometimes impregnated with herbicide that can be effective in preventing root growth where expanding roots will cause future damage. However, root barriers can be detrimental to the long-term health of the tree, by limiting its available space for root growth, and encouraging girdling roots.

4. Walls built on a continuous foundation wall will effectively stop root growth and prevent tree roots from accessing soil beyond the wall. If the wall is detailed like a fence with piers and a structural grade beam, then roots can extend beyond the wall (see C).



C. Allowing for Root Growth Below Structures

Good detailing is an opportunity to advance the concepts, symbols, and aesthetic themes of the basic design. The detail patterns can be used to edit the schematic design, celebrating its strengths and eliminating features that are not contributing to the central ideas.

The patterns clarify the issues relevant to a particular detail but avoid stating what the solution should be. They are meant to provoke the designer to discover many possible solutions, and to provide a clear process through which each can be assessed.

The final portion of the book demonstrates the process of designing the details of three different landscapes: a plaza, a rooftop garden, and a residence.

Reviewer Comment:

Landscape Architecture Professor:

This book describes basic principles that must be considered in the creation of landscape construction details. These principles are illustrated with clear and simple hand drawn details (unfortunately a dying art.) The clear presentation of process and principles, coupled with illustrations that place the emphasis on issues rather than on things, make this a solid introductory text.

If you are looking for reference material (e.g. detailed calculations of retaining walls, or strength charts for treated lumber) look elsewhere. Do the same if you want color photos of products from the ASLA Expo.

If you are interested in how to think about designing details, start here for a direct and unencumbered introduction.