

Landscape Design

Landscape design involves shaping the ground through the movement of earth or the creation of focal points, such as gardens consisting of flowers and plantings. Plants can be used for aesthetic or functional purposes. The primary aim of landscape design is to use plants to beautify a property and to enhance the visual appearance of a facility. The secondary aim is to use landscaping for functional purposes, such as to integrate the landscape design with stormwater management to reduce the rate and quantity of runoff and provide maximum treatment of on-site contaminants.

Landscape designs can be formal or informal. The choice can be based on the use of the site, the image desired, or the level of maintenance available. Traditional landscapes of old were generally treated as formal spaces, with defined areas, symmetrical plans, and balanced shapes. These areas require frequent, routine maintenance. Mowing, trimming, and pruning are regular activities required to maintain formal landscapes.

Informal landscaping uses less-defined areas to produce a flowing feeling so that one area seems to run into another. Informal landscaping is landscaping that appears to have developed without a clear-cut plan. Yet this is not the case. Generally, informal landscaping requires more planning initially, but less maintenance in the long run.

Functional Uses of Plants

Plants are able to perform a range of functions. A landscape designer can capitalize on their ability to:

- define space
- provide a sense of privacy
- supply shade
- block wind
- absorb sound
- curtail erosion
- reduce runoff
- provide on-site contaminant filtration

These plant qualities constitute the basis for their use in addressing surrounding environmental concerns. Many LEED® (Leadership in Energy and Environmental Design) case studies have shown that, through integration of landscape design and civil engineering, stormwater runoff can be reduced and the cost of underground piping can be lessened through coordinated indigenous plantings, special soils, and bio-swales. (Bio-

swales are nonirrigated stormwater pathways designed for increased absorption of rainwater.)

The building design engineer and property manager are concerned with controlling glare, traffic, sound, air conditions (temperature, humidity, and filtration), and soil erosion. Plants can be selected and judiciously placed to control natural and artificial glare and reflection and to direct and guide pedestrian traffic. They effectively soften or muffle sounds in an increasingly noisy environment. Perhaps most importantly, as air pollution increases, they absorb noxious gases, act as receptors of dust and dirt particles, and cleanse the air of impurities while consuming carbon dioxide and releasing oxygen.

Plants do, however, release pollen and mold spores, which can create health problems for some individuals; care should be taken when selecting plantings near any building fresh air intakes. Additionally, landscape designers should ensure plantings do not provide hidden areas for vandals or thieves to encroach upon or enter the facility easily.

Plants also make the environment more pleasant and livable for people. For example, trees may be planted to provide shade or a windbreak, thereby contributing to climate control. Deciduous trees screen the hot sun in summer, whereas in winter, warming rays pass between their bare branches. Judicious use of trees near the outside walls of a building can create a windbreak, create a dead-air space, and provide shade. Evergreen trees planted close to the wall of a building create a dead-air space and insulate the building from abrupt temperature changes. Placement of plants can reduce or redirect wind. Reductions in the heating and cooling loads can be dramatic and can significantly reduce energy consumption by a building's HVAC system.

In unplanted areas, rain and its constant pounding cause topsoil to run off, which not only forms undesirable gullies and crevices, but also depletes the nutrients needed for plant life. During times of heavy rainfall, plants deter soil erosion by their cover and the spread of their root systems.

Aesthetic Uses of Plants

Appearance is another prime factor determining plant use. A plant can create interest as a piece of living sculpture. Placed against a plain wall, a plant with an interesting branching pattern creates a more interesting display. A hedge serves as an ever-changing backdrop for other landscape elements. As the world becomes more crowded with man-made objects, plants can be used to blend together various unrelated elements, such as buildings, utility structures, or differing land usages. Landscaping provides a transition from the street to the building entrance. Plants can provide privacy, screening, spatial emphasis, and the progressive disclosure of a view or an object. In addition to their inherent beauty, plants can also enhance urban environments by attracting other natural elements such as birds, butterflies, and other animals.

A landscape should appeal to the senses—sight, sound, smell, and touch. In landscape planning, the following plant characteristics are considered:

- scale and proportion
- texture
- color
- pattern
- scent

Scale and proportion refer to the size of an object in relation to its surroundings. The general rule is to keep the size of the plantings in proportion to the size of the lot and building. A small plant in a large lobby will have no aesthetic impact.

Texture is apparent in good landscaping. Variations in leaf and flower size, shape, and surface give the landscape its textural feeling.

Color is the most noticeable aesthetic feature in landscaping. Colors change naturally from season to season. Except in desert areas, the background is usually green, with plants available in shades that range from gray-green or yellow-green to blue-green. Annuals and perennials can add additional color.

Pattern generally describes the unity and rhythm in a landscape. Sometimes areas repeat color or texture by duplicating specific plant or paving materials. Patterned areas are sometimes blended at the edges for a smooth transition from one area to another.

Scent is obtained from plants that emit pleasant aromas to make the environment more inviting, especially at entrances. Not all plants have pleasant aromas. It is important to always check scent when switching to a new plant for an enclosed environment.

Hardscape

Hardscape is nearly always incorporated into commercial facility landscaping plans. Every time someone walks through a landscaped area on a brick or concrete walkway or sits on a bench built into a garden, the person is walking or sitting on hardscape. Hardscape is anything used in landscaping that is not softscape (lawn, plants, trees, or shrubs) and includes:

- fences
- drives and walks
- irrigation systems
- retaining walls (stone and concrete)
- brick patios
- tile paths

- wooden platforms

The increased use of porous paving materials and other pervious surfaces helps absorb runoff from paved areas, reducing the dependency on structured flow through curbs, gutters, and extensive underground piping.

This article is adapted from BOMI International's course *The Design, Operation, and Maintenance of Building Systems, Part II*, one of several courses approved by the US Green Building Council. More information regarding this is available by calling 800-235-2664 or by visiting www.bomi.org.

Visit BOMI International's [Web site](http://www.bomi.org).