LANDSCAPE DESIGN

**Landscape design** is an independent profession and a **design** and art tradition, practised by **landscape designers**, combining nature and culture. In contemporary practice **landscape design** bridges between **landscape architecture** and garden **design**.

Definition of landscaping, Natural versus man made landscape, Scope and historical sketches of landscaping, needs for landscaping: to enhance property beauty and value; to provide screening effect etc. Institutional, private property, industrial, parks and gardens, roundabout and recreational areas, Landscaping: gardens, sporting arena, stadia etc. Design principles, design practice, basic styles, preparing landscape plan, Landscape construction, Hard landscaping, soft landscape, Contract and contractual agreements.

**Practical:** Identification of tropical ornamental plants. Visit to places of interest, Plan reading and translation. Drawing and design production, design (Private./residential, institutional and industrial Field work-contour development. Topographic map production. How to prepare contract document

- Design objectives are things ‘aimed at or sought; a target, goal, or end’
- Design theories are a ‘statement of rules or principles to be followed’
- Design methods are procedures ‘for attaining an object’

**The objectives of landscape**

Promote and defend licensure of the profession to protect the public health, safety, and welfare and to protect **landscape** architects' right to practice. Advance the image, visibility, and understanding of the profession with client groups, public policy makers, allied professions, media, and the general public.

The principles of landscape design are guidelines, or tools, that designers use to create attractive,
pleasing and comfortable landscapes. The landscape design principles are proportion, order, repetition and unity. **Proportion**

Proportion refers to the size of an object in relation to other objects in the landscape.

**Aim:**

Discuss the principles Garden Design.

This lesson has a far smaller quantity of set reading than any of the other lessons in Landscaping. The reason for this is that the reading set in this subject is very important. You should read it over several times and be certain you have a very firm grasp of the basic concepts of landscaping before proceeding with any other lessons.

A landscape consists of both living and non living things. These are the components of the landscape. Examples of non living components might be rocks, gravel paths, timber, walls etc. These non living components can be looked on in two ways:

- as the materials which they are made up of; and
- as the structures or things which the materials are used to make.

The living components of the landscape are the plants (and perhaps the animals which inhabit it). A landscape is made good or bad by the way in which these components are both selected and are arranged together.

The landscape is constantly changing, and a good designer must foresee and account for changes which are likely to occur. Plants grow, flower and die. Wooden structures rot and metal ones rust. Earth can erode. The garden continually changes through the cycle of the season. A skilled landscape designer will not only be aware of, but will use these changes.
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Chapter 1: General introduction

**Horticulture**- science concerned with intensively cultured plant directly used by people for food, medicinal purposes or for aesthetic gratification (environmental beautification). In summary it is a science that deals with cultivation of garden crops.

**Branches:** Pomology, Olericulture, Floriculture, landscape Horticulture, Horticultural Engineering etc
1.1 An overview of landscape horticulture industry in Nigeria: prospects and problems.

**Landscaping:** The art and science of developing the outdoor environment using soft landscaping, e.g. ornamental plants, and hardscapes e.g. non-plant objects, components to serve the needs and desires of people. It serves both the aesthetic and functional purposes. The outdoor surroundings could be designed with natural or man-made components/materials/objects i.e it could be natural or artificial. Landscaping involves design, construction and maintenance of landscapes.

**Landscape design/Garden design:** Science and art of organizing and enriching outdoor space through the placement of plants and structures in agreeable and useful relationship with natural environment.

It involves the qualitative and functional arrangement and spacing of plants and non-plants garden features on a parcel of land set aside in the planning process that gives an overall pleasing effect.

Design essentially entails manner in which objects are artificially arranged in order to attain a particular objective, usually may be not always, a functional and a visibly pleasing arrangement. Designs are evaluated aesthetically with regards to their element of colours, texture, line and form by long established man made value judgment called design principles. A successful design is normally functional and beautiful.
Landscape design is more than just a cosmetic treatment to be applied to indifferent or insensitive architectural or engineering in order to soften the harsh edges or disguise an awkward layout.

It is to integrate structures in to the environment by reducing the visual intrusiveness, by repairing damage to the existing vegetation and more positively by providing a setting that is attractive and welcoming. 

**Landscape**: Layout/arrangement of ground or land in scenery. It could be natural or artificial (man-made)

### 1.2 Natural versus man-made (artificial) landscaping

**Natural landscape**: A landscape that is unaffected by human activities. It may contain components that are living or non-living or both. Natural landscape remains intact if the living and non-living of the natural environment are free to move and change. Today no place on earth is unaffected by human activities. Thus landscape tends to vary in their degree of naturalness. Therefore, classification had been made into four types:

- a **natural** landscape is one that is unaffected by human activity
- a **sub-natural** landscape is one where if human activity was removed it would go back to a normal state
- a **semi-natural** landscape is one that has been drastically modified by human activity but has some natural elements left intact
- an **agricultural** landscape is one that has been totally altered and arranged by human activity

- very little if any naturalness is left

Examples of natural landscape in Nigeria are; natural surrounding such as forest or desert, rocks (Olumo rock, Zuma rock), Erin Ijesa water falls, Ikogusi warm/cold spring, plateau in Jos, Mambila, bar beach, etc.
**Artificial Landscape:** The use of artificially made plants (synthetic or otherwise) for landscaping of outdoor environment. Nowadays, it is common to see large quantities of artificial plants (trees, palms, lawns) being used for landscaping. Though, it will not and cannot replace the natural plants in their effects and functions on the landscape, but could also add to the beauty of the environment. It has the advantage of low maintenance in terms of watering, fertilizer application, mowing in case of lawns and turfs, trimming/pruning and so on. Other items in artificial designs include the use of art works, e.g. sculpture (UNAAB Olumo model), concrete benches and tables, water bodies such as water fountains, artificial springs, etc.

**1.3 Scope and historical sketches of landscaping**

**Scope:** Landscape by its very nature encompasses all other specialist sections of Amenity horticulture in one form or the other. It includes the design, construction, maintenance and management of landscape features. Knowledge of floriculture, landscape architecture, and engineering are usually important.

**History:** Landscaping is an important sector which has expanded and still expanding in recent years in Nigeria. Despite this development, it is by no means comparable to what is obtainable in the developed countries in terms of development, quality, patronage and boom experienced in the landscape horticulture industry.

People have designed garden throughout the recorded history. Thousands years ago in Egypt and Babylon, there were planted architectural structures. The roots of renaissance garden extend back to the tradition of antiquity, especially those of ancient Rome. To self conscious revival of the idea of Vitruvius and Pliny, there was added the influence of Islamic world and medieval theory and practice. The use of water and fountains and organization of garden in to geometric quarters were part of wider inheritance.
In Nigeria, from the time immemorial, people consciously or unconsciously add physiographic and environmental characteristics to the land around them either for aesthetic gratification and or environmental enrichment and protection.

Traditionally, people keep garden and trees around their buildings. Though, the experience of the colonial era did little to influence creation and preservation of beauty in the surroundings as it was in Francophone countries.

Nevertheless, the inception of colonialism changed the trends of events as concerted effort were made to formally landscape some public buildings, government reservation areas (GRAs), institutions of higher learning, and sport fields which marked the beginning of organized/formal landscaping in Nigeria. Missionaries (Christian) also established plants in churches and schools. Some individual copied this idea and planted some ornamental plants in their surroundings.

Nowadays, landscaping business is fashionable and there is influx of all sorts of people in to the profession, having seen it as an avenue to make quick money. There is generally, limited concern for landscape planning and management in Nigeria, most importantly from government with the exception of few state governments, who recently seem to brace up to the challenges of creating a beautiful and welcoming environment.

1.4 Needs for landscaping:

Basically, if human beings had never altered the natural world, there would be no need for designers. Nature is such a perfect designer that left unchanged by human beings, the earth’s beauty and natural system would never have require improvement. This idea is however not realistic in the modern world.

Therefore, some of the reasons why landscaping is important are;
1. Aesthetic/ Beautification of environment which is the primary purpose of landscaping
2. Engineering purpose: e.g. Environmental control and protection of structures against environmental hazards i.e. rain storms, wind breaks, shade trees for guide against sun glares etc.

3. Architectural purpose: e.g. re-integration of structures in to the natural environment.

Landscaping compliment rather than competing with the architectural features of structures thereby making enhancing their outlook.

4. Biological purpose: e.g. improves the micro-climate (environment), absorbs dust, noise, pollutants and assist in air purification by consuming CO2 and releasing O2.

5. Ecological purpose: e.g. some ornamental plants can be used to solve ecological problems such as flooding, to control erosion and absorb chemical from soil (oil spillage)

6. Economic purpose: e.g. creation of job opportunities, add value to property, creates wealth for plant growers and government (taxes, foreign exchange), beautiful environment also attract tourists and investors.

7. Social purpose: e.g. landscaped areas are useful as recreation and relaxation venues (parks), sporting arenas (polo, football fields), and symbols of affluence/wealth.

8. Nutritional/Medicinal purpose: e.g. some plants used primarily for landscaping could also be used for food (fruits and vegetables) and medicines, plants have therapeutic effect on patient etc.

1.4.1 Private property/residential landscaping

Landscaping of personal residential properties like a flat, bungalow, duplex, estate etc. Most private or residential buildings need at least three general areas;
(a). For public access-

(b). For service and work:
(c). For family living:

1. **Industrial landscaping:** It involves the establishment of plants and hardscapes within the industrial estate/area e.g Agbara industrial estate, Nigeria Breweries Ltd, Portland/Lafage cement company, etc.

2. **Institutional landscaping:** Landscaping that involves all sorts of institutions- universities, colleges, polytechnics, hospitals, research institutes, barracks etc.

3. **Recreational landscaping:** It involves landscaping recreational arenas (polo ground, parks and gardens, football pitches, game villages etc) for adults and children. It has special inclusions such as restaurant, water fountains, focal plants, green lawns and other areas for social like picnic, marriages, honey moon, film shooting. Nowadays, ICT and photocopy centre have been added.

1.4.2 Using the ‘Indoor room concept’ to describe the Outdoor

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1- Public area
2- General living
3- Service area
4- Private living room

Walls- hedges, avenue trees,
Ceilings- shade trees, canopies,
etc.
Floors- lawns, foundation plants, concrete
floors and walk ways, roads with
interlocking blocks or asphalt.

i.) Use areas

1. Public area – usually the front part of the property accessibility to visitors

2. General living room – an area of the home that joins the public area, service room and private room

3. Service area – accessible to only the occupants

4. Private living room – an area for rest and occupies the rear of the property and not accessible to outsiders

ii.) Components of the outdoor room:
a. **Walls** - defines the limit and shapes of the outdoor room, direct traffic through the landscape (hedges, avenue trees), provides full or partial privacy ( ), provide security (thorny plants e.g. boungavalia spp.), etc.

b. **Ceilings** – defines the upper limit of the outdoor room, provide full or partial shade, provide privacy from overhead viewers, etc.

c. **Floors** – defines the base line of the outdoor room, absorbs shock or impact of traffic, e.g. turfs / lawn, paving, ground covers,

### 1.5 Principles of landscape design

The goal in developing a landscape plan is to design a plan that will achieve unity and harmony. The principles of landscape design are the building blocks used by designers to create beautiful and functional landscapes. Landscape design principles are the same for all types of landscapes. They are in many different ways, depending on the site, the clients’ wishes, and designer’s knowledge and preferences. Similar to elements of art, these principles represent the primary concert that influence landscape design. Design principles are not rules that require precise adherence, but instead reflect a framework of universal concepts that prove effective in creating designs.

Therefore the following principles should be considered in designing the plan;

1. **Simplicity:**

2. **Order:**

3. **Repetition:**

    **Rhythm and line:**
5. Unity:
6. Balance:

7. Proportion and scale:

8. Emphasis:

1.5.1 Preparing/Developing/Creating the landscape plan

The development of landscape plan be it private, public or institutional merges the arrangement of plants and other materials with the graphic skills necessary to symbolize them. A well developed landscape plan provides an orderly means of landscaping a site and prevents waste of labour, money and possibly plants. It requires that the principles of design be applied to an entire property, not just sections and that the final design possess a unity which integrates all use areas in to a total plan. The time spent in analyzing a site and developing the plan is a good investment that can prevent frustration, save time and provide the appearance desired. The preparation of landscape plans requires a lot of work, considerable thought and planning.

The following procedures are suggested as a guide to initial design and planning of garden and landscape plan.

A. The first step in the development of a landscape plan is the site analysis which is divided in to the on-site and off-site analysis. One or more visits to the site may be necessary to analyze or evaluate the site.

On-site analysis: Landscape designer should draw the site features and the proposed building plan on graph paper. Normally/usually, a prepared chart/checklist should be completed on the site. At least two peoples are required to carry out site analysis.

A number of factors or condition should be considered in making site evaluation and should be accurate and in detail. Highlights of some of these factors are;
1. Climate of the site:

2. Soil conditions.

3. Location:

4. Existing structures:
5. Existing vegetations:

6. Rock outcropping - T

7. Utilities:

8. Presence of water bodies -

9. Dimension –

1.5.2 Off site analysis:

The purpose of this part of site analysis is to consider the site in relation to distant views and neighbouring areas which has a distinct influence upon the needs of the site. Features like trees, adjoining backyard, mountains, valleys, bodies of water e.g lakes, sea etc, forests, towns, cities etc located within the adjoining site becomes part of the site landscape. If a good view is spoilt by an untidy building, plant to hide the building, not the whole view. If the outlook from a property is not very good, a view can be created within the landscape by suitable screen planting on the boundary and attractive planting inside this screen-planting. Off-site factors that may present problems in landscaping are pedestrian traffic, noise, dust, bright lights, bill board, utility lines, roods, and neighbouring properties. It may be desirable to use screens to eliminate unfavourable factors.

B. Analysis of clients/family needs:

c. Match the client needs and site capabilities as closely as possible.

d. Area layout plan: There are three principal areas that are usually considered in landscape plans.
These are

i The public area which generally is the area in front of the house. However it could be on the side of the house if this is the approach owner wishes the visitors to use.

ii The service area is the area in which trash cans, cloth lines, dog runs, and work areas are located. It is often screened from view.

iii The private: This is the area normally used by the family for outdoor entertainment and lawn grasses. It is usually located at the rear of the house, but it may be on the side. Screening may be used to provide privacy in the area. The vegetable and flower garden may be located in this area.

After these three areas have been designated on the tracing paper, rough sketches of the organization of these areas should be drawn.
E. Select a scale that allows the site to be reproduced on paper, including lot, building and existing structures/features.

F. Assign use areas to appropriate region of the property.

G. Select focal points and locate them within the used areas

H. Shape each use areas in a way that directs attention to the focal point and relates it to adjoining use areas.

I. **Selection criteria for plants:** Selecting the best plants for a given position require a knowledge of the plant materials available and the types of growing conditions they prefer. A plant can be beautiful in its natural environment can be very ragged out of it, so it is important to give plants right growing conditions. Planting is needed to give privacy, cut down wind, give protection from sun, give pleasant effects etc.

   1. Ability to fill the role assigned it in the design

   2. Ability to survive the growing conditions of the site

   3. Availability and affordability by clients

   4. Plant size at maturity

   5. Flowering qualities

   6. Foliage and tree back colour

   7. Presence or absence of thorns

   8. Plant rate of growth and length of life
9. Deciduous or evergreen

10. Susceptibility to pests and diseases

11. Frequency of pruning required

12. Soil preference

13. Able to withstand severe trimming/pruning eg hedge plants

14. Attractive appearance

15. Ability to keep out intruders, including animals

16. etc
1.5.3 Selection criteria for pavings:

1. Ability to fill the role assigned it in the design
2. Availability and affordability by clients
3. Durability
4. Maintenance requirements

1.6 Review of soft and hard landscaping.

**Soft landscaping:** refers to the plant component of landscaping. It entails the use of plants of all categories (palms, trees, shrubs, grasses, herbaceous plants etc) that are natural in a landscape. The plantings of especially indigenous plant species ensure integration of structures in to the natural environment thus appearing natural in nature, among other many uses of plants in our surroundings. Both soft and hard components are employed to realize a beautiful and functional landscape.

**Hard landscaping:** The use of any non-plant materials in the development of a landscape. Examples include walkways, driveways, patio, decks, walls, ponds, fences, pergolas, steps, landscape lightings, water fountains, furniture, containers for potted plants etc. These features, individually and in combination, make up the ground, vertical, and overhead planes within a landscape and define outdoor living spaces. Hardscapes should be used to compliment the plants component to meet a client’s need.

1.6.1 Landscape Project Cost Estimation

Accurate cost estimation for landscape projects is central to the success of the industry. Over or under estimation of cost of the materials required for the job must be avoided. It is usually done after accurate measurement and examination of the site, pricing all materials required for a successful project and a reasonable profit added. It must be
prepared by the most experienced person to ensure precision since it is one of the veritable tools for contract bidding.

Methods

- Superficial/Simplest
- Bay system/method
- Grouped quantity method
- Scheduled method
- Accurate estimation/ Bill of quantity

Generally things to cost include;
  - Labour
  - Tools
  - Transportation
  - Ornamental plants
  - Topsoil/ Manure
  - Professional charges
  - Contingency
  - Maintenance cost before project delivery
  - Etc

**Studio Works:**

- Preparing Private/ residential, institutional and industrial landscape design/plan
Preparing contract document.

Field trips to relevant sites within the campus/Abeokuta city.

Chapter 2: Basic Principles of Landscape Design

2.1 Introduction

Landscape designers work on a canvas that is distinctly different from other art forms. The “art” is always changing as the plants grow, environmental conditions change, and people use the space. For this reason, landscape designers use a design process that systematically considers all aspects of the land, the environment, the growing plants, and the needs of the user to ensure a visually pleasing, functional, and ecologically healthy design.

The basic principles of landscape design are those things which influence the way in which the components are used. For example, the over-riding principle in Chinese gardens is unity—between rocks, plants and water. For Le Notre, a famous 17th Century French designer, a very important principle was that of symmetry, while for Capability Brown, an influential 18th century English landscaper, the most important principle was for landscapes to be natural in appearance.

2.2 Elements and principles

The design process begins by determining the needs and desires of the user and the conditions of the site. With this information, the designer then organizes the plants and hardscape materials, which are collectively referred to as the features. The features can be physically described by the visual qualities of line, form, color, texture, and visual weight—the elements of design. The principles are the fundamental concepts of composition—proportion, order, repetition, and unity—that serve as guidelines to arrange or organize the features to create an aesthetically pleasing or beautiful landscape. Knowledge of the elements and principles of design is essential to designing a landscape and working through the design process. This publication describes
each of the elements and explains the principles and their application.

### 2.3 Elements of Design

The elements of composition are the visual qualities that people see and respond to when viewing a space. Visual qualities can illicit many different emotions and feelings, and the more positive those feelings, the more likely people are to enjoy and use a space. Perhaps the most common element in a composition is line. Line creates all forms and patterns and can be used in a variety of ways in the landscape.

#### 2.3.1 Line

Line in the landscape is created by the edge between two materials, the outline or silhouette of a form, or a long linear feature. Lines are a powerful tool for the designer because they can be used to create an infinite variety of shapes and forms, and they control movement of the eye and the body. Landscape designers use lines to create patterns, develop spaces, create forms, control movement, establish dominance, and create a cohesive theme in a landscape. Landscape lines are created several ways: when two different materials meet on the ground plane, such as the edge of a brick patio meeting an expanse of green turf; or when the edge of an object is visible or contrasts with a background, such as the outline of a tree against the sky; or by the placement of a material in a line, such as a fence. Figure 1 shows common landscape lines, including bedlines, hardscape lines, path lines, sod lines, and fence lines. Lines can have one or more characteristics, such as those described below, but they typically serve different purposes.
Line can be either fixed or moving. Examples of fixed lines are borders of paths, fences, walls, the outline of a building, the shape of a statue and the edge of a lawn. Examples of moving lines are the edge of a shadow and the outline of a fast-growing plant.
2.3.1.1 Properties of lines

The properties of lines determine how people respond to the landscape, both emotionally and physically.

2.3.1.1.1 straight lines
Straight lines are structural and forceful; they create a formal character, are usually associated with a symmetrical design, and lead the eye directly to a focal point. Diagonal lines are straight lines with an intentional direction. Straight lines are most often found in hardscape edges and material.

2.3.1.1.2 curved lines
Curved lines create an informal, natural, relaxed character that is associated more with nature and asymmetrical balance. Curved lines move the eye at a slower pace and add mystery to the space by creating hidden views.

2.3.1.1.3 Vertical lines
Vertical lines move the eye up, making a space feel larger. An upward line can emphasize a feature and has a feeling of activity or movement. Vertical lines in the landscape include tall, narrow plant material, such as trees, or tall structures, such as an arbor or a bird house on a pole.

2.3.1.1.4 Horizontal lines
Horizontal lines move the eye along the ground plane and can make a space feel larger. Low
lines are more subdued and create a feeling of rest or repose. Horizontal lines can spatially divide a space or tie a space together. Low lines are created by low garden walls, walkways, and short hedges. Lines are used to draw forms on a plan. In plan view, they define plant beds and hardscape areas. Lines are also created by the vertical forms of built features and plant material. There are three primary line types that create form in the landscape: bedlines, hardscape lines, and plant lines. Bedlines are created where the edge of the plant bed meets another surface material, such as turf, groundcover, gravel, or patio pavers. Bedlines connect plant material to the house and hardscape because the eye follows the line, moving the gaze through the landscape. Hardscape lines are created by the edge of the hardscape, which delineates the built structure. Line can also be created by long and narrow materials, such as a fence or wall.

2.3.2 Form

Shape is created by an outline that encloses a space, and form is the three-dimensional mass of that shape. Form is found in both hardscape and plants, and it is typically the dominant visual element that spatially organizes the landscape and often determines the style of the garden. The form of structures, plant beds, and garden ornaments also determines the overall form theme of the garden. Formal, geometric forms include circles, squares, and polygons.

Informal, naturalistic forms include meandering lines, organic edges, and fragmented edges. Plants create form in the garden through their outlines or silhouettes, but form can also be defined by a void or negative space between plants. Form is the outline or three-dimensional shape of an object.
2.3.2.1 Geometric forms

2.3.2.1.1 Circular form

Circles can be full circles, or they can be divided into half circles or circle segments and combined with lines to create arcs and tangents. Figure 2 shows the use of circle segments for hardscape and lawn panels. Circles can also be stretched into ovals and ellipses for more variety and interest. Circles are a strong design form because the eye is always drawn to the center, which can be used to emphasize a focal point or connect other forms.
2.3.2.1.2 square form
Squares are used for a variety of features, including stepping stones, bricks, tiles, and timber structures, because they are an easy form to work with for construction. The square form can also be segmented and used repeatedly to create a grid pattern. Unlike circles, squares are stronger on the edges, which can be lined up or overlapped to create unique patterns and more complex forms.

2.3.2.1.3 irregular polygons
Polygons are many-sided forms with straight edges. Triangles, for example, are three-sided polygons. The angled edges of polygons can make interesting shapes, but they should be used cautiously because the forms can become complex; simplicity is best.

Mass
Mass is the degree of solidity of forms. Heavier, denser or darker foliage will create the effect of greater mass.
Mass of plants varies. Some have dense foliage and some more open. Deciduous plants have more mass when in leaf and less mass when leaves drop.

**Space**

Space is the volume defined by physical boundaries such as walls, trees, shrubs, ground surface and the sky or canopy of plants above.

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**2.3.3 Naturalistic forms**

**2.3.3.1 meandering lines**

Meandering lines often mimic the natural course of rivers or streams and can be described as smooth lines with deeply curved undulations. Meandering lines (Figure 3) work well for pathways, plant bedlines, and dry stream beds. Meandering lines can add interest and mystery to
a garden by leading viewers around corners to discover new views and spaces.

2.3.3.2 organic edges
Organic edges mimic the edges of natural material, such as foliage, plant forms, and rocks, and can be described as rough and irregular. Organic lines can be found in rock gardens and along dry creek beds or purposely created on hardscape edges.

2.3.3.3 fragmented edges
Fragmented edges resemble broken pieces scattered from the edge, such as stones or pavers, and are often used to create a gradually disappearing edge on patios or walkways.
2.3.4 Plant Forms

Form is the most enduring quality of a plant. Common plant forms are well established and standardized, as form is the most consistent and recognizable characteristic of plants. Form can also be created through the massing of plants, where the overall mass creates a different form than an individual plant. A strong form that contrasts with the rest of the composition will have greater emphasis within the composition. A highly contrasting form must be used with care—one or two work well as a focal point, but too many create chaos. Natural plant forms, rather than over-trimmed forms, should establish the bulk of the composition. The relevance of overall form is more or less dependent on the viewing perspective—the form of a tree can appear quite different to a person standing under the canopy versus viewing the tree from a distance in an open field. Vertical forms add height; horizontal forms add width. Plant forms also create and define the void or open spaces between the plants, creating either convex or concave forms in the voids. High-arching tree branches typically create a concave open space under the branches, and a round canopy with low branches fills the space to create a convex form in the open space under the tree.

2.3.4.1 Tree forms

Common tree forms (Figure 6) include round, columnar, oval, pyramidal, vase shaped, and
weeping. Different tree forms are used for visual appeal, but the form is also important for function. Creating a shady area in the garden requires a round or oval tree, while a screen usually requires a more columnar or pyramidal form, and a weeping tree form makes a good focal point.

Figure 6. Tree forms

2.3.4.2 Shrub forms
Shrub forms (Figure 7) include upright, vase shaped, arching, mounding, rounded, spiky, cascading, and irregular. Choosing shrub forms often depends on whether the shrub will be used in a mass or as a single specimen. Mounding and spreading shrubs look best in a mass, and cascading and vase-shaped shrubs do well as specimen plants.

2.3.4.3 groundcover forms
Groundcover forms (Figure 7) include matting, spreading, clumping, sprawling, and short spikes. Almost all groundcovers look better in masses because they are typically small, ground-hugging plants that have very little impact as individual plants.
2.3.5 properties of form

Form is very powerful because people can often recognize and identify a feature based on an outline or silhouette. People can often perceive a form when only a portion of it is visible. Familiarity and the suggestion of a form is enough for the eye to fill in the rest. Repetition of form is essential to the creation of pattern, which is the basic organizational structure of the landscape.

Form is also the primary determinant of a formal or informal garden. Geometric forms with straight edges are typical of formal gardens that are based on an established style, such as contemporary or Italian gardens. An informal garden has more naturalistic, organic forms that are normally found in gardens that mimic nature. Form compatibility is also a major component of unity in design—one or two strikingly different forms are good for contrast and emphasis, but generally all other forms should have some similarities for a unified look.

2.3.6 Texture

Texture refers to how coarse or fine the surface of the plant or hardscape material feels and/or looks. Texture is used to provide variety, interest, and contrast. The plant’s foliage, flowers,
bark, and overall branching pattern all have texture. The size and shape of the leaves often determines the perceived texture of the plant. A plant can generally be described as having a coarse, medium, or fine texture. Coarse texture is more dominant than fine and also tends to dominate color and form, while fine texture is more subordinate to other qualities and tends to unify compositions. Coarse-textured plants attract the eye and tend to hold it because the light and dark contrasts of the shadows provide more interest. Fine texture exaggerates distance and gives the feeling of a larger, more open space. Rough texture minimizes distance—plants appear closer and the space feels smaller, or enclosed. Texture is also found in the hardscape, including on buildings, patios, walls, and walkways. Texture refers to the patterning of the components of the landscape: coarse or fine, rough or smooth etc. Texture is significant when considering scale, particularly in more intimate, smaller areas. There is texture in plants, wood, stone, gravel, and even in water as the wind blows over its surface.
2.3.6.1 coarse texture

Plant characteristics that create coarse texture include large leaves; leaves with very irregular edges; bold, deep veins; variegated colors; thick twigs and branches; leaves and twigs with spines or thorns; and bold, thick, and/or irregular forms. Each leaf of a coarse-textured plant breaks up the outline, which gives the plant a looser form. Examples of plants with coarse texture include philodendrons, agaves, bromeliads, hollies, palms, and hydrangeas. Hardscape with coarse texture includes rough-cut stone, rough-finished brick, and unfinished wood with knots and a raised grain. Aged or old construction material that maintains a weather-beaten surface is often coarse in texture.

2.3.6.2 fine texture

Characteristics that create fine texture include small foliage; thin, strappy leaves (grasses) or tall, thin stems; tiny, dense twigs and small branches; long stems (vines); and small, delicate flowers. They are often described as wispy and light or with a sprawling, vining form. Fine-textured plants sometimes have a stronger form because the small individual leaves are densely packed (e.g., boxwoods) to create a solid edge. Plants with a fine texture include grasses, ferns, Japanese maples, many vines, and junipers with fine needles. Hardscape with fine texture includes smooth stone, wood or ceramic pots, and glass ornaments. Smooth water, such as that found in a reflecting pool, or water with a very fine spray is considered fine textured.
2.3.6.3 medium texture

Most plants are medium texture, in that they cannot be described as having either coarse or fine texture. They are characterized by medium-sized leaves with simple shapes and smooth edges. The average-sized branches are not densely spaced nor widely spaced, and the overall form is typically rounded or mounding. Medium-textured plants act as a background to link and unify the coarse- and fine-textured plants. Plants with medium texture include agapanthus, ardisia, camellia, euonymus, pittosporum, and viburnum. Hardscape with a medium texture includes standard flagstone pavers, broom-brushed concrete, and finished woods.

2.3.6.4 Properties of texture

Texture affects the perception of distance and scale. To make a space feel larger, locate plants so that the fine textures are along the outer perimeter, the medium textures are in the middle, and the coarse textures are closest to the viewer. The small size of the fine texture recedes in the landscape and is perceived as being farther away. To make a space feel smaller, place the coarse textures along the outer perimeter and the fine textures closest to the viewer. The detail of the coarse texture makes the plants appear closer and makes the space feel smaller. The perceived texture of plants can also change with the distance from the plant. Plants that are coarse close-up can look fine textured from a distance. Bold colors increase the contrast and make the texture appear coarser, while muted colors can flatten texture. Hardscape with a coarse texture—such as very rough rocks and bold, large timbers—tends to make all plant material appear more medium textured. Designers often develop a texture study (Figure 8) on paper to help decide the arrangement of plant materials. The drawing mimics texture by using different line weights and spacing to represent fine, medium, and coarse textures.
2.3.7. Color

Color in plant material and hardscape adds interest and variety to the landscape. Color is the most conspicuous element in the landscape and is usually the focus of most homeowners; however, it is also the most temporary element, usually lasting only a few weeks a year for individual plants. The use of color is guided by color theory (use of the color wheel) to create color schemes. A simple description of the color wheel includes the three primary colors of red, blue, and yellow; the three secondary colors (a mix of two primaries) of green, orange, and violet; and six tertiary colors (a mix of one adjacent primary and secondary color), such as red-orange. Color theory explains the relationship of colors to each other and how they should be used in a composition. The basic color schemes are monochromatic, analogous, and complementary.

*Colour* can be used for harmony or contrast. Generally (but not always) designers use contrasting colours sparingly. In general pale, cool colours (blue, green, white, silver and pastel shades) create a relaxing atmosphere in the garden, while hot, vibrant colours (reds, yellows, orange, bright pink) demand attention and subconsciously encourage activity.

*Different spaces with different dominant colours*

2.3.7.1 monochromatic scheme

A monochromatic color scheme uses only one color. In landscaping, this usually means one
other color besides the green color in the foliage. A garden that is all green depends more on form and texture for contrast and interest. One color can have many light and dark variations, which can add interest. An example of a monochromatic scheme is a white garden with white flowers, white variegated foliage, and white garden ornaments.

2.3.7.2 Analogous scheme
Analogous (sometimes called harmonious) color schemes are any three to five colors that are adjacent on the color wheel, such as red, red-orange, orange, yellow-orange, and yellow, or blue, blue-violet, and violet. The colors are related to each other because they typically include two primary colors mixed to form a secondary and two tertiary colors, which means they share common properties.

2.3.7.3 Complementary scheme
Complementary colors are those that are opposite each other on the color wheel. They tend to have high contrast between them. The most common sets are violet and yellow, red and green, and blue and orange. Complementary colors are often found naturally in flowers; a common pair is yellow and violet.

2.3.8 Color in Plants and Hardscape
Color is found in the flowers, foliage, bark, and fruit of plants. Foliage typically provides the overall background color for flower colors. Green foliage in all its various shades is the dominant color by quantity, but other colors capture attention more readily because of their high contrast to the color green. Color is also found in buildings, rocks, pavers, wood, and furniture. Most colors in natural materials, such as stone and wood, are typically muted and tend to be variations of brown, tan, and pale yellow. Bright colors in the hardscape are usually found in man-made materials, such as painted furniture, brightly colored ceramic containers or sculptures, and glass ornaments.

2.3.9 Properties of Color
Color is an important element for creating interest and variety in the landscape. Colors have properties that can affect emotions, spatial perception, light quality, balance, and emphasis. One
property of color is described relative to temperature—colors appear to be cool or warm and can affect emotions or feelings. Cool colors tend to be calming and should be used in areas for relaxation and serenity. Warm colors tend to be more exciting and should be used in areas for entertaining and parties. The “temperature” of colors can also affect the perception of distance. Cool colors tend to recede and are perceived as being farther away, making a space feel larger. Warm colors tend to advance and are perceived as being closer, making a space feel smaller. Color can also be used to capture attention and direct views. Focal points can be created with bright colors. For example, bright yellow, which has the highest intensity, also has a high contrast with all other colors (often described as a “pop” of color) and should be used sparingly. A small amount of intense color has as much visual weight as a large amount of a more subdued or weaker color. Color schemes in the garden can change with the seasons. Summer colors are usually more varied and bright with more flowers, while winter colors tend to be monochromatic and darker with more foliage. Color is also affected by light quality, which changes with the time of day and time of year. Brighter, more intense summer sun makes colors appear more saturated and intense, while the filtered light of winter makes colors appear more subdued. When choosing a color scheme, consideration should be given to the time of day the yard will be used. Because color is temporary, it should be used to highlight more enduring elements, such as texture and form. A color study (Figure 9) on a plan view is helpful for making color choices. Color schemes are drawn on the plan to show the amount and proposed location of various colors.
2.3.10 Visual Weight

Visual weight is the concept that combinations of certain features have more importance in the composition based on mass and contrast. Some areas of a composition are more noticeable and memorable, while others fade into the background. This does not mean that the background features are unimportant—they create a cohesive look by linking together features of high visual weight, and they provide a resting place for the eye. A composition where all features have high visual weight often looks chaotic because the eye tends to bounce between the features. High visual weight usually comes from a group of plants with one or a few of the following characteristics: upright or unusual forms, large size, bright colors, bold texture, and diagonal lines. Low visual weight is found in low horizontal lines, prostrate or low forms, fine texture, and subdued or dull colors (Figure 10).

Figure 10. Visual weight by mass and contrast
2.4 Principles of Design

Design principles guide designers in organizing elements for a visually pleasing landscape. A harmonious composition can be achieved through the principles of proportion, order, repetition, and unity. All of the principles are related, and applying one principle helps achieve the others. Physical and psychological comfort are two important concepts in design that are achieved through use of these principles. People feel more psychologically comfortable in a landscape that has order and repetition. Organized landscapes with predictable patterns (signs of human care) are easier to “read” and tend to make people feel at ease. Psychological comfort is also affected by the sense of pleasure that a viewer perceives from a unified or harmonious landscape. Users feel more physically comfortable, function better, and feel more secure in a landscape with proportions compatible to human scale.

2.4.1 Proportion

Relative proportion is the size of an object in relation to other objects. Absolute proportion is the scale or size of an object. An important absolute scale in design is the human scale (size of the human body) because the size of other objects is considered relative to humans. Plant material, garden structures, and ornaments should be considered relative to human scale. Other important relative proportions include the size of the house, yard, and the area to be planted. This refers to proper sizing or scaling of components in relation to each other and to the total landscape; for example, tall trees are not in proportion if used in a small courtyard, nor is a small shrub in proportion in the middle of a large expanse of lawn.
This garden furniture is in proportion to the space. Larger furniture would dominate the visual image and be awkward from a practical viewpoint. A small setting like this would be equally out of proportion in a very large landscape.

This sculpture is in proportion to the plants. It is partially obscured and appears to belong here, a much smaller sculpture would be hidden and out of proportion, and if the statue was too large the plants would not be noticed.

2.4.2 proportion in plants
Proportion can be found in plant material relative to people (Figure 9), the surrounding plants, and the house. When all three are in proportion, the composition feels balanced and harmonious. A feeling of balance can also be achieved by having equal proportions of open space and planted space. Using markedly different plant sizes can help to achieve dominance (emphasis) through
contrast with a large plant. Using plants that are similar in size can help to achieve rhythm through repetition of size.

2.4.3 proportion in hardscape

Features are most functional for people when they fit the human body. Benches, tables, pathways, arbors, and gazebos work best when people can use them easily and feel comfortable using them (Figure 11). The hardscape should also be proportional to the house—a deck or patio should be large enough for entertaining but not so large that it doesn’t fit the scale of the house.

![figure 11. Proportion in plants and hardscape](image)

2.4.3.1 proportions in voids

Human scale is also important for psychological comfort in voids or open spaces. People feel more secure in smaller open areas, such as patios and terraces. An important concept of spatial comfort is enclosure. Most people feel at ease with some sort of overhead condition (Figure 11) that implies a ceiling. The enclosure does not have to be solid; in fact, an implied enclosure, such as tree branches, serves as a good psychological enclosure that still allows light and views of the sky.

**Harmony**

This refers to the way different parts of the landscape fit together. Overall, most designers strive to achieve harmony.
Contrast

Contrast is in opposition to harmony and should not be overdone. Occasional contrasts are used to create an eye catching feature in a garden; for example, contrasting foliage texture, colour or form provides a focal point in the garden.

Round shapes contrast with straight lines
Hot colours contrast with pale concrete

**Rhythm**

*Rhythm is a conscious repetition of equal or similar components in the garden. It is usually created by repetition and transition (the slow change from one thing to another).*

**2.4.4 Order**

Order generally refers to the spatial layout or organization of the design and is most often achieved through balance. Balance is the concept of equal visual attraction and weight, usually around a real or imaginary central axis. Form, color, size, and texture all affect balance. Balance can be symmetrical, asymmetrical, or perspective. Order can also be achieved by massing features or elements into distinct groups and arranging them around a central point.
2.4.4.1 *symmetrical balance*

Symmetrical balance is achieved when the same objects (mirror images) are placed on either side of an axis. Figure 12 shows the same trees, plants, and structures on both sides of the axis. This type of balance is used in formal designs and is one of the oldest and most desired spatial organization concepts. This is because the mind naturally divides space by assuming a central axis and then seeks an even distribution of objects or mass (visual weight). Many historic gardens are organized using this concept.

![Figure 12. Symmetrical balance around an axis](image)

This refers to equilibrium, which can be either symmetrical or asymmetrical. With symmetrical balance, there is duplication on either side of an imaginary line of landscape components in terms of line, form or colour - for example, two similarly shaped garden beds in front of a house. Symmetry is an important feature of formal landscapes.
Asymmetrical balance is achieved by equal visual weight of nonequivalent forms, color, or texture on either side of an axis. This type of balance is informal and is usually achieved by masses of plants that appear to be the same in visual weight rather than total mass. Figure 13 shows groupings of trees and structures that are approximately equal in visual weight on either side of the axis. The mass can be achieved by combinations of plants, structures, and garden ornaments. To create balance, features with large sizes, dense forms, bright colors, and coarse textures appear heavier and should be used sparingly, while small sizes, sparse forms, gray or subdued colors, and fine texture appear lighter and should be used in greater amounts.
Asymmetrical balance involves dissimilar placement of different objects or masses on either side of the same sort of imaginary line, but in a way that equilibrium still exists – for example, three or five silver birch trees planted in a group. Asymmetry gives the garden a more relaxed, natural appearance.

Asymmetrical Balance

2.4.4.3 perspective balance
Perspective balance is concerned with the balance of the foreground, midground, and background. When looking at a composition, the objects in front usually have greater visual weight because they are closer to the viewer. This can be balanced, if desired, by using larger objects, brighter colors, or coarse texture in the background. In most cases, either the foreground or background should be dominant.

2.4.4.4 mass collection
Mass collection is the grouping of features based on similarities and then arranging the groups around a central space or feature. A good example is the organization of plant material in masses around an open circular lawn area or an open gravel seating area.

2.4.5 repetition
Repetition is created by the repeated use of elements or features to create patterns or a sequence
in the landscape. Repeating line, form, color, and texture creates rhythm in the landscape. Repetition must be used with care—too much repetition can create monotony, and too little can create confusion. Simple repetition is the use of the same object in a line or the grouping of a geometric form, such as a square, in an organized pattern. Repetition can be made more interesting by using alternation, which is a minor change in the sequence on a regular basis—for example, using a square form in a line with a circular form inserted every fifth square. Inversion is another type of alternation where selected elements are changed so the characteristics are opposite the original elements. An example might be a row of vase-shaped plants and pyramidal plants in an ordered sequence. Gradation, which is the gradual change in certain characteristics of a feature, is another way to make repetition more interesting. An example would be the use of a square form that gradually becomes smaller or larger. Repetition does not always create a pattern; sometimes it is simply the repeated use of the same color, texture, or form throughout the landscape. Figure 14 illustrates repetition of a square form in an entry courtyard, lawn panels, a patio, and a water feature.

![Figure 14. Repetition of square form](image)

**2.4.5.1 repetition in plants and hardscape**

Using the same plant repeatedly in a landscape is simple repetition. A grass garden is a good example of subtle plant repetition. Gradation can be achieved with a gradual change in height or size (e.g., using small grasses in front, backed by medium grasses, and then large grasses). A
more obvious gradation is plants that transition from fine to coarse texture, or from light green to dark green.

Material can be used repeatedly throughout the yard for unity, but interest can be created by slightly varying the size, texture, or color of hardscape material. Repetition and pattern can be made most obvious in the hardscape because duplication is easiest with built materials that are manufactured to exact dimensions.

2.4.6 Unity

Unity is achieved by linking elements and features to create a consistent character in the composition. Unity is sometimes referred to as harmony—the concept of everything fitting together. By comparison, scattered groupings of plants and unrelated garden ornaments are the opposite of unity. Unity is achieved by using dominance, interconnection, unity of three (described below), and simplicity to arrange colors, textures, and form. Although hardscapes and plants can be unified by the blending of similar characteristics, some variety is also important to create interest. The simplest way to create unity is through the use of a design theme or a design style. Design themes and styles have a well-defined set of features that have maintained their popularity over time because they are visually pleasing to many.

Unity is achieved by grouping, placing or arranging in such a way that several individual components appear to have a sense of oneness. A desirable appearance needs to be achieved from all points of view. A repetitive pattern can be used to create unity. For example, if you are placing rocks in the garden, use the same type of rock throughout the garden, rather than an assortment of rocks with varying shapes, colours and textures.
Pink used to create tie the whole area together creating unity.

Repetition through use of identical planters at the back adds further to a sense of unity.

2.4.6.1 unity by dominance

Dominance or emphasis is the property of a plant or object that attracts and holds attention, making the object an important feature. The ability of an object to capture attention usually depends on contrast with adjacent objects. A typical example for a garden would be a very brightly colored ceramic pot among green foliage. Dominant features that capture attention are called focal points. Focal points are used to draw attention to a particular location, move the eye around the space, or guide circulation. Emphasis is created through contrast in size, color, form, or texture. Plants that draw attention are often called specimen plants. These are plants with a unique form, size, or texture that stand out from the surrounding plants. Ordinary plants can also be used for emphasis by isolating the plant in a container (Figure 15) or an open space. Purposefully placing plants in this way draws attention to the plant. Specimen plants are usually used to draw attention to entrances, pathways, or statuary. Garden ornaments also work well to attract attention because they are often dramatically different from plant material. Form and color are usually the characteristics that contrast the most with plants. Sculptures, planters, and furniture have forms that are easily recognizable and distinguishable from plants.
2.4.6.2 unity by interconnection

Interconnection, the concept of physical linkage (touching) of various features, is present in all designs. Although all features are linked to other features, the key is to make the linkage seamless so that the features blend or fit together. Hardscape is important to interconnection because it typically serves to organize and link spaces in the garden. Continuation of a line, such as a path, the edge of a built object, or a defined edge of a plant bed, can create unity through interconnection.

2.4.6.3 unity of three

Features that are grouped in threes, or in other groups of odd numbers, such as in groups of five or seven, feel more balanced to the eye and give a stronger sense of unity. Odd numbers allow for staggered variations in height, such as small, medium, and large, that provide more interest. Odd numbers are often seen or perceived as a group and are not as easily split or visually divided as even numbers.

2.4.6.4 unity by simplicity

Simplicity is the concept of reducing or eliminating nonessentials to avoid a chaotic look. This brings clarity and purpose to the design. Many designers achieve simplicity by thoughtfully removing features from a design while still preserving its integrity.
2.4.7 Applying the Principles and Elements of Design

While it is useful to know the elements and principles of design, it is sometimes difficult to understand how to apply them to your ideas for your yard. Each site presents challenges and opportunities for individual design and expression and requires unique application of the elements and principles. Studying how the elements and principles have been applied in an existing design that appeals to you is a good place to start. The best way to create a good design is to borrow ideas from designs that you find attractive and adapt them to your particular site conditions.

2.4.7.1 personal style and sense of place

To discover and identify your personal style, think about other yards or landscapes you enjoy. Observe the landscapes in your neighborhood and other neighborhoods in your community. Study those that appeal to you and note the features and types of plant material. Also try to identify the elements of design, such as color, texture, and form, and determine how line is used in the landscape. Study the view and try to determine how balance and rhythm are created. Also, look for dominance and try to figure out how unity is produced. Studying landscapes in your neighborhood and community is important because most people feel more comfortable when they “fit in” with their neighbors. There is often a strong social desire to feel like part of the community and contribute to the neighborhood fabric. The concept of fitting in is referred to as “genus loci,” or having a sense of place. Sense of place also refers to the regional context—the surrounding landscapes, both natural and planned, that have an influence on the design and plant materials to be used. Other sources of inspiration include demonstration gardens or landscapes, local botanical gardens, and displays at local nurseries. Avoid the large national chain store nurseries, as their plants are not often grown locally, and their plant selection may not be as suitable to your area. They can be good, however, for buying temporary annuals for small areas. Visit demonstration gardens and botanical gardens to look for interesting and appealing plant groupings. Note the type of microclimate for each group to determine if it will work in your yard. Because these gardens are designed for your area, you can use the exact combination of plant material, as long as it fits the sun and shade requirements. Ask about growing and maintenance requirements to determine if the plants will fit your needs. At local nurseries, you can gather and arrange several potted plants to see how they look together. Although they are small, you can still get a good idea about texture and color composition. Another way to identify
your personal style is to look through magazines and books for ideas. Study the images and note the details. What do you like about the design? Will it work in your space? You will not be able to duplicate the exact design because your site will be different in location, size, and shape, but there are often many features you can adapt to your site. Appropriate hardscape materials and plants for your region can be substituted for those in the sample design by choosing materials and plants with the same characteristics. Try to picture how the features will look in your yard and where they might be placed. Several different ideas may be knitted together to create a final design. It is important to keep in mind that the gardens and yards you see in magazines and books are chosen because they are outstanding examples, and they are typically gardens that are cared for by people with extensive gardening knowledge. Keep in mind your (or your contractor’s) maintenance abilities and knowledge and adjust the design appropriately.

2.4.7.2 site conditions

How do you know if a design you like will work in your yard? First, compare the architectural style of the houses and try to find similarities between your house and the sample house. Study the hardscape materials in the sample design. Do the same colors and materials work with your house? If necessary, what substitutions could you use and still retain the desired look? Imagine your house with the same or similar plant materials—remember that the plants can be arranged differently to fit the dimensions of your yard. For more information on plant selection, see Right Plant, Right Place: The Art and Science of Landscape Design – Plant Selection and Siting (http://edis.ifas.ufl.edu/EP416). Second, look at the shape and size of the footprint (outline) of your house in relation to your lot size and shape. For this you will need an official boundary survey that shows the exact footprint, with dimensions, and it’s location within the property boundaries. This will tell you if you have room for the features you desire and where those features can be located. Pay particular attention to the shape of the spaces or voids between your house and the property lines. These are the areas where your features will be located and will help determine the potential form or shape for those features. For example, a rectangular yard may look best with rectangular shapes in the hardscape. The shape of the house will also provide clues as to the type of shape you should use in the yard. If the house has diagonal walls or hexagon shapes, this could inspire a diagonal or hexagon shape in the landscape. Designers will often draw lines on the plan that extend from the house edges or corners to the property lines. Figure 16 illustrates lines used to delineate the shape of spaces and locate the patio and focal
features. These are called regulating lines because they help regulate space and define forms that extend from the house or between the house and the property lines.

![Diagram of regulating lines from house walls and doors]

figure 16. Regulating lines from house walls and doors

Third, thoroughly understand your site and how you want to use the space. Begin with a site inventory and analysis. Note all the conditions of the space and analyze how the conditions might affect your design. Each condition can be seen as an opportunity—a positive condition that will help achieve your design—or a constraint—a negative condition that might impact your design, but could possibly be turned into an opportunity. Examples of opportunities and/or constraints include land forms, such as slopes and flat areas, and natural features, such as trees and rocks, or built features, such as swimming pools and fences. Depending on the desired design, each could present an opportunity or a constraint.

2.4.7.3 locating features and defining outdoor rooms

Once you have determined the architectural style, the shape of the yard spaces, and the opportunities of your site, you can begin to locate the features and give them form. Most features will have a logical location based on the use or type of feature and the site opportunities. The yard is typically considered an extension of the house, and it makes sense to locate the most heavily used features of the yard close to backdoor entrance. For example, the outdoor dining seating area (patio or deck) is typically located adjacent to the house for convenience and physical comfort. Other features, such as dog runs and vegetable gardens, are often located on
the side of the house to hide them from view, and play or recreation areas are often located in full
view of the kitchen or family rooms so that parents can watch children at play. Spatially dividing
a yard into separate uses is often referred to as creating outdoor rooms (Figure 17) and is a
fundamental concept of outdoor design. Logical arrangement of the “rooms” creates a functional
and aesthetically pleasing landscape. Spaces can be delineated through the use of different
materials, such as the edge of a stone patio against a lawn panel; through a change in elevation
(steps); through the use of a form, such as a square lawn panel; through the use of a feature, such
as a low garden wall or small trees; or through the use of plants to create implied walls and
ceilings. The elements and principles of design are particularly useful when creating rooms
because they help to define spaces, add interest, and create a unified, functional, and aesthetically
pleasing landscape.

figure 17. Outdoor rooms for separate uses

Color and texture can also be used to differentiate spaces by making each area visually unique or
distinct. The hierarchy of spaces or rooms can also be delineated through the use of visual
weight. Areas of high importance can include features and elements that give them high visual
weight and attract attention. Scale and proportion are also useful principles for spatial
organization and hierarchy. A space with a distinctly different size relative to the other spaces
tends to assume more importance because of the contrast. Scale is also very important in
determining the type of features that can be used in the landscape; different uses require different
square footage to be functional. For example, features such as swimming pools, dog runs, and
vegetable gardens have a minimum required size, and a patio has a minimum size depending on
the number of people expected to use the patio at one time.
Spaces can be connected through the use of lines, such as pathways, or they can be visually connected through the use of emphasis (focal points) that captures attention and leads the eye, or through repetition of elements that connects spaces through similar objects. Another important concept of outdoor design is direction or physical movement within a space. Movement or circulation can be controlled through the use of different materials, spatial organization, focal points, and intentional marking of pathways. Using all of the elements and principles will tie the entire landscape together in a unified, functional manner.

2.5 Design approach

Autumn colours at Stourhead gardens
The landscape design phase consists of research, gathering ideas, and setting a plan. Design factors include objective qualities such as: climate and micro-climates; topography and orientation, site drainage and groundwater recharge; municipal and resource building codes; soils and irrigation; human and vehicular access and circulation; recreational amenities (i.e., sports and water); furnishings and lighting; native plant habitat botany when present; property safety and security; construction detailing; and other measurable considerations.
Design factors also include subjective qualities such as genius loci (the special site qualities to emphasize); client's needs and preferences; desirable plants and elements to retain on site, modify, or replace, and that may be available for borrowed scenery from beyond; artistic composition from perspectives of both looking upon and observing from within; spatial development and definition – using lines, sense of scale, and balance and symmetry; plant palettes; and artistic focal points for enjoyment. There are innumerable other design factors and considerations brought to the complex process of designing a garden that is beautiful, well-functioning, and that thrives over time.
The up-and-coming practice of online landscape design allows professional landscapers to remotely design and plan sites through manipulation of two-dimensional images without ever physically visiting the location. Due to the frequent lack of non-visual, supplementary data such as soil assessments and pH tests, online landscaping necessarily must focus on incorporating only plants which are tolerant across many diverse soil conditions.

2.6 Training

Historically, landscape designers trained by apprenticing—such as André Le Nôtre, who apprenticed with his father before designing the Gardens of Versailles—to accomplished masters in the field, with the titular name varying and reputation paramount for a career. The professional section of garden designers in Europe and the Americas went by the name 'Landscape Gardener.' In the 1890s, the distinct classification of landscape architect was created, with educational and licensing test requirements for using the title legally. Beatrix Farrand, the sole woman in the founding group, refused the title preferring Landscape Gardener. Matching the client and technical needs of a project, and the appropriate practitioner with talent, legal qualifications, and experienced skills, surmounts title nomenclature.

Institutional education in landscape design appeared in the early 20th century. Over time it became available at various levels. Ornamental horticulture programs with design components are offered at community college and universities within schools of agriculture or horticulture, with some beginning to offer garden or landscape design certificates and degrees. Departments of landscape architecture are located within university schools of architecture or environmental design, with undergraduate and graduate degrees offered. Specialties and minors are available in horticultural botany, horticulture, natural resources, landscape engineering, construction management, fine and applied arts, and landscape design history. Traditionally, hand drawn drawings documented the design and position of features for construction, but Landscape design software is frequently used now.

Other routes of training are through informal apprenticeships with practicing landscape designers, landscape architects, landscape contractors, gardeners, nurseries and garden centers, and docent programs at botanical and public gardens. Since the landscape designer title does not have college degree or licensing requirements to be used, there is a very wide range of sophistication, aesthetic talent, technical expertise, and specialty strengths to be responsibly matched with specific client and project requirements.
Chapter 3: Landscape architecture

3.1 Introduction
Landscape architecture is the design of outdoor areas, landmarks, and structures to achieve environmental, social-behavioural, or aesthetic outcomes.\[2\] It involves the systematic investigation of existing social, ecological, and soil conditions and processes in the landscape, and the design of interventions that will produce the desired outcome. The scope of the profession includes landscape design; site planning; stormwater management; erosion control; environmental restoration; parks and recreation planning; visual resource management; green infrastructure planning and provision; and private estate and residence landscape master planning and design; all at varying scales of design, planning and management. A practitioner in the profession of landscape architecture is called a landscape architect.

Stourhead in Wiltshire, England, designed by Henry Hoare (1705–1785), "the first landscape gardener, who showed in a single work, genius of the highest order"

3.2 Definition of Landscape Architecture
Landscape architecture is a multi-disciplinary field, incorporating aspects of botany, horticulture, the fine arts, architecture, industrial design, soil sciences, environmental psychology, geography, ecology, and civil engineering. The activities of a landscape architect can range from the creation of public parks and parkways to site planning for campuses and corporate office parks, from the design of residential estates to the design of civil infrastructure and the management of large wilderness areas or reclamation of degraded landscapes such as mines or landfills. Landscape architects work on structures and external spaces with limitations toward the landscape or park aspect of the design – large or small, urban, suburban and rural, and with "hard" (built) and
"soft" (planted) materials, while integrating ecological sustainability. The most valuable contribution can be made at the first stage of a project to generate ideas with technical understanding and creative flair for the design, organization, and use of spaces. The landscape architect can conceive the overall concept and prepare the master plan, from which detailed design drawings and technical specifications are prepared. They can also review proposals to authorize and supervise contracts for the construction work. Other skills include preparing design impact assessments, conducting environmental assessments and audits, and serving as an expert witness at inquiries on land use issues.

3.3 History

Orangery at the Palace of Versailles, outside Paris

For the period before 1800, the history of landscape gardening (later called landscape architecture) is largely that of master planning and garden design for manor houses, palaces and royal properties, religious complexes, and centers of government. An example is the extensive work by André Le Nôtre at Vaux-le-Vicomte for King Louis XIV of France at the Palace of Versailles. The first person to write of making a landscape was Joseph Addison in 1712. The term landscape architecture was invented by Gilbert Laing Meason in 1828, and John Claudius Loudon (1783–1843) was instrumental in the adoption of the term landscape architecture by the modern profession. He took up the term from Meason and gave it publicity in his Encyclopedias and in his 1840 book on the Landscape Gardening and Landscape Architecture of the Late Humphry Repton.

The practice of landscape architecture spread from the Old to the New World. The term "landscape architect" was used as a professional title by Frederick Law Olmsted in the United States in 1863 and Andrew Jackson Downing, another early American landscape designer, was
editor of *The Horticulturist* magazine (1846–52). In 1841 his first book, *A Treatise on the Theory and Practice of Landscape Gardening, Adapted to North America*, was published to a great success; it was the first book of its kind published in the United States. During the latter 19th century, the term landscape architect begun to be used by professional landscapes designers, and was firmly established after Frederick Law Olmsted, Jr. and Beatrix Jones (later Farrand) with others founded the American Society of Landscape Architects (ASLA) in 1899. IFLA was founded at Cambridge, England, in 1948 with Sir Geoffrey Jellicoe as its first president, representing 15 countries from Europe and North America. Later, in 1978, IFLA's Headquarters were established in Versailles.

### 3.4 Relation to urban planning

The combination of the traditional landscape gardening and the emerging city planning combined together gave landscape architecture its unique focus. Frederick Law Olmsted used the term 'landscape architecture' using the word as a profession for the first time when designing the Central Park.

Through the 19th century, urban planning became a focal point and central issue in cities. The combination of the tradition of landscape gardening and the emerging field of urban planning offered landscape architecture an opportunity to serve these needs. In the second half of the century, Frederick Law Olmsted completed a series of parks which continue to have a significant influence on the practices of landscape architecture today. Among these were Central Park in New York City, Prospect Park in Brooklyn, New York and Boston's Emerald Necklace park system. Jens Jensen designed sophisticated and naturalistic urban and regional parks for Chicago, Illinois, and private estates for the Ford family including Fair Lane and Gaukler Point. One of the original eleven founding members of the American Society of Landscape Architects (ASLA), and the only woman, was Beatrix Farrand. She was design consultant for over a dozen universities including: Princeton in Princeton, New Jersey; Yale in New Haven, Connecticut; and
the Arnold Arboretum for Harvard in Boston, Massachusetts. Her numerous private estate projects include the landmark Dumbarton Oaks in the Georgetown neighborhood of Washington, D.C. Since that time, other architects – most notably Ruth Havey and Alden Hopkins – changed certain elements of the Farrand design.

Since this period urban planning has developed into a separate independent profession that has incorporated important contributions from other fields such as civil engineering, architecture and public administration. Urban Planners are qualified to perform tasks independent of landscape architects, and in general, the curriculum of landscape architecture programs do not prepare students to become urban planners.\[12\]

Landscape architecture continues to develop as a design discipline, and to respond to the various movements in architecture and design throughout the 20th and 21st centuries. Thomas Church was a mid-century landscape architect significant in the profession. Roberto Burle Marx in Brazil combined the International style and native Brazilian plants and culture for a new aesthetic. Innovation continues today solving challenging problems with contemporary design solutions for master planning, landscapes, and gardens.

Ian McHarg was known for introducing environmental concerns in landscape architecture. He popularized a system of analyzing the layers of a site in order to compile a complete understanding of the qualitative attributes of a place. This system became the foundation of today's Geographic Information Systems (GIS). McHarg would give every qualitative aspect of the site a layer, such as the history, hydrology, topography, vegetation, etc. GIS software is ubiquitously used in the landscape architecture profession today to analyze materials in and on the Earth's surface and is similarly used by urban planners, geographers, forestry and natural resources professionals, etc.

### 3.5 Profession

In many countries, a professional institute, comprising members of the professional community, exists in order to protect the standing of the profession and promote its interests, and sometimes also regulate the practice of landscape architecture. The standard and strength of legal regulations governing landscape architecture practice varies from nation to nation, with some requiring licensure in order to practice; and some having little or no regulation. In Europe, North America, parts of South America, Australia, India, and New Zealand, landscape architecture is a
regulated profession

3.5.1 Argentina
Since 1889, with the arrival of the French architect and urbanist landscaper Carlos Thays, recommended to recreate the National Capital's parks and public gardens, it was consolidated an apprentice and training program in landscaping that eventually became a regulated profession, currently the leading academic institution is the UBA University of Buenos Aires "UBA Facultad de Arquitectura, Diseño y Urbanismo" (Faculty of Architecture, Design and Urbanism) offering a Bacherlor’s degree in Urban Landscaping Design and Planning, the profession itself is regulated by the National Ministry of Urban Planning of Argentina and the Institute of the Buenos Aires Botanical Garden.

3.5.2 Australia
The Australian Institute of Landscape Architects (AILA) provides accreditation of university degrees and non statutory professional registration for landscape architects. Once recognized by AILA, landscape architects use the title 'Registered Landscape Architect' across the six states and territories within Australia.
AILA's system of professional recognition is a national system overseen by the AILA National Office in Canberra. To apply for AILA Registration, an applicant usually needs to satisfy a number of pre-requisites, including university qualification, a minimum number years of practice and a record of professional experience.
Landscape Architecture within Australia covers a broad spectrum of planning, design, management and research. From specialist design services for government and private sector developments through to specialist professional advice as an expert witness.

3.5.3 Canada
In Canada, landscape architecture, like law and medicine, is a self-regulating profession pursuant to provincial statute. For example, Ontario's profession is governed by the Ontario Association of Landscape Architecists pursuant to the Ontario Association of Landscape Architects Act. Landscape architects in Ontario, British Columbia, and Alberta must complete the specified components of L.A.R.E (Landscape Architecture Registration Examination) as a prerequisite to full professional standing.
Provincial regulatory bodies are members of a national organization, the Canadian Society of Landscape Architects / L'Association des Architectes Paysagistes du Canada (CSLA-AAPC), and individual membership in the CSLA-AAPC is obtained through joining one of the provincial or territorial components.

3.5.4 Indonesia
ISLA (Indonesia Society of Landscape Architects) is the Indonesian society for professional landscape architects formed in 4th February 1978 and is a member of IFLA APR and IFLA World. The main aim is increase the dignity of the professional members of landscape architects by increasing their activity role in community service, national and international development. The management of IALI consists of National Administrators who are supported by 20 Regional Administrators (Provincial level) and 3 Branch Managers at city level throughout Indonesia. Landscape architecture education in Indonesia was held in 18 universities, which graduated D3, Bachelor and Magister graduates. The landscape architecture education incorporate in Association of Indonesian Landscape Architecture Education.

3.5.5 Italy
AIAPP (Associazione Italiana Architettura del Paesaggio) is the Italian association of professional landscape architects formed in 1950 and is a member of IFLA and IFLA Europe (formerly known as EFLA). AIAPP is in the process of contesting this new law which has given the Architects' Association the new title of Architects, Landscape Architects, Planners and Conservationists whether or not they have had any training or experience in any of these fields other than Architecture. In Italy, there are several different professions involved in landscape architecture:
- Architects
- Landscape designers
- Doctor landscape agronomists and Doctor landscape foresters, often called Landscape agronomists.
- Agrarian Experts and Graduated Agrarian experts.

3.5.6 New Zealand
The New Zealand Institute of Landscape Architects (NZILA) is the professional body for
In April 2013, NZILA jointly with AILA, hosted the 50th International Federation of Landscape Architects (IFLA) World Congress in Auckland, New Zealand. The World Congress is an international conference where Landscape Architects from all around the globe meet to share ideas around a particular topic.

Within NZ, Members of NZILA when they achieve their professional standing, can use the title Registered Landscape Architect NZILA.

NZILA provides an education policy and an accreditation process to review education programme providers; currently there are three accredited undergraduate Landscape Architecture programmes in New Zealand. Lincoln University also has an accredited masters programme in landscape architecture.

3.5.7 Republic of Ireland

The Irish Landscape Institute [ILI] (www.irishlandscapeinstitute.com) is the officially recognized (by the Irish State) professional body representing landscape architects and parks professionals, in both the Republic of Ireland and Northern Ireland. The ILI was formed in 1992 by the merger of the ILHI (Institute of Landscape Horticulture of Ireland) and the IILA (Irish Institute of Landscape Architects), representing the related disciplines of landscape architecture and landscape horticulture. The Institute currently (October 2017) has a total membership of 160 (approx.) within 7 membership categories (student, graduate, affiliate, parks professional, corporate, fellow, honorary). In the absence of state regulation of the profession or title 'landscape architect', ILI is self-regulating, as for example in its adoption of the trade-marked title, 'Registered Landscape Architect', that is solely permissible for use by corporate members. At international level, the ILI is a full member of the International Federation of Landscape Architects (IFLA) through its European Region (IFLA-Europe). The ILI has play a consistent and active role in IFLA and the current president of IFLA-Europe is Irishman and ILI Past President, Mr. Tony Williams MILI. In the Republic of Ireland, the ILI is a member institute of the Urban Forum, which represents 5 built-environment professional bodies in engineering, architecture, planning, quantity surveying and landscape architecture.
ILI promotes the landscape profession by its accreditation of the master's degree programme in University College Dublin, its certification of Continuing Professional Development (CPD) for its members, administration of professional practice examinations, advocacy and lobbying in respect of government policies, guidelines and standards (e.g. the National Landscape Strategy, National Planning Framework, Blue-Green Infrastructure), conferences and seminars, public lectures and design awards.

The profession grew rapidly during the Irish economic boom of the early 21st. century, benefiting from the upsurge in the construction and development sectors and from the States' capital investment in infrastructure. The recession brought a sharp reduction in membership numbers. The profession and ILI has proven resilient with clear evidence of a slow but steady recovery through growth in membership and in employment, since the commencement of economic recovery in 2014.

A key challenge remains: there is still no professional regulation or protection registration of title in Ireland, despite calls for such on successive government by ILI over many years. Therefore, there is no state-guarantee or protection of clients, for example in terms of insuring and verifying educational qualifications, professional indemnity insurance or Continuing Professional Development (CPD) of those claiming to be landscape architects. Notwithstanding this, there is a growing awareness in some important sectors (e.g. government departments, media, construction, tourism) of the profession. This is due - to some degree - to the ongoing work of the ILI in promoting the benefits of landscape architecture to Irish society, economy and environment.

Landscape architects in Ireland work in private practice, public sector bodies at local government level and in some state bodies (e.g. transport, national heritage) and in academia. The demand for their professional services is often associated with public infrastructure projects (e.g. roads, motorways, renewable energy facilities, water treatment plants, etc.), Blue-Green Infrastructure (planning, design and management of parks, greenspaces, amenity trees) and with construction projects related to land use developments, principally residential, commercial and mixed-use developments in urban landscapes.

Landscape architects are employed in design of: green infrastructure, public realm, institutional/medical/industrial campuses and settings, parks, play facilities, transport (road/rail/cycle/port) corridors, retail complexes, residential estates (including plans for
remediation of now-abandoned housing 'ghost' estates), village improvements, accessibility audits, graveyard restoration schemes, wind farms, wetland drainage systems and coastal zones. They are also significantly employed in preparation/review of statutory impact assessment reports on landscape, visual and ecological impacts of planning proposals.

### 3.5.8 South Africa

In May 1962, Joane Pim, Ann Sutton, Peter Leutscher and Roelf Botha (considered the forefathers of the profession in South Africa) established the Institute for Landscape Architects, now known as the Institute for Landscape Architecture in South Africa (ILASA). ILASA is a voluntary organisation registered with the South African Council for the Landscape Architectural Profession (SACLAP). It consists of three regional bodies, namely, Gauteng, KwaZula-Natal and the Western Cape. ILASA’s mission is to advance the profession of landscape architecture and uphold high standards of professional service to its members, and to represent the profession of landscape architecture in any matter which may affect the interests of the members of the Institute. ILASA holds the country’s membership with The International Federation of Landscape Architects (IFLA).

In South Africa, the profession is regulated by SACLAP, established as a statutory council in terms of Section 2 of the South African Council for the Landscape Architectural Profession Act – Act 45 of 2000. The Council evolved out of the Board of Control for Landscape Architects (BOCLASA), which functioned under the Council of Architects in terms of The Architectural Act, Act 73 of 1970. SACLAP’s mission is to establish, direct, sustain and ensure a high level of professional responsibilities and ethical conduct within the art and science of landscape architecture with honesty, dignity and integrity in the broad interest of public health, safety and welfare of the community.

After completion of an accredited under-graduate and/or post-graduate qualification in landscape architecture at either the University of Cape Town or the University of Pretoria, or landscape technology at the Cape Peninsula University of Technology, professional registration is attained via a mandatory mentored candidacy period (minimum of two years) and sitting of the professional registration exam. After successfully completing the exam, the individual is entitled to the status of Professional Landscape Architect or Professional Landscape Technologist.
3.5.9 United Kingdom

The UK’s professional body is the Landscape Institute (LI). It is a chartered body which accredits landscape professionals and university courses. At present there are fifteen accredited programmes in the UK. Membership of the LI is available to students, academics and professionals, and there are over 3,000 professionally qualified members.

The Institute provides services to assist members including support and promotion of the work of landscape architects; information and guidance to the public and industry about the specific expertise offered by those in the profession; and training and educational advice to students and professionals looking to build upon their experience.

In 2008, the LI launched a major recruitment drive entitled "I want to be a Landscape Architect" to encourage the study of Landscape Architecture. The campaign aimed to raise the profile of landscape architecture and highlight its valuable role in building sustainable communities and fighting climate change.

As of July 2018, the "I want to be a Landscape Architect" initiative was replaced by a brand new careers campaign entitled #ChooseLandscape, which aims to raise awareness of landscape as a profession; improve and increase access to landscape education; and inspire young people to choose landscape as a career. This new campaign includes other landscape-related professions such as landscape management, landscape planning, landscape science and urban design.

3.5.10 United States

In the United States, Landscape Architecture is regulated by individual state governments. For a landscape architect, obtaining licensure requires advanced education and work experience, plus passage of the national examination called The Landscape Architect Registration Examination (L.A.R.E.). Several states require passage of a state exam as well. In the United States licensing is overseen both at the state level, and nationally by the Council of Landscape Architectural Registration Boards (CLARB). Landscape architecture has been identified as an above-average growth profession by the US Bureau of Labor Statistics and was listed in U.S. News & World Report’s list of Best Jobs to Have in 2006, 2007, 2008, 2009 and 2010. The national trade association for United States landscape architects is the American Society of Landscape Architects. Frederic Law Olmsted, who designed Central Park in New York City, is known as the "father of American Landscape Architecture."
3.6 CREATING LANDSCAPE EFFECTS

- Close mowing tends to make an area seem larger.
- A smooth boundary will make an area seem larger.
- Shadows or openings at one side of an area will make it seem wider.
- Looking downhill makes a distance seem longer.
- Looking uphill makes a distance seem shorter
- Too much repetition and harmony is monotonous.
- Too much contrast is chaotic.
- Spaces which are too small can be oppressive.
- Large spaces are empty and hollow unless there are a large number of people in those spaces.
- Long spaces (in large scale public landscapes) can be overdone becoming psychologically exhausting.
- To achieve a harmony in space in enclosed areas the ratio of building height to space width should be no more than 1:4.
- Introduced landforms, reshaping of land, should blend in with existing topography.
- Coarse textures decrease the apparent size of spaces.
- Fine textures will make small spaces look bigger.
- Flowing curved lines are passive, soft and pleasant.
- Geometric lines and shapes are solid, strong and formal.
- Sharp, straight irregular lines create an active, vigorous feeling in a garden.
- A garden can be made to appear larger by making trees and other features from adjoining appear to be part of itself.

CONCLUSION

The fundamental concept of landscape design is problem solving through the use of horticultural science, artful composition, and spatial organization to create attractive and functional outdoor “rooms” for different uses. The elements (visual qualities)—line, form, texture, color, and visual weight, and principles (guidelines) —proportion, order, repetition, and unity of design are used to create spaces, connect them, and make them visually pleasing to the eye.
This study has shown that the Landscape Architect has a significant role in the reconstruction of cities after war. The profession’s remit is the design of the public domain and the coordination of the built environment. On a project as large as Sarajevo the image of the city is a result of the Landscape Architect’s vision and the ability to unite the work of the other professionals. Landscape Architecture has the capability to understand the psychological effect that the landscape has on society. This can be used to neutralise aggression and promote reconciliation. It also has a substantial role in helping the community come to terms with their loss of people, lifestyle and the city they once knew.

Several lessons can be learned from studying the reconstruction of Coventry. First is the importance of securing funding during the initial stages of the redevelopment plan. The Government’s failure to provide this meant that implementation was delayed and unnecessary revisions were forced on the designers. Secondly, Coventry was the contemporary vision of one man. Reconstruction would have benefited from the involvement of a wider group of professionals, whose knowledge and expertise would have resulted in a more practical solution. Thirdly, the enthusiasm of the public for the modern city centre was not curbed. They needed to be educated about the importance of culture and heritage in the urban fabric. Nevertheless, Gibson introduced new concepts in urban design. Coventry was one of the first cities to incorporate a pedestrian orientated city centre. With hindsight the idea was not as successful as envisaged because it was not flexible enough to adapt to changes in society. The concept of pedestrianised city centres is still in practice but has since been refined and found to be a successful component of the public domain. Significantly for Landscape Architecture, the need for amenity space was recognised. This produced a park system linked by a network of public walkways and connections to the agriculture belt surrounding the city. This is another example that has become a customary part of urban landscape.

Beirut demonstrates the importance of establishing a coordinating body, to manage finance and pave the way for the reconstruction process. It also shows the value of a balance between new development and the restoration of the older city structure. It has been shown that the community requires references to their history and culture in order to accept new development. In an effort to re-establish a cosmopolitan feel to the city the original plans placed too much emphasis on the adoption of foreign culture. The result was an unfamiliar urban fabric with little recognition of
Beirut’s heritage. The public demand for revision and the form which it took illustrates the benefit to be had from public consultation. In Beirut this contributed to a sense of ownership and acceptance of the redevelopment by the community. It was recognised in the design of Beirut that the public realm was an important part of the healing process. The design of this was the responsibility of the Landscape Architect employing the use of an open space network within the city to provide locations that would promote the revival of tolerance by encouraging the community to mix. Beirut clarifies the role of the Landscape Architect and the significance of the profession in redevelopment through the introduction of a coordinating plan, the Landscape Framework, that controls the urban environment and the construction that occurs within it.

The recommendations given here have been generated from the perspective of a Landscape Architect to demonstrate the beneficial knowledge and skill the profession can bring to a project as sensitive as this. They do not ignore the contribution invested by other related disciplines but show that the profession has a unique capacity to influence the balance and atmosphere of environments in a restoration programme where an objective is to bring about reconciliation in a multicultured society. Four basic recommendations have been made.

1. Institution of a sound financial base by setting up a control agency whose responsibility is the reconstruction of the public domain of footpaths, street landscape and urban space. This organisation would also be a focus for inward investment, which in turn would bring employment and bring back tourists.

2. Reconstruction of Sarajevo as a sustainable city with the concomitant establishment of improved green space and efficient design that accentuates the role of natural vegetation to reduce pollution and improve air and environmental quality.

3. Ensure the presentation of the rich historical and cultural heritage of Sarajevo through the extension of links, squares and parks that will enhance its significance and provide locations in which the ethnic communities can intermingle and enjoy together a variety of recreations.

4. The Landscape Architect should become the co-ordinator for the entire program of reconstruction. As the main designer of the public realm the Landscape Architect is in a good position to influence the work of the other professions involved in the development of the reconstruction project. The experience of Beirut shows that it is important to have public participation in the drafting of a strategy. Landscape Architects are well placed to
act as an interface between other professions and the public, since training gives an overview of the work of other disciplines.

The recommendations offered here are synthesised from information sources discussed in previous sections and from other published work. They suggest a number of actions that would contribute to the reconstruction of Sarajevo, nurture its multiethnic society and be a symbol of defiance to those who attempted to prevent the growth of ethnic tolerance. Landscape design and reconstruction of the public realm can foster a community that maintains its rich cultural heritage, deals with the repercussions of conflict, and is able to step confidently into the next century.

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