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Relevant Landscape Factors in Property Management/ Maintenance

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Abstract
Effective landscape maintenance will apart from equipment and personnel depend largely on the proper understanding of the various roles played by the elements used in landscape design. This paper discusses briefly the functional and aesthetic roles played by constituent elements in landscape composition. Tangible functional roles discussed include visual control, physical barrier, micro-climatic control and environmental conservation, while intangible functions include institutional/corporate image or identity, public comfort, health, safety and welfare. Aesthetic roles include harmony and variety, unifying and softening architectural elements and relate buildings to their surroundings, control of mood, views and vista among others. These concepts and roles are illustrated with sketches and photographs from existing designed and maintained landscapes from parts of the country and elsewhere.

1. Introduction
The maintenance of buildings and to a much lesser extent, that of the landscape is yet to be embedded in our national habits and property management. Where property managers harbor the minimal attitude of building maintenance, the maintenance of its landscape is often not accorded the attention or priority it deserves. Clearly, this is borne out of lack of understanding of the role of 'pleasing' landscape in enhancing both the quality of human life and environment as well as improving the appearance of the property. Good landscape maintenance should be guided by an understanding of the design intent which inspired its composition. Failure to do this would lead to maintenance action which may destroy the intended functions and aesthetic values of landscape elements. Replacing brick pavement with concrete without knowledge of the role each plays in the composition or arbitrarily replacing plants without knowledge of their place in the composition will detract from the intended landscape quality and appearance.

'Beauty' often forms the basis for appreciating the landscapes around buildings. Expressions such as the building is landscaped with beautiful flowers are indicative of the limited concept of the functions of elements of the designed landscape. Yet, these landscape elements, which include the landform, paving, plant materials, walls / fences, open spaces, water bodies and outdoor furniture, in expressing beauty often are made to fulfill functional rolls in the landscape.

2. Functional Roles of Landscape Elements
The tangible functions which landscape elements are made to or can provide in a composition include visual control, physical barriers, micro climatic moderation and environmental conservation. Intangible functions include institutional/corporate image and identify, public health, safety and welfare as well as aesthetic roles.

2.1 Visual Control
(a) Glare: With the increasing use of glass, bright and smooth building surfaces, coupled with bright pavements, solar glare, glare from headlights, street lights or glare from these reflective walls is becoming very serious in the urban centers. Of all the landscape elements, plants most effectively reduce the visual

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discomfort caused by the glare. Placing trees over reflective pavement such as fresh concrete screens the sunlight (Plate 1a). Likewise trees and large shrubs located near reflective buildings surfaces reduce solar glare reaching pedestrian spaces as well as attenuate reflected light from that building (Olgyay, 1973).

(b) Space Definition and Privacy: Both the landform and pavement can be used to articulate outdoor spaces, create outdoor rooms, and define different use areas or separate conflicting activities (Rubenstein, 1980). Through variation in texture or color of pavement, areas of a particular space meant for circulation and for passive activity are signified to the user such as dark and light pavement or coarser concrete pavers versus smooth pavers. A continuous earth mound or large hedge can provide enclosure. Ceilings in the outdoor space can be articulated by planting large shade trees. Although privacy is easily achievable with fences and walls, plants and landforms can add more pleasant, less rigid screen, if the space is available to use them (Plate 1b).

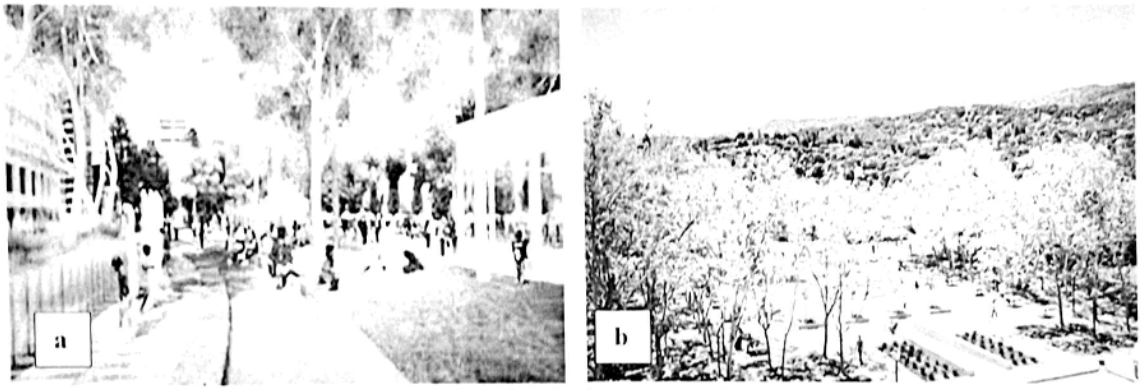

Plate 1a, b. Glare control,space definition with various landscape materials.

(c) Screen or direct View: Both the landform and plants can be employed to screen objectionable sight or to direct a view toward the building or open a visit toward a pleasing distant landscape (Weber & Adams, 1982). This is achieved by shaping the landform and placing plants so that the view is revealed or restricted as the individual progresses through the landscape (Plate 2).

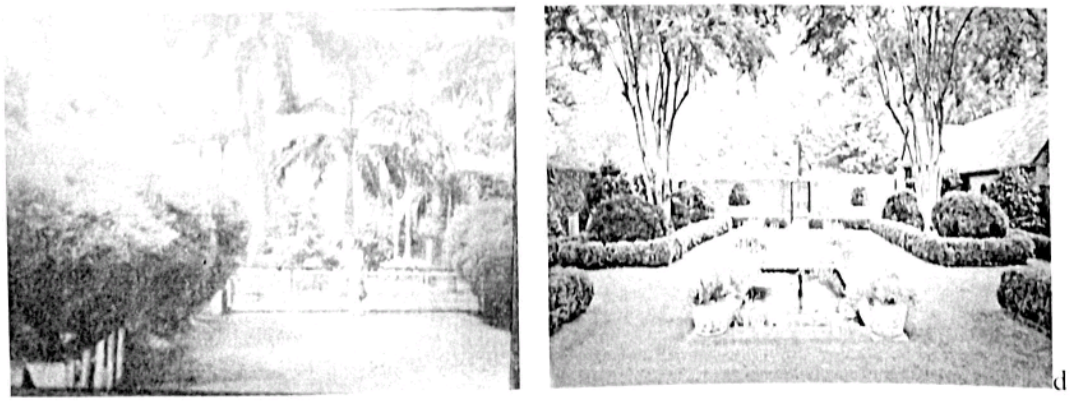

Plate 2. Screen a building and direct a view.

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.2 Physical Barriers: Both the landform and lants can effectively control access by people nd animals. Generally, mounds and hedges of 00mm or less exhibit more of psychological control than physical restraint. However, where visual restriction is not intended, physical barrier is achieved by increasing the width of the mound or hedge to no less than 1.2m. Alternatively, in the case of a hedge using plants with thorns will be effective even for shorter width. Thick, solid hedges of 1.5m or more serve both physical and visual restraint. Barriers of mounds or plant masses along walkways and parking lots serve to direct pedestrians and screen cars from view. They prevent short cuts which ruin lawn areas (Plate 3).

Plate 3. Massing of plants as physical barriers instead of walls or restraints.

2.3 Micro-Climatic Moderation and Environmental Consideration

(a) Solar Radiation and Temperature: Vegetation, whether it is grass or tree canopy reflects a good deal of solar radiation incident on it. On the contrary, asphalt and other dark pavement surfaces absorb tremendous incoming radiation and radiate heat out. The reflective effect of vegetation coupled with the cooling effect of their evapotranspiration moderates the temperature of the surrounding environment. The most desirable effect of plants is the comfort provided in and around buildings and outside spaces by shade trees during hot periods (Plate 4). West walls of buildings and pavements are shaded by positioning appropriate shade trees near or over them.

Plate 4. Micro-climatic modulation in outdoor spaces with landscape planting.

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(b) Wind Control: Landform and vegetation are used as means of blocking, directing or amplifying wind flow to alleviate discomfort. The use of plants as wind breaks depends of course on their height, shape, width and density. Height determines the size of area protected from wind; moderate dense barrier is more effective than very dense shelter belts (Fig 1). The area protected on the leeward side is about five times the height of the barrier (Olgyay, 1963).

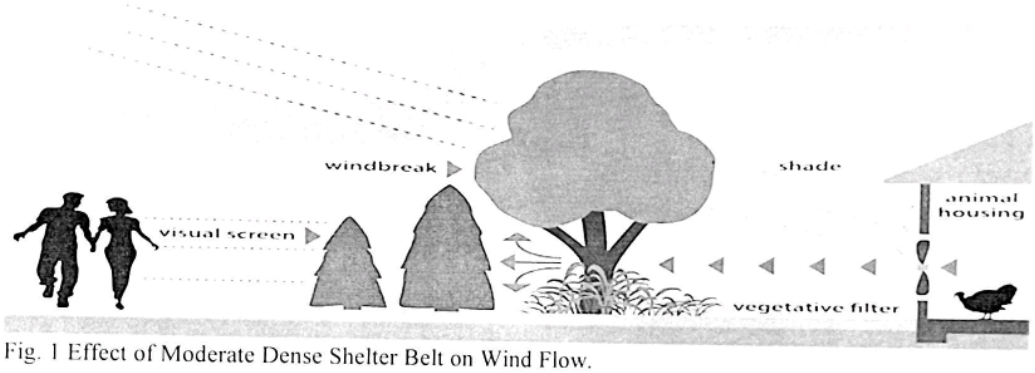

Fig. 1 Effect of Moderate Dense Shelter Belt on Wind Flow.

(c) Humidity Control: Through transportation, plants release moisture into the air, thus increasing humidity. The advantages of this for indoor planting and outdoor humidity during dry periods, particularly in northern states cannot be over-emphasized. Evaporation from fountains, pools and lakes used in composition has similar effect.

(d) Noise Control: Landform and plants can be combined effectively to screen unwanted noise. Earth mounds and vegetation control noise absorbing and deflecting sound waves which come in contact with them. These have been found to be more effective in reducing high frequency noise, however, than low ones. To do this, planting and earth mounds should be at least 7.0m wide.

(e) Air Filtration and Enrichment: Evidence is available that apart from dust and soot, plants filter various pollutants out from the air we breathe. Through photosynthesis, plants add significant amount of oxygen to the immediate environment. They are therefore very desirable to counteract the high level of carbon dioxide and exhaust fumes in the urban environment.

(f) Biological Air Pollution Monitor: Plants can provide a valuable function as indicators of exhaust fumes and toxic pollutants in the air when their leaves exhibit symptoms of these, e.g. soot on trees on Marina and Race Course, Lagos (Fig. 2).

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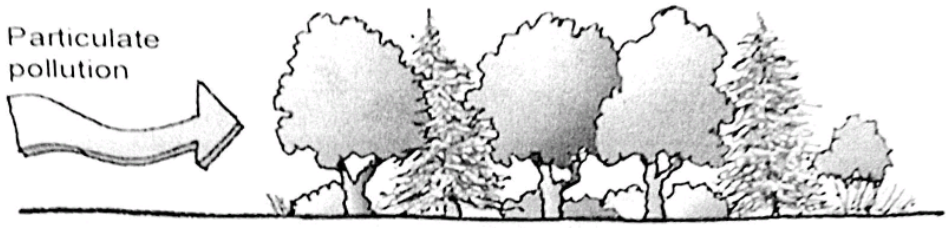

A 20 – 195m wide buffer may reduce particulate pollution by 40 – 75% depending on other factors.
Fig.2. Plants filter out some air pollutants and enrich the air through photosynthesis.

(g) Erosion Control: The best protection against soil erosion when the landscape is not covered by pavement is vegetation. Vegetation cover, grass, shrubs or trees, absorb the impact of rain drops; their root cement soil particles just as they delay run-off and thus increase infiltration. This way, erosion and flooding are minimized. Grass and groundcover are the widely used vegetation for erosion control (Plate 5). More of these and trees are needed in urban properties to save us from frequent flooding.

Plate 5. Where the landscape is not covered with pavement, grass and groundcover are widely used as cover for erosion control.

3. Intangible Functions

(a) Corporate/Institutional image or identity: Corporate or institutional image or identity is not only achieved by tall buildings, glass curtain walls and elegant logo. Well-ordered landscape compliments elegant buildings and courteous customer service to produce a favorable corporate image or identity (Plate 6). A few examples where decent environments and hence good visual corporate image seems to have been projected include, Berliet Motors, Ilasamaja, UAC Oregun, IMB, Barbeach, CMB Ltd, Ikoyi, National Oil, Marina, Harp, Ogba/Ikeja, and Nigerite, Ikeja. One of the benefits of decent working environment is high employee morale and sense of belonging which are fostered. These indirectly translate into higher productivity.

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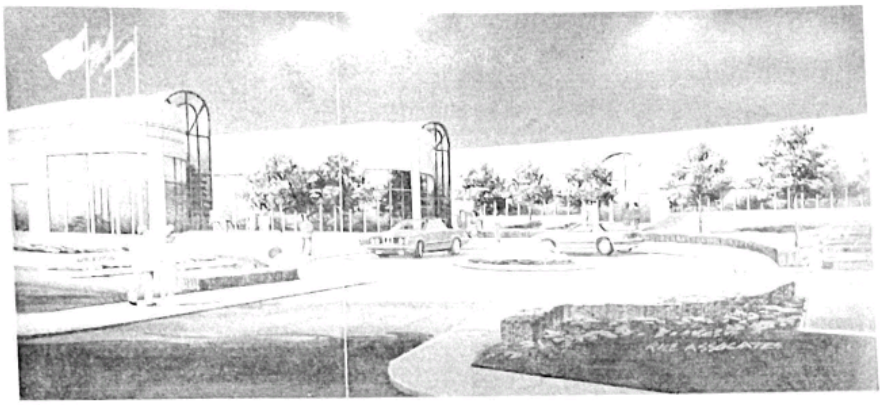

Plate 6. Well-ordered landscape is a compliment for corporate identity.

(b) Public Comfort, Health, Safety and Welfare: The social demands aimed at insuring public health and welfare has led to minimum standards observed in landscape design. These standards imply the minimum requirements in the alignment of driveways, walkways, pavement design, placement of steps, ramps, handrails and other landscape details. For example, through these standards, a single step is usually not advised in the landscape, or that a handrail has to be installed where there are more than three steps. So also, minimum curve radius is defined for driveways to ensure sight distance.

3.2 Aesthetic Roles: As part of intangible functions, aesthetic roles played by landscape elements include unifying and softening architectural elements, background and accents for buildings, frame views and vista, create shadow patterns on the landscape in addition to harmony and variety. If the designed landscape is all about functions, there may not be a lot to admire. Instead, such landscape is a mosaic of functional considerations embellished with aesthetic characteristics of materials which include form, line, colour pattern/texture, structure, habit and seasonal variations.

Aesthetic roles of landscape elements are follows:

(a) Unify, Soften Architectural Elements and Relate Building to Site and Surroundings: The interplay of landscape features is used to create visual beauty around the building and in the total landscape. The designed landform can be used to transform a monotonous flat site into a rolling, flowing and interesting one (Plate 7a-d). In the same manner, it can be molded to relate indoor activities to outdoor activity areas, or to relate the entire site to the surrounding landform. For example mounds, hills, slopes, banks, creek beds and lakes can be built up or carved on the site to heighten the visual experience. Combining these with serpentine lines of circulation, plant masses arranged in freeform or in circular and flowing patterns creates pleasing beauty. Landforms and plant material can be positioned to soften architecture and to unify disparate architectural features in the development (Plate a, b, c, d).

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The scale, colour, form and textures of landscape elements affect people's mood. Small or tight outdoor spaces create a feeling of enclosure. In a similar manner, colours of flowers, plant textures and fragrances affect people's mood-moods of excitement and warmth.

Plate 9. Framing views, vista and affecting moods with landscape materials.

(d) Shadow Patterns in the Landscape: Shadows of plants creates patterns of beauty on paving, building walls and lawns as the sun's position changes; just as the buildings registers its changing shadow on the landscape. Masses of vegetation interplay with open and sunny lawn areas to create patterns of darks and lights. Dark green foliage or pink, red or yellow flowered plants create interesting compliment to a white building façade or the colours of the building facade. Similarly, dark green foliage creates a contrasting background the white foaming jet of a fountain or bright reflective pavement (Plate 10).

Plate 10. Patterns of light and dark created by massing of landscape planting.

(e) Harmony and Variety: The judicious interplay of colours, textures, forms and lines of the buildings, paving materials, fences and plant materials create a harmonious relationship between the building and landscape or in the total environment. Conversely, the judicious use of contrasting colours, forms, lines and textures of features creates enriching variety in the landscape (Simmonds, 1983). These variety of forms include textures of the tree bark, leaves,

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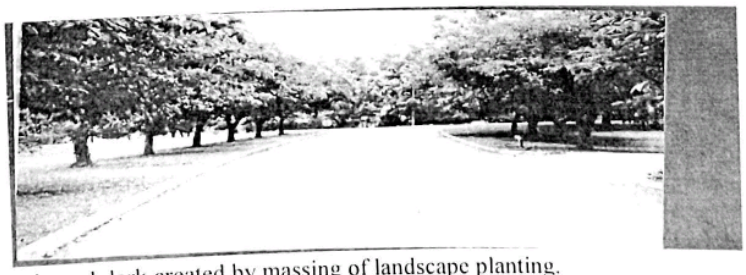

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branching pattern, flower colour among others (Plate 11).

Plate 11. Harmony, variety color and texture in a landscape composition.

4. Factors considered in Selecting Landscape Elements

The design characteristics considered in selecting landscape elements include form, line, colour, and pattern/texture. These characteristics are employed to express design principles which include unity, balance, scale, harmony, rhythm, contrast, variety and emphasis. All these have been directly or indirectly illustrated in the above figures and plates.

The factors considered in selecting plant materials include: (a) Form, structure and habit; b) Rate of growth or longevity; c) Texture of foliage, back and branching pattern; d) Colour – of foliage, flower, fruit and bark; e) Hardiness and root characteristics. Hardiness is expressed in terms of adaptability to locality or survivability in urban conditions; f) Ornamental characteristics and (g) Maintenance requirements.

4. Conclusion

Part of managing a property or building is the maintenance of the grounds or landscape between and around such property. Proper maintenance of this landscape derives its inspiration from a good understanding of the design intent which informed or guided the design selection and placement of landscape elements. Landscape design and maintenance should not be valued strictly in terms of tangible benefits derived therefrom. Instead the real value of a well-designed and effectively planted and maintained landscape also lies in the beauty, health, comfort and general improvement of quality of life in and around such living and working places.

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