Esthetic Considerations in the Selection and Use of Urban Trees

By William R. Nelson, Jr.

Trees can provide a sense of movement and eliminate confusion.

Esthetics and function are equally important in the selection of trees that strengthen, reinforce and add beauty to urban space. The basic structure of a tree, its pattern of lines, the contour outline of its form and its basic habit of growth provide a basis for determining which types are suitable for which settings.

Line and Form

Line and form are the most predictable and most permanent qualities of trees. They are either straight or curved, vertical, horizontal or oblique. The trunk and main branches determine the line and mass of a tree, the shadow patterns both internally and externally and the character and personality of the tree.

Horizontal lines emphasize extent and are restful; vertical lines are severe and provide a feeling of height; oblique lines suggest movement.

Form is the mass or volume of a tree. The extremes of form, from rigidly erect to weeping, provide a wide palette of materials to choose from.

Columnar forms of trees have either rounded or pointed tops and provide contrast. Rounded forms usually have dense crowns. Vase-shaped forms branch high so there is

usable ground space below, are compatible with most plant forms, and blend well with architecture. Pyramidal forms accent the spire top, provide strong contrast, are difficult to harmonize with other plants, but are effective as specimen plants. Irregular forms provide both interest and contrast to architectural masses because of variable outline. Weeping forms are unique, lead attention to the ground area, and are effective against hard lines of architecture.

Color

Flowers, fruit, twigs, bark and foliage are the sources of color in trees. Because flower and fruit colors are seasonal and of short duration, they cannot be considered as primary design elements. Twig color becomes a major factor during winter months if deciduous materials are being used. But leaf color in both subtropical and temperate plant regions is an important consideration.

All colors in the landscape are subject to the variation between true local color and the color perceived as a result of atmospheric interferences between the light source (the sun) and the objects. For example, at sunrise and sunset, the sun turns to crimson, the sky to gold, and

clouds to rose and lilac. This produces significant changes in color which are more difficult to grasp intuitively as compared to form, which is not subject to atmospheric variations.

Texture

The arrangement and character of the component visual qualities of trees result in a texture effect. Plant textures vary according to the distance from which the plant is viewed. In the near view, texture is the result of size and spacing of

leaves and twigs, shape and surface quality of leaves, and length and stiffness of petioles. In the far view, texture depends on the same qualities listed in the near view. However, as the individual detail is lost, texture results from the light and shadow of the plant or plant masses.

Texture can be divided into five classes: fine, medium-fine, medium, medium-coarse, and coarse. Fine textures are delicate and airy, provide a refined appearance, complement smooth surfaces, and soften and blend with harsh surfaces and lines of architectural masses. Coarse textures blend well with rugged, heavy materials, are dominant and effective even when viewed from a distance, but tend to dwarf areas.

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All other classes are gradational between these two extremes.

Design Context

The speed of the observer in motion becomes a critical factor in evaluating visual impact of the physical qualities. At a high rate of speed, form has the greatest impact, followed by line and color, and texture is the weakest. If the observer is walking at a rate of two or three miles per hour, the distances between the observer and the object will determine which of the three physical qualities will have the greatest impact.

In any design there are three compositional scales: near-view, middle-view and far-view.

The near-view space is that close to the viewer. Closeness allows the details of building materials and trees to be seen. At this scale, the intricate structure of line in twig and branching will produce a strong sculptural pattern in space and a three-dimensional filagree pattern against architectural structures. Form is important only when the total tree can be perceived by the viewer. Only small trees will be totally visible and must have an interesting silhouette and sculptural shape. The color of bark, twigs, foliage, flowers and fruit have strong impact, as does texture. Both must be carefully planned and patterned to avoid overuse and jarring results.

The middle-view scale is the transition between the close-up detailing of the near-view and the overall general composition of the far-view. All of the physical qualities come into play, but form will have greater strength.

Far-view is the basic structure and framework of the composition and is a greater distance from the viewer. Although it will already be structured by surrounding urban elements — buildings, roads, signs, walls, etc. — the trees should mold, define, and reinforce the volume of space contained within the composition. In this situation, line is evident only as a contour outline of the tree's form or as the result of several trees combined as a mass. Color has minimal impact except for the general impression of green without the subtle variations noted earlier. Texture, however, is somewhat more important because it is per-

Varying shades of Green Foliage

1. **Dark green** appears somber but combines well with architecture.
2. **Light green** is effective in expanding apparent size of space and lightening low-light areas.
3. **Gray-green** is also effective in expanding apparent size of space, combines well with vivid colors of buildings but conveys a cold feeling.
4. **Blue-green** combines well with other foliage colors, suggests coolness and calmness.
5. **Red-green** offers a spark of vitality and feeling of warmth to an area but reduces its apparent size.
6. **Yellow-green** blends well with other colors, brightens shadowy areas and offers a cheerful effect.
7. **Black-green** seems somber and formal but combines well with other foliage colors and with architecture.

A silhouette can be dynamic and expressive as well as appealing and satisfying.
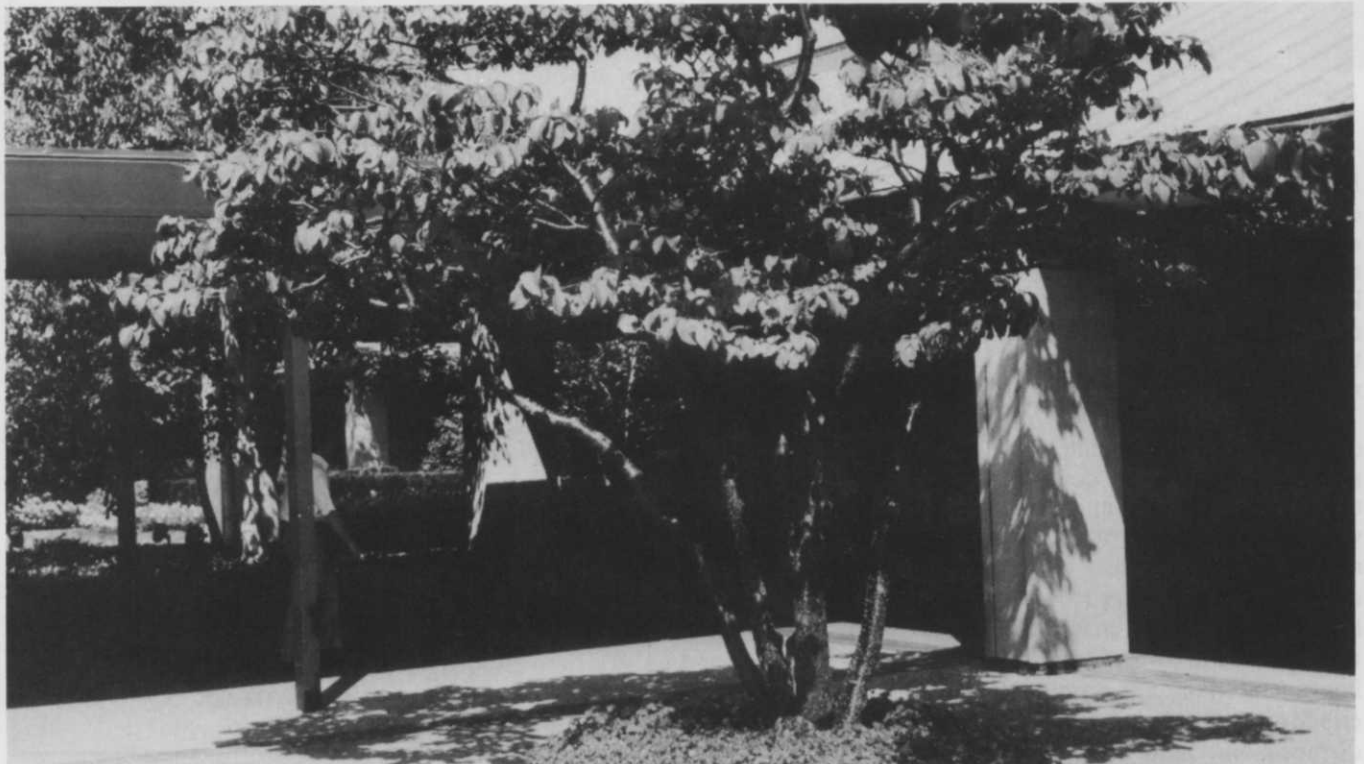
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ceived as light and shadow effects resulting from line, color, and form. But once again form asserts itself over all the other physical qualities. Tree forms in the background should be presented with clarity, boldness, and strength — and yet always with simplicity.

It should be noted that, at certain times of the day or year, a normally weaker element can assume temporary strength to the point

A tree can add drama to an otherwise ordinary scene.

where it dominates the scene. For example, seasonal floral displays or spectacular fall color could overpower from at any scale.

Emotional Qualities Affecting Esthetics

Space identification results from trees being used to establish a feeling or sense of place, possession, and movement. *Sense of place* is an encounter between the individual and place that is dramatic, simple, and impressive — space in which a person is emotionally secure. *Sense of possession* involves shade, shel-

ter, and visual quality of space in order for people to use it and take possession of it. *Sense of movement* results from space defined by trees to outline a corridor of movement that eliminates confusion and indecision on the part of the user.

Enclosure and space definition is the shaping of outdoor spaces by utilizing trees. Enclosures created by trees are rarely total and complete. Trees function more on the basis of suggestion rather than by providing complete visual stops. In the near-view, tree trunks provide a colonnade that defines space and implies

containment, yet the gaps between trunks reveal what is beyond. In the far view the combination of trunks and foliage tend to merge, suggesting a total and complete enclosure.

The details of line and form, color, and texture of the trees used for enclosure have importance at a distance of 40 feet or less. Beyond 40 feet the composite effect of the total mass assumes importance.

Orientation, focus, and sense of direction are attributes of visual control through the use of trees. *Orientation* is the use of trees to stimulate a reaction such as "I am enclosed" or "I am exposed." Trees are also obvious devices to serve as a

point of reference — "over there" or "here at the tree." *Focus* is the transferance of attention. For example, a tree placed near an architectural element seizes our eye and holds our interest, resulting in a strong focus of attention. *Sense of direction* is control over the extent of the observer's view. It includes enframement of a vista, the partial screening of a vista, the linking of the near-view with the far-view, and the closed vista.

Enframement involves the use of trees to force viewing a special feature or remote landscape.

Linking the near-view with the far depends on compartmentalizing the overall view, forcing the observer to see only sections of the total scene. When trees are arranged so the trunks form a series of "windows," the remote area is framed into a series of "pictures." This directs the observer's attention to the details of the remote scene.

Partial screening of a feature or vista utilizes the crown of a tree to withhold the total view until the observer has moved past the tree. This technique works well when the feature is large enough to be partially viewed over or around the screening tree. This introduces intrigue and curiosity that is climaxed by the dramatic impact of the full-view once one has passed the tree.

Finally, a blocked vista limits the observer's view to the immediate space he presently occupies. The result is added interest in the immediate environment.

Trees selected for screening or blocking of vistas should have strong form and be relatively dense. At the same time they should have interesting details for the nearby observer.

Truncation is the use of trees to mask the upper portion of buildings so that the building is not seen in its entirety. This break of the vertical mass directs attention to the space at eye level (the area below the tree's crown). The immediate space is no longer overwhelming to a person because the dwarfing influence of architecture is reduced by truncation.

The dramatic involves incidence, sequence, anticipation, infinity, and illusion. Establishing an

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incidence involves the capturing of the eye and attention in the midst of a monotonous field of vision. A continuous row of buildings quickly becomes boring because of number and dominance. If such a scene is interrupted by a tree or group of trees, the total scene has interest for the viewer.

Sequence is a process of revealing a succession of views by having trees arranged to suggest a path of visual or physical movement. *Anticipation* is the exploitation of human inquisitiveness. Instead of giving orientation and meaning to the scene, trees are used to arouse one's curiosity as to what will be seen next after passing beyond the visual block. An attempt to use trees to expand the boundary of the imme-
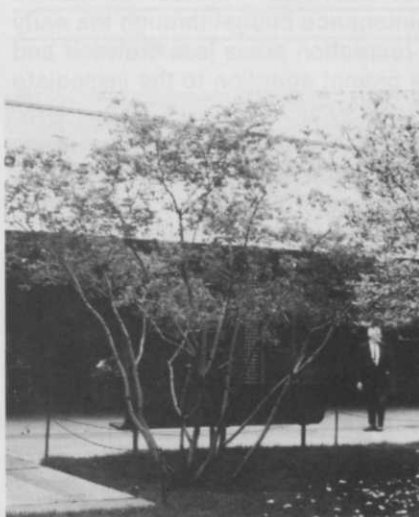
diate area provides a *sense of infinity*. Trees with strong line and form can direct the eye and attention, suggesting an expansion of size and infinity. *Illusion* involves suggestion and contradiction of perception.

Past experience has taught us what we expect to perceive in depth, size, and distance; but by skillful placement or juxtaposition of trees,

A combination of shadow and reflection brings this pool to life.

Additional Characteristics Affecting Esthetics

1. **Silhouette** — View of a tree as seen against the sky or building. It is a quality that is dynamic and expressive as well as appealing and satisfying.
2. **Sculptural quality** — Refers to the three-dimensional form of the tree. It may be bold or varied, yet always interesting because of the changing visual angle that results from the movement of the observer.
3. **Shadows** — Two-dimensional elements that have tremendous potential for esthetic effects. Shadows on the vertical walls of architectural or paved surfaces of the ground add detail, contrast, and animation to the man-made surfaces.
4. **Reflections** — Two-dimensional patterns, like shadows, but created by water, glass, and other mirror-like surfaces. Surfaces that upon quick glance have no significance come to life with the interesting and provocative pattern of shadow and reflection.
5. **Intricacy** — A quality relating to the natural yet sometimes curious branching pattern and general habit of growth of the tree. For the observer, this quality is sometimes curious and abstract, yet impressive and meaningful.
6. **Geometry** — The interaction of the tree form with architecture, sky, and space. Geometry can transform the landscape by the scale it establishes and by the significance it gains from contrast with the surrounding environment.

This tree results in a strong focus of attention.

Shadows on man-made surfaces add detail, contrast and animation.

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the visual experience can contradict the intellectual. If carefully handled, it can be intriguing and delightful.

Use of Trees for Esthetics and Utility

Trees for Different Urban Settings

The typical urban situations in which trees should be included can be grouped into (1) the single site, (2) the project site, (3) open space areas and (4) the connector system.

The *single site* usually involves a small unit of land on which there is one building with limited open space, such as a plaza. The size of the tree must be large enough to have a good scale relationship with the building. If it is a high-rise structure, the tree's crown should be massive and large enough to truncate the towering architecture so that the building will be viewed as a backdrop for foliage and branches.

Trees can unify an awkwardly fragmented scene.

Because the site will be viewed mostly by pedestrians, the trees selected should contribute interest in line, branching patterns, texture, and color (for near-views). These esthetic qualities provide delightful contrasts to the hard surfaces, harsh lines and cold materials of the architecture.

The *project site* usually includes more than one building and has sidewalks, streets and parking areas. The trees should facilitate visual identification, create a memorable scene and establish the feeling of a sense of place.

Often this landscape is characterized by an openness between buildings, roads and walks. Trees can be used to provide continuity to space and to articulate the form of space simply by dividing it into smaller units. As trees will be viewed mostly as background, their forms will be a critical esthetic factor. Similarly, parking lots are large and incomprehensible. They can be given architectural form through the repeated use of tree forms that are visually strong. An added functional benefit will be to give order and

pattern to the movement and parking of cars in the lot.

Trees may also be used to direct the movement of people. When the direction of movement is defined, the user can have a fuller enjoyment of space and be relieved of confusion and indecision.

Open spaces are varied and serve different needs and functions. Open space may be a greenbelt for separating or blending different parts of the city. It may be open lands for active and passive recreation. Or it may be a large-scale plaza for a variety of mixed uses such as sitting, walking, playing, eating, concerts and art shows.

Greenbelts can be used as a transition or buffer between various districts — as commercial, residential, industrial, recreational and educational. Trees can be used as either barriers or elements of transition, depending on the degree of physical and visual penetration they permit. The individual tree's form, color or texture is not important, but those of the aggregate are. The composition must be carefully con-

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ceived to convey a harmonious and visually satisfying combination of the physical qualities.

The connector system involves trees that extend throughout the city, connecting many diverse elements. The connector system is potentially the unifying element of an urban scene that is awkwardly fragmented into separate uses and zones. Esthetic qualities of trees provide one of the most powerful agents for unifying and joining the city.

The criteria for tree selection will be based upon the character of the street — residential, arterial, strip-commercial and pedestrian-shopping.

Trees on a residential street should mask utilities without interference, separate pedestrians from automobiles and soften and blend varying architectural styles into a harmonious whole.

For arterial streets, in general, selection of trees should consider speeds of the observers. The importance of form is obvious. Whether the crown should be open or dense depends on how much visual penetration is desired beyond the street corridor. Trees do not have to be regularly spaced at 30 to 40 feet to be effective. In fact, utilities, curb cuts and other physical elements usually prevent such rhythmic repetition.

Nevertheless, the introduction of trees wherever space is available creates visually pleasing effects along a monotonous street. Such trees should be sharp in silhouette feature, strong in texture, line, and possibly color, so as to add variety and interest.

Varying the street-tree pattern by alternating trees in a projection-and-recession pattern eliminates the effects of a straight-line green facade imposed on straight-line architectural facades. This provides an intricacy and pattern that is stimulating and enjoyable. Form and habit of growth are primary considerations.

Trees for minor streets should be used in much the same way as for arterial streets. However, on narrow streets, trees may be limited to one side, alternating sides by blocks. For narrow streets and small buildings, relatively small trees are preferred.

Trees of high interest in details would be appropriate on a pedestrian shopping street. At the same time they should function to separate cars from pedestrians, provide human scale in the midst of oversized buildings, serve as focal points, vistas and places to sit, and harmonize variable styles of architecture or a diverse and unorganized scene. □

William R. Nelson, Jr. is a professor and extension landscape architect in the Departments of Horticulture and Landscape Architecture at the University of Illinois, Urbana, Illinois.