

ALTERNATIVES TO LINEAR TREE PLANTINGS

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Along city streets and in parks and plazas, long avenues of trees are a classic planting mode. The planetree boulevards of Paris, the elm avenues of Washington, D.C. and the elm mall of Central Park are all familiar examples. When successful, evenly spaced linear plantings are magnificent and are certainly appropriate in some instances. Linear plantings, however, can be problematic, especially in highly developed areas where planting space is limited. In many instances, urban plantings will be far more successful if a less formal planting is installed.

Trees require large areas of moist, aerated soil space in which to spread their roots. A tree grown in open soil may have a root system that covers an area two to three times the spread of its crown. In the city, a tree simply cannot survive in the standard 4 foot square pit unless its roots can move into adjacent soil areas. Far too often, in an attempt to maintain the architectural repetition of a linear planting, trees are squeezed in situations where there is not enough soil or crown space. Inevitably, these trees decline and the original concept of a formal allee planting is destroyed.

Even where soil space is more conducive to a linear planting, other urban stress factors are such that some loss is highly likely over the years as the planting matures. Missing plants in formal linear plantings are highly visible and the entire planting can take on a run-down appearance. However, when non-linear designs are used, losses are less noticeable.

Planting spaces along streets, in courtyards, and in urban plazas are frequently irregular in nature (Figure 1). Even where overhead space is unrestricted, the underground is often a maze of utilities, extended basements and vaults. Simply stated, irregular/non-linear plantings give the landscape designer the flexibility to be opportunistic and to fully utilize the spaces that provide the best growing conditions. Where adequate soil space exists, utilize all of it and plant heavily. Where space is inadequate, don't plant. Even if this results in fewer trees, those planted are likely to grow well and the entire project will age more gracefully.

Non-linear planting design also gives planners the latitude to cluster tree plantings when space is available. These clusters can include tall canopy species, smaller understory trees and ground level shrubs and herbaceous plants. Such a plant community could share a large common root space

(Figure 2). Cluster plants protect one another from the wind, sun and reflected heat. Together they create a microclimate which is more conducive to their mutual survival. Also, cluster planting may well help protect one another from vandalism and mechanical damage. Of course, single tree plantings can and do thrive, but only when adequate soil space is available.

Formal linear plantings usually imply that a single species be used for design unity. This can be visually dramatic, but it is biologically precarious. In any planting, whether it be agronomic crops or urban trees, movement toward monoculture increases the likelihood of future problems. Monoculture is the biological equivalent to putting all your eggs in one basket. If an insect or disease problem becomes prevalent, the entire planting is in jeopardy. The dangers of monoculture are well known Dutch elm disease on American elms, cankerstain on planetree, and obscure scale on red oaks are all examples of dangers to monocultures In species diversity is safety. It is a way of hedging your bets with nature. The informality of non-linear plantings is more suitable to rich species mixes and allows the designer to better match the species to varying microclimate and soil conditions For example, the north and south side of a city street are likely to have dramatically different microclimates. The north street side would tend to be sunny with more reflected heat, while the south side may be in the shade much of the day. In many instances, a tree species that would thrive on the south side would not tolerate the conditions of the north side . Likewise, urban soil conditions vary markedly within relatively small areas. Informal planting schemes allow designers to select a species best adapted to each different situation.

Species diversity is not only biologically and horticulturally important, but it can also have aesthetic advantages. Urban areas are far too often devoid of rich gardenesque plantings. City dwellers cherish those plants which dramatically announce the changing seasons. Diverse plantings provide multiple seasons of flowers as well as contrasts in form, texture, fruit and autumn color. Naturally, diversity in any one planting must be tempered with some level of repetition to bring unity to a planting. Yet when done carefully and sensitively, a surprising level of diversity can be incorporated into a planting without sacrificing design unity. Consider natural plant systems such as a forest or a meadow. Each are richly diverse plant communities yet they present a unified, pleasing appearance.

Trees growing in the city are plagued by many problems, but overall, they are remarkably tenacious With careful planning, much can be done to increase tree survivability. Non-linear planting patterns can do much to give designers the flexibility to design biologically and aesthetically diverse plantings that are more responsive to the site and more conducive to long term tree survival and growth.

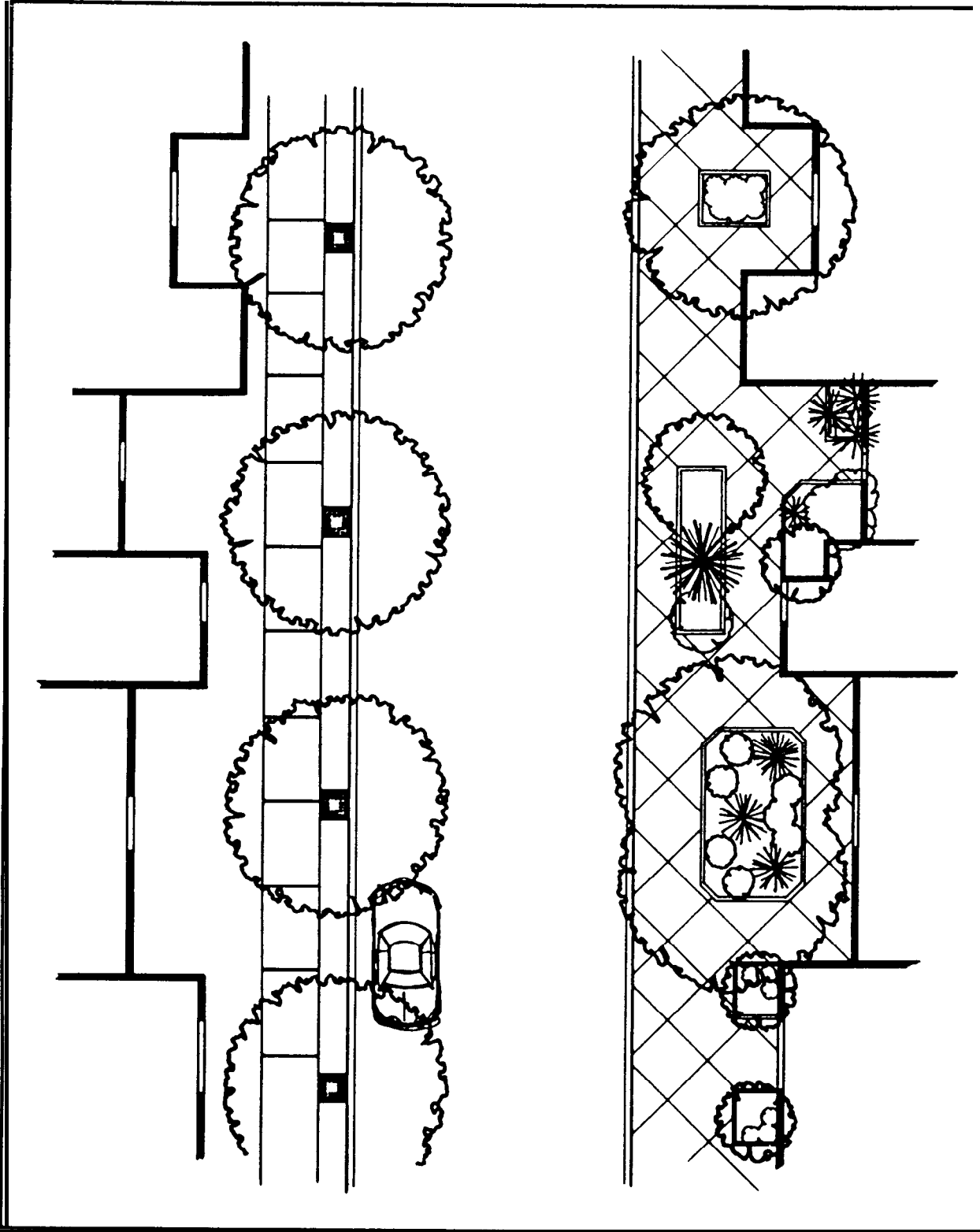


FIGURE 1: Examples of linear and non-linear streetside planting design.

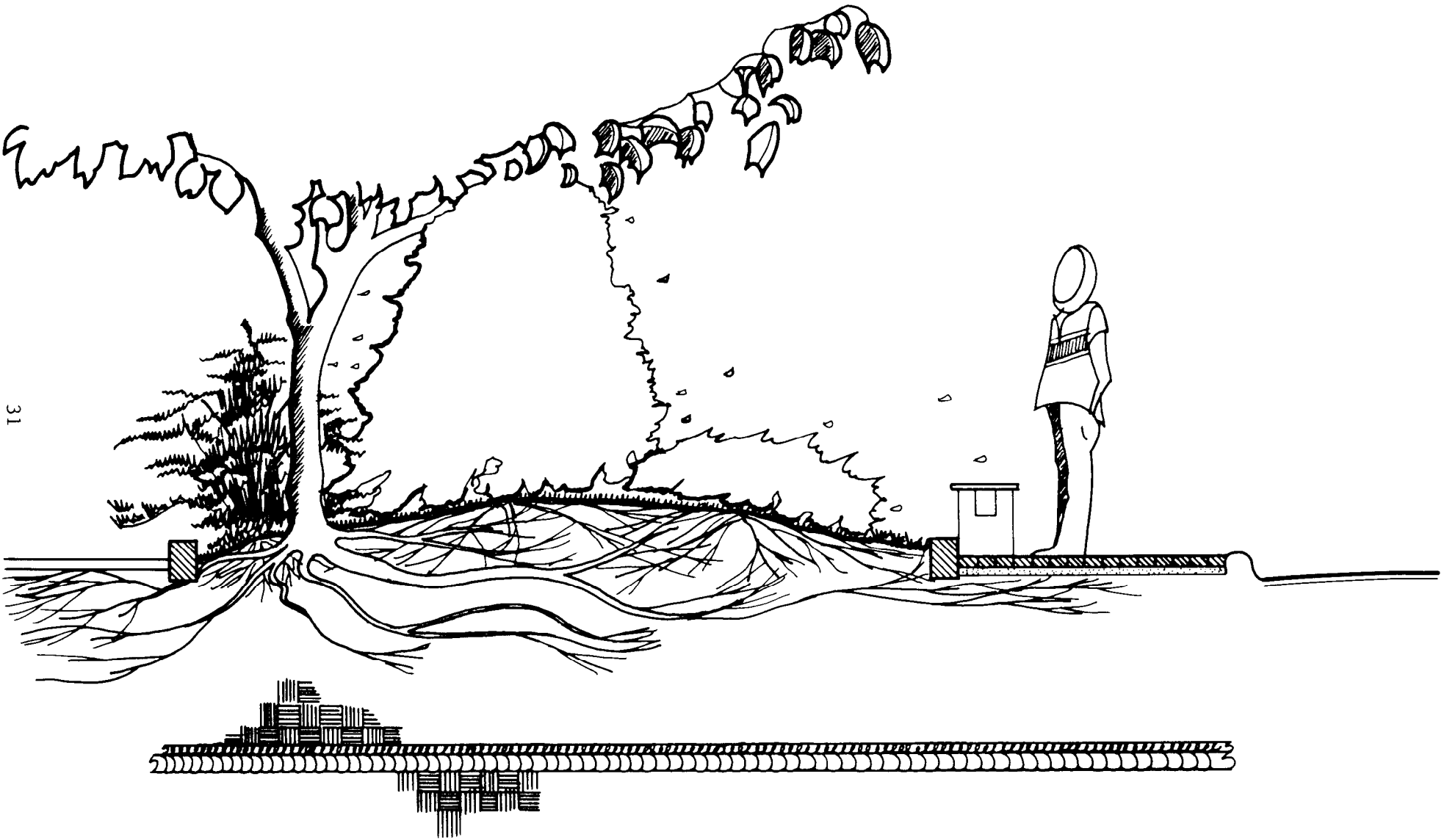


FIGURE 2: A cluster planting shows an ample volume of shared rooting space.

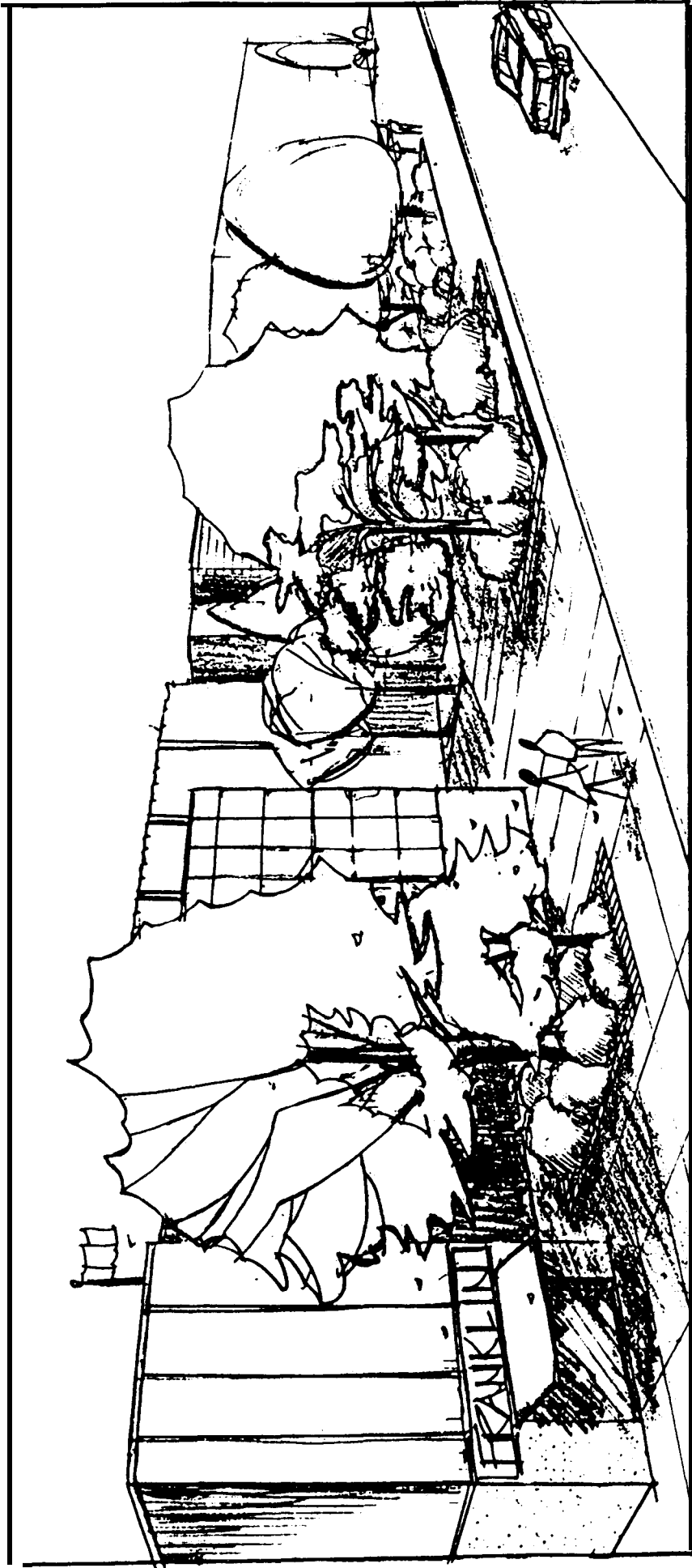


FIGURE 3: A perspective sketch of a non-linear planting showing extended planters and cluster planting.