

A LANDSCAPE DESIGN CREATED TO PROVIDE LOW MAINTENANCE, A SENSE OF SECURITY, AND VISUAL QUALITY

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Abstract. A landscape design was created at the Dr. Kennedy Homes Housing Project in Fort Lauderdale, Florida in order to eliminate such problems as high maintenance costs and unwanted pedestrian traffic. In addition, the design was created to enhance visual quality and provide a sense of security to the residents. A land survey of the site was conducted and existing building and vegetation were plotted. Within the common-use areas adjacent to all residences, all vegetation that was considered improperly placed was recommended for removal. A redesign of the areas in question was created concerning species adaptability, low maintenance, existing environment, and esthetics.

Well planned landscapes are extremely important in a world of vanishing resources. As more people move into already densely populated areas, our natural environment is diminishing and the need to develop landscapes in these areas is crucial. The expense, however, of time and labor in maintaining landscapes can be costly, especially if the designs do not work well for the sites in question. This is the case at the Dr. Kennedy Homes Housing Project in Fort Lauderdale, Florida. Owned and managed by the Housing Authority of the City of Fort Lauderdale, the Dr. Kennedy Homes Housing Project needs the installation of a better designed landscape to minimize maintenance costs, provide improved security and create an aesthetic quality that will increase community awareness.

Presently, the management of the Dr. Kennedy Homes Housing Project is faced with high maintenance costs of specific landscape areas within the project. These areas are undeveloped "common-use" areas that are adjacent to all residences. At present, there are several problems with the condition of these areas. For example, the majority of the area is covered with turfgrass. This requires frequent mowing and high maintenance. In addition, various trees are growing directly in or under power and telephone lines making it necessary to contract for regular pruning of the trees at enormous expense. Finally, the location of the Housing Project, in a high-crime area, makes security a problem. It is bordered on the north by West Broward Boulevard, making entry of unwanted pedestrian traffic a frequent occurrence. Unfortunately, this unwanted traffic increases opportunistic crime (i.e., burglary) and nuisance intrusions in residential areas.

The objective of this project was to evaluate the current landscaping, develop recommendations for removal of im-

properly placed trees, and to redesign the undeveloped landscape areas at Dr. Kennedy Homes to ensure low cost maintenance, improve its aesthetic quality, and generate a greater sense of security for the residents.

The Site

Dr. Kennedy Homes Housing project is a public housing project operated by the Housing Authority of the City of Fort Lauderdale. It is located in the southwest section of the city and was designed and built during the early 1940's. The total land area is 8.27 acres with forty-four residence buildings and one administrative building within the project. For evaluation and design purposes, the project was divided into six separate rectangularly shaped regions, with the common-use areas situated in the center of each region. A region approximately 28,050 square feet in area in the geometric center of the project was excluded from the present redesign due to limited time and resources.

The Survey

The original plans of the Dr. Kennedy Homes Housing Project were drawn up in December of 1939. Unfortunately, many of the buildings and sidewalks that exist today are not indicated in the original plans. Therefore, an actual survey of the site was done. Buildings, parking lots, and sidewalks were added or deleted in every region except region one and six. These two remained the same as the original layout. All existing plants within these common-use areas were mapped. In addition to plants, the location of the utility poles, telephone and power lines were also recorded. In the case of larger trees, both the location of the tree and the canopy size were inventoried. Each species was identified by the use of taxonomic references (1, 2, 3) and labeled on a landscape plan. All of this field data were then transferred onto larger representations of each region and the evaluation of improperly placed vegetation began.

The vegetation growing within these common-use areas included turfgrass, shrubbery, and several large trees. The plants classified as improperly placed either presented a hazard, such as in or directly under power and telephone lines, or required very high maintenance, such as turfgrass. This classification was applied to much of the existing vegetation. However, several of the regions had well maintained gardens and hedges that were cared for by individual residents. Since involvement in the landscape is encouraged by the Housing Authority, these resident maintained areas were considered during the redesign and usually not disturbed. In addition to these maintained areas, the areas between the clothes line poles and the buildings were not involved in the survey, out of respect to the residents, who consider them, as "private backyards". Therefore, only the vegetation in the common-use areas was considered. Once the survey and evaluation had been completed, the next step was to create a solution.

We gratefully acknowledge Robert Gilliland, Drafting Unlimited, Tavernier, Florida, for the use of his time and facilities in the preparation of Figure 1.

The Design Process

A new design should consider areas that are designated private by residents with common-use areas that are used by all residents. The design should designate areas that are accessible to all people, but at the same time create a feeling of privacy where needed or desired.

At first, interest by the residents in developing a landscape in the common-use areas was generally low. As time progressed, however, several people began to ask questions and offer ideas they thought would be appropriate. One of the biggest problems discussed involved two regions bordered on the north by West Broward Boulevard. According to many of the residents, unwanted pedestrian traffic through their yards is a serious problem. They felt security and privacy were priorities in any redesigning. The overall concern for most residents was the need to create a pleasant surrounding in which to live.

In addition to the residents, the Housing Authority staff had several expectations pertaining to a new design. The main concern revolved around expenses. The Authority expressed the desire to install a design that would greatly minimize present landscape maintenance costs. In addition to costs, the Housing Authority suggested the use of vegetation that could be utilized by the residents either as a source of food or income. And finally, by creating a pleasant environment, the Housing Authority hoped to increase community involvement and awareness.

The New Design

Creating the final design involved the combining of all the suggestions from the residents, the Housing Authority staff, and other sources. Each region was evaluated separately for design components such as noise, circulation, view, and path. In addition to design features, maintenance was also considered. Aspects involving the ease of mowing and pruning, litter of leaves and fruits, access to utility poles and safety. A basic "bubble" diagram was drawn to illustrate the listed components of each site. With these components in mind, the diagram was then advanced to actual shapes and curves representing the areas on which vegetation would be placed. These shapes were used to designate the final location of mulches, shrubbery, and trees. The actual position of the plants was done with the following principles of composition: balance, repetition, variety, sequence, and scale. The final stage in the design involved the choice of species.

The plant species were chosen with both maintenance and design principles in mind. In considering maintenance, the following factors were reviewed: maximum height and spread at maturity, insect and disease resistance, litter from fallen leaves and fruits, the economic value of the species, low pruning, and adaption to the area. The design qualities of the plants included: texture and color of vegetation, shape, and size of the mature plant.

An example of all the design factors combined is illustrated well in region one (Fig. 1). The existing vegetation within the common-use area included an enormous cluster fig., *Ficus racemosa*, one coconut palm tree, *Cocos nucifera*, two mature mango trees, *Mangifera indica*, and the remaining area was covered in turfgrass. The canopy of the cluster fig was measured to be a 30-foot radius. The trunk diameter was close to 13 feet. Basically, this enormous tree

required extensive pruning but provided little benefit to the residents or landscape. Therefore, it was recommended for removal. Neither the coconut palm tree or the mango tree were considered a problem and both were incorporated into the design. The only other species that required removal other than the cluster fig tree, were six umbrella trees, *Brassaia actinophylla*, 12 feet in height, that grew between the buildings facing West Broward Boulevard. The umbrella trees were mature enough that a person could easily walk between them and enter the central area. In order to discourage traffic between the buildings, the umbrella trees would be replaced with a barrier plant, spanish bayonet, *Yucca alifolia*.

The outline of the planting bed of the new design was done with smooth curves rather than straight corners. This creates ease in mowing and overall maintenance of the remaining turfgrass (5). In the area where the large fig tree was located, three new trees would be placed: a tame tamarind, *Tamarindus indica*, which provides shade and edible fruit, and two gumbo limbos, *Bursera simaruba*, which do not grow exceedingly large, but do grow rapidly, were also used for shade. In addition to the three trees added, a group planting of coconut trees, *Cocos nucifera*, would accompany the one existing palm. The coconuts from the palm tree are edible and could provide some economic value in the future. The remaining areas were restricted from large trees due to telephone lines above the planting bed. Therefore, various group plantings of low shrubbery that were considered hardy and drought tolerant would complete the design. The remaining areas within the bed were either covered with low growing ground cover or mulch. These ground covers decrease maintenance by eliminating turfgrass areas, reducing weed growth, and decreasing the total amount of water needed in the planting bed (6, 7).

Region four had several design problems. First of all, the vegetation within the common-use area included turfgrass, and several trees. Only one of these trees, the cluster fig, *Ficus racemosa*, was considered improperly placed because of its size and location and was recommended for removal. A second design problem which occurred in all six regions, was a 23' x 10' cement platform labeled on the original plans as a "garbage platform". All of these platforms were intact, and generally unused. However, in one instance a cooking grill had been placed in the center of the platform and used as a cooking/picnic area. Therefore, in redesigning all regions within the project, the platforms were cleared of debris and a picnic table was placed in the center. A bed planting, and whenever possible shade trees, were placed around the platform to create a more pleasant surrounding. However in this particular region, (Fig. 4), one of the privately maintained areas directly behind one of the buildings was so large, it not only included the cement platform, but decreased the common-use area by 50%. The average distance between clothes line poles and building within the project was 16 feet, but in this one case the distance was 40 feet. Since the area is considered as a private backyard by the residents, it was not incorporated into the new design.

The redesigning of this common-use area emphasized circulation of pedestrian traffic and shade. Since the common-use area was already restricted in size, any planting that interrupted the natural path through these areas

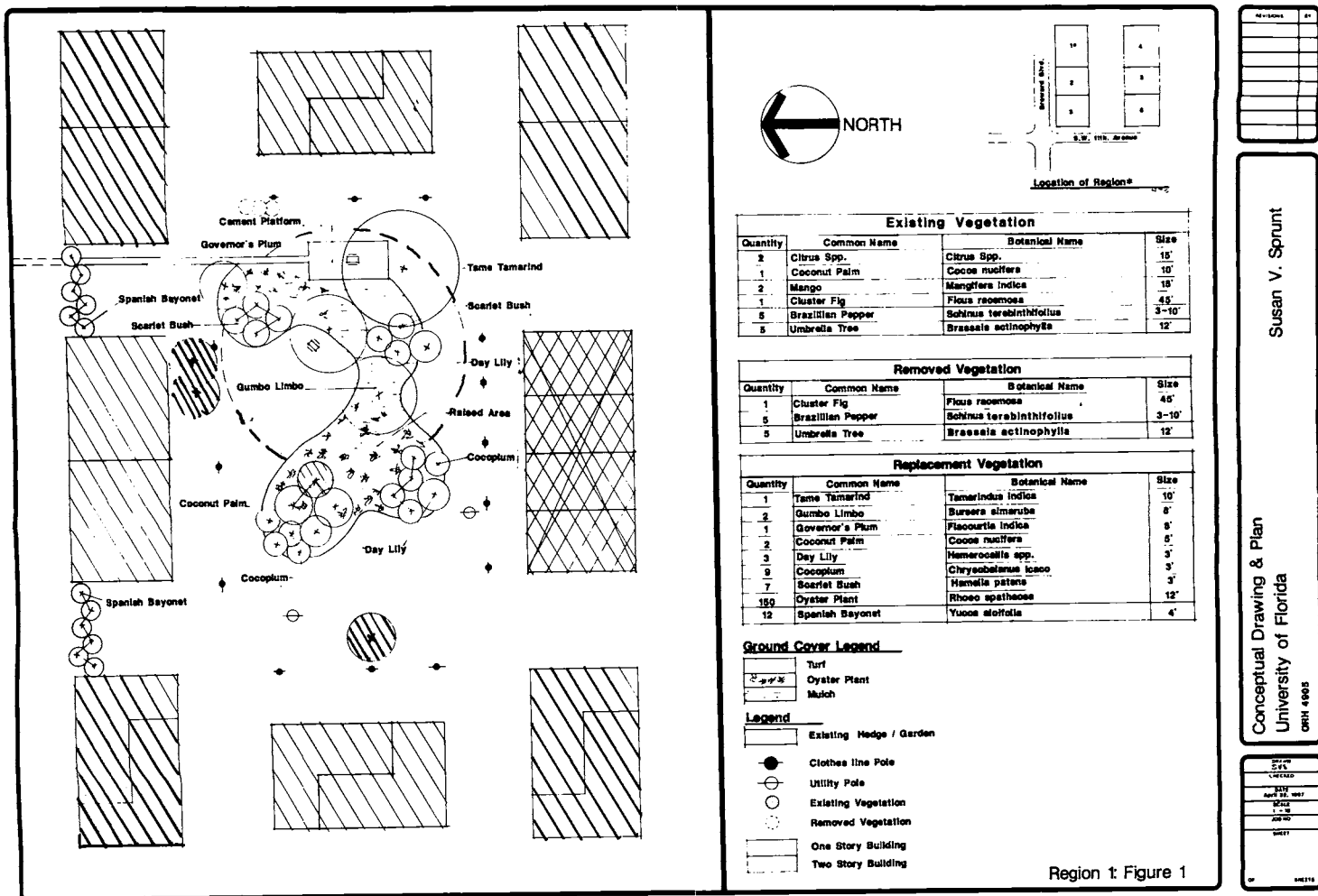


Fig. 1. Conceptual drawing and planting plan for Region 1, Dr. Kennedy Homes Housing Project, Fort Lauderdale, Florida.

would force pedestrian traffic through the privately maintained areas. Therefore, the bed plantings curve and direct pedestrian traffic through the common-use areas. The species chosen for the bed plantings were determined in the same manner as in region one. The shade tree, tame tamarind, *Tamarindus indica*, was chosen for its rapid growth, full canopy, and edible fruit.

As in other regions of the project, region 5 also had unique design problems. For example, region 5 on the original plans was a parking lot, making it much smaller than the adjacent regions. Presently, there are five resident buildings, two of which are two story, within the region. The entire common-use area is only 1,925 square feet, as compared to the other regions which are 7,150 square feet.

To make matters worse, a cement platform is also within this small area. Not to mention a telephone pole with several lines running from the pole to every residence building within the area. The vegetation within the common-use area consisted of turfgrass and two small trees growing directly under the telephone pole.

The redesigning of this area involved two planting beds that emphasized circulation of pedestrian traffic as well as aesthetics. As before, the planting beds were added not only to decrease the amount of turfgrass, but to direct pedestrian traffic and create a more aesthetic environment. Unfortunately, the use of shade trees was not possi-

ble due to proximity to the telephone pole and connecting lines.

All of the regions within the project had design obstacles to overcome. Hopefully, the design solutions suggested, such as bed plantings to reduce turfgrass maintenance, the removal and replacement of high maintenance trees with low maintenance trees which provide shade and edible fruit, and the use of barrier plants to stop unwanted pedestrian traffic, will aid in enabling the Fort Lauderdale Housing Authority to decrease maintenance costs, provide additional security to the residents, and create a better surrounding in which to live.

Literature Cited

- Tomlinson, P. B. 1980. The Biology of Trees Native to Tropical Florida. Harvard Univ. Printing Office, Allston, Massachusetts.
- Long, R. W. and O. Lakela. 1971. A Flora of Tropical Florida. University of Miami Press, Miami, FL.
- Condit, L. 1969. Ficus: The Exotic Species. Univ. California.
- Nelson, W. R. 1979. Planting Design: A Manual of Theory and Practice. Stipes Publishing Co., Champaign, IL.
- Durand, L. C. 1987. How to Design Landscapes for Maintenance Economy. Amer. Nurseryman 165(4):51-55.
- Donovan, W. C. 1987. Water-Wise Design-Xeriscape Teaches Conservation. Fla. Nurseryman 34(3):9-11.
- Michel, T. M. 1978. Homeowner's Guide to Landscape Design. Whitman Press, Lebanon, NH.