THE LACOED MASTER PLAN

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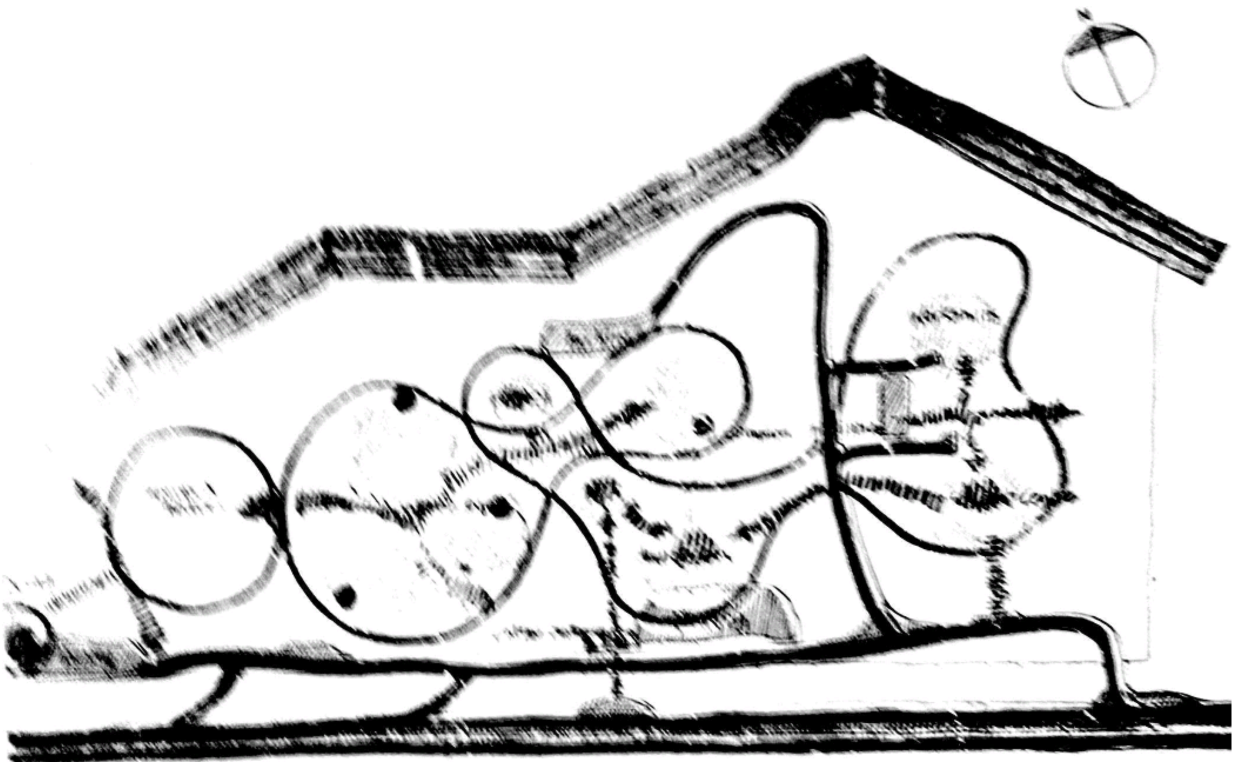
13.0 Conceptual Design

13.1 The Proposed Site Plan

A campus site development should offer a functional plan. To be functional, it should serve, as far as possible, the present and future needs of the College. It should anticipate and express the aspirations and hopes of the College. At the same time, elements of the design should compliment each and one another while the entire plan should respond imaginatively to the problems and opportunities of the site and its context. The proposed site plan, a physical expression of the conceptual land use plan, amplifies the elements of the design philosophy of the campus: pedestrian orientation, grouping of functions and their relationship to the land form, and the choice of materials to express and articulate building forms, scale, texture and colour and, modulate pedestrian movements, with the recognition that most circulation will be at the scale of the pedestrian, a pedestrian orientation formed the basis of the arrangement and placement of the site plan elements. The academic core is arranged principally as a pedestrian precinct. This precinct is framed on the west by the classroom buildings; schools of Education and Basic and Physical Sciences which provide a pedestrian scale frame to the sweeping openess of the sports complex. The same orientation underlines the arrangement of the Student Centre, Workshops and the Senior Staff Club, within themselves and the gymnasium in relation to the core area.

The proposed land use design takes advantage of the topography and geometry of the site to create a dynamic and functionally sensitive environment. The core area is situated on the central plateau to dramatize its pre-eminent focal position both within the campus and from the Expressway. Within this location, the Auditorium is sited for maximum visual impact. The Sports Complex is situated on the lower elevation in the west. Apart from its visibility from the core, minimal environmental impact resulting from its construction influenced its location. The location of the adjoining staff club is guided by the need for recreation facilities and a degree of seclusion for the staff.

As the welfare of the students constitutes a major consideration in the planning of the campus, the Student Centre is located on the eastern plateau. The north-east facing slopes prove ideal for the location of the workshops. In response to functional demands, the Technical School which frames the north-west end of the core area is located in proximity to the workshops. The choice of clay bricks for the building materials is based on aesthetics, scale and functional considerations including relatively low maintenance costs throughout the life of the buildings.



Spatial Organization Conceptual Design

15.0 Landscaping

15.1 Circulation

The proposed circulation system occurs in two forms: pedestrian and automobile. These two movement systems are designed to minimize conflicts in keeping with the design objective of creating a safe, pedestrian-oriented campus.

With the Library, Administration and Auditorium buildings forming the core, a concourse is proposed for the Administration/Auditorium approach from the parking area. A plaza or pedestrian mall links the latter with the Library. Walkways connect this core with all activity areas on campus thus ensuring pedestrian accessibility to all parts.

Vehicular circulation, consisting of the main carriageway and its feeder, is articulated to minimize unnecessary penetration of the automobile into pedestrian areas and ensure noise control of vehicular traffic near the School of Education and security control at exit points. Access and parking facilities are provided at the catchment areas while pedestrian drop-off zones are provided at pedestrian collection points. Major pedestrian entry is provided through monumental gates from the Bus Stop on the Expressway through to the Administration-Auditorium spaces. In addition, pedestrian crossing is proposed at crucial points of pedestrian/vehicular intersections.

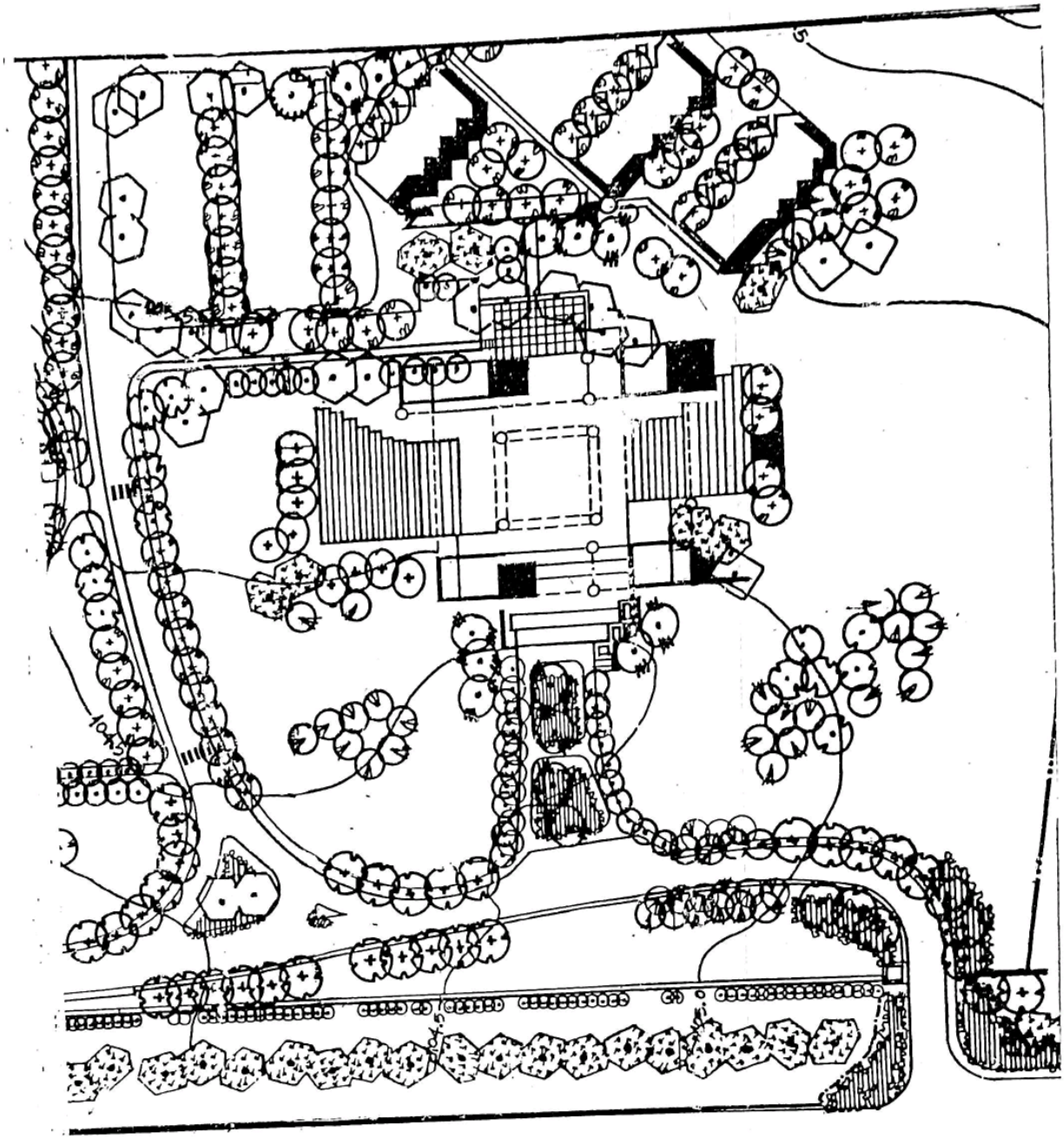
The unusual entrance and exit pattern has been changed to provide both realistic and safe entry and exit.

15.2 Grading

In site development, grading is performed for either functional considerations, such as creating circulation routes, building levels and solving drainage problems Here it is designed for aesthetic as well as functional reasons and especially to achieve positive drainage from buildings and activity areas.

The ponding occuring hitherto west ofthe proposed School of Education necessitates a level that renders the proposed soccer pitch less liable to flooding. This level coupled with the location of the pitch presents certain grading problems, namely: the demolition of existing buildings and the huge fill materials required. In some places, this fill is up to 0.62m. It is, however, envisaged that the knoll west of the schools of Education and Sciences will provide the bulk of the fill material if available for grading. Else, huge cost will be incurred in importing the extensive fill material needed. The provision of an earth mound around the pitch coupled with a wide drainage swale to the east will effectively check the ponding problems.

Because of their size, the schools of Education and Natural & Applied Sciences also present some grading difficulties. In some, the change in grade from the low to high points is up to 2m. This has resulted in a fairly steep embankment of 10-12% slope separating the School of Natural & Applied Sciences from the proposed library and plaza. As a consequence, the floor level of the School of Vocational Training will be achieved at a level that the net material cut will suffice for the fill while creating more gradual slopes. The same approach will be employed in setting the floor levels of all other building, thereby leading to minimal grading being required for them. The Auditorium area, however, calls for extensive grading for two reasons : to achieve the desired amphitheater and to integrate the seating terraces into the land form.



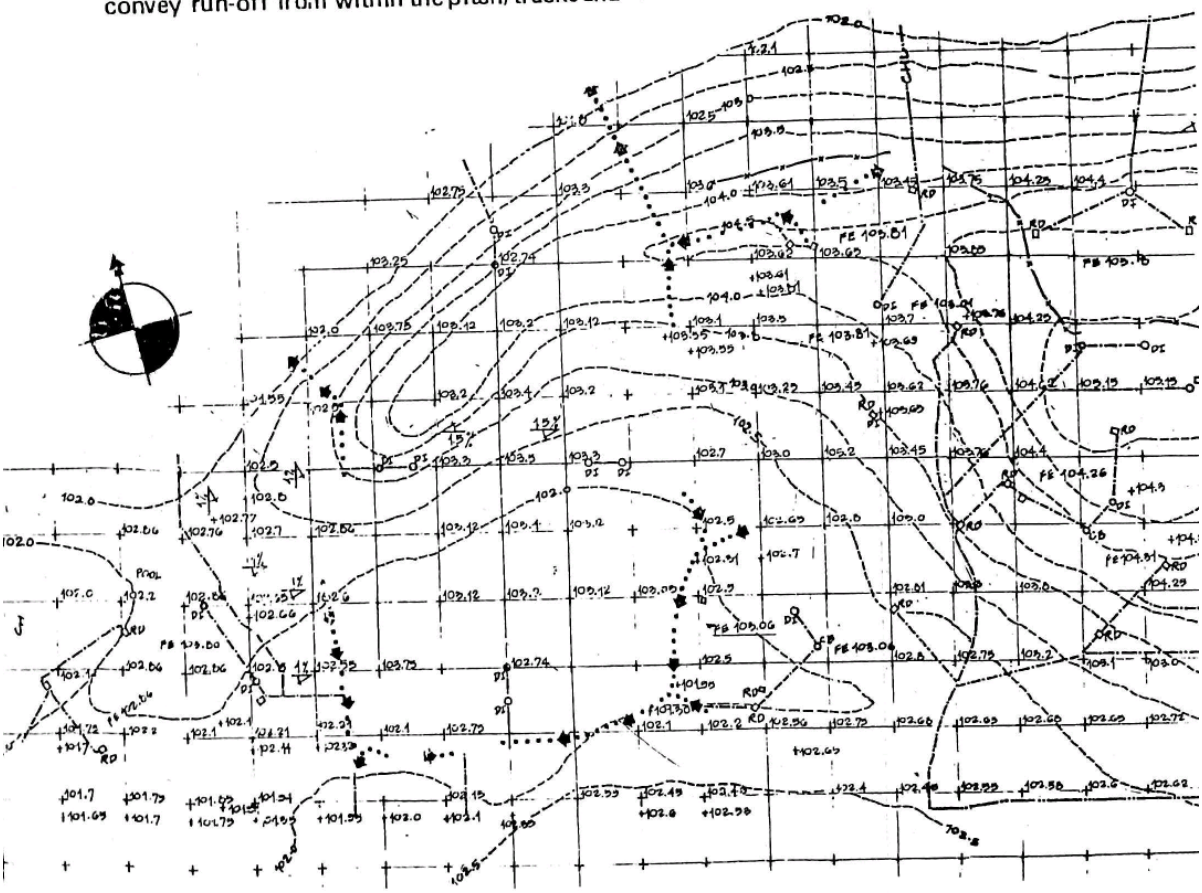
Student Centre

15.3 Storm Water Drainage

The aim of an effective drainage design is to conduct storm water efficiently away from buildings and use areas without causing ponding or erosion, yet permitting sufficient infiltration to occur. Towards achieving this aim, it is desirable and far cheaper to combine both natural and man-made systems for storm water conveyance. The storm water facilities proposed (see Fig. 9 Grading and Drainage Plan) involves both natural swales or shallow ditches and concrete channels in achieving this aim.

The watershed or drainage divide which tends roughly east-west suggested two networks. One half of the site drains northwards while the other drains southwards and then westwards. For the southern network, a main channel is proposed along the main carriageway in accord with the expected run-off volume. Part of this channel which will be ready in the first phase, will be reconstructed to the standards specified in the construction details. Laterals or secondary channels feed into the mains from both the building roof drains, activity areas and feeder road, all south of the watershed. For the northern network, the resulting land form does not necessitate a main channel. Instead, main channels are suggested for specific catchment areas as shown on the plan. Again, laterals feed accordingly into the mains from the buildings and activity areas north of the watershed.

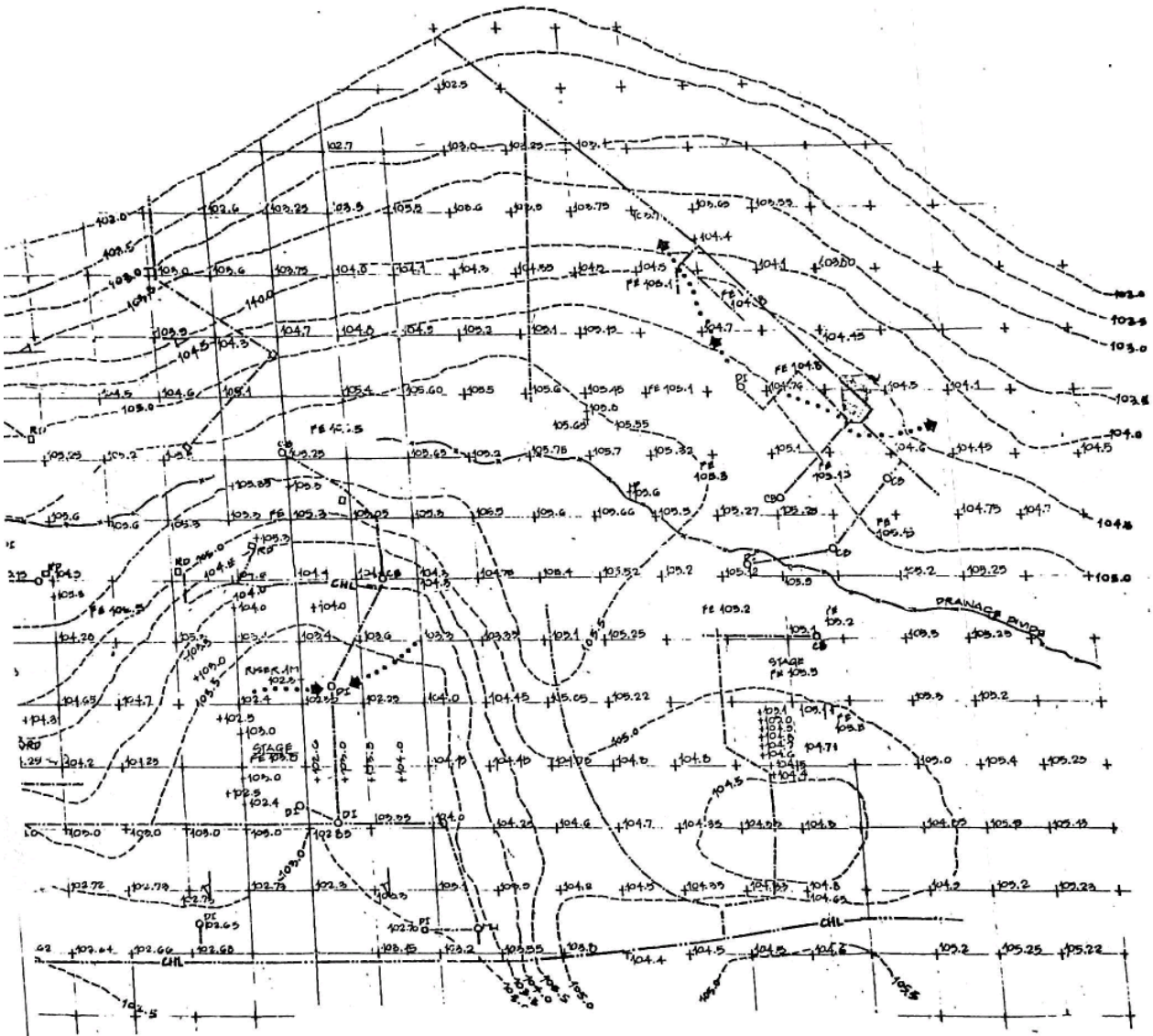
Swale or Shallow ditches drain both sides of the football pitch. The reason for this, other than aesthetics, is twofold. Firstly, roof or pavement cover is insignificant and as such the time of concentration (T. O. C.) of storm water is longer. Secondly, these ditches encourage appropriate infiltration to take place. Covered channels are however to be used to convey run-off from within the pitch/tracks and Staff Club to these swales.



Aesthetic and functional considerations will dictate that all laterals within activity areas, particularly the core area, be covered or channelled underground. The cover will be modular concrete slabs which are easily removable for periodic clearing.

Around the Auditorium where there will be need for underground channels, appropriate manhole locations for periodic cleaning have been indicated. The mains are left open due to cost and maintenance considera tions.

Low maintenance will form a key guide in both the location and in selecting the profile of the channels. This is achieved by conducting storm run-off purely by gravity and slope coupled with maximum self cleaning of channels by run-off water. Appropriate details of the drainage will be shown and described in the detail drawings.



Proposed Gradient and Drainage Plan

15.4 Planting Plan

Apart from rain, heat is the most critical physiological factor in the design of both the indoor and outdoor environment in the tropics. Shade from heat is therefore of prime importance in creating a comfortable environment for human performance in hot periods. The near absence of shade trees creates a situation in which in the hot season the existing campus is sun-swept. Immense reflections emanating from buildings and surfaces irritate the eyes, thereby causing people to scurry for cover. This situation, accentuated by the backdrop of dense canopy in the adjoining marsh, amplifies the need for comprehensive and aggressive planting program to be pursued in the master plan implementation.

Such a planting program as proposed will contribute towards achieving the guiding objectives namely:

(a) Unifying, complimenting the architecture and other elements on campus.

(b) Creating a ense of order and aesthetically pleasing environment.

(c) Creating a comfortable environment both indoor and outdoor, conducive to academic pursuits.

A combination of linear and informal (ecological) arrangement of plants is used in this proposal. Linear arrangement is suggested for the linear movement systems while informal arrangement and clusters are proposed for open areas. The latter is in response to the adjoining natural environment and the manner natural plant groupings occur. Choice of specific plant materials is guided by their hardiness (adaptation to the area), visual quality (form and scale). flowering characteristic and colour leaf texture, utility and above all, maintenance demands. Generally plants of high visual interest and low maintenance requirements are recommended. Specimen trees and shrubs are proposed to drammatize various activity areas.

A hierarchy of tree types help define the movement systems and activity areas as follows: the entry carriageway, being the most important road is lined with two rows of large, somewhat high branching trees; secondary vehicular access is lined largely with two rows of medium, flowering trees (e. g Cassia nodosa); while the pedestrian walkways are lined with staggered small trees (e. g Sand box trees). In essence, the high shade created with large trees is stepped down to create human scale shade at the pedestrian areas. Parking areas are shaded and coconut palms are largely used as ascents and expression of their adaptation to the coastal environment.

Generally to attenuate the strong effect of afternoon and evening sun, trees are proposed near buildings to shade the west walls. yet ample provision is allowed for the soothing effects of seasonal and local breezes. Islands or clusters of trees within lawn areas are to provide opportunity for informal sit-out areas for leisure reading during clement weather. Fruit trees such as mango and almond are proposed both for their shade and utilitarian interest which their fruits generate. Detailed shrub and ground-cover planting proposal will be made for each zone as the master plan implementation progresses.

15.5 Planting Implementation and Landscape Maintenance

Many of the prescibed plants are obtainable from reputable plant nurseries located in the Lagos Metropolis. Wholesale procurement from these nurseries, however, can only be a short-term measure. A small in-house plant nursery is therefore advisable and highly recommended in the long term to meet some of the plant needs of the college.

After implementation, maintenance is the key to the full realization of a neat, pleasing and functional landscape as envisaged in the proposal. Like all living things, plants and all landscape materials need to be cared for. Pruning, watering, fertilizing, edging, raking, pavement repairs, etc. are all part of this care. To this effect, a Landscape Unit/Plant Nursery within the Maintenance Department of the College is highly recommended.

The minimum initial provision for such a unit in the first phase is as follows :

Table 10 Planting and Landscape Maintenance Cost

Item	Cost Estimate
1 Horticulturist	₦6,000.00
1 Horticultural Assistant	4,000.00
4 Gardeners (initially) @ ₦2,000 per annum	8,000.00
Equipment – 2–4 handdrawn mowers, 4 wheel 20 cutlasses, 5 matchets, 3 scissor-action lopping-shears, 4 pruning saws, 2 pole pruner and saw, 5 hedge shears, & 3 scissor-action clippers	50,000.00
Miscellaneous – Planting containers watering hoses & cans, etc.	20,000.00
3 Shallow wells (hand dug) 900mm dia.	6,000.00
3 1½ HP water pumps	3,000.00
Administrative Staff (on secondment)	
1 Secretary/Typist	—
1 Cleaner/Messenger	—
TOTAL	₦97,000.00

Space needs — 1/4 hectare land area for Nursery
1 office for the Horticulturist
1 office for Horticultural Assistant
1 General Office
2-3 store rooms for equipment and supplies

15.6 Maintenance Prescriptions

Whereas the head of the Landscape Unit should draw up specific maintenance schedule or programme for the College grounds in consonance with the ideals and image of the College, the following general prescriptions are recommended here as a guide.

a) For establishment: all planted areas should be watered at regular intervals. The soccer pitch and all lawn areas should be watered liberally at least once daily between 7.00 – 9.00 a.m or 6.30 – 9.00 p.m in the dry periods until fully established. The soccer pitch should be watered once every two days at the above time during the first dry season following establishment. Shrubs and ground cover beds as well as individual trees should be similarly watered in the first dry season of establishment. Water should be applied so that the soil is wet no less than 150mm deep at every watering period.

b) After establishment: watering and other maintenance actions for the first two years should be as specified in the following Maintenance Checklist.

The implication of the checklist for mowing, for instance, is that mowing of the soccer pitch and all lawn areas shall be performed no less than once every two weeks during the rainy season.* Similarly, edging of the sidewalks and other paved areas abutting lawn and groundcover areas should be performed at least once every month during the growing season. It is expected that the frequency of these actions during the dry season will depend on how faithfully the watering schedule is adhered to. It is strongly urged that for the soccer pitch at least, the frequency should be religiously executed.

Owing to the loose surfacing material used on race tracks, these tracks need to be rolled and recompacted every two years or as becomes necessary.

* Sediment removal from the drainage sump or sand traps is to be performed at this rate during the rainy season.

Table 11: Landscape Maintenance Checklist

	Areas & Functions / MAINT ACTIONS	Water	Mow	Rake/Sweep	Prune	Weed Control	Pest Control	Edge	Refuse/Trash Pickup	Manure/Fertilize	Remulch	Wash off	Surface reconditon or maintain surface mat-	Redo surface cracks	De-weed and Mark	Restripe and Mark	Traffic Visibility	Traffic Control
A.	Lawn Areas (Soccer Pitch)	2	3	3	.	5		.	2	5	.	.	6	.	.	.		
B.	Ground Cover Areas	2	.	2	.	4	5	4	2	5	6	.	5	.	.	.		
C.	Shrubs & Tree Areas	2	.	3	5	.	6	.	3	5	5	.	.	.	.	.		5
D.	Paved Use Areas	.	.	2	.	.	.	4	2	.	.	6	.	5	.	.		
E.	Parking Areas	.	.	2	.	.	.	4	2	.	.	.	(5)	5	(2)	5		
F.	Drives	.	.	2	.	.	.	4	2	.	.	6	6	5	.	5		
G.	Walks	.	.	2	.	.	.	4	2	.	.	6	6	5	.	5		
H.	Storage & Service Areas	.	.	2	.	.	4	.	1	.	.	2	6	5	.	5		
I.	Walls & Fences	.	.	.	5	5	.	.	.	.	.	.	.	5	.	.		4
J.	Steep Slopes	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.		
K.	Surface Drainage	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.		
L.	Other	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6		
M.	Race Tracks	.	.	.	.	.	.	.	3	.	.	.	(2)	6	6	.		

Frequency

1 = Daily
2 = Weekly
3 = Bi-weekly
4 = Monthly
5 = Years
6 = As Required