

Master Plan for Roseau Botanic Gardens, Dominica

**FIRST INTERIM REPORT**

# Physical Development Plan

Prepared by

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## 1.0 INTRODUCTION

This Report is prepared in partial fulfillment of the Service Contract dated March 6th 2006 between the Ministry of Tourism, Industry and Private Sector Relations, represented by the Programme Management Unit of the Eco-Tourism Development Programme and Scribal Consultancy Services & Historical Tours, requiring the submission of an Interim Report before the end of the fifth week of the consultancy. The study is being funded by the European Commission. This document represents a draft strategic intervention for the Botanical Gardens of Roseau, Dominica. It comprise five broad sections including 1) A Stakeholder perspective; 2) An Expert Assessment; 3) A Physical Development Plan, 4) An Interpretation Plan; and 5) A Management Plan.

The report is broken into three parts as describe above. The first section attempts to collate the opinions received from various stakeholders about the future physical development of the Dominica Botanical Gardens. At the same time, it embodies the primary analysis compiled by the specialists commissioned to conduct this study and to prepare a Master Plan for its Development. This section is illustrated with photographs, sketch drawings and maps.

The second section examines the rationale for interpretation, the objectives of the gardens, a justification for the approach to interpretation adopted, and the visitor profile in developing an interpretation plan for the gardens. It is also based on the physical development plan and provides sample introductory scripts on selected sections.

The third section examines the management requirements for the effective operations of the DBG, and includes job descriptions for key personnel. This section will be further revised and updated for the final report, in accordance with the reviews of the primary and secondary clients, the Ministry of Tourism-Eco Tourism Development Programme and the Forestry and Wildlife Division of the Ministry of Agriculture and the Environment, respectively, as well as other civil society interests.

## 2.0 STAKEHOLDER PERSPECTIVES ABOUT THE FUTURE OF RBG

Based on consultations with a wide cross section of stakeholders and influencers of the DBG, the following (five) 5 broad perspectives have been identified:

1. There is a general agreement that the Botanic Garden is not in an acceptable condition, and must be improved and upgraded.
2. To return the RBG to its original pre-1979 Hurricane David appearance, with continued focus on exotic and introduced species. This perspective also concludes that the use of the Gardens for "Cricket" and "Kweyol in the Park" should be suspended.
3. To return the RBG to its original pre-1979 appearance, with a focus on exotic and introduce species; and to include water features in the form of a pond and/or waterfountain.
4. To return the Garden to its original pre-1979 appearance, to maintain the cricket grounds inside and to continue the "Kweyol in the Park" but with strict management guidelines that include carrying capacity considerations, a solid waste management plan, and an emergency response plan. This position is justified by the consideration that the garden and recreational activities like cricket and music are not necessarily conflicting activities, and can be complimentary.
5. With a current tourism development policy that focuses on eco-tourism,

biodiversity conservation policies should mandate the introduction of endemic and indigenous species within the garden's collection of plants and trees.

### 3.0 AN EXPERT ASSESSMENT OF THE ROSEAU BOTANICAL GARDENS

This presentation offers a general assessment of the Roseau Botanical Garden and its environment, and is presented as follows:

- 3.1 The surrounding streets
- 3.2 The garden gates and their immediate environment
- 3.3 The internal streets from the existing gates
- 3.4 The zones within the gardens
- 3.5 The plants within the gardens
- 3.6 Other features within the garden
- 3.7 The surroundings

#### 3.1 The Surrounding Streets:

- Valley road
- Bath road
- Elmshall road

Valley road is located north of the garden. There are three gates alongside the external stone wall. The street is narrow and accommodates a large volume of traffic. Consequently pedestrians use the Gardens for greater safety. There is a proposal to widen Valley road up to 36 ft in order to get three lanes for vehicles and one for pedestrians. In such a case the garden must be slightly reduced and the stone wall demolished and rebuilt the background at corner exclusively for pedestrians Valley Road crossing over Roseau Intersection at Valley Road and River. French Alliance building in Elmshall Road. An entrance gate Bath road is also a very narrow street, with less vehicular traffic. The distance from Valley road to Queen Mary Street where the west gate is located covers 1,150 ft. 50% of this distance is occupied by the front yards of private grounds. The visibility conditions at the intersection with Queen Mary Street make it generally very unsafe. In addition, electrical power lines are located exactly over the boundary stone wall.

Bathroad looking south. Pleasant houses Bathroad looking south. A combination of private lands, providing descent of scrubs and Juniperus bermudiana appearance; visually increases the height of the wall.

Intersection at Queen Mary Street - Bathroad looking north. Front yards of private grounds on the right.

Elmshall road is a very pleasant street, close to Roseau river, with less vehicular traffic.

The East Gate is located 230 ft from the Valley road intersection. The French Alliance Building and The University of the West Indies, School of Continuing Studies are located on the left side looking south.

Undoubtedly a very pleasant street Alliance Francais on the right.

Elmshall Road looking south. Elmshall Road looking north with

#### 3.2 The Garden Gates and their immediate Environment

- Valley road gate (north gate)
- Bath road gate (west gate)
- Elmshall road gate (east gate)
- Cricket grounds gate (at Valley road)
- Corner gate (at Valley road and Elmshall road intersection)

There are five main gates; three of which are used for normal vehicular traffic and the remaining two are reserved for pedestrians. In order to improve the present conditions of vehicular traffic and provide pedestrian safety, entrance control measures must be adopted. In any case, the general appearance of these particular spots must be enhanced.

Valley Road Gate

Valley Road Gate (North Gate) Valley Road Gate from within the Gardens. Notice the unpleasant view.

Bathroad Gate joins with Queen Mary.

Bathroad Gate (West gate) Just to the right of Bathgate entrance is an unsightly public convenience

Elmshall Gate entrance...Undoubtedly the most pleasant gate ...but a closer look reveals poor ground conditions Cricket Grounds Gate Corner Gate: Valley & Elmshall Corner gate at Valley Road and Elmshal Road, used mostly by pedestrians avoid Cricket Grounds gate at Valley Road must be improved to provide main entrance for sports and special events, including vehicular traffic on Valley Road

### 3.2 Internal Roads

- From Valley road gate entrance
- From Bath road gate entrance
- From Elmshall road gate entrance

Internal roads cross the garden grounds connecting the three main vehicular gates. Cars are allowed to enter and cross the garden grounds. There are no traffic regulations, so drivers have no restrictions or speed controls. There are also no officially designated parking zones. Tiny rocks have been placed near the shoulders of the road to prevent vehicles from parking on the lawn surface.

Valley Road Gate Entrance

Motor vehicles parked on the road verges More vehicles parked on the road side No regard for the stones which should in front of school building act as a deterrent from this practice. Vehicular traffic within the Gardens is one of the main problems to be resolved. It is desirable to have no vehicular traffic or parking within the gardens. Parking solutions must be found outside the Gardens, perhaps alongside Valley Road.

Bath Road Gate Entrance

Hedge covers the wall of the adjacent Public cemetery. Very attractive cluster of trees along this internal road.

Elmshall Road Gate Entrance

**Aesthetically** displayed plants; more vehicular traffic within gardens but with attractive display of trees and garden furniture; absence of appropriate design suitable for these conditions. In contrast, Palm Alley connecting layout of plants. Topiary art is not internal road to Forestry Dept HQ. The gardens generally display many examples of ecological, functional and aesthetic contradictions. Resolving these problems will require a redesigning of the plant layout and may take several years to accomplish.

### 3.4 The Zones within the Garden:

- The cricket grounds
- The plants of economical interest zone (agricultural department)
- The buildings
- The natural forest on the slope

The gardens are subdivided into several sections. The main AREAS include sporting areas, cultivated zones and natural forests. At present only a small percentage of the total surface is enjoyed by visitors. This situation must be improved.

The Cricket Grounds

Cricket grounds with pavilion and Other complimentary installations in the background.

Pavilion and Commentator's booth

Additional space for special events and recreational activities alongside the Cricket ground slopes gently towards the northern boundary of the gardens. the northern boundary. There is a general consensus about keeping the sporting activities and special events within the gardens, despite serious concerns about lawn trampling particularly during mass events like "Kweyol in the Park". A buffer between the recreational areas and the rest of the gardens should be created, so as to maintain some measure of independence. In addition, a management plan must be developed and deployed to ensure effective administration and supervision of this area. The complementary installations for sport activities, including pavilion and commentator's booth, require physical improvements that would enhance their functionality as well as their aesthetic appeal.

The Plants of economic interest zone (Agricultural Department)

Zone devoted to plants of economic value. To be redesigned to create ornamental Proposed area for the development of zone as primary attraction for visitors water attraction. Ornamental shrubs in this zone can be haphazard; planting of plants and trees better displayed. The most poorly managed and incompatible section of the gardens, for which there are several recommendations to have it removed and/or relocated, and redesigned for other purposes perhaps with water features and ornamental gardens.

The Buildings within the Gardens

The Agricultural Department Section The Forestry Department Section (left)  
The stark contrast between the buildings of the Forestry section and the Agricultural section is noteworthy. There are proposals to remove the buildings of the Agricultural section in the long term.

Internal gardens within Forestry Dept.

The Forestry Department Building \_\_\_\_\_ 12 The main buildings and the gardens around the Forestry Department section are well kept. Internal gardens within the Forestry section with water features are attractive. Note that topiary art is present and more appropriate in this context than in the open gardens.

The natural forest on the slope

35-step staircase leading to the natural Nature Trail leading into the natural forest. Apart from the staircase, which is in need of safety amenities, the trail into the natural forest requires enhancement. Visitor conveniences, primary with respect to health and safety must be added to this section. This should include, but not limited to railings and directional signs. There are also many natural sites and attractions within the natural forest which make this area desirous of enhancement to facilitate visitation and therefore excellent for a guided tour of the biodiversity of Dominica. Interesting sights to be enjoyed, acts as a modifier of the ecosystem, The sunlight penetrating the canopy; herbaceous plants acting as natural solutions to erosion control.

3.5 Plants within the Gardens

- Alongside the road from Valley road gate
- Alongside the road from Bath road gate
- Alongside the road from Elmshall road gate
- Near the school and private land

Plants within the gardens should be carefully displayed in order to obtain appropriate ecological relations between species, and with the environment, whilst simultaneously fulfilling aesthetic objectives. At present, there are many ecological and environmental contradictions in the flora display that must be resolved in the medium to long term. In addition, the Garden cannot be restricted to an arboretum of tropical exotic plants, but must be developed as

Dominica's reserve of endemic collections from the local flora, interest, layout. There are too many open spaces; absence of appropriate integration of any scenic or environmental landscape styles within the planting

Palms and Araucaria Sp. have no direct topiary art.

The Bamboo Den is an attractive spot which is unfortunately used as a lavatory. Notice the unplanned way in which palms and shrubs are planted; Undesirable relationship between botanical relationship and should not Plant and the environment be displayed side by side.

A relatively good planting layout, except inappropriate planting as well as use of for the conifer to the left and the unsuitable maintenance of shrubs alongside the road. But there is available; most trees have been historically located and maintenance space for new layouts in the future

Contradiction between landscape design

There are unused spaces between school and private lands. The school building in the background is not an aesthetic problem. The main problem is plant display and maintenance, and the need for appropriate design and planting layout in this area.

### 3.6 Other Features within the Gardens

- The students
- Informal pathways
- Details

The presence of students on the garden grounds is not undesirable, and should be encouraged. The pathways already used by pedestrians crossing over the lawns, should be formalized and used as the basis to design pedestrian pathways.

Short term decision making often neglects certain critical details. As such, a management plan is necessary in order to determine best and most appropriate use. This plan should demarcate zonal use; and assess carrying capacity and limits of acceptable change, in order to avoid damage to the plants and grass.

Students playing in the open spaces within the gardens at Valley Road and Elmshall Road; Students studying in the shade of the trees; Students crossing between corner gate; Students have cut a regular path across the grounds from the hedge to the intersection. **Shade of the trees:** One of the oldest pathways connects the corner gate at Valley Road and Elmshall intersection with the north gate, running between the cricket grounds and the stone wall. Pathways created by students should be formalized or preferred options clearly demarcated. This is critical in order to facilitate these activities whilst not harming plants or the lawn surface.

#### Informal Pathways

Pathway near Valley Road gate: Not a pleasant path for walking, but it is desirable to improve the conditions and the unsuitable environmental aesthetic conditions of this area for pedestrian mobility.

An internal pathway near the Forestry Section. A view of the pathway along the lowest part of the northern boundary.

Stonework of the external wall. Needed at the border of the road. Gardeners enjoy pruning hedges. Best suited around buildings. But to enhance the path between the wall topiary art must be applied for specific purposes and environments.

### 3.7 The Surroundings:

- The Roseau river
- The remote vistas
- The Roseau architecture

### The Roseau River

The proximity of the Roseau River to the gardens makes it part of that environment. This requires that special attention must be given to the river as an integral part of the gardens.

A view of the river looking north

Roseau River flowing alongside the notice running towards the sea, negative environmental impacts on the banks of the river; northern boundary of the gardens; polished rocks found all over Dominica, and useful in garden design; River water may be used for water features within the gardens; rocks should not be removed from the river for use within the gardens, as this can impact negatively on aquatic life in the river.

### The Remote Vistas

Other vistas beyond the gardens all encompass the product which is the DBG, and should reflect the objectives of the garden or be camouflaged. These vistas may present interesting bits of information for visitors on a tour of the gardens. However, northern vistas are not so purposes are recommended.

Excellent vistas encircle the RBG particularly looking east. pleasant. Visible on the summit of Morne Bruce is a religious shrine which can be an interesting feature of a tour script; **planting design for marking boundaries, and open spaces that can be considered for future parking**

Alongside the Valley Road northern

### The Roseau Architecture

Architecture of historical merit of significance

Restoration attempts of Architecture

The architecture of the city of Roseau is a unique blend of architectural styles of significance and merit, which ought to be considered in the designs of buildings within the gardens. This is where the RBG becomes a significant component of the city of Roseau, reflecting its architectural history, and providing opportunities for the continuum of a heritage tour of Roseau.

## 4.0 PHYSICAL DEVELOPMENT PLAN FOR THE ROSEAU BOTANICAL GARDENS

Having considered the various opinions presented, as well as the expert assessment of the Gardens, the initial task is to define the precise objectives of the Gardens, and then provide various development options for the short, medium and long terms. However, it is the expert view of the consultants, that given the historical and cultural significance of both cricket and music, in Dominica specifically and the West Indies generally; the plan should attempt to find accommodation for the continued presence of cricket and music in the Gardens. With respect to the botanical components, consideration must be given to the limited resources available and therefore practical development options must be considered. In view of these considerations, four (4) options have been presented:

4.1 Practical Development options stemming from the short to medium and long terms.

### 4.1.1 Option No. 1 short term

1. DBG continues to provide an arboretum of exotic plants from the tropical flora of the world.
2. The Agricultural Department buildings are kept in place within the Gardens
3. The area devoted for plants of economic interest will be enhanced in order to improve attractiveness, and to create access avenues for visitors.



#### 4.1.2 Option No. 2 short term

1. DBG continues to provide an arboretum of exotic plants from the tropical flora.
2. The Agricultural Department buildings are kept in place within the Gardens
3. The area devoted for plants of economic interest will be enhanced in order to improve attractiveness and create access avenues for visitors.
4. Collection of plants from Dominica's indigenous flora to be introduced within the Gardens.

#### 4.1.3 Option No. 3 medium term

1. DBG continues to provide an arboretum of exotic plants from the tropical flora.
2. The Agricultural Department buildings are relocated outside of the Gardens, while retaining the Forestry and Wildlife Division building.
3. The area devoted for plants of economic interest will be enhanced in order to improve its attractiveness and to create access avenues for visitors. Special consideration to be given to the introduction of fruit trees from the Caribbean.
4. Collections of plants from Dominica's indigenous flora to be introduced within the Gardens.

#### 4.1.4 Option No. 4 long term

1. DBG continues to provide an arboretum of exotic plants from the tropical flora of the world
2. The Agricultural Department buildings are relocated outside of the Gardens, while retaining the Forestry and Wildlife Division building.
3. Plants of economic interest continue to be displayed but only for exhibition purposes, as an additional attraction within the garden's collections.
4. DBG will be developed primarily as a place devoted to endemic and indigenous plants coming from Dominica's flora, and as a promotional center for biodiversity and environmental education.
5. On the grounds currently occupied by plants of economic interest, an artificial pond will be created and displayed at the lowest level point, using natural design concepts; and surrounding this space, plants from aquatic and high humidity environments will be introduced.
6. In close relation to this pond, a short water course, including a narrow cascade will be developed within the natural forest, which will create a scenic background and landscape ensemble.

4.2 Short-Term interventions to be undertaken independently of any adopted option. Independently of any of the above options being applied, it is necessary to undertake a set of actions, as soon as possible, in order to address current critical problems identified in the Gardens. These are as follows:

1) Ensure safe walking conditions for visitors, anywhere within the walls of the Gardens. Trails should be either paved using natural materials or in the natural forest area, borders should be strengthened and retaining walls erected.

conditions	Current pedestrian pathway	Proposed safe and aesthetic walking
Current trail into natural forest	Proposed retaining stone-wall and	strengthening of nature trail verges.

2) Resolving the traffic circulation problems inside and around the Gardens must be considered a number one priority. Various recommendations that include the creation of a link-road that circumvents the gardens; or the creation of a road that separates the recreational areas for cricket and special events, are both riddled with problems of a civil engineering nature on one hand, and on the other hand, that which will result in 50% loss of garden grounds and compromise the authenticity of the gardens. It is absolutely desirable that the practice of using the Gardens as a thoroughfare should cease. It is also necessary to develop parking lots for visitors outside of the Gardens, particularly alongside Valley Road.

50% loss of gardens 100% of Gardens

Preferred option:

Maintaining Roseau Peripheral Link Road, Gardens By-Pass Road

Other arrangements should be made for parking for workers and tour buses within the gardens. Such facilities are best placed just south of the proposed Information Centre and replacing the Agriculture buildings, near the Bath Road gate entrance.

Current Layout Proposed Layout

3) Vehicles appear to have priority over human beings, as they move and park freely within the gardens without restrictions. Visible signs to direct or guide the behavior of either vehicular or pedestrian traffic to be introduced. The loose stones alongside the internal roads must be removed and replaced with bigger polished stones to be partially buried in the ground, in order to deter vehicles from driving or parking on the lawns.

Current situation re: parking on lawns

Proposed introduction of polished stones

4) It is necessary to establish control points aside from garden entrances, in order to collect entrance fees and to offer information to visitors to the Gardens. and traffic control measures

Current situation re: gates

Proposed introduction of entrance booth

5) The arboretum of exotic plants from the tropical flora must be redesigned in order to overcome environmental, functional and aesthetic contradictions, acceding at the same time to best landscape planting practices.

Proposed enhancement with shrubsCurrent

Current Proposed enhancement with shrubs

6) Internationally accepted standards for the construction of steps and trails must be adhered to in order to enable the safe access of visitors, for example to the natural forest at the base of Morne Bruce.

Current stairway to natural forest

Proposed railings to improve safety

7) The existing pedestrian pathways must be rationalized as part of an appropriate pedestrian circulation system. pathway. pedestrian pathway with trees to enhance vistas Current conditions showing pedestrian Proposed improvements showing clear

8) Several facilities to be introduced, including public conveniences and light cafeteria services. At the same time it is absolutely necessary to provide information booths where visitors can obtain information about the Gardens and other interesting aspects of tropical plants and Dominica's outstanding flora.

9) A signage system is absolutely necessary to facilitate the easy and effortless movement of visitors within the Gardens and its various facilities. An interpretation system which includes the identification of plants and trees to be developed. (See Section II Interpretation)

10) A system for urban garden appurtenances must be developed, including seats for resting, waste paper receptacles, lighting posts and other components, using an integrated appropriate technology design approach.

11) The garden's nursery has to be re-developed in accordance with the new requirements consequent to the introduction of Dominica's tropical flora. Besides being a working place, the Nursery can also be used for environmental education purposes.

#### 4.3 Long-Term Interventions regarding Buildings in the Gardens

Once the buildings of low-value associated with the Agricultural department are relocated outside of the Gardens, new possibilities will become available in order to facilitate the enlargement of exhibitions and the creation of new landscaped environments.

1. The Forestry department's headquarters should be retained, with slight modifications to its external appearance and its relationship to the surrounding environment.
2. A new light structure building to be introduced in order to provide the following functions:
  - a. information and interpretation center,
  - b. lecture hall,
  - c. visitor's general services
  - d. other uses.

The general appearance of this new building should reflect Caribbean architectural vernacular and traditions.

3. If option 4 is adopted, a small green house with glass pitched roof should be introduced in order to allow the exhibition of plants coming from very dry regions at the windward and coastal regions of Dominica.

Glass pitched houses at National Collection of cacti plants  
Botanical Gardens of Cuba

4. In the same way, special exhibition devices to be constructed to allow for the appropriate open space exhibition of vines.

#### 4.4 Interventions regarding Sporting Activities and Special Events

Sporting activities can be kept within the garden, but confined to the northern border stripe. This space might also be used for special events that usually take place several times during the year. A management plan to be developed specifically for this area. The light constructions that support these activities are in poor to bad condition. The following actions are recommended:

1. To establish natural borders between sport grounds and garden grounds, in order to improve security and control measures within the gardens. Solutions coming from the field of landscape garden design, like the "haha" will be useful. Current state of cricket grounds

Proposed grounds showing "haha"

Demonstration of "haha" creating mound between grounds and ornamental section, where spectators may sit to watch cricket game.

2. To improve the constructions that support these activities, enlarging them in order to fulfill other requirements, for sportsmen and fans. The Commentators booth should be enhanced, as a priority action.

Current Commentators Booth Proposed enhancement of Booth with washrooms below.

3. To introduce facilities to enable the practice of jogging around the sport grounds or perhaps including part of the garden areas.
4. To develop a management plan to guide the conduct of special events in the recreational area of the gardens.

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#### 4.5 Interventions regarding public roads around the garden site

Taking into account the poor aesthetic conditions within the vicinity of some entrance gates; the pedestrian circulation problems alongside Valley Road; and notwithstanding the broader urban development issues of the city of Roseau, consideration to be given to the following actions:

1. To improve the aesthetic conditions at the west entrance gate on Bath Street, by masking or relocating the public conveniences next to it. Current public conveniences at Bathgate entrance gate.

Proposed camouflaging near entrance

2. To enlarge Valley Road across section up to 36 ft. in order to have three lanes for cars. But most of all, a suitable sidewalk for pedestrians.

Current conditions at Valley Road Proposed pedestrian pathways

#### 4.6 Conclusions

1. There are a wide range of problems affecting the physical space, the functioning, the management, the general image, and the environment of the Roseau Botanical Gardens.
2. This section was intended to collate the opinions of different stakeholders as well as to provide specialists technical inputs in order to synthesize the best and most workable ideas for the future improvement of the gardens.
3. FOUR options have been presented for action within the short, medium and long terms, to be developed once consensus on the institution's main objectives has been achieved.

#### 5.0 INTERPRETATION PLAN FOR THE ROSEAU BOTANICAL GARDENS

##### 5.1 Site Description

The Roseau Botanical Gardens, or "The Gardens" as it is known locally, is on a 40 acre site in Central Roseau at the foot of the verdant Morne Bruce hill. Its boundaries are Bath Road, Valley Road King George VI Road and the steep western slope of Morne Bruce. There are sections of land within this area (including land under residential structures as well as a secondary school) which are not owned by or the responsibility of the RBG. Currently the RBG houses divisions of the Ministry of Agriculture and the Ministry of Forestry, both of which share responsibility for the management of the DBG. In very broad terms, the Gardens as they exist today are not separated in to areas reflecting any specific characteristics or uses. There is an area, known as the economic or commercial area, which is used to grow plants which are then sold as a source of revenue for the Government of Dominica. Adjacent to this area is an agricultural experimental station which is intended for the propagation of fruit trees though this area has become largely overgrown. There is also the area which is regularly used as a cricket ground. The remaining botanical areas, however, follow no specific or discernable pattern.

##### 5.2 Site Values

###### 1. Environmental Education

The RBG is an excellent resource for increasing the awareness of Dominicans and other visitors of the natural environment of Dominica, the tropics, environmental issues affecting them; and

###### 2. Tourism

The RBG is an important attraction in the suite of tourism products of Dominica. It is an easily accessible and potentially highly rewarding experience.

###### 3. Recreation

Currently one of the largest groups using the RBG, purely for recreational purposes. It is clearly of very high recreational value to the Dominica public.

###### 4. Horticulture

There is currently no propagation of ornamental plants in the gardens, although the current physical development plan recommends the introduction of a working Nursery and the introduction of indigenous and endemic plants for horticultural purposes.

###### 5. Urban Green Space

The Master Plan and developments recommended by the plan are intended to enhance these values.

### 5.3 Objectives of the Interpretation Plan

#### General objectives

1. Enrich the visitor experience through increased awareness and appreciation of the RBG's natural environment and recreation opportunities.
2. Encourage best practice and low environmental impact behaviours both within the RBG and in other natural environments.
3. Encourage public compliance and active support for conservation of wildlife (plants and animals) and management of the park ecosystems.
4. Promote safe enjoyment of the Park.

#### Specific objectives

1. Visitors will be able to easily locate recreation nodes, public facilities and botanical displays.
2. Visitors will be encouraged to discover a wide range of natural and cultural values within the RBG resulting in increased use of the Gardens.
3. After reading interpretive signs or participating in interpretive activities, the majority of visitors will be able to understand the main themes of the areas visited.
4. Visitors will have increased awareness and appreciation of their role as 'custodians' of the RBG and Dominica's natural environment.

Research on visitors' responses to interpretation suggests that they remember ideas and concepts rather better than facts, particularly when exhibitions and guided tours are planned around a clearly identified set of themes.

#### 5.4 Key Themes

Since it is not possible to predict in what order visitors will see the material on offer, nor to rely on all visitors seeing all the material, the key themes should be reinforced several times within the overall product. These key themes are:

1. RBG as a botanical display/store of indigenous and endangered Dominican flora, as well as flora found on the island which is of special interest.
2. RBG as a display of the flora of the tropics globally
3. RBG as a safe haven of relaxation and recreation in the city
4. RBG as a tool for environmental education for Dominicans and visitors to the island

#### 5.5 Visitor Profile

It has not been possible given the limitations of this project to undertake a detailed assessment of the profile of the visitor to the RBG. However based on the literature review, interviews and observations, it is assumed that the following reflects current usage of the Roseau Botanical Gardens:

##### Cruise-Ship passengers - brief stop

The majority of cruise visitors spend a short period of time in the RBG, usually on their way to visit more popular attractions such as Trafalgar Falls and The Emerald Pool.

##### Cruise Ship passengers - tour stop

Some cruise passengers visit the Gardens as specific stop on their tour. Their visits are usually much longer and more comprehensive.

##### Stay-over visitors - visit gardens for interest, relaxation

It has been noted that just about every stay over visitor to Dominica will visit the RBG, even if it is simply to transit through the facility. Many stay over visitors visit simply to enjoy the ambience of this green space in the city as well as to see some of the plants on display.

##### Botanists or other scientists/special interest visitors

This group represents a miniature market and the traditional ties to other Botanical Gardens around the world, notable Kew Gardens in London, has been lost. The University of the West Indies, Faculty of Science and Agriculture includes Botany as a minor in its undergraduate Biochemistry programme of

studies. However, the UWI-School of Continuing Studies in Roseau, Dominica does not foresee the use of the Gardens for any educational purpose in the short to medium term.

#### Dominican Public

The Dominica public makes up the most complex group of visitors to the RBG. They use the facility for a wide range of sometimes competing purposes, including (though not necessarily limited to) jogging, relaxation, transit (to get from one place to another), organized recreational activities such as cricket and "Kweyol in the Park", elementary School and University Students use the RBG for studying/relaxing/recreation and organized sporting activities such as athletic meets, etc. Interpretive interventions are intended to provide required information in a number of formats in order to ultimately enhance the experience of the various types of visitor to the Gardens. Though there are a number of cross-cutting information requirements, for example location information and directional signs, the various groups will also require different types of information, and there are a number of tools available for the effective delivery of the information. Some of these are outlined below:

#### 5.6 Summary of recommended interpretation interventions

Group/Audience, What they are looking for, Best way to deliver

Cruise visitor - brief stop Memorable experience Brief guided tour, identifying specific plants of interest in a manner that will be easily remembered

Cruise passenger - tour stop Information & Memorable experience Guided tour, identifying specific plants of interest in a manner that will be easily remembered

Stay-over visitors Information & Memorable experience

Various Botanist/Special interest visitor - Specific plants, Scientific name tags on plants, flyer with a 'key'

Dominican Public - Recreation space Signage at the gates and on site

Dominican Public - Safe experience Information at the entrance, in interpretation centre?

Dominican Public - Educational experience interpretation centre

Dominican Public - Plants for sale Signage

Dominican Public - Parking Signage

Dominican Public - Traffic access Signage, general information on Well designed, easily decipherable "map" board

Dominican Public - things that are in the gardens. entrances, outside main building, and directional signs, Location information along roads and at intersections.

Nature-lover -- Dominica flora Guided tour

Nature-lover -- Reassurance that their activities and other planned events are not having a detrimental impact on the integrity of the product Information during the tour on the management of the gardens and other special interest sites.

#### 5.7 Signage

Signs will be required for a range of information to be disbursed within the Gardens. In each case, it is imperative that a graphic designer is contracted to produce the signs. The designer should be furnished with specific guidelines for signage in order to direct his/her efforts in a manner which is in line with the objectives and overall management of the site. In each case, the design should consider the following:

#### Plant labels

As many plants as possible in the RBG should be identified with individual tags providing the scientific and local names of the plant.

Star Apple

Chrysophyllum cainito L.

Sapodilla

Naturalized

México.

Edible fruit and traditional medical uses

Example of content of interpretive tag for plants and trees within the RBG  
Forests of Central and South America

Directional Labels

Map board (at entrance, with "you are here" marker).

These need to be carefully designed to maximize their effectiveness and could be located inside the park at each of the entrances to the RBG.

#### 5.8 Interpretive Walking Tour of the Roseau Botanical Gardens

Some tips for the design of the walking tour:

- Appeal to all senses. Get the audience to taste, listen, touch and smell as well as look.
- Ask clients questions. Encourage contributions in terms of recollections, invite questions, viewpoints and opinions.
- Use examples: 'Coconuts are an excellent example of a plant that disperses by using floating seeds'.
- Use analogies 'These two flowers are closely related - cousins if you like!'
- Self-referencing "have you ever...", "think of the last time that you...", "when did you....".
- Use strong human-interest themes. People are interested in other people so try to link the information that you are giving to some way that it may impact on some- one's life, for example how plants were used traditionally by the native Kalinago also known as Caribs, or if a particular flower was a favorite of colonial families and why.
- Overriding analogy - revolve the entire tour (if possible) around an analogy that you keep coming back to, such as likening a tree to a hotel, plant succession to housebuilding, or beehives to a city.
- Personification - present information about a plant through its eyes as if it had certain human qualities.

#### 5.9 Factual information which could be included in the walking tour of the RBG

- Layout of the RBG, pointing out the spatial relationships of the various sections
- Gardens as an oasis in the centre of Roseau (Roseau the only urban area in the world which boasts 33% under gardens)
- Established by the British in 1889, was considered the Pride of the British Empire. Something on the prestige associated with Botanical gardens in British Colonies. Historical information on the role of Botanical Gardens in British Colonies
- New focus of the gardens, why it was adopted
- Natural History of Dominica
- Flora of Dominica
- Examples of flora from the rest of the tropics
- Humid Tropical and Arid Tropical environments

#### 5.10 Conclusion

This Interpretation plan recommends the provision of a personal guided tour of the gardens (either through tour guides or interpretative material) that focuses on experiences of Dominica integrated into the garden experience, as the main approach. The imperative of adequate management of the RBG has required an assessment of the capacity of national institutions to champion the implementation and administration of the Gardens. Having assessed this situation (see Appendix VI), the actual management of the gardens, which requires an internal structure, will be addressed. The Department of Forestry functions in a supervisory capacity at the RBG. This function is not authorized by statute and appears to have emerged from expediency and an appreciation of sustainable resource management. An assessment of seven (7) entities (one of which - the

National Parks Authority which is not currently in existence) did not expose a more appropriate or capable institution to provide the required stewardship. That notwithstanding, the contribution of the National Development Corporation and the Ministry of Tourism would be pivotal in defining a relationship with the cruise sector which would allow for the charging and collecting of fees for cruise visitors to the RBG and for feedback and partnering with the sector. The Roseau Botanical Garden Management Plan is designed to embrace public services based on scientific functions, as well as sport and social activities that take place within its grounds. The institutional arrangements will be further developed in subsequent reports.

## 6.1 The Mission:

### 6.1.1 Broad Objectives of RBG:

- To refurbish and develop the scientific base or rationale of its current and future collections.
- To supervise the development of plants within its collections.
- To take the lead and contribute towards scientific research on local flora.
- To identify and label plants.
- To facilitate and encourage public access.
- To maintain exchanges with other botanical gardens within the Caribbean and with scientific institutions interested in Botany; develop relations with civil society as well as other amateur groups desirous of supporting the RBG; as well as with the general public through environmental education programmes.

### 6.1.2 Proposed Mission for RBG:

- The promotion of awareness among the people of Dominica as well as foreign visitors, of the role of plants specifically and bio-diversity generally, in maintaining the Earth's eco-systems.
- The promotion of the values of the local flora.
- The promotion of community interest in local conservation strategies, as well as management and sustainable development.

## 6.2 Working Objectives

The development of botanical collections might be organized in the following way:

6.2.1 Ornamental tropical flora: Includes most of the plants that survived after the 1979 hurricane; the recovery of missing plants; and the introduction of new species from trees, palms, shrubs and herbs. This exhibition area will be located within the grounds alongside the internal roads and near the garden boundaries facing Roseau. The layout of plants must be organized according to a prescribed landscape planting design.

6.2.2 Dominica's indigenous flora: This is a new collection developed by means of a scientific gathering of plants, authenticated in the RBG records. They will be located on the upper grounds within the garden, at the bottom of Morne Bruce's western slope. It will be worked out according to Dominica's principal vegetation types (Howard, R. A., *Flora of the Lesser Antilles*, Arnold Arboretum, Harvard University, Cambridge, Mass, 6 volumes, 1974 -1979)

These vegetative types are as follows:

- Dry coastal forest
- Vegetation from sweet water sites
- Semi-deciduous forest
- Rain forest

6.2.3 Additional elements from tropical flora might be located within areas close to principal collections; they contain more than 400 species from trees, palms, shrubs, herbs and epiphytes.

6.2.4 Ethno-botanic collection includes those plants used by the local population for feeding, medicinal and handicraft purposes, and might be located in small area.

6.2.5 Other botanic collections include seeds, woods, fruits, vegetable products of outstanding didactic importance. This collection may also include photographs.



### 6.3 Environmental Education Programme

An environmental education program must fulfill the following requirements (Wilson, J. 1994; BGCS, 2000):

- Analyze characteristics of potential visitors
- Carry on surveys
- Develop public relations
- Evaluate aftereffects

The natural values that might be used as a means for these programs include:

- A rich and manifold local flora and a plentiful collection of introduced tropical species.
- A free local fauna attracted by vegetation of gardens.
- Plants completely developed.
- A trail network that allows access to collections.
- Ponds and other features that facilitate the observation of plants and the way they adapt to different ecological conditions.

### 6.4 Priorities

#### 6.4.1 Public types

- Students from grade and high school levels.
- Amateurs, collectors, cultivators and others.
- Personalities from the scientific, cultural and political fields.
- Tourists and foreign visitors.

#### 6.4.2 Activities

- Guided visits
- None guided visits
- Public disclose activities.
- Cultural extension activities

### 6.5 Development of an Environmental Education Programme

The following are recommended:

- The garden circulation trail system
- Signage
- Published materials
- Lecture room with LCD projector
- Map and scale model of RBG

### 6.6 Fauna and Wild Life Exhibition

6.6.1 Fauna in captivity: by means of cages conveniently located in order to exhibit birds and vertebrates from the island of Dominica. These should be exclusive to threatened species, and therefore include ONLY critically endangered, endangered and vulnerable species.

6.6.2 Avi-fauna: to be encouraged naturally in the RBG as a nesting place.

6.7 Scientific Mission, Data Collections & Records and Facilities for Scientific Research. One of the most important scientific tasks of the RBG is to provide facilities to permit collections to be used by local and foreign specialists. For this purpose, it is necessary to have a reliable data source about their origin and development, properly documented in the Official Data Record Book of the Roseau Botanical Garden Collections of Dominica.

### 6.8 Human Resource Requirements

The various working specialties within the RBG are as follows: Note that these are functions, and some functions may be subsumed into ONE functionary.

6.8.1 Curator: General Manager: Bachelor's degree or diploma in biology or agronomy, with working knowledge of environmental issues, systematic vegetation and institutional leadership. (See Appendix VI)

6.8.2 Curator: Administrator: Bachelor's degree or medium level diploma with experience in HR management, accounting, material resources management (transportation, machinery, garden maintenance, etc).

6.8.3 Botanist: Scientific Manager: Bachelor's degree or diploma in biology or agronomy, with working knowledge of environmental issues, systematic vegetation,

ecology, and Dominica's flora and vegetation.

6.8.4 Botanist: Technical Manager: Bachelor's degree or medium level diploma, with experience in horticulture, forestry and gardening.

6.8.5 Guides: Associate Degree or medium level diploma, working knowledge or conversational level in foreign language preferable French, proper conduct and physical appearance.

6.8.6 Gardeners plant: medium level diploma or primary level, with experience in cultivation, wildlife, and in good physical condition to carry out strenuous tasks, occasionally. The training of staff personnel can take place within the Garden, in local institutions or nearby countries capable of conducting these tasks. Training courses should include:

- Gardening
- Conservation of species from the local flora.
- Botanical records management.
- Environmental education
- Systematic botanic
- Vegetation ecology
- Forestry
- Pest's control and plant diseases

Gardeners' training should be conducted while the garden is undergoing recovery works, by means of short courses lectured by qualified technicians.

The garden should be assessed periodically by a Landscape Architect and a Graphic Designer in order to guarantee the proper projection of its institutional image.

#### 6.9 Latin American and Caribbean Network of Botanical Gardens (LACNBG)

This international organization was founded in the early 1990s under the auspice of the International Society of Botanical Gardens and the Latin American Botanical Association. Its primary objective was to encourage the development of botanical gardens within the region, especially in those regions where biodiversity is threatened. This institution collaborates in many areas with the World Strategy for the Conservation of Botanical Gardens (WSCBG). It is recommended that the RBG seek membership to this institution, once its mission and objectives are accurately defined. The importance of international recognition can never be underestimated.

#### 6.10 Conclusion

The management plan recommends the reintroduction of a Curator who will perform the role of General Manager, in addition to attending to the general development of the gardens. The plan also includes a Botanist, who will perform the role of Chief Technical Officer to the gardens. It is recommended that the Department of Forestry continue to perform overall management functions of the gardens in the short to medium term.

APPENDIX I: RBG Option 4

APPENDIX II: ROSEAU PERIPHERAL LINK ROAD

APPENDIX III: GARDENS BY-PASS ROAD

APPENDIX IV: DIAGRAM SHOWING PROPOSED PARKING FOR WORKERS AND TOUR BUSES section of RBG replacing Agriculture Buildings

Current layout of buildings in southern Proposed parking area within RBG

APPENDIX V: PLANT SPECIES RECOMMENDED FOR RBG

Herbs

Hedychum (3 species)

Ginger collections (4 genus, 8 species and varieties)

Costus (4 species)

Calathea (4 species)  
Amomum (2 species and varieties)  
Sterlitzia (2 species and varieties)  
Musa (ornamentals, 2 species)  
Dracaena collections (3 general, 6 species and varieties)  
Araceae collections (7 general, 25 species and varieties)  
Cycadas collections (3 general, 6 species)  
Amaryllis collections (5 general, 10 species)  
Pilea collections (5 species)  
Ferns collections (6 general, 20 species and varieties)  
Agave and relatives (4 general and 10 species)  
Begonia collections (10 species and varieties)  
Commelinaceae collections (4 general and 10 species)  
Sun flower collections (12 general and 30 species)  
Others (12 general and 25 species)

#### Bushes

Hibiscus collections (3 genera and 5 species and varieties)  
Codiaeum collections (1 species and varieties)  
Acanthaceae collections (general and 10 species)  
Aralia collections (4 general and 10 species)  
Acalipha collections (4 species and varieties)  
Jasminum collections (5 species)  
Ixora collections (5 species and varieties)  
Others (15 general and 30 species)  
Palms: 20 general and more than 30 ornamental species  
Pandanus: 3 species and varieties  
Ornamental trees:  
Ficus collections (6 species and varieties)  
Tabebuia collections (3 species)  
Eryhrina collections (5 species)  
Others (15 genera and 30 species)

#### Economic plants

Manguifera indica collections, 10 varieties  
Sapotaceae collections, 4 general and 4 species  
Citrus collections, 5 general and 10 species and varieties  
Banana collections, 2 species and varieties  
Collection of coffees, 2 species and varieties  
Annonas collections, 2 general and 5 species  
Guajaba collections, 3 genera and 6 species  
Others (10 general and 20 species)

#### APPENDIX VI: TERMS OF REFERENCE FOR RBG CURATOR

The Curator performs the function of General Manager of the Gardens. However, his specific functions are as follows:

1. To monitor growth and development of all plants and trees within the Gardens.
2. To increase the collection of plants as per the garden's strategy for its enlargement.
3. To manage the basic data on all collections as well as ensure the labeling of plants.
4. To collect information about native species with conservation interest, and carry out in situ and ex situ protection measures.
5. To develop and encourage scientific exchanges about species with homologous botanical gardens, within the Caribbean and Latin-American Net of Botanical Gardens.
6. To apply and improve environmental education programmes for children, teenagers and other persons in Dominica.
7. To develop the guidelines for garden tours by tourists or local people.
8. To cooperate with the efforts of national and foreign specialists concerning

the island's biological diversity and the conservation of its phylogenetic resources.

Note: The Curator is not a designer. He should possess tremendous information and knowledge about plants, their habitats, forms of reproduction etc. He must work with the designer (landscape architect) in order to obtain best results from the general layout and spatial organization.

APPENDIX VII: CAPACITY ASSESSMENT OF NATIONAL INSTITUTIONS TO MANAGE RBG