# 3 SITE ENVIRONMENTAL CHARACTERISTICS

## 3.1 INTRODUCTION

It is essential that the environmental aspects of the total site and its immediate surroundings be carefully identified and studied so that they can be preserved wherever possible. If ever they have to be interfered with in the interest of the project, ways and means of reducing these effects as much as possible should be investigated.

The following sections identify these various aspects relative to the site and its surroundings.

## 3.2 SITE BOUNDARIES

The site earmarked for the residential and commercial morcellement project at Cap Tamarin, Tamarin, in the district of Black River is bordered as follows:

- Towards the northern boundary along 550metres by surplus of land belonging to the project promoter Societe R. Jhuboo & Cie
- Towards the western boundary along 216metres by Paul and Virginie Primary School
- Towards the southern boundary along 490metres by river reserves and Tamarin River
- Towards the eastern boundary along 228metres by surplus of land belonging to Médine Ltd

The Site Plan of the proposed morcellement is enclosed at Annex 1B, at the end of Section 1.

## 3.3 AERIAL PLAN

To enable the reader to have an overall view of the proposed morcellement overall site, an aerial plan of the locus site has been included in the report, and reproduced at Annex 3A at the end of Section 3.

The aerial photograph clearly shows:

(i) The demarcation of the site with respect to the adjoining population pockets constituted by the Tamarin Village and Black Rock Morcellement

(ii) The morcellement envelope

(iii) The main Black River Road A3 which runs towards the north of the proposed morcellement portion and from which the future road providing access to morcellement will branch off

(iv) Sugarcane cultivation surrounding the locus site along its boundaries.

(v) The amenities presently existing close to the morcellement site, namely Paul & Virginie Primary School, the Tamarin Bridge, the Shoprite Commercial Centre

(vi) The existing poultry rearing farms

## 3.4 ADJACENT CENTRES OF POPULATION

The closest centres of population, located on the other side of the Tamarin River site, towards its southern boundary, correspond to the built–up residential area of Black Rock morcellement.

The Black Rock Morcellement is positioned towards the southern part of the boundary of the site, as can be readily observed in the Aerial Photograph referred to in sub-section 3.3 above and reproduced at Annex 3A at the end of Section 3. It consists essentially of a vast number of individual concrete houses as shown in the pictures below.



**Photograph 3-1: Agglomeration of Houses within Black Rock Morcellement**

## 3.5 LAND COMPLEX

The Land Complex in which the whole site lies is generally classified as Western Coastal Valleys Plains and Slopes. The soil can be described as dark magnesium clays being deep, self-munching black or dark grey, heavy, montmorillonitic clays on alluvium or colluvium. There are few to frequent gravels and stones of fairly fresh compact olivine basalt of Older Volcanic Series.

## 3.6 LAND UNIT MAPPING SYMBOL

According to a plan and report prepared by the Food and Agriculture Organisation of the United Nations and the Mauritius Sugar Industry Research Institute in May 1973, the Land Mapping Unit of the area encompassing the site is classified as 4.1. It forms part of the Western Valley flats.

## 3.7 DRAINAGE AND EROSION SUSCEPTIBILITY

The drainage pattern of the region where the morcellement site lies can be described as imperfect or poorly drained with the Erosion Susceptibility being rated as slight on

gentle slopes. The slopes mainly refer to the river embankments which are outside the site envelope. Thus it can be reasonably concluded that the housing units and landscape areas proposed to be constructed within the morcellement site do not run any erosion risks.

## 3.8 LANDFORM AND ALTITUDE RANGE

### 3.8.1 Cap Tamarin Region

The landform within the 4.1 Land Unit Mapping Symbol can be described as flat or almost flat to gently undulating. The slopes are mostly below 5%.

The altitude of the landform ranges between 0 to 105metres amsl.

### 3.8.2 Morcellement Site Topography

The proposed morcellement site can be described as flat to gently undulating with a general slope towards the river. There is a general slope from the eastern to the western boundary with highest contour at 19.5amsl sloping to 5.0amsl as can be observed from the Contour/Topographical Plan enclosed at Annex 3B at the end of Section 3.

The average natural gradient of the site is 1: 41 i.e. it possesses a natural slope of 2.4% from the eastern to the western portions of the site.

## 3.9 SITES OF INTEREST

### 3.9.1 Within Site

There are no designated sites of interest within the site.

### 3.9.2 Outside Site

#### *3.9.2.1 Educational Amenity*

There exists Paul and Virginie Primary School, located towards the western boundary as shown on the Aerial View plan enclosed at Annex 3A at the end of Section 3 and whose pictures have been reproduced below.





**Photographs 3-2: Existing Primary School**

This already built and presently operating school is situated outside the morcellement envelope; but it will most certainly be used by some of the residents of the new morcellement. This will constitute an advantage to some of the buyers of the morcellement plots, being given the proximity of this educational facility within walking distance from the morcellement.

#### *3.9.2.2 Recreational and Leisure Amenities*

There exists towards the north-western boundary, outside the site premises the sport complex of Tamarin known as Riverland as shown on the Aerial View Plan enclosed at Annex 3A at the end of Section 3.

Pictures of the Tamarin Sport Complex are shown below.




**Photographs 3-3: Riverland Sport Complex**

#### *3.9.2.3 Poultry Rearing Farm*

There exist a poultry rearing farm and its feeding park located within the morcellement site, towards its eastern boundary.

The poultry rearing farm will be removed and relocated as confirmed by the owner, Le Poulet Fermier, in its letter addressed enclosed at Annex 3C at the end of this section.

#### *3.9.2.4 Building and Land Use Permit for Poultry Farm*

The owner of the poultry rearing farm has also obtained its Building and Land Use delivered by the Municipal Council of Vacoas-Phoenix for construction of the new

poultry pen at Henrietta, as evidenced by the Building and Land Use Permit enclosed at Annex 3D at the end of Section 3.

## 3.10 ENVIRONMENTAL SENSITIVITY

#### *3.10.1.1 Flora*

The indigenous flora is of negligible significance because the site is presently bare land with signs of possible discontinuous sugarcane cultivation which however existed in the old past. The flora consists of grass, shrubs and a few trees which do not carry any appreciable floral value.

#### *3.10.1.2 Fauna*

Similarly, the fauna within most of the morcellement area is of no significance because the site is bare land and does not therefore encompass any valuable faunal habitat, except for some mongooses and rats.

No endangered species were observed on the site. Hence, the site possesses neither floral nor faunal value.

The development of the site will "*push*" these animals towards the still underdeveloped and bare areas still existing towards the northern area beyond the morcellement site and river reserves.

## 3.11 AMENITY AND RECREATIONAL VALUE

The amenity and recreational value of the site in its present stage is negligible. However, through the proposed morcellement development, the site will be provided with green spaces and landscaped areas which will upgrade its amenity and recreational potential.

## 3.12 HYDROLOGICAL CHARACTERISTICS

There are neither rivers crossing the site nor any marshy land, wetland or boreholes.

### 3.12.1 Tamarin River

As mentioned above, there are neither rivers crossing the site nor marshy land or wetland within the site. However, there is the Tamarin River flowing outside the site and bordering it along its whole length, over 490metres towards its southern boundary.

Neither the river nor its embankments will be tampered with either during the construction or operation phase but will be integrated into the overall landscaping and a minimum set-back distance of 16metres from the closest plots has been allowed as per the Forests and Reserves Act 1983. Furthermore, the promoter will ensure that in the Deed of Sale, a clause stipulating that the statutory required set-back of the buildings will have to be respected by the individual owners.

## 3.13 CLIMATOLOGICAL CHARACTERISTICS

### 3.13.1 Micro-Climate

The climate of the geographical region encompassing the proposed morcellement site can be described as subhumid megathermal.

### 3.13.2 Rainfall

Tamarin region benefits from an average annual precipitation of the order of 1200 millimetres. This level of annual rainfall is considered as low as opposed to an annual precipitation of 4000mm on the Central Plateau because the western coast lies on the leeward side of the predominating South East Trade Winds. The heaviest rainfalls are associated usually with cyclones.

The mean annual evapotranspiration for the region lies between 1700 to 1900mm, meaning that the region is characterised by a deficitary water regime. The moisture deficit period during which evapotranspiration exceeds precipitation occurs over 6 to 10 months, definitely more than 50% of the year; therefore, the moisture deficit can be described as being on the high side.

### 3.13.3 Temperature

A summary of monthly climatological data collected at Palmyre Station representative of the western coastal area shows that the mean monthly temperature varies from 15 to 35 degrees Celsius ($^0$C).

### 3.13.4 Wind Regime

The geographical region encompassing the project area is governed basically by the South East Trade Wind regime.

The South East Trade Winds blow normally over Mauritius for about 10 months of the year, and constitute the main component of the wind regime. These winds blow from the South East, rise over the higher lands of the island, known as the Central Plateau, and reach the western and north-western parts of the island.

The western area falls under the leeward influence of the predominant trade winds from which it is sheltered by virtue of its geographic location.

## 3.14 GEOLOGICAL CHARACTERISTICTS

The geological characteristics of the site have been described at sub-sections 3.5 and 3.6 above.

During the detailed design stage, the structural engineer to be appointed by the client will carry out the necessary soil investigations for the foundations of the buildings.