Maldives – Sri Lanka Joint Research Project

Establishment of Alternative Road Construction Processes Using Corel- Limestone Base Soil Materials Locally Available at the Republic of Maldives

Introduction

It was the **First International Research Project** that was undertaken by the CECB under the Center for Research and Development unit in January 2007 on the invitation of the Ministry of Construction and Public Infrastructure (MCPI) of the Republic of Maldives. A team of experts representing CECB and University of Peradeniya (UoP) of Sri Lanka visited the Republic of Maldives to carry out a preliminary inspection for road work improvement during the period 16 – 21st January 2007.

The preliminary inspection carried out at various sites enabled the team of experts to identify certain critical issues such as the present unfavorable construction patterns, the high water table, problematic soil conditions and common structural problems associated with the present road bases. The possibility to use locally available resources (both material and technology) effectively to address the problems was also one of the main criteria under study. Therefore samples of available material were brought to the CECB laboratory for further physical and chemical study. The team of experts strongly felt that it was also essential to develop the local know about the recommended practices for road construction.

Taking the above into consideration, the Public Works Services of the Ministry of Construction and Public Infrastructure of the Republic of Maldives and the Central Engineering Consultancy Bureau of Sri Lanka have decided to carry out a joint research for the establishment of alternative road construction processes using coral – limestone base soil material.

Typical road surface problem

Coral lime as an Aggregate Base

Road shoulder construction using coral material

Final product

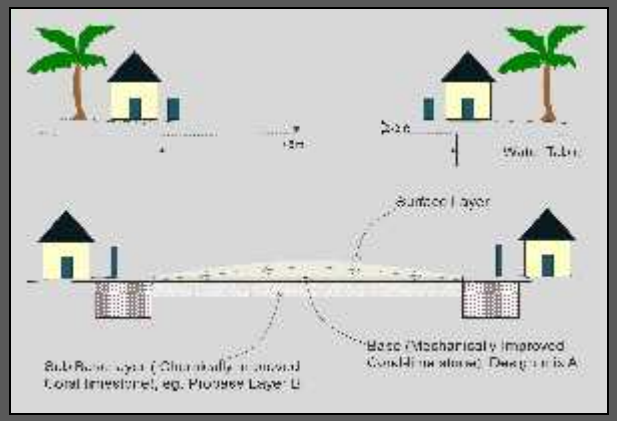
Main Objectives

1. Establishment of suitable methodology of construction of roads using limestone- coral base material in Maldives.

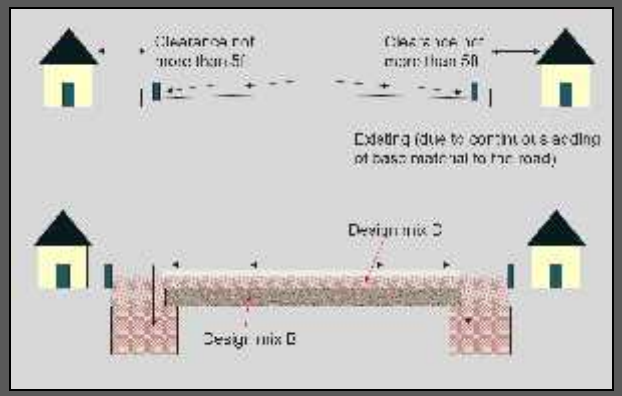
2. Capacity building of the personal in Maldives in the area of road construction through training and transfer of technical know-how.

Scope of Services

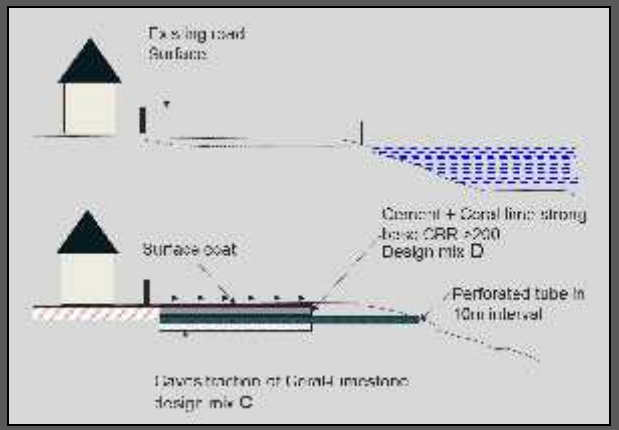
1. Provision of Testing of Parameters of Coral Based Soil Materials collected from the Maldives Islands.
2. Training Personnel from Maldives
3. Development of Road Construction Guideline for the Limestone-Coral Base Materials in Maldives
4. Establishment of Basic Road Laboratory Facilities in Maldives
5. Pilot Study in Maldives



1. Normal conditions



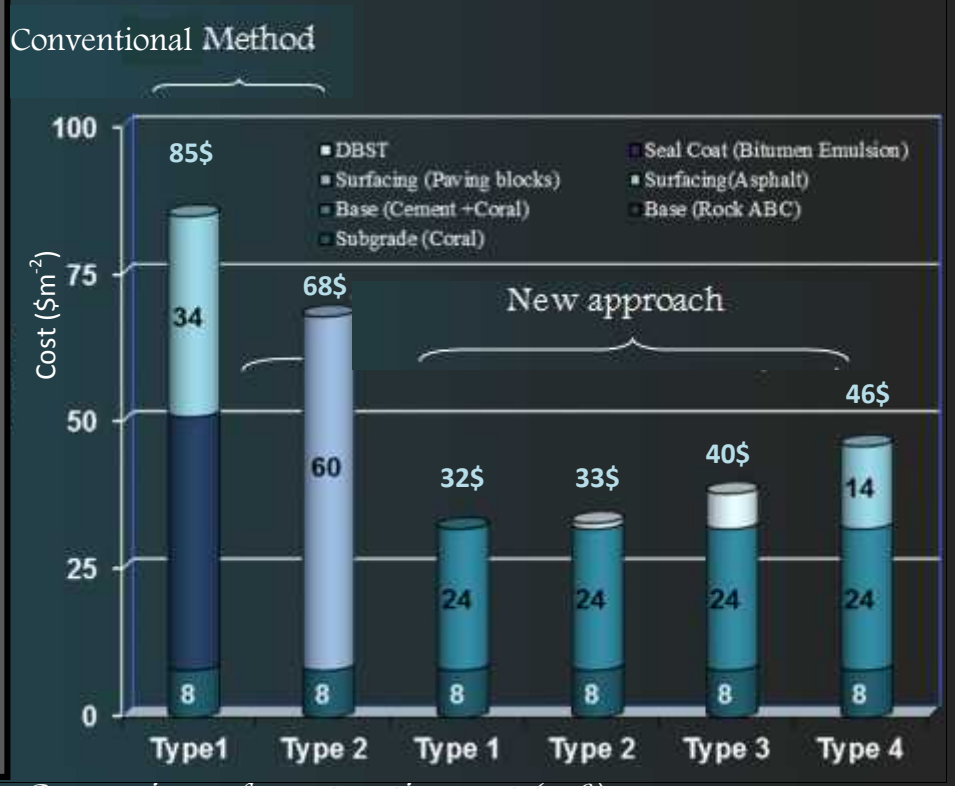
2. If the existing road level is higher than the ground level



3. At High water table conditions

Maldives is an island nation in the Indian Ocean, with an average ground level of 3.5 meters above sea level. Maldives is facing a critical issue with road surface problems in rural areas within the country. To overcome this, a solution was provided using resources found within the country. The study conducted was a location specific research project which proved to be very useful for the community especially in terms of cost. With the application of engineering sciences, coral-lime stone and abundant resource found in the country was used as an aggregate base to construct roads which is economically viable. At present the government of Maldives is planning on using this research for the development of the road networks in rural areas.

Comparison of Construction Cost (m^{-2})



Comparison of construction cost (m^{-2})