

BEACH NOURISHMENT PROJECT OF SEBERANG PERAI UTARA
BEACH, BUTTERWORTH, MALAYSIA.: A CASE STUDY

A report submitted to the School of Engineering, MARA Institute of Technology in partial fulfilment of the requirements for the degree of Advanced Diploma in Civil Engineering.

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ABSTRACT

Beach nourishment is a technique for shoreline stabilization and storm protection. It is very attractive as a recreational value to an important coastal tourism industry and has become increasingly popular as a method of shoreline protection in Malaysia nowadays.

This project starts with an explanation of the data required to study the beach condition. These data are taken from a beach nourishment project in Seberang Perai Utara. The study area of this project is along a 250m stretch of Robina Park beach which is 10 km from the Butterworth Cargo Terminal. Secondly, a study is made on the method of design beach nourishment. The data from Seberang Perai Utara project are used to show the design calculation. Thirdly, a comparison between the sample calculation and the result of the actual Seberang Perai project is made to check the accuracy of the design methodology. Lastly, the study is concluded with on the construction method used in beach nourishment.

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CHAPTER ONE.

1.0 INTRODUCTION.

1.1. The Concept of beach nourishment.

Beach nourishment is an environmentally attractive solution of shoreline stabilization which appears to become fashionable recently. Beaches widened by artificial fill placement act to dissipate erosive wave energy, provide upland property storm protection and supply additional sediment to a usually sediment starved sand budget area.

Interference with natural processes is reduced to a minimum and, where material is imported, the land gained may have a value. It is considered as an environmentally safe management technique since unsuccessful nourishment project would only result in the redistribution of material by wave action into the environment. No permanent modification of the beach and nearshore environment need to be build, and since no permanent structure is required for nourishment, the management committment allows rapid project abortion necessary. Beach nourisment monitoring has usually been concerned with evaluating changes in the extent of sub areas of the beach/or recalculation of fill volume.

These parameters are important, but it is necessary to consider the way in which nourishment sand is taken