CENTRE OF STUDIES FOR BUILDING SURVEYING
FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING
UNIVERSITI TEKNOLOGI MARA

RAINWATER HARVESTING SYSTEM: THE ECONOMICAL PLACEMENT OF RAINWATER COLLECTIVE TANK FOR TERRACE HOUSE

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"I hereby declare that this academic project is the result of my own research except for the quotation and summary which have been acknowledged"

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ABSTRACT

The application of an appropriate rainwater harvesting technology can make possible to the utilization of rainwater as a valuable and necessary water resource. This research aim to discover the suitability and economical placement for rainwater collective tank for rainwater harvesting system in terrace house. Most of the existing terrace house having limited space and suffered high and insufficient amount of cost for implementing the system. Thus, new projects especially the projects of green building homes nowadays have increase to encourage of never wasted the nature's precious resources such as rainwater. The rainwater harvesting system were installed at the terrace house thus can be used to collect rainwater for use in gardening and toilet flushing.

The performance is judged from the instrument which is developed through the research framework. The discussion starts with establishing the research concept by determine the overview of Rainwater Harvesting System in Malaysia. The research started with the literature reviews on rainwater harvesting system and rainwater collective tank. The assessment framework of this study has been developed as guide for this research to drive the research flow and the objective achievement. Two other instruments used in this research to accessed the performance and maintenance of each placement of rainwater collective tank for residential building. The instrument are questionnaire survey and interview had become the main data collection of the study. This is important to ensure the successful of this research.

CHAPTER 1: INTRODUCTION

1.1 INTRODUCTION

Rainwater harvesting is simply collecting, storing and purifying the naturally soft and pure rainfall that fall upon the roof. The term water harvesting refers to collection and storage of natural precipitation which aimed at harvesting surface and groundwater, prevention of losses through evaporation and seepage and all other hydrological studies and engineering interventions, (Appan, 2000). Rainwater may be utilized for both potable and non-potable requirement such as drinking, cooking, toilet flushing, laundry and landscape irrigation.

The application of an appropriate rainwater harvesting technology can make possible to the utilization of rainwater as a valuable and necessary water resource. Rainwater harvesting is a technique that has been used throughout history (Ngigi, 2003). Rainwater harvesting has been practiced for more than four thousand years and necessary in areas having significant rainfall but lacking of centralized government supply system.

New filtration and treatment technologies make rainwater harvesting relatively easy. Rainwater harvesting systems can be installed in existing buildings or incorporated into new construction. A basic rainwater collection system includes a roof, gutters or roof drains, and a piping system to convey the water to and from a storage tank or cistern. Storage tanks can be inside or outside, above or below ground, or partially above and partially below ground. In some instances a separate structure is used to enclose the tank and equipment, which will increase the roof surface catchment area. Many rainwater collection systems, as well as individual components, are available commercially.

This research therefore put an aim to discover the suitability and economical placement for rainwater collective tank for rainwater harvesting system in terrace house. The performance is judged from the instrument which is developed through the research framework. The discussion starts with establishing the research concept by determine the overview of Rainwater Harvesting System in Malaysia.