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A Cost Benefit Analysis of rainwater harvesting in a larger institution: A case study

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Rain water is considered as a free good and its benefits are often ignored. With the introduction of modern facilities together with technologies in the building construction sector, many people tend to ignore the valuable resource of roof rainwater collection for daily use. The present study intends to provide an economically feasible option for the utilization of rainwater as an alternative source of water supply among rural and urban condominium /cluster housing programmes in Sri Lanka, which will be important for motivating potential users and for popularizing the concept.

This case study was carried out at the Bandaranaike Memorial Conference Hall (BMICH) premises to investigate the financial viability of rainwater collection in urban buildings, which are used for large public gatherings. The selected location is the best representative sample in depicting the larger buildings across the Sri Lankan condition. A questionnaire survey was carried out to collect the necessary information from this institution. In addition, face to face interviews were held with relevant people. The analysis was carried out based on the recommended method of cost benefit analysis.

According to the results of this case study there were 80 – 95 % potential for collecting rainwater as the building complex was already equipped with adequate facilities. The result shows that rain water harvesting is financially beneficial with a net present value of 32 million for a period of 30 yrs with a 10 % discount rate with the current water tariffs.

This system saves a considerable amount of municipally supplied potable water which could be used to supply deserving people. A larger portion of the water collected could be used for non drinking purposes such as washing, toilet flushing, car washing, kitchen works and landscape irrigation etc. Roof rainwater collection helps to reduce storm water collection and the risk of flash flooding leading to damage to properties as well as damage to vehicles. If such advantages had been included, the benefits generated would be even higher.