

ABSTRACT

APPROPRIATE SEWAGE DISPOSAL SYSTEMS FOR LOW-COST

HOUSING IN TRINIDAD.

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There are many sewage disposal systems available today which can treat various qualities and quantities of wastewater to produce effluents which can meet accepted local and international health standards. Some systems can be simple to construct and operate whilst others can be highly mechanised and require a relatively high level of skill and expertise to construct and operate. The capital and running costs of each system is expected to vary according to the complexity and energy requirements.

In Trinidad and Tobago there has been a proliferation of package sewage treatment plants over the last ten years mainly due to the sharp increase in housing projects during this period. Besides the relatively high capital cost of the sewers and treatment plants, the high operation and maintenance costs have resulted in numerous problems which today pose a serious threat to the human living conditions and ecological environment in Trinidad and Tobago. Further, the continued mis-use of the existing traditional systems is of growing concern because of the potential health problems that can be created.

The provision of adequate housing by the Government is a major responsibility and housing developments would continue to increase in order to cater for the existing housing shortage and the increasing demand. Whether the housing projects are financed by private investors or the State, adequate means of wastewater disposal have to be provided. In this respect appropriate sewage systems have to be selected for implementation which should be able to function effectively under local physical, social and economic conditions.

This project report attempts to identify appropriate disposal systems for low-cost housing developments in Trinidad. Firstly, a review of the existing and proposed housing policies is carried out in order to highlight problems and possible solutions associated with the provision of housing. It later shows that although projects can be made economically feasible by using appropriate standards of infrastructure, the sewerage system which is a major cost item cannot be simply replaced by the cheapest or least complex alternative. One has to carry out a technical and economic analysis to determine the feasible system which will be appropriate under the physical and socio-economic conditions in the Country.

The systems which are assessed include conventional sewerage systems with package treatment plants, septic tanks with soakaway pits, pit latrines and suitable alternative systems which include two-compartment septic tank systems, stabilisation ponds treatment facilities and small bore sewer systems. The project concludes with a map proposal of appropriate systems for the island of Trinidad.