

HIGHER TECHNICAL INSTITUTE
COMPUTER STUDIES DEPARTMENT

DIPLOMA PROJECT

SOLAR SIMULATOR DESIGN TOOL

CS/154

SYSTEM ANALYSIS

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JUNE 1996



Introduction

The TRNSYS simulation program is an acronym for transient simulation program, is a quasi-steady simulation model. This program was developed by the members of the Solar Energy Laboratory at the University of Wisconsin was released in 1974.

The program consists of many subroutines which represent the various components commonly found in a Solar System, such as the Solar Collector, Heat Exchangers, Straight and fully mixed Water Storage Tanks, space and domestic water heating loads, pumps, auxiliary heaters, thermostats, head pumps, cooling devices, tees, valves e.c.t.

There are also component routines to handle input of weather data or other time-dependent forcing functions and output of simulation result. Many components may operate in any of several models, offering differing degrees of model complexity.

Also, the capabilities of component routines may overlap. Building loads, for example, may be calculated using the simple 'degree-hour' load model or with the more detailed transfer function zone component.

Alternatively, TRNSYS can accept hourly loads generated by other load programs.

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