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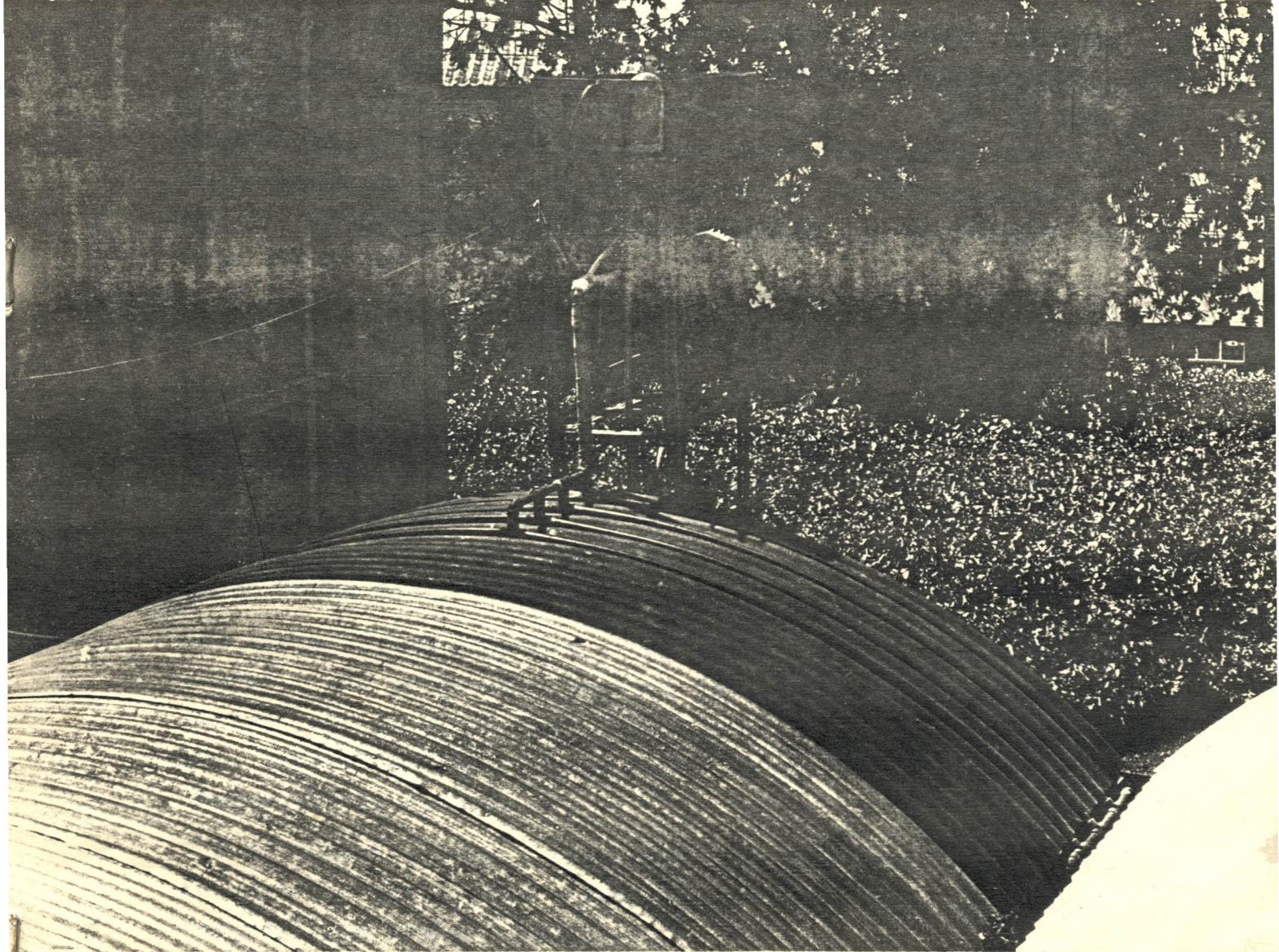
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A ROOF - INTEGRATED
SOLAR WATER HEATER

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A ROOF-INTEGRATED SOLAR WATER HEATER

The project as described below is a follow-up of a Ministry of Health undertaking with regard to a pre-fabricated roof structure for semi-selfhelp health posts in the remote regions of Kenya(*) .

The basic idea is to provide a pre-fabricated roof structure, under which floor slab, external and internal walls can be erected by means of self-help efforts. Thus it is hoped that the roof, one of the most problematic structural elements of a building as far as self-help projects are concerned, is provided according to a satisfactory standard, preventing serious disappointments as experienced in the past.

Since the running of a health post requires basic services such as hot water for instance, but the means of providing it are generally restricted and expensive too, it was thought that a solar water heating system would be more economical than anything else, in particular since "remote regions" mostly are blessed with a high amount of daily sunshine all over the year.

I n s t a l l a t i o n

Due to the standard design of the proposed roof structure, the idea has been developed to integrate the water heating system into the structure as part of the G.C.I. roof cover - see Fig.1 The foto in front shows the actual test installation at the University of Nairobi, Department of Architecture, FADD-Building State House Road.

The installation provides a collector with an overall area of 1.95m^2 - its projection amounts to 1.8m^2 - and a volume of 20 liters, out of which 4.5 liters count for the pipe system, and 15.5 liters for the storage tank. It works according to the thermosyphone system.

Out of budget reasons, free available PVC-pipes have been used in spite of their poor thermal properties. Thus the actual expenditures could be kept low.

(*)Ole Frydenberg, Alternative Design for Remote Regions - Rural Health Planning and Implementation Unit, Ministry of Health, Nairobi 1979