
windows

an interior view

a joint student project of

technische hogeschool delft
afdeling bouwkunde - vakgroep interieur
the netherlands

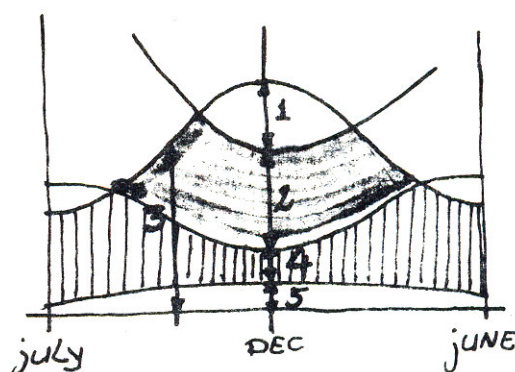
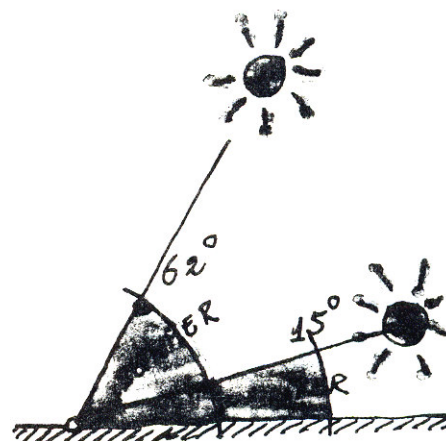
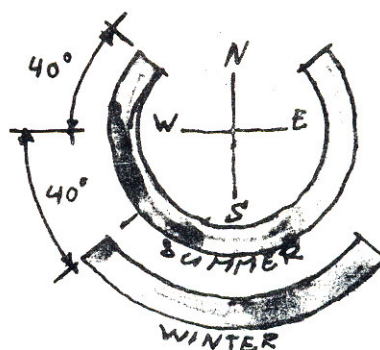
city of birmingham polytechnics
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WHEN WE THINK ABOUT SOLAR ENERGY WE HAVE TO CONSIDER THE SITUATION IN WHICH WE LIVE WITH REGARD TO THE ECOLOGICAL ASPECTS OF THE FUEL SHORTAGE. WE CAN SEE WE BOTH LOSE AND GAIN THROUGH WINDOWS EXPENSIVE HEAT. IN SEEING THIS WE HAVE TO CAPITALISE ON THAT FACTOR ALSO WE HAVE TO UNDERSTAND THE CLIMATE IN WHICH WE LIVE. WE CAN SAY THERE'S LITTLE DIFFERENCE BETWEEN THE CLIMATE OF HOLLAND AND ENGLAND. THE ANGLE OF THE SUN AND THE MAXIMUM TEMPERATURE VARY LITTLE

THE DIAGRAMS SHOW THE CLIMATIC SITUATION IN GREENWICH. FOR HEATING A HOUSE THESE ARE THE PRINCIPLE FACTS TO WORK WITH FOR A GREAT PART OF THE YEAR SOLAR ENERGY IS SUFFICIENT TO HEAT A BUILDING. IT IS ONLY ON THE COLDEST DAYS THAT OTHER MEANS OF HEATING SHOULD BE USED TO BOOST THE HEAT GAINED FROM THE SUN

IN THIS STUDY WE HAVE TRIED TO CONCENTRATE ON THE SIMPLEST AND MOST ECONOMICAL FORM OF SOLAR ENERGY COLLECTION IN RELATION TO HEATING. AS THIS IS THE MOST EXPENSIVE IN ENERGY USAGE. WITH THE THREATENING SHORTAGE OF FUEL AND THE ECONOMICAL RECESSION WE HAVE TO FIND CHEAP, SIMPLE SYSTEMS TO FULFILL OUR PURPOSE; TO LOWER THE COST OF RUNNING A HOUSE AND TO GIVE PEOPLE A MORE BEAUTIFUL AND SATISFYING PLACE IN WHICH TO LIVE.

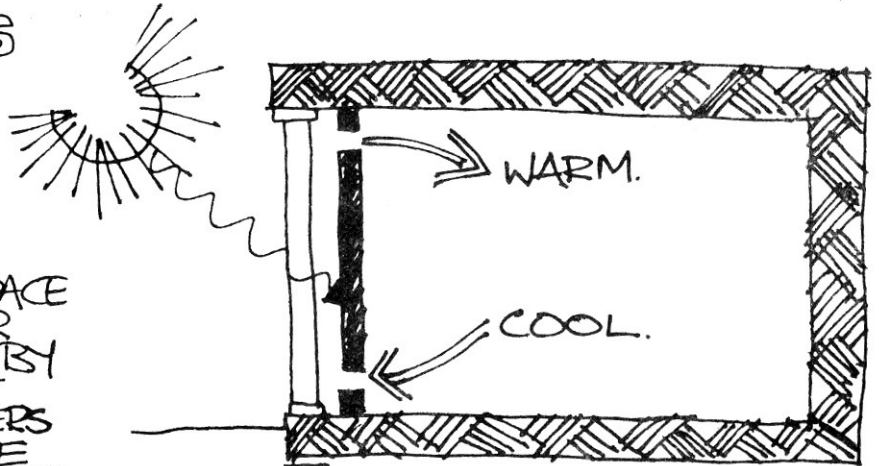


1. FOSSIL FUEL HEATING
2. SOLAR COLLECTOR SYSTEM
3. TOTAL ENERGY NEEDED
4. ENERGY GAINED FROM WINDOW
5. INTERNAL PRODUCTION OF HEAT.

systems

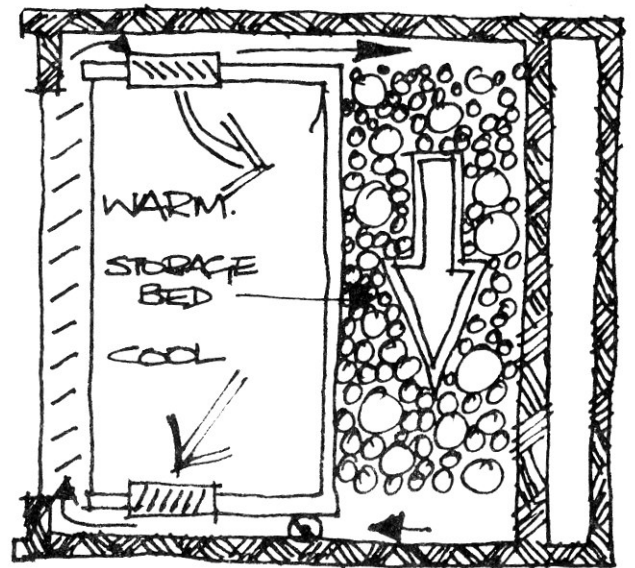
1

A SYSTEM OF SPACE HEATING USING AIR DIRECTLY HEATED BY THE SUN WITHOUT THE AID OF DAMPERS FANS AND STORAGE BEDS, CAN BE CALLED A PASSIVE SYSTEM.



2

A UNIT WHICH RELYS ON MECHANICAL METHODS OF TRANSFER AND STORAGE OF AIR HEATED IN A SOLAR COLLECTOR CAN BE CALLED A PASSIVE HYBRID SYSTEM.



3

IN CONTRAST TO THE PASSIVE SYSTEM THERE IS THE ACTIVE SYSTEM WHICH RELYS ON THE EXCHANGE OF HEAT FROM ONE MEDIUM TO ANOTHER

