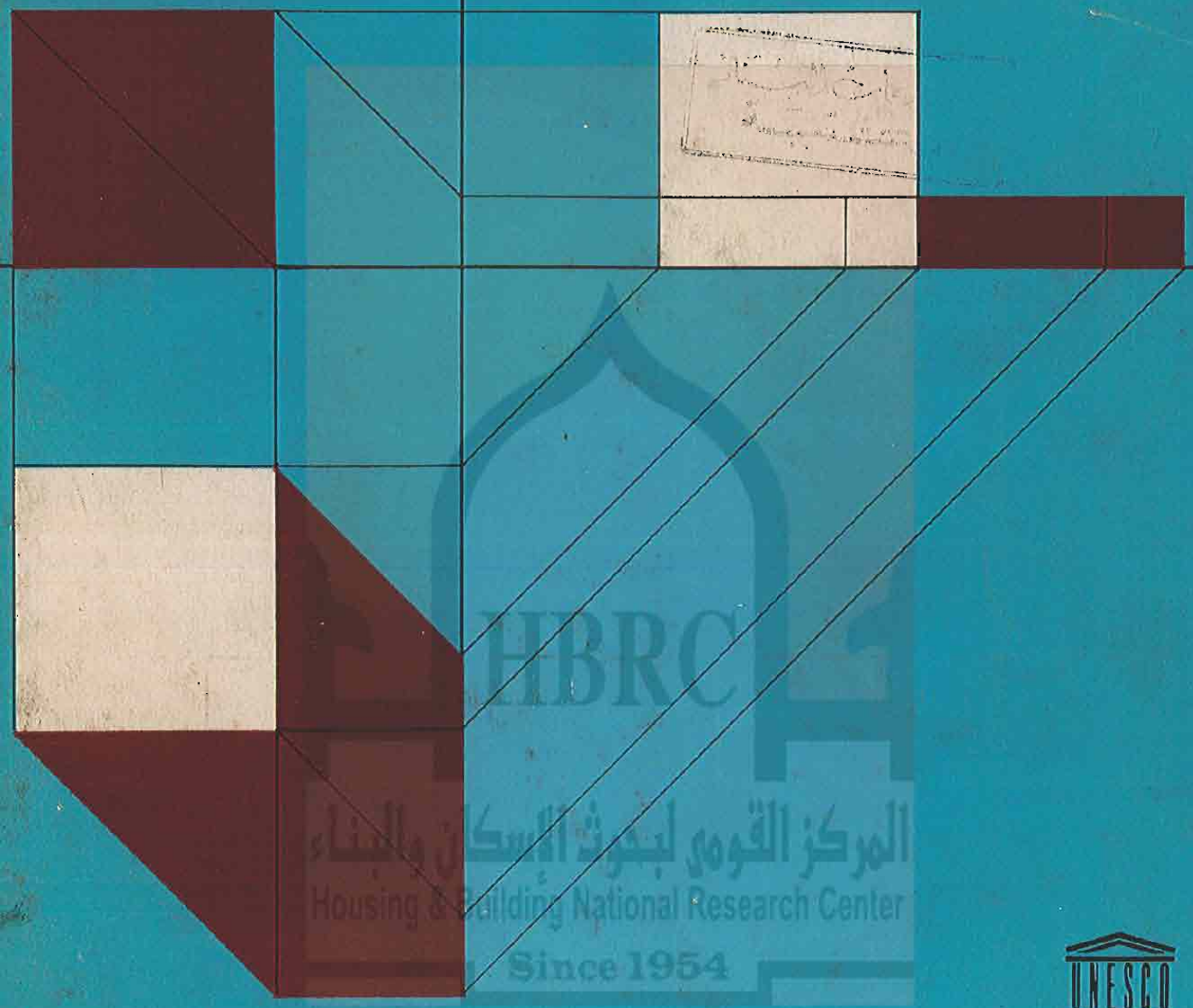
SUN SHADING DIAGRAMS FOR SCHOOL BUILDINGS



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EDUCATIONAL BUILDING REPORT 2

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SUMMARY

This publication provides data on the angles governing the design of sunshading devices for educational buildings in the countries of the Asian region and gives examples of the ways in which these data can be used. Different methods of excluding direct sunlight from teaching spaces are illustrated in a series of diagrams which show exclusion by roof overhang, louvres, adjustable shutters and grills. Planting of suitable shade trees is also recommended as a way of reducing solar heat.

Of course, a good way of keeping the cost of sunshades as well as solar heat load to a minimum is to orientate the building with its longitudinal axis east-west. This orientation may, however, sometimes conflict with the need in the humid tropics to face the building towards the prevailing breezes so that the occupants receive adequate ventilation for cooling. In such cases a compromise orientation must be sought. In the hotter and drier areas of the Asian region, smaller windows, normally provided to reduce heat gain, also make sunshading problems easier to solve.

The sunshading diagrams for latitudes 32° N to 10° S, to be found at the end of the publication, give the angle of the sun with the ground at right angles to the face of the building for a variety of building orientations. These angles can, as is shown in the examples, be used directly and without further calculation, to determine the projection of a sunshade which will exclude sun from the opening it protects.

SOMMAIRE

Cette publication fournit des données chiffrées concernant les angles et inclinaisons à donner aux dispositifs parc-soleil des écoles d'Asie, ainsi que divers exemples de la façon d'utiliser ces données. Une série de diagrammes montrent diverses méthodes de protéger les classes du rayonnement solaire direct: toits débordants jalousies, persiennes réglables et claustras. On recommande aussi de planter des arbres appropriés afin de rafraîchir l'atmosphère.

Assurément, un excellent moyen de minimiser tant le coût de ces dispositifs que l'échauffement dû au rayonnement solaire consiste à orienter les bâtiments selon un axe est-ouest. Cependant, cette orientation peut parfois être incompatible avec la nécessité, dans les régions tropicales humides, de construire les façades perpendiculairement à la direction des vents dominants afin d'assurer aux occupants une fraicheur suffisante par ventilation naturelle. En pareil cas, il faut rechercher le meilleur compromis. Dans les pays plus