
GIBSON

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Quantification of Urban Solar Access

> **The concept of solar access is an abstraction generalized from particular observations. The natural world appears to abound with examples of arrangements based in some measure on exposure to the sun. More to the point, observations of the modern built world reveal that we have not usually followed nature's example in this regard. Our cities are non-directional. Our buildings are undifferentiated by orientation to the sun. They stand static, unresponsive to the rhythms of their surroundings.**
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> **Ralph L. Knowles (1981)**

Introduction

The interaction between buildings and light from the sun and sky is a defining characteristic of the urban environment. Daylight is by its very nature a dynamic phenomenon. The urban form, in particular its vertical extent, serves to amplify the dynamic character of daylight through the casting and progression of shadows by tall buildings. Planners and architects have long appreciated, at least qualitatively, that the perception of the urban environment is directly related to the prevailing daylight conditions, or as it is often called, the *solar access*. A characteristic feature of urban environments is the large gradient in solar access over small spatial scales. An office or apartment perceived as brightly daylit may be one that, a few storeys below, is quite shaded. A pedestrian in the city is likely to