

عنوان مقاله:

A case study on saving energy by reducing heating and cooling loads of a building

محل انتشار:

اولین کنفرانس مهندسی و فن آوری (سال: 1399)

تعداد صفحات اصل مقاله: 8

نویسندگان:

Mehrnaz Etemadi, - School of Architecture and Environmental Design, Iran University of Science and Technology, Tehran, Iran. Centre for Infrastructure Engineering, Western Sydney University, NSW, Australia

Mahboubeh Mostashregh - School of Architecture, University of Tehran, Tehran, Iran

خلاصه مقاله:

Energy saving is one of the important issues in sustainable architecture. This study aims to examine this aspect of sustainability and estimate how much energy can be saved if heating and cooling loads of a building are taken into consideration at the time of design. The present study was conducted on the building of Dr. Habibi Library and Documentation Center located in the Islamic Azad University, Science and Research Branch in Tehran. Firstly, the cooling and heating loads of the building have been calculated using the Carrier software. Then, the addition of atrium and a shading device above the windows are presented as two proposed solutions to reduce the amount of energy required to meet the cooling and heating needs of the building. The comparison between the results shows that adding atrium and a shading device can reduce the cooling loads of the building down to ۲۵.۸ watts per square meter and the heating loads can also be reduced down to ۱۸.۳ watts per square meter. These results show a ۲۹% saving in cooling energy consumption and a ۱۷% saving in heating energy consumption of the building.

کلمات کلیدی:

.Energy Saving, Energy consumption, Cooling loads, Heating loads, Carrier software, Atrium, Shading

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1217772>

