01 Office Buildings Glass Facades Excitation under Hot and Dry Climates

Frashad Gheybi

Department of Mechanical Engineering, Islamic Azad University, Yasouj, Iran

farshadgheybi@yahoo.com

(Corresponding Author)

Rouhollah Moosavi

Department of Mechanical Engineering, Yasouj University, Yasouj, Iran

[moosavi@yu.ac.ir](mailto:moosavi@yu.ac.ir)

|  |  |
| --- | --- |
| **Received:**  2016/10/22  **Accepted:**  2018/02/04 | **Abstract:**  The purpose of this research is to reviews the thermal comfort condition of full glass south view official buildings in warm and dry zones and conclusion of buildings disadvantage in thermal waste and after all presenting an ideal plan with appropriate solution. To reach to that goal first of all the effective factors on wasting energy were reviewed then the temperature testing with thermometer was done and the data were analyzed by energy plus software. So, the studies method is based on statistics and experiments. The results show the main reason of energy wasting for buildings with full glass view is direct sun. After the reviews studies and simulations the conclusion is that this kind of view is known for having issues for thermal comfort, natural ventilation and glare. Specially buildings with bright shells in warm and dry zones. These issues made us to find solutions for this problem. After considering several solutions, we considered a 180° rotation of the building, in order to put the glass view on the north side of the building, which doesn’t have the sun heat. The result show that in hot and dry zones in order to prevent the building flushing, glass view with high percentage, should not be used. After the rotation simulation, the results showed the thermal waste which was the main reason of energy waste, were reached to a normal level. |
| **Keywords:**  Thermal comfort,  Climate,  Office buildings,  Glass facades,  Natural ventilation,  Facades |
|  | |