

Description:

In the light of new trends, façade solutions have become more performance-centric with other factors like cost playing a lesser role in the selection process.

Building skins are a vital component to resolve issues of responsive architecture as they are a medium through which intelligence can be imparted to a building system to respond to an environmental stimulus. Thus key characteristic of an effective intelligent building skin is its ability to modify energy flows through the building envelope by regulation, enhancement, rejection or entrapment.

Steps to design Climate Responsive Façade :



1. Climate Analysis



2. Building Orientation



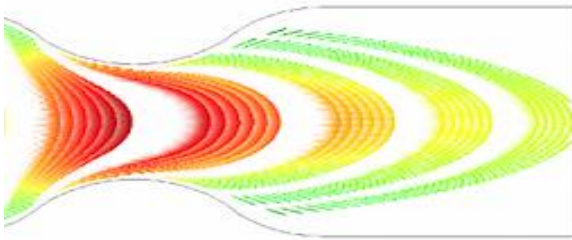
3. Daylight Requirements



4. Material Selection

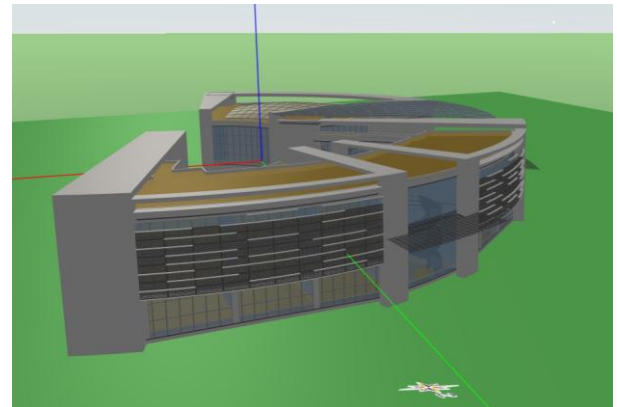
Jaalis for Tropical climate like India

Façades are intended to regulate heat and light exchange while producing comfortable indoor environments with reduced energy consumption.

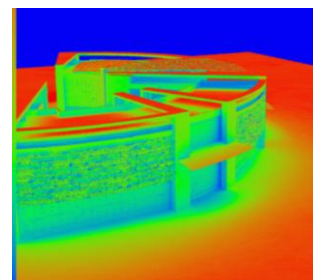


"Bernoulli law states that when air is compressed and released it becomes cool"

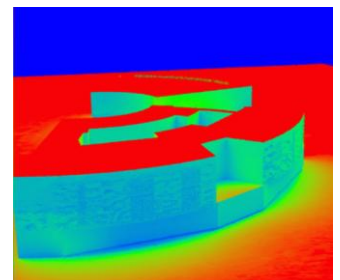
Façade Analysis of an Institutional Building at Bhopal, Madhya Pradesh



Total Annual Radiation on North-west glazed façade :



Without Jaali -
1,065.6 kwh/m2

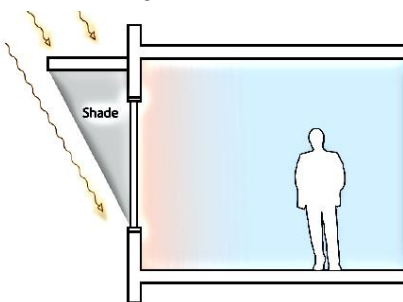


With integrating Jaali
759 kwh/m2

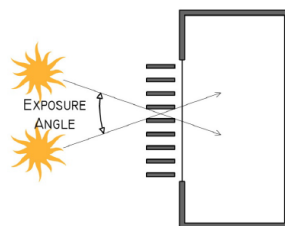
Other design Principles for Building Façade

External movable shading systems should be an important component of the sustainable façade to reduce solar heat gains in tropical climates.

South Façade



East-West Façade



REDUCTION IN INSOLATION :



28.8 %