

Acoustics and Lighting Design For Green Building

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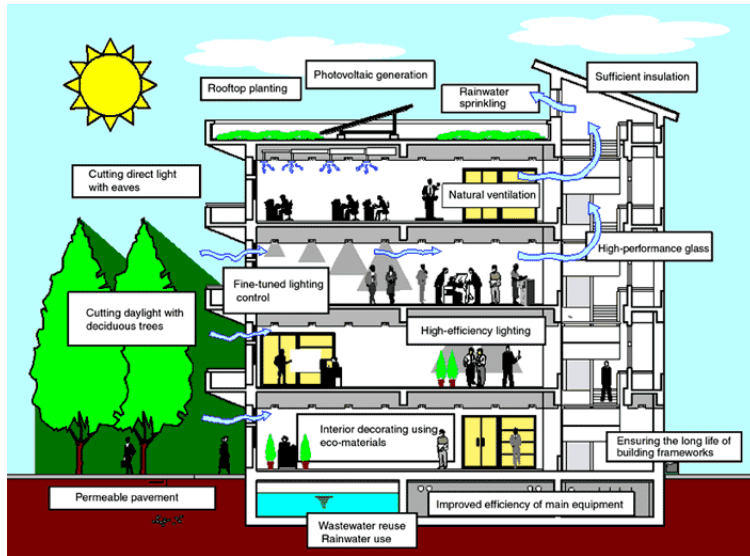
Organisers:



International Co-owners:



Green Building Design



How to rate a green building?

- Location & Neighbourhood
- Energy Use
- Material & Resources
- Water Use
- Indoor Environmental Quality

Green & Sustainability's Trend >>>> Focus more on People



Organisers:



International Co-owners:



Sustainable Buildings and Climate Initiative
Promoting Policies and Practices for Sustainability



Global Alliance
for Buildings and
Construction

The Five Senses of Human



Good Acoustics & Lighting Design are Important !!!

Acoustic Considerations

1. Construction noise that affecting neighbourhood
2. Fixed plant noise that affecting neighbourhood
3. Indoor room to room sound isolation
4. Exterior noise intrusion – Traffic Noise
5. Services background noise control
6. Vibration control due to outdoor traffic and indoor MEP plant
7. Indoor reverberated sound control



Natural Ventilation vs Noise Intrusion



“Studies show that individuals exposed to traffic noise have a higher risk for diabetes, stroke and heart attack, and those exposed to road traffic and aircraft noises have a higher risk for hypertension. In addition, exposure to noise can lead to reduced reaction time and increased levels of annoyance.” @WELL

Use less building materials = Sustainability ??



Office chatters. Ringing phones. Keyboard typing sound. Mouse clicking noise. These are the typical noise distractions in an open plan office. Open plan offices may appear cool, but in reality workers report suffering from too much noise and a lack of privacy. The increased exposure to noise distractions makes tasks requiring concentration much harder to accomplish

A Flexible Design Approach is Suggested

1. Do we need NIC 40 of cellular office?
2. Fixed installation vs movable furniture?
3. Design on demand?



Lighting Considerations

Daylighting

1. Neighbourhood daylight access
2. Enhance / Optimum daylight with control
3. Solar glare control

Electric Lighting

1. Light pollution the affecting neighbourhood
2. Fulfil Lighting Power Density (LPD) requirement
3. Less electricity consumption then requirement
4. Lighting quality, maintain illuminance, less variation, glare control, high CRI lighting
5. With automatic control, individual control, zoning, occupancy sensors..etc
6. Lighting due to security & safety requirement
7. Use task lighting to reduce general illuminance level
8. Circadian Lighting design



Organisers:



International Co-owners:



Satellite Images of Earth at Night by NASA



Organisers:



International Co-owners:



Hong Kong is one of the Brightest Cities



With new technologies and sustainability considerations. We should rethink the lighting design and function of city at night.



Organisers:



International Co-owners:



Is this ok?



E4 High Density city: max 15% ULR ; 25 L (cd/m2)



Organisers:



International Co-owners:



Do you feel comfortable ?



Organisers:

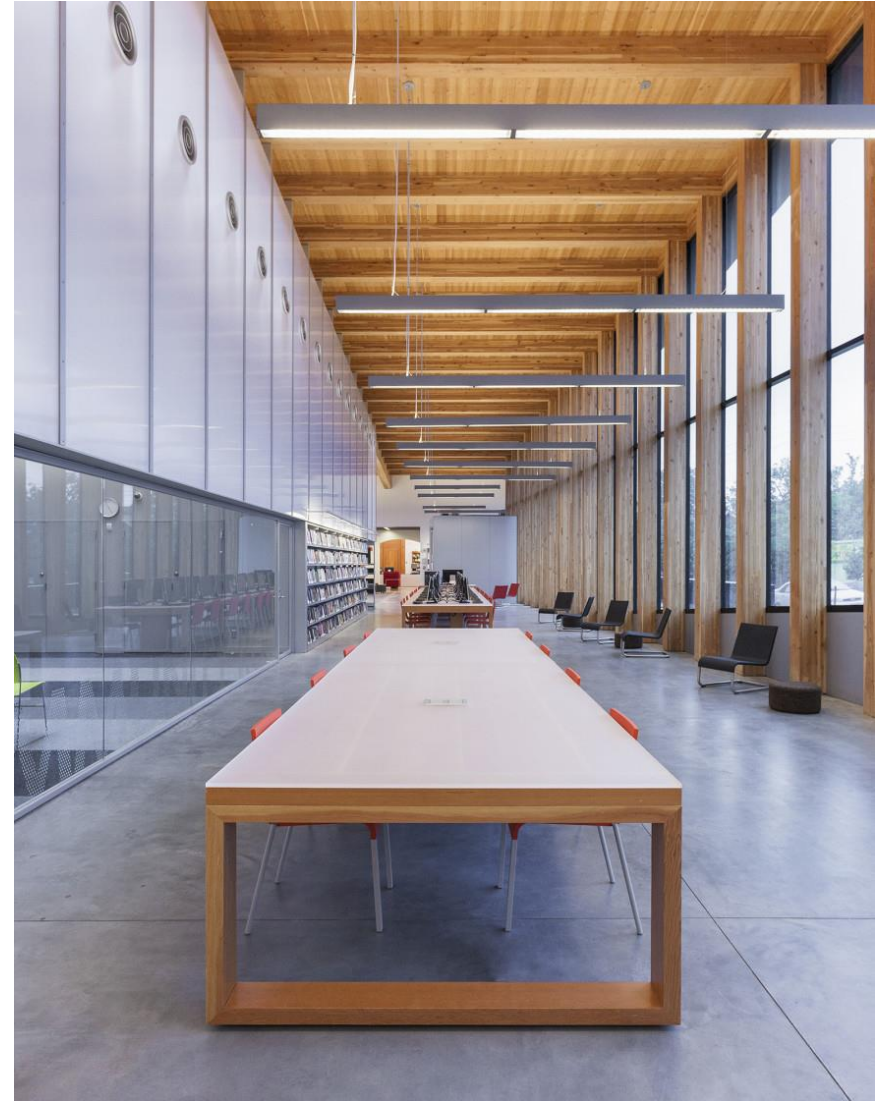


International Co-owners:



More Design Considerations

1. Diffuse & Direct Lights
2. Good Contrast / Materials
3. Variable Color Temperature
4. Dimming



Suggestion

Encourage Better Design
that
Focus on People
by
Giving Bonus Points
In
Green Building Certification



Organisers:



International Co-owners:



Thank you



Organisers:



International Co-owners:



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