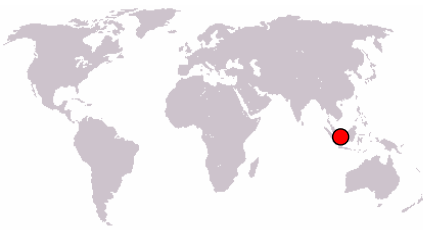


CREATE - University of Singapore



Location
Singapore

Building type
New educational campus building

- Features**
- 3 mid rise towers
 - 1 high rise tower
 - advanced facade design utilising vision and clerestory level glazing with light shelves and external shading

The project

CREATE (Campus for Research Excellence and Technological Enterprise) is a precedent-setting, scientific research centre to be located at the National University of Singapore's University Town campus.

It will be a unique, multi-national, multi-disciplinary research enterprise that stimulates innovation, discovery and entrepreneurship through interaction and collaboration with scientists and engineers from around the globe.

The CREATE campus will include three mid-rise buildings and a high-rise tower.



Image: Perkins + Wills Architects

Maximising internal visual comfort...

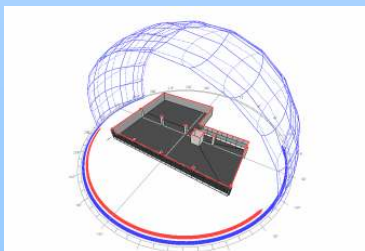
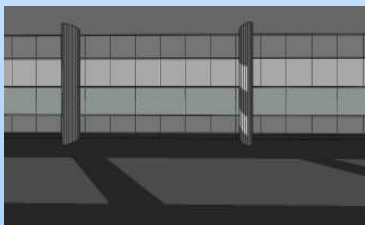
The Meinhardt Building Science Group (MBSG) used their expertise in natural lighting design to help design the facade of the building to utilise the highest amounts of natural light, making for a better teaching and learning environment.

Using advanced natural light computer modelling techniques, MBSG engineers were able to maximise natural light levels within the building while ensuring glare levels were kept below discomfort levels.

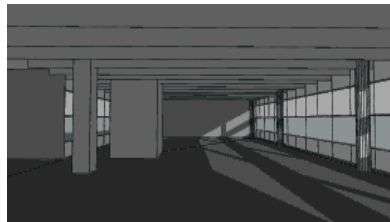
...while reducing unwanted solar gain.

However increasing natural light levels runs the risk in also increasing solar gain within the building and therefore energy consumption of the A/C systems.

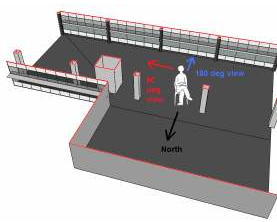
Through integrating the natural light and glare modelling with advanced thermal and energy modelling, solutions could be found which not only satisfied the visual requirements, but also kept solar gain and therefore energy consumption of the building to a minimum.



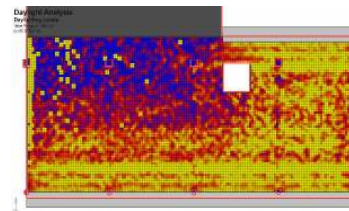
Optimising external shading design through shading studies



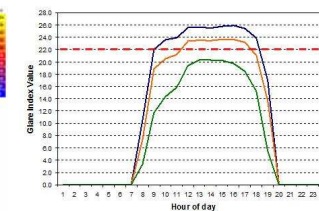
Measurement of visual comfort using occupant viewpoints



Calculation of internal natural lighting for different facade options



Ensuring glare levels remain below discomfort thresholds



Facade design effects on cooling loads and energy demands

