CIE2012 Workshop on

Rapid Urbanization in Asia means Daylight Design Issues for Cities

Workshop Convener: Professor Edward Ng, School of Architecture, CUHK

Abstract

A Politician asked, “Without light (daylight) in their homes, will people die?”

“No, people won’t die, but the consequences of not dying are even worse.” A scientist answered.

The above exchange prelude the launching of a performance based Code of Practice for daylight design for residential buildings in Hong Kong, a high density city.

According to United Nations data, around 20 cities in the world nowadays have 10 million inhabitants or more. This number will continue to increase in years to come as human settlements continue to urbanise and industrialise. In cities like these, people are fighting for their share of space, and buildings are fighting each other for their exposure to natural light and ventilation. Develop designs to optimize the occupants’ right of enjoying daylight and natural ventilation is an important task of the government, architects, engineers and industry stakeholders. Naturally lit and ventilated buildings are not only energy efficient, but also psychologically more peasant and potentially be more comfortable for their inhabitants, as well as being “green” and “sustainable”.

There are key questions to be asked and answered.

- What is the kind of daylight performance people are enjoying / suffering with our existing / foreseeable ways of doing things?
- How much and what kind of daylight people needs and wishes?
- Are there any mismatch between provision and needs?
- Are our current policies, regulations, tools and methods adequate?
- Are new design and evaluation tools needed?
- What further researches are needed?
- How market / practice transformation can be initiated? How stakeholders can be engaged? And how existing values can be changed?
- What kind of high density, urban morphologically, we should design and plan if the need for daylight is to be taken into account seriously.

The workshop will try to discuss and share views and ideas on the above and other issues related to the topic of designing for daylight in high density cities. Three short lectures are planned to jump start the discussion. The first lecture is on the new daylight design standard for buildings in China, a country now experiencing rapid urbanization growth, addressing the issue. The second lecture looks at how Hong Kong, an ultra-high density city, copes with the issue. The third lecture is a case study in Israel that methods are developed to assist designers coping with the issue.

Planned Agenda:

Introduction (5 min)

Lecture 1 (15 min):

> Tao Luo: A STUDY OF THE DAYLIGHT CLIMATE IN CHINA BASED ON THE TYPICAL YEARLY DAYLIGHT ILLUMINANCE

Lecture 2 (15 min):

> Edward Ng / T M Chung: DESIGNING FOR HIGH DENSITY LIVING – A PERFORMANCE APPROACH

Lecture 3 (15 min):

> I G Capeluto: DAYLIGHTING FOR DAYLIGHT AND SOLAR ACCESS – A CASE STUDY IN ISRAEL

Discussion (40 min)