

2013 International Lighting Symposium – 18 October 2013  
International Commission on Illumination (Hong Kong)  
Opening Address by Frank, CHAN Fan JP

Good morning Chairman Prof. Chung, Chairman Thomas, distinguished guests, ladies and gentlemen,

Let's imagine a world without light. The symposium today would become a dialogue in the dark. Without light, all colours would be just the same. Without light, pretty and ugly would make no difference. While all these may sound amusing if not alarming, the worst is yet to come. Without light, photosynthesis no longer work, plants would cease to grow. Without light, the sustainability of this planet earth and humanity would be in jeopardy. It is for this very reason that God created light in the very first day when God created the heavens and the earth. According to the Genesis, God said : Let there be light. And there was light.

Light is indispensable and lighting has indeed shaped the way we live. Without lighting, the world that we are living in would never be the same. Back in the 19th century, British scientist Humphry Davy invented the first incandescent light bulb that electrifies lighting until today. Now being considered as energy inefficient and short lived, incandescent light bulb is being phased out in many parts of the world. However, in a fire station in Livermore of the United States, an incandescent light bulb has continued glowing for 112 years since 1901. It serves as a living monument of the contribution of incandescent light bulb in the history of lighting.

Today we have all kinds of lighting serving all sorts of purposes. From general purpose lighting, special effects theatrical lighting, shadowless surgical light and even laser. Undoubtedly, lighting is everywhere and has become a way of living. Today, lighting across the globe altogether accounts for 19% of global electricity consumption, corresponding to around 3.4 trillion kWh per year. According to the latest assessment report of the Intergovernmental Panel on Climate Change published September this year, if carbon emissions continue at the prevailing pace,

the global temperature increase will exceed 2 degree Celsius by 2040. Adverse impact such as shrinkage of sea ice cover and rise in sea level will become irreversible. The report serves to remind us all the imminent need to help combat climate change.

As lighting professionals, we must strive for optimal balance between quality and energy efficiency, as well as other determinants such as life cycle cost and sustainable development. Demonstrated by many success stories, all these seemingly contradicting requirements actually work in harmony. Los Angeles, the second largest city of the United States, has installed some 210,000 streetlights along its 4,500 miles of streets. The annual electricity consumption was 168 million kWh. In June 2012, Los Angeles completed a large scale LED streetlight replacement programme that cost 57 million US dollars. The project spanned over four years and 140,000 high pressure sodium streetlights were replaced by LED. The project results in 63% reduction in electricity consumption, corresponding to 7 million US dollar saving per year. Together with lesser maintenance cost of 2.5 million US dollars per year, the capital investment will pay off in six years.

Advancement in technologies has enhanced the quality and energy efficiency of lighting over the years. Apart from the use of innovative lighting products and creative applications, there are many other ways to provide or enhance illumination. There is a small town called Viganella in Italy. The town is located right behind a 1,600 meter high mountain, making it unreachable by sunlight during winter time. In near darkness both day and night, people living there suffered from a depressed mood, a phenomenon called "Seasonal Affective Disorder". As a result, the younger generation chose to leave town, leaving only the elderly behind. One day, a young man, Pierfranco Midali decided he had had enough of this near darkness and came up with an idea to light up the town. In a cold morning in November 2006, with the help of a helicopter, a huge mirror of 8m wide and 5m tall was transported and installed on top of the mountain. Coupled with a sun tracking computer and necessary moving gear, sunlight is

captured and reflected onto the town square for up to eight hours a day. In Viganella's near 800 years of existence, it was the first time people there felt the warm winter sun.

The cases mentioned just now are exemplary engineering solutions. If we team up with architects, building designers and users, more and better solutions would be available and the sky would be the limit. By incorporating light well, light shelf, sunpipe and skylight into building design, we would be able to make the best use of God's gift. Similarly, we could save even more by relocating rooms to the building core and open plan office to the building peripheral. The use of task lighting and occupancy sensor also help reduce energy consumption by a wide margin. The same can also be achieved by way of behavioural change. The adoption of daylight saving time by many countries is a typical example. The necessary change is simply a shift of our daily routine by an hour forward or backward.

God created light and humanity created lighting. Lighting works magic at day and even better at night. Remember the great magician David Copperfield who in 1983 made the Statue of Liberty disappeared during a stars lit New York night. In cosmopolitan cities like Hong Kong, lighting works similar magic but with much greater might. Sadly, the power of lighting expels stars and galaxies out of sight.

Mindful of the power and might of light, I am sure that fellow members and friends of CIE will endeavor to come up with innovative and sustainable solutions in making the best use of lighting. Ladies and gentlemen, I earnestly look forward to your sharing, and please enlighten us as to how we can make this planet Earth green and bright. Thank you.

18 October 2013