### 1.7 Energy Efficiency and Sustainability

It is the responsibility of the lighting profession to use energy as efficiently as possible but at the same time to provide lit environments that enable people to operate effectively and comfortably.

Energy use involves two components:

- The power demand of the equipment
- Its hours of use.

The lighting industry has worked hard to develop equipment that has reduced the demand for electricity for lighting by producing more efficient light sources and their related control circuits, as well as more efficient luminaires. Then there are design options to be considered, such as the use of area/ambient lighting rather than a blanket provision of light by a regular array of the space.

The savings for the area/ambient approach have been estimated to be up to 50%.

Good energy efficient lighting design is not just about equipment; it is also about the use of lighting. There are many examples where lighting is left on when it is not required. This may be because there are inadequate lighting controls (for example: sensors of tunnels or streets are not working or are not well adjusted) or because people are not present (parks and other facilities are left on until early morning without use, as they are closed and lit) and therefore the lighting is unnecessary.

This aspect of lighting design and ownership needs a dramatic change in attitude to improve the energy efficiency of all lighting installations. This requires changes as to how the lighting is controlled both manually and automatically as well as how lighting is provided in terms of the distribution of light, particularly with respect to the daylighting availability in some cases. It is also necessary for the lighting industry and its customers to use equipment that is sustainable.

This means that the used materials should whenever possible, come from renewable sources and that at the end of its life, the redundant equipment can be disposed of safely with most of the base materials being recycled.