

## **ZERO CARBON DESIGN**

### **BUILDING GREEN 2009 CONFERENCE**

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Raul Manlapig

Managing Director, Arup (Philippines)

Ove Arup & Partners Hong Kong Ltd.

<http://www.arup.com>

[raul.manlapig@arup.com](mailto:raul.manlapig@arup.com)

### **ABSTRACT**

The target of developing the city into a low carbon society is now a global trend of combating the *Climate Change* worldwide. Among all sectors, building industry is identified as the major contributor on carbon emission. Low or zero carbon design is imperative to achieve the target of a country in carbon reduction. This article first provides an overview of carbon reduction design in buildings. The strategies on carbon reduction through the building design are then discussed. The ultimate objective is to achieve a building that does not contribute to carbon emission, i.e. a *zero carbon building*. A case study of Samsung Zero Energy House (ZEH) in Korea was adopted to illustrate how the carbon reduction designs can be applied on building design. The emphasis of the discussion is on issues related to carbon footprints, where appropriate connections will be discussed on related idea of energy consumption. In principle, the ZEH produces as much energy as it consumes over a year of time in overall quantity. This can be achieved by reducing energy demand with energy efficient building system integrated passive design, using highly energy efficient appliances and employing onsite renewable energy sources.

**Keywords:** Carbon footprint, carbon emission reduction, low/zero carbon