

Keynote Address 1

Prof. (Mrs.) Chinth Jayasinghe

B.Sc.(Eng), M.Eng.(Highway & Traffic Engineering), PhD., C.Eng., MIE(SL)
Department of Civil Engineering, University of Moratuwa, Moratuwa, Sri Lanka



Green Built Environments

During twentieth century, a significant change has occurred to the life styles of people in most parts of the world due to very significant advancement made in science and technology. Many scientific innovations have consumed a lot of natural resources in the world. This over-exploitation has gradually led to a situation of scarcities and/or higher prices to be paid.

Gro Harlem Brundtland chaired the World Commission on Environment and Development, which led to the publication of the Brundtland Report in 1987. This report led to the first Earth Summit, in 1992 in Rio de Janeiro, and then to the landmark concept of “sustainable development”:

“Development that meets the needs of the present without compromising the ability of future generations to meet their own needs”.

This definition points to one important aspect. That is preserving an opportunity for future generations to have a reasonable quality of life. Sustainable development with green built environment, has to be considered from a number of aspects such as social, involving houses with better quality and sustainability, economics, involving the affordability and ability to maintain employment and environmental, involving resource conservation, energy efficiency and air quality.

However, buildings can contribute against Sustainable Development (SD), in turn adversely affecting our lives in the long run. Adverse impacts of such “unsustainable buildings” on sustainable development can be categorized as:

- Environmental degradation
- Energy consumption
- Natural resources depletion

Still, buildings can be made to contribute towards SD (Buildings for SD) mainly through:

- Planning & Design (Sustainable Sites)
- Efficient use of water and disposal of wastewater (Water Efficiency)
- Construction & operation with energy efficiency (Energy and Atmosphere)
- Materials (Materials and Resources)
- Better indoor environments - Building operation with acceptable indoor conditions (Indoor Environment Quality)

The above points highlight the need and the considerable scope available for creating green built environments. Such buildings would need planning and design with pre-set goals so that compromising solutions could be reached. Many decisions taken based on qualitative reasoning would need quantification. Therefore, creating green built environment would need a carefully thought scientific approach where key decisions would be converted to costs and benefits not only based on capital costs, but also based on a life cycle cost approach.