



Kandalama Hotel

SUSTAINABLE BUILDINGS - THE WAY FORWARD

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We all know why we need to protect our environment, why we should take care of it. Evidence is there that Sustainable Development is not something alien or impossible for us. But, because of human ignorance and the status quo of social, economic and political factors, we do not give sufficient attention and take necessary actions. The problem is that majority does not believe in and accept sustainable development. Thus it is a responsibility of those who study and know the truth, to educate these less knowledgeable and convert open-minded people to go for a sustainable future. Those who are willing to learn and willing to change can make this world a better place for present and future generations creating environmentally, economically and socially sound living place.

"In 1987, the United Nations Brundtland Commission defined sustainability as meeting the needs of the present without compromising the ability of future generations to meet their own needs."

(<https://www.un.org/en/academic-impact/sustainability>)

The Real Estate Sector (Property sector) plays a major role in many economies around the world and no difference can be seen in the Sri Lankan economy as well. But on the other hand, this sector (building operations, material utilization and construction) is the main contributor of environment degradation and accounts for using the largest share of natural resources.

Real estate sector

As per the figure shown (See Chart), the UN Environment Global Status Report (2017), building operations, building materials and construction sector account for 39% of global carbon emission and according to World Economic Forum (WEF) (2016), carbon emission of the building sector is predicted to be 56% in 2030 becoming the highly influencing sector for environment.

Thus, the real estate sector as a whole must take necessary actions to achieve sustainable development being an aspirational sector by creating Sustainable Buildings.

What is the meaning of Sustainable or Green buildings (these two terms may have different meanings for different people in different contexts but in general both are used interchangeably)? There is no agreed definition of this. However, the World Green Building Council (WGBC) defines,

"A 'green' building is a building that, in its design, construction or operation, reduces or eliminates

negative impacts, and can create positive impacts, on our climate and natural environment. Green buildings preserve precious natural resources and improve our quality of life."

Construction and operation of sustainable buildings are imperative because of the increasing threat from Climate Change and negative impacts of operation and construction of the conventional building on the environment. And also not limited to these two, buildings play a significant role related to the social, cultural, health and well-being of all humans. If we further summarise the benefits of sustainable buildings; but not limited to the aspects mentioned here:

Environmental benefits - protect biodiversity and ecosystems, conservation and restoration of natural resources, improve air and water quality, proper waste management,

Economic benefits - increase occupants' productivity, reduce operating costs, create and expand markets for green products and services, optimize economic performance of life-cycle

Social benefits - improve occupants' comfort and health, increase aesthetic qualities, improve the overall quality of life, protection of traditional knowledge and culture

Highlighting the benefits as above, it is understood that some challenges/ barriers do exist in sustainable building developments and operations such as a lack of adequate incentives for the promotion of green buildings, lack of favourable financing schemes (e.g. bank loans), lack of expertise in the field, lack of environmental awareness in the professionals of real estate sector, higher initial investment and limited financial resources. Further, the small market of green buildings and since green rating mechanisms are not popular, these result in less attractive premium and capital value to investors (Wu, et al. 2019). These challenges are not solid, and not irremovable. To remove or minimize these challenges, we, as individuals and groups from top to bottom and from national and international contexts, should work hand in hand and be more committed.

Strategies

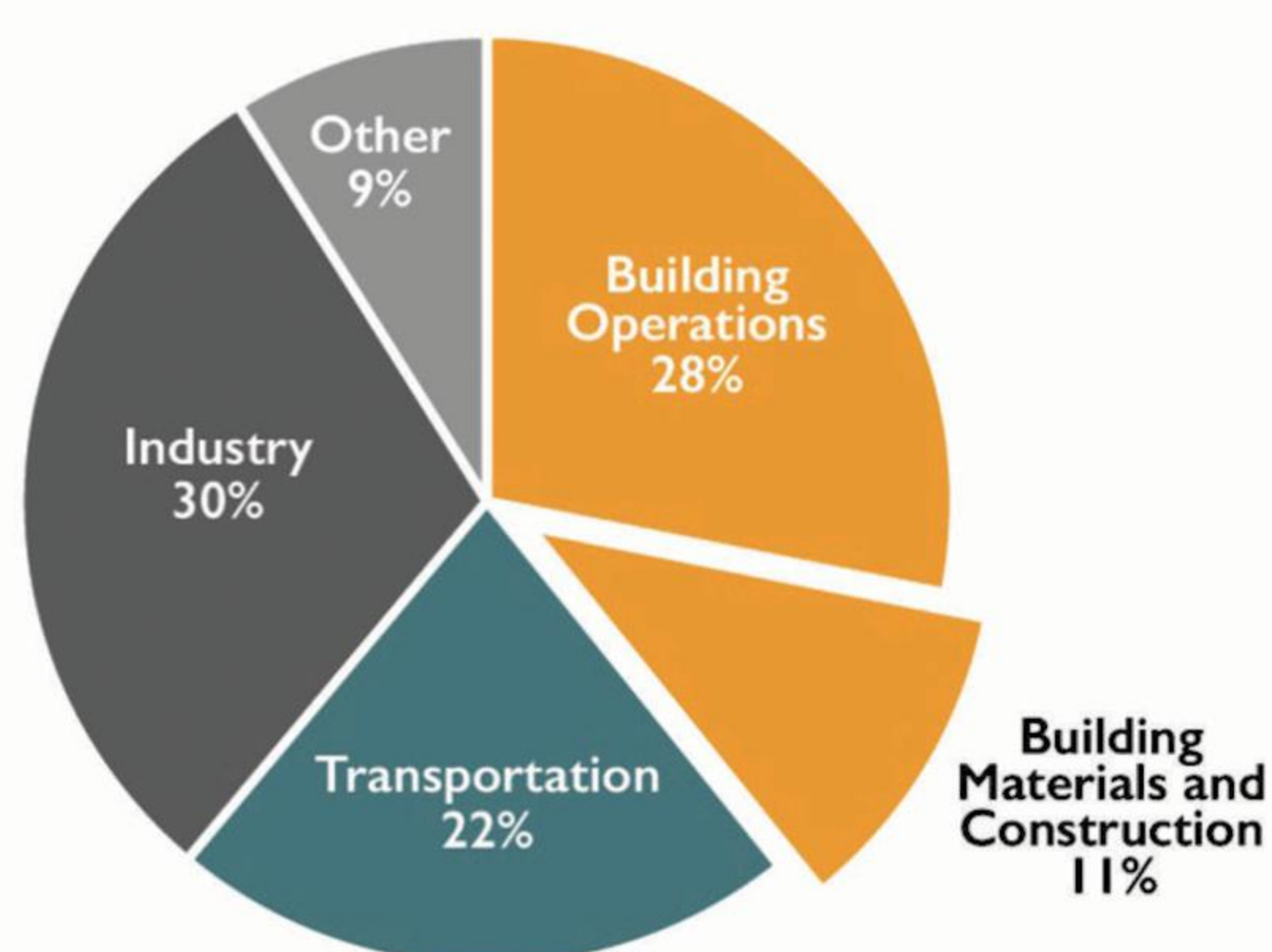
Let me give a few truths or strategies that can be used in sustainable buildings, yet have not been widely accepted in the society,

- Building massing and orientation - considering sun orientation and climate when orienting the building its door, windows and lightings and ventilation places. Managing day-lighting and natural ventilation



A rendering of a 'green building'

Global CO₂ Emission by Sector



Source: © 2018 2030, Inc. / Architecture 2030. All Rights Reserved. Data Sources: UN Environment Global Status Report 2017; EIA International Energy Outlook 2017

and reducing energy requirements of the building

- Implementing high-efficiency electrical, plumbing, HVAC, and other systems
- Harnessing solar energy
- Purchasing steel, timber, and finishing materials such as carpets and furnishings from companies that use environmentally friendly manufacturing techniques or recycled materials
- Using native plants to reduce the requirements for irrigation, which would also result in less maintenance
- Implementing stormwater management strategies such as pervious pavement and retention ponds
- Rainwater harvesting for irrigation
- Implementing proper waste management systems - Reduce, Reuse, Recycle (3R)
- Utilizing more local and regional materials to minimize transportation costs
- Focus on human health, safety and well-being when preparing the building design, layout and planning

The above mentioned are a few strategies that lead to sustainable buildings. Around the world, there are institutions that certified sustainable buildings such as GBCSL - Green Building Council Sri Lanka, LEED - Leadership in Energy and Environmental Design in the USA, BREEAM - Building Research Establishment Environmental Assessment Method- UK and Green star - Australian green rating system, they have their home-grown systems, that use different criteria for certification, but most of those criteria are similar and expect to

create a better place for living for the present and future generation on this Earth.

Generally, demand for Sustainable buildings is increasing around the world, but most of the developments can be seen in developed countries such as USA, Australia, UK and Singapore. Meanwhile, with very positive notes, in developing countries like India, China, Sri Lanka, there is a trend for sustainable buildings. According to the Green Building Council of Sri Lanka (GBCSL), there are a number of certified green buildings available in Sri Lanka, for example - THURULIE factory- Thulhiriya, Kandalama Hotel-Dambulla, and HNB-Nittambuwa.

However, in today's context, it seems that sustainable building development is not moving fast enough. If we continue our business as usual, without caring about this precious environment, the future of our children and grandchildren will be devastating. We need to take necessary actions today without delay, we have examples in past that we did not accept at first but later these were accepted by the whole world. For example, 'Silent Spring' by Rachel Carson, which discussed the harmful impact of DDT utilization in agriculture which later led to a ban on DDT usage.

Let me finish the writing with these two quotes;

"We shape our buildings, thereafter they shape us" - Winston Churchill

"The future depends on what we do in the Present" - Mahatma Gandhi

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Thurulie Thulhiriya