

SUSTAINABLE BUILDING DESIGN

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Sustainability is the capacity to endure. In ecology, the word describes how biological systems remain diverse and productive over time. Long-lived and healthy wetlands and forests are examples of sustainable biological systems. For humans, sustainability is the potential for long-term maintenance of wellbeing, which has environmental, economic, and social dimensions.

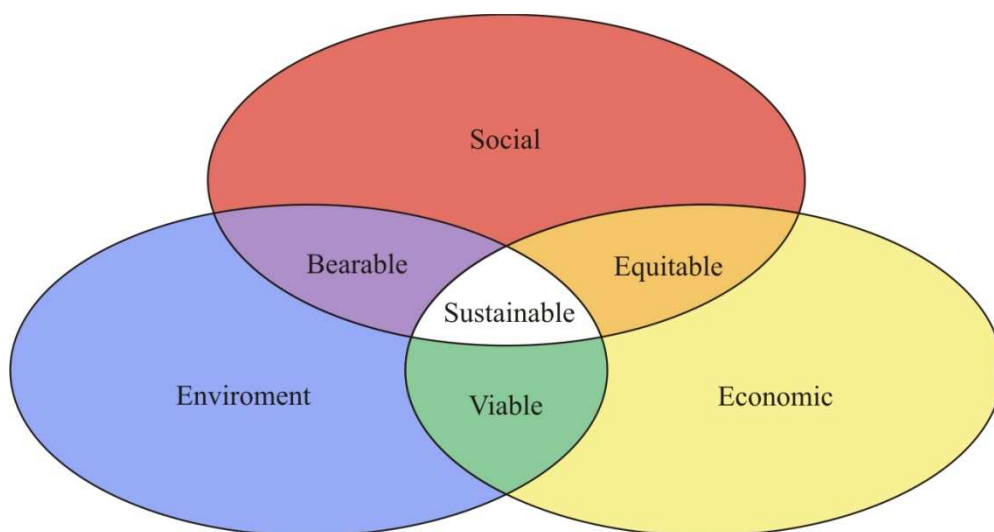
The history of sustainability traces human-dominated ecological systems from the earliest civilizations to the present. This history is characterized by the increased regional success of a particular society, followed by crises that were either resolved, producing sustainability, or not, leading to decline.

Sustainable architecture is a general term that describes environmentally conscious design techniques in the field of architecture.

Anyone involved in building design, procurement or maintenance in recent years will have been confronted in one way or another by the term *sustainability*. The term remains elusive to many, and while a number of definitions exist, they give little indication of how to apply principles of sustainability in practice.

Like architecture as a whole, sustainability involves addressing a wide spectrum of issues, sometimes, seemingly, conflicting ones.

Thousands of completed buildings have addressed sustainability in one way or other and many more are on the drawing boards, despite the fact that sustainable designers are still struggling with issues of lack of awareness among clients, authorities and the public; the potential for higher costs; and difficulties in complying with legislation and standards. The challenge for the future is to address sustainability in a holistic rather than a piecemeal fashion.



Scheme of sustainable development: at the confluence of three constituent parts.

The principles of sustainability aim to address the problems of environmental degradation and lack of human equality and quality of life, by supporting development that is

sustainable in economic and social terms and is capable of retaining the benefits of a healthy stable environment in the long term.

Why should human-generated changes to the environment matter? Do humans need the environment to survive? Does the environment have 'rights'? The responses to these questions range from the technocratic anthropocentric to the non-anthropocentric, reflecting opposing views of the place of humans within the environment. The anthropocentric view believes that nature exists for the benefit of humans and that when a choice has to be made between human and environmental interests, human interests should always be put first. The non-anthropocentric views put sentient beings, living beings and nature as a whole on equal standing, deserving equal priority.

However, while establishing a position on the issue may be difficult enough, implementing one's theoretical views in practice is even more difficult. Whether adopting a person-, quality of- life- or nature-focused approach, the translation of a personal philosophy into practice comes up against practical issues that can be difficult to consolidate.

The concept of sustainability now embraces a triple bottom line that addresses social, economic and environmental sustainability concurrently.

The philosophical and analytic framework of sustainability draws on and connects with many different disciplines and fields; in recent years an area that has come to be called sustainability science has emerged. Sustainability science is not yet an autonomous field or discipline of its own, and has tended to be problem-driven and oriented towards guiding decision-making.

For most individuals, embracing principles of sustainability, whether adopting an anthropocentric or non-anthropocentric approach, requires a major ethical shift. One of the key concepts of sustainability is equity: equity between all people around the world living today, and also equity between people living today and people living in the future.

Embracing the concept of equity requires refocusing away from personal benefits onto the needs and interests of others. Achieving the ambitious goals of sustainability requires a realism that recognises the limitations of humans, but also recognises the urgent need to embrace a different life philosophy.

Then we should address how to achieve this relationship. To move from theory into practice it is necessary to understand the impacts associated with our work- and life-related activities.

Buildings, their construction, use and disposal, have a significant impact on the natural environment and social fabric of our society. Sustainable architecture can help put into practice and even encourage a sustainable way of life. But how can buildings be designed and built to contribute positively to the sustainability agenda, to achieve economically strong, socially inclusive, stable communities while minimising the impact on the environment?

There are perhaps two main aims for sustainable architectural design:

- First, sustainable buildings should metaphorically 'tread lightly on the Earth' by minimising the environmental impacts associated with their construction, their life in use and at the end of their life. Sustainable buildings should have small ecological footprints.

- Second, buildings should make a positive and appropriate contribution to the social environment they inhabit, by addressing people's practical needs while enhancing their surrounding environment and their psychological and physical well-being.

Sustainable technologies are available, sustainable design strategies have been implemented, and studies have proved that these approaches can contribute positively to reducing the ecological footprint of a society. There aren't any practical or ethical reasons for not designing and building sustainable buildings.