

• what is ecological design? (frequently asked questions)

frequently asked questions



- **What is ecological design?** Ecological design is based on the science of ecology on a nature-based approach for a sustainable and resilient future.
- **Why ecological design?** Ecological design provides an environmentally comprehensive basis for addressing the current worldwide environmental crisis. Addressing this is the most compelling issue that all architects and those whose daily work impinges on the planet's natural environment must address. Designing is now no longer just mitigating negative impacts but a race and rescue mission.
- **Why ecology?** Ecology is the branch of biology that deals with relations of organism to one another and to their physical surroundings. Ecology is the underlying environmental context and baseline upon which all human acts and activities impact and upon which the planet's health is determined.
- **What is the environmental context for ecological design?** The context is the biosphere that surrounds the planet within which are the ecosystems with all species and their environments interacting with the planet's biogeochemical cycles.

- **How does bioclimatic design differ from ecological design?** Bioclimatic design is designing to respond to the climate of its locality to create passive-mode low-energy built systems. Ecological design is designing to respond to the ecology of its locality (including climate) that seeks to create built systems that biointegrate seamlessly and benignly with nature. Bioclimatic design can be regarded as a subset of ecological design and provides an armature for ecological factors.

- **How is ecological design more effective than other green design approaches, including those based on rating systems such as LEED or BREEAM?** Ecological design as a nature-based approach is inclusive of the planet's ecology and its environmental biology that others such as those based on certification systems which tend to be technology-focussed (such as emphasis on Net Zero Energy design).

- **How do we implement ecological design?** Implementing ecological design is by designing to biointegrate synergistically the key ecoinfrastructures, being nature and its systems, humanity's socio-economic-political-institutional-cultural systems, built environment with its technological and production systems, energy use and production systems, hydrology of the natural environment and water management systems, where all of which must be integrated seamlessly into a whole as '**constructed ecosystems**'.

- **What is a constructed ecosystem?** A constructed ecosystem is a human-made ecosystem created by the emulation (biomimicry), replication (reproduction) and augmentation (nature-based collaboration) of ecosystem attributes to form human-made ecosystems. Ecosystem attributes include the provision of ecosystem services. The ecosystem as a concept is referred as a model of nature by some environmentalists.

- **Why make the built environment into constructed ecosystems?** The premise is that the constructed ecosystem in having the physical and systemic properties of naturally-occurring ecosystems becomes synergistically integral with the natural environment without any dislocation. Being integral with the natural environment, the built environment as a constructed ecosystem is no longer alienated nor make negative impacts on nature, as is currently the condition by the extent built environment.

- **On a personal note, how did you conclude that ecological design is the defining and authentic approach for designing for a sustainable and resilient future?** I worked initially as a Research Assistant (1971) to John Frazer and Alex Pike at the Technical Research Unit of the Department of Architecture at Cambridge University on the 'Autonomous House' project, an idea first mooted by Buckminster Fuller. I concluded that this work was technology-driven, whereas the key issue was ecological and that design must first address the environmental aspects. I took leave to do a doctorate on ecological design and planning which became my life's agenda and the basis for my architecture.

