

GREEN DESIGN

Ways to make your home energy-efficient

Sustainable design is the art of designing physical objects and the built environment to comply with the principles of economic, social and eco-sustainability. It ranges from the micro-designing of small products for daily consumption to the macro act of designing cities and buildings.

This is not just a fashion or an 'ism'. It is really closely linked to our lives. Perhaps, also the last chance to save ourselves from cataclysm. We have exceeded the sustainable limits of the earth and yet we continue to design in a manner where the continuous investment and harvesting of natural resources are often taken for granted. The construction industry is a major offender, tilting the teetering energy balance in the environment.

Thankfully, one often hears the terms 'sustainability' and 'green' today. But more than just terms, there has to be strategies of implementation. We, as architects and designers, can aim at sustainable design in shaping buildings and products in a way that reduces the dependence and usage of non-renewable resources thereby minimising the impact on the environment.

Ironically, building green structures that would be sustainable is something that traditional societies have intuitively known. We, as Indians, have traditionally built responsibly, making our homes climatically and culturally-sensitive. This could have been due to the sheer lack of resources available, initiating the move towards Western established methods of conservation. While this is to be commended, there is still a need for awareness about regional resources.

Green design approaches design in a two-pronged way. The first approach deals with morphology and orientation. These are design tools that afford substantial portions of climate tempering while achieving desired aesthetics or imagery.

At a local level, there are simple ways and methods we can employ to evaluate our existing structures and optimise their performance. This would in

turn translate into lower energy costs per month and a better-built environment to live in. If we were to start to evaluate a typical office or home building, we could try and achieve a greater performance level purely by passive methods.

The biggest energy guzzlers are air-conditioners and artificial lighting. By minimising the openings on the West face and probably relocate lesser-used areas in this zone, is a remedy. The openings on the north face of the building can have larger windows to maximise the daylight coming through. The southern face can be provided with sunshades (chajjas), louvers and canopies to control direct sunlight coming into the building.

Another major area for improvement in any structure is the amount and type of glass used, especially when we have large windows. One option is to replace the existing glass with glass which has a low-emissivity coating (referred to as low-e glass) and which is sufficiently shaded from the direct sun. This helps to lower the total heat flow through the windows by increasing the amount of heat reflected back from the glass.

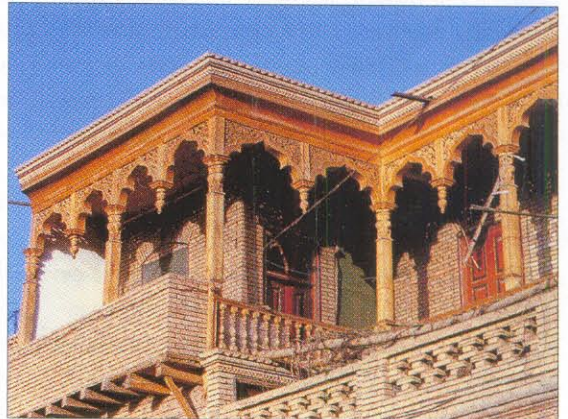
Terraces and outside open spaces tend to be sparingly used in the Indian summer. Tempering these spaces by way of terrace gardens and green areas with pergolas not only increases the usability of such areas, but also acts as buffers between the harsh outside and the inside. The list of local solutions is endless.

Here I would like to quote from *Small is Beautiful* by E F Schumaker—"Green Design is not the attachment or supplement of architectural design, but an integral design process with architectural design."



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