FAQs

1. What is passive design?

'Passive design' is design that takes advantage of the climate to maintain a comfortable temperature range in the home. Passive design reduces or eliminates the need for auxiliary heating or cooling.

2. State few advantages of Passive design strategies.

- Maintaining the right interior temperature, humidity, and air quality often accounts for THIRTY PERCENT or more of a building's energy use. But you can do this passively, without demanding purchased energy at all!
- The importance of passive design cannot be overstated. Paying attention to the principles of good passive design suitable for your climate effectively 'locks in' thermal comfort, low heating and cooling bills, and reduced greenhouse gas emissions for the life span of your home.
- Passive design utilizes natural sources of heating and cooling, such as the sun and cooling breezes. It is achieved by appropriately orientating your building on its site and carefully designing the building envelope (roof, walls, windows and floors of a home). Well-designed building envelopes minimize unwanted heat gain and loss.

3. What is passive cooling?

- Passive cooling is the least expensive way to cool your home. To be effective, passive cooling techniques need to cool both the house and the people in it — with elements such as air movement, evaporative cooling and thermal mass. Passive cooling design techniques can be applied to new homes as well as renovations, across a range of different climate zones.

- The sun heats buildings, especially on dark roofs and pavement.
- You can minimize unwanted heat gains by choosing more reflective surfaces, or vegetation

4. What is passive heating?

- Passive solar heating is the least expensive way to heat your home. Put simply, design for passive solar heating keeps out summer sun and lets in winter sun while ensuring that the building envelope keeps that heat inside in winter and allows any built up heat to escape in summer. Orientation, thermal mass, sealing and other elements all contribute to the design of a house that benefits from passive solar heating.
- Energy also radiates in and out of buildings through windows.
- You can make windows work for you by optimizing the window-to-wall ratio on each side of the building, and choosing windows that optimize how much energy passes through as infrared, visible light, and higher-frequency radiation.

5. How is orientation essential for passive design?

- Orientation refers to the way you place your home on its site to take advantage of climatic features such as sun and cooling breezes.
- For example, in all but tropical climates living areas would ideally face north, or as close to north as possible, allowing maximum exposure to the sun, and easy shading of walls and windows in summer.
- Good orientation reduces the need for auxiliary heating and cooling and improves solar access to panels for solar photovoltaic and hot water. Your home is thus more comfortable to live in and cheaper to run.
- It takes account of summer and winter variations in the sun's path as well as the direction and type of winds.