Net Zero Building [Net Zero-Energy Building]
Audit Course

Net Zero Building [NZB] or Net Zero-Energy Building[NZEB] is a Building which consumes Net Zero Energy. This means Net Zero Building [NZB] consumes Annually Total amount of Energy which is nearly Equal to Energy Generated Annually in the Building - Premises / Site by Renewable Energy Sources. Also Additionally they contribute to less Overall Greenhouse Gas to the atmosphere than similar non-NZB Buildings. They do at times consume non-renewable energy and produce greenhouse gases, but at other times reduce Energy Consumption and Greenhouse Gas production elsewhere by the same amount.

Most zero net energy buildings get half or more of their energy from the grid, and return the same amount at other times. Buildings that produce a surplus of energy over the year may be called "Energy-Plus Buildings" and buildings that consume slightly more energy than they produce are called "near-zero energy buildings" or "Ultra-Low Energy Houses".

Traditional buildings consume approximately 40% of the total fossil fuel energy and are significant contributors of Greenhouse Gases. The zero net energy consumption principle is viewed as a means to reduce carbon emissions and reduce dependence on fossil fuels and although zero-energy buildings remain uncommon even in developed countries, they are gaining importance and popularity.

Most zero-energy buildings use the electrical grid for energy storage but some are independent of the grid. Energy is usually harvested on-site through energy producing technologies like solar and wind, while reducing the overall use of energy with highly efficient HVAC and lighting technologies. The zero-energy goal is becoming more practical as the costs of alternative energy technologies decrease and the costs of traditional fossil fuels increase.

The development of modern zero-energy buildings became possible not only through the progress made in new energy and construction technologies and techniques, but it has also been significantly improved by academic research, which collects precise energy performance data on traditional and experimental buildings and provides performance parameters for advanced computer models to predict the efficacy of engineering designs. Zero-energy buildings can be part of a smart grid

The net zero concept is applicable to a wide range of resources due to the many options for producing and conserving resources in buildings (e.g. energy, water, waste). Energy is the first resource to be targeted because it is highly managed, expected to continually become more efficient, and the ability to distribute and allocate it will improve disaster resiliency.

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S. No.	**TOPICS**	**Required time**
1	Introduction, Definition, Design and Construction of Net Zero Building [NZB]	4 hrs
2	Energy Harvest versus Energy Conservation and Occupant Behaviour	3 hrs
3	Utility Concerns	3 hrs
4	Development Efforts - Influential zero Energy and Low Energy Buildings and their Definitions with Case - Studies , Net Zero Carbon Conversion Example	3 hrs

5	Advantages and Disadvantages, Net Zero Energy building versus Green Building	3 hrs
6	Certification and worldwide Initiatives with Live Examples	3 hrs
	Total	**20 Hrs**