



Daylight Harvesting

For Prelims: Daylight Harvesting, Building's Energy Efficiency, Initiatives to Promote Energy Efficiency.

For Mains: Significance of Daylight Harvesting in Energy Conservation.

Why in News

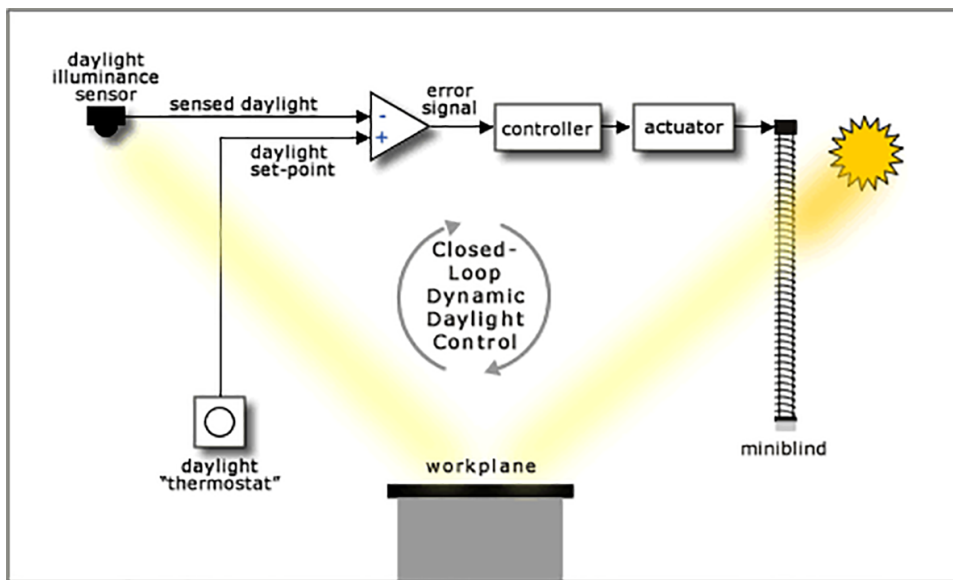
Recently, the Ministry of Science & Technology has decided to promote a unique **Start-up in the latest Daylight Harvesting Technology** in order to **reduce carbon footprint** and improve the **building's energy efficiency**.

- The Ministry will give **Rs 5 Crore of the 10 Crore project** to Skyshade company for developing **new technologies for basement illumination on a 24x7 basis**.
- The company aims to create **Green & Net zero buildings and to participate and contribute in national missions** under the **National Action Plan on Climate Change (NAPCC)**.

What is Daylight Harvesting?

- Daylight Harvesting is a method **of saving the energy costs** associated with lighting. It **makes use of the available sunlight**.
 - The **solar energy** spectrum has 45% energy as visible light and this can be used to harvest **building illumination for about 9-11 hours a day**.
- It is one of the most advanced techniques used in sustainable lighting designs for contemporary buildings.
- It **automatically dims or adjusts the brightness of light** in response to the amount of natural light available in a space.
- Utilising natural daylight coming through the windows or skylights **minimises the amount of energy used in artificial lighting**.
- The daylight harvesting system **employs light sensors, also known as photocell sensors, to detect the prevailing light level** in the environment.
- It then sends the intensity of light received to a controller, which is connected to the lighting control system. The control system **in turn adjusts the electric lights automatically** according to the measured light level.

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What is the Significance of Daylight Harvesting?

- **Energy Savings:**
 - It increases energy savings **by dimming or turning Off lights** based on the natural daylight entering the space.
- **Provides Comfort and Convenience:**
 - It helps to maintain proper light intensity in a space by continuously and **automatically adjusting lights**.
- **Healthier Working Conditions:**
 - Providing right amounts of light to people helps in **maintaining proper circadian rhythms** that are crucial to good health and adequate sleep besides preventing seasonal affective disorders.
 - **Circadian rhythm** is the 24-hour cycle that tells our bodies when to sleep, rise, and eat—regulating many physiological processes.
 - Letting in natural light to workplaces provides better concentration, creates a positive mood, and drives **healthier employee life**.
- **Reduce Carbon Emission:**
 - Daylight is available universally and it is a very **clean and cost-efficient source of energy**.
 - Meeting our energy requirement during the day by using daylight harvesting technology will contribute immensely to meet one of the commitments of the five nectars of **“PANCHAMRIT”** i.e., to make India a **Net Zero emission** country by 2070.

What are the Other initiatives to Promote Energy Efficiency?

- [Perform Achieve and Trade Scheme \(PAT\)](#)
- [Standards and Labeling](#)
- [Energy Conservation Building Code \(ECBC\)](#)
- [Demand Side Management](#)
- [ECO Niwas Samhita](#)
- [Bureau of Energy Efficiency](#)

Source: PIB

