

# Setting Standards

A catalyst in the revolution for attaining sustainable goals, PEBS Pennar is the first factory in India to be certified Gold under the IGBC Green Factory rating system.

**T**he paradigm of green buildings has been evolved to counter the malignant effects on the environment. After observing the green sector intensely for a few years, **PV Rao, Executive Director, Pennar Engineered Building System Ltd (PEBS)**, reveals that globally, about \$ 500 million of work is registered with the green building council. In India as well, he believes the concept is growing from something that is more of a sound byte for marketing.

Any project aspiring for the Indian Green Building Council (IGBC) rating has to meet the mandatory requirements and minimum credit points set by the council. Considering these requirements, PEBS Pennar in Hyderabad stands as the first-of-its-kind factory in India to be certified Gold by IGBC. From the initial sketch planned, Rao highlights the green features of this plant in conversation with SHRIYAL SETHUMADHAVAN. Excerpts...

**EARLY ON:** The foundation for PEBS Pennar's factory was laid in October 2008. After due clearances, the construction of the project began in March 2009. In September 2009, construction activities came to an end, trial shipments started and commercial shipments eventually began from January 2010. Certain sustainable solutions like the use of skylights, ventilators and gutters were planned right at the initial stages of construction. The entire construction work was executed without disturbing natural topography, and there was minimum site disturbance. Soil erosion control measures were implemented, and the soil excavated at site was reused for other purposes. Also, for water management, a rainwater harvesting pit and sewage treatment plant were provided.

**THE GREEN CONSULTANT STEPS IN:** Gunjan, Principal Architect and Head – Sustainability, Green Inertia, was the green consultant on the project. As our project was an existing setup with green features at the design stage itself, the consultant suggested measures and changes on the basis of the IGBC requirements. For instance, water harvesting was introduced in the project design by the consultant. Also, local material such as grass and some special kinds of plants onsite and on the roofs was proposed. He gave inputs on the material process and handling in consideration of the IGBC requirement of occupant health and productivity. Thus, water harvesting, landscaping, covering of roofs, parking roofs and every structure with local creepers and local vegetation were introduced to our plant's design with the green consultant stepping in.



## Project details

**Size:** 23 acre

**Developer:** PEBS Pennar

**Cost:** About Rs 50 crore

**Completion:** September 2009

**Building materials:** Essar;

Tel: 022- 5001 1100/6660 1100;

JSW Steels Ltd: Mouli,

Mobile: (0) 80087 77754; ISPAT

Industries Ltd. Contact: Amruta,

Mobile: (0) 96668 16963. Lloyds.

**Civil and painting contractor:**

Asia (Chennai) Engineering Pvt

Ltd. Prasad.

Mobile: (0) 94406 20545.

**Architect/planner/service**

**consultant:** SSID Pvt Ltd.

Prasad Rao. Tel: 040-2776 6312.

E-mail: ssidhyd@yahoo.com

**Green consultant:** Green Inertia

**External cladding consultant:**

HCE Consultants

**External cladding contractor:**

Global Engineering. Venkata

Reddy. Mobile: (0) 99083 43339.

**Civil finish:** RCC Flooring

**Lights:** Wipro

**Electrical and fire detection**

**systems:** Contractor: Power

Tech Pvt Ltd; Usha Fire

Air conditioners: LG

**External cladding:** Colour-coat-

ed zinc galvalume sheets

**Roofing:** Bare galvalume sheets

**Flooring/tiles:** RCC and VDF

flooring

**Paints:** Berger/Nerolac

**Painting contractor:** Asia

(Chennai) Engineering Pvt Ltd.

Prasad. Mobile: (0) 94406 20545.

**Cement:** Maha Shakti



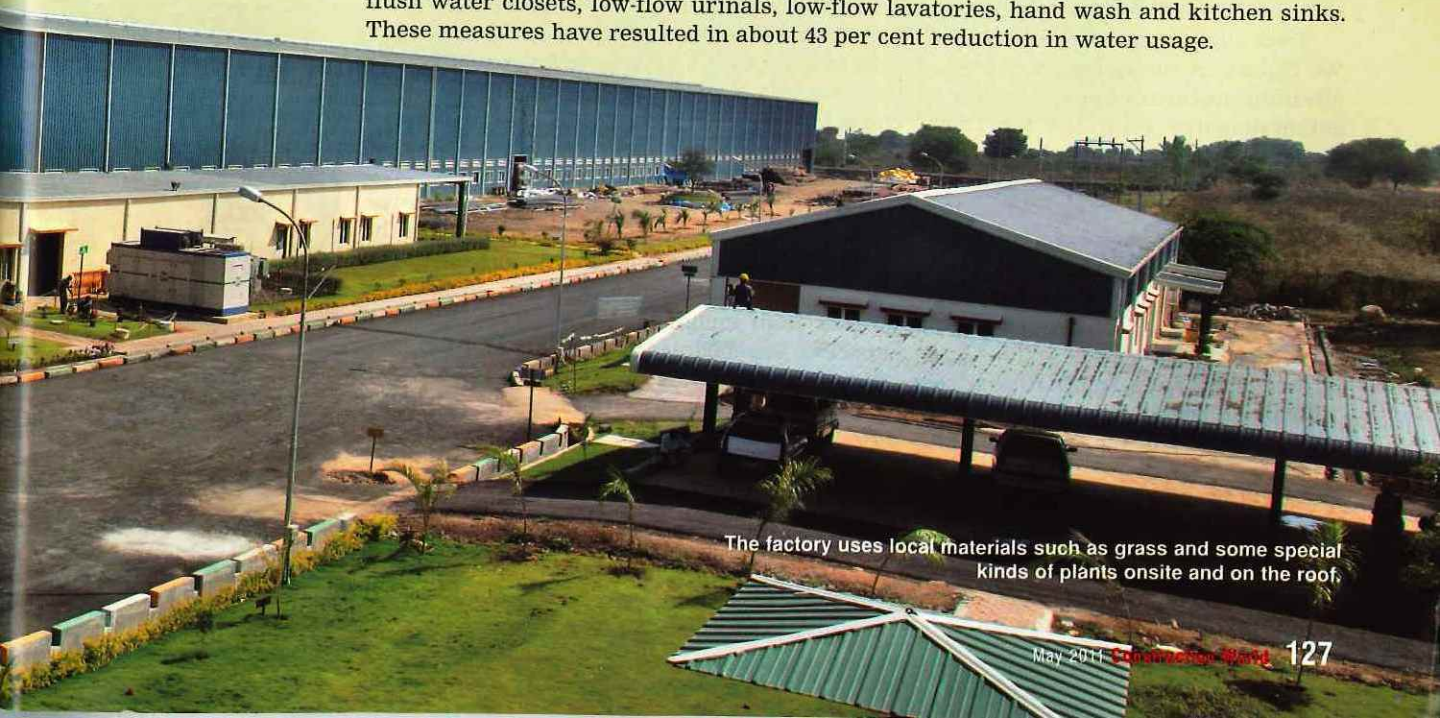
The usage of 100 per cent steel in the building mitigates the harmful effects of concrete and cement and also lowers lifecycle costs.

**INIMITABLE FEATURES FOR LEED:** Initially, we just planned for a green building. The fact that we were the first plant to receive the LEED Gold rating in India came as a pleasant surprise. The prevalent IGBC rating systems have specific criteria for rating buildings as green. These involve an exhaustive evaluation of built-up areas as well the entire premises. And PEBS Pennar certainly contributes to the various categories under the rating system.

Steel is the basic and predominant raw material; by virtue of its origin and its recycled and recyclable elements, points can be provided under the category of material conservation. Moreover, the solar reflective index (SRI) properties of our materials and minimum site disturbance contribute towards points under site selection and planning. Building features like vents and skylights contribute towards indoor environment and quality. Also, our optimisation methods can help customers gain points under innovation and design. In addition, PEBS Pennar can help customers fix solar PV panels onto the roof. Eco-friendly housekeeping chemicals are used in the premises for maintenance purposes. These are some of the many sustainable features of PEBS Pennar's buildings.

**THE HIGHLIGHTS:** A green building has characteristics that reduce its environmental impact during its life cycle - from construction, all the way through the end of the building's useful life. PEBS Pennar highlights include:

**WATER EFFICIENCY:** The plant has water-efficient plumbing fixtures such as dual-flush water closets, low-flow urinals, low-flow lavatories, hand wash and kitchen sinks. These measures have resulted in about 43 per cent reduction in water usage.



The factory uses local materials such as grass and some special kinds of plants onsite and on the roof.

**CONSERVING ENERGY:** Compared to a baseline factory building, the PEBS Pennar building has a much lower interior lighting design load. Primarily, the building is naturally ventilated and has turbo ventilators and sky lights. These have contributed to reducing energy consumption for its ventilation needs. Additionally, the roof insulation and reduced wall window ratio make the building thermally comfortable for occupants. Also, a 25 kw solar PV system installed at the factory reduces dependency on conventional sources of energy.

**INDOOR AIR QUALITY:** Essentially, you are talking about an entire built-up area in excess of 26,000 sq m. So, when you have such a large area with a lot of ongoing activity, there is a need to ensure considerable air flow. In PEBS Pennar, on top of the building as well as the sides, we have incorporated ridge ventilators and louvers, which actually provide for conduction of air. Hot air rises and exits the building, and fresh air comes in through the louvers. These systems don't require power and ensure there is constant air movement throughout the facility that keeps the temperature cooler.

**INSULATED METAL PANELS:** PEBS Pennar offers effective insulation solutions for both roofs and walls. The panels have a superior R value that will contribute towards greater thermal and energy efficiency.



### PV Rao's perspective

"The extent to which the paradigm is prevalent in India might be limited when compared to certain developed countries. But of late, the green movement has gathered some momentum, courtesy the enthusiasm shown by the corporate sector and some government institutions. The design and construction market in India has certainly embraced the concept of green building with a great deal of vigour and is definitely on a par with the rest of the world in terms of quality. However, with depleting natural resources and the rising demand of consumer products, the green building sector will certainly be of great relevance in times to come."



**SKYLIGHTS:** These help usher natural light into the building. This ensures minimum or negligible usage of artificial lighting, thus contributing to lesser emissions. The usage of natural lighting also has a positive impact on employee productivity.

**STEEL - THE GREEN METAL:** This is the basic material used in the construction of a pre-engineered building. The usage of steel negates the usage of concrete and cement to a great extent, thus mitigating any harmful effects associated with them. Also, steel used by us can be 100 per cent recycled in the future after the building has lived its life. In addition, steel lowers the lifecycle cost as it is easier to maintain.

**PROVIDING GREEN:** We are a prime player in the prefabricated metal buildings sector. We believe in the cause for a green future and act as a catalyst in the revolution for attaining sustainable goals. Adding to the greenness of our factory, PEBS Pennar offers comprehensive solutions for LEED compliances. Our design and methodologies enable customers to get substantive LEED points that contribute to the rating of a building as green.

**GREEN MAKES BUSINESS SENSE:** There is a popular perception that 'green' is expensive. But, it has been observed that the increment in the project cost would only be in the range of 3 to 7 per cent when compared to the baseline scenario. Even this increment can be minimised if measures are planned in the initial stages. The return of investment (RoI) for sustainable measures is far quicker than imagined. For example, usage of renewable power will help nullify the impact of unscheduled power cuts and the high cost of generation from DG sets. The rainwater harvesting pit will help store water, which will reduce dependency on groundwater, and proper ventilation measures will reduce dependency on conventional sources of energy. Apart from the commercial aspects, there will be certain intangible benefits like employee efficiency and health and value addition to the brand, which can play a crucial role in the success of an enterprise. Hence, yes, green makes business sense!



Would you like to share details of any green initiatives? Write in to us at [feedback@ASAPPmedia.com](mailto:feedback@ASAPPmedia.com)