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Sonali Rastogi
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Morphogenesis.

Infusing ancient wisdom with contemporary aesthetics

“Morphogenesis designs a net-zero facility for forest essentials in the Himalayan foothills.”

The Lodsi community project for Forest Essentials is nestled in the Himalayan foothills, along the banks of the river Ganges, in Rishikesh, India. The design brief stipulated by the client outlined the construction of a manufacturing facility for a modern skincare company that focuses on reviving the ancient science of Ayurveda. The brand's philosophy of infusing ancient wisdom with contemporary aesthetics allowed the design team to adapt vernacular construction techniques to create a contemporary production facility.

The design approach and development of the facility were highly specific to the site's topography, climate, and immediate context. It has been designed in a manner that does not exceed the footprint of the previously existing structure. Furthermore, the location of the site and the limited availability of resources determined the budgetary and building constraints for the project. Therefore, the firm set out to achieve a net-zero and energy-efficient building

through an integrated design approach resulting in a free-running and off-grid production unit.

The built form draws inspiration from the traditional Garwahli “kholi” (house). A rectilinear volume-oriented along the east-west axis has been planned with a central entry that divides the facility into two parts. Functions that require a cooler environment (herb grinding, packaging, and storage) are located on the upper floor, whereas primary functions with high internal heat gain are located on the lower floor. With 80 percent naturally daylight spaces and unobstructed views of the valley, the North-South oriented butterfly roof form allows large operable windows to enable the prevailing North-East and South-East winds for ventilation. The high volume of space with operable clerestory windows enforces Bernoulli's principle and moderates indoor temperatures. A central light well forms a multi-purpose communal space. This also serves as a mother-and-child wellness camp and a student post-school programme.

Passive design strategies and indigenous construction techniques resulted in a strong architectural expression that contextually blends in and builds community pride. Façade shading, window-to-wall ratio, and building materials were optimised to ensure a high-thermal mass façade. This resulted in an energy-efficient building envelope with an EPI of 38 kWh/m²/year. A solar roof generating 55 kWp offsets



the facility's requirements and creates a surplus to supply back to the grid, hence the name “Energy+.” A site-specific rainwater collection, storage tank, treatment system, and effluent treatment plant offset the water requirements. Waste materials at the site have been repurposed and used, e.g., reclaimed wooden rafters as light fixtures, waste purlin sections as tube light holders, stone chisels as door handles, re-bar as wash basin pedestals, and others. Any organic by-product is reused or composted. This project is net-zero on energy, water, and waste. The plan incorporated the existing “gaushala” (cow shed) to produce milk-based products.

Sixty-five villagers built the project, and the building supports 45 percent of the village households directly and the entire village indirectly. The use of vernacular materials, techniques, and village labour forms the ethos of the facility, making it “a project for the locals, built by the locals, and for the employment of the locals.” The Lodsi Community Project addresses sociocultural and economic sustainability. It is an example of decentralised development in the post-pandemic world. This project stayed functional through most of the pandemic, and this is the exemplar for future growth across India.

