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5 homes built for heat

Architects and design studios share examples of how Indian homes are responding to rising temperatures and longer summers

Rashmi Gopal Rao

To say that the Indian summer of 2026 has been unforgiving is an understatement. With temperatures ranging from 42-45 degrees Celsius across many parts of the country, heat is no longer a seasonal inconvenience – it is beginning to reshape how homes are designed and built.

"We are increasingly seeing climate as the starting point of design rather than something that gets addressed later through mechanical systems. With rising temperatures and longer summers, the way a house sits on the site, its orientation and how it opens up have become far more critical than ever before," says Neelesh Kumar, principal architect of 23 Degrees Design Shift, a Hyderabad-based architecture and design firm.

Kumar added that there is a clear shift away from sealed, inward-looking homes that depend entirely on air-conditioning, towards spaces that can breathe and adjust through the day.

"This means thinking carefully about how sunlight enters, how heat is blocked, and how air can move naturally across spaces," he says.

Her further adds that as architects they are trying to reduce heat gain at the source by shaping the built form itself, rather than relying on technology to correct it later. This renewed focus on orientation, wall mass, and shaded edges is bringing climate-led thinking back to the centre of design decisions.

Rising temperatures are fundamentally shifting architectural priorities. Passive cooling, climate-responsive layouts, and heat mitigation are now being treated as core design elements rather than afterthoughts.

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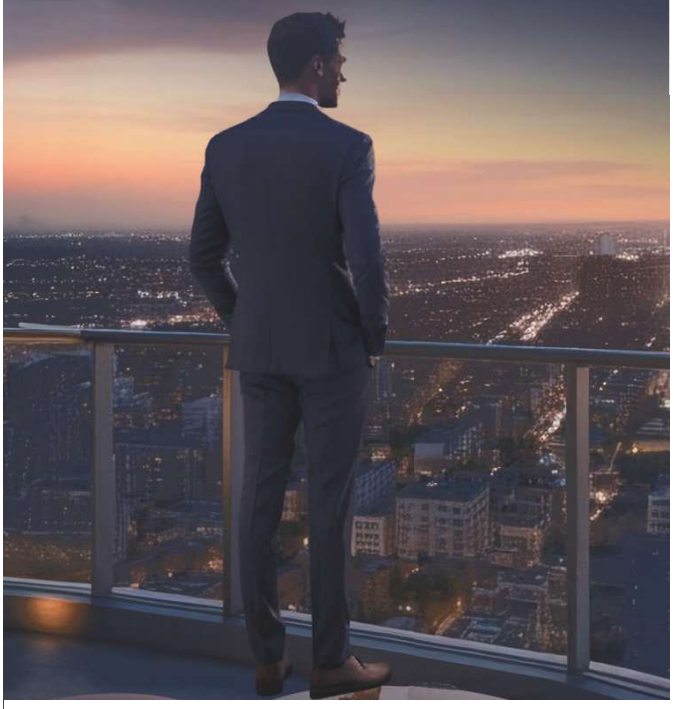

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"Architects are moving away from glass-heavy, visually driven designs that perform poorly in heat, toward building envelopes that actively manage solar gain, ventilation, and thermal comfort. There is a growing return to local and natural materials like stone, rammed earth, and mud brick valued for their high thermal mass, which absorbs heat during the day and releases it slowly at night, thereby naturally stabilising indoor temperatures. Durability in extreme weather conditions is also becoming a key material selection criterion alongside aesthetics" says Keta Shah, co-founder and principal architect, Workshop Inc., a design agency in Ahmedabad.

5 homes built for heat

Traditional spatial wisdom

Traditional Indian architecture has long responded to climate, and many of its strategies are being adapted for contemporary use.

"Time-honoured planning strategies such as transitional spaces, and layered thresholds are being retained, but expressed through a contemporary architectural language. High ceilings and courtyards are integrated into compact urban homes and paired with materials like lime plaster and select natural stones that offer durability and thermal mass," says Nilasha, founder and principal architect, Studio Nilasha, a Hyderabad-based architecture and interior design firm.

Elements such as verandas, transitional corridors, and shaded thresholds are most effective when treated as interconnected systems rather than isolated features.

Courtyards, in particular, function as thermal regulators, drawing hot air upward and enabling cooler air to circulate through surrounding spaces.

"When a water body is introduced within or adjacent to the courtyard, evaporative cooling further lowers the ambient air temperature before it enters the living spaces. Shading devices like *jaalis*, *chajjas*, and verandas work at the building's periphery, intercepting direct solar radiation before it reaches walls and windows, significantly reducing heat gain at the source. Together, they create a layered microclimate: the courtyard and water cool the air, the shading elements prevent heat from entering in the first place, and the spatial organisation channels this cooled air through the building naturally," says Varun Shah, co-founder and principal architect of Workshop Inc.

He further adds that traditional elements are also being refined through modern fabrication techniques.

Complementing newer systems

Alongside passive strategies, newer systems are being introduced to support cooling and reduce overall energy demand.

Recycled water loops are being used for landscape irrigation, supporting greenery that contributes to cooling. In terraces and courtyards, fine misting systems help reduce ambient temperatures during peak summer hours.

"We are also exploring alternatives to conventional air conditioning. In one ongoing project, we have integrated a water-based air-cooling system in a ductable format for more energy-efficient cooling," adds Nilasha.

Greywater recycling systems further support evaporative cooling while addressing water conservation.

"Radiant cooling systems which circulate chilled water through pipes embedded in floors or ceilings are gaining traction in high-performance residences, offering silent cooling without the air movement and noise associated with conventional air conditioning. Misting systems are also being explored in transitional outdoor spaces such as verandas and terraces, extending their usability through peak summer months. These technologies are most effective when deployed in combination with passive design, reducing the mechanical load rather than acting as standalone solutions," adds Shah.

Challenges and constraints

Despite growing awareness, climate-responsive design is not always easy to implement.

One of the primary challenges lies in perception, where such strategies are often seen as optional rather than fundamental. Projects driven by maximising built-up area or visual outcomes can limit the integration of courtyards, shading devices, or transitional spaces.

"Many projects are still driven by the need to maximise built-up area or achieve a certain visual outcome, which can limit the possibility of introducing elements like courtyards, deep shading, or transitional spaces. In dense urban contexts, site constraints make this further difficult. These features need to be integrated early into the design process and cannot be easily modified later," adds Kumar.

Site conditions, including existing topography and vegetation, also require careful negotiation, particularly when balancing openness with protection from heat.

Here is a look at five projects where climate responsive features have been implemented:

Safdarjung House

by Amit Khanna Design Associates, New Delhi

This 8,600 sq.ft residence has a clay brick facade as a thermal buffer. "Clay brick has exceptional thermal mass, absorbing heat during the day and releasing it at night as temperatures drop. The screen also creates a buffer layer in front of the glazing, reducing direct solar load before it reaches the glass," says Khanna. The courtyard's vertical geometry keeps it largely self-shading, and the Kota stone floor retains coolness longer than tile. The entire design blends aesthetic intent and performance, adds Khanna. While the brick screen buffers the main facade, the exposed side and rear walls are finished in a pale, reflective white cement grit wash. The terrace uses inverted pots beneath terracotta tiles; an age-old technique that creates a dead air gap, significantly reducing heat gain in the roof.

"On the active side, double-glazed aluminium windows, a VRV system monitored for occupancy, and LED lighting with motion sensors in bathrooms all reduce heat generation and energy use" adds Khanna.

House of Verandahs **by GroupDCA, Harayana**

Located in Chhatarpur, New Delhi, this sprawling bungalow has a built-up area of 18180 sq.ft. The project employs a combination of material strategies and spatial detailing to reduce heat gain. "The building uses thick masonry walls that provide thermal mass, slowing heat transfer, while the white exterior finish reflects solar radiation, reducing heat absorption," says Amit Aurora, partner at GroupDCA, located in Haryana.

He adds that deep roof overhangs and continuous verandas are proportioned to shade openings through the day. They are supported by tapered columns that maintain structural efficiency without visual heaviness. Window openings are designed as slender sections, allowing controlled daylight while being protected by shaded thresholds.

Existing trees have been retained as natural shading devices on the site, while landscaped gardens with water bodies are integrated to enhance microclimatic cooling.

Hygge Haus **by Studio Nilasha, Hyderabad**

Located in Hyderabad, this 6,000 sq.ft. residence subtly integrates climate-responsive strategies through a central courtyard that promotes natural ventilation. "In this project, we introduced 15-foot high ceilings, an internal courtyard within a contemporary setting, with strategically placed openings to enable cross ventilation, while maintaining a clean, modern aesthetic. The architecture itself incorporates passive shading through deep, curved reveals and softened edges, while breathable materials like wood and cane help minimise heat retention," adds Nilasha. Nature-led elements such as a dry Zen landscape further contribute to a cooler microclimate, collectively reducing heat gain and supporting a more comfortable, energy-efficient indoor environment without relying heavily on mechanical cooling.

House by the Grove

by Taliesyn, Bengaluru

Located in Hosahalli, in Ramanagara district of Karnataka, the design approach in House by the Grove spread across 4,200 sq. ft is largely passive and embedded within both planning and materiality. "The high-pitched Mangalore-tiled roof creates a larger overhead volume, allowing heat to rise and dissipate while also shading the living spaces below. Kota and Sira stone flooring contribute to a naturally cooler underfoot experience, helping stabilise indoor temperatures through their thermal mass," says Shalini Chandrashekar, co-founder and principal designer, Taliesyn, a design and architecture studio in Bengaluru. She adds, "Hand-finished cement walls add to this by reducing heat absorption while introducing a breathable, tactile surface. Spatially, the house is divided into two blocks at different heights, enabling a gradual transition in volumes that prevents heat from being trapped." The integration of a water body at the entrance introduces evaporative cooling. Airflow is consistently maintained through the porous planning and open connections, reducing dependence on mechanical cooling. Together, these elements form a part of a layered system that moderates heat through material choice and spatial openness.

The courtyard house

by 23 Degrees Design Shift, Hyderabad

The courtyard house located in Mansanpally village, 40-km away from Hyderabad, draws inspiration from the traditional Manduva house. Designed for contemporary living, this farmhouse spread across 1,4000 sq.ft. was originally a single-bedroom house, after which six bedrooms, along with a fully functional kitchen and dining area, and expansive areas for communal living were added. "By strategically detaching four blocks around the central courtyard, as opposed to a traditional courtyard layout, the design allows natural ventilation from all directions, enhancing airflow and overall comfort. Constructed entirely in wood, without the use of metal structural members, the structure is a lesson in the use of natural materials," adds Kumar. Brimming with greenery, the central courtyard has a small water feature with a wooden suspended deck, which helps keep the surroundings cool. Each bedroom accessed through the central courtyard opens onto a rear veranda, which further enhances air circulation. Single leather-finish Kota stone for the flooring, with its low heat absorption, further helps maintain cooler surface temperatures. Further, a natural timber roof, brown sandstone for cladding, as well as a muted colour palette all serve to mitigate heat gain.