
# VISHRANTHI OFFICE

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**Categories:** Architizer, Energy and sustainability, High Density, KSM Architecture, Project

**Tags:** Bricks, Building construction, Chennai, Efficiency measures, Energetic Approach, Heat Mitigation, India, Office building, Project, Second skin, Sustainable construction, Urban conditions, Urban Health, Urban pathologies, Ventilated façade, Ventilation, Zero-waste

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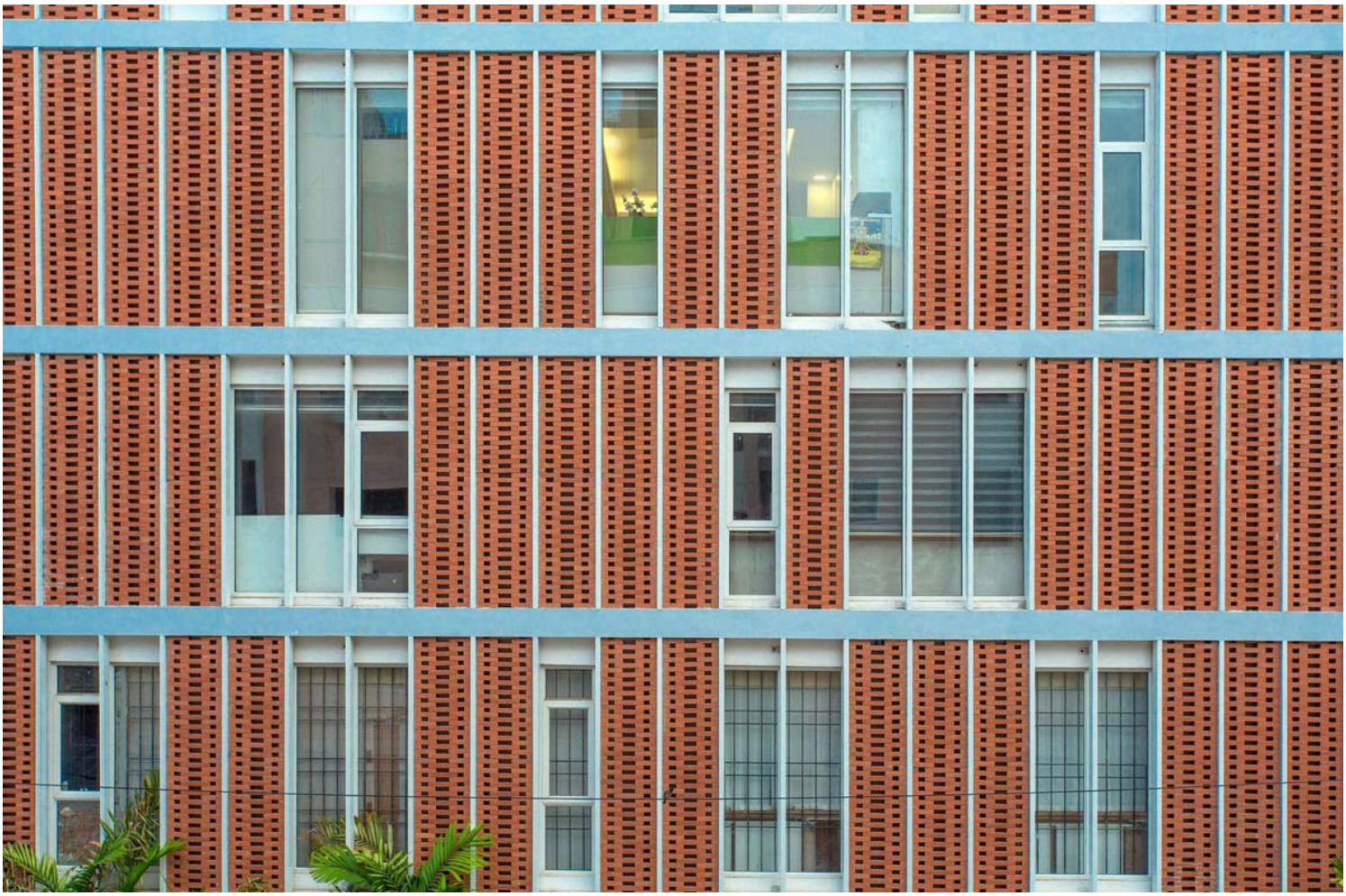
Located on a busy stretch of Lloyds Road in Chennai, this commercial building is nestled among a row of old residences, a few apartments and scrappy little shops and stores dotting this busy streetscape. Located on the corner of the main road and a bylane, the building faces north towards the main road, east towards the bylane, west and south towards two old residences.



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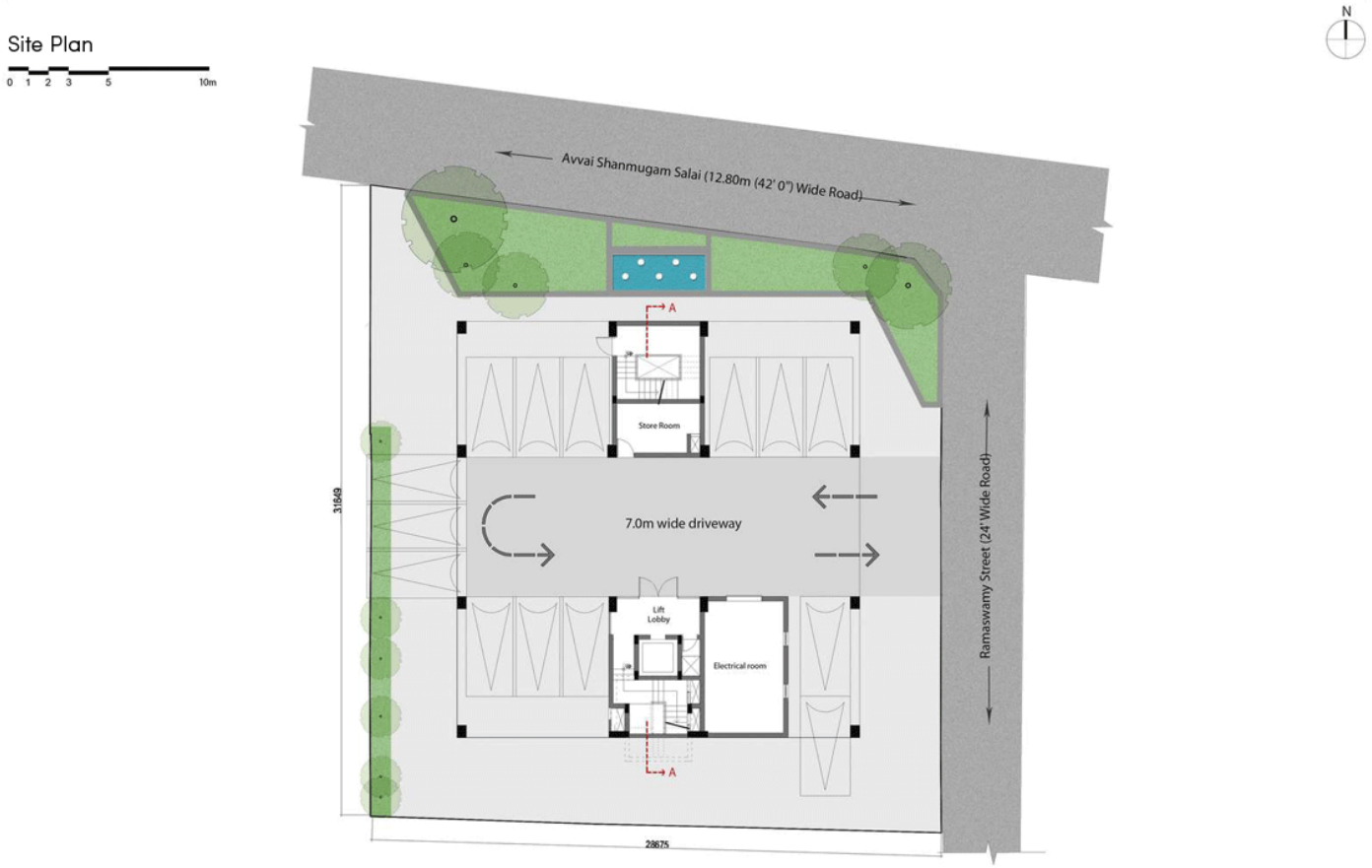
## Design Intent

Our main architectural intent, apart from providing the clear floor plate for the office indoors, was to work on a passive method of providing a better indoor environment: providing well-distributed natural light, reducing the load on the air conditioning requirement and ensuring the noise from the street below was kept out, to the best extent possible.




## Plans

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KSM Architecture

Section - AA


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This architectural intent manifested itself in the form of a skin wall along the north, east and west sides of the building. Our first point of reference was a traditional brick jali screen wall. Stretcher courses, staggered at every alternate course, create the play of mass and void. We took this basic jali screen geometry and looked to tweak it to suit our requirement.

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## Materials

Our first material choice was to go with a flatter and longer brick (300 Wx100 D x 50 H). The brick is hollow, with two cavities running along the length of the brick. Our reason for choosing this brick is because of its lightweight nature, its air cavity which allows for less thermal heat gain, and also because of its accurate dimensions and finished edges.

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The overall façade of the building is divided and broken down into clear panels of 600 mm each with white aluminum mullions that define the edges. The infill skin space in between the mullions is divided into two distinct types: a panel for light and a performance jali screen panel.

## Light Distribution

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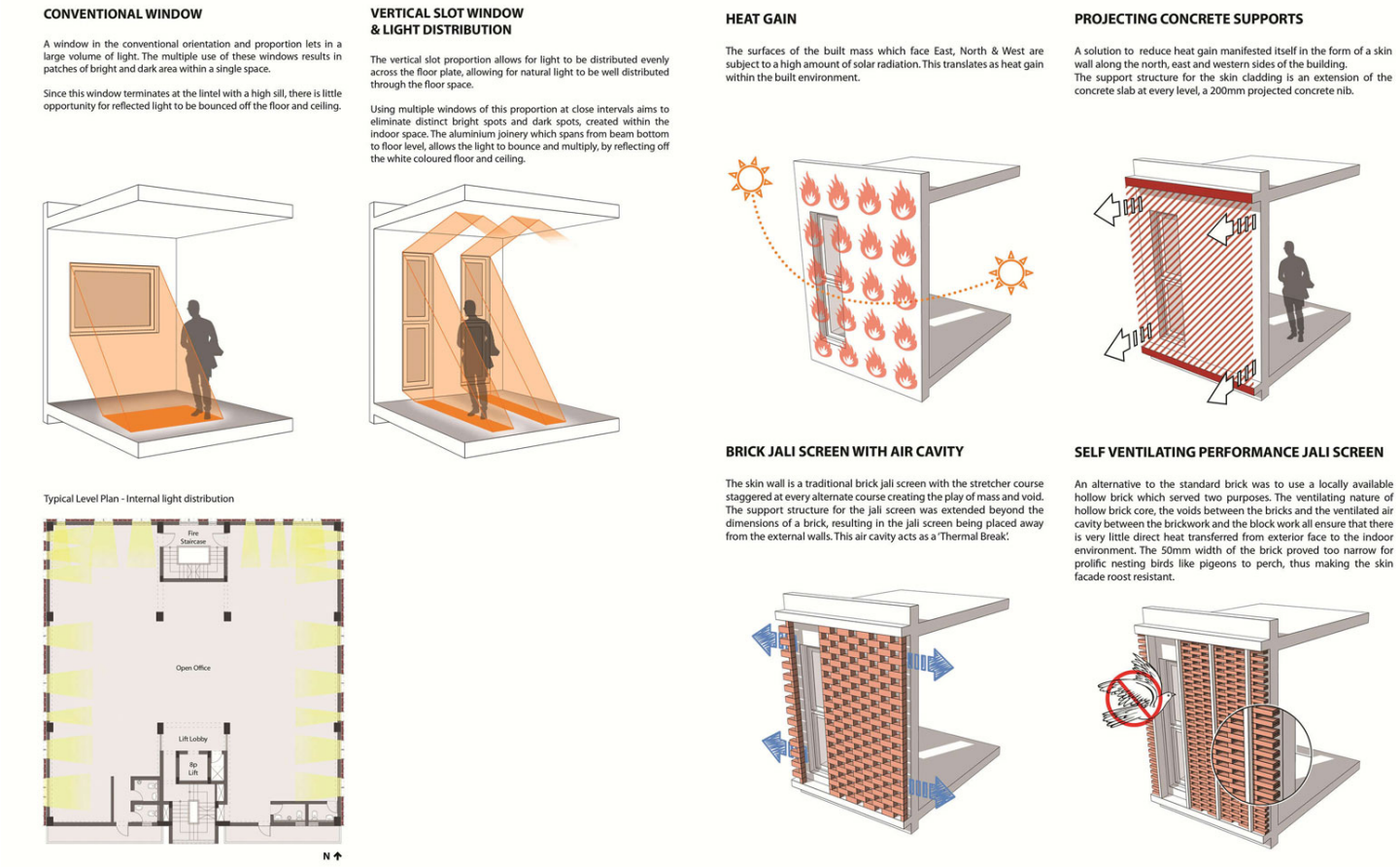
The panels for light are distributed evenly across the floor plate, allowing for even natural light to be distributed through the floor space. This way, no distinct bright spots and dark spots are created within the indoor space. The aluminum joinery, which spans from beam bottom to floor level, allows the light to bounce and multiply by reflecting off the white-colored floor and ceiling.

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### Efficiency Measures

## Performance Jali Screen Panel

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The performance jali screen panel itself is comprised of three distinct zones: the outer exposed brick jali screen wall of 100 mm; a 50 mm freely ventilated air cavity; and a 200 mm two-sided plastered concrete block work wall on the office indoor side. The ventilating nature of the hollow brick core, the voids between the bricks, and the ventilated air cavity between the brickwork and the block work all ensure that there is very little direct heat transferred from the exterior face to the indoor environment. In fact, the inner block work wall almost never receives direct sunlight at any time of the day, as the jali screen edge soaks in the heat and vents it out through the various air cavities. This will greatly reduce the heat radiated within the indoor space and, in turn, will reduce the load on the air conditioning systems.

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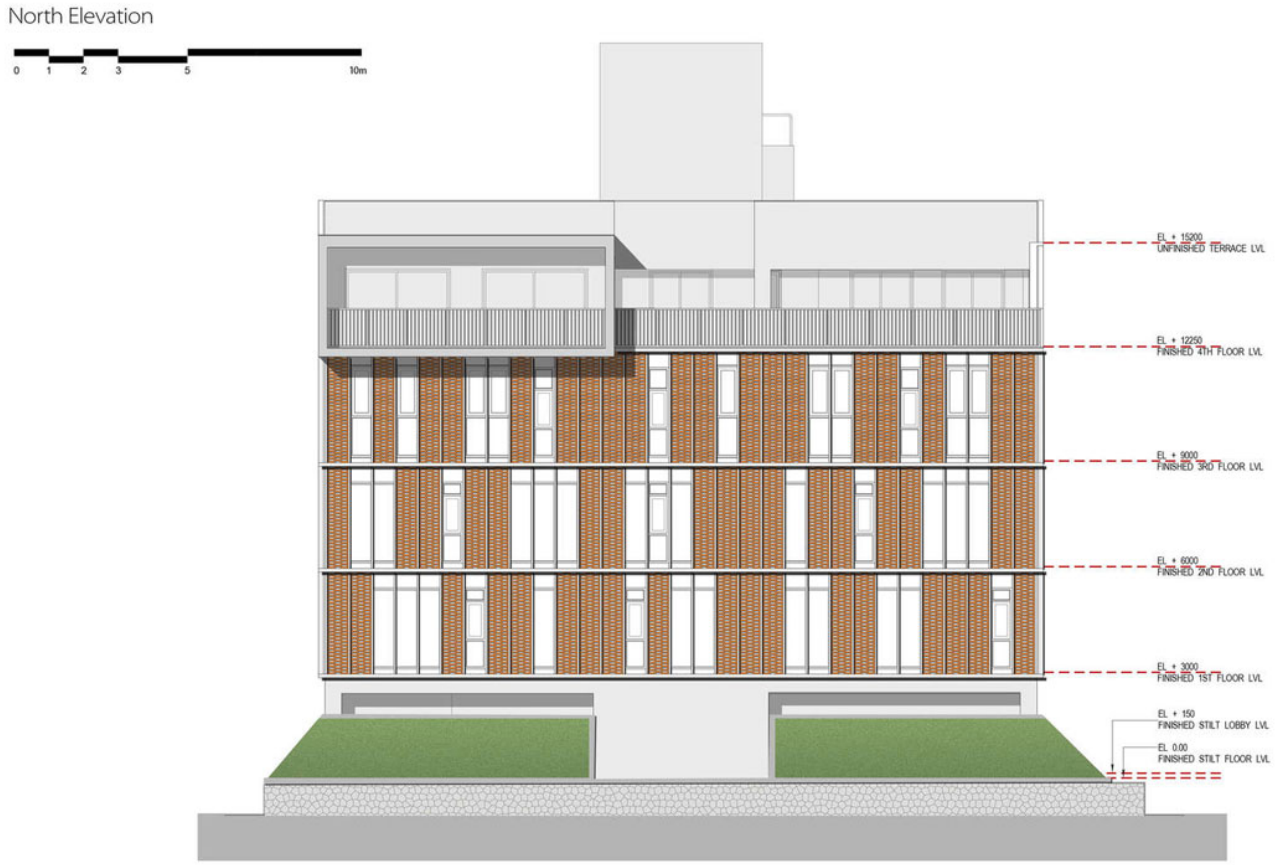


## North Elevation

On the northern face of the building is the main road, which is fairly busy and can be quite noisy at times. Using the same panelized performance jali screen to the northern face, we are looking to reduce the level of penetration of this noise to a great extent. The pixelated façade, with its air cavities, allows these noisy disturbances to attenuate and fade before they enter the office interior, thus keeping the indoor space relatively disturbance free from unwanted noises.

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## Roost Resistance

A standard problem faced with jali screen walls in urban situations has been the roosting of pigeons

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and other similar birds. This has always been a problem and has been tackled in many ways, like using nylon guide wire, metal spikes, low voltage electrical wires, etc. Our awareness of this problem was another critical reason we chose the 50 mm wide brick. The bricks are bonded by a cement-based adhesive, not a conventional 10 mm mortar joint, allowing us to ensure the voids are just fractionally larger than 50 mm in height. Because 50 mm is too small for prolific nesters like pigeons to roost in, it made this jali screen wall roost-resistant.

## Modular Zeri Wastage Jali Screen

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The construction of the brick jali screen was to ensure that we have near zero percent wastage of material. The 300 L x 150 B x 50 H brick is used in full, as well as in site-cut sizes of 230 mm and 70 mm, ensuring that there is no wastage. The adhesive used to bond the brick is also applied as a thin layer, 3 mm thick, with a small trowel. There is no removal of extra mortar, no spillage and no wastage. Each brick jali screen was further modularized into panels of 600 mm in width, bound by aluminum mullions.

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