ASSIGNMENT-5

BUILDING MATERIAL AND SCIENCES REPORT

MALABAR HEADQUARTERS, CALICUT

SUBMITTED BY: ALIZA BEG

AR-103 BUILDING MATERIAL ANS SCIENCES

B.ARCH. 1ST YEAR (REGULAR)

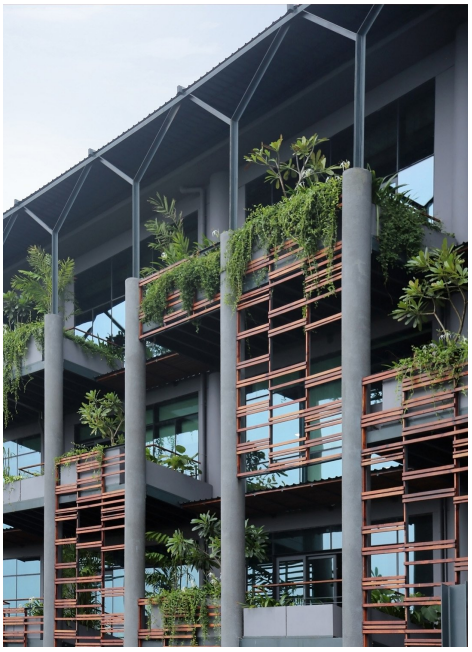
- Completion: 01/2018
- Gross Floor Area: 18317.135 mq
- Lead Architect: Tony Joseph

Tony Joseph , an award-winning multi-disciplinary practice, emphasising the values of integrity, sustainability and innovation. Stapati's architecture emerges from a sensitive understanding of the context; one where the evolution of design is firmly rooted in the region's traditional narratives, while interpreting the elements in a modern context.

Natural vegetation comes into the interiors through spill out balconies and the central landscaped spine with dense greenery, providing opportunities for social interactions and enhances the psychological well being of the employees.
The interiors are an expression of a contemporary design aesthetic with exposed materials like polished concrete flooring and cement board finishes which contrast with the sleekness of glass and mild steel.

The services are thus exposed and are completely finished in black above the eye level, creating a raw industrial aesthetic in the interiors, which is contrasted with the bright colours of the furnitures and the artworks.
The central landscape has a solar screen roof on top which helps in meeting the energy demands of the building.
Rainwater collected on the roof and other surfaces are channelised to percolation pits and help in recharging the groundwater.

1. ELEMENTS USED TO CONTROL SUN AND WIND:

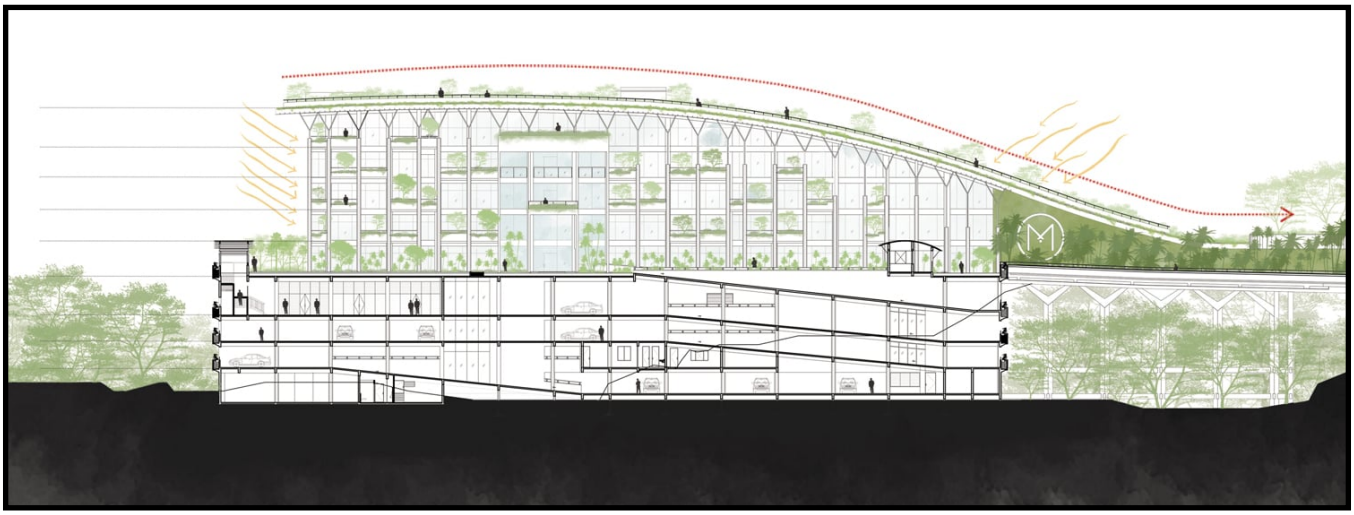


The malabar headquarters in Calicut incorporates various sustainable features to control sun and wind. The building design includes advanced shading systems and louvers to manage sunlight, minimising heat gain while maximising natural light.

Strategically placed balconies with large trees and vegetation on the western facade cut out the intense sun, creating a green buffer. They also serve as gardens in the sky, providing spill out spaces that can be accessed from various floor levels.

The lower four levels accommodate the parking and service areas, with an interesting pattern of terracotta jaalis and greenery defining the facade. Intermittently placed wooden trellises allow climbers to grow, which helps in cutting out the harsh sunlight and wind, along with the double glazed units on the western facade.

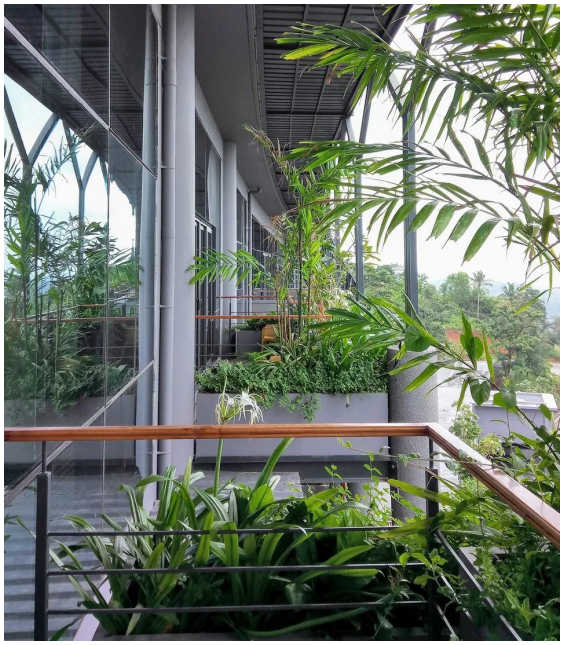
The green roof slopes down to the ground on the South to reduce the intensity of the southern sun and also acts as insulation to the office spaces below.



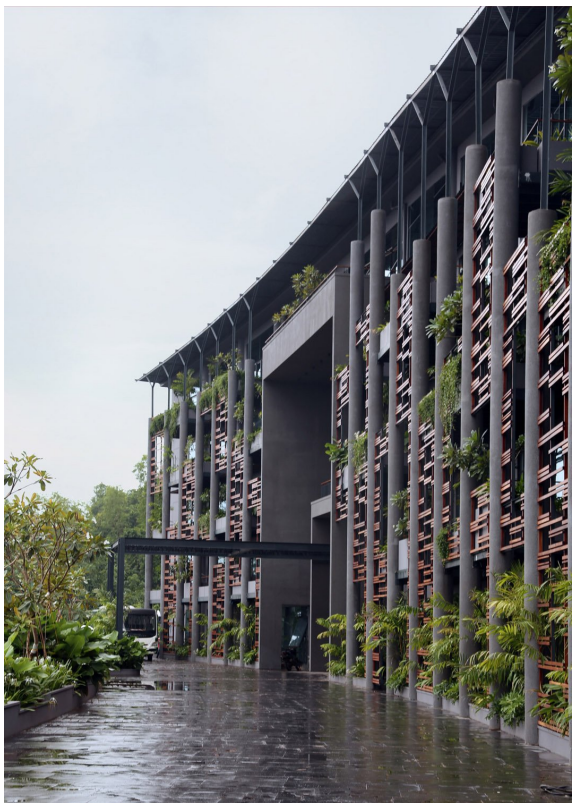
2. SITE ELEMENTS:

- Landscaping- The roof is designed as a landscaped gathering space that slopes all the way down to the ground and has amphitheaters, lounges, pavilions, and plenty of vegetation, serving as a space to get together and unwind. Responding to the sloping site, the office spaces are resolved as two separate blocks with a green landscape spine in between.
- Parking and Accessibility: The lower four levels accommodate the parking and service areas.

- Outdoor spaces: To take advantage of the wonderful views all around, the office areas are designed as transparent open plans and rise up four floors above the podium. They also serve as gardens in the sky, providing spill out spaces which can be accessed from various floor levels.Innovatively designed furnitures and artworks accentuate the vibrancy of the space.



- Integration with Surroundings: Consideration for local environment, ensuring the building harmonises with its surroundings.
- Security Measures: Incorporations of security features to ensure safety of occupants and assets. The design is resolved as a series of levels along the contours which reduces the intervention on-site to a minimum.



3. ELEVATIONAL ELEMENTS:

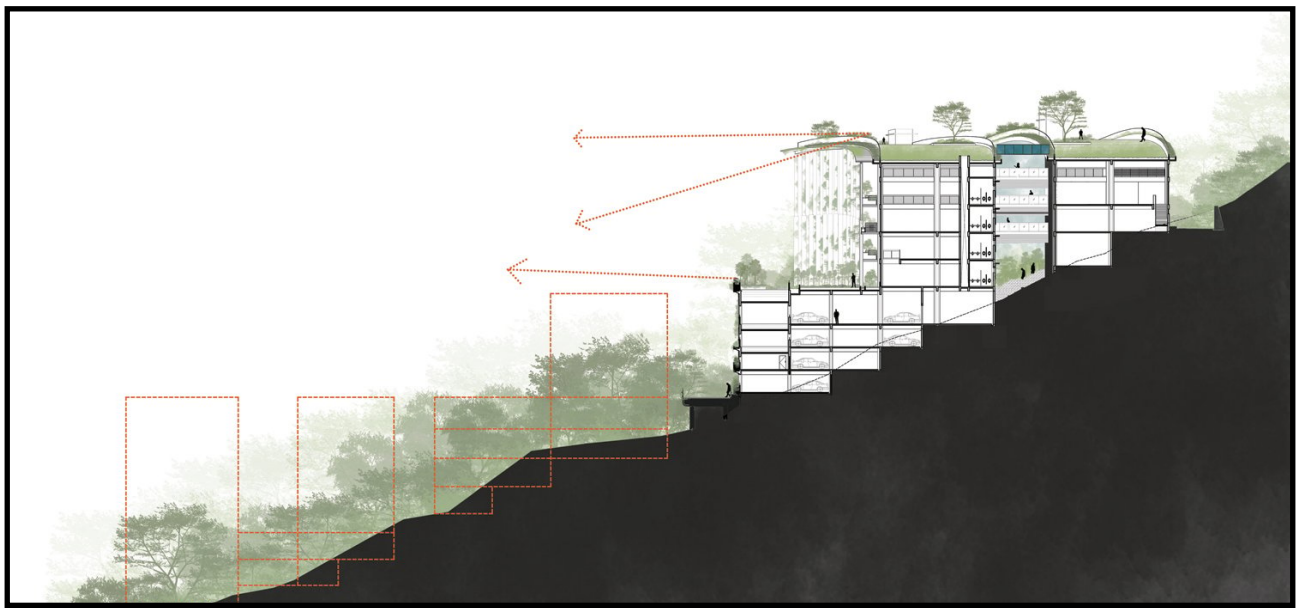
- Iconic Form: A steep sloping site, facing the west presented a unique challenge for the design of the Malabar Group Headquarters at Calicut.
- Facade Design: Innovative facade materials and patterns, potentially incorporating glass and other advanced material to achieve this raw aesthetic.

4. PLANNING:

- Conceptual Design: A unique and sustainable concept that defines the overall shape, structure, and purpose of building.

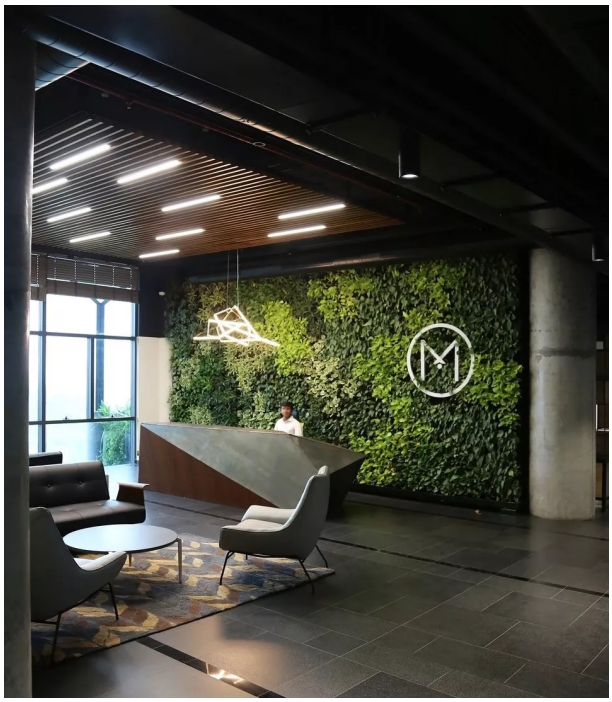
- Sustainable Design: Integration of sustainable practices and green building principles to minimise environmental impact and enhance energy efficiency.

- Site Analysis: Through evaluation of site condition, considering factors like sun exposure, wind patterns, and environmental context to inform design decisions. The site is located in Calicut, kerala



5. MATERIALS: The inherent honesty in the usage of materials along with the contextually relevant design helps in creating a highly sustainable building, one which is integrally connected to nature. A conscious decision was taken to avoid using false ceilings so as to reduce the material usage.

- Glass: High performance glass for the facade, offering transparency, natural light, and possibly energy efficient properties.



- High Performance Insulation: Use of advanced insulation materials to enhance energy efficiency and reduce environmental impact.

- Lightweight Materials: Incorporation of lightweight materials such as jaalis to optimise the building's structural efficiency.

- Biophilic Elements: Materials that promote a connection with nature, such as wood or natural texture, enhancing the overall aesthetic and well-being of occupants.

6. CLIMATIC ZONE: The specific climate zone of the Malabar headquarters in kerala corresponds to warm and humid climate prevalent in the region. Kerala's climate characterised by high temperatures, significantly high humidity and rainfall.

- Temperature- Not very high, varies between 20-35 degrees celsius in summer and 20-30 degrees celsius in winters.
- Humidity- Very high humidity
- Rainfall- High rainfall about 12mm