

BUILDOTECH

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Technology

- Optimizing HVAC through Green design



Design

- Delivering eco-conscious infrastructure

Sustainability

- Coming Out of the Cold

A building conceived as an **assemblage** of parts

Architecture Discipline, a Delhi based, multi-disciplinary design studio engages in progressive architectural practice with an intent to make buildings last longer through the utility of longer life-span materials. Its project, **Discovery Centre** exhibits cultural continuity and creates built form that need not to be conditioned and spruced up timely.

The plaza is broken by softer landscape



Spread across 125 acres, the development is planned as a place-making exercise to craft an environment to attract people. The building is only placed for 6 years and post that, it would be relocated and moved down the site precinct and hence the building was conceived as an assemblage of parts. Being a Greenfield project in the outskirts of Bangalore, the design had to be more than just a rudimentary structure that would establish an identity even from the glimpse off the highway.



Design Brief

The structure of the project is purposed to demonstrate the upcoming progressive development

An egg-shaped auditorium amidst an urban plaza is therefore conceived, which would attract the urban Indian family looking to be a part of the township.

Built with Glass fibre to introduce the narrative, the auditorium sits amidst a lotus pond that with its lotus motif pays homage to Indian design. Painted red, the egg on the plaza is aimed to bring the family together at one point.

at the Bhartiya city, Bangalore. The brief was to create a flexible city town hall that would also serve as the site office/sales office to illustrate the urban real estate initiatives of the Bhartiya Group. The brief also demanded the exploration of the possibilities of sustainable design and sustainable development on an extremely tight budget.

While typically, a building of this nature is placed at the edge of the site as an open flexible shell that is dressed up, in order to enhance the spatial connect with the visitors, the Discovery Centre is placed at the heart of the site to engage the visitor right through the development. The building had to tell a story, the concerns of the township and of

course demonstrate the residential and commercial characteristics of the development.

Concept & Built form

Optimizing the sky, light and air quality in Bangalore, the intent was create a progressive design experience that would demonstrate the core value of a high quality of life in the development. Innovation is therefore crucial, and something distinctive had to be created that would not only stand out in form but also in colour, revealing a narrative for the township. In a derelict zone with no clear indication of what was to come in up in the imminent future, a palette that would enable all these aspects is adopted.

Red as a colour has the longest wavelength, and can easily be spotted from a distance even in the back of beyond- an in the face gesture for the visitor. Every other element such as Golf cart, an ice-cream van, plasma screen is typological insert that may get amended over time. A single flight staircase in red steel & regional granite stands out as a distinct feature that brings visitors to itself. All other functions are planned as occurrences in an event that one happens to chance upon, inside the building. The Building opens out at a lower level, connecting the north-south plaza, while creating a spill out space.

A light weight building is hence built on compacted soil that is borrowed from the excavated foundation of the surrounding development. The structure uses longer life span materials in a modular manner for ease of composition and assembly. Earth fill has been used to create the plinth, in order to use all the material that is dug out from the lower levels. The idea is to take modularity beyond its conventional theoretical understanding, to a more literal level, that enables each panel, each nut and bold to >>>

Functionally, what is created is a 90m long building with a 20m large span and a double height space and a deck that is suspended from the trusses to get a clear, multi-function space that can perform most functions (with a height of 4.5m). The structure is exposed in its entirety and painted with water-based paint to further allow for visual connections.



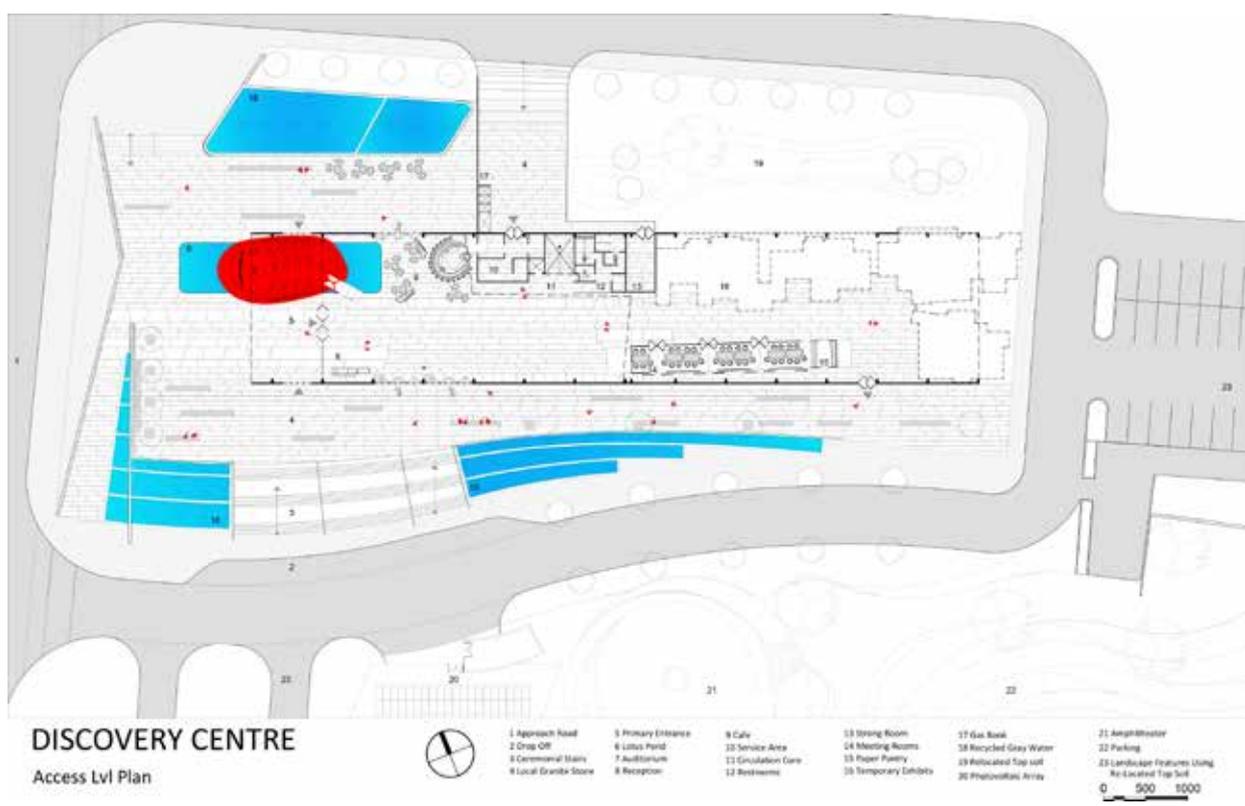
be assembled, dismantled and then reassembled processing the building like a machine.

Elementally Sustainable

A large span built form is fashioned with the truss being the most economical way of covering these large spans. Using a truss system aids in keeping the roof light, brings light inside and also enable controlled surrounding views of the site. An architectural mesh and glass are hence used; frit printed glass are used in a manner that reduces internal heat gain and aids easy ventilation.

In a conventional large span structure, the column sizes are fairly large; to avoid this, dynamic laced columns are used that enables the structure to become a part of the building skin. In a typical 6m bay, the column is perceived to be much thinner than it actually is because it partially embedded within the glass, whilst being integrated with the ventilation system. Sun breakers at appropriate angles are employed both on the outside and the inside of the building.

The clear Bangalore sun is exploited by the Photovoltaic farm that powers the plaza, the public area and the street lighting while Grey water is used for landscaping. A Thermal storage system is piggybacked on a 100% fresh air, earth cooling system.

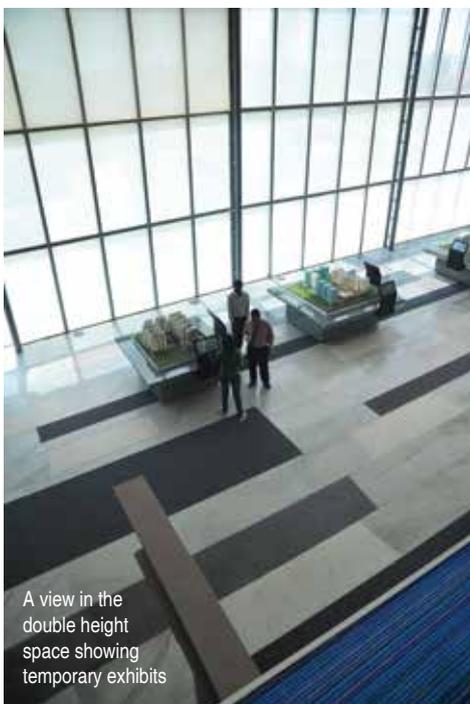




Glass fins generate a secondary rhythm

Glass & Light

Frit printed glass is used not only to dissipate heat, but also to play with patterns and enable changes in light transformation to make the building appear dynamic through the day. Grey on the outside and white inside, the multiple layers of the frit-printed glass creates a dynamic during the day and at night. The Lighting transforms itself with the change in the number of people occupying the plaza, and likewise at different times of the day. The night lighting is dramatically different from the visual experience during the day, and is always unique with interesting colours making the building come alive even at night.



A view in the double height space showing temporary exhibits

Displacement ventilation techniques are used to introduce cool air from below the floor; this in turn is extracted through the glass skin and layered the roof.

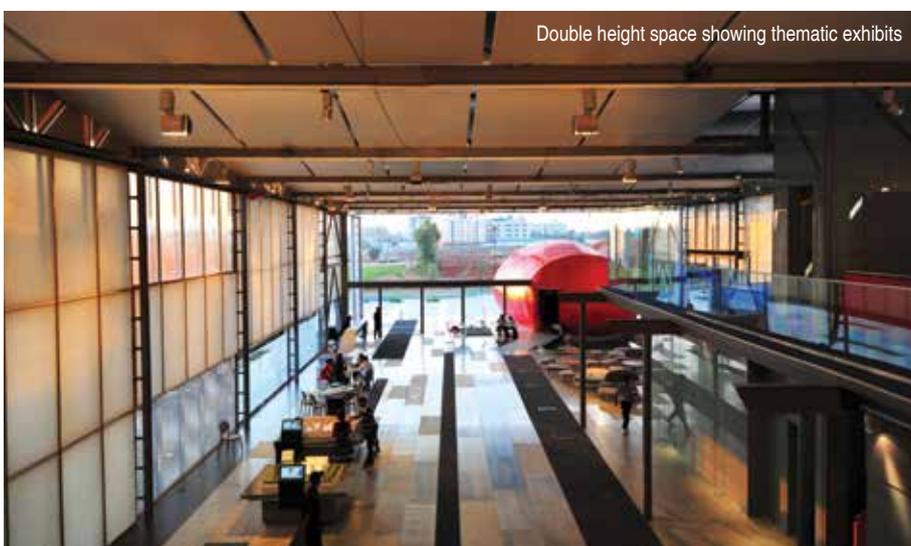
Designed as an exhaust duct, the glass skin has a void in between; beyond a certain point, a pressurized glass cavity is created which exhausts the air. This air coming out is at around 27°C and hence, the convection heat transfer is completely negated. The flooring is such that it can be reused, including the materials used. Some parts of the building are false floor, owing to the underfloor ducts. Atypical elements such as Robertson deck are used to ensure that even the deck slabs are removable and can be used again.

Contextual Response

The building should react instantly to the environment; since seasons, time zones and durations create different experiences, the building should express that change. This dictates the choice of the local materials that are adopted to integrate with the regional context; steelwork that is typical of this area is manipulated for a responsive material palette which is fairly simple comprising of glass, steel, fabric and stone with no timber being brought in from the outside.

Locally available sadarali stone that is typically used to create archetypal freestanding walls to demarcate boundaries in the region is used to further exemplify the cultural continuity as a monolithic sculptural entity in the form of ramps, the water body etc. The longitudinal trusses are clad in a vinyl to express them as a visual element.

The flora selection is also regional and berming from the excavated top soil is used to create more gathering space outside that also maximized the moderate climate of the region. Ferns and grasses that change quickly in colour and texture are exploited as a canvas to further enhance the architectural dynamics that create a unique experience on each visit.



Double height space showing thematic exhibits