

BUILDOTECH

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Plus INTERIORS

Automation to E-sourcing

Analyzing online sourcing of building products

The Weathering House

Minimalist architecture for a Kerala House

The Rainbow Tower

A distinctive symbol of Milan's colour and creativity

Workspace Design Drifts

A report on changing work styles and new workplace designs.



September 2015 - Volume 9 - Issue 09



This September issue of *Buildotech* is rich both in terms of content and the varied topics it has touched upon. Continuing our discussion on IBMS is an interview with Farook Merchant, CMD of Messung Group who says that awareness about building automation systems is still not very high among the Indian developers. There is a need to do life cycle analysis of IBMS, rather than getting concerned about the cost of different individual technologies. Globally, BMS technology is fast changing. A recent report in the US said that more than eight million BMS would be integrated with some form of Internet of Things (IoT) platform or service by 2020. This will transform the traditional BMS from unconnected system to becoming part of a wider and integrated network.

From automation, the building owners are also looking at internet and mobile apps to purchase building and home improvement products. E-Sourcing is advantageous to both the buyer and the seller as it reduces costs, improves inventory management and fastens decision making. CEOs of a couple of e-sourcing companies discuss the great potential of this way of selling building products. Another interesting article in this space is on Architectural visualization, a new technology which can merge the projections of developers and the requirements of home buyers.

One building component getting the best of design innovations is façade system. Glass façade is indeed giving way to materials like zinc. Architect Ravindra Verma of Utkarsh Kothari and Associates talks to *Buildotech* about the advantages of this metal over many conventional materials. From eastern India, we have a case study of a School for which the designer had to create a façade to offer a distinct identity. The team created a screen with graphical representations of symbols, alphabets and numbers that wraps around the school buildings and unifies them visually. Similarly, Anagram Architects from Delhi, explored, the most common idiom of identity, the thumbprint in designing the building exterior of a well-known media company.

Talking of "sustainability", Architect Dill A S has designed a double storey building in Venjaramood, Trivandrum District, Kerala, resorting to a sustainable way of minimalist architecture. The farm house designed by Architect D Pradhan on the river side in Raigad district too limits the planned landscaped area and dovetails into groves of mango and coconut trees to achieve a seamless transition to the natural surroundings

Mangala Chandran



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Editor-in-Chief
Mangala Chandran

Managing Editor
Sapna Srivastava

Art Director
Suhas L Patki

Assistant Studio Manager
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Nishad Ansari

Circulation
Fanny D'cruz
Archana Nair

Chairman
Jayaraman Nair

Managing Director
Jayaprakash Nair

Editorial / Marketing / Circulation Office:

316, 3rd Floor, Mastermind - 1, Royal Palms, Mayur Nagar,
Aarey Milk Colony, Goregaon (E), Mumbai - 400 065

Editorial Tel. : 022 - 6120 4111 / 2879 4695
E-mail : buildotech@virtualinfo.in
Marketing Tel. : 022 - 6120 4111 / 2879 4695
Fax : 022 - 2879 4739
CIN : U72200MH2000PTC129334

Delhi Office

167-B, Third Floor, Amritpuri, Main Road East of Kailash,
Near ISCON Temple, New Delhi - 110 065, India
Telephone : 011-4107 6412

Website : www.buildotechindia.com

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The **Weathering** House



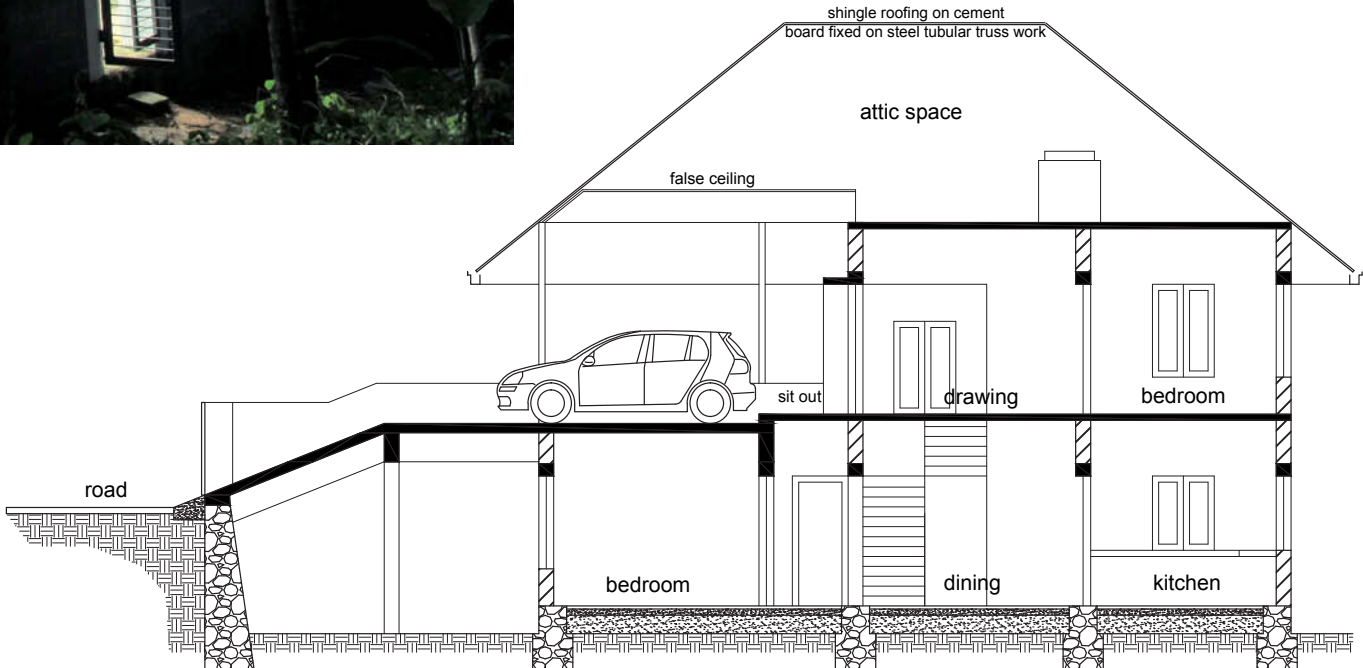
Dr. Dili A. S., architect and **professor** in the department of architecture at TKM College of Engineering, Kerala, designed a cost-effective house in keeping with the hot tropical climate and the monsoons of Kerala. He explains his concept that takes a different view on the theory of minimalism as applied on the function, material and visual aspects of the structure.



An independent double storeyed house for a family comprising living, dining, kitchen and three bedrooms with attached toilets also required well designed spaces for a car porch, out, prayer room with ablution area, store, work area and a utility space. The site 10.36m x 39m was around three

meter lower from the road level with adjacent buildings on North and East side, five meter road on the West and 120m wide pathway along with rubber plantation on the South side of the plot.

Since the site was lower from the road level on the West, a connecting bridge was designed between the road and the house as passage



Longitudinal Section



leading to the car porch with a sit out area and the main entrance that opens into the living room. This level also contains the prayer room and one of the bedrooms with balcony. A stair (ladder) from the balcony leads to the attic space above. The lower ground floor consists of the dining room, two bedrooms, kitchen, store and work area. A special entry is provided to the dining room from the pathway on the South side through a wicket gate.

Design Considerations

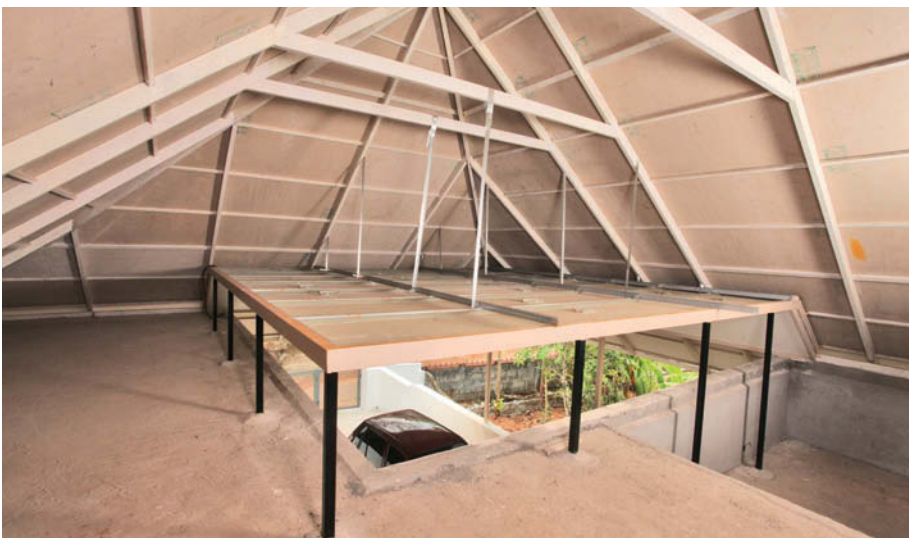
Conventionally, minimalism is applied in architecture giving emphasis only on visual aspects and external minimal form of the building, ignoring, its effective function and other aspects. Frequently, in an attempt to design minimal external form, the internal system of the structure becomes complex or gets adversely affected. A sustainable way of minimalist architecture is applied

in this building with the following considerations.

- Minimal cost
- Optimum material usage
- Nominal weathering of the building
- Least maintenance
- Marginal energy usage

Realizing that high interior thermal discomfort is the main reason of employing "active" cooling systems that consume precious energy and raise the cost of living, an additional sloping roof with a light weight system is created above the concrete roof to protect the house from sun and rain. The attic space created between the roofs acts as a passive control system and a utility space. Moreover, the light weight roofing system covers the whole building like an umbrella and acts as a protective element for the building from external environment. This makes the building weathering free throughout.





Materials Used

Top Roof –

- G I tubular truss work using sections – 2"×4", 1.5"×3", 1"×2" and 1"×1"
- 12mm thick cement board fixed on the above truss work using SD (self-driven) screws
- 4mm thick algae resistant shingles fixed (nailed) on the cement board
- Gypsum board false ceiling is provided for the car porch, passage and sit out

Bottom roof – RCC slab (excluding car porch, passage, sit out and balcony)

Walls – 8" thick cement block with M – Sand Cement mortar

Wall plastering – with river sand cement mortar, Belt concrete (6" thick) above lintel level with 8mm steel rods (4nos) using 6mm stirrups

Windows – anjili and jack wood

Window Glass – 4mm glass fixed on window shutter frame using 10mm sq. reapers

Doors – anjili and jack wood

Wall finish – emulsion paint

Stair Case – tubular and angular steel frame work with coconut timber treads

Interior flooring – vitrified tiles

Car porch Flooring – cement mortar finish

BT