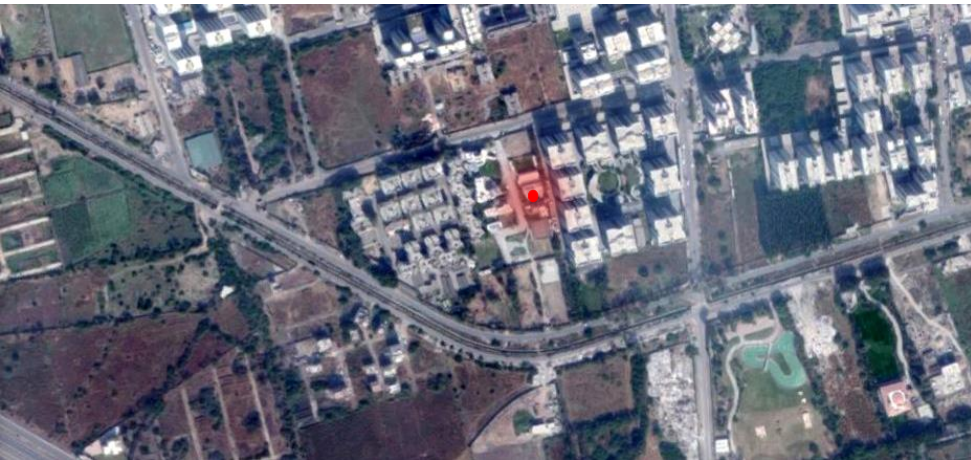




## SVASTI

*Architectural Design for a Residential Bungalow*

Client:	Ar Snehal Shah
Site Location:	E3 Block, Vesu, Surat - 394518
Plot Area:	16200 sq ft / 1505 sq m
Construction Area:	6727 sq ft / 625 sq m
Cost of Project:	Confidential
Year of Completion:	June 2017
Services:	Architectural Planning, Interior Design, Landscape Design, MEP Integration, Art Integration
Firms Involved:	EsTeam, Oblique



## THE PROJECT:

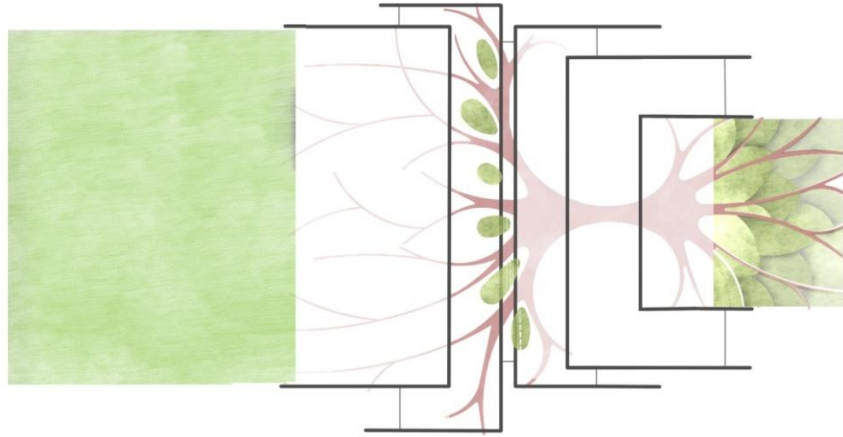
Having worked on nearly 500 design projects in the last fifteen years as a principal architect, nothing was more challenging than designing a villa for self. So many ideas, so many possibilities and so many aspirations! All of this came down to the vision that they, as an architect couple created for their own house, 'A dwelling that exhibits a mature restraint in cutting out all that is unnecessary, and welcoming all that is right and aligned to the principles of nature'. The spatial requirement for private spaces included four bedrooms, for their mother, one each for two kids and one for themselves.

## THE SITE:

With this clarity of vision, the beautiful journey to realise their dream on this 1500 square metre piece of land, part of a gated residential society at suburban Surat, developed by fourteen acquaintances and friends, was set.



The plan consists of four 'C' shaped walls - two facing north, and two south. generates two independent building blocks dividing the plot into three courtyards. The linear block facing the north has public areas like living room, hobby room, dining and the kitchen. These spaces open into the north court which is the formal lawns directly accessible from the street in case of larger gatherings. The other 'C' shaped block faces the South Court which has four equally sized bedrooms, two on ground floor and two stacked above them. The Centre Court gives a more traditional sense, the Chowk. This space holds the entire house together where the private and public, formal and the casual, outside and the inside to come together.





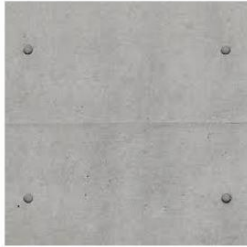
NORTHERN COURT



CENTRAL COURT



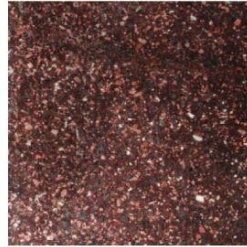
SOUTHERN COURT



FORM FINISHED  
CONCRETE



KOTA STONE



ROLITE  
GRANITE



BIDASAR  
MARBLE



VALSAD TEAK  
WOOD

With a strong value of 'Built- to- last' and 'Easy- to- maintain', the small material palette of the house consists of simple and rugged materials in their natural forms and no 'cover- ups'.



AERIAL VIEW FROM THE WEST

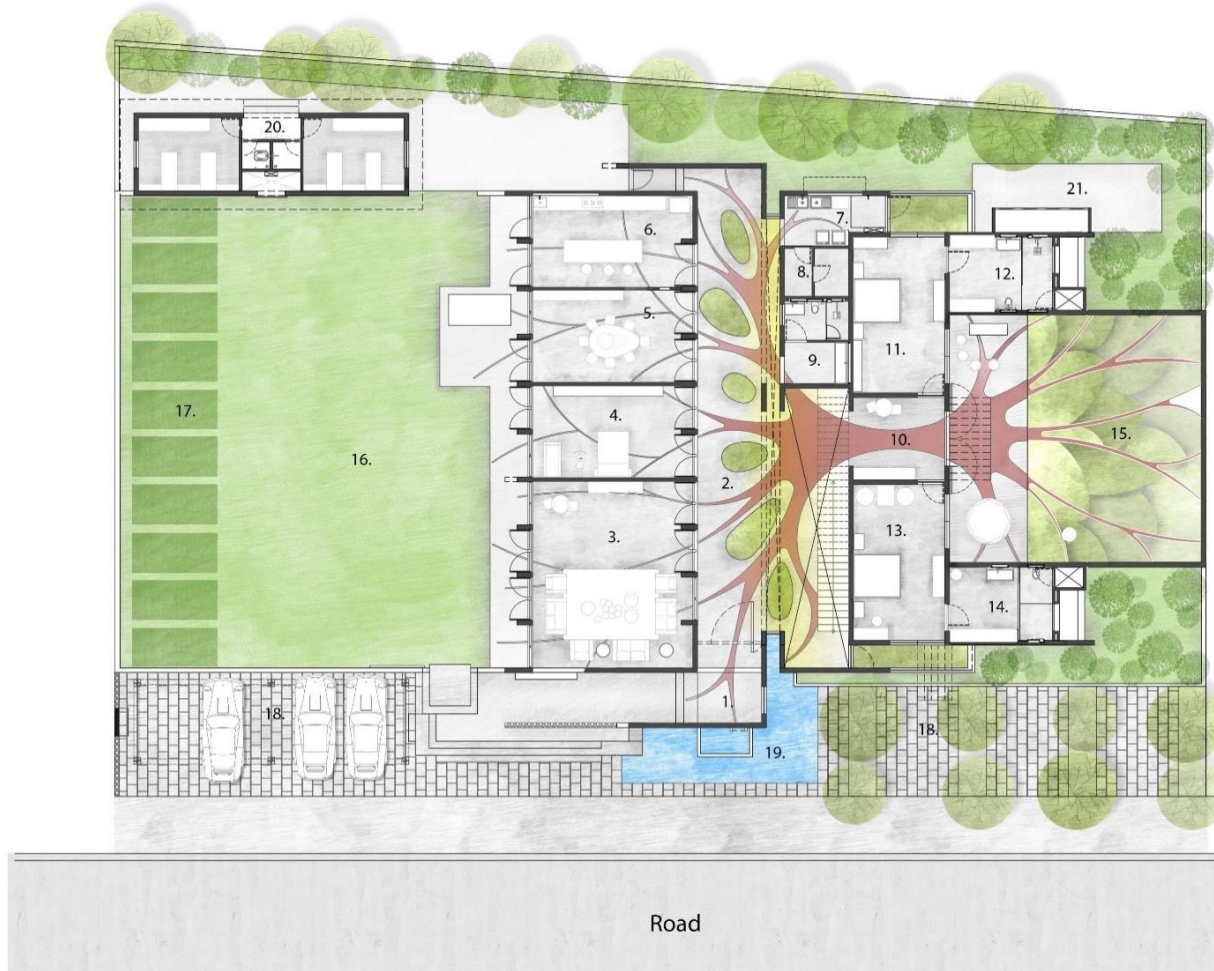




THE WEST FACADE



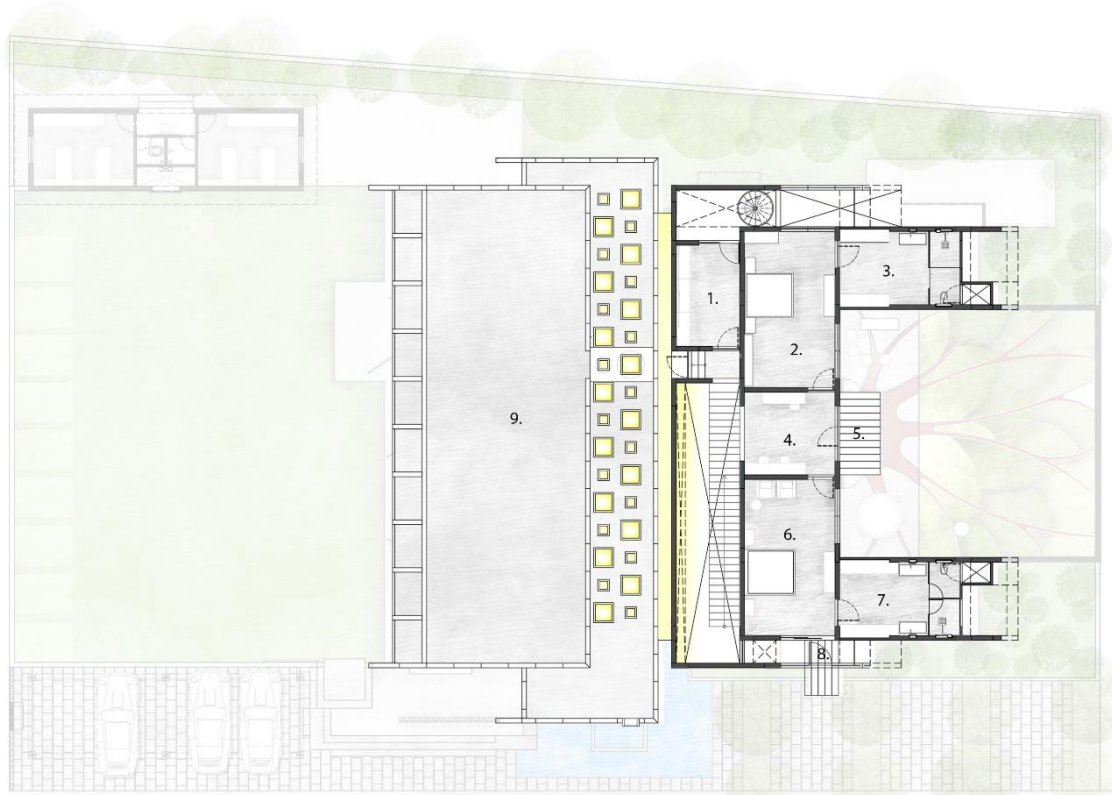
THE NO- WALL NORTH FACADE



1. Entrance Foyer
2. Court
3. Living area
4. Multipurpose Room
5. Dining
6. Kitchen
7. Utility Room
8. Machine/ Electrical Room
9. Common Toilet
10. Sitting/ Reading Space
11. Son's Bedroom
12. Son's Bedroom Toilet
13. Mother's Bedroom
14. Mother's Bedroom Toilet
15. Southern Court
16. North Lawn
17. Kitchen Farming
18. Parking
19. Lily Pond
20. Servant's Quarter
21. Underground Water tank



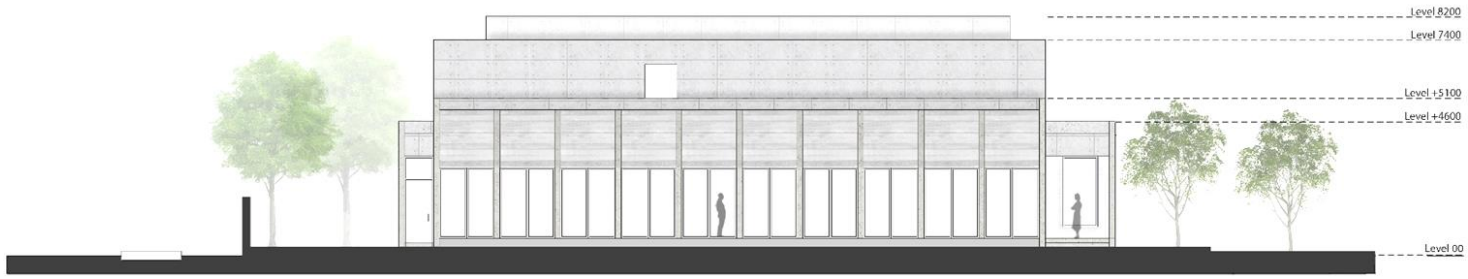
GROUND FLOOR PLAN



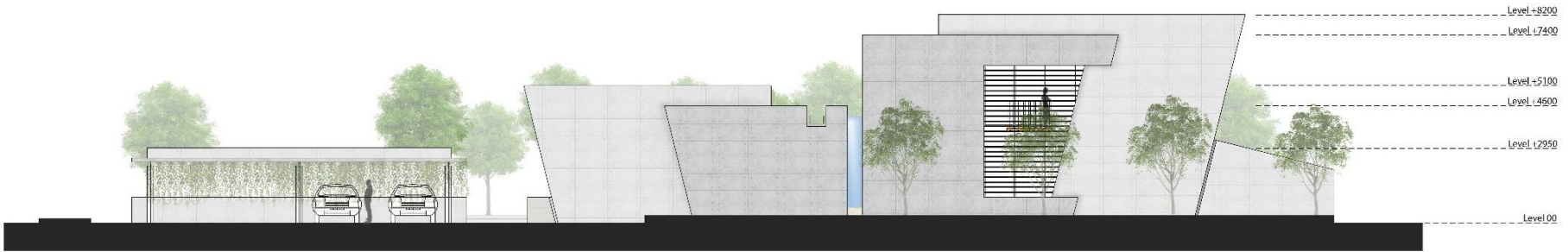
1. Yoga Room
2. Daughter's Bedroom
3. Daughter's Bedroom Toilet
4. Library
5. Balcony
6. Master Bedroom
7. Master Bedroom Toilet
8. Balcony
9. Terrace



FIRST FLOOR PLAN



NORTH SIDE ELEVATION



WEST SIDE ELEVATION





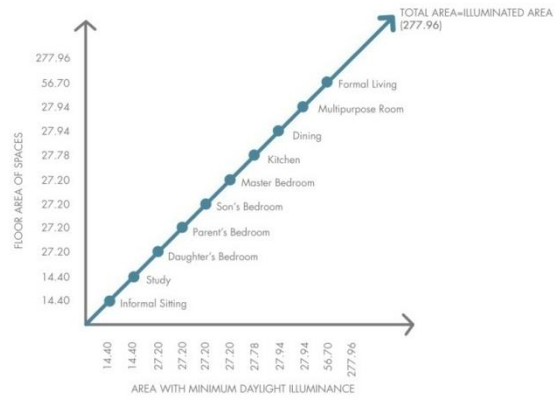
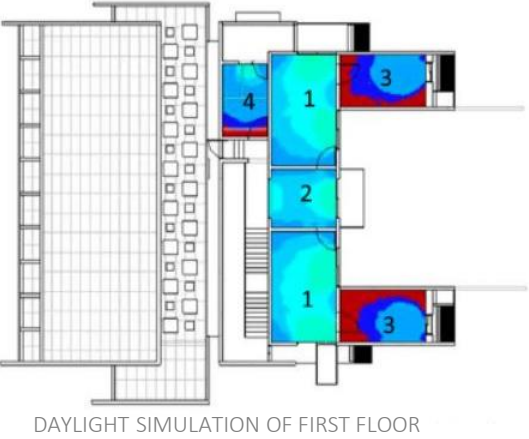
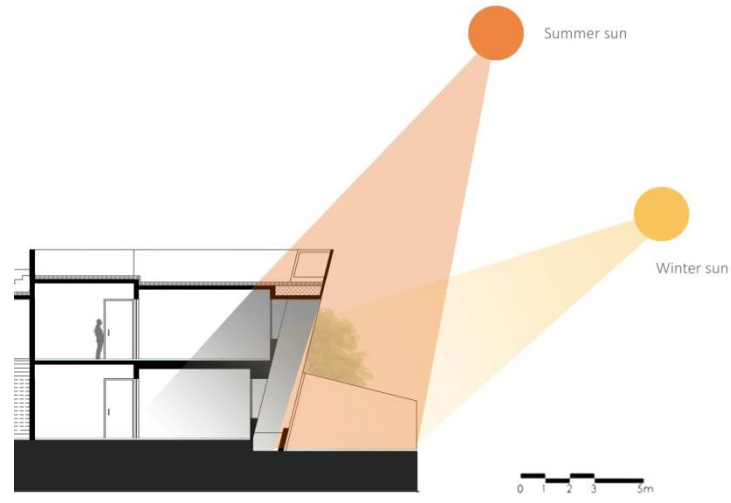
More than 50% of regularly occupied spaces achieve illuminance levels of 108 lux in a clear sky condition on Sep. 21 at 12 noon.

The building design allows winter sun to penetrate while cutting the summer sun and casting shadows.



- Ground Floor:
1. Formal Living
  2. Multipurpose Room
  3. Dining
  4. Kitchen
  5. Bedroom
  6. Dressing/ Toilet
  7. Toilet
  8. Informal Sitting
  9. Servants Quarters
  10. Common Toilet

- First Floor:
1. Bedroom
  2. Study
  3. Toilet
  4. Massage/ Yoga Room



01. 100% DAYLIT SPACES



CENTRAL COURT

01. 100% DAYLIT SPACES



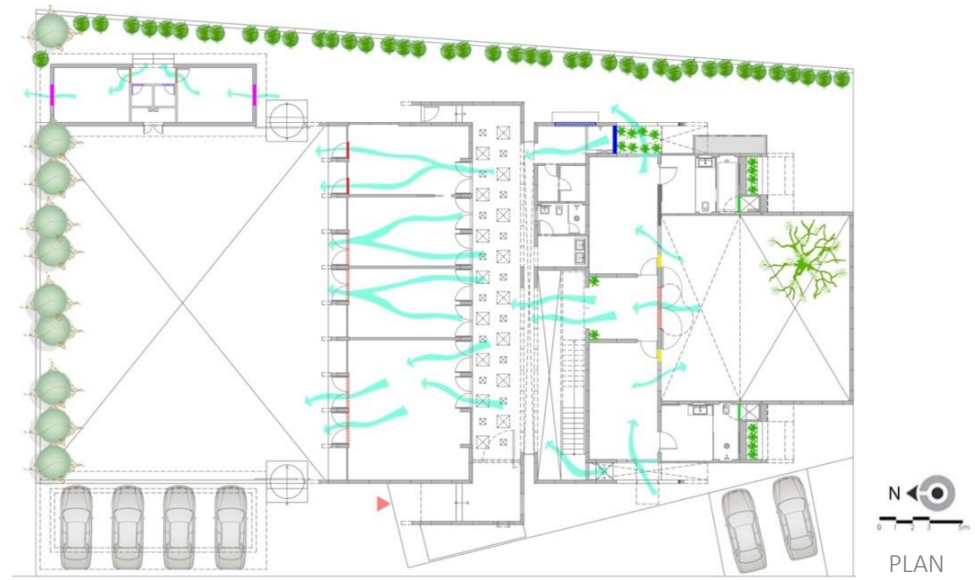
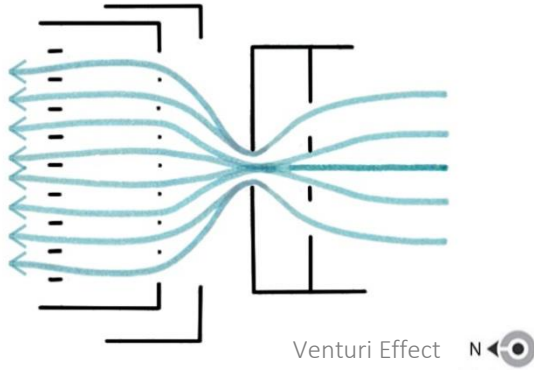


LIVING AREA

## 01. 100% DAYLIT SPACES

Windflow in all habitable spaces:

With Venturi effect the pressure of air decreases, increasing the velocity of wind giving proper motion making areas cooler.





CENTRAL COURT

02. NATURALLY VENTILATED SPACES



CENTRAL COURT

02. NATURALLY VENTILATED SPACES



LIVING AREA

## 02. NATURALLY VENTILATED SPACES



LIVING AREA

## 02. NATURALLY VENTILATED SPACES



DINING AREA

## 02. NATURALLY VENTILATED SPACES



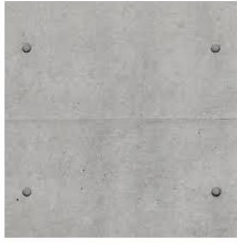
KITCHEN

## 02. NATURALLY VENTILATED SPACES





KITCHEN



FORM FINISHED  
CONCRETE



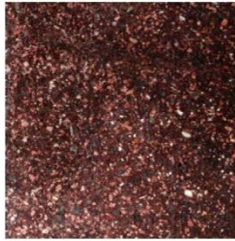
KOTA STONE  
WITHOUT POLISH

VOC sources in a house:

- Carpets and adhesives
- Sealing caulk
- Paint
- Composite wood products
- Upholstery fabric
- Solvents
- Varnishes
- Vinyl flooring



CHINA MOSAIC



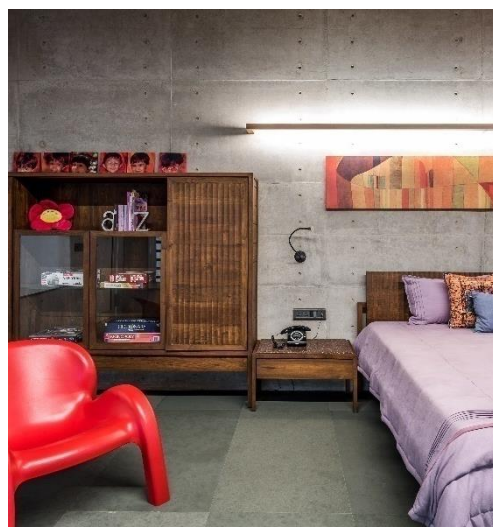
ROLITE GRANITE  
WITHOUT POLISH



BIDASAR MARBLE  
WITHOUT POLISH



VALSAD TEAK  
WOOD

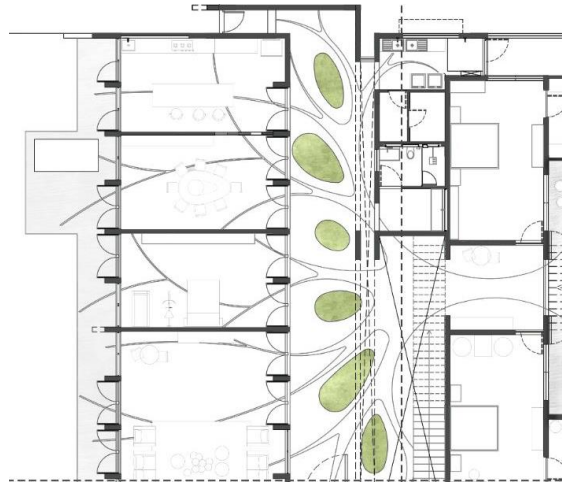


Materials with no VOC are used in the construction of the house for better indoor air quality as VOCs can affect human health or have adverse effects on the environment. Low-VOC building products benefit the health of those individuals installing such materials in addition to long-term building occupants. Reducing the use of materials that emit pollutants is the most effective way to improve indoor air quality.

### 03. ENHANCED AIR QUALITY

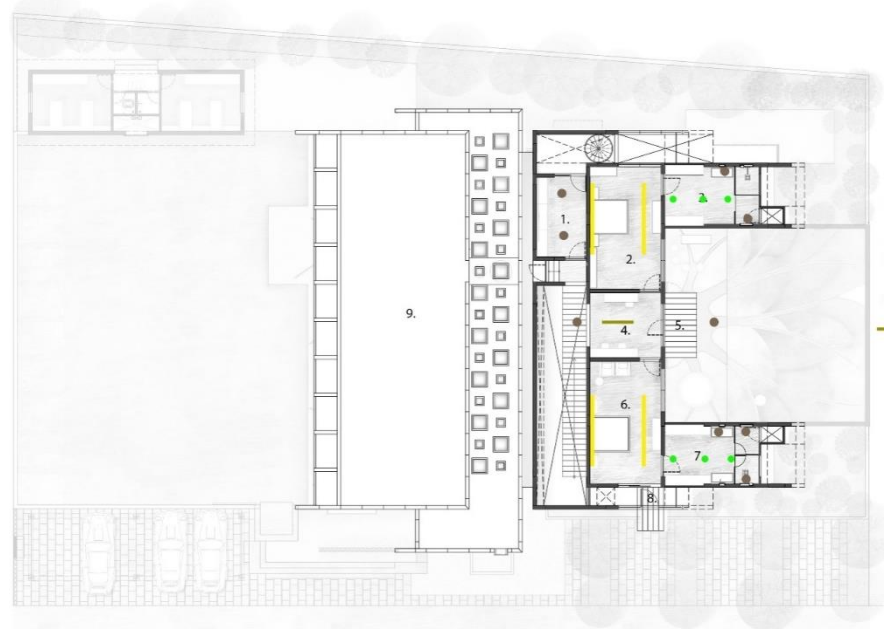


CENTRAL COURT



Houseplants as a way to purify the air and observed that some volatile organic compounds (VOCs) are filtered out from the air by several indoor plants. It is one of the best plants to purify air polluted with synthetic chemicals from furniture and cleaning solutions. It energizes the home by filtering air and increasing oxygen inflow. Money Plant is used for better indoor air quality which are also low maintenance and drought tolerant.

### 03. ENHANCED AIR QUALITY



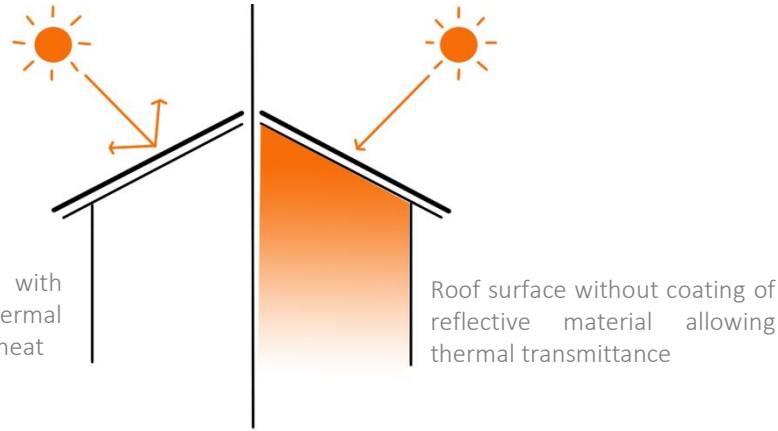
- | Corvi tubelight- 20 x 1 x 12watt  
20 x 1 x 9watt  
20 x 1 x 6watt
  - Fabric Light Fixture - 5 x 6 watt  
osram L.E.D bulb
  - Corvi Surface Light - 1 x 6 watt  
L.E.D bulb
- Corvi Surface Light - 1 x 12 watt  
L.E.D bulb
  - SGLW057 - 1 x 10 watt L.E.D  
LIGHT
  - Corvi Surface Light - 1 x 9 watt  
L.E.D bulb
- | Corvi tubelight- 17 x 12watt
  - | Corvi tubelight- 2 x 12watt  
1 x 9watt
  - Fusion Light Fixture - 2 x 22 watt

Total Lighting Area:	850.552
Proposed L.P.D.:	9.08
Baseline L.P.D.:	14
Percentage Reduction:	35.14%

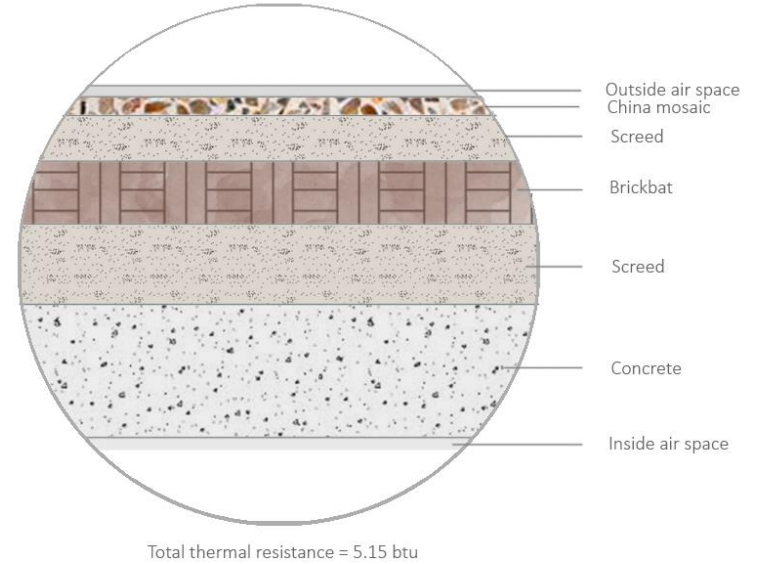
Lighting Power Density: Energy is saved by reducing more than 30% lighting power density in Exterior, interior, common and parking area from the baseline values through 'Building Area Method' as outlined in Annexure – 1 by the type of fixtures used in the house.

## 04. ENERGY CONSERVATION- LIGHTING

According to the climate zone that is, Hot and Dry climate, the U-value of the building should be less and roof assembly of this building offers very less U-value hence allowing less heat to transmit inside.



The heat radiation gained by the roof is 60%, rest 40% is through the walls, therefore insulating the roof is important and beneficial.



Maximum U- value- 1.2 W/m<sup>2</sup>.K  
U- value of the roof- 1.07 W/m<sup>2</sup>.K



Why China Mosaic?

Providing appropriate roof material can reduce heat radiation upto 80%, thereby China mosaic is used for high thermal reflectivity.

Self- efficiency is promoted by generating on-site solar energy which accounts to 62.5% of the connected building load.

- DGVCL connected load capacity: 16 kV
- Solar PV load capacity: 10 kV



ON GRID SOLAR ROOFTOP SYSTEM

The solar panels generate most of the electricity of the house reducing the bill to large numbers-

Average monthly electric bill: 12000- 15000 Rs.  
Reduced monthly electric bill: 400- 800 Rs.



#### 04. ENERGY CONSERVATION- ROOFTOP SOLAR PV

100% Rain water from Roof and Non-roof water is collected in Infusion Well with V “Wedge Wire” technology to recharge ground water table.

### On-site Rain Water Harvesting Percolation Infusion Well

Rain Water Harvesting Class V ‘Wedge Wire’-Infusion- Well System

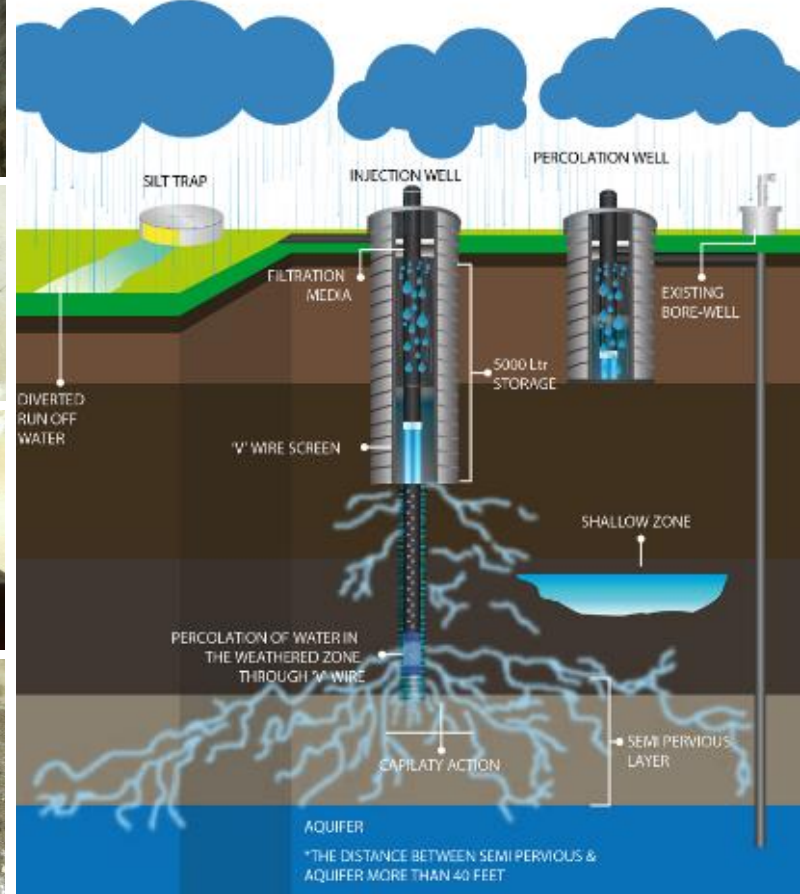
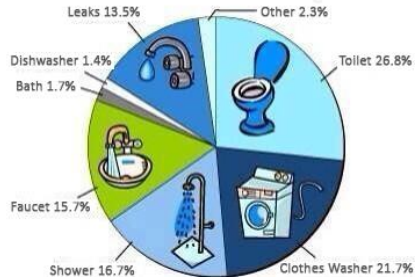
Advantages :

- Increases ground water level by re-charging.
- Reducing stress on urban water supply at least by 25%
- Saving in annual requirement of water to the extent of 35%.
- Rejuvenation of dried bore wells.

Run off Area (sq. mt.) x Rain Water Run off Co-efficient x Annual Rain Fall (mm)

Area	Sq. ft.	Sq. mt.	Annual Water Collection for Recharge	Per Inch Water Collection for Recharge
Plot Area	190000	19000	1.44 Cr. Liters	1.50 Lac Liters

### INDOOR HOUSEHOLD WATER USE:



## Low flow faucets:



Annual Volume of water fixtures:

373760 Litres

Annual volume through low flow faucets:

278130 Litres

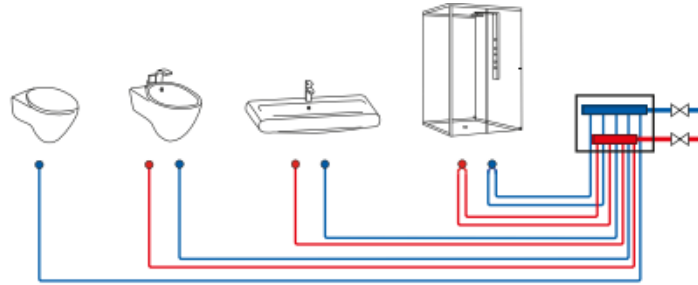
Total water consumption reduction :

25.6%

## Innovative plumbing techniques:

All usage points, both for hot and cold water, are connected to the manifold separately. The water required by a draw off point with high flow rates runs through both connection pipes and, in any case, only upon collection from the draw off point.

To minimise the use of water, efficient plumbing fixtures are installed. But to further control the flow of water, an innovative water control device i.e. Giacomini Modular Manifold is installed which enables to control the flow of each fixture via control valve.



Single + Double terminal connection





### Reusing old salvaged building construction material:



- Total Project Cost 1,22,09,419
- Total Material Cost 73,25,651
- Total Value of Salvage Material 3,70,877

Percentage of reused salvaged material: 5.06%



Wastage of stones like granite and Kota, which is used for flooring in interiors, is used for flooring of parking and plinth area. Broken salvage bricks were purchased for waterproofing layer on terrace along with the use of empty cement bags filled with sand for shoring of drainage trench on the approach road.

### Reusing old furniture instead of buying new one:



- Total Project Cost 1,22,09,419
- Total Material Cost 73,25,651
- Total Value of Salvage Material 11,30,000

Percentage of reused salvaged material: 15.4%



Furniture like chairs, tables and sofa set were acquired from old house to be reused as a part of furniture for new house which reduces the usage of newer materials for making furniture.





With a firm belief of wood being a truly renewable resource, all the bedrooms were designed using just one material - open pore polished natural teak wood. To avoid the use of plywood, the furniture exemplifies the craft of making solid wood furniture with a huge emphasis on interesting and intricate wood joineries.





PARENT'S BEDROOM



MASTER BEDROOM



MASTER BEDROOM



SON'S BEDROOM



DAUGHTER'S BEDROOM



STARICASE DETAILS





The eminent artists Van Gogh, S. H. Raza, Paul Klee and Georgia O’Keeffe are the brainwaves of the furnishings and linens of the bedrooms. The color palette of the same are tints and shades comprising the celebrated artworks by the artists. Fusing of interesting Batik works adds a lot of authenticity and depth to the bed and window dressing ideas.



VAN GOGH



PAUL KLEE



S. H. RAZA



GEORGIA O’KEEFFE

## 08. THE CREATIVE FURNISHINGS

The theme of the house is Forest, therefore all the artworks are a depiction of wildlife in the harmony of the theme, connected by the tree of the house- the Banyan Tree.



**Wildlife:** The artwork comprises of photographs of wildlife clicked by the client itself.

**Dragon fly:** Balusters as the body and door knobs as eyes are painted and reused to create this artwork.

**Soulebration:** This sculpture portrays happiness being celebrated by happy souls.

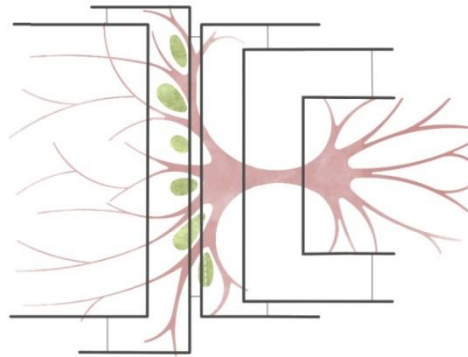
## 09. ARTWORKS- 'WELCOME TO THE JUNGLE'



**Peacock:** The Peacock is right opposite the Ganesha Door reflecting the circular form from the same.



**Ganesha:** The door is an abstract form of lord Ganesha at the entrance. The eyes are also used as a peep hole.



**The Banyan Tree:** The tree in the flooring, ties the entire house together in accordance to the theme of the house.



For the synchronicity in the artworks, both the circular artworks of ganesha and peacock are arranged opposite to each other reflecting the form.

## 09. ARTWORKS- 'WELCOME TO THE JUNGLE'



**Wise monkeys:** The prominent three monkeys made out of wooden logs communicating to not see, listen or speak evil.



**Imperfect Nature:** The sculpture shows wildness and imperfection of the nature made with reused materials.



**The Sunflowers:** This is a sunflower- painted outdoor dining table made out of a 'laari' to reuse resources and create a unique piece of furniture out of the same.



RESIDENCE FOR SALONI AND SNEHAL SHAH IGBC GREEN HOMES RATING SYSTEM	INDIVIDUAL RESIDENTIAL UNIT POINTS AVAILABLE	INDIVIDUAL RESIDENTIAL UNIT POINTS ACHIEVED
SITE SELECTION AND PLANNING	09	08
WATER EFFICIENCY	11	09
ENERGY EFFICIENCY	22	16
MATERIALS AND RESOURCES	13	07
INDOOR ENVIRONMENTAL QUALITY	15	15
INNOVATION AND DESIGN PROCESS	05	05
<b>TOTAL POINTS</b>	<b>75</b>	<b>60</b>



FINAL RATING ACHIEVED - PLATINUM



• SURAT • AHMEDABAD • HYDERABAD


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