

Residential House, Goa – A Unique Blend of Contemporary Architecture with Traditional Values and Ecological Sensitivity

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ABSTRACT

A domestic structure stands as a physical manifestation of the religious, social and cultural life of any Community. Traditionally ‘Goan Rajaangan’ Houses (house designed around an internal courtyard) with the harmonious natural settings and surroundings like wells, kitchen garden (‘Ghorbhat’), etc were part of community consciousness towards the nature. These Houses were nature friendly with good use of local resources, local skills and user friendly with respect to their scales thus ecologically sensitive.

With the advent of modernity, concrete came about to be treated as one and the only solution influencing residential designs at a mass level especially with the middle income group. In this process they were losing the basic connecting link of tradition in their living environment.

This project is a small attempt to tie up these missing chords, to blend the very essence of traditional values with contemporary Architecture still enduring a viable eco-sensitive and cost effective solution for these strata. The house planning includes the optimum use of natural resources i.e. the sun, rain and wind as much required to liven up the spaces, to revive the traditional spatial hierarchy with respect to orientation, provide the cultural and religious focal points in these spaces, roof top water harvesting and kitchen garden. And all this was well achieved in a tight plot within the means of a middle income family by simple load bearing construction with local materials.

Keywords: ‘Goan Rajaangan’, ‘Ghorbhat’, load bearing, ‘Laterite’, form, plot, ‘Padvi’, landscape.

1. INTRODUCTION

The Traditional Goan Hindu Houses before colonial period seems far more ingenious in their built form. These houses were designed for joint families and were built around an internal courtyard ‘Rajaangan’ with a ‘Tulsi’ plant at the center, facing the main road. These were built either with mud or local ‘Laterite’ stone with low scale sloping roofs with an overlay of Mangalore tiles. These built forms were suggestive of a simple lifestyle which had a direct relation between the

nature and man. Backyard was maintained with a well and a kitchen garden '*Ghorbhat*' having vegetable, fruits and flowering varieties utilized for the house related routine activities.

Later with the Portuguese arrival the '*Rajaangan*' character of the house transformed into the colonial bungalows which had massive roofs with verandahs all around (extroverted) which made the internal living areas quite dark. The front yard was emphasized with flowering gardens and lawns for mere beautification of the facades. Soon after Liberation and with the advent of modernity, the houses transformed into the '*modern bungalows*', which ended up into a stereotype '*boxy*' concrete Architecture, thus creating a huge loss to the very essence of the domestic built form which is still deteriorating. Present forms are blind towards the long standing traditions, local characteristics and references of local techniques. Lack of knowledge towards the appropriate usage and not being sensitive to the context adds to the reasons for the above situations. Therefore there is a need for exploring appropriate tools in design and technology for conservation of local heritage.

This house designed for my Client (Ajit's house) at Cacora, Goa, is one of the typical middle income nuclear family, wherein we tried to revive the principles which guided the evolution of Goan domestic residential built form and its Architectural character, thus striking a fine balance between Contemporary Architecture with Traditional Values and Ecological Sensitivity.



Fig. 1: Entrance View of the Designed house **Fig. 2: Front View from the highest level**

The Site. Located in a small village *Cacora* about 15kms from Goa's commercial capital, *Margao* this house was designed within a limited plot area of 238 m², having a sloping terrain with a contour difference of 2.5m across the plot width of 15m. The plot is elevated by 6m from the approach road to the site. The site was strikingly projected by the existence of a '*Gulmohar*' tree at its highest level (refer with: Fig.2, Fig. 3, Fig. 12).

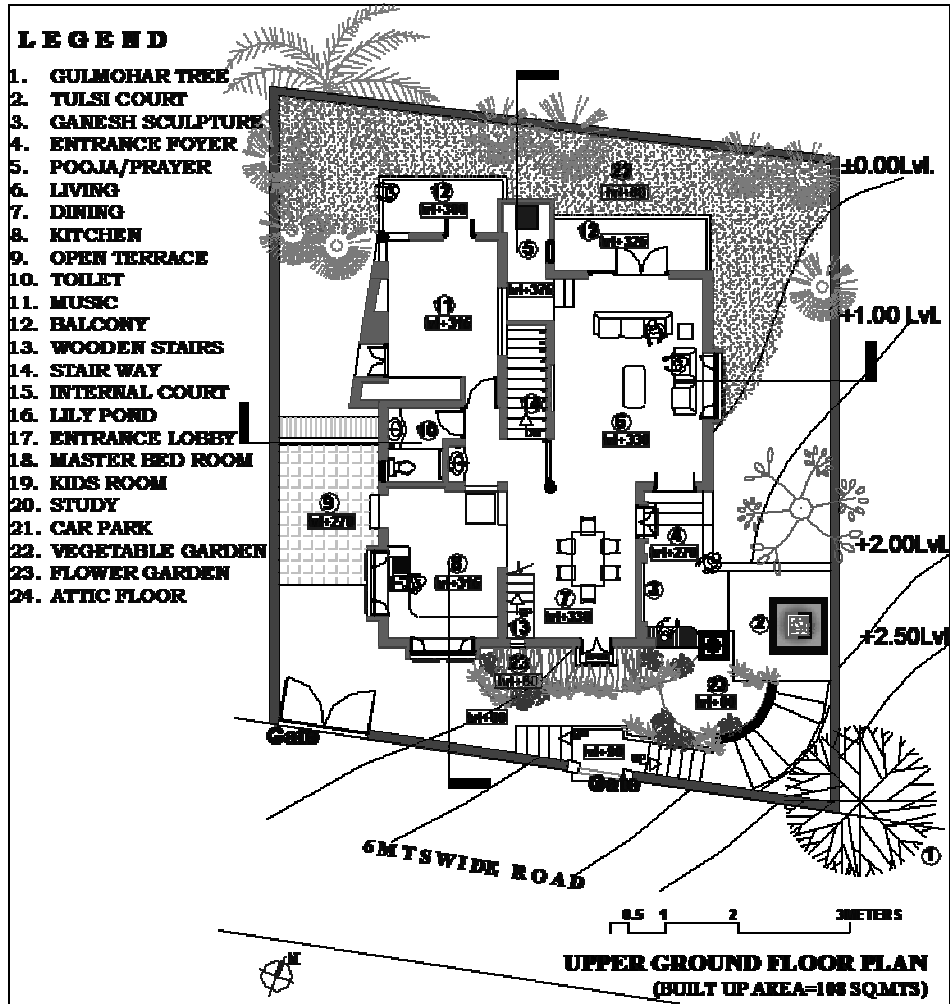


Fig. 3: Upper Ground Floor Plan – (Designed House)

2. COMPARATIVE ANALYSIS

Courtyard. The Goan ‘*Rajaangan*’ concept is a traditional hindu house design evolved with central small courtyard with a ‘*Tulsi*’ plant (refer with: Fig. 4). This basic spatial arrangement came about not just for a practical reason of the morning light to illuminate and ventilate the inside spaces but also to associate with their social and cultural lifestyle.

In this design the ‘*Tulsi Court*’ is not the centre but surely the focal point which marks the entrance to this house. In this constrained plot the element of courtyard has evolved as a new contemporary strain. (refer with: Fig. 3, Fig. 5, Fig. 6)



Figure 4: Traditional 'Tulsi court'- Bhave's house, Magueshi, Ponda-Goa.



Figure 5: 'Tulsi'- Figure 6:'Tulsi court'- Designed house (Ajit's house), Cacora -Goa.

Entrance Foyer. The '*Padvi* or *sopo*' (entrance seat) is the transition space that connected the inside to the outside. The column element featuring around the courtyard and the '*Padvi*' had a strong impact in the traditional designs (refer with: Fig. 4, Fig. 7, Fig. 8)

In this design, '*Tulsi*' and '*Padvi*' with an imposing traditional column feature of local '*laterite*' stone were harmoniously blended together. The column being the main load bearing structural

component also served as an illuminating source(‘*Deepstambha*’) at night, complementing the practice of ‘*Diyalagan*’ (lighting of lamp around the ‘*Tulsi*’), thus creating a ceremonial platform for the religious occasions. The ‘*Ganesh*’ sculptured in ‘*laterite*’ stone on the wall looks over this ambience commanding strong reverence. (refer with: Fig. 3, Fig. 9, Fig. 11)

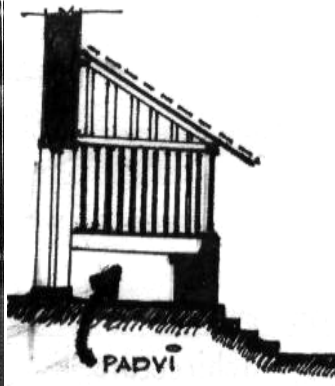
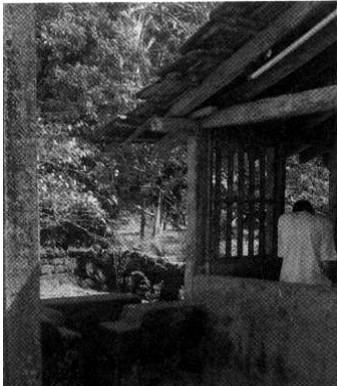


Figure7:Traditional ‘Padvi’- Figure8:Sketch
–A Brahmin’s house, Canacona -Goa.

Figure9: ‘Padvi or Sopo’-
Designed house (Ajit’s house), Cacora -Goa.

Spatial arrangement. The traditional courtyard house layouts had its socializing spaces around the courtyard with an extroverted character whereas the private spaces were placed in an introverted and secluded manner.

In this design, the sloping terrain facilitated a similar sensibility. The public spaces (praying, music room, living, dining and kitchen) were designed at the higher level giving an advantage of better illumination and cross ventilation and the private/resting spaces (bedrooms and study) were placed at the lower level to achieve privacy, seclusion, introverted character and to receive the diffused light. They were much cooler being placed at a lower level. (refer with: Fig. 3, Fig. 10, Fig. 14)

Orientation The traditional courtyard houses were strongly designed on the footprints of ‘*Vastushastra*’ wherein the spaces had a sense of direction.

In this design, orientation was analyzed in an advantageous manner to position the Entrance courtyard, Prayer room and Living towards the north-east and the Kitchen and Dining in the south-east. Similarly the Bedroom spaces have been advantageously arranged westwards. (refer with: Fig. 3, Fig. 10, Fig. 11, Fig. 14)

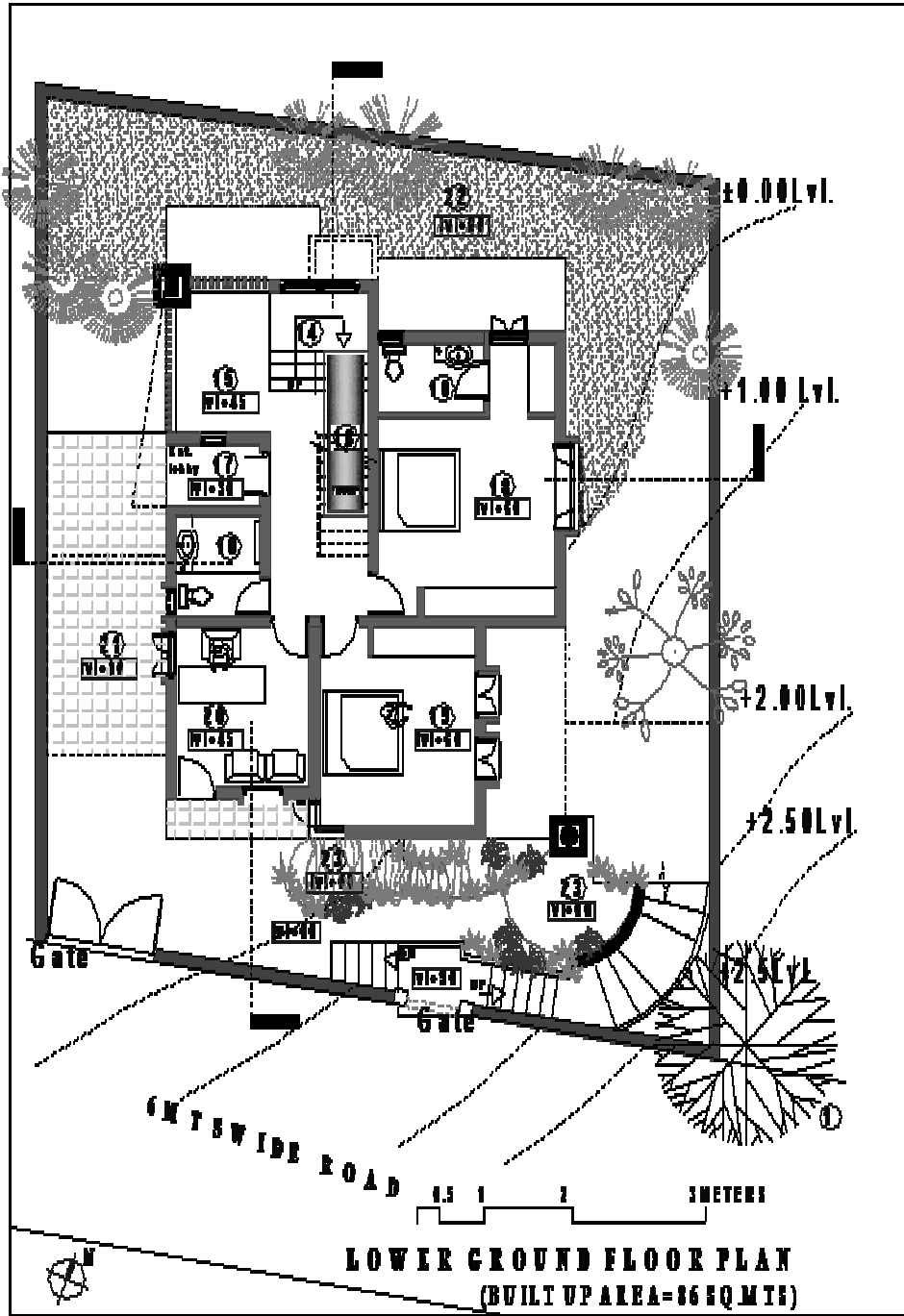


Figure 10: Lower Ground Floor Plan – (Designed House)



Figure11: North East View-Designed house Figure12: Front Elevation-Designed house

Levels: The hierarchy of spaces was a prime consideration in the traditional approach of design wherein the prayer room was given the highest platform.

In this design the same principle is adopted with the prayer room positioned at the highest level from where all the other spaces descend radially downwards. The prayer room has a glass ceiling which filters the natural light directly lighting up the deity (refer with Fig. 3, Fig. 14).

Volume: The traditional '*Rajaangan*' houses offered a comfortable human scale with the Ground and Attic floors. The Interior volumes also were more at user friendly heights.

In this design, the structure is effectively made to appear externally only of one floor (refer with Fig.11) due to the play of the sloping terrain. In reality, it is a G+1 structure accommodating the traditional attic space which has direct access to roof level easing out the maintenance (refer with Fig.12, Fig.14).

Openings: The Sills and Lintel levels of the traditional courtyard houses were low (about 60cm to 85 cm) adopted to suit the lifestyle.

In this design, similar character has been achieved by extending the sill widths thereby giving the impact of the solidity of the traditional thick walls and also acting as a barrier, shielding the direct heat and glare. The lowering of the sill heights acts as a dual advantage of using it as a seater or working space within the walls and saving the need for furniture requirements (refer with Fig.13, Fig.14).

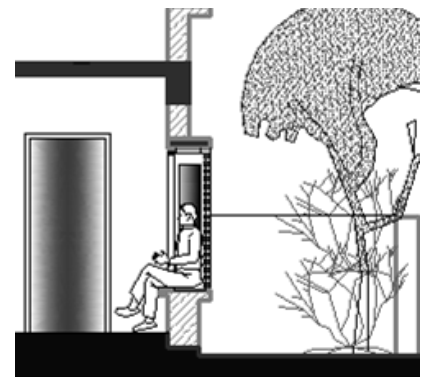


Figure:13- Sill

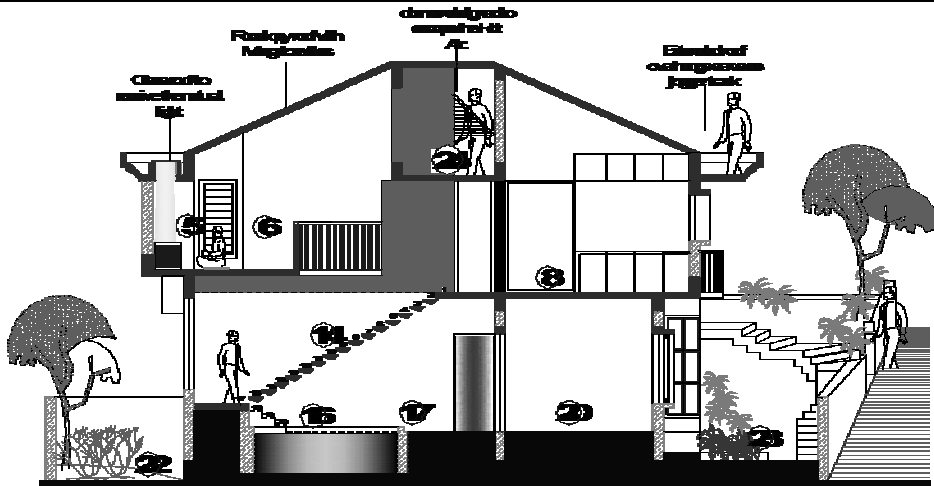


Figure 14: Longitudinal Section – (Designed House)

Façade. The traditional facades in Goa have more earthy colours. The colour combination in the designed house is similarly maintained with a blend of the original colour and texture of the ‘laterite’ stones harmoniously combined with the whites (refer with Fig.1, Fig.12).



Figure: 15- Side View

Roof. Traditionally roof profiles were simple, sloping 2-ways or 4-ways having huge overhangs shading the verandah spaces. In this house, a simple pyramidal 4-way canopy with flat overhangs provides a complete cover over the full cubical mass. In addition, as the roof is accessible from the attic floor it has been planned for multi use, maintenance of solar panels, roof tiles, water harvesting and even a comfortable jogging track open to sky (refer with Fig. 12, Fig. 14).



Figure:16- Construction

Cost. Like the traditional courtyard houses, the designed structure stands fully load bearing on the reddish ‘laterite’ soil type best suited for the site. Besides the slab, the R.C.C. components are limited to the pre-cast louvers & stairs. These features ensured cost effectiveness for the client practically within his budget. Actual cost was 36 lakhs only for a super built up area of 194 m² (refer with Fig.14, Fig.15, Fig.16).

Ecological Sensitivity. The ‘Ghorbhat’ of the traditional Goan house had a productive landscape which sustained the prayer services, vegetables for the kitchen and coconuts and other fruits for

everyday use. Similarly over here, instead of an artificial landscape, a well planned provision is made in at the front and the back for the flowers, vegetables and fruit trees along with a rain water harvesting facility to have eco-friendly inter-dependence with the nature within the limited resources of the plot (refer with Fig. 3, Fig. 10, Fig. 14).

3. CONCLUSION

1. It is possible even in today's times to strike a balance with the traditional values in the design concepts yet keeping contemporary living styles, what is required is the cultural sensitivity and the commitment both by the client and the Architect to create a viable solution to the context.
2. The optimal use of natural resources like sunlight, rain, wind and orientation in the house planning has made this design not only healthier and nature friendly but also saved the recurring artificial energy consumption and cost effectively.
3. The use of the local 'laterite' stones majorly for the whole load bearing structure with the local skills and techniques has immensely saved cost. Minimal use of concrete, exposed 'laterite' walls, pre-cast techniques additionally increased the thermal efficiency of the house.
4. The open areas around the built form have to be well planned for a productive and natural landscape which keeps the whole environment healthy as a continuous nature friendly cycle.

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