

Relevance of Terrace Space in Architecture

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Abstract: The aim of the study is to explore in depth the characteristics and relevance of terrace space in Indian context. Terrace is a space which always exists and cannot be destroyed, thus the study would help to achieve an overall understanding of the terrace. Open space in a typical North Indian house consists of a verandah, courtyard, terrace etc. These open spaces have evolved with time and need. They have lot of aspects to themselves, climatic, socio-cultural, psychological, functional and economic. In Indian context, these open spaces show a whole lot of cultural trends, climatic effects etc. on a society. Hopefully the study makes a small contribution in understanding the relevance of terrace as a very integral space for human activities. To analyze and understand the architectural significance of a terrace some case studies were done. The study highlights the feature that contributed to the numerous applications of the terrace space and in promoting a spirit of community living among the inhabitants by providing an ideal environment for healthy community participation. Case studies are, terrace in an urban settlement of Asian Games village; for a typical traditional settlement, study of terrace in Jodhpur. The study is restricted to north India (hot arid zone), which has extreme climate. Issues involved are numerous, hence there is a possibility that some issues which are considered to be less relevant would be left out. The issues which are discussed are studied treating them as a representative field of study. The study is restricted to terraces in residential areas.

Index Terms - Terrace a Space, Jodhpur Houses.

I. INTRODUCTION

Solids and voids are the primary elements if spatial expression in architecture. It is a meaningful composition of solids and voids, wherein without one or other has no meaning. Solids become form and voids becoming spaces. The style of expressions and ideas in architecture has been changing, differing in different regions and times, with cultural changes, new ideas, expressions and forms developed in architecture. However, in spite of changes, the basic idea of space and form has remained constant over the years. Solids and voids still remain the two main elements of architecture. This does not mean that architecture is amere meaningful composition of solids and voids. There are many more aspects like orientation; symbolism etc., to it, but it is beyond the scope of this study to discuss them.

Architecture space can be open, semi-enclosed or enclosed. In a built environment there is a balanced combination of different kinds of space depending upon various factors for that particular place and time. The quality and properties of space, namely, visual form, quality of light, scale, depend totally on its boundaries as defined by elements of form. Open spaces as the name suggests, are open by nature. They are defined and assume an architectural character when enclosed in full or part by built form. Often such spaces are useful extension of buildings. Open space not only improves living condition but can also have a considerable economic value. Open-to-sky space can make a decisive difference between livable habitat and claustrophobia. These defined open spaces and built forms are best conceived as a meaningful composition of solids and voids. The voids accentuate the presence of the adjoining solids and the solids do the same to the presence of voids. One such essential open space in a house is a terrace, which is a multifunctional open space in a house.

II. UNDERSTANDING TERRACE AS A SPACE

With time, we have lost the traditional understanding of open spaces in a house. Hence, it becomes necessary to understanding what went behind this loss and to rediscover the characteristics that made these open spaces in a house work and to incorporate the same in the present day context. The need is to understand the importance of open spaces and their meaning in a house.

Space-House

Space is a structural organization as a frame for human activities and is based on very definite factors; on the relationship between the forms of the surrounding buildings, on their uniformity or their variety, on their absolute dimensions and their relative proportions in comparison to width and length of the open area.

Importance of open space

Throughout human history, the sky has carried a profound and sacred meaning. Man intuitively perceived it as the abode of the supernatural. In India, the sky has profoundly affected our relationship to build form and to open space. In a tropical country like India where the climate is hot for major part of the year, the best place to be in the late evenings and it the early morning is outdoors, under the open sky. Such spaces have a finite number of relations.

Definition of a terrace and factors governing its character

A terrace is a usable, easily accessible, elevated (with respect to surrounding), flat, open to sky space which forms the roof top of a habitable space. A terrace is not cantilevered. There are certain factors, which define a terrace space, such as privacy, view, scale and function.

Privacy: Generally a terrace space is public or semi-public in nature, but can also be used as a private terrace space depending on the nature and the location of the terrace.

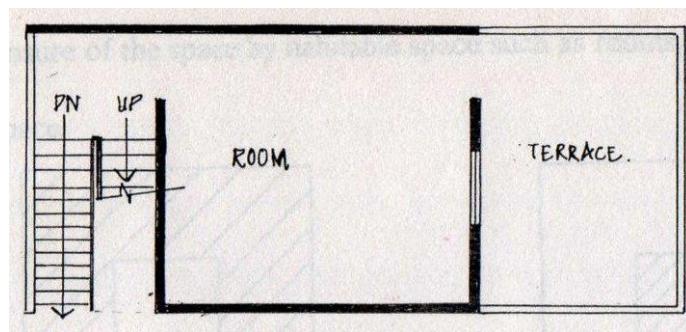


Figure 1: House plan showing a private terrace

View: The visual access also plays an important role in defining the space. If there is a visual relationship, which is established between the open space and the surroundings, as in case (I), one relates him to terrace. But this might not be the criteria all the time as in case (II), where the parapet height along the edges is very high, providing no visual access but still continues to maintain a relationship with the outside. The relationship is merely negative and not positive as in the previous case. Thus it is a terrace as the activity, which takes place, is not very private.

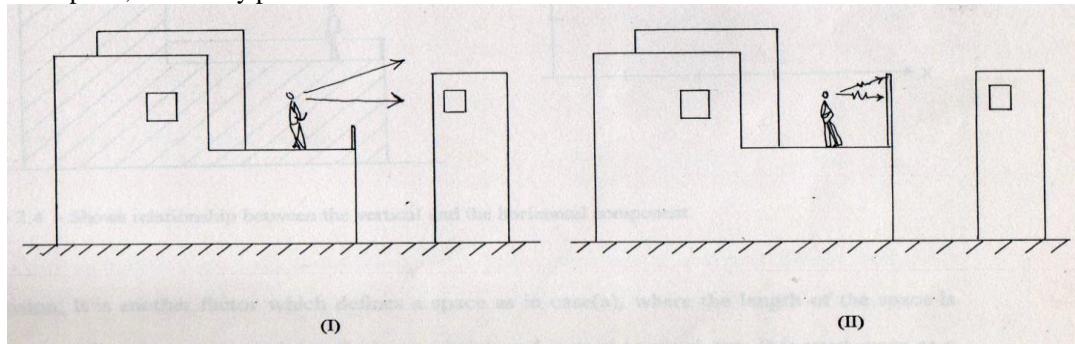


Figure 2: Showing different visual accessibility from a terrace

Scale: It is the relationship, which is established with the built mass and the horizontal plane. The space also establishes a relationship with human scale. For as the built mass around get more and more restricted in function. A storey height can be used for family purposes including sleeping at night. Two storey's you can still cook. Five storey's and it is just for the children to play.

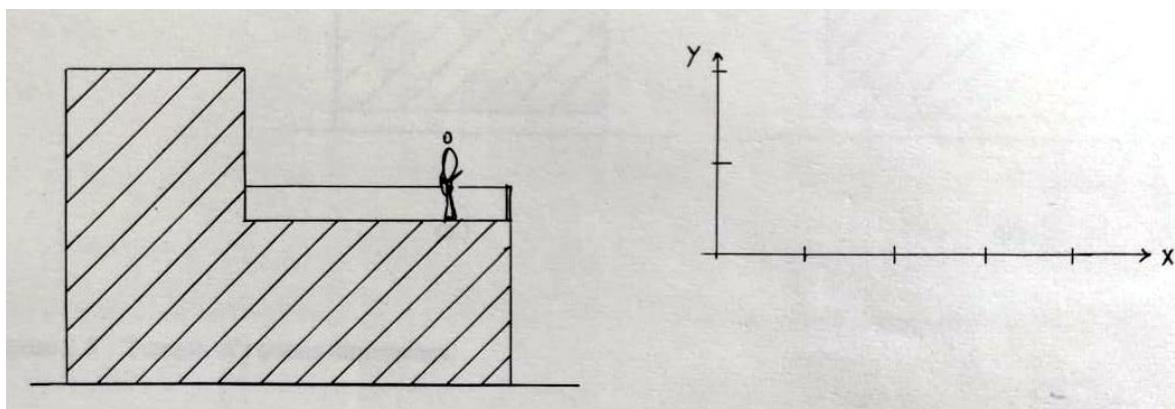


Figure 3: Shows relationship between the vertical and the horizontal component

Dimension: It is another factor which defines a space as in case (a), where the length of the space is equal or less than the average height of a human being and is used to stand out. It is used more as a balcony. But in case (b), the terrace is 1.5-2 times the human height at a perception scale, the space becomes more comfortable and can be termed as a terrace.

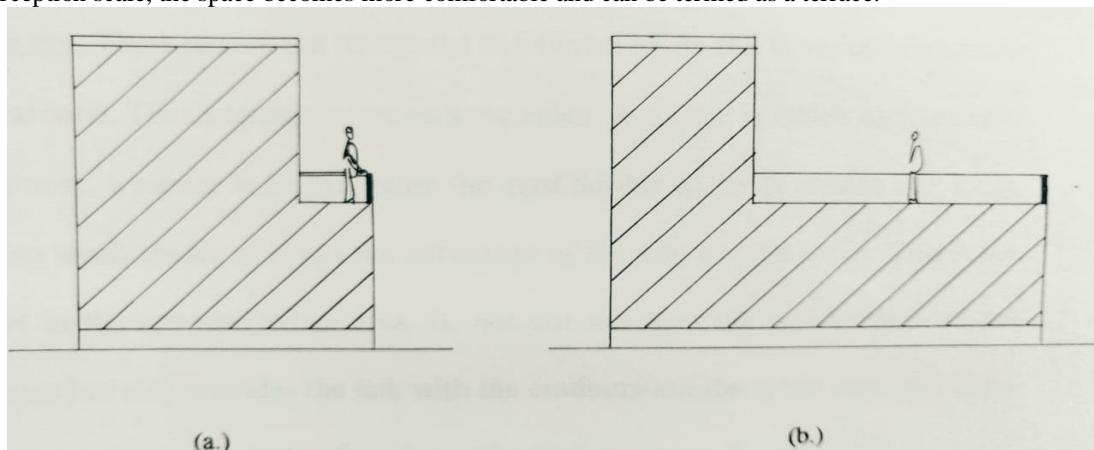


Figure 4: Terrace of various dimensions

Terrace space of a house presents great complexities both in terms of their meaning and determinants of their functional response. The functions of a terrace space in a house can be usefully grouped into four categories: a) Utilitarian functions, b) Social functions, c) Perceptual functions, d) Incremental growth.

III. APPLICATION OF TERRACE SPACE

According to Architect, B.V. Doshi, the porches, verandahs, open spaces, balconies, terraces etc., which constitute the form and the character of indigenous architecture, show the relations of classes and communities, their mutual actions and reactions. They also help us understand the connections with economy and the use of energy. He says "Space is not merely an open or an enclosed area. It also has a mythical sense which touches the inner perception of what it should be. Being based on outer as well as inner perceptions, space is again constantly modified according to the desire of the perceiver."

Architect Charles Correa says "Space is a resource. Hierarchy of spaces gets modulated with climate, income levels and cultural patterns of the society concerned." This relationship of built form and open space define each other to create a whole.

Utilitarian Function

It is the most tangible and measurable group of functions. It includes aspect like optical and thermal comfort inside the built spaces, providing access to dwellings and other use areas and the passive activities like storage. This can further classify as:

- Climatic Comforts: it is generally well recognized that both thermal and optical comforts are essential for efficient and pleasant living environments. A terrace space is used to get wind and light inside the built spaces. It helps in securing the optimum if not the ideal conditions of environment in relation to climate for human comfort, health and happiness. In a place where we have a hot and dry climate, the terrace is the most comfortable place to be in the evenings, place to sleep during summers and place to sit in sunny, cold winters.

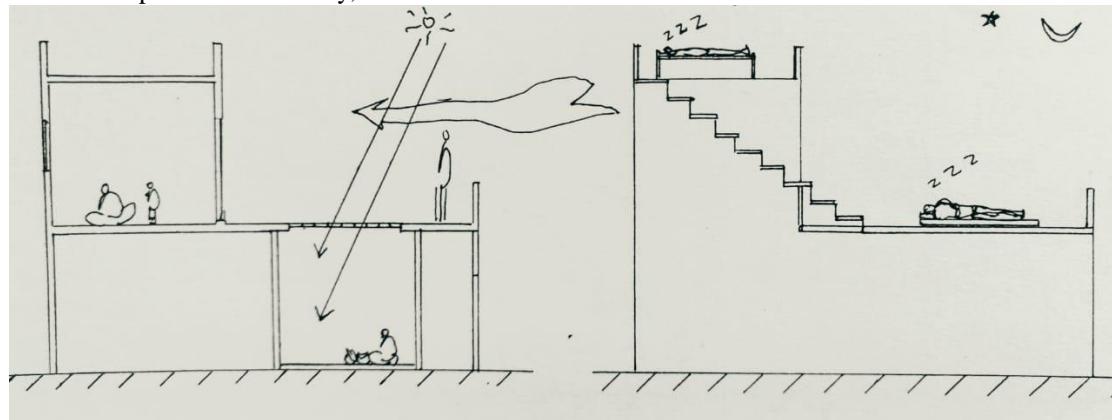


Figure 5: Use of terrace a) During day/winters b) During night/summers

- A terrace provides the space as lungs within the frame of a city, where the atmosphere is spoilt by air pollution. It gives one an experience of openness and freedom.
- A terrace acts as a buffer between public and private spaces. It gets privacy, insulation, a sense of spaciousness and scale to a building.

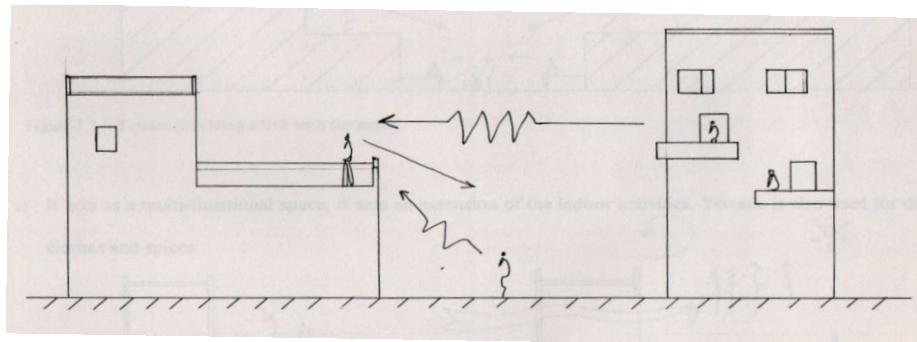


Figure 6: Terrace being used as a buffer

- A terrace can also provide linkage between the house and the street. It also generates view around from the house.

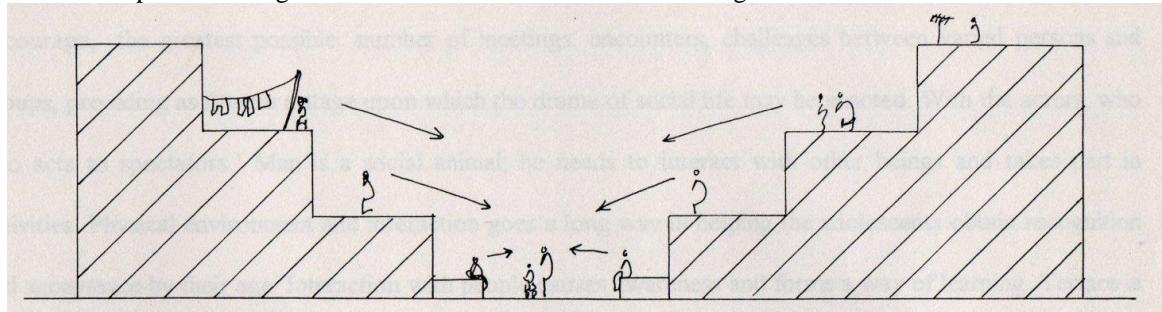


Figure 7: Terrace providing a link with the street

Social Function

This involves direct and active participation of human beings in these spaces. It includes social interaction, recreation etc. Martin Buber writes ‘The function of open space is to permit, to encourage, the greatest possible number of meetings, encounters, challenges between varied persons and groups, providing as it were a stage upon which the drama of social life may be enacted. With the actors, who also acts as spectators?’ Man is a social animal; he needs to interact with other beings and takes part in activities. Physical environment and interaction goes a long way in helping the adolescents obtain recognition and acceptance by their age. Interaction with people causes awareness and forms a way of learning. Terrace is one such space which enhances interaction. In traditional cities like Jodhpur during evenings one finds everybody of the house is on the terrace talking, playing etc. It is like the whole activity of the city has shifted to terraces.

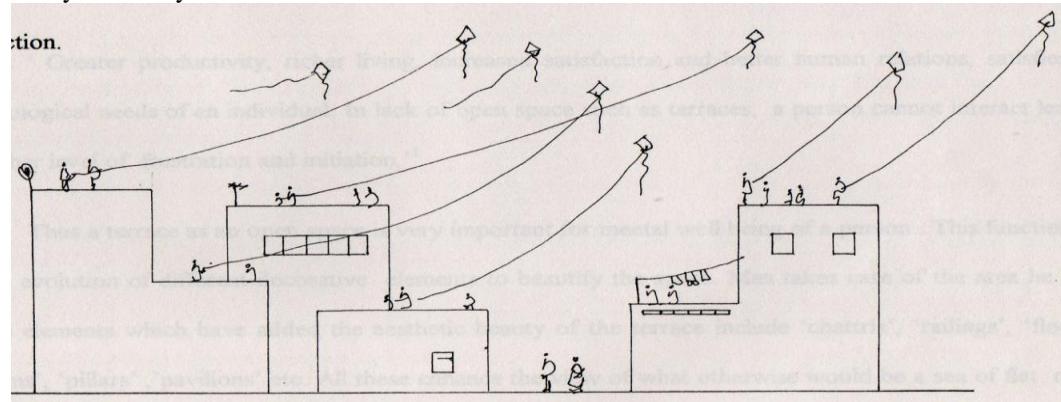
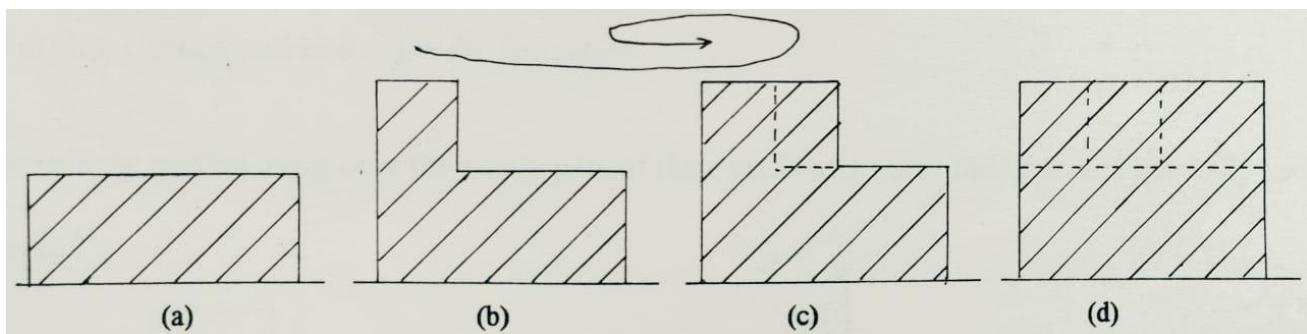


Figure 8: Terrace as a ground for kite flying

Incremental Function

A terrace space allows for further growth and prosperity. A terrace gives the owner flexibility to build a room over it and create a terrace above as shown in the figure.



IV. CASE STUDIES

JODHPUR

Historical Background

The city was founded by Rao Jodha Singhji in 1459 A.D. and is named after him. The fort and the city wall dominate the skyline from miles away, the fort and the battlements appear on the horizon as a symbol of an impregnable city. Jodhpur has a very rich cultural heritage. The city is divided into various ‘vas’, ‘chowks’ and ‘wadas’. The closely spaced buildings and the network of narrow streets efficiently shelter it from the worst of the elements, the sun and the hot dust laden winds. Variation between day and night temperatures is considerable. Jodhpur has an extreme kind of climate which is predominantly hot and dry in nature. During summers, hot winds blow throughout the day. The nights are, however, pleasant and cool.

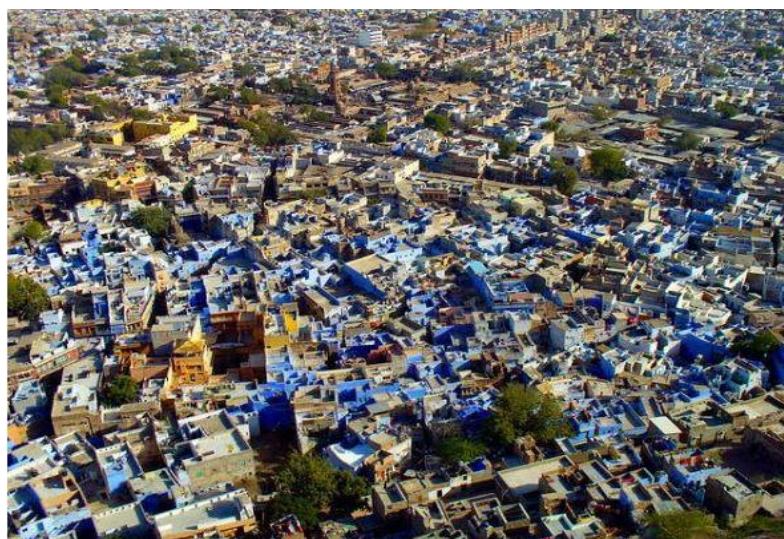


Figure 9: the Blue city: Jodhpur

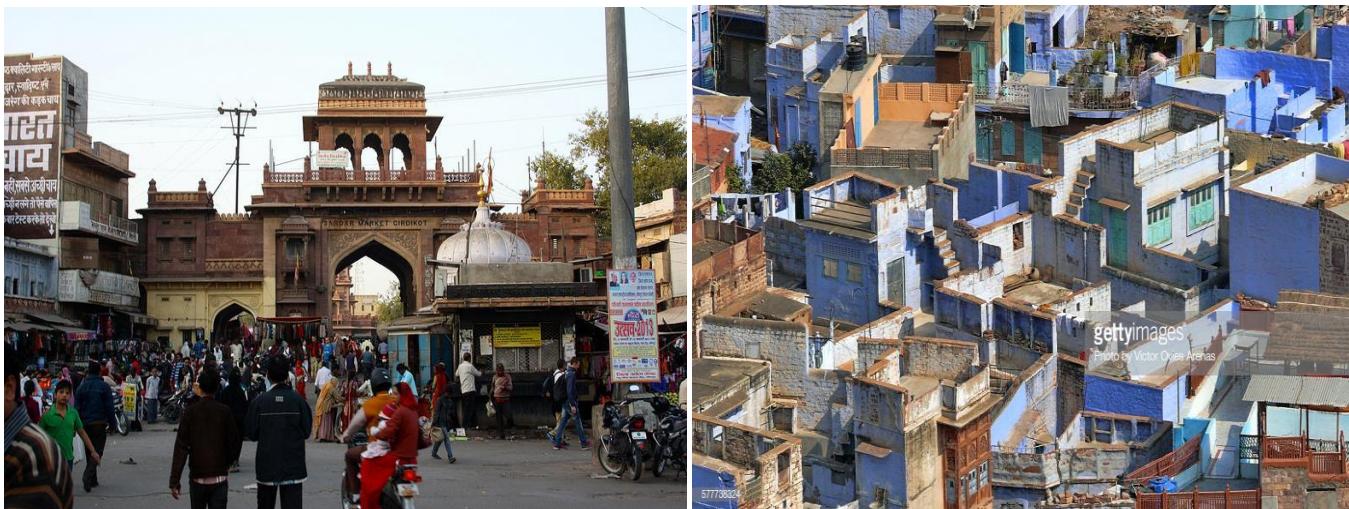


Figure 10: A View of open terraces and walls of Jodhpur

Salient features of a typical house in Jodhpur

A typical house of Jodhpur city is planned around a courtyard. It has an extension called the ‘chabutra’ at the ground floor which forms a part of the streetscape. It is usually used by elderly members of the family to sit out. There is an internal courtyard, around which the rooms are placed opening through a colonnaded corridor in some cases. This courtyard gets its light and ventilation through a ‘jali’ placed at the upper terrace level which is open to sky. It also helps to trap as much cool air as possible at night and to retain it during the day.



Figure 11: Terraces open to sky

OBSERVATIONS:

Scale and Dimension

The relation of the vertical and the horizontal is 1:1. Generally, a single storey has a terrace in front of it.

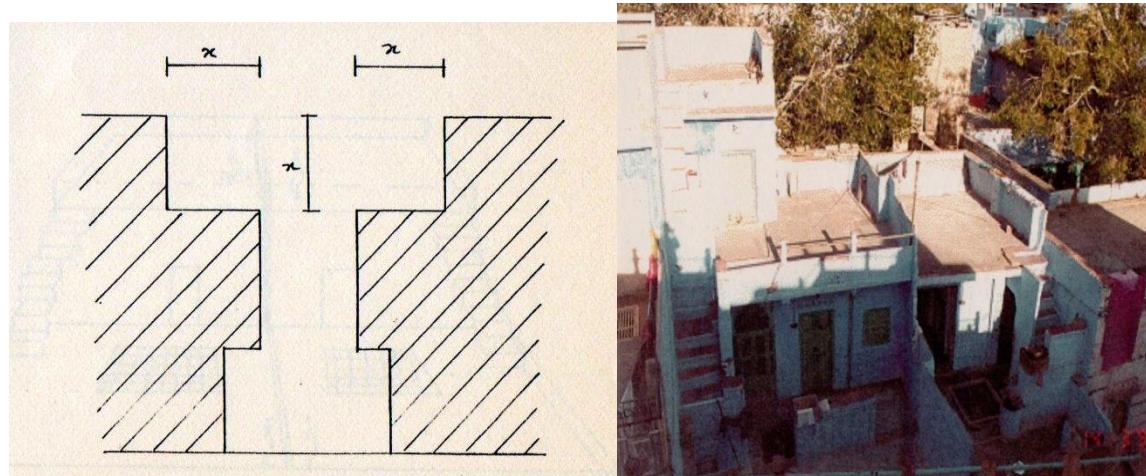


Figure 12: Relationship of vertical and horizontal components 1:1.

Relation

Terraces are generally attached to a bedroom or a storage space on that particular floor. Houses in Jodhpur have a common wall separating them. A terrace also shares an interesting relationship to the terrace on its side, to the terrace on the other side and the terrace it overlooks.

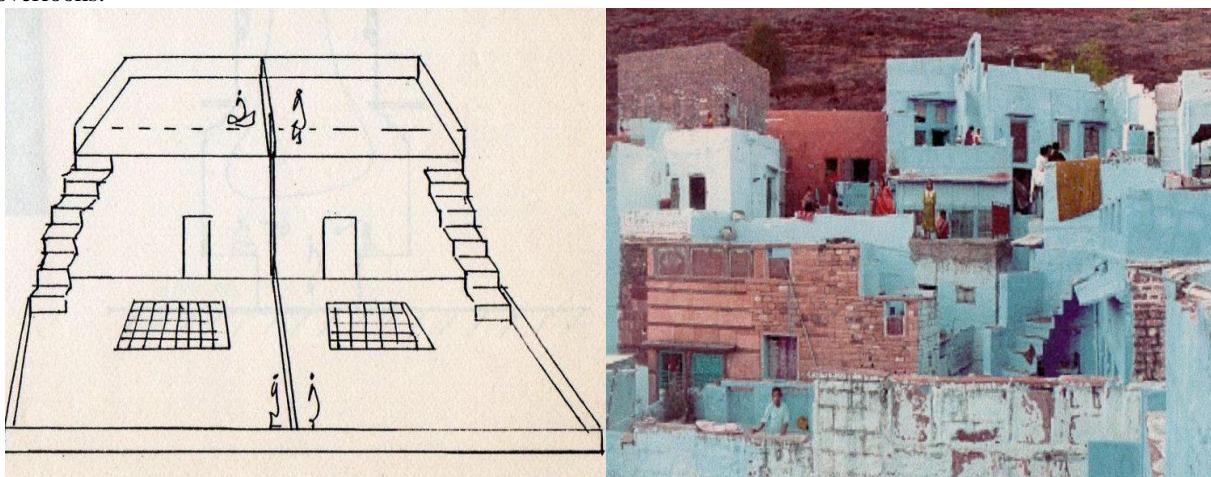


Figure 13: Relationship of one terrace to another

A terrace also overlooks the street below, thus playing an important role in the street activity. The figure below shows a typical section through a street of Jodhpur.

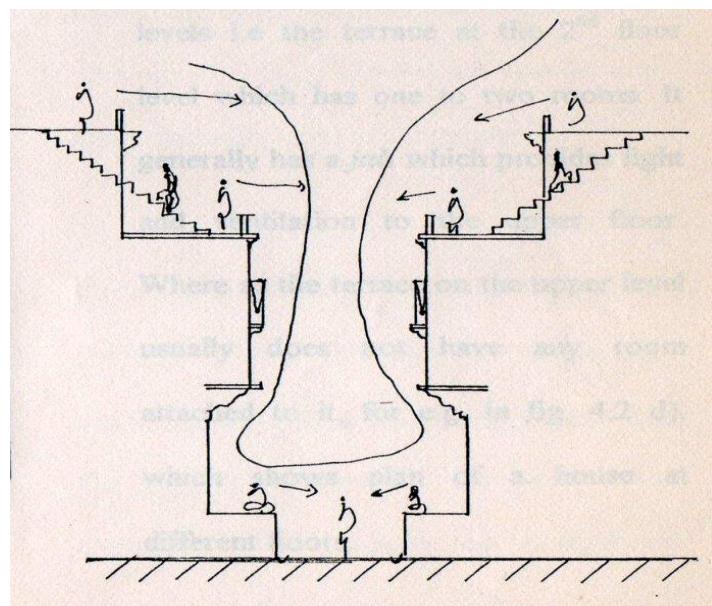


Figure 14: Typical section through a street of Jodhpur

Location

Generally terrace are located on the second floor as the height of the houses are generally is G+3. They have terraces at different levels i.e. the terrace at the second floor level which has one to two rooms. It generally has a jail which provides light and ventilation to the upper floor. Whereas the terrace on the upper level usually does not have any room attached to it, for e.g. in figure 15 which shows plan of a house at different floors.

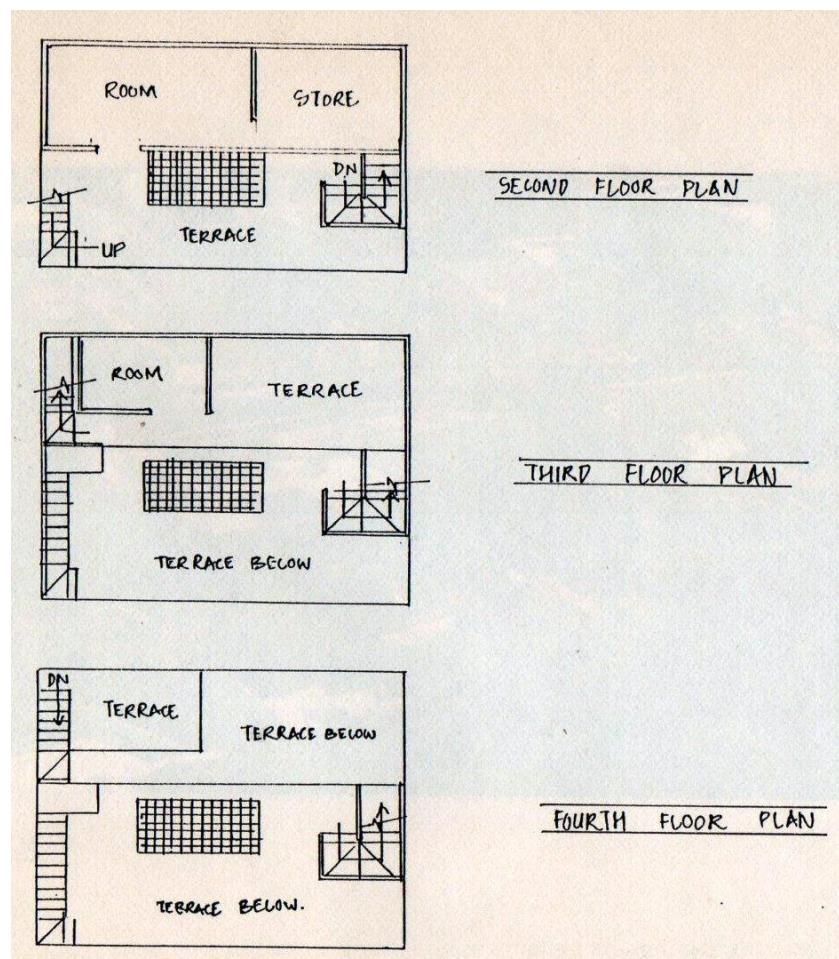


Figure 15: Plan of different floors of a house

Application

Due to streets being narrow and the ground coverage being 100%, the open space available in a unit is a terrace. Terraces are well conceived and are extensively used in all seasons.

In winter, many days of the activities take place on the terrace under the warmth of the winter sun. This includes sitting out, cooking, eating and socializing particularly for women. In summers, the terraces are very useful for sleeping out at night as nights are quite pleasant and sleeping in the open is quite common. Terraces at the upper level create an open space with relation to the other terraces. These terraces form an open platform which enhances activities and social interaction. In Jodhpur, terraces are used as a place where neighbors or family members interact with each other.

VI. CONCLUSION

There is a very clear and certain balance between the building and the open spaces. One discovers a passive response imparted to each other from both of these and to which the human factor imparts an active response through its behavior.

Applications of this multifaceted, multifunctional, flexible space which we know as a terrace are many, as been listed before in the study. But it is very important for the designer, who has to be very careful in designing a terrace space, that the terrace is utilized and not abandoned.

There are a few guidelines which have emerged from the study:

- It is essential to design for two important and distinct uses of a terrace. The first is for more public realm, i.e. for social interaction. Whereas the second one relates to the need to extend the domestic activities of the household, related to cooking, washing, drying etc.
- A terrace should not be treated as an end point but should relate the inside to a more beautiful, healthy and pleasing outside.
- A perfect relation and proportion between the terrace and the building has to be maintained.
- Bye-laws need to be revised to allow a designer more flexibility in designing a useful, sensible terrace space.
- A terrace is a resource and it must be exploited to the maximum and in the best possible way. If a terrace space has a good relation between the inside and the outside, there is no way of it getting destroyed. This study is not questioning the relevance of a terrace but emphasizes on the need and importance of a terrace space. The terrace should be treated as a spatial resource.

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