Is the highrise residential building suitable socially?

The high rise allows one to house huge numbers of people in single edifices, allowing one to treat town-planning on a large-scale. (Aregger & Glaus, 1967, 27). The highrise is " a means of organizing the shambles of a huge city without increasing its spread, of improving living conditions and traffic flow, and creating open spaces for recreation at the same time. (Aregger & Glaus, 1967, 33). Moreover, as suggested by writers such as Dewi Cooke, urban sociability can be promoted by high-rise housing since it encourages meetings with neighbours through the sharing of mutual facilities. (Cooke, 2012).

The residential high-rise building, offers acceptable and suitable accommodation for a certain part of the population: single people, couples and the smaller families. A highrise building is also capable of transforming an older, but well-preserved district into a visual slum. As a result of its height and mass, it tends to overpower its surrounding not only by its size, but all the other aspects of its appearance. (Aregger & Glaus, 1967, p. 57). As Earnest F. Burckhardt states due to the height of a high rise, people are relegated to an ant-like existence. The highrise apparently seem less worth fulfilling, and somewhat satanic. Other negative features of this massing include architectural monotony, aggressive exhibitionism vs. traditional horizontal housing that would merge into the landscape. Small towns, in particular, lose a certain ambience of intimacy and modesty. Highrise blocks have something loud and aggressive about them. (Aregger & Glaus, 1967, 58). The high rise is capable of causing tenant isolation and even depression. (Qureshi, 2004).

1. 2. 1. History and motive

The motive of designing a high rise lies in the tendency to " rise above the self," it is a fundamental human urge. Building into the sky satisfies a primeval instinct. Acted-out collectively, it signifies the desire to dominate. (Earnest F. Burckhardt, Observations on the question of highrise building). The three most common reasons for building these ostentatious high buildings are known to be: architectural emphasis of a certain place in the city, social distinction of individual, group of nation and demonstration of an abstract or concrete power, which can be summed up to be artistic aesthetic motive, sociological motive and religious motive respectively. (Aregger&Glaus, 1967, 14). In the west architects were interested in neither giving distinction to individuals or groups, nor in demonstrating any power, but simply wanted to create a vertical spatial element which would effectively " articulate and punctuate the historical mass of banal housing" that was rapidly spreading around large cities (Aregger&Glaus, 1967, 15). Furthermore, the originators of European high-rise building, particularly the residential type, had social motives in mind. Starting with the theory that architectural environment influences man's way of life, they hoped, by means of " differentiated, accentuated building, to promote the re-emergence or strengthening of human values and individuality instated of the growing tendency towards collective behaviour." They were successful. (Aregger&Glaus, 1967, 15). And in the contemporary period, the constant and increasing growth of today's major cities results in an ever-growing demand of the high rise building, as is the case in New Delhi, India.

1. 3 Massing – horizontal cities and vertical cities

1. 3. 1. issues related to cities (Jaipur) based on horizontal massing

The traditional cities of India can be studied to understand planned horizontal massed cities. Common problems can be delineated to understand the negative features related to this type of massing in the contemporary world, as described by the Housing and Development Corportation, with particular reference to Rajasthan.

Poor infrastructure is found in most of the towns: katcha houses and non-availability of water, sanitation and basic services to bulk of the rural population (23. 1) These areas have no planned drainage systems, management of increasing solid waste is thus becoming an issue in such cities. The restricted areas for defecation, open sewers, lack of clean drinking water, infestation by flies, rats and mosquitoes, cramped living, cooking and sleeping quarters and the exposure to industrial and chemical wastes, all make the basti a risky place to live in. The basti was also a major rubbish sorting depot (outsiders called it the kachraor rubbish basti) which makes it all the more hazardous, especially for young children. (Kumar, McNay. &Castaldo, 2008, p. 11)

Many traffic accidents are caused due to unsystematic and mushroom growth of such centres. There are no regular parking areas for trucks which remain parked within the right of the way of the highways. This invariably creates traffic bottlenecks hampering smooth flow of fast highway traffic. (23. 7) Maintenance of built heritage is another problem being faced by such cities.

Furthermore, due to migration of people from rural areas there is tremendous pressure on limited urban land and on already strained services. Land cost is escalating every year. Living in cities is thus becoming costlier by the day. At the same time quality of life is deteriorating. Due to the increase in population, ground water resources are depleting. On the other hand, due to migration of village youth to the cities, the village economy is getting adversely affected. Most affected villages are those located near the large cities and valuable agricultural lands are being converted in the name of city development. (23. 6)

Slums are an inevitable by product of urbanization. The growth of slums is a sign of people's inability to afford land and shelter through the normal market mechanism and the failure of the public sector to ensure equitable access of the same to the poor. Slum housing lacks in term of tenure, structure & access to services are which is deprived of civic amenities. These unauthorized colonies are further problematic since they are set up on agricultural land.

1. 3. 2. issues related to cities based on vertical massing

In the city of Melbourne, with the presence of the heritage buildings and the high rise, from the 71st floor of Melbourne's tallest building, the Eureka Tower, Melbourne's centre looks small and uneven. The low-rise heritage buildings contrast markedly with the glass and concrete towers that have sprung up in between. Still, there's that view – stretching far out to the north and west of the city and curving around the beaches past St Kilda. The vista from the Eureka Tower is vast and beautiful. (Cooke, 2010).

Another example is that of Pruitt-Igoe in St. Louis; built as part of the post-war regeneration, it was completed in 1956 but was demolished just fourteen years later after being beset by disrepair, vandalism and crime. For families with children, the high-rise complex did not offer them respite from poverty or crime, but merely gathered the ingredients for it together in one place.

In many cases, the high-rise ideal is progressively changed from " a citadel of modernism to that of a problem estate, a place of poverty, of aliens and illegal immigrants, petty crime, unemployment, with a high incidence of truancy and drug abuse" (Helleman and Wassenberg, 2004, p. 6). Against such negativism, it is no surprise that the resultant response was to halt high-rise public housing construction, and even demolition.

1. 4 Housing and factors which affect it

India is a country where thousands of people migrate to the city for reasons such as social mobility, job opportunities etc. When the architect designs housing factors such as regional identity, culture and traditions are not a priority of the designer. The architect designs to meet the demands of the city. In doing so, the architect controls the society's mode of living in accordance to what he thinks is right.

Patterns of housing have constantly changed to accommodate the pressures of land, materials, bye-laws, architectural styles and social cultural values. Human relationships and the associated cultural images are expressed by the built form of various levels, at neighbourhood level by the settlement, at community level by cluster of houses, and at the family level by the house

unit. Housing forms a large part of our environment, where physical and infrastructural facilities are shared amongst people. The way housing is built reflects the understanding and attitudes of society with respect to the climate, culture, architecture and the economy. (Ritu. 1992. p. 10).

The prevailing socio-economic order has the final say in the layout and building of housing. " The effect of recognizing this meant a real breakthrough in the theory and practice of town-planning. Until then, town-planning had been in conflict with a society that apparently refused to understand its purpose and thereby made the realization of it impossible." (Aregger & Glaus, 1967, p. 23). The town planners and architects gradually began to see the necessity of coming to terms with society if they were to build cities.

1. 5 Housing and present situation in Delhi and NCR

The overall shortage in EWS and LIG housing in India has been estimated at close to 25 million dwelling units by Micro Housing Finance Corporation. With rapid urbanization and increasing labour mobility arising due to the shift from the agrarian economy to the industrialised and service economy emerging in India, this shortfall of residential accommodation is increasing rapidly. With five people to a dwelling unit, the minimum living space required per dwelling unit is about 300 sq ft, which means that approximately 7, 500 million sq ft needs to be built. At a conservative cost of Rs 1, 000 per sq ft in urban India where most of the demand exists, the overall investment requirement is a staggering Rs 750, 000 cr. (Menon, 2009, p. 1).

1. 6 Social scenario in urban India with respect to housing

With the growth and development of science, technology, trade and commerce there has also been an enormous explosion of human population in modern Indian society. Such a high growth in population in relation to the changes in the life styles of human beings have turned people to be city oriented and agriculture which was previously the main engagement of people has gradually given way to occupations in the fields of industry, trade and commerce. All these factors have made a large section of the populace rushing to the cities creating thereby tremendous and unmanageable space problems. Dwelling space getting scarcer, there is little possibility for horizontal expansion in the cities to facilitate accommodation of such perennial flow of people. As remedial measures, a two-fold planning has been contemplated and is being acted upon. The first way out has been the expansion of city limits and inclusion of the contiguous suburbs within the ambits of the cities. The other remedial measure has been the vertical expansion of the available spaces providing maximum possible accommodation to as many numbers of people as possible through the construction of high rise buildings. In the developed countries of the world like the United States, Canada, The United Kingdom, France, Germany, China , Japan and others construction of high rise buildings started from the early twentieth century while in a developing country like India it began in the later half of that century. (Chatterjee, 2009. p. 85).

Through further research and study it shall be explored whether India is a suitable place for the growth of highrise buildings, also known as " skyscrapers." The highrise shall be studied in the context of housing. It is

known that the demand of housing has been escalating in the nation with the increase in urbanization, increase in population and many other factors. It shall be explored if a transition or transformation from horizontal based traditional housing to vertical high rise residential buildings is actually required in the present time. Furthermore, the dissertation would be a critique and analysis, considering the negative and positive perspectives of this transition in residential massing and its effects on the society. The social suitability of the highrise residential building in Delhi and the NCR shall thus be analyzed.

Need of the study

The study is required to create awareness of the consequences of designing vertically. This awareness would be of pertinence, especially today, because constructing high rise residential buildings is the current trend of the city of Delhi. The knowledge of the issues would help a designer to design. The study would also help individuals residing in a high rise by providing options to deal with problems, if any, which may occur due to a high rise. In other words, firstly the difficulties one faces while residing in a vertical massing will have to be recognized. Then these features can be addressed architecturally. Similarly, the positive aspects of living in a high rise will be delineated.

Scope of study

1. The traditional ' horizontal' massing and the approach of ' vertical' massing

its general positive and negative features with respect to any existing cities

The specific type of massing in study will be housing

The height of a building can be analysed with respect to social aspects. Relationships between the two can be figured out, if any exist.

The particular context chosen for analysis is the area of my current residence, the capital city of India, Delhi. Since this is a place which can be physically experienced and observed firsthand.

Identification of case studies

The housing societies where a survey shall be conducted are:

Low rise housing – four storey building – Sector B-10, Vasant Kunj

Med rise housing – ten storey building – Eligibal CGHS – plot no 38, Sector 10, Dwarka

High rise housing – twenty storey building – Gurgaon

Limitations of study

The analysis, to some extent, is based on the analysis of other writers, architects, sociologist's etc, since a significant amount of firsthand experience is not available.

In order to analyze human response to a high rise residential building and to understand its effect on the society one should talk to people. But due to the time available this cannot be done extensively, but at a small scale.

Consequently, interviews, questionnaires and surveys would be followed by shortcomings such as:

Sample size: analysis will have to be based on a sample population, which may or may not reflect the social effects of the high rise of the entire region of Delhi accurately

People: a number of subdivisions exist within the sample size, which have to be studies separately, such as male, female, children, the elderly, age groups, generations, classes within the society e. g socio-economic strata etc.

Area, location: particular areas are chosen according to accessibility

Biases, cultural preferences and many other issues may arise

General trends: The subject of study, human response to a high rise is subjective in manner. Conclusions or analysis can be drawn by general trends observed only.

Results: These results may or may not be representative of the entire population in study.

The highrise residential buildings have been a part of other parts of the world for a longer period of time than Delhi. Consequently, the majority of the literature available or critique of the highrise is from a context different from the context in study.

When considering the situations abroad, some arguments may or may not apply to Delhi for reasons such as cultural preferences, lifestyles and differences in social-economic strata.

Research Methodology – Find attached flowchart and Questionnaire

The prepared questionnaire will be carried out in the three housing societies.

A minimum number of fifteen people will be interviewed, five people within

each age group i. e. < 12, 12-30, 30-60 and > 60.

2. Highrise living

2. 1 Human response to tall buildings

High rises have been accused of causing many unpleasant outcomes,

including fear, dissatisfaction, stress, behavior problems, suicide, poor social

relations, reduced helpfulness, and hindered child development. Early

studies and reviews concluded that high-rises are, on balance, not

bene¬)cial for residents. At the societal level, they are accused of burdening

existing services and infrastructure, worsening tra¬fc problems, and

damaging the character of neighbourhoods (Gifford, 2007. p. 2).

2. 2 Social implications of built form – analysis of different types of spaces

The design of urban development's, including high-rise buildings, can

influence the social capital and sense of social connectedness amongst

residents. For instance, Leyden in 2003 completed a study on the

relationship between urban design and social capital and found that

residents who lived in mixed-use developments with opportunities for

walking rather than driving as a mode of transport, had a higher level of

social capital and social cohesion than those who lived in developments

lacking these features. (Wilson, 2008, p. 6).

Social relations may be divided into two main domains, relationships within a dwelling and relationships among neighbours in the building. One review concluded that high-rise residents have poor social relationships, both among themselves and toward outsiders (Korte & Huismans, 1983). In one within-dwelling study in a building in which residences were equal in floor area and supplied furniture, roommates on higher floors got along with one another better than roommates on lower floors (Schiffenbauer, 1979). However, as reported earlier, Edwards, Booth, and Edwards (1982) concluded that high rises are associated with greater marital discord than low rises. (quoted in Gifford, 2007, p. 9).

An examination of friendship patterns within a high rise showed that proximity is a major determinant of social interaction (Bochner, Duncan, Kennedy & Orr, 1976). Experience suggests that most social interaction occurs among residents of the same floor; if this is so, then buildings with many floors will include a few friends and acquaintances for the typical resident, and many strangers from other floors. Ginsberg & Churchman, in an Israeli study of women who lived in 8- and 20-storey buildings found that 97 % knew at least someone on their own floor, and 67 % knew everyone on their floor; in contrast, 36 % knew over 30 % of all people living in their building (1985). Most women did interact with neighbours, yet reported no problems with privacy. In a large-scale study in Toronto, Michelson found that high-rise apartment dwellers tended to choose friends outside the building, from school or work (1977). These residents viewed their neighbours negatively and as dissimilar to themselves, except that they were approximate financial equals. In Hong Kong, a high-rise, high-density

city, interview results suggest that the overall sense of residential community is low and that where respondents had a very strong sense of neighbourhood, their interactions were often work- or school-based, with colleagues or schoolmates living in the same area (Forrest, La Grange & Ngai-Ming, 2002). (quoted in Gifford, 2007, p. 9).

Studies that compare housing forms suggest that high-rise dwellers may have more respondents reported knowing about twice as many families as those in low rises (Williamson, 1978). However, knowing more neighbours did not translate to close relations; the German high-rise residents reported less visiting and borrowing among their neighbours, and that their closest friends were more likely to be colleagues at work than neighbours. Both the German and Italian respondents said that they would like to have more friends among their neighbours, and that they believed they would have more friends if they lived in a smaller building. Outdoor socializing was examined in a study of three housing types in a low-income neighborhood: an old ghetto neighbourhood of low-rise tenement houses, a traditional high-rise housing project and an innovative high-rise housing project, where a creative outdoor design had been added to encourage outdoor use (Holahan, 1976). The old neighborhood and the innovative project showed higher levels of outdoor socializing than did the traditional project, which suggests that high-rises will discourage social interaction in their vicinity but that this can be overcome by setting aside an area designed to encourage social interaction. Nature also seems to facilitate social interaction. Researchers observed the presence and location of trees and the presence and location of youth and adults near a high-rise and a low-rise public housing

development (Coley, Kuo & Sullivan, 1997). Spaces with trees attracted larger and more mixed groups of people than did spaces without natural elements.

High-rise residents may have more acquaintances but fewer friends because residents of high rises simply encounter a larger number of people in their building than residents of low rises (Churchman & Ginsberg, 1984). More of these people are strangers, too, but one gets to know some of the strangers, over time, at least superficially.

Consistent with the notion that lower levels are associated with more friendships, garden apartment residents reported having three times as many friends in the building as did high-rise residents (Boyd, Morris & Peel, 1965). Similar results were reported in another study: three-quarters of low-rise residents reported they had made good friendships within their project, but only half of the residents of a high rise could make the same claim (Stevenson, Martin & O'Neil, 1967).

Friendship formation depends on multiple factors, however, differences between the low- and high-rises in the friendship-related attitudes can be found. High-rises were experienced as lower in involvement, support, order and organization, but higher on independence. (Gifford, 2007, p. 10).

Research is unanimous in the finding that rates of helping others are lower in high-rise buildings. The nature of most high rises supports anonymity and depersonalization of one's neighbours, so that living in a high rise tends to have both the advantages, such as greater privacy and freedom from unwanted social interaction and disadvantages, less intimate social

interaction and less caring about anonymous others as large cities. (Gifford, 2007, p. 12).

The gist of the evidence about social relations is that residents of high rises encounter many more other residents, know of or about more others, but have fewer friendships in the building, per capita, than residents of low rises. Social interaction is more difficult for residents to regulate. This can lead to withdrawal, which can lead to loss of community and social support.

The structure of high rises usually is such that one is not likely to meet residents of other floors except in elevators and lobbies, which are barely more personal than the street. Thus, one lives physically close to many others, but in practice is limited to those on one's floor for the sort of encounters that might lead to friendship, such as borrowing food or talking while children play. Male-female differences may moderate friendship formation in high versus low rises. (quoted in Gifford, 2007, p. 12)

2. 3 The impact of high rise housing on neighbourhood livability

Residents of public high-rise housing estates are likely to perceive different aspects of their housing and neighbourhood in different ways, dependent on their sense of belonging. Some residents may explain stigma in reference to the irresponsible behaviour of fellow residents (Hastings, 2004).

Others may not feel connected to their neighbourhood and may not use community facilities (Hastings, 2004). Forrest and Kearns (2001) suggested that communication between residents shapes the image of their neighbourhood and stated: " neighbourhoods seem to acquire their identity

through an on-going commentary between themselves and this continuous dialogue between different groups and agencies shapes the cognitive map of the city and establishes good and bad reputations" (p. 2135) (quoted in Wilson, 2008, p. 5).

However, the social connectedness of urban high-rise developments may influence residential satisfaction. Halpern (1995) suggested that if people are in frequent contact with their neighbours, then the objective quality of their house makes little difference to their level of residential satisfaction. On the other hand, Halpern (1995) asserted that if people are not in frequent contact with their neighbours then consequently, the objective quality of their house has a large impact on their satisfaction. In other words, " residents who are involved in their local community tend to be happy with where they live regardless of the physical quality of their homes" (Halpern, 1995, p. 113). (quoted in Wilson, 2008, p. 6).

Baum and Palmer (2002) found, from their study of residents' perceptions of the influence of place on levels of social capital, that there exists a direct link between urban infrastructure and social capital. These authors concluded that higher levels of social capital are likely to occur in neighbourhoods where residents have a positive image of their environment and where their environments are green with open spaces Additionally, natural features and open spaces were found to facilitate a sense of community in new urbanist communities. (quoted in Wilson, 2008, p. 6).

As well as green spaces contributing to urban neighbourhood's social connectedness, pets have been found to facilitate social capital too. A study

completed by Wood, Giles-Corti and Bulsara (2005) investigated the role that pets can play in promoting social capital, by surveying a random sample of 339 Australian residents. These authors found that pets promote opportunities for their owners to have social contact with other pet owners, neighbours and members of their community. Furthermore, pets were found to motivate owners to participate in community events and to make use of community facilities (Wood, 2005). (quoted in Wilson, 2008, p. 7).

2. 4 The family in highrise housing

2. 5 Children in highrise housing

Innumerable studies suggest that children have problems in high-rises. It is known " for…families with small children, the evidence demonstrates that high-rise living is an unsuitable form of accommodation" (Conway & Adams, 1977, p. 595.) Another study concludes that " high-rise housing does not provide an appropriate living environment for preschool or school-age children because too few of the attributes of a single-family house have been accounted for…" (Cooper Marcus & Hogue, 1976, p. 34. This has not seemed to change with time. Children under 8 are usually not allowed to go downstairs by themselves, and if they were allowed to go down, parents found it difficult to supervise their play.

The problems range from fundamental child development issues to everyday activities such as play. For example, a Japanese investigation (Oda, Taniguchi, Wen & Higurashi, 1989) concluded that the development of infants raised above the fifth floor in

high-rise buildings is delayed, compared to those raised below the fifth floor. The development of numerous skills, such as dressing, helping and appropriate urination was slower. Children who live on higher floors also go outside to play less often (Nitta, 1980, in Oda et al., 1989). A study in India recognized that children's difficulties are not solely a function of living in high rises (Oke, Khattar, Pant & Saraswathi, 1999).

Learning to read may be affected by the floor level on which children live (Cohen, Glass & Singer, 1973). The researchers measured sound levels, ability to discriminate auditory stimuli, and reading skills in children who lived in high rises built above a major highway in New York. Children in lower-level apartments, Gifford 10 discriminate sounds and had poorer reading skills, than children who lived in higher floors. Apparently, where traffic noise is a considerable factor, high rises may be good for children who live higher up in high rises.

Children's play clearly is affected, as parents in high rises either keep their children indoors more often, which means close protection or over-protection in an indoor environment, or allow them outside, many floors away, which can result in under supervision. One outcome is that children in high rises, on balance, spend more time playing alone and in restricted play (Gittus, 1976). Perhaps this is why there is evidence that high-rise raised children have lower levels of motor ability than children reared in single-family dwellings (Crawford & Virgin, 1971; cited in Michelson, 1977). (quoted in Gifford, 2007, p. 11).

2. 6 The elderly in highrise housing

A study by Kweon, Sullivan and Wiley (1998) found that elderly public highrise housing residents' sense of community was stronger when they spent time in outdoor green common spaces, areas with trees and grass. (quoted in Wilson, 2008, p. 6).

Welfare and the types of living arrangement for the elderly are also gaining wider attention. The aged should be supported by their families, the government and the community, to live and be integrated into the mainstream community for as long as possible (National Council of Social Services, 1996). Hence, planning and designing of housing with essential supporting services should be carried out for this group of people who are more at risk and deserving of care and consideration.

2. 7 Secondary studies done on residential responses on high rise living

3. Primary study – Case studies done in Delhi and NCR

3. 1 Methodology

A questionnaire based survey is conducted in housing societies of varying heights (sample questionnaire attached). The questionnaire aims to find social implications with respect to heights of residential buildings.

The same number of people are surveyed in all the case studies i. e 15 people, further divided equally in the age groups: teenager, adult and elderly.

Data is further analysed to understand the topic in study.

3. 2 Selection criteria of case studies

Distinct variation in height (4 storey, 10 storey, 20 storey)

Within Delhi or NCR

3. 3 Data collection through Questionnaire

3. 3. 1. Low rise housing, Vasant Kunj – Not done yet

3. 3. 2. Med rise housing, Dwarka

Elligible Co-operative Group Housing society (10 storey building)

Address: Plot no 38, Sector 10, Dwarka

3. 3. 3. High rise housing, Gurgaon – Not done yet

4. Analysis of Data

5. Findings

According to the case study done in Dwarka, a pattern can be observed between the liking of a particular type of housing i. e low, medium, high and the generation. It is found that teenagers, today's generation prefer the highrise. Adults prefer medium rise housing – walk ups. While the elderly prefer the bungalow system, the idea where one can say this particular piece of land is ' the property of my family and me.' A highrise, however, stresses on community land or space, then the unit or apartment becomes the property of the individual owner. The finding exemplifies how one becomes accustomed to particular conditions during their years of development and seems to become their preferred style of living.

It is also found that there are a number of spaces where people interact such as the community hall, gym, badminton court, children play area, the road which runs along the periphery of the society – which acts a