Urban Renewal and Redevlopment:
Identification of Appropriate Planning Intervention for Indian Cities

Dhote K.K., Silakri R.K. and Onkar P.
Maulana Azad National Institute of Technology, Bhopal, M.P, INDIA

Abstract

Unlike their western counterparts, Indian cities didn't have the fortune or misfortune of being demolished in the world war. Most of the Indian cities are built in layers bearing testimony to various rulers during different periods of time and amalgamated to give the present shape. The term Urban renewal and redevelopment which are often used as synonyms have definite meaning and application depending upon the context. The term renewal was defined as fashionable American term of the 1950s, which really meant large-scale destructive redevelopment of urban area, often it was adopted in the United Kingdom to mean the re-planning of towns or urban centers, to modernize them and provide access for traffic, whereas, redevelopment refers to demolition of blighted areas and development on the same site. It is seen as solution to existing problems of congestion and poor design which sometimes results in wasteful of resources, destroying communities, and creating urban deserts until building takes place. In India after independence in 1947 the earlier focus of development was agrarian base. It was only in the 1990's, the era of economic liberalization and globalization it was realized that the cities are the engines of economic growth. This resulted in shifting of focus on urban development. In 2005, the government of India launched Urban renewal mission specifically for the metro Politian regions and million plus cities. It is necessary to understand the complex phenomenon of urban renewal and urban redevelopment either for the degrading inner city or the blighted areas of the newly developed areas in Indian context before adopting any intervention. A clear understanding of physical and social infrastructure and the community participation for the localities in question has to be ascertained before going through with the planning interventions in terms of renewal/ redevelopment or none. What are the factors responsible for renewal or redevelopment and their interrelationship is the prime concern of the planners. In this research paper it has been tried to find the answer for above questions and in the process has emerged with a logical framework that tries to answer the perpetual dilemma of the planners. The logical framework that can (produce consistent results, and hence) help decide on the Urban Health and the remedial approach best suited for the given case, while maintaining a disadvantaged friendly perspective. It tries to help in prioritization of the above-mentioned methods and attempts to develop an appropriate tool open for duplication in similar Urban Scenarios.

Keywords: Urban renewal, redevelopment and neighborhood intervention.

Introduction

Transformation is the single most consistent factor in the life of a city. How to control or direct that transformation to get the best combination of benefits from renewal and redevelopment is perpetual for the planner, as how to decide for the spatial sustainability as per its available potentials, they are also dynamic in nature and inevitable for change[1] The problem that planners have today are too complex to be solved either by speculative approach based upon experience, intuition and imagination, or by an inductive analytical approach based on the detailed study of particular parts of problem concerned. Regarding urban settlements as complex systems; the planners is faced with prime need of understanding the work of them, so that the diagnose problems and assessment of alternative designs can be done effectively. One fact of this revolution in approach involves the development of mathematical models, which attempts to simulate the structure of land uses and activities in cities and region[2].

The recent launching of Jawaharlal Urban Renewal Mission (JNNURM) is a landmark in the history of post independent urban planning scenario as it has brought in a paradigm shift in the role of government form provider to facilitator[3].

The JNNURM has two sub missions first the urban infrastructure and second the basic services for urban poor. Under such circumstances it is really important to identify appropriate intervention. The inner city seems to be suitable cases of renewal, whereas the blighted areas demands for redevelopment[4]. The present research aims to identify and prioritize the areas for Urban Renewal or Redevelopment and develop a logical framework to support and reinforce the conventional instinct based decisions for the appropriation of desired method i.e. renewal, redevelopment, renewal andredevelopment both or none for given neighborhood unit. The focus is on understanding the urbanization system and its impact on urban areas for consideration under the Urban Renewal or Redevelopment. It also tries to understand how the

factors (Physical, social and economic) and determinants (housing, road, water supply, sewage, storm water drainage, social infrastructure transport, solid waste management environmental condition, residential satisfaction, sense of community, willingness to improve living condition) play a prominent role in renewal or redevelopment.

Material and Method

The decision of intervention largely depends upon the status of housing, infrastructure and socio-cultural aspects. To understand these aspects the determinants were developed from theoretical background established on the three pillars namely physical, social and economic factors. Also it was found necessary that the listing of determinants prepared for the field study are equally rooted in the prevalent norms and respect and benefit from the fine tradition of standard institutional practices. Whence a strategy was devised, which improvised upon the standard questionnaire of the Town and Country Planning organization, government of India (Guide to Preliminary Planning Surveys of Urban Areas including Land Use Classifications) and changes were made upon it and a list of determinants was finalized, all the while keeping in mind the three pillars established on theoretical ground. Finally, the determinants were condensed, as an outcome of the process and are presented in Table no 01.

The Study Area: The study was conducted in the Bhopal city, the capital of Madhya Pradesh and one of the million plus city of India selected under the JNNURM**.** The origin of Bhopal is said to be before 1010AD, however the present morphology roots from the 18th century with the establishment of a fortified the city ruled by a feudal lord, which in its generated form exists as the current downtown/old city of Bhopal. In 1956, Bhopal became the capital of the Central Province of the state of India. The Capital city status and the incapacity of the small feudal fortification to contain the population and services required for the administration of the province lead to the formation of a satellite settlement of the Capital city and its inhabitants, which is now regarded as the new city predominantly consisting of government housing. Moreover Bharat Heavy Electrical Limited public sector industrial unit was established during the same period, and for factory and township land was allocated 3 Km away from the then municipal boundary.

All this while the growth of the city brought in more and more economically disadvantaged people in search of jobs as workers in the factories and as house helps for the administrators living in the government housing and richer dwellers of the old town. The widening gap between the three areas and rupturing of the traditional industrial and economic infrastructure lead to a lot of people succumbing to economic pressures and they were left with no choice but to join the squatter and create an enormous agglomeration of slum dwellers all around the potential job centers. The disadvantage is not limited to the squatters or the slum dwellers alone. The population within the compact and congested downtown

of Bhopal is faced with aged structures and a density better suited to the fortified settlements of the past era and definitely not suited for the automobile driven population of contemporary times. Also the newer developments around the area have led to filling up of peripheral open spaces, which used to provide a relief from the hustle and bustle of the inner town. The government housing, which is relatively habitable having sufficient provision for transportation and other services is also moving towards a state where most of the structures being already more than 50 years old need proper renewal. The outgrowth of the government housing is faced with issues of improper service provisions, proximity to highways and lack of service roads, poor access to job centers and commercial hubs[4]. Thus the three distinct forms of settlement with their typicality intact in the form of distinct social, economic and physical conditions (and their respective deprivations) that they offer to their inhabitants were finalized i.e. category A: inner city, category B: government housing areas and category C: slum area. After identifying the wards under different categories land use analysis was carried out in each category to find the three most distressed wards for the field survey.

The Field Procedure: Procedure for data collection was carried out in a formal procedural manner. The demographic data of the study area was taken from Census 2001 and Department of Statistics, M.P. The information regarding planning and digital maps was taken from T and CP of provincial government, Bhopal. The ward wise map was taken from BMC. Secondary data from census, urban local bodies (ULBs) and different parastatal agencies were collected for demographic analyses and assessment of availability of social and physical infrastructure. A primary study was conducted in the nine wards for assessment of physical conditions. The researcher conducted the interviews and focus discussions in all the nine wards, the responses of which are shown in Table 01.

The questionnaire was developed to survey the wards, which sought opinions on a 5-point rating scale on questions based upon the pre-established determinants. The survey collected 80 samples from each ward for stratified random sampling. Care was taken that the opinion of various persons across the cross section of society was included. Hence a total of 240 samples in each category and 720 in all were available as the primary data for assessing the method to be applied for individual sample.

Determinants: To assess the housing condition following sub heads were selected. The first three headings: plot size, ground coverage and F.A.R. will give the information of prevailing building byelaws and the regulations. The next three headings: type of construction, age of the building, condition of the building will give the physical status of buildings and the rest two headings will give the information regarding ownership or property rights of the buildings. In renewal and redevelopment consideration the decision is made on the physical condition of the structures, living conditions within them and the legal status guiding the perceived change though not in a particular order.

Table-1
Response of Focus Group Discussion and Interviews

1	Interviews of concerned persons	Interviews of five persons from the ward. Essentially including the corporator, the sitting corporator and one official from ULB	They showed their concern about services, property tax maintenance and encroachment
2	Focus discussions with residents	Discussions were with the residents in a group of 5 regarding the problems of wards	The male respondents raised the issue of development, parking problem, roads and services. The female respondents showed their concern about local shopping, street upkeep and garbage disposal
3	The questionnaire was updated as per the feed back of 1 and 2.		

To assess the condition of physical infrastructure the determinants taken were the roads, water supply, sewage and storm water condition. To assess the condition of social infrastructure the distance of primary school, distance to shopping for daily needs, distance to recreation and distance to community hall /social gathering space were taken into consideration. To assess the condition of transport facility the determinates taken are the distance to work place, Mode of travel to work place, Mode of travel to school / college, Traveling time to place of employment and Type of vehicle. For solid waste management collection of garbage and the disposal of garbage were taken. To assess the environmental condition of the ward the upkeep of streets, air and noise pollution are considered.

To assess the residential satisfaction among the residents the duration of stay and the willingness to move from the present location was recorded. The frequency of participation in social activity in neighborhood and feel of friendliness in neighborhood was taken into consideration to find out sense of community among the residents. In the same manner the willingness to improve living condition was also recorded, the main feature was to find how much amount and for what component people are ready to pay on their own.

Results and Discussion

As a result of the field exercises data collected corresponding to the determinants, and then sought the decisions of jury on each sample regarding the optimum method to be applied to each sample was taken. Once the researcher had the codified information in the form of the determinants and method decisions, reverse statistical analysis was necessary to decodify the mathematical function behind the decision process (assuming that the decisions were based solely on logic and that such logic can be defined as a mathematical function of finite complexity). Now assuming the method decisions as three classification variables (namely renewal, redevelopment and none) and quantitative variables as determinants, the discriminate analysis was found as appropriate statistical approach in consultation with the statistical expert.

Once the distinct samples were collected in the form of filled up survey questionnaire corresponding to methodologically established determinants the findings were put up in front of a jury and opinions were sought upon every single sample regarding the method to be used for intervention. In this stage the jury came up with method decisions for different distinct samples on how they performed corresponding to the established determinants. Hence the discretion of the jury was codified in the form of their responses to different distinct samples. This logic of discretion was purely based on the responses to the questionnaire and hence it can be concluded that it was devoid of external influences and based on logic and logic alone. This logic was used to develop a tool/ scale which would generate automated decisions based on the established logic. The decisions of the jury or the subject expert based on the determinants are as presented in table no 02.

Once the method intervention given by the expert on the basis of method intervention the discriminate analysis was carried out to device a tool to be used for duplication in identical scenario. The discriminate analyses treat data with one classification variable and several quantitative variables[5.] The purpose of discriminate analysis is to find a mathematical rule, or discriminate function, for guessing to which class an observation belongs, based on knowledge of the quantitative variables only or a set of linear combinations of the quantitative variables that best reveals the differences among the classes.

Now this computer based tool open for duplication in similar Urban Scenarios and can be used at local levels by simply gathering the information on given defined determinants. The tool will provide them the method of intervention, whether the neighborhood for which the data is collected is suitable for renewal or redevelopment.

Table-2
Method Decision of Intervention Based on Responses

S. No	Determinant	Description	Result	Implication	Intervention
1	Housing	Relationship in plot size and built up area	The floor area ratio was more in inner cities	It implies high density housing stock should be retained during renewal	Renewal
			The floor area ratio was very low in government housing	It implies low density housing with adequate infrastructure	Re-densification of housing to optimize use of infrastructure
			The floor area ration has no significance in slums	Since most of the houses have temporary roof structures are ground floor only	Redevelopment for utilization of land
		Housing condition	In inner city, it was mix of RCC and masonry superstructure	Obsolete and abandoned structures can be demolished and rebuilt	Renewal with urban design regulations
			The government quarters built almosr 50 years ago are now in dilapidated condition	The infrastructure and services, particularly roads are in good shape	The structures can be replaced with additional floors
			The structures in slums are mix of semi permanent and permanent	The permanent structures to be retained and semi permanent can be replaced	Redevelopment for services and housing stock
		Building height	In inner city the predominant building height if G+1, G+2 with few structures of G+4 height	Building heights should be restricted to control population density	Renewal
			The building heights are uniform in government housing	The building heights can be increased to optimize utilization of infrastructure	Redevelopment
			The structures in slums are single storied	Structures need to rebuilt with increased stories	Redevelopment
2	Road	Width	In inner city roads are narrow for vehicular movement	Street widening if feasible or creating parking lots	Renewal
			In government housing width is adequate	No intervention required	None
			Streets are narrow in slums	Street widening required	Redevelopment
		Pattern	Geometrical , dense and pedestrian friendly	Not feasible vehicular movement	None
			Geometrical and uniform ideal for vehicular movement	No intervention required	None
			Organic and haphazardous pattern is observed in slums	Redesigning with improved geometry	Redevelopment
		Surface condition	Concrete paved roads and streets in inner city	Surface is impervious often results in overflow of surface runoff	None for road , however storm water drains should be provided
			In government housing roads are black top	No intervention required	None
			Concrete surfaced streets	Provision of waste water and storm water to be made	Redevelopment
3	Water Supply	Source	In inner city dependency is equally on piped water supply and ground water	Provision to prevent ground water contamination to be made	Renewal
			In government housing it is through piper water supply	No intervention required	None
			In slums the supply is inadequate	Provisions for piped water supply to be made	Redevelopment
		Duration	Average 1 to 2 hours per day	Time segregation to ensure pressure supply	None

			Average 1 to 2 hours per day	Time segregation to ensure pressure supply	None
			Inadequate and acute shortage in summers	Provisions to be made	Redevelopment
		Distribution system	In inner city pipe line are old	Capacity augmentation	Renewal
			Adequate and efficient	No intervention required	None
			In slums public stands are provided	The entire area should be covered with piped distribution	Redevelopment
4	Sewer Line	System	Dependency is more on in house septic tanks	Sewer line to be laid	Partial redevelopment
			Sewer lines are provided in government houses	No intervention required	None
			There is no provision for even in house toilets , few have septic tanks	Sewer line to provided	Redevelopment
5	Storm water Drainage	Provision of drainage	Open drains are provided roadside in inner city area	Open drains get choked and contaminate ground water	Renewal
			Adequate in government housing	No intervention required	None
			No drains in slum areas	Provisions to be made	Redevelopment
6	Social Infrastructure and Transport	Health and Education facility, Recreational facility and Community services	No direct co-relation depends on the location irrespective of inner city, government housing or slums	Locality is not an issue, affordability counts	Intangible parameter to decide upon method intervention
7	Waste management and Environmental conditions	Air and water quality, Ambience	In inner city air is comparatively polluted, ground water is contaminated and garbage collection is poor	Mechanism to be improved	Partly renewal and redevelopment
			In Government housing ambient air and water quality is satisfactory	No intervention is required	None
			In slums the overall environment is degraded	Provision for drain, waste water and piped water supply to be made	Redevelopment
8	Residential Satisfaction	Sense of belongingness	The sense of belongingness and satisfaction level was comparatively high in inner city area.	People preferred to live in inner city because of their commercial and social establishment	Renewal
			In government housing inhabitants were satisfied	The residents are not permanent	None
			The satisfaction was co-related to livelihood opportunities	Livelihood opportunity and proximity to workplace is priority	Renewal and redevelopment
9	Willingness to improve living condition	Willing to pay for betterment/ improvement	The resident were paying property tax and are ready to pay for improvement of infrastructure	Community participation to be encouraged	Renewal and redevelopment
			Nominal rent is charged for government housing	The upkeep is the responsibility of government	None
			Slum dwellers are willing to pay in order of priority		Redevelopment

Conclusion

The current scenario of urban development in various part of the world depend on a number of reasons, among which one can name globalization, previous development history, general economic and social situation of the particular city etc. On this basis it is possible to define an array of various situations, among which the separate case can be associated with the cities[6]. The studies of research related to urban renewal policies and programs, analyzes the history of planned intervention for the regeneration of distressed residential areas can be divided into three "generations", each with unique policy components, related to the social, economic and political characteristics of its period in history, with different major players, methods of action and outcomes. All three generations can be identified in the US, the UK and several other European countries, although not always precisely in the same form and at the same time[7]. The situation in India is quite different as Indian cities were built in different layers of time periods. Thus the urban renewal and urban redevelopment either for the degrading inner city or the blighted areas of the newly developed areas, is a complex phenomenon. A clear understanding of physical and social infrastructure and the community participation for the localities in question was to be ascertained before making the decision. Apart from the technical advancement in provision of services, the historicity of the place, the community spaces, socio-economic linkages also played a vital role in making the decision.

In the studies conducted in America also revealed that in housing neighborhood amenities and structural attributes are insignificant as determinants of renovation and the of a building and its neighborhood do indeed influence the likelihood that it will be renovated[8]. On the contrary the studies of Asia, like one in China reveals that the spatial distribution and locational characteristics of land development have changed dramatically, the land reform of China which allowed the paid transfer of land-use right led to the rapid transformation of the urban spatial structure of Chinese cities[9]. In a similar study of Hong Kong which is well known for its high-density form of development, such form of development shaped either by new development or urban renewal, adopted to improve the living condition of the public and the quality of the built environment. Urban renewal is the main focus of this study, which aims to highlight the deficiencies of current (re) development practices, explains how the major urban design considerations shortlisted from the literature can sustain local community in various aspects[10].

The redevelopment program of American cites suggests that the public is highly segregated by race and ethinilcity[11].

In Indian context the present study represents the situation of any Indian million plus city. The city had been established by parmars in 11th century, nurtured by nawabs rather Begums in colonial era and was developed as state capital after independence, the industrial township of BHEL even added a new distinct layer, whereas slums sprawled in and out of the city irrespective of periods. The comparison of Indian cities with examples of UK, US or global south may appears to be irrelevant in terms of complexities but the issues remains the same. For instance when talked of historicity, social and cultural aspects associated to neighborhood it is visible that physical development alone is not the key to success. Density is the obvious parameter as land being the only scarce natural resource; however in Indian million plus cities we have not yet reached the threshold as the other south Asian cities.

The specific conclusions which can be drawn from the study with reference to the specific area of any city namely inner city, government housing and slums are as under: i. Density is the essential issue which has to be decongested in case of inner cities, can be optimized in the leisurely designed almost five decades back with ample of open spaces in and around building block and slum to be reorganized to achieve ideal density and also to match with the city pattern, ii. The second important issue is of land use which is predominantly mixed in case of inner city and people's responses reinforced its very existence, however government housing remains formal and is always confer to Master Plan and for slums particularly with incompatible land use needs to be redeveloped. iii. The intervention for renewal or redevelopment has to be dealt at micro level, the smallest unit being the neighborhood, should be considered. iv. The determinants of physical infrastructure are to be dealt in cohesion with social and cultural parameters which are intangible in nature but are decisive in selecting appropriate intervention.

The resident's perception of community plays a vital role in identifying the intervention as renewal, redevelopment, both or none. The tool devised on the basis of study conducted in Bhopal is open for duplication in similar scenario.

References

1. Onkar P., Dhote K.K. and Sharma, Exploring The Concept Of Urban Renewal in The Indian Context, *Journal of ITPI, New Delhi,* **5(2),** 42–46 **(2008)**

2. Benjamin R.B, The Death of Communal Liberty, *A History of Freedom in a Swiss Mountain Canton* **(1974)**

3. Nair P., Historical Analysis of Relationships between the State and the Non-Governmental Sector in India, *International Development Department* **(2007)**

4. Theodore K., Urban Redevelopment, Displacement and the Future of the American City, *Ph.D. Center for Housing Research Virginia Polytechnic Institute and State University* **(1996)**

5. William R.K., Discriminant Analysis, *sage university paper* **(1980)**

6. Lorens P., Urban regeneration vs. urban sprawl, *44th ISOCARP Congress Urban regeneration vs. urban*

sprawl– problems and prospects in the post-socialistic cities **(2008)**

7. Naomi C., Three generations of urban renewal policies: analysis and policy implications, *Geoforum*, **30(2),** 145–158 **(1999)**

8. Andrew C.H., Understanding gentrification: an empirical analysis of thedeterminants of urban housing renovation, *Journal of Urban Economics*, **54(3),** 474–498 **(2003)**

9. Fulong W. and Anthony G., Changing Spatial Distribution and Determinants of Land Development in Chinese Cities in the Transition from a Centrally Planned Economy to a Socialist Market Economy: A Case Study of Guangzhou, *Journal of urban studies* **(1997)**

10. Grace K. L. L. and Edwin H. W., Factors Affecting Urban Renewal in High-Density City: Case Study of Hong Kong, *American Society of Civil Engineers* **(2012)**

11. Segregation in the Second Ghetto: Racial and Ethnic Segregation in American Public Housing, 1977 Adam Bickford Doug las S. Massey, *Social Forces,* **69 (1991)**