

**Transfer of Development Rights as a tool for Landmark Conservation
Program at Calcutta developed through an evaluation of American programs**

by

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**Dissertation submitted to the Faculty of the
Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of
Doctor of Philosophy
in
Environmental Design and Planning**

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**December, 1988
Blacksburg, Virginia**

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(ABSTRACT)

This dissertation examines the question of whether Transfer of Development Rights (TDR), a technique developed in the United States, might prove useful in Calcutta for urban conservation.

In many cases, municipal governments in India have been unable to preserve structures of historic value because they lacked the funds to compensate the losses imposed by designation. The owners of the landmark structures suffer financial losses for not being allowed to develop their properties to their full potential. The TDR technique has the advantage that through this program the owner of a designated landmark is compensated from the sale of the unused development rights in his property. The community is benefitted because of the landmark being preserved without the community's cost. The City is benefitted by the additional tax from the development potentials transferred from the landmark properties, which would have remained untaxed otherwise.

This paper begins by providing an overview of the developments in building regulations, and emergence of TDR as an useful means for land use management through flexibility in zoning. The ongoing TDR programs of seven American cities and a forthcoming one are then studied to identify the central issues and features of this technique. The next chapter is devoted to the analyses of the problems and prospects of TDR programs in the United States. This includes an examination of the issues derived from the case studies as well as a questionnaire survey.

The discussion in the following chapter provides some background on the city of Calcutta. The

demand for redevelopment in the central city is compounded by the situation that the growth of population is not matched by physical expansion of the city. Calcutta's economic climate, political environment and conservation ethics are also discussed to provide a comprehensive perspective of the testing ground. The test of the technique in Calcutta is discussed in the following chapter with reference to some cases. The concluding chapter includes the general and particular principles that ought to govern the TDR program in Calcutta. The conclusion also includes the administrative and institutional details that will be necessary to apply TDR technique in Calcutta.

To summarize the findings of this research, it can be stated that the existing programs in the US cities have entered a second generation. While the legal issues attracted most attention in the first generation, the emphasis has now shifted to the design and implementation of the programs. The need for the program's close coordination with the overall planning and urban design of the city has been recognized. However, each program is designed according to some bias, and in view of supplementing some other planning goals – some of them being compatible, while others are not. The main issues of the program are: balance between TDR supply and market demand, distance between the originating and receiving sites, urban design and planning in the receiving districts, coverage limit in relation to the zoned density, transfer from public landmarks, banking of TDRs, and a 'single window' administration of the program for easy and 'fast track' approval incentive. Although a general downzoning and suspension of other bonus provisions will facilitate the TDR program, the market does not seem to support such steps.

Incorporation of a TDR program in Calcutta is possible without any change in the existing building by-laws, but with a relaxation in the regulations governing the land ownership limits. The TDR prices in the receiving sites in BBD Bag and Esplanade areas commensurably match with the TDR values in the sending district of the Bag. But a district-wise transfer will have to be allowed rather than only to physically attached sites. Other receiving districts in the north and south axis along the rapid transit line have potential for future transfers.

**Dedicated to
those who care for Calcutta**

Acknowledgements

The author fully recognizes that many individuals have contributed to the successful completion of this study. It is appropriate that those who have contributed significantly to the researcher's achievement be acknowledged for their help.

Gratitude is expressed to the researcher's graduate committee members, Dr. Humberto L. Rodriguez-Camilloni, Dr. Milka T. Bliznakov, Dr. Joseph C. Wang, Dr. John M. Levy, and Professor W. Brown Morton III, for their constructive suggestion and wonderful assistance throughout the period of this study. Special appreciation is expressed to Dr. Rodriguez-Camilloni, the chairman of the dissertation committee, for his expertise, guidance, support, wise counsel and particularly for final editing of the whole volume. Special gratitude is also expressed to Dr. Levy, who introduced the author to the concept of TDR, and for his friendly guidance throughout the period of study and research in this school. The author also acknowledges Dr. W. David Conn, the Program Director, for his overall guidance and help throughout the author's stay in the School.

The author is indebted to Professor John J. Costonis and Professor Peter J. Pizor for their encouragement, as well as for their assistance in testing the questionnaire. In this regard, sincere appreciation is also due to _____, _____, and _____.

who spent considerable time with the researcher despite their busy schedule. Those who helped in the case studies are listed program-wise in Appendix D. Thanks to all of them, as well as to those who responded to the questionnaire.

, and deserve special mention for their immediate sending of materials from Calcutta without which the research could have taken much longer. Gratitude is also expressed to the authorities of Jadavpur University, Calcutta, the author's home university, for granting adequate study leave.

The author expresses a special gratitude to the Extension Service of the College in general, and to Professor Robert Stuart in particular, for extending financial assistance for the study trips. People who leave an indelible mark on others are not easy to come by. Professor Stuart is one such in the author's life. When money was a serious problem, Professor Stuart came forward without even being approached.

Finally, the acknowledgement will remain incomplete if the family members are not mentioned. Regard is expressed to my parents for their inspiration and moral support. Gratitude is also expressed to my wife, for her constant display of understanding, personal sacrifice, and encouragement. A special appreciation is extended to the author's son, Much of his fun plans had to be kept in abeyance, and thereby lost, because Daddy did not have time.

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1. Introduction

Problems of urban conservation are manifest everywhere, varying only in degree, as an outcome of the interconnected forces of each city's redevelopment pressure, its regulatory mechanisms and its planners' will for constructive resolution of the conflicts. A city's redevelopment pressure is a function of several factors. They are : the city's position in the urban hierarchy of the region / country, its changing urban functions and adaptability of the existing built-up spaces, and the rising land prices which determine the obsolescence of an existing building. Regulatory mechanisms are institutional efforts on the part of the City to control, guide and influence the development forces. Such measures of governmental interventions and control are devices created by the planners to achieve certain public purposes. Urban conservation is being increasingly accepted as a public objective; but necessary regulatory measures are not always available to address it.

Redevelopment in central city areas are actions from profit motive, whereas the conservation appeal is from moral, sentimental and environmental concerns. A conflict raised by causes of such polarity cannot be dealt with in the absence of well-thought-out regulatory measures. Last few decades of preservation movement in America has been a record of evolution of such measures, their battle with the real estate market, and subsequent adjustments to redress the conflict.

While evolution of regulatory measures in America and in Europe has been commensurate to the degree of the conflict between redevelopment forces and conservation, that in the developing nations has been far from achieving a balanced level. In general, priorities in developing economies are different than those in the developed world; but social goals are not always tuned to economic affordability. Paul N. Perrot noted this in his forwarding address in the 1984 conference on the 'Challenge of Our Cultural Heritage' held in Washington D.C. As he mentioned,

"Enthusiasm for historic preservation is manifest now in virtually every part of the world. Yet despite enormous stride in conservation technology, our collective heritage is perhaps under greater jeopardy today than any time in the past. This is particularly true in economically less developed nations that are aspiring to parity with their more fortunate, distant neighbors."¹

Conservation of urban landmarks amid enormous redevelopment pressure has been a mounting concern as a direct reaction to the devastating building boom of the late 1950s. In America, the boom was triggered by the rapid growth of the economy. By the middle of 1970s over 50 per cent of the 12,000 buildings listed in the Historic American Buildings Survey, commenced by the federal government in 1933, had been razed. Professor John J. Costonis was right to mention that "urban landmarks merit recognition as an imperiled species alongside the ocelot and the snow leopard."²

This crisis of diminishing urban landmarks becomes even more tense in the case of a third world city, where growth and spread of the city has been restricted by various reasons of resources, management, envision and planning as well as of geography and climate (e.g; Calcutta). In such cases the old central city remains the only urban area where services and infrastructures are available. Despite overloaded, the core areas have to absorb the growth

¹ Isar, Yudhisthir Raj; (ed) *The Challenge to Our Cultural Heritage, Why Preserve the Past*, Smithsonian Institution Press, Washington D.C., 1986, p.7. (Paul N. Perrot was the Director of Virginia Museum of Fine Arts and the President of the ICCROM Council. Yudhisthir Raj Isar was the Director of the Agha Khan Progeam at Harvard and MIT.)

² Costonis, John J.; "The Chicago Plan : Incentive Zoning and the Preservation of Urban Landmarks," *Harvard Law Review*, 85, 1972, p.574. (Professor John J. Costonis has been one of the vanguards to conceptualize and articulate the TDR program for urban landmark conservation)

demands, and are subjected to harsh redevelopment pressure in which the underdeveloped urban landmarks become the easy prey.

Yudhisthir Raj Isar diagnosed the reasons for such crisis in a developing world situation. He pointed out that, in the poorer countries many of the errors of past industrialization are being repeated today. In adapting to modern needs, planners and developers in developing countries, according to Isar, "are bent upon to recreate the factors to which the success of Europe's industrial revolution is wrongly attributed."³ The problem of urban conservation in the developing world, therefore, is of the nature where the lack of resources and planning is further compounded by the chances of committing mistakes. A clear understanding of the experience elsewhere, therefore, is of utmost importance to avoid the common mistakes.

1.1. The Objective

The goal of this research is to investigate the possibilities of using Transfer of Development Rights (TDR), as developed in the United States, for application in Calcutta to redress its urban conservation conflicts. The TDR technique has the advantage of compensating the landmark owner, not from public money, but from the market mechanisms. The objective of this research is to first undertake an in-depth study of the TDR programs, both ongoing and forthcoming in the United States. Drawing from this experience, the tool is then to be juxtaposed in the Calcutta situation to test its applicability there.

The reasons for choosing Calcutta for testing are as follows. First, Calcutta does have a serious need for some means to resolve her outstanding urban conservation disputes. Secondly, the investigator's familiarity with the city's architectural / planning processes through his 15 years of professional involvement shall be useful in hypothetically subjecting the regulatory

³ Isar, Yudhisthir Raj; *op. cit.*, p.23.

measures for test. Thirdly, the investigator's position in the Department of Architecture, Jadavpur University, Calcutta offers a scope of involving interested faculty and students for obtaining necessary information from Calcutta. Fourthly, the tremendous redevelopment pressure at the central city as an outcome of a host of factors, as will be discussed in Chapter 5, has generated a reconstituted love for the remnants of the city's glorious past. And finally, Calcutta has been very successful in using and repaying World Bank loans for various works of municipal development,⁴ which is indicative that planning functions of the city are now in good shape. It is perhaps the right time for incorporating preservation in the planning activities.

There is also another very important reason why a market-oriented urban conservation policy should now be tried in Calcutta. The underground rapid transit line is now partially under operation, while the construction of the remainder portions are nearing completion. This 26 kilometers long transit facility, which is one of the biggest public investment made in the city in recent times, has been changing the activity patterns along its entire length, where the land prices have gone up substantially. This is the right time for the city to tap the benefits made available by the transit line to integrate conservation and planning in a complementary way. For instance, conservation of certain landmarks of the city can be exchanged for additional construction in the sites along the route.

Preliminary studies have indicated that the Transfer of Development Rights (TDR) provision has a strong potential to be useful in this regard. It should be particularly useful because it compensates the landmark owner from the market mechanism and, therefore, relieves the pressure on public funds. The hypothesis in this research is that TDR shall be useful for alleviating urban conservation problems in Calcutta, and the dissertation shall be a test of this hypothesis.

⁴ Lea, John P. and Courtney, John M. have evaluated Calcutta's achievement to be exemplary in their publication entitled *Cities in Conflict, Studies in the Planning and Management of Asian Cities*, The World Bank, Washington D.C., 1985. pp.61-77 & 101-109.

1.2. The Perspective

The general upsurge in the conservation ethic, and broadening of the perception with regards to urban conservation can be viewed as a reaction to the inadequacy of the tools available to deal with the problem. It has also been for the enlargement of the perception with regards to urban conservation. Before a discussion of the tool is done, it is necessary to understand the total embodiment of the conservation perspective; and to clearly identify, from there, the premise of this research.

In recent years, the problems of urban conservation have been further compounded by the broadening of the concept of historic monuments. The 1964 Charter of Venice recognized that preservation could no longer be limited to only associative structures. As the Charter defined,

"This (the concept of historic monument) applies not only to great works of art but also to more modest works of the past which have acquired cultural significance with the passing time."⁵

There can be some disagreements regarding the criteria for the selection of significant buildings according to this definition. Nevertheless, it is imperative by this definition that urban conservation can no longer be limited only to masterpiece buildings and sites. For instance, buildings and sites not included in the 'World Heritage List', established by the 'World Heritage Convention' of the Unesco, are also important. The Convention itself recognized this when it emphasized equally the importance of the protection of unscheduled artifacts.⁶

Further, there has also been a growing awareness for environmental character. There are also recognizable areas in many cities where some particular character exists. Protection of a single monument there is useless as the setting and ambience of the environment get lost in the absence of care for the surrounding structures. The protected monuments in such cases

⁵ *The Venice Charter*, 1964, ICOMOS, Paris, Article - 1.

⁶ Article - 12, *Convention concerning the Protection of the World Cultural and Natural Heritage* (commonly known as The World Heritage Convention), Adopted on November 16, 1972 by the General Conference of Unesco at its 17th session held in Paris.

stand strange in the changed environment, no matter how well preserved. Samuel Wilson, Jr., seems to express the common concern of the preservation community in general when he suggests that the "*Tout Ensemble*" is important, "not only the great buildings of the past but also the lesser and later structures that form part of the local character of the area."⁷ This environmental issue in preservation was also considered aptly in the Charter of Venice when it replaced the term 'monument' of erstwhile charters by the term 'cultural property'.

The profundity of preservation concern has also been influenced by the rate of change in our cities. As Donald Appleyard points out,

"..... the rapidity of change has been difficult for people to absorb. Change no longer conveys a sense of freedom when it takes place too fast and out of one's control. Change, then represents a loss more than gain."⁸

In this race, the depth of history becomes a function of the pace of change. Said another way, the more rapid is the change, more recent are the buildings and sites that are thought to be important and dear. Samuel Wilson, Jr. also recognizes this issue when he mentions '*later*' structures also to be important for his '*Tout Ensemble*'. Michel Parent introduces the 'new-style history', while discussing the extension of the field. According to Parent, the "new-style history" comes out of the narrowness of the "conflict between princes and people" and includes "knowledge of everyday life, of community life and of mentalities."⁹ The issue of recent heritage was also accounted by John S. Pyke, Jr. when he showed that by late 1960s there was not a single building in Manhattan dating back to the 17th century and only nine going back to the 18th.¹⁰

⁷ Wilson, Samuel, Jr.; "Evolution of a Historic Area's '*Tout Ensemble*'," *Old and New Architecture: Design Relationship*, Papers from a Conference, The National Trust for Historic Preservation, Washington D.C., 1980, p.115. (Samuel Wilson, Jr. has been the most prominent preservationist architect in New Orleans).

⁸ Appleyard, Donald (ed); *The Conservation of European Cities*, The MIT Press, Cambridge, 1979, p.19.

⁹ Parent, Michel; *ICOMOS, Its Mission and Orientations*, Paris, 1983, p.18. (Michel Parent has been the President of International Council on Monuments and Sites).

¹⁰ Pyke, John S., Jr.; *Landmark Preservation*, Citizen Union Research Foundation, Inc., New York, 1970, p.15.

There has also been considerable change in the perception of preservation simultaneously with the broadening of the concept. Preservationists gradually recognized that change is inevitable in a growing society. Lewis Mumford dealt at a length with the importance of the values in the changing society to create a humane city, and to bring a kind of equilibrium. As Mumford wrote,

"Now, in every organism, the creative and the destructive are constantly at work. Life and growth depend, not on the absence of negative conditions, but on a sufficient degree of equilibrium, and a sufficient surplus of constructive repair, to absorb novelties, to regulate quantities, and to establish give-and-take relations with all the other organisms and communities needed to maintain balance."¹¹

Mumford was preaching to work for the equilibrium in change, because the growing societies would have to accept change as an essential part of their progress. Urban renewal has been the key function in the post war era to repair and enlarge the activity spheres in our cities with massive projects of redevelopment. A compassionate planner like Professor Hans Blumenfeld could not but accepted this fact of urban life when he wrote,

"Just like automobiles and refrigerators, cities and parts of cities become obsolete from the moment they are produced, and sometimes before. Obsolescence is the reverse of progress and often faster than the later. Only in a stagnant society is there no need for renewal."¹²

Other experts like Hiroshi Daifuku accepted the need and merits of renewal; but suggested inclusion of an environmental / circumstantial aspect to it by preferring the term '*retrieval*' rather than '*renewal*'. Daifuku, indeed, went further to suggest that renewal was not essential for *all* bad parts of a city. According to him,

"It was assumed *a priori*, for example, that certain areas were decaying and contributing to the malaise of a city. Perhaps these localities contained old residences since converted into shops or rooming houses, old warehouses, or well-worn buildings of outmoded industries. However, recent studies have shown that many such old and worn quarters of a city - just as marshlands fronting a sea - may have an important functional role in urban ecology."¹³

¹¹ Mumford, Lewis; *The city in History*, Harcourt, Brace & World Inc., New York, 1961, p.556.

¹² Bleumenfeld, Hans; "Urban Renewal," *The Modern Metropolis*, The MIT Press, Cambridge, 1967, p.190.

¹³ Daifuku, Hiroshi; "Introduction : Urban Retrieval Too," *The Conservation of Cities*, Unesco, St. Martin's Press, New York, 1975, p.11. (Hiroshi Daifuku was the Chief of the Sites and Monuments Division, later called the Operations and Training Section, in Unesco's Division of Cultural Heritage).

Daifuku's concern for urban ecology goes against massive bulldozing of old decrepit areas of a city. He nonetheless seem to accept the need for the soft changes of rehabilitation and adaptation.

Recognizing that change is inevitable, the preservationists today are concerned with the concept of 'change management'.¹⁴ The goal of preserving the character of an area amid the changes is naturally a matter subjected to great challenge, and suffers from confusion. The challenge stems from the market force of maximizing the returns from an urban property. The confusion is from the subjectiveness of the issues of design relatedness in new construction. These two postulates of preservation movement need to be distinguished at this stage, as ways and means to deal with them vary considerably. This research shall address only one postulate of the two – the former one.

It is quite common today to identify an entire area to be important as a historic district,¹⁵ and imposition of a 'historic district ordinance' is an usual measure taken by the cities to regulate preservation, adaptation, rehabilitation and change in that area.¹⁶ The question of design relationship in the changes, i.e; in new construction, is usually dealt with by incorporating design guidelines in the historic district ordinances.¹⁷ Although subjectiveness of design controls in

¹⁴ The term 'change management' was introduced by James Biddle, the then President of The National Trust for Historic Preservation, in his forwarding address in the 1980 conference in Washington, DC on the theme of "Old and New Architecture, Design Relationship."

¹⁵ Papers presented by Murtagh, William J. and Argan, G. C. at the Seventh General Assembly of the International Centre for Conservation, Rome, Italy in 1973 discussed the issues of identification and social aspects of Historic Districts. The eight criteria of *Location, Design, Setting, Materials, Workmanship, Association and Key Structures* devised by Murtagh have been used frequently to identify a historic district.

¹⁶ The first ordinance of this kind was enacted in Charleston, South Carolina, in 1931. Until mid-1960s the number of communities adopting such ordinances grew slowly to 51, but since then there was a sudden surge in interest in local preservation. A 1975 study by the National Trust for Historic Preservation found 421 active historic preservation commissions across the United States. The number has more than doubled in the last 10 years. By 1983, there were between 800 and 1,000 historic preservation commissions around the country. (Roddewig, Richard J.; *Preparing Historic Preservation Ordinance*, Planning Advisory Service Report No. 374, February, 1983. Mr. Roddewig is one of the leading legal consultant on zoning and preservation in the Chicago region.)

¹⁷ Although the pioneering thought in this line was expressed by the Providence City Planning Commission, Rhode Island as early as in 1959, the first organized one was produced in Savannah, Georgia in 1971 (Muldawer, Paul; "Criteria for Urban Relatedness, Contemporary Building in Historic

this kind of ordinances is still an issue of debate, it can, however, be dealt with when an identifiable district is clearly demarcated. But the landmarks scattered in the high priced core areas of giant cities, such as Manhattan in New York City or the inner loop in Chicago, cannot be controlled by such an ordinance as it would result in virtual stagnation of the city core. Furthermore, the gap between the existing volume of urban landmarks and their potential volume is usually so big that a downzoning for the entire area – imperative in a historic district ordinance – is impractical. The objective of this research is to address this challenge faced by downtown landmarks where an overall historic district zoning is not possible, and landmarks are to be conserved by isolated designation.

Traditionally, preservation in developing countries remained limited to the antiquities and ruins. The city centers, where the pace and volume of change were greatest, remained unattended. These urban centers are the areas where the mistakes referred to by Isar are most prevalent. Also, during the earlier years of independence from colonial rule, most developing nations viewed the colonial buildings as reminder of erstwhile suppression, and preferred their replacement. However, as their origin receded into history they became politically de-symbolized. They are no longer viewed so clearly as symbols of their originators, creators, or users; but rather as cultural symbols of common heritage. Whereas originally they belonged to one social group, the hated and powerful one, now they are treasured as belonging to all. As Appleyard has pointed out,

“Only such a transformation can explain, for instance, why many ex-colonial countries, thirty years after decolonization, have begun to repair and restore the formerly hated symbols of colonialism, the buildings of the colonial administration and former homes of the slaveowners, or why the Soviets have painstakingly restored the czarist palaces.”¹⁸

The recent upsurge for the conservation of urban monuments, including and perhaps more so for the colonial buildings, is clearly evidenced in many cities of the developing world. The author has first hand experience in this regard in Calcutta.

Districts,” *Historic Preservation*, Vol. 23, No. 1, Jan.-Mar., 1971). Today there are several communities around the country which have such design criteria in some form or the other to guide and control new construction in the designated historic districts.

¹⁸ Appleyard, Donald; op. cit., p.20.

1.2.1. The Perspective in Particular : Calcutta

Calcutta was the capital of British India until 1911 when Delhi was chosen for the new capital complex. Yet, even after the transfer, Calcutta remained the financial and cultural capital of the country for the port of Calcutta handled the bulk of export-import functions. Despite Rudyard Kipling's deadpan verse of *'The City of Dreadful Nights,'* by early 19th century the city was rated as the second capital of the then British Empire after London. It was also called the 'City of Palaces'. However, Calcutta's prosperity also produced a brand of intellectuals who felt and propagated the nationalistic feeling. It was from this city the spirit of freedom from the British rule took its birth – one of the reasons for which the capital was removed.

It is perhaps for this reason of hatred for anything that was related to the British, the destruction of many urban monuments to be replaced by modern buildings was allowed without a murmur. The domed Victorian building of 'The Bengal Club' was razed even without a sigh. That was the club built by the British where natives were not allowed to be members. This was the reason which led to the creation of 'The Calcutta Club' by the nationalistic elite Bengalis.¹⁹ The multistoried Automatic Telephone Exchange building was built inside the Dalhousie Square²⁰ replacing the Dalhousie Institute. The demolished Institute was low rise, blending with the square landscape, and protected the civic design axis connecting the Writers' Buildings (the Seat of the State Government) to the Governor's Palace.²¹ Many residential buildings of quality were also demolished to make room for the expanding CBD in the south.

¹⁹ The natives of Bengal, the province whose capital is Calcutta.

²⁰ The square with a pond at the center is in the very heart of the CBD of Calcutta. This square is presently renamed as Binoy, Badal, Dinesh Bag – in short BBD Bag. Binoy, Badal and Dinesh are three martyrs who took the suicidal step of going inside the Writers' Buildings to kill the Viceroy during the independence struggle. Changing names of places and streets has been a very popular activity among the politicians for two reciprocating reasons. First, it enables them to efface the history they choose to forget; and secondly, it enables them to place their own names on artifacts of importance and imparts in them a sense of accomplishments as if they were creating new history. Although changing names tends to sever the thread with the past, it does not destroy any landmark.

²¹ De, Ramen; "Conservation and Change : from conflict to compatibility," *Trend*, 2, Jadavpur University Press, Calcutta, 1983.

Fortunately, Calcutta is not favorably placed in the international tourist map, which has kept the redevelopment project in the Grand Hotel site in the Esplanade area in abeyance. For the same reason, the YMCA redevelopment project did not finally mature, and the old building still exists. Meanwhile, the Asiatic Society has built a multistoried building in one portion of the site, and has leased off another road facing portion completely overshadowing the landmark building of the society.²²

In Calcutta the preservation culture originated from the demolition of the Senate Hall of the University of Calcutta. It was a Parthenon-like edifice which was even in the emblem of the University (Figure 1 on page 12). Civic protest was not adequate to prevent the demolition of the old Senate Hall, but its destruction set in the minds of the concerned citizen an evidence of genuine loss. Soon an organization called the *Society for Preservation of Archival Monuments and Historical Documents*²³ was established under the leadership of Dr. Nishit Ranjan Roy, then curator of the Victoria Memorial Hall. Since then, several redevelopment projects involving significant buildings and sites have been vehemently opposed by the preservationist group. The most popular poster used in their meetings, seminars and exhibitions has been a picture taken at the time of demolition of the old Senate Hall. The Corporation of Calcutta, the City Government, is in a fix in this situation as it does not have any mechanism in its regulatory system by which such conflicts can be resolved.

St. John's Church compound is located in the middle of the CBD of Calcutta. It is one block wide on the 62 feet wide Kiron Shankar Roy Road, having 54 feet to 44 feet wide Church Lane on one side, and 58 feet wide Council House Street on the other. Total area of the lot is 196,845 sq. ft. which houses the Church, a couple of cemeteries and an outhouse totalling only 22,140

²² The need for conserving the landmark building of the society, which was the forum for exchanging the ideas during the Renaissance of Bengal of late 17th and early 18th centuries, was felt important even by the Central Government at Delhi. The landmark building has since been restored in 1984-85.

²³ The Society is also affiliated with the *Indian National Trust for Art and Cultural Heritage* (INTACH), the newly established Trust under the auspices of the Central Government with the Prime Minister as the Chairman. This can be considered as the counterpart of the National Trust for Historic Preservation in the United States.

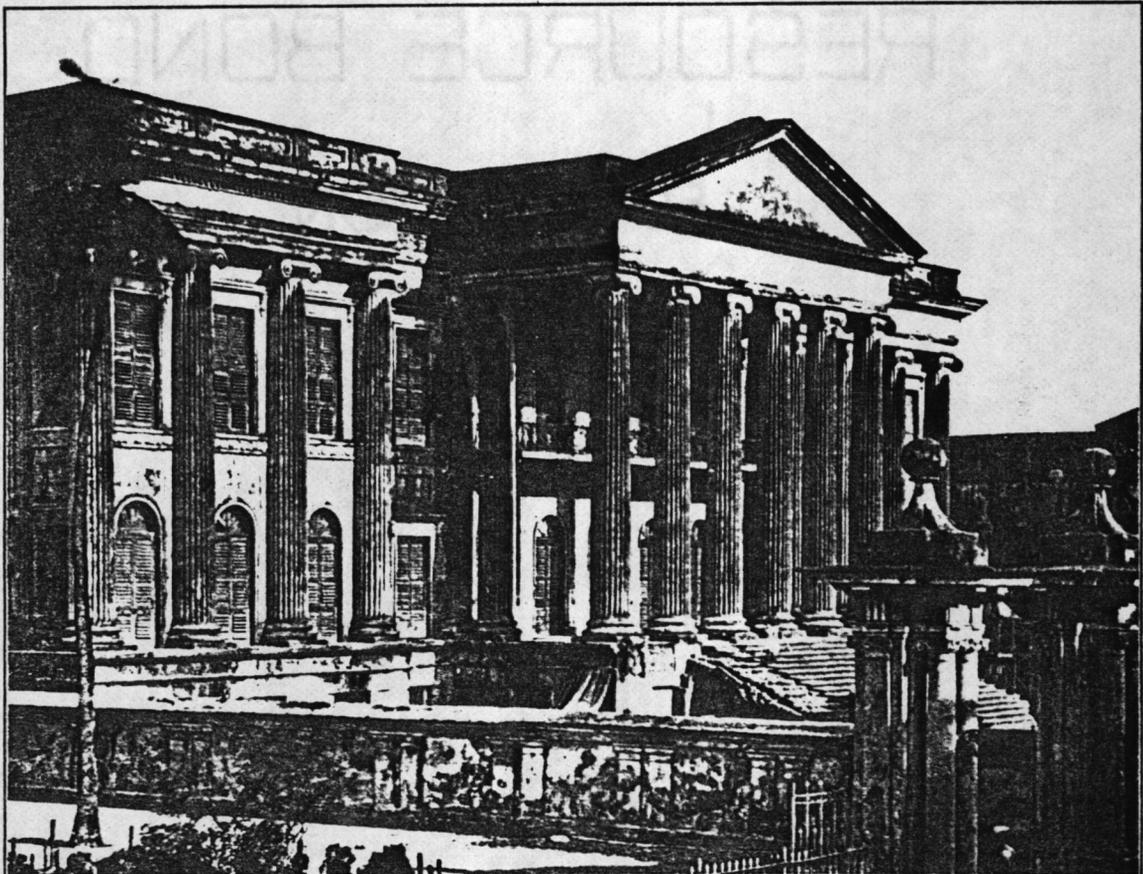


Figure 1. The Old Senate Hall, The University of Calcutta

sq. ft. in built-up space (Figure 2 on page 14). The permissible potential of the site is 649,588 sq. ft. (196,845 x 3.3 allowable FAR²⁴). The Church Authority is terribly hard pressed lately as their commitment increased over the years, while their resources shrunk for want of generous donations as they used to receive. To augment their income, and to decrease their dependence on the donations, the Church Authority intended to develop the site in late 1970s. With inherent feeling for the church compound, the architect proposed a modest development at the most insignificant corner of the site facing the Church Lane. The proposal was to build an office building which would have raised the FAR from existing 0.112 to only 0.55, whereas the

²⁴ FAR means Floor Area Ratio, a ratio which establishes the development potential of a site as a multiplication factor to the site area. Detail discussion on FAR will be included in Chapter 2.

allowable FAR for this site according to current building by-laws of Calcutta could be as high as 3.30.²⁵ But the preservationist group saw the proposal as destructive, and raised the hue and cry. The objection was that the proposed office building shall destroy the sanctity of St. John's Church, and will jeopardize the monuments -- the cemeteries of Admiral Watson; that of Job Charnock, the founder of the city; and those of his daughters Mery and Catherine. As Philip Davies notes,

"In Calcutta the tomb of its founder Job Charnock is affected by proposals to sell a part of St. John's Churchyard for redevelopment, and an unholy row continues in the columns of the Indian press about the obtrusive nature of the multi-storey block proposed for the site."²⁶

The Church authority has since sold a portion of the lot facing the Church Lane.²⁷ The fate of this landmark site is now under greater danger as the private developer who has bought the site shall leave no stone unturned to develop it in the most profitable commercial use. The sad aspect of the whole affair is that the Church Authority was psychologically weak to forcefully pursue the development project, for which the project remained stalled for all these years. They have now passed it over to a private developer who surely has no sentiment like the Church Authority. The developer has purchased the property with full knowledge of the dispute, and also of the fact that there is no legal provision, as of today, to prevent him from developing the site.

Similar objections are raised for the projects of St. Paul's Cathedral complex in southern part of the CBD (Figure 4 on page 16). Some publicly own buildings and sites have also been facing similar hurdle. The project in the south-east corner of the Victoria Memorial Hall site (Figure 3 on page 15) is kept in abeyance pending resolution of the debate whether or not such a development can be permitted. Other publicly owned landmarks include the Town Hall

²⁵ Project Report on 212/B Church Lane (St. John's Church premises) Development by M/S. Ghosh, Bose & Associates P. Ltd., Architects, Engineers and Town Planners, Calcutta, 1979. (mimeographed)

²⁶ Davies, Philip; *Splendours of the Raj, British Architecture in India 1660 - 1947*, John Murray, London, 1985, pp.246-47.

²⁷ *Sangbad Bichitra*, January 24, 1988, p.19, col.2.



Figure 2. St. John's Church, Calcutta.

site, the General Post Office complex (Figure 4 on page 16),²⁸ the Collectorate Building site, the Great Eastern Hotel complex and the Hogg Market.

The most interesting development that has taken place lately in Calcutta is that, the Corporation of Calcutta itself has come up with projects involving landmarks. The first one has been the proposal of a multistoried office building in the Town Hall site demolishing the exquisite neo-Palladian edifice of 1814. While the battle for the conservation of the Town Hall is still

²⁸ Thapar, B. K.; *Perspectives and Problems in Urban Conservation*, Paper at the Third International Congress on Architectural Conservation and Town Planning sponsored by the Heritage Trust in London, April, 1987. (Dr. Thapar is the Secretary of the Indian National Trust for Art and Cultural Heritage -- in short INTACH).



Figure 3. The Victoria Memorial Hall, Calcutta

ongoing, the Corporation came up with another proposal to build an underground shopping center in Satyanarayan Park in the northern part of the city. Further, The Corporation has recently proposed a massive cultural center of 5 auditoriums in the site of the existing park in Rawdon Square. The extent of controversy, conflict and debate generated by these proposals of the City authority indicate the degree of economic pressure that exists in Calcutta market for redevelopment.

As mentioned earlier, objections from the concern for preservation has two postulates -- one is to object to any development with or without involving demolition of the monument (e.g; St. John's and St. Paul's proposed buildings in left over site without demolishing the main struc-



St. Paul's Cathedral



General Post Office

Figure 4. The St. Paul's Cathedral and the General Post Office, Calcutta

tures), and the other is to accept change as an unavoidable element in the process. The first category of cases calls for urban conservation, while in the second the need is to guide and control the design of the proposed structures to be compatible with old monuments. Figure 5 on page 18 shows the landmarks belonging to the first category in Calcutta identifiable from general public concern without any organized survey.

Curiously, while the primary issue of conservation of the urban landmarks remained unattended, the architects and planners in India engaged themselves in the issues of design relationship. The battlecry of 'blending the old and the new' resulted in numerous seminars and conferences in 1970s. In November 1971, the Town and Country Planning seminar in Panaji initiated this discussion on the issue of design relationship. Santosh K. Ghosh was skeptical about the timing and appropriateness of the idea when he wrote,

"..... blending the old and the new buildings and urban spaces in the urban renewal satisfying the needs of all ages which reminds of a possible scene where experienced bartenders are mixing and fixing mixed drinks, children are tasting lollipops in the delicatessen and the ladies smelling roses in the museum."²⁹

The conflicting images drawn by Ghosh were perhaps to contrast the wisdom with the harsh reality of Calcutta. Design relationships are necessary undoubtedly, but they are useful only in the context of change. There are some projects in Calcutta which have attempted to address this design issue, and an ongoing endeavor among a section of the designers can be observed to achieve the syntax of a new design paradigm for the blending. But the pledge for the protection of Calcutta townscape, as expressed by Gordon Cullen³⁰, by Philip Davies³¹ and by Jan Morris³² to name a few, does recognize the necessity of conservation of certain monuments and sites as focal and reference points of the city. The image of Calcutta depends a

²⁹ Ghosh, Santosh K.; Paper at the Town and Country Planning seminar, theme - *Blending the Old and the New*, 1971. (mimeographed) (Santosh K. Ghosh was the Chief Architect and Renewal Planner in CMPO).

³⁰ Cullen, Gordon; "Need for Urban Planning," *India, A Survey* compiled by the Times, London, January 26, 1962 and "Save the flower from being steam rolled", *Architectural Review*, Vol.150, No.898, December 1971.

³¹ Davies, Philip; op. cit.

³² Morris, Jan; *Stones of Empire, The Buildings of the Raj*, Oxford University Press, Oxford, 1983.

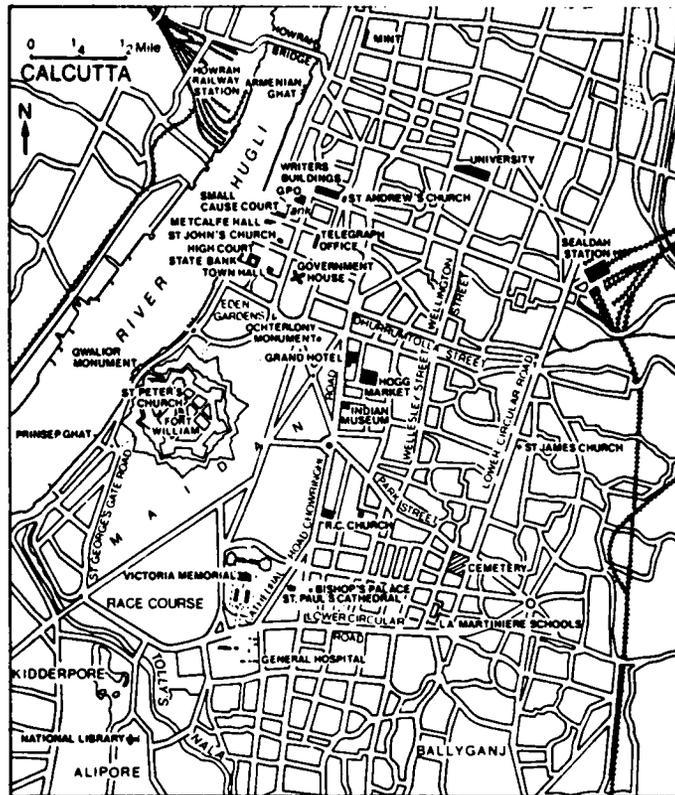


Figure 5. Location of some Landmarks in Calcutta: (after Philip Davies)

great deal on the protection of the landmarks and nodal features that create and establish the paths, nodes, edges, and districts. The importance of the elements of city image as devised by Kevin Lynch³³ cannot be more stressed.

Conservation of these landmarks is not a design issue, neither they can be included in specific district to impose an ordinance. They can be protected only by isolated designation. Unfortunately, there has been no thought or discussion on this matter as to how the compensation for the unused potential of a landmark property can be met. The common perception is that such properties should be nationalized through purchase from public funds and to be preserved

³³ Lynch, Kevin; *The Image of the City*, Technology Press, Cambridge, 1960.

as museums. For example, the buildings in the State Bank premises on Strand Road in BBD Bag needed conservation.³⁴ But the Bank authorities were bent upon getting rid of the old buildings to generate more built-up space. They argued that if the buildings were so significant and dear, why the City did not buy the properties to preserve and maintain them. The Bank also made the point clear that in such an event they would develop the regional complex in Bhubaneswar in the neighboring state. The City does not have such resources to buy properties like this. Moreover, there was the the fear of loosing such a development as source of potential income and employment in the city. The buildings are now being demolished in phases as the construction progresses. What comes out of such instances is that the conservation of landmarks is a moral pronouncement with which no one would quarrel, but the implementation is a difficult task. The implementation of an urban conservation program is often countered by stiff opposition from the real estate interests of landmark owners. Economic considerations are usually threatening enough to counterbalance a concern for conservation.

As Pyke has put it,

"Some scheme to afford a measure of compensation to landmark owners who are asked to dig into their own pockets for the good of the community should be an integral part of any preservation program."³⁵

1.3. The Prospective Tool

The tools developed in the United States to resolve conflicts between urban conservation and redevelopment dynamics are tax incentives and Transfer of Development Rights (TDR) option. Tax incentives for preservation is an effective tool when the scale of loss due to designation of the landmark is only modest. In simple economic terms, the compensation offered by tax

³⁴ The buildings were originally built by the *Nawabs* of Bengal as their guest house on the bank of the river Hooghly. Later in the British period the complex became the Head Office of then Imperial Bank, which become the State Bank of India after independence. As such, they were pre-colonial buildings and were artifacts of indigenous pride and sentiment.

³⁵ Pyke, John S., Jr.; op. cit., p.6.

benefits is compared to the amount of loss imposed by a designation. The loss is the short fall in income achievable from the potential building less that from the existing building with renovation / rehabilitation / adaptation etc. for best use of the existing spaces. If the incentive amount would more or less bridge the gap, the owner would agree to tax benefits.³⁶ In generalized terms, the developers who rehabilitate historic buildings can get back from 15 to 25 per cent (depending on the age of the buildings and their designation status) of their renovation costs in the form of income tax credit, as long as they put the buildings to commercial use. A set of standards have also been developed by Professor W. Brown Morton III and Gary L. Hume, to guide the rehabilitation program, and to establish a set of standards according to which the projects are to be evaluated to qualify for the tax benefits introduced by the Tax Reform Act of 1976.³⁷

The tax credit program has been quite successful for the rehabilitation of certain historic structures. From 1982 through 1985, the historic rehabilitation credit alone has stimulated an estimated \$8.8 billion of investment in more than 11,700 historic buildings in some 1,800 towns and cities.³⁸ This investment has been made in large projects, such as Union Station in St. Louis, the Willard Hotel in Washington D.C., and the Pullman Factory in Chicago, as well as in smaller projects. Almost 80 per cent of historic commercial projects incur expenditures of less than \$1 million, and nearly 40 per cent involve expenditures of less than \$150,000. The tax incentives, however, slice off the city's existing resources, and hold off the potential increase of taxable built-up spaces through maintenance of the underdevelopment. Furthermore, the publicly own landmark properties are out of the tax roll and, therefore, can not be

³⁶ The effect of Tax regulations on Historic Preservation and Rehabilitation is presented in a tabular form in Appendix A.

³⁷ Morton, W. Brown III and Hume, Gary L.; *The Secretary of the Interior's Standards for Historic Preservation Projects*, National Park Service, Washington D.C., 1979. (W. Brown Morton III was the Chief of the Technical Preservation Service Division in the U.S. Department of Interior. Gary L. Hume was the Chief of State Preservation Projects).

³⁸ Spatz, Ian D. (ed); *A Guide to Tax - Advantaged Rehabilitation*, A joint publication of National Trust for Historic Preservation and Dewey, Ballantine, Bushby, Palmer & Wood, Washington D.C., December, 1986, p.6.

dealt with this tool. Also, in most cases the gap between what is built in existing landmarks, and what can be built according to current zoning regulations is too big to be compensated only by the tax relief.

TDR is the tool developed to address such cases. It has been developed in the United States as a result of inadequacy of the tax incentive program to protect urban landmarks. This has also been a by-product of the evolving zoning system of cities to allow variety in urban design and better environmental quality through flexibility in regulatory measures. Beginning in 1968 in New York City, this regulatory tool has undergone several modifications to adjust to the market mechanism. Although it does not yet seem to achieve the final refinement, it nevertheless offers a viable solution to the conflict faced by most urban landmarks. By allowing the landmark owner to sell his unused potential, the landmark can be preserved in its existing state, the owner can be compensated by the money from the market mechanism, and the City also can augment its tax base by allowing additional taxable space to be built in the site of the TDR transfer.

TDR, although still in a developing state, has potential to resolve many urban conservation problems. Few planning concepts in the recent years have raised as much enthusiasm and controversy as TDR. The concept has been hailed as the solution to a variety of land use problems including protection of landmarks, ecologically sensitive areas and farmlands etc.. Being a new concept, TDR suffers from confronting situations to some extent unprepared, and needs refinement. As Richard J. Roddewig and Cheryl A. Inghram have pointed out,

"The concept has been hailed as the solution to a sweeping variety of land-use problems, including protection of historic landmarks in Denver, the flood plains in Chicago's chic north shore suburbs, cypress swamps in Florida, farmland in Maryland, pine barrens in New Jersey and mountain vista in California."³⁹

³⁹ Roddewig, Richard J. and Inghram, Cheryl A.; *Transfer of Development Rights Programs*, Planning Advisory Service Report No. 401, APA, Chicago, May, 1987, p.1.

1.4. The Plan of the Study

The main tasks required to achieve the objective of this research are first, to investigate the strengths and weaknesses of this tool. Secondly, having understood the prospects and problems it involves, to test it in the Calcutta situation. The methods to be employed in this research shall be literature review, case study, interviews and questionnaire survey to evaluate the tool as a means for landmark conservation. After this, a hypothetical superimposition of the evaluated tool shall be done on Calcutta's existing building by-laws to observe and analyze whether or not the tool can be applicable in Calcutta. The steps to be followed according to the methods described above shall be:

1. Study the published literature on building regulations and emergence of TDR to understand the intricacies of the mechanism, and to identify the cities, the organizations and the key persons from where/whom further information can be obtained.
2. Inquire and select cases⁴⁰ where TDR has been used for the conservation of urban landmarks. Study materials on these cases and hold interviews with the key actors in the programs.
3. Conduct a questionnaire survey among the key participants in the TDR programs around the country.
4. Analyze the problems and prospects of TDR from the case studies, interviews and the responses to the questionnaire survey. This would offer the state of the knowledge in the field as well as a far sight with regards to the future improvements of the tool.
5. Describe Calcutta's urban environment in terms of her primacy in the region, her socio-cultural-economic-political conditions, her constraints and opportunities of growth etc. which have been bequeathed to her from a glorious past to the strained present.
6. Review Calcutta's urban development scene, and her planning and implementation processes. Discuss the existing building by-laws of the Corporation of Calcutta which regulate the building volumes, open space, public health, fire safety, parking etc., i.e; the regulations by which the potential of an urban property is decided.
7. Test the TDR program features according to the above building regulations by analyzing implications of the program on the sending sites, on the receiving sites, as well as the pricing issues in current market rates. Also analyze other planning goals which can be supplemented by the introduction of a TDR program.
8. Finally, conclude on the suitability or otherwise of a TDR program in the regulatory process of Calcutta including the general and specific principles required to be followed should the technique be found useful.

⁴⁰ Due to financial constraints a country wide field survey is not possible. It is, however, intended to make study trips in some cities on the eastern seaboard depending on availability of case materials.

Recording of the studies, investigations, and analyses done according to the methodology detailed above shall necessarily follow a similar sequence. While this introduction in the first chapter sets the objectives and the plan of the study, the second chapter of this dissertation shall be devoted to a review of the developments in regulatory measures that guide and control the density and building volumes, leading to the concept of TDR. This will include discussion on the evolution of building regulations to strike a balance between the strict predictability to be offered by a set of regulations, and the flexibility in it for better designs. TDR is an outcome of this process. Chapter 2 will conclude identifying TDR's position in the total regulatory realm of a city. This chapter is primarily addressed to the readers in Calcutta, who are not familiar with the concept of flexibility in building regulations to improve the design and thereby the quality of urban environments.

Chapter 3 will be devoted to the study of some existing and prospective TDR programs. New York City is the oldest to implement a TDR program. It is the city where experiment on TDR has been most profound. As such, an intensive study of the New York City's zoning regulations and their modifications over the years to accommodate both development and preservation shall be done. A scenario should emerge which would show the reasons why TDR was instituted and how it got modified to adjust to the real world situations. After New York City, other TDR programs to be studied will be Chicago, San Francisco, Denver, Seattle, Washington, DC and Philadelphia. Washington, DC is a case where there is no actual TDR program, but transfers are worked out through the Planned Unit Development (PUD) provision in the zoning. Philadelphia is an important case to be studied because the city is now in the process of incorporating a TDR provision in its zoning. As such, Philadelphia shows the issues to be addressed, and considerations to be made for the incorporation of a TDR program.

The study of the existing and prospective TDR programs will identify some common issues, as well as some particularities from case to case. The main issues will involve TDR programs' relation to the zoning system, to the comprehensive plan, and to the considerations in the real estate business. They will also include the questions with regards to the identification and

design of TDR receiving areas, conservation of the TDR originating landmark, TDR program administration, TDR pricing etc.. All the main issues will have to be analyzed from the study of the existing programs in view of how they have addressed the issues, and what are their experience. The design of the program will vary from city to city. There may not be a clear consensus regarding some issues in the program. Indeed, there will be differences of perception between programs with regards to some program features, and their *modus operandi*. The interviews and the questionnaire survey among the key actors in the program will help resolve these differences. Analysis of the survey responses will also indicate which factors are desirable, and which are not. The strengths and weaknesses of the program will be evaluated, with an understanding of the inter-relation of the program features. Chapter 4 will include these analytical discussions.

Chapter 5 shall be devoted to the description of the setting in Calcutta. It will include discussion on the city's location, landform, and urban fabric to demonstrate its primacy in the entire eastern region of the country as well as its physical constraints to growth. The social, cultural, and economic conditions shall also be discussed to identify the values prevalent in the city. The political dynamics, the social organizations, and the orientations of different communities in the city shall be significant parts of the discussion. The description of all these factors governing Calcutta's present situation shall naturally follow a historical perspective, which will allow an understanding of the dynamics as well as the evolving trends in the city. This chapter shall identify the economic need for a tool like TDR, the intellectual preparation of Calcuttans to try and accept a new tool, and the political process to which it may be an attractive alternative. The current conservation process shall also be included in this chapter. This chapter is particularly addressed to the readers from outside Calcutta to offer them a general understanding and feeling of the place where the tool is to be tested.

Having gone through the above steps in the research, the stage would be ready to test the tool in the Calcutta situation. Chapter 6 will first discuss the planning process and institutions in Calcutta, which will be followed by a discussion of the existing building regulations in Calcutta.

After this, the testing of the program features evaluated in the previous chapter will be performed by hypothetically incorporating the TDR option in the above regulatory system. The analyses will include examination of the implications of absorbing the TDR bonus in view of the current regulations. The price of TDRs in the sending sites will be compared to the value of the bonus in the receiving districts to observe whether and how the existing market mechanism can support the program.

The analyses in the previous chapter will identify whether or not a TDR program can be applicable in Calcutta, and what modification and changes in the current system would be necessitated by the incorporation of TDR in the regulatory mechanisms of Calcutta. The conclusion in chapter 7 shall list the program features and the principles according to which the design, operation and administration of the program in Calcutta are to be performed. They will be listed both in general, as well as those particular to Calcutta. Some of the particular principles needing further elaboration will form the next part of chapter 7. The conclusion in this chapter will also include discussion on the choice of the institution under which the program may be introduced. The aspects of passing the enabling act, and the need for a basic program to identify the legal issues will be discussed. The prospective support and challenge to the program will also be identified in the conclusion with an optimism that the program will get a trial.

2. Building Regulations and TDR

2.1. Summary

Redevelopment of urban properties are outcome of strong profit motives, while the demand for conservation of landmarks is from concern about heritage, environmental character and quality. Conservation of urban landmarks being an act of prohibiting profit through redevelopment, cannot be accomplished without strong institutional support (i.e; regulations) and valid economic options. TDR concept is unique in this respect as it is a regulatory measure which offers feasible economic alternatives. With a single TDR program the landmark owners can get the compensation against the loss due to designation, the TDR buyer can increase the profit potential in the transfer project, and the City can increase its tax base by bringing out the unused potentials locked in the landmark properties.

Building regulations control bulk of buildings by specifying open space, ground coverage and Floor Area Ratio (FAR). While the profiles of buildings are guided by the road angles, the total bulk is restricted by specified FAR as a multiple of the lot area. FAR relates ground coverage and height of a building in an inverse scale, i.e; higher the ground coverage, lower the height of the building and vice versa. In general, the provisions of the building regulations are to offer

clear predictability with regards to the potential of a zoning lot. If the building regulations are obeyed, the granting of building permit is as-of-right. However, the strict predictability of the zoning regulations have also restricted design possibilities.

Building regulations have evolved over the years to include under the umbrella of human 'welfare' the concerns for environmental quality. Rigid zoning laws have been amended to offer flexibility, and in turn to allow better urban design. Special review process, PUD and incentive zoning are some of the means by which flexibility in building regulations is achieved. Incentive zoning introduced the idea of building and improving public amenities in exchange for additional density, and thereby without the City's cost. TDR emerged from the same concept of getting landmarks preserved without encumbering the public fund. The difference is that while the increase in density is absolute in incentive zoning, TDR only shifts the density. TDR bonus is only to protect an undevelopment in another site in the city.

2.2. Conservation vs. Redevelopment

Any act on a piece of urban property – building, rebuilding or maintenance (conservation) – costs money. The difference is that, while the cost for building or rebuilding has to be borne by the owner / developer, for conservation, the onus falls on the community. Redevelopment forces in any city are outcome of a strong economic motive to maximize the benefits from urban properties. As conservation of urban landmarks is an act of prohibiting redevelopment, it ought to have strong institutional support and valid economic options. The evaluation of alternative approaches for city center redevelopment by Ian Alexander;⁴¹ the British city center rejuvenation case studies compiled by John Holliday;⁴² the inner city regeneration process

⁴¹ Alexander, Ian; *City Centre Redevelopment : An Evaluation of Alternative Approaches*, Pergamon Press, New York, 1974.

⁴² Holliday, John; *City Centre Redevelopment : A Study of British City Centre*, Widenfield and Nicholson, London, 1980.

discussed by Robert Home,⁴³ and American urban renewal controversies recorded by Davidson and Leonard⁴⁴ or Wilson⁴⁵ – all are highly involved in the issues of economic feasibility, and regulatory considerations that work hand in hand in the ruthless market economy.

The interrelationship between the regulatory aspects and the economics of redevelopment in the process of urban conservation cannot be more stressed as they are reciprocating by themselves. Regulations create the potentials,⁴⁶ and at the same time control the extent of potential exploitation. The profit maximizing attitude of the real estate market works by comparing the existing built-up space and its current use against the allowable potential of the site under current regulations, and changing functional demands. In other words, according to Professor William Alonso's bid-rent curve⁴⁷, the urban properties are constantly subjected to a bidding system. This bidding regulates the use (occupation) of existing buildings, and also warrants their replacement when existing facilities fail to reap the benefits of the bidding. Studies done on several cities by economists and urban geographers such as Parry Lewis, W. Lean, B. Goodall, Duncan Sim and others⁴⁸ have pointed out that it is speculation and unsuitability to changing functions that demand and hasten building demolition rather than their physical obsolescence. Some researchers have considered 'the Prisoner's Dilemma' to be responsible as well for physical dilapidation.⁴⁹ The zeal in the real estate business to beat the

⁴³ Home Robert K.; *Inner City Regeneration*, Spon, London, 1982.

⁴⁴ Davidson, A. W. and Leonard, J. E.; (ed) *Urban Renewal*, Advanced Land Use Studios, Washington D.C., 1974

⁴⁵ Wilson, James Q.; *Urban Renewal, The Record and the Controversy*, MIT Press, Cambridge, 1966.

⁴⁶ That is, a property becomes underdeveloped when a later date zoning allows bigger bulk.

⁴⁷ Professor William Alonso offered the bid-rent model from the principle of diminishing rent, which explains the market competition for occupation of urban properties. In the core the bid of the office functions drive out other functions as it expands, the retailing functions take the next ring, and finally the residential function circumscribes on the periphery. (Alonso, William; *Location and Land Use : Towards a general theory of Land Rent*, Harvard University Press, Cambridge, 1964.)

⁴⁸ Sim, Duncan; *Changes in the City Centre*, Gower, London, 1982.

⁴⁹ If two convicts of a case are interrogated separately, each one suspects that the other would take advantage of his absence, and would lay the blame on him. Similarly, each urban property owner suspects that his neighbors will beat him in reaping the benefit of the growing market. (Davis, Otto

competition results in a redevelopment spree. In such situations, the market forces are completely indifferent to historic and aesthetic significance of buildings / areas, and exert pressure for replacement. Often the pressure for replacement is also supplemented by profit calculations which can be had with little or no cost.⁵⁰ It is in this context that institutional support in the form of well-thought-out regulatory measures for urban conservation becomes necessary. It is this race of market efficiency in which regulations ought to function, and resolve conflicting interests.

Since the community becomes liable, urban conservation tends to rely heavily on regulatory measures. But throughout the free world the concept of private property right is such that the community cannot simply prohibit any isolated owner from developing / redeveloping his property. The 'taking issue' is a well debated phenomenon, and it is more than established that the community cannot deprive a property owner of his usual rights at least without 'fair compensation'.⁵¹ It is also well understood that a full dependence on the public fund for such compensation, as would be necessary even with *accommodation power*, has been one of the most serious impediments against urban conservation. Such a situation makes it imperative that some regulatory measures ought to be developed which would facilitate urban conservation without reliance on public fund. The tool under investigation, the Transfer of Development Rights (TDR), is prospective in this regard as it relies neither on police power, nor on

A. and Whiston, Andrew B.; "The Economics of Urban Renewal," in Wilson, James Q. (ed); op. cit., p.54.)

⁵⁰ Most inner city redevelopment projects are self financed, i.e; the prospective users extending funds as construction advances, what is called *salami* in Indian practice. Baron Haussmann was ousted for using such financing expedients in the rebuilding of Paris in 1850s, but it is today a common practice in urban real estate market.

⁵¹ The 'taking issue' seems to be locked between the extremes of no compensation by the advocates of the 'Police Power' on one hand, and *just* compensation by those of the 'Eminent Domain Power' on the other. Reviewing the upcoming trends, Professor John J. Costonis has suggested a third power -- the 'Accommodation Power' -- which would render *fair*, rather than *just* compensation. While 'just compensation' is outcome of 'highest and best use' calculations, the 'fair compensation' is based on 'reasonable beneficial use'. According to Costonis, the accommodation power should be a more fitting predicate for TDR. (Costonis, John J.; "'Fair' Compensation and the Accommodation Power : Antidotes for the Taking Impasse in Land Use Controversies," *Columbia Law Review*, Vol.75, No.6, October 1975, pp.1021-1082.)

eminent domain power. It is devised to use the market potential for the resolution of the conflict between redevelopment and conservation.

Study of this tool necessitates an understanding of the perspective in which this has evolved. The examination of the prospective tool, reported in this chapter, is planned to be done by sequentially studying the background of building regulations, introduction of zoning and its *modus operandi*, flexibility in zoning for better design and environmental quality leading to the creation of TDR as a means to transfer density from desirable underdevelopment to desirable additional development.

2.3. The Background of Building Regulations

The justice sought through a set of building regulations in a city has its origin in the spirit of social good that became necessary due to concentration of population and activities. Due to their compact morphology, it became imperative in a city that every individual property should have certain obligation to its neighbors. Maximization of the output of each lot may hinder that of the one beside it, and thereby may jeopardize the total potential of an area. Therefore, it became necessary to control the extent up to which each property would be allowed to build. These controlling norms, while institutionalized, became the building by-laws or zoning regulations that restricted the building volumes and guided use patterns.⁵²

In the later half of the 1800s, most cities in the United States began to develop a public-park system. The general level of public amenities outside such parks, however, varied greatly as they resulted mainly as by-product of private decisions determined primarily by economic considerations. Cities were compact and walkable with built-up volume and details worked

⁵² The history of institutionalized norms for controlling and regulating man-made environment is, by no means, a recent phenomenon. The *Lex Julia Municipalis* of Rome, the *Mansara Silpa Sastra* of India, and the *Book of Rites* of China are some the ancient treatises which guided building art and practice.

out through an architecture of human scale. But often offensive land uses were placed in inappropriate locations. City planning was mostly limited to the mapping of streets, almost invariably on a grid,⁵³ regardless of topography. Occasionally certain squares of the grid would be left vacant without structures, to be developed as marketplaces or public plazas.

The common law bequeathed to the American colonies the principles governing landowner's right to build skyward without legal limitation. The frontier desire to improve newly-cleared land to the fullest extent was approved in the treatise of James Kent in his '*Commentaries on American Law*'. It proposed that land "has an indefinite extent, upward as well as downwards, so as to include every thing terrestrial, under or over it".⁵⁴

However, the indefinite upwards building was constrained by the technology, materials and expertise available until about 1860. In 1865, New York was still a city of relatively low structures, four to five stories walk-up buildings. In 1870, the first building with an elevator rose to seven stories.⁵⁵ The advancement was greeted by the market so much that one of the top floors was soon leased at twice the rental rate of the city's best office accommodation,⁵⁶ whereas previously rent used to decrease above the third floor.

The main factors encouraging high-rise are the need for concentration of some functions in close proximity, and the shortage of build-able land in the vicinity. The southern tip of Manhattan was subjected to these factors as New York's role in the ever growing trade and industry of the nation demanded close physical association of bankers, brokers, lawyers, and

⁵³ Influenced by European Baroque designs, Thomas Jefferson proposed diagonal but rigid and formal grid.

⁵⁴ Kent, James; *Commentaries on American Law*, p.401; cited in Richards, David A.; "Development Rights Transfer in New York City," *The Yale Law Journal*, Vol.82, No.338, 1972, p.341.

⁵⁵ This was the first Equitable Building. It is curious to observe that the first building and its successor on this lower Manhattan site bracket the beginning and end of the skyscraper's pre-zoning era. The first building exhibited the possibility of elevator and the second building, the 42 storied monster (discussed in Chapter 3), carried the development of high-rise to such intolerable extremes that it caused the birth of zoning law.

⁵⁶ Toll, Seymour I.; *Zoned American*, Grossman, New York, 1969, p.48.

corporate offices. The demand for space was pushing the property values in galloping pace. Between 1875 and 1925 land values increased so rapidly that it became economically prudent to demolish even fairly new buildings in order to use the land more intensively.⁵⁷ The noted city planner George Ford explained the exponential nature of this growth dynamics in his classic study. As he pointed out,

"As business increases, not in arithmetical proportion to population but according to a power of the increase in population, the intensity of business is greater in the larger cities. This causes a more rapid rise in land values of these cities and consequently quicker obsolescence of their office buildings."⁵⁸

2.4. The Concern for Quality of Urban Environment

The years of 1900 started with two significant developments that affected the physical form and quality of built environment in the cities with profound and lasting influences. They were the technology of the high-rise building with steel skeleton, and the invention of the elevator. High-rise buildings had begun to appear in the 1870s, but their cumulative effect on the environment was not felt until 1900. These buildings made possible the concentration of large numbers of people in small land areas. Increasing popular use of the automobile, at the same time, began to offer a freedom of movement. This encouraged the development of land independent of public transportation systems, and far away from the central city. The automobiles, compared to public transport, required larger amount of space for their movement and storage. Much of the downtown planning and design at this stage, therefore, was bogged down with the needs, constraints and opportunities of the automobile. The primary concern was to resolve the issues that have arisen generally from the need to accommodate the automobile,

⁵⁷ Nelson, Richard L.; "Appraisal of Air Rights," *The Appraisal Journal*, Vol 23, No.4, pp.495-508; cited in Costonis, John J.; *op. cit.*, 1972, p.589.

⁵⁸ Ford, George B.; *Building Height, Bulk and Form : how zoning can be used as a protection against uneconomic types of buildings on high cost land*, Harvard University Press, 1931, pp.123-24.

and particularly from the interface of the automobile and the elevator as the increasingly intense development made possible by the elevator drew more people into a fixed land area.

In such a situation the quality of the urban environment was bound to deteriorate. It was not only losing the human scale by the invasion of the skyscraper; the compactness by insertion of the facilities for automobiles; and the cityscape by the replacement of traditional articulated, molded and ornamented facades by stark, cubic, glossy and reflective facades -- it was also losing the very sense of place through the indifference brought into the urban spaces. Urban open spaces such as plaza or *piazza* did no longer mean the same kind of space, function and environment. As Cook mentions,

"New high-rise buildings have tended to rise in splendid isolation from "plazas", the misnomer applied to the remaining space on the building site, which were often poorly defined by the surrounding structures and could hardly be considered plazas in the European sense, that is, places where streets come together and create cross currents of pedestrian, and more recently, vehicular activity."⁵⁹

Above all, the hard lesson learned from the wholesale demolition in the early days of the federal urban renewal programs became highly important in the realm of urban development. This generated the sense of the loss of identity, and gave rise to a concern for preserving buildings and districts that give a city a special quality, its sense of continuity with the past. The retention and adaptation of such buildings and districts to modern uses, as well as efforts to integrate new construction more carefully into the existing fabric have been demonstrated to be economically feasible and having a visible effect in the central city areas.

The developments in the continuum of central city's growth, decline, stabilization, and regeneration led to the growth of a concern for the quality of the environment and the level of amenity in cities. General deterioration in the quality of the environment was attempted to be redressed by the efforts given to the economic revitalization of cities which, unfortunately, often appeared to overshadow the attention also to be given to improve their environment and design. But building a high quality urban environment and building healthy local economies

⁵⁹ Cook, Robert S., Jr.; op. cit., pp.6-7.

go hand in hand. America's most successful and attractive cities are prime examples. For economic, demographic, and sociological reasons, cities are now experiencing a movement -- a demand for a better quality of environment with more amenities. This can be observed from the comment of Alan Beals when he wrote,

"People are demanding higher quality urban environments with more amenities, and to stay competitive, city officials are finding ways to provide desirable environments and to guide and control the complex dynamics of urban development as well. Significantly, city officials are finding attention to design to be an invaluable asset with many economic, social, and environmental benefits. Mounting evidence suggests that without it, a city suffers."⁶⁰

Increasingly it has been felt that the strict predictive nature of the building regulations leaves little room for innovations in design, and produced a sterile environment. Building to the full potential becomes the prime consideration, and quality of design remains only secondary. The business calculations in the real estate industry care for the quality of environment only in economic terms, i.e; a smaller building with high quality design can be accepted only when the income from it will match to that of a building of full potential with ordinary environmental quality. This is an impractical proposition, as income is more directly proportional to the amount of space, and only indirectly related to the quality of design. Improvement in the design will not be possible unless there will be some economic incentives for it. Many cities, therefore, have incorporated flexibilities in their building regulations. The advantage of these flexibilities can be had only in exchange for some prescribed design features. For example, certain additional density may be made available if the design considers an open plaza, or an arcade, or the like in the project. In this regard, urban conservation becomes very important because significant old buildings not only provide aesthetic charm, they also provide light and air pocket in the dense core areas. The scale, character and appearance of old buildings enrich the environmental quality physically, as well as psychologically.

⁶⁰ Beals, Alan; Preface to "Innovative Zoning Tools for Downtowns," *Technical Bulletin No. 1*, National League of Cities, Washington D.C., 1981, p.4. (Alan Beals was the Executive Director of the National League of Cities.)

Despite such importance of the landmark buildings, their preservation cannot be pursued, operated and administered being divorced from the total development dynamics. Institutional efforts and regulations to deal with urban conservation could not have been developed in isolation. Indeed, it should be noted that the main emphasis has been to improve the quality of the environment and amenities, in which preservation of landmarks and districts is significant, but only a part. It is, therefore, necessary to study the development and modifications of zoning -- the institutional measures for general growth management of the cities -- to understand the perspective in which regulatory measures for urban conservation have to work. Such an understanding shall lead to the appreciation of the actual context, spirit and purpose of a special regulatory tool like TDR.

2.5. Zoning

Zoning in America is the modern version of the common-law doctrine of nuisance, the principal means by which a city can influence its built-up volumes, forms and use categories. Zoning draws on that rationale to create districts -- zones -- into which land uses deemed incompatible are segregated, with all parcels of land within each zone treated equally, at least in theory. The uses with the most offensive characteristics (e.g; heavy manufacturing, slaughterhouse, and so on) are considered the lowest, with single family residential use at the other end of the scale. Between these extremes is a gradual scale, with uses for each zone spelled out in great detail. Although such compartmentalization instituted by zoning was thought to be good for the society in general, its effect was not always very nourishing. By the middle of 1960s there were many publications in which zoning segregation and density issues were highly criticized.⁶¹ Strict use separation by zoning was thought to be responsible for the

⁶¹ One of the most vehement objections came from Mrs. Jane Jacobs in her landmark book entitled *The Death and Life of Great American Cities*, 1961. Jacobs saw zoning as an evil and evidently charged it for the *death* of urban environment in most American cities. She criticized 'use' regulations as responsible for creating islands in the society, and to advocate for 'mixed uses.'

sterile and monotonous environments that characterized most urban, and suburban areas of America. In addition to separating uses, zoning regulates the intensity of development and the deployment of the bulk on a site. In most cases, the landmarks in central city areas were artifacts built well before the zoning phenomenon came into practice. As such, later imposition of the regulation influenced their use pattern a great deal while volume-wise they mostly became underdeveloped. They are, therefore, allowed to remain only up to the time when use changes results adequate return.

The legal foundation of zoning is in the police power, that is, the power to enact laws for the protection of public health, safety, morals and welfare. Over the years, the definition of 'welfare' has been expanded by the Courts to bring under its wings the general well-being of the community, including good planning, a good physical layout and appearance, to name just a few qualities meriting legal protection. In other words, there has been wide judicial acceptance of zoning controls that seek to achieve community objectives going far beyond the old nuisance rationale. In the name of general welfare, communities have assumed through zoning – and Courts have sustained – broad powers over the use of privately owned land. Furthermore, the common notion that zoning is essentially negative, for the fact that it circumscribes the owner's right to unrestricted use of his land, is changing. Increasingly it has been adapted to achieve positive objectives, and are being considered for both preventive and creative uses.

2.5.1. How Zoning Operates

A zoning ordinance is a set of regulations that a municipal jurisdiction is empowered to enact by virtue of a state enabling act or, in the case of some large cities, the city charter. By and large, the state enabling acts were originally based on the New York State act or the Standard State Zoning Enabling Act (SZEA) of 1924, drawn up under the sponsorship of the U.S. Department of Commerce. Planning commissions usually recommend zoning reclassification,

and sometimes get involved in specific applications for relief from certain zoning requirements. But planning commissions usually have only advisory powers, and their roles vary greatly from city to city. Traditionally, it has been the practice to keep planning one step removed from the political process. Zoning, a major mechanism for implementing plans, is enacted by a municipal legislature, such as city council or town board. It is therefore more directly responsive to politics.

Zoning legislation assigns varying degrees of authority and discretion to an administrative body, often a city planning department or building department (e.g; in Calcutta, the City Architect's Department). A property owner or a developer applying for a building permit from that department must demonstrate that his proposed development conforms with zoning requirements. Appeals for certain relief from zoning restrictions, depending on their nature, are dealt with by the planning commission or by another entrusted body, usually called a board of appeals or something similar. Such board of appeals have found to be generous with requests for relief, often undermining the intent of zoning. This has encouraged, what Cook termed 'forum-shopping',¹² by applicants seeking a relaxation of restrictions. Since the planning commissions have a stake in the implementation of their plans, they have often attempted to check the powers of the board of appeals by narrowing the grounds on which relief may be granted. Sometimes the planning commissions are drawn into the process by which they tend to ensure that undue relaxation of the zoning specifications should not jeopardize the implementation of their plans.

Usually a zoning ordinance contains a text of regulations and a land use map delineating the zones. In most states, the zoning must be in accordance with a 'comprehensive plan', the purpose and details of which have been the subject of ongoing debate among planners and lawyers. The argument is that zoning imposed in accordance with a poorly thought-out or sketchy comprehensive plan shall be less – or in no case more – protective of the communi-

¹² Cook, Robert S., Jr.; *op. cit.*, p.19.

ty's interests, compared to a zoning where objectives are clearly thought-out without imposition of a formal plan. For the purpose of urban conservation, however, the requirements of a comprehensive plan is significant as it would provide a clear and explicit understanding of the urban design objectives -- in which conservation of landmarks shall be an important part -- to be accomplished by the application of the zoning power to provide guidance, administration and predictability to developers.

The standard method of relaxing the strict requirements of the zoning regulations for a particular plot of land is the variation and the special permit. Sometimes they are also called special exceptions or conditional use allowed through undertaking by the owner to the City. Variations are granted according to specific criteria relating to economic hardship caused by the size, shape, topography, or other special characteristics of the site. But, ordinances usually require that a variation should not result in adverse impact on the lots beside or the area in general. As has been mentioned earlier, the grounds on which variations are granted are being increasingly restricted. For instance, it is now common to permit variations only as to volume of the building rather than the use. Further, the awarding of a variation is usually accompanied by conditions designated, through undertaking, to lessen its impact.

The basic unit of land on which the control of zoning is applicable is usually the zoning lot. The definition of the lot, therefore, is of importance with regards to the power of zoning as a tool for regulating the built-environment. Generally, the zoning lot is the parcel of land under single ownership or control to be developed by the owner or developer. It may contain more than one mapped parcel and the central requirement of the rule is that the development is to be undertaken under single ownership or control.

Volume and height limits are established to protect 'light and air' amenities. These terms are generally used in tandem such that 'light' originally meant sunlight falling on building surfaces, but has come to include light falling on the streets and sidewalks as well; and 'air' meant natural ventilation to the building's openings. Although the technology of fluorescent

tube and air conditioning have shifted the focus of 'light and air' to the public environment, they are still of high importance in the central city areas because of the concentration of high-rise buildings. Height and bulk of buildings need more careful and detailed examination as they are the primary elements of manipulation for the achievement of the quality of built environment in the downtown areas. Also these are the elements that threaten the existence of the urban landmarks.

A building's allowable volume is defined by the limits of its lateral dimensions. Maximum coverage of a lot is specified by mandatory front, side, and rear yards, and setback requirements - the latter specifying the location of planes of the exterior walls in relation to lot boundaries, streets, or neighboring buildings so as to result in a permissible maximum lateral dimensions. In some cases, these requirements may also be defined by angles from the street delineating planes that the proposed building may not penetrate (sketches in Figure 6 on page 40). Volume may also be circumscribed by limits on the amount of the site that a building may cover - usually expressed as a percentage of the lot area. Height may be defined in terms of actual maximum dimension, or in terms of number of stories, or as a multiple of the width of the abutting street. It is becoming increasingly common to combine height and coverage specifications in a way that their manipulation in a stereo scale (i.e; if the proposed building has to go higher, it has to cover less or vice-versa) results in number of alternatives for the same maximum allowable volume.

When coverage and height are combined, the resultant volume on the site is very specifically determined, although either factor has the effect of placing some limits on volume independent of the other. An increasingly popular device that combines height and coverage in a flexible formula is the Floor Area Ratio (FAR), which states that a proposed building's volume is limited to a certain multiple of the area of the site, without necessarily specifying coverage or height. Thus, for instance, a one-story building covering whole of the lot would have an FAR of 1. The same FAR can be achieved by a two-story building covering half of the lot area. A 50,000 square foot building may be constructed in a 10,000 square foot site if allowable FAR

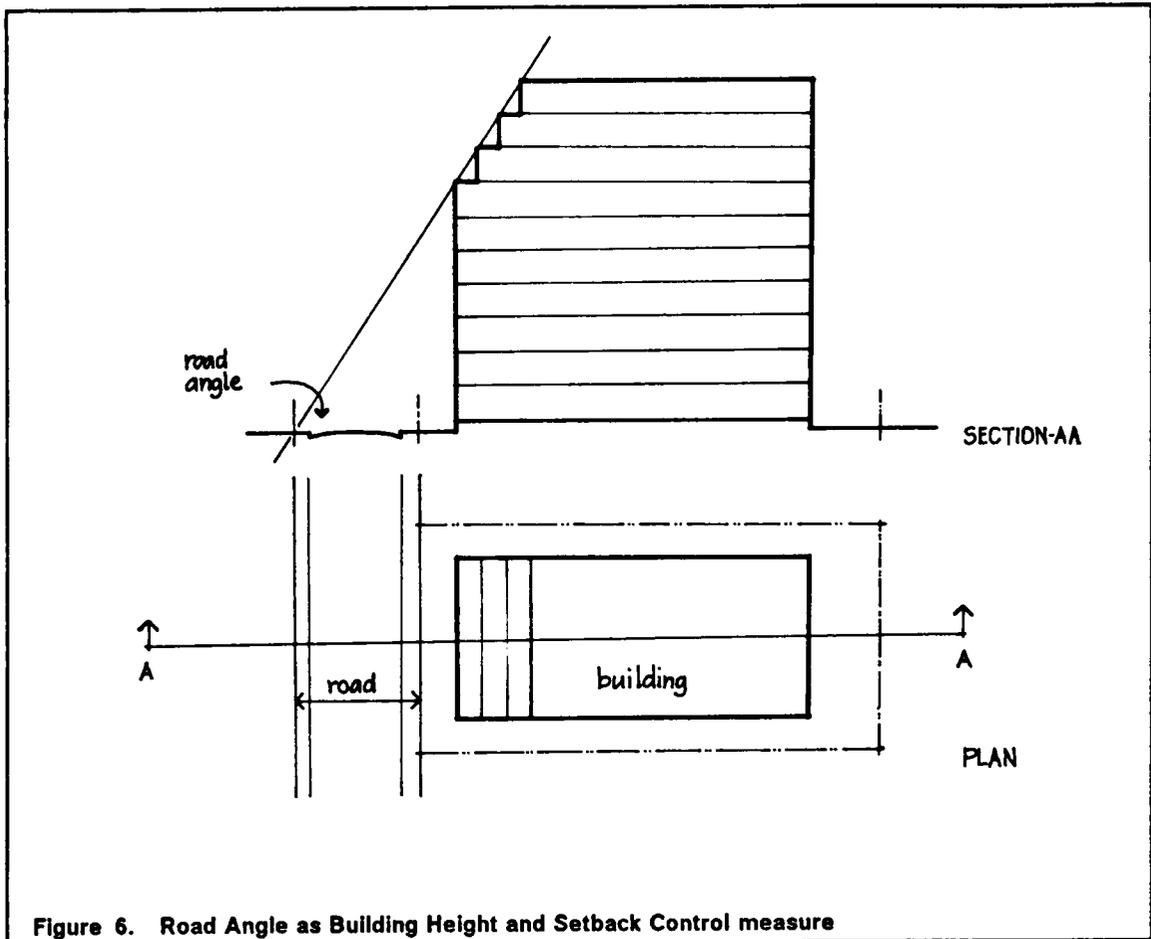


Figure 6. Road Angle as Building Height and Setback Control measure

is 5. The building may be designed having 5 floors with 100 per cent site coverage (sketch A in Figure 7 on page 42), or having 10 floors with 50 per cent lot coverage (sketch B), or having 20 floors with 25 per cent site coverage (sketch C). In many cases FAR specifications are also accompanied by maximum height limits, without which the theoretical maximum would be limited only by real estate development economics, construction technology, and by the requirements of aviation administration. Vertical construction is expensive and also requires spaces for elevators which reduces the efficiency of the built-up space.⁶³ Unless there are

⁶³ Efficiency in buildings is calculated comparing the net rentable space against those devoted to essential services of circulation, both horizontal and vertical, utility areas, and the thickness of the structural elements etc. Elevator shaft, the lobby area and the machine room space all add up to increase the service area considerably, and thereby reduce the percentage of net rentable area per unit of service area.

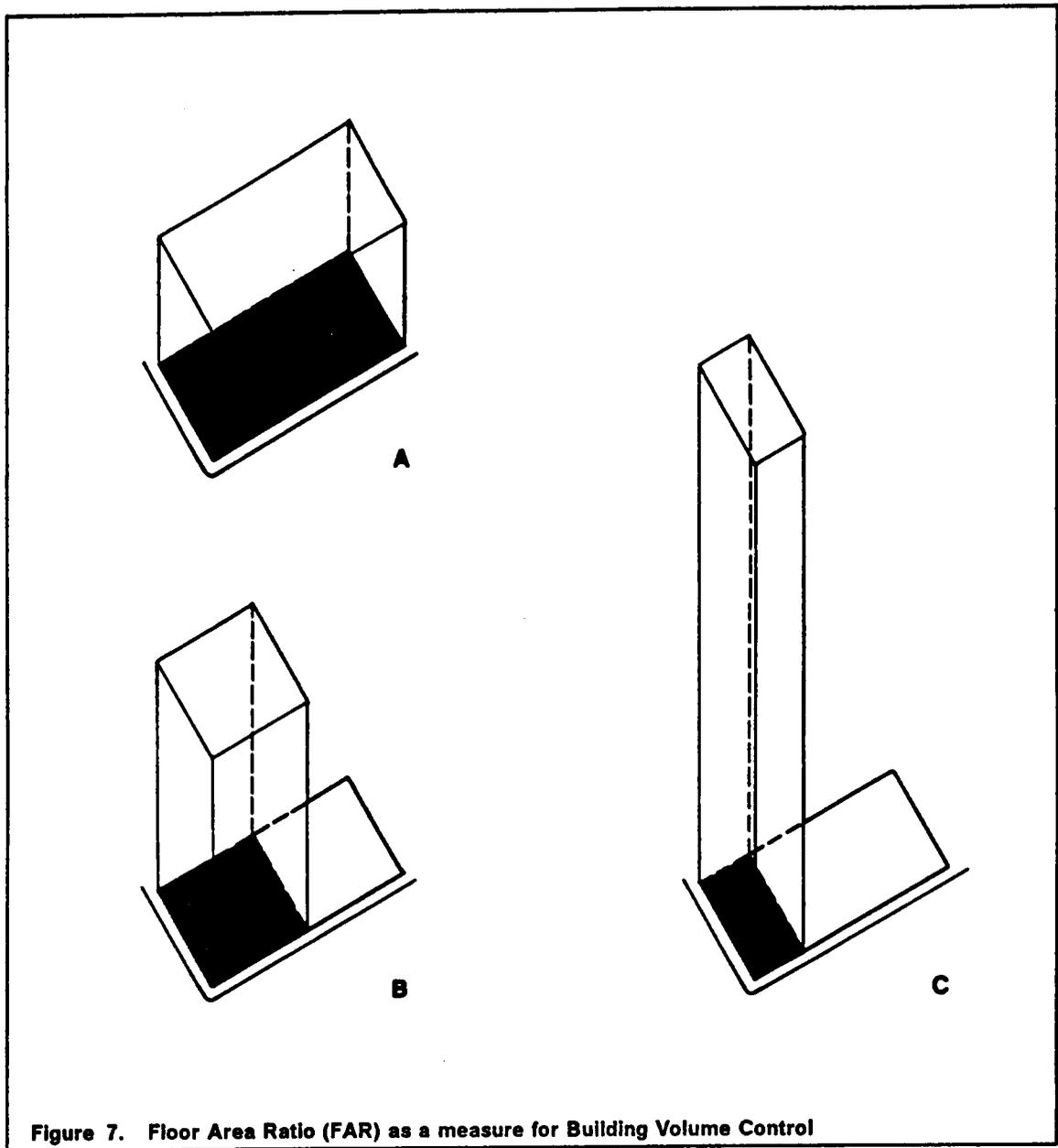
other reasons, economics usually encourages a developer to build lower structures with greater site coverage. Open space requirements, therefore, has come out to have an important relation to FAR.

Heights, coverage, and FAR limits define the intensity of use and the envelope solely in terms of the floor area or volume of the proposed building on the site. There has been criticism to such generalized specification, particularly in view of variable demands by different use types. For example, different kinds of use – such as office buildings, hotels, departmental stores and apartment blocks – each place different demands on streets, sidewalks, transportation and other infrastructures. The argument is that, these differences ought to be taken into consideration by the zoning specifications. Hotels may have a relatively constant flow of people moving in and out by car throughout the day. Office buildings, depending on the type, might have morning and afternoon peaks that put demands on public transportation and sidewalks for a short period every day. The inherent complexity of adjusting volume of building according to type of use, so far, has retarded the formulation of a zoning that would account for such differences. Only a crude attempt can be observed in differential zoning on a district-by-district basis.⁶⁴

2.6. Flexibility in Zoning for Better Environment

Zoning has been created to protect public health, safety and welfare by ensuring predictability in land use, by separating incompatible uses, and by limiting the extent of development on a

⁶⁴ An interesting attempt at expressing density for individual parcels on the basis of a sliding scale was done by Byron R. Hanke, then Chief Land Planner, Federal Housing Administration. (Hanke, Byron R.; "Planned Unit Development and Land Use Density," *University of Pennsylvania Law Review*, Vol.114, No.1, November 1965, pp.15-46). The effort has been to vary the FAR according to the size of the lot rather than the use type. It will be observed later that Calcutta has different FAR limits for different types of use, but it reflects market demand of space in different types rather than the relation to facilities and infrastructures. For instance, a site on a 25 meters wide road may have a maximum 3.5 FAR for residential use, 3.75 for office building and 3.0 for warehouse.



lot. Predictability implies prestatement through fixed rules. From the increasing concern for quality of environment an ongoing tension between the need for strict predictability and that for flexibility has become apparent. As Cook has mentioned,

"On one hand, zoning is necessary to preserve predictability of land use. On the other, urban design controls must at times be flexible, less predictable, to permit suitable and imaginative design solutions responsive to the unique qualities of a particular site."⁶⁵

To address the demands for higher quality of urban environment through flexibility, zoning has been evolving to include a variety of devices. The names of these devices vary from city to city whereby similar intent and spirit in the device may have different terms. For example, what is 'special district' in a city may be 'planned development' in another. Moreover, the zoning is an amalgam of these various devices that have been developed and combined to suit the requirements of a particular city. Controlling measures described above usually do not exist in pure form. For instance, one means of combining different measures is the overlay zone – a zone with special requirements with regards to review procedures, height limits, or design guidelines that covers more than one zoning districts and does not change the underlying use and density specifications.

There is a wide category of zoning devices for which the specifications to be adhered to are fixed, permitting a minimal level of discretion in their application. As an example, in order to preserve the character of a streetscape, visual corridors may be established in which development shall be restricted by zoned limits of height or easements. Build-to-lines, on the other hand, specify that structures will be built following a specific vertical plane (e.g; the front boundary line) in an effort to preserve the character of the plane of enclosure by maintaining the facade lines or by preventing the interruptions on the vertical plane. For the same reason, they may also require that the wall be of a certain height.

Planned districts or special zones contain pre-established design and amenity requirements, and often architectural specifications, that are thought-out in detail in the zoning ordinance. Special districts may be enacted to provide review procedures intended to ensure developments consistent with the character of an area or to provide plans for the development of an

⁶⁵ Cook, Robert S., Jr.; "Innovative Zoning Tools for Downtowns," *Technical Bulletin No.1*, National League of Cities, Washington, DC, 1982, p.7.

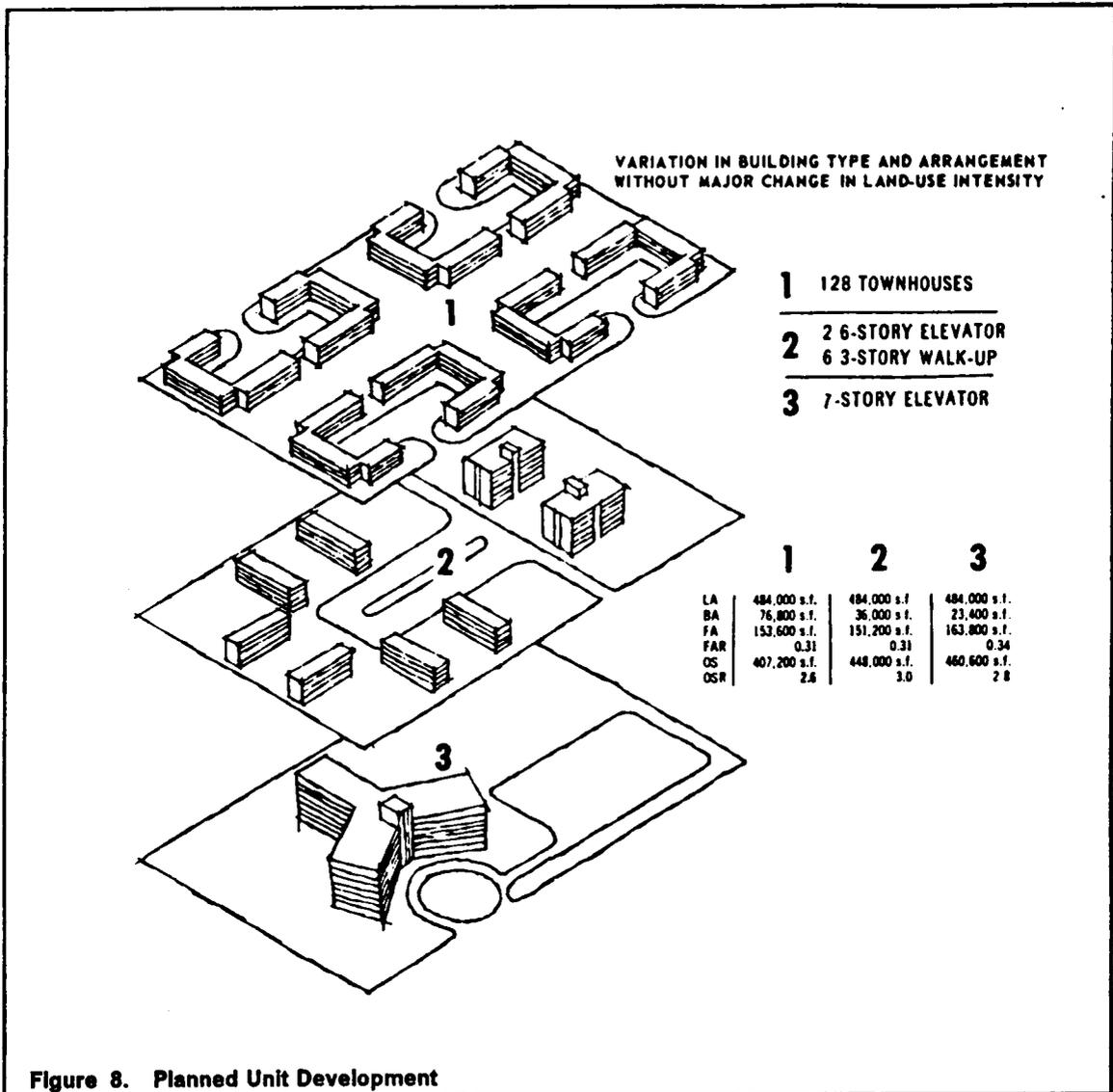
area's pedestrian system. While these requirements may restrict developer's options severely, they may include incentives, usually in the form of more space for income generating uses, to balance the impact of the restrictions.

Some zoning specifications do not relate directly to the three dimensional aspects, but are nonetheless important to the social and economic environment of the area. One such zoning is that which requires mixed uses within buildings, that is, retail on the ground level and other uses above. On site parking requirements not only dictates heavily the economics of the design and construction of a building, they also influences the traffic volume and accessibility of the area.

The mechanism called special-review district is a regulatory system which falls between the preset zoning specifications on one hand, and fully discretionary review by city authority on the other. Its objective is almost similar to that of a special district, but it differs by not having the design features as part of the ordinance. Further, the decision of the review body, often comprising people from the district, is only advisory. Guidelines and parameters for the decision may be contained in the ordinance and/or in an adopted plan.

The zoning techniques discussed above only narrowly define the subject matter and extent of City review. There are two other techniques that permit public intervention beyond the usual concerns of zoning, while allowing the developer more flexibility. They are the 'Planned Unit Development' (PUD) and the incentive or bonus zoning.⁶⁸ Both of these techniques are tied to manipulation of volume and intensity of development, and both of them require the involvement of the city government.

⁶⁸ Cluster zoning is another technique which, indeed, in another variation of PUD applicable only in residential developments. Since the objective of this study is to examine regulatory measures shaping and guiding central city areas with scattered landmarks, the concept of cluster zoning is left outside the discussion here.

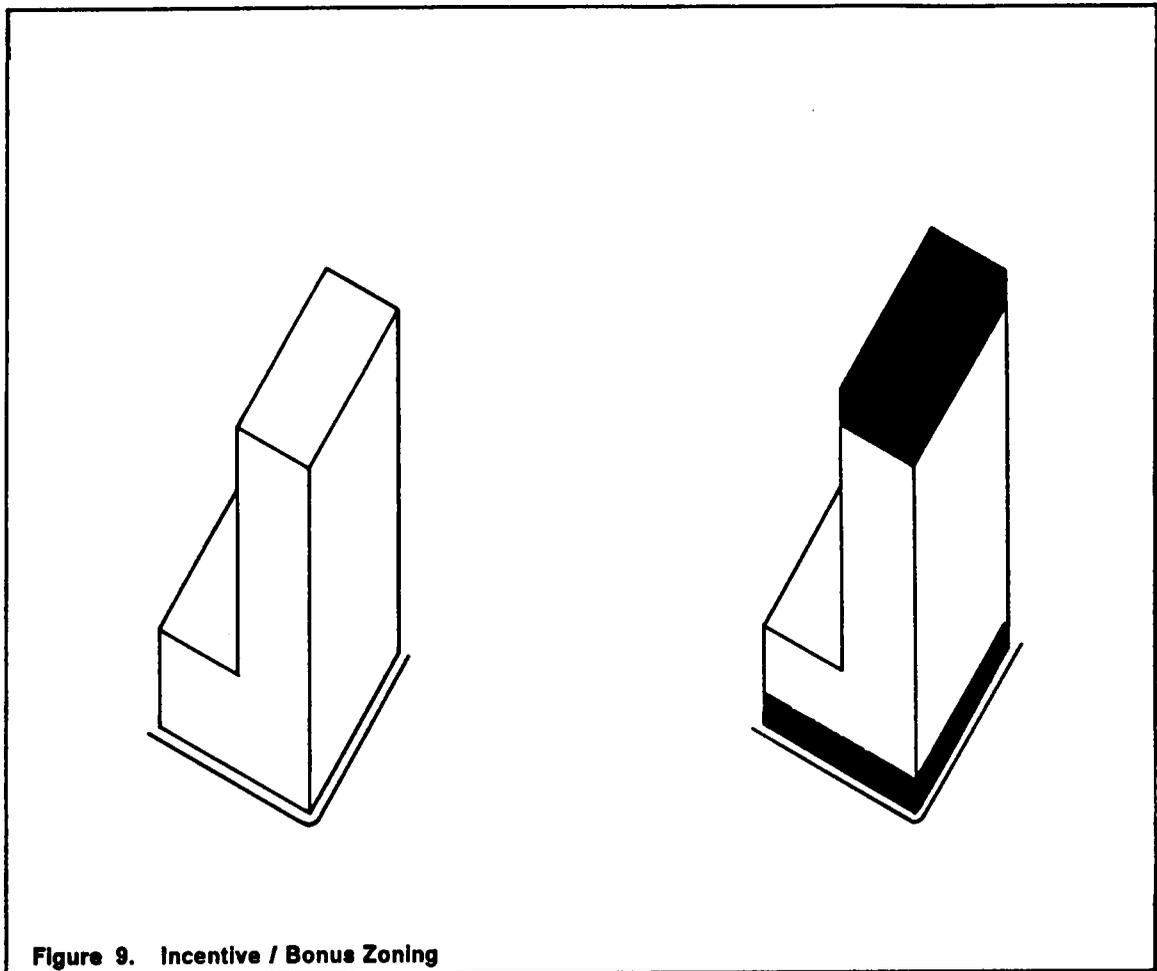


Planned unit development applies to sites larger than a zoning lot, permitting shift of density within the sites that do not change the overall density. In addition to density shifts, the PUD may allow uses and building types not ordinarily permitted. Instead of monotonous development all over, the PUD concept can play with building volumes and heights within the lot, may concentrate them in one part making room for organized open space which otherwise gets scattered all around, and can combine functions for variety of built-volume, scale, open space and landscape (sketches in Figure 8). The city exercises greater control in determining the

acceptability of the proposed plan and designs in exchange for the flexibility granted in a PUD. After such rigorous evaluations, the approved plan is enacted into an ordinance applying to the entire site area.

Bonus / incentive zoning takes two forms - one allowing flexibility at a negotiated agreement, and the other in exchange of certain public amenities. In both instances, government intervention is solicited by the developer by proposing to exceed the FAR, height, or coverage restriction. The change in density or FAR is the characteristic that distinguishes incentive zoning from PUD, albeit government intervention is required in both cases. The density level is relaxed considering the market demands and merit of the proposed design. The developer can build at the permitted density or chose to exceed it and negotiate with the City on his design. Such a negotiation usually results in an agreement between the developer and the City; and an ordinance is devised accordingly for the site.

'As-of-right' incentive zoning, the second type, entitles the developer to exceed current density limits in exchange for some prescribed design features to be included in the proposed development. For example, the proposal on left in Figure 9 on page 47 uses maximum FAR with no bonus, and the proposal on right in the same lot gets additional two floors in exchange for the arcade in the ground level. The supervision by the city, in this case, is limited only in ensuring that the prescribed design requirements have been met. However, often it is not possible to describe the design features in the ordinance with accurate specificity and there remains some degree of latitude for interpretation. This should allow the City a position to exercise more discretion and consequently greater influence in the design; but as it is found in practice, the greater latitude for interpretation works to the advantage of the developer particularly depending on the political context. No new ordinance is necessary for as-of-right zoning and any developer who otherwise meets the zoning criteria may take advantage of the as-of-right provisions.



Incentive or bonus zoning was originally intended to achieve better environmental quality by allowing room for innovative design through flexibility in zoning. The idea was to offset the additional density with ameliorating design features, such as additional open space, an arcade, or a pedestrian overpass at the base of the building. Such features are intended to have public purpose, and what constitutes a public purpose has become a matter of controversy in the liberal interpretation of the concept. Conservation of urban landmarks, however, falls within the purview of public purpose without much disagreement.

In this context, density, or the right to develop, becomes the government's leverage. By specifying the conditions under which density can be increased, the government is able to

achieve two objectives. First, it can transfer the cost of public amenities onto the developer by requiring him to include improvement of public or semi-public areas or by accepting contribution by the developer to a fund for improvements away from his site. Secondly, it enables the government to exercise significant control over the design of structures and their relation to the total environment. As such, incentive zoning has been a milestone in guiding and influencing the environmental quality of central city areas which has far reaching latitudes if used constructively and innovatively. But ordinarily it is attractive as a means of accomplishing public amenities without public cost.⁸⁷

Transfer of development rights (TDR) has emerged as an offshoot of the concept of incentive zoning.⁸⁸ The concept developed on the idea that additional density may also be granted to a site in exchange for certain price which may be used to compensate additional restriction to another site. TDR is nothing more than shifting of unused density or right to develop from one site to another, often by selling that right. Generally, cities have permitted such transfers only between adjacent parcels or those across an alley or street from each other. The environmental objective achieved by the transfers are usually either the preservation of the variation in scale and the 'light wells' between large buildings, or conservation of urban landmarks, with the landmark owner realizing compensation from the sale of development rights. For example, the landmark building A in Figure 10 on page 49 utilizes only a fraction of the development rights of the site. The remainder development rights (B) are transferred to various other sites within the transfer district, where additional bulks (C) are allowed to be built. These transfers have a 'something-for-nothing' appeal because the City incurs no direct expense; but the landmarks are preserved without any loss in the overall density as increase in density of the receiving site balances the underdevelopment in the landmark site. This density main-

⁸⁷ This, however, is now a debatable issue. As will be discussed later in this chapter, the argument is that the additional bulk put demand on infrastructures which has to be augmented by public capital, and that the amenities received in exchange satisfy only the words of the regulation, not the intent or spirit.

⁸⁸ Costonis, John J.; op. cit., 1972 and *Space Adrift, Saving Urban Landmarks through the Chicago Plan*, University of Illinois Press, 1974, pp.29-35.

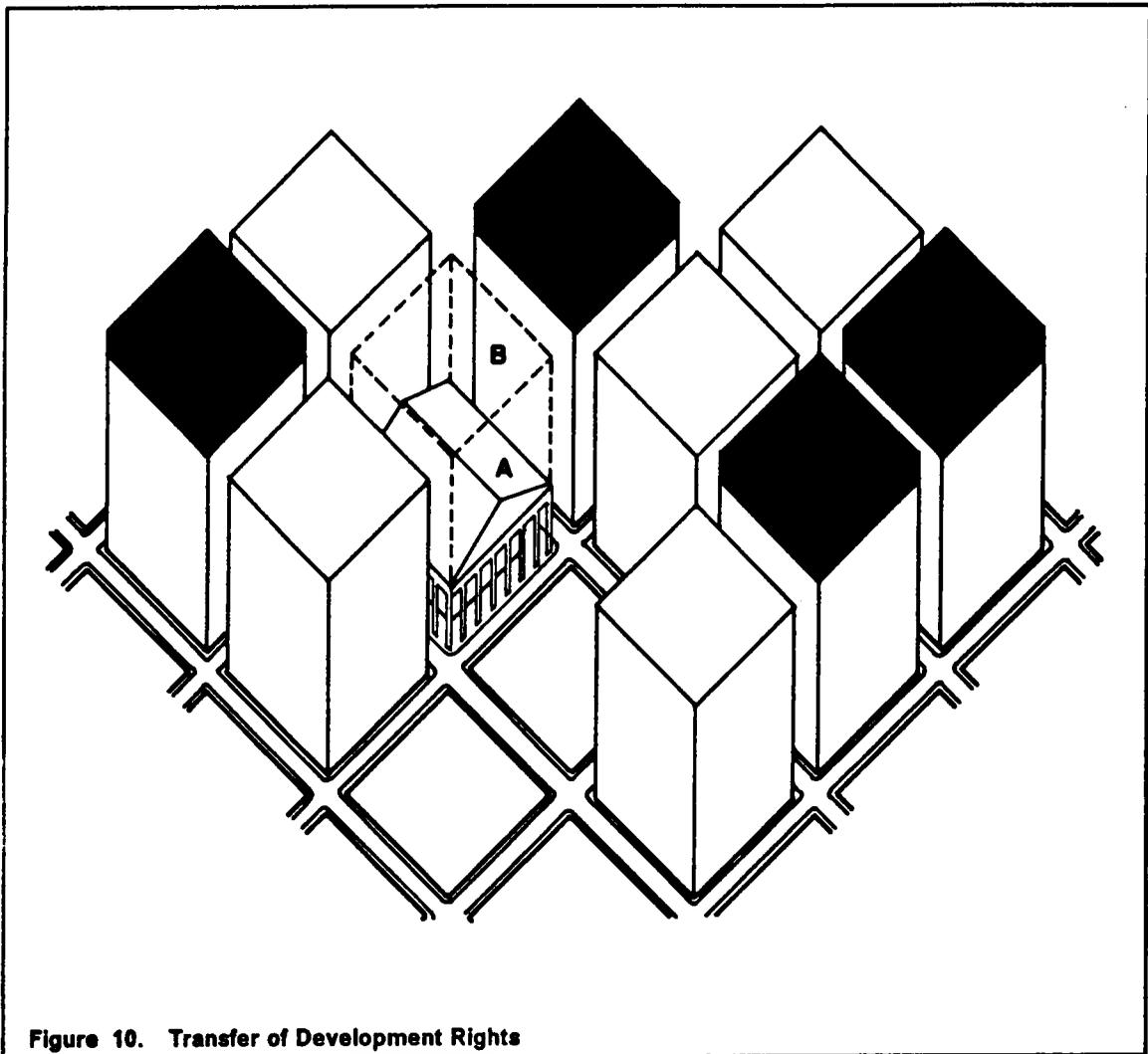


Figure 10. Transfer of Development Rights

tenance feature distinguishes TDR from incentive zoning. Although TDR comes out as a variation of the concept of incentive zoning, it does not overload an area with additional density. In incentive zoning the bonus of extra density is given in exchange for certain amenities and, therefore, the increase in the overall density is absolute. By contrast, in TDR the bonus is granted only to ensure an underdevelopment in the vicinity and hence density is only shifted, not increased. However, such shifts may pose serious planning and design problems, and raise controversy over the issue of location of such shifts. Prof. Costonis identifies the issue when he writes,

"Development rights transfer programs differ from zoning bonus programs with respect to the source of the additional density that is made available to developers and the location of the amenity in relation to the project incorporating the additional density. The first difference makes the transfer technique a somewhat less worrisome urban design tool than the zoning bonus; the second has the opposite effect."⁶⁹

Despite of progressive thinking and innovative devices, there are limitations of the scope of zoning to shape urban environment. The two most important features limiting zoning are its prospective nature and the fact that, being a creation of the political process, it can and is changed to accommodate economic forces. Zoning can help define but cannot create a real estate market, nor can it prevent pressures that will result in its amendments. Within these limitations, zoning in general works, and TDR being a very sophisticated and encompassing part of it works within greater limitations. In this context, the cases of cities having TDR program are examined in the next chapter with regards to the perspective of their general regulatory framework, the details of their TDR programs and emerging issues in implementing the programs.

⁶⁹ Costonis, John J.; op. cit., 1974, p.33.

3. Case Studies

The TDR concept was first proposed in the United States by Gerald Lloyd in 1961 when he introduced the idea that allowable density may be separated from the originating piece of land.⁷⁰ Thereafter the concept received articulation in two different conservation fields. While Professor John J. Costonis devised its adoption and application details for urban landmark conservation, Professor B. Budd Chavooshian and his colleagues Thomas Norman and George H. Nieswand worked to use the concept for environmental planning and open space preservation.⁷¹

Within a very short period, the concept got wide attention and articulation. It was recognized immediately to be useful and promising to resolve planning and land use conflicts in various directions. As early as in 1975, the Center for Urban Policy Research in Rutgers University organized a volume under the editorship of Professor Jerome G. Rose in which diverse applicability of the concept was discussed with reference to current programs.⁷² In this volume

⁷⁰ Lloyd, Gerald; "Transferable Density in Connection with Zoning," *Technical Bulletin No. 40*, Urban Land Institute, 1961.

⁷¹ Chavooshian, B. Budd and Norman, Thomas; "Transfer of Development Rights : a new concept in land use management," *Urban Land*, Vol.32, No.11, 1973, pp.11-16.

⁷² Rose, Jerome G. (ed); *Transfer of Development Rights*, Center for Urban Policy Research, Rutgers - The State University of New Jersey, 1975.

TDR concept was reviewed as a method for preserving landmarks, open space and fragile ecological resources. It was also examined as a system of land use regulation, as a means for encouraging low-income housing, as a tool for regulating the location and timing of community growth, as well as a method of avoiding the windfalls and wipeouts syndrome.

The programs studied in this chapter are some of those devoted to conservation of urban landmarks. But there are several other successful programs in the United States which use TDR concept for land use planning purposes. For example, for the Pinelands in New Jersey and Collier County, Florida; the purpose of the TDR program is to protect environmentally significant forests and wetlands. In Santa Monica, California, the program protects a coastal mountain range. Other programs, such as the one in Montgomery County, Maryland, perhaps the most successful program in the country, have been established to protect prime agricultural lands. And as will be discussed, the Seattle program has been designed to encourage maintenance and rehabilitation of low-income housing. There are now more than 30 TDR programs operating in the country as shown in Table 1 on page 53 with various levels of accomplishments.

The TDR programs to save urban landmarks are distinguished from other programs because of the compact morphology of central city areas in which landmark TDRs originate. Density limits in the downtown areas are usually so high that transfers, though not increasing absolute densities, easily distort building bulks and infrastructural requirements, let alone skyline distortion and other qualitative problems. Other TDR programs receive additional density, originating in the low density rural areas, in development districts near the urban centers. By contrast, the landmark TDR programs have to absorb unused potentials within the urban districts as high value unused density cannot feasibly be directed in low value areas. The challenge in landmark TDR program, therefore, is much more acute, and demands greater care and sophistication without being complicated to operate and administer. The issues in landmark TDR programs may have common features with other programs, but their resolution in

Location	TDR	PDR	Rights Transferred	Purpose			Preserve Open Space or Protect Environment
				Historic Preservation	Control or Redirect Growth	Protect Farms	
Alaska							
Matanuska-Susitna Borough	-	-	-	-	X	X	-
Arizona							
Scottsdale	X	-	-	-	-	-	X
California							
Los Angeles	X	-	yes	X	-	-	-
San Bernardino County	X	-	-	-	X	-	-
San Diego	X	-	-	X	-	-	-
San Francisco	X	-	yes	X	-	-	X
Santa Monica Malibu Mountains	X	-	yes	-	-	-	X
Colorado							
Denver	X	-	yes	X	-	-	-
Pitkin County (under consideration)	X	-	-	-	X	X	X
Connecticut							
State of Connecticut	-	X	yes	-	-	X	-
Windsor	X	-	-	-	X	-	-
District of Columbia							
Washington DC	X	-	yes	X	-	-	-
Florida							
Collier County	X	-	yes	-	-	-	X
Dade County	X	-	-	-	-	-	X
Hollywood	X	-	-	-	-	-	X
Lee County (under consideration)	X	-	-	-	-	-	X
Monroe County (under consideration)	X	-	-	-	-	-	X
Palm Beach County	X	-	yes	-	-	X	-
Louisiana							
New Orleans	X	-	-	X	-	-	-
Maryland							
Calvert County	X	-	yes	-	X	X	-
Howard County	-	X	-	-	-	-	-
Montgomery County	X	-	yes	-	-	X	-
Massachusetts							
State of Massachusetts	-	X	yes	-	-	X	-
Nantucket	-	X	yes	-	X	-	X
Sunderland	X	-	-	-	-	-	-
Montana							
Bridger Canyon Zoning District							
Gallatin County	X	-	yes	-	-	-	X
New Hampshire							
State of New Hampshire	-	X	-	-	-	X	-
New Jersey							
Burlington County	-	X	yes	-	-	X	-
Chesterfield	X	-	-	-	-	X	-
Hillsborough Township	X	-	yes	-	-	X	-
Hunterdon County	-	X	-	-	-	-	X
Pinelands	X	-	yes	-	X	X	X
New York							
Eden	X	-	-	-	-	-	-
New York City	X	-	yes	X	-	-	-
Southampton Township	X	-	-	-	-	-	-
Suffolk County	-	X	yes	-	-	-	-
Pennsylvania							
Birmingham Township	X	-	-	-	-	-	-
Buckingham Township	X	-	yes	-	-	X	X
Kennett Square	X	-	-	-	-	-	-
Philadelphia (under consideration)	X	-	-	X	-	-	-
Upper Merion	X	-	-	-	-	-	-
Rhode Island							
State of Rhode Island	-	X	yes	-	-	X	-
Texas							
Dallas	X	-	-	X	-	-	-
Virginia							
City of Virginia Beach (under consideration)	X	-	-	-	-	-	X
Washington							
Island County	X	-	-	-	-	X	X
King County	-	X	yes	-	-	X	-
Seattle	X	-	yes	X	-	-	-
Wyoming							
Teton County (under consideration)	X	-	-	-	X	-	X

Table 1. TDR Programs currently in operation in the United States

highly tense real estate market of central city areas are sensitive to too many conflicting factors than those having comfortable transfers from countryside to urban fringes.

3.1. Summary

The programs studied here are particularly those designed for landmark conservation. They are of New York City, Chicago, San Francisco, Denver, Seattle, Washington, DC, and Philadelphia. The programs in New York City, San Francisco, Denver, and Seattle are currently in operation. The plan for Chicago has not yet materialized. Washington, DC does not have a TDR program, but transfers are allowed through the PUD provision in the city's zoning. The Philadelphia program is currently under preparation.

New York City's program, the pioneer one in the country, has its achievements as well as criticisms. In general, the program originated from the effort to make the city's zoning flexible for better urban design. In particular, it was to preserve landmarks without demand upon public funds. The planners in New York City have amended and modified the program several times in order to resolve the conflicts raised by previous features, or to render the program suitable to accommodate certain new aspects. The program started with adjacency requirement and zoning lot merger; but later on expanded the receiving area to the whole city block having the originating landmark building. However, the required urban design preparation to guide and control the receiving lots has never been done in New York City. The planners here seem to prefer adjacency because otherwise a host of planning and urban design works become necessary. New York City's program is also in competition with other as-of-right bonus provisions. These bonus provisions are under close scrutiny from other planning considerations; but as yet they provide comparatively easy way of adding density rather than TDR. New York City also declines to organize a TDR bank; but is interested to market the unused development rights from publicly owned landmarks. Although the city's effort to create variations

of the program one after another to deal with the situations confronted deserves praise, it is nonetheless true that the prime driving force has been to accommodate the interests of development and the City's treasury.

Chicago's program was benefitted by the earlier experience in New York City. The 'Chicago Plan' introduced the concepts of organized receiving districts and TDR bank. The receiving districts also had two alternatives: districting in conjunction with the city's landmarks, and districting independently of the landmarks. The TDR bank was to resolve the synchronization problem of TDR supply and demand, as well as to support the lean period in the real estate development cycle. The bank was to start with the TDRs from publicly owned landmarks, and those donated. The 'Chicago Plan' also envisaged a downzoning to cut down the density of development, and to facilitate the TDR program. The Plan was thought to be implemented in conjunction with the federal program of saving the landmarks of the Chicago School of Architecture. This state and federal partnership was perceived by the local developer community as federal intervention, and declined to participate. Chicago's generous zoning regulations is forbidding for a TDR program to be of any significance in the local building industry.

San Francisco's program is one of the best designed programs. It not only has the TDR sending and receiving areas clearly identified, it also is supported by block-by-block urban design to offer clear predictability. The program is also supplemented by a general downzoning, and suspension of most other bonus provisions. San Francisco's program has introduced the usefulness of preparing a TDR inventory, and to plan accordingly in the receiving areas. The program in San Francisco has also cleared-up an implementation problem. It has separated the conservation of the TDR originating landmark and the transfer project. The transfer project is to be approved independently; while the conservation of the TDR originating landmark is to be accomplished through other regulations.

The program in Denver does not have clear urban design of the receiving areas as the San Francisco program; but the receiving areas are clearly demarcated, and integrated in the

overall planning of the city. TDR inventory has also been prepared to plan transfers accordingly. The program is not supported by any downzoning; but is supplemented by a sharp cut back in the bonus provisions. Denver's program has also introduced an useful feature. The landmark owners are required to get the conservation plan of their landmark building approved in order to be eligible to market the unused development rights.

Seattle's program is in competition with other zoning bonuses like that in New York City. Further, the program also requires the transfer to be within the same city block of the TDR originating landmark. TDR is considered as a general bonus, i.e; unused potential from landmark building, and those from low-income housing are considered under the same program. The conservation of the landmark being closely tagged with the transfer project makes TDR from landmark buildings less attractive, while those from low-income housing are easily and cheaply available. The hourly fees requirement against city officials' involvement in the transfer negotiations distract the developers from being interested in the program.

In Washington, DC, the transfer cases are dealt with by means of PUD provision in the zoning. Therefore, each project is considered separately, and on the merit of the project the transfers are considered. In such a process the transfers are limited only to either zoning lot merger, or to adjacent lots. A far-away transfer districting was tried from Georgetown to areas along the metro line. This program, like New York's, suffered from the conceptual legacy in sending development rights beyond a certain distance. The later program developed within Georgetown could also not materialize because of its complicated formulae and assumptions.

The ensuing program in Philadelphia has carefully considered the strengths and weaknesses of the existing programs. The program developed in Philadelphia has three components – transfer of development rights (i.e; transfer away from the originating landmark lot), zoning lot merger (i.e; transfer in adjacent lots), and zoning bonus for preservation. The third component is an unique feature. It will allow additional density in receiving sites in exchange for preservation expenditure of a designated landmark having no unused development rights to sell. The

Philadelphia program is also supported by clear identification of receiving areas, their planning, and a TDR inventory. The program designers currently researching materials for a TDR bank, and a fast track single window approval procedure. Philadelphia's program is useful to observe as the process of adapting the experience of existing programs in a particular city's situation.

3.2. New York City

New York City is well known for originating novel ideas in almost all spheres of life, and regulatory measures to shape the urban environment are no exceptions. This city has been the vanguard of zoning since it enacted the nation's first comprehensive zoning ordinance in 1916. New York has continued to innovate, modify and adjust ever since. The current zoning enacted in 1961 contains thousands of revisions and additions made since then resulting in a complex, and more than 600-pages long zoning law.⁷³ The city's three basic zoning districts – residential, commercial and manufacturing – are further subdivided into 21 zoning districts, controlling development within each district through a variety of use, bulk and parking regulations.⁷⁴ Some of the most innovative zoning measures have been devised for the city's CBD areas. An examination of New York's entire zoning dynamics would be too lengthy, nor is it necessary for the purpose of the study. Only those aspects related or leading to the TDR program and landmark conservation are investigated here.

⁷³ Compared to, say, Chicago's about 70 pages and Washington DC's 76 pages.

⁷⁴ A complete list of these regulations and the corollary maps for the entire city are found in *New York Zoning Regulation*, 1985. The zoning resolution is discussed more generally in *New York City Department of City Planning; Zoning Hand-Book : A Guide to the New York City Zoning Resolution*, 1981.

3.2.1. The Background of 1916 Zoning

The second Equitable Building at 120 Broadway in lower Manhattan was completed in 1915. The volume of the building was so huge that it cast a shadow over 7 neighboring acres.⁷⁸ It brought the development of skyscraper to such an intolerable extremes that it raised serious question on a building's size in relation to the lot area and to the neighborhood. All of the surrounding building owners got reductions in their tax assessment when they proved a loss of rent due to the light and air obstruction by their monster new neighbor. A situation as grave as this was the reason that brought together planners, administrators, realtors and reformers behind the nation's first comprehensive zoning ordinance. The dilemma between the conflicting objectives – of encouraging intensive development of tax-generating properties on one hand, and to limit congestion and overcrowding of the city on the other – has shaped the city's zoning regulations ever since.

The 'Heights of Building' Commission, a body created by the Board of Estimates and Appointment in 1913 suggested twin themes which influenced planning theory in New York's CBD ever since including the zoning resolution of 1916. The principles have been the preservation of property value, and the encouragement of building activities. Control was decided to be exercised by maintaining heights, setbacks and area limitations on building size. At this time New York was virtually without any direct control over building height except for residential construction which were to abide by the rule of one and a half times the width of the wider abutting street. The newly enacted regulation in New York established the zoning envelope, an imaginary three-dimensional volume representing the maximum allowable bulk of the proposed building. It established five categories of height districts based on street width. District A was the 'one times', B - 'one and a quarter times', C - 'one and a half times', D - 'two times', and E - 'two and a half times'. However, skyscrapers could rise to any height if it cov-

⁷⁸ The building was 42 stories high with 1,250,000 square feet of rentable office space. 100,000 people visited the building daily and 13,000 people worked in it. The building cut off the sunlight from the facades of buildings as tall as 21 stories. (Toll, Seymour I.; op. cit., p.71.)

ered at their base not more than 25 per cent of the site area, and if they observed certain setbacks from the streets.⁷⁶ The 1916 zoning resolution also introduced a bonus provision which allowed a builder to add height if he left open space more than specified in the ordinance.

3.2.2. The Aftermath of 1916 Zoning

Within a decade of 1916 resolution the planners were observing that the regulations were inadequate. Height zoning was altering the form, and limiting the bulk of skyscrapers; but still allowed the crowding together of towering structures that overshadowed their districts. Between 1925 and 1931, Manhattan office space increased by 92 per cent, and next two years added yet another 56 per cent⁷⁷ including the Empire State Building and Rockefeller Center. The Grand Central area alone had 70 new office buildings between 1921 and 1946. As a result, in 1944 the height and area limits in the more intensive districts were lowered. But the tools to regulate remained the same, i.e; height and setback restrictions as means of preserving light and air, and they produced the slender tapering towers of 1920s that are so much a part of the city's romantic image.

These techniques were indirect and inefficient to control population density, although they adequately insure light and air requirements. Direct regulation of density was possible only through FAR technique. The FAR device was in use in zoning ordinance for the city's lowest density residential districts since 1940, but was not included in the general rezoning of 1944. After 17 years of political maneuvering, the FAR controls were extended in the city's com-

⁷⁶ The setback regulations required that a building, after rising from the street or lot line a certain height, must be set back from that line at some fixed ratio, for example, one foot for every three feet of height. The setback regulation is responsible for the distinctive pyramidal shape of downtown buildings.

⁷⁷ Richards, David. A.; "Development Rights Transfer in New York City," In Rose, Jerome G. (ed); *op. cit.*, p.126. (David A. Richards, a real estate legal consultant, has been a strong critic of the New York City TDR program.)

mercial districts by the zoning resolution of 1961. However, by that time attention had shifted from the need for FAR controls in the congested CBD to the determination of their upper limits.

3.2.3. The 1961 Zoning Amendment

The argument from the developers' side was that FAR fixation of floor areas would inhibit the growth of business. They complained that because of the FAR limit, the taller buildings would have smaller floor plans, which would not be serving the demands of the office functions. Further, they maintained that such small floor plans would be inefficient in relation to the service areas and elevator banks. The City hired consultants in 1956 to devise a rezoning that would balance the builders' desires with the predictable need of the city. The consultants considered all relevant factors and suggested a maximum limit of 15. The consultants also found in their studies an average FAR of 15 in the existing buildings built since World War II. Since the developers were building profitably at that level, and since the land area required at this FAR to accommodate the projected increase in floor area was a modest amount relative to total commercial land available in the CBD, the Planning Commission adopted 15 as the FAR in its highest density commercial districts under the 1961 resolution.⁷⁸

The lobby of the builders and realtors in New York City has always been a very strong one to influence the regulations in their favor. In order to win their support for the 1961 resolution, as well as to address the general concern for better environmental quality,⁷⁹ the planners incorporated two interesting features in the zoning. This somewhat undermined the limitations on building volume represented by the FAR of 15. But it was thought to be worthwhile as it

⁷⁸ In comparison to New York City's highest base FAR of 15, the FAR limits in other cities ranges from 8 in Philadelphia and Toronto to a maximum of 32.1 in Minneapolis. In the same range, San Francisco (before the 1985 downzoning) had a base FAR of 14, Chicago has 16, Denver 10 and Seattle 10. By contrast, the FAR ceiling in London's commercial district is 4.5 and that in Calcutta is also 4.5.

⁷⁹ The immensely popular success of the Seagram Building of 1961, which rose straight up without setbacks behind a plaza, encouraged creation of such open spaces in the form of urban plazas and the new style in skyscraper - the sheer glass boxes.

would provide amenities in the building projects, and thereby would improve the environmental quality. The first was a bonus device which granted a developer additional 20 per cent area in exchange for a plaza at the base of the building. A builder might therefore increase his FAR from 15 to 18 only by covering less of his lot and putting more of his permitted bulk into a tower. This 20 per cent floor area bonus provision has since proven to be "one of the most widely used feature of New York City's 1961 zoning resolution".⁸⁰

Experience with the plaza bonus illustrates some of the pitfalls of a predetermined, as-of-right bonus features. The 1961 zoning did not contain a detailed description of a plaza's necessary design features. It was, therefore, possible for a development to qualify for the bonus with a design feature that live up to the letter but not the spirit of the law. As Cook points out,

"Either through ignorance or indifference about what design characteristics made a plaza usable, or because the owner wanted to discourage public use to avoid maintenance, liability, and image problems, architects designed many spaces whose design said "keep out"."⁸¹

This defeated the very purpose of the bonus. The obvious question raised was whether New York City would have been better off without the amenities, and therefore without the bigger buildings that came along with them.⁸²

The second innovation was a relaxation in the definition of the zoning lot to which the FAR limit could be applied. The 1961 resolution defined the term 'zoning lot' to include, in addition to the project site, any other parcel of land located within the city block under same owner-

⁸⁰ Barnett, Jonathan; "Case Studies in Creative Urban Zoning," in Marcus N. and Groves, M. (ed); *The New Zoning : Legal, Administrative, and Economic Concepts : And Techniques*, Praeger Publisher, NY, 1970, p.127. By a New York City count, there were 93 plaza or public arcade bonuses awarded in midtown alone by 1982. Some developers, of course, did not keep up to the promise with regards to scale or quality of the amenities, and now intend to make further profit out of them. (Smith, Randall; "Use of Office Buildings' Plazas Causes Spat in New York City," *Wall Street Journal*, December 1, 1982, p.29, col.1). According to Paul Goldberger, the architecture critic of the New York Times, the plaza bonus provided 8 million extra sq. ft. of office space between 1963 and 1975, which is equal to three and a half Pan Am Building. The arcade bonus provided another half million sq. ft. of additional rentable space (Goldberger, P.; "The Limits of Urban Growth," *The New York Times Magazine*, November 14, 1982, p.56).

⁸¹ Cook, Robert S., Jr.; op. cit., p.88.

⁸² As Goldberger points out, "the carrot (the bonuses), of course, turned out to be so enormous as to constitute a problem in itself - and the stick (the amenities) a mere twig." (Goldberger, P.; op. cit., 1982, p.58).

ship. A lease of at least 75 years qualified for this purpose. Therefore, by leasing an adjacent underdeveloped or vacant lot in the vicinity, and designating it as part of his total 'zoning lot', a developer could add the authorized but unbuilt volume of the leased parcel to the bulk of his project site. This was the embryonic form of the concept of transfer of development rights.

3.2.4. The TDR Program

Although the zoning law was introduced to control over building, it had no control over the concentration level. Said another way, the zoning was directed to control bulk and volume of the building lot-wise, and therefore, accepted full development in each and every lot. According to Goldberger's observation,

"Instead of spreading out, (developers) have squeezed in - putting more building on Third Avenue, shoehorning skyscrapers into tiny sites on side streets off Park and Lexington that would have been unthinkable a few years ago, tearing down medium sized buildings on Fifth and Madison Avenue to put up blockbusters instead. Such change is encouraged by a system of land economics that prices land with the assumption that it will be used for maximum development - and that sets in motion a troubling cycle. For if a developer pays top price for land, he then feels compelled to build the biggest possible building to get a fair return on his investment."⁸³

The troubling cycle never ceased to be active in New York City. In 1986 the price of midtown Manhattan land was, according to George Sternleib, the Director of the Center for Urban Policy Research at Rutgers University, "at upwards \$1,500 a square foot - that is unmatched in the world. a situation where nothing is sacrosanct in New York (from replacement), certainly nothing under 50 stories."⁸⁴

In such a situation landmarks are in great danger both by the zoning ordinance's encouragement for new office buildings, as well as by urban economics. But older buildings not only enhance the city's character through their historic association and architectural distinction, they also provide pockets of light and air amid high-rise blocks. Yet their economic return

⁸³ Goldberger, P.; op. cit., 1982, p.48.

⁸⁴ Gottlieb, Martin; "The High Mortality of Manhattan Real Estate," *The New York Times*, May 4, 1986, p.6, col.3.

could never reach that of the office building which might replace them. The pressure to demolish them, therefore, is overwhelming.

In 1968, the New York City Planning Commission enacted its first development rights transfer regulation for this specific class of structures. This regulation was intended to supplement existing programs for landmark preservation, by allowing the landmark owner to transfer his authorized but unused floor area to adjacent parcels for development.⁶⁵

The state legislature had amended the General City Law in 1956 which permitted the acquisition or control of buildings having special aesthetic significance or value. The City, however, failed to act until pressured by citizen's preservation groups. The City enacted the Landmark Preservation Law in 1965, and created the Landmark Preservation Commission. The Commission was empowered to designate any appropriate structure or site as a landmark. It can also name any area of the city having special historical, aesthetic, or architectural significance as an historic district.⁶⁶ The designations, however, were to be finalized after a public hearing, and after being approved by the city's Board of Estimate.

The Commission is not required to consider the economic hardship while designating a building to be a landmark. But the witnesses at the designation hearings do testify on the loss in property values as a result of the designation. The owner may challenge the designation on the ground that he is not receiving a reasonable return from his landmark property. The definition of this reasonable return in the statute is placed at a net annual return of six per cent

⁶⁵ The rationale for this early TDR provision was to maintain a bowl or saucer of light and air with adjacent properties on its rim and the older landmark at the bottom of the bowl (Marcus, Norman; "Air Rights Transfer in New York City," *Legal Contemporary Problem*, Vol.36, 1971, p.372. Norman Marcus was the General Counsel to the New York City Planning Commission.)

⁶⁶ Over the years the Landmark Preservation Commission has become a powerful force in shaping land use in New York City. Its exacting criteria mean that its ruling can exceed other forms of Government control over development and is being referred to as 'super planning commission' (Dunlap, David W.; "Landmarks Panel Studies History, Rules on the Future," *The New York Times*, November 2, 1986, Section IV, p.8, col.1).

of the assessed valuation of the property including both building and site.⁸⁷ If the landmark owner succeeds to establish that he cannot realize this return without alteration or demolition of the buildings, the onus falls onto the Commission to devise, with the owner, alternative plans for preservation which would provide the required return. In this process, the Commission has the power, subjected to the approval of the Board of Estimates, to grant various degree of tax relief.

The 1961 zoning resolution permitted 'zoning lot merger', i.e; the transfer of potential development rights to a contiguous lot in the event both the areas were under the same ownership. This was, however, imperative that no merger should be possible in three instances. First, if all the contiguous sites were already fully developed; second, if the neighboring buildings were themselves landmarks; and third, if area in the immediate vicinity of the landmark were thought significant for the preservation of the environmental setting. Further, the requirement of common ownership imposed an additional barrier, and the adjacency requirement limited the marketability of the development rights.

The 1968 amendment aimed at removing this restrictions and broadened the definition of 'contiguous' to include lots across the street or intersection from the landmark and by allowing transfer between separately owned zoning lots. This has been the most notable measure undertaken in New York City TDR program. This created a new unit of development control. Indeed, it has been the forerunner of the concept of establishing a TDR 'receiving area'. As Norman Marcus stated,

"Many planners felt that the essential interrelationship of zoning density control to street width, transit access, school seats, and other objects of planning concern could not survive if the city allowed indiscriminate transferability of unused development rights between more widely spaced parcels. At its extreme, if development rights were transferable from Staten Island to Bronx, for example, TDR would destroy any zoning plan within which it operates.

Had the city chosen a different unit of control as its basis - perhaps a block basis or even a square mile basis - there would have been no bias against transferability of potential for devel-

⁸⁷ The 'net annual income,' according to the statute, shall be the excess of earned income from the property over operating expenses, excluding mortgage interest, amortization, and allowances for obsolescence and reverses, but shall include a specified amount for depreciation.

opment across a wider area. A block-by-block control can achieve density objectives as successfully as a lot-by-lot approach."⁸⁸

Since the city already had a history of allowing 20 per cent extra as bonus, the transferee lot in the TDR program was also allowed a 20 per cent increase in floor area through transfer. Therefore, the landmark owner was allowed to sell portions of his unused rights to several adjacent owners, but naturally could not sell the same portion more than once. The development rights of the landmark's zoning lot is to be reduced forever by the amount of rights sold, and notice of the restrictions upon further development is permanently imposed. The approval of the transfer was also conditioned upon findings by the Planning Commission:

"(a) that the permitted transfer of floor area or minor variation in the front, height and setback regulation will not unduly increase the bulk of any new development, density of population or intensity of use in any block, to the detriment of the occupants of buildings on the block or nearby blocks, and (b) that the (required) program for continuing maintenance will result in the preservation of the landmark."⁸⁹

To receive a transfer permission under these provisions, an application is to be made to the City Planning Commission which has to include a site plan of the original landmark, that of the transferee lot, and a plan for preservation and maintenance of the landmark. The Landmark Preservation Commission then reports to the Planning Commission on the proposed transfer with comment on the site plan for the landmark. The maintenance requirement, however, is not further detailed in the 1968 amendment to permit the City to tailor the requirements according to the specific needs of a particular structure. The Planning Commission usually condition its approval of the TDR transaction upon an estimate of maintenance costs to be made available from the transfer proceeds. The Commission is also empowered to recommend design modification of the proposed building to ensure compatibility with the landmark. Such modifications are also necessary because utilization of the additional bulk of the transferred

⁸⁸ *ibid*, p.878. The Act governing TDR in New York State, however, allowed transfer "within the same integrated district as that from which the development rights originated but to no others". (Hennigan, Robert D.; (et al)., "Transfer of Development Rights, A System for New York State," *Emerging Land Use Concepts in an Urbanizing Region*, SUNY, College of Environmental Science & Forestry, July 26, 1976, Section 239-dd, p.5. mimeographed)

⁸⁹ *Zoning Regulation*, New York, Article VII, Chapter - 4, 1971; cited in Richards, David A.; *op. cit.*, 1975, p.131.

development rights would, without such waiver, violate height or setback or yard requirements.⁸⁰

The concept of TDR is well accepted in New York, particularly for two reasons apart from its potential for landmark preservation. First, its adherence to optimal density, i.e; it does not increase the overall density of an area as only unused density is transferred. Secondly, its offering 'multiple benefits' in the form of compensation to the landmark owner, additional office space to the TDR buyer, and enabling the City to benefit by new tax revenues from what would have remained untaxable. Although it can be criticized to be a method of 'fiscal zoning', it nevertheless allows the City not to be dependent entirely upon the tax relief provisions to compensate the landmark owner. Therefore, even after two decades, TDR is well described in the glossary of the New York City Planning Commission's 1982 publication which announced details of the latest master plan for the midtown area of Manhattan. As it says,

"For every lot in the city some amount of development may occur. The amount of permissible development is measured in terms of floor area and other bulk allowances permitted by the underlying zoning district. The difference between the floor area of retained buildings and the floor area permitted on the zoning lot equals the development rights, available for new construction. In certain situation, e.g., in the case of zoning lots occupied by landmarks, this unused floor area, or development rights, may be transferred to an adjacent zoning lot, to increase the amount of floor area which is permissible on that zoning lot."⁸¹

3.2.5. TDR Cases and Amendments

The transfer of development rights is only one regulatory tool in the welter of measures included in New York's zoning ordinance.⁸² Also, preservation of landmarks is only one of the objectives, although an important one, the City intends to accomplish through zoning regu-

⁸⁰ Oser, Alan S.; "A Dissenting Voice on Transferring Air Rights," *The New York Times*, June 16, 1985, Section 8, p.7, col.1.

⁸¹ New York City Planning Commission; *Midtown Zoning*, New York, 1982, p.270.

⁸² Furthermore, New York has become the first city in the nation to limit the amount of sky a building can block. This 'sunlight preservation system', mostly developed following what has been developed in Great Britain, requires that about 75 per cent of the sky surrounding any new building remain open. Compliance can be complicated, but basically a structure succeeds if someone standing 250 feet

lations. The objectives in front of the City are not always free of conflict, nor are the measures themselves all complementary to each other. For example, if a developer's calculations indicate that the market demand of office space may be only marginally higher than permitted volume, he will definitely first of all attempt to qualify for as-of-right bonus before he would venture for TDR.

Further, the real estate market in New York is brisk, and the developers' guild is extremely powerful. They can hold the city hostage to the explicit or implied threat of a corporation to move elsewhere. Also New York's financial difficulties have led to understaffing of the city planning department, which does not have sufficient personnel to evaluate each proposal subject to special zoning requirements in an adequate manner. Therefore, the game of exploiting the situation to rip advantage is primarily being played by the developers. As Cook notes,

"Above all, because power in New York is so diffused, with only a weak constituency speaking out for the public interest in the quality of urban environment, developers have been able to wield enormous influence both in drafting the rules and in having them administered in a friendly way."⁸³

The TDR program in New York, therefore, is complicated, somewhat confused, and is dependent upon the signals of the real estate market.⁸⁴ This would be true for any city trying to introduce new concepts. In taking such a leadership New York City has been, what Richards calls, the 'nation's laboratory' for development rights transfer experimentation over the past quarter century, since the city's original zoning of 1916 was comprehensively amended in 1961. The formulation of the TDR program by New York's planners, the activities of the developers to take advantage of the transfers, the resolutions of its Courts, and the responses by the citizen groups – all these provide useful examples and lessons for its application

away can see about three-quarters of an imaginary sphere above and around its top. (New York City Planning Commission; *ibid.*, pp.137-168.)

⁸³ Cook, Robert S., Jr.; *op. cit.*, 1980, p.90.

⁸⁴ Interviews with Blythe Merrill of Municipal Arts Society, and Karen Huebner of New York Landmark Conservancy, May 31, 1988.

elsewhere. The New York City Planning Commission has been quite imaginative to come up with numerous variations in the TDR program.

The Grand Central Terminal Case and the 1969 Amendment

On September 21, 1967, the Board of Estimate confirmed the Landmark Preservation Commission's designation of the Terminal as a landmark. The terminal utilized only 1.5 FAR while including an as-of-right bonus the FAR could be as high as 18. The developer who, obtained a renewable 50 year lease of the air rights over the Terminal from the Penn Central Railroad Company, proposed to build a skyscraper containing some two million sq. ft. of office space on top of the Terminal. After more than a year of controversy, and the presentation of two alternative proposals by the architects, the Landmark Preservation Commission finally denied the permission to construct over the Terminal in late 1968. This ruling meant that the proposed structure could not be erected without exhausting the Commission's various ameliorating procedures. The Penn Central went to court to challenge the constitutionality of the city's landmark preservation law. The negative ruling by the Commission triggered a suit for damage of dollar eight million a year until permission to build was granted. Grand Central Terminal posed a major test of the city's landmark preservation law at various levels of judicial consideration. Everybody was patiently watching because if it could work in New York City, it would work anywhere.

The trial Court found the cost of operating the Terminal to be more than its revenues from tenants and concessionaires, and did not regard the TDR as providing compensation to Penn Central or as minimizing the loss as a result of the landmark designation.⁹⁵ It granted the injunction against the City. The Appellate Division reversed the ruling. It concluded that Penn Central considered only the most profitable use, which did not satisfy the requirement of the

⁹⁵ Marcus, Norman; "The Grand Slam Grand Central Terminal Decision : A 'Euclid' for Landmarks, Favorable Notice for TDR and A Resolution of the Regulatory / Taking Impasse," *Ecology Law Quarterly*, Vol.7, No.731, 1978, p.738.

constitutional taking claim. The Court also observed Penn Central's failure to demonstrate that the unused development rights of the property could not have been profitably transferred to sites in the vicinity. Next, the Court of Appeals unanimously affirmed on all the grounds considered by the Appellate Division.

Finally, the case went to the Supreme Court. The basic questions presented to the Court were: first, whether the restrictions imposed by the landmark preservation law upon Penn Central's exploitation of the landmarked Terminal site effect a taking of property for public use according to the 5th and 14th amendments, and secondly, if so, whether the TDR afforded the landmark owner constituted just compensation. The Court majority replied the first question in the negative, and thereby did not answer the second question. The Court, nevertheless, found opportunity to note the importance of Penn Central's TDR privileges in mitigating the economic impact of the landmark preservation law's restriction on the Terminal. The Court mentioned,

"(T)o the extent appellants have been denied the right to build above the Terminal, it is not literally accurate to say that they have been denied *all* use of even those pre-existing air rights. Their ability to use these rights has not been abrogated; they are made transferable to at least eight parcels in the vicinity of the Terminal, one or two of which have been found suitable for the construction of new office buildings. Although appellants and others have argued that New York City's transferable development rights program is far from ideal, the New York Courts have supportably found that, at least in the case of the Terminal, the rights afforded are valuable. While these rights may well not have constituted 'just compensation' if a 'taking' had occurred, the rights nevertheless undoubtedly mitigate whatever financial burdens the law has imposed on appellants and, for that reason, are to be taken into account in considering the impact of legislation."⁹⁸

Indeed, the Grand Central Terminal has been a case where the owner shifted its reliance on lawyers rather than architects, and preferred to pursue its interest exclusively in Courts. Initially, however, Penn Central interacted with the City closely. The Terminal presented a situation where a massive amount of development rights were available to be transferred only with an area in which all the 'adjacent' lots were already developed. The 1968 amendment, therefore, was of no assistance in solving the problem of the landmark Terminal. In 1969, Penn Central persuaded the City to approve broadened TDR enabling legislation. Penn Central

⁹⁸ Quoted in *ibid*, p.747.

wanted to transfer around 50 per cent of its unutilized development rights to the then unprofitable Baltimore Hotel site - one of many properties owned by Penn Central in the vicinity of the Terminal. The modification finally adopted by the Planning Commission, with at least a partial interest to enhance its position in the Grand Central case, was to amend the definition of 'adjacency' in the highest density commercial districts. The amendment made possible a greater radius of transferability when it defined,

"a lot ... which is across a street and opposite to another lot or lots which except for the intervention of streets or streets intersections form a series extending to the lot occupied by the landmark building. All such lots shall be in the same ownership."⁹⁷

The 1969 amendment also removed the 20 per cent ceiling limit on an individual receiving lot. Because the Terminal possessed such great unutilized development rights potential, that limitation would have required several receiving redevelopments which was not likely in the densely built-up area around the Grand Central Station. The 1969 amendment revoked the 20 per cent restriction with regard to the Manhattan central business district. The transfer of about half of the unused development rights to one lot, the Baltimore Hotel site, was thus permitted. Of the remainder of the Terminal's development rights 800,000 sq. ft. were proposed to be transferred, jumping five blocks to 383 Madison Avenue for incorporation into a 1.5 million sq. ft. office building of 72 stories, what would have been the third tallest building in New York City behind only the World Trade towers and the Empire State Building.

The 1969 amendment, particularly the removal of the ceiling of transfer to a lot, may be criticized as a case of spot zoning, i.e; an amendment made solely for the benefit of one landowner which was not in accordance with a comprehensive plan. As Richards rightly criticizes,

"To permit development rights transfer of such magnitude from the Terminal to a single transferee lot, given the congestion of transit facilities in the Grand Central area, was the very antithesis of rational planning. Under the statute, that single transferee lot could have an FAR of 34.5 (18 plus 16.5), almost twice the permissible maximum."⁹⁸

⁹⁷ *New York Zoning Resolution*, Article VII, Chapter 4, Section 74 - 79.

⁹⁸ Richards, David A.; "Downtown Growth Control Through Development Rights Transfer," *Zoning In 1980s : What Hath Euclid Wrought?*, American Bar Association on Real Property, Probate and Trust Law and Section on Urban, State and Local Government Law Program Proceedings, August 1986, pp.451-52.

Construction of another such monster in the densely-built Manhattan CBD was objected by many. The city officials, pressed to approve the transfer, asserted that the requirement of the "series" of lots "in the same ownership" by the 1969 landmark TDR amendment was not fulfilled. At a later date a transfer of 75,000 sq. ft. from the Terminal to the southwest corner of Park Avenue and 42nd Street was consummated. The transfer allowed additional three and a half floors of the total 26 story office tower by Philip Morris Incorporated. Penn Central was required to set aside five per cent of the purchase price (amounting \$112,000) for the maintenance of the Terminal.

Grand Central Case, therefore, has been the first pronouncement on TDR as a technique to resolve the regulatory / taking impasse. TDR was well accepted to be within the public purpose spectrum. It also established that TDR privileges was far from a guilt-ridden gesture towards the property owner, and was viewed as a valuable mitigating factor in considering the impact of landmark regulation. The Court's recognition of the legitimacy and value of New York City's TDR program has provided, according to Richard J. Roddewig, the most important legal position in the country's dilemma over TDR.⁹⁹

Public Landmark and the 1970 Amendment

New York City owns more landmarks than any other single landlord in the city.¹⁰⁰ Although about 25 per cent of New York City's designated landmarks were publicly-owned, the original TDR program was applicable only to privately-owned landmarks. Transfer from publicly-owned landmarks could be made under 1961 zoning resolution only through 'zoning lot merger', i.e; the landmark site had to be contiguous, and the developer must have control over its air rights at least for a 75 years lease. Indeed, the first transfer from a public landmark was done following this procedure.

⁹⁹ Roddewig, Richard J.; op. cit., 1983, pp.4-6.

¹⁰⁰ Dunlap, David W.; "City Plan to Sell Air Rights at Landmarks Draws Critics," *The New York Times*, August 26, 1984, Section 1, p.51, col.1.

The owner of the land adjacent to the Appellate Division Courthouse, a city-owned landmark, intended to add built-up space while planning for an office tower. The FAR limitations allowed 400,000 sq. ft. on the lot, and the developer wanted to add roughly 100,000 sq. ft. to it. The developer and the City worked together to aid the builder, as well as to produce revenue. The City leased the Courthouse for 50 years to the developer with a 25 year renewal option. The developer then subleased it back to the City reserving the 100,000 sq. ft. of the floor area he needed for his office project. Since the developer now had a lease of 75 years,¹⁰¹ he was deemed to be the owner of the Courthouse lot and could combine its development rights to his office building beside. The City gained about \$46,000 per annum, i.e; a total of \$3.45 million for the lease term. But as Richards points out, "(n)one of this was marked for maintenance of the Courthouse or improvement of the transit system serving the huge new office building."¹⁰²

Soon the Planning Commission realized that public landmark's unused development rights should not be marketed "solely to bolster the municipal treasury,"¹⁰³ and that there is additional obligation to be borne. As explained by Norman Marcus, the Commission's then General Counsel, transfer of air rights from public landmarks should be tied to the provision of major improvements in the public pedestrian circulation or transportation system in the area. "Developments incorporating formerly publicly owned air rights (were) therefore held to a higher amenity standard than those utilizing privately owned and transferred air rights."¹⁰⁴

As a policy, therefore, public benefits were to be extracted as the price of transfer from a public landmark. The Planning Commission amended Section 74-79 in May 1970, and specified policy regarding publicly owned landmarks. As the amendment stated,

¹⁰¹ The 'air right lease' technique was invalidated later by a 1977 amendment of the definition of 'zoning lot' in Section 12-10 of the Zoning Resolution.

¹⁰² Richards, D. A.; *op. cit.*, 1986, p.453.

¹⁰³ Quoted in Richards, David A.; *op. cit.*, 1975, from a letter of Norman Marcus, p.136.

¹⁰⁴ *ibid*

"..... in the case of landmark sites owned by the City, State or Federal Government, transfer of development rights shall be contingent upon provision by the applicant of a major improvement of the public pedestrian circulation or transportation system in the area."¹⁰⁵

This amendment, however, was in response to another transfer request from another public landmark - the United States Custom House. This property located close to Bowling Green at Broadway could have 1,134,000 sq. ft. of floor space according to current zoning, whereas it had only 344,200 sq. ft. built in it. Its unused development potential amounted to 789,800 sq. ft., which was roughly equal to that of the Woolworth Building. A neighboring developer got interested in this unused development rights. The 1970 amendment approved the Custom House transfer in exchange for increasing the underground access and corridors to adjacent Bowling Green Subway Station in addition to a fund preserving the Custom House. Weak demand for new office space at that time hindered consummation of the transfer, but the amendment remained in New York City's TDR program.

TDR Program for Residential Areas, the 1971 Amendment

Although the original TDR program did not restrict residential transfers, the TDR projects involved only office buildings until 1970. But high-rise luxury apartments were also good candidates to absorb additional potentials. The new amendment, thus allowed building of high-rise apartments to exceed their FAR restrictions by purchasing the unused development rights of smaller townhouses located in the east-west midblocks between the great north-south avenues. The residential amendment permitted the transfer of unutilized development rights from buildings in the midblock R-8 districts to R-10 lots fronting the avenues in the event both R-8 and R-10 districts were situated within the same city block. Its provisions could also be applied for transfer within a zoning lot divided by a boundary between an R-8 and an R-10 district. The ceiling limit of additional potential on a transferee lot was kept to the original 20 per cent.

¹⁰⁵ *New York Zoning Resolution*, Article VII, Chapter 4, Section 74-79, (1980).

The argument for allowing increased development on avenue facing properties was to protect the light and air well in the midblocks without increasing the overall density of the area. It was also thought that if the unused development rights of the midblock properties were allowed to be transferred, the financial gain from such transfers would prevent neglect of the midblock buildings. The Planning Commission also incorporated a requirement of an open plaza in the receiving lot which was not ordinarily required by the zoning. This amendment was finally aborted as the opposition to additional density on the avenues increased. The Planning Commission kept the matter for future hearing in order to reformulate it.¹⁰⁶

Later Amendments

Later amendments to New York City's TDR program included using unused potentials of outlying smaller buildings for public institutions like hospitals (1971), transferring development potentials of private parks (1972), transferring those of museums, theatres and churches (1982), and finally firehouses and police stations (1984).

Similar to the case of residential transfers, the TDR program for public institutions were also opposed by the community. The Planning Commission called for updating of regulations pertaining to large-scale community facility developments, which would allow the Planning Commission and the Board of Estimates the power to modify bulk regulations. Under this proposal such institutions would not have to apply to the Board of Appeals and Standards in order to alter the size and location of new or existing construction.¹⁰⁷

The issue of park's development potential entered the realm of TDR program when a developer planned to develop two private oases on 42nd Street near First Avenue, the Tudor City

¹⁰⁶ Daniels, Lee A.; "Side Street Density At Issue in Midtown," *The New York Times*, January 27, 1984. Section B, p.7, col.1.

¹⁰⁷ Goodman, George Jr.; "Planners Vote to Ease Zoning Rules for Community Institutions in the City," *The New York Times*, April 6, 1972, p.39, col.1.

Parks, into two new luxury apartment towers. In an effort to resolve between the developer's goal and local residents' desire, the Planning Commission amended the TDR program with the introduction of a Special Park District. According to this amendment, the unused development rights of private open spaces were allowed to be transferred to lots in the CBD with a ceiling of 10 per cent overage on the normal FAR of the transferee lots. The planning officials thought it to be an easy case of transfer as "(d)velopment rights were transferable from a residential zone of FAR 12 to a commercial zone of FAR 18," and "(t)he cost of land in the receiving area was significantly more expensive than the cost of land in the granting area,"¹⁰⁸ However, the Court ruling was against the City. The Court observed that the change would seem to benefit one property owner (the purchaser of the rights) at the expense of his neighbors who were too far away from the reserved parks to benefit therefrom. The Court also objected to the idea of floating and mandatory TDR when it ruled,

In an attempt to preserve the rights they were severed from the real property and made transferable to another section of mid-Manhattan in the city, but not to any particular parcel or place. There was thus created floating development rights, utterly unusable until they could be attached to some accommodating real property, available by happenstance or prior ownership, or by grant, purchase, or devise, and subject to the contingent approvals of administrative agencies. In such case, the development rights, disembodied abstractions of man's ingenuity, float in a limbo until resorted to reality by attachment to tangible real property."¹⁰⁹

The City of New York did not want to take an investor's posture by establishing a TDR bank as suggested by Professor Costonis, and the Tudor City Park case was lost due to lack of synchronization of supply and demand of TDR. However, through this case the TDR program matured significantly by way of identifying the need for a wider receiving area.

Coinciding with a renewed building boom, TDR program again caught attention in 1982. Art institutions like the Museum of Modern Art, the Carnegie Hall, the Jewish Museum, the Museum of American Folk Art, and the Whitney Museum saw their unused development potential as a new source of revenue. Meanwhile, Manhattan's development wave was pushed westward by the downzoning of the east side of the midtown CBD, and by raising of FAR levels

¹⁰⁸ Marcus, Norman; "The New York City Experience," *Transferable Development Rights*, Planning Advisory Services Report No. 304, ASPO, Chicago, 1975, p.4.

¹⁰⁹ From quotation in Richards, David A.; *op. cit.*, 1986, p.458.

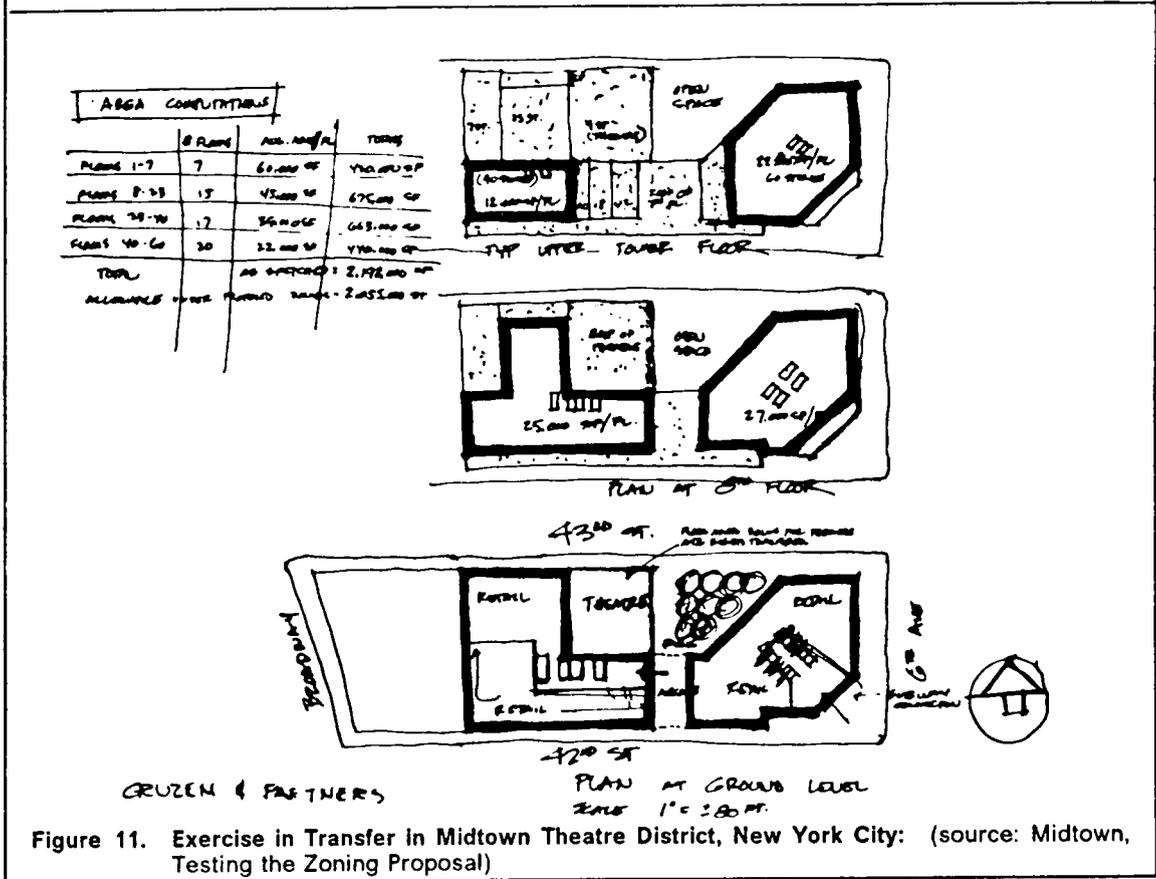
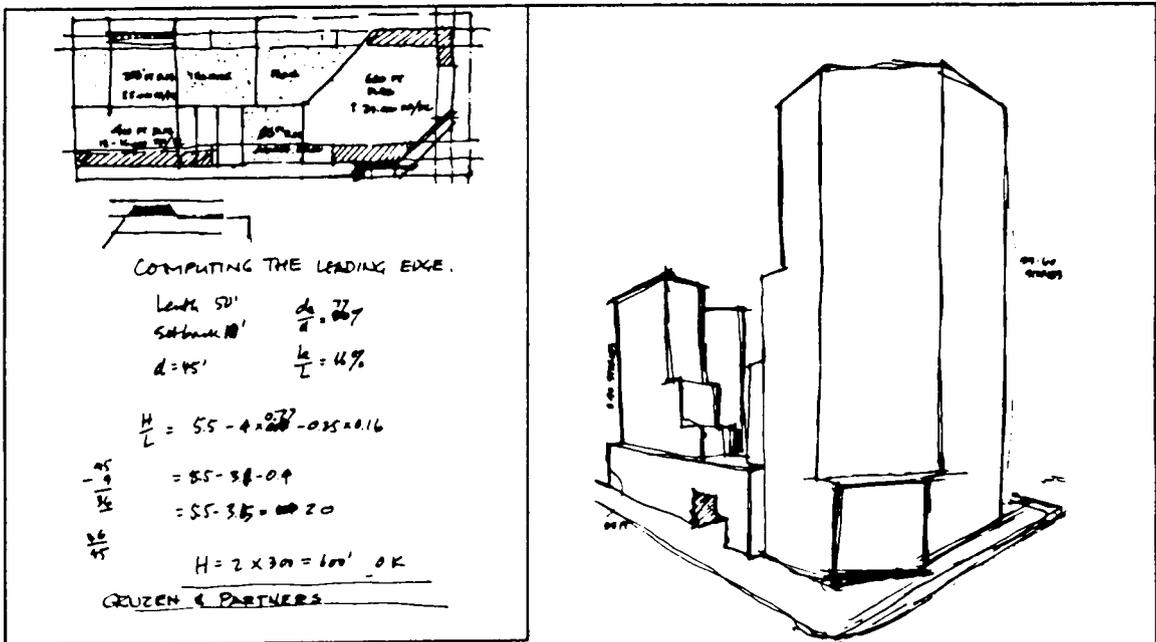
west of Sixth Avenue. This wave created enhanced potential, and hence threatened the theatres and churches. The Manhattan midtown zoning revision adopted in May 1982 created a new Theatre District, and included a new provision for a theatre rehabilitation bonus. In addition, the new zoning allowed theatres to transfer their unused development rights. Sketches in Figure 11 on page 77 show an exercise involving transfer from adjoining theatre.¹¹⁰ This transfer was also allowed without regard to the 'split lot rule',¹¹¹ which otherwise prohibit TDR across the boundary between two zoning districts.

In 1982, the Department of General Services held a municipal real estate information fair in which the City announced its intention to sell TDR from its low-rise municipal structures of firehouses, schools, and police stations etc. both to encourage development and to generate tax revenues. Two years later the City had the opportunity to transfer the development rights from a combined lot of the former First Precinct police station and the adjoining fire station. After that the City has also effected another landmark rights transfer -- 297,300 sq. ft. from the City Center Theatre on West 55th Street to the 72 story Cityspire project. To service the transfer, the developer agreed to contribute \$3 million each to both the tenants of the theatre, the City Opera and the City Ballet, in addition to \$5.5 million rehabilitation cost of the City Center Theatre to obtain the 20 per cent FAR bonus against renovation of the landmark theatre.¹¹²

¹¹⁰ Boissevian, H. F. (et al) (ed); *Midtown, Testing the Zoning Proposal*, Report of a Conference Sponsored by Metropolis, New York, 1982.

¹¹¹ A 'split lot' is a zoning lot situated within two or more zoning districts which are governed by different zoning regulations. Split lots are commonly found on or within 200 feet of a wide street since the wide street is generally zoned for comparatively higher density while the contiguous narrow street is usually zoned for lower development intensity. (Kowaloff, Steven D.; "Zoning Advice : Explaining Split Lots," *Real Estate Weekly*, January 6, 1986, p.12.)

¹¹² Dunlap, David W.; "Board Approves a Contract," *The New York Times*, August 17, 1984, Section B, p.3, col.5.



3.2.6. Final Observation

New York City's landmark preservation through TDR program has created varied reactions both in favor as well as against. Those in favor hail the City's effort in creating variations of the program one after another to deal with the situation confronted. Those against criticize the program variations to be accommodations of interests of both the development desire and the City's treasury. It can be understood that a program as delicate and sensitive as development rights transfer cannot be above criticism with respect to politics and big money involvement. Nevertheless, the City has shouldered the burden of experimentation with a new concept.

Although there are not many success cases in the city, the program has provided pioneering examples, and a general confidence in the technique that other cities may borrow from. Among the success cases are the Amster Yard between 49th and 50th Streets, Greek revival residence on 58th Street, South Street Seaport, the Grand Central Terminal, The Villard House on Madison Avenue between 50th and 51st Streets, the Federal Reserve Bank in Lower Manhattan. The recent transfers include the India House on Hanover Square, the Old Slip Police Station, the Citibank Building on 55 Wall Street, the City Center Theatre and Saks Fifth Avenue's flagship the Fifth Avenue Store. The theatre District TDR program is currently under operation and undoubtedly this would also have some failures as well as some successes. These success cases are in addition to those achieved through as-of-right transfers between contiguous lots. Included among them are Olympic Tower on Fifth Avenue at 51st Street, Trump Tower on Fifth Avenue and 56th Street, 9 West 57th Street with its sloping front, Tower 49 on 49th Street, 599 Lexington Avenue at 53rd Street and the Continental Illinois Building on Madison Avenue between 53rd and 54th Street. Similarly zoning lot merger has also helped transfer of development rights in several other cases in Midtown CBD of the city.

The main criticism, that New York City's TDR program seems to attract, comes from a concern for over concentration despite the fact that the central idea of TDR is to shift development

potential, not to create as in the case of incentive bonus. Such concern is obvious when critics say,

"The idea of every parcel being developed to its maximum either directly or through transfer of development rights is essentially a perversion of all that planning had traditionally stood for."¹¹³

The proponents of limits to growth generally oppose all development options. The difference between TDR and other incentive bonus provisions is point of no importance to them. The irony of the matter is that the bonus provisions in zoning have been the greatest impediments against TDR program. Since bonus allows additional bulk as-of-right, the developers have tried and have achieved phenomenal built-up space without going into troublesome, time taking TDR program. If an over development level has been instituted in the zoning which has triggered excessive growth and concentration, a downzoning is perhaps necessary. And such a downzoning would possibly help TDR program more than anything else.

3.3. The Chicago Plan

New York City's initiation of the experimentation with TDR program inspired Chicago to work out a plan for landmark preservation through development rights transfer. The effort originated by the Chicago Chapter of the American Institute of Architects and Chicago Citizen Group – the Metropolitan Housing and Planning Council. The Idea was to adopt the New York's program to Chicago's purposes.

As Jared Shlaes discussed,¹¹⁴ the formulation of the Chicago Plan began by critical appraisal of the New York City program. According to Shlaes, The New York plan had serious flaws in the areas of just compensation and planning. New York's standard six per cent return of an

¹¹³ "Manhattan in Change : Shaping Vital Services," Editorial, *The New York Times*, July 13, 1982, Section B, p.2.

¹¹⁴ Shlaes, Jared; "The Chicago Plan," *Transferable Development Rights*, Planning Advisory Services Report No. 304, op. cit., pp.7-8. (Jared Shlaes, a leading real estate legal consultant, was one of the authors of the Chicago Plan.)

assessed value was much below the market price. Also the adjacency requirement, then in force in New York City's program, was thought to be an impediment in the marketing of unused potential from a landmark. Adjacency requirement also had negative urban design effects, since a large structure just next to a low scaled landmark was most likely to be incompatible to the setting of the area.

3.3.1. The Concept of Transfer District

The Chicago Plan abandoned the idea of adjacency, and opened development rights transfer up to a large area, recognizing of course that there would be legal and planning problems inherent in the idea. Professor Costonis, one of the authors of the Chicago Plan, recognized that the success of the Plan depended upon its feasibility from three different perspectives : those of the economist, the planner and the lawyer. The development rights of designated landmarks must be marketable to provide funds for compensation, administration and maintenance of the landmark. The redistribution of the rights must neither overload public services and facilities, nor distort the urban cityscape. And it must be able to withstand legal challenges.¹¹⁵

The Chicago Plan attempted to address the feasibility question in all three respects by introducing the concept of development rights transfer district. The authors of the Plan devised two alternatives : districting in conjunction with the city's landmarks, and districting independently of the landmarks.¹¹⁶ These two alternatives were thought for cases where landmarks may be found concentrated in one area, and the first alternative may be useful; whereas if the landmarks were scattered, the second alternative would have to be used.

¹¹⁵ Costonis, John J.; *op. cit.*, 1974, p.48.

¹¹⁶ *ibid*, pp.49-52.

The transfer districts were not to be historic districts like New Orleans' Vieux Carre, but rather a marketing area containing only a few structures of architectural and historical significance so that redevelopments become desirable. The transfer district proposed for Chicago's Loop, for instance, contained perhaps 30 - 35 buildings, and covered most of Chicago's central business district. The transfer district being in the central business area also included the parcels having the city's highest land values, and therefore, offered most lucrative opportunities for the sale of the development rights. To forestall haphazard, random development through transfer, the Plan contained two principal safeguards. First, the district was to be established after careful study by the planning and landmark commissions with respect to the effect of the distribution of the development rights on the area's service infrastructures, dimensional scale, environmental amenities and other public facilities. Second, the Plan envisaged a dispersal of the transfers throughout the entire district with the density increase on an individual receiving lot being controlled by bulk and height ceilings determined to avoid undue urban design consequences.

In the case that the landmarks were not concentrated in one area, or that the landmarks were located in an area where further density was not desirable, the Plan suggested a second alternative of independent transfer district. Such districts should be in the areas that were expected to undergo intensive development soon due to significant public investment in services and infrastructures, or due to growth propensity triggered by private investments. In rezoning such areas as transfer districts, the Plan suggested deliberate skewing of the density levels to somewhat short of the levels that the market and sound design standards would warrant. This would insure sound demand for development rights to be transferred from landmarks elsewhere, or from the TDR bank. The Plan drew upon the example of Washington, DC's Georgetown waterfront historic district's then current conservation plan¹¹⁷ to illustrate the validity of the idea of independent transfer district.

¹¹⁷ In this plan the development rights from Georgetown was proposed to be distributed along then completed metro line of Washington DC, particularly at important station points.

3.3.2. The Concept of TDR Bank

The Plan also observed that there might not always be a perfect timing between the demand and supply of transferable development rights. An interested TDR buyer might not be readily available when a landmark owner would like to market his unused potential. Also the fluctuation in the real estate market between peak and lean periods, the Plan observed, necessitated functioning over periods of time. As Shlaes made the point,

“Accordingly, the development rights transfer bank would have to be prepared to function over periods of time and to ride out the business and development cycles, much as a real estate developer does : when times are bad, waiting; and when times are good, jumping in with both feet.”¹¹⁸

The development rights bank, envisaged in the Chicago Plan, was thought to have potential to reverse the speculative tide which has engulfed so many landmarks. The Plan proposed creating the bank by storing the TDR from landmarks condemned by preservation restriction when the owner declined to deal with his development rights, from donated TDR, and from municipality owned landmarks.¹¹⁹ By creating its own revenue source, i.e; income generated from the sale of development rights, the bank was thought to be analogous to the “First and Second Bank of the United States.”¹²⁰

Such a bank, although may run fine on its own dynamics after a teething time, needed seed capital to get started, and to support the first chain of holding time. The Chicago Plan depended on federal financial assistance by way of creating a ‘National Cultural Park.’ The Department of the Interior had already come forward with a plan to preserve the landmark buildings of the Chicago School of Architecture in the Loop area. 12 buildings located in the Loop were identified to “portray the evolution of the skyscraper and the ensuing style change in modern architecture.”¹²¹ The park concept envisaged by the National Park Service consid-

¹¹⁸ Shlaes, Jared; op. cit., p.8.

¹¹⁹ Costonis, John J.; op cit, 1974, Figure - 4, p.53.

¹²⁰ Shlaes, Jared; op. cit., p.7.

¹²¹ Miller, Hugh C.; *The Chicago School of Architecture : A plan for preserving a Significant Remnant of*

ered the city's role would be to accord to each landmark in the park the protection of the Chicago Landmark Ordinance through official designation, and to an order of development rights transfer. National Park Service intended the transfers to be through a development rights bank, which according to Park's concept was to be,

"A cooperative agreement between the City and the Secretary of the Interiors (to) specify the terms on which the park units would benefit from Chicago Plan financing and the interest of the Secretary in standards of preservation, restoration, maintenance and use."¹²²

3.3.3. The Critique of the Plan

Chicago has had zoning since 1923. Until 1942, the zoning had a height limit of 264 feet for buildings in downtown. A tower could rise above this height if it was limited in size to 25 per cent of the building's lot area. A lower height limit of 144 feet was imposed in 1942. This limit was further revised in 1957. The 1957 ordinance is still in effect with minor modifications having been made since then.¹²³ Chicago's zoning regulations regarding height restrictions, control of bulk by FAR, and the bonus provisions have been so liberal that they represent formidable difficulties in minimizing the cost of urban conservation.

The base FAR in the Loop area is 16, but under the bonus provisions it is theoretically possible for the owner of a half-block lot to double this base FAR. And for a full-block site the FAR could be as high as 39.3. i.e; a 140-story building with about six million sq. ft. of built-up space. In comparison, New York's Empire State Building is 102 stories high containing 2,120,836 sq. ft. on a site of 83,860 sq. ft. with an FAR of 25.3.¹²⁴ Indeed, the Sear's Tower, the World's tallest

America's Architectural Heritage, United States Department of the Interiors, Washington, DC, 1973, P.34. (Hugh C. Miller was then the Chief Historical Architect, National Park Service.)

¹²² *ibid*, p.33.

¹²³ Cook, Robert S. Jr.; *op .cit.*, p.115.

¹²⁴ Costonis, John J.; *op. cit.*, 1974, pp.83-84.

building, has an FAR of 33, and could have gone higher did it not pose a danger to aviation lines.

Chicago's zoning regulations allowed generous as-of-right bonus provisions even more than those in New York City. On top of usual bonuses against public amenities such as plaza, arcade, etc., the bonus system allows additional FAR at the rate of 2.5 per street if the proposed building leaves 20 feet setbacks on the street abutting sides. This means that a site with two road abutting sides was in better position to harness the bonus provisions than a midblock site with one side fronting the street. The FAR calculations, therefore, jumped from a half-block site having three road facing sides to a full-block site which would have roads on all four sides. This led to a market force for assembly of smaller lots to cover full, or at least a half block. Landmarks on smaller lots became easy prey. To introduce a further incentive / bonus in the form of TDR in such a liberal zoning of Chicago was, indeed, of no significant attraction to the developers. The as-of-right zoning provisions permitted such monstrous buildings that developers of large parcels in the Loop area seldom built to the limits. They usually worked out the optimum between the size of floors and the economics of high-rise construction.

Indeed, what Chicago urgently needed was perhaps a downzoning. Michael Newsom spoke on the critique of the Chicago Plan in the 1975 ASPO conference. He was concerned in this regard when he said,

"Without some careful consideration of downzoning, it (the TDR program) might even complicate the first problem : the protection or the preservation of physical structures designated landmarks."¹²⁵

Downzoning was in the minds of the proponents of the Plan, but they were concerned lest it should appear as creating market for TDR. As Shlaes identified, "if our city is overzoned, as indeed Chicago's CBD is overzoned, let us downzone it to reflect the planning realities, not in order to create a market for development rights but for good civic reasons."¹²⁶ Cautiously

¹²⁵ Newsom, Michael; "Critique of the Chicago Plan," *Transferable Development Rights, Planning Advisory Services Report No.304*, p.9.

¹²⁶ Shlaes, Jared; op. cit. p.8.

the Plan proposed a resolution of this problem by means of a 'dual bulk' system which could regulate densities on non landmark sites within the transfer district. Properties without having TDR were to be governed by a lower ceiling limit. Purchasers of TDR, on the other hand, were to be allowed additional density proportional to their purchases.¹²⁷ This idea, however, was not adopted as it was thought that the dual bulk system would violate the requirement of uniformity.¹²⁸

There were considerable debates over the issue of a TDR bank as well. In New York, the concept of TDR bank was never adopted as a city-operated TDR bank was thought to be just another form of subsidy. Municipal resources were typically not available to purchase and store development rights. There was, however, a TDR bank in New York City for the South Street Seaport District. But the banker was not the city, rather a consortium of banks who held the original mortgages on the landmark properties. Such financial aid was not likely from Washington. Further, as the New York real estate industry's major trade association has pessimistically observed at a later date,

"The Seaport air rights bank only 'worked' because the banks involved were willing to hold their unproductive air rights for many years. Chances are minimal that they or another purchaser would agree to do so again."¹²⁹

As a result, the concept of TDR bank stood a slim chance. The National Cultural Park idea for Chicago was never adopted. Among the reasons were the political difference between the then Republican national administration and the decidedly Democratic municipal administration of Mayor Daley. Also, the real estate interests in Chicago were opposed to any cooperation between the City and the federal government which they thought might result in limitations on real estate development.¹³⁰ Although the idea of a National Cultural Park was

¹²⁷ Concept of 'residual zoning' in Costonis, John J.; "Development Rights Transfer : An Exploratory Essay," *Yale Law Journal*, Vol.83, No.75, 1973.

¹²⁸ Huxtable, Ada Louise; "Chicago Plan Ruled out in Chicago," *Planning*, July 1974, p.8.

¹²⁹ Real Estate Board of New York, Inc.; *A Change of Scene : Proposal for New York's Theatre District*, New York, 1984, p.5.

¹³⁰ Letter from Professor John J. Costonis, December, 1987.

rejected in Chicago, a similar idea has been successfully implemented in Lowell, Massachusetts.¹³¹

3.4. San Francisco

San Francisco enacted its first zoning ordinance in 1921 without a master plan as it was not required at that time. Although beginning in 1927 the City enacted some special height districts, the zoning by and large contained no controls on size and density of downtown structures until 1960. Indeed, in 1950s the Board of Supervisors revised the code to omit density control. At that time HUD's predecessor, the federal Housing and Home Finance Agency, suggested such controls to be incorporated without which it declined to continue the federal housing assistance.¹³² The City responded by adopting the 1960 zoning ordinance with very generous downtown FAR of 20 with a bonus of additional FAR of 5 for the corner lots. A single district covered the entire downtown area.

Encouraged by the examples of New York and other cities, San Francisco first incorporated bonus provisions in its 1964 ordinance. Then, in 1968, the City rezoned downtown. The 1968 zoning ordinance divided the downtown into four districts : the C-3-O office district in the financial area straddling lower Market Street, with a base FAR of 14; the C-3-R retail district around Union Square, requiring continuous ground level retail uses, with a base FAR of 10; the C-3-G general district encompassing mixed residential, commercial office, hotel and entertainment uses on the west and north sides of downtown, with a base FAR of 10; and the C-3-S downtown support district south of Market, composed largely of warehouses and light indus-

¹³¹ Von Eckardt, Wofi; "A Cultural Community Center in the Lowell Tradition," *The Washington Post*, January 26, 1974, Section B, p.1, col.1. Von Eckardt has called it "Industrial Williamsburg".

¹³² Cook, Robert S., Jr.; *op. cit.*, 1980, p.124.

try, with an FAR of 7.¹³³ Although these four districts were defined in terms of uses, the density distinctions were more important than use classifications. The zoning ordinance of 1968 generously allowed commercial uses of office towers of almost limitless bulk and height throughout the downtown area. Most of these developments were permitted as-of-right.

The bonus provisions available in the C-3-O office district allowed developers to build structures with densities in excess of the base FAR of 14 in exchange for public amenities like tunnel access to the rapid transit station or a parking structure, multiple building entrances, widening sidewalks and through-block walkways, plazas, setbacks, smaller upper floors, and observation decks. Each of these features was tied to a formula for additional bonus, with an upper limit of 20 per cent, and the FAR could be increased from the base of 14 to about 22 through the most advantageous combination of bonus features. And this bonus system was by and large as-of-right.

As a result of such liberal density and bonus provisions in the ordinance, the city grew excessively in the following years. During the 16 years between 1965 and 1981, the city's downtown office space more than doubled, to a total of 55 million sq. ft.. Since 1981, the City has approved permission for construction of yet another 10 million sq. ft. of office space.¹³⁴ It soon became apparent from the enormous building activities that the FAR limits of 1968 were tantamount to almost no limits.

Public pressure was always active in San Francisco asking for reduction in the FAR limits. In 1964, the Board of Supervisors in response to such pressures amended the ordinance to reduce FAR for downtown from 20 to 16, and for corner lots from 25 to 20. Then, in 1968, the downtown FAR was again lowered and tied to use specifications. The highest FAR, as dis-

¹³³ Vettel, Steven L.; "San Francisco's Downtown Plan : Environmental and Urban Design Values in Central Business District Regulations," *Ecology Law Quarterly*, Vol.12, No.3, 1985, p.517.

¹³⁴ Adams, Gerald D.; "A Last-Ditch Effort to Save Downtown San Francisco," *Planning*, Vol.50, No.2, February 1984, p.5.

cussed above, was in the office district which was brought down to maximum 14. But such reductions proved insignificant to tame the scale of development that was ongoing. Finally reacting to a public outcry, which was further reinforced by a referendum banning tall building construction, the City Planning Department came up in 1983 with a strict new set of zoning regulations. This zoning amendment was also supplemented by a master plan of the city, which according to Paul Goldberger has been,

“... an unusually sophisticated plan, and it would have given San Francisco the most restrictive downtown zoning laws in the nation.”¹³⁵

The 1968 zoning ordinance established a limited TDR program. According to this provision, a developer could transfer up to half of the permitted base floor area of an underdeveloped C-3-O office district site to an adjacent lot. Construction on the receiving site was allowed with FAR significantly higher than the base FAR applicable to the lot. The TDR provision of the 1968 zoning ordinance was, however, so restrictive that in many cases there was disincentive for developers to use it. The adjacency requirement, and the ceiling of transfer of only half of the unused potential of a landmark often led to the economic sense to simply demolish the small building.

3.4.1. The Downtown Plan of 1985

The Downtown Plan, or Proposition M as the initiative was called, lowered San Francisco's then existing building height limit of 700 feet to a maximum of 550 feet in the new development district south of Market Street. It also cut the maximum height in much of the financial district more sharply still, to amounts ranging from 50 to 300 feet.¹³⁶ Indeed, the Plan has been so detailed that it sets specific requirements for almost every block in the downtown area. It sets

¹³⁵ Goldberger, Paul; “San Francisco Tries to Tame the Skyscraper,” *The New York Times*, July 28, 1985, Section 2, p.24, col.1.

¹³⁶ Goldberger, Paul; “San Francisco Plan Seeks Tight Limits on New Skyscrapers,” *The New York Times*, August 26, 1983, Section A, p.1, col.2.

out clear preservation objectives,¹³⁷ recommends designs for public plazas to ensure adequate sunlight and to encourage wide range of public activity,¹³⁸ and strongly encouraged the current movement in architecture to come out of the paradigm of austere, flat topped glass boxes of the last generation of skyscrapers.¹³⁹ It looks forward to an expressive architecture typically thinner, stepped-back towers of the 1920s and 30s. This, of course, is not favored by a section of the design professionals.¹⁴⁰

The conservation objectives in the Plan are intelligently tagged with those of growth control. The Plan suggests a well-thought-out downzoning in the commercial, office and retail districts of the downtown. In the high density C-3-O commercial office district the allowable FAR is reduced from 14 to 10, in the C-3-R retail district from 10 to 6, in the C-3-G general commercial district from 10 to 8, and in the C-3-S commercial service district from 7 to 5. The Plan also takes steps to discourage large scale office uses from encroaching upon the retail district's supply of smaller office space for personal services – such as travel agencies, medical offices etc. – by permitting office construction not exceeding 5000 sq. ft. in the C-3-R district.¹⁴¹ Simultaneously, the Plan proposes the creation of five 'architectural conservation districts' in the areas which contained older buildings, and possessed an overall scale and character worthy

¹³⁷ Incorporating base studies and recommendations of the Foundation for San Francisco's Architectural Heritage.

¹³⁸ According to the suggestions of William H. Whyte, the author of '*Servicing Open Space for Urban America*' and '*Social Life of Small Urban Spaces*,' and consultant for New York City's review of urban plazas.

¹³⁹ Williams, George A.; "Fine Points of the San Francisco Plan," *Planning*, op. cit., 1984, pp.12-13.

¹⁴⁰ Supported through some studies by the San Francisco Chapter of the American Institute of Architects (Adams, Gerald D.; op. cit., pp.14-15.), although the Northern Section of the California AIA Chapter was somewhat divided in opinion for and against this proposal of the Plan. Despite the AIA endorsement, Chapter President Robert Hersey noted that the design controls were "very stringent and ... offensive" to some members. San Francisco Chronicle architecture critic Allan Temko warned by writing that the Plan would "dictate a stage set of slender, stepped-back towers that would be essays in remembrances" of the high-rise of 1920s with "shafts that will taper, in a profusion of gables and roofs, capped by pinnacles and spires, pyramids and pediments, strange triangular attics or circular vaults and domes." (ibid, p.11.)

¹⁴¹ Telephone interview with Larry Badiner, San Francisco Department of City Planning, February 23, 1988.

of protection. One such district embraces most of the retail district, and the others fall in the financial district.

One of the finest points in the Plan is that it recognizes the recent architectural heritage. It boldly wants to conserve the structures constructed in the downtown just after the 1906 earthquake.¹⁴² The plan identifies 266 buildings in the downtown area to be 'architecturally significant', and other 222 structures as 'contributory buildings'. While a complete ban on the demolition of the 'significant' buildings is considered, those 'contributory' are preferred to be conserved although alteration and replacement are considered allowable subject to strict design controls to ensure the maintenance of the district character. As Mr. Dean Macris, the San Francisco Planning Director said, "we are taking much direct action by proposing an outright ban on demolition of certain buildings and by actively encouraging the transfer of development rights".¹⁴³

The TDR program in San Francisco is not only backed by the downzoning in the downtown, it is further supported by the suspension of most of the conventional bonuses previously allowed to gain density. Owners of both significant and contributory landmarks (and also the private park and open space owners) are allowed to realize economic benefit from their older buildings by transferring the unused development rights from their sites to other building sites within the downtown. San Francisco TDR program not only moves away from the adjacency requirement, it also intends to direct development through TDR in the desired location, a marked 33 acre area for special development on the south of Market area. Through the purchase of TDRs, developers may increase density from base FAR ranging from 6 to 10 in downtown office areas to an FAR of 18. Since other bonus provisions are suspended, it is only through the transfer of TDRs from historic buildings or open space (or by including housing

¹⁴² Williams, George A.; op. cit., p.12.

¹⁴³ Knack, Ruth; "View from the Planning Department," *Planning*, op. cit., 1984, p.9.

within the new building) that a developer could achieve maximum density. Thus, the incentive for developers to use TDRs becomes exceedingly strong.

Another unique point in the San Francisco Plan is that in developing the downtown plan and its TDR program, the City has clearly identified the receiving sites. The amount of transfers the area could absorb has also been calculated in order to ensure predictability of the program. In drawing up the plan, the area marked for development, i.e; the south of Market Street district, is found to be capable of accommodating most of the developments. Accordingly, the zoning for this area allowed highest density in the city.

3.4.2. *The Aftermath of the Plan*

The plan was adopted by ordinance in October 1985. However, the approval of the Plan by the Board of Supervisors required certain modifications. Some Board members found the Plan too much development oriented, and even called it "the Manhattan Plan".¹⁴⁴ The most important modification that came as a result, was a tight limit on the amount of office construction that might be permitted each year. The decided figure was 950,000 sq. ft., which is less than the total space in many single buildings in New York City.¹⁴⁵ Further reduction in the ceiling of allowable office construction in the downtown was considered during the approval process. Finally it lowered the growth cap from 950,000 sq. ft. per year to 475,000 sq. ft. for next 11 to 15 years, and 950,000 sq. ft. per year thereafter.¹⁴⁶ Limits to growth as strict as those the Plan now proposes have several troubling effects. Among them the most important is a chance of chaotic urban sprawl in the neighboring areas in the suburbs, or down San Francisco Bay to San Jose. As Goldberger has written in despair,

¹⁴⁴ Goldberger, Paul; op. cit., 1985.

¹⁴⁵ The Board of Supervisors also inserted a provision requiring real estate developers to contribute \$1 per square foot for child-care facilities in new downtown skyscrapers.

¹⁴⁶ Roddewig, Richard J. and Inghram, Cheryl A.; op. cit., 1987, p.11.

"San Francisco had a chance at the finest downtown plan in the nation, a daring proposal that did more to tame the madness of over-building than any other city has even come closer to doing. But by insisting that this was not enough, that building need not be limited but to be strangled, San Francisco's politicians have turned this plan into something that may not help the city much at all, and that runs the risk of sending the surrounding regions on a roller-coaster ride from which it will never recover."¹⁴⁷

With the measures limiting the growth to a somewhat impractical level, the Plan now makes the future market for TDR more uncertain. One new office project, the 101st Building, approved just before the revised plan went into effect, successfully used transferred development rights from a significant structure. Although the planning department is currently reviewing about a dozen office construction projects, including some that will use TDR, the revised plan will depress the market for TDR below the expectations of the program designers.

San Francisco's TDR program still deserves close observation for its uniqueness in many respects. Its relations with downzoning, suspension of other bonus provisions, clearly identified receiving areas supplementing city's growth directions, and detail block by block planning of receiving lots have already been mentioned. In addition, San Francisco's TDR program, unlike other city's including New York City, does not tag the landmark's preservation / maintenance / restoration cost to the proceedings of the transfer. Instead, this obligation is enforced by mandatory provisions in the ordinance to take care of the conservation of 'significant' and 'contributory' buildings that have sold TDR. Also, TDRs do not have to be transferred from site to site. San Francisco TDR can float, unattached to a particular transferor or transferee site. A certificate of transfer records the exchange of TDR from the original owner to the buyer which can be another owner of development lot or persons or organizations who wish to hold them for subsequent use or transfer. The San Francisco TDR program has been so clear and predictable – through carefully identified receiving sites upto assigning the extent that each of them can absorb – that the enthusiasm for the program was evident when the local real estate industry sponsored seminars on the topic. If a stagnation on growth can be administered through a strict plan, there will be very little development pressure on the landmarks.

¹⁴⁷ Goldberger, Paul; op. cit., 1985.

They will thus be conserved without any other measure - the owners will maintain them at their best because they will not be able to replace them. In that even the purpose of urban conservation is served willy-nilly, and the TDR program need not be used. But if such stagnation becomes impractical in the future, the TDR program will play a vital role in shaping the development, as well as in conserving the urban landmarks in San Francisco.

3.5. Denver

Denver has had FAR restrictions in the zoning since 1956. In the downtown B-5 district the FAR limit has been 10 which could be raised to as high as 16 by providing public amenities in the form of plaza, atrium, gallery, etc.. This FAR bonus system has been by and large as-of-right, but required special review beyond certain levels. In the mile-high city of Denver, there is no absolute height limitation on the buildings. The heights of buildings are contained by local economy, i.e; demand, and the indirect constraints from aviation. The FAR in B-7 warehouse district which was originally 4, has been recently reduced to 2.

3.5.1. *The TDR program*

In 1979, the Denver Partnership (a not-for-profit advocacy organization of private and public interests) and Historic Denver Incorporated started working in close coordination to protect the turn-of-the-century commercial buildings and warehouses, remnants of Denver's frontier days in the low-rise area of the lower downtown district. What eventually emerged from such an effort was a TDR ordinance adopted in January 1982. It established Denver's B-5 TDR district, which included an approximately 40-block area of Denver's downtown. Soon after the ordinance, the Denver Partnership started working on the second area, the warehouse district located in the western edge of downtown to protect the historic character of the warehouse

buildings and to encourage housing development. This resulted in extension of the TDR program in November 1982 to the warehouse district as well through creation of the B-7 TDR district.

Denver's TDR program was not accompanied by downzoning or the imposition of any historic district designation. "As it stands, the ordinance doesn't guarantee any preservation at all," said Lisa Purdy, a preservation specialist for Historic Denver Incorporated, "but it does provide the incentive for it and we believe this is the practical way to go."¹⁴⁸ In Denver a TDR is strictly voluntary, and owner consent is almost always sought before a designation. In absence of strict tagging of TDR transfer and the implementation of preservation plan of the originating landmark, as in San Francisco, the TDR program offers an economic alternative for landmark designation and rehabilitation. Once the owner of a landmark building decides to sell the unused development rights, he has to earn the eligibility for transfer through prior rehabilitation of the building to the standards set by the Denver Landmarks Commission.

The TDR program, however, is supplemented by a sharp cut back in the plaza bonuses. Some years ago the City initiated a system of incentive zoning based on New York's program, but disappointed by its failure to guide development adequately, the City has suspended most of the incentive bonus provisions. Increased urban design controls to limit the scale of new construction is put into effect along with the TDR program that permits transfers outside the adjacent sites around the B-5 and B-7 districts. Denver has been the nation's first major city to enact such a legislation and according to Goldberger was "(p)erhaps the most innovative zoning."¹⁴⁹

¹⁴⁸ Reichhardt, T.; "Will new Denver Zoning become national model?" *Preservation News*, February 1983, p.1, col.4.

¹⁴⁹ Goldberger, Paul; *op. cit.*, November 14, 1982, p.68.

Before November 1982, i.e; before inclusion of the B-7 district in the TDR program, Denver allowed transfers in the B-5 district only to adjacent lots.¹⁵⁰ But after B-7 district was also incorporated in the program, the City lifted the adjacency requirement and allowed transfer throughout B-5 and B-7 districts. The housing development policy is intelligently interjected in the program by way of allowing additional transfer rights if landmark owner considered housing in the rehabilitation program of the landmark. However, to limit the paperwork, an individual landmark owner cannot make more than four transfers.

The receiving sites also can absorb additional development rights if they conform to certain conditions such as design with setbacks that enhance natural light, and ground level retail spaces. What it means is that the traditional incentive bonus system will not automatically authorize additional bulk, but it will allow purchase of more TDRs to be used in the proposed construction. A receiving site, however, cannot normally increase density more than 2.5 FAR beyond the base density. The maximum density with all allowable bonuses in B-5 district can go as high as 18 FAR. Whereas the B-5 district may have a lowered density with wide use of the TDR program, the density in the B-7 district shall increase because of the provision of additional density transfer in exchange for residential development.

In the 40-block B-5 Central Business District TDR area, there is an inventory of approximately 2.7 million sq. ft. of density that can be transferred from already designated landmarks. In the 23-block B-7 TDR district, about 1.6 million sq. ft. of density is available from existing and potential landmarks.¹⁵¹ According to a study done by Shlaes and Company, a potential of 13 million sq. ft. of density will be available in B-5 district if all the potential buildings will eventually be designated.

¹⁵⁰ Reichhardt, T; *op. cit.*, 1983.

¹⁵¹ Roddewig, Richard J. and Inghram, Cheryl A.; *op. cit.*, 1987, p.9.

Since the ordinance was enacted, there have been some transfers in Denver. The first one was the Denver Athletic Club, located in the B-5 district, transferred 60,000 sq. ft. of density to a site five block away. Currently there are some projects in negotiation stage in both B-5 and B-7 districts which may use TDR. In general, Denver, in recent years, has been experiencing unprecedented office vacancy. New office space that might benefit from the TDR program will remain on the drawing board until the office space surplus has been absorbed. Such a boom period may be coming when the TDR program may have its real testing in Denver.¹⁸² Despite the lack of transfer, the TDR program has allowed the landmark owners other options they did not have before. The owners of two such properties could use their TDR as collateral for rehabilitation construction loan. This way, the historic Navarre Building, an endangered landmark, was saved.

3.6. Seattle

The core of Seattle downtown is covered by two zones : metropolitan commercial (CM) and metropolitan business (BM). The BM district is the higher zone in which retail, service and related establishments are intended to be located in the street level. The basic BM and CM zones for the downtown core has no directly stated height or coverage limits, except to the extent that an FAR limit, which is fixed at 10, can indirectly impose. Both BM and CM districts contain a schedule of as-of-right design features that entitle a developer, who incorporates them in his projects, additional FAR. However, due to generous FAR and the absence of a height limit, large lots, such as a city block, may contain gigantic buildings without resorting

¹⁸² Telephone interviews with Lisa Purdy, one of the key person in Historic Denver Inc., on January 19, 1988; and Robert Damerou, the Director of Denver Planning office on January 22, 1988 indicate an optimism that a boom period is approaching, and that the TDR program will play the most significant role in shaping Denver's downtown.

to the bonus provisions. This is exemplified on the four downtown blocks owned by the UNICO, the University of Washington's real estate arm.¹⁶³

3.6.1. The TDR Program

The new downtown plan adopted in Seattle in 1985 has four significant TDR components. The TDR program was incorporated in the plan to achieve certain objectives. They were: to protect and rehabilitate low-income housing in the downtown area, to conserve Seattle landmarks, to encourage compatible in-fill development projects in the historic districts, and to maintain the varied building scale in the core area. Like San Francisco, Seattle's TDR program was also accompanied by downzoning of the office and retail districts.

The TDR program in Seattle is in competition with other bonus provisions as in New York City. The base FAR of 10 in the office core can be doubled with a series of bonuses. Through general bonuses against the provision of day care, parks, sculptured building tops, retail atriums, or from the transfer of unused development rights from designated Seattle landmarks, the base FAR of 10 can be raised to 13. If these general bonuses are combined in addition to affordable housing bonuses, and TDR from low-income housing, the FAR can be raised from 13 to 15. An increase in density from 15 to 20 FAR can be ultimately achieved through buying low-income housing TDR or through bonuses in exchange for construction of low and middle income housing in the proposed development, or for rehabilitation of vacant residential buildings.

The Seattle TDR program allows transfers from designated landmarks located within the office, retail and mixed commercial districts in the downtown core. However, in the retail districts, unutilized development rights can be transferred only within the same block. There are

¹⁶³ Cook, Robert S., Jr; op. cit., 1980, p.74.

also other sending limitations. For example, in the office district the unused development potential is ascertained by calculating the difference between the base FAR (rather than the maximum FAR through bonus provisions) and the FAR achieved in the existing structure. In other areas of retail, mixed or residential districts, the transferable development potential is generally calculated by comparing the difference between the FAR in existing buildings and an FAR of 6.

The guidelines for transfer from landmark buildings have been established by the Seattle Department of Community Development.¹⁵⁴ Generally, any proposed development project using TDR from landmark structure requires a certificate of approval from the Seattle Landmark Preservation Board. The program requires both the sending and receiving lot owners to interact with the Board. While the receiving lot owner applies for a transfer approval and includes plans for long-term preservation of the landmark, the sending site owner must also apply for approval of the proposed rehabilitation or restoration.

The review and approval procedures are designed to ensure that funds from the sale of TDR are available for the rehabilitation of the landmark, and that such rehabilitation works are completed. For instance, the occupation certificate for the new buildings in receiving site shall not be issued until the landmark building is rehabilitated, or funds from the sale of TDR necessary to restore the landmark are deposited in the Community Development escrow account. However, if the landmark involved in the TDR transfer has already been rehabilitated through the National Park Service's investment tax credit program, the proceeds from the sale of unused development rights need not be regulated by the City. Another unique feature in the Seattle TDR program is that it tags TDR with a time frame. According to the guidelines, "(t)he transfer of development rights from the sending lot to the receiving lot last for the life of the project on the receiving lot."¹⁵⁵

¹⁵⁴ Guidelines for Transfer of Development Rights from Landmark Structures, Department of Community Development, City of Seattle, 1985.

¹⁵⁵ *ibid.*, p.landmarks I-85.

Seattle's urban conservation program is also maintained by establishing certain historic districts on the periphery of the core where strict design review is required by the ordinance. The specific objectives of each district are, however, varied depending on the environmental condition of the district. For instance, while the historic setting and exterior appearance of buildings are important in the International Special Review District or in the Pioneer Square; the Denny Regrade area is to be protected from the encroachment of the office buildings. The FAR system, therefore, has been tuned to encourage multiple residence - mixed density use in the Denny Regrade area. The in-fill projects in these historic districts are allowed to use TDR from designated landmarks provided their designs follow the guidelines of the district concerned.

3.6.2. Landmark Preservation vs. Housing Provision

The Seattle TDR program came into force in 1985, but so far no transfer from landmark buildings has happened.¹⁵⁶ However, a number of transfers from low-income housing have been consummated. This can be attributed to the emphasis given to low-income housing protection in the TDR program design. As mentioned earlier, TDR from landmarks is in competition with other bonus provisions as well as with those from low-income housing stock in the downtown area. TDR from landmark structures, which falls in the category of 'general bonuses' can raise the FAR from 10 to 13, whereas the housing bonuses can be used to raise it from 13 to 20. Further, the TDR from landmarks involve a complicated process of review and approval which delays, and thereby, adds expenses to the development cost. The program becomes non-encouraging for TDR transfers from landmarks when the guidelines include hourly charges for time spent by the City staff in negotiating and review of the project involving TDR from landmarks.¹⁵⁷

¹⁵⁶ Telephone interview with Karen Gordon, Historic Preservation Officer, City of Seattle Department of Community Development, February 17, 1988.

¹⁵⁷ *ibid*, item - f, p.landmarks I - 83.

The plan emphasizes retention of low-income housing more than anything else. The TDR program has been a tool to achieve this goal. Downtown Seattle has lost some of its low-income housing through gentrification. But even after that, according to the estimate of the City, more than 7,300 low-income housing units are still available in the downtown area. Almost all of the downtown low-income housing sites are built far less than the full FAR, and the unused density from them may be transferred to other downtown lots. If such a transfer is approved, the buildings in the sending site must comply with the standards of housing and building codes. Further, the program requires that more than 50 per cent of the total floor area in the sending site shall remain in low-income housing use for at least 20 years from the time of transfer.

It is not surprising that in such a situation the owners of the low-income housing sites shall compete to sell their unused development rights. This has devalued the price of TDRs well below the standard price. For example, while the planners calculated up to \$25 per sq. ft. for additional density, the TDRs from low-income housing have been selling for only \$9 per sq. ft.¹⁵⁸ City Planning goal to encourage low-income housing has triggered a market competition in which not only landmark preservation has been suffering; it has brought down the market price of TDRs from low-income housing sites so low that the primary goal of maintaining and rehabilitating the housing stock may not be accomplished by the resources generated through the TDR proceeds.

3.7. Washington, DC

Washington, DC may be regarded as the romantic classical city par excellence in the United States. During the earlier years, numerous buildings were erected in the eclectic style of the late 19th century borrowed freely from French Chateaux, Greek Temples, Gothic and

¹⁵⁸ Roddewig, Richard J. and Inghram, Cheryl A.; *op. cit.*, 1987. p.10.

Romanesque churches, and other styles of the past. A commission authorized by Congress in 1901, which included, among others, Daniel Burnham and Frederick Law Olmstead, Jr., recommended unified heights and materials for new buildings. The Height of Buildings Act of 1910 allowed a maximum of 160 feet height, although the zoning regulations of different areas prescribed various maximum building heights. The first zoning regulations for the District of Columbia was adopted on August 30, 1920. Major revision of this original zoning came in response to the Zoning Act of June 20, 1938, which still remains in effect with various amendments.

The 1938 zoning prescribed various use districts in the city, e.g; residential district (R), special purpose district (SP), commercial districts (C), and industrial districts which was further subdivided as commercial - light manufacturing (C-M) and general industry districts (M). Each of these districts was further sub-zoned according to prescribed density, which again varied according to predominant use. For example, an office building in the SP district could have an FAR of 5.5, but the same lot could be developed at 6.0 FAR for apartment houses or hotels. In the Central Business District (C-4) the FAR allowed for residential use is 5.5, but could be as high as 11 (general 10 plus 1 extra for above ground parking) for office buildings. The usual maximum height in the C-4 district was limited to 110 feet to match the Federal Triangle height. This height limit was subsequently raised to 130 feet in general; and the buildings setback 50 feet from the existing line along north side of the Pennsylvania Avenue between 1st and 15th Street can take advantage of full 160 feet height allowed by the 1910 Act.¹⁵⁹

3.7.1. Historic Preservation and TDR

Like any other city, urban conservation concerns in Washington, DC initially were isolated battle cries and usually sprang rather late when demolition had started or was imminent (e.g;

¹⁵⁹ Pennsylvania Avenue Development Corporation; *The Pennsylvania Avenue Plan*, 1974, p.ix.

Old Post Office, Willard Hotel etc.). One such landmark building, the Christian Heurich Mansion, showed a new way of resolving the stress between conservation and redevelopment pressures. The fine Romanesque mansion on 19th Street and New Hampshire Avenue near Dupont Circle, built in 1880 for the venerable German born brewer, became the home of the Columbia Historical Society after 1956. The Society maintained the interiors -- the gilded cupids on the bedroom ceiling, potted palms, basement *Bierstube* etc. -- and kept it as a museum. But the Society gradually became unable to maintain the landmark. At the same time the redevelopment pressure was on as it contained considerable unused development potentials.

In 1970-71 'Dupont Circle Joint Venture', the developer of the adjacent land, offered the Society more than half a million dollars for its unused development rights. Through this purchase the Venture wanted to build up to 130 feet, the maximum height permitted in the city. This proposal was hailed by connoisseurs of architectural heritage and general public alike.¹⁶⁰ The Washington Post editorial urged serious consideration citing success of the system in New York City.¹⁶¹ The 'Costonis Plan,' as the system was called sometimes, of saving landmarks through transfer of development rights was published at this time and, as mentioned by Wolf Von Eckardt, was instrumental in working out the transfer program.¹⁶²

It required Washington, DC's Zoning Commission to permit the Society to sell its unused development rights to the project next door, and also to allow the office building to go up to 130 feet instead of the zoned 90 feet.¹⁶³ The proposal also required that the funds received through

¹⁶⁰ Interview with Hugh C. Miller, the then Chief Historical Architect, US National Park Services, December 21, 1987.

¹⁶¹ *The Washington Post*; Editorial, "A New Way to Save Old Buildings," May 10, 1971, Section A, p.18, col.2.

¹⁶² Von Eckardt, Wolf; "The Architectural Treasure Robbery," *The Washington Post*, May 7, 1974, Section C, p.8, col.2.

¹⁶³ Woodbury, Steven R.; "Transfer of Development Rights, A New Tool for Planners," *Journal of American Institute of Planners*, January 1975, Vol.41, p.5.

this transfer be used to restore and maintain the landmark including restrictions upon the landmark's interior, exterior, and grounds in accordance with the National Capital Planning Commission's plan for the area. The Zoning Commission finally used its Planned Unit Development ordinance to permit the transfer,¹⁶⁴ and the landmark was conserved.

Meanwhile, the urban conservation movement in Washington, DC gathered further momentum. By 1972 the Joint Commission on Landmarks listed all important buildings in three categories : category - I included buildings most significant that must be preserved; category - II included those significant that should be preserved if possible; and category - III listed those of value to be preserved if practicable.¹⁶⁵ The controversy over the redevelopment of the Pennsylvania Avenue and eventual change in the philosophy of the project furthered the cause of urban conservation.¹⁶⁶ Successive plans were drawn to accommodate the criticisms, and finally in 1974 the Pennsylvania Avenue Development Corporation was established. With this, the whole concept was turned around from cataclysmic urban renewal to careful urban conservation. The zoning revisions the planners asked in the 1974 plan were to permit along north side of the Avenue to build up to the full 160 feet height limitation imposed by Congress in the Height of Building Act of 1910. Current zoning allowed 130 feet, and the 30 feet bonus was to be granted against innovative amenities in the new building to use rooftops for tennis courts and swimming pools, cafes and restaurants, and to build underground concourses to metro stations.

In 1971 architect Grosvenor Chapman proposed a plan for Georgetown waterfront preservation through adoption of a TDR program. The proposal was to send unused development rights from Georgetown waterfront to areas around the downtown metro stops where receiving lots

¹⁶⁴ James, Franklin J. and Gale, Dennis E.; *Zoning for Sale : A Critical Analysis of Transfer of Development Rights Program*, The Urban Institute, 1977, p.10, note 15.

¹⁶⁵ List updated by Nancy Taylor, Landmark Historian of the Historic Preservation Office, *The Washington Post*, April 9, 1972, Section F, p.4, col.1.

¹⁶⁶ Von Eckardt, Wolf; "Enlivening Pennsylvania Avenue," *The Washington Post*, January 21, 1978, Section B, p.1, col.5.

were to be allowed additional height. The proposal was particularly attractive as it tagged preservation of landmarks in Georgetown to an encouragement for efficient use of the mass transportation by concentrating development along the metro line.¹⁶⁷ This plan drew immediate attention of many, and Von Eckardt wrote favorably by comparing it with New York City's TDR program as well as with the then current Chicago Plan. Von Eckardt preferred the TDR program rather than downzoning the waterfront; as he wrote,

"... that would mean a fight that is rarely if even won because in this country we never change the zoning to allow people less profit on land they already own."¹⁶⁸

Unfortunately, the proposal raised planning and administrative controversies regarding the rationale of adding density in the areas far removed from the sending areas. The concept of separating the sending and receiving sites in a TDR program was then something too upstart, and as feared by Professor Costonis¹⁶⁹ the legal issue went against the proposal.

Subsequently, the Georgetown Planning Group – a consortium of renowned planning firms – proposed a TDR program within Georgetown area. This plan required establishment of a 'development rights district' in which all of the land in the planning area was to be assigned proportional development right units according to use type. Allocation of these units was to be decided by a somewhat complicated formula correlating land requirement by each type with transportation demand. The total transportation capacity was calculated and was assigned proportionally to each type. According to this plan, a redevelopment in the district was to secure required development right units through transfer from designated landmark properties. This proposal was accepted for discussion by the National Capital Planning Commission.¹⁷⁰ However, one of the main concerns in this proposal was conceivably the basis for

¹⁶⁷ Woodbury, Steven R.; op. cit., p.6.

¹⁶⁸ Von Eckardt, Wolf; "Getting Charm and Height," *The Washington Post*, February 27, 1971, Section C, p.5, col.2.

¹⁶⁹ Costonis, John J.; op. cit, 1974, p.50-51.

¹⁷⁰ National Capital Planning Commission; *Georgetown Waterfront Area Plan and Development Management Program*, July 25, 1975, Appendix - C.

allocating the development right units. This concern was evident in the paper presented by Martin J. Rody at the 1974 National Planning Conference in Chicago, when he mentioned,

"One might argue with the total development level within the development district, the basis for arriving at the development potential, and the value assigned to DRUs for each 1000 square foot space by use. However, once the level of development and limiting constraints are resolved, the technique itself appears to be very workable and fair in the distribution of development potential."¹⁷¹

Arguments of this nature for a program, which by itself was new, never got resolved. The failure of the proposal proved that a complicated TDR program with questionable assumptions will not work irrespective of the merit and credibility of the designers. The program needed to be simple with clear procedures. Georgetown's preservation program is still facing numerous disputes because resolution of conflicting interests between redevelopment and conservation require public funds in the absence of a workable TDR program.¹⁷²

Although Washington, DC does not have a clear TDR program, it however has an active PUD technique that allows transfer among contiguous or adjacent lots. The case of Heurich Mansion has already been mentioned. Special zoning permit, as required in a PUD project, enables the City to evaluate the merit of each project, and balance the gain against the trade-offs. In 1978 developer Oliver T. Carr applied for a PUD project in the block bounded by F / G Streets and 14th / 15th Streets which planned for demolition of four certified buildings to save three others.¹⁷³ This was turned down by the Zoning Commission. A recent PUD project which has been approved by the Commission is the Arts Club of Washington project at the corner of 20th and I Street. The project involves four existing buildings of which two will be preserved, and other two to be demolished to make room for new construction. The new construction

¹⁷¹ Rody, Martin J.; "Encouraging Redevelopment Through a TDR System : Georgetown Waterfront, D.C.," Planning Advisory Service Report No. 304, op. cit., 1975, p.42. (Martin J Rody was the Assistant Director of Regional Affairs, National Capital Planning Commission.)

¹⁷² Bredemeier, Kenneth; "Panel Approves Georgetown Park," *The Washington Post*, May 3, Section B, p.9, col.1. The article discusses several "thorny questions" despite the Commission's approval of the general plan, particularly with regards to cost of the project and how to obtain such funds.

¹⁷³ Von Eckardt, Wolf; "Zoning Game," *The Washington Post*, March 4, 1978, Section B, p.1, col.2.

shall incorporate the unused potential of the preserved buildings.¹⁷⁴ Washington, DC shall have more of such PUD projects as demolition or alteration of designated landmarks now requires, after the passage of the 1978 bill by the City Council, a special permit involving the Mayor, the Federal Joint Commission on landmarks and the Fine Arts Commission.¹⁷⁵

3.8. Philadelphia

Unlike other big cities in the United States, Philadelphia traditionally allowed conservative density even in the core of the city. Until 1962, the FAR allowed in the C-4 and C-5 commercial zone of the CBD was restricted to maximum 8. Later on, the FAR limit in these two zones has been raised to 12, but the residential districts were kept at old density limits. For example, FAR in R-5 residential zone remained at 3.5, and that in R-6 at 5. Mixed used districts were created in the years between 1962 and 1970, and their density limits were set according to location from a maximum FAR of 1.5 in RC-2 district to a 12 in RC-5. So far Philadelphia does not have an incentive / bonus system in the zoning which allows additional bulk in exchange for public amenities. However, the existing zoning does allow bonuses against yard space and setback in excess of what is prescribed in the regulations. The new Center City Plan, which is now undergoing the approval process, has included bonus provisions against public amenities and preservation of historic structures.

Starting from the landmark preservation case of the Independence National Park, historic preservation through rehabilitation tax credit has been quite active in Philadelphia. From 1976 to 1986, 763 buildings have qualified for federal tax incentives which has resulted in \$970 million of restoration and rehabilitation work. Nevertheless, rehabilitation tax incentives have

¹⁷⁴ Information from Cecil Tucker, Zoning Commission, Washington, DC, Case No. 87 -23C.

¹⁷⁵ "Historic Preservation in the City," Editorial, *The Washington Post*, November 14, 1978, Section A, p.20.

limitations as the program does not include locally certified buildings and those owned by non-profit and religious organizations. Despite the nation's largest historic office building renovation, the one million sq. ft. Curtis Center, the new Center City Plan recognizes that,

"Although existing zoning regulations largely serve to protect developed communities in Center City from demolition, the preservation of all worthy structures is not guaranteed. There are sites within these developed areas that are not built to capacity under zoning. As land prices increase and the market for office and mixed-use development prospers, pressure will intensify to replace buildings on these sites with new construction."¹⁷⁶

There are now 21 districts in the center city listed on the National Register of Historic Places. Some include whole neighborhoods, others are but a single block. There are no historic districts in the center city which are certified locally, and creation of two such districts is in progress. While Philadelphia's new Center City Plan is developed to take full advantage of federal tax incentives for historic properties rehabilitation, it also proposes to extend the present tax abatement period of five-year to a ten-year period for locally designated historic properties. In addition, the Plan also proposes a vigorous TDR program for the Center City areas that would relieve the burden on public funds while fulfilling the objective of preservation.

3.8.1. The Proposed TDR Program

Philadelphia is fortunate to have retained much of the architecture of the 18th and 19th Centuries. However, with the construction of Liberty Palace, the first skyscraper to break the traditional height limit, Philadelphia has entered a new era of development activity in the city. This, as the City Planning Commission recognizes, results from Philadelphia's new-found economic prosperity. The Commission saw the need to assess and formalize this vision of the Center City and developed the new Plan, the first since Edmund Bacon's pioneering effort of 1963. The Plan is a massive effort, and preservation recommendations while important, con-

¹⁷⁶ City of Philadelphia Planning Commission; *The Plan for Center City*, 1987, p.88. (mimeographed)

stitute only a few of the more than 200 recommendations set forth in the document. But as the proposal prepared by the Central Philadelphia Development Corporation recognizes, "this Plan marks the first time that a preservation point of view or 'ethic' is acknowledged in Philadelphia's principal planning document."¹⁷⁷

The new Plan is framed with two missions : 'stimulating growth' and 'preserving values'. With these missions the Plan addresses the conflict that in purely economic terms, historic landmarks are threatened due to the disproportionate value between the building lot and the small historic building that sit upon it. Already the choice building sites in desirable locations have been purchased and plans are being developed for virtually all available parcels on West Market Street. The sites that are most vulnerable to the next wave of redevelopment are those located south of Market Street and west of Broad, as well as east of Broad, close to the proposed Convention Center. These sections of the city are filled with historic, low-scale properties, that are vulnerable precisely because they occupy the lands now considered highly desirable for new office and commercial developments. Although the 1984 Preservation Ordinance is strong enough to designate properties and regulate change to historic buildings, it cannot prevent claims of economic hardship and dilapidation through neglect which results from under-utilization of the potential.

Recognizing the need for additional incentives to advance new opportunities for these threatened historic properties, the new Plan has proposed the TDR program drawing from the experience of the programs of other cities. The incentive program in Philadelphia has three components which are:

- Transfer of Development Rights (TDR)
- Zoning Lot Merger (ZML)
- Zoning Bonus for Preservation

¹⁷⁷ "Implementation of Preservation Zoning Incentives Contained in the New Center City Plan," A proposal by Central Philadelphia Development Corporation for research and adoption of the preservation zoning incentives recommended by the Philadelphia City Planning Commission, February 1988, (mimeographed).

The TDR program would allow the owner of a certified historic property which is not built to its maximum potential allowable under current zoning, to sell the unused development rights to another location separate from the landmark property. In Philadelphia's present market situation the proposed TDR program will benefit commercial owners who seek to realize some financial gain from the unused potential above their low-scaled landmark buildings. The Plan envisages this type of transfer to represent the majority of cases. This program shall also be beneficial to owners of non-profit institutions, such as churches or synagogues, which are hard pressed to capitalize on the increasing land values beneath their landmark buildings. The transfer proposal has to include a plan to rehabilitate and maintain the historic structures, and the transfer must be officially recorded with the City.

The ZML program would allow two adjoining sites to be merged, even if under different ownership, for the purpose of calculating allowable density on the overall site. Under this program, unused development rights shall be transferred only to the adjacent lot. As with the TDR program, the transfer proceeds will have to ensure improvement and maintenance of the historic structure. Unlike the TDR program, the adjacency situation of ZML program necessitates certain degree of design control to prevent developments out of scale with its neighboring landmark building. The Plan proposes input of the Historic Commission to set a maximum increase of floor area for the new structure. An official record of the declaration and agreement of the zoning lot merger has to be filed; which should outline a plan for dividing development interests, and for continuing maintenance of the historic property.

The system of zoning bonus has been thought to further the preservation goals in case where the historic structure does not have unused rights. Revisions proposed to the zoning code would provide floor area bonus for extraordinary public amenities such as observation decks or a mid-block connection between streets. Under this program, density bonus should also be granted in exchange for the preservation of locally designated historic structures. The value of the private investment for rehabilitation or continued maintenance of the landmark should be related to the value of increased development rights for the new building.

Various details for implementation of the program are currently under research by the Central Philadelphia Development Corporation and Philadelphia Historic Preservation Commission. Issues under investigation are identification and planning of the receiving districts as part of the TDR program. Requirements of restrictions, covenants and maintenance plans are also under examination in the case of transfer from publicly owned landmarks. The possibility and appropriateness of a TDR bank along with administrative organization and mechanism are also on the agenda. Most importantly, development of a 'fast track' mechanism for approvals of transfer projects is given high priority.¹⁷⁸ This should become an additional incentive for the program if it becomes a faster and thereby "cheaper than hiring a lawyer to get zoning variance."¹⁷⁹ Transfer of development rights did occur in Philadelphia even without a formal program. Academy House, a high-rise condominium building used the development rights from the Academy of Music. In the absence of a ZML program, Academy House had to be physically connected to the music hall.

¹⁷⁸ Information from Donna Ann Harris, Vice President, Program Development in the Philadelphia Historic Preservation Corporation.

¹⁷⁹ Central Philadelphia Development Corporation; *op. cit.*

4. Analysis of Issues

The TDR programs of different cities studied in the previous chapter show diversity of program designs for landmark conservation. In general, the case studies indicate that the legal questions concerning the validity of a TDR program has been adequately addressed, and legality of the concept is no longer a primary question. This is where the TDR concept has entered, what Professor Peter J. Pizor calls, the second generation in its articulation and program formulation.¹⁰⁰ In the second generation, the main thrust of the programs is planning and implementation. After the legal questions are more or less sorted out, the emphasis has now turned on the questions of 'how' to implement the programs.

Each of the programs studied above has its particular and unique aspects which needed special attention. But each recognizes a central problem of ensuring that a market indeed exists for the development rights, to give them a value, and to provide an incentive for TDR transfer. A market for development rights is a function primarily of two elements – demand for built-up spaces as expressed by availability in relation to occupancy / vacancy rate, and allowable density limits set forth in the existing zoning with other bonus provisions.

¹⁰⁰ Pizor, Peter J.; "Making TDR Work, A Study of Program Implementation," *APA Journal*, Spring, 1986, pp.203-211. (Professor Peter J. Pizor is a prominent scholar in the field of TDR.)

Other questions vary from case to case, but in general, they relate to planning, administration and management of the program. Whether the receiving sites should be adjacent to the sending site, or they can be far away is a question that influences TDR marketability as well as city's overall planning goals and infrastructural capacities. Distribution of TDR and its relation to zoning limits of the receiving areas are also of critical importance. Administration of TDR transfers, and time required for processing approvals play significant roles for success and otherwise of a program. From this concern, establishment of a liaison organization for management should also be examined. And finally, whether there should be a TDR bank, and how that ought to be created are also of crucial importance for synchronizing the supply with demand, as well as to balance the fluctuations in the real estate market. From these questions emerge the main issues that are to be analyzed for identifying the cause, as well as resolution of the problems of a landmark TDR program. They are :

- How to ensure a TDR market, and how to make a TDR program competitive with the existing zoning variance and bonus system.
- Whether transfer should be restricted only to the adjacent lots of the originating site, or they may be sent elsewhere. If adjacency requirement is to be removed, should specific areas be designated to receive additional density as a result of the transfer.
- Whether development rights should be permitted on a site in excess of the existing density limit, or there should be a downzoning preceding the program implementation.
- How to ensure that TDR proceeds will be used for restoration / preservation / maintenance of the landmark.
- How procedural and administrative complications of a TDR program can be minimized.
- Does there exist a need, and what is the role, for a non-profit organization in managing a TDR program.
- Should a TDR bank be established to facilitate and hold transfers.
- Should publicly owned landmarks be governed by special requirements for transfer from them.

These issues are analyzed in the following pages, and are based on the observations of the case studies. Resolution of some issues may be evident from experience of existing programs discussed above, while other issues may remain questionable requiring further opinion and

thought. These latter issues shall form the core of the questionnaire survey to find out perceptions among various actors in the field belonging to different interest groups.

4.1. TDR vs. Zoning Limits and Bonuses

Central city landmark TDR programs typically provide developers on receiving lots with density bonus. It is, therefore, imperative that there exists an incentive for developers to acquire TDR from sending sites. If the city's zoning ordinance is already quite generous in its FAR allowances, or provide many as-of-right / easy-to-acquire FAR bonuses, there will be no incentive for a developer to go for TDR despite allowance in the ordinance and availability.

As observed, Chicago is a case in point. Although the 'Chicago Plan' is one of the pioneering proposals for TDR program in the country, the Plan never got started for one very important reason. To make the Plan work, a significant reduction in current FAR limits in the downtown were essential. Projects can be developed in Chicago downtown to achieve FAR between 24 to 30 on large lots with existing bonus provisions of pedestrian plaza, street-level arcades and upper-floor setbacks. Sears Tower, the world's tallest building has been built without the need for a zoning change. Another case in point is Dallas. Although Dallas has in its zoning ordinance the provisions for TDR program since 1982, not a single transfer has taken place so far as the City is overzoned in itself, and also provides generous as-of-right bonuses.¹⁸¹

Overzoning usually means density allowances more than what the market can consume. But it may also be viewed in terms of cityscape disruption as Paul Goldberger commented on 'shoehorning' in New York City. However, if the market shrinks, as it has happened for Dallas and Denver, the whole development business decreases, and there would be no market for

¹⁸¹ Telephone interview with Ron Emrich, Department of Planning and Development, Dallas, March 15, 1988.

TDR. In such a case, the basic goal of conserving the landmarks is by and large ensured as low demand in the market may spare the landmarks. However, even in a slow market some landmarks would still be threatened for their locational advantages. The situation becomes even worse as in such circumstances the new development usually cannot absorb additional density, and TDR provisions becomes useless. If the local economy is prosperous, the market would opt for additional density, like New York City and Philadelphia. In such cases, the developers would not venture for TDR before they have exhausted all as-of-right bonus provisions. That is, even in favorable market situation, TDR program is in an unequal competition with bonus provisions. Unequal because most bonus provisions are as-of-right in exchange for certain prescribed design features, whereas TDR bonus requires negotiation, approval, undertaking, etc. which consume time and energy.

First part of the problem can be solved by overall downzoning, particularly in the receiving areas. Downzoning is typically viewed as taking privileges out, and often challenged in Courts. However, the case of San Francisco shows that it is possible if supported by public opinion and sound urban design / planning. The argument in favor is that downzoning reduces something that was created entirely by the regulations, and was allowed earlier as the City saw the demand. The reduction now is nothing but revising the regulations in view of the market condition. That is, when the City can create the extent of development, it also has the authority to reduce it to some desirable limit as it sees fit in the current market situation. The argument against could be that the reduction in density limit is only to create a market for TDR. If the market has shrunk, development activities would automatically shrink irrespective of density allowances. Said another way, if the market does not demand, the buildings shall not be built to the maximum limit, and as such there is no real need to reduce the limit. Both arguments have merit, and this issue needs further opinion through the survey.

The second part of the problem is already part of a bigger controversy. As has been observed in the New York City case, incentive and bonus zoning have added enormous built-up spaces in exchange for very unsatisfactory amenities. Suspension / modification of these provisions

are already in agenda for planning consideration, and are partially suspended in many cities (e.g; New York City, San Francisco) from the concern of over building rather than their competition with TDR. While considering the question of carrying capacity, TDR programs fare very well as they do not add to absolute density, whereas bonus provisions are absolute addition. But the argument in favor of bonus system remains that they are the only means by which flexibility in zoning can be achieved for better urban design.¹⁸² Therefore, like the first part, this question should also be examined through opinion survey.

However, one point can be agreed upon without much controversy and that is, if there does not exist an incentive / bonus system in the current zoning, it would be better not to have it. Flexibility in zoning can be achieved in some other ways. Further, when each lot in the downtown takes advantage of the same flexibility, it makes even flexibility look sterile. To achieve better quality of designed environment through flexibility in zoning, it would probably be useful to allocate additional densities in preferred locations decided by an approved urban design, as in San Francisco; or by allocating block-wise additional density to whomever comes first, as suggested by Paul Goldberger.¹⁸³

4.2. Adjacency vs. Transfer District

The embryonic stage of TDR program was that when the definition of a zoning lot was revised in New York City, and total density of a proposed development was reviewed against total potential of the lots in the same city block under the same ownership. The imperative logic in

¹⁸² The argument of getting public amenities without public cost or the 'something-for-nothing' rationale is no longer valid, as the additional density against such amenities does require services and infrastructures which ultimately has to be borne by the community. This is common to both bonus system and non-adjacent TDR schemes where a TDR bonus, though not absolute increase in the regional perspective, is however net addition in local context (James, Franklin J. and Gale, Dennis E.; op. cit., pp.31-34.).

¹⁸³ Goldberger, Paul; op. cit., November 14, 1982, pp.64-68.

this revision was that within a city block one parcel may get additional density in the event the same owner kept another parcel under or undeveloped. Since the total density of the block is not exceeded, the planning objectives are not disturbed, and demand on infrastructures are only marginally shifted. This is a comfortable situation to the city planners as it does not require further work with regards to planning. Therefore, when a formal TDR option was incorporated in New York City's zoning ordinance, the planners insisted on adjacency; that is, transfers to take place only among adjacent properties.

The adjacency requirement poses several problems. First, the adjacent sites may all be newly developed, and without structural capacity to absorb any further density. Secondly, the adjacent structures may be landmarks by themselves, and restricted from further development. Thirdly, the area may fall in a historic district where special design reviews do not permit beyond a certain height, and thereby do not allow building additional density. In the third case, all the structures in the area become originating source of TDR or sending sites, and a TDR program cannot function with adjacency requirement. At least transfers from such a district have to go on to the periphery of the area. Depending on the size of the historic district, the additional density will be scattered. Although the rationale of light and air bowl at the middle, and additional bulk on the rim of the bowl may be maintained, it still would require certain amount of planning and urban design to institute adequate predictability with regards to location of additional bulk on the rim.

In the second case, if all adjacent structures are landmarks, the situation becomes similar to the third case. The ring of adjacency broadens upsetting underlying planning assumption. The situation becomes even worse if one or two of the adjacent properties are not designated. In such an event, the owners / developers of these undesignated properties will inevitably bargain for lower price of TDR from their neighbor, because they are the only buyers. Being pressurized, the owner of the designated landmark will argue in the Courts that the price he may get by selling his unused potential is far less than 'fair', let alone 'just' compensation. In such a situation, can the City fix a justifiable price of TDR on the basis of land price and rent

in the area? And even if it does, how can the City force buyers to accept that price? TDR programs so far could make selling of unutilized density mandatory, but the chance is extremely remote to be able to make buying also mandatory.

Similarly in the first case, if all the adjacent properties are newly developed, the 'taking' argument of the designated landmark owner will get strong support as there will be no buyer of TDRs. Again, if few of the adjacent properties are there for redevelopment, they will definitely bargain and distort the market price. In such cases, the City may try to institute a building permit restriction to allow only TDR buyers -- an indirect way of making TDR buying mandatory -- for which it has to prepare elaborate argument to counter charges of 'spot zoning'. As has been observed in New York City's case, the City naturally did not go for such restriction. Instead, it revised the definition of adjacency, and tried to avoid the price conflict by requiring the transfers to be within the same ownership. Such a revision is bound to breed hotch-potch development and upset the underlying planning rationale. As has been found in the Grand Central Terminal case, under such revision the Penn Central Company could propose transfers hopping several blocks as their underground line has easement on a chain of properties in the vicinity to satisfy the common ownership requirement.

Adjacency rationale is also argued against by many urban designers and planners. According to this argument, the adjacency requirement defeats the preservation objective by having disproportionately bigger structure just beside a low-scale landmark. The landmark then sits in a physical environment in which it loses the setting, and becomes out of context. Some cities have tried to attach design review process with adjacency requirement (e.g; Washington, DC and San Francisco), which being a restriction -- and further a subjective one -- is another disincentive for a TDR program.

The above impediments of an adjacency restriction in a TDR program were realized through experience in New York City. The 'Chicago Plan' intended to remove this by suggesting transfers between non-adjacent lots within the district, as well as by designating receiving

district(s) which may be far away in the city. The first alternative requires elaborate planning to identify receiving sites in the districts, and then assigning limits on additional bulk on each of them on the basis of infrastructures and other planning considerations. In the second alternative, it becomes even more difficult as light and air amenities conserved through designation stay far away, and do not benefit the receiving districts. Further, the demand on services and infrastructures in far away receiving sites becomes absolute as underdevelopment in the sending site cannot balance the pressure beyond a distance.

From the first concern the neighboring residents of the receiving areas tend to object as the additional bulk falls on their backyard without any benefit from the landmarks preserved elsewhere (e.g; the cases of residential transfer efforts in New York City between midblock and avenue facing lots, and the Tudor City Parks case). This conflict may be resolved by pursuing the citizens in view of prospective rise in their property values due to development in the neighborhood. This, of course, will be calculated by the local property owners to determine the net gain after deducting the raised taxes imperative of the higher valuation of their properties. However, any element of tax credit in pursuing a TDR receiving district should not be considered as in that case the basic objective of conservation without public fund will be defeated. Also, such citizen opposition is not rampant as further development in an urban area is by and large an accepted future, and indeed citizens cannot ask for an exclusionary zoning. What seems to be important is to understand the threshold of tolerance beyond which public opposition will be inevitable and irresistible.

4.3. TDR Distribution vs. Comprehensive Planning

The second concern in designating receiving districts, i.e; its relation to services and infrastructures raises a controversy in the concept of comprehensive planning. Zoning is typically required by state statute and the Courts to be in accordance with a comprehensive land

use plan. If density levels in the land use plan were specified after careful analysis; the mandating density reduction in sending site, and an increase in receiving sites may thwart the plan. The argument in this case may be that the zoning is no longer in compliance with the plan. Reduction of density on designated landmarks may be supported by preservation policy objectives stated in the comprehensive plan, but the conflict in the receiving site is potentially significant. There is a strong argument among a section of professionals in the field that districting receiving areas disrupt the overall plan. As Richard J. Roddewig and Cheryl A. Inghram have quoted,

"Assuming that the original land restrictions and regulations were enacted, as they should have been, with due regard to existing and prospective conditions, an adequate provision for travel, water supply, sewage disposal, fire and police protection, and schools in the various areas of the municipality all 'in accordance with the comprehensive plan', the transfer of development rights from one area to another must necessarily be disruptive to the plan."¹⁸⁴

This argument, however, seems to assume that a comprehensive plan is final and ultimate for the community, which itself is contrary to the spirit of comprehensive planning. Any plan must have within it a mechanism for revision and modification to take care of the feedbacks in implementation stages as the future cannot be entirely definitive with details of all interrelated aspects. If the community comes up with a new objective, e.g; landmark conservation in this case, not adequately considered in the existing plan; the plan ought to be modified to achieve the new goal. Capacity of services and infrastructures has to be augmented should there be a need to absorb additional density in a particular area identified through other planning considerations. What it means is that a TDR receiving district requires additional planning attention, and that through designation and preparation of such areas the TDR program has to become part and parcel of the total planning of the city. Plans for San Francisco, Denver and Philadelphia are valid examples.

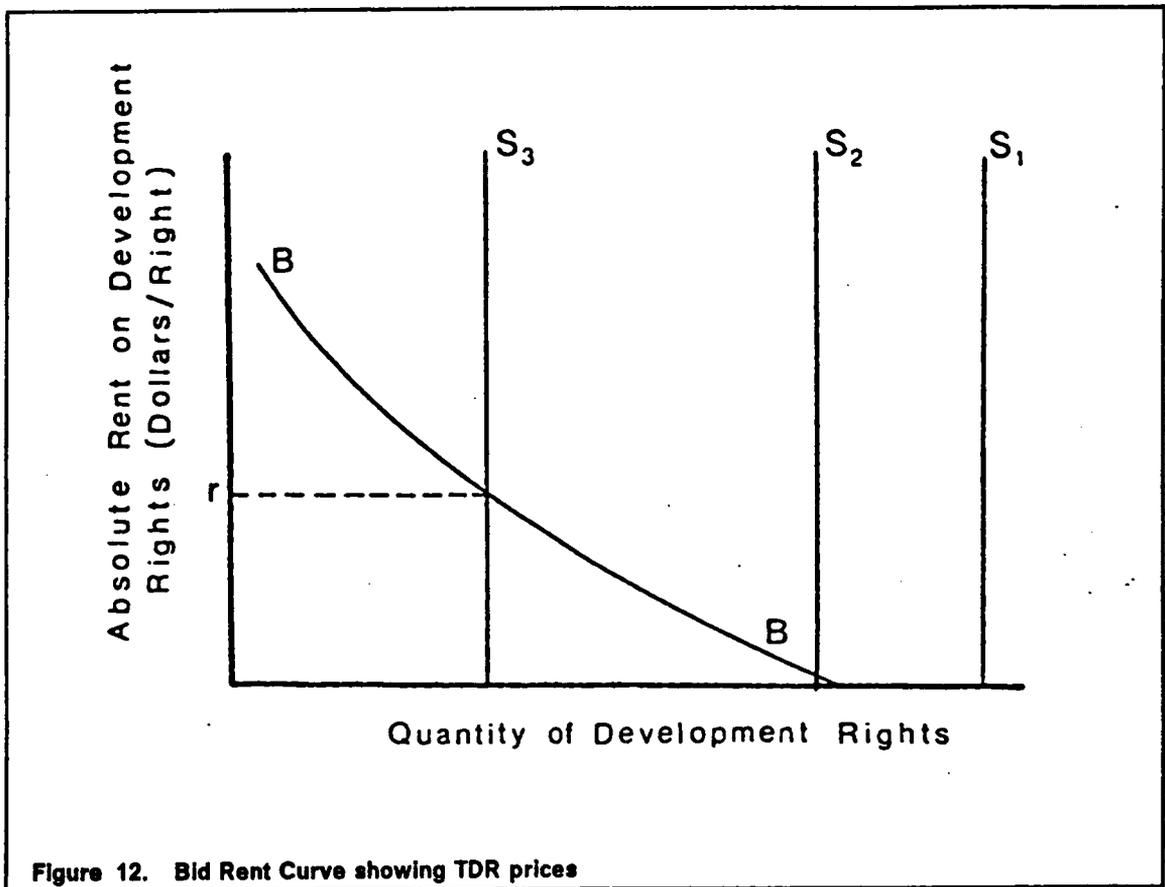
What this means in terms of planning is that, first the total volume of unused density in the designated landmarks has to be determined. After identifying the areas where development /

¹⁸⁴ Roddewig, Richard J. and Inghram, Cheryl A.; op. cit., quoted from Rathkopf, Arden H. and Rathkopf, Daren A.; *The Law of Zoning and Planning*, 4th ed., ch.34.05.

redevelopment may occur either through the study of the trend or according to planning objectives,¹⁸⁵ a calculation should be done to determine what maximum density can be supported by existing and augmented services and infrastructures. If the density to be sent out is less than the density that can be added in excess of current zoning, the planning would need only detail urban design of the receiving sites. If unused density for sale is more than absorption capacity in the receiving sites, which mostly is the case, the planning has to decide among policy options to tune the supply commensurate to the demand.

Balancing the amount of TDR supply and demand also has economic significance apart from determining the quantity to be dealt with in planning and urban design. The price at which TDRs may be bought must be ascertained from market study to see whether at least 'fair' compensation will be afforded by transfers. Researchers David Berry and Gene Steiker superimposed TDR supply on Alonso's bid rent diagram to graphically show how rent (price) of TDR falls exponentially with increase in supply (Figure 12 on page 121). Supply of TDRs is created by regulation, i.e; availability of these rights does not depend upon some production process and therefore, concepts of marginal cost being irrelevant to them, the supply curves are price inelastic and straight vertical lines. The bid rent curve B is the aggregate marginal surplus of development rights in the floor space industry in the region. The downward exponential slope reflects the decreasing marginal surplus per development rights as the number of these rights used in the production of floor space increases. From the diagram, it is quite apparent that the absolute price of development rights depends on the number of rights created. When that number is large, S1 and S2, the bid rent for the rights on the market would be at or near zero. If they are relatively scarce, S3, their rent will be bid up to 'r'. As Berry and Steiker noted,

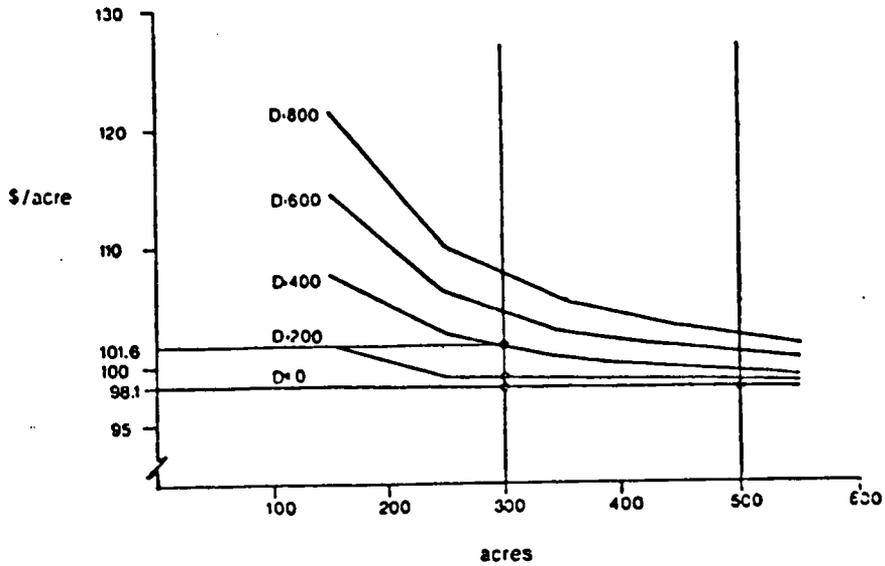
¹⁸⁵ Point to consider here is that these areas identified for development must have the demand for it, they cannot be entirely from planners' vision of what the city should be.



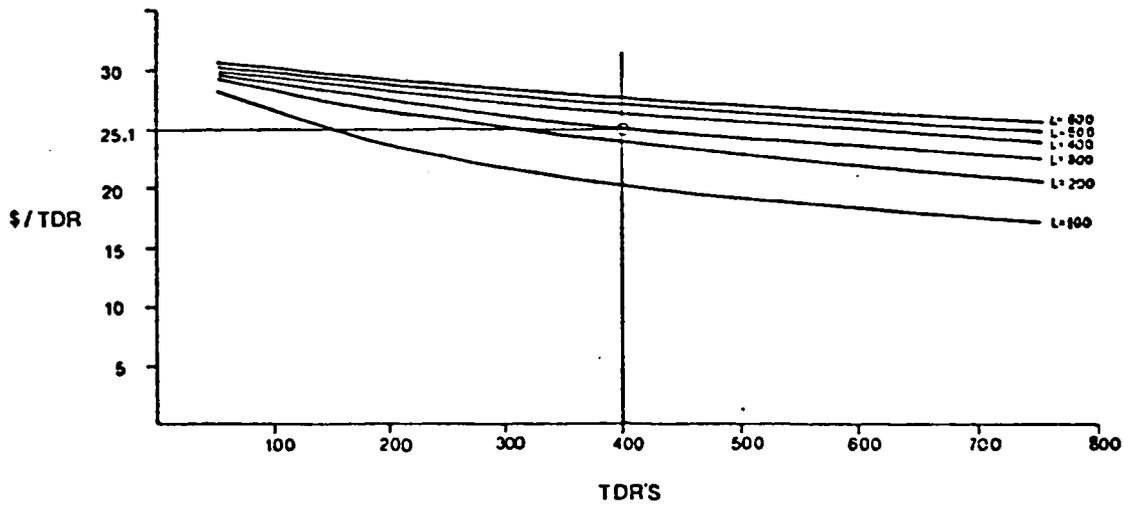
"Thus in order to make the market for development rights yield an absolute rent large enough to suffice as compensation for the loss of the privilege of conversion, the number of rights created must be carefully contrived with a knowledge of the shape of the bid rent curve."¹⁸⁸

They further elaborated the relationship among TDR price, TDR supply and the absorption capacity of receiving areas (in terms of available land) to show that land price in receiving areas shall fall quickly when receiving capacity is low (low availability of land), and TDR supply is higher. They found that the higher the supply, the sharper is the fall (Figure 13 on page 122). Consequently, the second diagram shows that TDR price falls gradually with increase in supply; but the fall is relatively small when capacity of receiving area is higher, and it is sharper when capacity (land supply) is low. Their study in Philadelphia area shows that the

¹⁸⁸ Berry, David and Steiker, Gene; *An Economic Analysis of Transfer of Development Rights*, Regional Science Research Institute, Paper No.81, September 1975, p.15. (mimeographed)



Family of Bid Rent Curves for Land as Transferable Development Rights, D, Vary



Family of Bid Rent Curves for Transferable Development Rights as Land, L, Vary

Figure 13. Relationship among Supply, Absorption Capacity and Price of TDRs

bid rent curves with variable supply amount fall as a family with increase in area of the receiving districts. The fall is sharp when receiving area is low and TDR supply is high (e.g; curve D = 800 vs. 200 acres in the diagram at top of Figure 13 on page 122). TDR price falls with increase in the supply, but the fall is lot small when receiving area is big (e.g; curve L = 800 vs. L = 100 in the diagram at bottom of Figure 13 on page 122). Berry and Steiker have also pointed out that designating a landmark is indeed increasing the potential, and thereby the price of non-designated lands as the designated properties are taken out of the competition in the office space market.

The question of equilibrium between supply and demand of TDRs is, however, not a simple one particularly for giant cities like the New York City. For instance, the Landmark Preservation Commission has estimated that there is nearly 20 million sq. ft. of potential transferable development rights over the landmarks in Manhattan.¹⁸⁷ TDR supply of this magnitude is "enough to depress the market so sharply that the rights would no longer have enough value to subsidize the very landmarks their sale was intended to save."¹⁸⁸ Even if all other bonus provisions are suspended and TDR remains as the only method by which developers could secure extra bulk, and if the 20 per cent overage¹⁸⁹ limit were strictly enforced; it would require the construction of 100 million sq. ft. of new office and mixed used buildings to provide a sufficient number of receiving lots to save New York City's landmarks. This can be compared to the fact that the total square footage completed in midtown Manhattan in the boom year of 1985 was only 2 million sq. ft..

¹⁸⁷ The figures of the Real Estate Board of New York for landmark development rights, calculated in 1983, were as follows : midtown - 9.6 million sq. ft. of which public entities owned 1.25 million sq. ft., nonprofit entities such as Churches and schools owned 5.2 million sq. ft., and private parties 3.2 million sq. ft.; downtown - 10 million sq. ft. of which 8.33 million were publicly owned, and 647,000 sq. ft. held by nonprofit organizations (Goldberger, Paul; "Threatened Churches Are the City's New Battleground," *The New York Times*, May 30, 1982. Section 2, p.1, col.1.

¹⁸⁸ Goldberger, Paul; op. cit., November 14, 1982, p.62.

¹⁸⁹ 'Overage' is the new terminology found in the recent articles to denote the additional density over and above the base FAR.

It may seem obvious that something has to be done to reduce such huge amount of TDR supply. Downzoning may be a serious option. Downzoning can be applied on either the sending sites, or the receiving sites, or both. Downzoning on sending sites will reduce the supply of TDRs. That on receiving sites will increase the absorption capacity. And there will be the combined effect of reduced supply and increased demand if downzoning is applied on both. Notwithstanding usual problems of owners' opposition, downzoning may not tantamount to taking. In the Grand Central case the Supreme Court, in focusing on the impact of a city regulation, rejected the proposition that a taking established simply by showing the denial of "the ability to exploit a property interest that heretofore had believed was available".¹⁹⁰ In other cities where zoning has not been so generous, the comprehensive plan should seriously consider this question while revising zoning limits. Said another way, the comprehensive plan should consider development demands also in view of TDRs that may be created by any change in zoning.

4.4. TDR and Conservation of Originating Landmarks

The TDR bonus becomes less attractive for the fact that it is not allowed as-of-right. That is, granting of a TDR transfer is usually tied to the conservation of the originating landmark. As observed in the case studies, this usually means involvement of various agencies for their approval which always requires time. This is viewed by the developers as something to be avoided if possible. While success of a TDR program depends greatly on simplicity and fast track approval of the program, the requirement of the originating landmark's preservation cannot be detached entirely from the TDR transfer procedure. If it would be completely free of the obligation, chances are high that the TDR transfer will take place without achieving the primary goal of conserving the landmarks. However, it has become obvious from the case

¹⁹⁰ Quoted in Richards, David A.; op cit., 1986, p.480, note 166.

studies that the next generation of TDR programs will have to view this aspect from the point of making the obligation as easy as possible. For instance, the current procedure in Seattle, which requires the developer, or the applicant for landmark TDR transfer, to pay for the time that is consumed in negotiation for the transfer and related preservation plan, is itself a strong disincentive for any developer to venture for TDR from a landmark. The time spent in negotiation is itself money to a businessman. The argument for such a system may be that when one has to pay for the time, he will tend to be precise when negotiating. Considering this to be a viable point, the payment should be from either side. Under the existing system, there is no incentive for the planners and officials of the agency to act precisely as well. Indeed, being on the granting side of the table, they have reasons to delay the process.

Keeping aside such a provision of paying for negotiation time, it is general experience that the developers are more keen to settle the procedure as early as they can. Effort to simplify the program should see how such procedural delay can be minimized. In most cases studied above, the developer has to furnish a plan for the conservation of the originating landmark when applying for a transfer approval. The Planning Commission sends the plan to the Landmark Preservation Commission for their recommendation. The Landmark Preservation Commission examines the plan, and reports to the Planning Commission. The report from the Landmark Preservation Commission usually makes the developer tied as much as possible to the implementation of the preservation plan simply from the fear that otherwise the plan will never be implemented. The developer also tries to shed the responsibility as far as possible. The TDR transfer approval process, therefore, undergoes a tedious tug of war between the City and the developer. While an approval system is essential, which will take some time for the evaluation of the conservation plan no matter how small, there ought to be a process by which this approval and the permission for the new development using the TDR can be separated. There are two parties involved in a TDR transfer – the seller of TDRs and the buyer. Instead of making the buyer responsible for the conservation plan, or holding the approval of his new development until the conservation plan is approved and implementation is

assured, it would make sense to leave it up to the seller. As it is today, the preservation plan of the landmark is tied directly to the development project on the receiving site, and the latter is not approved even if it satisfies all requirements in the event the preservation plan is not approved. These two segments of the program need not be tied to one another as has been in the new San Francisco plan, as well as in Denver.

The Denver program shows that the designated landmark owners may be required to prepare their preservation plans, and to get them approved to be eligible to sell their unused development rights. These plans will also include estimation of the cost for their implementation and maintenance on the basis of which the apportionment of funds from TDR proceeds will be decided upon. The buyer developer, in this case, can simply pay the price and obtain the bonus without further obligation.

However, there remains an argument that the onus now falls on the sellers who are already hard pressed due to designation of their properties. In most cases, the landmark owner may not be willing to spend money for the preparation of the preservation plan and estimates for a happen-stance transfer without being sure of a prospective transfer. This situation can be overcome in two ways. Firstly, if the adjacency requirement is removed, the market for TDR will be open and there will definitely be some enterprising TDR sellers who will fulfill the prerequisite (having an approved preservation plan and estimates) to be able to sell their unused development rights. This will definitely happen for the reason that once designation is accepted through due process, the potential of the property is frozen if the owner is unable to harness the TDR option. And once some landmark owners will come forward, the market competition will lead others also to follow suit. The rationale behind this proposal is that the incentive to encash the value of unused development rights should be more, and in no case less, for the sellers than the buyers. This is particularly so because the buyers have other options of bonuses, while the sellers have TDR as sole alternative.

Secondly, there may be genuine cases where the designated landmark owner may not have adequate resources to prepare such plans and estimates. Also, even in the first case the TDR transfer may not ensure implementation of the plan on which the transfer was granted. Intervention of an agency, non-profit in nature, may be necessary to overcome this hurdle. Preparation of the preservation plan and estimates may be contingent upon agreement with the buyer developer, but he must be relieved of the obligation of obtaining approval and implementation of the plan. Implementation of the preservation plan without involving the buyer developer may be ensured by allowing the transfer proceeds to go through the agency, in which case the landmark owner shall receive the money for implementing the plan and the remainder of the proceeds only after completion of conservation as planned.

The strength of this proposal is that the responsibility of each party in the program is tuned to their interest. In the existing system the buyer developers are made unduly responsible for parts that are beyond their interests. The suggestion of involving an intermediate agency may be viewed as additional obstacle. But this agency is proposed to function as a single organization with inputs from the Planning Commission, Landmark Preservation Commission and any other relevant Body so that the parties involved in a TDR transfer will have to deal only with one agency and not with many as typical in the existing programs.

4.5. TDR Administration and TDR Bank

The single agency concept is particularly relevant to simplify the transfer procedure from bureaucratic maneuvers. Most often much time is wasted in communication between the agencies with part responsibility. If a single agency can be organized with inputs from all the relevant organizations, it would be able to perform more efficiently, while in the same exercise it would take care of the interests of all the authorities delineating power to it. Such an agency can easily perform the liaison function between the sellers and the buyers, between the sell-

ers and the Landmark Preservation Commission, between the buyers and Planning Commission, and the like. The agency can be ready with a clear inventory of sending and receiving sites. This will provide the necessary predictability that the building industry seems to perceive essential. As it is today, buyers and sellers of TDR depend on chance negotiation and agreement, which most often work for the benefit of the buyer at the cost of the seller.

Such a single window procedure may also work constructively in cases where supply of TDR is more than the demand. As consumption cannot be more than the demand, there is a need to prioritize the supply. In the open market a landmark of secondary importance may market its unused potential when another one of primary significance is unable to succeed. The designation process most often identify the levels of significance of the listed landmarks. Preparation of an inventory according to priority should not be a subjective problem. Transfers according to this priority list can be performed only when they are to be processed through a single agency having knowledge of the total inventory.

Creation of a single agency to administer TDR transfers may also be supported by creation of a TDR bank. The Chicago Plan elaborated the details of the function of such a bank. Keeping aside the question of seed capital for such a bank for the time being, it can be strongly argued that a TDR bank shall be able to resolve some very crucial problems of TDR transfers. For instance, the TDR bank will be able to solve the problem of synchronization between the supply and demand of TDRs. Further, a TDR bank may be essential to hold TDRs during the lean periods of real estate development cycle.

Although the concept of a TDR bank has so far been used in a very limited way,¹⁹¹ there are a number of reasons for considering it as an essential element in a TDR program. First, it can provide required confidence in understanding the program if the developers see that TDRs are actually being purchased by a bank, and sold to developers in the receiving areas. Sec-

¹⁹¹ South Street Seaport in New York City has a TDR bank working. In addition, Montgomery County, Maryland and the Pinelands in New Jersey have been using a TDR bank.

only, a TDR bank can serve as a market maker or market stabilizer. Real estate development cycle follows the general economic condition of a region or the country. The bank can acquire more development rights to stabilize the slack market when demand for housing and office construction is down. These TDRs purchased during the lean period can help meet the increased demand when market turns around, and when there may be more developers interested in buying TDR than there are willing sellers. The bank, if adequately funded, therefore, can balance the supply and demand factors necessary to make a TDR program work.

The importance of a bank in setting and maintaining the price of TDR is also of crucial importance. Although it is commonly thought that TDR price will appreciate over time, a typical reason for holding TDRs, experience in Montgomery County, Maryland and in Santa Monica Mountains has been that the price of TDRs decreases with time.¹⁸² The stability, increase or decrease of the TDR price depends upon the design and operation of the program. As discussed earlier, if more TDRs are created than can possibly be consumed in the receiving areas, the price of TDRs is likely to go down over time. As time would go by, the owners of the designated landmarks will gradually become more familiar with the TDR program details. The developers in the receiving areas also will become more aware and comfortable with the program, and will master the art of approaching and negotiating potential sellers with greater efficiency in order to reduce the transaction time and cost. A well funded bank can play a vital role in such a market to ensure that developers in the receiving district must pay close to the bank's purchase price.

There are, of course, some legal questions that must be addressed before initiating a TDR bank. Existing statutes in the state or in the country must be reviewed to determine whether or not they can authorize establishment of such a bank. In case there does not exist a clear statement that may authorize creation of a bank as part of the TDR program, general zoning and police power laws current at the time should be reviewed to ascertain the legal basis of

¹⁸² Roddewig, Richard J. and Inghram, Cheryl A.; *op. cit.*, 1987, p.27.

a bank. As Roddewig and Inghram mention, "(o)ther legal issues, such as whether the establishment of a bank violates antitrust laws or the TDR bought and sold by the bank are securities must also be addressed."¹⁹³

The size of the bank is also an important point to consider before its incorporation in the TDR program. Indeed, the size of the bank should be a function of the size of the program. For a bank to be of significant influence on the market, it must be involved in a significant number of transfers. It is commonly estimated that the bank must at least handle 25 per cent of TDR transactions to be able to ensure its influence in the market. If the funding of the bank allows it to operate at this level, it would possibly ensure stability of TDR prices. Once the bank is able to sell the development rights purchased, it should be able to continually reuse its initial funding in a revolving program of purchase - sale - purchase of development rights.

The funding of a TDR bank is, of course, of utmost importance as typically municipal funds are seldom adequate to venture in a program of TDR purchase. The Chicago Plan envisaged creation of the bank by storing the TDR from landmarks condemned by preservation restriction when the owner declined to deal with his development rights, from donated TDR and from municipally owned landmarks. The Plan depended on federal assistance for the seed capital to get started and to support the first chain of holding time. However, when such funds are not forthcoming, it is worthwhile to view publicly owned landmarks' unused potential as the seed capital to get the bank started.

4.6. TDR and Public Landmarks

Most TDR programs studied above have, for some reason, tended to treat public landmarks differently than those private. New York City's program has particularly specified additional

¹⁹³ *ibid*, p.27.

requirements to be satisfied before transfer from a public landmark is granted. TDR transfer from publicly owned landmarks is held to a higher amenity standard than those utilizing TDR from privately owned landmarks. The explanation provided by Norman Marcus for the 1970 amendment of New York City's TDR program involving public landmarks seems to be somewhat guilt ridden. His assertion that public landmark's unused development rights should not be marketed "solely to bolster the municipal treasury" leads to view the contention with doubt.

Indeed, there is no good reason why public landmarks should be treated differently. After a building is designated as a significant landmark in the city through due process, there should be no difference in status and treatment with respect to its ownership. Just because a landmark is owned by the City does not make it a less or more of a landmark than another owned privately. The designation imposes same restriction, and the economic loss is depended solely upon the market condition with no relation whatever to the nature of ownership. Notwithstanding these facts, most TDR programs have considered public landmarks in the second row in TDR marketing. This is perhaps due to the fact that usually the number of publicly owned landmarks are far more than those owned privately. If they are treated equally, the private landmarks' TDR will receive only proportional access in the market, which will be significantly smaller than the public landmarks' TDR. The emphasis on the protection of private property rights have led to take the public landmarks out of competition in the TDR market so that the private landmarks can enjoy a monopoly.

There are two inherent assumptions in excluding public landmarks from a TDR program. First, supply of TDR can be restricted by excluding some landmarks, and since the private sector is more militant, let the private landmarks get the priority, i.e; follow the line of least resistance. Secondly, the freeze imposed by a designation is an economic loss to the private sector which is keen to redevelop to harness the profit from market demand. To the public sector, which likes laissez-faire, the freeze suspends only the possibility of further gain, does not impose a real loss.

There is definitely a need to restrict the supply of TDR so that their prices remain stabilized and good enough to afford a fair compensation. As has been discussed previously, there is a genuine need to list designated landmarks in order of priority so that most significant ones are conserved in the event of restricted absorption capacity of the receiving areas. It is understandable that a good TDR program will first calculate total absorption capacity of the receiving areas, and will allow transfers according to the priority list up to the saturation of the absorption capacity. When some landmarks are to remain as low priority, they ought to be decided upon their qualitative merit, not merely upon their nature of ownership. Said another way, just being publicly owned is not a good enough reason to group them in low priority. A publicly owned landmark may be exceedingly significant in terms of historical and architectural qualities.

The second assumption takes it for granted that the public sector ought to remain less efficient, and community's loss is impersonal while private loss is very personal. To set public institutions one step removed from the leading edge of market efficiency is a mental frame which allows private benefit at the cost of public expense. Qualitatively being the same, a public and a private landmark should compete equally in the market to sell their TDR. Indeed, public landmarks perhaps can lead the desired trend by way of earning the eligibility for TDR marketing as proposed earlier with regards to the relationship of TDR to the preservation plan of the originating landmark. If some public landmarks are already with approved preservation plans and estimates, they will be more attractive to prospective buyer developers. This may set the motion of competition among the sellers to market their TDRs, thus achieving the goal of separating the TDR use and implementation of the conservation of the originating landmark. If the private sector is more efficient, as commonly assumed; allowing public landmarks' TDR in equal status with those from private landmarks should not hurt the private sector, as they could perhaps outsale the public sector's effort.

The notion that an impersonal loss is a loss of secondary importance inherently accepts the subsidy factor, and perceives that the public landmarks' preservation cost to be borne by the

community which cannot go to the Courts against its own designation. This, indeed, is defeating the primary objective of preserving urban landmarks from the resources of the market mechanism. To strictly adhere to this objective would be to treat both private and public landmarks equally with regards to marketing their TDRs. TDRs from public landmarks can play a significantly role in establishing a TDR bank by providing the seed capital, and the importance of such a bank for smooth operation of a TDR program has already been discussed. On the merit of logic, public landmarks' TDRs are more crucial for success of a TDR program, and the survey will reveal the perception in this regard among the actors in the field.

4.7. TDR and Real Estate Business Considerations

A TDR program's relation to the real estate business considerations are not apparent from the case studies, but they emerge as essential factors from the issues analyzed above. The following analysis is from a developer's point of view to critically observe the considerations that he will undertake while participating in a TDR program. While other actors in a TDR program – the landmark owner, the planners, the citizen activists – are on the receiving side of the program, it is only the developer who is on the spending side. The objective of the former side may be noble, and that of the latter side may be primarily profit making; yet without participation of the latter side a TDR program will not take off no matter how well designed.

A typical central city developer looks quite closely at land costs expressed as the cost per sq. ft. of gross built-up area, and will analyze a TDR program by comparing it with alternative land acquisition cost. Let us consider a hypothetical case for example. A city's high density downtown commercial office zoning allows a maximum FAR of 10 after all bonuses for public amenities. A developer assembles a 200'x 400' lot to build an office building. The total permissible gross area that can be build would be $200 \times 400 \times 10 = 800,000$ sq. ft.. Suppose the developer had to pay \$150 per sq. ft. of the site area to assemble the lot, i.e; the total land

cost is $200 \times 400 \times 150 = \12 million. Land cost per sq. ft. of gross building area then comes to be $12,000,000 / 800,000 = \$15$.

Let us now consider that the city has a TDR program that allows 20 per cent bonus against purchase of TDRs from landmark buildings. This bonus FAR of 2 (20 per cent of base FAR of 10) will allow the developer to build additional 160,000 sq. ft. ($200 \times 400 \times 2$) in the proposed building. The straight benefit obtainable by the developer, therefore, will be the extra density allowance multiplied by the land cost per sq. ft. of the total building area, i.e; $160,000 \times 15 = \$2,400,000$. This will be the maximum price that the developer will be prepared to pay against acquiring the TDRs, but his considerations shall be influenced by various other factors. First, he will consider whether there is a ready market for the additional built-up space. If his study does not indicate demand for extra space, he will not be interested to acquire the TDRs. In case of a weak market it may be easy to rent / sell 40 per cent of the built-up space, but more difficult to find tenant / buyer for the remainder 60 per cent. In such a case, adding extra space will make the leasing / selling problems more difficult, especially for the fact that the mortgage lenders usually insist on a specific percentage of the lease commitments before extending the final construction / mortgage loan.

Secondly, the developer will consider whether the TDR bonus increases or decreases the average construction cost per sq. ft. of the building. If the excavation, piling and foundation costs increase only marginally to add 160,000 sq. ft. in the building, and if it does not involve additional staging for elevators and mechanical systems, additional cost for sophisticated fire protection equipments and provisions, and additional structural cost to account for wind thrusts; the developer may be able to include the cost savings in the price to be paid for the TDRs. On the other hand, if the additional bulk of the building necessitates additional costs in all these structural and service systems, the price of TDR would be reduced by the extra cost.

Thirdly, he will carefully consider the efficiency factors. He will calculate to determine whether the additional bulk will lead to operating efficiencies or inefficiencies. If the building regu-

lations restrict floor sizes as the building goes higher, the upper floors may become inefficient, i.e; the ratio of the rentable area to the service core area may fall below the efficiency mark. Heating / air-conditioning and illumination requirements also have relation to the size of the floors and to the total volume of the building. Usually increased size of a building lowers the cost per sq. ft. of operation, but it may as well increase if additional bulk results in crossing an operation cost border. For instance, three full-time maintenance engineers may take care of a 200,000 to 400,000 sq. ft. office building, but a fourth engineer may be necessary if the building exceeds 400,000 sq. ft.. The cost of security staff, management staff, leasing staff and similar other costs are also effected by the size of the building.

Fourthly, the developer will also consider the prestige factor that might improve or detract the rentability / sellability of the built-up space. There may be an extra prestige value associated with having office in the tallest building in town. This would improve rentability, but every building cannot be the tallest or biggest. Therefore, such a prestige value may not be of importance to the developer in general. However, particular location of the building may offer better views from the floors above certain height, which may lead to greater demand of space in upper floors. From a tenant's point of view, such prestige factors are important if the mechanical and elevator systems do not delay services at peak hour. This means that the prestige value can be harnessed only if building services are adequate.

Finally, one of the most important consideration for the developer is the knowledge whether the TDR program will make obtaining building permit easier or more difficult. The building permit granting process is usually problematic and time consuming in most active cities. The developers, being on the receiving end of the process, are normally treated with bureaucratic indifference in which small details are blown up for perfection at the cost of efficiency of the process. Sometimes, discretionary powers are abused leading to corruption. Developers ultimately obtain the building permit, but the cost for it is added to the development cost. If the TDR program further complicates this process, the developer will try to avoid; and even if he participates, the price for the TDRs will be reduced by the cost he incurs for obtaining the

approval. On the other hand, if the TDR program will ensure processing the approval with a 'fast track' planning and zoning review process, it will save the developers some time and therefore some costs, such as interest on the construction loan, real estate taxes during construction, rent loss due to delay, and other carrying costs. The proposals of separating the use of TDRs in the development project and the implementation of the originating landmark's preservation plan, and establishing a single agency system for program administration are from the consideration of minimizing the approval complication and time.

4.8. Questionnaire Survey and Interviews

The issues identified from the case studies, and their analyses indicate a need for an opinion survey among the key actors in the field. Also, the operational, administrative and implementation details of the program need to be investigated through experienced opinion. The main actors in the field can be grouped under four categories - the planners, the administrators, the preservationists, and the developer / owner.¹⁹⁴ This 'key informant' method suggested by Constance Perin is particularly suitable when the investigation is on a concept which is still developing, and information is limited within a small circle of people having experience in it.¹⁹⁵ TDR is a recent and developing concept, and the number of people familiar with it is rather limited. Therefore, the survey is to consider the quality of the sample, rather than the size. Published materials studied, and people contacted for the case studies have helped

¹⁹⁴ Professor Peter J. Pizor identified builders, owners, real estate professionals and attorneys as main actors (Pizor, Peter J.; op. cit., 1986, p.204.). Richard J. Roddewig and Cheryl A. Inghram have also identified four kinds of actors - the developers in the receiving zone, the owners in the sending zone, the local government planners and tax authorities, and the mortgage lenders (Roddewig, Richard J. and Inghram, Cheryl A.; op. cit., 1987, p.20.). The actor groups selected for this study also come from similar categories. Legal professionals will be divided depending on which interest they represent. One who has been pleading for the planners will be considered as a planner, and other representing a developer will be grouped accordingly. Mortgage lenders input is considered here to be represented by the developer / owner.

¹⁹⁵ Perin, Constance; *Everything in its Place : social order and land use in America*, Princeton University Press, Princeton, New Jersey, 1977.

identifying prospective respondents in all these categories. Some of the respondents were interviewed, while others were sent the questionnaire by post after prior consent from most of them.

4.8.1. Design of the Survey Questionnaire

The objectives of the survey and interview have been to gather opinion with reasons on identified issues, as well as to examine the preference of criteria for design of the program. Since the survey is to be conducted among a selected group of respondents, the sample size will be small for a statistical analysis. Of necessity, the data have to be sorted according to the issues and features under investigation. The design of the questions have been tuned to this mode of analysis. In general, questions have been spread out, as suggested in the social research literatures, rather than squeezing them in order to reduce the length of the questionnaire.¹⁹⁶

As a general rule, effort has been taken to structure the questions so that a 'three-answer' format, i.e; 'yes', 'no', and 'don't know', can be used. However, all the inquires cannot be put into this format, and there are some 'contingency questions' included in the questionnaire. The contingency questions become necessary when each option on the issue needs further explanation / elaboration, and a respondent favoring one option can skip the questions on the other. For example, the question on the overage in bulk in exchange for TDR (question - 10, a sample of the questionnaire is presented in Appendix B) is first structured to indicate whether it should be fixed or, could it be flexible. Then the contingency question asks those who think it should be fixed, to indicate the overage limit in terms of percentage of the zoned density. Alternatively, the second contingency question asks those who prefer it to be flexible, to indicate from a list of choices how the decision on maximum limit can be made. Further, a

¹⁹⁶ For example, Babbie, Earl R.; *The Practice of Social Research*, Wadsworth Publishing Co. Inc., Belmont, 1979, pp.315-352.

third contingency question inquires on the means by which the corruption element associated with flexibility can be dealt with.

The 'matrix questions' are necessary to investigate the order of importance among a set of reasons / criteria. Typically, such questions are structured to be answered in the Likert response categories in a survey to be analyzed by the statistical methods. Since a small sample size will not permit statistical analysis, the Likert response categories are not used in this survey. Instead, the respondents are instructed to rate the possible reasons / criteria listed under each matrix question in order of importance. For instance, the question on the criteria of selecting a receiving site (question - 8) is followed by a set of possible criteria with an instruction to "mark the most important as '1', then rate as 2,3,4 etc. according to decreasing importance". The set of possible reason / criteria under each of the matrix question also includes 'other (please specify)' option to offer a freedom of answer, as well as to find out overlooked reason / criteria.

There is also one skip option in the questionnaire (question - 2). This is used here to help sort the responses from those who believe obstacles to TDR are decreasing over time, and from those who believe otherwise. Each group is instructed to skip some questions not relevant to their belief, and asked in another set of questions to reflect on the basis of their belief. There is also a complex matrix question which provides 'yes / no' options for each of the possible criteria (question - 9). This question on the planning criteria of the receiving districts is followed by a list of possible means each with 'yes / no' option. The respondent is guided not to 'rate' the means, but to point 'whether or not' a means should be applied. Again the 'other (please specify)' option is included to allow the respondents to add other means she/he thinks relevant.

The order of the questions does not have a particularity, but related questions are placed in sequence as a batch. For instance, questions - 7 to 10 are on issues related to receiving sites, and are placed in order of the depth of inquiry. The questions on main issues have been

broken into parts according to conflicting aspects of the issue. For example, the questions on the adjacency issue first ask whether or not the respondent believes in the logic for adjacency. Then a brief explanation is requested on the problems if she/he prefers adjacency. A third question on this issue is directed to those who do not believe in adjacency. Here the common conflicts are stated, and then a multiple choice question is placed for them to reflect on the resolution of the conflicts.

4.8.2. Testing of the Survey Questionnaire

After a draft questionnaire was prepared, it was first discussed with the committee members¹⁹⁷ for their observation and comment. Certain changes were made according to the advice of the committee members, and it was suggested that the questionnaire be tested by some involved persons in the field. Accordingly, some professionals and researchers, well involved in TDR programs, were contacted. Finally five persons were selected for this purpose. They were informed of the objectives and process of the research, and particularly making them understand the importance of their help. The selected persons were :

1. Prof. John J. Costonis
One of the architects of TDR concept and the author of the landmark book entitled '*Space Adrift :Saving Urban Landmarks through the Chicago Plan*'.
2. Mr. Hugh C. Miller
Chief Historical Architect, US National Park Service.
3. Prof. Peter J. Pizor
Prominent scholar in the field at the Center for Urban Policy Research, Rutgers University.
4. Mr. David Ennis
Senior Planner in the New Jersey Conservation Foundation, and organizer of a recent symposium on TDR.
5. Ms. Donna Ann Harris
Vice President, Program Development In Philadelphia Historic Preservation Corporation, currently working for incorporation of TDR in Philadelphia's zoning ordinance.

¹⁹⁷ Members of author's Ph. D. Committee.

As a result of the testing, a few questions were dropped which were elaborative in nature. The structure of some questions was also rephrased according to the suggestions of the test respondents. Some contingency questions were further broken into a 'three-answer' format. Listing of possible reasons / criteria for matrix questions was an important factor that required follow-up discussion with the test respondents. There were few conflicts between the observations and suggestions from the test respondents, which were resolved by follow-up discussion.

One of the interesting suggestions from a test respondent was to offer something in exchange for the respondent's help in the research. The suggestion was to offer the results of the survey, which would also help circulation of information. A question, therefore, has been added at the end asking if the respondent will like to know the results of the survey; and if so, to write her/his names and address. This is an identification question, but only optional.

4.8.3. Method of Analysis

The questionnaire includes inquiry on particular issues, as well as on the details of the program features. Required information on most of the issues cannot be generated by the basic questions alone. The contingency questions are, therefore, asked following the basic questions. While the answers to the basic questions may be either in favor or against of the given logic / rationale; the contingency questions require explanation, or rating of the possible reasons / criteria, or selecting among choices.

As mentioned earlier, standard statistical analysis will not be useful due to the restricted sample size. Further, the survey is basically an inquiry on opinion or perception. Putting differential values in a scaled fashion would involve subjective judgement, and may not offer actual picture. It is also true that for any issue there will always be some actors in favor, while some others will be against. A TDR program may function well despite a section of people

not liking it. Therefore, the idea of this survey is not to find the perfect answers, rather to observe how the key actors are divided on the issues, and what may be the resolutions considering the actors in favor versus those against.

The method used to extract information from the responses is primarily sorting the answers in a matrix according to issues, actor category, and response type i.e; whether in favor or against. The value of opinion of each respondent is considered '1' for both in favor (+ve) and against (-ve). Those who abstained from answering a question, of course, is not given any value. The answers sorted in the matrix will allow analysis according to issues broadly, and then according to the interest and activity groups.

4.8.4. Results of the Survey

27 responded questionnaires have been received back, and another 11 were filled up during interviews and discussions. Of the total 38 respondents, 12 are planners / consultants, 9 administrators, 11 citizen activists, and 6 developer / legal consultants to developers. The analysis of the survey responses according to this point system can be summarized as shown in Table 2 on page 142.

The general opinion regarding the usefulness of a TDR program as a tool for urban landmark conservation is observed positive. The contingency questions, however, reveal that the most of the planners think that the reason for so few actual transfers is the availability of so many other as-of-right bonus provisions. The administrators and the activists in general blame the planning process and its lack of coordination with the TDR program. The developers blame the complicated administrative process and lack of predictability. However, the slack in the market demand for additional built-up space has also been mentioned by most to be a reason for so few actual transfers. The question on the trend indicates that, in general, impediments to TDR program are considered to be decreasing over time. The matrix questions on possible

Issue	Respondent Category	In Favor	Against	Abstained	Remarks
TDR useful for Landmark Conservation	Planners (P)	8	4	-	Usefulness of TDR observed positive (+ 28 vs -18)
	Administrators (Ad)	9	-	-	
	Activist (Ac)	9	2	-	
	Developers (D)	2	4	-	
Impediments to TDR decreasing over time	P	8	3	1	Impediments to TDR observed decreasing (+ 18 vs -13)
	Ad	9	1	3	
	Ac	4	6	1	
	D	1	3	2	
Other zoning bonuses to be suspended	P	8	6	-	Suspension not preferred (+ 18 vs -20)
	Ad	4	5	-	
	Ac	7	4	-	
	D	1	5	-	
Adjacency logical	P	7	3	2	Adjacency requirement observed positive (+ 21 vs -15)
	Ad	3	6	-	
	Ac	6	5	-	
	D	8	1	-	
Downzoning required	P	7	9	-	Downzoning viewed negative (+ 18 vs -20)
	Ad	4	8	-	
	Ac	6	5	-	
	D	1	8	-	
Single Window Liaison Organization needed	P	7	2	3	Liaison Organization preferred (+ 22 vs -11)
	Ad	4	3	2	
	Ac	8	3	-	
	D	3	3	-	
TDR Bank required	P	7	4	1	Need for TDR Bank observed positive (+ 23 vs -12)
	Ad	5	3	1	
	Ac	7	3	1	
	D	4	2	-	
TDR from public Landmarks for subsidy	P	6	5	1	Observed positive (+ 18 vs -12)
	Ad	6	-	3	
	Ac	7	4	-	
	D	-	3	3	
Identification of TDR Receiving areas to be clear	P	9	3	-	TDR Receiving areas to be clearly identified (+ 29 vs -9)
	Ad	8	1	-	
	Ac	7	4	-	
	D	5	1	-	
Overage for TDR transfer should be Fixed	P	5	7	-	Overage may not be Fixed (+ 17 vs -20)
	Ad	4	5	-	
	Ac	8	5	-	
	D	2	3	1	
Fast track permit for TDR Transfer cases	P	6	5	1	Fast track permit to TDR Transfer cases preferred (+ 22 vs -13)
	Ad	5	3	1	
	Ac	6	8	-	
	D	5	-	1	
TDR can fairly compensate loss due to designation	P	8	3	1	Fair compensation is possible through TDR Transfer (+ 28 vs -8)
	Ad	6	2	1	
	Ac	9	2	-	
	D	3	2	1	
TDR program can be misused	P	8	4	-	Possibility of misuse observed positive (+ 23 vs -13)
	Ad	7	1	1	
	Ac	6	5	-	
	D	2	3	1	
Legal problems may be simplified	P	3	8	-	Legal issues still require attention (+ 18 vs -18)
	Ad	5	3	1	
	Ac	8	5	-	
	D	4	2	-	
TDR may be exchanged for license, permit etc.	P	3	8	1	Such exchanges not favored (+ 14 vs -20)
	Ad	2	5	2	
	Ac	6	4	1	
	D	3	3	-	
TDR will have better acceptability in future	P	8	4	-	Perception in favor (+ 21 vs -12)
	Ad	8	1	2	
	Ac	4	5	2	
	D	3	2	1	

Table 2. Results of the Survey for main TDR Issues

reasons for the perceived trend show that the removal of strict adjacency has been the main development in the program that has made TDR more attractive. Demand in the market for built-up space is also observed to be a constant factor.

Suspension of other zoning bonus provisions is found not desirable in the survey. Although the case study analysis indicated a strong need, the actors in the field, particularly the developers, never view taking off any provision favorably. However, the value of the final score is only 3; which means that the demand for keeping the bonus provisions is not very strong. Similarly, the adjacency requirement, over which the debate seem to be non-ending, is found preferable in the survey. However, the contingency question on adjacency reveals that most of those preferring adjacency actually mean a nearby location, rather than a strict adjacent lot. Down-zoning was observed to be a very sensitive issue in the case studies in relation to the comprehensive plan, and revealed that it required generation of enormous public opinion. The survey result shows that downzoning is not generally acceptable or desirable. The results of the survey on other issues of the need of a liaison organization, TDR bank, and transfer from public landmarks to subsidize short fall in other cases; all found desirable as was observed necessary from the case studies analysis.

Clear identification of the receiving areas is found essential. The subsequent contingency questions reveal that most of the planners think that such areas should be chosen first according to availability of services and infrastructures, and then according to planning decision of growth areas. The administrators prefer them to follow the growth direction of the city. The activists also prefer areas with services and infrastructures. The developers point at the demand for built-up areas to be the main criteria for selecting the receiving sites. The control of the receiving areas, however, is seen by most irrespective of group interest, to be best performed by an urban design identifying variable development potentials, and not by down-zoning.

Should the overage in density in exchange for TDR be fixed, or should it be flexible is an issue of importance in the design of the program. The overall response is in favor of it being flexible. Almost all who preferred it to be flexible thought the ceiling limit to be decided on the basis of merit of the project. Those who preferred overage limit to be fixed indicated the limit to be between 10 to 30 per cent of the zoned density. Although, the final point on this question gets a negative sign, i.e; indicating it may not be fixed, the low value of 1 of the final score suggests that it is not a very strong negative. Indeed, the respondents in general were divided almost half and half, one favoring fixed overage and the other supporting flexibility. This competing nature of answers on this issue indicate that this feature of a TDR program is a circumstantial element, rather than an ethical or logical one. Interestingly, almost all of the respondents found that the corruption associated with flexibility in overage limit should be dealt with by a well thought out guidelines for project evaluation. This means that the circumstantial decision on overage limit in a TDR program must be guided by well predictable project evaluation system.

The idea of putting an incentive in the TDR program by allowing a fast track permit approval for the projects with TDR transfer is observed desirable in the survey. The survey also shows that a fair compensation for the designated landmarks is achievable through a TDR program. However, those who think it is not possible, approved of the idea that the shortfall should be made up from the proceeds of transfer from the public landmarks. The question whether or not a TDR program can be misused seems to have a positive answer. Which means, the possibility of misuse is there. However, those expressing the doubt did indicate that no special attention will be necessary to deal with the problem. They thought the usual regulations should be able to take care of the situation.

Although there have been so many discussions on the legal issues of a TDR program, and although it seems legal questions are all sorted out; the survey reveals that there still remains a need for further simplification of the legal process. The trend question subsequently asked shows that the legal problems are perceived to be reduced in future. The respondents have

rejected the idea that TDR can also be exchanged for values other than additional building volume. Granting of other incentives, such as business license, permit, etc. in exchange for TDR transfer should not be done. The survey result finally shows that the acceptability of TDR will be better in the future.

4.9. Final Evaluation of the Tool

It is interesting to observe that there are differences on certain issues between the outcome of the case studies analysis and the results of the survey. The differences are perhaps for the fact that the case study analysis does contain an element of wisdom and utopian logic, while the survey results are pure pragmatic reaction. What this means is that, although some issues may logically seem to be negative, the practical world may still prefer it. The element of long term well-being inherent in wisdom may not always be supported by the short term pressing demands of the present. Efforts may be there to make those issues less preferable over time -- this is what is planning -- but a TDR program should start accepting the market demands.

The general lesson to be learnt from this is that a proposed TDR program may have long term objectives according to the analysis of the case studies; but the immediate program must be on the basis of the findings of the survey. For example, the bonus provisions may seem to do more harm than good, but they cannot be withdrawn immediately. It may perhaps be withdrawn gradually in the course of time. Similarly, the adjacency requirement may seem to have many problems, and broadening the receiving areas may seem to have so many plus points; but the market is not yet ready to accept such hoping transfers. TDR programs will have to live with adjacency for some more time to come. Combining the case studies analysis and the survey results, a final evaluation of the tool may be summarized as follows:

1. TDR is an useful tool for landmark preservation; but it must be supported by strong market demand for built-up spaces.

2. Suspension of other as-of-right zoning bonuses has planning support; but the market is not yet ready to abandon the bonus provisions. There, however, may be a tapering off of these bonuses. Most importantly, if bonus provisions are not there in the current zoning, they must not be included.
3. Supply of TDRs must be commensurate to the demand of additional density, i.e; absorption capacity of the receiving areas. If supply is more, an inventory of TDRs must be prepared with clear indication of priorities.
4. Adjacency requirement in a TDR program is still preferred despite strong planning pronouncement for separating the sending and receiving sites. However, adjacency now means a transfer to a nearby lot rather than a physically attached lot.
5. Far away receiving sites must have demands for additional density; then the broadening of receiving areas will help stabilize the TDR prices.
6. Clear identification of the receiving lots is essential. They must be chosen according to the services and infrastructure capabilities of the area. Their potential must be made clearly predictable by an approved urban design.
7. Although downzoning seems to be a solution to most of the problems of over building, and a means for generating the market for TDRs; it is not readily acceptable. The overall comprehensive plan of a city may have an objective towards that, but the TDR program will be better if not involved in downzoning debates.
8. The overage limit in exchange for TDR may be flexible, but a basis for decision must be worked out considering the circumstances concerning demand, availability of services etc.. However, in view of the fact that the preference for flexibility has only a lean final score in the survey, it will perhaps be alright to try an overage of around 20 per cent of the zoned density.
9. A 'fast track' building permit granting of the projects with TDR transfer will be an attractive incentive in favor of a TDR program.
10. A liaison organization will help implementation of a TDR program. It may also act as a 'single window' agency for a 'fast track' approval procedure.
11. A TDR bank is found to be desirable for successful implementation of a TDR program. TDRs from public landmarks may form the seed capital for such a bank.
12. A TDR program usually provides fair compensation for the economic loss due to designation, but some cases may need subsidy. This subsidy may come from the proceeds of transfer from public landmarks.
13. There is a possibility that a TDR program may be misused. The program objectives must be clearly spelled out in order to minimize the chances of misuse.
14. There is still a need for simplification of the legal procedures in a TDR program.
15. A TDR program should not consider other incentives, such as business license and permit granting options in exchange for TDRs.
16. The project in the receiving site and the preservation plan of the originating sending site may not be tagged together. An approved preservation plan should be the criteria of eligibility for a TDR transfer. The liaison organization may supervise use of the transfer proceeds for the implementation of the originating landmark preservation plan.

What the survey does not reveal, and the case studies do, is the position of the TDR program in a city's planning agenda. In general, a TDR program in any city is only a part of a bigger program. By being so, it is obviously linked with other planning goals in addition to preservation of landmarks. Each city with a TDR option in its zoning designs its TDR program to supplement these other goals as well. Most often the TDR programs are also influenced by some biases. For example, as David A. Richards has pointed out, the New York City program "seems to have had four separate goals, which were in turn profoundly influenced by two biases."¹⁰⁰ The goals in the New York City program are: to promote growth for improving the tax base through new construction, to preserve 'desirable underdevelopments' such as the landmarks and 'critical resources' such as the parks, to avoid municipal expenditure for transit, parks and public amenity improvements, and to increase municipal revenue by the sale of the unused density from the city owned landmarks. The first bias is to favor the private market, and the second one is to minimize administrative and planning efforts. In the case of San Francisco the goals are almost the same, but there are some differences. The program in San Francisco does not seem to include the public landmarks with as much vigor as that in New York City does. Also the scale and character of development are to be controlled through a set of design guidelines. The bias of minimizing administrative and planning effort is not prevalent in San Francisco as the TDR program is found to have clear identification of the receiving areas, and with block by block urban design of such areas. Seattle seems to have a program with competing goals between preservation of landmarks and that of low-income housing. The program in Seattle definitely has a bias for minimizing administrative costs by asking a fee on time spent in a transfer discussion.

It is obvious that each program will have some such particularities in terms of goals to be supplemented, and biases to be adjusted to. The issues and features of a TDR program evaluated above must, therefore, be adapted according to the desirable position of the program in the prospective city's overall planning agenda. Said another way, the transferability

¹⁰⁰ Richards, David A.; *op. cit.*, 1986, p.474.

of a TDR program is not only a function of how well the issues and features are evaluated; it is also a function of making the program a contributory part in the total planning dynamics of the prospective city. The TDR program at Calcutta must supplement the city's other demands, while preserving her landmarks.

5. The Testing Ground : Calcutta

The nature of the concern for conservation, and means to achieve it have to be understood in the total context of a city's needs, constraints and opportunities. Like any other metropolitan city, Calcutta has numerous problems which demand priority. Measures for urban conservation cannot be thought of being divorced from the mainstream of issues in the city. This chapter is devoted to providing an understanding of the overall situations at Calcutta, where TDR is to be tested for possible application. The discussion in this chapter includes:

- a brief discourse on Calcutta's historical background,
- her physical constraints and primacy leading to the development pressure at the center,
- her socio-cultural context in view of her citizens' intellectual preparation to accept such a new tool,
- her economic environment to identify the need for a tool like TDR to provide funds from the market mechanism rather than the public treasury,
- her political perspective to show possibility of administrative acceptance of such a tool, and
- her concern for urban conservation.

The next chapter will include the testing of the tool wherein the regulatory aspects controlling developments in Calcutta will be discussed.

5.1. Summary

Calcutta was chosen by the British East India Company to be their headquarters in Bengal in the later part of 17th century. Since then up to the end of 19th century, the city enjoyed an unrivalled economic growth and prosperity. It became the second city in the British Empire, and was called the 'City of Palaces'. The population grew from 10,000 in 1701 to about one million by the end of 19th century. In the same period, the original three villages grew into a giant city of more than 30 square miles. After that, the population kept growing (3.3 million in 1981), while the city area remained restricted to only about 37 square miles. The physical expansion of the city was constrained by the low-lying marshes around the city. The scarcity of land in Calcutta, therefore, is a chronic problem which keeps the central city areas under constant development pressure.

Calcutta is more than 12 times bigger than the next city in the region. It is the only metropolitan center for the whole of eastern India containing more than 170 million people. The extent of primacy is a factor that perpetuates concentration. The land price, rent and real estate interests in the central city areas of Calcutta, where services are available, are functions of the centripetal force generated by this high level of primacy. Certain circumstantial factors determined the city's major space and circulation pattern, which still continue to influence the city's development direction. The civic design of the core was deliberately grand with elegant squares, vistas and facades.

Indian and English cultures confronted each other in Calcutta, which resulted in a two-sided process of encounter. The *shahebs* embraced the European ways, while the *babus* clung to the Indian tradition. The spirited and erudite sections of the *shahebs* and the *babus* merged and brought in the 'Renaissance of Bengal'. This made Calcutta the leader in Indian thought and culture. Calcuttans can be broadly divided into two groups, the Bengalis – the natives of the state – and the non-Bengalis, including the foreigners. The Bengalis are dominant culturally,

but not economically. Socially they do not dislike the outsiders, but are not interested to include them either. The non-Bengalis, therefore, lack the sense of belonging; and tend to form clusters of origin, language, tribe, religion, etc.. The demand on lands and spaces in different parts of the city is also an outcome of this clustering tendencies.

Economic decline of Calcutta has reasons of local, national and international origin. Opening of Suez Canal, and silting of the Hooghly river decreased the importance and efficiency of Calcutta Port. Industrial base was dislocated by the partition of the country during independence. This was further compounded by migration of large number of refugees from the other side of the border, as well as from the countryside. The scarcity condition, lack of opportunity, unemployment of educated youth, and neglect by the Central Government resulted in a political unrest. This was followed by an industrial exodus. The burden of preserving a glorious heritage has fallen on a declining economy.

Bengalis are impulsive and extremist. But the destructions during the extremist *Naxalite* movement have generated an increased love for the glorious past of the city. The Center oriented revenue system and decision making process raise a conflict between the State and the Central Governments. This is further compounded by the situation that a left front government is in power in the state, while the government at the Center is of right wing political party.

The Bengali spirit of 'plain living and high thinking', and their socio-cultural identity with the glorious past of the city have generated the conservation ethic. The *Society for Preservation of Archival Monuments and Historical Documents* is a strong organization of preservationists. They are sincere for urban conservation, but seem to avoid the economic issues preferring to think that the public fund should take care of them. History of conservation efforts in India goes back to the early 19th century. Archaeological Survey of India (ASI) was founded in 1861, and later reorganized by Sir John Marshall in 1904. ASI is financially constrained and afraid of designating more than what its budget permits. ASI takes care of the ancient monuments and ruins because when funds are short, the landmarks of recent heritage cannot get priority. But

in the central city areas the landmarks are subjected to the greatest destructive force – not natural, but man-made.

5.2. Historical Background

Calcutta was founded in 1690 by Job Charnock, an agent of the East India Company. In 1858 the Company formally handed over power to the British Crown. India then, became an empire in itself, with a Queen-Empress in London, and a Viceroy to represent her in Calcutta. By then, the city was already in prominence. As Morris notes,

“Though by the end of the nineteenth century the second largest city in the entire British Empire, still it reached its true apogee relatively early in its history : in the first half of the nineteenth century, when its social complacency was undisturbed, its political supremacy was complete and its prosperity seemed unbounded. The village of palaces, as visitors had called the place in the previous century, had grown into the city of palaces, and Chowringhee was the richest street in the east.”¹⁹⁹

Once started, Calcutta enjoyed an unrivalled economic growth. Its transformation from a cluster of mud houses to the 'city of palaces' was the physical manifestation of this burgeoning growth and prosperity. Calcutta was East India Company's headquarters and therefore, the premier trading port in India. As early as 1804 Calcutta had 6 insurance companies which rose to 15 by 1832. The Kidderpore docks in Calcutta had built 35 vessels between 1780 and 1800, and launched another 75 between 1800 and 1805. And where, in 1790, there had been 15 managing agency houses in Calcutta, by 1813 there were 14 Scots, 10 English, 12 Armenian and 2 Portuguese merchants in the city.²⁰⁰ Lord Curzon, then Viceroy, emphatically mentioned the British idea of the city in his address to the businessmen of the city in 1903. As he said,

“To me, Calcutta is the Capital, not merely of a province, great as that province is, but of the Indian Empire. As such, it appears to me fitly to symbolize the work that the English have done, and are doing, in this country. For though, of the enormous population of over 1,100,000 souls that make up the city on both banks of the river, not much more than 30,000 are returned as Europeans and Eurasians, yet a glance at the buildings of the town, at the river and the roar and

¹⁹⁹ Morris, Jan; op cit., pp.205-206.

²⁰⁰ Moorhouse, Geoffrey; op. cit., p.60.

the smoke, is sufficient to show that Calcutta is in reality a European city set down upon Asiatic soil, and that it is a monument - in my opinion one of the most striking extant monument, for it is the second city to London in the entire British Empire - to the energy and achievements of our race."²⁰¹

Calcutta began as a trading town, but rapidly was transforming into a manufacturing city as well. 'Fairy Queen', the first Indian Railway pulled out of Howrah for Hooghly²⁰² in 1850. Soon another line opened from Calcutta to Raniganj, the coal field area, 120 miles away. By 1860, there were about 50 pits working in Raniganj area. Dundee had started to supply power-driven looms to turn jute into gunny sacks and other heavy packing. By 1885, there were about two dozen of these power-driven factories in Calcutta. The expatriate Scottish managers in the city were rubbing their hands regarding the scrofulous plants as 'gold on silt'. In 1861, regular auctions of tea from the gardens at Darjeeling in the north Bengal began in Calcutta, which increased leaps and bounds since then. Trading of traditional items and industrial entrepreneurship were flourishing extremely well. As Moorhouse has found,

"Trade was coming along so comfortably that the Bengal Chamber of Commerce could toss 54,000 Pounds in the direction of Lancashire, which was in some difficulty because of American Civil War; in 1869 it was handing Rs. 8,250 to a Mr. Cooper for trying, but failing, to open up an overland trade route to China."²⁰³

The commercial rush was torrent for more than half century. Urbanization came about in commensurate speed as well. The first Howrah bridge, a pontoon device, across the Hooghly river started functioning in 1874. Horse driven trams started running in 1880. A telephone system was installed in 1882. There was also a Lottery Committee which was financing public construction works of the Town Hall and the Strand Road. Calcutta at this time presented a picture of almost continuous building activity. With the completion of the *Maidan* in 1780, an opportunity was provided for the rising merchant classes to express their new-found wealth

²⁰¹ Cited in Moorhouse, Geoffrey; op. cit., pp.260-61.

²⁰² Not to be confused with the name of the main river in the metropolis. While the name of the river is Hooghly, there is also an urban settlement near Calcutta called Hooghly. Therefore, in case of the river it will be mentioned river Hooghly.

²⁰³ *ibid.*, p.65.

in a more visible form. This expression was so rich that they surpassed the quality of their counterparts in London. As Davies has found,

"In London town houses of the period were fairly small in size with simple external designs which relied for impact on their grouping into terraces, squares or crescents. In India Georgian houses resemble scaled down version of English country houses and Palladian mansions rather than the narrow London town house."²⁰⁴

In 1901, traveller Digby wrote that, "Time was, not more distant than a century and a half ago, when Bengal much more wealthy than was Britain."²⁰⁵

The growth of population in the city was a response to the promise it offered. People from all parts of India poured down the river Hooghly in search of wealth, just as the Englishmen sailed up to it for the same purpose. The city grew up at a rapid pace especially after 1757 with the victory of the English Company at the '*Battle of Plassey*'. Tentative estimates placed the total population of the city at about 10,000 in 1701, and by the end of the 18th century the total population was estimated to have risen to 140,000. In 1837, Captain F. W. Birch, then Superintendent of Police, took a census which estimated the population at 229,714. By 1850, another census placed the total population of the city at 413,182. By the end of 19th century, the population had increased to 949,144.²⁰⁶ The growth of population continued in rapid pace, although the city was running short of space to expand. Table 3 on page 155 shows the population and corresponding area of the city since 1921. It is clear from the table that the physical expansion of the city was not proportional to the growth of its population. This resulted in a tremendous pressure at the core for development and redevelopment.

The series of events during the final days of the independence movement, and after the partition of Bengal were disasters to the city. All of a sudden the city was flooded with refugees from erstwhile east Bengal – about 700,000 came in 1947 alone. The industrial base was dis-

²⁰⁴ Davies, Philip; op. cit., P.52.

²⁰⁵ Roy, Ranjit; *The Agony of West Bengal*, Hindusthan Standard Publication, Calcutta, 1970, p.7.

²⁰⁶ Sen, Satyen N.; *The City of Calcutta, a socio-economic survey*, Bookland Private Limited, Calcutta, 1960, pp.2-3.

Year	Calcutta Pop. (million)	Calcutta City Area (sq. miles)	CMD Pop. (million)	CMD Area (sq. miles)
1921	1.05	32.10	2.25	
1931	1.22	32.10	2.54	
1941	2.17	32.32	4.31	
1951	2.70	33.10	5.37	
1961	2.93	..	6.72	540.00
1971	3.14	36.92	8.10	..
1981	3.30	..	9.30	..

Table 3. Growth of Population and Land in Calcutta, 1921 - 1981

located. The commercial link with Europe was disconnected by the opening of the Suez canal in 1869. The port in Bombay became easily approachable from the West. Above all the silting of the Hooghly river bed has been restricting the navigability of big vessels. Calcutta was undergoing severe economic strain. The development phase ended with the shift of the Capital from Calcutta to Delhi in 1911. After independence started the redevelopment phase. It was no longer building an empire, but mending an empire fabric. It was no longer expressing power by magnificence, but maintaining taste of magnificence. It was no longer a scene of extravagance, rather a state of scarcity. The shrinkage in the economy resulted in a chain reaction – the society became strained, the culture was adjusting and the politics became conflicting. The measures for urban conservation in Calcutta have to emerge out of these realities.

5.3. Primacy and Physical Constraints

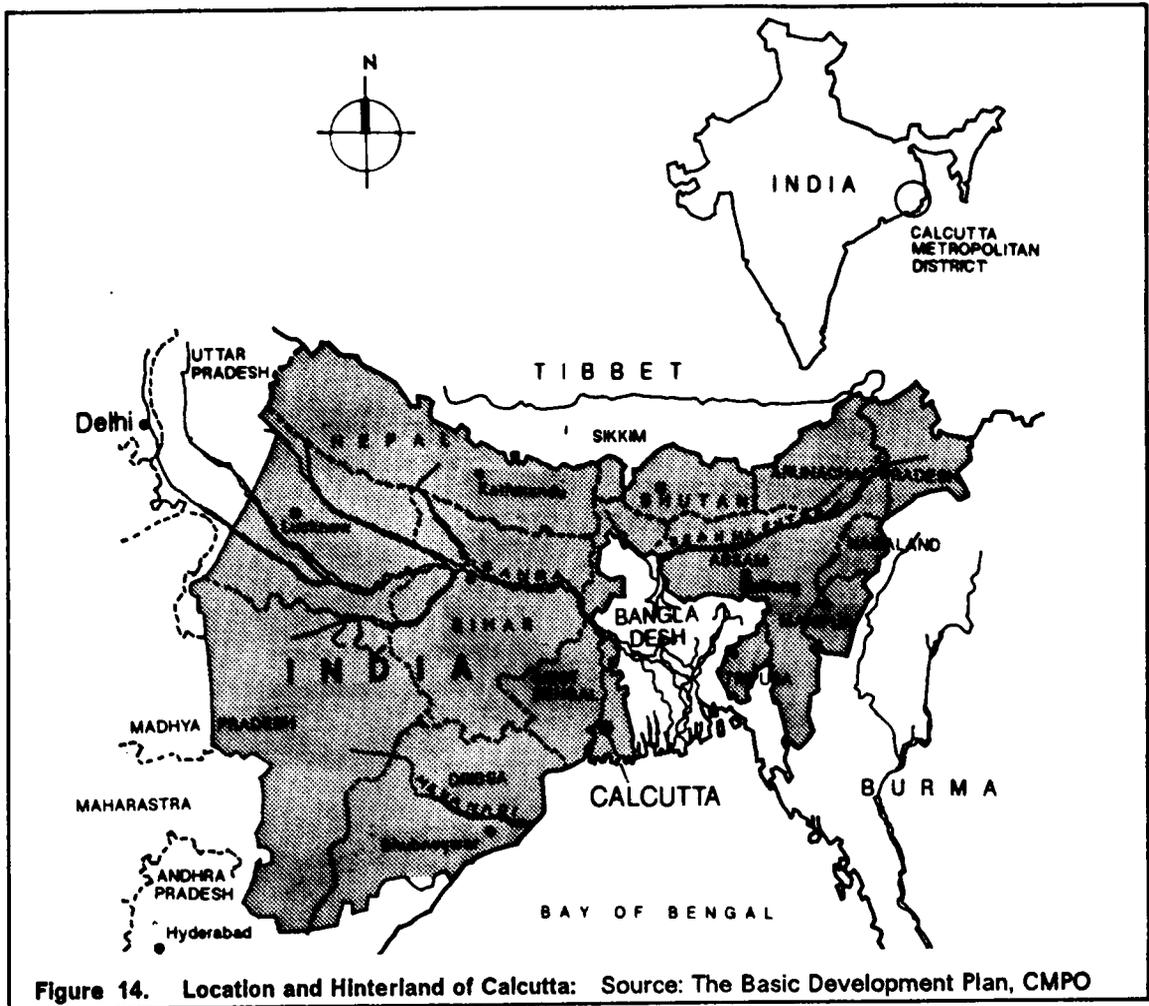


Figure 14. Location and Hinterland of Calcutta: Source: The Basic Development Plan, CMPO

Calcutta is located on the river Hooghly, an effluent of the Ganga, some 70 miles inland from the Bay of Bengal (Figure 14 on page 156). The location of Calcutta has geographical disadvantages. As Professor Rhoads Murphey has pointed out,

"... Calcutta surely stands out as occupying the most difficult and unpleasant site of any. Calcutta's growth must be regarded as a striking illustration of the extent to which locational advantages can overcome even the most forbidding site problem."²⁰⁷

²⁰⁷ Murphey, Rhoads; "The City in the Swamp : Aspects of the Site and Early Growth of Calcutta," *Geographical Journal*, Vol.130, part-2, June 1964, p.255. (Professor Rhoads Murphy was the editor of the *Journal of Asian Studies*)

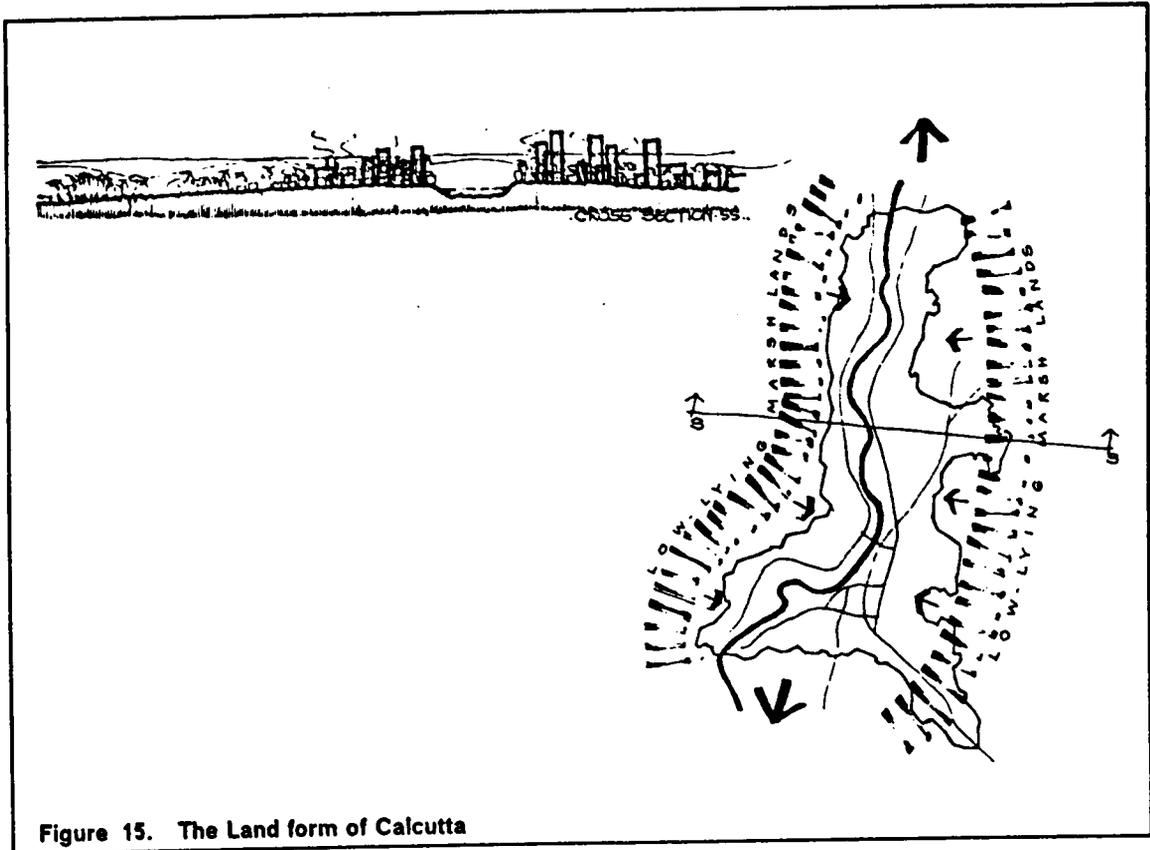


Figure 15. The Land form of Calcutta

Calcutta has a unique structure guided by her landform which is in contrast to the forms of urban development found in other river cities. London and Paris radiate outward in all directions from a strong center on the river. This has happened in a very limited degree in the case of Calcutta city. Over the centuries, the Hooghly has deposited large quantities of alluvial silt along its banks, thus forming a natural levee of high land suitable for human settlement. But since the deposit came from the river, the slope of the land is away from it. Within a very short distance from either bank – scarcely more than two miles anywhere, and in some places even less – the level falls quickly into low-lying marshes (Figure 15). The physical expansion of Calcutta to the east has been prevented by the immediate proximity of large areas of malarial marshes and salt lakes.

The fundamental importance of the constraints imposed by the geography of the land can be seen in the fact that of the total area of 400 square miles in the metropolitan district

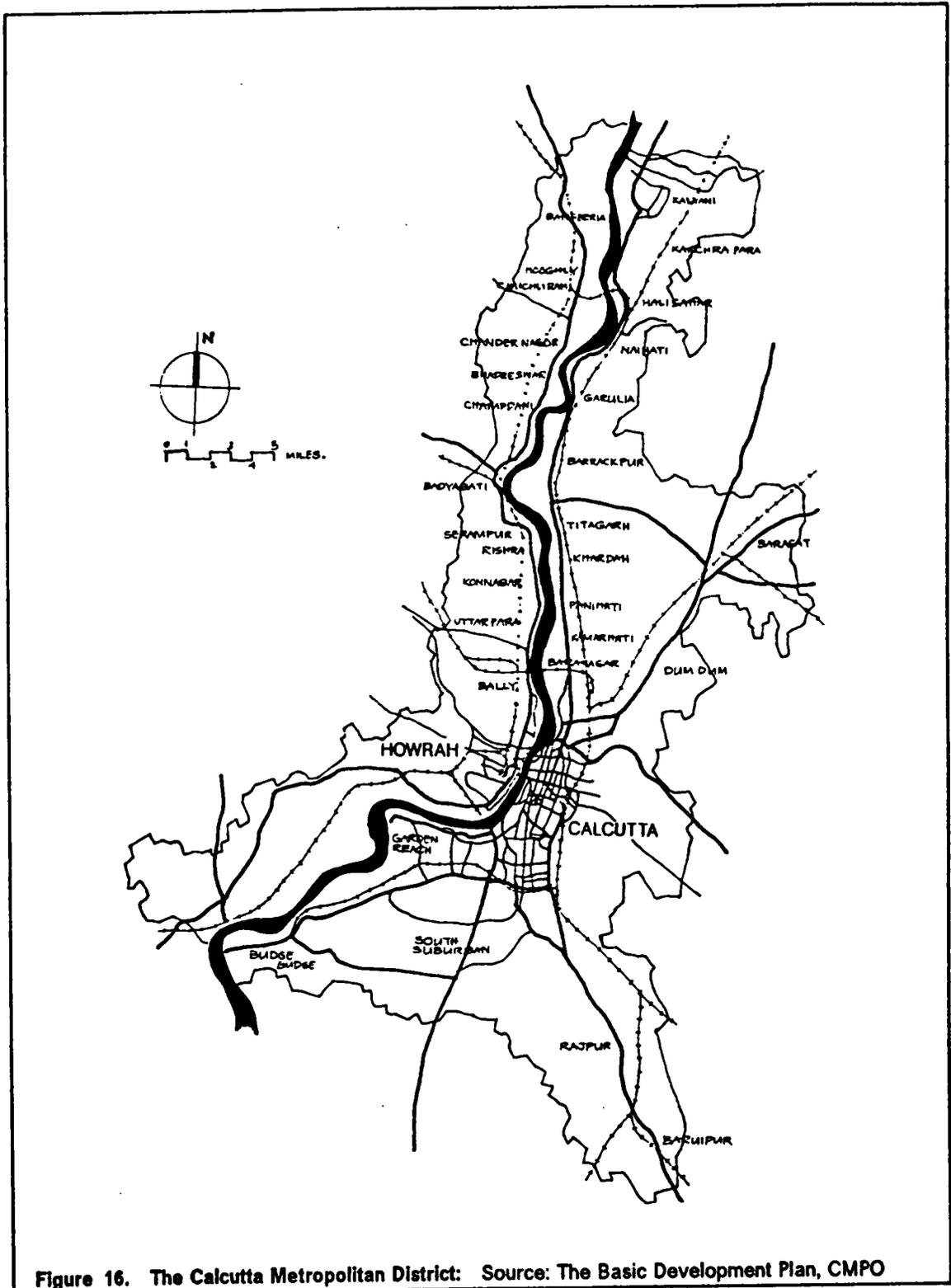


Figure 16. The Calcutta Metropolitan District: Source: The Basic Development Plan, CMPO

(Figure 16 on page 158), excluding the area of the river itself and the inland water-bodies, only approximately 140 square miles or little more than 31 per cent is developed land. The rest of the area is low-lying marsh and swamp. The total population of about 10 million is crowded into this physically confined space. The value of land has always been a function of this extreme scarcity of land in the metropolis, and the peak of it is naturally in the central city areas of Calcutta.

The city of Calcutta is about 40 square miles in area lying on the eastern bank where the river has taken a westerly bend, and where the deposition of silt was widest. Typical of a colonial port-city, it had a strong CBD and a fort in close proximity on the river. It also developed two areas of Europeans and natives side by side without any distinct dividing feature.²⁰⁸ The native quarters grew in a dense morphology with narrow alley ways, whereas the English part was developing with spacious grace and splendor. Although this distinction gradually merged together, yet it produced formidable difficulties for future generations. Two centuries later E. P. Richards, then Chief Engineer of the Calcutta Improvement Trust (CIT), wrote in his report in 1914 that,

“Urban, built-up Calcutta has no street system; 2,500 acres are provided only with highly irregular lanes and passages. It would require the creation of 110 miles of ordinary 30-40 ft. street to bring Calcutta into the line with the old built-up sections of European cities.”²⁰⁹

Moorhouse further noted that, “in the second city of the British Empire, where there were roads at all, they were scarcely ever more than 20 ft. wide and more frequently they were only 10 ft. from wall to wall, ...”²¹⁰ The organic growth pattern, as these descriptions denote, was due to the lack of planning as well as to the physical constraints imposed by the land form of the delta region. Essentially, the development concentrated around the CBD and the fort closely on the river bank with the crowded native quarters on the north, and expanding British town on the south. The layout thus resulted was a spontaneous one without any formal pat-

²⁰⁸ As Moorhouse finds, “by 1742 the English town was a mile long and a quarter of a mile wide, with black town of natives four miles in circumference beyond it.” (Moorhouse, Geoffrey; op. cit., p.26.)

²⁰⁹ Cited in Moorhouse, Geoffrey; op. cit., p.263.

²¹⁰ *ibid.*, pp.263-64.

tern. The irregular winding network of streets suggests a medieval form (Figure 17 on page 161), which Rudyard Kipling serenaded as, "chance-directed, chance-erected laid and built, on the silt."

Calcutta's hinterland (Figure 14 on page 156), which includes more than a third of the Indian sub-continent, is what makes the city India's most important urban area. Within this region are the bulk of the nation's industrial resources. The region's productivity is such that Calcutta, its principal port, clears more than 40 per cent of the country's annual exports. A large proportion of the city's inhabitants are migrants from the villages of the region. The region contains about 170 million people. This makes Calcutta a city of vital national importance economically, politically and in historic leadership in Indian thought and culture.

The primacy of Calcutta is both demographical as well as functional. The politico-economic system of the colonial period stimulated the rise of a system in which a concentration of high order political, administrative, economic, cultural, educational, and recreational functions was deliberate for administrative purposes of the colonial ruler. This circumstantial element in the developmental process of Calcutta led to a functional supremacy of the city, to be followed by the demographic one.

The physical constraints, however, did not seem to influence the primacy of the city. The two-city indices of primacy worked out by the United Nations in 1977 with the primate cities of some selected countries show that the index for Calcutta was 11.59; whereas that for Sao Paulo was only 1.48, for Lagos - 1.74, Nairobi - 2.09, Rangoon - 3.79, Jakarta - 2.94 and so on.²¹¹ This means that in early 1970s Calcutta was about 12 times bigger than the next city in hierarchy in the region compared, for example, to Sao Paulo which was about one and a half times bigger than the next biggest settlement in its region.

²¹¹ Cited in Alam, S. Manzoor; "Distribution of Settlement System in India," *Geographical Review of India*, The Geographical Society of India, Calcutta, Vol.42, No.4, December 1980, p.310.

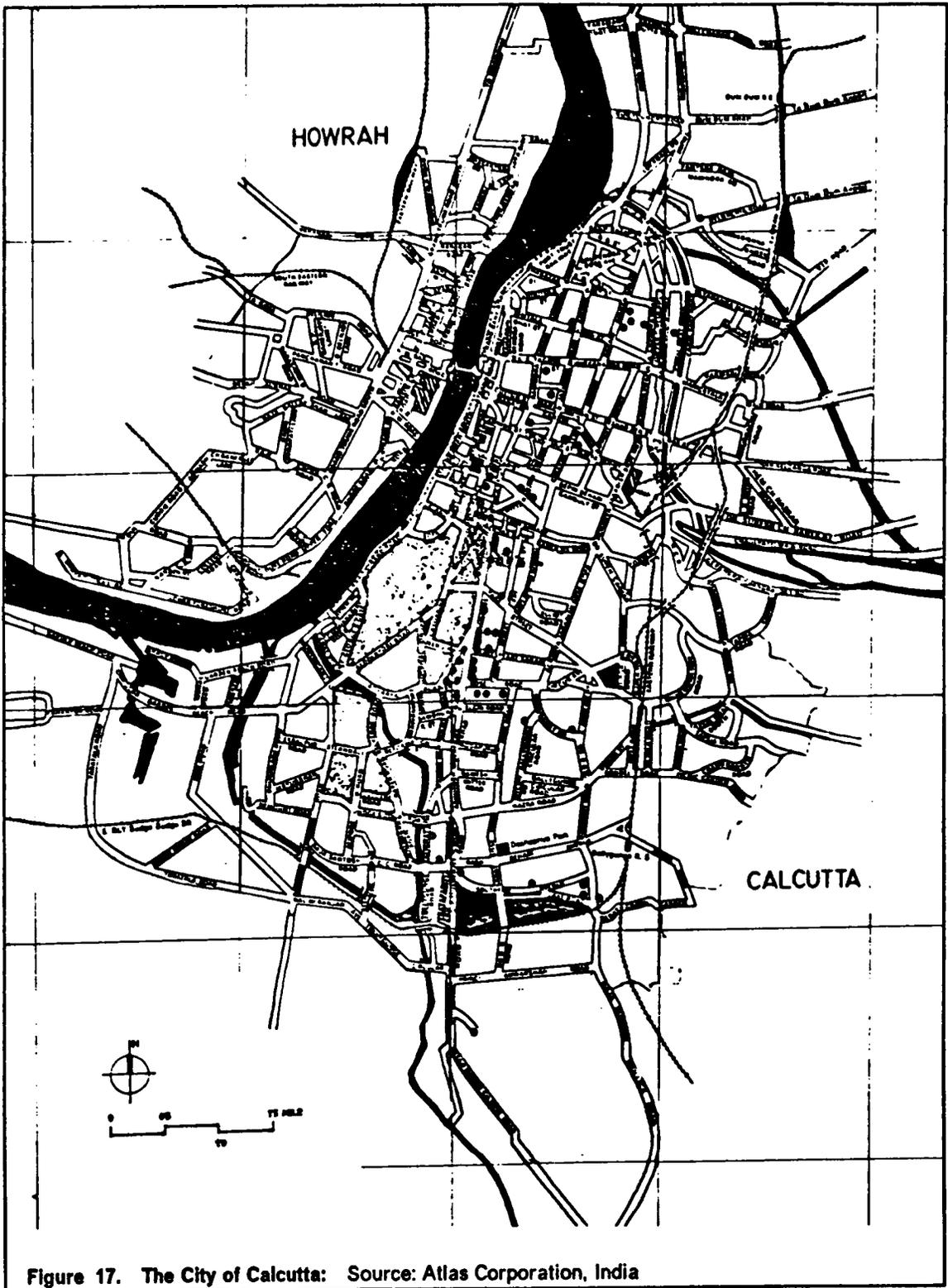


Figure 17. The City of Calcutta: Source: Atlas Corporation, India

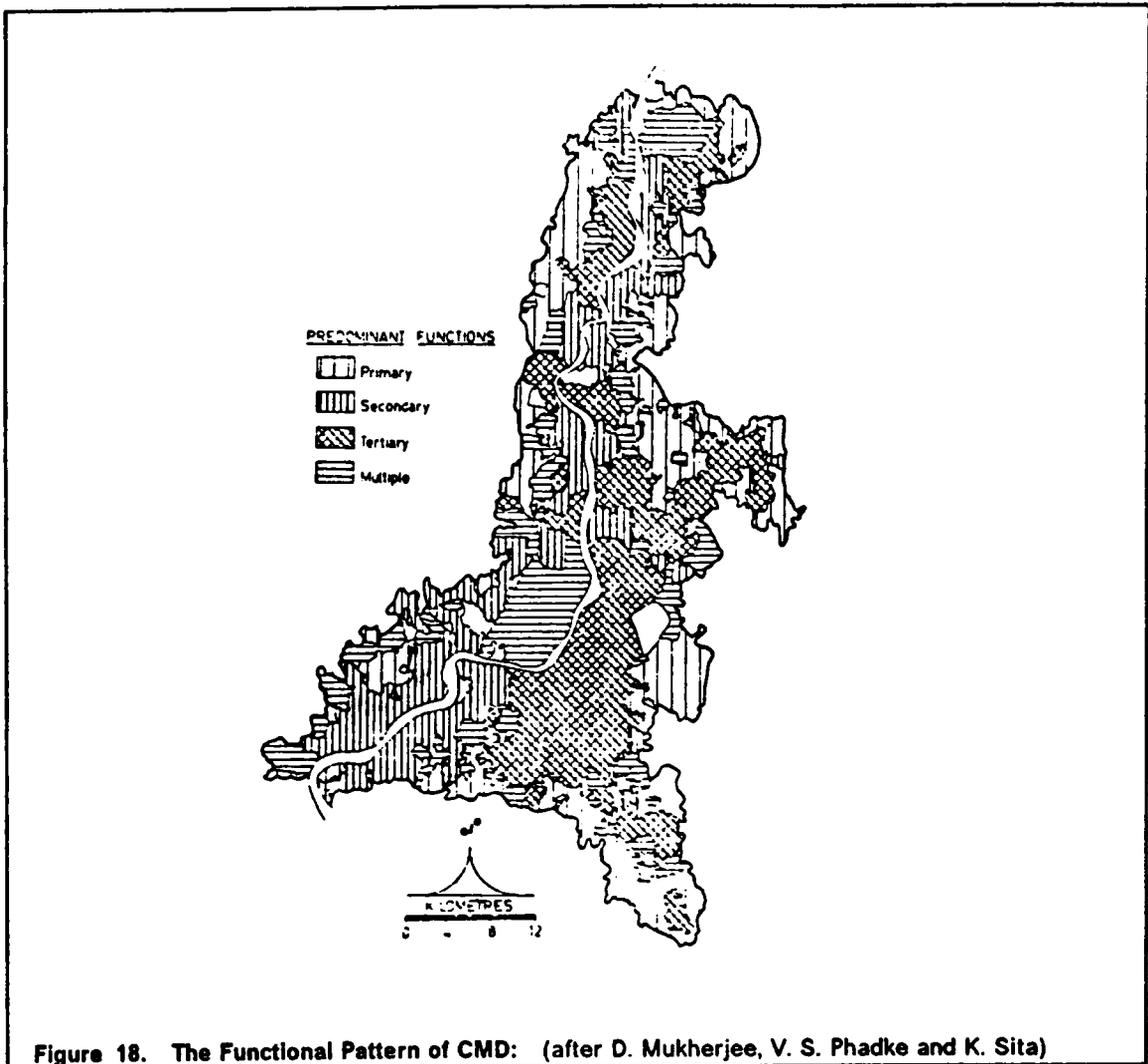


Figure 18. The Functional Pattern of CMD: (after D. Mukherjee, V. S. Phadke and K. Sita)

Even within India, Calcutta's primacy has been disturbing compared to those of Bombay, Delhi, and Madras. It is perhaps because Calcutta was the seat of the colonial trade for the longest period of time. Professor S. Manzoor Alam, the Director of Metropolitan Systems of India Project in Osmania University in Hyderabad, developed the comparison between these four metropolitan cities of India which graphically displayed the relative imbalance in size-wise settlement distribution in the Calcutta region. These graphs are updated with the population figures of the 1981 census (Figure 19 on page 163) which show that the pattern of primacy still persists. Such a primacy together with the physical constraints to expansion has

developed a tremendous development pressure in the central city areas, which threaten the preservation of many significant old buildings and sites in the city.

5.3.1. Civic Design and Building Forms

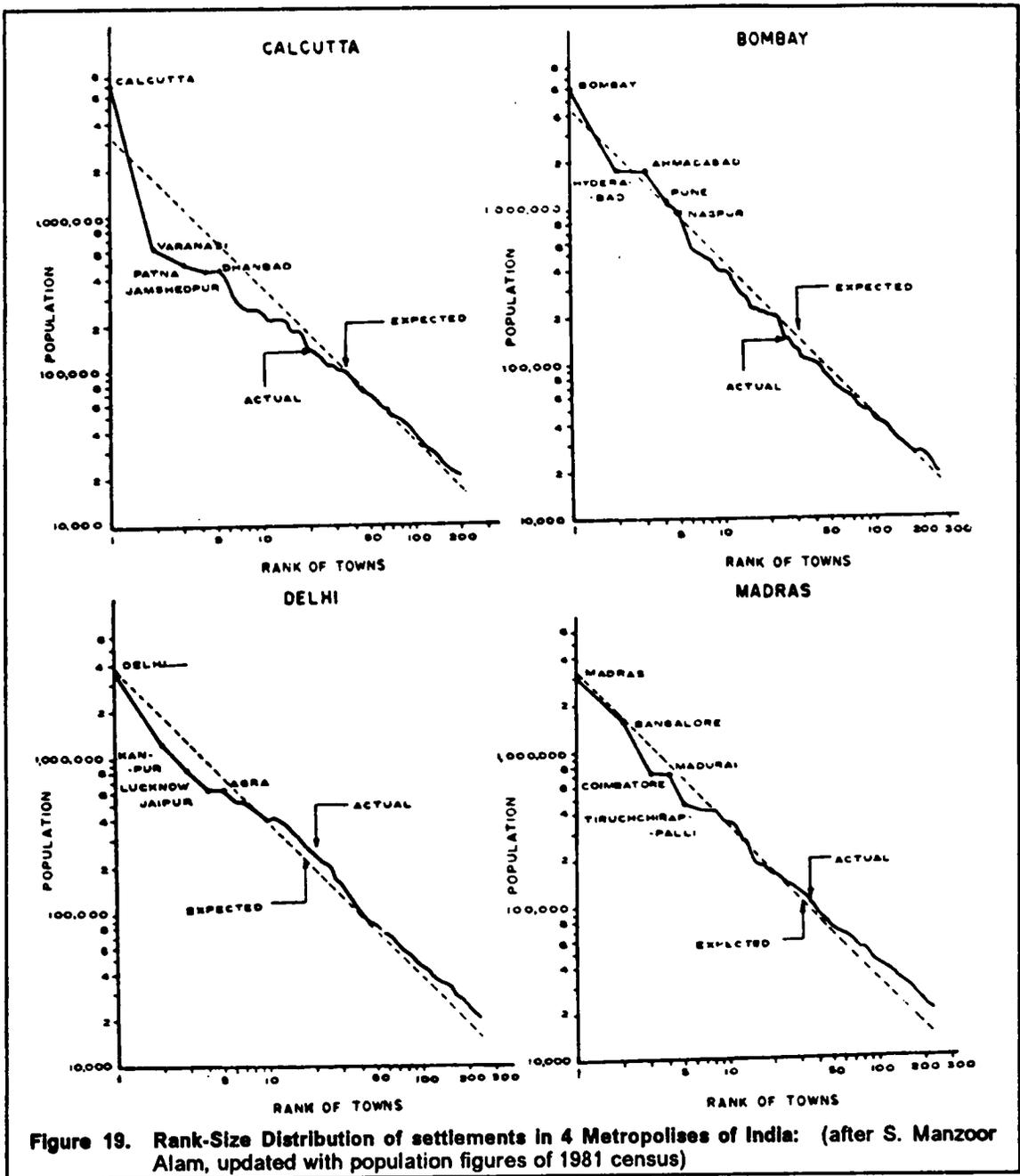
During the centuries of British rule (i.e; from the late 17th century to the middle of the 20th century), Calcutta was growing a thousandfold. But the capital proper remained essentially unchanged in shape and in function. Its pattern was deliberately grand, laid out as a great capital must be, with authority. It occupied two sides of a square, on the north and the east. The western side was formed by the Hooghly river, and the southern was left open to suburban developments. Around the whole layout the defensive *Mahratta* Ditch, later the Circular Road, was built. The center of the square was occupied by the grand expanse of the *Maidan*, with the protective stronghold of Fort William at its south-east corner.²¹²

The northern side of the square, at right angles to the river, was formed by the Esplanade, where most of the great public buildings of the city were grouped. At its center stood the Government House, exactly symmetrical in its shape, upon which the whole city seemed to be focused.²¹³

The erection of the Government House was of seminal importance in the history of Calcutta for it created a focus for the subsequent development of the city. A whole series of classical

²¹² The Fort was designed by Captain John Brohier. The complex symmetry is based on Vauban's concepts of fortification (Figure 20 on page 165). It took 13 years to be completed in 1773 at a staggering cost of two million Pounds. At present it is the Headquarters of the Eastern Command of Indian Army and is well cared for. As it was desired in the design, the fort is not visible from the city and hence is not significant as an image element of the city.

²¹³ The Government House was designed by Charles Wyatt adapting the scheme from Kedleston Hall in Derbyshire on the basis of earlier designs prepared by James Paine. (Bench-Jones, Mark; *Palaces of the Raj : Magnificence and Misery of the Lord Sahibs*, George Allen and Unwin Ltd., London, 1973, pp.41-67.)



perspectives were formed with vistas²¹⁴ terminated by prominent public buildings and monuments (Figure 21 on page 167). Directly aligned upon its main entrance, north of the house,

²¹⁴ Note the axis of civic design discussed in the Introduction chapter, which has been destroyed by the

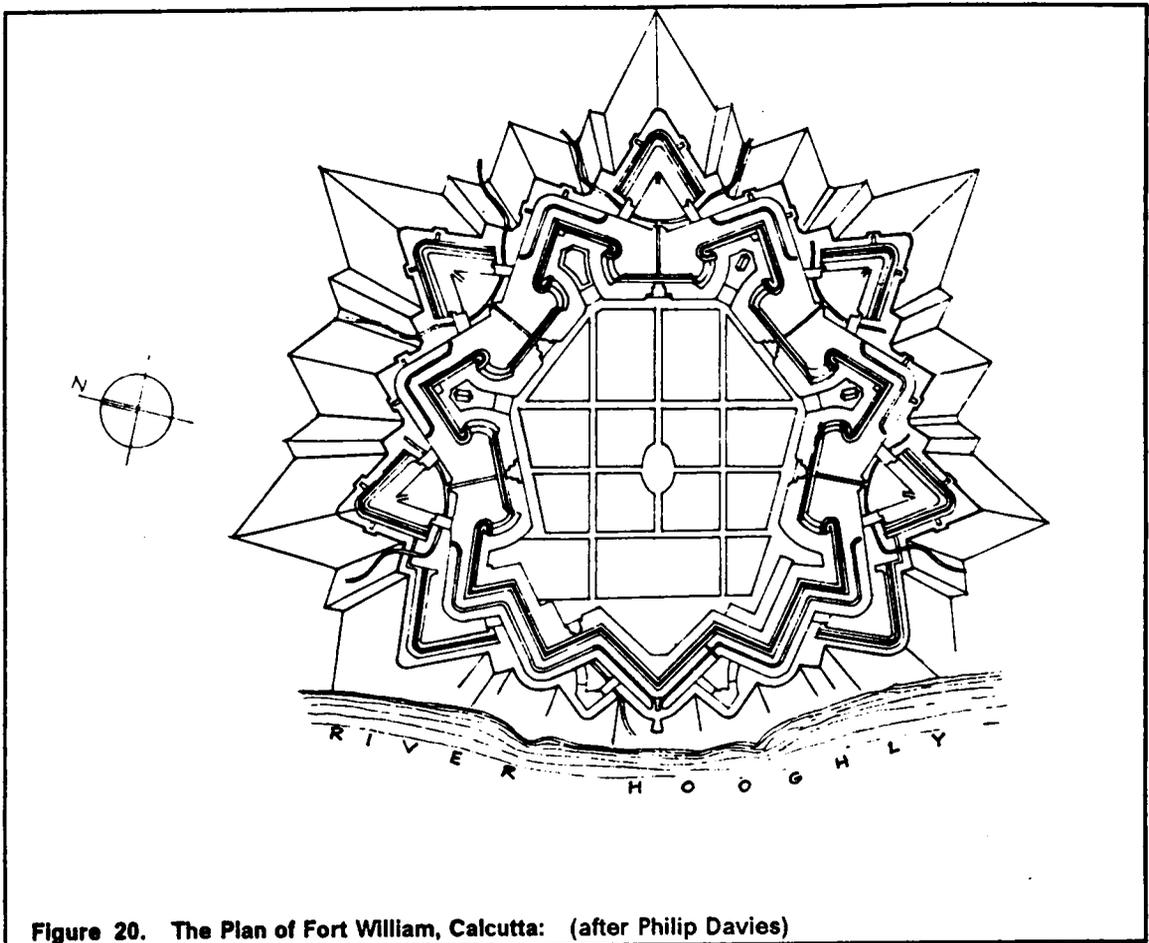


Figure 20. The Plan of Fort William, Calcutta: (after Philip Davies)

was Wellesley Place, which was stacked on each side with government offices of classical pose. Beyond that was the Dalhousie Square (now B.B.D. Bag), which was also lined with office buildings. The western facade in the Square is dominated by the great copper dome above the corinthian colonnade of the General Post Office (Figure 4 on page 16 in Introduction). The whole northern side of the Square is formed by the Writers' Buildings overlooked at the corner by the spires of St. Andrew's Church (Figure 22 on page 168). Diagonally opposite to St. Andrew is St. John's with the compound and cemeteries. East and west of the Government House, in grand array, stood the Town Hall, The High Court, The Mint, and other institutional buildings. The whole rank of them had as their background the forested masts and

Automatic Telephone Exchange Building inside the BBD Bag, referring to De, Ramen; "Conservation and Change, from conflict to compatibility," *Trend*, 2, Jadavpur University Press, Calcutta, 1983.

riggings of the shipping in the river, at the western end of the street. At a later time, the immense latticed silhouette of the Howrah Bridge provided the final backdrop.

At right angles to the Government House, the other arm of the square running north to south is the city's second facade, the Chowringhee Road, bordering the *Maidan*. Chowringhee was originally lined up with big, palatial houses of the *Nawabs* and *Zamindars*²¹⁵, which were later on infiltrated by shops, hotels, theatres and the Museum. It gradually has become a rich metropolitan mixture of a street, which display wealth and confidence, and blazed with the brass plates of successful entrepreneurship.

In 1862, James Fergusson, the architectural expert on India wrote, "if used with freedom and taste, no style might be better adapted in Indian use than Gothic."²¹⁶ Based on arcuated principle of construction, the most widely used and adaptable form of Gothic was Venetian - a style which has its origin in Levant, and which lent itself ideally to hot tropical locations. Most of the buildings are in Gothic mode, in the adaptation of the 19th century, but the shapes remained distinctly classical. Old prints of the city are full of clear and elegant vistas. As Morris has found,

".... white terraces as John Nash might have built them, arched gates through which palatial casements showed, the steeple of St. Andrew's finely breaking the long horizontal of the Writers' Buildings or framed elegantly at the top of old Court House Street."²¹⁷

English ideas of planning, townscape and layout were imposed on the Asian city on a scale which had never before been witnessed, and which was to give Calcutta its name 'City of Palaces'. The need for conservation of the environmental quality and the character of this districts in Calcutta cannot be more stressed.

²¹⁵ *Nawab* is the Muslim version of Hindu *Zamindar*. They were the big landlords who were instruments in the British rule of Bengal for exploitation. These wealthy landlords were given right to rule their territory in exchange for heavy tax to be paid to the British treasury.

²¹⁶ Cited in Davies, Philip; *op. cit.*, p.14. The idea of style also has a bearing on the national symbol. British Empire considered Gothic to be their national style as exemplified by the design of the British Parliament Building by A. W. Pugin.

²¹⁷ Morris, Jan; *op. cit.*, p.206.

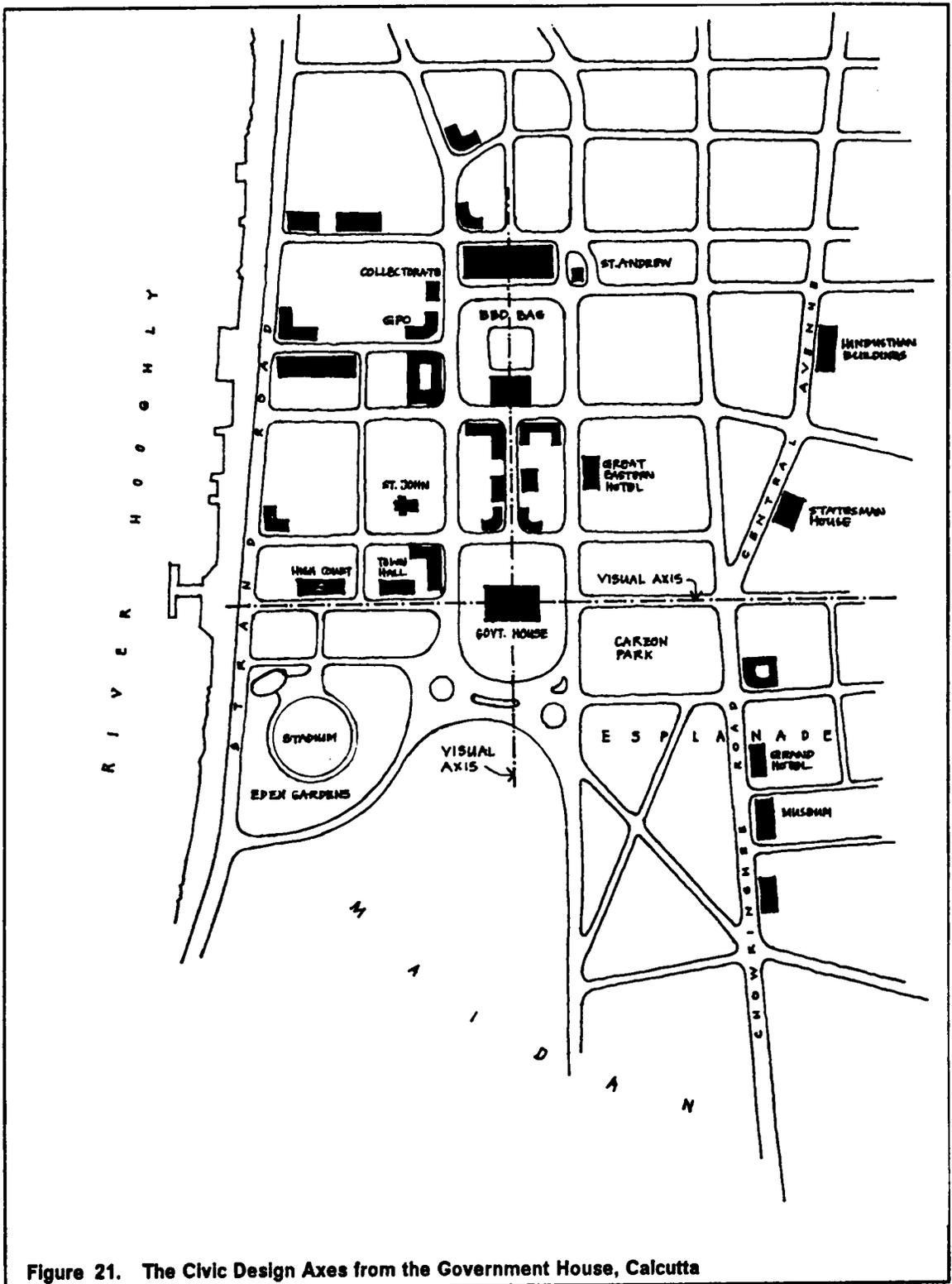


Figure 21. The Civic Design Axes from the Government House, Calcutta

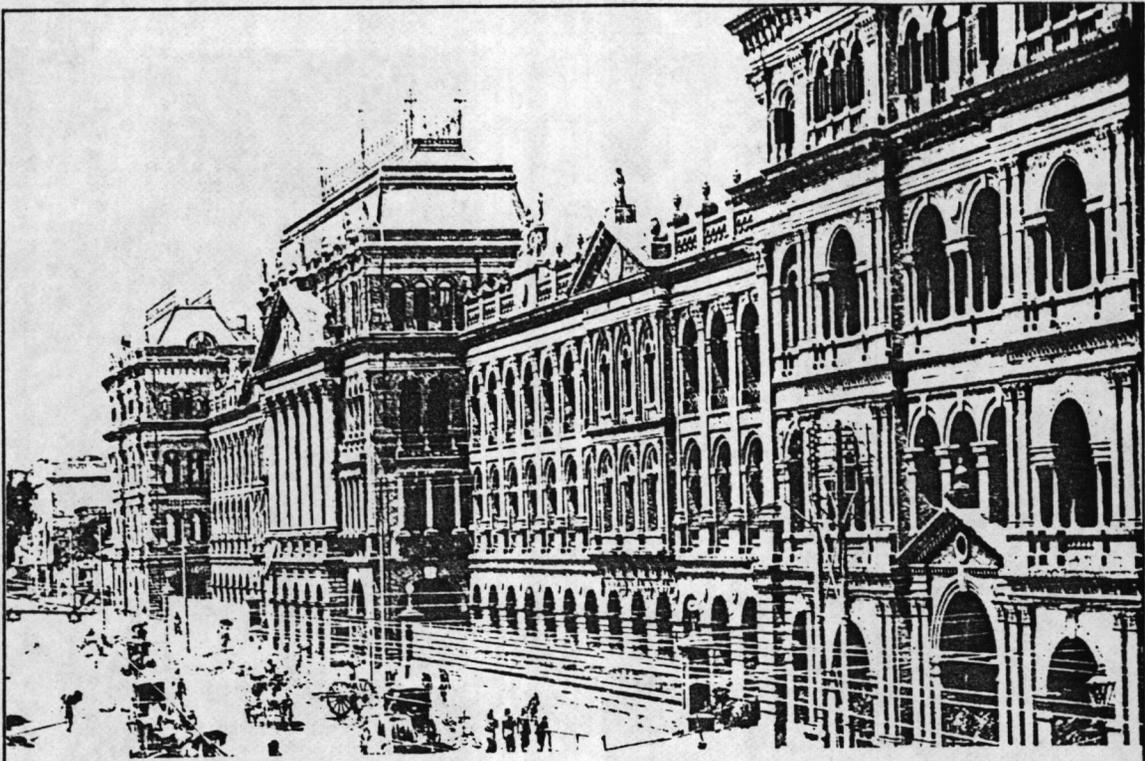


Figure 22. The Facades in BBD Bag, Calcutta

Between these two arms lays the *Maidan*, with its long riverside promenade, its meanders of walks and gardens, its series of statuary, its vertical element of the Ochterlony Monument (renamed Shaheed Minar, meaning martyrs' column), its Pagoda taken from Burma, its cricket pitches, its Red Road built especially for the ceremonial processions. Over the river is the half sunk Fort William hidden in the landscape. On the south rose the Victoria Memorial Hall (Figure 3 on page 15 in Introduction)²¹⁸ with the tall silhouette of the St. Paul's Cathedral on its east and the race course on its west. With the towers and domes of authority on the north, the opulent blocks of Chowringhee on the east, the masts and sails of the ships in the river on the west, and the grandiose monuments of memorial and faith on the south, the *Maidan* at

²¹⁸ British answer to the Taj Mahal. The Prince of Wales laid the foundation stone of Sir William Emerson's white marble monument in 1906. It took 15 years to finish, with the ornamental statuary fashioned in Italy.

Calcutta is one of the finest park prospects in city core (Figure 23 on page 170). The *Maidan* is the lungs of the city and needs conservation²¹⁹ as a distinctive feature of the city.

5.4. The Socio - Cultural Context

There have been social and cultural conflicts in the process of a cluster of Indian villages being transformed into an English city. Traditional ways and means clashed with those European. The English naturally favored those who came out of their own ways to embrace the European fashions. They were rewarded with economic opportunities to set examples, and to encourage social mobility. Gradually a '*shaheb*'²²⁰ class emerged who adopted both virtues and vices of their foreign neighbors.

Simultaneously, there was a strong '*babu*' class in the native quarters who forcefully clung to the traditional ways. The landlord class, who created the *babu culture*, was in an economic understanding with the English Company which was profitable to both of them. The *babus* in this process accumulated unprecedented wealth and their aspirations went so high that they wanted to compete with their English neighbors in terms of their urban achievements. The whole *Pathuriaghata* district in north Calcutta has been the display of native wealth. The enormous houses of successful *babu* families and *zamindars* were envied even by the British. As an example, the Marble Palace of the Mullicks has been a wonder in Calcutta. Moorhouse describes it typically in his cynical language as,

"This (the Marble Palace), indisputably, is the richest, the quaintest, the eeriest, the most hazardous and the most ridiculous, the most astonishing and the most lovable and almost the saddest relic in what, by about the start of the nineteenth century, was beginning to be called the City of Palaces."²²¹

²¹⁹ Gordon Cullen went even further. He suggested further afforestation in the *Maidan* to enhance the 'getting lost' quality, the most important characteristic of the vast open space at the core of the city. (Cullen, Gordon; op. cit., 1971.)

²²⁰ Denoting an Indian found in European fashions.

²²¹ Moorhouse, Geoffrey; op. cit., pp.6-7.

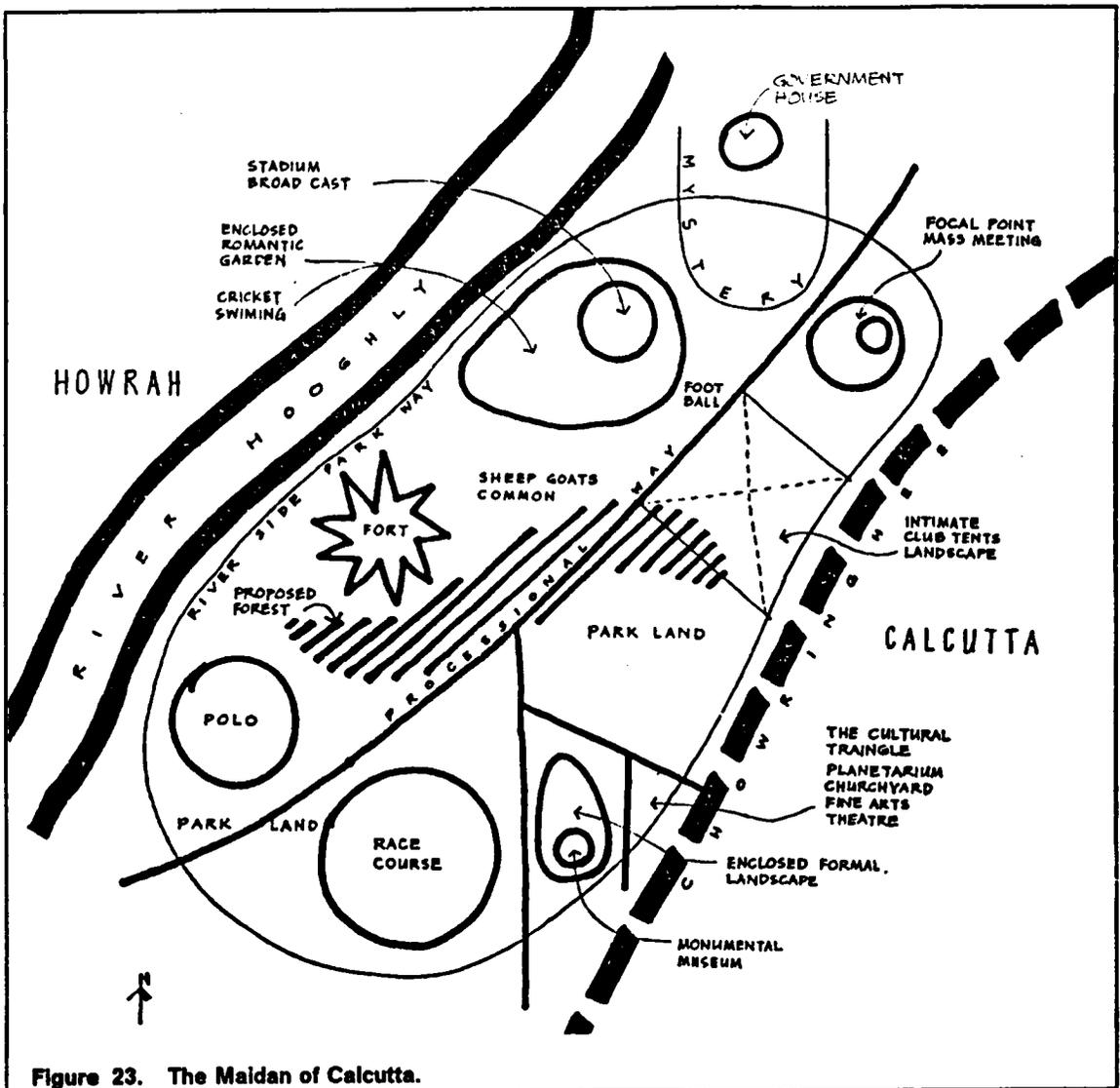


Figure 23. The Maidan of Calcutta.

While the majority of the successful *babus* were busy in luxury, a minority of them went for intellection, and came much closer to the better lot of the *shahab* class in terms of affluence and social patterns. Together they emerged as the strongest social force and gradually became brave enough to criticize the English as well as the Indians. They became bold enough even to question the traditional ways of Hinduism. Under the leadership of Keshab Chandra Sen they created the '*Brahmo Samaj*' - a separate religious sect which was a modification

of Hinduism in the light of Christian Unitarianism. Thus, the Renaissance of Bengal²²² started with this enlightened and somewhat liberated elite Bengalis on the saddle, and gradually many of the civilian Englishmen became a part of it. The wave of socio-cultural reformations shook the whole country²²³ and Calcutta was the hub of it. The proverb became commonly accepted that "what Bengal thinks today, the rest of India will think tomorrow." The educated *babus* developed a culture of 'plain living and high thinking'.

This was the backdrop with which Calcutta emerged in her industrial age. After independence there have been several studies which have addressed the socio-economic and cultural issues of Calcutta. Professor Satyen Sen conducted a socio-economic survey of Calcutta between 1955 and 1958.²²⁴ Professor Nirmal K. Bose carried out an extensive social survey in 1964.²²⁵ This was further extended by Brian J. L. Berry and P. H. Ress in 1969.²²⁶ Hemayet Hossain did his dissertation research on human ecology of Calcutta.²²⁷ All these studies emphasized the compositional characteristics of the society, and their impact on the physical form of the city. Identification of socio-cultural differences and interaction patterns have shown clustering tendencies in the land use of the city.

²²² Kopf, David; *British Orientalism and the Bengal Renaissance, The Dynamics of Indian Modernization, 1773 - 1835*, University of California Press, Berkeley, 1969.

²²³ The major social reformations included abolition of the *Satidaha Pratha* - the system of burning widow in the funeral pyre of her husband, bringing women out of *parda* to the enlightenment of education, dishonoring the caste system and various other social details that hindered the progress of achieving social rights and privileges.

²²⁴ Sen, Satyen N.; *op. cit.*

²²⁵ Bose, Nirmal K.; *Calcutta, A Social Survey*, Lalvani Publishing House, Calcutta, 1968 and *Calcutta, A Premature Metropolis*, A Scientific American Book, New York, 1970.

²²⁶ Berry, B. J. L. and Ress, P. H.; "The Factorial Ecology of Calcutta," *The American Journal of Sociology*, Vol.74, No.5, 1969, pp.445-491.

²²⁷ Hossain, Hemayet; *Calcutta, a human ecological approach to planning*, Ph.D. Dissertation, Texas A & M University, 1974.

5.4.1. The Composition of the Communities

Calcutta is a highly cosmopolitan urban pot, but not a melting pot. It has people from all provinces of India as well as Europeans, Armenians, Zoroastrians, Persis and a sizeable populace of Chinese origin. Although all these communities have clear identities in Calcutta society, yet two distinct divisions are apparent -- the Bengalis, the son of the soil; and the non-Bengalis, the migrants from outside.

Bengalis, the natives of the city and the dominant community, are extremely pluralistic in mind. Consequently their institutions are many. Since the Renaissance of Bengal, they have preferred to be engaged in intellectualism and cultural pursuits. Started by the affluent *babus*, it propagated quickly among the erudite middle class Bengalis. To belong to the world of intellection, or '*charcha*' as they call it, has become a birthright or one of the desirables of the Bengali *bhadralok*²²⁸ culture. As Dr. Sinha has commented,

".... the Bengali middle class chose to keep away from commerce and industry, call them as you like, the *bhadraloks* or *babus*; they had chosen a wide world of *charcha*. There is thus a long chain of many people belonging to a common world of intellection; this tradition hangs on us super-organically."²²⁹

Their free and courteous nature impress upon people like Ved Mehta, the columnist in the *New Yorker*, who finds, "Bengalis talkative, ebullient, charming people, (who) call themselves - the French of the East."²³⁰

The Bengalis belong to all upper, middle and lower income groups, with the middle one being more numerous and militant than the rest. While a different way of life, food habit or dress do not seem to bother them, they easily get irritated when ideologies are different, even if not conflicting. For over half of a century they have been inspired by political idealism. Their ed-

²²⁸ *Bhadralok* means gentleman, having an inherent connotation of being scrupulous, honest and moral, but without referring to any economic status.

²²⁹ Sinha, Surajit; (ed) *Cultural Profile of Calcutta*, Seminar Papers, The Indian Anthropological Society, Calcutta, 1970, p.255. (Dr. Sinha was the Director of the Indian Anthropological Society).

²³⁰ Mehta, Ved; *Portrait of India*, Penguin Books, New York, 1972, p.403.

ucation, literature and even institutions have been strongly influenced by it. Ordinary issues of disagreement quickly get politicized and thereby, distorted for immediate benefit of the influential groups. An apparently gentle and amiable populace easily turn into hard and violent which, according to Hossain, needs careful consideration in planning. He observed that "the resentment, anger and impatience often finding expression in senseless violence, point to the need for rapid and fundamental social transformation".²³¹

The non-Bengali community, by contrast, is divided into the poor or the rich. The middle ranks do not compare favorably with the rich commercial class either in number or in influence. Neither of these two groups has much political involvement. For the past few years, the upper classes have been drifting towards westernization in some of their habits as well as in business reorganization. The poor left unattended, combine in small institutions like night schools, libraries or *Puja*²³² organizations. The Gujrati community forms a section of the prosperous commercial upper class of Calcutta, but they do not readily adopt a Western way of life as the new generation of Rajasthani Hindi speakers seem too inclined to do. Professor Bose and later researchers have observed that although the life and pattern of the organizations of the non-Bengalis were changing, their sense of nationalism was on increase.

The orthodox, old type of Muslim social life centered mainly around the Mosque. With the rise of a Westernized upper class, and a nationalistic professional middle class among the Muslims of Calcutta, the old forms have tended to remain. However, the new generation of Muslim, particularly the immigrants from Bangladesh, as observed by Hossain, is mostly in the middle and lower middle classes who interact with their Hindu counterpart freely and on the same level, perhaps for their common language.

²³¹ Hossain, Hemayet; op. cit., p.221.

²³² Religious festival

5.4.2. The Cultural Diversity

The influx of a great number of outsiders in the city, and the traditional particularity they brought along, had given rise to a pluralism. Varieties in cultural spheres are encouraged and the tradition of absorbing new aspects has been so strong in Hinduism that there has been no demand on the part of the Bengalis upon others to suppress their own language or culture.

This tolerance for others' ways of life has been one good aspect in Calcutta, but it has created a conglomeration of unevenly related heterogeneous sub-cultural populations lacking a composite character. Except for their official and commercial interests, when the different communities have peripheral interaction with people of other groups, most of them remain usually confined in their cultural island.²³³ This has forced them to stick to their own ways and has resulted in little or no sense of belonging to this metropolis. Diversity is a prized quality in any society, but there ought to be some issues where everybody would act as general Calcuttan. This would be cultural unity. Except for issues of national security and sports such an unity does not seem to appear in Calcutta. The indifference and the lack of interest in broad issues, such as urban conservation, on the part of the non-Bengalis is the manifestation of their being left out as outsiders.

5.4.3. The Clusters and the Land Use Trends

The clustering tendencies of the communities at Calcutta, which has been the outcome of the socio-cultural diversity, are reflected in the physical pattern of the city. There are separate areas marked by the inhabitants of separate communities either classified by their place of origin or by language or religion. Professor Bose mapped identifiable areas in the city where ethnic base community pattern was predominant. He could differentiate areas on the basis

²³³ Panchbhai, S; "Cultural Islands in Calcutta," in Sinha, Surajit (ed); *op. cit.*, pp.50-60.

of origin, caste-tribe, and refugees²³⁴ which were strictly ethnic; but he could also map areas according to economic status and occupation further subdivided in ethnic clusters.

This pattern, however, was changing though marginally, particularly in the middle and lower income ranges. Berry and Ress further analyzed the findings of Professor Bose using a factor system, and by adding an ethnicity factor as the third dimension in a typical American model of two choice dimension of individual social space. As they found,

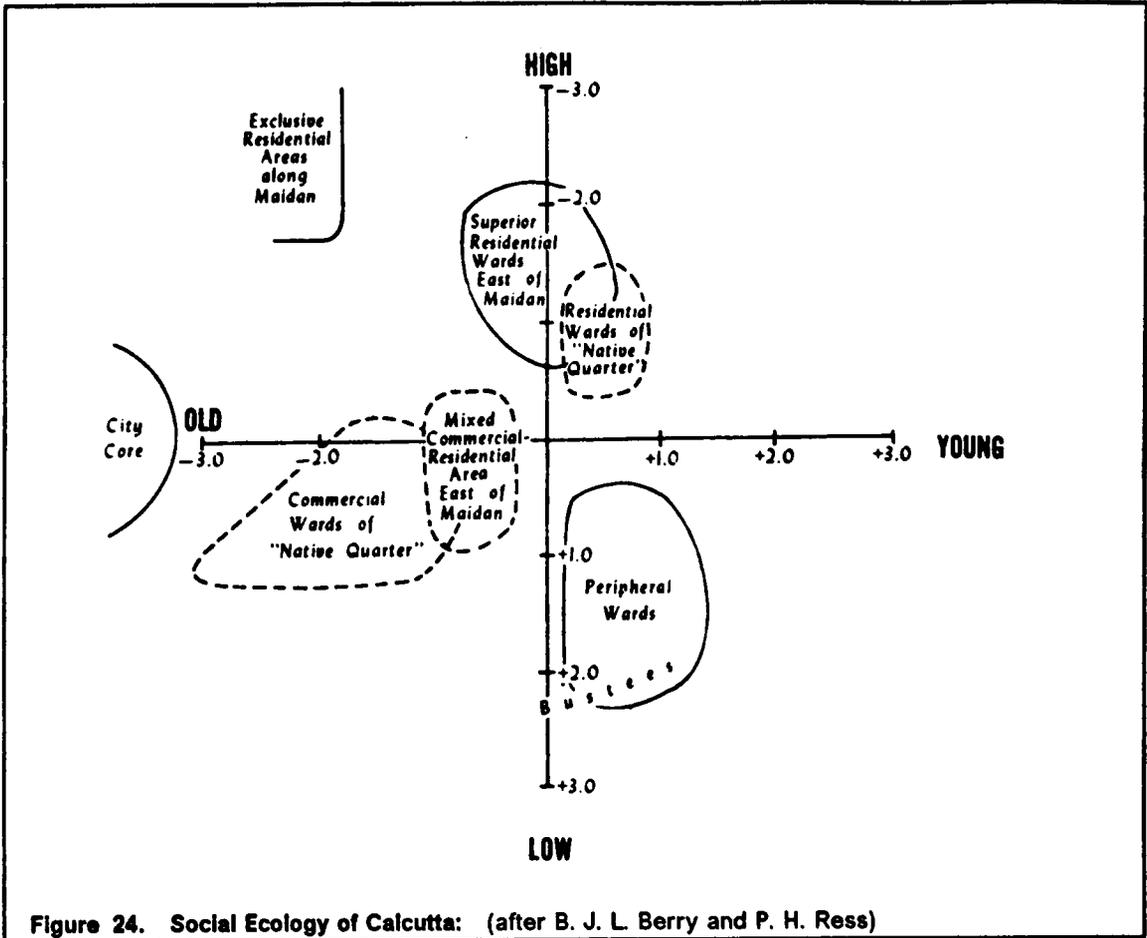
"Because most non-Bengali ethnic groups also occupy particular occupational niches, the variance in status within ethnic groups is substantially less than that between ethnic groups. In effect, ethnicity overrides choice based upon status, for the status and ethnic dimensions are colinear, with the latter more fundamental in defining the social dimensions within which choices are made."²³⁵

What it meant was that the decisions in the social sphere, which produced the physical pattern, were less-than-economic. Due to the parallel relativity of location of the ethnic enclaves in physical space, the cluster formation tendencies influence the physical space of the city to a considerable degree. Berry and Ress juxtaposed the factor of residential areas ranked 'high' and 'low' against that of the familism and land use ranked 'old' and 'young.' The interaction pattern produced by this juxtaposition (Figure 24 on page 176) showed that the peripheral wards were 'young' but 'low' whereas the the areas along the *Maidan* were 'high' although 'old.'

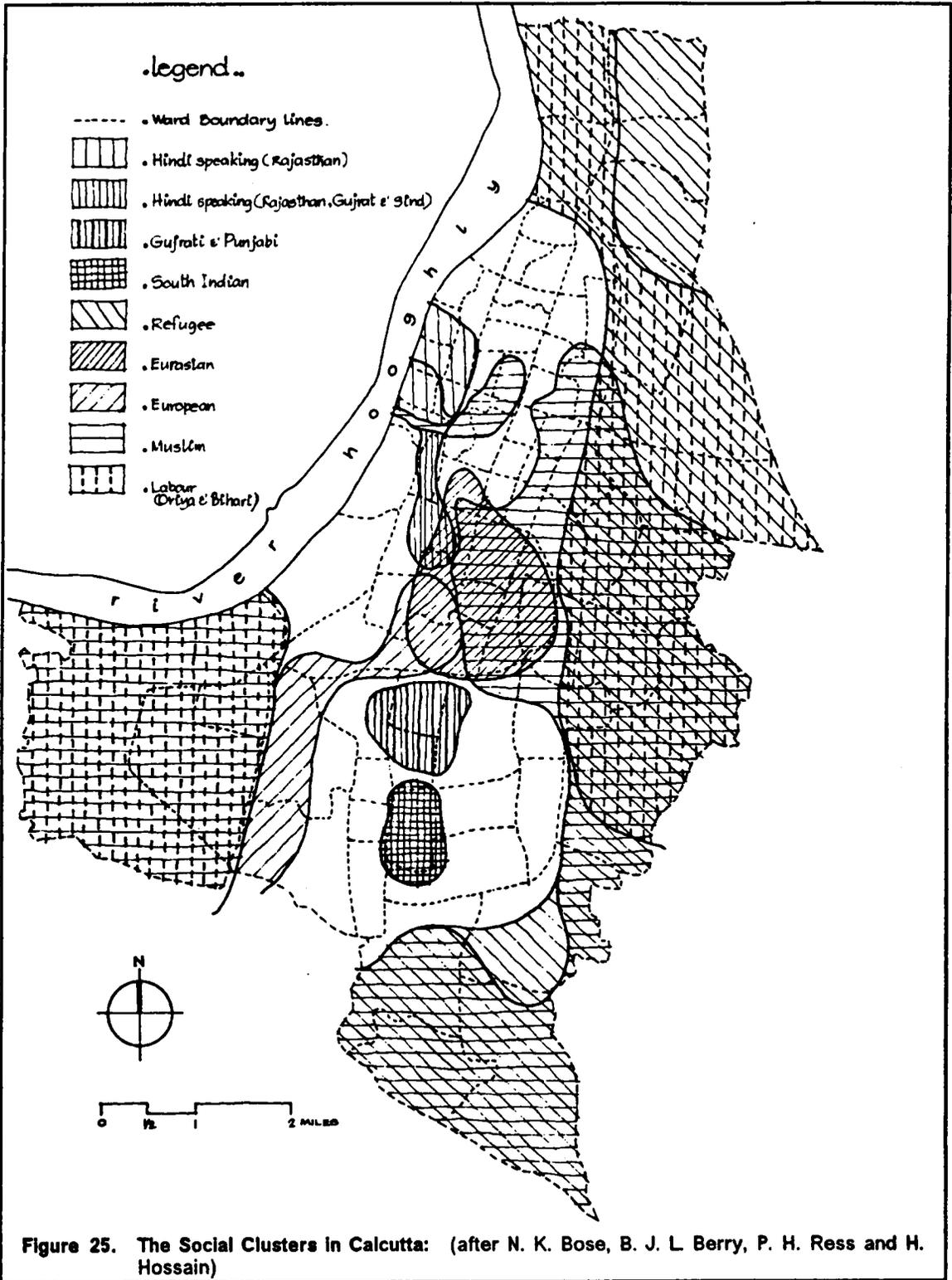
The recent shift in social clustering pattern in physical terms, as observed by Hossain, is taking the shape of lower income groups in the periphery with the wealthy and powerful at the core. This is gentrification of a special kind as the gentrifiers are non-Bengali rich, while the Bengali middle class old residents are pushed out to the periphery. The present pattern of social space in Calcutta according to Berry, Ress and Hossain can be summarized as shown in the map in Figure 25 on page 177. This clustering forces in Calcutta has developed an

²³⁴ The refugees stood out as a social class, but that was only for the poor section of the refugees who clung together in an effort to face the new mechanism together. The affluent refugees had little difficulty to make their position in the new society and thus got mingled in the existing social pattern of the city.

²³⁵ Berry, Brian J. L. and Ress, H. P.; op. cit., p.490.



added pressure on land, in addition to that from usual economic factors. There ought to be another impact on this pattern as a result of the underground mass transit system coming into operation. While it is too early to have any study on this impact, it would be reasonable to think that under the existing conditions the eminence of the center shall be further reinforced by this new infrastructure. This will attract further commercial functions in the center, but will perhaps distribute them along the line in decreasing magnitude from the core. The test of a TDR program in Calcutta will have to be performed in view of these trends in land use in Calcutta.



5.5. The Economic Environment

The present economic environment of Calcutta is one of decline. From a zenith of economic prosperity in the late 18th and early 19th centuries, the city is now troubled with numerous economic problems. The first shock to this goldrush in Calcutta was the opening of the Suez Canal in 1869 which shortened the distance between Europe and India, but it made Calcutta a comparatively distant port. The railway network in India by then was spread enough to transport on surface the goods from Calcutta region to Bombay, the nearest port in India. Soon the directors of the Penninsular and Oriental Steamship Company decided to shift their headquarters from Garden Reach in Calcutta to Bombay. The shock, however, was not felt for a considerable time to come, and the economic growth continued in Calcutta. In 1853, the total value of import and export trade for the whole of Bengal was about 29 million Pounds. By 1901, in Calcutta alone it was worth nearly 111 millions. This growth trend gradually started falling back, which has been further compounded by the decrease of navigability in the river Hooghly.

Industrial dislocation brought about by the partition of Bengal is another prime reason for Calcutta's economic descend. Before World War II, Bengal accounted for 2.25 million acres out of a world total of 2.7 million acres of jute producing fields. Most of this was in East Bengal, which is now Bangladesh. Ironically, however, almost all the jute mills in undivided India were on the banks of the Hooghly river. Therefore, after the partition of the country, India was left with the jute mills in Calcutta without any supply of raw jute. Pakistan (of which then East Pakistan, now Bangladesh was a part), with an abundance of raw jute, found itself with no mills. As a result, rice producing fields were converted to jute production, and India somewhat regained her position in the world jute market. By middle 1970s, of the total 4,065,000 acres under jute cultivation in the world, India's share was 43 per cent, Pakistan's 40 per cent and the rest of the world's 17 per cent. But this was at the cost of producing less rice, the staple food for Bengalis. Further, it was determined by the demand for jute products in the world market, which itself has been declining due to improvement in polymer technologies.

The urge this situation generated for industrial diversification, coupled with India's drive for rapid industrialization in the aftermath of independence, started a new era in the metropolis. The state of West Bengal together with a southern strip of Bihar, a northern slice of Orissa, and a part of western Assam formed an industrial region justifiably called the 'Ruhr of modern India'. Within less than 300 miles from Calcutta almost the whole of the nation's iron and steel industry is concentrated today in townships cleared out of the jungle to make room for blast furnaces, coke oven plants and rolling mills. Durgapur, Jamshedpur and Asansole, as Moorhouse has mentioned, "are chiefly the tropical cousins of Middlesborough, Pittsburg and Essen."²³⁶ By the middle of 1960s West Bengal was producing 95 per cent of India's jute, 92 per cent of its razor blades, 87 per cent of its electric fans, 80 per cent of its sewing machines, 78 per cent of its railway wagons, 74 per cent of its rubber shoes, 70 per cent of the total enamelware, 56 per cent of the electric lamps, over 50 per cent of the crockery, little less than 50 per cent of the paints and varnish, little over 30 per cent of total radio sets and electronic gadgets, 30 per cent of finished steel, little less than 30 per cent of the coal, 25 per cent of its tea and about 20 per cent of its paper and paper boards.

5.5.1. The Impact

The production levels mentioned above were, however, not commensurate to the economic need of the region. Population growth in Calcutta was further compounded by the mass migration of Hindus from the eastern part of Bengal which fell in the territory of Pakistan due to the partition of India. Some 700,000 people came in 1947 alone.²³⁷ This was a national problem,

²³⁶ Moorhouse, Jeffrey; op. cit., p.120.

²³⁷ The wave of migrants from then East Pakistan, now Bangladesh, is a perpetual affair depending on the political and social developments there as well as for natural calamities. It happened once again in 1965 during the war between India and Pakistan, once more in 1970-71 during the internal war and emergence of Bangladesh, and continues even today due to the strained political situation in Bangladesh. A flood or a storm in Bangladesh sends some thousand of destitute in Calcutta region. The government of India at one time proposed to have a barbed-wire fencing in the border, but that was vehemently objected by the Bangladesh government stating that the government of India wanted to humiliate their government in the international scene.

but by and large, Calcutta had to face and live with it alone. The government of India's response was marginal, and not sincere to the depth of the problem. Investment in the region remained low compared to other parts of the country.

With her chronic unemployment and refugee problem, the city has become a troubled spot in the state as well as in the nation as a whole. The political unrest, which came as a result, further deteriorated the possibilities of investment in the city. Lack of jobs and opportunities has been the obvious outcome. Today one Calcutta household in every four has one or more unemployed persons. At least 20 per cent of the labor force is unemployed. And this rate of unemployment has a further paradoxical nature that the unemployment is more with the educated section. As Professor Manas Chatterjee has identified,

"Paradoxically, unemployment is severe among the educated. Nearly 8 percent of the illiterate labor force is unemployed (illiterate constitute 24 percent of the CIR, Calcutta Industrial Region, labor force). Of high school graduates belonging to the labor force, 26 percent are unemployed, as are 15-20 percent of college graduates. Finally, it is noteworthy that single individuals form more than one-half of all households."²³⁸

The fact that the economic crisis always occurs simultaneously with the deterioration of the environment and the legacy of the culture gets bequeathed, are the signs that the disorder is in danger of being carried to a point of breaking. The diagnosis of a situation such as this implies acknowledgement of the extent of the pressure from economic factors that orders use of available resources from mere immediate economic issues. In physical terms, use of built-up spaces becomes a function of immediate need despite incompatibility. This leads to buildings and sites becoming ill-adapted²³⁹ as they are subjected to function not suitable to them by both type and degree. Or they are simply neglected for want of resources, and often deliberately so that replacement becomes inevitable through premature dilapidation. Such is the case of Calcutta. The responsibility of preserving the assets of a glorious past has fallen

²³⁸ Chatterjee, Manas; *Management and Regional Science for Economic Development*, Kluwer, Nijhoff Publishing, Boston, 1983, p.40.

²³⁹ Typical example of ill-adaptation in Calcutta is conversion of residential houses into hospitals / nursing homes, printing press, restaurants etc., and of course, overcrowding of built-up spaces.

on a declining economy. A tool like TDR, which can boost additional development and improve the tax base while preserving the landmarks with no cost to the City, will have a ready acceptance in Calcutta in sheer economic terms.

The private sector in the city is also a part of this dynamics of decline. The abolition of the *zamindari* system in India was to free land and labor from exploitation. Whether or not the objective has been achieved is besides the point of discussion here, but it has undoubtedly left the erstwhile rich families with shrunk resources for them to maintain their estates in the city. Their interest to make best use of their property in a market, which comes forward to self-finance the redevelopment projects, is a combined function of their inability to maintain their properties coupled with alluring economic prospects. The Land Ceiling and Regulation Act of 1976 instituted by the government of India also has its bearing on the breaking up of large properties in the urban areas. This will be discussed later in Chapter - 6. General economic decline and high unemployment rate, particularly of the educated section, have manifested in sensitive political atmosphere which needs immediate discussion.

5.6. The Political Perspective

Calcutta's political perspective revolved around different goals depending on the total situation in the city and in the country. When Calcutta was the capital of British India, her goals were more national than regional. The political activities were focused on issues that related to freeing the country from a foreign domination. This nationalistic goal coupled with the inherent impatience of the Bengalis generated a spirit of fighting rather than negotiating. The political process that the city has undergone, and is still subjected to, is one that inspires but does not combine; one that drives for justice, but only with disagreement in terms of fundamentalism.

5.6.1. The Battle against the British

The origin of the city was a decision by a foreign company to establish a place for themselves from where their goal of profit-making could be performed unhindered. The English intention of building the empire in Calcutta was primarily to exploit the resources and people. As Morris has mentioned blatantly,

“..... the fundamental purpose of British imperialism was commercial, the pursuit of profit by a nation of merchants and manufacturers. Its political, strategic and improving activities were ancillary to the making of money, the securing new materials and markets, the manipulation of prices.”²⁴⁰

This intention was becoming clearer to the Bengalis, particularly to the *bhadraloks* or *babus*, who were getting educated in English ways to question the English ways. Gradually, they were becoming more difficult to contain in peace. Previously politics in India was limited only in the royal courts; but this time it came out on the streets. Calcutta being the seat of decision making in those earlier days naturally became the leader in the quest for independence. The Bengali youth tended to be radical and preferred blow for blow strategy. While Mahatma Gandhi was preaching for non-violence, Subhas Chandra Bose, the young Bengali barrister, who was the elected President of the National Congress in 1938, left his position due to disagreement with Gandhi in this respect. He raised the slogan 'give me blood, I will give you freedom'.

Whether or not Subhas Chandra Bose was superior to Jawaharlal Nerhu or Gandhi, or whether his principle of armed confrontation was appropriate is besides the point here. What Subhas symbolized at that historical phase of Indian independence movement was that Bengalis were not a patient kind, and that they were impulsive enough to go ahead without support and to find recourse in extreme measures. Subhas's expulsion from the country left a permanent sore between Calcutta and Delhi. Consequently, Bengalis in independent India are never fully trusted by the national leaders and a step-brotherly attitude simmers within.

²⁴⁰ Morris, Jan; op. cit., p.2.

The trend of neglect towards Calcutta, which was started by the British by shifting the capital to Delhi in 1911, continued in the independent nation while the city was confronting the waves of problems that sprang up over night due to the partition of Bengal.

5.6.2. The Upsurge of Unrest

The first two governments in West Bengal after independence were run by the Congress Party, the national political party also in power in the Central government. The first of them led by Dr. B. C. Roy was constructive to some extent. Those were the days of nation building and national concern seemed to get priority over the regional ones. The discontent, however, was simmering and the next government led by P. C. Sen faced severe opposition. Finally, in 1967 the people in West Bengal rejected the Congress Party, and an united left front (UF) government came into power. The new UF government of 14 political parties began with a sense of flair. Among several other stances of fraternity with the poor, the new government instructed the Corporation of Calcutta to reduce tax on *bustees*²⁴¹ and to raise it on buildings.

The UF government's communist principles facilitated the emergence of a movement called 'Naxalite movement'. In Naxalbari in north Bengal a *jotedar* was killed by the laborers in a style found in the Chinese revolution. This incidence displayed the guts of the violent section of the communists, and the young intellectuals in Calcutta were greatly influenced by it. The streets of Calcutta were flooded with posters which proclaimed Chairman Mao-Tse-Tung to be their leader too. Once again the youth of Bengal was restless and resorted to violence. The Naxalites asked people to shatter everything that stood as tradition – both bad and good – as the propagation of the revolution was not possible with the backpull of the past. Some good things of past, as they demanded, should be traded off for better things in the future. Indeed, they questioned the perceptions of 'good' and 'bad'. This was where they alienated the aver-

²⁴¹ Local term for slum areas.

age Bengali. The Naxalites' call to disown the glorious past and to hate anything that perpetuated from it came from their opinion that the Renaissance of Bengal was by and large a bourgeois culture. To exemplify their withdrawal from the legacy of the past, no matter how important, they started breaking the statues of the legendary figures who led the Renaissance of Bengal.²⁴²

The strategy, however, failed. Instead of liberation from the legacy, the common man in Calcutta felt increased love confronting the destruction. For the first time since independence Bengalis realized how dear was their past. As a result, Naxalism remained a movement limited only among the angry youth. The general populace started disapproving not only the Naxalites, also the UF government which helped such a movement to surface. Consequently, in 1971 election the Congress Party again came into power with a vast majority. From June 1975 to April 1977, the country was under Emergency Rule. In 1977 election the United Front (called Left Front, LF, this time) came back into power with clear majority. The LF government offered the much needed stability and strong administration after a long time. They have been re-elected twice since then, first in 1982 and then again in 1987.

5.6.3. The Conflict with the Center

The fundamental issue of Center - State relationship remains despite so much political upheaval in Calcutta. The revenue system and the decision making machinery (Figure 26 on page 186) of the Government of India make the Central government enormously powerful in terms of allocating money as well as for influencing vital decisions. Communists were not the only people in Calcutta who have been demanding improved financial allocation from the

²⁴² For example, they broke the head of the statue of Vidyasagar, who had been famous for his social reformation contributions including the introduction of remarriage of the widows, and for organizing the fundamentals of the Bengali language. Sir Ashotosh Mukherjee was a Chancellor of the University of Calcutta who proclaimed his goal of having at least one graduate in each family. His statue was broken and they left at the site of rampage a poster asking 'are you now satisfied that every family has an *unemployed* graduate?'

Central government. In 1967 when Mr. J. M. Parsons, then President of the Bengal Chamber of Commerce, told his annual meeting that if the State was to be properly rehabilitated, it would require "a liberal measure of sympathy and assistance from the Central Government."²⁴³ Shortly after the re-election UF leaders went to Delhi to plead for a redistribution of resources between the Center and the States, which was promptly rejected by then Finance Minister Morarji Desai. In the existing revenue system all taxes from all over the country go straight to the Central fund and then are disbursed back to the States. West Bengal, with its comparatively huge contribution to the national economy²⁴⁴ obviously has a better claim than most states to a large share in the final disbursement. This battle is still ongoing between the Congress government in Delhi and the LF government in Calcutta.

Political conflict for more funds and power with the Central government usually lead to reciprocating reproaches without constructive resolution of issues. Frequently, the State government blames the Center for any failure they encounter, and so does the Central government. This conflict, however, transcends in the case of broad issues concerning national integration or security.²⁴⁵ For all practical reasons, urban conservation is such a broad issue; but the Central and the State governments each tries to shade the responsibility pointing to the other. This is because of the financial burden associated with conservation in the existing system. Introduction of a tool like TDR has a high probability of political acceptance, both in the Center and in the State, as it would be supporting a good cause without financial liability, and thereby would create a degree of political credibility for those in charge.

²⁴³ Moorhouse, Geoffrey; *op. cit.*, p.319.

²⁴⁴ More than 30 per cent of the national tax revenue of India is produced in Calcutta.

²⁴⁵ For example, the military action in Punjab or dealing of the Tamil problems in south India involving Sri Lanka by the Central government are hailed also by the opposition leaders without hesitation.

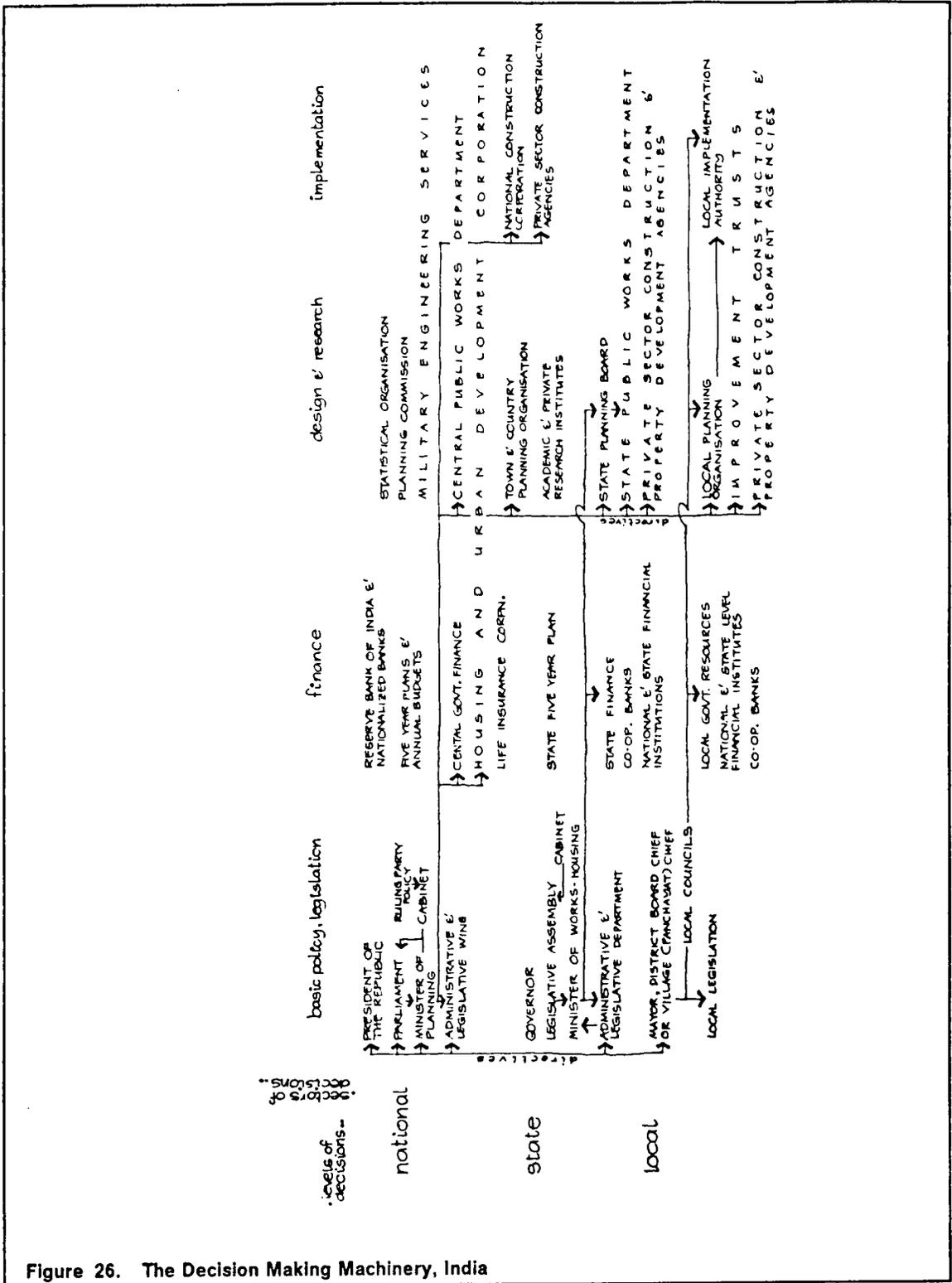


Figure 26. The Decision Making Machinery, India

5.7. The Course of Conservation

Existence of a glorious past of the city helps generate a popular ethic for urban conservation. This is evidenced by the steps taken by the Government of India in general, and by the creation of citizens' activist groups such as the *Society for Preservation of Archival Monuments and Historical Documents* at Calcutta in particular. The ethic, however, is not enough for the protection of the urban landmarks. The threat of destruction of some key landmarks mentioned in the introduction of this volume has already reached Europe. Davies has noted the perils of these monuments and has mentioned the uncertainty of their future due to the absence of institutional measures. In his language,

"..... in the absence of a sophisticated planning inquiry system the resolution of such disputes takes many years and the site (St. John's Church Compound) remains intact. It still stands, although no one seems clear what its future will be."²⁴⁶

The social setting of Calcutta, her cultural context, economic environment, and political perspective each has its particular influence on the issue of urban conservation. Ordinarily, a city with so much pressing problems would shelve the conservation disputes to die out in course of time, and the fate of the landmarks to be decided by *laissez-faire*. But the spirit of Bengali *bhadraloks* has always been charged with the quest for greater cause despite privation. Therefore, urban conservation remains as a great concern in the agenda, although suffering in terms of priorities in the existing environment of economic decline. As Davies has pointed out,

"The very limited resources devoted to architectural conservation in India need to be allocated to the case of many ancient monuments infinitely older and more fragile, from the Buddhist, Mughul and Hindu Past. If 7th century temples are crumbling, then 19th century churches cannot be regarded as a particular high priority."²⁴⁷

²⁴⁶ Davies, Philip; op. cit., p.247.

²⁴⁷ Davies, Philip; op. cit., p.245.

India has a long history of conservation efforts and as such there exists a large reservoir of expertise in the conservation of ancient monuments. As early as the late 18th century, officers of the East India Company carefully noted and recorded Indian monuments in stockbooks and drawings. In 1808, the Governor General, the Earl of Minto, set up a Taj Committee, and government funds were set aside for repairs to monuments at Agra and Fatehpur Sikri. A coherent policy towards ancient monuments and archaeological remains came after the foundation of the Archaeological Survey of India (ASI) in 1861. Conservation was delegated to the provincial government with advice from a carefully appointed Curator of Ancient Monuments. This post, however, was abolished in 1883. Later on, Lord Curzon worked out the present statutory framework for architectural conservation in India. In 1900, he noted,

"I cannot conceive of any obligation more strictly appertaining to a Supreme Government than the conservation of the most beautiful and perfect collection of monuments in the world."²⁴⁸

The ASI was reorganized under the leadership of Sir John Marshall. In 1904, the Ancient Monuments Preservation Act was introduced which provided statutory protection for India's heritage for the first time.

Marshall formulated, what can be regarded, the highest principles of architectural conservation and set them out in a document entitled 'Conservation Manual'. This document was of profound significance as this became the working philosophy of the ASI. It set exemplary standards by requiring, for instance, the reparation of any remnant of ancient architecture, however humble, to be entered upon with totally different feelings from a new work or from repairs to a modern building. It also warned against the temptation of renewing to preserve the authenticity by emphasizing the purpose of conservation to protect and display the historical value, not to renew.²⁴⁹

Since independence the principles laid down by Marshall have been further developed and incorporated into the Ancient Monuments and Archaeological Sites and Remains Act of 1958,

²⁴⁸ *ibid.*, p.245.

²⁴⁹ The principles laid down by Marshall now seem so familiar after the Charter of Venice, 1964.

and also into the Antiquities Act of 1972. However, these Acts are useful only for the ancient monuments and sites, and as mentioned previously, the monuments of recent heritage in the central areas of the big cities of Calcutta, Bombay, Madras, and Delhi remain nearly unattended.²⁵⁰ Neglect is always a common threat to the landmarks, but unthinking modernization and redevelopment are the worst enemy. Until there is a greater integration between the work of the ASI and day-to-day planning control, the prospect of planning policy paying due regard to the landmarks in the central city areas shall remain in doubt.

The conservation effort in India needs a coherent national policy mainly because of the Center oriented decision making system that is in practice for both policy and allocation of funds. Existing conservation machinery needs to be overhauled with a national body responsible for the preparation of criteria for the listing of buildings, as well as for the actual survey work. There is also a need for reorientation of the concept of heritage. Attention should be directed also towards the monuments of the recent past, and those of modest quality.²⁵¹ These structures may not be crumbling down due to the influence of nature, but they are threatened even more gravely by the pressure of redevelopment. The pivotal change in the perception from one of protecting only against the natural causes to one including the man-made forces cannot be more stressed. The ASI does not yet has a policy in this regard. Indeed, it seems practical to involve the Survey to a varying degree for various kinds of landmarks. As it is now, any structure enlisted by the Survey becomes a liability of it for acquisition and maintenance. This makes the ASI tuned to plan its work according to the budget, rather than according to the merit of the monuments. In this perspective, if the Survey is made free, at least partially, of the financial commitments it would be able to perform its function of identifying, listing, recording

²⁵⁰ Even historical cities are in danger for lack of planning coordination. When Le Corbusier was designing *Chandigarh* as the new capital of Punjab; *Bhubaneswar*, the new capital of Orissa was intended to be designed following Indian tradition. Recent studies show that of the thousand temples that once existed in this town, only 312 survive today. A recent INTACH survey revealed that 130 of the 312 surviving temples were threatened by high-rise buildings of residential and office complexes. (Ahmad, Farzand; "Bhubaneswar : A Lost Heritage," *India Today*, November 1987, New Delhi, p.74.)

²⁵¹ According to the concept of recent heritage advanced by Michel Parent, Donald Appleyard and Samuel Wilson Jr., and that of modest monument set in the Charter of Venice.

and documenting more effectively. Total dependence on the public fund for conservation, as it is now, should be reformed to include the opportunities offered by the market economy to supplement the financial requirements. As has been mentioned above, the priorities of the very old monuments would always be greater than those of recent origin, and the ASI may be trusted to protect only them. The urban landmarks of recent origin should be supported by other means that becomes available in particular situations. This basic strategy reorientation should also be a joint venture by the Center and the State to formulate enabling acts, and bold new steps by the local governments to devise programs upon them.

Indeed, it is usually from the local area's concern for a landmark that it gets the State and ultimately the national attention. If needful action can be taken in the local level, then involvement of the upper level governments may not be necessary. Said in another way, if each and every case has to go to the State and Central level, then their prospects would be more and more doubtful. In this respect, Calcutta's concern for her landmarks is primary, the State and Central action should only be supportive. As mentioned earlier, the *bhadralok* culture in Calcutta has already organized a citizens' group that raises hue and cry for urban conservation from time to time. While the Central government is too far to reach, the State government treats them with the policy that this is something to be tolerated, but not to be paid great attention. Like the ASI, the State government wants to avoid further financial liability. Their indifference stems from the fear that if they get involved, they will have to assume sole responsibility. Again, the preoccupation with the concept that the onus is up to the government for anything that is of public benefit restricts independent thinking and action.

As evident from the profile of Calcutta discussed above, the social force for urban conservation is only from a section of the population who are morally and sentimentally charged, but with little economic power. Further, being a typical Bengali endeavor, the social groups demanding urban conservation are small organizations and lack both voice and influence. What is more frustrating is that these groups, although highly intellectual, do not come forward with any new concept that might eliminate dependence on public funds. It is understandable that

these groups cannot possibly raise adequate funds to act on their own, but their total inclination for government support, particularly with the traditional concept of public appropriation of the landmarks, is by itself constraining. It is also surprising that such a vibrant, intellectually mature city like Calcutta, does not seem to search for other means to deal with the problems of urban conservation. It is surprising as well as frightening because the existing system shows, if at all, a very slow process which may not be within the threshold of patience of local inhabitants. As Donald Milner has mentioned,

"Perhaps the greatest danger lies in the demoralization induced by hopes of resuscitation so long deferred - that in the years of waiting the will to live of a once great metropolis may die."²⁵²

A city which has always provided the country with leadership, should not merely cry for urban conservation, it should introduce measures that can be exemplary to the entire nation. This dissertation is driven by such a spirit. The impatience inherent in Bengalis which is usually triggered off by disagreement over ideological issues should not necessarily result only in violence, it might as well result in innovative / adaptive ideas to deal with the situation of indifference and shading responsibility as typically found in the case of urban conservation.

Above all, nothing is outside the realm of politics in a sensitive place like Calcutta. Of late, urban conservation has also been an issue in political fights in Calcutta. Typically, a communist would view the landmarks as production of erstwhile bourgeois system, and would be less than interested to pursue such a cause. But the memory of public disapproval of similar activities of the Naxalites is still vivid. The present City government is hard pressed to improve its fiscal base. This has involved the City government in the controversial redevelopment projects as mentioned in Chapter 1. These are of great concern to the opposition political party as well as those committed to conservation. These projects are being opposed by many, including the Calcutta Metropolitan Development Authority (CMDA); but the City seems to go ahead despite all oppositions. This desperate move by the City government is undoubtedly motivated by the the sad economic condition of the city, but there is still an element of political

²⁵² Milner, Donald; "Calcutta - a city in despair," *Geographical Magazine*, Vol.XLI, No.1, October 1968, p.49.

ego in it. The city government, which is strongly supported by the State government as they both come from the same political party, seems bent upon to take the destructive stride to demonstrate their victory over political opposition.²⁵³ But such a move may well be avoided if the fiscal base of the city can be improved without resorting to the demolition of landmarks or eating up of the public parks for redevelopment projects.

It is unfortunate that a solemn issue like urban conservation in Calcutta is caught in the welter of political conflicts with regards to the ends, and in the shallows of traditional perception with regards to the means to achieve them. Political involvement becomes inevitable when other means of resolution are not forthcoming. Socio-cultural impatience in Calcutta easily leads to political maneuvering. This trend can be countered only by economic solutions, not from public fund, but from the market mechanism. The intellectuals of the city need only to sit back and reflect on the situation from a pragmatic point of view, not only from moral pronouncements. If the city is able to devise viable alternatives, political involvement will automatically evaporate. Moreover, the majority of the affluent in the city, who scarcely belong to the city and who have been holding much of the central city properties, cannot be motivated in conservation without concrete economic alternatives. Alternatives need not be entirely original, may be borrowed from elsewhere, but they ought to be creatively incorporated in the existing system to provide resolution of the conflicts at hand. This dissertation is an effort to provide Calcutta with a test of a new regulatory measure that has potential to resolve many of her outstanding and future urban conservation disputes. The intellectual sensitivity of the city's populace and the tradition of initiating reformation, which are prized qualities of Calcutta, provide a supportive testing ground to try new ideas. The philosophy of 'high thinking' may be again of use to provide 'plain living', but in a better environment enhanced by the links to the glorious past.

²⁵³ The recent statement by Kamal Bose, the Mayor of Calcutta, indicating his determination to go ahead with the Rawdon Square project despite CMDA's (Calcutta Metropolitan Development Authority) rejection shows such an adamant behavior (*Sambad Bichitra*, February 14, 1988, p.2, col.3.).

6. The Test of TDR Program in Calcutta

The study of existing and prospective TDR programs in different cities, analysis of the emerging and troubling issues, and the interview / questionnaire survey for the evaluation of options and alternatives in procedural details have led to a comprehensive understanding of the tool. The strengths and weaknesses of the program are well identified together with its relation to the planning and urban design of the city. The testing of the tool in Calcutta is to be done by hypothetically considering that a TDR program is incorporated in the existing building regulations of the city. Such an incorporation, naturally, will be benefitted from the evaluation of the tool discussed in the previous chapters. The proposed TDR program in Calcutta will take into consideration the features that have been identified as strengths, while avoiding the weaknesses experienced elsewhere. Considering a TDR program is in effect in Calcutta, analysis will be done in this chapter to find whether or not such a program can function in Calcutta within the realm of existing regulations; and what possible amendments / relaxations it might warrant.

As discussed in the previous chapters, the TDR programs in different US cities have certain goals and biases which are not solely for urban conservation. Although it is true that a TDR program may not take off by the causes of urban conservation alone, it however should not have parallel goals and biases that may have detrimental effect. It is, therefore, important to

first identify the goals that the proposed TDR program will be expected to achieve in Calcutta, the testing ground.

The primary goal, of course, is conservation of urban landmarks that are threatened by the pressure of redevelopment. As discussed in Chapter 2, the archaeological ruins, the monuments of world fame, etc. are taken care of by the Archaeological Survey of India (ASI). But both ASI and the State Governments are reluctant, or extremely cautious to designate any building or site to avoid any further liability. This is particularly so because the budgetary provision for ASI is not commensurate to the need of conservation in the country. In this context, the hypothesis has been that the introduction of a TDR program shall : (1) utilize the market mechanism to make funds available for urban conservation, and (2) relieve the ASI from the fear of liability, and will enable it to function better in its survey work to identify and designate significant buildings and sites including those of recent heritage.

Notwithstanding the importance of the primary goal, a TDR program must have supporting goals that enhance the significance of the program in the context of planning and urban design of the city.²⁵⁴ Calcutta city, the testing ground for the tool, has priorities in several areas of planning that have been discussed in Chapter 2. Urban conservation is not a pressing issue in the planning agenda of Calcutta primarily because of the traditional perception of associating conservation with public liability. It would be of tremendous importance to integrate the proposed TDR program to Calcutta's planning needs in order to gather support, as well as to render the program significant in the development dynamics of the city.

A TDR program can play an important role in directing growth / development in areas that are supported by public / private sector investments. In Calcutta, most of the significant landmark

²⁵⁴ The success of those TDR programs protecting farm lands and ecologically sensitive areas is primarily from their well integration in the land use plan. The San Francisco and Denver TDR programs are hailed by most experts as they enmesh with the total plan of the city. On the other hand, the New York City program is criticized to have used the program for municipal benefit, without adequate responsibility to integrate it to the total planning and urban design of the city. And the Seattle program is an example where conflicting goals of the program jeopardize TDR prices from both low-income houses and landmarks.

buildings are in the old core and around the *Maidan*. Incidentally the density of buildings is also highest in the old core, where infrastructures and services have become old and overloaded. Recent public capital investment in the construction of the underground rapid transit line, the Circular Railway, water supply and sewer infrastructure around the city, have created areas where private redevelopments are already in offing. This is because of the rise in land price due to new facilities, and also due to the inadequacy of the old buildings of these areas to harness the full market potential. A TDR program in Calcutta will be highly attractive if it can provide additional density in these prospective areas through transfers from landmarks in the old core. The details of such a proposal need further discussion in the context of a physical plan of the city and urban design of these areas, the building regulations, and the prices of unused development rights. These aspects will be dealt with later in this chapter. Before that, it is necessary to discuss the existing planning process, the institutions and their interactions in Calcutta.

6.1. The Planning Process and Institutions

The planning activities in Calcutta have traditionally been performed by several related institutions not having clear coordination among them. Only very recently the CMDA (Calcutta Metropolitan Development Authority) has been given the responsibility to oversee the activities of various institutions in the metropolis. But so far CMDA's intervention have not been very significant in the absence of a comprehensive plan of the city.

The department of Town and Country Planning comes under the Ministry of Municipal Affairs and Urban Development. The Calcutta Metropolitan Planning Organization (CMPO), the main institution under the Town and Country Planning Department, which produced the Basic De-

velopment Plan (BDP) of 1966, is now a much smaller institution.²⁵⁵ It now deals primarily with state level physical planning. Indeed, at present CMPO has little influence in planning matters of Calcutta city.

The Calcutta Improvement Trust (CIT) is the oldest planning and development institution in the city since 1911. The creation of CIT was as a palliative to the city after the capital was removed to New Delhi.²⁵⁶ During the earlier years CIT was actively involved in addressing the problems of the city, and developed several areas with excellent integration to the fabric of the city. These areas were developed complete with infrastructures, services, and often with buildings for selling or leasing. Over the years the activities of CIT have gradually reduced to developing low / middle income housing, and commercial development of markets and retail facilities (e.g; Manicktala Civic Center, Jadavpur Central Super Market Complex etc.). Indeed, CIT is now an organized developer in the city with the only difference from a private developer being its less emphasis on profit. CIT has many prime sites under its ownership, and influences Calcutta's urban design by the sheer scale of the projects it takes up.

The changes in the activity pattern and character of the institutions like CMPO and CIT have been due to the establishment of the super authority of CMDA by a state statute in 1971. The BDP recognized the need for such an organization with authority over the entire metropolis to implement the broad infrastructures that should cut across the boundaries of several small municipalities in the metropolis.²⁵⁷ The scale of CMDA's projects and their influence over the development arena have been so enormous that other institutions preferred a safe distance. In the beginning, CMDA intended to do everything, from infrastructural development to area development to urban design projects to housing. In those days CMDA started trunk sewer

²⁵⁵ Since the Ford Foundation took its support off in late 1960s, and since the establishment of CMDA in early 1970s according to the suggestion in the BDP.

²⁵⁶ Morhouse, Geoffrey; op. cit., p.261.

²⁵⁷ Government of West Bengal, CMPO; *The Basic Development Plan, 1966 - 1986*, Calcutta, 1966, pp.131-134.

and water supply projects all over the metropolis. Simultaneously, it also initiated housing development projects in Sectors 18 and 19 in the Salt Lake area, urban design projects in Golf Green area and Bustee (slum area) Improvement / Modernization projects in several locations in the city. Later on, the institution of West Bengal Housing Board has been established by a state statute which took away housing and some urban design projects from CMDA. Indeed, the Housing Board was created by slicing off the housing wing from CMDA. CMDA was consequently made responsible for overall planning of the city with the establishment of a whole physical planning department within it. In addition to the infrastructure projects, the Bustee Improvement and Modernization projects remained with CMDA.

The Housing Board was created with a sizeable seed capital to build low and middle income housing that would revolve the fund. It started with the Salt Lake housing project of Sectors 18 and 19, and the Golf Green Urban Complex which were ongoing in the CMDA housing wing. Gradually the Board developed Sunny Park, Minto Park Housing projects, Purbachal Housing Complex in the Salt Lake, and several small and intermediate size projects in and around the city. Soon the Board has become an organized housing developer in the city providing high and middle income housing. Typically it acquires premium lands and develops dwelling structures with an optimum mix of single family homes, multi-family low-rise houses or multistoried cooperative buildings. It, therefore, has no positive input in the planning of the city. Indeed, it has some negative input as it sometimes violates the building regulations regarding density, and cannot be controlled as it is a government institution.²⁵⁸

CIT meanwhile showed that redevelopment of markets was a very profitable business. CIT's success was with markets in the periphery of the city. The markets inside the city, which are in very important locations, are mostly owned by the Corporation of Calcutta, the City au-

²⁵⁸ For example, the Sunny Park Housing Project has been developed to an FAR of about 8, while allowable FAR on the abutting road could not be more than 3. The monstrous 12 story multi-family building inside the Golf Green Complex is being built on the site that was previously demarcated to be a park. The residents of the complex lost the case in the Court as the Board maintained that the demarkation of the park was only tentative.

thority. The Corporation itself has been in bad financial condition for several years due to its inept tax collection system, and corrupt valuation procedure. Without emphasizing reorganization or repair measures in those departments, the new Left Front (LF) State Government tried to increase the Corporation's earnings by developing the markets it owns. To begin with, it took up redevelopment projects of prime market areas in various parts of the city²⁵⁹ with loan from the central institution of Housing and Urban Development Corporation (HUDCO).

The incidents relating to the administrative composition of the Corporation of Calcutta, and their activities are also important in this respect. In 1972, the Congress government in the state dissolved the elected administrative body of the Corporation, and instituted a system in which selected bureaucrats were given charge to run the administration. This was done in order to make the corporation more efficient, which then was a perpetual liability of the State Government. The left front (LF) government continued with this system for some time, but in 1984 held the Corporation election. The ruling party in the State Government (CPM) came in power in the Corporation as well with clear majority. With consolidated position and initial success in market developments, the Corporation then came up with several projects that directly concerned urban conservation. Indeed, one of the markets projects – the New Market (previously known as the Hogg Market) – has been a sensitive issue as the proposal involved demolition of the old brick structures including the landmark clock-tower.²⁶⁰ The later projects initiated by the Corporation involved the Town Hall, a Palladian mansion, and two parks - the Satyanarayan Park in the north and the Rawdon Square in the southern part of the city. The Town Hall project was to generate full potential of the site in the old CBD by a multistoried office building. The Satyanarayan Park was planned to have an underground market with a raised park intact on top, and the Rawdon Square project included five auditoriums which

²⁵⁹ For example, the New Market in *Maidan-Esplanade* area, the Gariahat Market in the southern part, the College Street Market in the northern part, the Manicktala Market in the east-central part of the city, and yet another, the Lansdowne Market in the south-central part under project preparation.

²⁶⁰ Das, Partha Ranjan; "Old Market New Market," *Architecture + Design*, Nov.-Dec. 1987, New Delhi, pp.49-53.

would eat up whole of the park. Naturally, these projects have been vehemently opposed by the citizen groups, the media, and of course the opposition political party. These developments in Calcutta indicate that the City authority has also entered the building industry as a developer like the CIT and the Housing Board.

The Bustee Improvement programs of CMDA involved providing basic infrastructures of water, sanitation, electricity and walkways in the bustees. The program has been quite successful, but it has been primarily a public philanthropy. Money was being made available by the Central Government, and money has been spent to provide those services in the bustees. This has no particular influence over the physical and financial condition of the city. The bustees are like islands in prime locations where land price is too high; but laissez-faire has to be maintained without even tax appreciation as they are inhabited by the lowest income people.²⁶¹ CMDA's Bustee Improvement program definitely improved the environmental condition inside the bustees, but their maintenance is today a problem as the Corporation is unable to raise the tax. Indeed, the Corporation declines to take responsibility of the bustees.²⁶²

The Bustee Improvement program was actually the first step in the sequence of two schemes involving the bustee properties in Calcutta. The second scheme was Bustee Modernization. The bustees are single story non-permanent structures in prime locations in the city. The modernization program thought of stacking the bustee dwellers in 5-story walk-up tenements, thereby clearing the major part of the site to develop for sale at premium price. The profit from the sale was to subsidize the tenement construction and infrastructure / service provisions.

²⁶¹ Bustees in Calcutta are parcels of land in the city where a three-tier tenancy system is prevalent. The land owners leased the lands to *thika tenants*, who built the shacks and let them out for profit. The renter community is the poorest in the city and extremely militant. Both the land owner and the *thika tenant* are unable to raise the rent or clear the site. Therefore, these bustees properties in prime locations of the city are out of redevelopment possibility and tax roll of the City.

²⁶² Maitra, M. S.; Text of talk in the Seminar on 'Environmental Improvement in Calcutta Metropolitan District' organized by the Bengal Chamber of Commerce and Industry, November 1985, Calcutta, (mimeographed) (Mr. Maitra was associated with the Bustee Improvement Program since its inception, and retired as the Engineer-in-Chief in 1982).

The first few projects developed to achieve this goal have failed miserably because of several economic and social reasons.

CMDA, therefore, so far has not been able to emerge as a developer like CIT, Housing Board and the Corporation of Calcutta. CMDA is now in charge of developing the comprehensive plan for the city, and the TDR program in Calcutta must be an integral part of the plan. What is important to note here is that the TDR program must have clearly spelled out priority of transfers from the landmarks in order to achieve the primary goal of urban conservation. The temptation of TDR transfers from the bustees may be too much for CMDA to resist. TDRs from the bustees may also be considered in the program, but clearly after the inventory of unused potential from the landmark has been exhausted.

The institutions related to development and planning in Calcutta act almost as free agencies in the absence of any direction in city planning. The Improvement Trust, the Housing Board, and even the City authority behave like private developers to reap the benefit of the market potential. The BDP was a development plan that laid out policies upon which the working plans were to be prepared. CMDA was given the charge, but it did not have adequate staff to handle Calcutta's pressing problems, let alone preparing physical plans. The need for a comprehensive plan has been felt seriously in the last few years, without which adequate predictability could not be rendered in the planning and urban design of the city. The Chief Physical Planner position was created in CMDA in 1983; and in 1985 a task force was organized with experts from related fields to help develop the comprehensive plan. The TDR program in Calcutta ought to be closely integrated to the plan to supplement the goals under consideration in the plan.²⁸³ The plan under preparation will emphasize growth and development in certain areas of the city better prepared with infrastructure and service provisions

²⁸³ Professor Monideep Chatterjee, former Director of land use planning in CMDA, and presently the Head of the Department of Architecture in Jadavpur University, has been selected as a key member in the task force. Professor Chatterjee, a senior colleague of the author, mentioned in several informal discussions the major elements of such a plan for Calcutta. Most of the planning objectives considered as part of the TDR program in Calcutta are according to those major planning directions under consideration in the forthcoming comprehensive plan.

through some measures of incentive (TDR may be a very important one). The plan would also try to augment the accessibility of the old core by street widening and traffic engineering programs. The plan may also specify some use classifications for certain areas of the city to attract non-polluting electronics industry, while making the regulations more severe for the space consuming traditional factories.

Whatever may be the desired directions in the plan, they ought to be implemented through the regulations that control and guide the growth and developments in Calcutta. The building regulations of the Corporation of Calcutta, therefore, are of tremendous importance in this regard. An understanding of the existing by-laws is essential before designing the TDR program so that the incentive program becomes feasible in the overall plan.

6.2. Existing Building Regulations in Calcutta

In the absence of a comprehensive plan, Calcutta's growth and development are not controlled by any land use specifications. Originally, the Calcutta Municipal Act of 1951 laid a set of building by-laws that controlled the building volumes by specifying front, side and rear spaces; as well as by front and rear angles. The whole city of 80 wards (now 100 wards) were zoned in two districts -- the attached district and the detached district -- according to the ground coverage specification. In the detached district, a maximum of 55 per cent of the lot could be covered (the erstwhile European quarters in the Esplanade area), and in the attached district as high as 2/3rd of the site could be covered (the native quarters and the old business core). Mandatory side space was 4'- 0" irrespective of the height of the building. The rear yard was minimum 10'- 0", but a 68 degrees angle (i.e; two-and-a-half times the depth of rear space) was applicable. This meant that with the minimum 10'- 0" back space, a building could rise up to 25'- 0" without any setback. After that, a 10'- 0" high floor needed at least a 4'- 0"

setback. However, there was an additional provision in the by-laws that if a 32'- 0" back yard was left open to sky, the building could rise any height without any rear setback.

The front angle guiding the building height and front setbacks was 56.5 degrees to be measured from the plinth level of 2'- 0" on the opposite side of the road including pavement. 56.5 degrees means one-and-a-half times the width of the front street. A building on a 60'- 0" wide road could rise up to 90'- 0" without any front setback. A 120'- 0" tall building on the same road needed 20'- 0" front space if it were to rise straight without any front setback. Alternatively, the building could have either a 20'- 0" set back after 90'- 0" straight rise for further 30'- 0" height, or it could have setbacks at three levels, each about 7'- 0", for top three floors each of 10'- 0" height. There was no specified maximum height, but the heights of buildings were controlled by the economics of construction cost and efficiency. The higher the buildings went, less and less became the floor areas due to setback from front and rear. After a certain height, depending on lot size and shape, the floor sizes became uneconomic as the ratio of the rentable area (i.e; the gross area less the service areas including the areas eaten up by structural elements) to the gross area of the building fell below the efficiency mark of 80 per cent.

In 1975, there was a devastating fire in the Central Bank building in the CBD of Calcutta. In the same year, there was another case of fire in the State Bank of India building in Bombay. Both these cases brought building by-laws in close scrutiny, and eventually the National Building Code (NBC) has been amended to include additional measures for fire protection. Accordingly, all state and city regulations were also amended. The Calcutta Municipal Act was amended in November 1977 which is still in effect.

The amended Act kept most of the old regulations, and added several new restrictions. First, it introduced the FAR system according to different types of use, and on different widths of abutting streets. For instance, permissible maximum FAR on a 18 meter (about 60'- 0") wide road is 3 for dwelling house; 3.25 for office buildings; 3 for public buildings, institutions, hotels,

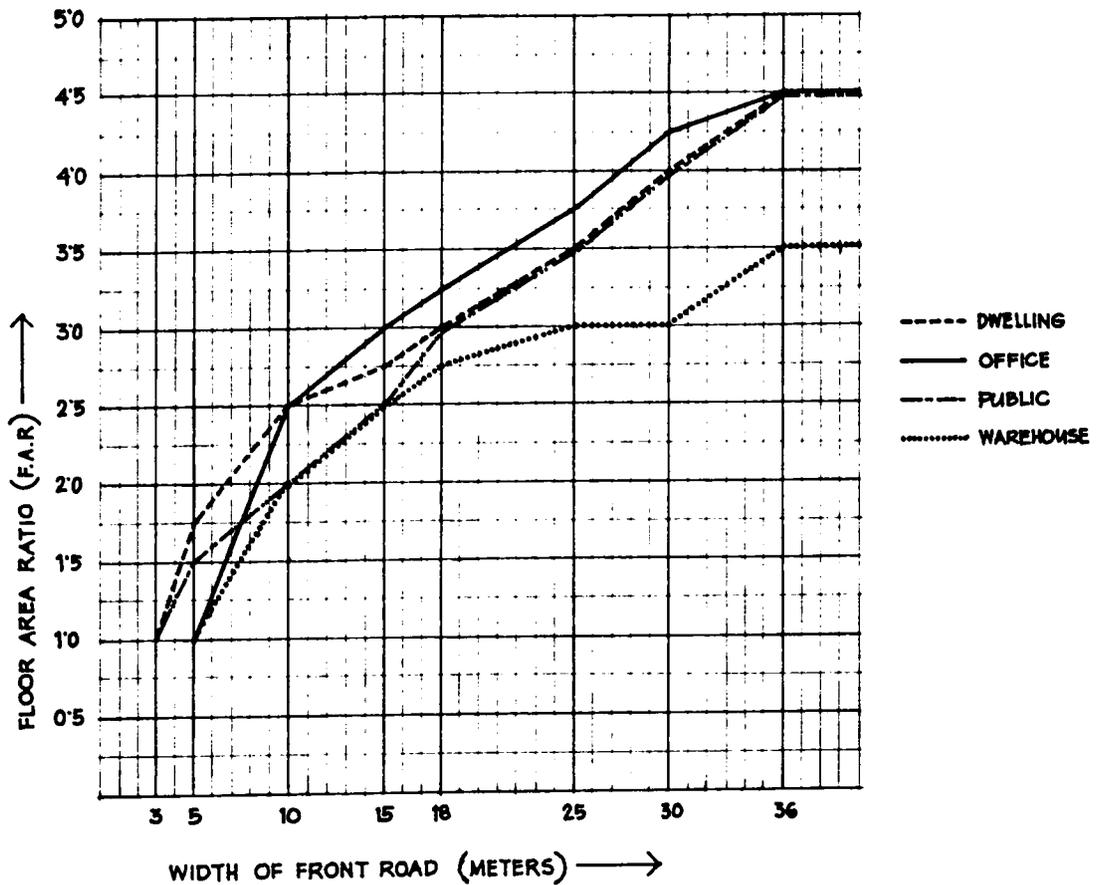


Figure 27. FAR levels in Calcutta

hospitals, etc.; and 2.75 for warehouses.²⁸⁴ However, FAR specifications allow only proportionate increase, although the table may imply a slab increase system. For example, FAR for office buildings on a 18 meter road is 3.25, and that on a 25 meter road is 3.75. For a road of 20 meter width the permissible FAR is not 3.75, as would be for a slab increase system, but is only $[3.25 + 3.25/18 \times (20 - 18)]$ 3.61. The chart in Figure 27 shows the graphical interpretation of the FAR table. There is also a bonus provision in the FAR specification in Calcutta.

²⁸⁴ Appendix C presents the relevant sections of Calcutta Municipal (Amendment) Act of 1977. The complete list of FAR specifications is included therein.

A 10 per cent bonus on FAR is allowed for basement car parking provision and for the service spaces of air-conditioning plant room, pump room, electric sub-station, etc.. For a mixed use building, the applicable FAR is determined according to the use covering more than 50 per cent of the built-up space.

Secondly, the amendment imposed mandatory front, side and rear open spaces varying according to the height of the building. The ground coverage regulation has also been specified in relation to the height of the building. Table 4 on page 205 summarizes these requirements according to different height categories.

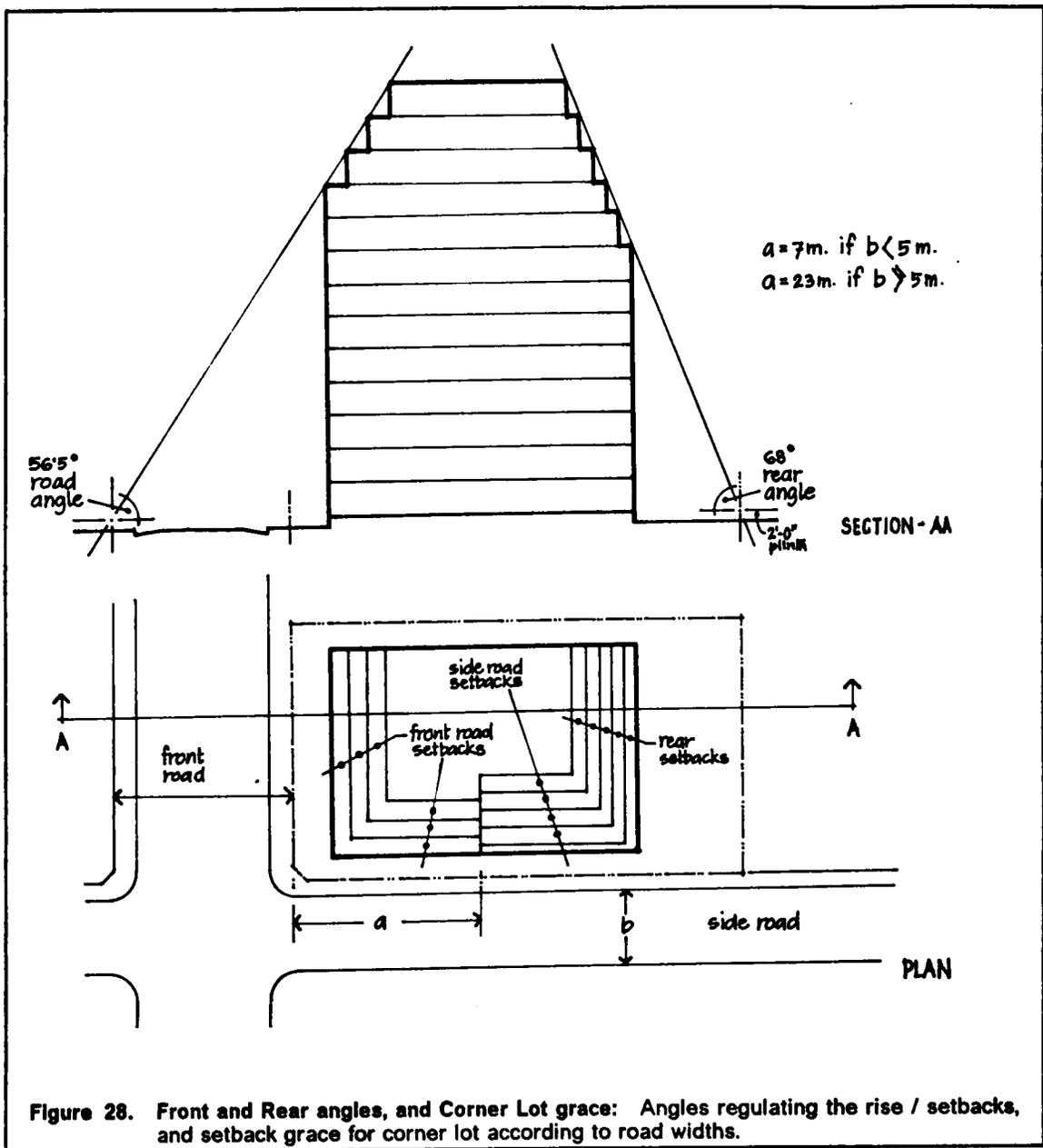
The amendment has also specified some special requirements, such as the concept of 'joint open space'. The amendment specifies that "(t)he total width of the open space in between two buildings at ground, one or both exceeding 18 metres, whether within the same site or not, shall not be less than 7 metres."²⁶⁵ This means that a proposed building exceeding 60'-0" (18 meter) height must leave little more than 19'-0" side space on its lot if the structures in the adjoining site is existing with a 4'-0" side space (which is typical as old regulations required standard 4'-0" side space). Worse even, same 19'-0" side space to be kept open for a proposed building less than 60'-0" in height if the existing building beside is 60' or taller. This joint side open space between two buildings, whether within the same site or not, and one or both of them exceeding 36 meters in height should be minimum 10 meters. The important point to note here is that, this concept of joint side open space introduced in the 1977 amendment does recognize interrelations between adjoining zoning lots. The erstwhile practice of referring regulations strictly to individual lots, therefore, is amended to include environmental implications irrespective of ownership of the lots. This treatment of regulatory measure according to environmental condition involving more than one zoning lot has paved the path following which a TDR transfer between lots will perhaps not be difficult to perceive in practice.

²⁶⁵ *The Calcutta Municipal (Amendment) Act, 1977; Part II, Rule 8, Article (d), Item (i).*

	upto 13.5m (40')	Above 13.5m upto 18m (60')	Above 18m upto 36m (120')	Above 36m
Front Space (minimum)	1.25m (4'- 0") may be relaxed if more than 50% of the buildings on the road do not have a front space	1.25m	3.5m (11'- 0")	10% of height
Side Space (minimum)	1.25m 1.6m if building in the adjacent lot has opening on the side wall	1.8m (6'- 0")	3.5m	10% of height
Rear Space (minimum)	3m (9'- 9") 2m (6'- 6") for buildings upto 7.5m (25'- 0") height	3m	7m (23'- 0")	10m (33'- 0")
Ground Coverage (maximum + 5% for corner lots)	2/3rd of lot area	2/3rd of lot area	50% of lot area	50% of lot area
Table 4. Mandatory Open Space Requirements, Calcutta				

Building height and setbacks are to be controlled by the old regulation of 56.5 degrees front angle, and 68 degrees rear angle. As mentioned earlier, the front angle is measured from the boundary line on the opposite side across the front street, whereas the rear angle is measured from the rear boundary line of the lot. However, both these angles are measured from the plinth height of 0.6 meter (2'- 0"). The sketches in Figure 28 on page 206 shows graphically the implications of these angles. The amendment further specifies that for a corner lot, the height calculated according to the wider street shall be valid for a depth up to 7 meters along the side abutting the narrower street if it is less than 5 meters (about 16'- 0") in width; and up to 23 meters (about 75'- 0") if the narrower street is 5 meters or more in width (sketch in Figure 28 on page 206).

In effect, the new regulations specify maximum bulk of buildings in terms of FAR, which is to be achieved satisfying all other regulations of front, side, rear open spaces; front and rear angles; and ground coverage restrictions. Since enforcement of the amendment in 1977, design of every proposal needs at least two alternatives -- one up to 18 meters height with 2/3rd



ground coverage, and another above that with 50 per cent ground coverage – to ascertain the economic building form generating the full FAR potential. In some cases building with efficient floor sizes that approach the allowable maximum FAR is possible within 18 meters height; but in most cases a greater height becomes necessary to achieve the permissible bulk. The amendment does not specify a height limit, but has included discouraging special require-

ments for buildings over 36 meters in height. Buildings up to 36 meters in height get as-of-right permits, but those over 36 meters in height need to go through a special permitting process and hearing. What this means is that a developer would try to limit the height of the proposed building within 36 meters to avoid approval complications. He will go for more height, and thereby special permitting procedure, only when the shortfall in a 36 meter alternative is substantial.

6.2.1. The Building Permit granting procedure

The City Architect's department in the Corporation of Calcutta is the final authority to grant a building permit. Previously, an applicant for building permit used to submit his proposal to the City Architect's department, and the proposal used to move through several other departments within the Corporation²⁶⁶ for their observation before a final decision by the City Architect. After the 1977 amendment, some other agencies are now part of the permit granting procedure.

First, each proposal has to be approved by CMDA to check whether it conflicts with CMDA's plans about the city. This will be much more relevant after the comprehensive plan will be published. In absence of a comprehensive plan, CMDA now checks the proposals against its road alignment notice for future widening,²⁶⁷ and observes whether or not the proposals fall

²⁶⁶ For example, The Survey Department used to check the disposition of the site lines and the area. The Sanitation Department used to check the water supply and drainage provisions. The Engineering Department used to check the structural design etc..

²⁶⁷ There is already a published list of roads where CMDA envisages future widening. This notice indicates the extent of possible future acquisition for each road in the list. The Corporation of Calcutta has been directed to carefully observe the building permit applications to see whether a proposal has considered such notice of future acquisition in leaving the front open spaces. According to the rulings in the Court challenging this alignment, a property owner may now build in the front space aligned for road widening, but will have to demolish up to that line without any compensation for the structure when such acquisition will be demanded. It has also become imperative that a time period be specified after which the widening may be done. This is particularly important for the developer to know the expected life the additional structure in the aligned space in order to calculate cost versus income from it. If his calculations would indicate that the total income from the build-up space in the aligned area would be more than the construction cost now and the demolition cost at the end, he may get

in CMDA's development freeze areas.²⁶⁸ CMDA is also considering certain use specifications, although not in terms of elaborate zoning. For example, in the areas with industrial potential, CMDA prefers non-polluting electronics industries rather than traditional factories. Traditional factories are permitted only if they treat their waste inside their premises before discharging in the city sewer.

Secondly, a proposal has also to be approved by CIT. This, however, is almost a routine check against any conflict with CIT's projects. Thirdly, a proposal exceeding 18 meters in height, or 4000 cubic meters (about 140,000 cubic feet) in volume, must have self fire-fighting arrangements which are to be approved of by the Fire Brigade.²⁶⁹ Fourthly, a proposal has also to be approved by the Traffic Department of Calcutta Police to see whether or not adequate parking provision has been made. The regulation specifies 10 per cent parking space for buildings up to 4 FAR, and 17 per cent above 4 FAR. However, in some cases in the CBD area where old buildings have no parking provision, the Traffic Department imposes additional parking requirement.²⁷⁰ This, of course, is an issue of great dispute as such additional parking demand is made without any incentive bonus either in FAR or in ground coverage. Finally, some proposals have also to be checked by the Post and Telegraph Department to observe whether or not the proposed building will obstruct their micro-wave transmission corridor.

the building permit after signing an undertaking with the Corporation stating his agreement to demolish the additional part without any obligation.

²⁶⁸ While CMDA is working on the comprehensive plan, it has imposed development freeze for some sensitive areas (e.g; the areas along the Eastern Metropolitan By-pass). However, there are a number of cases pending in the Court in which the owners of lands under freeze have moved against such freeze imposed by CMDA. In some cases the Court has ruled that such freeze cannot be for unlimited period. CMDA now has to decide without further delay what it intends to specify for these areas.

²⁶⁹ Buildings exceeding 18 meters height or 4000 cubic meters volume must have additional water storage reservoir, dry / wet riser plumbing approachable in each landing fitted with swinging hose reel, smoke detector sprinkler in the ceiling of fire-prone areas (e.g; parking) charged from over head reservoir, inert gas network in document and record storage vaults, fire escape staircase in specified intervals, fire proof elevator lobby, landing decks on outside above 36 meters, and emergency fire-fighting equipments installed in each floor in convenient locations.

²⁷⁰ For instance, the Traffic Department demanded over 25 per cent parking space in the Bank of India site on Brabourne Road in BBD Bag area.

Check against aviation hazard is rare in Calcutta, but it is almost routine in Salt Lake in view of the area's proximity to the airport.

One of the most troublesome acts enforced recently that effect the building industry in general, and the building permit granting process in particular, is the Urban Land (Ceiling and Regulation) Act (ULCR) of 1976. In 1967, the Parliament at Delhi passed a resolution that,

"(t)he pattern of conspicuous consumption and wasteful display which increasingly characterize some of the urban areas are all out of place in a socialistic society. There is thus compelling need to impose limitations on urban property. Concrete steps should, therefore, be taken for placing restrictions on individual holdings of urban land for preventing racketeering in land in urban areas."²⁷¹

The 25th amendment of the Constitution paved the way of ULCR, 1976 which was in pursuance of the above pledge.

The objective of the Act is to prevent the concentration of urban land in the hands of a few persons for speculation and profiteering with a view to bring about an equitable distribution of land in urban areas. This objective is to be achieved by the imposition of a ceiling on vacant²⁷² land in urban agglomerations. In determining the ceiling limit there has been a definite approach with reference to the size of land that could be held by an individual in urban areas. The urban areas have been divided into four categories according to population, and ceiling limits for each of the categories have been fixed accordingly. Metropolitan cities of Bombay, Calcutta, Madras and Delhi having a population over one million fall in Category - A in which the ceiling limit is 500 square meters (about 5,400 sq. ft.). A proposal involving a lot more than 500 square meters in Calcutta, therefore, has to be approved of by the ULCR authority.

²⁷¹ Bhargava, Gopal; *Socio-Economic and Legal Implications of Urban Land (Ceiling and Regulation) Act, 1976*, Abhinav Publication, New Delhi, 1983, p.1.

²⁷² This term is very tricky because it has direct impact on redevelopment proposals. For instance, a parcel of land which has building(s) in it will not be regulated by the ULCR Act even if it is more than the ceiling limit permitted under individual ownership. But the moment the site will be cleared for new construction, it will become *vacant* and will come under the purview of the Act.

Most building regulation provisions in Calcutta are as-of-right, i.e; if the requirements of the by-laws are satisfied, the building permit should be granted. But there may be cases where certain by-laws cannot be satisfied due to the shape, location, etc. of the site. Such cases are to be forwarded to the Mayor's office where a final decision is to be reached after a public hearing. Also, there are provisions of discretionary power of the Mayor²⁷³ for certain cases, e.g; the front space requirement may be relaxed for buildings up to 13.5 meters in height if more than 50 per cent of the existing buildings on the road are *not* with such front open spaces. The City Architect may also grant a permit subject to some undertaking that would fulfill the regulatory specification after an interim construction period. For example, a redevelopment project with more than one building in the site to be constructed in phases may not satisfy coverage requirements in an intermediate stage. The undertaking then specifies that if construction of such a project is abandoned in an intermediate stage for some reason, the required open space is to be created considering as *is* condition, by demolishing some buildings in the site.²⁷⁴

Finally, every project has to obtain an occupation certificate from the City Architect's office, which is usually granted after inspection and observation that the building has been constructed as was permitted. Electricity and water connections are available only after such an occupation certificate is granted. Incidentally, buildings requiring more than 50 kilo-watt of energy must have their own electrical sub-station, because they will be given high voltage

²⁷³ The Calcutta Municipal (Amendment) Act of 1977, as presented in Appendix 3 is an old copy printed during the period when the elected administrative body of the Corporation was suspended, and the Commissioner was the administrator in chief. After the elected body has taken over again in 1984, the functions of the Commissioner now come under the Mayor's office. All the articles in this old copy of the Act that mentions 'the Commissioner' should now be read 'the Mayor'.

²⁷⁴ For example, The State Bank of India complex on Strand Road in the CBD of Calcutta had about 87 per cent of the lot covered by numerous buildings. The redevelopment project was designed to be constructed in 3 phases over a 20 year period. The approved design included 4 tall buildings exceeding 18 meters in height connected by a public banking concourse of four floors. The required 50 per cent open space in the lot can be satisfied only after the third phase is constructed. In any other intermediate stage the ground coverage will be more the 50 percent due to high ground coverage in the existing buildings. The building permit for the project required an undertaking to the City Architect by the Bank stating agreement to satisfy the ground coverage requirement should the project be abandoned in an intermediate phase.

connection. The design and location of the sub-station has to be approved of by the Electric Supply Authority. An underground water reservoir, pumping equipments, and overhead storage tanks are common for the downfeed water supply system in every building in Calcutta. This is because the pressure in the street water main is too low for an upfeed system. For large projects, the water storage for ablution and consumption is sometimes reciprocated for the demand of fire-fighting. This involves an interaction between the Corporation and the Fire Brigade.

6.3. The Test of the Program Features

Let us now hypothetically consider that the Corporation of Calcutta has incorporated a TDR program in the building regulations discussed above. According to this program, a designated landmark can sell its unused potential to interested buyers. The TDR buyers can thereby add 20 per cent of the normal density to their development projects. With this broad basis, the analysis in the following pages will test whether or not generation of such additional bulk is possible according to the existing building by-laws of Calcutta. If there will be some conflicts, whether or not they can be reasonably resolved. This test will be discussed in two sections. First, it will examine the problems in the sending districts with regards to the adjacency question. Secondly, the redevelopment implications in the receiving districts will be analyzed to identify potential conflicts. Finally, an analysis will compare the TDR prices between the sending and the receiving areas. The price of TDRs affordable in the receiving sites must match with the value of the TDRs in the sending sites. The analysis will show the range of transfers possible in Calcutta's existing market situations.

6.3.1. Sending District and Adjacency Problem

The morphology of the BBD Bag area, the old core of Calcutta, where most of the significant buildings are located, is described in Chapter 2. Although some civic design elements were introduced by the British, most of the buildings were built before the Calcutta Municipal Act of 1951. As a result, most of the buildings were built without the benefit of even the old building regulations. The load bearing construction of those days did not permit very tall buildings, nor was there an elevator system to allow vertical rise. Of necessity, the old structures in the BBD Bag area covered almost the whole area of the lots. In some cases, attached buildings were also constructed, which did not leave any side open space at all. There are a number of buildings in the Bag which will qualify for conservation considering their contribution to the local ambiance and recent heritage. And there are others which may be replaced. Since there is a mixture of significant and replaceable structures in this district, a TDR program with adjacency requirement is possible. But there will be some important issues that will be raised by such an adjacency program.

First, the existing built form in the Bag has its own character which reminds the city's glorious past. Ideally, the whole area should be designated as a historic district in which redevelopment may be permitted according to an approved design criteria to maintain the scale and character of the district. Since the TDR program is to allow an overage in bulk, this may be in conflict with the design criteria suitable for the maintenance of the district's environmental ambiance.

Secondly, the infrastructure in the Bag was built in the previous century with brick-vault sewer lines and ironite water pipes which after 1910 were not properly maintained. This has resulted in decreasing efficiency of the existing system. In any case, they were not designed in the first place to serve a density as they are now subjected to.²⁷⁵ Although a TDR program with

²⁷⁵ Government of West Bengal, CMPO; op. cit., p.17 and p.26.

adjacency requirement will only shift density within the district rather than absolute adding, yet any redevelopment in this district must be carefully judged against the infrastructure and service capabilities of the area.

Thirdly, most roads in the Bag is narrow in width, and cannot be widened due to the compact morphology of the area. As a result, even with latest traffic engineering techniques (from the World Bank's input), the flow of traffic is extremely slow.²⁷⁶ This problem is further compounded by on-street parking. Since the fabric of the old roads was not designed for automobiles, there is never adequate parking space despite on-street parking in almost all roads in the BBD Bag area.²⁷⁷ Both the traffic flow rate and the parking problem are standing impediments in accessibility of the old core. A TDR program having receiving sites located in the old core will place additional demand on the traffic system.

Fourthly, the approach roads being narrow, the permissible FAR levels under current regulations are not the highest available in the city. Of course, there are cases like the St. John's Church Compound, the General Post Office Complex, and the Collectorate Building site where small buildings were built in large lots. Also, they happen to be on the wider streets in the district which permit bigger FAR. But in general, typical building lots are fully developed; and due to their greater ground coverage, the total built-up area is close to what would be permitted in current FAR regulations. Indeed, in some cases the older building has more built-up area than would be permitted today.

For example, let us consider a lot of 100' frontage and 200' depth on a 40'- 0" (13.5m) wide road. Let us consider two cases -- an existing 5-storied building, and an existing 3-storied

²⁷⁶ In 1971, it was measured to be below 5 kilo-meters an hour (CMDA Leaflet, 1972 exhibition). Since then the situation further deteriorated until 1979 when the Calcutta Urban Transportation Project was launched through technical and financial support from the World Bank. The traffic flow rate has marginally improved as a result, but that at best can be viewed as halting further deterioration.

²⁷⁷ The parking inside the central Square of the Bag for the ministers and secretaries working in the Writers' Buildings is a nuisance that needs clearing. The mini-bus terminus stops, also located inside the Square as part of the Calcutta Urban Transportation Project, are the indications that the Square is the only place left in the CBD area for an easy and obvious solution of the parking problems.

building -- both of which are common in the Bag. The Following table compares their built-up areas with what could be permitted according to current regulations.

Lot Area	100 x 200	= 20,000 sq. ft.
Maximum Permissible FAR	4.225 (3.25 base FAR + 10% bonus for basement parking + 20% overage for TDR transfer)	
Maximum Permissible Bulk	20,000 x 4.225	= 84,500 sq. ft.
Ground Coverage	(100 - 6) x (200 - 10) (typical old building has 3' side spaces, 10' rear space and no front space)	= 17,860 sq. ft.
Area in a 5-storied building	17,860 x 5	= 89,300 sq. ft.
Comparison to Permissible Bulk	89,300 - 84,500	= +4,800 sq. ft. (additional area)
Area in a 3-storied building	17,860 x 3	= 53,580 sq. ft.
Comparison to Permissible Bulk	53,580 - 84,500	= -30,920 sq.ft. (shortfall in area)

Above calculations show that if the existing building is a 5-storied one, the owner will have no incentive for new construction, let alone venture for TDR transfers. But if the building is only 3 floors high, there will be a definite incentive for the property owner to venture for re-development as well as for TDR transfers. But before he would go in search for TDR, he would like to determine whether or not the site condition permits additional bulk according to other building regulations.

Typically, the first alternative to be tried will be a design within 18 meters height. In case a low-rise design fails to generate the total permissible bulk, a high-rise alternative within 36 meters height will then be worked out. As discussed earlier, due to approval complications a

proposal crossing 36 meters height shall not be tried unless compelled by the investment / profit calculations. The 10 per cent FAR bonus against basement parking makes certain parking vs. office space calculations imperative. According to current regulations, required parking space is 10 per cent of the total generated area for an FAR level up to 4.0, and 17 per cent if the generated FAR is more than 4.0. The calculations for the above lot are as follows:

For FAR 4.225 (base FAR 4.5 + 10% Parking bonus + 20% TDR bonus)

a) Permissible Bulk	20,000 x 4.225	= 84,500 sq. ft.
b) Parking Requirement	84,500 x 0.17	= 14,365 sq. ft.
Usable Area (a - b)		= 70,135 sq. ft.

For FAR 4.0

a) Permissible Bulk	20,000 x 4	= 80,000 sq. ft.
b) Parking Requirement	80,000 x 0.1	= 8,000 sq. ft.
Usable Area (a - b)		= 72,000 sq. ft.

This indicates clearly that developing the lot in 4.0 FAR will be more profitable although a higher FAR was permissible. This calculations stand common for both the low-rise or the high-rise alternatives.

The low-rise design requires 6'- 0" side spaces on either side, a 4'- 0" front space, and a 10'- 0" rear space. Leaving these mandatory open spaces the remaining area in the lot becomes $\{(100 - 12 \text{ (side spaces)}) \times \{200 - 4 \text{ (front space)} - 10 \text{ (rear space)}\}\}$ 16, 368 sq. ft.. But the 2/3rd maximum permissible ground coverage regulation for the low-rise buildings restricts the maximum building coverage to $(100 \times 200 \times 2/3)$ 13,333 sq. ft.. Considering 5 floors within 18 meters and a basement floor, the maximum built-up area in the low-rise alternative can be $(13,333 \times 6)$ 79,998 sq. ft., which is close to the target of 80,000 sq. ft.. Therefore, a low-rise alternative is feasible.

The low-rise design can have 10'- 0" side spaces in the ground level for ingress and egress lanes on either side leading the driveways at rear to the ramps to the basement. For the floors

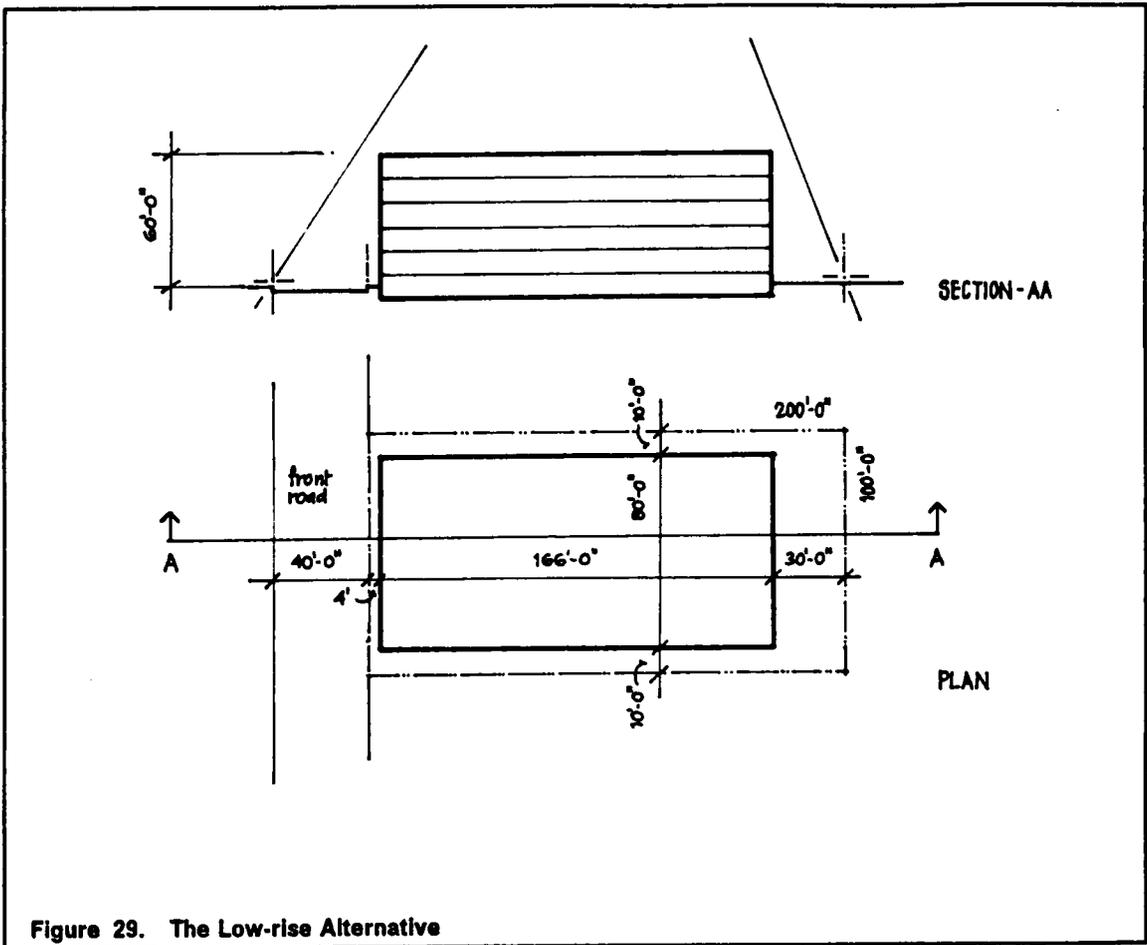


Figure 29. The Low-rise Alternative

above, the side space can be reduced to 6'-0" each. But since the ground coverage regulation requires more space to be left open in the site, cantilevering the side walls for all the upper floors – which will involve additional cost in structural elements – will not be considered. With a 80'-0" building width, the depth of the building can be $(13,333 / 80)$ 166'-0" to have ground coverage within 2/3rd of the lot area. This leaves a $\{200 - 4(\text{front space}) - 166 (\text{building depth})\}$ 30'-0" rear space. 40'-0" road width plus 4'-0" front space allows an unobstructed rise of $\{(40 + 4) \times 1.5^{278}\}$ 66'-0", which is more than the stipulated height (60'-0") in the low-rise design.

²⁷⁸ Front road angle of 56.5 degrees means a straight rise without setback for 1.5 times the road width plus the front space.

This stipulated height requires a $(60 / 2.5^{279})$ 24'- 0" rear space for straight rise without setback. Hence, the building can be designed either with a 6'- 0" additional front space, or with the 30'- 0" rear space having some surface parking provisions. Sketches in Figure 29 show a possible design. In such a situation, when a low-rise building could achieve the target FAR, the high-rise design need not be tried. But for lots on wider roads permitting higher FARs would need high-rise development. This will be discussed in the receiving area analysis later in this chapter.

However, another serious impediment in redeveloping the above site is the Urban Land (Ceiling and Regulation) Act. The 20,000 sq. ft. site with an existing building in it is not affected by the Act as it is not a vacant land. But the moment the existing building will be demolished for new construction, it will become a vacant land. It will have to pass through the approval procedure of the ULCR authority. According to the Act, lots more than 5,400 sq. ft. in area cannot be under single ownership. To abide by the Act would be to subdivide the bigger lots into smaller parcels not exceeding 5,400 sq. ft. in area. This, in fact, is not a practical proposition considering Calcutta's compact morphology and road system. As Gopal Bhargava has observed,

"Bombay is an island with no space to expand and there are swampy low-lying lands on either side of Calcutta conurbation. Both these metropolitan areas, which are tending towards attainment of megalopolitan stage of growth, have developed with considerable compactness, density and congestion. On the other hand, Madras and Delhi have vast hinterland into which they could expand and, relatively, they have less density and congestion and are well planned cities with several areas having garden city character. The wisdom of applying the same restrictions with regard to vacant land size and plinth area for the four metropolitan area is questionable. In fact, there may be need for varying these standards as between the core, suburban and fringe areas of the same metropolis."²⁸⁰

What happens in such a case is that the property owner takes resort to legal maneuvering, and a corporate or cooperative ownership with required number of members²⁸¹ is worked out to by-pass the law. This legal processing and dealing with the ULCR authority take substantial

²⁷⁹ Rear angle of 68 degrees means a straight rear rise without setback for 2.5 times the rear space.

²⁸⁰ Bhargava, Gopal; *ibid*, pp.10-11.

²⁸¹ For example, the site measuring 100' x 200', i.e; 20,000 sq. ft. in area must have four members in the cooperative ownership. A 5,400 sq. ft. being an individual's ceiling limit, a four persons' cooperative can hold a land area of $(5,400 \times 4)$ 21,600 sq. ft..

time and energy. Therefore, if the economic benefit with a new construction is not substantial, the property owners would tend to avoid such hassles, and be content with their existing buildings.

A strict adjacency requirement in the BBD Bag area, therefore, will have problems as the properties beside designated structures may be either overdeveloped or would prefer to remain unchanged to avoid ULCR restrictions. Some property owners, however, will like to redevelop when their existing buildings are too small (as in the case of the 3 story building in the example analyzed). Such properties are there in the BBD Bag and in the Esplanade areas, but they may not be adjacent to a designated landmark building. The happenstance occurrence of such an underdeveloped adjacent property will tremendously restrict the transfer options and TDR prices. Therefore, a district-wise distribution of TDRs in the old CBD has to be considered abandoning strict adjacency restrictions.

From similar calculations, there will be quite a few significant structures in the Bag that will not be threatened by redevelopment pressure as their existing bulk would be more than what could be built now. These structures can be easily identified, and can be marked as landmarks but not TDR generating sources. The Accountant General's building, the Koilaghat building of the Eastern Railway, several Bank buildings, the International Telegraph Office building, the Spencer's Hotel building, and several corporate head-quarters buildings will fall in this category. It is a definite plus point for a TDR program in Calcutta as quite a number of the designated buildings will not be TDR generating sources, and thereby will be out of the TDR inventory. Some of these buildings, however, may require maintenance and restoration. As devised in Philadelphia, the TDR program in Calcutta may have provisions to allow additional bulk in receiving areas in exchange for contribution in a fund responsible for maintaining such buildings.

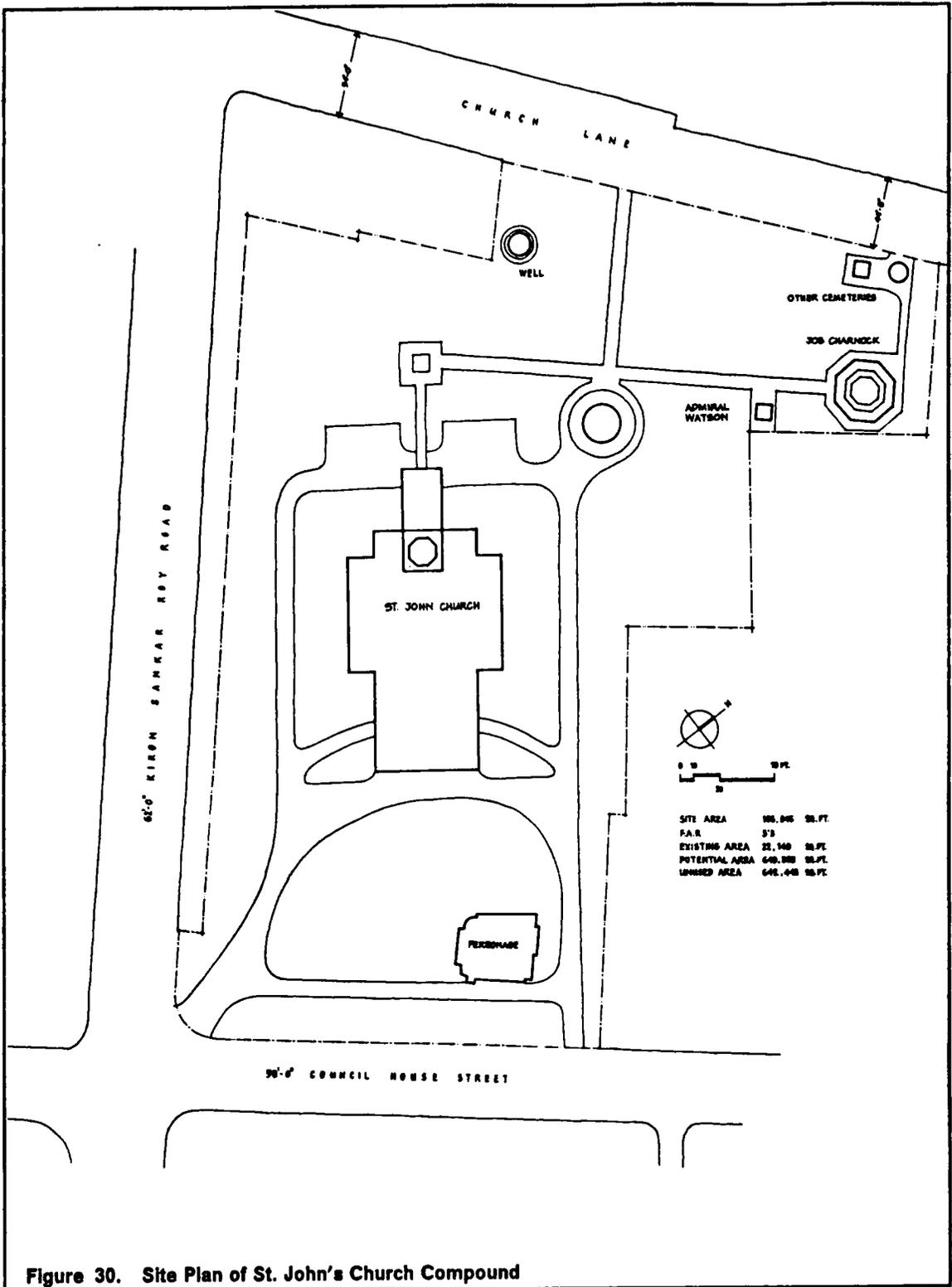
As mentioned in Chapter 1, and shown in Figure 5 on page 18, there are many significant buildings and properties in the Bag which have considerable unutilized potential. For exam-

ple, the St. John's Church Compound (Figure 30 on page 220), the General Post Office Complex (Figure 31 on page 221), the Collectorate Building (Figure 32 on page 222), the Officers' Quarters building on either side of Wellesly Place, the Custom House on the Strand Road, the Town Hall Premises, the High Court site are a few to be mentioned in the BBD Bag area. The significant buildings in the Esplanade area on Chowringhee Road along the east boundary of the *Maidan* include the Metropolitan Building, the Grand Hotel building, the Museum building, the Great Eastern Store building, the Virginia House, and the Kanak Building (Figure 33 on page 223). The St. Paul's Cathedral site (Figure 34 on page 224) is also on Chowringhee Road, but on the south of the *Maidan*. The existing built-up area and unused potential of some of these properties are mentioned in their site plans.

Like the BBD Bag area, the transfers in the Esplanade area also cannot be maintained in strict adjacent lots. Esplanade area lots are generally bigger in size and developed with open yards as they were in the previous detached area. Redevelopment of these lots invariably involves the ULCR restrictions, but since the allowable FAR on Chowringhee Road is the highest in the city, there is a strong motivation for the developers to spend time and energy for ULCR clearance. In general, the receiving sites in BBD Bag and in the Esplanade area will have to be found in a district-wise distribution, rather than only the physically attached lots. However, a substantial amount of TDR from the BBD Bag and the Esplanade area will have to find place elsewhere in the city where greater density redevelopment is possible.

6.3.2. Receiving Districts and Redevelopment Implications

The construction of the underground rapid transit line, and the newly laid sewer and water supply provisions have rendered some locations in Calcutta suitable for development investments. Properties along the underground rapid transit line, particularly in the junction with other important roads, are choice locations for redevelopments. The areas north of Shyam Bazaar 5-street crossing, and south of Circular Road crossing are particularly under redevel-



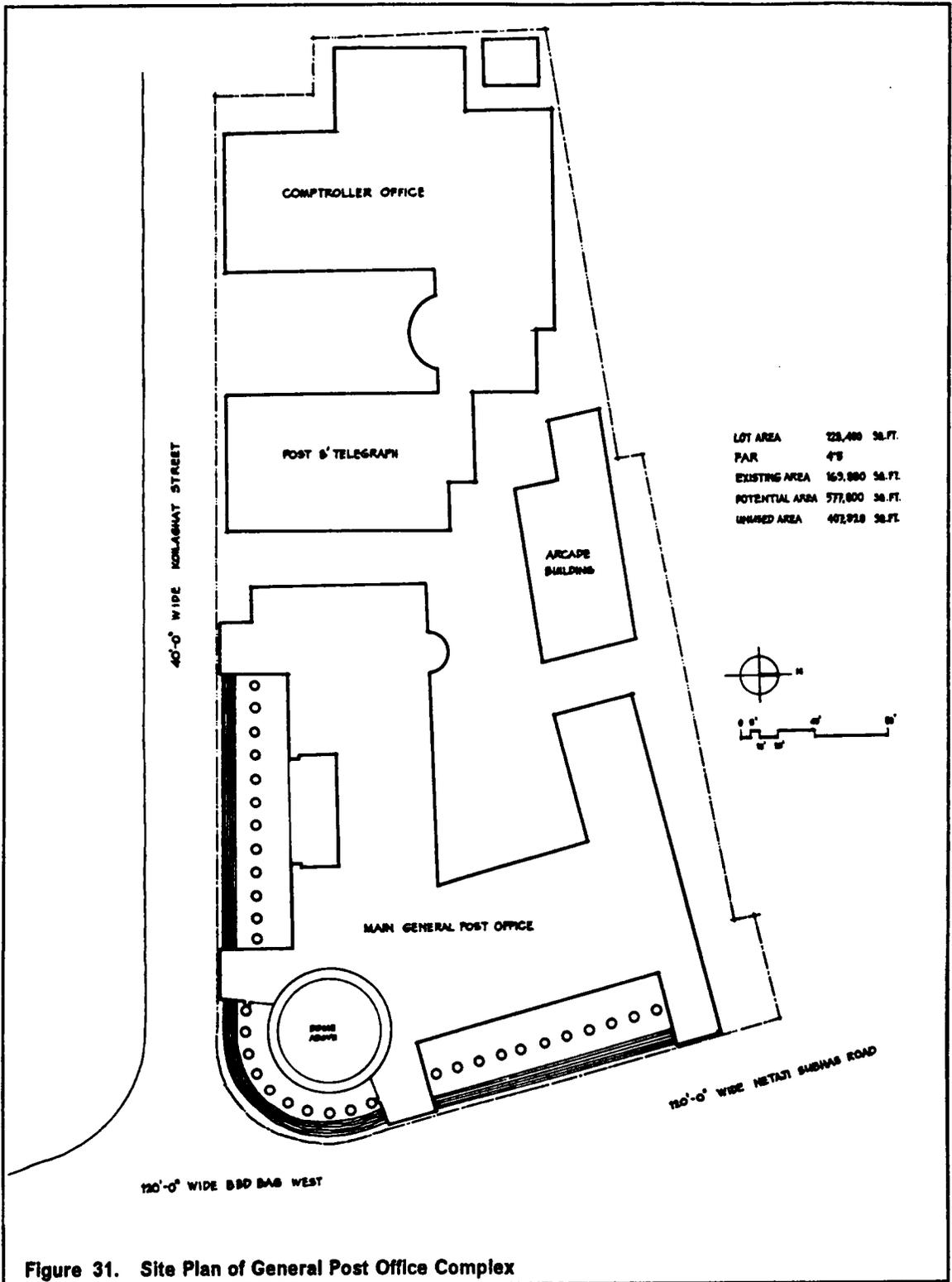


Figure 31. Site Plan of General Post Office Complex

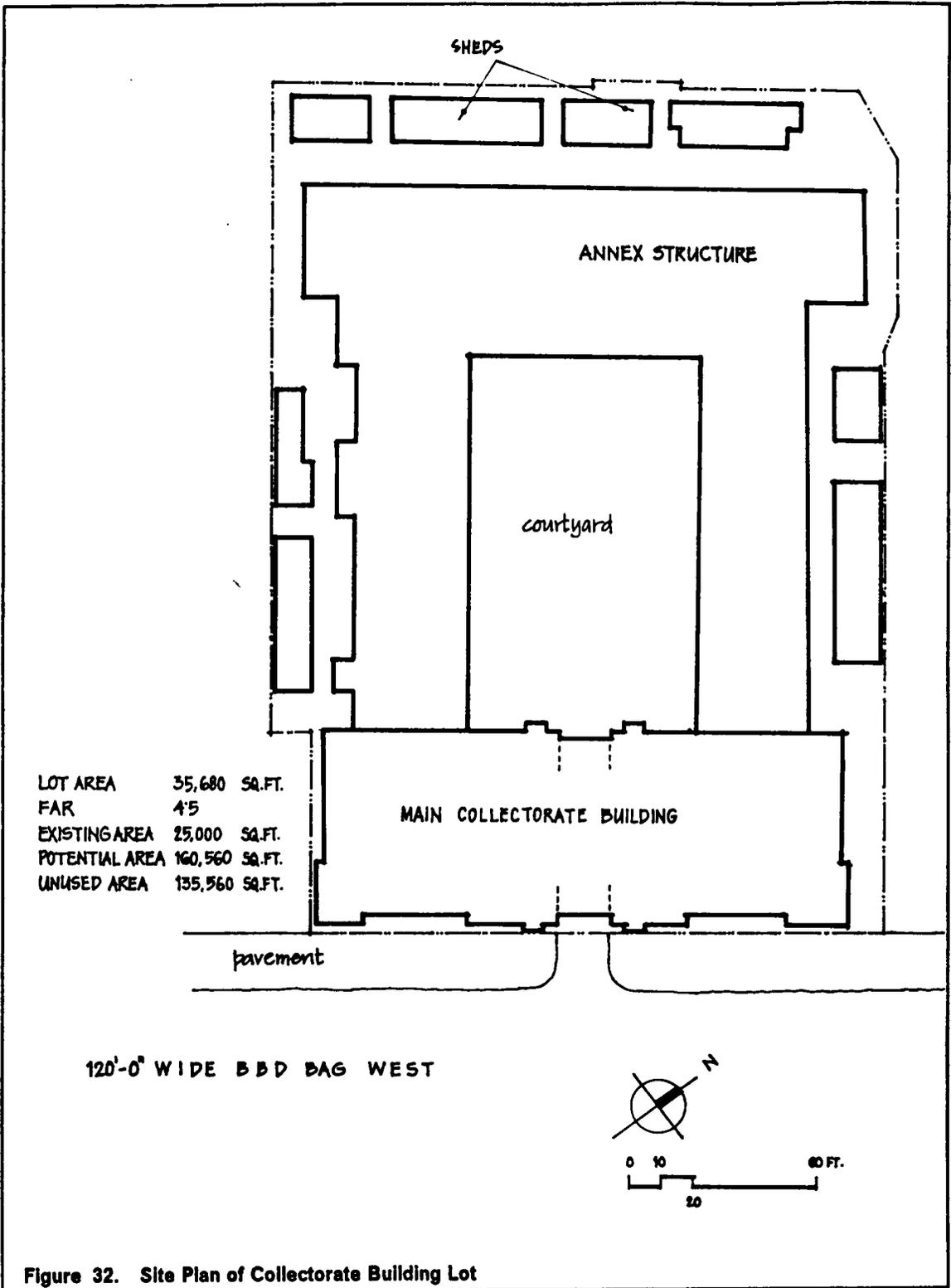


Figure 32. Site Plan of Collectorate Building Lot

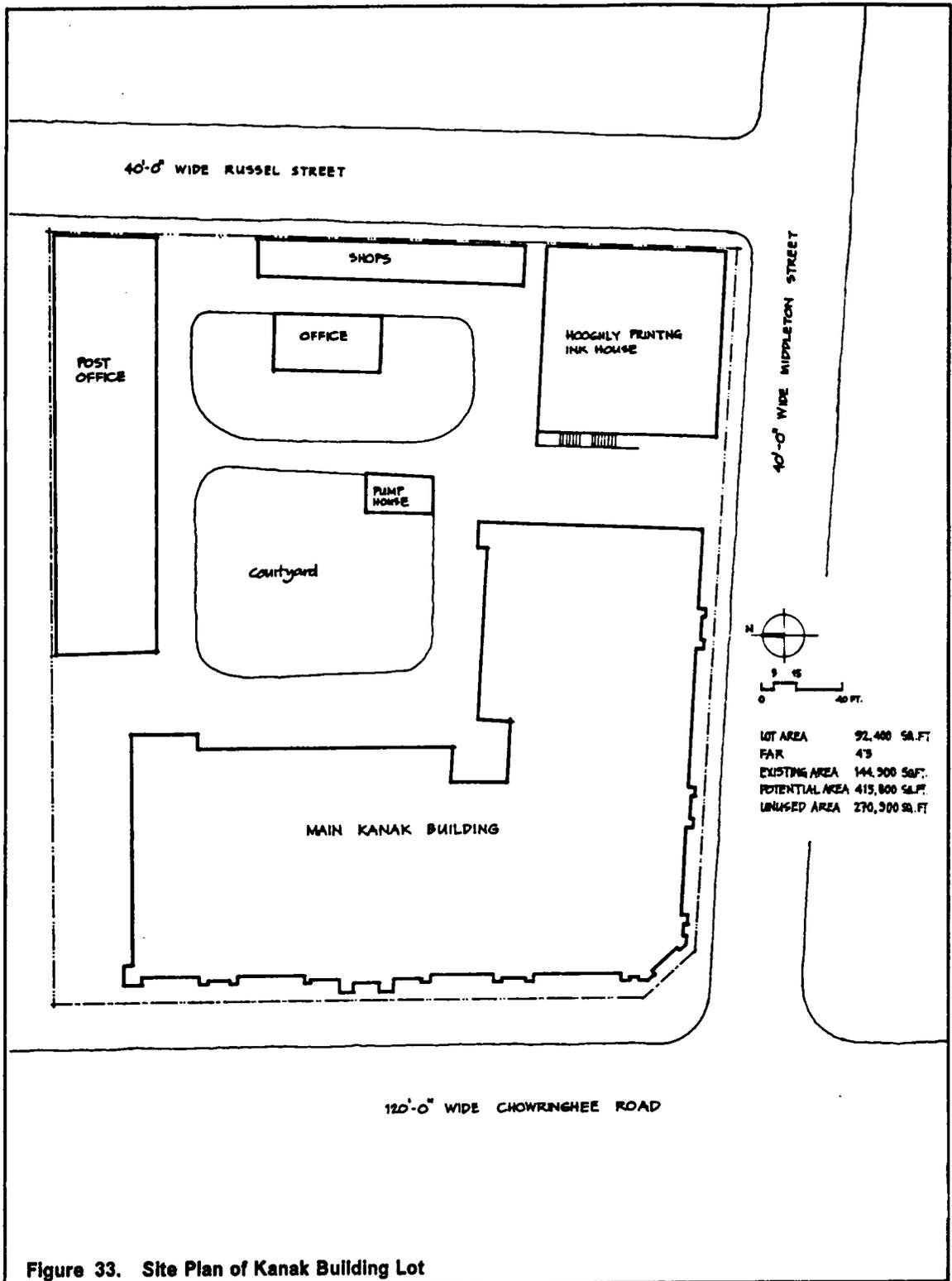


Figure 33. Site Plan of Kanak Building Lot

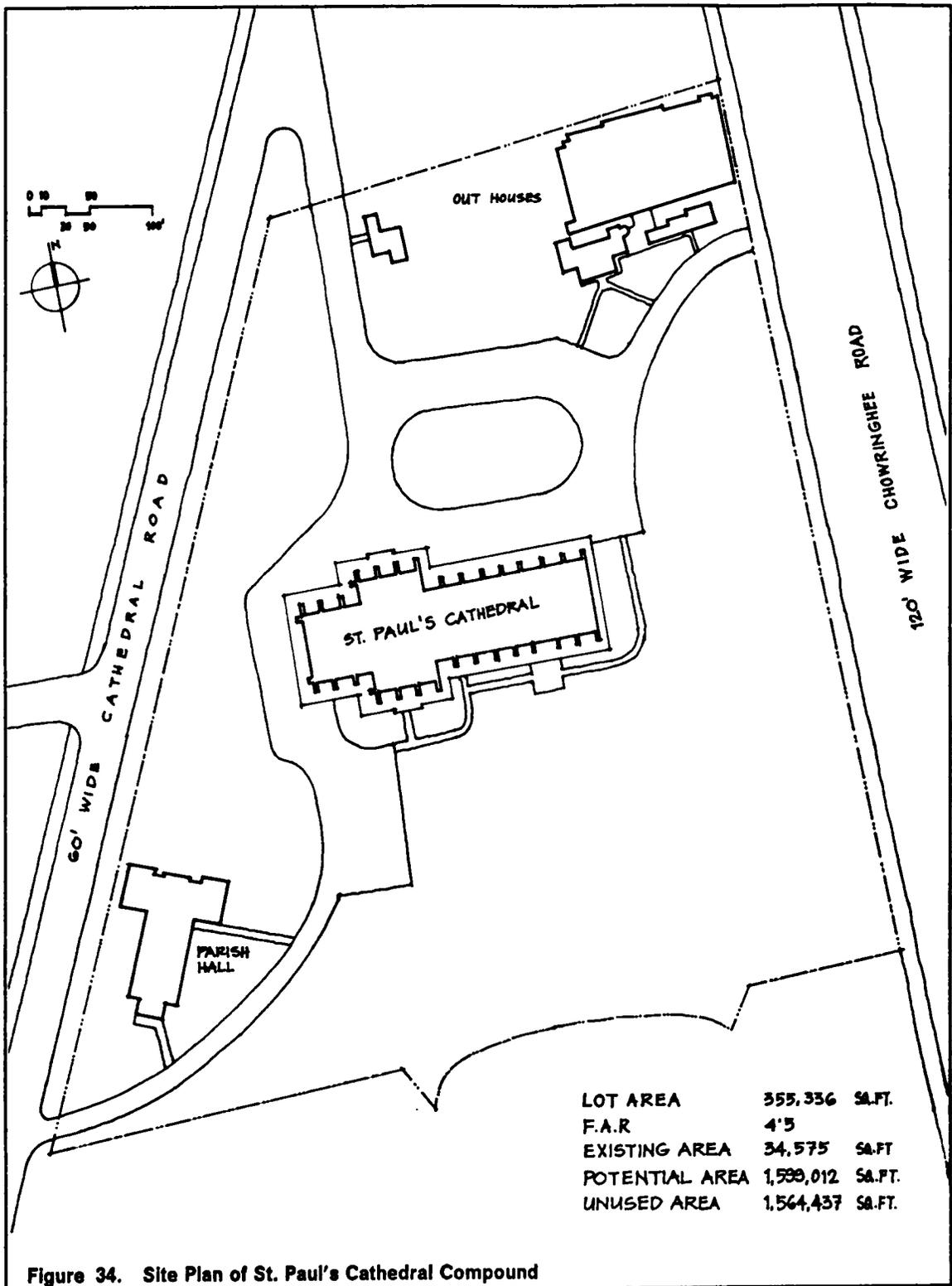


Figure 34. Site Plan of St. Paul's Cathedral Compound

opment demand. The existing buildings in these areas are all low-rise, ill maintained and mostly of insignificant importance. The built-up areas in the buildings in these properties are far below the level of development demanded by the current land price. As mentioned earlier, the junctions between the rapid transit line and the Circular Railway are already under pressure for commercial and office developments. The areas near the terminus points of the rapid transit are choice location for residential developments. The TDR program in Calcutta ought to take advantage of this development trend in identifying the receiving districts. The map in Figure 35 on page 226 shows where along the rapid transit line the TDR receiving districts in Calcutta may be identified. However, considering locational advantages as well as the proximity to the rapid transit line, the most desired receiving lots will perhaps be in the Esplanade area.

The first issue to be analyzed regarding the redevelopment of the properties in TDR receiving areas is the question of land assembly, and conflict with ULCR restrictions. Debates over the implications of ULCR Act is an ongoing issue in urban development throughout the country since its inception. The Central Government first circulated to the State Governments a draft bill imposing a ceiling limit of Rs. 500,000 on urban property holdings. The State Governments were generally in favor of the bill. But the problem of taking over, managing and disposing of urban properties, effected adversely by the draft bill, were considered colossal. Hence the ULCR Act imposed a ceiling only on private holding of *vacant* lands. As already been mentioned, a property having existing building(s) is not effected by the Act even if the amount of land under one ownership exceeds the ceiling limit simply because it is not *vacant*. Therefore, the implication of this Act is severe only when such a property owner wants to clear the site for redevelopment. As has been mentioned by Bhargava,

“One can very well imagine the plight of a citizen who owns a piece land in urban area and wants to develop the land, say, by the erection of buildings etc.. He will have to pass through the legal bottlenecks of a number of legislations.”²⁸²

²⁸² *ibid*, p.72.

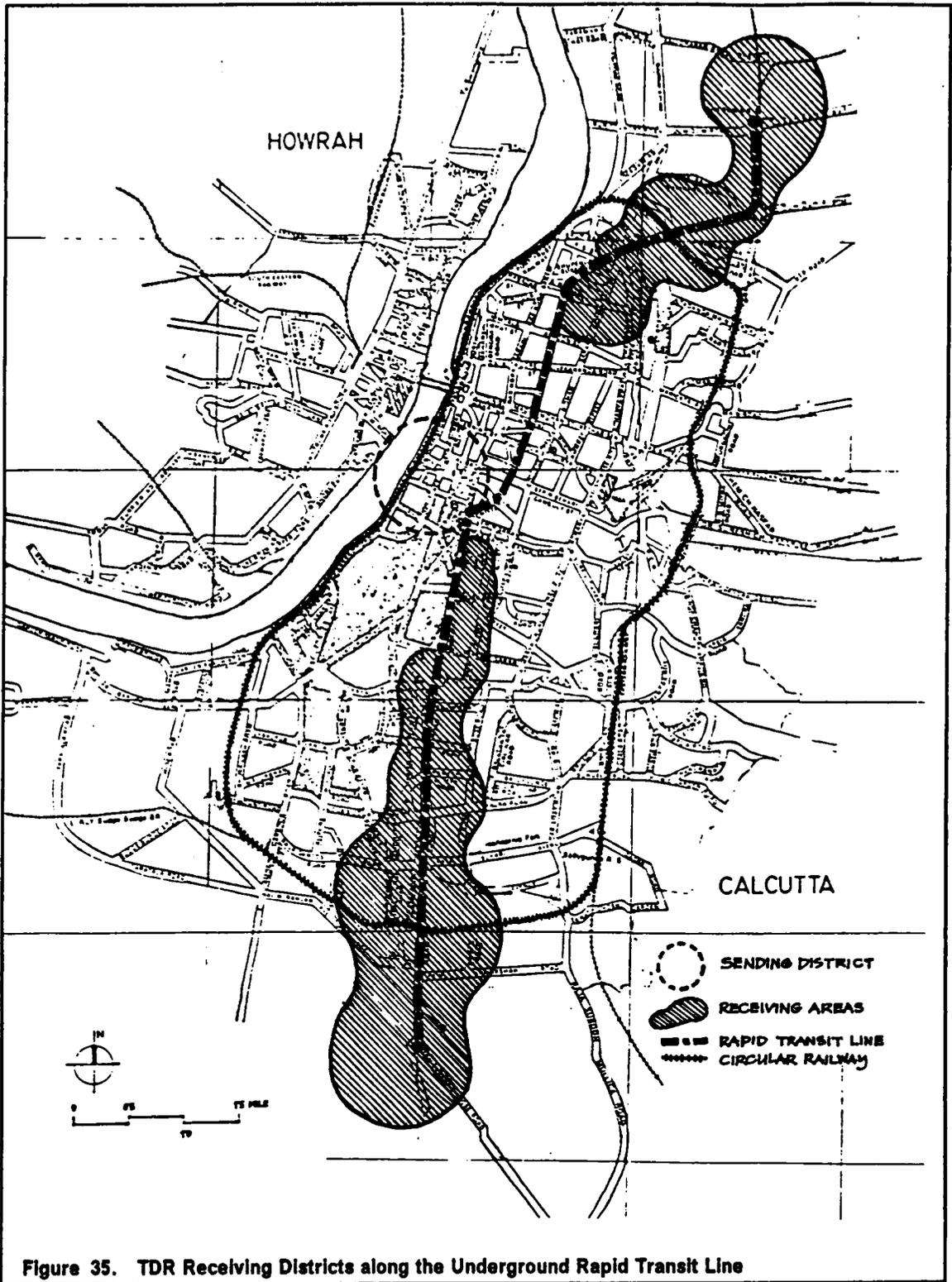


Figure 35. TDR Receiving Districts along the Underground Rapid Transit Line

This, indeed, has led to a virtual halt in large property developments. Sooner or later the Act will have to be modified. Most likely this will come about under pressure from the State Governments who are suffering from the slow period in building, and are interested to appreciate their tax base.

Actually, the Act has backfired the very intent of it. It was thought of primarily to provide equitable distribution of urban land for housing. In reality it has done incalculable damage to the housing activity in the country. It has paralyzed private building activity, where out of every 5 house constructed, 4 used to be in the private sector. The reason is that the imposition of this Act was not related to the planning functions of urban areas. Several members of the Institute of Town Planners, India have discussed the detrimental effect of the Act.²⁸³ The pressing issue led to a national seminar organized by the Centre for Urban Studies, Indian Institute of Public Administration at New Delhi in 1978. General observation in the seminar was that the implementing policies should be left to the local committee and state planning. The state of Rajasthan was cited to have taken a wise lead in setting up a separate directorate in the planning department for dealing with urban ceiling matters.²⁸⁴ As Bhargava has pointed out,

"To effectuate the Urban Ceiling Act a new machinery is required rather than the 'designated authority'. They do not have any physical planner, or physical planning background (amongst them) to oversee and look for planning implications involved in giving exemption or otherwise, and enforce ceiling laws in built-up and vacant lands. Without having an adequate and appropriate institutional machinery (and in certain cases not even a Master Plan) any enforcement on an erroneous premise (however, good synoptically) would lead to a development of different set of economic and social forces in that urban economy, thereby developing an altogether different pattern of growth"²⁸⁵

²⁸³ To cite a few : Swamy, M. C. K.; "Implications of Urban (Ceiling and Regulation) Act for Urban Planning," *Journal of the Institute of Town Planners, India*, Vol.90, June 1976.; Mittra, P. C.; "Urban Land Ceiling Act : Need for Restructuring it," *Civic Affairs*, Vol.27, No.8, March 1980.; Khanna, P. C.; "The Urban Land (Ceiling) and Some Pros and Cons," *Journal of the Institute of Town Planners, India*, Vol.90, June 1976.; Ribeiro, E. F. N.; *An Overview of Urban Land Policies and Land Use Control Measures in India*, Delhi Development Authority, October, 1981.

²⁸⁴ Rao, G. B. Krishna; "Urban Land Ceiling Act : Emerging Problems and Vistas in Urban Development," in Bijlani, H. U. and Balachandran, M. K. (ed); *Law and Urban Land*, Seminar Proceedings of Centre for Urban Studies, Indian Institute of Public Administration, New Delhi, 1978.

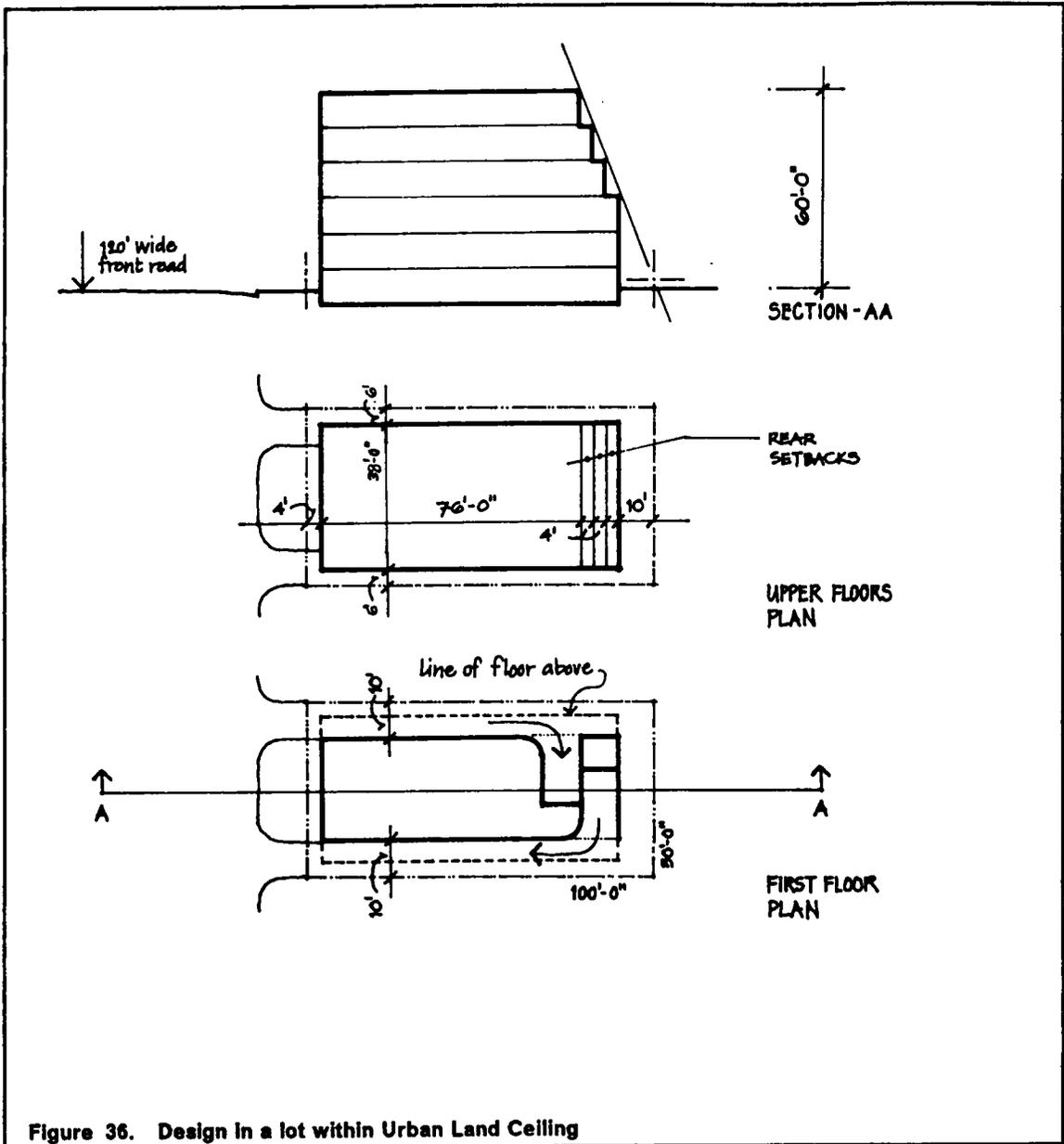
²⁸⁵ Bhargava, Gopal, op. cit., p.68.

An analysis of a case abiding the ceiling limit will clearly demonstrate the adverse effect of the Act over urban property development process. Let us consider a 5,000 sq. ft. lot (ceiling limit being 5,400 sq. ft. maximum) having 50' frontage on a 120' wide road. The base FAR permissible for office building is 4.5, which including the 10 per cent bonus for basement parking will be $(4.5 + 4.5 \times .1)$ 4.95. Total allowable potential of the lot would be $(5,000 \times 4.95)$ 24,750 sq. ft.. The floor area calculations are similar to that of the low-rise design discussed in the sending area. Leaving all mandatory open spaces, the build-able area remains within the 2/3rd maximum lot coverage requirement. A low-rise design will have floor areas as follows : (sketches in Figure 36 on page 229)

First Floor	30 x 86	=	2,580	sq. ft.	
Basement		=	2,580	sq. ft.	
Second Floor	38 x 86	=	3,268	sq. ft.	
Third Floor	38 x 84	=	3,192	sq. ft.	(rear setback starts)
Fourth Floor	38 x 80	=	3,040	sq. ft.	
Fifth Floor	38 x 76	=	2,888	sq. ft.	
<hr/>					
Total Area		=	17,548	sq. ft.	

The low-rise proposal cannot generate the full potential of the lot. A high-rise alternative is also not workable in such small lots simply because leaving the mandatory side, front, and rear spaces the building coverage becomes too small. In this case the lower floor area will be only $\{[50 - 22 \text{ (side spaces)}] \times [100 - 11 \text{ (front space)} - 23 \text{ (rear space)}]\}$ 1,848 sq. ft.. A standard service core including the elevator shafts, lobbies, the staircases, and toilets will take a minimum of 20 per cent of that space. That is, the net rentable space in the lower floor will be only $(1,848 - 1,848 \times .2)$ 1,480 sq. ft.. And worse even, the areas in the upper floors will be further reduced due to the rear setbacks (since the abutting front road is 120' wide, the front angle will apply only if the building exceeds 180' in height). In such a situation, when standard permissible potential cannot be achieved, a TDR bonus shall have no attraction at all.

Now, if the previous case of a 100' x 200' lot on the same road is considered, the maximum permissible bulk including 10 per cent bonus for basement parking plus 20 per cent TDR

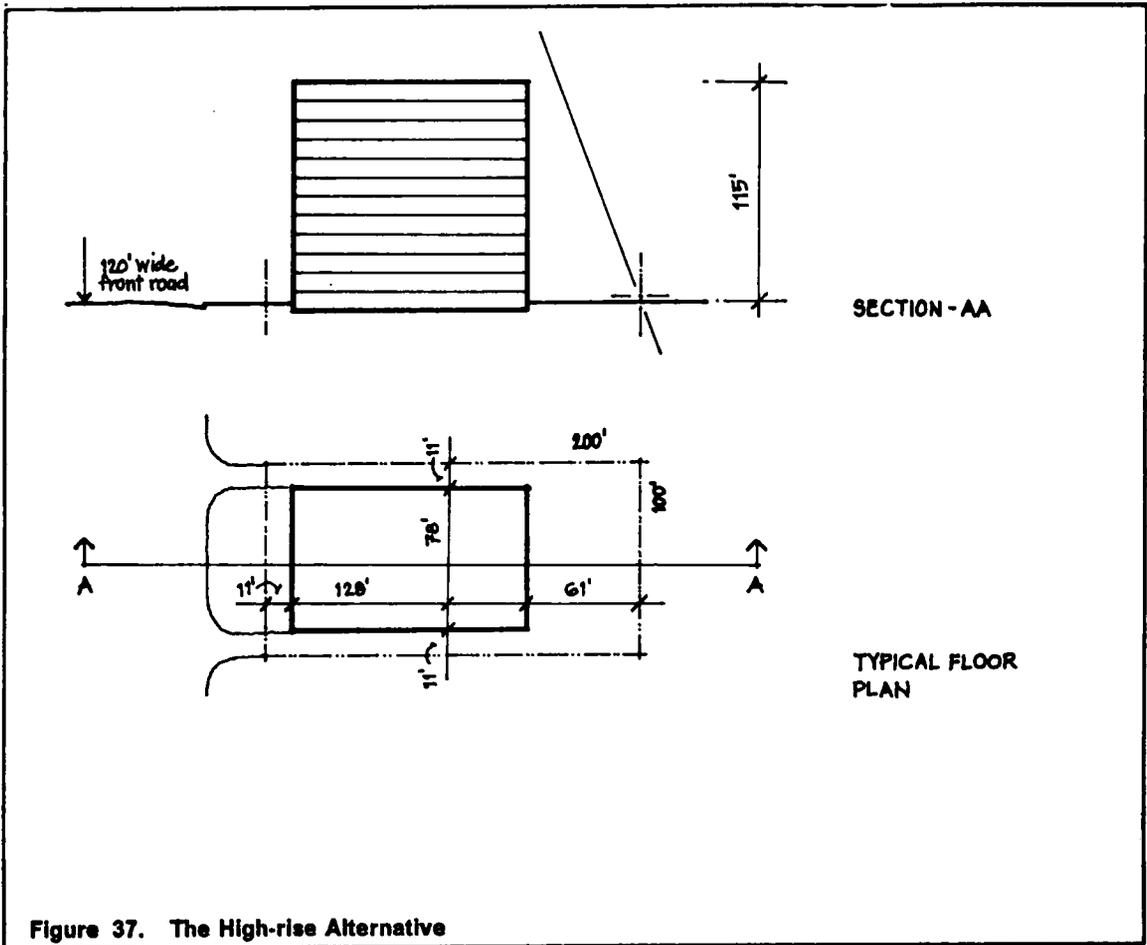


coverage will be $(100 \times 200 \times 5.85)$ 117,000 sq. ft.. As analyzed earlier, the low-rise alternative can generate a maximum of 79,998 sq. ft.. Therefore, the high-rise alternative will have to be considered to cover the shortfall. The front, side and rear spaces leave a $\{(100 - 22 \text{ (side space)}) \times \{200 - 11 \text{ (front space)} - 23 \text{ (rear space)}\}\}$ 78' x 166' building line, i.e; 12,984 sq. ft.. But the maximum ground coverage rule for buildings exceeding 18 meters height is only 50

per cent of the lot area. Therefore, only a maximum 10,000 sq. ft. floor can be built in this site for a building taller than 18 meters. This means that more space has to be left open than required by the side, front and rear open space requirements. This needs design considerations to decide where such additional open space can be located for best advantage of the proposed building. Since the abutting 120' wide road and the 11' front space allow an uninterrupted height of $[(120 + 11) \times 1.5] 196.5'$, there will be no need for further front space. Leaving the space open at the rear, on the other hand, would permit greater number of floors without a rear setback. A typical floor measuring 78' x 128', i.e; 9,984 sq. ft. (less than 50 per cent ground coverage) will leave a 61' rear space, which would allow a straight rear rise up to $(61 \times 2.5) 152.5'$ without any setback. A design of 11 floors plus a basement within 36 meters height can be proposed, which will generate $(9,984 \times 12) 119,808$ sq. ft. (sketches in Figure 37 on page 231). Therefore, if a 20,000 sq. ft. land can be assembled, the existing regulations will permit absorption of standard 20 per cent additional density from TDR transfers without going into complicated special provisions of the by-laws.

Since assembly of land is a crucial factor for a redevelopment project to have capacity to absorb additional bulk, this can be thought of as an additional incentive to make developers interested in TDR transfers. For example, if purchase of TDRs promises a developer the exemption from ULCR approval requirements, it will make the TDR program attractive. At the same time, it will also render TDR absorption possible by allowing a feasible scale of the projects.

As it is now, assembly of land cannot really be stopped by ULCR restrictions. As discussed earlier, corporate or cooperative ownership of a large land help by-pass the ULCR requirements. Therefore, the proposal to offer exemption from ULCR approvals in exchange for buying TDRs from landmark buildings is only to make the process easy by avoiding a redundant legislation, which in any case will be permitted after a complicated legal maneuvering. How big an assembly may be permitted, will be a question to be answered after considering relevant issues of ULCR, and by determining after what level the scale of development becomes



inappropriate according to current building regulations. In any case, a bigger assembly shall not be an obstacle to the TDR program. From this concern, it is important to determine how small can be an assembly of land to feasibly absorb, say, a standard 20 per cent TDR bonus.

This can be calculated by a small exercise as follows :

$$\text{Maximum FAR including 10\% basement parking bonus} + 20\% \text{ TDR bonus} = 4.5 + (4.5 \times .1) + (4.5 \times .2) = 5.85$$

A 10,000 sq. ft. lot can be developed in high-rise design with 50% ground coverage for 11 floors + basement (within 36m height).

The total built-up area will be $5,000 \times 12 = 60,000$ sq. ft., i.e; a development of $(60,000 / 10,000)$ 6 FAR. 5,000 sq. ft. office floors are minimum acceptable in Calcutta standards.

This theoretical calculation can be checked considering a case of similar scale. For instance, let us consider a site of 75' frontage x 150' deep on a road allowing 4.5 base FAR. A building line of 53' x 116' comes out leaving necessary front, side and rear spaces. But this area, 6,148 sq. ft., is more than 50 per cent of the lot. Hence, a bigger rear space will have to be left open, and the size of floors in different levels will be as follows :

Floor 1	52 x 108	=	5,616	sq. ft.	
Basement		=	5,161	sq. ft.	
Floor 2 to 8	5,616 x 9	=	50,625	sq. ft.	
Floor 9	52 x 103	=	5,356	sq. ft.	(rear setback starts)
Floor 10	52 x 99	=	5,148	sq. ft.	
Floor 11	52 x 95	=	4,940	sq. ft.	
<hr/>					
Total Area		=	66,069	sq. ft.	

FAR generated = $66,069 / (150 \times 75) = 5.87$, which is fairly close to 5.85 FAR allowable in exchange for TDR purchase. Thus, if a minimum 10,000 sq. ft. site can be assembled, it would be possible to absorb 20 per cent TDR bonus. This means allowing double the ceiling size assembly as the minimum feasible site for TDR transfers. Legally what it means is only two partners in the ownership of the lot. A TDR program in Calcutta, therefore, will be feasible without any major change in the building by-laws except for a relaxation in the ULCR approvals. Further, the public development agencies such as the CIT, Housing Board and the Corporation of Calcutta are not restricted by the ULCR Act; and developments by these agencies will not need such relaxations to be able to absorb additional density through TDR transfers. However, as observed in the New York City case compared to that in San Francisco, the identification of the receiving sites – both inside the old CBD as well as outside – and the assembly of land must be clearly worked out in a detailed urban design to form part of the comprehensive plan.

6.3.3. TDR Prices : Sending vs. Receiving Areas

The TDR program in Calcutta will have receiving areas in the old core as well as in the north and south districts along the rapid transit line in junctions with the Circular Railway and surface main roads. The sending area, however, will be primarily in the BBD Bag area. The analysis of the pricing factors shall have to be done comparing the loss due to designation in the sending area, to the gain in the receiving areas through TDR transfers. While the calculation for the loss due to designation will be one concerning the old core sending district, that for the receiving areas will be three -- for the receiving areas in the BBD Bag and Esplanade, for the north district (north of Shyam Bazar 5-street crossing), and for the south district (south of Circular Road crossing).

Most often the crucial problem in a TDR program is the pricing issue, i.e; provision of a fair compensation from the proceeds of TDR transfers. As mentioned in the previous chapter, the pricing issue of TDR is easily resolved when the transfers drift from a low land price area to a high land price area (e.g; the Montgomery County, Maryland case). The issue becomes difficult when the flow of TDR is the other way around, i.e; from a high land price area to a low land price district. The transfers within the BBD Bag and Esplanade area, therefore, may not have a pricing problem; but that in the north and south districts will perhaps have a problem in this regard. The scale of the problem may be assessed after calculating the difference of values; but the trend in land price and rent rates will have to be considered to comprehend the nature of the problem, and its forthcoming implications. First, the quantum of values and difference will be analyzed through detail computations of all relevant factors. It will be worked out for the sending district, and then also for 3 receiving districts. After that, an analysis of the development trends in the sending and receiving districts will also be done.

The Value at the Sending Sites

The value of TDRs at the sending sites should be equal to the difference between the existing landmark property's value, and its value if developed to the full potential. This difference in value is best calculated in terms of incomes. The focus is on the net annual income from the building after deducting real estate taxes and operating expenses. The method following which such calculations are usually done is the Land Residual Method. This method is preferred because it takes into account all possible cost and benefit factors, and can be used for calculating both the loss due to designation as well as the gain due to TDR transfers. The factors this method includes are :

1. a building cost estimate
2. net income before recapture (NIBR)
3. income residual imputable to the land determined after deducting the income required for the improvement including interest and recapture.
4. market value determined by capitalizing the land residual at current interest rates.

After NIBR and the cost estimates are known, a capitalization rate applicable to the project is determined by examining current interest rates for long-term mortgages and selecting an appropriate projection period. According to the current practice in Calcutta, a 13.5 per cent interest rate and a 50-year period are used in this analysis. Although a simple straight-line capitalization may be used, a sophisticated process using the 'Inwood Factor'²⁰⁶ is also employed as it gives consideration to reinvestment value of invested funds. The annual capital requirement for the building is determined multiplying the total cost of the building by the capitalization rate. The residual income is then obtained by deducting the annual capital requirement from the NIBR. This residual income is then capitalized into perpetuity at the market rate of interest.

²⁰⁶ The Inwood Factor is a method for determining the present worth of an income stream, utilizing principles of compound interest. The present worth is the basis of interest and amortization tables for the customary full amortizing mortgage. Features of the Inwood Method are : (1) Annual income requirement, to satisfy recapture and interest, is an equal annual amount; (2) recapture installments are relatively low to begin with but increase each year; (3) interest is received each year on the remaining amount of investment. (Costonis, John J.; op. cit., 1974, p.90.)

For the purpose of calculating the loss due to designation, the factors of operating expenses and real estate taxes are to be considered separately for an old landmark building and a new replacement building. The standard operating cost in the core of Calcutta for a new building will be around 20 per cent of the effective gross income, whereas that for the old landmark building could be as high as 30 percent because the old structures are typically less efficient. The real estate taxes for a designated property is usually reduced by 25 per cent to relieve the economic loss.²⁸⁷ The current 17 per cent real estate tax in the CBD of Calcutta would be reduced to 12.75 per cent for the designated landmark buildings. The vacancy and credit loss, however, will remain common to both buildings at a 5 per cent of the gross income.

The NIBR for both the existing landmark building and the potential building can be calculated by deducting vacancy and credit loss from the gross income to determine the effective gross income, and then subtracting the real estate taxes and operating expenses from the effective gross income. The gross income is obtained multiplying the rentable area by the rental rates. The rental rate for some of the landmark &bls. may be a little higher due to the prestige value; but considered equal for this analysis as the prestige value may not be typical or equal. An estimation of construction cost for the potential building is then made. The capitalization rate (Inwood factor) is determined from a standard table by matching current interest rate to the period of projection. The construction cost multiplied by the capitalization rate shows the amortized annual building cost including financing i.e; the amount of money required every year to pay for the construction loan with interest. This amount deducted from the NIBR gives the residual income. The NIBR for the old landmark building, and the residual income for the potential building can be capitalized for perpetuity at the current rate of interest. The difference between these two figures will be the loss due to designation. This loss is usually expressed in terms of money per sq. ft. of unused potential.

²⁸⁷ This, indeed, is a subsidy as it raises the net income from the existing landmark building and thereby reduces the loss to be compensated. However, the tax received from the unused potential transferred and developed elsewhere more than compensates this subsidy loss of the City.

For analysis, let us consider two prospective sending sites; the Collectorate Building in the BBD Bag area, and the Kanak Building in the Esplanade area. The existing area in the buildings in the Collectorate site is 25,000 sq. ft. whereas the potential is 160,560 sq. ft.. The existing built-up space in the buildings in the Kanak Building site is 144,900 sq. ft. while a replacement building could be as big as 415,800 sq. ft.. The difference in value between the existing and the potential buildings in these two cases can be computed as shown in Table 5 on page 237.

The income loss due to designation is the potential income minus the income from the existing building. This means, the income loss is a function of the usable area in the existing building as percentage of the potential total area. This is the reason why the cost of TDR per sq. ft. has varied between the examples analyzed above. In the Collectorate premises, the existing building is about 16 per cent of the potential bulk, and that in the Kanak Building is around 35 per cent. In the St. John's Compound, the existing built-up area is only about 4 per cent of the site's potential. In the General Post Office premises, the existing buildings cover roughly 30 per cent of their potential volume. The cost of TDR from St. John's property, therefore, will be higher than that from the Collectorate Building. The cost of TDR from the GPO premises will be higher than that from the Kanak Building, but will be lower than that from the Collectorate Building. Although there will be this variation in the cost of TDR from the landmark properties depending on how much of the potential is currently in use, it can be generally stated that the price of TDR will be between Rs. 525 and Rs. 575 per sq. ft., or an average of about Rs.550 per sq. ft..

The Price at the Receiving Sites

It is understandable that a developer will pay a price for development rights which is proportionate to the value that they add to his site. What this means is that the purchase of devel-

	Collectorate Building		Kanak Building	
	existing	potential	existing	potential
Gross Building Size (sq.ft.)	25,000	160,560	144,900	415,800
Efficiency Factor	.75	.80	.75	.80
Net Rentable Space (sq.ft.)	18,750	128,448	108,675	332,640
Average Rent Rate (Rs.)	240	240	240	240
Gross Income (Rs.)	4,500,000	30,827,520	26,082,000	79,833,600
Vacancy & Credit Loss @ 5% of Gross Income (Rs.)	225,000	1,541,376	1,304,100	3,991,680
Effective Gross Income (Rs.)	4,275,000	29,286,144	24,777,900	75,841,920
Real Estate Taxes (Rs.)	545,062	4,978,644	3,159,182	12,893,126
Operating Expenses (Rs.)	1,282,500	5,853,628	7,433,370	15,168,384
NIBR (Rs.)	2,447,438	18,453,872	14,185,348	47,780,410
Construction Cost @ Rs. 250 per sq. ft. (Rs.)		40,140,000		130,950,000
Capitalization Rate 13.5% interest & 50 year projection		.1372		.1372
Annual Building Cost Requirement (Cost x Capitalization Rate) (Rs.)		5,507,208		14,261,940
Residual Income (Rs.)		12,946,664		33,518,470
Capitalized Value @ 13.5% interest (Rs.)	18,129,170	95,901,214	105,076,650	248,284,960
Income Loss (Rs.)		77,772,044		143,208,310
Cost of TDR per sq. ft. (Rs.)		573.70		528.60

Table 5. Income Loss calculations for Sending Sites

opment rights is tantamount to purchase of additional land. In a simple calculation, the developer will distribute the total land cost over permissible total built-up area to arrive at a figure representing land cost factor per developable sq. ft.. If the land is in the core area, the

100'x 200' lot will cost $(100 \times 200 \times 2780^{298})$ Rs. 55,600,000. The total developable bulk with 10 per cent basement bonus is $(20,000 \times 4.95)$ 99,000 sq. ft.. Hence, the land cost factor per developable sq. ft. equals to $(55,600,000 / 99,000)$ about Rs. 560. If a 20 per cent coverage is allowed through TDR transfer, the total allowable bulk will be $(20,000 \times 5.85)$ 117,000 sq. ft.. The land cost factor per sq. ft. in that case will drop down to $(55,600,000 / 117,000)$ about Rs. 475. This means a saving of $(560 - 475)$ Rs. 85 per sq. ft. of built-up area, i.e; a total saving of $(117,000 \times 85)$ Rs. 9,945,000. After this calculation on the basis of land price, the developer will also work out sophisticated computations involving the construction cost, mortgage loan, current interest rates and current rental rates to assess the cost vs. benefit picture.

As discussed earlier, the method normally used in such real estate computations is the Land Residual Method. The NIBR can be calculated following the process as was done for the sending sites. The annual building cost requirement is determined using the capitalization rate (Inwood factor) as a multiplying factor to the capital cost of the building. This deducted from the NIBR gives the residual income which can be then capitalized at market interest rate.

The income from a building depends on the market rental rates which vary depending on location, opportunity cost, etc. usually reflected in the land price.²⁹⁹ The current land price in the core is about Rs. 2,780 per sq. ft.; that in the north district (near Shyam Bazaar 5-Street crossing) is around Rs. 1,120; and in the south district (near Charu Market area) Rs. 850. Current rent rates are Rs. 240 per sq. ft. in the core, Rs. 75 in the north district, and Rs. 50 in the south.³⁰⁰ The construction cost in the core area is currently placed at around Rs. 250 per sq. ft. including basement and foundation. This in the north and south districts will be roughly

²⁹⁸ Current land price in the BBD Bag area is about Rs. 2,000,000 per *katha*. One *katha* equals to 720 sq. ft.. Land cost per sq. ft., therefore, is $(2,000,000 / 720)$ Rs. 2,780 (Letter from Mr. Subimal Ghosh, Managing Director of M/S. Ghosh, Bose & Associates P. Ltd., the leading Architects, Engineers, Town Planners and Valuers firm in Calcutta, March 12, 1988).

²⁹⁹ The land price is, actually, a forerunner of the trend in rent levels. Typically the land prices appreciate on the basis of future potential of the land, but the rent levels do not immediately pick up as the opportunity cost is a factor that develops after a lead time.

³⁰⁰ Letter from Mr. S. Ghosh; *ibid*.

225 per sq. ft. considering savings in mobilization and work room, etc. in the less compact morphology of these areas.

It has been found in the previous analyses that an 11-storied building with a basement will have to be built to absorb 20 per cent TDR overage in a 100' x 200' lot. According to current building regulations, elevators and numerous fire protection arrangements are necessary if the building is taller than 18 meters. The standard practice in elevator, mechanical systems, and water supply, etc. design does not require staging if the building does not exceed a 20 floors height. What this means is that the absorption of the 20 per cent overage in the form of TDR is possible without involving additional cost in elevator and mechanical systems, and with marginal increase in the foundation cost. Indeed, when there is a basement floor in the proposed building, the whole basement can be designed to act as a hollow cap on the foundation piles; and the increase in foundation cost from an 8 storey-high building to one 11 stories high shall be rather insignificant. Taking into account these cost considerations, the construction cost for the additional 20 per cent bulk should be around Rs. 225 in the core, and Rs. 200 in the north and south receiving districts.

Using the Land Residual Method, and considering a 20 per cent overage in exchange for TDR transfer the values of TDRs are computed for 3 sending areas - the BBD Bag and Esplanade area, the north, and the south receiving districts. The differences among these 3 locations in the rent levels and construction cost are already mentioned. There will also be differences in the tax and operating expense rates. The comprehensive plan under preparation is thinking of a deliberate tax incentive for dispersal of development away from the core to the peripheral areas. Frequently suggested tax rates in these newly developed area is 11 per cent whereas that in the core is 17 per cent. The operating expenses in the core is about 20 per cent of the effective gross income; but that in the north and south districts will be around 15 per cent. This is primarily because of the difference in the rent of the spaces used up in operating plants and staff offices. The computation of the values of TDR in these 3 locations can be done as shown in Table 6 on page 240.

	Receiving Site BBD Bag or Esplanade Area	Receiving Site North District	Receiving Site South District
Site Area (sq.ft.) (100' x 200')	20,000	20,000	20,000
Additional Area (sq.ft.) (20% overage for TDR transfer)	18,000	18,000	18,000
Efficiency Factor	.8	.8	.8
Net Rentable Area (sq.ft.)	14,400	14,400	14,400
Gross Income (Rs.)	3,456,000	1,080,000	720,000
Vacancy & Credit Loss @ 5% of Gross Income (Rs.)	172,800	54,000	36,000
Effective Gross Income (Rs.)	3,283,200	1,026,000	684,000
Real Estate Tax (Rs.)	558,144	112,860	75,240
Operating Expenses (Rs.)	656,640	153,900	102,600
NIBR (Rs.)	2,068,416	759,240	506,160
Construction Cost (Rs.)	4,050,000	3,600,000	3,600,000
Capitalization Rate 13.5% interest & 50 year projection	.1372	.1372	.1372
Annual Building Cost Requirement (Cost x Capitalization Rate) (Rs.)	555,660	493,920	493,920
Residual Income (Rs.)	1,512,756	275,320	12,240
Capitalized Value @ 13.5% interest (Rs.)	11,205,600	2,039,407	90,666
Price of TDR per sq. ft. (Rs.)	622.5	113.3	5.0

Table 6. Income Gain calculations for Receiving Sites

TDR prices calculated in Table 6 show that the price will be more than the average of Rs. 550 per sq. ft. in the receiving sites in the BBD Bag and Esplanade areas. But they will be a less in the north and south receiving districts. The preliminary calculation on the basis of land price indicated a saving of Rs. 9,945,000 for building 18,000 sq. ft. extra as TDR bonus in a lot measuring 100'x 200' in the old core. That is, a TDR price of $(9,945,000 / 18,000)$ Rs.552.5 per sq. ft.. The calculations involving all cost and benefit factors indicate that actually a higher price (Rs. 622.5) will be affordable by the developers for transfers in BBD Bag or Esplanade areas. Same land price based calculations for the north and south receiving districts on a 100'x 200' lot are shown in Table 7 on page 242.

It is interesting to note that the land price based calculations do indicate a much higher TDR prices in both these districts (in the north district about double, and in the south district around 34 times higher). A logical explanation of this dichotomy is perhaps the fact that the land prices have already gone up whereas the rental rates are still awaiting opportunity cost to develop. It is, however, important to note here the trend in rent rate appreciation. In 1979-80, after the imposition of the Calcutta Municipal (Amendment) Act in 1977, the rent rate in the old core was around Rs. 200 per sq. ft. That in the north district was then about Rs. 35, and in the south district roughly Rs. 15. Comparing these rates with those current, it can be observed that the rent rate has since gone up by about 20 per cent in the core; while in the same period that in the north district has appreciated by about 115 per cent, and in the south district by about 235 per cent. Thus, it will be reasonable to believe that within a short time the TDR prices on the residual income basis will also appreciate considerably in these districts. The land price base calculations suggest only that. However, it should be concluded at this point that until the TDR prices based on residual income do not come to an equilibrium level with at least the 'fair' compensation price in the sending sites, the TDR receiving sites in Calcutta will have to remain limited within the BBD Bag and Esplanade areas.

		North Receiving District	South Receiving District
Area of the Site (100'x 200')	(sq.ft.)	20,000	20,000
Land Cost	(Rs.)	22,400,000	17,000,000
Potential before TDR Transfer	(sq.ft.)	99,000	99,000
Land Cost / sq. ft.	(Rs.)	226.3	171.7
Potential after TDR Transfer	(sq.ft.)	117,000	117,000
land Cost / sq. ft.	(Rs.)	191.5	145.3
Saving in Land Cost / sq. ft. for TDR Transfer	(Rs.)	34.8	26.4
Total Saving	(Rs.)	4,071,600	3,088,800
TDR price / sq. ft.	(Rs.)	226.2	171.6

Table 7. TDR Prices on the basis of Land Price

7. Conclusion

The analyses of the previous chapter have revealed that a TDR program can be applicable in Calcutta without major revision in the existing building regulations. In general, the program can be introduced by incorporating in the building by-laws the regulations which will allow the owner of a designated landmark property to sell his unused development rights. Consequently, regulations to allow the buyer of those rights an overage of density in his building projects elsewhere are also to be instituted. The unused potential of a landmark property is to be determined by calculating the shortfall in built-up area in the existing building from that of the replacement building allowable under current building regulations. Authorization of a development rights sale is to be contingent upon an agreement by the landmark owner to maintain the building in a manner approved of by the competent authority. In the receiving site, the TDR bonus will allow the additional bulk; but that has to be developed complying to other existing by-laws. However, apart from these basic components, the TDR program at Calcutta must also be governed by some other principles which are derived from the evaluation of the tool in the US programs, as well as from the testing of the tool in Calcutta situations.

7.1. Principles to Govern the TDR Program in Calcutta

The regulations learned through the examination of the TDR programs in the US and the questionnaire survey are general in nature. Any city planning to introduce a TDR program must incorporate these regulations as the basic principles. The examination of the US programs also indicated the potential features in which the conflict must be resolved considering the particular circumstances of the prospective city. The regulations found important through the testing of the tool in Calcutta situation are those particular to Calcutta. The regulations, both general and particular, are listed below, respectively. Following this there will be discussion on the necessity, basis and details of some of these regulations requiring further explanation and elaboration.

The General Principles

1. The receiving areas must be clearly identified. An approved urban design of these areas should be ready to offer predictability regarding the building potentials of the receiving sites. An estimation of the total additional density that can be absorbed in these sites is to be made to plan and prioritize the transfers from landmark buildings.
2. The program must *not* be governed with a strict adjacency and single ownership requirement.
3. A TDR inventory to be prepared in order of significance of the landmarks. The amount of unused development rights releaseable from the designated landmarks must also be ascertained. This is to be checked against the absorption capacity of the identified receiving sites, and priorities on the landmarks to be set accordingly.
4. The TDR sellers to be made responsible for the implementation of the conservation plan for the landmark building. A landmark owner to be eligible for marketing his unused development rights only after having the conservation plan and estimates required to preserve the landmark approved of by the competent authority.
5. The TDR buyers to be given incentive of a 'fast track' building permit approval.
6. A liaison organization to act as the 'single window' authority for the approval and administration of the projects involving TDR transfers. (This is referred to as the 'competent authority'.)
7. A TDR bank to be organized by holding the unused development rights from the public landmarks, and those donated from private and quasi-public landmarks.

The Particular Principles

1. The receiving sites for immediate transfers to be located in the BBD Bag or Esplanade areas. District-wise transfers to be allowed rather than only to physically attached sites. The receiving areas for future transfers to be identified in the north and south districts along the mass transit line.
2. The receiving sites in the BBD Bag area to be controlled by a set of design guidelines to ensure protection of the character of the old city core. An overage limit of 10 per cent may be applicable in this area. The overage limit in the Esplanade area may be raised to 20 per cent. A higher limit up to 30 per cent may be permitted in the north and south receiving districts.
3. The TDR inventory to include two lists – one for the landmarks having unused development rights, and the other for those without unutilized potentials. The landmarks in the second list to authorize an FAR bonus proportional to the expenditure required for their rehabilitation and maintenance.
4. Partial development in the sites containing landmark buildings to be allowed to reduce the amount of TDR supply. These developments must be compatible to the scale and character of the existing landmark building, and must be approved of by the competent authority.
5. A TDR buyer to be given the incentive of ULCR approval relaxation. The projects asking for such relaxation must include transferred unused potentials from a landmark close to the overage limit prescribed for the area.
6. The 'single window' liaison organization, the competent authority for the TDR program, to begin under one of the existing institutions in the city. The selection of this institutions to be made after careful consideration of the goals of these agencies relating to the TDR program.
7. Transfer of unused potentials from any property not designated as a landmark must not be allowed until the TDRs from the landmarks are exhausted.

The necessity and basis of the general principles listed above are adequately discussed in the evaluation and analysis chapters. While the rationale for the particular principles are well identified in the testing chapter, the basis and details of some of them requires further discussion.

7.1.1. The Need for Variable Overage Limit

First, the necessity of the variable overage limit suggested above for different areas in the city is to achieve two objectives simultaneously. As described in Chapter 2, the BBD Bag area has a particular character developed through the civic designs by the colonial rulers. The

scale and ambience of these areas ought to be proctored from getting disturbed by a tool, introduced in the first place, for urban conservation. The compact morphology of the Bag, and its constraining infrastructure and traffic conditions should not be subjected to intensive development. On the basis of this consideration an overage limit of 10 per cent has been suggested in this area. This, however, to be adjusted after trial in few pioneering cases.

The Esplanade area is less compact, and the vast expanse of the *Maidan* does allow certain degree of additional development on its boundary. Further, the underground mass transit line runs along the western edge of the *Maidan* parallel to the Chowringhee Road, augmenting the transportation facilities of this area to a considerable degree. Over the years Calcutta's CBD has been moving south-wards. Ever since the *Maidan* was cleared out of the Gobindapur jungle, the Chowringhee Road on its western boundary offered choice location for real estate investment. In the booming years of late 19th and early 20th centuries, the palatial houses of the *Nawabs* and the *Zaminders* on Chowringhee Road were taken over by the corporate headquarters, hotels, theaters and large scale retail houses. The growth propensity of this area will be an important means to implement the TDR program in Calcutta. Considering these factors an overage limit of 20 per cent will perhaps be reasonable. Again, this limit has to be adjusted according to the feedbacks from the first chain of transfer projects.

Secondly, the TDR program is also to supplement the planning goals of the comprehensive plan for the city. To make the TDR program a means to attract development in the northern and southern districts will be to allow a higher overage limit in these areas. The higher limit is also supported by the mass transit line and the augmented infrastructure facilities in these areas. It has been found in the survey that the overage limit should not be more than 30 per cent of the zoned density. To supplement the planning goals through the TDR program, the overage limit in these development areas may be set at a maximum of 30 per cent. However, a flat 30 per cent overage may not be suitable for all the sites. Indeed, the allowable overage should follow the variable FAR system in the city. The overage limit may be highest on the roads allowing maximum FARs, and then gradually lower on roads with lower FAR limits. The

overage may be 30 per cent on 120' wide roads with FAR of 4.5, 25 per cent with 4.0 FAR, 20 per cent with 3.75 FAR and so on. Whatever may be the graduation, they must be decided upon an approved urban design, and clearly spelled out to offer distinct predictability and less discretionary options with regards to the building potentials of different transfer sites.

7.1.2 The Dual Landmark List and Program Implications

While the landmarks with unused development rights are major elements in the TDR program, those without such development rights should also be included in the program to achieve the primary objective of urban conservation. The landmarks without unutilized density should be in a separate list with assessment of their rehabilitation and maintenance needs. Cost of their rehabilitation and maintenance works can be raised in exchange for additional density in the receiving sites. For example, if a landmark without unused potential will require say one million Rupees for its restoration and a fixed deposit for maintenance,²⁹¹ a developer of a receiving site may be allowed to increase the density by an area worth one million Rupees according to the TDR prices of that receiving site. The current TDR price as calculated in Table 6 on page 240 is about Rs. 620 per sq. ft. in the BBD Bag and Esplanade areas, and about Rs. 115 per sq. ft. in the north district. An expenditure of one million Rupees will allow the developer additional density of about 1,600 sq. ft. in the Bag or Esplanade area, or about 8,700 sq. ft. in the north district. This additional bulk allowable in exchange for landmark restoration, rehabilitation and maintenance must be controlled by the stipulated overage limit of the district where the transfer will take place.

The landmark buildings without unused development rights are indeed existing buildings developed in full, or may be in excess, potential according to current regulations. Since a re-

²⁹¹ Yearly maintenance to be taken care of by the interest earned yearly from the deposit in a bank. An assessment of the yearly maintenance requirement will indicate the amount to be deposited in relation to the rate of interest.

placement building will not be bigger, and since demolition of the existing building may involve the ULCR approval complications, the owner of such a landmark property should be more than interested to take good care of his building. An unqualified provision of rehabilitation and maintenance may be misused if the obligation of the owners of such landmarks will only be an agreement of keeping the building unaltered, which they have to keep anyway. Therefore, this provision must contain the requirement of demonstration by the landmark owner of the need for such assistance. To be eligible to participate in the TDR program, a landmark owner of this category must prove that the income from the landmark building is below a certain level. In New York City the level is annually 6 per cent of the property's gross valuation. This was thought to be rather low by the authors of the Chicago Plan. The fact that it has not so far been challenged in the Courts in the harsh real estate market of New York is indicative that the level is acceptable by the general building industry. However, the level in Calcutta must be ascertained through proper studies and research of the real estate market conditions and cost factors in Calcutta.

7.1.3. Tailoring the TDR Inventory

The case studies have indicated that one of the major problems in a TDR program is the amount of unused potentials that releases from the designated landmark buildings. The program at Calcutta will not have as big a problem as that in New York City; nevertheless, the inventory of TDRs must be prepared with clear identification of the landmark building(s) in each site, as well as identifying those not significant in that site. This is important because after such an identification the sites having landmark buildings may accommodate certain amount of development, and thereby will have lesser amount of unused potential to sell as TDRs. Let us, for example, consider the Collectorate site and the Kanak Building site in this regard to analyze what difference this may make, and what other considerations it might involve.

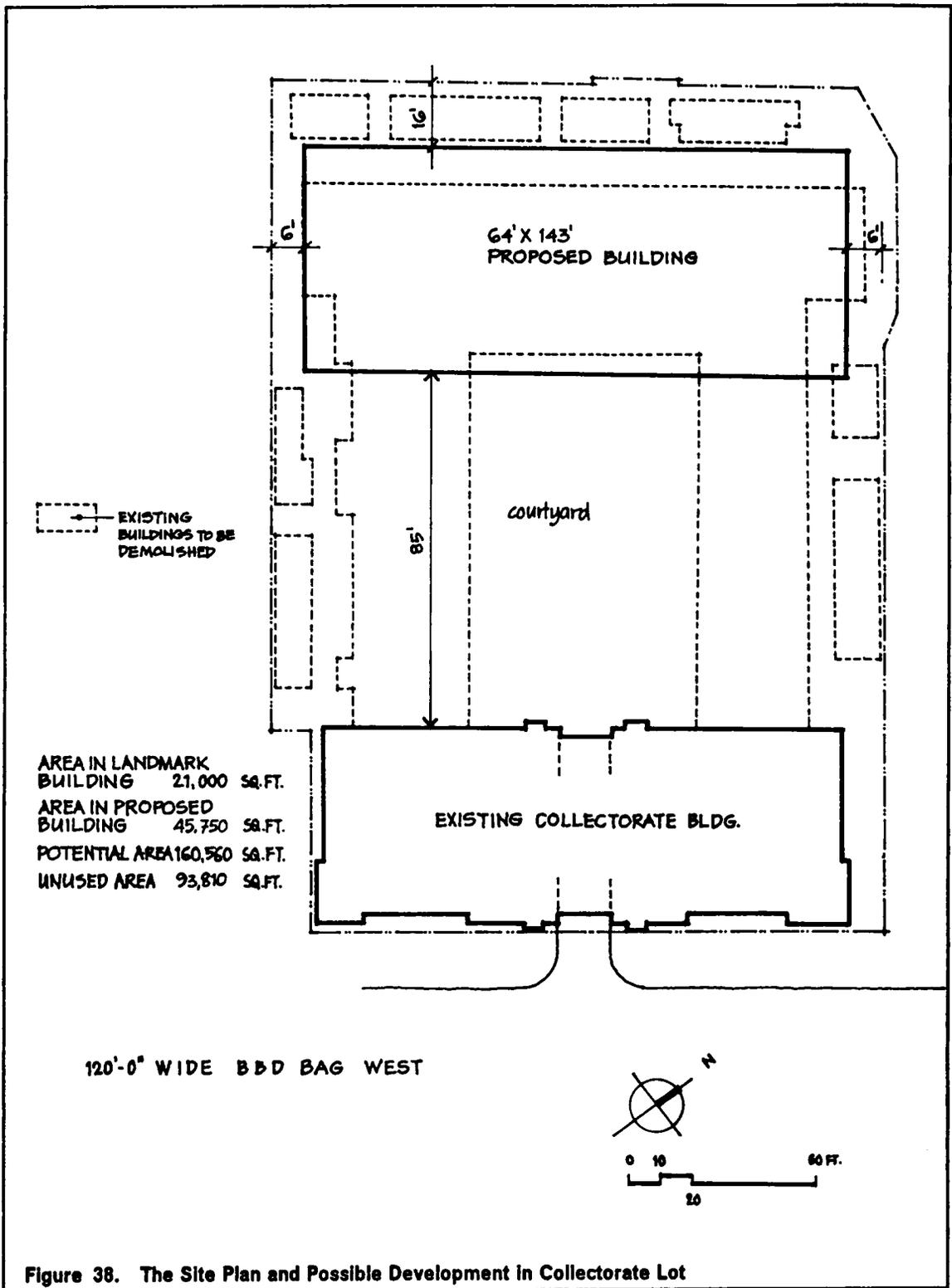
The total area of Collectorate site is 35,680 sq. ft.. The buildings it contains are the main Collectorate Building at front abutting the front street, and some single storied buildings at rear (existing site plan shown in Figure 32 on page 222). Of them, only the 3-storied Collectorate Building is of distinguished character which merits conservation. The buildings at rear may be demolished with almost no harm to the landmark building, and may accommodate a modest development. The development in the landmark site, however, has to be in harmony with the existing building, and there ought to be a well through out design guidelines to regulate such a development. While design elements and features of such guidelines need thorough research, there is no doubt that a development of this nature must follow the height and scale of the landmark building beside. In this case, a 4-storied building may be proposed within the height of the Collectorate Building.²⁹² A tentative position and coverage of a proposed building behind the Collectorate Building is shown in Figure 38 on page 250.

The landmark building covers 7,000 sq. ft. of the lot and rises 3 stories to a total height of 42'-0". Total built-up area in the landmark building is about 21,000 sq. ft.. The building developable at rear can cover about 64'x 143', i.e; about 9,150 sq. ft. leaving an adequate distance of 85' from the landmark building.²⁹³ The total bulk in this building in 4 floors plus a basement will be (9,150 x 5) 45,750 sq. ft.. Together with the landmark building the total built-up space will be (21,000 + 45,750) 66,750 sq. ft.. The total potential of the site considering the base FAR of 4.5 is 160,560 sq. ft.. After the development at the rear, the amount of unused potential will be (160,560 - 66,750) 93,810 sq. ft.. Allowing a modest development at the rear part of the site, about 45,750 sq. ft. will be prevented from entering the TDR inventory.

Similarly, in the Kanak Building site the L-shaped landmark building is located at the corner of the Chowringhee Road and the Middleton Street. Other buildings in the site include a

²⁹² Considering the current practice of low floor heights in new constructions, and the lofty 14'-0" height of the existing landmark building.

²⁹³ The 85' distance considered adequate following the rule of thumb that approximately twice the height of the building to be required for full appreciation of the facade (Ashihara, Yoshinobu; *Exterior Design in Architecture*, Van Nostrand, New York, 1981).



two-storied structure at the other corner on the Middleton Street and the Russel Street, one single-storied shed abutting the Russel Street, another single storied structure with end on the Russel Street, and a 4-storied house behind the shed facing the Russel Street (existing site plan shown in Figure 33 on page 223). Except for the main Kanak Building all other buildings in this site are of no significance, architecturally or historically. Their demolition will permit a sizeable development in the lot keeping height and volume relation to the landmark building.

The total area of the lot is 92,400 sq. ft.. Total built-up area in the landmark building is about 97,600 sq. ft. with a ground coverage of 32,100 sq. ft.. Most of the building is 3 floors high, with a rear section of the arm on the Middleton Street being 4 floors tall. Each floor of the building is 16'- 0" high, and with the plinth the facade of the building is around 50'- 0" tall. A building at rear corner, and abutting the Russel Street may safely rise for 5 floors with 10'- 0" height of each floor. A tentative disposition of a possible building, a reverse L-shaped block, is shown in Figure 39 on page 252. According to this design, each floor may cover 19,200 sq. ft.. The total built-up space in 5 floors plus a basement will be $(19,200 \times 6)$ 115,200 sq. ft..

With 4.5 FAR on the Chowringhee Road, the total potential of the lot is 415,800 sq. ft.. Existing built-up area in the site is 144,900 sq. ft., i.e; if all the buildings were to be retained, the unused potential will be 279,900 sq. ft.. Now, if the insignificant buildings in the site are replaced by a building of agreeable size and height, the total generated area in the site becomes $(97,600 + 115,200)$ 212,800 sq. ft.. This means, the remainder potential will be $(415,800 - 212,800)$ 203,000 sq. ft., i.e; about 76,900 sq. ft. will not be allowed to be in the TDR inventory.

It is, however, to be noted that such partial development will not be possible in many landmark sites, and may not be taken as a general rule. It may also happen that demolition of the unimportant buildings in the site may not create enough room to feasibly place a new building according to the building regulations, or may be due to the shape and size of the lot. Ground coverage may also be a constraint. Finally, a clearing in the site may actually be necessary to create adequate open space around the landmark building. Notwithstanding all this con-

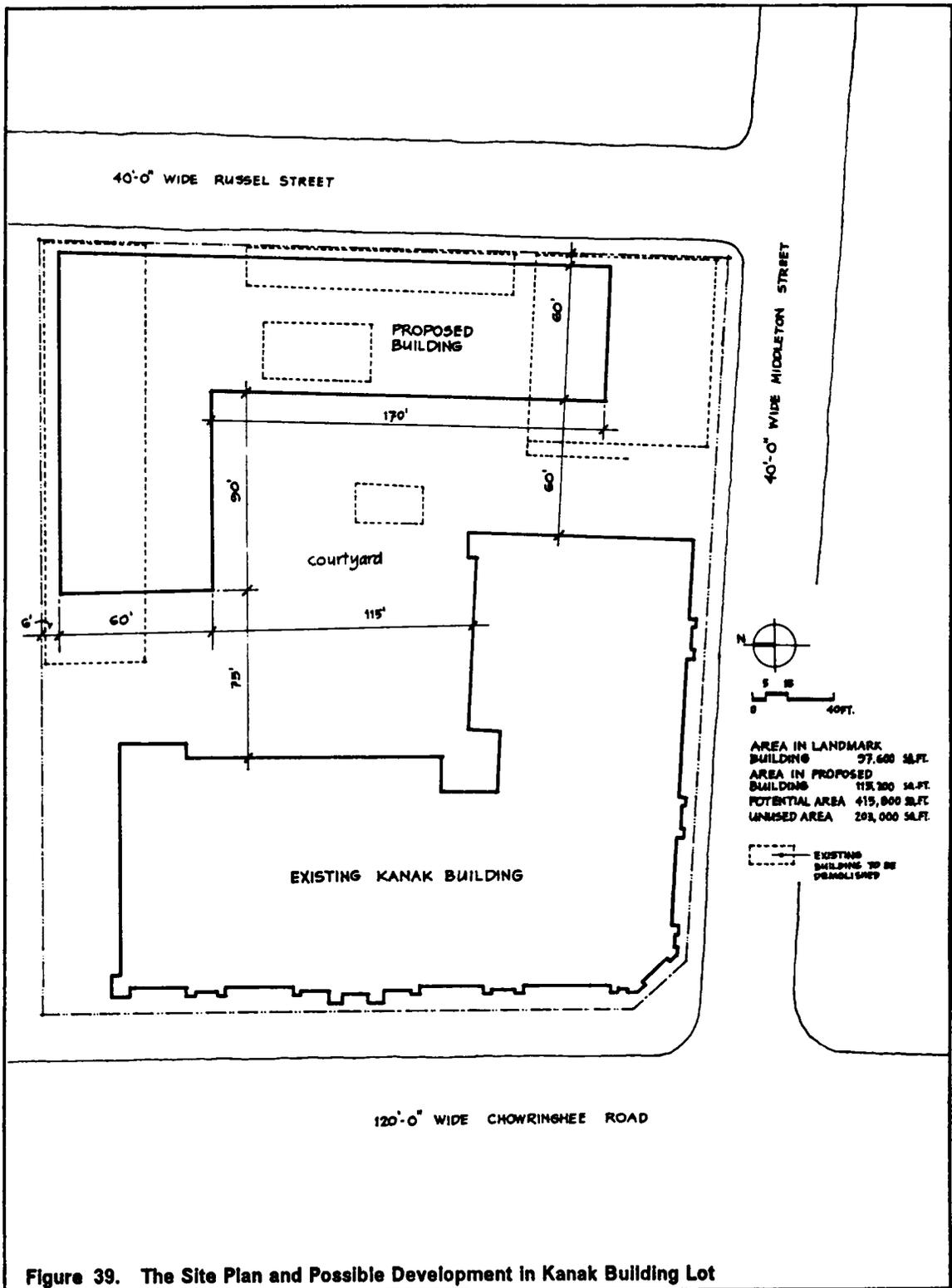


Figure 39. The Site Plan and Possible Development in Kanak Building Lot

siderations, the TDR inventory preparation must consider each and every landmark site to see whether or not a certain degree of development is allowable in the site. The sites having possibility must also be guided by an approved urban design of the area, as well as with a detail design criteria. Apart from reducing the quantum of TDRs in the city, this will also provide adequate incentive and resources for the landmark property owner to prepare the plans and estimates for the conservation of the landmark building.

7.1.4. The ULCR Approval Relaxation

The relaxation of the ULCR approval will be an important incentive for TDR transfers in Calcutta. The development proposals hindered by the ULCR Act will perhaps jump to take advantage of this provision of the TDR program. There is a likelihood that this provision may also be misused if not controlled by strict regulations. The requirement of absorbing TDRs up to a near saturation level of the overage limit to qualify for the ULCR relaxation is, therefore, necessary.

In the absence of such a requirement, a developer may use just a nominal TDR transfer to get advantage of the ULCR relaxation, as well as to receive a fast track building permit approval. The chance of a misuse of this kind will be in those sites where the market demand and site location may not profitably use the full overage limit density. In other words, the ULCR approval relaxation must be used only as a means to make TDR absorption feasible, not TDR transfer as a means to ease the ULCR approval requirements.

An example will provide a clear understanding of the need for this regulation. Let us take the previous example of the lot measuring 75' x 150' on a road allowing 4.5 FAR. The potential of this lot after taking 10 per cent basement parking bonus and 20 percent TDR bonus will be $(75 \times 150 \times 5.85)$ about 65,800 sq. ft.. If the studies of the developer will indicate that the market demand may not be as good to market so much of built-up space, he will like to build a smaller

building. But in order to take advantage of the ULCR relaxation provision, and to obtain a fast track building permit granting consideration, he may just buy, say 50 sq. ft. of TDR from a landmark owner. This will be a clear misuse of the TDR program, and will delay the genuine transfer projects. According to this principle, the developer will have to buy at least say, 80 per cent of the overage limit to qualify for ULCR relaxation. In this example, the overage limit of 20 percent allows an additional area of $(75 \times 150 \times 0.9)$ 10,125 sq. ft.. The developer must absorb in his project at least $(10,125 \times 0.8)$ 8,100 sq. ft. of transferred density in order to be eligible to for the ULCR relaxation and fast track building permit approval.

7.1.5. The Selection of the Institution for TDR Administration

A fast track administration of the TDR program has been identified as an incentive for the implementation of the program. The creation of a non-profit liaison organization for this purpose has also been found preferable. A Landmark Preservation Commission is an usual form for such an agency. Typically a commission is composed of selected representatives from related fields and institutions. The number of members in a commission is usually an odd number (e.g; 5, 7 or 9) to avoid cases of tied votes. The tenure of the members are deliberately made staggering so that there will always be some experienced persons in the commission.²⁹⁴ A commission for this purpose in Calcutta will have to be formed with representatives from the Corporation of Calcutta, CMDA, State Government, eminent scholars and citizens, Chamber of Commerce, developers' guild and from the local chapters of architects' and planners' institutes.

However, creating a new organization amidst all the existing ones at the outset of the program will perhaps not be a good idea. It may be viewed as creating yet another bureaucratic complication. Further, there is a chance that the existing institutions will perhaps view it as an

²⁹⁴ The details of creating a Landmark Preservation Commission is discussed elaborately in the American Planning Association's Planning Advisory Report No. 374 (Roddewig, Richard J.; op. cit., 1983).

other party to share the power with, and may follow a non-cooperative attitude to discredit it. Also, it is always better to start within the umbrella of an existing institution, and separated at a later time when activities pick-up. This will generate added support from the institution to which it becomes a part. In Calcutta, the commission may start as a part of the Corporation of Calcutta or the CMDA. The choice has to be made in view of other considerations discussed below.

There can be certain conflicts in the design and operation of the TDR program if the administration is to be under CMDA. Firstly, there is a chance that CMDA will try immediate use of the program to attain its planning goals of dispersing developments in the northern and southern districts. This will not be supported by the market situations, as observed in the testing chapter, until the rent rates in these areas appreciate adequately to afford the TDR values of the sending sites in the old core. Secondly, there is also a chance that CMDA will try to use the program to transfer the unused potential of the bustee properties. In such a situation, as has been observed in the Seattle program, the TDRs from the bustees will compete with those from the landmarks, and the main objective of the program will be defeated.

On the other hand, the Corporation of Calcutta can administer the TDR program without such conflicts. The Corporation's interest of appreciating its tax base is in no conflict with the program. Further, the Corporation being an elected body has more direct link with the State Government which will facilitate establishment of a new wing under its roof. The administration of the TDR program can be through a 'Preservation Commission' in the Corporation of Calcutta directly under the Mayor as its chairperson.

The advantage of this division being a part of the Corporation will be three-fold. First, it will enable organizing a 'fast track' approval procedure for the projects with TDR transfer as the building permit is issued by the City Architect of the Corporation. The Mayor can easily assign priority to these projects within his Corporation. Secondly, the survey department of the Corporation will be able to supply ready information on the existing built-up areas of the

landmark properties, which will in turn facilitate a quick preparation of the TDR inventory. Thirdly, the establishment of a TDR bank from the unused potential of the city owned landmarks will be much easier under the Corporation as most of these landmarks are owned and maintained by the Corporation itself.

7.2. Passing of the Enabling Act

The very first step in introducing a TDR program should be to pass an enabling act in the state legislature. Passing of an enabling act depends highly on the legal issues that the new concept may bring about. The first generation of the TDR programs in the United States have gone through the process of harsh legal challenges. But after that first spell, "(l)awsuits involving air rights are few and far between. For a case to go to the Court of Appeals is unusual."²⁹⁵ The cases in the United States regarding the legal battles may help the understanding of the legality of a TDR program; but some time will definitely be necessary for the settlement of local particularities in the legal issues. In any case, the legal problems will not be sorted out until and unless they are faced to. It will need a basic TDR program for the legal issues to be tried. Only then the issues could be attended and resolved with reciprocating modifications in the basic program. The proposal here is to introduce such a basic program.

The plus point in Calcutta in this regard is that, the Corporation of Calcutta, under which the program is to start, is eager to enhance its fiscal base. In such a situation, there is a strong likelihood that the Corporation will be more than interested to pursue passage of an enabling act in the state legislature. The elected body in the Corporation, being from the same political party in power in the State Government will, definitely play a positive role in this regard. The fact of the matter, as observed in the recent New Jersey Conference on TDR is that, the legal

²⁹⁵ Newman, Harry N. and Ostrow, Edwin; "Getting Down to Cases : Air Rights Present Problem," *Real Estate Weekly*, May 9, 1983.

procedure may take some time at best; it cannot block a TDR program permanently.²⁹⁶ It has also been observed in the case studies that legal acceptance of the program depends more on the due process in designation rather than on the concept of development rights transfer *per se*. Therefore, the TDR program in Calcutta must involve only those buildings that are either designated by ASI or are prospective according to the designation criteria of ASI.

7.3. Support and Challenge to the TDR program in Calcutta

Having considered the necessary regulations and legal preparation aspects, the incorporation of the TDR program in Calcutta must also examine the possibilities of support and/or challenge it might raise. Indeed, from the passing of the enabling act to the implementation of the program, it will be supported or challenged by different institutions and interest groups according to the program's potential to supplement or conflict their own objectives. Urban conservation may be a goal with which nobody will apparently quarrel, but this alone has not worked in any existing program in the US. The authorities instrumental in implementing the the TDR program must have some concrete benefits to be achieved through the program.

The Corporation of Calcutta is hard pressed with its fiscal problems, and desperately trying to alleviate the situation through controversial real estate ventures. A TDR program at this stage will be a highly attractive tool for the Corporation to boost development to enlarge its fiscal base. Further, it will be able to resolve the outstanding and potential conflicts involving landmark properties in the city without spending its resources. And what will be more encouraging to the Corporation is that it will be able to achieve these objectives without actually increasing the absolute density, and thereby without any additional cost in the infrastructural

²⁹⁶ "Transfer of Development Rights : A Choice for New Jersey," A conference sponsored by the Natural Resources Defense Council and the New Jersey Conservation Foundation, September, 1986 (mimeographed). Also in *Footprints*, A Report to members of the New Jersey Conservation Foundation, Vol.XIV, No.5, September-October, 1986.

provisions. Support from the Corporation in favor of the program will be there without any doubt.

The State Government will also have certain incentives to help institute a TDR program. First, if the Corporation of Calcutta can achieve a sound economic health through a TDR program, the State Government will be relieved of the subsidies it is providing for the last several years. Secondly, if a TDR program can generate a better development environment, it will attract more regional headquarters which the state has been losing of late to the neighboring states. Thirdly, incorporation of a TDR program in Calcutta will bring the prestige of being a pioneer in introducing a new tool in the country. The politicians like nothing more than being in the news for doing something good. The initiation of a TDR program in Calcutta will provide them with a scope in this respect.

CMDA, the planning agency for the city, also will have interest to support the TDR program. CMDA will be able to use the program as a tool for the implementation of its planning objectives. Although not immediately, the program will eventually facilitate development in the north and south axis. Indeed, the differential coverage limit suggested to be in the regulations governing the program does provide incentive for development in the locations desired by CMDA. Further, the flexibilities in the urban design achievable in the receiving sites through the TDR program will allow a unique opportunity to shape the city's growth in desired fashion.

However, the institutions like CIT and the Housing Board will perhaps oppose a TDR program in Calcutta. The reason is simple. These organizations being government bodies can build projects with more density than is permissible under current building regulations. For instance, the Sunny Park Housing Complex, built by the Housing Board, is built to an FAR of about 8 while the allowable FAR on the approach road of the site is around 3. In the existing situation these governments bodies have monopoly in building additional bulk according to the market demand. The idea of private developers also being able to do so will not be viewed favorably by them. However, they may not be very strong in opposing the program considering

the fact that they can build extra density without paying for it, while a private developer will have to buy from a TDR seller. Therefore, they will still have the edge of price advantage in marketing their projects compared to a private developer.

The system of government bodies not being controlled by the building regulations is indeed a case where the creator of the rule becomes the breaker of the same rule. This perhaps got started from the consideration that the government bodies build projects for public benefit, and that too without a profit motive. Sometimes additional density may also become necessary to offset the subsidies with which the spaces are to be distributed to the section of the society not served by the private sector. But today both CIT and the Housing Board are far from adhering to the principle of public service. The Sunny Park Complex, for example, has been for the high income group involving substantial profit. The recent projects of CIT have also been designed with clear profit motive. Considering these facts the system now warrants amendment. The government bodies must also conform to the building regulations, because, in the first place, the regulations are to protect light, air and other environmental factors. This, of course, is not to be tagged with the TDR program. This ought to come as an independent amendment of the conventional system as a reaction to the changed situation.²⁹⁷ In any case, the opposition to the TDR Program by CIT and the Housing Board will not be a formidable impediment as they are not instrumental for the incorporation or implementation of the program.

The developers in Calcutta will be enthusiastic for the TDR program unlike their counterparts, say in the New York City. The reason is that in New York the developers can build additional bulk through numerous as-of-right bonuses, whereas in Calcutta the TDR bonus will be the

²⁹⁷ Indeed, the Corporation of Calcutta is very much against this convention. In the Sunny Park case, the Corporation declined to give sewer and water connection on the grounds that the sewer and water lines along the approach road were not big enough to supply such a huge demand. The Corporation argued that the FAR levels are set according to the infrastructural capacities, and it cannot make those who followed the regulations suffer for one who has dishonored them. Ultimately, the Housing Board had to connect their sewer and water lines to those in the closest main road having adequate capacity at the Board's own expense. This length was substantial, and so was the cost. This case set an example to the government bodies to avoid such conflicts.

only means to increase development potential. The developers in Calcutta have always been trying to build more than what is permissible. Much of the cases in Calcutta involving the building permit granting process are due to this demand. For example, the high-rise office building, named the Chatterjee International Centre, on the crossing of the Chowringhee Road and the Park Street has been built violating the FAR specification. The argument sustained by the Court has been that the site faces the *Maidan*, a permanent open space, which can support the additional density built in the building. Another landmark case has been in the *Burra Bazaar* area where the developer built the additional bulk under the cover of a religious festival; and once that was built, the Corporation had been in trouble to get the demolition order as the owner just keeping the case hanging through legal maneuvers of injunction and appeals. By the time the case will be settled, the building will perhaps outlive its life. There are innumerable small cases where the property owners bribe the officials and building inspectors in the City Architect's department to build little extra. All these cases, and particularly those by the government bodies of CIT and the Housing Board do indicate that there is a strong demand in Calcutta to increase the density. The developers will particularly welcome the TDR program as this will remove the monopoly of the government agency's ability to construct additional density.

The support for the TDR program from the preservationists needs no elaboration. Indeed, it is due largely to their initiative that a conservation ethic has developed in Calcutta. The general citizen in Calcutta, like any other city, will react according to the impact of the projects involving TDR transfers to their personal properties. For any particular case there will be a group supporting it, while another will perhaps oppose. The balance of voice and influence will play the decisive role; and a circumstantial component, such as this, will have to be resolved case by case.

7.4. The Epilogue

The concern for urban conservation in a city with a glorious past but a strained present is something that can neither be afforded, nor can it be forgotten. Calcutta in the penultimate phase of this century finds herself in this peculiar situation. As a typical Bengali philosophy, the tradition of 'high thinking' hangs on the city's populace despite 'plainer living'. Economic constraints could never stopped Bengalis from thinking high, and preservation of Calcutta's landmarks are intrinsically related to this spirit. Preserving the remnants of the glorious past in the city artifacts is one of the most desirable, because they keep the memory of the highest thinking phase – the Renaissance of Bengal – alive. Incorporation of a TDR program in Calcutta may be viewed as a 'high action' derived from the 'high thinking'.

A TDR program may be as well applicable to other metropolitan cities in India. If the program can work in Calcutta, it will work in any other city as the building regulations of most cities in India are now guided by the National Building Code. However, every city will have certain particularities in which the program will have to be tested and adapted upon. In this respect, let Calcutta lead the way in introducing a new thought, as she used to do in her glorious past.

In that glorious period, an Englishman named William Hunter came to Calcutta to work for the East India Company. As he arrived at the port on the Hooghly river, he was struck by the beauty of the city. He wrote home to his fiancée,

"Imagine everything that is glorious in nature combined with all that is beautiful in architecture, and you can faintly picture to yourself what Calcutta is."²⁹⁸

Much of that beauty has already worn out, and the rest is vanishing fast. Let the vibrant intellectual community of the city take the lead to protect as much of that environment as possible. Adoption of a TDR program will be a step forward in this direction. The city was founded on the 24th of August, 1690. A TDR program will be an excellent gift on her 300th birthyear. If

²⁹⁸ Moorhouse, Geoffrey; op. cit., p.4.

the gift will be accepted by the city, at least for a trial, the purpose of this research will be more than served.

Appendix A. Effect of Tax Regulations on Historic Preservation

EFFECT OF FEDERAL INCOME TAX REGULATIONS ON HISTORICAL RESTORATION & RENOVATION

	PRE - 1976	TAX REFORM ACT OF 1976	1978 - 1981 REVENUE ACT OF 1978	POST - 1981 ECONOMIC RECOVERY TAX ACT OF 1981*
A. CERTIFICATION	<p>NO EFFECT: Certification existed, but was not advantageous in terms of tax treatment.</p>	<p>ADVANTAGEOUS: Must Meet One of Three Criteria: 1. It must be listed on the National Register of Historic Places. 2. It must be recognized as being of architectural or historic significance to a National Register Historic District. 3. It must be recognized as being of architectural or historic significance to a state or local historic district that has been certified by the Secretary of the Interior.</p>		
B. RENOVATION (upgrading of building systems to extend the life of the existing building)	<p>DETRIMENTAL: Discouraged building upgrading through non-favorable tax depreciation provisions: -protracted useful life period. -unattractive depreciation schedule options. -land and building value allocation.</p>	<p>ADVANTAGEOUS: Substantial rehabilitation encouraged by 150% depreciable schedule for commercial property and 200% depreciable schedule for income-producing residential property.</p>	<p>ADVANTAGEOUS: Similar provisions to Tax Reform Act of 1976 with a 10% investment Tax Credit (ITC) for new capital additions related to rehabilitation of commercial properties only.</p>	<p>ADVANTAGEOUS: The developer may qualify for a 25% investment Tax Credit for substantially rehabilitating a certified historic structure. Straight line capital recovery must be claimed over a period of 15, 30, or 45 years. Premature disposal of building may result in recapture of excess depreciation.</p>
C. RESTORATION (rehabilitation of a building to its original condition in material, workmanship, and detail)	<p>DETRIMENTAL: Discouraged preservation through unfavorable tax depreciation provisions: -protracted useful life period. -unattractive depreciation schedule options. -land and building value allocation.</p>	<p>MIXED EFFECT: Restoration costs for income producing residential and commercial properties may qualify for 60 month amortization. Depreciation claimed under the 60 month schedule subject to ordinary tax rate at the time of sale.</p>	<p>MIXED EFFECT: 60 month depreciation schedule kept intact. Accelerated depreciation taxed at the ordinary income tax rate for deductions in excess of the straight line depreciation claimed during the same period.</p>	<p>MIXED EFFECT: Same as Revenue Act of 1978. Investment Tax Credit of 25% encourages rehabilitation of currently "non competitive" properties. This reduction of the depreciable basis by one-half the amount of the ITC reduces the development incentives available in 1982 but still offers substantial advantages.</p>
D. NON-HISTORIC OLDER BUILDINGS (upgrading and replacement of building systems)	<p>DETRIMENTAL: Discouraged renovation through unfavorable tax depreciation provisions: -protracted useful life period. -unattractive depreciation schedule options. -land and building value allocation.</p>	<p>DETRIMENTAL: Discouraged renovation through unfavorable tax depreciation provisions: -protracted useful life period. -unattractive depreciation schedule options. -land and building value allocation.</p>	<p>ADVANTAGEOUS: Developer may qualify for a 10% investment Tax Credit for a qualified rehabilitation. No certification of rehabilitation work is necessary. Restrictions include: 1. Commercial property only. 2. Structure must be at least 20 years old. 3. 75% of external walls remain.</p>	<p>ADVANTAGEOUS: Two additional categories of commercial renovation are now eligible for investment Tax Credit (ITC): 1. 15% investment Tax Credit if building is 30-40 years old. 2. 20% investment Tax Credit if building is 40+ years old. Investment tax credit is deducted from building's initial depreciable basis and thus reduces future annual capital recovery deductions.</p>
E. DEMOLITION	<p>DETRIMENTAL: Encouraged destruction of building through tax advantages of crediting the remaining taxable basis and demolition cost to the next year's depreciation deduction.</p>	<p>ADVANTAGEOUS: Demolition costs and undepreciated basis of destroyed building added to the value of the land. If the building was certified, any new building must be straight line depreciation for the next 30 years.</p>	<p>ADVANTAGEOUS: Similar to Tax Reform Act of 1976. To avoid demolition penalties, a building within a historic district must be certified as "non-historic."</p>	<p>MIXED EFFECT: Similar provisions to Revenue Act of 1978 with accelerated capital recovery for new structures replacing demolished historical buildings allowed.</p>

Note: Amended by the Tax Equity and Fiscal Responsibility Act of 1982

Appendix B. Sample Questionnaire

**Survey Questionnaire
for the evaluation of
Transfer of Development Rights (TDR)
as a tool for
Landmark Preservation**

The objective of this survey is to identify the prospects / problems of TDR as a regulatory measure for landmark preservation. Therefore, the survey is intended to be conducted among those who directly or indirectly have been involved in the TDR program. If you are not familiar with the program, please pass this questionnaire along to someone who has experience / knowledge of it. Please indicate in the last question if you would like to know the results of the survey. Thank you.

1. How have you become familiar with the TDR program?

Through involvement in project(s) ____
Through literature and discussions ____
Other (please specify) ____

If you were/are directly involved in the program, please attach a brief statement of your experience to benefit this study.

2. Do you consider the TDR program to be useful for preservation of urban landmarks?

Yes ____ / No ____ / Don't know ____

If 'yes', why do you think so few transfers have actually been consummated up today? Alternatively, if your answer is 'no', what do you think is the reason? Please explain.

3. Do you think obstacles to the use of TDR are decreasing over time?

Yes ____ / No ____ / Don't know ____

If 'no' skip questions - 4 and 5, go to question - 6

4. If modifications of the program are to be credited for improvement in the performance of TDR system, please indicate their order of significance.

(Mark the most important by '1', then rate as 2, 3, 4 etc. according to decreasing importance)

Allowing sale of TDR to a second party ____
Allowing sale of TDR to non-contiguous but nearby lots ____
Allowing sale of TDR to far away lots ____
Allowing sale of TDR to a bank ____
Other (please specify) ____

5. If you think change in the real estate market is responsible for improvement in the performance of TDR system, please indicate the order of significance of the following changes.

(Mark the most important as '1', then rate as 2, 3, 4 etc. according to decreasing importance)

Growing demand for built-up space ____
Rise in downtown land price ____
General increase in the knowledge about TDR ____
The TDR program becoming easier to administer ____
Other (please specify) ____

6. If your answer to question - 3 is 'no', is improvement in TDR program possible? If yes, please explain.

7. How important is it to clearly identify the TDR receiving areas?

Must be done ____
Should be done ____
Does not matter ____
Should not be done ____

8. Receiving sites must be chosen according to some criteria. Please rate the following features in order of importance.

(Mark the most important as '1', then rate as 2, 3, 4 etc. according to decreasing importance)

Availability of services and infrastructures ____
Demand for built-up space ____
Following the growth direction of the city ____
According to planning decision of growth areas ____
In the depressed areas to boost growth ____

9. Do you think areas for receiving TDR should be controlled by:

a) General downzoning to create market for TDR Yes / No
b) An urban design identifying variable development potentials Yes / No
c) Development permits only to TDR buyers Yes / No
d) Other (please specify) ____

10. Should the ceiling limit for additional bulk in TDR receiving sites be fixed or flexible?

Fixed ____ / Flexible ____

If 'fixed', roughly what per cent of the zoned density ____

If 'flexible', how decision on maximum density in those sites be decided?

By merit of the project ____
By market demand ____
By limits of available services and infrastructures ____
Other (please specify) ____

Flexibility in the regulation could breed corruption. How do you think that should be dealt with?

By open public hearing ____
By well thought out guidelines for project evaluation ____
According to an approved urban design ____

11. Adjacency in TDR program was thought logical as additional density in the receiving lots beside would be balanced by underdevelopment (light and air pocket) of the adjacent sending site. Do you share this logic?

Yes ____ / No ____ / Don't know ____

If 'yes', the market for the unused potential of a sending site becomes restricted, particularly when adjoining lots are all newly developed. What should be done in such a case? Please indicate.

12. If adjacency restriction is removed, the market for TDR broadens and planning objectives may be achieved through proper urban design. But usually citizens of the designated receiving area object to additional density in their neighborhood. How do you think this conflict can be resolved?

Through provision of additional public amenities ____
Through demonstration of private benefit (e.g. increase in property value) ____
Through tax incentive for accommodating additional density ____
Other (please specify) ____

13. Do you think TDR is bound to involve cumbersome legal procedures or can it be simplified?

Cumbersome ____ / Could be simplified ____

If it is cumbersome at present, do you think subsequent experience can help it become simpler?

Yes ____ / No ____ / Don't know ____

14. Do you think operational complications in TDR program might be caused by:

(Please rate 1 - 6 if you think responsible reasons are more than one)

Lack of planning direction ____
Administrative process ____
Public relation / information problem ____
Lack of acceptance by mortgage institutions ____
Lack of synchronization between demand and supply of TDR ____
Other (please specify) ____

15. Do you think administrative complications in TDR program might be caused by:

(Please rate 1 - 5 if more than one reason are responsible in your opinion)

- The building permit granting process ____
- Involvement of too many authorities ____
- Lack of political will ____
- Lack of planning direction ____
- Other (please specify) ____

16. Do you think operational and administrative problems can be minimized by designating a public authority to perform liaison function?

Yes ____ / No ____ / Don't know ____

17. There may not be an interested buyer just at the time when a landmark owner wants to sell his unused development rights. Should there be a TDR bank to redress such synchronization problem between demand and supply of TDR?

Yes ____ / No ____ / Don't know ____

18. Do you think TDR can also be exchanged for other than rights for building additional bulk? (e.g: business license, permit etc.)

Yes ____ / No ____ / Don't know ____

19. Do you think TDR buyers should be given incentive through a promise of less bureaucratic and, thereby less time consuming building permit processing?

Yes ____ / No ____ / Don't know ____

20. Do you think TDR can adequately compensate the owner for economic loss imposed by a landmark designation?

Yes ____ / No ____ / Don't know ____

If 'no', do you think there should also be some Government subsidy to balance the short fall?

Yes ____ / No ____ / Don't know ____

If 'yes', would you agree that resources for such subsidy should be generated through a public banking of TDR or by marketing the TDR from publicly owned landmarks?

Yes ____ / No ____ / Don't know ____

21. Do you think TDR program can be misused for other purposes in the guise of preservation?

Yes ____ / No ____ / Don't know ____

If 'yes', do you think this problem needs special attention or can it be checked through other existing regulations?

- Needs special attention ____
- Other regulations may take care ____

22. Do you think TDR program will be more readily accepted in future?

Yes ____ / No ____ / Don't know ____

23. As-of-right incentives and bonus provisions in most existing zoning regulations seem to compete with the TDR program, and they also increase absolute density. Should such provisions be suspended while instituting a TDR program?

Yes ___ / No ___ / Don't know ___

24. Your involvement in / familiarity of TDR program has been as a:

Landmark property owner ___
Developer / builder ___
Administrator ___
Planner / architect ___
Mortgage lender ___
Legal consultant ___
Realtor ___
Other (please specify) ___

25. Can we call you to discuss your experience?

Yes ___ / No ___

If 'yes', your telephone no. please : () _____. When is the best time to call?

26. Do you like to know the results of the survey?

Yes ___ / No ___

If 'yes', your name and address please:

Thank you for your time and cooperation. A self addressed stamped envelope accompanies the questionnaire to facilitate easy responding. If by any chance the envelope is missing, please send the responded questionnaire to:

Ramen De
Ph. D. student, Environmental Design & Planning
Architecture Annex
Virginia Tech
Blacksburg, VA 24061

703 961 4359 (office)
703 953 1753 (home)

**Appendix C. The Calcutta Municipal (Amendment)
Act of 1977 (part)**

WEST BENGAL ACT VI OF 1977
**THE CALCUTTA MUNICIPAL (AMENDMENT)
ACT, 1977.**

An Act to amend the Calcutta Municipal Act, 1951.

Whereas it is expedient to amend the Calcutta Municipal Act, 1951, (West Ben. Act XXXIII of 1951) for the purposes and in the manner hereinafter appearing :

It is hereby enacted in the Twenty eighth Year of the Republic of India, by the Legislature of West Bengal, as follows :

1. Short title. — This Act may be called The Calcutta Municipal (Amendment) Act, 1977.
2. Amendment of section 5 of West Ben. Act XXXIII of 1951.—In the Calcutta Municipal Act, 1951 (hereinafter referred to as the said Act), clause (g) of section 5 shall be omitted.
3. Amendment of section 356.—In section 356 of the said Act,—
 - (a) the proviso to sub-section (1) shall be omitted ;
 - (b) sub-section (4) shall be omitted.

June—1977.

4. Substitution of new section for section 357.—For section 357 of the said Act, the following section shall be substituted, namely :—

“Revision of building line of street alignment 357.—(1) The Corporation may, if it considers expedient, and after giving public notice of its intention to do so and after considering all objections in the manner laid down in section 356, by order revise any building line or street alignment prescribed under the said section.

- (2) Every order under sub-section (1) shall be published in the *Official Gazette* and shall take effect from the date of such publication.

- (3) When a building line or a street alignment has been revised, the register referred to in sub-section (3) of section 356 shall show all public streets in respect of which the building line or the street alignment has been revised”.

5. Amendment of section 378.—In section 378 of the said Act,—

- (a) in sub-section (1), for the words “any person he thinks fit a license to act as a licensed building surveyor”, the words “any architect he thinks fit a licence to act as a licensed building architect” shall be substituted,

[published in the *Calcutta Gazette, Extra ordinary*, of the 27th April, 1977.]

(b) after sub-section (3), the following sub-section shall be added, namely:—

“(4) (i) Notwithstanding anything contained in this section the Commissioner may from time to time, in accordance with such rules as may be made by the Corporation, grant to any person he thinks fit a license to act as a licensed building surveyor and the Commissioner may accept plan, elevation or section, submitted in respect of a building not exceeding thirteen and a half metres in height with any application for permission to erect a new building when it bears the signature of a licensed building surveyor.

(ii) Provisions of this section and of section 379 or section 380 shall *mutatis mutandis* apply in the case of a licensed building surveyor.”

6. Amendment of section 379.—In section 379 of the said Act,—

(a) in sub-section (1), for the word “surveyors”, the word “architects” shall be substituted,

(b) in sub-section (2), for the word “surveyors”, the word “architects” shall be substituted.

7. Amendment of section 380.—In section 380 of the said Act,—

(a) for the words “may decline to accept”, the words “shall not accept” shall be substituted,

(b) for the word “surveyor”, the word “architect” shall be substituted.

8. Amendment of Schedule XVI.—In Schedule XVI to the said Act, in the Rules as to the use of Building sites and the execution of Building-Work,—

(a) for Parts I to VIII, the following Parts shall be substituted, namely:—

PART I—BUILDING-SITES

1. Conditions as to use of building-sites.—No piece of land shall be used as a site for the erection of a building:—

(1) if the building is to abut on a street, unless the site is of such a shape that the face of the building can be made parallel to the line of the street, or as nearly parallel to the said line as the Commissioner may consider practicable;

(2) if the site is within ten metres of a tank, unless the owner takes, or satisfies the Commissioner that he will take, such action as will prevent any risk of the drainage of the building passing into the tank;

(3) if the site is a filled-up tank, or has been filled up with, or used for depositing rubbish, offensive matter or sewage, unless the Commissioner has caused the site to be examined and granted a certificate to the effect that it is, from sanitary and engineering point of view, fit to be built upon;

(4) if the building to be erected is intended for human habitation, unless the site is certified by the Commissioner to be dry and well-drained, or unless the Commissioner is satisfied that it is capable of being well-drained and that the owner will take necessary steps to drain it; and

(5) if the frontage of the site is less than five metres, unless it is certified by the Commissioner that the site can be used for the construction of a building and while granting the certificate the Commissioner may fix the height of the building to be erected.

2. Certificate as to correctness of the plans of a previously existing building and fees therefor.—(1) Any person who intends to erect any building upon a site in which a building had been previously erected, whether before or after the commencement of this Act, shall, before commencing to erect his intended building, cause to be prepared plans showing the extent of the previously existing building in its several parts (or in the event of such building having been taken down before the commencement of this Act, or having been accidentally destroyed, the best plans available under all the circumstances of the case), and shall cause such plans to be submitted to the Commissioner who shall (if reasonably satisfied with the evidence of their accuracy) certify the same, and such certificate shall, for the purposes of these rules, be taken to be conclusive evidence of the correctness of the plans.

(2) The Commissioner when granting a certificate under this rule may charge fees not exceeding ten rupees for any one building as may be prescribed by the Corporation from time to time.

PART II—BUILDING GENERALLY

3. Streets and heights of buildings.—(1) No building exceeding ten metres in height shall be constructed on a street which is less than five metres in width.

(2) No building exceeding fifteen metres in height shall be constructed on a street which is less than seven and a half metres in width.

(3) No building exceeding eighteen metres in height shall be constructed on a street which is less than ten metres in width.

(4) No building exceeding thirty-six metres in height shall be constructed on a street which is less than eighteen metres in width.

(5) Notwithstanding anything contained in sub-rule (1), (2), (3) or (4), a stair-case room with a height not exceeding two and a half metres shall not be taken into account in calculating the height of the building.

4. Front open space.—(1) Every building not exceeding eighteen metres in height shall have a front open space at ground, forming an integral part of the site of a minimum width of one metre and twenty centimetres in its narrowest part:

Provided that the provisions of this sub-rule shall not apply in relation to buildings to be constructed up to a level of thirteen and a half metres on a street where substantial number of buildings have already been constructed and the Commissioner shall, having regard to the number of buildings already constructed thereon, decide whether it is a street where substantial number of buildings have been constructed.

(2) Every building of more than eighteen metres but not exceeding thirty-six metres in height, shall have a front open space at ground forming an integral part of the site of a minimum width of three metres and fifty centimetres in its narrowest part.

(3) Every building exceeding thirty-six metres in height shall have a front open space at ground forming an integral part of the site of a minimum width taken as ten per cent. of the height of the building in its narrowest part.

(4) In the case of a tandem site, the side opposite to the rear shall be deemed to be the front for provision of a front open space.

Explanation. The expression 'tandem site' means a site access to which is by passage from a street, whether such passage forms part of the site or not.

(5) If before the coming into force of these rules, plan for the erection of a building exceeding eighteen metres in height has been sanctioned by the Corporation but the erection has not commenced, the erection shall not commence until a fresh plan is sanctioned in accordance with the provision of these rules.

5. **Rear open space.—(1)** Every building not exceeding eighteen metres in height shall have a rear open space at ground (along the entire width of the building forming an integral part of the site) of a minimum width of three metres in its narrowest part.

(2) Every building of more than eighteen metres but not exceeding thirty-six metres in height shall have a rear open space at ground (along the entire width of the building forming an integral part of the site) of a minimum width of seven metres in its narrowest part.

(3) Every building exceeding thirty-six metres in height shall have a rear open space at ground (along the entire width of the building forming an integral part of the site) of a minimum width of ten metres in its narrowest part.

(4) For the purposes of this rule, the back of a building shall be deemed to be that face of the building which is furthest from any street from which the site has access to it :

Provided that where a building is situated at the side of more than one street the back of the building shall be deemed to be that face of the building which is furthest from the widest of all such streets :

Provided further that in the case of a tandem site, the back of a building shall be deemed to be that face of the building which is along the lesser demarcation of the site and furthest removed from the street from which the site has access to it.

6. **Relaxation of rule 5 in certain cases.—(1)** The Commissioner may permit the construction of a building not exceeding eighteen metres in height in relaxation of the provisions of rules 5 and 19 of this Schedule, if he is satisfied that the site is irregular in shape or is of such a nature that it is impracticable to provide an open space in the rear of the building of the dimensions prescribed in rule 5 of this Schedule, provided the open space left in the rear shall not be less than two metres in width in its narrowest part and the average width of such open space shall not be less than the width as required under rule 5 of this Schedule as if the site was not of irregular nature.

(2) Notwithstanding anything contained in rule 19 and rule 5 of this Schedule—

(i) the construction of a building, not exceeding a height of seven metres and fifty centimetres, with a staircover not exceeding two metres and

fifty centimetres over it, may be permitted by the Commissioner if the open space to be left in the rear of the building is not less than two metres in width and the site is situated on the edge of a street which has open spaces on its sides as required under rule 8 of this Schedule :

(ii) the construction of a building, not exceeding a height of ten metres with staircover not exceeding two metres and fifty centimetres over it, may be permitted by the Commissioner if the average open space to be left in the rear of the building is not less than three metres in width having the width in its narrowest part not less than two metres and the site is situated on the edge of a street which has open spaces on its sides as required under rule 8 of this Schedule.

7. **Construction of garage in rear open space.—**Where the width of the rear open space is not less than three metres and no construction is made therein, the Commissioner may grant permission for construction of a garage measuring not more than eighteen square metres in floor area and not more than two metres and forty centimetres in height measured from the ground level, if he is satisfied that—

(a) the building on the rear of which the garage is proposed to be constructed does not exceed eighteen metres in height ;

(b) a passageway or pathway measuring at any point not less than two metres and forty centimetres in width, appurtenant to the site of the building and leading up to the garage is kept open to the sky or access to the garage is available directly from a street ; and

(c) the construction of such garage will not prejudicially affect the sanitation, ventilation or drainage of the building or other adjacent buildings and notwithstanding such construction of a garage, the space covered thereby shall, for the purposes of sub-rule (1) and rules 6, 8 and 18 of this Schedule, be deemed to be left open to sky.

8. **Side open space.—(1)** If either side of a building is not attached to the adjacent building, and if such side does not abut on a public square or street which is not less than one metre and eighty centimetres in width, or on a private street or partition passage which, in the opinion of the Commissioner, is likely always to be kept open to the sky and which is not less than one metre and eighty centimetres in width, there shall be between the buildings an open space extending along the entire length of such side and forming part of the site of the buildings.

(2) The minimum distance across such space from every part of the said building to the boundary line of the land or building immediately opposite such part shall be—

(a) one metre and eighty centimetres, if there is a door or window opening in the building next to such boundary line or within sixty centimetres of it, provided the height of the building does not exceed thirteen metres and fifty centimetres ;

(b) one metre and twenty centimetres, if there is an open space or building having no door or window opening on the other side of such boundary line, provided the height of the building does not exceed thirteen metres and fifty centimetres ;

(c) one metre and eighty centimetres if the height of the building exceeds thirteen metres and fifty centimetres but does not exceed eighteen metres ;

(d) three metres and fifty centimetres on either side for building exceeding eighteen metres but not exceeding thirty-six metres in height, and ten per cent. of the height of the building in case the height exceeds thirty-six metres whether the side of such building abuts in a public square, street, private street or partition passage or not.

Provided that—

(i) the total width of the open space in between two buildings at ground one or both exceeding eighteen metres whether within the same site or not, shall not be less than seven metres;

(ii) the total width of the open space in between two buildings one or both exceeding thirty-six metres in height, whether within the same site or not, shall not be less than ten metres;

Provided further that the aforesaid conditions may, under special circumstances, be relaxed by the Commissioner.

(3) The Commissioner may under special circumstances relax the provisions of clauses (b), and (c) of sub rule (2) of this rule in case of alterations or additions made to a building existing at the commencement of this Act if the said alterations or additions merely add to the height of a previously existing building having attachment with the building adjoining and rest upon such existing building.

9. **Joint open space**—Subject to the provisions of rules 4, 5 and 8 of this Schedule, the joint open space in between two buildings belonging to the same owner or not, shall not be less than seven metres if one of such buildings exceeds eighteen metres in height;

Provided that the provisions of this rule may be relaxed by the Commissioner in the case of a building less than 13.5 metres.

10. **Projections into open space**.—Every open space provided as per rules 4, 5 and 8 of this Schedule shall be kept open to sky and no cornice, roof or weather-shade more than fifty centimetres in width shall overhang or project over the said open space.

11. **Safeguard against reduction of open spaces**—No construction work on a building shall be allowed if such work operates to reduce the open air space of any other adjoining building belonging to the same owner to an extent less than what is prescribed at the time of the proposed work or to reduce further such open space if it is already less than that prescribed.

12. **Courtyards (interior open space)**.—(1) The whole of one side of rooms intended for human habitation and not abutting on either the front, rear or side open space shall abut on a courtyard (interior open space).

(2) Any room which is separated only by an open verandah from the courtyard shall be deemed to abut on such courtyard for the purpose of this rule.

(3) The minimum width of every such courtyard shall be three metres in its narrowest part.

(4) No portion of any face of a domestic building abutting on such courtyard shall intersect any of a series of imaginary lines drawn across the courtyard from the opposite face of the house, at the level of the plinth, at an angle of sixtyeight degrees with the horizontal;

Provided that nothing contained in this sub-rule shall prevent the construction of four-storey building on two sides of a courtyard where the length of the courtyard opposite such buildings is not less than six metres and the width of such courtyard is not less than four metres and fifty centimetres.

(5) For the purposes of sub-rule (4), the opposite face of the house shall be deemed to be a vertical plane drawn through the most projecting portion of such face excluding any cornice or moulding not exceeding fifty centimetres.

(6) Notwithstanding anything contained in sub-rule (4), a building abutting on a courtyard of which the greater dimension does not exceed twice the less dimension, shall be held to comply with this rule if, by reason of its abutting on a courtyard of the same area but square in shape the building would comply with this rule.

(7) If there be building other than boundary wall on not more than three sides of a courtyard, then the angle referred to in sub-rule (4) shall be seventy-one and a half degrees instead of sixtyeight degrees.

(8) A ventilation shaft having no access to the same except through one door for service purposes, shall not be treated as courtyard, if the area of such shaft is less than ten square metres.

13. **Space to be added to street** not to be taken into account under rules 4, 5 and 8.—For the purposes of calculating the open space required to be left under rules 4, 5 and 8 of this Schedule, an space which falls within the alignment of a street or is included within the alignment of a projected street shall be taken into account.

14. **Free gift of land to widen the road**.—In case of a building site abutting on a street less than five metres, but not less than two metres and forty centimetres in width if the owner of any building site abutting on the street makes a free gift to the Corporation of all land comprised within such site which falls within two metres and fifty centimetres of the centre line of such street, then the Commissioner may consider the effective width of such street fronting the premises as five metres for the purpose of this Schedule.

15. **Open space prescribed for one site not to be taken for another site**.—No building shall at any time be erected or any open space prescribed under this Schedule for a building and forming part of the site thereof, nor shall such open space be taken into account in determining the area of any open space required, under this Schedule, for any other building.

16. **Means of access**.—(1) No building shall be constructed on a site unless the site abuts on a street or gets access to it directly from the street by a passage which is less than one metre in width in its narrowest part.

(2) In case the means of access to the site is by a passage from a street giving access to not more than three premises, the following provisions shall apply, namely:—

(i) a building of height not exceeding three metres and fifty centimetres with a staircase room not exceeding two metres and forty centimetres in height may be constructed on a site if the site gets access to it from a street through a passage which is not less than one metre in width;

(ii) a building not exceeding seven metres and fifty centimetres in height with a two metres and fifty centimetres high staircase room may

however, be allowed on any site if such site gets access to it from a street through a passage which is not less than one metre and twenty centimetres in width :

- (iii) a building not exceeding eleven metres and fifty centimetres in height with a staircase of two metres and fifty centimetres may, however, be permitted on any site if such site gets its access from a street through a passage which is not less than two metres in width in its narrowest part ;
- (iv) no building of a height in between eleven metres and fifty centimetres and eighteen metres shall be allowed on any site unless the site gets its access from a street through a passage which is not less than three metres in width in its narrowest part.

(3) The Commissioner may in special cases, for reasons to be recorded by him in writing, relax the provisions of this rule.

17. Means of access for buildings more than 18 metres in height.—(1) No building of more than eighteen metres in height shall be permitted on any site unless the site gets its access from a street through a passage belonging to the site which is not less than five metres in width in its narrowest part.

(2) No building of more than thirty-six metres in height shall be erected on a site unless the width of such passage belonging to the site is seven metres and fifty centimetres in its narrowest part.

18. Height fronting a street.—Subject to the provisions laid down in rule 3 of this Schedule, the height of the building fronting a street shall be regulated as provided in this rule.

(1) If a building is situated at the side of a street, no portion of it except open or balustraded parapets not more than one metre and twenty centimetres in height, shall intersect any of a series of imaginary lines drawn across the street at an angle of fifty-six and a half degrees with the horizontal, such lines being drawn from that side of the street which is more remote from the building, from a height of sixty centimetres above the centre of the street.

Explanation.—If a building be placed at the end of the street, its height measured from sixty centimetres above centre of the street and excluding the parapets as aforesaid shall not exceed one and a half times the average width of the street :

Provided that if the building or one or more of its storeys be set-back, the height of the building may be increased subject to the condition that no portion of the building after the height is increased intersects any of the aforesaid lines.

(2) Where the said street is joined at an angle by another street facing the building, or where the street in which the building is situated terminates in front of the building, the height of that portion of the building which is opposite the street facing it measured from sixty centimetres above the centre of the street, shall, in the former case, not exceed the height which would be permissible if the building abutted on or were situated on the side of a street equal in width to the width of the street on which it abuts or on the side of which it is situated plus half the width of the street facing it, and in the latter case, the height of the building shall not exceed the height which would be permissible if the building abutted on or were situated on the side of a street one and a-half times the width of the street terminating in front of it.

(3) If the said street terminates in front of the site, the street or passage shall be considered as virtually parallel to the front boundary of the site.

(4) If a building is situated on a corner plot so as to abut upon more than one street, the narrower of such street shall for the purpose of regulating the height of the building, be deemed to be of the same width as the wider streets :—

- (a) to a distance of seventeen metres from such wider street, if the narrower street is less than five metres in width, and
- (b) to a distance of twenty-three metres from such wider street, if the narrower street is not less than five metres in width.

(5) If a building is situated on a corner plot so as to abut upon more than one public street, the corner of the building shall be splayed two metres and forty centimetres on either side.

(6) No building exceeding thirty-six metres in height shall be erected without the special permission of the Corporation, who, in granting such permission, may impose such conditions as the Corporation may think proper for the safety of the public and the safety and convenience of persons occupying the building.

(7) If in any street or portion of a street less than five metres in width, the owner of a building site abutting on the street makes a free gift to the Corporation of all land comprised within such site, which falls within two metres and fifty centimetres of the centre line of such street, then a two-storeyed building not more than seven metres and fifty centimetres in height with two metres and forty centimetres high staircase room may be erected without complying with sub-rule (1) and (4).

(8) For the purpose of sub-rule (7), the Commissioner may prescribe the centre line of any street which is less than five metres in width and when such centre line has been prescribed the side of the street shall, for the purposes of sub-rule (1) be deemed to be an imaginary line drawn two metres and fifty centimetres from such centre line.

19. Height from rear.—(1) Subject to the provisions of rule 5 of this Schedule, the height of every building abutting a rear open space shall be such that any series of imaginary lines drawn across the rear open space at an angle of sixty-eight degrees with the horizontal, from points on a level with the plinth of the building and situated on that side of the said space which is farthest from the building, shall not intersect any portion of the building up to a height of forty metres excluding open and balustraded parapet not more than twenty centimetres in height :

Provided that the provisions of this sub-rule shall not apply in relation to building not exceeding thirteen and a half metres in height.

(2) If it is proposed to erect one or more buildings on the sight of an existing building or if two or more buildings are proposed to be erected on any one site (whether or not such buildings are connected by means of a verandah or gangways or in any similar manner), the open space referred to in rule 5 of this Schedule shall be provided at the back of each such building.

20. Covered area of buildings.—(1) For all buildings not exceeding eighteen

10 THE CALCUTTA MUNICIPAL (AMENDMENT) ACT, 1977.
metres in height the total area covered by all buildings on any site shall not exceed two-thirds of the total area of site.

(2) For all buildings of more than eighteen metres in height the total area covered by all buildings on any site shall not exceed fifty per cent. of the total area of the site.
(3) If the site is situated at the junction of two streets none of which is less than five metres in width, five per cent. of the total area of the site as extra coverage may be permitted by the Commissioner, provided the building does not exceed eighteen metres in height.

21. Floor area ratio.—(1) Limitation of floor area and height of a building shall be achieved in terms of Floor Area Ratio (FAR).

(2) Floor Area Ratio or FAR shall be the quotient obtained by dividing the total covered area of all the floors of the building by the area of the plot:

$$\text{FAR} = \frac{\text{Total covered area of all floors}}{\text{Area of the plot}}$$

(3) The maximum permissible FAR for the different classes of building on different width of streets shall be as given in the table below:—

T A B L E
Floor Area Ratios (Maximum)

Width of the streets in metres—	Maximum Permissible Floor Area Ratio					
	Dwelling House	Office	Public Building	Warehouse in declared locality.	Place of Education or public Institution or Hospital	Assembly (Hotel with sleeping accommodations)
Up to 3	1.00	Not permitted	1.00	Not permitted	Not permitted	Not permitted
3 to 5	1.75	1.00	1.50	1.00	1.00	1.00
5 to 10	2.50	2.50	2.00	2.00	2.00	2.00
10 to 15	3.00	3.00	2.50	2.50	2.50	2.50
15 to 18	3.25	3.25	3.00	3.00	3.00	2.75
18 to 25	3.50	3.75	3.50	3.50	3.50	3.00
25 to 30	4.00	4.25	4.00	4.00	4.00	3.00
30 to 36	4.50	4.50	4.00	4.00	4.00	3.50
36 and above	4.50	4.50	4.00	4.00	4.00	3.50

The FAR specified in this table may be increased by 10 per cent. for the following services only:—

- (a) The basement exclusively for the purposes of Car Parking.
- (b) Air Conditioning Plant, Pump House, Electric Cabin or substitutes, Watchman's Booth, Garbage staff.
- (c) Staircase room and lift machine room on the roof.

22. Parking spaces.—(1) For every public or domestic building exceeding in cubical extent 500 cubic metres or exceeding 4000 cubic metres in cases of buildings of warehouse class and also for all buildings exceeding eighteen metres in height, a parking space shall be provided within the premises containing such building at ten per cent. of the total area of all the floors of the buildings:

Provided that if the Floor Area Ratio exceeds 4, the percentage referred to above shall be fifteen.

(2) The open spaces required under rules 4, 5 and 8 of this Schedule shall not be treated as parking space for the purpose of this rule.

(3) The parking space shall have an access to and from a street and, if covered, shall have a clear height of not less than two metres to the soffit of beams.

(4) Every building of the warehouse class shall have attached thereto, for the accommodation and passage of carts and lorries used for the loading and unloading of goods, an open space forming part of the site of the building of not less than three metres and fifty centimetres in width throughout the entire length of the building from the street frontage of the site.

(5) The Commissioner may permit the open space referred to in sub-rule (4) to be covered to the extent of one half of its width and at a height of not less than four metres and twenty-five centimetres above the ground level.

(6) The provisions of sub-rules (1) and (5) shall apply *mutatis mutandis* to the cases of additions alterations to any existing building.

23. Provisions for lifts.—(1) The Commissioner may, by written notice, require the owner of an existing building, more than eighteen metres in height or comprising five or more storeys, to provide a lift or some other similar mechanical contrivance for carrying persons from one floor to another according to the specifications given in the notice.

(2) All new buildings more than eighteen metres in height or comprising five or more storeys, to be constructed shall be provided with lift in one or more places or some other similar mechanical contrivance for carrying persons from one floor to another according to the requirement made by the Commissioner. The landing of the staircase should not be used as the landing of the lift.

24. Rat proofing.—(1) Every building or part thereof designed or intended for use for dwelling, storage or sale of food-stuffs shall conform to the requirements given in sub-rules (2) and (3).

(2) Every such building unless supported on posts shall have continuous foundation walls, extending from at least sixty centimetres below ground level or proof materials.

(3) All openings in such foundations or floors, windows and drains, and all junctions between foundation walls and building walls shall be effectively rat-proofed, that is windows and doors shall be tight fitting, other openings shall be securely covered with rat-proof screening or shall be tightly closed with metal abutting, concrete or other equal rat-proof materials.

25. Fire protection.—(1) Every domestic building of more than eighteen metres in height and all other buildings shall be provided with adequate means of escape and all arrangements for protection in case of fire.

Appendix D. Case Study References

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