Revitalization of City Core

Petta Zone, Bangalore

Final Pre-feasibility Report

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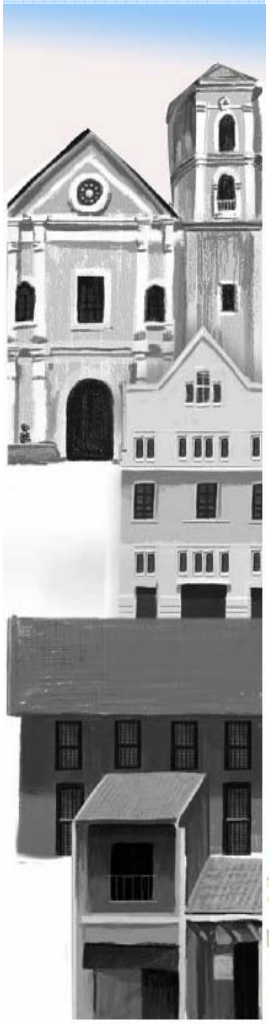
Foreword

While most of the cities in India have been concentrating on their conventional infrastructure requirements, many cities are still discovering how to deal with the challenge of urban renewal in a broader sense. Many cities in the region have old or historic inner-city areas of considerable historic and cultural value. These city centers are not only valuable old assets but opportunities for revitalization of local economic development and national cultural identity. Inner-city areas and urban heritage assets can become important opportunities for public and private investments with a good potential for bankable and profitable public–private partnership projects.

The City core or Petta occupies a very significant place in the historic context of Bangalore. As the largest informal economy of the city, trade and commerce is its primary activity. It has served as the main business centre for Bangalore in the post-independence era. Government of Karnataka intends to revitalize the Petta area.

This study explores various approaches, options of revitalization and possibility of taking up the revitalization under PPP framework.



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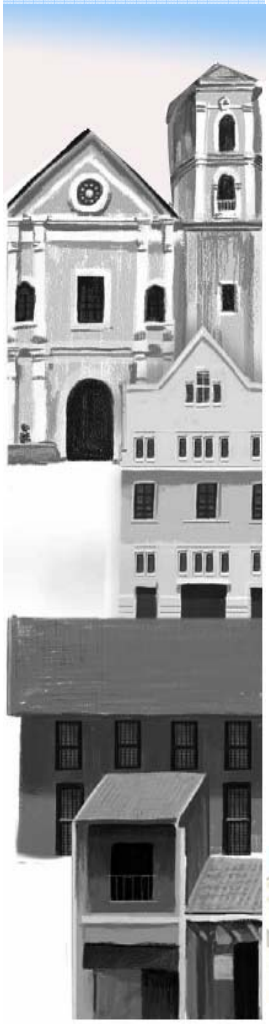

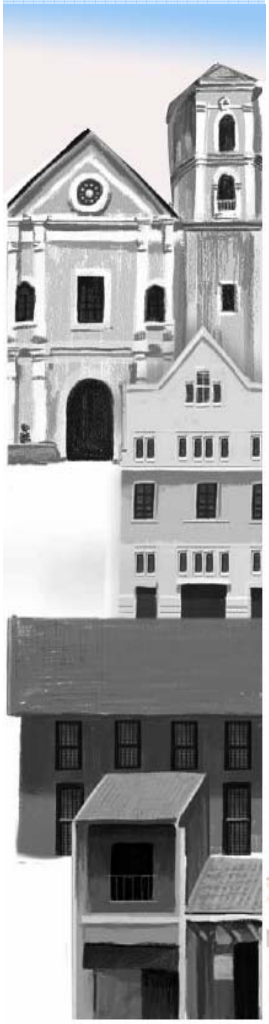

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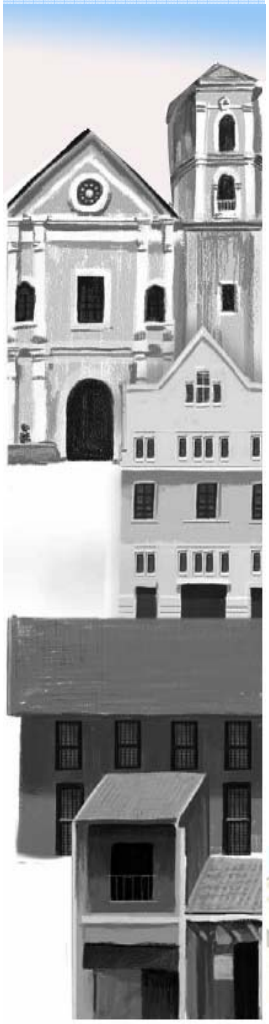

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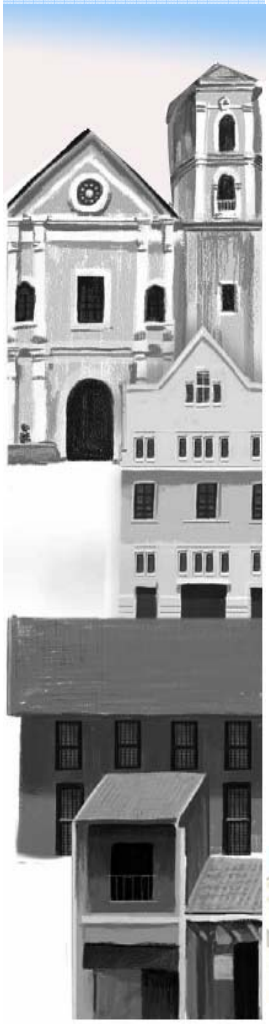


Introduction

1. About the Project

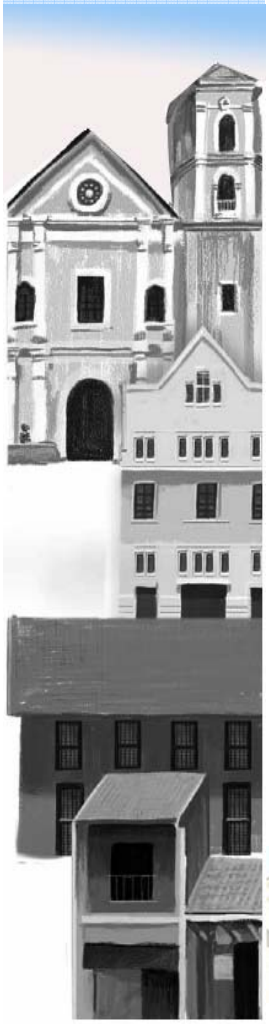
Bengaluru Petta is the largest informal economy (square kilometers) of Bangalore (1305 square kilometres). Established by Kempegowda I (c. 1510–1570) in 1537, Petta is an integral part of the present day Bangalore city. Petta (Market centre) forms a well–defined body of markets which are associated with various trades and professions of the populace in the locality.

The Petta, structured in the contemporary style of deep networks of crowded streets, richly represented the multi cultural identity, social history, and economic geography of the times which are considered as hallmark in the planning and design of any urban agglomerate.

Figure 1: Petta Area in relation to Bangalore City.

As the largest informal economy of the city, trade and commerce is its primary activity, it has served as the main business centre for Bangalore in the post-independence era.

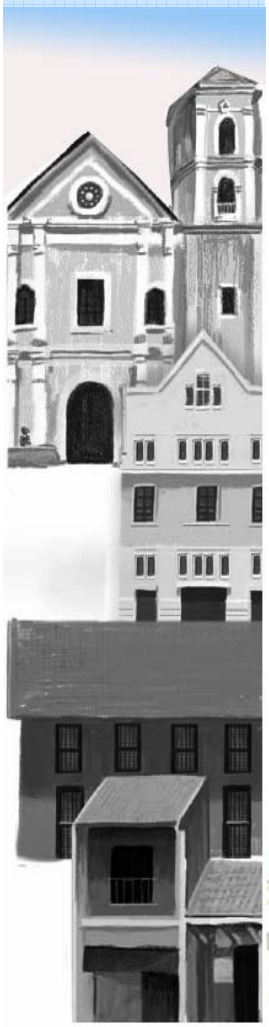
A particularity of the Petta is the special concentration of its activities. Certain



streets and neighbourhoods focus on specific activities, for example retail and wholesale dealings for cotton, spices and paper, printing of wedding cards, and small provision stores.

Figure 2: Layout of Petta area

The textile industry of Cubbonpette is a noteworthy example. Such a special concentration of activities has encouraged access to information, formation of shop owners associations, social regulations and a balanced land market. It is a mix of uses, the live-work culture and the unique special concentration of activities that lend to the self-sustaining character of the Petta.



1.1 Objectives of the Study

The objectives of the study are:

- To rejuvenate the petta area and restore its heritage character.
- Preserve the cultures, traditions and trading practices that have been in use for centuries now.
- To decongest the area with good planning and adding high end infrastructure by keeping the future and long term requirements of the city in mind.
- Restoration of Monuments to their original glory wherever possible for display and re-use.
- Identification of projects that can be undertaken under PPP model.

1.2 Approach & Methodology

The methodology adopted for the feasibility study is as follows:

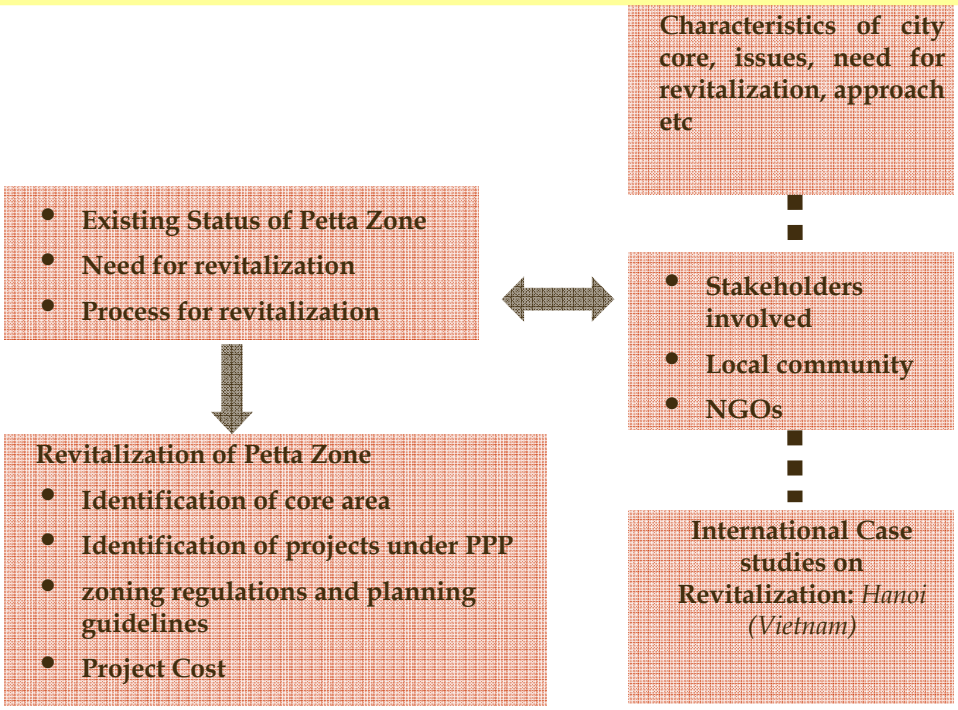
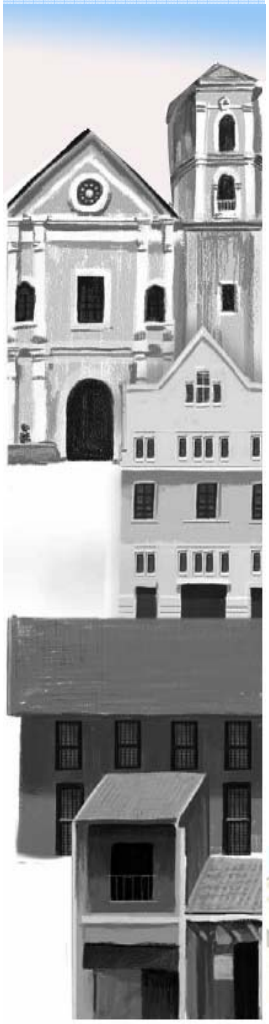


Figure 3: Methodology Adopted

The interpretation of existing trends and scenarios in the process of revitalization as presented in this report is based on interactions with limited key players namely government stakeholders, local people and personnel involved in the field work. Hence, they are indicative of the situations prevalent at the time of conducting the study.

The study is based on market information, whether from public and private sources, and it has been ensured to the best of its ability, the correctness and the validity of the same, by cross checking from various sources.



Sector Profile

2. Overview

City Cores, traditionally known as Petta in Bangalore, is a unique and important component of the city. Petta gives a clear identity to the city, showcases the history, accomplishments, and community identity. The Petta contains a mix of diverse uses and possess a wealth of historical architecture. Like any other city, the Petta reflects the health, vitality, and quality of life of the overall city.

Established by Kempe Gowda III in 1537 AD (Narasimaiah, 1924) the Petta was originally a territory marked by ethnic and linguistic, regional and national diversity. Bangalore, like other major cities around the world, has continued to embrace and adapt to the rapid demands that new economic and cultural dimensions pose. Located at the geographical centre of Bangalore, the Pete forms a distinct entity.

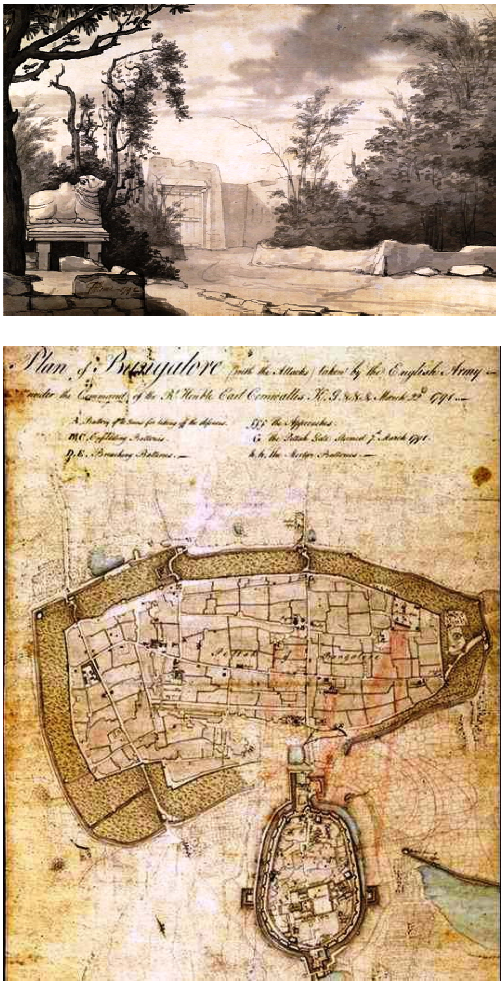
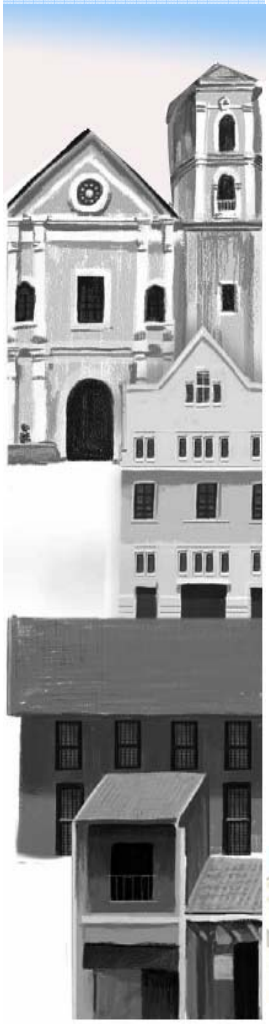


Figure 4: Historic Maps of Petta

It is bound by major roads which are formed on the original footprints of the fort wall. Historically, streets oriented along the cardinal directions led to the four gates of the fort wall. Main streets formed several petes or markets which were associated with various trades and professions of the inhabitants, viz., Tharagupete-market for grains, Balepete-musical instruments, Chikkapete, Nagarthpete- textile trade, Ballapurpete, Ganigarapete market where oil is extracted by people of the Ganiga Pete community, Tigalarapete- gardener's flower market, Cubbonpete- textile manufacture by people of the Devanga community.

The town had two main streets, Chikpete Street ran east-west, and Dopete Street ran North-South, their intersection forming Dodpete Square, the heart of Bangalore. Each petta catered to the supply of specific goods or specialized in rendering a particular service. The other petes included Halasurupete,



Mandipete, Taragupete, Seegebelipete etc.

The construction of the mud fort, laying of the roads, formation of residential layouts together with several temples and lakes transformed Bangalore from the sleepy village to a centre of culture. Brief history of the Petta area is given in Annexure 1.

2.1 Need for Revitalization

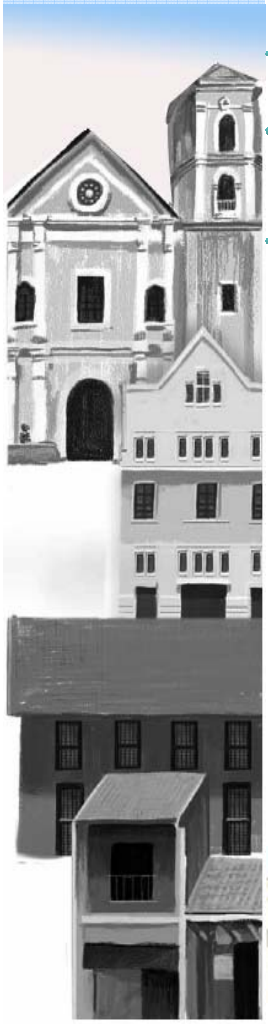
Revitalization of city core or Petta leads to:

- Economic efficiency (revitalization, including upgrading of the infrastructure increases the value of the real estate)
- Promotion of commerce, trade and tourism
- Employment creation
- Poverty reduction
- Strengthening of civic and National pride.

2.2 Issues

The main issues in the core area are:

- The land value of the core area used to be more previously, but has come down due to encroachment leading to narrow roads.
- It is not very easy nor very safe for pedestrians to move around in this area because of the high and chaotic state of traffic flow in this area.
- The whole of the Petta area has become fragmented into many pieces of land. Development of any area is possible only if the area is large and un-fragmented.
- Slow traditional activities are currently being replaced by warehouses as the younger generation moves out to pursue speedier lucrative occupations that the IT city offers.



Project Concept

3. Project Description

The Petta presents highly mixed land uses: residential, Commercial (small-scale retail) and industrial. While the commercial (34.6%) and residential (37.5%) are prominent uses, the Petta also has artesian and small and medium scale industries. Residential land-use mixed with commercial and industrial activity has facilitated a live-work culture. People living in surrounding neighbourhoods like Kempapura Agrahara generally seek employment in the commercial or manufacturing activities of this area. This core is particularly dense, with the gross density being 519 persons/ha and the net density being 4 times higher than the average in the BBMP area.

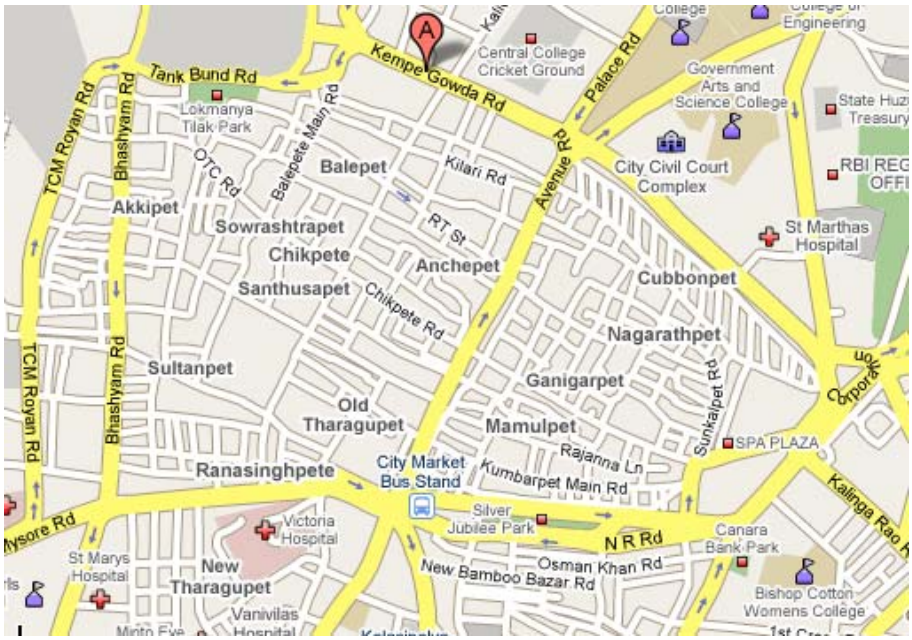


Figure 5: Bangalore latest city map

3.1 Existing Land Use

The entire Petta has organic development with high intensity of activities and heavily built up areas. Buildings are located on small plots ranging from 30 to 300 sq. meters, a result of bifurcation of properties over the years. The smallest plot frontage is about 1.5m. Ground coverage is homogeneous (close to 100%). They are constructed very close to each other, several with shared walls and their heights vary from 2 to 6 floors. Built form with heritage value has deteriorated or transformed over the years.

Zoning regulations currently permit an FAR of 1.0; however rampant building activity is taking place along narrow roads without height or land use constraints. Market forces in the area have resulted in constructions of G+1 to G+6 floors. The land value in this planning district fluctuates between two categories: Rs. 1000-2000 and Rs. 200-4000 per sq.ft. The last decade has shown considerable reduction in resident population, a trend that is continuing due to increased demand for commercial space.

Figure 6: Land use in Petta area

The central part of the Petta Planning District (old Petta) is surrounded by areas of varying built form and characteristics. The eastern areas characterized by a wide network of streets, large plots, wholesale trade and less activity as compared to the central area. It also has large buildings such as the LIC office and the Industrial Financial Corporation of India. In comparison, the areas to the west of BVK Iyengar Road host a narrow network of streets, with trade catering to the regional scale. Buildings and properties along the Kempegowda Road in the northern area of the planning district are large and are undergoing transformation.

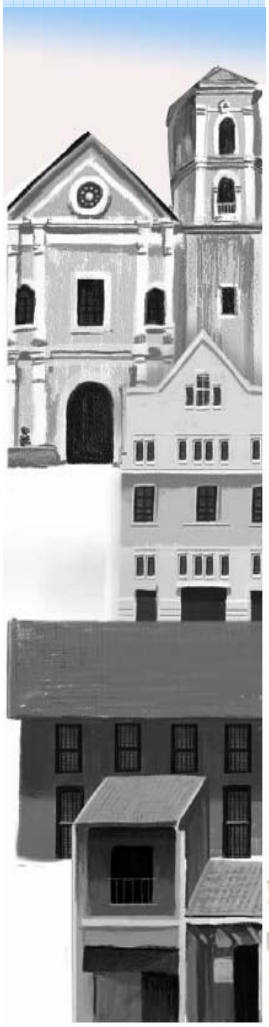


Table 1: Details of Land Use

S.No	Land Use 2004	Area ha	Area %
1	Residential	84.1	**37.5**
2	Commercial		
	Trades and Businesses	70.5	**31.4**
	Corporate Offices and services	7.2	**3.2**
3	Industrial	6.1	**2.7**
4	Public and Semi Public	12.8	**5.7**
5	Public Utilities	-	**-**
6	Parks and Open Spaces	6.3	**2.8**
7	Transportation		
	Transport facilities	0.6	**0.2**
	Roads + Railway Lines	29.8	**13.3**
8	Other Spaces		
	Quarries	-	**-**
	Lakes and Tanks	-	**-**
	Agricultural Land	-	**-**
	Vacant	7.1	**3.3**
	Unclassified	-	**-**
	Total	**224.5**	**100**

3.2 Social Index

Most of the area has a medium or a high social level (the synthetic social index varies between 117 and 128), although surrounding planning districts (Chamarajpet, Gandhinagar and Richmond Town) present a lower social level. One slum, Sidharthanagar, is located in the southwest part of the planning district.

3.3 Physical Infrastructure

Water and Sanitation

This planning district is lacking with regards to infrastructure. Services provided by the networks (potable water, sewage system) are insufficient, which has led to the use of ground water. However the 2002 data indicates that there were 118 BWSSB connections for 1000 persons, which is higher than the average in the BMP area. Sanitation levels are low in most pockets.

Roadways

The Petta is bound by the major urban road KG Road to the north and State Highway, Mysore Road and its fly-over to the South. Road networks of the Petta connect across to Sultanpet and Chamarajpet to the south, which have

historically been extension of the Petta.

Transport and Traffic

The Petta is advantageously located adjacent to the Kempe Gowda Bus Stand, the KSRTC Bus Depot and the Bangalore City Railway station and can be easily accessed from all parts of the city and state. The Kalasipalyam Bus Stand towards the south is a significant node of regional and state-level transport which services the activities of the Petta. The narrow main roads inside the Petta are not equipped to handle the current intensity of traffic and often lead to traffic congestion.

Figure 7: Traffic in Petta area

The area is highly under equipped as with respect to the parking facilities.

Urban Amenities

*Ratio = Number of existing UA
Planning District's Population/ Standard per UA

In comparison to the BBMP average, educational facilities are adequate. The planning district is well served by higher primary schools and high schools; however, the number of primary schools is inadequate. Health care facilities are highly inadequate to serve the current population of this planning district and also in comparison to other planning districts within the BMP. Number of post offices is not adequate.

Table 2: Details of Urban Amenities

Types of Urban Amenities (UA)		Average or standard	Number of UA		Ratio*	PD level Average ratio
			Private	Public		
Education	Primary Schools	1/2,500	19	18	0.82	1.57
	Higher Primary Schools	1/5,000	14	10	1.07	
	High Schools	1/15,000	15	6	2.8	
Health	Primary Health Centres	1/30,000	4	0	1.07	1.55
	Maternity/Nursing Homes	1/100,000	2	2	3.57	
	Hospitals	1/100,000	0	0	0	
Post Offices		1/100,000	2		1.78	
Police Stations		1/90,000	5		4.01	

3.4 Components of the Project

The revitalization of the Petta area can be done in the following ways depending on the level of interventions required.

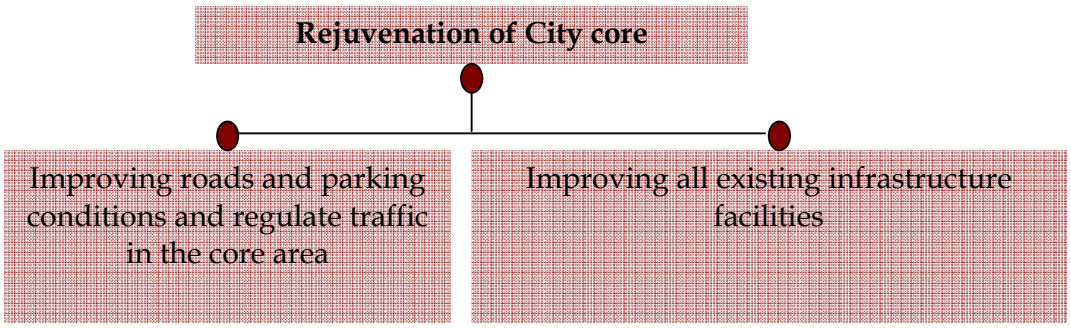
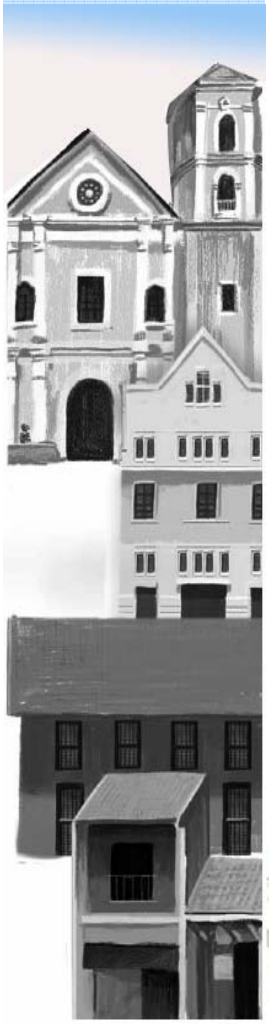


Figure 8: Process of Revitalization

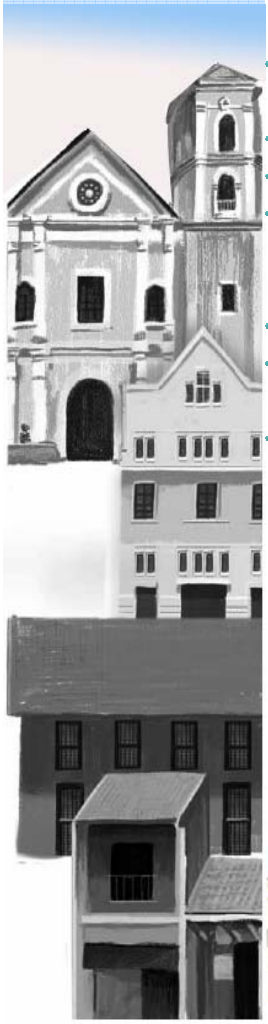
The following components can need a direct intervention by the Stakeholders and the PPP framework can be involved only at the implementation level on an EPC or annuity basis.

The revitalization shall include the improvement of existing infrastructure like water supply, road network, sewage, etc.

The core shall be retained and conserved as it is without altering the existing physical structure with minimum intervention in terms of facade treatments. The stakeholders can bring in the policy regulations for pedestrianization of identified streets to help in decongestion. These interventions can include the following:



- Augmentation of existing infrastructure.
- The key interventions to enhance the conservation area are:
    - Pedestrianization
    - Controlled parking
    - Improving existing roads
    - Provision for street furniture and lighting
    - Signage and information
- Encouraging pedestrian friendly measures would reduce vehicular congestion in the core. This would help preserve the environment and character of the old city and heritage structures. In view of this, wide pavements can be proposed in Petta area.
- This area can be delineated from the outer ring and treated differently.
- Introducing better pavements and regulating the flow of motorized vehicles will ensure more safety for pedestrians.
- Detailed study can be conducted so as to mark out some areas which should completely do away with motorized vehicles. Cycling and walking can be promoted in these areas.
- A mixed land use can be promoted further. This is because it provides a certain sense of identity to the area that has been its unique feature since the beginning. If the residents are moved out, then this would lead to encouraging them to buy more vehicles to enable them to travel from home to their work places. This would further increase traffic in that area.
- Street furniture can be provided in the city core such as lamp post, barricades (railings and bollards), seating, and litter bins.
- Core zone street furniture can have special heritage character suitable for the ambience.
- Signage, direction signs and road name signs can be installed.
- Number of hoardings can be reduced in the Petta area.
- Irregular shop front name plates need articulation. It is proposed to have uniformity in dimension and mounting height. The shops can have a new outlook, which will merge with the existing architecture.
- Drinking water kiosks and toilets can be erected at regular intervals.
- Information kiosks are proposed to be installed at the entrance and exit of the core area.
- Posters, advertisements, and compound wall writings need to be controlled.



Legal Framework

4. Legal Framework

4.1 Background

Bangalore has been substantially affected due to globalization and witnessed rapid urbanization over the last decade. In Bangalore the City core or Petta occupies a very significant place in the historic context of Bangalore. As the largest informal economy of the city, trade and commerce is its primary activity. It has served as the main business centre for Bangalore in the post-independence era.

As a part of the process of revitalization, the status of existing infrastructure facilities like water supply, sewerage and sanitation, road network, parks, etc are proposed to be improved and at the same time thrust is given towards conserving the lifestyle and strong culture of the city core.

4.2 Legislations

1. Karnataka Municipal Corporation Act, 1976

The Karnataka Municipal Corporation Act, 1976 (KMC Act) is entitled to exercise control in respect of the areas under its jurisdiction. The Municipal Corporation is responsible to provide urban municipal services to the residents of Bangalore, along with other civic governing bodies having jurisdiction over the area. The KMC Act amongst other things provides that the Municipal Corporation is responsible to carry out various obligatory and discretionary functions within its territorial jurisdiction.

Under the provisions of the Act, relating to obligatory functions and discretionary functions1 of Municipal Corporation respectively, - empowers Municipal Corporation to make adequate provisions by any lawful means or measures for achieving these objectives. For the purpose of this note, the functions relevant to public services conducive to the objectives of Urban Area Development Authority are given below:

Obligatory functions of Municipal Corporation include management of drains, public conveniences, removal of polluted matters, abatement of nuisances, management relating to municipal markets and slaughter houses, abatement of offensive trade, secure and removal of dangerous buildings and places, construction and maintenance of public streets, bridges, culverts, causeways etc., management of public streets and public places, naming and numbering of

Sections 58 and 59 of the Karnataka Municipal Corporation Act, 1976

streets and premises, laying and maintenance of public parks, gardens or recreational grounds, maintenance of monuments and memorials, preparation of plans for economic development and social justice etc.

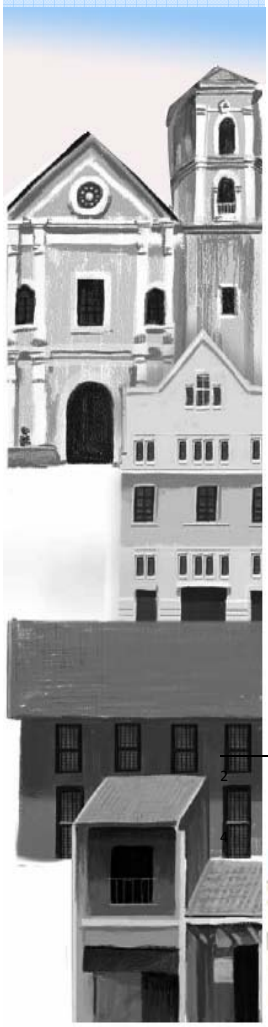
The discretionary functions include establishment and maintenance of schools for cultural and physical education, libraries, museums, art galleries, plantation of trees on roadsides, survey of building and lands, providing entertainment in public places, organization and management of fairs and exhibitions, acquiring of movable or immovable properties for any of its purposes and make compensation in this regard, construction and maintenance of rest-houses, poor-houses, infirmaries, etc., maintain laboratories for examination and analysis of water, food, drugs etc., undertake necessary actions for improvement of public health.

Powers of KMC to contract[2]

The KMC Act empowers Municipal Corporation to enter into contract for the purpose of the Act. All such contracts shall be entered on behalf of KMC and in the name of the Commissioner.

Power of the Corporation to apply Municipal Fund[3]

Section 149 of the KMC Act authorizes the KMC to apply all the money credited to the Municipal fund for the purpose of achieving its objects under the Act.



2. The Karnataka Urban Development Authorities Act, 1987

Bangalore Urban Area is governed by the provisions of The Karnataka Urban Development Authorities Act, 1987. As such the legal review of this Act has been done with a view to understand the consequences and working of Urban Development Authorities in the urban area vis a vis the Bangalore Urban Development.

The main object of the Act is to provide provisions relating to the development of urban area and the matter ancillary thereto.

Implementation Mechanism

To implement the provisions of the Act, the Act constitutes an authority called Bangalore Development Authority (BDA)4. For the purpose of advising the authority in its working as well in preparation of the master plan for Bangalore, the Act empowers the Authority to constitute an advisory council. Apart from this, the Authority is also empowered to constitute committees consisting wholly of members who constitute the Authority or wholly of other persons or

2 Section 180 of the Karnataka Municipal Corporation Act, 1976
3 Section 149 of the Karnataka Municipal Corporation Act, 1976
4 Section 3 of Karnataka Urban Development Authorities Act, 1987

partly of members and partly of the other persons for implementing any purpose of the Act.

Objects of BDA and declaration of development areas

The main object of BDA is to promote and secure the development of Bangalore urban area according to master plan and zonal development plans prepared by it under the Act. In this regard, BDA has been vested with the powers to acquire, hold, manage and dispose of land and other property, to carry out building, engineering, mining and other operations, to execute works in connection with supply of water and electricity, disposal of sewage and other services and amenities etc.

BDA can carry out developmental activity in accordance with the plans prepared by it in respect of the land declared as the developmental area. Any person or body including any department of Government intending to carry out any development activity within the area declared as development area under the Act shall get written permission by BDA as per the provisions of the Act.

Power of Authority to take up works for further development[5]

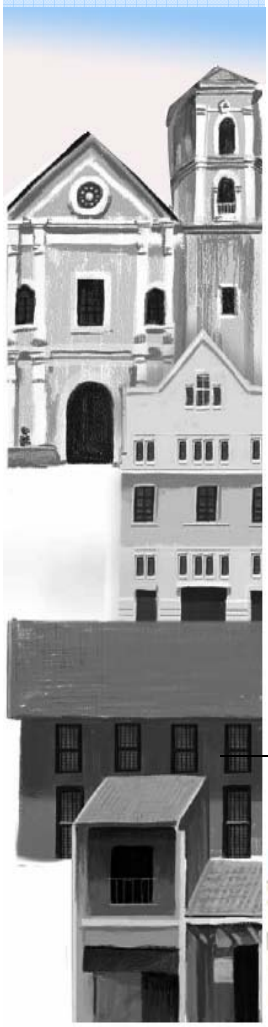
Authority may, with the previous sanction of the Government, taken up such works as it considers necessary or desirable for the further development of any area within the urban area: Provided that the local authority concerned shall be consulted if such area lies within the limits of a local authority. The expenditure incurred or proposed to be incurred or such portion thereof as may be determined by the Authority and approved by the Government in carrying out such works may be recovered by a prorata levy on the owners of properties benefited by such works as may be determined by Authority. The said sum may be recovered as any other sum due to Authority under the provisions of Karnataka Urban Development Authorities Act, 1987.

Authority to have power to acquire land by agreement[6]

Subject to the provisions of Karnataka Urban Development Authorities Act, 1987 and with the previous approval of the Government, Authority may enter into an agreement with the owner of any land or any interest therein, situated within the urban area for the purchase of such land.

Power of Government to transfer to the Authority lands belonging to it or to the local authority, etc[7]

The Government may by notification from time to time, for the purposes of development and subject to such limitations and conditions as it may impose



Section 25 of Karnataka Urban Development Authorities Act, 1987

[6] Section 35 of Karnataka Urban Development Authorities Act, 1987

[7] Section 37 of Karnataka Urban Development Authorities Act, 1987

and to the provisions hereinafter contained, transfer to and vest in the Authority the land belonging to the Government or to the local authority.

Power of Authority to lease, sell, or transfer property[8]

Subject to such restrictions, conditions and limitations as may be prescribed, the Authority shall have power to lease, sell or otherwise transfer any movable or immovable property which belongs to it, and to appropriate or apply any land vested in or acquired by it for the formation of open spaces or for building purposes or in any other manner for the purpose of any Development Scheme.

3. **The Karnataka Town and Country Planning Act, 1961**

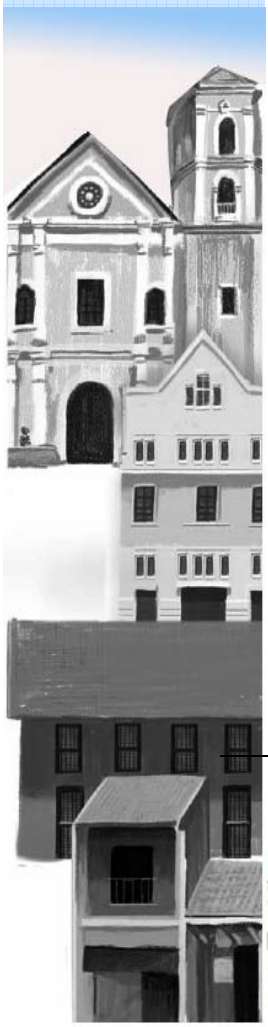
Recovery of a fee in certain cases of permission for change in the use of land or building[9]

Where permission for change of land use or development of land or building is granted and such change of land use or development is capable of yielding a better income to the owner, the Planning Authority may levy a prescribed fee not exceeding one-third of the estimated increase in the value of the land or building in the prescribed manner for permitting such change of land use or development of land or building.

Levy and collection of cess and surcharge[10]

The Planning Authority may while granting permission for development of land or building levy and collect from the owner of such land or building:-

a. Any person aggrieved by the levy, assessment and collection of cess or surcharge under section 18A may within thirty days from the date of the order appeal to the prescribed authority whose decision shall be final.
b. The prescribed authority may after giving a reasonable opportunity of being heard to the appellant and the Planning Authority pass such order as it deems fit.
c. The State Government may exempt any Board Authority or Body constituted by or under any law and owned or controlled by the State Government or the Central Government or an infrastructure Projects promoted or implemented by any company or person and approved by the State Government or Central Government from the payment of cess or surcharge leviable.



[8] Section 38 of Karnataka Urban Development Authorities Act, 1987
[9] Section 18 of Karnataka Town And Country Planning Act, 1961
[10] Section 18A of Karnataka Town And Country Planning Act, 1961

Land in respect of which a town planning scheme may be made[11]

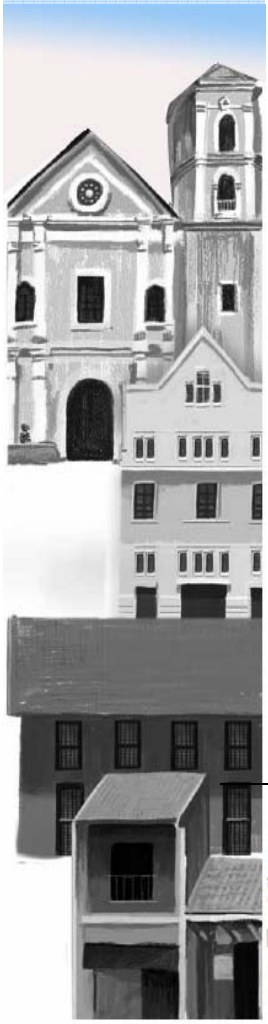
A town planning scheme may be made in accordance with the provisions of Karnataka Urban Development Authorities Act, 1987 in respect of any land which is in course of development, likely to be used for building purposes and already built upon. The expression "land likely to be used for building purposes" shall include any land likely to be used as or for the purpose of providing open spaces, roads, streets, parks, pleasure or recreation grounds, parking spaces or for the purpose of executing any work upon or under the land incidental to a town planning scheme, whether in the nature of a building work or not.

Land acquisition for purposes of a scheme or Development Plan to be deemed for a public purpose[12]

Land needed for purpose of a Town Planning scheme or Master Plan shall be deemed to be land needed for a public purpose within the meaning of the Land Acquisition Act, 1894.

4.3 Conclusion

From the above analysis of the applicable laws it is concluded that to improve the quality of life of the citizens, the authorities concerned could go hand in hand with private participants. To make projects viable from a Public Private Partnership angle, the authorities concerned shall endeavor to facilitate the private parties by proper application of the existing laws and wherever necessary by making changes in the respective rules, regulation, policies, such that, the Public Private Partnership is a viable option.



[11] Section 28 of Karnataka Town And Country Planning Act, 1961

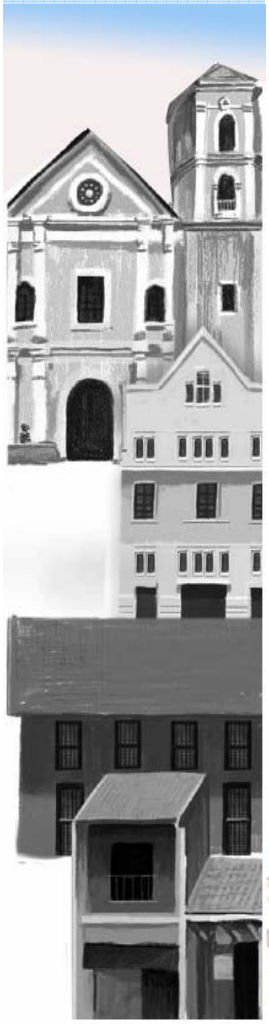
[12] Section 70 of Karnataka Town And Country Planning Act, 1961

Environmental and Social Impact

The revitalization of Petta area shall have a positive impact on the overall economy of the Petta and also lead to improvement of living standards within the core area.

The Pete falls within the intensely developed zone. Wholesale trade attracts intense activity resulting in a very high net density of 1334 persons / hectare (RMP, 2015) and a gross density of 499 persons / hectare. (Density: Bangalore Development Authority's residential layouts: 110 to 180 persons / hectare) (RMP 2015).

In Zone A, the regulations prescribe one metre setback in the front and on the right for properties up to a depth and width of six metres. Incongruously, maximum ground coverage is set separately for residential and commercial buildings- at 65 percent and 60 percent respectively- for plot size of up to 240 square metres, whereas most, buildings in the Pete are mixed in use, i.e. residential, commercial, and industrial. As a remedial to the high density of the place, the CDP '95 stipulates a floor area ratio of 0.75 (residential use) and 1.0 (commercial use); although most properties are mixed in nature, for plots up to 240 square metres (sqm) and on roads of six metres right of way, these regulations change with plot sizes and street widths; this implies most buildings are regulated to build up to ground + 1 (G+1) floors.



Governed mainly by norms of socio-economic accrual, the new developments invariably bypass the regulations which stipulate sparse development. Traditional street networks host dimensions between three metres (Huriupete Road) to seven metres (Avenue Road). New developments now rise up to a height of Ground+3 floors to G+6 (as opposed to the permissible G+1). With bare minimum access and very poor natural light and ventilation, for both buildings and the streets, the reproduction of this typology in the Pete has resulted in less livable conditions.

The proposal of augmenting the existing infrastructure and pedesatrialnizing certain identified streets shall improve the overall traffic scenario and help in decongesting the core. This will lead to increase in tourist inflow due to improvement in connectivity and more safety and security.

Reduced congestion shall result in improved environment and improved economic and social development.

Project Financials

5. Project Cost

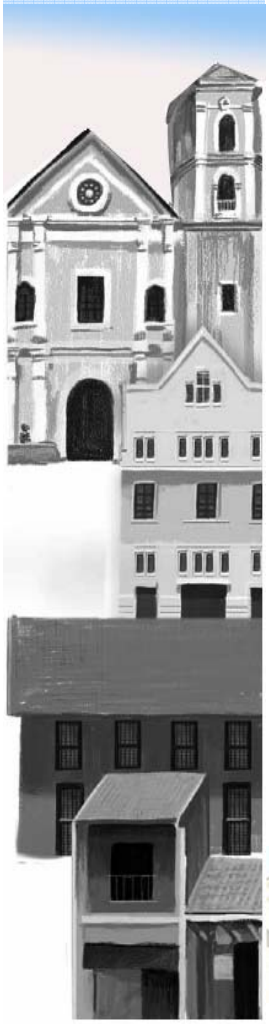
This chapter covers estimation of the initial cost and operations & maintenance cost for components of revitalization as mentioned in the previous chapter.

5.1 Assumptions

The revitalization plan shall cover improvement of existing road and parking conditions. The assumptions for the same are listed below.

Table 3: Project Cost Assumptions

Particulars	Unit
Area	**Meter^2**
Area for roads	298000
Area for footpaths	150000
Area available for parking	30000
Unit Cost	**Rs. Per Meter^2**
Relaying and repair of roads	300
Footpaths	450
Parking facilities	5500



For calculating cost, the unit costs are taken from the estimations made in the Bangalore City Development Plan, JNNURM (2006).

5.2 Capital cost

The estimated cost for improving traffic and road conditions is around Rs. 33 crores. The cost for augmentation of other important sectors of infrastructure is around Rs. 15 crores. The cost for removing encroachments is not included.

Table 4: Project Cost for improving roads and parking conditions.

Particulars	Rs. Crore
Relaying and repairs of roads	8.94
Road furniture including signage	0.89
Footpaths	6.75
Improving existing parking facilities	16.50
Total Cost	**33.08**

Table 5: Project Cost for Integrated revitalization of core

Costing for improving the existing infrastructure	Rs. Crore
Water	3.63
Sewerage	6.92
Solid Waste Management	3.39
Miscellaneous/Landscape	1.10
Total cost	**15.04**

5.3 Operation & Maintenance cost

Operation and maintenance (O&M) expenses will depend on many factors. However, at the feasibility stage, based on the analysis carried out, the O&M cost components shall be estimated as follows:

Table 6: O&M Cost for improving roads and parking conditions

Particulars	Rs Crore
Roads	1.34
Road furniture including signage	0.09
Footpaths	1.01
Parking facilities	1.65
Total Cost	**4.09**

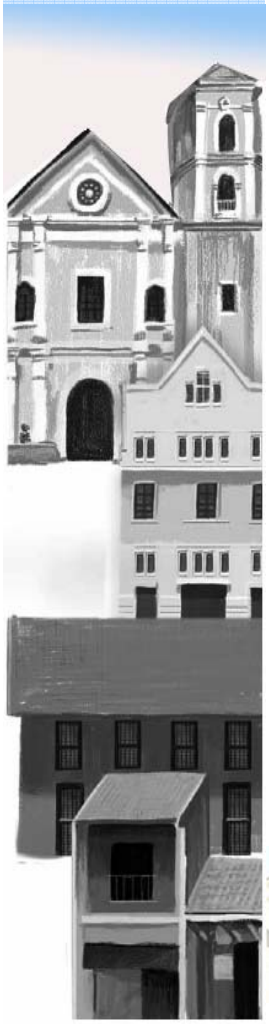


Table 7: O&M Cost for Integrated revitalization of core

Particulars	Rs. Crore
Water	0.73
Sewerage	4.15
Solid Waste Management	2.04
Miscellaneous/Landscape	0.44
Total cost	**7.35**

Operating Framework

6. Overview

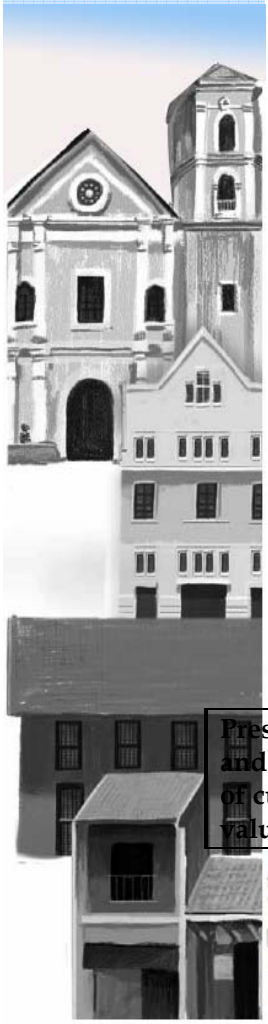
Integrated revitalization of core will comprise detailed infrastructure planning and implementation policy framework. This process requires public participation as soliciting the participation of the current residents is very crucial. The focus will be on improving existing facilities.

6.1 Indicative Project Structure

After studying details of similar revitalization carried out in different parts of the world in terms of the areas of investment and the interventions required, following observations highlight the area of investments and the possibility of taking up on the PPP Model:

Table 8: Infrastructure sectors and intervention level

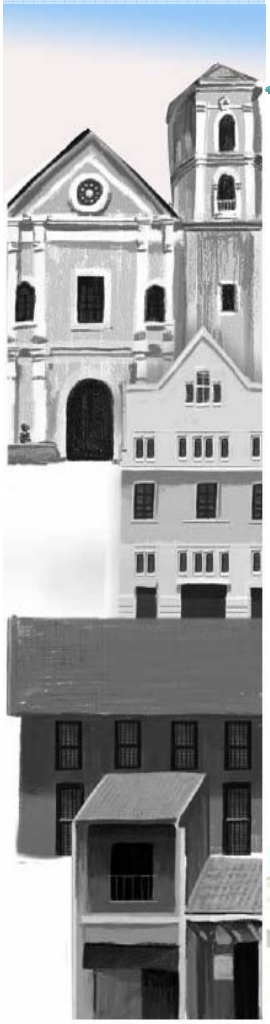
Areas of Investment	Interventions	ULBs	PPP Model
Infrastructure rehabilitation	• Roads and sidewalks • Water supply, sewerage, and storm water drainage • Electrical supply system, surface and underground cabling • Garbage disposal • Traffic management & public transport system		✓
Arts, handicrafts, and tourism	• Handicraft centers, and artists' and artisan centers • Give priority to production of local handicrafts • Provide urban design guidelines, and necessary technical and financial support to facilitate proper conservation practices.		✓
Enterprise formation	• Establish operational guidelines and regulations • Provide information services, advisory services, and marketing assistance • Establish a business stakeholders' board that involves representatives of key groups	✓	✓
Preservation and promotion of cultural values	• Develop boutique hotels, markets, and museums • Conserve religious and historic buildings	✓	✓



	• Regulate/restrict display of advertisements and signage to designated streets where commercial activities dominate.		

Accordingly the areas that come under the PPP model may need intervention from the stakeholders on policy level. Also as mentioned earlier, the infrastructure rehabilitation if taken up under a PPP model can be done either on an EPC contract or Annuity basis.

- **Engineering and Procurement Based Contracts:** Traditionally infrastructure in the country has been developed through unit price based contracts (mostly for civil construction, where there is a reasonable accuracy in developing the bill of quantities) or through fixed price lump sum construction contracts. The focus and business intent is to procure construction services for a given design, followed by asset maintenance for some time by the contracting agency (in this case the stakeholder). The payments are typically made during the construction period, with recurring expenses for operations and maintenance not being adequately provided for. This system does not consider the lifetime requirements of asset maintenance and utility extraction, but emphasises the short-term need of asset creation. Moreover, it is not necessary that the given inputs lead to desired outcomes.



- **Annuity Model:** The payments in a Annuity model or performance based deferred payment structure incentivise performance not only during the initial construction period, but also during the O&M period. The payments are typically spread over the life of the period of operations. The annuity model of payments, successfully adopted by the National Highways of India (NHAI), in its road expansion programme is one variant of the performance based contracting wherein a specified payment by the grantor of the concession (i.e. NHAI) is paid at stated intervals for a pre-determined concession period to compensate the developer for the capital costs and operating expenses and return thereon in relation to construction, operation and maintenance of a project facility.

Similar structures could be developed for augmentation of infrastructure facilities in Petta Area. The payments structures could be varied based on the need, while retaining the principal advantages of payments for achieving performance targets, transferring risks to the party who can bear the same most effectively, and addressing the key issue of operations and maintenance for the project period.

In case of projects being developed with the assistance of multilateral agencies, the inflows for the project are skewed towards the initial phase of construction. In a way this would reduce the interest burden as the developer could recover most of his initial expenditure during the early phase of the project period.

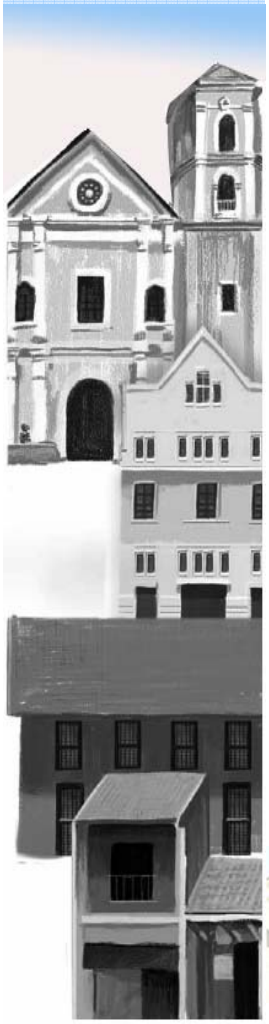
6.2 Internal risks and the possible mitigation measures

The possible internal risks in the project and the possible mitigation measures are summarized as follows:

Table 9: Infrastructure sectors and intervention level

Risks	Mitigation Measures
Risks associated with the project itself	*Characteristics of the clients/users of the service:* resistance to change, lack of involvement, inadequate education level, difficulties in communicating, unrealistic expectations – to overcome stake holder's resistance in seeking citizen participation and others for buy-in for the project implementation *Scope of the project:* universality or specificity of the service, number of partners involved, size of the budget. (contract documentation being revamped to define the role and responsibility very clearly emphasizing on the need to communicate to the stakeholders at critical times) *Complexity of the project:* especially organizational *Definition and structure of the project:* unclear objectives, ill defined specifications and functional requirements, changes in the scope, difficulties in integrating data or processes.
Organizational Risks	*Lack of Resources:* uncertainty of funding, inadequate resources, lack of expertise in complex resource management. *Project team competencies:* lack of experience, expertise, stability and communication skills. *Management Strategy:* inadequate or inappropriate organizational support control, lack of leadership, unavailability of tested tools and processes. (Inter-institutional committee proposed to deal with policy level decisions including release of funds from the State Govt.) *Technological know-how:* absence of a technological infrastructure and in house technological competencies (competencies being upgraded as well as latest construction

Relationship risks	practices being followed in road construction, material handling and disposal of debris) *Form of collaboration:* inadequate or inappropriate type of agreement, misunderstandings regarding the content of the agreement; inappropriate selection of partners.(all contractual frameworks to define the role, responsibility and liability of various parties clearly; contractors to be provided opportunity to seek clarity before accepting the work) Collaborative process: problems occurring with collaboration, communication, inertia, dependency, mistrust, lack of consensus or involvement.



7. Project Development Needs

The development of the Project will require the following activities:

- Finalization of Development Approach
- Public Participation
- Selection of the Private Player

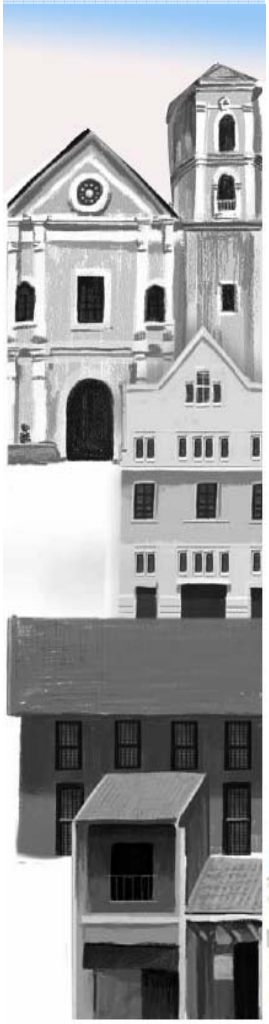
The selection of the private player has been elaborated in the previous chapter. The other two activities are detailed out below:

7.1 Development Approach

All revitalization initiatives must be financed. A key concern is raising the funds necessary for seeing initiatives through to completion. Urban revitalization initiatives involving historic areas combine one or more of the following approaches:

- Adaptive reuse and cost recovery.
- Integrated area development.
- Full commercialization of historic city centers.
- Real estate development.
- Modernization of commercial activity.
- Promotion of tourism and conservation of tourism monuments

An overview of the possible implementation options is given in the figure below:



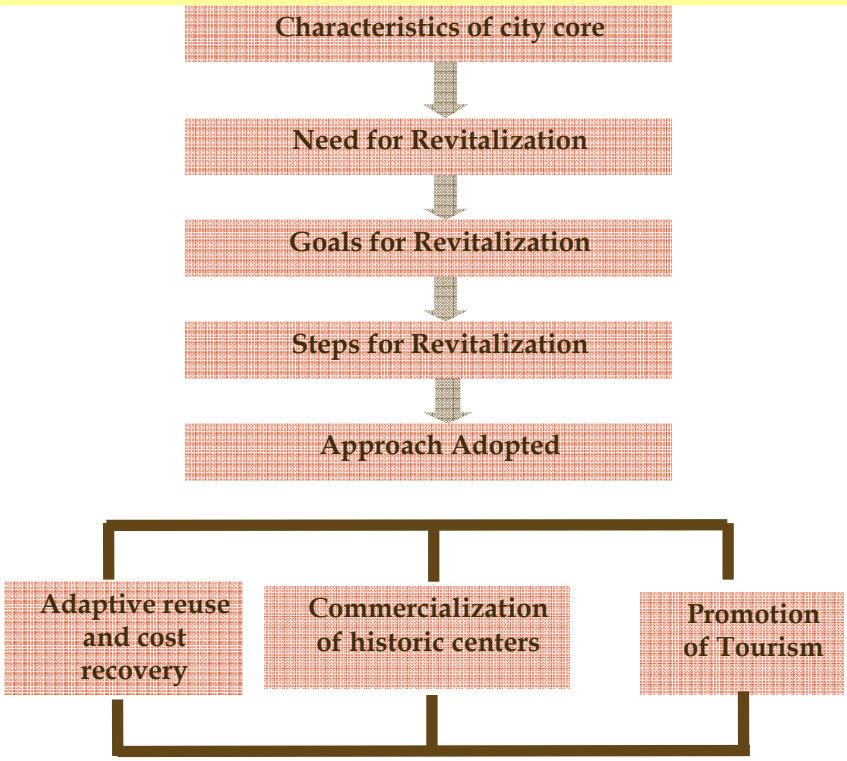
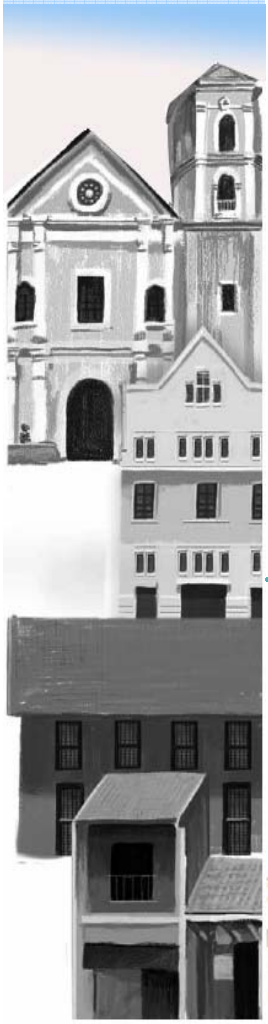


Figure 9: Study Approach

- **Adaptive reuse and cost recovery:** Under this approach, private entities and/or non-government institutions are allowed to lease historic facilities for commercially viable uses that respect their historical value and to earn a profit from the use to which the facilities are put. Examples of adaptive reuse include heritage investments in Cartagena, Fez, India's Rajasthan region, Penang, Quito, Sana'a, Singapore, and Tunis. Adaptive reuse is generally appropriate to heritage structures and not necessarily those of a grandiose nature. Heritage investments carry significant cultural prestige value and thus often stimulate private investment. In addition, they often improve the corporate image of the company sponsoring their revitalization via association in investment in social good. This often makes them particularly attractive to private investment. Further, adaptive reuse is often seen as being desirable because of its positive connotation toward the environment.

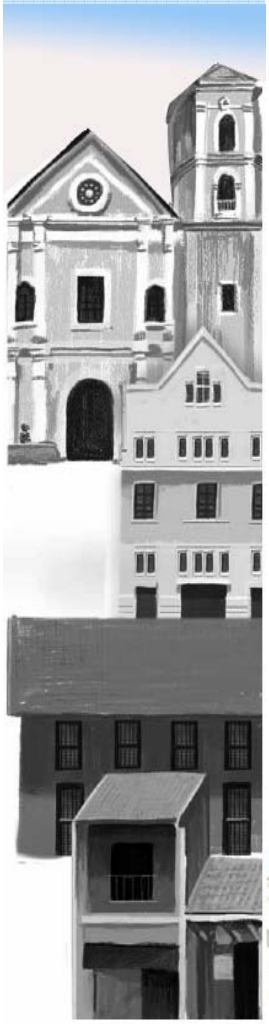


- **Full commercialization of historic city centers**: Few cities have followed an entirely commercial model in revitalizing historic urban areas. Singapore provides the best example of this approach, since it allowed the local redevelopment authority to acquire all plots of land located within the designated conservation areas. These plots were then sold to commercial entities for rehabilitation cum redevelopment as shops, restaurants, tourist

hotels, or offices.

- **Feedback between increased land values and public revenue:** In addition to increasing land values, revitalization of historic urban areas also increases local tax revenues, which in turn provides additional stimulus for rehabilitation of the infrastructure serving the revitalized area. Conversely, revitalization of historic city centers contributes to modernization of the commercial sector, thereby increasing revenues. Singapore's experience is that urban revitalization leads to a significant increase in property values. Rehabilitation of the shop houses in Singapore's heritage areas have caused property values to increase to nearly eight times their pre-rehabilitation levels.

- **Tourism:** Development of tourism often encourages conservation of monuments and revitalization of historic urban centers. However, the degree to which the economic benefits of tourism are distributed across the population of the entire city depends on the manner in which the revitalization initiative is implemented. Given that tourism-related economic activities (e.g., hotels) directly benefit from revitalization initiatives, it may be appropriate to levy a "heritage tax" on tourism-related activities to ensure that some of the increased revenues that these activities enjoy as a result of revitalization will be devoted to further revitalization efforts. This approach, which has been used in Havana, is one means of financing urban revitalization efforts over the long term, particularly in the case of archaeological sites and similar heritage-related artifacts that generate only modest revenue streams, but that produce a significant and direct benefit to tourism-related economic activities.



7.2 Government Obligations

The stakeholders may need to bring in strict enforcement measures to deal with indiscriminate occupation. Apart from education and awareness programmes, enforcement measures act as deterrent for the erring vendors and owners of vehicles who park in the no-parking zones. It is recommended that the civic authority is empowered to deal firmly with violators of law in respect of occupation and parking of vehicles where it is not allowed. To sustain the initiative, enforcement measures are proposed against unauthorized constructions and to deal with encroachments.

The Stakeholders need to bring in efficient legislation, targeted law enforcement, reliable data and qualified staff.

Public Participation: For shaping development frameworks suitable to people's aspirations planning processes must involve consultative processes and citizens' participation with representation from residents' groups, trade organisations, socio-religious institutions, sociologists, economists, lawyers, planners, urban designers, environmentalists, historians, linguists, architects, government bodies, and NGOs. An informal economy such as the Petta claims concessions by influencing policy inputs through its implementation rather than its formulation. For a place of complicit enforcements, it is imperative to devise planning processes that would enable dialogue among all actors, public authorities, citizens, related trade and residents' associations and professionals in an attempt towards shaping shared relationships between the public and the private realms.

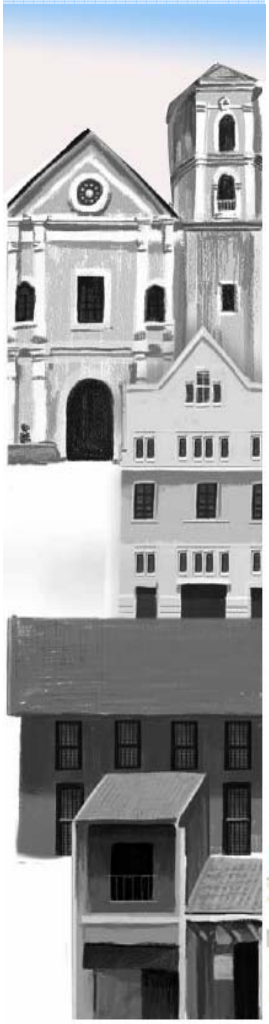
Accordingly, possible design alternatives will need to be demonstrated to the various inhabitants / groups of the Petta Community values of cooperation and negotiation may result in new development patterns that ensure livability through shared amenities and land pooling of bifurcated lands, wherever possible.

7.3 The Development Timeframes

The major development activities and the time frame involved in the same shall be as follows:

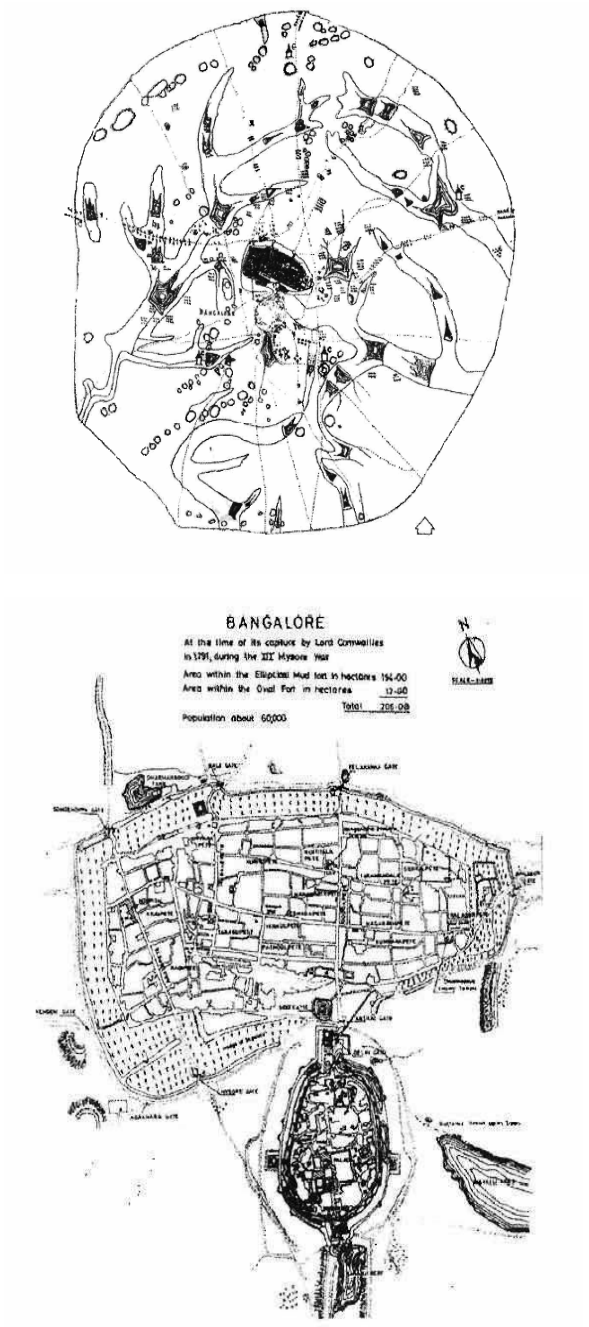
Table 10: Development timeframe

Activities	Timeframe
Finalization of Detailed Project Report	180 days
Public Consultation and incorporation	30 days
Selection of the Private Player	180 days
Project clearances and approvals	60 days
Project Implementation	360 days



Annexure-1: Brief History of Petta Area

After Kempe Gowda, the Marathas ruled the city for a brief period, after which the Mughals captured the city and leased it to Chikkadeva Raya Wodeyar in 1690 AD.

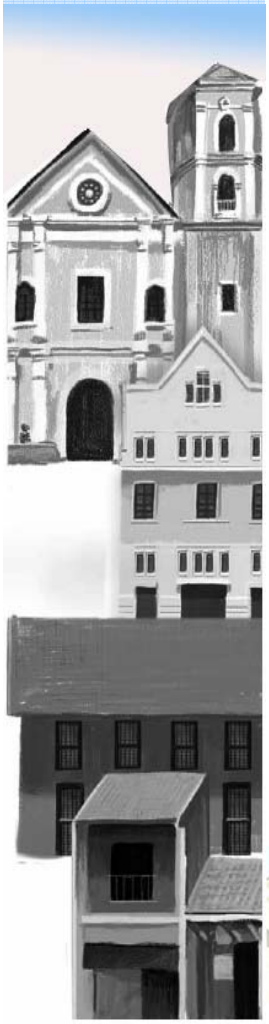


During this period, there was no major growth in the city, with not much change in urban fabric. The only addition to the cityscape by the Mughals that can be seen even today is the Jumma Masjid built by Kiledar, towards the north east of the town.

After the death of Wodeyar in 1704 AD, Hyder Ali usurped the thrown and ruled Mysore with his son Tippu Sultan until the British defeated him in 1790 AD.

Hyder Ali got the oval fort in the south rebuilt in stone, as it exists today. The town spread to about 5 km. in circumference, with the fort at the south end, with well planned streets and prosperous shops indicating a flourishing economy. Later Tippu Sultan added the famous wooden Summer Palace, to the south of the fort. After defeating Tippu in the 4th Anglo-Mysore War, the British took charge of the city. Moving away from the traditional city the British built the new area of cantonment.

Figure 10: Historic Maps of Petta (Around 1710)



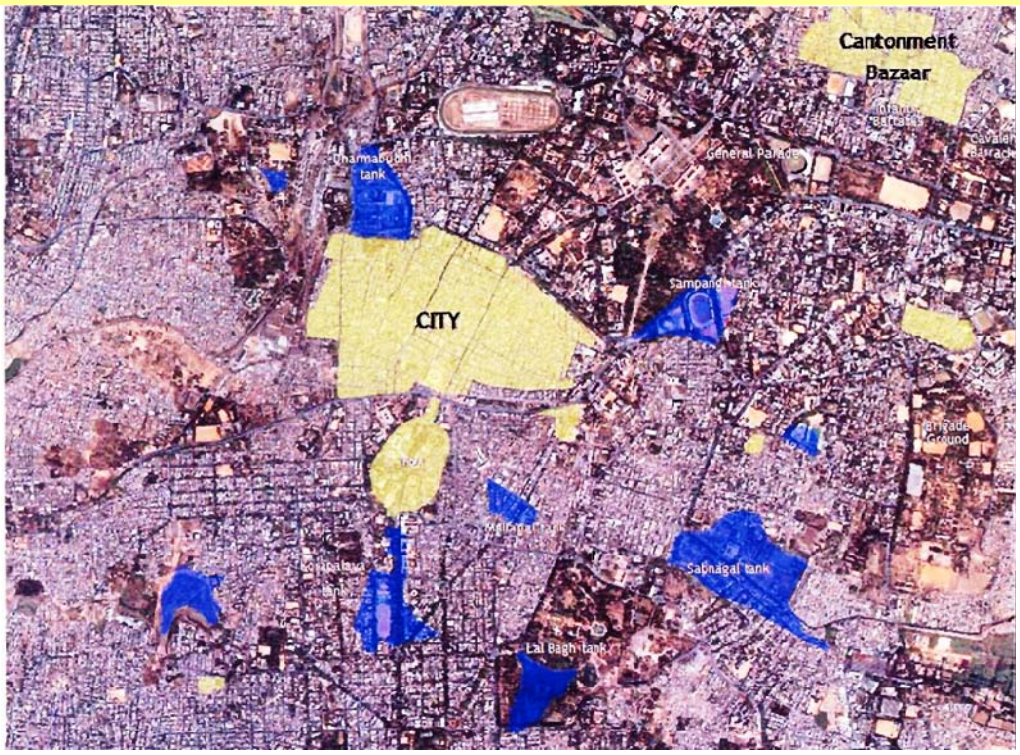
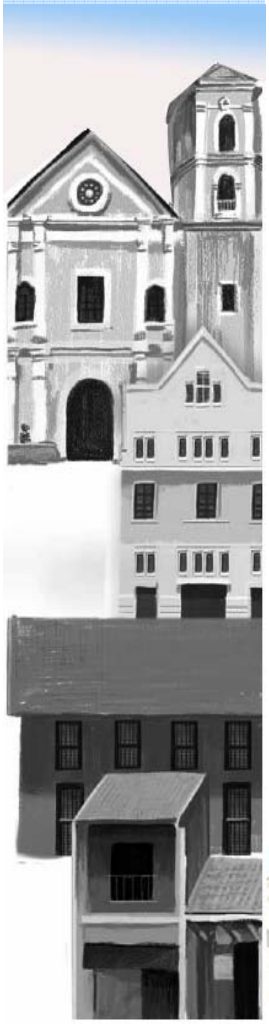
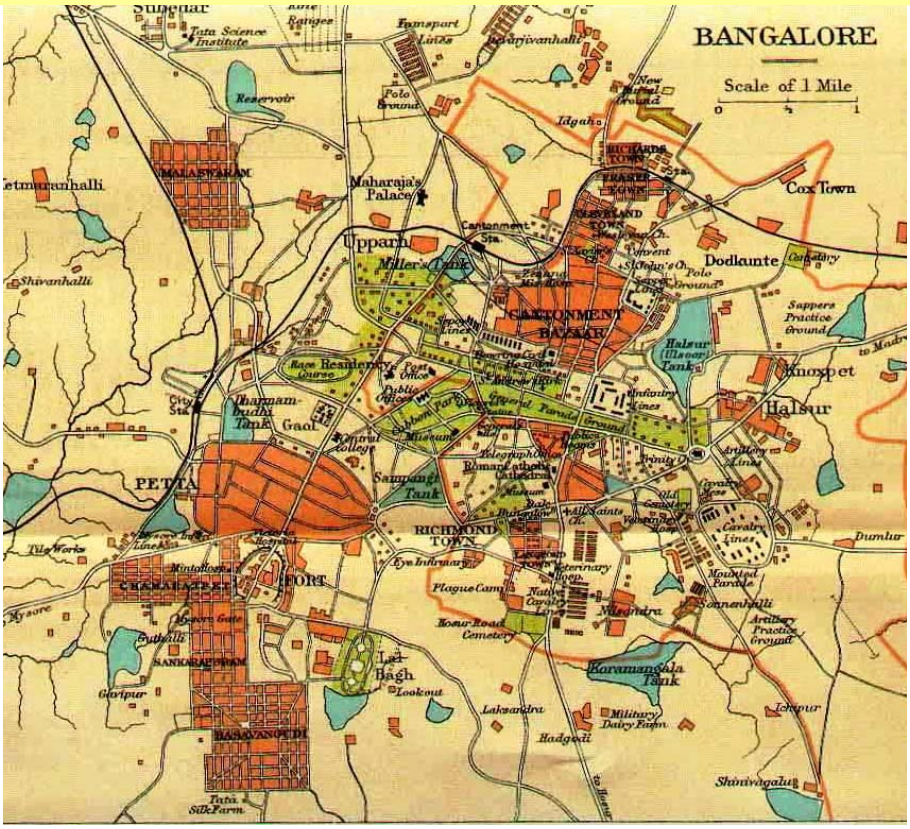


Figure 11: Historic Maps of Petta (Around 1881)

By 1881 AD, Bangalore had two nuclei; one a high density area around the fort and its market (K. R. Market area) in petta and the second Blackpally (Russel Market area) within the colonial city both linked together by the green corridor of Cubbon Park.

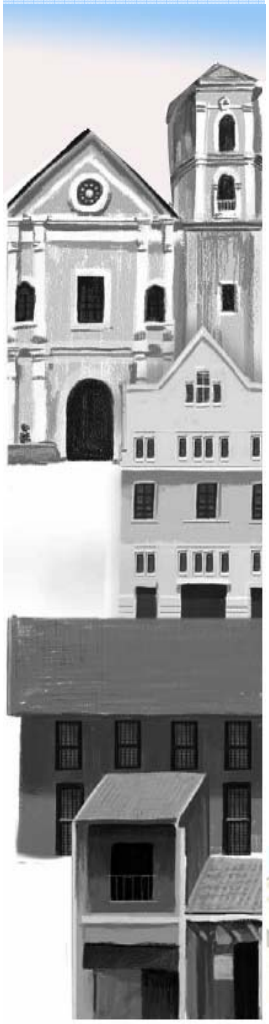
During this period several new buildings were built. These include the famous Town Hall, Victoria, Minto Hospital etc. in the Greek, Tudor and Roman styles.





In the year 1947, India gained independence and later the various states were formed. Bangalore has since remained the capital of the Karnataka State. Bangalore continued to grow and several public sector companies were set up transforming it into a science and technology centre. By 1961, Bangalore had become the 6th largest city in India with a population of 1,207,000.

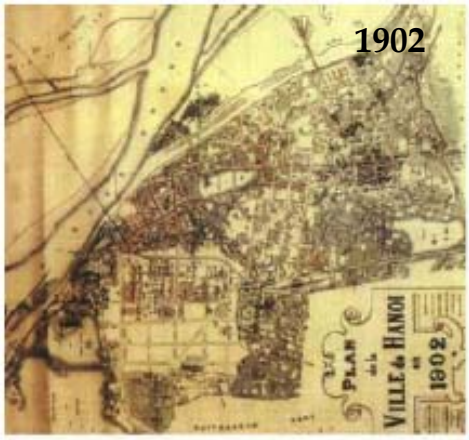
Irrespective of all these developments, the traditional city center was continuously ignored. Both the British and the Government neither bothered to develop the settlement nor preserve the historical past. This resulted in unplanned growth in the area consequently crumbling the historical city and its surroundings. The important historic buildings in the Petta area include Dharmaraja Temple, Jumma Masjid and Ranganatha Temple.

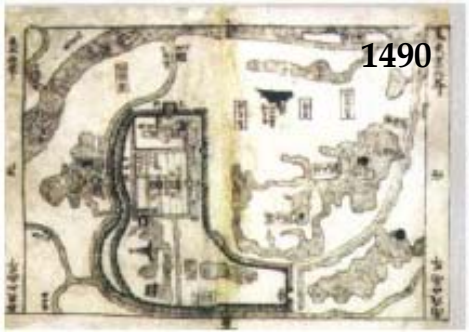


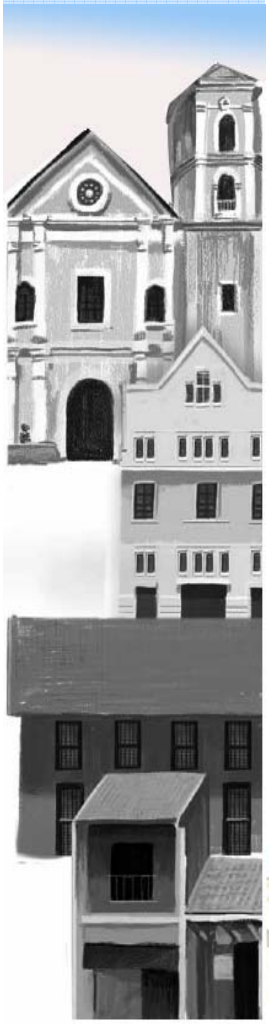
Annexure 2: Case Study for revitalization of city core

Hanoi, Vietnam

Hanoi, the capital of Vietnam, is located in the Red River delta and has, for nearly a thousand years, been the socio-cultural, economic, and political center of the country. Occupying the stretch of land between West Lake and Hoan Kiem Lake, Hanoi's old citadel was built in the 11th century and was demolished and reconstructed many times. Its most recent destruction occurred when the French Army launched its offensive against the capital at the end of the 19th century. Established in the year 1010, Hanoi is an ancient city with a long cultural heritage. Today, it is a city in transition—the capital of a country moving from a centralized command economy to a more decentralized market economy. As a result, the city is experiencing rapid economic growth and is actively seeking further development. Hanoi's historic center has passed through four historical periods: (i) feudal, (ii) French colonial occupation, (iii) independence, and (iv) economic liberalization







Planning Initiatives

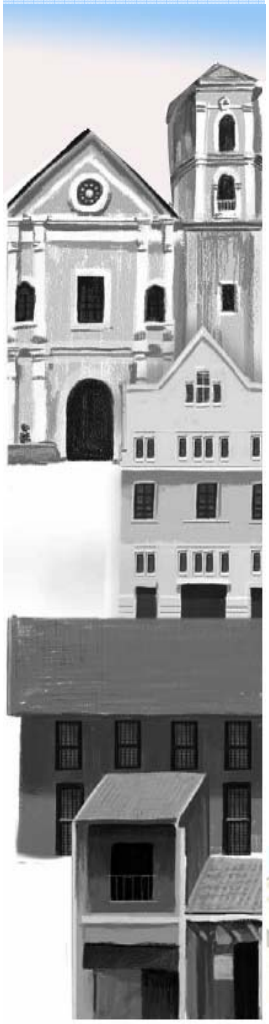
The Hanoi Master Plan to the Year 2020, which was approved by the prime minister on 20 June, 1998 envisages the historic inner city as being dominated by small-scale commercial and trading activities and high-density residential areas. In addition to the area's architectural heritage, its natural environment and historical and cultural traditions are to be preserved. The plan introduces zoning controls as well as limits on the height of new buildings and includes upgrading and construction of social facilities. The most prominent public buildings addressed by the plan are the existing Municipal Center in Ba Dinh District, which is part of the national institutional and political center; Hoan Kiem, the municipal center of administrative politics; and the new cultural,

commercial, financial, and services center located at West Lake.

Revitalization Initiatives

Established in 1992, the Office of the Architect-in-Chief reports directly to the Hanoi People's Committee. The office is responsible for the control of all building activities within the city's boundaries, as well as enforcing planning regulations in the preservation areas. The guidelines drafted by the office concerning the Ancient Quarter's preservation, which have been approved by the Hanoi People's Committee, state that all buildings classified as monuments must be preserved, and if necessary, restored. Further, buildings fronting streets or within residential blocks are limited to a maximum height of three or four storey. Several studies concerning the preservation and restoration of the old city of Hanoi were conducted during the 1990s by local and expatriate specialists. One of the earliest was a study by Phe and Yukio Nishimura (1990) that concerned housing and environmental conservation in the Ancient Quarter. In 1994, the National Institute for Urban and Rural Planning, and the Architectural Research Center studied mixed-use redevelopment and conservation of the Ancient Quarter. But, so far the most comprehensive and operational plans developed thus far is Hanoi: Planning and Development Control.

Funded by the Australian Agency for International Development (AusAID), this plan includes a comprehensive strategy and an operational framework for managing conservation and development in Hanoi (AusAID 1995; AusAID 1996). In 1995, the Ministry of Construction determined that conservation and restoration should be the guiding principles for development of the Ancient Quarter in order to preserve its cultural and architectural heritage. Then on 5 April 2004, the Ancient Quarter was classified as a national historic heritage site by the Ministry of Culture and Information.



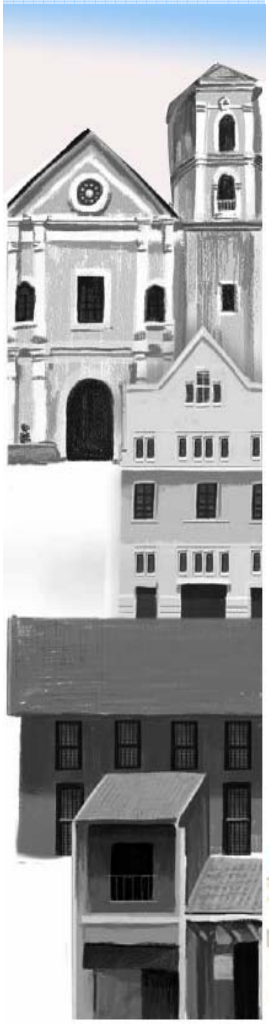
Real Estate

Prior to economic liberalization, centralized economic planning determined where people worked and lived, as well as where they received food subsidies and social services. As a result, household tenancy was well documented. However, the 1993 Land Law introduced major changes to property rights. While the state retains ownership of all land, private individuals and entities can now possess, transfer, and mortgage use rights to land parcels for specific periods of time. To procure these rights legally, urban households must obtain a building ownership and land use certificate, a single legal document conferring both homeownership and land use rights (LURs) on the bearer (AusAID 2000). Also known as the "pink certificate", this certificate is the equivalent of a freehold title to residential property.

There are four types of land ownership in Hanoi's inner city:

(i) Government-owned houses,
(ii) Mixed government–private ownership,
(iii) Private ownership, and
(iv) Company- owned units.

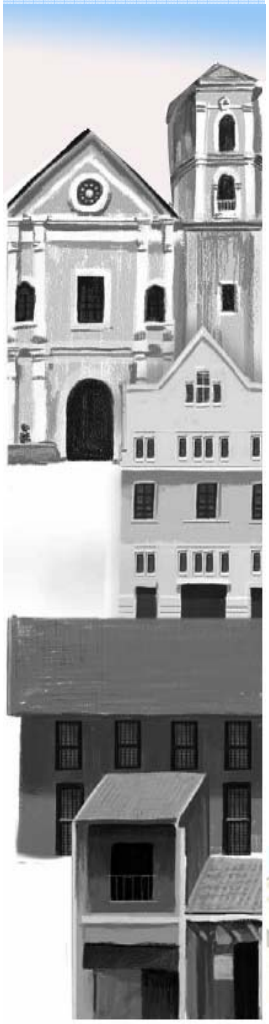
Nearly 20% of all buildings in the Ancient Quarter are state-owned. Government-owned buildings are managed by the City Land and Housing Department, which is also responsible for repair and maintenance of these buildings at no cost to lessees. Rental payments for residential accommodation are extremely low at about 3–4% of a lessee's nominal salary, which in relation to market rates is practically nothing. The heavy subsidies implicit in this arrangement are part of the overall compensation package of state employees. The minimal payments they make for housing are thus not rent at all, but are instead indicative of the significant housing subsidies they receive as part of their pay (Kim 2006). While private ownership is now officially accepted, it pertains only to houses and not the land on which they stand since the law stipulates that all land remains in the control of the state. The government has consistently affirmed that "land, forests, mountains, rivers, lakes, water sources, and subsoil resources all belong to the state and come under all-people's ownership" (Article 17, 1992 Constitution). As a result, in cases in which a house must be demolished, the City Land and Housing Department confers on the private owner in question the right to housing of corresponding quality and size, privately-owned urban land by the authorities is problematic because of lack of effective planning control, and the fact that in general, disputes are resolved through careful negotiation. While housing conditions in the French Colonial Quarter are superior to those in the Ancient Quarter, overcrowding, structural decay, destruction of architectural heritage, and social constraints are also common in the French Colonial Quarter. Thus far, government policy has had little positive impact in encouraging improvement of residential quarters. This is because residents simply prefer to continue leasing government-owned housing at the heavily subsidized rates offered to them. This is problematic for the Government, since although it still manages a large share of the housing stock, the heavily subsidized rental rates produce too little revenue to provide for maintenance and improvement of residential units. Company (i.e., work-unit) ownership of housing is widespread in Hanoi, although this is mainly concentrated in districts where businesses such as department stores and rented offices are located.



Ownership Type	Residents	Issues
Government-owned	State employees, retirees	• Lack of financial resources for improvement of residential units • Rental fees too low to provide for maintenance and improvement • Residents do not want to pay for improvement and maintenance since they do not own these units outright.
Mixed ownership by Government and individuals	One or several households, state employees, retirees	• Misunderstandings often occur when one household improves a home and this impacts other households. • Multigenerational households that do not share a familial relationship must share the same toilet, bathroom, and other public service facilities, which usually causes conflicts.
Privately-owned	One or several households	
Company-owned	Company personnel	

Source: Comprehensive Urban Development Programme in Ha Noi, Capital City of the Socialist Republic of Vietnam (HAIDEP) 2005.

Revitalization and Real Estate Development



The Government realizes that while inner city revitalization can generate a significant amount of profit, this may require relocation of current residents. In October 1995, the Hanoi People's Committee designated the Hanoi Land and Housing Department as the agency responsible for implementing the renewal of the French Colonial Quarter. The major objective of this plan is to expropriate, restore, and renovate 150 villas for high-end accommodation, as well as for rent to foreign businesses (Japan Bank for International Cooperation 1999). However, this plan has not yet been implemented due to problems relating to resettlement and financing. As per existing law, current renters are to receive compensation sufficient to enable them to buy new housing units of comparable quality and size. Despite the potential negative social impacts resulting from relocation of these villas current residents, the Government plans to move ahead with this plan for transformation of the French Colonial Quarter. However, its implementation will require authorities to provide land sites where apartments can be built for the relocation of entire families. To the degree that private companies perform more efficiently than government agencies, the private sector should be allowed a major role in revitalization, with the Government's role being restricted to that of sorting out relevant normative issues, updating the legal framework, and upgrading the infrastructure necessary for urban transformation. Since 1994, the Government has authorized land ownership by foreigners permanently residing in Viet Nam. While this

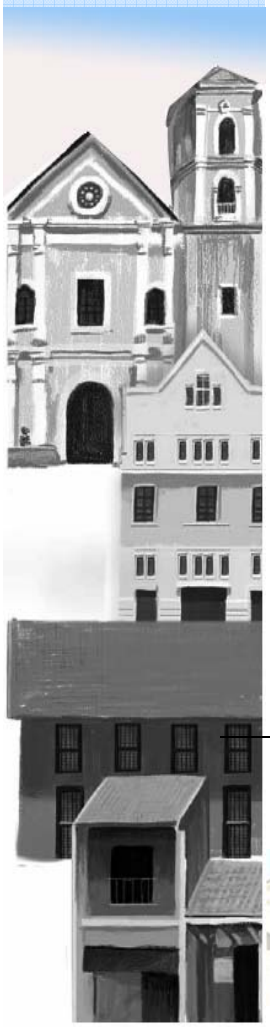
authorization extends first and foremost to residential housing, it may also include commercial enterprises and industry.13 These legal provisions for expatriate ownership and LURs further augment the already significant real estate business opportunities being driven by Viet Nam's rapid rate of economic growth. Viewed from the appropriate perspective, this high level of economic activity in Hanoi's real estate market constitutes an opportunity for revitalization of the city's historic areas. However, taking advantage of this opportunity in an efficient manner will require increased accountability on the part of real estate professionals.

Of the approximately 3,000 real estate firms currently operating in Hanoi, few have obtained official business permits. As a result, regulation and accountability are minimal. Given this, establishing a real estate trading center operated by municipal authorities would facilitate yet even more rapid growth in real estate transactions by improving accountability and creditability among all members of the real estate industry. Such a center has been planned for Hanoi since 2006.

Land Values

While the Land Law of 2003 attempted to fix land prices in a manner consistent with free-market levels, it did not provide for regulation of activities pertaining to LUR transactions. As per the law's Article 4.23, land prices are formally announced to the public on the first day of January of each year, with the currently applicable price levels serving as the basis for taxation, land use fees, and leases. The prices announced also serve as a benchmark for compensation when sites are cleared and residents relocated. Land leases are of four types, with prices ranging from $0.06 to $12.00 per square meter (m2) per year. Since these prices remain unchanged for 5 years, at the expiration of each 5-year period, leases are revised and prices readjusted, provided that price increases do not exceed 15% of current rates.

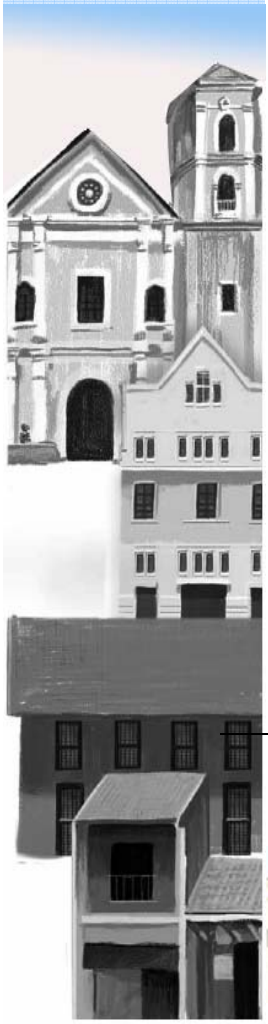
The above notwithstanding, in practice three mechanisms determine land prices: (i) announcement of land prices by the Government, i.e., the people's committees of provinces or central cities; (ii) auctions or tenders of LURs; and (iii) agreements between land users concerning transfers, leases, and subleases. Today, scarcity of well-located urban land has resulted in an overheated market. After many years of stagnation, land prices in Hanoi have increased so steeply in recent years that they are now among the highest in the world. During 1990–2004, land prices in Hanoi increased by a factor of 10. Then in 2007, the real estate market rose so steeply that at select auction sales, inner city dwelling spaces on Hang Bong, Hang Ngang and Hang Dao Streets sold at prices in the



[13] Government Decree No. 60/CP of 5 July 1994 grants to expatriates the right to own dwelling houses and the right to use residential land in urban areas. Article 19 of Decree No. 61/CP of 5 July 1994 on purchase, sale, and trading of dwelling houses contains similar provisions.

range of VND100–180 million ($6,250–$12,000) per m2. This is surprising, given the low income levels of Viet Nam compared to countries at comparable levels of per capita gross domestic product. Surprisingly, such high land prices appear to have had little adverse impact on economic growth; they even seem "normal" in light of the impacts of economic globalization.

High-end residential units are in the greatest demand in Hanoi, partly because buyers of these units are mainly investors seeking to lease them to expatriates. As a result, price increases for these units have been the most rapid. Currently, the selling price of these apartments is $1,600–$3,500 per m2, though construction costs are only about $400 per m2. While rents for high-end apartments are relatively stable at $30–$45 per m2 per month, which is roughly equivalent to prices in similar markets, rental prices for office space continue to increase rapidly. The price per m2 of A-level office space has reached $50 per month or even more at locations in the center of the city, with prices rising at 6.31% annually. Conversely, the price per m2 of B-level office space is approximately $40 per month, with prices increasing at 4.55% per year.14 Regarding the market for hotels, the number of four- and five-star hotel rooms in Hanoi is still limited. Five-star hotel rooms in the inner city rent for $120–$350 per night, with room occupancy rates reaching 82%. In sum, current real estate prices are much more representative of a temporary demand–supply imbalance than they are of the cost of materials and manpower used in construction. In the view of CB Richard Ellis (CB Richard Ellis 2007), the leading expatriate real estate service provider in Viet Nam, demand for Hanoi real estate is likely to remain high in 2008; thus, the current demand–supply imbalance is likely to remain in effect during 2008–2009. Only after large-scale projects become operational in 2010 can this demand–supply imbalance be corrected and thus prices stabilized. The new land prices for 2008 released by Hanoi authorities show an increase of 20% on average, which in and of itself is expected to trigger further price increases. Recently, the prime minister asked the Ministry of Construction to adjust land use tax rates and to apply progressive taxation to (i) those who own a large number of properties, (ii) those who own vacant housing units and unused land, and (iii) those who buy properties with the intent to sell them a short time later. While these measures are meant to make property speculation less rampant, the price of luxury housing will most likely fall anyway when the current demand–supply imbalance is corrected.

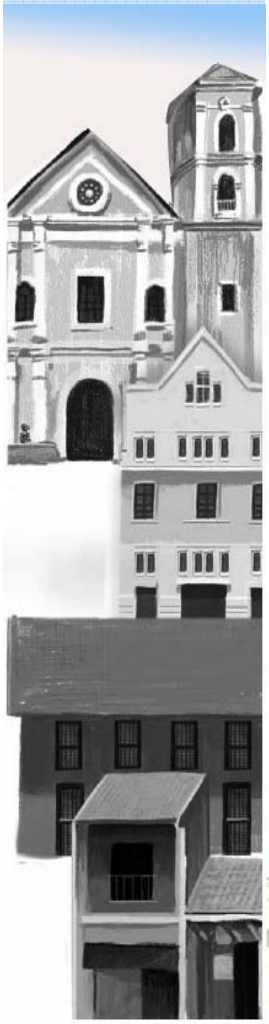


Given that the source of rapid price increases is demand–supply imbalance, it is unlikely that the progressive tax rates proposed would be successful in cooling off the real estate market. The Ministry of Natural Resources and Environment recently confirmed that at the current pace of construction, Hanoi will run out of vacant land by 2010. Hanoi authorities are therefore planning to increase land

14 In the second quarter of 2007, the Opera Business Center, Pacific Place, and VIT Tower were completed and most of the space leased out. Expectations are that in 2008, 33,000 m_2 of A-level office space will be required in Ha Noi. Corresponding figures for 2009 and 2010 are 110,800 and 287,000 m_2, respectively.

availability by removing old factories and facilities from high-value inner city locations to the suburbs. In addition to these factories taking up the most desirable locations within the city, they are also a source of pollution. It is thus expected that soon some 1,000 establishments will be moved to the suburbs. A document released by the Hanoi People's Committee in 2003 stated that removal of the factories would create space for public works, as well as for schools, parks, and business centers. Facilities being relocated are to receive compensation from the Government of up to VND5 billion ($312,500). However, Hanoi's mayor, Nguyen The Thao, observed that this figure would not even approach current land prices. Investors are aware of the imminent clearing of these desirable plots of land and are therefore lobbying for the right to invest in them. In fact, one investor reportedly spent tens of billions of dong for a plot near Hoan Kiem Lake. Due to the great attraction to investing in Hanoi's inner city, the municipal administration is currently in the favorable position of being able to choose among investors. As a result, the city administration has declared that in the case of new industries, it will only permit pollution-free high tech projects and will not accept investment in excessive numbers of high-rise buildings or apartment blocks within the city center. Investors in new inner city projects must therefore (i) ensure that new developments are of high-quality design and that they are appropriate to the existing environment
and architecture; (ii) respect existing technical guidelines applicable to the inner city areas, both in the case of rehabilitation and new development; and (iii) encourage local private developers to participate in these projects.

Urban Heritage



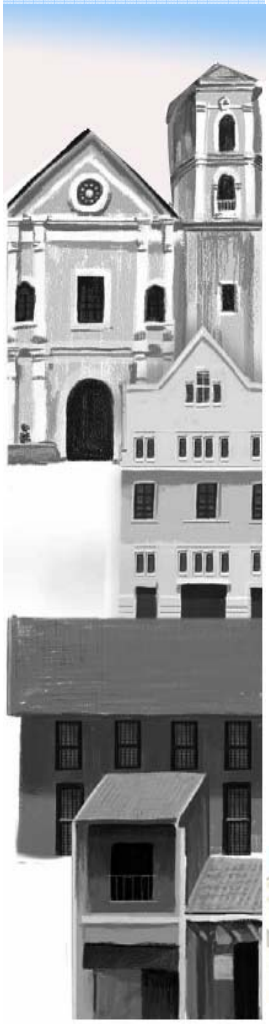
Four distinct areas comprise the historic inner city of Hanoi: (i) the old citadel; (ii) the Ancient Quarter, often referred to as the "36 old streets"; (iii) the French Colonial Quarter; and (iv) archaeological sites and natural landscapes (Ministry of Construction 1999).

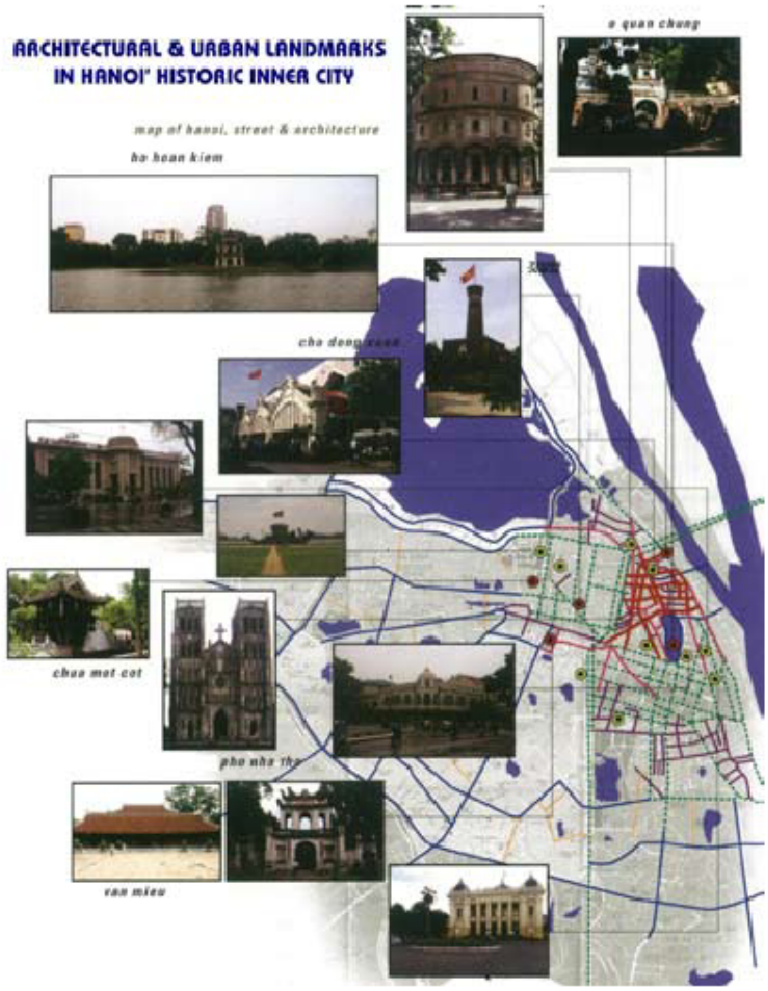
The Old Citadel. The Royal Citadel was built when Hanoi was first established as Viet Nam's capital and was served by the adjacent Ancient Quarter, which provided goods and services to the citadel area as well as access to the waterways of the Red River. Today, the Government and military control most of the citadel area.

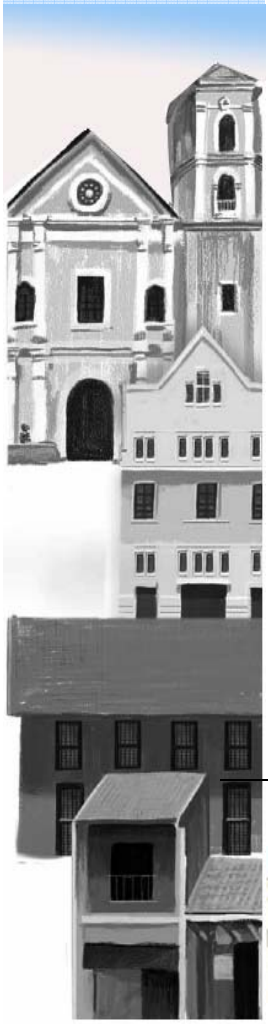
The Ancient Quarter. The Ancient Quarter contains mainly mixed-use structures, with most of the land being used for residential or commercial purposes or both, since numerous businesses within it operate out of residences. The architectural styles prevalent in the Ancient Quarter largely show 19th and early 20th century influences, with three distinct styles apparent: (i) traditional Vietnamese or Chinese, (ii) colonial, and (iii) art deco. The Ancient Quarter's spatial layout pattern is largely characterized by longitudinal plots, since "tube" or "compartment" houses were developed on these narrow and deep plots of land. The front portion of these tube houses was used for business and the rear

portion for residences. Gradually, all frontages contiguous to the streets became business outlets.

In 1995, the Conservation, Restoration, and Development Plan for the Ancient Quarter was adopted. This included recommendations for town planning, heritage conservation, new buildings, adaptive use, and conservation of historic buildings. However, implementation of the plan has been difficult. The regulatory framework remains vague, and too many institutions are responsible for planning permits. Overcrowding has resulted in some historic buildings losing their cultural identity. Because of the substandard technical quality of physical interventions, these have often done more harm than good. Given the steep rise in the cost of land that has affected the Ancient Quarter, most building owners are more concerned with building modern high-rise buildings that maximize sellable or rentable space than they are with conservation of buildings of historic and architectural value (SENA Corporation 1994).







Revitalization Initiatives

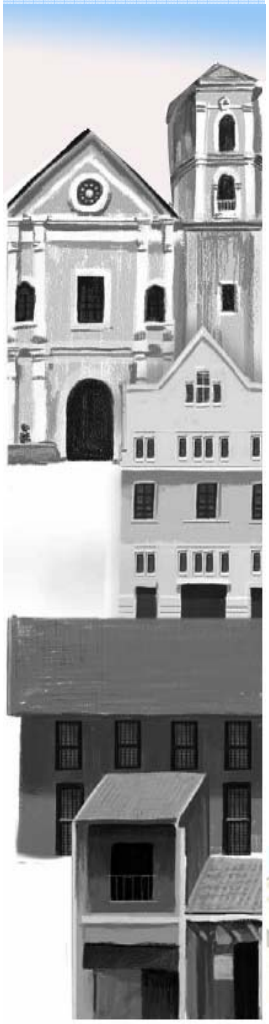
Studies sponsored by AusAID, the European Union, the Swedish Agency for International Development, and the Japan International Cooperation Agency (JICA)15 have evaluated the stock of heritage buildings of Hanoi's inner city and have proposed rehabilitation and improvement of tube houses. In particular, the European Union's Urbs Asia Programme proposed a comprehensive and innovative rehabilitation initiative aimed at reversing dilapidation of heritage buildings and living conditions in the Ancient Quarter, as well as improving the life of local residents from social, economic, and cultural perspectives. This initiative proposed improving historic sites and buildings as a part of Hanoi's preparations for its 2010 millennium celebrations. A subsequent Ancient Quarter pilot project restored two traditional tube houses (57 Hang Bac and 58 Ma May) for the purpose of demonstrating the improvements proposed by the initiative. These improvements are to be replicated on other sites in a

15 AusAID 1996; SWECO International 1998; HAIDEP 2006.

sustainable, full cost recovery manner when the entire Urbs Asia Programme is implemented.

The JICA-sponsored study proposed interventions in the Ancient Quarter and gentrification of historic villas in the French Colonial Quarter. While the French Colonial Quarter villas are currently occupied in a multifamily fashion, the JICA-sponsored study proposed their adaptive reuse for high-end commercial and expatriate residential purposes. However, as mentioned previously, this Villa Plan—which had already been endorsed by Hanoi People's Committee in 1995—has not been implemented fully due to issues relating to resettlement and the financing of compensation payments. Thus far, the Government has been unable to identify suitable sites for alternative accommodation and to form partnerships with the private sector, which would assist with financing and implementing the scheme. Other proposals for Hanoi's revitalization include pedestrianization of streets (Hang Dao, Hang Ngang, and Hang Duong), weekend operation of the Dong Xuan Night Market, conducting the annual Hanoi tourist festivals as musical festivals in the French Colonial Quarter's squares, fireworks during New Year celebrations at Hoan Kiem Lake, and handicraft and painting exhibitions and sales.

Public–Private Partnership for Upgrading Housing Ancient Quarter



The principle reason for conserving the character of the Ancient Quarter is to maintain its unique way of life. This maxim guides both preservation and development of the Ancient Quarter, which includes (i) conservation, renovation, and upgrading of the existing building stock, particularly housing; and (ii) orientation toward a modern and advanced architecture and urbanism that maintains the Ancient Quarter's unique identity.

This area housed the living and working quarters of craftsmen who traditionally came from rural areas surrounding Hanoi. Each street was dedicated to a specific trade and craft, hence their respective names. Decision No. 70/QD BXD, dated 30 March 1995 and entitled "Approval of the Plan for Protection, Conservation, and Development of the Ancient Quarter of Hanoi," defines the conservation area as 10 wards of Hoan Kiem District with boundaries as follows: Hang Dau Street to the north, Phung Hung Street to the west, Hang Bong-Hang Gai-Cau Go-Hang Thung Street to the south, and Tran Nhat Duat-Tran Quang Khai Street to the east. The Ancient Quarter's protected area comprises approximately 100 hectares, with land uses proportioned as follows: commercial, 12%; residential, 80%; and cultural, 8%. The area's urban identity includes the following features:

- coherence of built spaces and a picturesque streetscape created by tube houses;
- High building density;
- Small green areas in residential quarters, insufficient open space, and lack of street furniture;

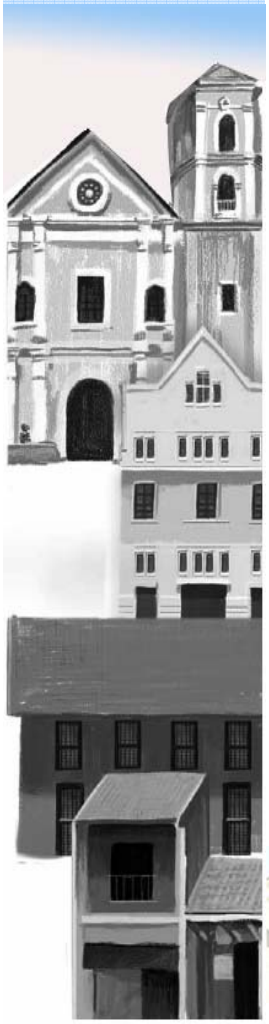
- Degradation of buildings, mismatch between old and new, and spontaneous physical development;
- Overloaded infrastructure and mixed modes of transportation;
- Water, air, soil, and noise pollution; and
- High population density of about 1,000 persons per hectare.

According to Decision No. 45/QD-UB of 1999 entitled "Temporary Regulation of Management, Construction, and Conservation of Hanoi's Ancient Quarter", cultural heritage shall be saved, concurrent to solution of the housing shortage, and the streetscape and built environment shall be preserved.

Upgrading and Modernization of Existing Housing

The characteristics of buildings and housing conditions in the Ancient Quarter are as follows: The building typologies are diverse, since these structures were built during various periods. The buildings exhibit a special urban quality that deserves preservation. Currently, the buildings are used as residences, commercial enterprises, hotels, offices, and other service facilities.

- Most housing in the Ancient Quarter is traditional tube housing: two-storied houses with narrow facades of 2–4 meters, with length of usually 20–60 meters. There are three major types of ownership in the Ancient Quarter: government ownership, private ownership, and mixed ownership.
- The physical condition of numerous houses in the area has degenerated considerably, with very few being well-kept: 50% of all houses require major repairs, 30% require moderate repairs, while only 10% require minimal repairs and regular maintenance.

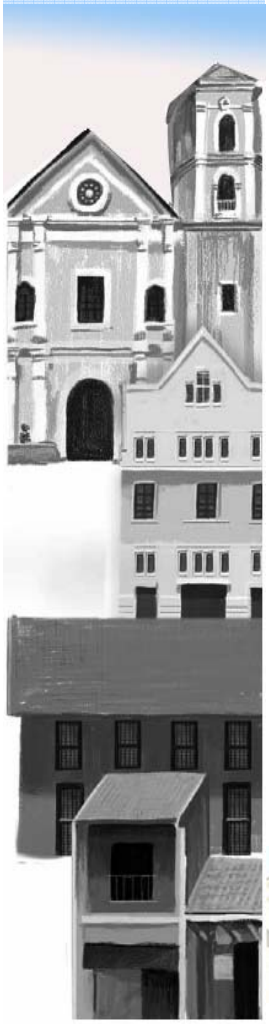


SWOT Analysis of Pilot Block

Strengths	Weaknesses
• Significant economic and tourist potential • 60% of houses government-owned • High degree of awareness of benefits of revitalization and redevelopment	• Housing ownership is complicated due to high degree of government ownership • Lack of financial resources on part of residents • Traditional occupations are changing • Ineffective land use regulations
Opportunities	**Threats**
• Application of innovative technologies • Good potential for economic development • Favorable attitudes for upgrading living conditions • Preservation of traditional values	• Bureaucratic procedures and policies • Diversity of uncoordinated financial resources • Increasing amount of private vehicles and motorbikes • Construction delays • Revisions of detailed plans during approval procedure for building permits • Slow approval of building plans by authorities

Planning Objectives

1. Provide onsite relocation for 80% of households within 4 years (modern buildings in new residential area compensate for dwellings requiring replacement).
2. Improve drainage and sewerage; increase living area per inhabitant.
3. Provide modern infrastructure services.
4. Preserve or restore buildings with historic, cultural, or architectural value.



Action Plans Include the Following Steps:

(i) Identify subprojects.

(ii) Select feasible subprojects.

(iii) Contact owners and/or developers to present ideas contained in action plan; propose cooperation.

(iv) Discuss expectations and intentions concerning upgrading and rehabilitation with owners and/or developers.

(v) Develop rehabilitation scheme through discussions with owners and/or developers with revisions as necessary.

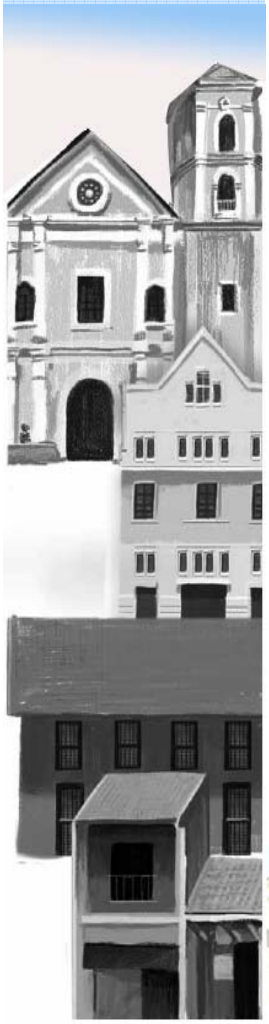
(vi) Submit rehabilitation scheme to Department of Conservation Management for the Ancient Quarter of the City Administration after acceptance by owners and/or developers.

Parameters of Pilot Project

(i) The front part of the houses and facades of "cultural value" are to be preserved.

(ii) The back part and core of the block can be reconstructed on a house-by-house basis, or two or three narrow houses can be combined, depending on ownership of units. Depending on depth of houses, buildings are to be divided into two or three parts with open-to-sky yards in center.

(iii) Create new pedestrian alleys through core of blocks that lead to new buildings. Use modules of 6.5 meters by 8 meters to yield three different apartment sizes: 50, 65, and 90 m2. Height of new buildings is 16.5 meters maximum.



Before Redevelopment	After Redevelopment
• Total area of block: 10,630 m^2	• Total area of block: 10,630 m^2
• No internal alleys	• Total area for new internal alleys: 1,000 m^2
• Areas of inner courtyards built up.	• Total area for inner courtyards: 3,000 m^2
• Site coverage by construction: 90%	• Site coverage by construction: 70%.
• Total retail area and offices: 3,000 m^2	• Total retail area and offices: 4,500 m^2
• Total dwelling area: 9,000 m^2	• Total dwelling area: 18,000 m^2
• No area for parking and public use.	• Total area for parking, open space: 2,000 m^2
• 935 inhabitants, 240 households	• 227 households, about 870 inhabitants
	• Voluntary relocation of remaining households

Key Actors and Their Roles in Upgrading Housing in the Ancient Quarter

Partnerships among all actors including public and private sector are necessary, with voluntary and community-based organizations essential to achieving sustainable urban development. The role of the community as basis for planning and construction should be strengthened.

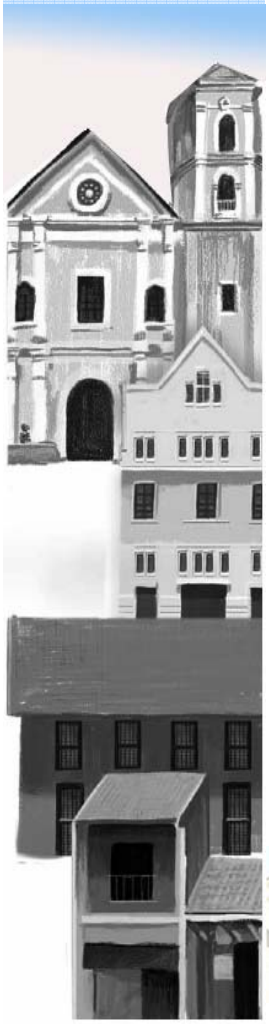
Lessons Learned

(i) In planning urban rehabilitation, the city government should take into account the opinions of the private sector and citizens at large. Communication should be reinforced not only during the public–private partnership process, but also during the city planning process.

(ii) Conflicts among key actors in inner city redevelopment can be resolved, or at least partly resolved, through discussion and negotiation.

(iii) Public–private partnerships appear to be an efficient instrument for raising funds for Ancient Quarter revitalization. It is the task of the city government to develop concrete mechanisms and a normative base for this process.

Residential Environment



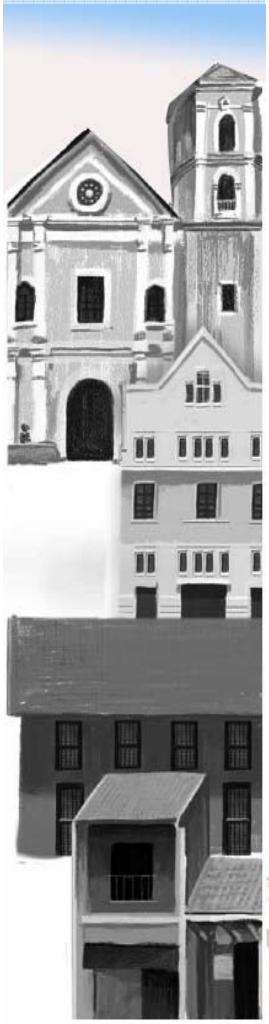
In the early 1990s, the inner city's population increased due to migration from other regions of the country, the driver of this migration being growth of business activities in central Hanoi. In addition to being a residential area, central Hanoi is also a stimulating business district. There are over 1,300 registered enterprises, tens of thousand of home-based businesses, and many informal business activities in the inner city. All of these have led to a high population density.

While housing conditions in the French Colonial Quarterare better than in the Ancient Quarter and other areas of Hanoi, overcrowding, decay of infrastructure, and destruction of built heritage are common. Unfortunately, government policy has had little impact on improving the residential environment. About 56% of Hanoi's residents are unable to afford their own housing. Moreover, many residents prefer to continue leasing government-owned housing, given the existing low rental payments relating to this housing stock. However, even though local authorities own about 20% of the housing stock, they are unable to maintain the dwellings they own as rental returns are insufficient to cover maintenance and improvement costs. In the case of properties with significant revenue-earning potential (e.g., business premises and high-end housing), the authorities are considering relocation of current low-rent-paying residents. However, commercializing these Ancient Quarter and French Colonial Quarter properties would require current renters to be paid compensation sufficient for them to purchase new housing units of

comparable size and quality.

Crowded living space is one of the most serious challenges facing Ancient Quarter residents, as living areas there are only 44.0 m2 per family or 10.5 m2 per person on average, which is only 50% of the average for the city of Hanoi overall. Overcrowding results in accelerated decay of toilets and bathrooms, particularly when these facilities are shared. Further, numerous home-based businesses expand commercial space at the expense of their living space and privacy.

The unique urban character and attractiveness of the Ancient Quarter are decreasing as a result of development pressure, lifestyle changes, and population increases. Some homeowners and investors have put into motion a process of demolition and reconstruction. Many new buildings have been constructed that replace vintage housing stock without reference to any guidelines or standards relating to height and proportion, architectural style, building materials, or color. A wide variety of billboards and roofing styles add to this hodgepodge of styles. The traditional townscape of the Ancient Quarter was characterized by a common urban pattern with regard to facades and building heights, outdoor spaces, and greenery. This supported mixed land uses including commercial activities, individual livelihood styles, and culture. Unfortunately, the traditional atmosphere of the Ancient Quarter is disappearing as it faces a wave of modernization and individualized architectural styles.

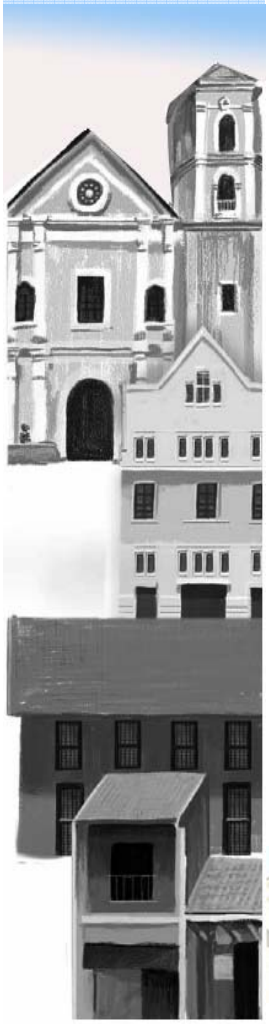


Condition of Urban Infrastructure

Upgrading of infrastructure is critical to revitalization of the Ancient Quarter, since its systems are aging and currently overloaded well beyond their capacity. This notwithstanding, in recent years Hanoi has been able to upgrade some aspects of its urban infrastructure. This includes expansion of road networks, construction of major intersections, renovation and construction of water supply and sewerage systems, and construction and development of the city's electrical distribution network. Funding for such works has come largely from commitments of foreign aid agencies, but additional funds for maintenance and repair are now to be collected through development levies, taxes, and user fees. Each of the following sections addresses the changes that have occurred in urban infrastructure as it relates to key sectors.

Table A1.4: Environmental Features of the Ancient City

Positive	Negative
• Vibrant street life • Intimate scale of the street social network, mixed land use, small and narrow houses • Mix of commercial and tourist activities • Sense of history and cultural heritage • Heterogeneity of architectural styles	• Loss of original houses along with their architectural and historical value • Chaotic assortment of facades due to violation of building height and design standards, and commercial pressures • Lack of unity (protrusion of buildings, invasion of neighbors' and public space, excessive overhead cables, commercial signage, and plastic rain covers) • Degradation of historical and cultural architecture • Reduction of green and open space • Uncollected garbage and rubbish from street vendors and markets • Congested traffic and streets crowded with motorbikes ridden by visitors and residents • Poor residential living conditions including overcrowding • Poor condition of infrastructure



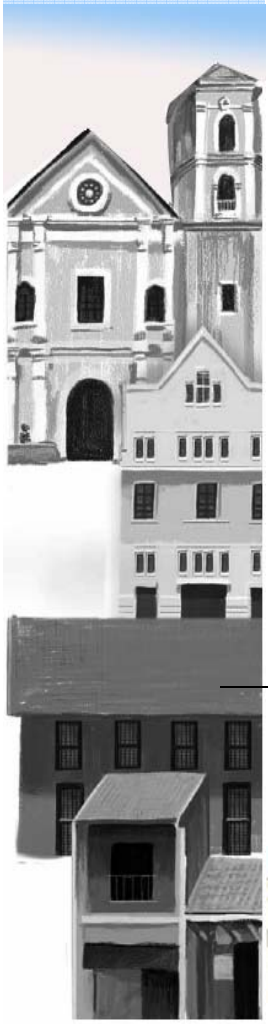
- **Transport:** Hanoi has seen rapid motorization over the last 15 years. Motorcycle registrations have growth from approximately 100,000 in 1990 to 1.5 million in 2005. This is an important indicator of traffic density as motorcycles account for nearly 70% of all vehicular trips. With incomes expected to continue rising and a population forecast to double by 2020, rates of motorization are likely accelerate. There is already more than one motorcycle registered per household on average, and the city's automobile population is growing at more than 10% annually from its current base of 150,000 vehicles. As commercial and development activities intensify in the area, so do problems relating to air and noise pollution, traffic congestion, regulation of traffic flow, and parking for motorcycles and cars.

Prior to April 2004, the Ancient Quarter had no parking facilities for

motorcycles and bicycles; available parking space was reserved for cars. Hence, two-wheeled vehicles would mainly park on sidewalks or indoors in private shops and houses. However, since the introduction of the "Cultural Street" pedestrian zone, temporary parking areas emerged to accommodate the parking demands of 13 streets from 7:30am to 5pm. Underground parking facilities have likewise been constructed (e.g., Hang Dau, Tran Nhat Duat, Ly Thai To, Dinh Tien Hoang, and Hang Da). In the French Colonial Quarter, the city government has assigned a higher priority to pedestrians and sidewalk commercial activities than vehicle movement and parking except for the five major roads. Additionally, one-way traffic was introduced on some streets in the French Colonial Quarter to improve traffic flow. While Hanoi's mobility management strategy recommends limiting vehicle ownership, this has met with only limited success. Restrictions on automobile and motorcycle ownership have been in place for the last 5 years, but these were so widely circumvented that they have recently been abandoned.

In some locations in the Ancient Quarter (e.g., Hang Ngang, Hang Dao, Hang Gai, and Luong Van Can Streets), roads have been properly paved and sidewalks built. Despite these initiatives, the demands of growth will require the city to invest in additional transport infrastructure and improved public transport. In 2004, the World Bank's Public–Private Infrastructure Advisory Facility financed a study of institutional issues relating to the public bus network. As a result of this study, in 2004, the World Bank supported franchising new routes to private operators.16 In 2005, Hanoi franchised six new bus routes to two new private operators selected via competitive tender, ending the monopoly of Transerco, a state-owned enterprise. This process is now being extended to other routes. As a result, the authorities recognize that an independent planning, coordinating, and regulatory agency responsible for all public transport is required. Overall, traffic management investments and institutions in Hanoi have been supported by the World Bank via a loan of $40 million under its first urban transport project in Viet Nam.

Currently, Hanoi's most formidable transport challenges are (i) coordinating private and public transport modes; (ii) gradually increasing use of public transport alternatives; (iii) decongesting "congestion hotspots" through appropriate planning for parking and traffic flow; (iv) controlling air and noise pollution; and (v) reducing the number of traffic accidents, as Hanoi's accident rate is among the highest in Asia.

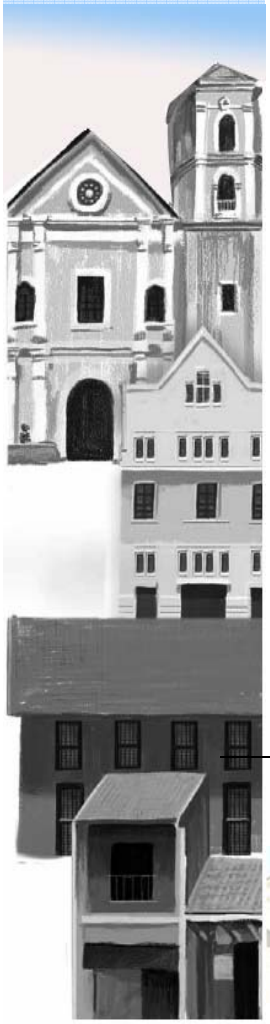


[16] The PPIAF grant of $250,000 assisted reorganization of bus services. The World Bank's Global Environment Facility has also expressed interest in cofinancing elements of the project that address global climate change. Its financing now appears to be in order for the following interventions: (i) promoting a modal shift away from personal-use motor vehicles (the public bus project component), (ii) encouraging nonmotorized travel, (iii) development of a sustainable urban development policy, and (iv) a complementary urban transport policy.

The city administration also recognizes the need to improve air quality. The data suggest that transport is a significant contributor to Hanoi's poor air quality. This is particularly true of carbon monoxide, nitrous oxide, and particulates. However, availability of data is limited, as most existing air quality stations are in a state of disrepair, and the data collected from them are not processed systematically. The city administration thus requires assistance in creating mechanisms for effectively managing the city's air quality monitoring infrastructure, which would provide the basis for an information-based air pollution control strategy.

Water Supply

Water is provided by the Hanoi Water Works Authority, operating under the Hanoi People's Committee. Water supply problems in Hanoi include poor water quality, contamination, and the fact that 50% of the water distributed does not earn revenue, the latter being due to the age of the distribution network which is leaking, fragmented, and able to maintain only limited pressure. Water distribution improved significantly in 2006. Following implementation of the $90 million Hanoi Water Supply Program funded by the Finnish International Development Agency. Currently, 97% of the population is connected to the city's water distribution network, as compared with 90% in 1999.17 The distribution target for 2010 is 150 to 180 liters per person per day with availability reaching 90% to 95% of the urban population. The city's water supply upgrading program includes the repair, cleaning, and replacement of mains; treatment plants; and installation of individual meters.



Sewerage and Drainage

Hanoi's Sewerage and Drainage Company (SADCO) is responsible for wastewater drainage and treatment. At the ward and commune level, the people's ward committee is responsible for managing wastewater drainage. SADCO, a public utility administratively under the Hanoi People's Committee, is responsible for treatment and disposal of both domestic and industrial wastewater. This includes operation and maintenance of the wastewater network serving the core inner city area. SADCO Hanoi manages the primary and secondary networks that include ditches, channels, sewers, and rivers, as well as other sewerage and drainage facilities.

Hanoi's sewerage and drainage system processes industrial and domestic wastewater, storm water, and the water used for cleaning city streets. The capacity of the sewerage and drainage system's automatic flow mechanism is insufficient relative to current demand since it dates back to the French Colonial Period. The pipe network requires frequent maintenance to prevent silting, and

[17] Water prices for businesses and expatriate residents are $0.43 per cubic meter, whereas the general public pays $0.20 per cubic meter and poor families $0.10 per cubic meter.

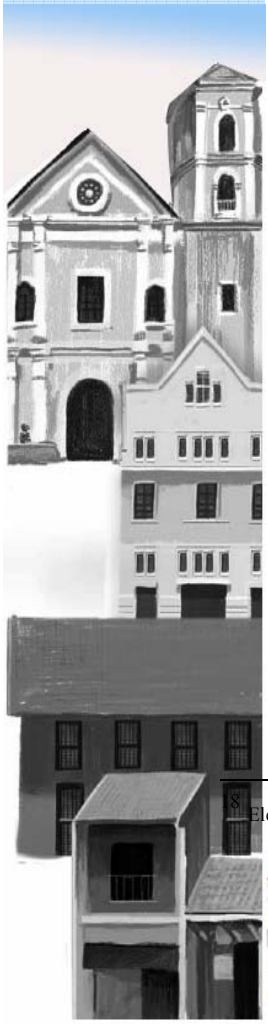
more than 12 sites frequently flood during the rainy season, making 15% of households susceptible to flooding. The $1.1 billion sewage and wastewater treatment project proposed by JICA would include dredging of sludge and sediment from pipes, replacing old and dilapidated sewer pipes, and increasing drainage capacity through installation of additional storm water drainpipes. The goal of the project is to create a storm water drainage system complete with pumping stations, sewerage lines, and canals with a density of 0.6–0.8 kilometer of facilities per square kilometer (Cau 2007).

Solid Waste Management

The Hanoi Urban Environment Company, a public not-for-profit utility that reports to the Hanoi People's Committee, is responsible for the collection, transport, and disposal of all solid waste generated in urban districts.

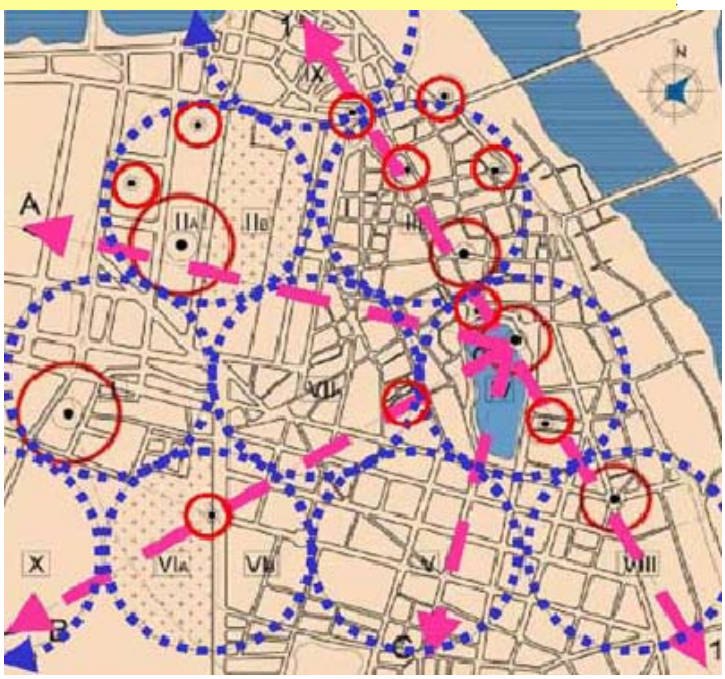
Electrical Power Supply and Telecommunications

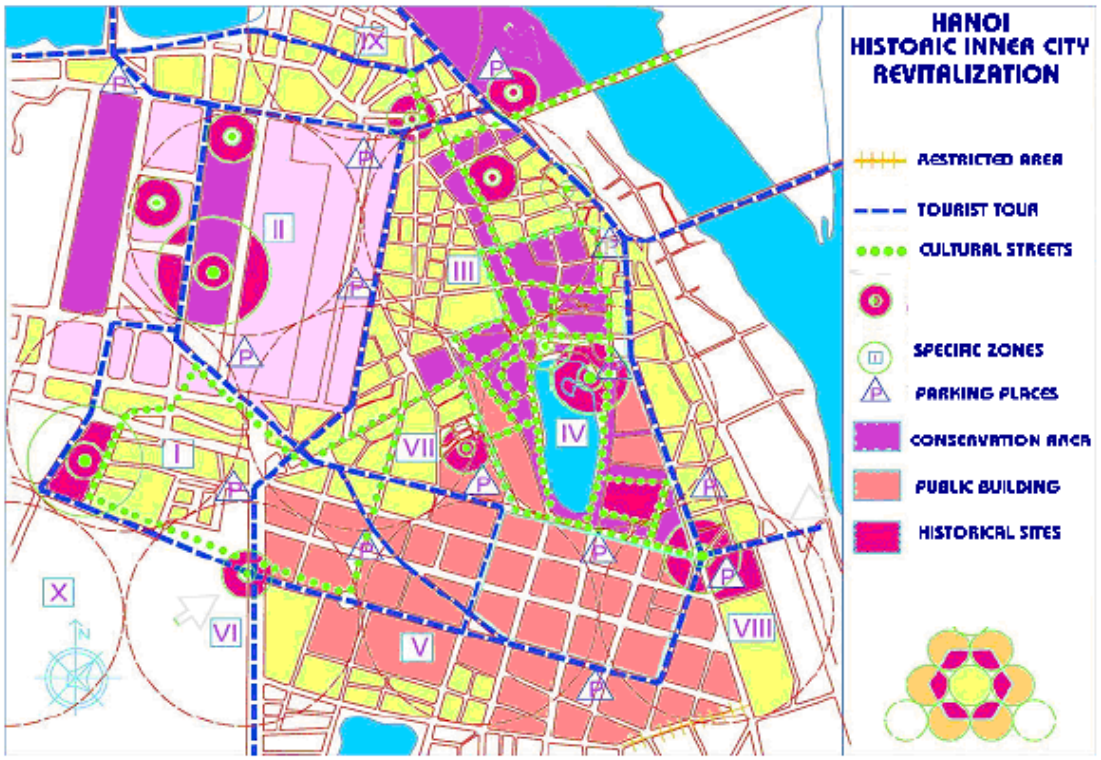
After 1945, a medium-voltage underground cable distribution system of 35, 10, and 6 kilowatts was constructed. However, the poor condition of this aging system causes frequent power failures and significant transmission and distribution losses. The power grid has been renovated for medium- and low-voltage levels, with underground cabling of 0.4 kilowatt capacity on major roads and upgrading of transmission towers to ensure constant tension and continuous supply.18 In contrast, Hanoi's telecommunications network boasts state-of-the-art features such as digital operation, optic fiber transmission lines, and connection to the worldwide telecommunications network.

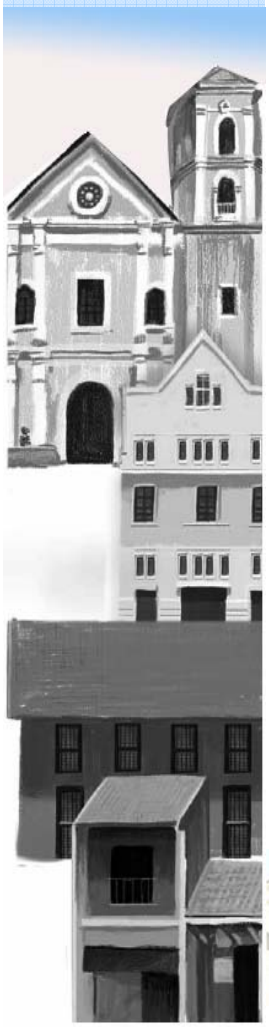


8 Electricity prices are $0.10 per kilowatt-hour for nonindustrial users and $0.09 per kilowatt-hour for industrial users.

- **Zone 1:Civilization & Promotion**
- **Zone 2: Historic – Heritage conservation Activities**
- **Zone 3: Traditional Life – Encourage Rehabilitation**
- **Zone 4: Hoan Kiem Lake – Historic and Cultural Landscapes**
- **Zone 5: Business & Service Development**
- **Zone 6: Modern Development**
- **Zone 7: Ecological Establishment**







Zone	Area	Interventions required
Zone I	French Colonial Quarter	• Conservation of urban landscape and historic buildings • Renovation of French villas • Upgrading of urban infrastructure • Upgrading of living conditions
Zone II (A & B)	Old citadel area	• Restricted area, restoration of vestiges of old citadel, and old citadel itself • Height controls for new buildings, Government administrative buildings
Zone III	Ancient Quarter	• Conservation of urban fabric • Upgrading of living conditions • Reduction of population density, relocation of informal sector activities Conservation of traditional lifestyles, promotion of tourism
Zone IV	Hoan Kiem Lake	• Limitations on use of private vehicles, • proper management of parking spaces • Upgrading of urban infrastructure • Creation of a pedestrianized precinct • Maintain mixed functions: residential and commercial • Adaptive reuse of public buildings • Promotion of traditional festivals
Zone V	Commercial and French Colonial Quarter to south of Hoan Kiem Lake	• Maintain mixed functions • Construction of complex of multifunctional public buildings • Upgrading of urban infrastructure • Establishment of pedestrian zones • Development control for new construction
Zone VI (A & B)	Transport infrastructure: Hanoi Train Station	• Rebuilding of central train station • Development of new business center • Relocation of informal sector activities
Zone VII	Traditional food services	• Restricted development areas and buffer zones between specific areas: old citadel, Ancient Quarter, and French Colonial Quarter • Promote tourism and traditional food services
Zone VIII	Entertainment and business	• Upgrading of urban infrastructure • Reorganization of transport system, parking places • Construction of multifunction public buildings
Zone IX	Ecological area	• Area in transition: Ancient Quarter and river Transport axis for historic inner city New transport system
Zone X	Modern development	• Upgrading of residential housing stock • Upgrading of urban Infrastructure • New residential development