

Learning from Precedents: Emerging Urban Planning Practices towards Livable Communities in Dhaka

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Abstract

The objective of this paper is to reveal the shift of thoughts in city planning in terms of livability demonstrated in one of the newly planned satellite towns of Dhaka city. Ever since the emergence of the term 'livable cities' back in 1980's by IMCL (International Making Cities Livable LLC), considerable amount of research and practice have been oriented towards understanding how the contemporary cities should grow or be planned for livability, in terms of physical, socio-economic and cultural aspects. Cities around the globe demonstrate diversified vision, policies and strategies for achieving these desired goals. This paper takes Dhaka city as a case study to critically investigate the intentions and attempts of urban planning and design practice focused on the livability aspects of the city. The human settlement of Dhaka city can be traced back as early as the 12th century. Till then, the city received attention, negligence, natural calamity, political instability and went through a number of philosophical views as well as planning proposals for its development. In all its efforts, the intrinsic components of livability were much less emphasized due to the major thrust on city's physical constraint, limited land resources along with negligence in detail area and neighborhood planning. But recent efforts in one of the newly planned satellite town Purbachal shows evidence of change in the traditional paradigm of planning practice. The ultimate objective of this paper is to reveal the points where the proposed master plan of Purbachal succeeded or failed to embrace the principals of livability learnt from earlier precedence of greater Dhaka city. The findings of this paper have been extracted from the studio exercise of Urban Design Studio of the Department of Architecture, University of Asia Pacific. The study was mainly based on case study, examining documented evidence and map & model study along with expert interview.

Keywords: Livability, Livability dimension, Livability Indicators, Livable Community, Satellite townships, Planning Initiatives

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Introduction

The term 'livability' was called into existence in the 1970s when a 'new ideology of livability' had been adopted by The Electors Action Movement in Vancouver (VanZerr & Seskin, 2011). This approach focused more on humane, socially progressive and aesthetic policy and replaced the dominant growth centered discourse. The result was that a shift took place from a focus on the city's economy to the city's people (Kaal, 2011). A decade later urban planners had picked up the concept and used it to study rapidly growing cities and suburban areas. In the reports the traditional 'economic growth assumption' as a tool to measure quality of life was being challenged by some regions that had tried to make communities more 'livable' (VanZerr & Seskin, 2011). These cities were not only focusing on creating economic development, but also on improving the quality of life by taking care of the environment, the infrastructure and by enhancing community cohesion.

On a contrasting note, Dhaka, one of the fastest growing mega cities of today's world, apparently differs to a large extent in meeting these essential components of a livable city. However, planning initiatives like DMDP has attempted to address some of the underlying causes like overpopulation, decentralization and increasing housing demand by proposing satellite towns on the peripheral areas of Dhaka. PURBACHAL is one of them. A substantial shift in planning approach from the earlier precedents can be observed in this newly planned township. But yet, there remain doubts on whether PURBACHAL truly holds the potential of becoming a role model of livable environment in the context of Dhaka. Thus this paper attempts to reveal the shift of thoughts in city planning demonstrated in PURBACHAL and the points where the proposed master plan succeeded or failed to embrace the principals of livability learnt from earlier precedence of greater Dhaka city.

Understanding Livability

Most researchers have reported livability as a concept that is difficult to define and measure (Wheeler, 2001; Balsas, 2004; Heylen, 2006). The term livability is an umbrella to a variety of meanings, which depend both on the objects of measurement and on the perspective of those making those measurements (Heuvel, 2013). Livability refers to the living conditions of a place and reflects people's perception of the place to be fit for living or not. Though the interpretation of livability varies with time and place but the concept seems to share terms like 'quality of life', 'well-being' and 'life satisfaction' all across (Lyndhurst, 2004).

Livability, being a very subjective notion, argues various opinions of how to assess the quality of life because each person has different values on the important aspects of one's life (Carmichael et al. 2007). In the US, livability refers to overall 'quality of life' and 'well being' whereas in UK, livability focuses strictly on local environment i.e. cleanliness, safety and greenery (Lyndhurst, 2004). Wheeler (2001) argues that the most important element in discussions of livability is the subjective experience of living in particular places. According to Heylen (2006), livability refers to the environment from the perspective of the individual and also includes a subjective evaluation of the quality of the housing conditions. In a simpler form, livability encompasses the characteristics of urban environments that make them attractive places to live (Throsby, 2005). He pointed out that such characteristics could be divided into tangible features, particularly with regard to the availability of public infrastructure and intangible features, such as sense of place, local identity and social networks. In Balsas's (2004) work on city-centre regeneration, livability has come to mean the ability of a centre to maintain and improve its viability (the capacity to

attract continuous investment) and vitality (to remain alive). Table 1 summarizes the various components that contribute to livability.

Dimensions and Indicators of Livability

Another crucial consideration concerns the aspects of the environment to be measured. The living environment experienced by inhabitants can be depicted from various perspectives, each representing a different facet of their lives. Lynch (1998) was among the first to examine the criteria of a good settlement. A good settlement is a place that is responsive to the human context as well as connects human values to actions that affect the spatial, physical city. Defining a good settlement is the core concern to understanding livability and is also crucial for achieving livable places.

The livability index is a system that monitors quality of life for a given environment using carefully selected social, economic, and environmental indicators (CII, 2010). Though, there is a worldwide concern for improving quality of life and standard of living, but no consensus on what constitutes the most appropriate index. The selected indicators must represent the social, economic and environmental needs of the local community (Carmichael et al. 2007). Omuta (1988), in his attempt to measure the objective and subjective quality of life to determine the livability of various neighborhoods in Benin City, utilized five broad dimensions: employment, housing, amenities, nuisances and socio-economic factors. The Economist Intelligence Unit's livability rating quantifies the challenges that might be presented to an individual's lifestyle across 140 cities worldwide. Each city is assigned a score for over 30 qualitative and quantitative factors across five broad categories: stability; healthcare; culture and environment; education; and infrastructure (Gerrardbown, 2006). Other global measures include Mercer's Quality of Living Survey, the International Living Quality of Life Index and the United Nations Human Development Index. The Australian Unity Well-being Index measures personal well-being (e.g. standard of living, health, safety, community inclusion) and national well-being (e.g. social conditions, state of environment, business and national security) (Woolcock, 2009). These indices produce a quantifiable measure of livability at a broader level rather than at the residential areas, building or dwelling level.

Table 1. Summary of Livability Dimensions and Indicators (Leby & Hashim, 1990; modified by authors)

Livability dimension	Theme
Social dimension (social relations)	behavior of neighbors (nuisance) inclusive community and social interaction healthcare and wellbeing cultural conservation education sense of place
Physical dimension (residential environment)	environment quality and stability open spaces and recreational facilities maintenance of built environment infrastructure
Functional dimension (facilities and services)	availability and proximity of social amenities universal accessibility employment opportunities
Safety dimension (crime & sense of safety)	number of crime number of accidents feeling of safety and risk management
Economic dimension	economic vitality and viability business and national security

Peter and Lesley Brenner (2007) developed a Livability Planning Checklist for municipalities of Tasmanian cities to assess whether a proposed development fulfills the requirements of up to date livability standards. The checklist includes nine broad categories of livability indicators – social interaction; economic viability; tourism and recreation; wellbeing for all; environment; safety and risk management; national and international treaties and guidelines; technical details; climate change. Table 1 summarizes the various attributes towards achieving livability.

Global Practices in Promoting Livability

The Economist Intelligence Unit's livability rating quantifies the challenges that might be presented to an individual's lifestyle across 140 cities worldwide. These cities demonstrate diversified vision, policies and strategies for achieving these desired goals. The objectives and strategies vary according to contextual differentiation. For precedent study, this paper prefers those countries that have the similar context as Dhaka in terms of population density and socio cultural complexities and diversities, namely Singapore city, Kuala Lumpur and new town Kolkata.

Table 2. Principles of Livability Practiced in Different Asian Countries

SINGAPORE CITY, SINGAPORE	KUALALAMPUR, MALAYSIA	NEW TOWN KOLKATA, INDIA
Plan for long-term growth and renewal	Distinctive local characters	New areas to absorb future metropolitan growth
Embrace diversity, foster inclusiveness	Excellent physical and virtual connectivity	Quality of wetland and water bodies
Draw nature closer to people	Good mix of development density and uses	New Business District to complement and supplement the metropolitan level functions
Develop affordable mixed-use neighborhoods	Vital and high quality public realm: a place of social learning and socialization	Land for setting up of non-polluting, inoffensive and non-hazardous industries
Make public spaces work harder	Placing a value to everyone in community : Dialogue & Listening	protection of the newly grown unplanned existing settlement areas from flooding and drainage congestion
Prioritize green transport and building options	Affordability and choices: multiple functions	planned infrastructure facilities
Relieve density with variety and add green boundaries	Attractive business environment and diverse economic Opportunities	new areas for setting up regional level centers
Activate spaces for greater safety	Wisdom & knowledge of the urban community are appreciated	an environment-friendly and aesthetically attractive new urban settlement
Promote innovative and nonconventional solutions		
Forge 3P partnerships		

Existing Livability Condition of Dhaka

To the greatest disappointment of the city dwellers, once again, the Economist's updated Global Livability Index has ranked Dhaka as the second least livable out of 140 world cities surveyed in its annual rankings. The ratings are based on 30 factors, across five board categories -- stability, healthcare, culture and environment, education and infrastructure. While this survey's methodology may contain some flaws, it is beyond doubt that Dhaka is highly unlivable and, that without major change, is in danger of becoming less attractive to residents and businesses. Sneaking critically into the underlying reasons behind this failure brings forward a number of intriguing causes that have been unnoticed or more rightly termed, neglected over years.

Booming populace: Since independence no effort has been focused on the most crucial aspect of the city, and that is its booming populace. Scope and plan of a city's infrastructure, road communications system , environment, and ranges of many other factors, are designed as according to the need of a specific number of inhabitants or more correctly stated, a projected density slab specified differently for different areas of the city. According to World Bank (2007) every year around 300,000 - 400,000 people added to the existing population of Dhaka, making the 400-year-old city vulnerable. No one is there to restrict and control this human flood and therefore the city fails to cater to the needs of more than it can bear. Moreover the absence of projected population and density slab further aggravates the prevailing chaos of the city.

Unplanned urbanization: The human settlement of Dhaka city can be traced back as early as the 12th century. Till then, the city received attention, negligence, natural calamity, political instability and went through a number of philosophical views as well as planning proposals for its development. In all its efforts, the intrinsic components of livability were much less emphasized due to the major thrust on city's physical constraint, limited land resources along with negligence in detail area and neighborhood planning. Following is a summary of the major features of the planning proposals (Table 3) ranging from British period till date.

Table 3: Planning Initiatives for Dhaka Mega City (Kabir & Parolin 2012)

<p>1917: British colonial period Dacca Town Planning Report, By Sir Patric Geddes</p>	<p>The development plan proposed by Geddes emphasized to conserve the character of any area while making plans to accommodate growth. But that plan was never adopted formally or no efforts were made for implementing the same</p>
<p>1948: Pakistan period East Pakistan Planning Sub-Committee</p>	<p>The physical plan for the city's expansion suggested improvement of roads, new roads construction, new residential area, an industrial area, 'New Market' shopping centre and hotel development. These schemes were later adopted in the 1959 master plan</p>
<p>1959: Pakistan period Dacca Master Plan, By Minupria & Macfarlane</p>	<p>The first comprehensive master plan defined the land use pattern, zoning, water bodies, flood prone and buildable zones. In order to discourage the excessive growth of Dhaka, it formulated a national planning policy for decentralization by expansion of industry and commerce in other towns with an additional 4481 acres of land zoned for industry and several new housing schemes to accommodate 402,700 persons; suggested extended residential areas on the reclaim land in the south to accommodate growth and cultural conservation of the old part of the city. The implementation process is marked by breach and deviation than adherence to the plan by changing land use pattern.</p>
<p>1981: Bangladesh period Dhaka Metropolitan Area Integrated Urban Development Project, By Shankland Cox Partnership</p>	<p>The impetus for this plan was the storm water drainage and flood problems of Dhaka metropolitan area, and it proposed long term growth strategy for urban expansion, north-south corridor (mass-transit) and institutional re-arrangements.</p>
<p>1995: Bangladesh period Dhaka Metropolitan Development Plan By Mott Macdonald in association with Culpin Planning Ltd.</p>	<p>The plan proposed new peripheral expansion of low lands on the east and west by encroachment on suburban and the agricultural land, northern area designated for wealthier groups of population following existing trends of growth, more roads and highways to link with the sprawling new developments, leading to a vision of low rise, low density city form, with long journeys to work. These proposals were meant to reduce traffic congestion in the older parts of the city.</p>
<p>2005: Bangladesh period Detail Area Plan</p>	<p>Detailed Area Plan project area was divided into five groups and 11 locations on the basis of geographical location and settlement pattern. Some very good proposals were adopted, for example: (i) densification of existing built-up areas, (ii) accelerating development within existing fringe areas, (iii) development of planned new areas, (iv) development of dispersed new satellite towns at flood-free locations, (v) gradual dispersal of commercial activities to existing suburbs and new growth areas, (vi) augmenting, identifying and securing sites for major recreational uses and (vii) developing long term primary road network and national link commuter rail network.</p>

Referring to the livability indicators summarized in Table 1, a critical observation might be drawn regarding the dimensions where the planning initiatives of Dhaka succeeded or failed to adopt the essence of livability-

- Though 1959 Dacca Master Plan proposes cultural conservation for the older part of the city, there's no indication of the strategies guiding foster of cultural environment, community development and social interaction in other parts of Dhaka. Somewhere these intrinsic elements of a livable environment left much to the responsibility of the city dwellers. On the other hand, the fact that distribution of social facilities like health care, education, employment and open spaces according to social clusters and their proximity to residential areas promote physical, mental wellbeing and a socially inclusive community; and in absence creates lack of safety ,crime is not regarded in these guidelines.
- Apart from addressing water bodies, flood prone and buildable zones in 1959 Dacca Master Plan, preservation of environment and urban ecology at micro level has been a least thought out issue in all the planning guidelines. Proposals for transportation infrastructure like mass transit, roads, commuter rail and expansion of residential areas formed the major focus in most of the guidelines, but in a very non-coordinated manner where the guidelines have no clear indication regarding how these different layers of master plan will complement and interact with each other and how the proposed infrastructures will facilitate and guide the growth of the communities.
- The expansion and distribution of commercial zones has a strong deviation from the way it links to the residential zones of the city, putting the emphasis of all the planning guidelines towards a zonal planning approach contrary to the contemporary mixed use theory of planning that essentially promotes a strong livable community.

The Case of PURBACHAL Satellite Town

According to the previous master plans like DMDP, it is proposed that Dhaka should be decentralized in population and employment opportunities from the inner city to the surrounding areas with satellite communities. Following the recommendations of the DMDP, the Government has developed satellite communities outside of DCC, such as TONGI, GAZIPUR, SAVAR and NARAYANGANJ and more recently, PURBACHAL new town. These settlements will constitute a multi-core mega urban region centering DCC. PURBACHAL new town has been undertaken as the first priority project among all the other satellite communities.

This research has been based on data extracted from the studio exercise of Urban Design Studio of Fall 2013 of the Department of Architecture, University of Asia Pacific. The study was mainly based on case study, examining documented evidence and map & model study along with expert interview. The major limitation of the research was the lack of data regarding socio-economic and spatial environment since the studied township is yet to be developed in a long term phase. In absence of detail urban design guideline and a realistic scenario to be surveyed, most of the assumptions, criticisms and findings were predominantly planning process focused and based on documented evidences.

Purbachal is the biggest Planned Township in the country. The Project area comprise of about 6150 acres land located in between the SHITALAKHYA and the BALU River at RUPGONJ THANA of NARAYANGONJ district and at KALIGONJ Thana of GAZIPUR district, in the north-eastern side of Dhaka. The Township will be linked with 8 (eight) lane wide express way from the Airport Road/PROGATI SWARANI crossing. The distance is only 6.8 km (Fig. 1) RAJUK intends to plan and develop the area as self-contained New Township with all modern facilities and opportunities.

Objectives of this project includes-

- To reduce the pressure of population in Dhaka city by creating opportunity of residential accommodation of the city dwellers in the vicinity of the city.
- To maintain the balance of environment by proper urbanization. To create environment friendly and sustainable atmosphere.
- To reduce the existing acute problem of housing.
- To expand civic facilities by urbanization to the nearby and surrounding areas gradually.
- Development of new township and to expand economic facilities.
- To mitigate future housing demand.

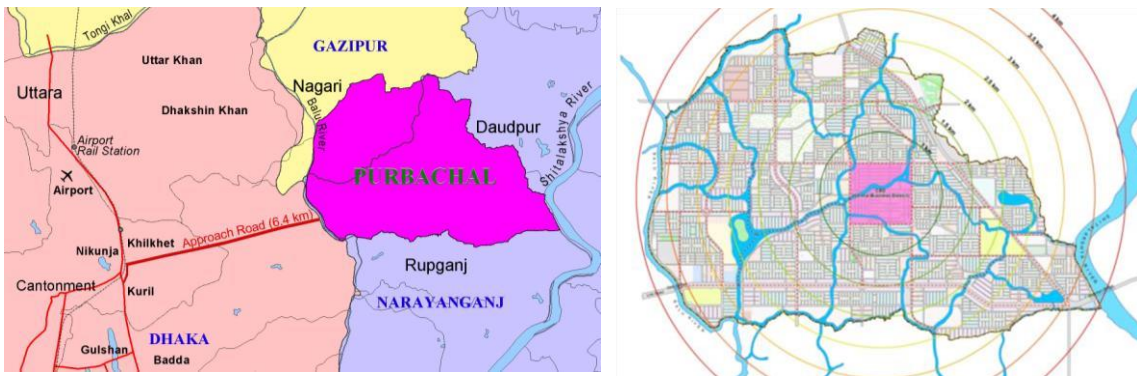


Fig. 1: PURBACHAL Location Map and Central CBD Location at PURBACHAL

The undulating topography of PURBACHAL acted as the starting point for planning decision. The low areas have been dedicated to form a network of canals that would facilitate the storm and flood water drainage and also acting as a pedestrian connectivity and recreational belt for the whole township. Then, in a very contrasting approach, a rigid grid iron pattern road network has been added to the master plan. Interestingly, the master plan, which apparently seems to derived from the concentric zone theory (because of the dominant central location of CBD), later on appears to be multiple nucleic development model because of the even distribution of secondary commercial centres and their surrounding residential plot distributions. This particular aspect of development is quite rare in the earlier planning precedents in Dhaka.

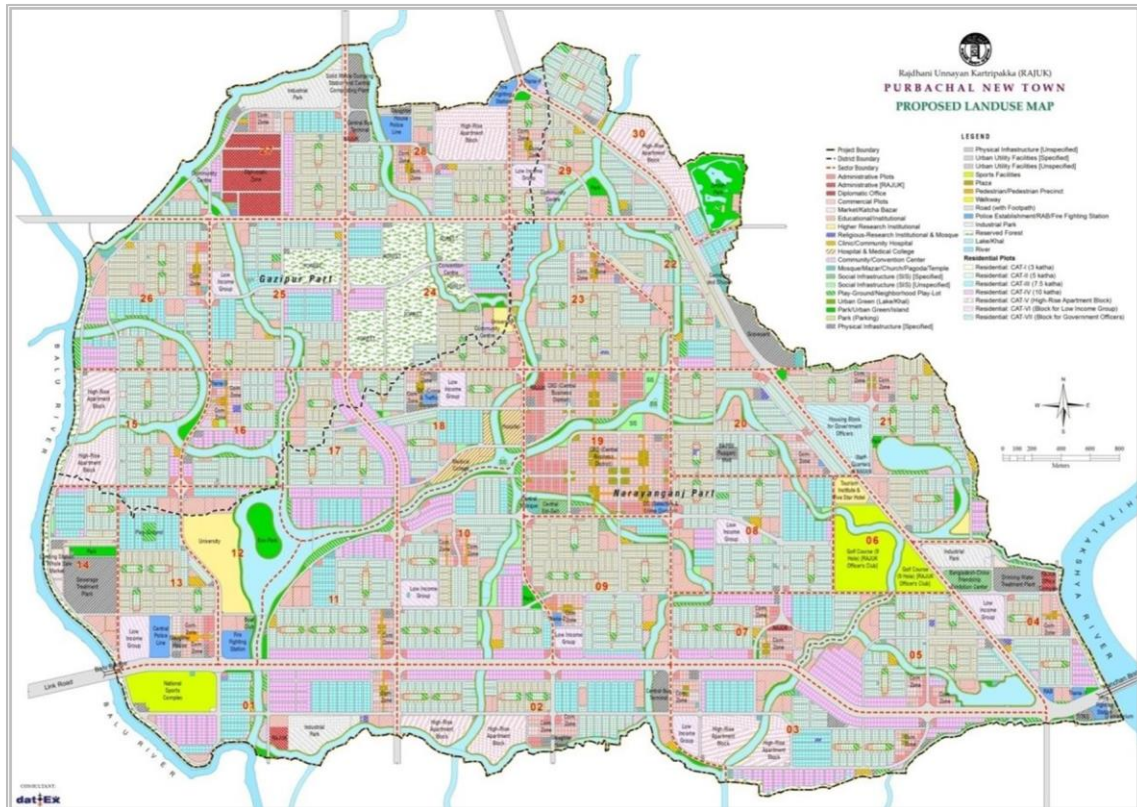


Fig. 2: Proposed Land Use Plan of PURBACHAL Area

Table 4: Statistics of Proposed Land use

Land Use	Percentage used	Intl. standard
Administrative, Commerce, Industrial Park, Diplomatic Area, Institutional Area	9.60	5-10%
Residential	38.74	35-40%
Road, Footpath, Pedestrian and Walkway	25.90	25%
Forest, Eco-park, Green Belt and Urban Green	6.60	5-6%
Sports Facilities & Physical Infrastructure	4.80	2-3%
Lake/Canal	7.10	5-6%
Health, Education, Social Infrastructure (SIS), Urban Utility Facilities & Others	7.26	5-10%

Any town or city development requires having a clear indication of a systematic hierarchy of population level for facility and administrative management and preserving a sense of place. This essential feature of planning process has been missed out in all the national planning guidelines. However, PURBACHAL planning guideline proposes a clear structure of varying scale of social clusters and their corresponding social structures such as- Housing, Neighbourhood, Community, District and Division level. Also, unlike the earlier precedents of planning practice in Dhaka, PURBACHAL positively differs in land use proposals where the percentage of land allocated for each use has followed the international standard (Table 4).



Fig.3: Accessibility of Nursery School (250m)

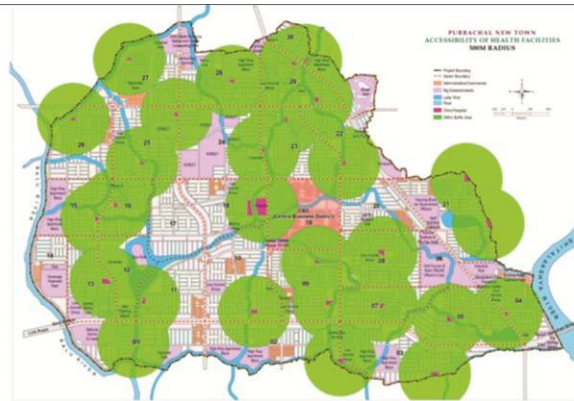


Fig.4: Accessibility of Health Facilities (500m)

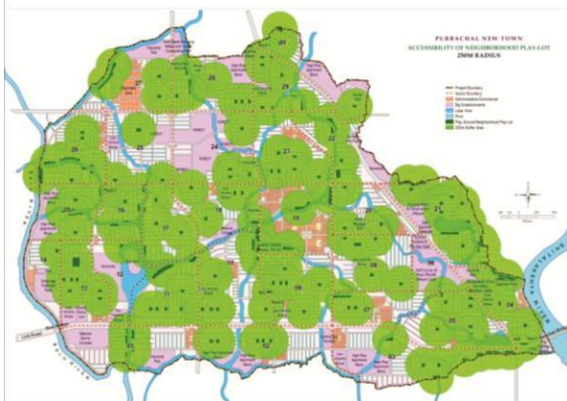


Fig.5: Accessibility of neighborhood play lot (250m)

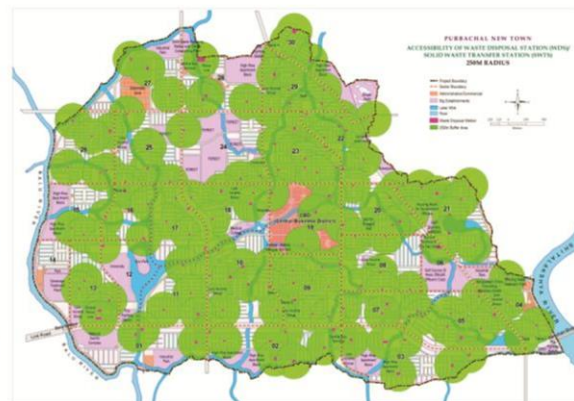


Fig.6: Accessibility of waste disposal station (250m)

While the distribution of social infrastructures has a very unstructured and uneven distribution in DCC area, PURBACHAL introduces a successful planning policy by distributing all the essential components like nursery school (Fig. 3), health facilities (Fig. 4), neighborhood play lot (Fig. 5) and utility facilities like waste disposal station (Fig. 6) at 250 m and 500 m walking distance from residential neighborhoods, ensuring a pedestrian dominated, safe and vibrant community. Also the continuous network of pedestrian walkways and adjacent green chunks further emphasizes the character of a sustainable and livable community environment.

As well as tackling polluting industries and improving law and order generally, the government needs to urgently facilitate major improvements, particularly to the state of housing and transport infrastructure. Poor infrastructure is the biggest factor underscoring the city's low ranking and needs to be addressed as a high priority. Having better transport connections and improving energy supplies across the country can help ease pressure on Dhaka by enabling more relocation of industry and housing. But it is not only major developments that have to take place, it is also necessary to get back to basics. Many of the day-to-day challenges afflicting residents need to be tackled far better by city authorities. Road conditions can be readily improved by better enforcement of traffic laws and by reforming the city's bus networks. There is also no excuse for not vastly improving the state of garbage collection and waste recycling in the city, or for protecting green spaces.

Contradictions and Barriers

All the features discussed earlier puts forward quite an optimistic picture of PURBACHAL. But then again, the question arises, whether the planning process could address all the loopholes identified in the earlier planning precedents. The investigation of this paper extracts some of the alarming issues that might impede the overall livability issue in PURBACHAL and might turn it into a storehouse of Dhaka's prevailing crisis.

- **Realistic Estimation and Future Projection of Served Population and Relevant Density:** This very issue formed the starting point of our discussion on Dhaka's livability and once again we had to get back to the same issue. Though there is an approximate calculation of total population based on the plot numbers, unit numbers and occupants per unit, not from the actual density of population needed to be catered.. As stated, PURBACHAL is supposed to reduce the population pressure on Dhaka, it was essential to have a clear indication of the capacity of population that this township is able to serve efficiently and up to which level this township will be allowed to be densified. Density is another issue that has been skipped narrowly, just like the previous planning initiatives. Though there is a proposed F.A.R for each of seven types of residential plots, but that does not seem to be taking the advantage of the current F.A.R. rules and which might drastically change due the market forces. And since there's no realistic projection of future expansion, the population density might cross the tolerable threshold.
- **Affordable housing:** Affordable housing is one of the acute crisis in current Dhaka city. Cities like Singapore and KUALALUMPUR have stressed on affordable choice of housing and uses in their livability proposal (Table 2). PURBACHAL town planning claimed to solve this problem too. But the mechanism for distribution of housing is not clear enough to guide the whole process. First of all, 88% of the residential land-use is allotted for private development. There's no indication of public mass housing. It has been clearly mentioned that these plots are going to be allotted to private individuals by RAJUK. Rest of the 12% land is allotted for low income groups in land chunks located in infeasible locations. The distribution mechanism is not at all clear. Without even distribution of housing among different socio-economic groups, livable environment will remain as a far reaching object.
- **Employment and trade opportunity:** Job opportunity is one of the major pull factors for people willing to shift to new settlements. In case of PURBACHAL, the definition of job market is not clear enough to create an impetus for the new settlers, apart from a few government offices, educational institutes and light industries. The greater CBD and the secondary commercial chunks are yet to define the nature of jobs they might provide.
- **Less priority in public transportation:** In a time when global effort is towards promoting more and more green, sustainable public transportation (Table 2), PURBACHAL differs to a large extent by promoting 80% private vehicle, leaving 20% provision for public transport. The low income group people will use mainly bus and minibus. The Consultant considers that about 3% people will use the bus and about 2% people will use the minibus.

- **Lack of urban design guidelines:** Vital and high quality public realm for social learning and socialization and greater safety have been considered vital for ensuring livability at both city and neighborhood level (Table 2). Successful place making requires detail urban design guideline which is apparently missing in PURBACHAL planning guideline.

Conclusion

The shift of thoughts in city planning demonstrated in PURBACHAL and the planning decisions where the proposed master plan succeeded to embrace the principals of livability learnt from earlier flaws of greater Dhaka city is undoubtedly praiseworthy. However, the major policy decisions reflect the similar drawbacks that are found in previous planning practice of Dhaka. As one of the prime satellite township, PURBACHAL still holds immense opportunity to become a role model of livability for many more townships in future, provided that it addresses the alarming flaws identified through this paper's investigation.

Acknowledgement

The author thus takes this opportunity to express gratitude to the students of Level-4, Term-1 of Fall 2013 semester at the Dept. of Architecture, University of Asia Pacific, Dhaka for extracting data on Purbachal based on case study, examining documented evidence and map & model study along with expert interview.

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