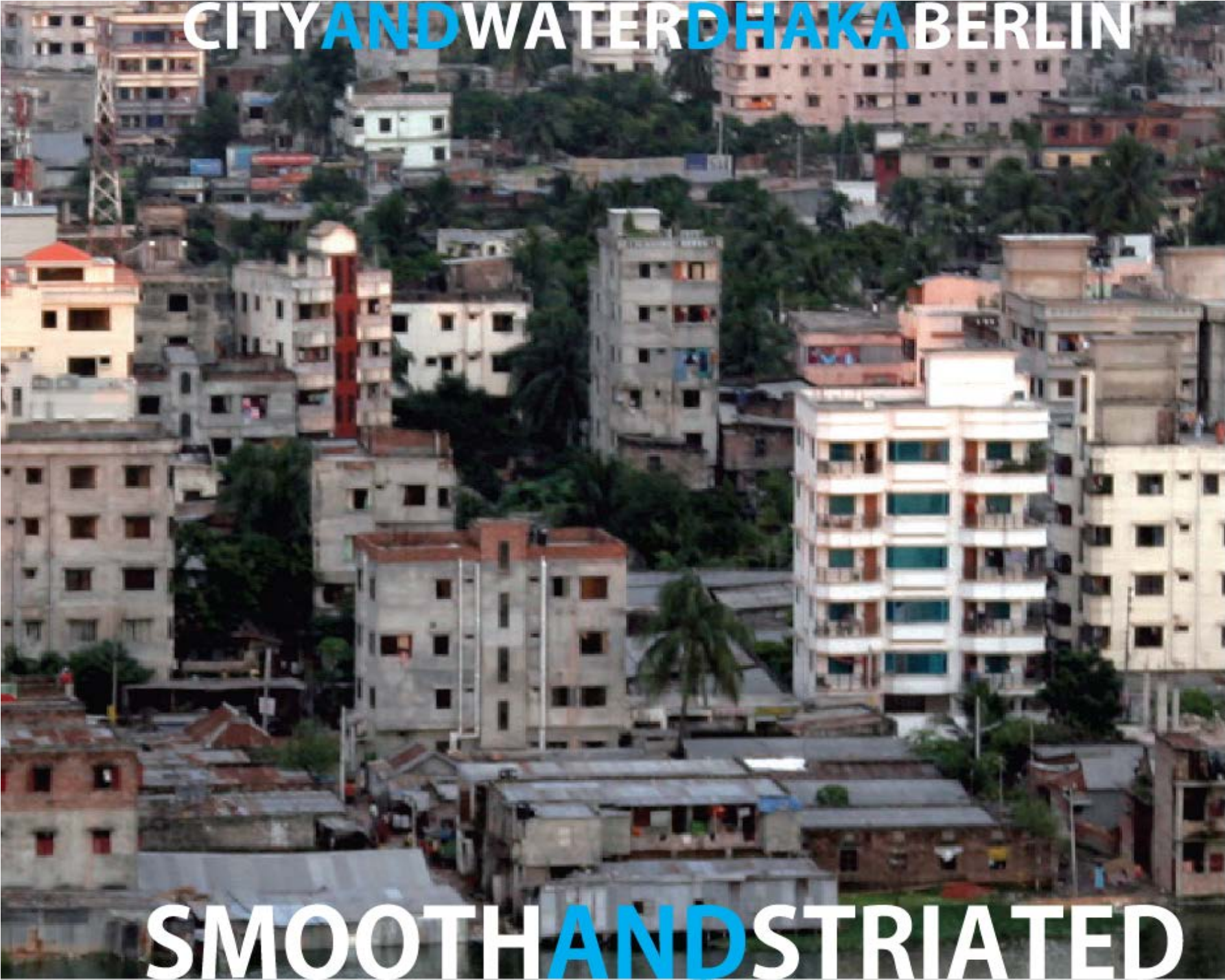
CITY AND WATER DHAKA BERLIN
SMOOTH AND STRIATED

Elisa T. Bertuzzo Nazrul Islam Günter Nest Salma A. Shafi

Smooth and Striated
City and Water
Dhaka / Berlin

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in Cooperation with Habitat Forum Berlin

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Content

Water not only damages property and endangers the lives of human beings, but is also a living space for many people in this world. Entire cultures have developed along rivers, within deltas and next to the sea.
In Dhaka, the Buriganga River, with its network of branches and the remains of complex canal systems, offers living space to millions. In Berlin, the Spree and Havel Rivers have also had a great impact on the city's history and development. Architects, developers and administrations in both cities have discovered »their« rivers and have planned office buildings and housing that stress the importance of water and promote better accessibility to the river banks.

Various seminars and workshops on »water« have been conducted at the Goethe Institute in Dhaka. They have all stressed the importance of clean water in a progressively urbanized environment. The present publication, however, also focuses on the social and infrastructural aspects of life along the water. After all, cities are a focal point of human development, too. The dense concentration of people, especially in cities like Dhaka and Berlin, as well as the flows of goods and capital and high resource consumption, mean that sustainability problems are particularly severe in both cities.

Because urban development problems and global poverty problems overlap, the German government is taking on its responsibility to act here and now, in order to move closer to our goal of globally reducing poverty. In the case of Dhaka, this means addressing the hydro-ecological, but also social, public and infrastructural challenges.

The present publication is a good example of fruitful cooperation between Germany and Bangladesh. These major problems can only be tackled through the exchange of ideas and targeted capacity building, so that Dhaka, Berlin and other cities remain good places to live in the future.

Frank Meyke
Ambassador of the Federal Republic of Germany

Cities have always held a particular fascination for me. When I was ten years old, I left the village where I was raised in order to attend secondary school in a nearby city. I never looked back. Not for me, idyllic natural settings and stable village communities. No, I fully understand the millions of Bangladeshis seeking jobs, education, opportunities, and the amenities of modern life – to say nothing of personal liberty - in the towns and cities of Bangladesh.

Unfortunately, what these hopeful rural-urban migrants often confront in their new urban homes is chaos and misery. Contrary to what they had perhaps dreamt of, there is no running water, no functioning sewage system, no trash pickup, no good roads, nowhere to live, few and poorly run schools and health clinics, few jobs and few buses to get them to their job if they are lucky enough to land one.

Bangladesh is currently undergoing rapid urbanisation. Dhaka, its capital and biggest city, is the fastest growing city in the world. Although Bangladesh's degree of urbanisation, calculated at 25% in 2006, is still relatively low, it is rising quickly and is expected to double by 2025, meaning that approximately 100 million people will live in cities by then. According to government statistics, 53.2 % of the urban population lives below the national poverty line, and the proportion has increased over the past few years: in 1991, there were about 10.6 million urban poor; by 2000 that figure had risen to 19.2 million. Urbanization and urban management have received little attention in national policies and strategies, so that this rapid urbanisation has been largely unplanned. Centralised government structures at both the national and local levels get in the way of efforts to improve and expand public services in the cities; the pourashavas [municipalities] have therefore been unable to provide adequate public services, particularly for poor people. Water supply, sewage, waste management, housing, access to business opportunities in markets, basic health, and primary education are some of the areas that the pourashavas are struggling to manage. Transparency and public accountability are also issues.

Recognizing the intrinsic connection between urban development problems and poverty, the German Technical Cooperation [GTZ], on behalf of the German Federal Ministry for Economic Cooperation and Development, is now cooperating with the Government of Bangladesh to tackle these problems head on in a new project titled Good Governance in Urban Areas. The goal of the project is to provide urban populations with the services they need and want.

I was therefore very pleased when the Goethe Institute in Dhaka announced its intention to hold the seminar, »City and Water, Dhaka / Berlin« and am particularly pleased that the results of this international exchange will now be made available to many others through this publication Smooth and Striated: City and Water, Dhaka / Berlin. I believe that this publication marks the beginning of a new phase of Bangladeshi-German cooperation, focused on the millions of Bangladeshis who, like me, see their future in the city.

Peter Palesch
GTZ Country Director, Bangladesh

Smooth and Striated: City and Water, Dhaka / Berlin is the result of a seminar conducted at the Goethe-Institut in Dhaka in August 2007.

At the first sight, the connection between Dhaka and Berlin is rather irritating. Dhaka, the capital of Bangladesh, is a city contrasted by a rapid population growth and parallel urbanization. Berlin, the old and new capital of Germany, like many other cities in the industrialized world, has a stagnating and even declining population. In Dhaka and other Asian cities, population growth primarily takes place in the cities, while in Europe, cities and populations are shrinking.

On the other hand, Dhaka and Berlin have many things in common: both cities developed along rivers. The word »Berlin« supposedly derives from the Slavic syllable »Berl« meaning »marsh« or »swamp«. Cölln, an early settlement on the site of present day Berlin, was first mentioned in 1237 as situated on an island in the River Spree. Dhaka also developed along its rivers, with their constantly changing courses and marshy banks. Thus, both cities' early history and development was largely dependent on water and literally had a smooth and striated way to go.

Nowadays, Dhaka and Berlin face new challenges. Dhaka's growth is extraordinary and sustainable urbanization has to be achieved. Berlin has developed into a modern capital with new public spaces after more than 40 years of separation. Both cities have to face the challenges that accompany millions of people living in urban conglomerations - on infrastructural, social and hydro-ecological levels.

Architecture, hydro-geology and public space have thus become the focus of the seminar and the present publication. Dhaka and Berlin have many things in common in a century called the »urban millennium«. Worldwide, more than three billion people are living in cities, half of them in Asia. There truly is a demand for sustainable exchange not only on a scientific but also on a social and infrastructural level.

The results of the above mentioned seminar, »City and Water, Dhaka / Berlin«, shed light on the parallels between two distant cities in a globalising world. The responsibility to improve people's living conditions, to limit negative environmental impacts in mega-cities and to create sustainable urbanization does not only embrace problems of waste water management or ecological aspects; it also encompasses social and infrastructural questions.

The question of how to meet such responsibilities was the starting point for the seminar, whose results are presented in this book. I would like to thank all participants of the seminar for their lectures and contributions to the discussion. I would also like to mention the special merit of Prof. Dr. Günter Nest [Kunsthochschule Berlin Weißensee, Habitat Forum Berlin], Elisa T. Bertuzzo [Habitat Forum Berlin], Prof. Dr. Nazrul Islam [Centre for Urban Studies, Dhaka] and Salma A. Shafi [Centre for Urban Studies, Dhaka] for taking on the task of compiling the present publication.

Special thanks to Christine Edmaier [Bund Deutscher Architekten, Berlin] and Prof. Dr. Broder Merkel [Bergakademie, Freiberg], who came all the way from Germany to Dhaka in order to take part, and to all seminar panelists. Also thanks to our partners, the GTZ [Gemeinschaft für Technische Zusammenarbeit] Office Dhaka, Habitat Forum Berlin, Prof. Dr. Qumrul Hassan from Dhaka University, and in particular the Alumni Association of German Universities in Bangladesh.

Thanks to all of you for your excellent support.

Torsten Oertel
Director, Goethe-Institut Bangladesh

Muhammad Qumrul Hassan
Preface

As Michel Foucault once observed, after one century, the 19th, which was dominated by the paradigm of time, in the 20th century space reestablished its relevance, almost becoming the »obsession« of a generation that was experiencing the world as simultaneity, heterogeneity and juxtaposition of differences. Globalisation and postmodern currents of thought changed the perception of the world, now conceived as a net of points that can be linked and shifted, and only secondarily as a historical process.

This spatial turn influenced theoretical conceptions as well as material constitutions of space. In the 21st century, the so inaugurated reflection is being challenged and brought forward by two dissolution processes of worldwide pertinence – of geographic distances through the new possibilities of communication, and of boundaries through legal and illegal migration. Space is being re-observed with new eyes, which perceive in it the potential infiniteness of virtual space or make it the object of political-theoretical debates on national boundaries and identity. Hereby, the natural and almost obvious laboratories for the application and confirmation of these discussions are cities, where space is a precious ressource for fast growing human agglomerations, and the stage of sensible changes affecting social life.

Given the described state of things, I expect projects like »City and Water - Dhaka / Berlin«, namely projects that »juxtapose« contrasting cities as Dhaka and Berlin on the base of an interest for their spatial configurations, to become very frequent in the days to come. The mentioned simultaneity of, and accessibility to, communication will enhance, for the first time in history, dialogue on an equal footing between researchers, practitioners, thinkers and artists with different backgrounds. It can not further be ignored that the growing complexity of our world requires new approaches to be found, approaches that will have to be based on comparison and exchange of experiences. Here, I see an important player in cultural and research institutions, which can be platforms for the coming together of different disciplines and nationalities. Far from producing a cacophony, heterogeneous sounds can give birth to a perfect concert. In this spirit, the underlying publication is a collection of six very different articles from the seminar »City and Water – Dhaka / Berlin«, whose interventions included hydrology, architecture, planning and sociology.

The practical meaning of »smooth« and »striated«, to which this book owes its name, is initially revealed in Elisa T. Bertuzzo and Günter Nest's The Significance of Urban Water Bodies for Public Sphere. The French philosophers Gilles Deleuze and Félix Guattari tried to reflect on space on the base of these two categories. Broadly speaking, »smooth« space is unplanned and multi-directional, the reign of nomads, of movements and affections, whereas it becomes »striated« through planning and the consolidation of organisation forms. In their application of Deleuze / Guattari's theory, Bertuzzo and Nest juxtapose a description of everyday practices along Dhaka's water bodies, to an overview on Berlin's urban developments since the fall of the wall with particular attention for the planning along the River Spree. Abu Sayeed, delineating the architectural phases in Dhaka along 400 years in his article Dhaka Antiquities, stresses the influence that the Buriganga River and water courses in general have had on the city's historical development. It will be mentioned here that water is a central concern for Bangladeshis up to the present day, and it still determines many aspects of their everyday life. In Architecture and Society in Dhaka, Bangladesh, Khadem Ali not only formulates a call for a socially responsible architecture that should speak to the hearts of architects beyond Bangladesh, but expresses the need for action, on all levels, for better living conditions in his country, whereby agents like the Government are as much called for as non-Government and private initiatives. By describing Use of Surface Water Bodies by Various Socio-economic groups on the base of three case studies conducted in different areas of Dhaka, Nazrul Islam and Salma Shafi open our eyes to coexisting but actually separated realities in our Mega City. They attract the attention to the drastic shrinking of water bodies in Dhaka, whereby the responsibility of planning authorities is not ignored.

Christine Edmaier, in Contemporary Trends in Urban Design and Architecture in Berlin, especially focuses on the emergence of water as the new protagonist of urban design: in Germany, so her point, architecture is no longer possible without water! In his concluding article Factors Endangering Berlin's Water Supply, finally, Broder Merkel explains how lignite mining, formerly practiced in the region surrounding Berlin, has influenced, and can influence in future, the quantity and quality of the River Spree's water. This also reminds us that cities, far from being autarchic islands, must closely inter-relate with their surrounding regions for their survival.

As General Secretary of Alumni Association of German Universities in Bangladesh and one of the seminar's presenters as well as participants, I am glad to introduce Smooth and Striated: City and Water, Dhaka / Berlin and wish an inspiring reading.

Elisa T. Bertuzzo / Günter Nest

Smooth And Striated: City And Water, Dhaka / Berlin

In 1980, Gilles Deleuze and Félix Guattari published an essay titled 1440: The smooth and the striated, a text filled with notions from disciplines as heterogeneous as music, navigation and fabric weaving, which they »combined« into a reflection on space[1]. »Striated«, so the French philosophers, is planned space, subjected to metric units as points, reign of consolidated organisation forms and home to sedentary people. Nomads, in contrast, populate a smooth space, reign of vectors and directions, of affects and movements. Their article became renowned largely due to its straight-forward thesis of spatial planning being a means of materialising spaces for the deployment of forces of order and governing the bodies and minds of individuals. Indeed, the »striation« of contemporary urban life was impressively described in the text and understandably had an immediate impact on socio-political theory. Nevertheless, the analysis regarded the two modi of space, smooth and striated, as equally important, and especially stressed their inter-relationship, or better to say: continuous and reciprocal mixture.

More than 25 years have passed since then; instead of representing a »problem«, the non-determination and non-determinability of cities has started being accepted and dialectic approaches like Deleuze and Guattari's have been substantiated. Precisely the essential inter-mixture of smooth and striated space is attracting the attention of urban researchers.

In this publication, smooth and striated – anthropological and geographic space, spatium and extensio – have been chosen as starting points for the parallel discussion on two cities. Contemporary metropolises are challenging urban studies with their spatial complexity too as, in fast growing agglomerations, space becomes ephemeral and vulnerable, and theorisations almost impossible. It is here that the flexibility of the binomial »smooth« and »striated« emerges as a valid interpretation key. Furthermore, the dialectic character of Deleuze and Guattari's approach makes the otherwise problematic association of apparently distant contexts such as Dhaka, mega city in one of the world's poorest and fastest urbanising countries, and Berlin, capital of a demographically »shrinking« population, possible, because it shifts the analysis' focus to symptomatic changes of urban life in the 21st century.

1 The text appeared in Deleuze / Guattari's book »Milles plateaux«, as it was originally called in French, in 1980. An English translation was published in 1987 under the title »A thousand plateaus. Capitalism and Schizophrenia«.

To help understand their terminology, Deleuze and Guattari[2] used the example of fabrics to define striated space. In first instance, fabrics are constituted of two kinds of parallel elements, each with precise functions. One is fixed and one mobile, and they are perpendicularly intertwined and intersected. Secondly, they are delimited, or closed, at least on one side, which implies that they have a top and a bottom. These characteristics determine that, microscopically, fabrics look like grids, they are »striated«. In contrast, the supple felt appears as an anti-fabric: instead of separated threads intertwined to create a structure, it consists of an entanglement of fibres obtained by »fulling«, i.e. rolling blocks of fibres back and forth. Felt is, so the philosophers, an aggregate of intrication, virtually infinite, and – as a beginning and end are lacking – open. Given this distinction, and recalling the haptic perception of felt, the meaning of »smooth« should be clear. Interesting for Deleuze and Guattari was the fact that felt is the typical »fabric« of nomads, as these »index« clothing and home to the outside space in which their bodies move. Differently, sedentary people tend to produce their fabrics so as to »annex« body and exterior space to the immobile, closed space of the house.

Having presented the terms, let's proceed to their precise explication. The adjectives »smooth« and »striated« were originally applied to space by the French composer Pierre Boulez in the late 1950s. Critical towards occidental polyphonic music, and influenced by the theory of relativity, Boulez pleaded for rhythmic instead of harmonic music. He wanted to free composition from the dictates of polyphonic music, based as it was on standardised homogeneous intervals within a macro-structure, whereby his »serial« music tried to follow an open logic that didn't disdain, in its most drastic forms, to apply the principle of case[3]. What first attracted Deleuze and Guattari's attention was probably Boulez's semantic field: according to his programme, the only rules of composition should be discontinuity, transformation and variation. In his words, consciously non-homogeneous intervals have

2 For the sake of present publication, only relevant portions of Deleuze / Guattari's analysis are going to be analysed in the following. An in-depth study of their essay has been conducted by Edward S. Casey, in »The Fate of Place. A Philosophical History« [1997].

3 Boulez has started composing according to his theory in the 50s; he never retained to have achieved satisfying results. Some works that could well exemplify his method are, for instance, »Structures«, Chapitre I and Chapitre II, »Poesie pour pouvoir«, »Dérive [1]«, »Dérive [2]«, and »Polyphonie X«.

to build a variable space with flexible definitions that develop along with the music, individually, and following micro-structures [i.e. melodies]; musical space can be created through linking, aligning and overlapping intervals, which in turn may be repeated in distant moments in the composition, or compressed, or played so fast that it becomes imperceptible. Furthermore interesting for the two philosophers must have been the new meaning assumed by the idea of »continuum« in Boulez's theorisation: from fullness of homogeneous sound, it transformed into an entity that actually manifests itself in the possibility of space to be broken. Hereby, two ways to »break« space were suggested: either following a standard that can be repeated with a certain regularity, or on the basis of a free and irregular path. In the first case, space will be striated, in the second, smooth. In striated space, frequencies are distributed in the intervals, between breaks; in smooth, they are placed »statistically«, without breaks. Smooth spaces can not be classified: only statistics could reveal any trends in their extension, but this would not affect the music's resonance at all!

Transferred to Deleuze and Guattari's occupation with space, smooth stands for natural, pre-civilised space that depends on transitory rules; it becomes striated through the introduction of structures and organisation, which »break« the virtually infinite smooth. Where points of orientation and landmarks are in continuous movement and must be constantly reconstituted; where we can not be »in front of«, but necessarily »in« or »on«, then we are confronted with smooth spaces: the sea, deserts, steppe, or ice. The experience of these spaces is crucial for human beings, who naturally tend to »striate« them for practical scopes like travelling or trading. Deleuze and Guattari recognised smooth space per se in the sea. This »big unknown«, »other« space, celebrated in sailors' lyrics, sung in poetry and symbolically referred to in philosophy, has both attracted and repulsed human beings in all cultural contexts and ages. For the sake of navigation in open water, men of all continents have brought to perfection their knowledge of stars and maps and thus achieved crescent orientation. Indeed, this process meant nothing but »striating« the smooth maritime space, and it reached its highest peak when governments started to superimpose their propriety on the sea itself, eventually controlling and protecting it, or invading other States' seas. War machines were constructed, submarines for which a swarm of locusts, an enemy attack or a natural phenomenon are simple points on the radar monitors. In a strange reversal, the sea had been made smooth again.

Aggregate of intrication, distribution of continuous variation, absence of centre, amorphous collection of juxtaposed pieces, non-homogeneity, flexible definitions that develop individually in time, micro- instead of macro-structures, transformation, overlapping, compression, direction instead of dimension, close-range vision, continuously varying landmarks. These consciously selected words support the assumption that, writing their essay, Deleuze and Guattari were thinking in particular of post-modern cities. In fact, the city was recognised by them as the striated par excellence, indeed as »the« striation force. As they put it, in ancient times, the relevant distinction was not between bedouinism and cultivation, but between bedouinism and polis. It was the existence of towns that transformed the transhumant cultivators, habituated to moving in a smooth space, into farmers settled around their walls and producing for their markets. In order to exist, the city requires rules, planning and control systems: the emergence of government forms has been tightly linked to urban development. And indeed, as it is possible to striate the desert or sea, it is possible to be »smooth« in the city: let's think of gypsies, but also of postmodern »urban nomads« jetting from one [global] city to another, or of Joyce's Ulysses' inner monologue in a town that, re-shaped by the individual's emotions, loses its materiality and metrical extension. Movements, the intercalation of speed and slowness, as well as the humans' poietic individuality can be enough to reconstruct smooth space. In fact, similarly to the retroactive smoothing of the sea once striated by men, nowadays the striated and striating city is re-importing smooth space not only within its boundaries, but on various levels of contemporary human life. Worldwide trade networks, stock-market exchanges and control eluding migration flows are as clear examples of this process as what could be defined as a movement against the town, namely the expansion of slums, of nomads' and seasonal workers' settlements as well as of vacant areas.

Let's now come to our cities, Dhaka and Berlin. Instinctively, we could define space as smooth in Dhaka, where thousands of rural migrants, trying to survive in the capital, move within the city following job and accommodation perspectives, squatters are regularly evicted and constantly settle down in new places, and where infrastructure has developed rather out of situations and within the restrictions given by climate and environment, than through planning. Then we could think of some of the last years' most impressive urban planning and design adventures like the re-routing of an entire railway system, or the creation of Potsdamer Platz, and assume

that Berlin, having undergone consistent transformations especially since it became the capital of re-unified Germany, would be the reign of striated space. Yet, if we believe Deleuze and Guattari, there is neither pure smooth nor striated space but only a continuous transition between both stadiums – which means that blanket generalisations or universal distinctions on the two cities are impossible.

With this understanding of smooth and striated in mind, we walked through Dhaka and Berlin. »City and Water« was the theme of the seminar's discussions, which contemplated a spectrum of issues including the social meaning of water for the public sphere, the aesthetic practice of architecture and urban design on and along water, infrastructural and supply problems, etc. One challenge emerging with Deleuze and Guattari's essay was to visualise smooth and striated space; contemporarily, we wanted to reflect on space in these two cities, on their relationship to water, and on the influence of planning on everyday practices. We were well aware of the risk that goes along with the application of any philosophical construction to reality, namely to make dogmatic, even utopian, assumptions. Human and social science have elaborated their own approaches in this regard, for example, ethnology and anthropology avail themselves of the ethnographic method: by integrating concrete information, from interviews for instance, with theoretical assumptions, these disciplines are able to deliver significant results without falling into dogmatisms. Another field that came into consideration as a way to approach space and its variable nature was art, which has the faculty to bring abstract thoughts into reality, into something perceivable by the senses, whereby through its same formal confinement in the field of the possible, it can reveal unseen relationships without pretending to be absolute, thus resisting the temptation of dogmatism.

It was so that we decided to accompany our descriptions of urban space, its importance for public sphere, and its changes through planning in Dhaka and Berlin by the medium of photography. Hereby, as space is an abstraction as much as smoothness or striation, these photographs could not represent space, but will only suggest it; they will not follow one definition of smooth and striated, but try to connote their meaning through series that can contrast, confirm, stress or enforce each other. Like the selected texts in this publication, they are juxtaposed and assembled to give an insight into the two cities' spatial dispositions. A contribution to Deleuze and Guattari's innovative essay, and contemporarily, a declaration of love for Dhaka and Berlin.

The Significance of Urban Water Bodies for Public Sphere

Elisa T. Bertuzzo / Günter Nest

Dhaka, it is commonly heard from senior Dhakaiyas[4], used to be rich in surface water. As boys in their school and college years, they used to dive into the Buriganga River from its ghats [masonry steps used to descend to the river], swim several kilometres down-stream, until reaching the Dholai Khal, through it other canals and then their homes, where water was again their entertainment – hours could pass while catching fish, puti maas and boal maas, with fishing rods. Many had notions of sailing, particularly inhabitants of the northern low-lying areas like Mirpur, who could only reach the city by boat. Seasonal boat races used to be organised and middle and upper class men also took part in them. Indeed, some portions of the canals were too busy for swimming due to the intense coming and going of boats that transported vegetables and goods from the North to Kawran Bazaar, Dhaka's central market. The khals [canals] were full of water during monsoon, whereas their level sank in the dry season: they protected the streets from flooding during the rains, and ensured a better environment in summer, when they provided in particular a source of irrigation for the fields.

Walking through Dhaka nowadays, few traces remind us of those water bodies; four big artificial lakes, the Dhanmondi, Gulshan, Banani and Mirpur Lakes, are mute reminiscences of the forgotten canals, and it is a surprise to hear that Kataban and Pantha Path, crucial streets for present day road communication, were canals once upon a time. Dhaka's younger inhabitants from middle-income and wealthy families largely ignore the existence of the River Buriganga, or at least avoid visiting it as its name only evokes images of squalor and pollution; only those who live in Old Dhaka or in river proximity seem to have conserved a slight notion of the river, and refer to it for orientation and recreation.

On the other side, the Buriganga has remained an important communication route for persons and goods, it hosts a lively port in the heart of Old Dhaka, at Sadar Ghat, where vegetables, fruits, but also wood and bricks are introduced to the capital city, and it still represents an important source of work. On St. Valentine's Day or marriage anniversaries, it is common for young couples to rent a boat and go for a Buriganga tour. The lakes are used by the urban poor as a source of washing water, as well as by an increasing number of middle class inhabitants who like gathering, walking, doing sports and even singing in groups along their banks. Initiatives to develop and prevent the river's as well as the lakes' environment have grown thanks to a tiny but well-represented »educated class« that regards surface water as a contributory factor to the quality of urban life and aesthetics.

Without memories, but with our eyes open for situations and peoples' movements along the water, we start our walk near Gabtali, where the River Turag crosses the Buriganga. A busy harbour extends here, at the city's outskirts: workers coming and going from the ships transfer bricks, vegetables, fish - all collected in big straw baskets balanced on their heads – to storage barracks. The landscape, actually a waterscape leaving little space for land and buildings, corroborates the expectations of the capital of a country occupying the world's biggest Delta. Beyond the river harbour, which can be reached by a road through the fields, other barracks have spread out: the labourers' and other families alike, migrants from the north, are living there. Many of them have concluded their journey to Dhaka here, where the port ensures job opportunities and water for daily use is available, and squatted on the riverbanks. The riverbank, simultaneously a site for working and housing, can be reached by foot over sandy paths that descend from both sides of a four-lane highway. Children and women living in the squats approach the river for washing and playing daily, but rarely hike the path to the heavily trafficked main road; to reach the bazaar, they walk through the fields. The men are different: they are habituated to climbing up to the highway, from where a short walk leads to the next bus station, market and shops.

Some kilometres down the Buriganga River towards Dhaka, the Memorial to the Martyred Intellectuals remembers a whole generation who fought for independence from Pakistan, contributing to the birth of Bangladesh, in the 1971 Liberation War. The monument, a curved brick wall consciously left incomplete to resemble a ruin, stands on the embankment and faces the low-lying lands to the east of the capital. During the monsoon, an apparently endless flooded landscape extends under the elevated monument, which seems to be surrounded by the sea. A fence protects the Memorial's park and guards control its access; nevertheless, the neighbourhood - mainly squatters occupying the inner front of the embankment - is not deterred and seems to enjoy gathering in the park's green: couples, but especially

4 We will call Dhakaiya those inhabitants who were born in Dhaka of parents who already lived in the city. A more circumscribed definition was given by Dhaka Association and adopted also by geographer Hafiza Khatun in her book »Dhakaiyas on the Move«, for whom Dhakaiyas are exclusively »those indigenes of the city who presently own or owned inherited land as recorded in the cadastral [survey] maps of 1912«.

children and young boys can be seen walking along the platform at every time of the day. On the contrary, despite the good architecture, visitors to the monument are rare. As a young nation, Bangladesh is particularly attached to its dramatic fight for independence; not only during commemorations, but also privately, Bangladeshis are keen to visit various monuments spread over Dhaka. Yet, this memorial does not seem to be »rooted« in their awareness. Could the reason reside precisely in its location on the embankment with its degraded environment?

The embankments' history in Dhaka goes back to the 19th century. During particularly severe monsoon seasons, the surrounding lowlands – nowadays part of the metropolitan area - were subjected to floods; as Bangladesh's river system is geologically young, the Buriganga's bed constantly moved, causing erosion of the banks as a consequence. To prevent the city from these phenomena, an embankment was built already during British period. The waterfront, called »Buckland Band« after the commissioner who monitored its construction, also became the foundation of an elevated road where markets settled and dwellers enjoyed walking. As Dhaka expanded northwards, the new areas along the Buriganga also faced flooding problems and created the exigency of building a new embankment. This became particularly urgent after a terrible flood in 1988, and, in the following years, an internationally funded project made the construction of a protective waterfront for the entire south-west area of Dhaka possible[5]. Nowadays, a 27-km-long riverfront starting from Ahsan Manzil nearby the lively port area of Sadar Ghat in Old Dhaka, and continuing northwards to Ashulia and Uttara in Dhaka's outskirts, completes that initial string.

The road built upon the new embankment runs alongside some of Dhaka's poorest and most underdeveloped areas. Since its creation, land owners and developers have discharged construction waste into the low-lying areas beyond the embankment, established illegal businesses and continued operating polluting activities such as tanneries. Past the Memorial, following the embankment road southwards, squatter settlements on stilts, illegal constructions and a broad area occupied by tanneries follow in succession. Thousands of migrant families have settled in these low-lying outskirts: they run tea-shops beside the road, work in the processing of leather, cultivate and sell fish, or are employed in small enterprises for the recycling of plastic and batteries, whose remains lie on the street and on the bank; many are rickshaw pullers. All have found protection from the flood, access to water and job opportunities beside the river. The wetlands on the right side of the embankment, those actually planned as absorbing and retaining areas for water coming from higher regions and thus expected to remain empty, have also undergone an unplanned development. Rice fields, fish cultivation ponds and isolated constructions, among them a private school and a hospital, alternate in the landscape. Eventually, over the years, the sediments transported by the river, especially during the rainy season, have been deposited along the riverfront. Parallel to the constant filling up of the wetlands through construction and other waste, this has caused the gradual drying up of the northern Buriganga flow and corresponded with the loss of an island, which became a peninsula, called Kamrangir Char.

By and then, small gates »break« the embankment wall and allow access to the Buriganga from the ghats. As the waterfront necessarily had to »block« the city's passage to the river - but also closed the city's view from the Buriganga –, these steps represent a last trace of the traditionally important relation between Dhaka and its water, which is clearly stated by the fact that the ghats have been spared by the construction works. Here, particularly women living in proximity of the river take the chance to gather and talk to each other for some minutes while collecting water or washing; also children playing with kites, following each other or sitting and telling stories beside the river fill the banks. The waterfront is rich in various signs of the business activities going on beside, on and along it. Wooden frames to cover the boats, tents and oilcloths lying in ordered lines reveal the work of ferrymen and especially show that, from various sites, it is possible to load goods and people to travel in different directions. Clothes hanged or even laid to dry along the river indicate that, nearby, washer-men must work. Leaning against the embankment wall, tea-shops on stilts host men

5 Severe countrywide flooding in 1987 and 1988 prompted a proposal for formulation of a comprehensive Flood Action Plan [FAP] for Bangladesh. This consisted of a study phase that researched on flood protection requirements [FAP 8] and resulted in a proposal covering the most densely populated western part of Dhaka [FAP 8B], which was implemented between the years 1992 to 2000 with Asia Development Bank's [ADB] assistance. However, the proposal also included flood protection, drainage and environmental improvement for remaining 124 km² on the eastern part of the city [FAP 8A], that have not been implemented to date primarily due to funding constraints. As a result, some 60% of Greater Dhaka's east area is regularly submerged between June and October.

chatting in contemplation of the broad river: despite the wall, the Buriganga is a constant companion of everyday activities – and a precious open space from where to enjoy a broader view in the congested Old Dhaka.

We are already in the old town area, precisely at the conjunction between the recently constructed and the Buckland embankments, where the ghat nearby Ahsan Manzil assumes a special importance in correlation to the Hindu festivals. Water has always had a symbolic meaning for the Hindu ritual and, at the end of most Pujas, Dhaka's Hindu community is keen on going to the Buriganga. Emerging from the small, tight lanes of Old Dhaka, hundreds of people congregate on the bank, waiting for the divinities' statues that are to be drowned in the river's waters as an act of purification. Men and women get into the boats to accompany the divinity's descent into the dark waters; boys often jump into the river along with the statues. The Pujas may represent one of few practices in Dhaka that, through a collective activity of urban dwellers, »cancel« the barriers created by planning – in this case the embankment –, but also those deriving from urbanisation – like pollution and loss of identification with the urban environment – and re-connect the city and its water.

Some miles north from the Buriganga, in Dhanmondi, a conscious effort to »give the water back« to the city was made with the upgrading of the homonymous lake. One of Dhaka's most beloved neighbourhoods, loaded with memories regarding the War of Independence, host of various cultural institutes and art galleries, as well as centre of a vibrant urban life with its cafés full of young people, Dhanmondi also owes its popularity to the Lake. In the 90s, to counteract the water body's environmental degradation, the government called a public competition for its re-qualification. Few planning studios took the challenge as the chances of realisation were estimated to be low – experience had in fact given evidence of the difficulty to plan and realise public works under Bangladesh's socio-politically fragile situation. Nevertheless, the project was funded and in the end realised by a young architectural studio. The lake's banks have been planned as to prevent illegal encroaching by the poor, an open-air theatre, walking paths and gazebos placed so to attract local inhabitants to gather. In order to finance the maintenance costs, various business activities, including a restaurant and boat rental, are operated on the banks as well. In particular the construction of two bridges connecting north and south sides of the lake was expected to enhance the neighbourhood feeling, as inhabitants of one side could directly reach the other.

Dhanmondi Lake has become one of Dhaka's most popular water bodies; nowadays, even people living far away from Dhanmondi come here to meet their friends; on Fridays and Saturdays, youth groups play music on its banks and couples or lovers find a little bit of intimacy in the more hidden sites. Only Dhanmondi inhabitants, as some critics have pointed out, have lost their lake. Yet, the lake's easy accessibility and openness have factually given Dhaka a space where city consciously approaches the water and dwellers can relate to it according to individual needs, be these embracing or bathing.

The case of Banani Lake is exemplary of a completely different development. Located in the heart of one of Dhaka's new districts, the lake – in particular its western side along with a peninsula - started being encroached by the workers of the surrounding construction sites as early as in the 1970s and has since grown in parallel with the new capital city's urbanisation. Nowadays, at least 100,000 people are living in the settlement, which is one of Dhaka's biggest and most famous slums, Karail.

To reach Karail it is necessary to take a boat at unofficial embarkation points, like dozens of people who daily cross the strip of water between their habitations and the main street, loading the small vessels with all kinds of items. Having landed on the sedimentary peninsula, a tiny path leads through a completely structured urban community, with a well-organised bazaar, schools and mosques, as well as various types of huts. Each group of dwellings shares a water-pump, from which adults and children pump water for drinking and everyday use. On sunny days, they often descend from the slum's fringes towards the lake to take a bath or wash clothes and blankets. The squatter settlement, which developed on public land, occupies a potential »golden area« for a future exclusive building site. Its inhabitants are aware of the precariousness of their situation and are wondering, as are civil organisations, how long the public authorities will withstand the pressure of private developers.

Berlin's image, it has been observed, is only secondarily characterised by its rich surface waters and, especially in comparison to other capitals, Berlin as a whole doesn't actually have any relationship to the river. In fact, the tiny Spree could easily be mistaken for a canal compared to Berlin's broad area, and the Berliners have never seemed to rely on the river in any particular way - or at least not as much as citizens of Paris and Vienna, Hamburg or Frankfurt. Whereas Paris's inhabitants will describe a neighbourhood, a street, or a building, according to their location on the right or left side of the Seine, in Berlin, the Spree is never referred to as a boundary or as a landmark. Whereas the Elbe represents a strong demarcation, actually a »land-marking line« and Hamburg's road system is organised according to it, in Berlin, the roads were developed independently and almost completely perpendicularly to the Spree.

Due to the fact that the main road system does not accompany the river, but rather crosses it, Berliners and Berlin visitors see the Spree from the bridges rather than from promenades along it. Though there are impressive bridges that remain in one's memory, from the downtown Mühlendammbrücke with its locks, to Weidendammbrücke and Elsenbrücke, not to mention the spectacular Oberbaumbrücke, they do not share any consistent »context« with each other, and thus, the Spree's picture remains a fragmented one. This is actually the reason why a residence or business address in Berlin is not yet characterised by saying that it is »on the Spree«, while indications like »Unter den Linden« or »Kurfürstendamm« have a peculiar identity. For those who do not live directly on the Spree, Berlin could very well be a river-less city, as the river is easily overlooked[6]. Even in Mitte, the central and most touristy part of the city, on the section of the Spree that flows along the »Museumsinsel« [museums island] for example, the banks rarely coincide with the main road system and they maintain an air of privateness and silence typical of by-lanes or dead-end streets.

Long before the road system became relevant for goods transportation, not only the introduction of materials, but also the transportation of finished products was managed via water. Thus, rather than as a constitutive element for urban livelihood and design, the River Spree was considered as a cheap and efficient transport way for industrial and commercial goods for centuries. Accordingly, industries and commercial companies settled in its proximity: for such locations, river promenades would have been an eccentric, not to say useless, investment. This purely functional understanding of the river has survived until the present day, as certain lengths of the Spree banks seem to be thought of exclusively as location for commercial centres and research institutions that more or less consciously keep a distance from the public. This is certainly the case in one section of the Spree in Tiergarten, in which administrative buildings, traditional industries as well as the Technical University's campus are concentrated [see also Christine Edmaiers article further in this book].

Beside these rather infrastructural aspects which have determined the Spree's complex situation in Berlin's urban landscape, a historical one will be mentioned here, too. After the Second World War, Berlin was divided into four sectors and, very drastically, by the wall. The city, as we have seen a striating force per se, was immensely striated through the check-points between East and West. Hereby, long sections of the River Spree, especially to the south-east, used to demarcate the border between the two parts: on both sides, broad areas were left vacant for security reasons. Up to the present day, the Spree has not completely lost its function as a »boundary« between two parts of Berlin that are different even now, and both riversides have been, or are currently, the subjects of new development plans.

In the post-war period, the urban development schemes for West Berlin followed the model of the neighbourhood with limited public access: streets on the riverfront were cut, access roads blocked, and dead-end roads substituted whole street sections. On the other side, in the same period residential neighbourhoods were consciously planned towards the river. They remain among Berlin's most appealing areas, but also here the connection between water and city remained partial, because these quarters are in fact cut off from the main road system. Along with this type of urban planning, and from an infrastructural point of view, in rare cases public streets have been set out along the banks, but mostly without being integrated into the general street pattern; the accessibility of existing riverside streets has been rather reduced until complete closure for security reasons.

Due to Berlin's historical development but, probably, also to a certain »blindness« of its inhabitants and planners, the Spree has not been consistently integrated in the city's public space. The case of Rummelsburger Bucht well exemplifies the persistence, also in recent years, of this »exclusion« of water. The Bay between the Spree's northern bank and a sedimentary

6 This is also due to the fact that, in Berlin, bridges are typically built on the same level as the streets and are flat, which hinders the perception of the underlying river especially if moving by car.

peninsula, Stralau, was developed for industrial aims in the mid 19th century due to the favourable proximity of waterways and railways. In the following years, public facilities and tenements followed the initial industrial buildings. After the fall of the wall, vacant ruins were the meagre reminders of that booming period of industrial development in Berlin. Yet, in the hope of another boom – the expected but never achieved demographic growth -, the site was developed as a residential area for the upper middle-class. The complex, with its security systems and high fences, gives the feeling of a gated community and consists of different private houses with balconies looking towards the river. As in other peripheral areas of Berlin, for example at the big Müggelsee Lake, the houses' street facades reveal nothing of the presence of water at all, whereas their water-facing sides, private and introverted, are used as private piers or jogging paths.

The situation described so far should not be interpreted as absolute, as Berlin's relationship to water is actually controversial. 6,7% of the city's total area, around 6,000 hectares, are occupied by a huge surface water system - beside the River Spree, also the River Havel and a multitude of lakes, some of which invite Berliners to swim on summer days. This extent of waterways actually implies that living and working in the proximity of the water should be common. A particular situation in this regard is the »Landwehrkanal«. This canal was built in the 19th century as a transport route for the materials for the construction of new residential neighbourhoods on both sides of the Spree. In an almost absolute exception for Berlin, the front facades of the houses built along it face the water, instead of ignoring it. With its kilometre-long footpaths, the Landwehrkanal plays a conspicuous role for the cityscape. Its broad grassy banks are a beloved spot for pick-nicking for far more people than the residents. From the morning-time jogging to the meanwhile typical gathering of young people singing and making music, from the skateboarding platforms beside the banks to the senior citizens' evening strolls, a series of activities make it possible for diverse people to share the public space. In fact, spaces like this create that kind of livelihood peculiar of urban contexts that is also called public sphere: not only do residents and users have a special affection for their »public water«, the canal, and its surrounding environment; they are also actively involved in its preservation.

Today's situation, characterised by vacant space as a consequence of historical, social and economic changes, is providing the city with the new challenge of conversion, meaning on one side transformation of obsolete activities and, on the other, a re-orientation of architectural and planning practices. This is particularly the case of Berlin's »Neue Mitte« [»new centre«], strung along both sides of the Eastern Spree, which has become a pole of attraction for commercial companies, creative industries and new entertainment thanks to the marketing strategy of »mediaspree«, an investors' project for the development of the area.

To the east, between the Elsenbrücke and Oberbaumbrücke, the area nearly corresponds to the site of Berlin's first large port, and is nowadays a largely vacant architectural heritage site. The history of Osthafen is connected to important events of modern and contemporary Germany. For its construction, in 1895-1907, an embankment of 1.5 kilometres was built along the Spree; 80% of its facilities were destroyed during the war, but it continued to function and was actually East Germany's biggest and most important inland harbour. After the fall of the Wall, the port was privatized and finally taken over by former West Berlin's port and warehouse operator, Behala. Nowadays, it is the centre of an impressive urban upgrading process, but also of lively public debates.

Attracted by Berlin's popularity as »city of design«, of artists and creative people, as well as its comparatively low rents, brands like MTV and Universal have settled into the new site. Although the marketing strategy uses the Spree as the main attraction factor and the architectural improvements are inspired by the port's traditional industrial architecture, a relation to water struggles to develop because the generated »public sphere« is actually a fake, artificial one. The three local authorities[7] responsible for the area are interested in its further development, for which a new urban upgrading programme[8] is being applied in co-operation with Berlin's urban development authority and mediaspree. The priority is on one side to counter the deficit derived from the traditional separation of riverside and city, for example through the construction of public foot- and bicycle paths along the river; on the other, an envisaged aim is the integration of the mainly migrant population living in the southern riverside through new employment opportunities.

Nevertheless, the plan's details reveal a resistance towards a real »opening« of the riverside: the buildings' orientation - private rear elevation to the river, public front facade to the street - has remained unchanged. Strong

7 Friedrichshain / Kreuzberg, Mitte and Treptow.

8 Stadtumbau West, co-funded by Berlin's Senate and the German government.


HAVEL
SCHIFFFAHRTSPOLIZEI

criticism was aimed at the »social« aspect as intended by administration and planning studio, as unemployment is only one of many factors preventing integration and the approach has been regarded as superficial. Worried that the further construction of buildings for offices and companies could completely privatise the banks, as in the case of other parts of Berlin, concerned inhabitants, and Berliners in general, have started asking the planning authority for some restrictions to the future development. In fact, up to the present day, people from the neighbouring areas have used the riverside for fishing, jogging, walking or simply enjoying the beautiful view of the Spree. It should be mentioned that in the background of such development plans are the implied dissolution and eviction of precedent uses. Along the entire mediaspree area, spontaneous beach-bars, clubs and caravan settlements have found niches for alternative community life in this still »smooth« space, becoming popular as leisure time locations with a certain urban flair. Clearly, the development plans clash with the temporary projects, which seem to be destined to move again, maybe further east, where planning has not yet started.

A very recent example of urban development beside the Spree that, because of its identification value, has largely occupied public opinion is the new Parliament Area [photo left] with the recently opened Central Station. Until the late 17th century, the bend in the river to the north of Tiergarten Park consisted of an extensive meadow that actually was not even part of Berlin; by the beginning of the 19th century, extensive works had transformed the meadow into a popular destination for day-trippers. When Berlin became the capital of Germany in 1871, the parliament building was constructed precisely on this site, and the region to the northeast of the Spreebogen [Spree Bow] became a new residential area for politicians and members of the diplomatic corps. The erection of the Berlin Wall in 1961 made this former political centre a no-man's-land between the two German states. In 1991, when Berlin regained its status as the German capital, the parliamentary and government district in the bend of the River Spree became object of an extensive upgrading programme with the aim to give the re-unified capital a new centre. The river's proximity was seen as an important aspect for the whole design: Berlin had to »get its river back«.

The works on the huge area were completed only in 2006 and the new government district will surely take some more years to really find its place in a city that has inherited a basic scepticism towards political power and is still forming its new identity as a capital. Yet, particularly after the 2006 World Cup, as well as the tourists, Berliners have started exploring the area, attracted not only by fashionable riverside-cafés but also by the green spaces where football can be played. Especially the riverside promenades, for a long time the exclusive realm of policemen and security corps, are being filled by joggers, couples and families who descend on the re-discovered river.

Outlook

This article's aim was to reflect on space in Dhaka and Berlin, on their relationship to water, and on the influence of planning on everyday practices without pretending to compare or formulate general judgements on these two so diverse cities. Also for this reason, two different methods were adopted: Dhaka was experienced by walking, from the perspective of the flaneur, whereas Berlin was »looked upon«, with an idea of its plan, thus from a bird-eye perspective.

In Dhaka's case, the choice was the necessary solution to the fact that the authors lacked the profound knowledge of everyday practices that only locals can have. By looking at it from above, or on its plan, we would have treated the city as an empty construct. In contrast, the elementary everyday practice of walking appeared to be a viable way to experience Dhaka, to »follow the urban texts«. Differently, for the description of Berlin we could rely on an extensive knowledge of the city and therefore consciously based our analysis on the road system. As a central aspect of urban planning and one of the major agents of striation, the road system well reflects administrations' agendas and development trends. Simultaneously, it has an immediate impact on everyday life, and is thus a platform for the »public sphere«, in the sense that Berliners' creative uses and individual interpretations of available urban space contribute to re-smoothing the city.

Let's start with some observations on Dhaka and water. Traditionally, Dhaka has lived on and with water; since its extreme urbanisation, the value of water bodies for environmental and climatic reasons, but also for a better quality of life in the city, has been recognised by a portion of its inhabitants. At the present time, the illegal filling of retention ponds, which is leading to environmental deterioration and an increase of floods, as well as the encroachment of river and lakes' banks, are at the centre of lively debates. Public opinion is demanding a better co-ordination by responsible authorities to avoid further delays and partial solutions. Another important issue is the construction of a second embankment to protect the city's northeast, in which recently developed areas as Gulshan, Badda, or Rampura are located.

In the meantime, the Buriganga River, as well as Dhanmondi Lake, continues to be largely used by urban poor and Hindu festivals remain centred on water. This shows that smooth - from the unplanned development supported by corruption to the »nomadic« movements of those million inhabitants that have no alternative to squatting in unsanitary areas and live under constant threat of eviction - and striated – from civil society's plea for better functioning of planning authorities to the plan for the Eastern Bypass - are factually alternately co-existing in Dhaka. Hereby, smoothing processes have so far seemed to overcome striating efforts.

In the article, five different sites have been encountered. Dhanmondi Lake's case showed that the striation effected by planning is never absolute and that the city, defined as striating force per se, always creates the conditions for new smoothing. Further on: the squatters on the Buriganga banks and Karail Bustee, although temporariness and informality make them to a paradigmatic smooth space, are nevertheless ruled by a series of norms and cultural values that eventually »striate« space. Reflecting on this, we can arrive at the conclusion that smooth and striated not only coexist in Dhaka, but they are generating the constant tension and transition that make the city vibrate under huge debates, contrasts, and struggles.

What about Berlin? In its function as a transport route, the River Spree was exclusively a development factor for commerce and industry in the past. For almost 30 years, until 1989, it demarcated the boundary between East and West, and probably due to this it long lacked a place in reunified Berlin's urban life. From an urbanistic point of view, one of the problems was the empty riversides, extending for kilometres into the city's new heart. While commercial or industrial development remained a distant dream, partly because, meanwhile, motorisation had made river transportation obsolete, but mainly due to the decadence of traditional economic sectors in favour of the tertiary, those huge vacant spaces started to be occupied by young alternative groups that have filled them with cultural and political initiatives. In recent years, conspicuous upgrading interventions have been made on the river promenades in the historical centre by the public authorities, who have discovered the River's attractiveness for tourists. The dialectic of smooth and striated is well expressed in these processes: after an extreme striation caused by the hostilities between the two German States during the Cold War, the fall of the Berlin Wall determined a period of smooth space, which was destined to be in turn striated through the political will to give Berlin a new centre.

The most interesting of the described examples seems to be the development initiated by investors and now co-ordinated by the local administration in the city's south-east as it confirms how, in contemporary Berlin, striating forces not only co-exist, but go hand in hand with the smooth activities of private enterprises. What is the impact of so-called public-private partnerships on urban space going to be? Can these new approaches contribute to an improved balance of smooth and striated? Or are they tools for gentrification, for an exclusive development threatening democratic, participative urban development? The tension between smooth and striated, between individual creativity and public administration, challenges also in Berlin democracy in urban development.

The two photo series reproduced here are the results of an experiment that integrated music and photography to make perceivable what Deleuze and Guattari intended by »smooth« and »striated« space. Pierre Boulez having been the inventor of the two terms, we started with one of his compositions, precisely his Dérive from 1984. The six-minute-long piece, in which he combined six instruments that at times seem to flee the conductor's control to produce a wallowing in sound, became the backbone for our representation of both Dhaka and Berlin. Walking through the two cities, we took photographs which could suggest the sense of smooth and striated along and nearby water – vacant spaces, slums, informal developments as well as festivals on one side; built up areas, infrastructure or sites planned under public intervention on the other. In Dhaka, we were helped by other flaneurs, who made their personal views on their city's space available to us. But we also collected impressions: a sinking boat in the Buriganga, a man washing his car at Dhanmondi Lake, an imposing view of Dhaka by night from the 21st floor; or again an obsolete sailing boat now exclusively used for theatre performances on the Spree, a small group of migrant youths sitting on the banks of a canal, or an illuminated stair mysteriously descending to a former bunker along the river. Smooth and striated, as mentioned, fluctuate. They depend on moments, on individual movements. On the base of a personal and intuitive perception, we combined the music – visualised as frequency bands - with these photographs, obtaining a video slide-show. It is a sequence of situations that rush beside the Buriganga, keep silent in front of its degradation, increase in excitement during a Puja, are stunned at the new Parliament Area, and relax in Berlin's empty port area.







































































































Grillplatz




























GÉ GL















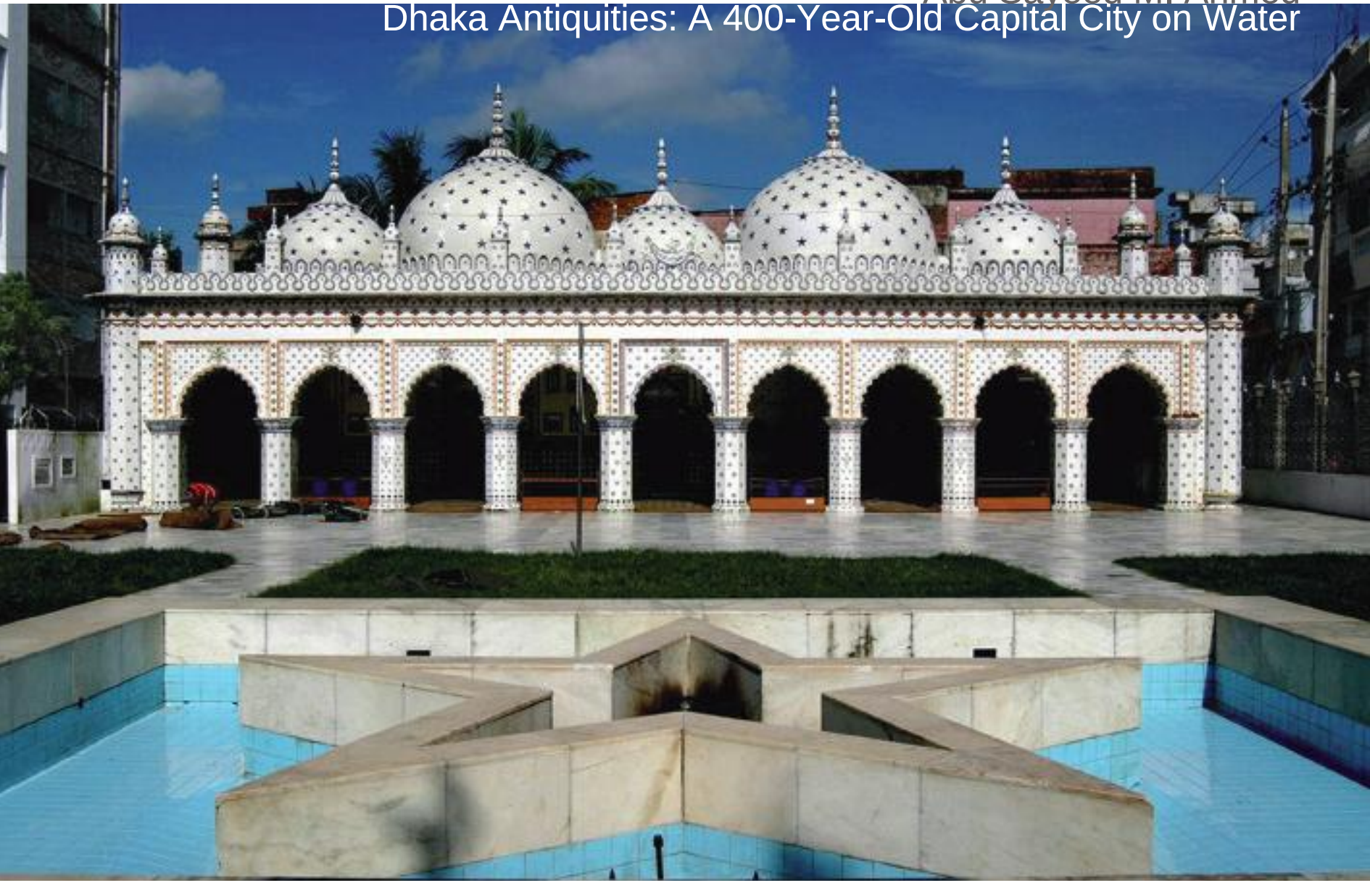





PULL THE PLUG

Abu Sayeed M. Ahmed

Dhaka Antiquities: A 400-Year-Old Capital City on Water



Dhaka, today's capital of Bangladesh, used to be known as the city of mosques and muslin. With its exciting history and rich culture, it attracted travellers from near and far through the ages. Whereas its existence in the pre-Mughal period cannot be ascertained precisely, it is known that it developed as an urban centre in the Sultanate period [1204-1525AD]. According to recorded history, it was founded in 1610 AD as the seat of the imperial Mughal Viceroy of Bengal.

Since its establishment as the capital of the Mughal province of Bengal, Dhaka[9] served as administrative headquarters and residence of subahdars [the chief officer in a company of soldiers] and other imperial officers with their courts. Its first period of glory came to an end with the shifting of Bengal's provincial capital to Murshidabad in 1717, and a drastic decline set in after the acquisition by the East India Company, in 1765. Also during British rule, while Kolkata's importance grew, Dhaka's population significantly declined. At its peak, during the Mughal period, the city with its suburbs was said to have a population of some 900,000; in 1801, some 200,000 inhabitants remained and by 1840 they had reduced to 51,636.

Dhaka again became headquarters of a large division, namely the Dhaka Division, in 1829 under the Government of British India. Thereafter, its administrative importance grew quickly, in particular from 1905, when it was made the capital of the new province of East Bengal and Assam. A more significant development in Dhaka's political rise took place in 1947 with the end of British colonial rule and the establishment of the Eastern province of independent Pakistan. In 1971, finally, Dhaka became the capital of a new country, Bangladesh.

In the distant past, a course of the Ganges River used to reach the Bay of Bengal through the Dhaleshwari River, which flowed near Dhaka. This course gradually shifted, ultimately lost its link with the main Ganges channel and was renamed as Buriganga. Nowadays' Dhaka is located on the banks of that river, whereby not only its year-long relation with the Bay of Bengal through the Buriganga is proved, but it is furthermore clear that the same river has determined the city's development.

9 The origin of the name »Dhaka« is obscure and several interpreters have suggested different derivations, of which the three most popular are: 1] the dak tree [butea frondosa], which was once found in the place in abundance; 2] dhaka-ishvari, or concealed goddess, as the Hindu goddess Durga was once found concealed in the place; 3] the dhak, or drum, beaten by order of Islam Khan during the inauguration of the Mughal capital in 1610.

A complex net of canals, of which the most famous are Dholai Khal, Narinda Khal, Begunbari Khal, Segunbagicha Khal, Arambagh Khal, Gopibagh Khal, Paribagh Khal, Kathalbagan Khal and Dhanmondi Khal, crisscrossed the city, connecting it to all the major rivers and, through them, to almost all districts of Bangladesh, itself a largely riverine country. Thanks to this communication hub, Dhaka flourished as a centre of administration, trade, commerce and industry. Indeed, the city remains encircled by water to the present day: by Tongi Khal to the north, Turag River to the west, Buriganga to the south and Balu River to the east.

As the capital of Bangladesh, Dhaka has grown into a busy city with about 10 million people in its metropolitan area. It is Bangladesh's centre of industrial, commercial, cultural, educational and political activities. Architecturally, it shows a happy blending of old and new building forms, which I will try to describe in the following pages.

D´Oyly´s sketch of Boro Katra in Old Dhaka

Religious buildings / Mosques

The only surviving structure of the Sultanate period in Dhaka is the Binat Bibi mosque in Narinda, built by one pious woman in 1455 AD during the reign of Sultan Nasiruddind Mahmood Shah of Gaur[10]. According to the Bangladeshi historian Taifoor, this mosque was erected beside the Heyat Bepari's Bridge, one of many bridges that used to cross the Dholai Khal, a canal that demarcated the city's eastern end for a long time. Nowadays, it is difficult to guess the existence of those bridges as the channels have disappeared along with the rapid urbanisation Old Dhaka has undergone. However, recent soil tests have revealed that the building's eastern and southern sides have been filled with earth, which supports the assumption that the mosque was located on the northern bank of the Dholai Khal and the ablutions before the prayer happened in its waters. Binat Bibi Mosque is not only Dhaka's oldest building; it is also an example of Khan Jahan Ali style in Central Bengal[11]. It had been hidden by vertical and horizontal extensions in all directions for years before the main constrain was re-discovered and, after year-long struggles, civil society and universities were able to convince the Mosque Committee to conserve instead of demolishing it.

The Mughals came from central India with a precise conception of religious architecture, consisting of the rectangular, three-bayed or -domed mosque, and imposed it on Bengal. Dhaka's earliest example of the Mughal three-domed mosque, the Shahbaz Khan Mosque, has three shallow domes of equal size but no shoulders, and a further characteristic of Mughal origin is shown in the panelled plastered facade. While the domes initially rested on three equal square bays, later developments retained the square shape only for the central bay, with a bulbous dome as a roof.

Dhaka was known as the city of 52 bazaars and 53 goliie [lanes]. To serve the needs of worshippers, a special type of mosque became common and peculiar to ancient Dhaka City, i.e. a two-storey building, of which the ground-floor was dedicated to commercial uses [shops and rest houses]. Khan Muhammad Mridha's Mosque in Lalbagh, Begum Bazaar Mosque at Becharam Deuri and also Chawk Bazaar Mosque are examples of this type of building.

Also the square-type sultanate mosque was popular during the Mughal period, as can be observed in the drawings of D'Oyly and in one surviving mosque, the Bhuyia Bari Mosque on the bank of the Balu River. Its plan is pre-Mughal, whereas the surface ornamentation, such as the recessed rectangular panels made in plaster instead of sultanate terracotta ornamentation, is typically Mughal.

Picturesquely situated on the northern portion of the Buriganga, presently known as River Turag, the Sat Gambud Mosque [photo below] was built on a spacious buttressed podium to overlook and contemporarily be protected from the extensive water course. Architecturally, the structure is a typical three-domed Mughal mosque, but its four articulated corner pavilions make it the most innovative of all the Mughal monuments. The pavilions were used as verandas to enjoy the vast water body before and after prayers.

In 1645, Mir Abul Qasim, Diwan [»chief minister«] of Shah Shuja, built an idgah [a congregation place for the two largest annual Islamic festivals] on the spacious plain to the north of Peelkhana, on the way to Satmasjid, which is still standing today on an earthed platform, albeit in a ruined state. The difference in level between the road and the raised platform proves that the idgah was originally built on the eastern bank of the River Turag, which has now receded about one kilometre westwards. In fact, Satmasjid Road, at present one of Dhaka's most important north-south connections, was constructed on the Turag's deserted bed.

10 This earliest known building proves that Dhaka is more than 600 years old.

11 This type of square-shaped, single domed mosque form originally developed in the southern part of ancient province Vanga, for example Chunakhola Mosque in Bagerhat.

During the colonial period, wealthy Muslim zamindars [landowners] and merchants renovated a large numbers of Mughal mosques and built a few new ones. Instead of developing a new style, they mainly focused on surface treatment. Despite the rich tradition of Islamic terracotta and Mughal plaster works, chini-tikri [»broken ceramics«] were imported from China for surface cladding, as the Tara [photo page 45] and Kasaituli Mosques still show.

Traditionally, human settlements in Bangladesh are built around artificial tanks to ensure the provision of household water, whereby dug up clay and mud are used as building materials. Dewanbari Mosque in Amin Bazaar was built in this manner in 1920: the ablution before the prayer took place by the near tank, which could be reached through a ghat, the broad flight of masonry steps that, as typical of the Subcontinent, leads down to water bodies.

Churches By late 17th and early 18th century, Portuguese, Dutch, Greek, Armenian and French traders and merchants were influent in Dhaka and the British East India Company had already established a trading post. Along with the business community, a large number of priests arrived with missionary intentions and they left Dhaka a large amount of churches and memorials. The Church of the Holy Rosary [photo on the left] in Tejgaon, built in 1677, is the oldest existing church in Bangladesh. The Portuguese built the original small chapel that was subsequently extended until it reached its current dimensions. It is a large Basilica with a curious blending of Christian and Mughal elements such as fluted pillars with kalasha [pot-like decoration] base and a cusped arch topped by a curved eave. The latter is an architectural element that developed exclusively in deltaic Bengal.

During the colonial time, exotic styles appeared in Dhaka and eventually blended into the traditional architectural practice. An example is the little memorial [photo above] built in 1915 by a Greek businessman of Narayuanganj in the Teachers' and Students' Centre complex of Dhaka University. Conforming to the classical Doric style, each facade has a projected bay, which turns the square plan into a cruciform one, and consists of two fluted Doric columns topped by a triangular pediment.

Temples One of Dhaka's most famous Hindu temples is the Dhakeswari temple, to which a popular legend ascribes the origin of the city's name. According to the same legend, King Ballal Sen's mother went to bathe in the holy water of Brahmaputra in Nangalbund, close to Narayanganj and, there, gave birth to a boy. Ballal Sen, it is said, erected the Dhakeswari temple in commemoration of his birth. This complex of the 12th century comprises four square garbagrihga [womb chambers] covered by Bengali curvilinear shikhara [tower] placed side by side on a raised platform.

In Bangladesh, the most important Hindu festival is the Durga Puja, which takes place in different places throughout Old Dhaka, like Tanti Bazaar, Laxmi Bazaar, Shakhari Bazaar and Rayer Bazaar. Its highlight, »dorpon bishorjon«, the sacrifice of the devi [goddess], consists of the ritual immersion of the divinity in the Buriganga. Nowadays, however, almost all Pujas in Dhaka end with the ritual immersion of idols in the river.

Residential buildings / Mughal residences and forts Apparently, building and living along the river was a logistical as well as aesthetic or status decision for rulers and traders at all times in Dhaka's history. Beside the communicational advantage, water supply was a strong reason for placing a new building on the bank of the river. Water was first uplifted in the house's north-western corner, collected in a reservoir in the upper level and then distributed to the lower level by opening a sluice gate. Thanks to the generated pressure it could be easily distributed to gardens, fountains, bathroom and toilets by water channels and disposed again to the Buriganga.

Islam Khan Chishti, on his way to Dhaka in 1610, sent a party of officers from Shahzadpur [Pabna] in advance to construct a fort and prepare the city to welcome the new subahdar and its court. His residence, nowadays called the Fort of Dhaka, stands in the present Dhaka Central Jail compound. In fact, Mughal subahdars in Dhaka hardly built residential houses of their own, as they received short-term appointments. Generally, their court lived in tents whilst they resided in a royal boat called Chandni [prince] Bazra and anchored in Chandni Ghat. The ghat was also used as landing site for the imperial army and navy coming by river.

During Mughal rule, two magnificent buildings, endowed for the residence and welfare of visiting merchants, were built and came to be known as katra [rest house]. Emperor Shahjahan's son, Shah Shuja, built the Boro [big] Katra in 1643-46 at Chawk Bazaar [photo page 45] with the intention of turning it into his palace, whereas the Choto [small] Katra, situated about 200 yards east on the bank of the Buriganga, is believed to have been built by Shaista Khan around 1664. Both the katras are similar in plan, with a quadrangular courtyard enclosed by several rooms on all four sides and two gateways, on the north and south sides. The southern one, which looked towards the river, was regarded as the main entrance, and was therefore decorated with a gigantic frontage and hanging balconies.

The magnificent, unfortunately incomplete Mughal Fort of Lalbag, or Fort Aurangabad [photo next page], was built in 1678 by Prince Mohammed Azam, son of the Mughal Emperor Aurangazeb. It is situated in the south-west part of the old city from where, like the majority of representative buildings, it once overlooked the Buriganga River. The fort was conceived as a complex of three buildings: the Diwan-i-Aam, the mosque, and a tomb. Two gateways in the fortified wall, nowadays partly damaged, and a service block with a rooftop garden were also part of the building. The residential

part was located along the west fortification wall, to the south-west of the mosque. On its west, the double-storey Diwan-i-Aam is attached to a single storey hammam, which includes an open platform, a small kitchen, an oven, water storage area, a masonry brick bath-tub, a toilet, a dressing room and an extra room, as well as an underground portion for boiling water and the sweepers' passage.

The most impressive of the surviving buildings is the Tomb. Eight rooms surround a central square, containing the mortal remains of the prince's beloved daughter Pari Bibi, which is covered by a false octagonal dome and covered in brass leaf. The entire inner wall of the central room was in white marble and the roof was constructed in black basalt stone.

Armenian houses The European companies established their factories in Dhaka, transforming the city into a manufacturing station, from the middle of the 17th century. Armenian traders had their own community, which was recognized as such by the Mughal government in the late 17th century. Led by a few influent families, they played a significant role in the city's commercial life in the 17th and 18th century, before declining under British rule. It was the Armenians especially who preferred to build their residences on the bank of the Buriganga, from where they could easily run their businesses - the storage and distribution of imported and exported materials.

Of these mansions, the Ruplal House in Farashganj [photo above] is the most impressive. It is an imposing building of the early 19th century, located on the northern bank of the Buriganga, from which it overlooks the riverfront promenade along the Buckland Band. Its builders, two affluent merchant brothers named Ruplal and Raghunath Das, purchased the property from another Armenian in 1840 and built their residence at a huge cost, according to the design of an architect of the Martin Company in Calcutta. Divided into two unequal blocks in slightly different styles, it is a two-storey edifice with a 91-meter-long grand river front, and represents a fine example of late European Renaissance architecture.

Nawab's Palace Ahsan Manzil [photo below], built ca. 1872 by Dhaka's wealthiest landowner, Nawab Abdul Ghani, as official residence of the family, has been renovated and turned into a museum in recent years. The two-storey building stands on a high podium overlooking the busy Buriganga from porticoes that surround both the northern and southern sides. It is again the river side that was favoured: a spacious open stairway comes down from the southern portico, extending up to the bank of the river through the front garden, which allows a grand vista of vegetation and water.

Colonial residences The impressive two-storey building known as the old High Court was conceived in 1905 as the residence for the governor of the newly created province of Assam and East Bengal, of which Dhaka had become the capital in the same year. Its imposing facade in typical European Renaissance style has a prominent central porch under a triangular pediment which is supported on Corinthian columns. The building, symmetrical in its plan, is surmounted by a graceful dome which rests on a series of columns.

Institutional buildings As mentioned above, the Armenians played a major role as patrons of urban development in Dhaka and supported education especially. The Pogose School, the first private school in the country, was founded by JG Nicholas Pogose, an Armenian merchant, and P. Arathon, also an Armenian, was the headmaster of the Normal School.

After the foundation, in 1835, of Dhaka Government Collegiate School, the main source of new English education and western culture, the growth of education facilities continued steadily: in 1874, the Dhaka Madrasa was opened, enabling Muslim youths to learn Arabic and Persian; in 1884, the Jagannath College was established as a private enterprise and it eventually became one of the best centres of higher education during the British period[12]. However, the climax of this educational development was reached in 1921 with the foundation of the university. The Science Faculty of Dhaka University has been housed in Curzon Hall [photo above] since 1921: originally meant to become a town hall, the foundation stone was laid in 1904 by Lord Curzon and it represents a happy blend of Bengali, Mughal and European architecture.

12 In addition to general education, specialized educational institutions were also founded, like Dhaka Medical School in 1875, and the Dhaka Survey School in 1876.

Civic buildings Since the mid 18th century, through the combination of Mughal and European elements, a hybrid architectural style emerged. This can particularly be observed in civic buildings like Northbrooke Hall, constructed in 1872 as a town hall in Wiseghat on the River Buriganga and known as Lal Kuthi because of its brick-red exterior.

Conclusion When Dhaka was established, water characterised the urban landscape not only due to the city's location on the bank of the River Buriganga, but also due to the several canals that crisscrossed it. For decades, a river-based economy supported the city's development; building and living along the water was a matter of status and had relevant practical advantages too. In contrast, in modern times river transport has been gradually losing importance as a consequence of improvements in land communications. In the name of development, government and private agencies have robbed Dhaka of its canals for constructing roads, box culverts and new housing areas. Dhaka supports about 7.2 percent of the country's total population on less than one percent of Bangladesh's total land area. After long years of negligence, mismanagement, improper planning, corruption and political instability, it can be easily understood that the city has marched into the 21st century as an over-populated, over-congested and over-polluted mega city. This extreme and uncontrolled urbanisation has not been accompanied by measures for the protection or preservation of architectural heritage. On the contrary, Bangladesh still lacks a consistent series of laws that regulate and enhance architectural conservation, while its importance struggles to be grasped and internalised by the urban population.

We strongly recommend that the relevant authorities recover the canals from grabbing, make them operational and re-introduce water transport to ease traffic and pollution problems linked to the transportation by land. Effective measures should be taken to stop the encroachment on the Buriganga, which first of all requires the provision of alternative dwellings to the weakest groups of society in more appropriate areas. The solution of this most urgent issue for Dhaka's dwellers should be made the precondition for the - desired! - construction of an attractive waterfront.

As far as architectural heritage is concerned, a serious area conservation programme to ensure the preservation of the disappearing heritage of this 400-year-old capital city must be urgently undertaken. I have tried to show how Dhaka has developed in direct dialogue with its river for years, basing its wealth on river transportation and building its most beautiful, representative buildings on the Buriganga's banks. Over the past 50-60 years, this relationship has been broken. To save it, many factors need to be tackled simultaneously, from the engineering aspect to the upgrading of living conditions and ensuring of better opportunities for Dhaka's urban poor, from the discussion on [and realisation of?] water transport to the sensitising of dwellers for architectural heritage as part of the own cultural identity.

Khadem Ali

Architecture and Society in Dhaka, Bangladesh

The intention of this essay is to draw attention to the alarming disconnection of Bangladesh's intellectual human resources and the institutions with national development objectives and goals; it therefore urges action from architects and planning communities.

Although some of the social development indices quoted in the following, e.g. on health and education sector, are about 5-7 years old, they still convey a fairly accurate picture of Bangladesh's social situation and, especially for the purpose of the arguments, an appropriate description of the present state of affairs. Since collation of the data produced here, some progress has been made in the social development sector, but the situation concerning the equitability of physical development has further deteriorated. Bangladesh has also made some progress in the economic sector in the ensuing period, but, in the typical »poverty economy syndrome«, wealth has only deepened disparity and deprivation.

General Situation

The vast majority of people in Bangladesh have little or no access to architectural services. One reason for this is that within a population of 140 million, there are only about 1300 architects, whereby their additional apathy towards the affairs of the broad masses, unable to afford their services, should be mentioned, too. It is the architects' general belief that reference to a society's basic needs is irrelevant for great architecture. That most people must make do without their professional services is of little concern to them. These premises raise very important questions, like what Architecture is about, its usefulness to society, what went wrong with society's investment in architects' development, and above all, the architects' perception of their professional purpose.

Historically, Architecture has been viewed as the footprint of civilizations and cultures, and not infrequently as a projection of a given individual or people's power. Today, the nomenclature Architecture generally applies to

man-made structures accommodating any human activity, but, more discriminatingly, it only refers to structures that have attained some degree of excellence. This latter qualitative attribute is both illuminating and confusing as to how the profession should relate to society. To some, Architecture is an essential prop for a functioning society, and must measure up to it. To others, it is an Art, by nature arbitrary, and could not be faulted for not being sufficiently responsive to contemporary needs, for technical flaws or for financial imprudence. Architects by and large support the dual claim of their work being both a purpose-built product and Art with strong arguments. In this debate on utilitarian versus aesthetic missions of Architecture, it would be useful to remember that an architect's primary task is, and has been, to address a central demand of functionality and to respond to it competently; that without responding to this demand, no architecture would be sponsored; that architectural response can be highly effective both functionally and emotionally, but without functionality, architecture cannot be exonerated on an aesthetic count.

As architects try to justify their actions by staking a claim to their status as artists at the cost of other roles they may be expected to play, especially in a society at the crossroads to development, it may be useful to examine the elemental features of Art and Architecture.

On Art and Architecture

The first distinction that is to be made between Architecture and other art forms is that it is called forth and driven by an external agent, or client, with practical objectives. Secondly, it has a near-total dependency on funding by its sponsor. Thirdly, the architect and the client, along with other actors in various disciplines of planning and building, are engaged in its conceptualization and realization. The client will indulge the architect as long as his primary interest is not sacrificed. Thus, in contrast to visual art forms where visual interaction with viewers can threaten the product's intrinsic worth, Architecture's singularity is that it originates from a [participatory] group action. Yet, a building may approach Art through a compatible resolution of all the various physical and social forces acting on it.

While other art forms are timeless in their expression of eternal and universal emotional aspirations and quests, Architecture cannot escape the reference to time and place, because its basic ingredients are the real time impetus of dictated functions and contemporary usages, materials and technology, meticulously »composed« into a body with surfaces, textures, forms, spaces and ambience through an analytic-intuitive process. Reference to time and place could mean that Architecture implies a strong regional and contemporary cultural flavor. This is, in fact, an inescapable condition, but by itself no prescription to the solution of an architect's task. Simplistic adoption of regional diktats can also lay dangerous dogmatic traps, as dangerous as fashion trends, obstructing the clear stream of thought and a creative process. These are important differences between Art and Architecture. But beyond all that, Architecture imposes a whole range of social, philosophical and ethical responsibilities on the architect because it occupies physical space, dislodging other entities from that space, and impacting on civic consciousness, lifestyles and the natural environment with long term consequences.

All architects would agree that there cannot be Architecture without an appropriate response to the task. Through his training, the architect ought to be singularly qualified to do that. But does he actually employ his skills with due sensitivity and care, and thus put us at ease? And if not, can we then ask ourselves whether there is a necessity to redefine and restate the reference in time and place, the primary context, for the architect? What is, then, this primary context? The people and the Society, I would like to suggest. So what does it look like?

Bangladesh Context

Bangladesh is a country with few natural resources, a poor industrial base and limited economic activities and opportunities. Over 35% of its urban and 49% of the national population is poor, with an income of 1.37 US$ a day[13]. Our physical and social infrastructure is minimal, whereas the most pronounced of all resource constraints resides in a huge human resource sector. The unbalanced situation is manifest in our low literacy rate, skill level, productivity and affordability, and in tune with our simple lifestyle and non-existent maintenance culture. Our population density is 1,123 per square km - the highest in the world [with the exception of few very rich city states][14]. Nearly half of our land mass is flooded during the monsoon. Less than 50% are literate[15] and less than one in four

13 Data based on government figures. Yearly PPP, or purchasing power, was 440 US$ in 2004 and 470 US$ in 2005.

14 Data from July 2007, with a total population of 150, 448, 339 and land area of 133,911km².

15 Adult literacy [above the age of 14] is 43.1%.

children [5-9 year old age group] attends a school. Theoretically, there is one doctor for 5,000 people and one hospital bed for 3,200, but the poor have little access to healthcare. The healthcare service itself is sick. One in 17.5 babies dies at birth.

The standard of housing and workplace is inadequate and highly unsatisfactory. An Asian Development Bank [ADB] study[16] has found the available floor space per person in Bangladesh to be only 5m² in urban areas and 4.4m² in rural areas. The majority of houses in both urban and rural areas were in structurally poor condition, built with temporary or semi-permanent materials. 24% of the roofing was corrugated iron sheet, clay tiling or thatch. Every tenth house used mud as walling; every third was made completely of thatch, straw, bamboo and other such organic ephemeral material. About 38% of the shelters were so vulnerable as to require total replacement every year. In addition to these structural deficiencies, lack of amenities was severe. Sanitary latrines were available to only 41% of the urban and less than 2% of the rural shelters, potable water was available to every fourth urban household and to no rural homes at all. Only a sixth urban and fourth rural household enjoyed the luxury of a kitchen within the house. The report suggested that every year for the next 7 years till 2000, a minimum of 3.3 million housing units needed to be constructed to make up for the housing backlog, parallel to gradually upgrading 38% of the existing houses by architects and engineers. If not, the required need per year would be much higher, because approximately 7 million units of the most vulnerable type with one year life span have to be added to the 3.3 million figure every year. In fact, the situation has steadily worsened since that study.

A 2005 study on urban slums by the Centre for Urban Studies, carried out in Bangladesh's six divisional towns, found that over 35% of the population in the six cities lived in slums, and are either hardcore poor or poor.

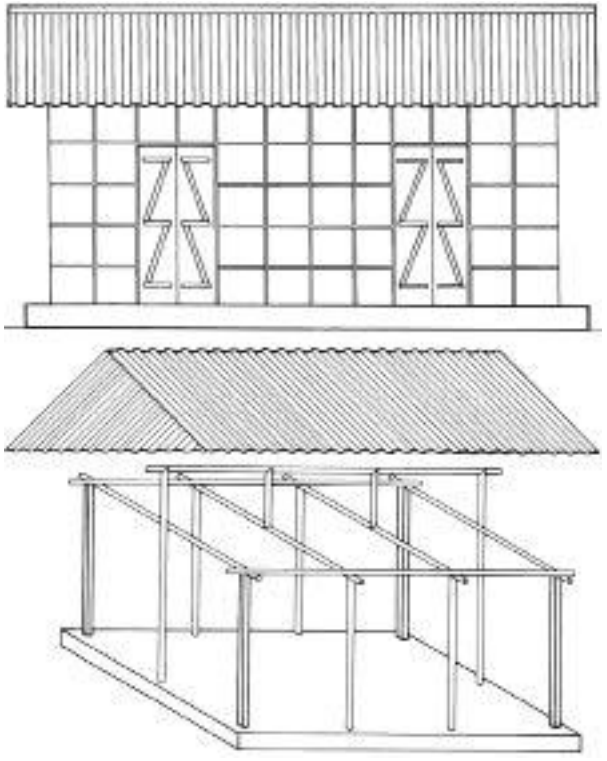
16 I'm referring to a Housing Sector Institutional Study of March 1995.

In Dhaka, a higher proportion, 37.4% of the population, are slum dwellers, which has multiplied two-and-a-quarter fold in the last five years. Actually, the poor's living conditions in the capital are worse than those stated by the earlier ADB study. Two-thirds of slum dwellers make do with only 2.3 to 3.5 m^2 floor space per person, two-thirds of the houses are mere shacks and jhupris[17] and only 1% of the structures, built to a very poor standard, are permanent.

A lack of institutional arrangements, institutional capabilities and motivation of public development agencies exacerbates the existing deficiencies and encourages inevitable future aggravation. Publicly funded developments, which have largely benefited the higher income groups, have often led to a skewed development and inequitable distribution of available resources. A National Housing Policy adopted in 1993 by the Government generated high hopes through promise of major policy thrusts towards affordable housing and better environment for the low income groups, but has failed, sadly, to follow up with significant action plans and specific programs. Lack of perspectives for the poor in Dhaka's Master plan, coupled with aggressive development by housing companies serving the upper-end market, is irrevocably edging the poor out of habitable land. In Dhaka, the Capital Development Authority, RAJUK, is giving a helping hand to the schemes, as a just published study revealed that 90% of all private sector development schemes approved by RAJUK are in breach of existing environmental and safety rules and were obtained through bribe.

The community of architects shows no interest in the Housing Policy or in housing for the low income groups. It is needless to add that the owners of slum housing in Dhaka, who supply shelter to 34% of the population in the lowest income groups [91% of slum dwellers], never request the services of architects. In fact, only a negligible percentage even at the top end of the market seeks our services. The mind-set of our architects is no great help either. With 12 years of schooling and five years of exclusive university education behind them, they stand out as an elite of 1 in 110,000. Our education system, designed in accordance with the best schools of thought, technologies and lifestyles of affluent societies, but with little focus on our underlying realities, breeds a creed largely unaware and insensitive to the needs of our habitat. The marginalized vast majority in Bangladesh regards their accomplishments with incomprehension, and never dreams of using their services. This is the backdrop of architecture and society in Bangladesh. The Government, with critical need for skilled manpower in mind, spends more than 140 times as much for every university student as the national per capita investment on primary education. The investment in architects, engineers and doctors is higher still.

It is interesting to note that various NGOs, international agencies, and at least one local consulting group have tried to address the deficiency through low cost housing models. Their proposed unit sizes ranged from 15-18 m^2, featuring a reinforced concrete column or brick structure, brick masonry for walling, corrugated iron sheet, clay tile or thin concrete for



17 The word »jhupri« defines improvised shelter made of decayable materials and tin.

roofing and cemented plinth[18]. In this sense, the »basic house« of Grameen Bank [sketch previous page], designed not by an architect, but by an engineer and replicated in one million units, was a successful model because of its modular self-build conceptualization, mobility in the event of flood, and a wide range of affordability options. These units, 81ft² to 142 Taka[19]/ft² at nearly one third the cost of comparable units built by the Public Works Department for its lowest category housing [mess or dormitory typology], are structurally comparable to 95 percent of the houses of our people.

Constraints

To be fair to architects, it must be stated that existing frameworks for services by architects also leave much to be desired, whereby three major deficiencies can be stated. Firstly, except in Dhaka Metropolitan Area, no licensing is required to practice architecture. Actually, many years' concerted efforts by architects, planners and civil society members with the concern of protecting public interest through expert service have just succeeded in licensing the profession and regulating development activities in Dhaka. We remain one of the few countries in the world without statutory regulation of the profession. Secondly, the role of planning is undervalued in the society. Public operators, in a misconstrued zeal for project economy, try to prune investment in planning to such an extent that adequate planning input becomes impossible, and do harm to the projects and the nation by endangering the entire investment branch. Thirdly, as mentioned earlier, the academic curricula for architects fail to focus on social responsibility. The outcome is an inevitable roadblock to good design and a distancing of architecture from society. On one side, people without adequate professional skill are delivering inefficient, wasteful and flawed design and construction. This is linked to the fact that low remuneration for architectural services makes appropriate planning input impossible, opening doors to non-professionals to bid for work. At the same time, low or shrinking incomes automatically reduce the incentive for addressing social and community concerns, research as well as development initiatives. Eventually, corruption compromises necessary statutory vigilance, which leads to shirked responsibility, sacrificed quality and pilfered funds.

Search for a Way Out

To reconnect architects with the society, the major role-players, namely academic institutions, architects, civil society as well as the government are required to build trust and partnership among themselves. Given Bangladesh's economic situation and the fashion trends sweeping the professional saloons of architecture, we may do well to ask ourselves whether we can yet focus on a minimally civilized environment for our people. Can we architects wake up to the larger issues of environmental disruption, ecological threat, pollution of land, water-bodies and air, and join our hands with others to reclaim their inviolability and refuse cooperation to such violation? Can we work on reasonable access to land, shelter and workplace in our habitats, for all? Is it possible to develop sustainable housing models for our flood plains and against natural disasters? Can we develop models for high population density and diminishing land? Can we design houses for low income groups, within meager resources, instead of only beautiful houses? Can we develop an architecture which relates to our society? I believe we can try. There are many places to start. To name a few:

A] At educational institutions level, the curricula may re-focus on needs of a developing economy and evolving society;

B] At government policy level, the »development approach« might tune itself into environmental demands and the basic physical environment of the people;

C] At institutional levels and respective organizations, the agenda may be matched to the tasks at hand, and necessary resources mobilized for the purpose.

D] At levels of architectural practice, an awareness of issues and responsibilities may bring about fundamental changes on the ground, slowly but surely, and without sacrificing the architect's creative quest.

The question is, whether or not we wish to relate architecture to society.

18 I am referring to the Mohibul Majid Model by Bangladesh Consultants Limited.

19 Local currency, also abbreviated to Tk.

Nazrul Islam / Salma A. Shafi

The Use of Surface Water Bodies by Various Socio-economic Groups in Dhaka City

A city that has grown continuously throughout its 400-year-long history, Dhaka has undergone a period of very rapid growth since the 1950s and an extraordinary development has occurred since Independence in 1971. The city's population increased from under 300,000 in 1950 to 900,000 in 1971, and successively to 10 million in 2001. At present, a population of over 12 million is estimated to live in an area of 1530 square kilometres, which corresponds to the urban extension delimited by Dhaka Metropolitan Development Plan [DMDP]. This distinction is important, as DMDP limits [also called RAJUK limits] include the areas of Dhaka City Corporation [DCC] and of five other municipalities. In this text, the term »Dhaka City« will designate Dhaka City Corporation, which is the most urbanised area up to now, with a population of ca. 6,7 million and an area of 145 square kilometres. The different administrative subdivisions representing Dhaka are showed on the plan attached on page 69.

During its first three and half centuries, Dhaka was known as a city that co-existed well with rivers, canals, ponds and the surrounding wetlands, which were a fundamental part of the urban transport system and concurrently guaranteed a clean, healthy environment. However, due to the absence of proper implementation of plans and environment control measures, natural water bodies are fast disappearing from Dhaka's urban area nowadays. The same lack of control is actually one of the first causes of present day segmentation of the city scape, characterised by mixed uses as well as by the intercalation of developed and non-developed or underdeveloped areas. To give an idea of the extent of mentioned segmentation, two generalized land use maps [respectively from 1984 and 2004] of Dhaka City have been reproduced at the end of this article [pages 70-71]. Their comparison also shows that, especially in the recently developed northern areas, water bodies have increasingly fallen prey to construction.

Like any other megacity in the Developing World, Dhaka is socio-economically an »unfairly structured« city: a small upper income-group enjoys disproportionately better spatial allocations and urban service benefits than the much larger middle and lower income-groups. Considering a categorization into three main income groups, the lower income-group comprehended in 2005 a hardcore poor core [counting 20% of total DCC population, or 1,34

Income groups and their housing sub-system	Typical Location	Use of water by residents
UPPER INCOME GROUP		
Private owner occupied housing in unplanned areas [with freehold land tenure]	Old town, intermediate zone [Bangshal, Lalbagh etc.]	Ponds and low lands have been filled up for building construction. Large portion of water areas on the edges of lakes and canals have been filled up for development of new plots. Some of the waterfronts areas are conserved and maintained with walkways. Dhanmondi, Uttara, Gulshan, Banani, Baridhara lakes are used as storm water and drainage outfalls. Increase in use of these lakes for release of waste water from drains. DCC allows lease of lake water for fish cultivation in Dhanmondi and Gulshan. Boating, fishing etc. are activities carried out by few people.
Private owner occupied and rental housing in planned areas [with leasehold tenure]	Intermediate and outer zones [Dhanmondi, Gulshan, Baridhara, Banani, Uttara]	
Public [rental] housing in planned areas [on public land]	Ramna, Sher-e-Bangla Nagar	
Private Luxury apartment housing, owner occupied and rental [with freehold/shared freehold tenure]	Intermediate and inner suburbs	

Table 1: Land use, location and use of water by income groups

MIDDLE INCOME GROUP		
Private owner occupied and rental housing in unplanned areas [with freehold land tenure]	Old town, intermediate zone, outer and suburban zones	Planned public residential areas have some ponds. Ponds and low lands have been filled up for building construction. Ponds do not exist any more in middle class areas. Canals, low lands in these areas are encroached on by residents or squatters. Dumping of garbage pollutes low lands in these areas. Water logging causes severe problems during rainy season. Canals, ponds etc. create unpleasant and unhealthy environment due to poor maintenance and pollution. Few among the middle class have access to usable surface water. No conscious efforts to protect water areas.
Private owner occupied and rental housing in planned areas mainly developed by RAJUK [with leasehold land tenure]	Intermediate and outer zones	
Public housing [rental and ownership flats] planned area [on public land]	Ramna, Azimpur, Motijheel, Dhaka University and BUET Campus	
Private multi-storey apartments and cooperatives both owner occupied and rental [with freehold and cooperative form of tenure]	Inner, intermediate and fringe zones	
LOWER INCOME GROUP		
Resettlement Colonies by NHA Government lower grade employees housing	Mirpur, Tongi, Basabo, Mohammadpur	Water bodies and low lands provide shelter areas for the urban poor. Slums or squatter settlements are built on marshy lands within or close to flood zones. Outside the embankments, settlements stand on water beds. Polluted water below settlements poses severe constraints to health. Water from low lands, lakes and rivers are used for washing, bathing throughout the year. During monsoon period water ways are used for communication. Children of these communities live with water, swimming is their preferred sport.
Squatters Bustees Conventional Inner City Tenement Slums Others [Accommodation in industrial and commercial units]	Inner, intermediate and fringe zones Intermediate and fringe zones Extensively located in inner, intermediate and fringe zones Mostly inner city zone Mostly suburban and intermediate zones Diverse location [Tongi, Badda]	

millions people] and a poor group [15% of DCC population]. In the middle income-group three subgroups could be recognised, whereby the lowest covered another 25% of DCC population, while the middle and upper decreased to respectively 20% and 13%; finally, the upper income-group was also subdivided into two groups, one corresponding to 5% and the highest to 2% of total population. In conclusion, it could be said that 60% of Dhaka City's population do not earn more than 10,000Tk a month [corresponding to ca. 90 Euro], which, under consideration of a continuously increasing inflation, means a critical threshold. Hereby, the 20% of population defined as hardcore poor, with less than 2,500Tk/month [20 Euro], are hardly able to meet basic nutritional needs and live, illegally or legally, in slums lacking primary infrastructure.

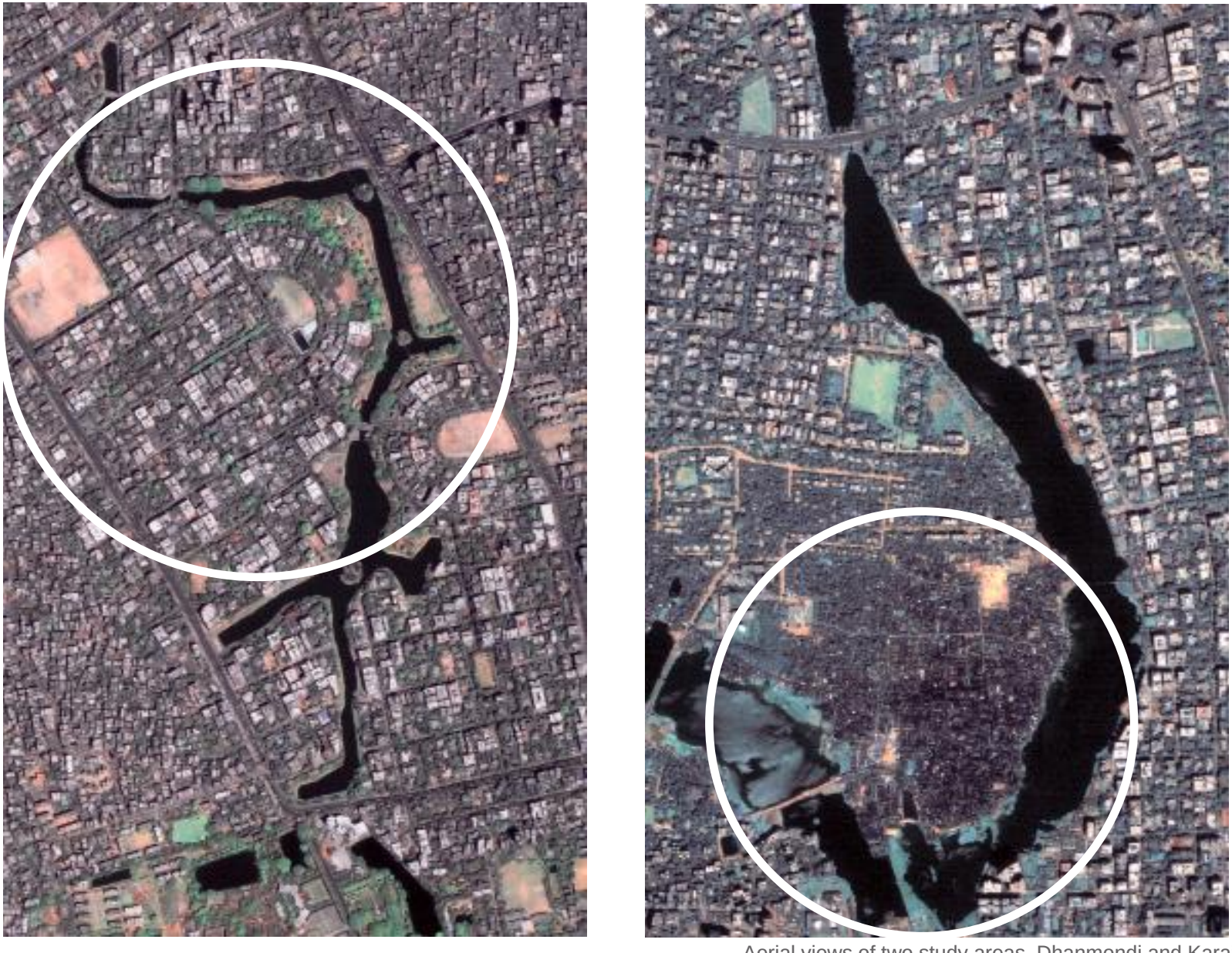
There are no official statistics on Dhaka's land-use patterns. The detailed area plans, executed for the 1996 structure plan, have come up with no quantitative statement. On the basis of a generalized land-use map compiled by the Centre for Urban Studies [CUS] in 1996, the residential use is delineated within an area of 265km² [Dhaka Metropolitan Area, DMA]. Hereby there are differences corresponding to varying income categories: the residential land use can vary from very low density [100–300 persons/hectare] for the upper income groups up to 1500–4000 persons per hectare for the lower income groups and the poor. Table 1 [previous page] well characterises high income groups´ residential areas, planned and developed by the city development authorities. Whereas poor and rich are concentrated in specific zones, the middle income group is geographically more widely distributed. Middle-income residential areas are often characterized by mixed land use, and are also mostly in planned areas spread through old and new parts of the city. The poor live predominantly in slums and squatter settlements. Slums are permanent, in the sense that land owners are mostly private people who have a financial interest in letting the huts, whereas squatter settlements occupy government or private land illegally and are therefore temporary in nature. A CUS survey of 2005 identified about 4950 squatter settlements in DMA area. In recent times, since the establishment of the caretaker government, rampant eviction in central areas has resulted in driving the poor out of the main urban areas.

When we come to speak about surface waters, some of the high income residential sites utilise water surfaces, whereas in some cases the middle income areas lack such possibilities. In contrast, surface water is always taken advantage of by the lower income people. Children of slums are the best users of ponds and any form of water available to them. Dhaka city's topography and land use until 1970 allowed a generous distribution of water and open spaces within areas with other characteristics and uses.

Throughout the past centuries, the Buriganga River has been an important route for inland communication, and it was the most used transport mode, followed by railway and road. At those times, Dhaka's thriving river transport system consisted of a network of 30-40 rivers and canals which also served as drainage and communication channels. Of these, Balu river to the east and Turag river to the west were particularly important as they connected the big rivers Shitalakhya and Dhaleswari. The rich and poor alike enjoyed the river and canal facilities for transportation. Boat trips or fishing nearby the water used to be common forms of recreation. The »Buckland Band« embankment along the Buriganga, constructed in 1864 by the British Commissioner C.T. Buckland, provided the city with its first planned riverside area and one of the most important urban centres for years to come. The road built along the river stretched nearly a mile from Farashganj to Babu Bazaar and gained a decades-long popularity as a business and recreation centre.

For Hindus, the river site had and has a special meaning during religious festivities, including cremation, but they traditionally used the river water for everyday purposes like washing and bathing, too. Like the Hindu community, a large section of people and mainly the poor used river water for bathing, cooking as well as drinking, and small businesses also started on the water. For example, commercial laundries used river water for large scale washing.

Today, the rich and middle class travel by road and rail and rarely make use of river transport. Commercial ventures offering water sports like »Nandan Park« or »Fantasy Kingdom« have come up in the outskirts of the city, replacing the traditional recreation on the river, although picnic spots and guest houses for the rich outside the city are located close to rivers and low-lying lands. It could be discussed in how far the present situation has to do with a change in lifestyle or with the fact that the Buriganga is now choking with industrial pollution and siltation. Canals have gradually vanished due to their unwise conversion to roads with box culverts, or through encroachment and unauthorized constructions. Nowadays, DCC and Dhaka Water



Aerial views of two study areas, Dhanmondi and Karail Bustee

and Sewerage Authority [DWASA]'s negligence in maintaining canals, potentially and traditionally effective drainage channels, is a major cause of water logging within the city. However, this problem has been recognised and, in 2006, DWASA undertook a project funded by the World Bank for the re-excavation of 15 canals. The actual process of re-excavation, itself very difficult and expensive, is particularly critical as it implicates the demolishing of various unauthorized structures as well as the resettlement of squatters. The poor living within the metropolitan boundary find affordable accommodation sites in the dry beds and riverside areas. All southern, western and eastern peripheries of the city - those surrounded by rivers - as well

Locality		Dhanmondi Residential Area	Karail [15 percent of Ward area]
Thana	Kotwali	Dhanmondi	Gulshan
Ward	71	49	19
Ward Pop^{n} (HH)	36020 [6000]	47088 [15300]	81937 [17574]
Landownership	Private	Public leasehold	Land owned by govt. agencies [T&T, PWD]
General Description	Located in the old city with good accessibility Specialized business centres mixed with high density residential use. A predominantly Muslim area with many mosques.	Originally planned layout for single unit residential use allotted to high income groups. Residential area with lake and open spaces aesthetically pleasant Central location and pathway connected to major roads provide the best commuter way for thousands of daily LIG workers both men and women	Most potential zone for urban development Slum and squatter settlements occupy about 15% of the ward area Slum is on the edge of Mohakhali khal connecting Gulshan and Banani lakes. Rehabilitation space for evicted slum dwellers in this area by caretaker government.
Land use and changes with city growth	Changed to dense residential and commercial use area Intense reconstruction activities replacing old buildings	Fast changing into multistorey apartment housing Increase of commercial and institutional uses [health, education, private offices etc.] Good access and open green areas make it atractive for real estate development.	Ownership of land mainly by government agencies [T&T, PWD] Low lying lands subject to regular floods prevented development of the area Consequently the low land allowed squatter settlements and housing for the LIG employed in the area

Table 2: Description of land use and water use of three areas

Use of Water area	Only one pond exists in the area [1.5 acres] The pond is full of stagnant water and used as a garbage dump by some of the local residents. DCC without any purposeful planning is constructing a fountain within a park.	37.81 acres [8% of total area] Lakeside space commercially used for restaurants, boating club, open air theatre for the city at large Walkways by the lake provide exercise and recreation to locals and outsiders Dhanmondi lake is the most popular outdoor recreation in central Dhaka. Residents along the lake enjoy good view.	> 100 acres The khal or low land of Karail provides vast open area to the 15000 LIG hh. They use the water mostly for washing and bathing Toilets are often built on the edge of the water The people enjoy the open air, children swim in the water for long hours Boats are used for communication particularly in the rainy season

as the riverbeds in the dry season have become abodes of the poor. Squatters living on these areas commute on foot along the entire urban area to work in industrial, commercial and residential facilities. Other water bodies like tanks, ponds, low-lands and ditches have disappeared in the past thirty years, mostly filled up for real estate development. Only a few water bodies have survived as public space and must be guarded from encroachment.

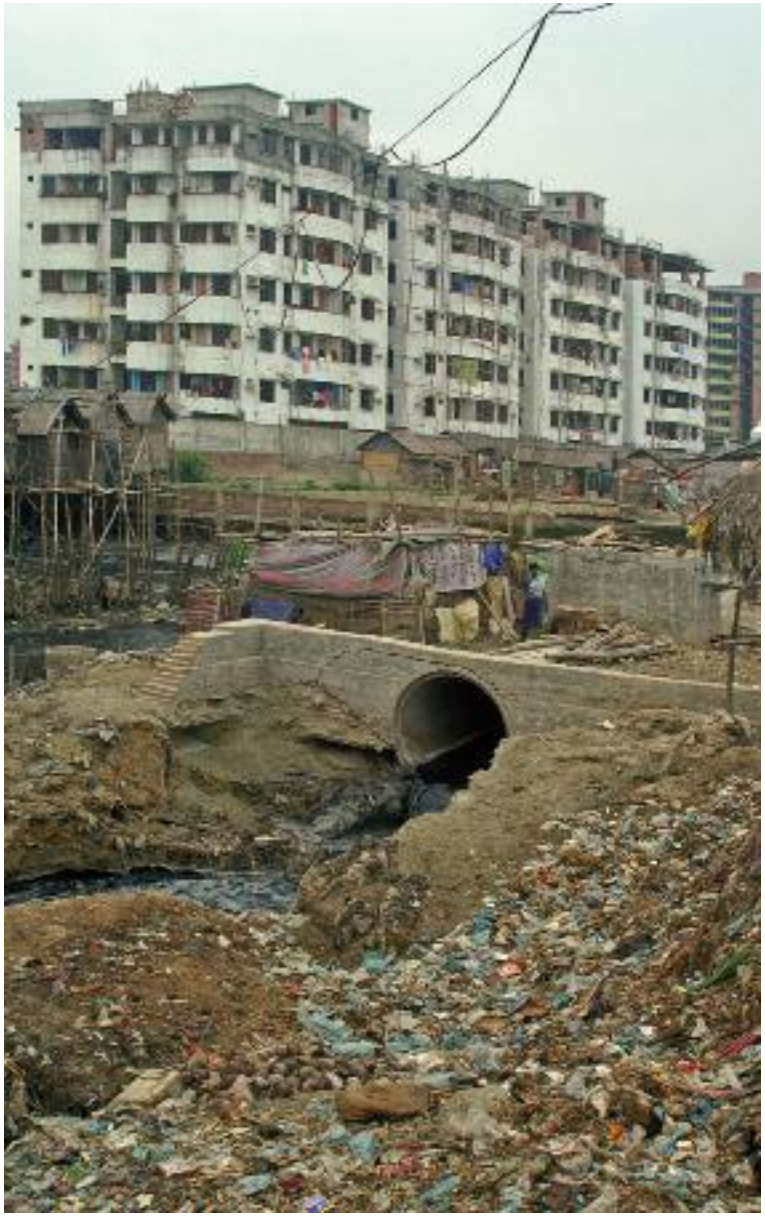
The elevation from the sea level of 70 percent of Dhaka city varies from 0.5m to 5m. Typically, wetlands used to develop on outlying areas - to the east and west alongside the rivers -, that are below 0.5m. These used to be connected by natural canals and, particularly after the monsoon, their confluence created vast lake-like water masses. Along with urbanisation, RAJUK [Urban Planning Authority], Public Works Department and Housing and Settlement Directorate planned to maintain such water catchment sites in the new residential areas for high income and middle income group, as well as in areas owned by the military and police forces. The adaptation and use of those water bodies have created artificial lakes like Dhanmondi Lake, Banani Lake, Uttara and Mirpur Lake, which nowadays have grown to exclusively used water bodies for the residents.

However, these lakes' vital linkage with the canals has been lost due to encroachment, land filling and closing of the canals by box culverts. The beloved Dhanmondi Lake in the homonymous area, for example, was once connected to the east by Begunbari Khal, but the canal has recently been disconnected. In the same process, wetlands such as Hatirjheel have been filled by developers and private sector corporate bodies such as Sonargaon Hotel, BGMEA etc., who have constructed new complexes by filling up the jheel[20]. Also these lands, former abodes of the poorer population groups, are now fast turning into commercial use areas. Some open lands, particularly those under public - or khas – holdings[21], sometimes remain unused for long years as fallow lands. In these lands and ditches, water becomes a resource of everyday use for those who live nearby and provide unlimited recreation for their children during the monsoon season. Floods and disasters do not scare them and their natural resilience is evident during floods or cyclones.

In Dhaka, also known as a city of mosques, religious spaces were traditionally built alongside ponds, as these waters were used for the common people's ritual washing purposes. Mosques continue to be built nowadays, and still have a symbolic relation to the water - as contained in open concrete tanks, almost like small ponds for washing and ablution, but ponds nearby mosques are no longer visible except, perhaps, in the cantonments. As typical in Bangladesh, Dhaka city didn't have natural lakes but there used

20 The word »jheel« means low or wet land as they are commonly found in low lying lands which dry up in the dry season and serve as catchment areas in the wet season. However, jheels are identified as not viable for cultivation and habitation whereas low land areas are both used for agriculture and urban expansion.

21 Khas holdings are land under government ownership that, unless transferred to any public or private agencies, remains under the name of the district administration, represented by a Deputy Commissioner.



to be big ponds or tanks in well located areas, of which some examples still exist in the Dhaka University Campus, Osmani Uddyan or Ramna Park. Prestigious buildings were built by integration of water and open green spaces. Louis I. Kahn's modern parliament building, standing on a large lake-like expanse of water, is a wonderful example of water use. The parliament grounds provide city dwellers, particularly middle income group, with a much sought outdoor recreation space.

Social restrictions actually prohibited women to use open ponds but, within closed areas, they also used them. For rich families it was customary to have big tanks or ponds within their housing estates. Nowadays, the very rich people construct swimming pools either in their gardens or underground, and even roof-top pools can be found in some mansions. Otherwise, hotels and sports centres provide swimming facilities affordable only for the rich. Children of the poorer income groups grow up bathing in ditches, tanks or the polluted river.

To be more concrete, the three areas of Dhanmondi, Bangshal and Karail have been chosen to represent the three socio economic groups. Dhanmondi [Aerial View], founded in the 50s, is a well planned residential area for the high-income group, who received the land on lease and built one-family houses that are nowadays making way for apartment blocks developed by real estate corporations.

The centenarian Bangshal is an old residential area of well-to-do business people, representing the middle income group. It is a mixed-use area with residential, commercial and business facilities.

Karail Bustee [Aerial View], located in the centre of the high-income residential and commercial area of Gulshan, hosts – temporarily - Dhaka's largest squatter settlement, with a population of 100,000. The slum expands over a peninsula and is almost completely surrounded by the waters of the Banani Lake. Table 2 compared land use and water use in these three areas.

Conclusion

A: Water spaces in Dhaka for public use are continuously shrinking.

B: Dhaka is far away from DMDP's vision, which planned a city with water to be used for all purposes, i.e. flood control and recreation

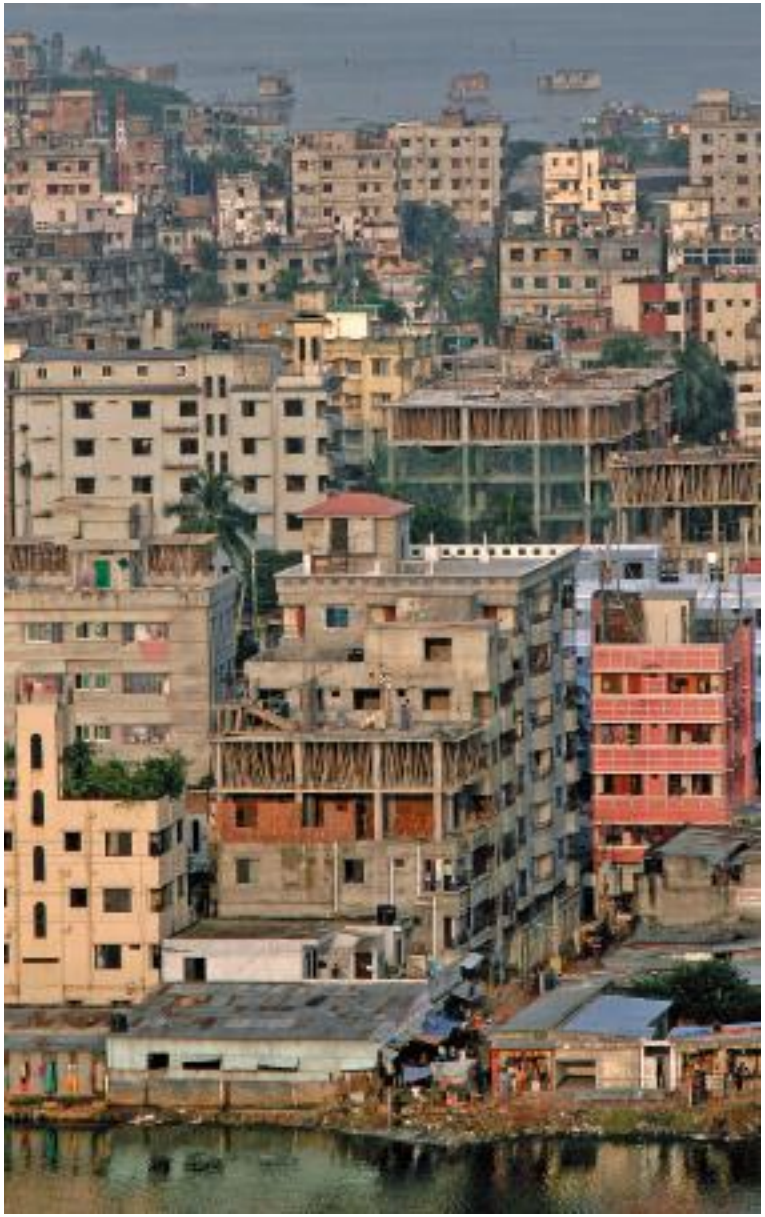
C: Unplanned settlements by all income groups have encroached water bodies and made them unusable and even non existent in most cases

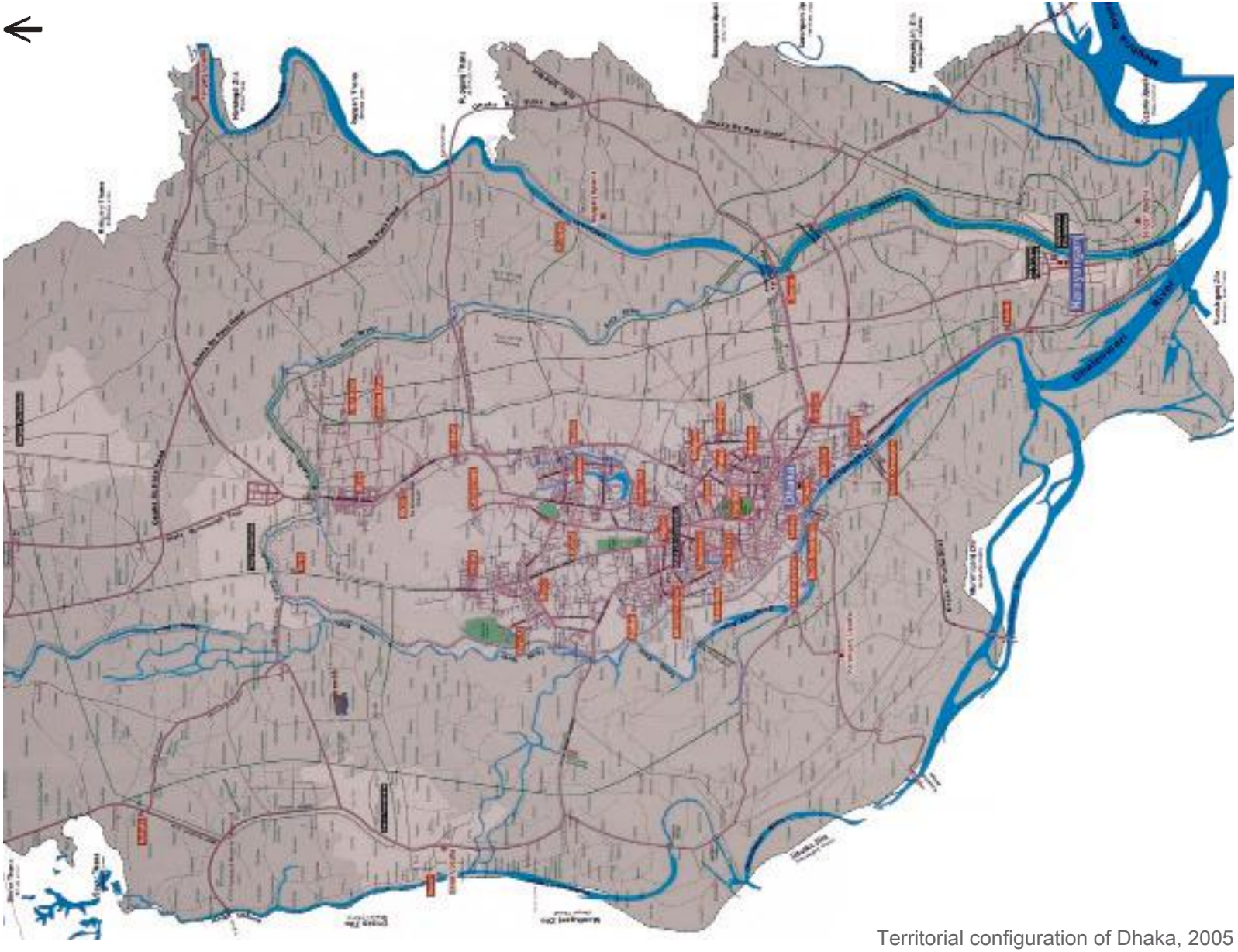
D: There is always the possibility of reverting to possible conditions and water in Dhaka city can still be brought back to life with careful planning.

F: Water bodies need to be well distributed in different parts of the city.

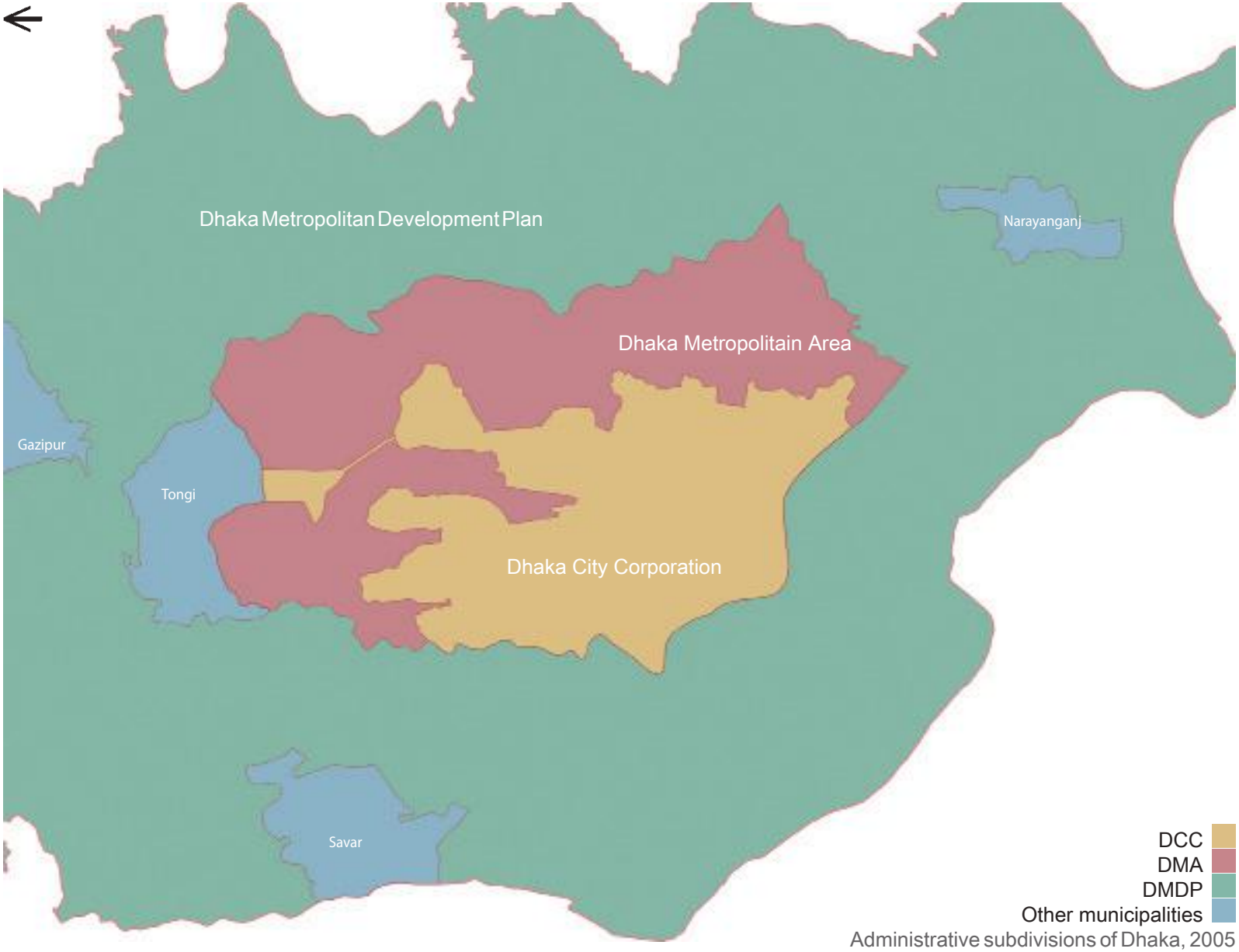
E: It is important to note that water bodies, be these rivers, lakes, ponds or jheels, are liked and sought equally by people of all social and economic groups in Bangladesh.

D: It is absolutely necessary that provision be made for considerable proportion of city space under water bodies for aesthetic, environmental and functional reasons.

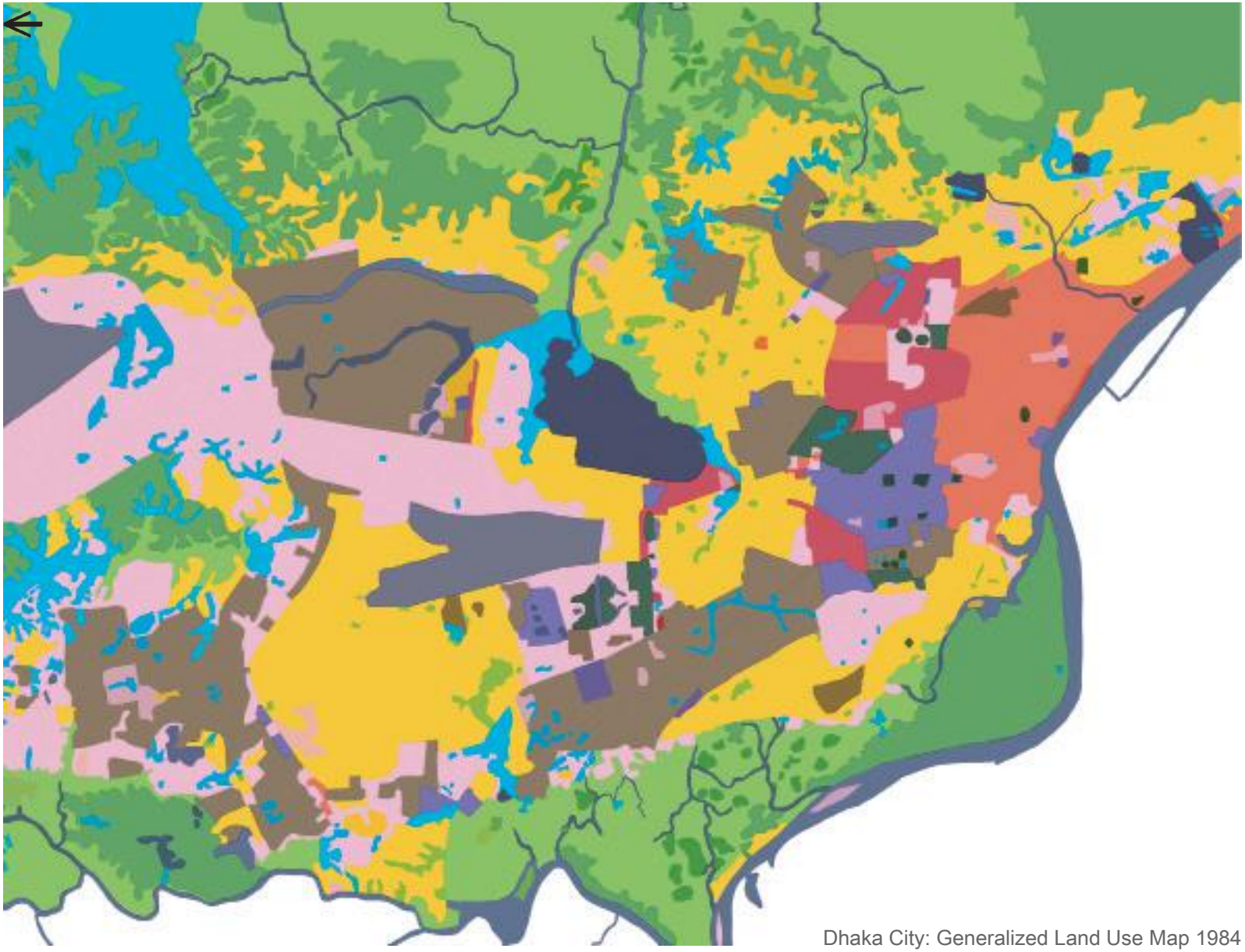




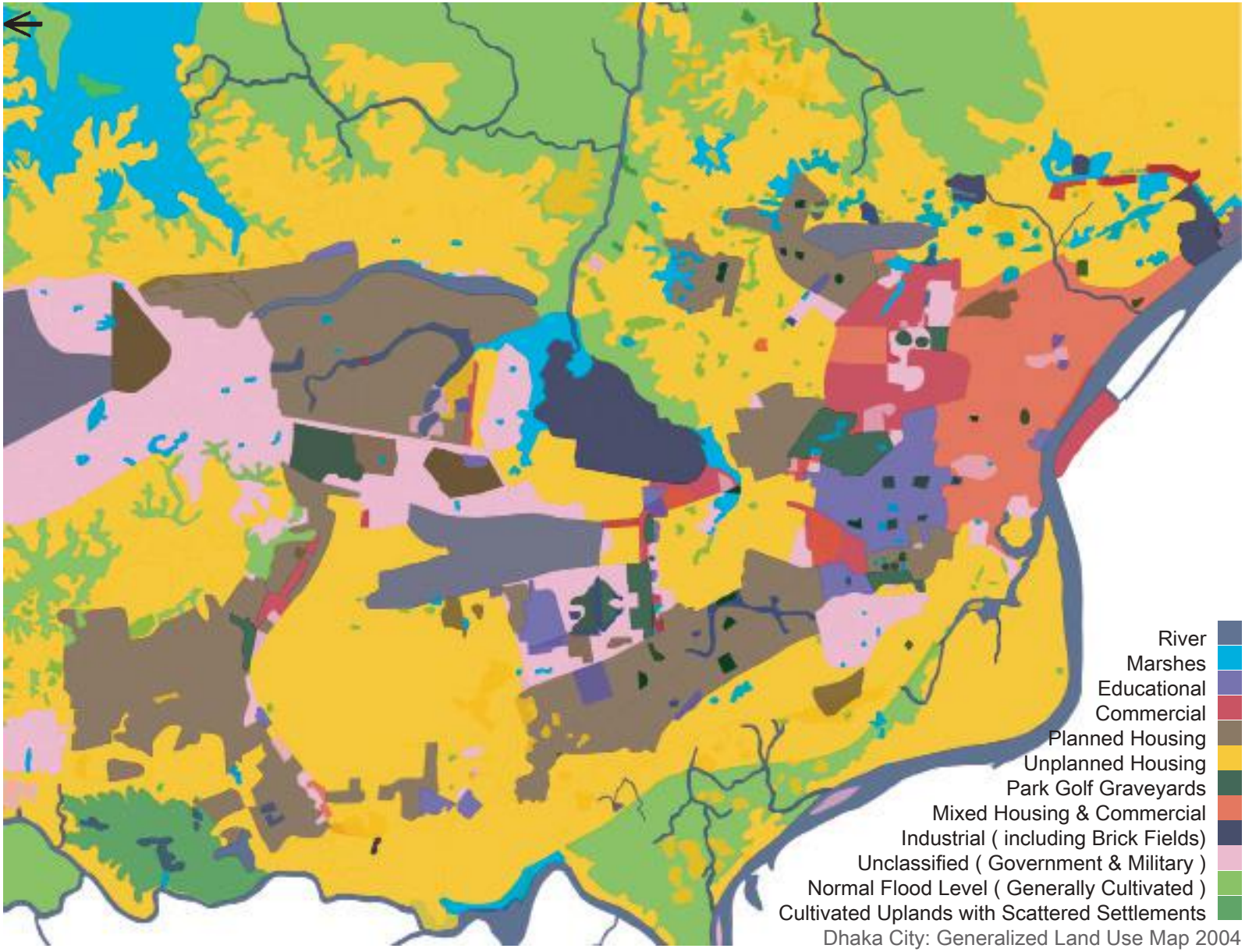
Territorial configuration of Dhaka, 2005



Administrative subdivisions of Dhaka, 2005



Dhaka City: Generalized Land Use Map 1984



Dhaka City: Generalized Land Use Map 2004

Christine Edmaier

Contemporary Trends in Urban Design and Architecture in Berlin

My following essay on architecture and urban development along the water in Berlin reflects not only the view of a practicing architect, but also that of a critical observer of my city's development. The article is divided into three parts: firstly, I will describe recent urban developments on and around water in Berlin; subsequently, I am going to present my »String of Pearls«, a personal choice of outstanding architecture along the Spree River; in conclusion, I will try to forecast how water and the city will or could be connected in future.

Refocusing: new urban developments along the water in Berlin As the majority of German cities are no longer growing, the focus of public and private architectonic activities has shifted from the elementary provision of living and working space, to the qualitative improvement of existing buildings. For urban administrations, this is the only means to tackle the competition between cities in Germany, and for architecture offices, a vital source of survival in the difficult German real-estate market. After the displacement of heavy and textile industries from German waterfront sites to countries with lower production costs, vacant harbour zones are being transformed into attractive new quarters with a typically urban mix of living, leisure and culture facilities[22].

Creating residential quarters along the water that offer urban qualities, individual housing types and also really interact with the water is a very ambitious architectural task indeed. Berlin, like many other German cities, has rediscovered the architectural potential of the banks of the River Spree and River Havel. The complex water system, which crisscrosses Berlin, is located in a very flat, water rich landscape and is actually more a sequence of lakes and man-made canals [Landwehrkanal and Teltowkanal] than two single rivers. These conspicuous water bodies, however, have not played an important role for architectural and urban planning development in the city, although water management has led to important technological improvements in Berlin throughout its history – it was, for example, one of the first European cities with a canalisation system and Hobrecht, the inventor of the 19th-century city grid, was a Berlin-based canalisation specialist.

In the following pages, I will present four urban development areas along the Spree as they are showed in the plan below.

22 This phenomenon is actually part of a very big conversion and recycling process of former industrial zones that is taking place all over Europe.

Rummelsburger Bucht In Berlin's south-east, the Spree is wide enough to accomodate harbour activities. The Stralau peninsula, beside the remains of an ancient little village and formerly furnished with harbour facilities close to the railway, has been the object of a recent urban development intervention. With the fall of the Berlin Wall, the administration expected many people to immigrate to Berlin and decided to build new public housing quarters close to the water. They placed a semi-public organisation called »Wasserstadt« [Water City] in charge of the planning. First, a very expensive infrastructure system of schools, parks and esplanades was built along the Spree to provide the big blocks that where planned for high density housing.

Today, these public parks and boardwalks seem rather oversized and the scale of the houses has been reduced to freestanding town villas, or even to single family housing, as the expected population growth never arrived. Based on this disappointing experience, Berlin abolished public housing programmes more than 10 years ago.

»mediaspree« Between Stralau Brücke and Ostbahnhof the opposite is the case. This section of the Spree formed the border between East and West Berlin and was, therefore, a sort of »back-side« for the divided city. The initial post reunification development, based on private initiatives, quickly grew in dynamism and scale and, nowadays, this area in the heart of Berlin is one of the city's fastest growing zones, a lively spot attracting Berliners and tourists with its cultural and leisure activities. The public administration only became aware of the area's enormous potential very late; when it started its area planning, most of the land had already been sold to owners with their own development plans. The »mediaspree« group was created as an alliance of these owners, to represent their interests in confrontations with the administration as well as in negotiations with investors, which initially substituted and at present co-operates with the government.

The view on the left is not a master plan, but a mediaspree photo montage which illustrates, with some additions, almost all the different individual projects formulated so far. No public competition or shared vision led to this growth; the owners did not take part in any public-moderated process. The infrastructure - boardwalks, bridges and parks – is still lacking and continues to be difficult to provide, because the city-state's government, after years of State subventions for its urban re-construction, is short of money. On the other hand, the limited public engagement allows a different sort of development, a new mixture between »global players« and »local heroes«. You can not walk along the river because there are no public paths, but in their place there are temporary bars and clubs located on the river banks.

Spreestadt Charlottenburg Spreestadt is situated quite centrally in former West Berlin, near to the Technical University, in the area of the ceramic factory formerly owned by the Prussian Kings south of the Spree. Today, this theoretically attractive location emanates a very sad atmosphere, which is determined to some extent by the lack of access to the water. Although a Spree promenade has been built, it is not yet in use and this is seemingly not set to change in the next few years. West Berlin is much less dynamic than the former eastern parts of the city and it has, in fact, been neglected by the administration for many years. In this specific area's case, however, the situation may be the result of a failed urban concept. The public urban planning competition ended with the choice of housing blocks of the type typical in 19th century's Berlin, open on just one side to provide some view of the water.

Wasserstadt Spandau Wasserstadt Spandau was Berlin's first and biggest urban development project along the water; it started when, due to the city's enclosure in former East Germany, new residential quarters for the growing population where needed in West Berlin. Building in the proximity of water, however, does not always lead to success. At the time, a huge water landscape, including an island, was planned; its first quarter was the »Havel-Spitze«, which, despite a very attractive location, ultimately failed because it had been packed with much too dense blocks. As a consequence, the promised relation to the water simply vanished for the flats in the third row. The Havel Bridge, designed by the German architect Walter A. Noebel, which connects the Havel Spitze with the water city to the east, is a typical example of the monumental and expensive style, typical for Berlin in the 90s. To attract investors, the public walkways were finished to a very high quality; their luxurious style has, however, been criticized as a waste of public funds.

Nowadays, the flats in Wasserstadt Spandau are empty. In a more recently developed quarter, Pulvermühle, a situation reminiscent of Rummelsburg occurred: instead of blocks, primitive, small prefabricated houses have been built; empty sites rest along the wide alley waiting for life that has never arrived.

The »String of Pearls« - outstanding architecture along the River Spree Starting again from east and following the water course, I would like to show the positive effect water can have on building quality in this subjective selection of interesting architecture from Berlin.

The Berlin Terraces designed by Gussmann Valentien, built in Rummelsburg after the expected settlers left the blocks waiting to be filled, are an example of how a dense urban concept can be transformed to provide high quality housing. The four-storey houses were designed by the architects in strict interaction with a group of private families - at present the option of co-operative building is becoming very popular in Berlin and Germany.

Some miles down the Spree we find the Radial System [photo next page], built in 2004 by Gerhard Spangenberg. The building's name derives from the homonymous method, developed in 1880 as a very advanced technology for dealing with waste water. In fact, the structure functioned as a waste water pumping station until 2000. The addition of a new building to the vacant pump station goes back to a private cultural initiative that wanted a new space for dance, music and parties in the lively area. Spangenberg created a sort of patchwork facade to the Spree, which is looked at from a broad terrace; the tension between old and new outside and inside

the building makes it one of Berlin's most innovative architectural works of last ten years.

The headquarters of the Deutscher Sozialverband, built by Leon Wohlhage Architects in 2004, is an absolutely modern building blessed with an extraordinary view of Berlin's eldest quarter beyond the river. Paradoxically, but perhaps signifying Berlin's reluctant attitude towards exploiting its water resources, the architects used such a privileged site along the water in a rather unspectacular way. A very carefully detailed facade in dark concrete and coloured glass attracts attention to the building, particularly at night, when a sensitive illumination makes the building shine on the river banks.

Just two houses further down the Spree, Rem Koolhaas's only building in Berlin, the Dutch Embassy, shows the Dutch architect's singular interpretation of the previously mentioned Berlin block[23]. The Embassy is a freestanding cube on a podium, to which he transferred the function of completing the block. While the building is set back from the water front in favour of a narrow green strip between walkway and embassy, from inside the water is rather present, as the visual trajectory created by the circulation system contextualises the building with the River Spree and the TV Tower. At the same time, the corridor works as the main air duct, from which fresh air percolates the offices through the double facade. To further distinguish the building, the plinth and walls are clad with aluminium as a contrast to the surrounding buildings' stone cladding.

On the other side of Spree, in a historically charged area of Berlin, next to Friedrichstraße Train Station, a prominent triangular site has occupied architects for almost a century. In 1919 and 1921, Mies van der Rohe designed two glass skyscrapers for the site; at the time, both were visions, far removed from what the technology of the time could achieve. The site is finally to be developed with a project by Mark Braun. It is reminiscent of Mies' second project, although its moderate height of only 50 meters makes it pale in comparison.

From Friedrichstrasse, Berlin's new government area, the »Federal String« by Axel Schultes Architekten, connecting what used to be East and West Berlin, is already visible. His Kanzleramt building [photo above], with its outspoken reminiscence of Louis Kahn's Parliament Building in Dhaka, seems to have found a sort of godfather in the American architect. The whole government quarter can be regarded as a very successful example of good architecture together with good landscaping and good planning of public spaces, which considered water as an important part of the scenery, for public as well as private spaces. One of the most important elements in

23 Traded city planning guidelines demanded the new building to »complete« the built blocks in line with the 19th century fashion.

the plan is the symbolic and real connection of Parliament and Library over the Spree, by a bridge. Both buildings by Stefan Braunfels are expressed, both inside and outside, in exposed concrete. To complete the quarter, landscape architects Weber und Sauer designed a park flanked by a walkway along the Spree, where tourists from all over the world and Berliners alike enjoy the re-gained access to water.

Tendencies: how will water and the city be connected in future? Thousands of years ago, human beings preferred to live on the water. Contemporary European architecture seems to confirm this preference and, in Berlin, the construction of floating houses in both »water cities« has been officially allowed: these model buildings of ca. 130m², designed by various architects and developed by private enterprises, seem to be the ultimate housing trend, and the last effort to attract people to the new forms of urban life. Is this really a new tendency for housing, or will it be the next flop? Do Germans really want to live on boats?

Another aspect is the environmental one: water is beautiful to look at, but even more beautiful to swim in – is one way in which the claims of clients looking for new flats could increasingly be subsumed. Water quality is becoming a very important concern, and new projects to clean the Spree through a new technology, consisting in the separation of the rain water from the dark water, are presently being developed

A recent project that confirms the »floating« trend is the »Badeschiff« [»bathing boat«, photo right side]. Clean water fills a modified ship floating in the not so very clean water of the River Spree. In summer, people go swimming in the waters of this swimming island; in winter, the island is covered by a membrane construction and serves as a sauna with pool[24].

In a comparatively rich and developed country like Germany, the water of the rivers and also of the sea is viewed as a precious asset; it belongs to everybody and can not be divided, or bought. In this sense, water is synonymous of public space, and it is a public task to maintain and improve its quality. For me, the question remains how to use public money in an intelligent way to ensure not only water, but also housing quality on an urban and an architectural scale.

24 For detailed information: www.spree2011.de.

Broder Merkel

FactorsendangeringBerlin’swatersupply

Berlin, the capital city of Germany, is situated on the banks of the River Spree. In comparison to other German rivers like the Rhein, Elbe or Oder, the Spree is a small river with an average discharge of only 4m³ per second. Due to a very low gradient, its flow - with an average of only 50cm/s that lowers to just 9cm/s during the crossing of Berlin - is very slow. However, in the Spree's »background« a complex net of minor water courses gives life to considerable wetlands - the Spreewald, which is now a biosphere reservation [view on right side]. In fact, Berlin and its surrounding region are one of Germany's water-richest areas. This situation would allow us to expect that water supply is not a problem at all for Berlin; however, there are factors endangering it. These are especially due to the fact that the mentioned availability of water is actually man-made: it has to do with mining activities.

For more than 100 years, and in particular from 1955 until 1989 in the GDR, lignite mining took place in the southeast of Berlin and west of the city of Cottbus, with significant consequences for the River Spree. About 13 billion m³ of groundwater were pumped from the open pit mines to allow mining operations at depths of more than 60 metres below subsurface. This groundwater was mainly pumped into the River Spree, thus increasing its natural average discharge of 4 m³/s to about 10 m³/s in the 60s, 20 m³/s in the 70s and 30 m³/s in the 80s. Thus, over the years, the Spree has carried much more water than would naturally have been the case. The water management systems of the Spreewald and Berlin got used to these high runoff conditions, but were in fact living »beyond their means« regarding water supply.

After the German reunification, lignite mining activities were mostly stopped; since 1990, most of the open pit mines have been abandoned and, nowadays, only four of the former sites are still operating. An immediate effect of this closure process was that the pumping rates decreased to 17m³/s in 2000, and they will be further lowered to 14 m³/s by 2020. Depending on future decisions about lignite mining, the Spree's discharge might fall back to the pre-mining natural amount of 4 m³/s, with considerable consequences for the environment, as well as for Berlin's water supply. Yet, things are much more complicated. At the very beginning of the rehabilitation works for the obsolete mining sites in 1990, a deficit of about seven to nine billion cubic metres of groundwater was estimated. Besides, the coal excavation had left huge »holes« [photo next page] in the landscape, which the development plan suggested be filled with water to create in total more

than 20 artificial lakes for future recreational purposes like boating, sailing, swimming and fishing. To reach this goal as quickly as possible, the normal groundwater inflow has to be enriched with about 200 million m^3 of river water per year [6.3 m^3/s]. Not the only, but the closest and thus cheapest and most readily feasible option to deliver such amounts of surface water was to pump it out of the rivers Spree and Neisse. The other solution would have considered the four still active lignite mines, from which the required 6.3m^3/s could have been pumped into the rehabilitation area. Yet, no political consensus could be reached in favour of this more logical option, because residents as well as authorities, including Berlin's, downstream on the River Spree, did not keep in mind that the Spree's natural flow is so low. Taking as much water as possible from the Spree will mean reducing its discharge to a critical value.

Beside this quantitative problem, however, a more critical issue for the future is related to the water's quality, as the mining activities have modified the water courses' chemical characteristics with a long-term effect. Due to the lowering of the groundwater during lignite mining, sulphides and in particular pyrite – till then buried in the sediments of the tertiary - came in contact with atmospheric air. This led to an oxidation of the sulphides into water soluble components, iron and sulphate. Since iron is hardly soluble under oxidizing conditions, it precipitated as iron-hydroxide, a phenomenon easily visible in many mining districts in the form of red-coloured sediments in the earth. What remains in water after sulphide oxidation is a low pH [which decreases to level 3 or 2, or in certain cases even much lower], and high sulphate concentrations. The pH level can be adjusted relatively easily, for example by adding carbonate or treating the mine water with carbonate and other carbonate-related products. But this would have only a limited impact on the sulphate concentration and the quantity of gypsum in water would still remain above 1500 mg/l. German and international drinking water regulations rely on 240 mg/l as the maximum contamination level. This means that in the future - but the process has already started - a huge groundwater contamination plume will move towards Berlin, endangering its drinking water supply, which is related to the groundwater. At present, the sulphate concentrations in the Spree are already critical and constitute a problem. Assuming a groundwater flow velocity of 500m per year, the sulphate plume will reach Berlin within 200 years.

Enough time to think about remediation strategies.

Elisa T. Bertuzzo / Farzana Islam

Epilogue

After a series of articles that, under the broad title »City and Water«, provided information on two very different urban contexts, here is an attempt to summarise this experiment's meaning and outcome. Let's start with order. In their essay, Deleuze and Guattari basically recognised that smooth and striated exist contemporarily, and defined movement and situation as factors for smoothness; planning and dimension for striature. During the reflections on the text, one recurrent term - »everyday practices« - was recognised as a key for the application of their approach. In a way, everyday practices striate space: be they informal or formal, commercial or ritual, private or public, they always imply certain rules, which can be ratified institutionally or just by common acceptance. In another, depending on people's individual relationship with certain attributes of space, these practices are unforeseeable, and smooth.

In the following pages, an anthropologist is going to share her point of view on the topic »City and Water« with regard to Dhaka, based, in particular, on field work on poor people's use of surface water. Her exposition of facts will linger on smooth space – defined by Deleuze and Guattari as anthropological -, and make a point on the way a certain striating is drastically affecting Dhaka's public sphere beside its environment.

In Dhaka, very young children from the lower income group learn swimming and diving from their parents, older siblings and neighbours in rivers and ponds. In fact, for Dhaka's urban poor, bathing represents one of the rare chances to develop father-child bonding: fathers, who generally give hardly any time to their children, take them to the river for bathing. This practice also enhances neighbourhood bonding, solidarity patterns and social networks, as children and adults of the same community go swimming together, sometimes organising small groups to hire a boat and go far from the river's edge, where the water is less polluted. By doing so, men and children also reduce the women's work load as they need to carry less water, generally used for household chores, for personal washing and cleaning, from the municipal corporation's supply.

One of the complaints we commonly hear from poor women living in urban slums, Gang nai je dhobo, Ma nai je kobo [»there is no river to clean my dirt and no mother to listen to my pain«], well expresses their dissatisfaction at the limited water supply. Moreover, it expresses their consternation at having to use confined places instead of the free water of a pond or river, which in the village can be generally reached from a ghat. Poor women continue to prefer to use rivers, ponds or canals for heavy washing. Heavy cloths like hand-made quilts need to be washed in rivers and ponds to become clean, otherwise a strong sense of dissatisfaction remains in the women's minds. First generation migrant women, in particular, believe that after giving birth all clothes are »polluted« and remain impure until they are washed in the river or at least in a pond.

A consistent number of poor families live on the city's fringes because of the easier access to the rivers or ditches, where they raise and can bathe their dairy cattle. Rickshaw wallahs [van- and cart-pullers] prefer living in Dhaka's low-lying areas and suburbs for the same reason: living in proximity of surface waters, they can easily wash their vehicles. It is quite common to see the helpers of bus or truck drivers washing their vehicles and chit-chatting with other fellow workers beside the river, as even public or goods vehicles are washed by the Buriganga and in other ponds.

Travelling in any direction out of the capital city, large paddy and vegetable fields can be found within 20 minutes drive, but small fields of vegetables are also scattered within Dhaka City. The irrigation water for these cultivations comes from the rivers, ponds and ditches that cross the city. The maintenance of this efficient irrigation system is vital to the cultivators, but it also provides work to men, women and children from poor families.

Surface water supplements poor people's diets with water vegetables. There are varieties of vegetables, such as the water lily, which grow in water and form a staple of the poor's meals as they cost labour, but no money. In rivers and ponds the water hyacinth, a popular fodder for cows, also grows.

Surface waters, especially rivers, are a crucial and versatile professional resource for poor people: washer men have always used river water to wash clothes and hung up the wet fabrics to dry on the Buriganga riverside. River water necessarily plays an essential role in the process of colouring clothes, but also tea-shop owners, brick breakers, stone carriers and tannery workers depend on water in some way or another.

River transport has a long tradition in Bangladesh and thousands of people use rivers for their personal transportation or to transport goods within Dhaka. Not all Dhaka's poor labourers live in the city: many commute everyday from the other side of the Buriganga, Turag, Shitolakhaya and Balu Rivers. This can be explained by the scarcity of housing and the very high rents which compel people to cross the river everyday. However, some work-

ers actually prefer to live in their place of origin and are prepared to spend several hours a day commuting.

Poor people go fishing wherever possible, both inside and outside Dhaka, and fishing is a particularly common occupation among poor children. Fish is a relevant and popular part of Bangladesh's traditional cooking, and the fish business is a complex and varied one: all social groups buy fish according to its affordability. Poor women and children from Dhaka's outskirts sell the fish caught by their husbands and fathers at informal road-side markets; men buy fish from the wholesale market, either from the riverside or from inland markets, to vend it locally or sell it at the city's formal markets.

Walking along river- and lakesides with friends, family members, or alone is still a common pursuit for Dhaka's poor; on hot summer days, swimming and diving provide pleasure and refreshment. Poor children enjoy swimming for hours on end. On the contrary, urban children from the middle and upper income groups have very limited opportunities to enjoy swimming as pools are very rare in Dhaka, and, in fact, most do not learn to swim at all. Actually, and this sounds particularly sad in a country, like Bangladesh, that is consistently characterised by water, drowning is one of the major causes of child mortality in Bangladesh[25].

Dhaka provides very few spaces where young people can spend free-time outside, out with their families' supervision. As restaurants are expensive and crowded, they prefer to visit open spaces within the city, like the Chandrima Uddayan and Ramna Park, the green areas surrounding Dhanmondi Lake, the Buriganga River Bridge, or even travel to the outskirts, for example to the water bodies of the Ashulia suburb. It is common to see young couples as well as groups of couples and friends on recreation trips in these pleasant localities, where they ride small boats, go on river cruises, or just spend time together on the bridges and enjoy sitting and talking. Adult people also regularly meet by the river. Friends and relatives gather to exchange experiences and feelings, whereby women are the most enthusiastic group: they get together around ponds and rivers to do household chores, which provides them with the opportunity to share information, sorrow and joy, while washing and cleaning.

Throughout history, cultural events have occurred next to rivers and lakes, for example fairs and festivals like Baisakhi Mela or Durga Bishorjon. Before the Independence of Bangladesh, Dhaka celebrated the Bengali New Year through a huge and eventful ceremony beside Ramna Lake, where thousands of Bengalis still assemble to listen and sing songs today. Along with the expansion of the city, centres of cultural celebration are increasing and thus Dhanmondi and Gulshan Lakes play host to this and various other festivals as well. On the first day of the year, people congregate there in the very early morning to enjoy songs, dances and recitations, but also to greet friends and share and produce an identity by wearing sarees in the same colours - red and white - beside water.

After this short review of the urban poor's everyday practices on water, it can be said that, in the main, poor people in Dhaka are migrants from the villages. As villagers, their water resources, which were used to fulfill needs of bathing, washing, production, recreation, culture, etc., were more or less adequate. Once they migrated to the city for employment however, they find themselves deprived of surface water resources. It is important to mention that migrants feel comfortable living in proximity of rivers, ditches and low-lying land, as this ensures easy access to free water, comparatively good communication facilities, and many utilities. Yet, these water resources are constantly under threat due to the development of land for upper and middle class housing, as well as for commercial and governmental buildings. A paradox process of exclusion is taking place, as the social group that most desperately has to rely on public resources in an infrastructurally inadequate urban context is in fact losing its right to common water and resources[26]. Gradually, middle and upper class people's demands on lakes for morning walks, jogging and exercise have increased. Precisely these groups have started contesting other uses by the poor, instead of acknowledging the state of need, which is in turn ignored or insufficiently tackled by the city corporation.

Along with urbanisation and the consequent development of land for building purposes, most of the ponds, canals, lakes and ditches that used to cross the city have been filled up and even rivers have been encroached. The ultimate effect of these interventions on Dhaka's environment is extremely damaging, as the city is losing almost all of its surface water bodies and the lack of water retention bodies can critically increase flooding during the

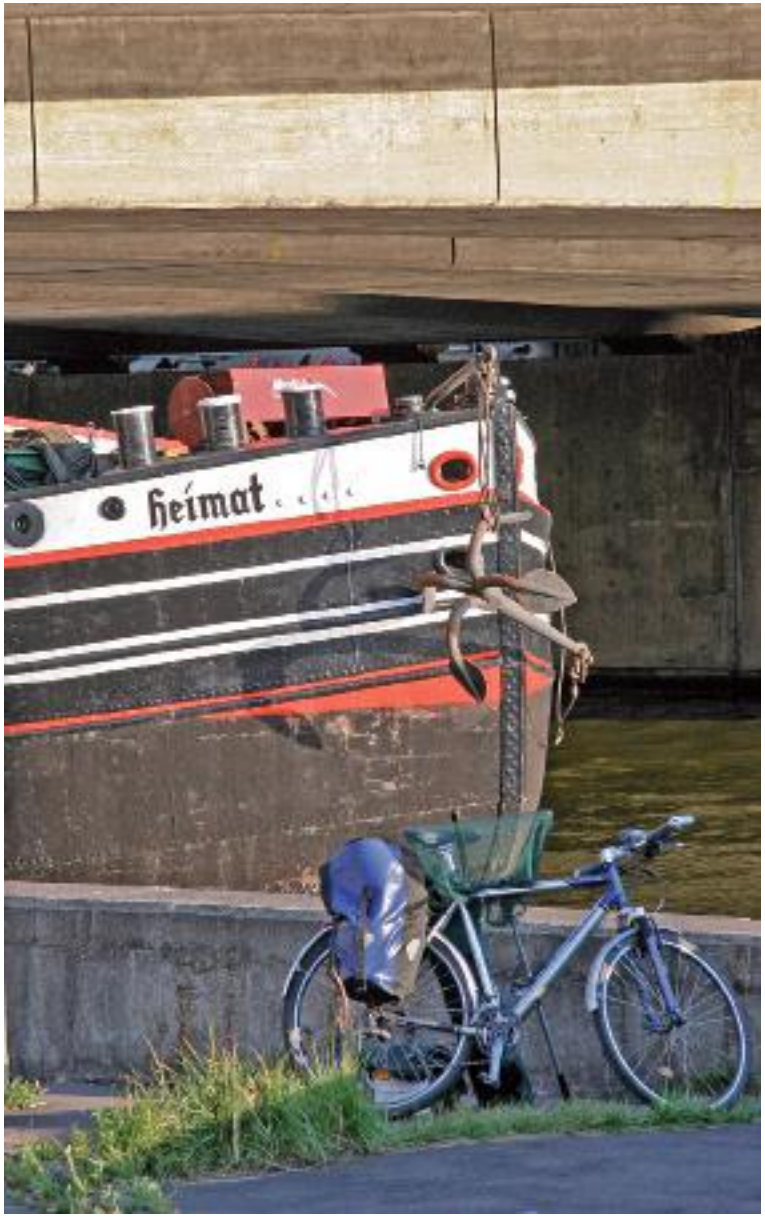
25 This was recently showed in a research by International Cholera and Diarrhea Disease Research Centre in Bangladesh, 2007.

26 It should be mentioned that, within the compounds of civil and armed forces such as all cantonments, police and Bangladesh Rifle's barracks, lakes and ponds are actually available, but unaccessible to general public.

rainy season. Nowadays, it is difficult to believe that Dhaka was once a city of canals and ponds, but - if not immediately regulated by the competent authorities - in the near future surface water will be a very scarce resource indeed! At the same time, with the exception of a few wells that still might be considered as safe, surface water is no longer believed to be a source of clean drinking water. It is used for drinking only when it is utterly necessary, as in cases of severe water shortage, and at such times the poor as well as people from different socio-economic groups depend on surface water sources.

If, on one side, as Broder Merkel's article pointed out, Berlin shares Dhaka's problem regarding water supply and quality, the German capital city, on the other, is now rediscovering its river after having ignored it for centuries. Working, living or clubbing along the river has become popular; the plan to build a »city on water« is giving birth to different projects, all focused on the re-orientation of streets and buildings towards the Spree and other water bodies. In some cases, the consequence of these interventions is gentrification, as the experiences of Wasserstadt Spandau, Rummelsburger Bucht but also the developments on the River Havel show. Yet, to a great extent, the river, its canals and remaining water bodies are still accessible to the public, who has the chance to stake claim on it, or protest if necessary, through the media and with the administration. A further positive requisite of Berlin is the broad awareness, at political and civil society's level, for the protection and preservation of the water bodies' environment.

A balance between striated and smooth space was indirectly suggested as ideal for urban development in Deleuze and Guattari's essay; in this sense, how long will the striature deriving from an increasing planning in Berlin be sustainable? Are the new developments described by Bertuzzo and Nest going to thwart people's chances possibility to individually create their space? How long are the »movements« of those urban nomads, who have populated Germany's capital since its reunification, going to be possible? Does the recent change of aspirations expressed by Berlin's senate regarding the image of the city – from »poor but sexy« to a paradise for real estate speculators, mass events and tourism – represent a threat for smooth space or again a pre-stadium of new »smoothing«? Berlin should acknowledge the fact that the remaining smooth space actually constitutes part of its appeal in comparison to other German and European cities, where striature was stronger. The comparatively high growth of striated space for



the sake of new work places and urban improvement could threaten this resource. How can urban administration and urban management structures ensure an urban development that respects and treats striated and smooth ways of life as equal?

The possibility to take part in, and contribute to, urban management and development seems to be the key-issue for democratic growth and urges initiatives for Dhaka, too. Thus, the question of reforms and measures that should be taken to ensure the accessibility of these opportunities for more people, in particular the poor, appears to be a very crucial one. Not only good governance, but self-organisation and networking can be regarded as decisive tools for this process. Hereby, considering the extent of international projects' influence on development in Bangladesh, measures for better communication and co-operation between international and local agents, which equally support »striature« through planning and »smoothing« of the same through people's practices and everyday knowledge, must urgently be found.

Profiles

Khadem Ali returned to Bangladesh in 1966 after graduation with a Bachelor of Architectural Engineering in Beirut [1962], and a post-graduate diploma in Architecture in Karlsruhe, Germany, and was introduced to the profession by Architect Muzharul Islam in Vastukalavid.

He was Vice President and Acting President of the Institute of Architects in 1981/82 and President of the Institute during 2005/06. In addition, he is Vice President of CUS [Centre for Urban Studies], life member of BAPA [Bangladesh Paribesh Andolon], BGS [Bangladesh Geographical Society], CUP [Coalition for Housing Rights of the Urban Poor] and Member of the Planning and Development Committee of the North South University, Dhaka. Presently, he works as director of ARCHITEKTON [Pvt] Ltd.

Over the past many years he has earned respect through his commitments to architectural design and teaching, organizational activity of the profession, urban research, advocacy for housing rights and environmental issues.

Elisa Tullia Bertuzzo was born and brought up in Vicenza, Italy, but did her studies in Augsburg and Berlin, Germany. She completed her master in comparative literature, sociology and communication studies at the Free University of Berlin in 2004, and she is at present working on a PhD-research on spatial configurations and practices in Dhaka at the Habitat Unit of the Technical University of Berlin. In 2007, she has worked at School of Art Berlin Weißensee in the new study programme »Space Strategies«.

Elisa T. Bertuzzo has been involved in the NGO »Habitat Forum Berlin« since 2007. Since 2005, she has worked in the field of participatory urban development in Berlin with the initiative »experimentcity« and since 2003 as a documentary film-maker.

Christine Edmaier gained her Diploma of Architecture at University of Fine Arts in Berlin, Germany, in 1987. In 1985 she received the DAAD-fellowship for I.U.A. Venice, Italy. From 1987-1991, Christine Edmaier had a working partnership with Christian Kennerknecht. Since 1992 she has run her own office for architecture and urban design in Berlin. She also worked as a professor at the Kunsthochschule Berlin-Weißensee in 1996/97.

Since 2003, she has been the Chairwoman of BDA-Berlin. In this role, and also following her passion for architecture, she is very involved in discussions, lectures and work groups about the specifics of future town-planning and architectural thought in Germany.

Prof. Dr. Muhammad Qumrul Hassan, after achieving a Master Degree in Geology at Dhaka University, obtained a Master of Science in Geology at the University of CA-Kiel, and a PhD in Hydrogeology from the Free University of Berlin, in Germany. He continued his research in Hydrogeology, Engineering and Environmental Geology as a post-doctoral scholar at Dhaka University and Free University of Berlin and was trained at different institutions in Bangladesh, Germany and India. Currently, Prof. Hassan holds the position of Chairman of the Department of Geology at Dhaka University.

He is member of various scientific associations in Bangladesh and is General Secretary of the Alumni Association of German Universities in Bangladesh. He is the author of five books as well as various papers in scientific journals and books and is currently working on further publications.

Dr. Farzana Islam is professor of Anthropology at Jahangirnagar University, Dhaka. She received her Doctorate in Social Anthropology with an empirical research on urban poor women workers' family and employment relation from the University of Sussex in 2001.

Prof. Islam published as author and co-author articles on violence against women, influence of women's empowerment on early marriage and child bearing, women's reproductive health and child health issues and presented papers in conferences and seminars, both in Bangladesh and abroad. She also worked as consultant and advisor for various national and international development agencies such as UNESCAP, UNFPA, Save the Children Sweden-Denmark and USAID for example. She is an executive member of Centre for Urban Studies and Nagorik Uddyog, and member of Asiatic Society of Bangladesh.

Prof. Islam is currently working on a book regarding poor women's daily struggle with poverty and gender disadvantages based on empirical findings of Dhaka City.

Prof. Nazrul I slam attained his B.A. Honours Degree in 1961 and the M.A. Degree in Geography in 1962 from the University of Dhaka. He gained further education at the University of Western Ontario, London, Canada and DPU London, UK. At present, he is professor at the Department of Geography and Environment, University of Dhaka, and Founder Honorary Chairman of the Centre for Urban Studies, Dhaka. An urban development expert, Nazrul Islam has been charged with many planning and manage-

ment related functions by Bangladesh's government since 1991. Professor Islam is Vice Chairman of Bangladesh Paribesh Andolon [BAPA], a civil society organization, and other relevant associations in Dhaka and Bangladesh. He has been author, co-author and editor of 22 books, including »Dhaka Now«, »Dhaka: From City to Megacity«, and »Urban Governance in Asia, Addressing the Poverty Agenda in Bangladesh«, as well as various professional and academic papers in foreign and national journals.

Prof. Dr. Broder J. Merkel, after a master degree in Geology, obtained a PhD in Hydrogeology from the Technical University of Munich, Germany, in 1983, and continued his research activity in the same field as a post-doc and consultant. In 1992 he obtained his »Habilitation« from the Christian-Albrechts Universität Kiel, Germany. Since 1993, he has been chairman of the Hydrology Faculty at the Technical University Bergakademie Freiberg, and since 1995, director of the Department of Geology in the same university.

For more than 30 years, Prof. Merkel has collected research and professional experience in the fields of Hydrogeology, Aquatic Chemistry, Environmental Research, Water Management, etc. in Egypt, Bangladesh, China, Germany, Israel, Jordan, Mexico, Mozambique, Nicaragua, Palestine, Saudi-Arabia, Tanzania, and the USA. He has taken part in several expert missions sponsored by DAAD and EAEA in Saudi Arabia, Jordan, China and Mexico for example.

Prof. Dr. Günter Nest, professor at the Kunsthochschule Berlin Weißensee [School of Art], is co-organiser of the new international MA-course »Space Strategies«, which started in the same school in April 2007, and honorary professor at the Technical University Berlin, Dept. of Architecture. His teaching experience on Indian issues, especially on urban development in Bombay, goes back to 1991, and he has been Associate Professor at the University School of Design in Mysore since 2004. Günter Nest, who earned his doctorate with a research study on »The Role of Indian Voluntary Organisations in Coastal Andhra«, has set his primary focus on city planning and urban design as well as global and local development strategies in various cultural arenas. He is Director of Habitat Forum Berlin, an NGO for Housing and Urban Development in Africa, Asia and Latin America. Günter Nest is presently working on a book about »The Modernist Architectural Movement in South Asia«.

Prof. Dr. Abu Sayeed M. Ahmed obtained his Bachelor Degree in Architecture [B. Arch.] in 1983 from Bangladesh University of Engineering and Technology, Dhaka. Subsequently, at the University of Karlsruhe, Germany, he obtained a Masters Degree [Dipl.-Ing] in 1991 and PhD [Dr.-Ing] in 1997. He started his career as a teacher of History of Architecture, Architectural Documentation and Conservation in the Department of Architecture, University of Asia Pacific where he also has held the position of departmental head since 1997. His many publications include the two books titled »Mosque Architecture in Bangladesh, UNESCO, Dhaka, 2006« and »Choto Sona Mosque at Gaur: an Example of the Early Islamic Architecture of Bengal, Karlsruhe, Germany, 1997« and several articles in journals, periodicals, and newspapers. He is actively involved in the heritage safeguard movement in Bangladesh.

Salma A. Shafi did her M. Sc. in Urban Planning, Department of Human Settlements Development from Asian Institute of Technology [AIT], Bangkok, Thailand in 1982. She had achieved a Bachelor of Architecture degree from Bangladesh University of Engineering & Technology [BUET], Dhaka, in 1978.
Salma Shafi is a member of the Institute of Architects, Bangladesh, Bangladesh Institute of Planners and she is presently the Honorary Treasurer of the Centre for Urban Studies [CUS], Dhaka.

Salma Shafi possesses about 27 years of professional experience in architecture, planning and urban management through implementation of various development projects. As an urban researcher and urban planner she has been contributing to various policy making agencies in formulating issues regarding urban policy and management for sustainable development.

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