Through most post-Second World War history there were two very different trends in global urbanisation – the exodus of residences, business and commercial areas to a wide car-based megalopolis of the developed world and the implosion of megacities through massive rural to urban migration in the developing world. Sharon Haar and Victoria Marshall combine their research experiences in the Pearl and Yangtze River deltas in China to describe a new hybrid megaregional development containing both megalopolitan car-based sprawl and megacity implosion. Haar and Marshall examine how slight shifts in the superposition of the new megablock structure of Chinese urbanisation can better accommodate the historical hydrological network of the historical delta cities of China.

Introduction

China’s explosion of urbanisation offers a redefinition of both the megacity and the megalopolis. Situated within a culture and state structure that privileges ‘planning’ – of cities, the economy and social relations – China’s cities do not fit neatly into the category ‘megacity’ represented by cities of the Global South. While sharing many causal factors and statistical narratives with cities such as São Paulo and Mumbai, known for their intensive rural in-migration, in China the planning and design of both existing and, increasingly, new cities operates within different registers. Similarly, as China quickly builds a 21st-century infrastructure to support megalopolitan regions already firmly in place, Chinese cities do not cleanly follow the American patterns of suburban and exurban sprawl. Rather, Chinese urbanisation is a process that reorganises and radically transforms existing ecosystems into official ideals of nature and city. Two case studies, one an analysis of the New Administrative District in Shunde in the Pearl River Delta and the other an urban design proposal for Shaoxing in the Yangtze River Delta, will illustrate how large-scale, planned development in China is used to intervene in and control the informal production of the megacity, built atop and expanding upon the pre-modern aqua-urban network of two megadeltas. Within these vast deltas we observe and analyse Chinese planners’ attempts to integrate the dispersed urban elements of the new megalopolis created by duplication, replication and excess through an endless repetitive grid that threatens the intricate urban water-land interactions of two megadeltas.

Much of the contemporary understanding of Chinese urbanisation derives from the study of the spectacular explosive growth of cities such as Shenzhen in the Pearl River Delta and Shanghai in the Yangtze River Delta. Here we focus our attention on two lesser-known cities in these regions to illustrate more generic urban processes that are taking place throughout China. Structuring our discussion within a patch dynamic framework rather than a centre/periphery dialectic, we first analyse existing Chinese planning and design
methodologies through the example of the New Administrative District of Shunde. We then shift our focus to an urban design proposition for a new town for Shaoxing referred to as a ‘riverbank city’. In doing so, we understand these cities as part of larger urban ecosystems that include the uneven history of dynastic, colonial, communist and global dynamics. Until the 1960s the phrase ‘urban ecology’ was used as a metaphor rather than based on an underlying metabolism. Over the past two decades, a way of thinking about the actual ecological processes of the city has been absorbed into a larger concept of the ‘sustainable’ city, which assigns ecosystem processes a role alongside other urban systems, be they economic, cultural, social or political. Like all open, evolving systems, the sustainable city is not without its tensions. Of particular note are those that arise between economic goals and cultural traditions as well as developmental imperatives and existing ecosystem processes. These tensions become evident in the examples of Shunde and Shaoxing.

Our study asks whether it is possible to introduce disturbances into the megamorphology of Chinese urbanisation in such a way as to interrupt its cellular, insular logic through the retention of existing and creation of new microclimates. We further seek to understand how current official concepts of sustainability can be supplemented by everyday resilient urban ecologies, operationalising the current ‘culture debate’ in China by updating the contemporary idea of harmony as ‘balance’ to be more consistent with the Confucian ideal of harmony as ‘sustained by energy generated through the interaction of different elements in creative tension’.2

Megadelta

Shunde and Shaoxing sit within two of the 11 megadeltas in the coastal zones of Asia that are continuously being enlarged by sedimentation from rivers originating from the Tibetan Plateau.3 Defined as an area of more than 10,000 square kilometres (3,860 square miles), megadeltas support huge conurbations along the coastline of the South China Sea and Bay of Bengal. Taking a long historical perspective, the megadelta cities of the Yangtze and Pearl Rivers are built on land that had been created or enriched with fertile topsoil made mobile through 2,000 years of upstream deforestation.4 According to Mark Elvin, ‘upstream deforestation almost certainly lay behind the rapid filling in of the Pearl River Delta in late-imperial times’. In addition, ‘the growth of the deltas of the Yellow River on its various north and south courses, and of the Yangtze, must both have depended to some degree on the same effect’, the site of what is now Shanghai, for example, was created by Yangtze River sediments in about the 13th century CE.5 Humans, separated from the sea by a sea wall, washed delta land free of salt, transforming it into rice or fish ponds enclosed within polders.

The late-imperial megadelta was an agriculturally productive landscape a few feet above sea level, dotted with a network of cities strategically created as administrative centres that played an important role in administration and taxation. Cities ‘belonged to the wealthy citizens such as administrative officers, merchant traders, and noblemen and their extended families, which strictly controlled it behind its walls, keeping most of the people from outside away’.6 Global trading networks via ocean and land routes connected these cities with Afro-Eurasian networks of exchange from the 1st century CE.7 Until modernity the Yellow and Yangtze Rivers were much more important than the Pearl River. The north, with its political centrality in Beijing, became disconnected from the south, with its growing emphasis on trade. The development of treaty ports in the mid-19th century marked a shift to new types of north/south entanglements. The Pearl River Delta – at a great distance from the centre of politics – became the site of the first Special Economic Zones after ‘opening up’ at the beginning of the 1980s. These experiments in economic reform were later exported north to cities such as Shanghai, where the massive influx of migrants needed to fuel economic growth met with more resistance.8

The Hukou registration system has controlled the movement of rural populations to cities since 1958; at the same time, industrialisation and the move to a socialist market economy has resulted in the vast expansion of Chinese cities and urban populations, particularly along the coast. The by-product of these internal borders is a temporary ‘floating population of workers who inhabit surplus housing of former work units, within the densifying urban villages and dormitories built adjacent to new factories and construction sites’.9 The form of this large collective body becomes evident at Chinese New Year when migrant mobility overloads the capacity of Chinese transport infrastructure. Middle-class urban residents, for which Chinese urbanisation is designed, move around all of this: shopping, trading, recreating and driving cars. Large-scale planned cities built with only this population in mind, keep the floating population adrift.
Pre-modern delta settlement patterns were defined by a dyke-pond system of fish ponds, cultivated dykes and grid-like water patterns of flood storage and canal transport. The Pearl River Delta, in the southern subtropical zone, has a longer cropping period yet a shorter history of farming than the Yangtze River Delta. On the other hand, the Yangtze River Delta located on the southern end of the north subtropical zone has a shorter growing period as the water freezes in winter. The mulberry, sugarcane, banana and flower River Delta located on the southern end of the north subtropical zone has a shorter cropping period yet a longer history of farming than the Yangtze River Delta.

The Pearl River Delta, in the southern subtropical zone, has a longer cropping period yet a shorter history of farming than the Yangtze River Delta. Although it is often conflated by virtue of their proximity, it is important to distinguish between the Pearl River Delta and the Yangtze River Delta. The Pearl River Delta is located in the southern subtropical zone and has a longer cropping period due to its warmer climate. The Yangtze River Delta, on the other hand, is located in the north subtropical zone and has a shorter cropping period due to its colder climate.

Megapolis/Megacity
In using the term ‘Megapolis’ in the late 1950s Jean Gottmann was creating a ‘place name’ for a ‘unique cluster of metropolitan areas’ extending along the north-eastern seaboard of the United States from Boston to Washington, DC. A megapolis is not a single, expanding city but a stringing together of cities into one extended urbanised region. By contrast, a megalcity is understood to be a metropolitan area of 10 million inhabitants, produced by massive hypergrowth, most commonly associated with the post-colonial cities of the Global South. Although they are often conflated by virtue of their overlapping qualities associated with sprawl and density, a megalopolis and a megalcity are not the same. Brian McGrath and David Grahame Shane see the ‘sprawling global megalopolis and the imploding megalcity’ as ‘the monstrous twin products of the “open” neoliberal world (dis)order’. Yet, in China’s megadeltas the distinction between the centrifugal and centripetal forces of megalcity and megalopolis is less clear.

In the context of Chinese urbanisation it is Gottmann’s description of the landscape the megalopolis encompasses that is most applicable. Travelling along the ground by rail or highway one experiences a continuous landscape of densely settled land; from the air, however, one sees: ‘… ribbons of densely occupied land along the principal arteries of traffic, and in between the clusters of suburbs around the old urban centers, there still remain large areas covered with woods and brush alternating with some carefully cultivated patches of farm land’. He continues: ‘We must abandon the idea of the city as a tightly settled and organized unit in which people, activities, and riches are crowded into a very small area clearly separated from its nonurban surroundings. Every city in this region … grows amidst an irregularly colloidal mixture of rural and suburban landscapes; it melts on broad fronts with other mixtures, of somewhat similar though different texture …’

Gottmann’s megalopolis was built along centuries of overlaid infrastructure that ‘straddles state boundaries, stretches across wide estuaries and bays, and encompasses many regional differences’. From the air in China one sees not just patches of suburbs and rural lands being transformed between old urban centres, but the lingering existence of rural villages that now sit within its densifying and sprawling cities. While some of these ‘urban villages’ represent the ‘swallowing up’ of rural life by rapidly sprawling older cities (for example, Beijing and Shanghai), others are the result of the planning and rapid growth of new cities, most evident in the example of Shenzhen. Here the ‘controlled anarchy of the urban villages contrasts vividly with the order and discipline that has characterized Shenzhen’s development’. As former villagers capitalise on the increased value of their land, they produce megalcity conditions the Chinese are at pains to control through planning.

Two of the primary crises associated with the megalcity – the pressures on people, transit, resources and housing produced by extreme density and the absorption of agricultural land brought about by extensive sprawl – underlie Chinese planning. The city-building enterprise in China comprises concerted attempts to avoid the unrestrained growth of slums and informal development present in the cities of the Global South. As Jose Castillo notes in regard to Mexico City, ‘The use of the term megalcity … implied much more than just a quantitative aspect, applied to urban agglomerations of more than ten million inhabitants. The expression carried beleaguered associations with the most negative and problematic traits inherent in cities’. In China, it is often the unregulated urban villages that provide the housing and support network for the large, unaccounted for ‘floating population’, suggesting that these cities are not just ‘mega’ by virtue of statistics, but also by the existence of unacknowledged informal urbanisation located in the former danwei (work units), on roofs, crammed into spaces that formerly housed one family, and tucked away behind walls and billboards touting new urban and suburban developments.

Despite the differences between the megalopolis and the megalcity, in reality their form and lived experience often merge, as can be seen in the case study of Shunde, to the south-west of Guangzhou in Guangdong province. Established as a county during the Ming Dynasty, Shunde is currently a city of 1.3 million inhabitants within a megalopolis of over 40 million. Since being chosen as a ‘pilot city’ in the 1980s, Shunde has seen vast influxes of private and public capital that have combined with strong pre-existing industries, agriculture and trade demonstrating – in microcosm – the globalising forces at work in the region as a whole. As the city expands, its small urban and farming villages, historical gardens and temples, and canal towns are literally encircled by a new global geography made up of industrial and technology parks, highways, residential developments, shopping malls, skyscrapers, government facilities, cultural and entertainment attractions, golf courses and restoration projects. Within the ‘Old City’, vestiges of urban village neighbourhoods cling to the back of mountains, hemmed in by new roadways and high-rise construction; adjacent to the ‘New City’, with its New Administrative District at its centre, farming villages are strung along canals and water systems, awaiting the moment when new suburban developments expand outward and erase them too. Highways and the electrical grid crisscross the fish farms and dykes with their cyclical rhythms of micro water-land interactions. Small pockets of residential and commercial buildings built by...
displaced farmers, now often factory workers, fill the interstitial spaces between ‘old’ and ‘new’. This is the tense life of the megacity, rushing to avoid disorder.

In China the problem of the megacity is most often conceived as one of inadequate population and infrastructure planning not of design. Although neither Shunde nor Shaoxing are megacities, they sit within growing megalopolises, each of which contains statistical megacities. And they can be seen as part of a larger strategy to enlarge and develop new cities in advance of conditions that could lead to ‘implosion’. The question is how does design – architectural, urban, landscape – interface with the larger, and in China, more important state-controlled project of planning, which typically prefigures the land in such a way as to limit both the extent of intervention on the part of the designer and the ability to work within preexisting water-land interactions.

Megablock

The implications of Chinese large-scale planning imperatives to avoid the megacity can be seen throughout both the Pearl and Yangtze River deltas. At one extreme is the desire to organise uncoordinated urban development about by the decentralisation of planning, changing patterns of wealth and urban-rural hierarchies, localism and competition driven by market forces that lead to repetition of investment and infrastructure.23 Tingwei Zhang notes that in a country where ‘City planning … means really planning a whole city’, speed and concerns over national identity – in the social conflict between efficient growth and equitable distribution of resources – and political conflict – between power and democracy – lead to a frustrated and at times powerless planning profession.22 Therefore, at the level of the city, nationwide, top-down physical planning principles are clearly in evidence. Here megablocks are the dominant motif of land development. Like New York’s Commissioner’s Grid of 1811 and the US Land Ordinance of 1785, in contemporary Chinese development the uniform parcelisation of land allows for its efficient sale. The Chinese megablock interlinks the scale of modern superblock development with the closed compound of the historic Chinese walled city. This ‘megatypology’, as Kjersti Monson labels it, ‘is efficient for implementing rapid expansion since it allows the government to limit its hard investment to the planning and construction of a widely spaced pattern of major infrastructure only, shedding enormous chunks of developable land with approved use rights in single transactions, wherein the private owner will plan and build interior roads’.21 Coming out of the institutionalised practices of China’s Local Design Institutes, Monson notes, ‘buildings within a superblock project tend to be standardized, streamlining the design process and reducing costs’.24

The strategy used by the designers of Shunde’s New Administrative District – building new urban areas outside existing centres – is common as Chinese cities struggle to expand beyond physically constrained historic centres to accommodate massive urban growth. The superimposition of an urban grid measuring 300 metres x 300 metres (9 hectares) (984 feet x 984 feet (22 acres))22 over pond-dyke systems has created a jarring clash between old and new. The urban grid places the new city hall across from a large public space flanked on either side by administration buildings sitting atop parking plinths hidden by a designed landscape. Despite the rapid rate of construction, environmental considerations are prioritised (according to the city’s own brochures), so that an ‘immense artificial green landscape’ is simultaneously being grown. New convention centres and exhibition halls highlight the relationship of administration and economy, and new high-rise residential complexes, malls and entertainment centres are quickly built to support the district’s burgeoning population. Unlike the congestion of the Old City, the New City welcomes the automobile: its six- to eight-lane roadbeds anticipate a move toward the use of the private car, forming a megagrid infrastructure system that contains individual megablocks.

The region’s canal-focused villages illustrate a form of family-based, communal living that remains extant in many new residential projects but without the integration of productive land. The role of water as a symbol of the region’s ecosystem is present in almost every new development, but particularly in residential projects where water courses through artificial streams, canals, ponds, fountains and play areas. Separated from the dramatic nature of a walled garden, these water elements provide what Keyang Tang calls ‘a sort of cultural ritual to “get outside the city” while “returning to the past”’.26 Here stripped of its functions as resource, and connector, water becomes a metaphor, an image rather than environment, and a stand in for sustainability. Separated from ecologically productive functions, its ‘artificiality’ is of a different nature than the artificial ecosystem of the aquaculture built within rather than on top of the delta.

Panorama of the New Administrative District of Shunde including the new city hall and administrative buildings in 2004. The cutting of the mountainside (left) creates fill for the new ground plane built on former fish ponds. In the foreground is a sales centre for new residential development, now complete. To the right are new civic buildings under construction.


Megascene

Shunde’s websites actively promote the city’s ‘Return to Nature’, ‘the Natural Watery Region’, and ‘Traditional Culture’.

To create the new ground plane for industrial agriculture, industrial and technology parks, and entirely new cities, large amounts of the mucky delta must be filled. The effect of this filling is evident, not only in the loss of productive agricultural land but also in the denuding and carving out of the area’s hills and mountains which provide the material for the infill. Each block of the new city swallows numerous fish ponds with little attention to existing land divisions or waterways. Landscaping – requiring constant watering by mobile tankers throughout the cool night and tending by manual labour throughout the hot day – serves to augment the monumentality of the district’s open spaces, roads and buildings, but does little to relieve the excessive scale of roadbeds.

Preservation is also a developmental imperative necessitating the survival of parts of rural lifestyle and the building of new sites to selectively frame history and tradition. In Shunde, the 400-hectare (988-acre) Shunfeng Mountain Park sits at the juncture between the old and the new cities. Containing both historic and recreated features, the park conjoins Chinese and Western characteristics, with reference to Chinese historic landscape elements and a programme designed to be a ‘leisure and body-building people’s park’ affording the qualities of a ‘city-lung’.

Shunfeng Mountain Park provides the entire district with a landscape and heritage site in which views to and from it suggest a history of urban and landscape construction deeply tied to long-standing religious and cultural traditions. Stanislaus Fung in his reading of the traditional text on Chinese Gardens, Yuan ye, within both a traditional Chinese and a Western philosophical context, offers an alternative way to understand the potential of such a monumental restructuring of tradition: ‘The borrowing of views is discussed in Yuan ye as eventful encounter and depends on the notion of tradition, here conceived not as a tradition of stylized or designed objects but as embodied practices of daily living.’ Such ‘embodied practices of daily living’ may present opportunities for urban design to create new identities in physical and mediated space in a context where official history and tradition are carefully curated.

Shift

According to Elvin, before the Southern Song Dynasty, the breach of a tidal barrier resulted in significant erosion of the northern shoreline of Hangzhou Bay. In the 12th century shoreline stabilisation was therefore needed to protect the inhabitants from incursions by the tide. Sea walls were built on both sides of the river. At the same time deposition of sediment blocked the southern draining streams creating flooding upstream. All the while the path of the river periodically shifted between three ‘mid-bay mountains’, hills called the northern, central and southern cleft. Like a gigantic funnel, the bay intensified the force of the incoming tides and the outflow of the river provided a counter-force, depositing and moving sediments brought in by the muddy tide, flowing south from the Yangtze River, located just to the north. The hardened edge of the sea walls bounced waves and deflected currents into unpredictable patterns of erosion and sedimentation.

By the 17th century, ‘the geometry was generating its own destruction’. Today the Qiantang River flows through the northern cleft, a path less than 200 years old, and the inflow and outflow of sediments are carefully and expertly harvested. New land for urban growth is created daily. In 2010 an urban design competition was launched by the City of Shaoxing to generate ideas for a ‘Riverbank City’. On the southern shore of Hangzhou Bay, 20 kilometres (12½ miles) south-east of Hangzhou, the new city is part of the planning project for Zhejiang Province and is nested within the ‘Regional Plan for the Yangtze River Delta’, the first cross-province regional plan in China. In this enormous planning project, the port of Shanghai is being promoted as an ‘International Gateway for the Asia Pacific Region’. A mental image of a gigantic bird – ‘One Body and Two Wings’ – locates Shanghai as the body and Nanjing and Hangzhou as the two wings. The social project of this gigantic bird aims for ‘a well-off society in an all round way by 2015’. All of this is to take place in a region that in the 18th century was referred to as the ‘Chinese Netherlands’, given its extensive polder landscape, much larger than its European contemporary.
The brief for this new city was similarly dynamic. The goal was to design a new town sub-centre, south of the main new town that is to be built within the next 10 years. To do this the design teams were requested to minimise large-scale public buildings and, at the same time, create centralising space and form. Feedback from Shaoxing planning officials reflected the codes and sustainable development tropes of central planning such as a call for two main streets and four main functions including main public facilities such as sports buildings, hospitals and cultural facilities, service centres, commercial facilities such as supermarkets, commercial complex, office buildings and green parks. Directives included requirements for at least 25 per cent of green land and water, an urban complex in the core area with a scale of 50,000 square metres (540,000 square feet) of built-up area and 20,000 square metres (215,000 square feet) of land area. Buildings ‘especially residential’, were required to be in south-north direction and the two main roads could not be changed.

The competition entry titled ‘Water Town’ consists of three formal ‘shifts’ that open up the logic of the megablock. The first is the result of a happy error, where the new road grid does not align with the existing canal grid. This results in varying block shapes, divided by an interconnected water network that supports a bus-on-water. The second shift is the insertion of as many boat slips (lou) perpendicular to the canal grid inside the megablocks as possible. The lou is unique in Shaoxing and its surrounding areas; it serves as a boat slip for daily commuting, for loading, to wash clothes or vegetables etc. As it only has one end that connects to an outer water body, and the other one is a dead end, no boats pass by. The third shift is a rotation of the core of the city within the water network, which creates open triangular water spaces, grand views and reference to an adjacent low-rise and dense walled fishing village called Lihai. These formal moves follow the rules of the megablock and at the same time serve to replace the redundant inner road infrastructure of the megablock with an infrastructure of water. The water body is designed on the patterns of slow water flow and social water use in the region.

Emphasis is also placed on the design of new microclimates. For example, a boat pavilion provides a cool shelter for commuters waiting for the morning bus-on-water as well as an environment for groups of elderly residents to socialise. Each pavilion is also a sensing device, tracking slow ecosystem change as well as announcing the fast coming and going of the boat. The project of slowly opening the contained and stagnant fresh water to the push and pull of saline water by the ocean and the river is mediated by everyday observations of fish and plant health. In this city, gates, valves and weirs are a shared resource, operated remotely. Like an urban game, residents can modulate water flows, pushing high bacteria content water into constructed wetlands as well as pulling salt water into fishing hot spots. A second microclimate example is a roof-top plaza in the Central Business District. Tilted to create a viewing plane toward a canal that passes under an elevated highway, the plaza is designed as an energetic environment for youth. Below the plaza is a mat of shopping accessed by pedestrian malls and narrow streets. Monumental office and hotel buildings, each designed with a charismatic shape to encourage affection in the residents, punctuate this intimate retail base. At night the illuminations of

Facing south, this night view of the competition entry shows the shift of the Water Town in relation to the alignment of the megablock megagrid surrounding it.
environmental support system making the city a place where one becomes more familiar with the ‘strange stranger’ that is nature. These views offer an alternative to the ‘money shot’ that often frames an urban design project through a singular lens of creating an extremely high value product. When built, the views of the Water Town can be reproduced via mobile phones and digital cameras in everyday life, creating an image mixing space where residents continue the project of building the digital representation model of the city.

These microclimates engage the Confucian ideal of harmony and the contemporary ecological theory of resilience, prompted by the ‘Culture Debate’ occurring among Chinese urban residents after partially recovering from the shock of rapid change since the 1980s. According to Zha Jianying, this debate includes, among other topics, a renewed interest in Confucianism, Daoism and Buddhism. Ecologists used to believe that natural systems have an equilibrium-seeking force and that disturbance is not natural; however, contemporary ecology now engages a non-equilibrium framework of ecosystem dynamics, understanding that disturbance is natural. When the classical Confucian ideal of harmony is viewed side by side with this non-equilibrium framework, some productive resonance occurs that can move the desire for a scientific approach to ecosystem management towards an ecological model that includes humans. These could open formal planning moves of conservation and preservation towards options that engage everyday life micro-practices of socio-natural interactions as discussed above. Chenyang Li states that the ‘notion of harmony does not presuppose a given, fixed underlying structure in the world; if the world is to have a structure, it is a result of the harmonizing process, rather than a precondition for harmony. We may call this radical notion of harmony “deep harmony” as opposed to the kind of harmony seen as conforming to a pre-existing structure in the world ... Deep harmony in this sense is a self-generating harmony.’ The non-equilibrium frameworks of ecosystem dynamics as well as the microclimates of the competition entry engage this generative, nonlinear and integrative imagination of change.

Conclusion

The questions raised in this paper are meant to point to areas for further investigation, not as indictments. The city and people of Shunde, for example, are living the experiment of ‘creating a future with urbanisation’ where ‘the future lies in the past’, a difficult task that begins to take into account the need to balance economy, culture and ecosystems, but remains lacking as it negates the megadelta within which it is built. In Shaoxing, residents are living the experiment of the expanded port city, as the ‘International Gateway for the Asia Pacific Region’, an image that continues to separate water from land. In the unfolding urbanisation of China, urban ecosystems and the larger ideal of sustainability will have to be understood as more than ‘greening’. This will necessitate a conceptual move from the metaphorical to the metabolic within mediated and sensorial dimensions.

Can other scales be evoked beyond those claimed by the discipline of urban design to create sustainable Asian megadeltas? A more nuanced embrace of harmony could become a meaningful way for Chinese residents themselves to engage and participate in shaping the culture debate at the local urban scale. Could microclimate changes prompt
formal design projects of conservation and preservation? At another scale, political scientists and environmental activists are shifting our attention from the land to the sea, speculating on how ocean space can become a space for co-operation for human ecological security. Similar dialogues are occurring around mountain space, in the context of shrinking Himalayan glaciers. Can the 11 Asian megadeltas become the sites for new human hydraulic interactions that are responsive to changes in their headwaters and midstream water-sharing projects? Understanding megadeltas in the context of both their hydrological and urban histories may offer a way to conceive the future megalopolis as a resilient system in this stretched environmental frame. However, without deeper consideration of the flow and everyday life of all people in and out of these regions, the cultural, economic and social implications of the megalopacy being created today hinder the success of the sustainable Chinese urban project.

**Notes**

1 Megadelta is a generic term given to the very large Asian river deltas: the Huanghe (Yellow), Changjiang (Yangtze), Pearl, Red, Mekong, Chao Phraya, Irrawaddy, Ganges Brahmaputra, and Indo. This term was developed by the Asia Pacific Network for Global Change in 2004 as a conceptual model toward establishing capacity building networks among fluvial and coastal specialists of the Asia Pacific regions, especially those from developing countries.


13 McGrath and Shawe.

14 Gottmann, Megalopolis, p 5.

15 Gottmann, Megalopolis, p 5.

16 Gottmann, Megalopolis, p 7.


18 Campanella, The Concrete Dragon, p 41.


20 Research in Shunde was conducted in autumn 2004 as part of a team of faculty and students in University of Illinois at Chicago’s Urban Planning and Policy Program and School of Architecture hosted by the city and its local development company to work on proposals for new residential developments in Shunde’s New Administrative District.


23 K Monson, ‘Stringblock Vs Superblock: Patterns of Dispersal in China’, AD: New Urban China, 78 (September/October 2008), p 47. Here we use the term ‘megablock’ rather than Monson’s ‘superblock’, first because of the enormous shift in scale and, second, in order to look at the way individual ‘blocks’ are linked into larger systems.

24 Monson, ‘Stringblock Vs Superblock’, p 47.

25 Monson notes megablocks may reach 20 hectares; developments of this kind can be seen in Shunde’s expanding suburbs.


28 Quotations from promotional materials are taken from the four-volume report: Shunde New City: Planning, Operation, Industry and Culture provided by Shunde’s planning department.


30 Elvin, The Retreat of the Elephants, p 150.

31 The urban design firm TILL was invited to participate with Zhejiang University.


33 The number of bridges created by these shifts was the reason the entry did not proceed to the second round. They were considered too expensive.


37 Shunde promotional materials.
