In his lecture ‘The Open City’, Richard Sennett (2006) pleads for an approach in urban design and planning which creates conditions for an evolutionary city. In his view, the current generation of designers and planners is still too focused on the city as a closed system. As a result, many cities become frozen entities, unable to cope with social, economic and physical changes, inducing problems of economic and social stagnation and destruction. Sennett argues that we must regard the city as an open system, which can deal with change and uncertainty and which is able to adapt to unforeseen new circumstances.

This plea is relevant for any city, but it is extremely relevant for delta cities. Deltas have been considered attractive urban locations for centuries, because of the splendid conditions for different economic activities: agriculture, fishing, trade, navigation and port development. In many countries, delta cities are not only flourishing cities but also the national economic engines and the cities with the most dynamic social and cultural life. Delta cities welcome more than goods and money; they are marked by people arriving, leaving, passing or staying, and leaving their imprints on the life in the city. This quality of the delta city, its capacity to deal with permanent economic and social change and evolution, can only be maintained if the city truly functions as an open system.

At the same time, the delta city should be able to deal with the dynamics of the delta itself as a natural environment, defined by the influence of currents, waves, wind, tides and sediment transports from the sea as well as from the rivers. Because of this dynamic character, the natural environment of a delta is an extremely open system, constantly changing and taking different forms. If you make an overview of an evolving delta landscape, with one picture taken at the same spot every hundred years, you will get a movie of a slowly but substantially changing landscape. Currently, accelerating climate change and rising sea levels represent additional factors of change in delta regions.

This means that a delta city has to deal with two different dynamics, one related to environmental processes, the other to societal processes. These dynamics become very complex when they are intertwined with each other, and in deltas they are interwoven. Both environmental and social dynamics have their own rhythms and speed, simultaneously influencing each other and dependent on each other.

Urbanized delta areas require particular attention not only because of climate change and rising sea levels, but because of the speed with which delta cities are growing and expanding. In order to be able to deal with the societal dynamics driving urbanisation, as well as with the natural dynamics driving changing environmental conditions, it is necessary for designers and planners to study, understand, estimate and interpret the different dynamics of the delta city. This conclusion was already made by the American landscape architect Ian McHarg in the 1960s. He emphasized the importance of understanding the differences in the speed of change of the landscape versus the speed of change in urban patterns and infrastructure networks.

His observation was that systems with a low speed of change (i.e., environmental systems) should be considered the most important in the long term, needing enough space for their slow but very substantial dynamics.

When the evolutionary process of change of these systems gets frustrated, for instance by uncontrolled urbanization, serious disasters like floods will be the consequence. McHarg’s book ‘Design with Nature’ (1969) is a plea for taking the fundamental processes of the natural environment as a basis for urban design and planning. As a matter of fact, the process of the formation of the delta landscape, the making of networks of infrastructures and the process of urbanization can be considered as different processes which can be visualized in different series of maps. Studying important historic stages in these different processes, analysing how these layers relate to and influence each other and developing hypotheses and theories on the important issues in the evolution of the urban delta has become known as the ‘layer approach’.

For the new generation of urban designers and planners, as well as for the new generation of civil engineers and policy makers, it is extremely important to be familiar with the complex dynamics of urbanizing deltas. They need to be able to create the conditions for future delta cities to function as open systems, systems which are prepared to deal with the uncertainties in climate change as well as the uncertainties in future societal developments and related claims on land use.

‘Building with Nature’ and ‘Working with Water’ are slogans which fit this approach: not only understanding natural processes and paying attention to them, but also considering natural processes as forces which can contribute to a new way of designing, engineering and building the urban delta landscape. To date, several experiments have implemented this approach, like the ‘sand engine’ at the coast of South Holland. Projects like these can be regarded as experiments in making a new-type of coastal or deltaic landscape as such.

An interesting additional aspect of several projects in this book is that students made serious attempts to elaborate this concept of building with nature to create a new type of urban landscape. The discovery of the possibility of designing new patterns for urbanization in the delta landscape by applying a ‘layer approach’ and ‘building with nature’ is one of the most exciting results of the Delta Interventions Studio.