Longue Durée

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New approaches for combining flood protection, soil regeneration and water management with urban design, landscape architecture and spatial planning in delta regions require knowledge of the nature-culture relationship over time. The history of reciprocities or divides between design, engineering, science and governance in the operationalisation of natural forms and processes determines the current state of delta regions and their performance. Therefore, an understanding of the logic behind the palimpsest of occupation, infrastructure and natural strata from the past to the present must guide any spatial intervention that seeks a new balance between nature and society. In the development of cities and regions, at any time, there is the concept of Longue Durée recognizing the formative forces of nature and the relevance of historical concepts that must be taken into account (Braudel, 1949). Therefore, the main question of this issue is:

How can interdisciplinary approaches of design, engineering, science and governance respond to the environmental crisis and steer upon the Longue Durée of the delta?

In the field of historical research, investigations on the relationship between landscape, water technology and urbanism have more or less been the non-explicit object of study. Also here there is a segregation between architecture history research in relation to the study of urban form, landscape history or geology studies, and the study of technological history. The study of deltas should include all these dimensions under the term Longue Durée. This concept was introduced by Fernand Braudel (1902-1985) who wrote *La Méditerranée et le Monde Méditerranée á L'Epoque de Philippe II, The Mediterranean and the Mediterranean World in the Age of Philip II* (1949). Braudel is famous for his vast panoramic view and the use of insights from other social sciences.

The concept of the Longue Durée is the first of three time levels. The first involves the geographical/environmental time, with its slow, almost imperceptible change, its repetition and cycles wherein change is irresistible. The second level of time comprises social and cultural history and the third level consists of events, respectively fast and fastest. →

The cover of this issue of the journal is showing the Longue Durée of the city of The Hague in the Netherlands. Here the original geomorphologic subsoil of the coastal territory is drawn, including the sand ridges, interrupted by peat layers with their parallel discharges through a creek system. In The Hague these structures were a determining factor for the city structure which is laid over it. The Hague started as a settlement that benefited from the shelter of the sea dunes and on the ridges had dry ground to stand on. At the foot of the dunes on the land side, the clay grounds were covered with a thin layer of sand which were suitable for farming. These sand ridges were also the transport routes and still today these are dominant in the main structure of the city (Meyer, 2005).

Legend to the cover image

- Young dune and sand beaches
- Old dune and sand beaches
- Old and/or young dunes and sand beaches (width of less than two meters)
- Sedimentation at Duinkerke
- Holland peat

The Longue Durée is operationalised in the Netherlands by the Dutch Layers Approach (Hoog, Sijmons and Verschuuren 1998) that is used in spatial planning but strictly in its temporal dimension. The layers approach was developed by a group of urbanists and landscape architects as a conceptual framework to guide Dutch spatial policy. The original approach distinguishes three types of connected layers characterised by different rates and types of (potential) spatial development and change. The lowest and slowest layer is represented by the subsurface layer (soil, water, nature, landscape) that consists of long-standing structures that are difficult to change. The middle layer corresponds to the network layer (infrastructure) that represents large-scale civil structures that can be changed but still at a low rate and often involving high costs. The upper and fastest layer is the occupation layer (living and working) that represents the (use of) buildings with a relatively high rate of change (dRO Amsterdam 1996; Hoog, Sijmons and Verschuuren 1998).

The Longue Durée is an important concept when studying the natural hydrological and geotechnical systems because it gives insight into how the landscape has been altered by human activities. This understanding is evermore needed in the process of integrating flood risk management with spatial planning and design and in revisiting the role of design through interdisciplinary lenses. Over time flood management has become fundamental in offering the primary safety condition to urban development in the Netherlands. Van der Woud (1987) calls this the *conditio sine qua non*, meaning, without dikes, there is no spatial order. Technical interventions make the Dutch territory liveable; and the government has a strong and coordinated responsibility for both safety and spatial planning (Hooimeijer, 2014). How can this be turned around? Here the relevance of historic concepts, interventions and approaches to present-day problems can be found in the work of different great thinkers over time. Niccolò di Bernardo dei Machiavelli (1469-1527) even claimed that:

Whoever wishes to foresee the future must consult the past; for human events ever resemble those of preceding times. This arises from the fact that they are produced by men who ever have been, and ever shall be, animated by the same passions, and thus they necessarily have the same results.
(Machiavelli in Viroli, 1998)

Lewis Mumford joins Machiavelli in proposing: 'Without a long running start in history, we shall not have the momentum needed, in our own consciousness, to take a sufficiently bold leap into the future' (Mumford, 1961). Mumford defines specific regional conditions in geographical qualities (soil conditions, climate, vegetation, agriculture, technical exploitation) that are of all times, and the existence of a dynamic balance with the region. Here he makes the connection between social and geographical aspects the main motive for studying history. In his understanding, to gain a perspective on the future social behaviour within the given conditions of a region one must look at its history (Mumford, 1938). Thus, history sets out lines into the future to enable understanding of the contemporary context.

The concept of Longue Durée underpins Mumford's argument in exposing the delta conditions as a common enemy for society. This has resulted in a strong sense of citizenship and powerful tradition in flood defence that has been the basis for urban design (in practice and form) in the Netherlands. Therefore, the wet and soft conditions generated the social and physical frameworks and/or traditions.

The functionality of history is also that it sets out lines that can be drawn into the future to be used as guides. History gives one a range of choices; it forms ideology (the possibilities and their form), it shows what can and what cannot be, what signs we use. Saussure (1974) defines the signifier, the form, the object, and the signified, the subject, the concept and/or context. Historical urban forms are the signifier of the relation of the development to the characteristics of the landscape. Signified is the logic between social, economic, technical and territorial circumstances that ultimately delivers the form of the city. This logic is necessary to really understand the development of cities, to be able to apply knowledge to future developments, and thus to continue the line. In order to deal with this crisis, we need to overcome segregation between engineering and design to be equipped to deal with the changing natural system. We need to go back to our roots, back to the balance with the natural system, which from the Netherlands is called the Fine Dutch Tradition, an obvious result of the coherence between water management and urbanism.

For this issue we have sought contributions that could address the niche that has developed over time between technology and nature, landscape and city. The purpose of the Longue Durée is to understand the changing roles and relations between technology and nature, landscape and city in order to understand its impact and future transitions away from it. The concept of Longue Durée can guide the design for a sustainable future.

The Journal of Delta Urbanism is a dedicated space for the dissemination of ideas and the construction, expansion and collection of an international body of knowledge for the discourse of Delta Urbansim. The first issue 'Premises' started the sharing of academic innovation and critical theory, best practices and projects, fostering new dialogues and translations between fields of knowledge and their experts contributing to the discourse.
This second issue continues to connect and expand the international community around Delta Urbanism. The diversity in unity is expressed in the growing diversity of voices that the journal is accommodating in the issue. As in the first issue, academic essays are published in the section 'Papers'. The four other section types are 'Practice', 'Dialogue', 'Project' and finally the 'Dictionary' building, which gradually expands the Delta Urbanism language by exploring, in every issue, the meaning of these two terms from an interdisciplinary design perspective.
JDU #2 has taken the Longue Durée as a concept to collect and connect contributions on the analysis of continuity and fundamental characteristics that form the common thread in the history of urban development in deltas. This red thread, which is the natural system, gives insight into how civil engineering and urban design relate. We understand that this knowledge is at the basis of a socio-ecological resilient and climate-proof urban and territorial project.

JDU's'Longue Durée' issue starts with the 'Paper' section, bringing a reprint of a lecture by Kenneth Frampton as the first essay. The original was published in February 12th, 1999, to commemorate the Raoul Wallenberg Memorial Lecture named "Megaform as Urban Landscape". The interest to reprint is the "human Longue Durée" that can be recognised in the premises of the mega structures. In his lecture, Frampton gave an overview of how in dealing with the larger scale of landscape and mobility, the megaforms took form in different parts of the world. The conceptual approach can be very much applied to the deltaic landscape, therefore the lecture is contextualised and illustrated by the name deltaic megaforms in the section 'Project'. The second Paper is titled "Building with nature, a 19th-century concept?" by Dennis Lambert and Fransje Hooimeijer.

It exposes the tipping point in history just when technology took over dealing with the conditions in the delta and replaced traditional knowledge that was accumulated over centuries. It shows the transition in the international context of knowledge development and exchange by taking two main figures, Thomassy in the USA and Scholten in the Netherlands, and their correspondence as a starting point.

The 'Practice' section brings the contribution of Garry Momber of the Maritime Archeological Trust who presents the perspective of history of water and land as assets to develop Nature Based Solutions in urban coastal zones. The other Practice paper, titled "Spatial water calendar. An illustrative workbook for adaptive transformation" by Inge Bobbink, Naeema Ali and María José Zúñíga, explores concepts for deploying climate-resilient design in deltaic regions which encounter environmental challenges. This results in design interventions that do not rely on a fixed plan, but rather propose and visualise a process using a 'water calendar' as the driving force. The spatial water calendar is a chart that helps to represent time linked to space and water, which can be useful to enumerate, elucidate, and determine time-based fluctuations in a landscape and make decisions accordingly.

The 'Dialogue' section of this issue has two contributions that discuss the Longue Durée of the profession and systems. The first Dialogue is a round table discussion with Chris Zevenbergen, professor of Delta Urbanism at the TU Delft, Carola Hein, professor of Architecture and Urban History, also at the TU Delft and Lars Marcus, professor of Urban Design at Chalmers University of Technology in Gothenburg. The exchange was urbanism in light of environmental crisis, sectoral versus integral, and the agency of change of the disciplines and over time.
The second Dialogue is about how the Longue Durée of public cooperation has been crucial in deltaic conditions and how to adapt this traditional approach to an urban development where people would like to 'do it themselves'? Simone Rots, partner in Crimson Architectural Historians and Urbanists and Jacqueline Tellinga, a publicist and concept and area developer at the municipality of

Almere exchange ideas on “aided self-help” and “sites and services” in the delta.

The section ‘Project’ starts with a piece that highlights a technique in the development of knowledge about the mechanism in the delta: the Waterloopbos in the Netherlands and the Mississippi River basin in the USA. The current state of both models could be exposed as a new technique in which maybe the Longue Durée of the relation between humans and nature can become evident. The section continues with an elaboration of the project by Jaap Bakema for Lage Land in Rotterdam reflecting on Kenneth Frampton's lecture on "Megaform as Urban Landscape".

In the first issue MaartenJan Hoekstra, architect, urbanist and historical linguist, Assistant Professor Section of Urban Design at the Faculty of Architecture and the Built Environment, kicked off with the etymological origins, current meaning(s) and other interesting details of the two terms Delta Urbanism. In this issue we invited two scholars to present their disciplinary perspective on these terms. Antonia Sebastian, Assistant Professor of Watershed Hydrology & Flood Hazards; Faculty of Earth, Marine and Environmental Sciences at the University of North Carolina at Chapel Hill, USA, wrote her perception of the term “Delta”. Kanako Iuchi, Associate Professor Disaster Humanities and Social Science Division at the Regional Resilience Planning Lab at Tohoku University in Sendai, Japan, gave her interpretation of “Urbanism”.

We hope the contributions will be enjoyable and informative to the concept of Longue Dureé and are eager to invite you for future contributions to our journal.

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