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Book review

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In 'Infrastructural Urbanism' from 1999, Stan Allen reminded us that architects failed to keep up with the ever-increasing scale of urban complexities in the late modern to post modern era.¹ However, much of the concern was the crisis of 'meaning in architecture', reflecting an internal disciplinary struggle of architectural semantics in postmodernism. Arguably, architecture became absorbed with a higher level of interpretation in representation and meaning, which perpetuated a self-referential disciplinary dialogue. In doing so, architects lost the ability to think *technically* through systematic planning and, perhaps more importantly, engage with the public realm, communities, and engineers, as well as those bureaucrats and politicians with the power to rework land and territory outside of the traditional canon of architecture with a capital 'A'. Allen calls for architects to see the expansive reach of infrastructural practices as not invisible, but an active element of urban design and processes of urbanisation more broadly. Yet, in Allen's recommendations, the material substance and examples offered remain at the scale of more common architectural matters of intervention.

Twenty-five years on from Allen's seminal essay on infrastructure, the world is different. The design disciplines are now challenged by intensifying questions regarding the environment, politics, and society. The extra-large-scale today is less about the structural configurations or aesthetic preferences, as formalism has run its course; instead, what is at the forefront of the questions of bigness in the built environment for design researchers and architectural practices is the shared concern of climate change and the demands to have shift their lenses to respond environmental justice, decentralising and outdating the western canons of design practice. Banal and seemingly anonymous architectural practices operate through the backstage of urbanism and neoliberal capital markets, with infrastructure as one of the most important facets of the built environment if we want to truly make the future world a better and healthier place. For Derek Hoeferlin — the principal architect of [dhd] and chair of the landscape architecture programme at Washington University St. Louis — the vital infrastructural landscape depends on the massive regional watersheds

around the world that engage local communities and land-use-oriented managing partners.

Derek Hoeferlin's latest book, *Way Beyond Bigness: The Need for a Watershed Architecture*, presents alternatives that render obsolete siloed architectural practices. Architecture now must engage and work through massive scales of extra-urban interventions. Not only is it relevant to simply move up in architectural scales of objects themselves, like we have seen through the 'extra-large' projects in *S, M, L and XL* from Rem Koolhaas. Hoeferlin suggests a much greater scale — *beyond* bigness.² But what does it mean for architectural work to be at the scale of 'bigness?' And how is it any different than architectural practices using the same tools and techniques, yet just increasing dimensions? For Hoeferlin, the question ironically is not scale per se, but a way of entering the larger 'scale decision-making' process (p. 21). Especially in Hoeferlin's work in partnerships with allied design fields, which include landscape architects, regional planners, civil engineers and geographers, it is critical to re-establishing architect's role in shaping and informing our future world.

The primary content of the book is organised around three large-scale trans-political boundary river basins: Mississippi, Mekong and the Rhine. Hoeferlin tells us that these regional watersheds were selected for study because 'each enables large-scale industrial, agricultural systems to connect neoliberal economies, nation-states, and private industries across global trade networks' (p. 63). The river corridors are so widespread that they each surpass multiple political governances, climate zones, and diverse landscapes: the Mississippi River as the second longest river in North America passes two Canadian provinces and drains thirty-two states in the USA; the Mekong River extends its reach across six countries, including China, Myanmar, Lao, Thailand, Cambodia and Vietnam; and the Rhine River winds through six countries, including Switzerland, Liechtenstein, Austria, Germany, France and the Netherlands. It is also clear that these three environmental corridors originated as natural watersheds, but later became territorialised, occupied and managed through diverse agencies that turned them into 'technical lands' for capturing resources, ultimately decoupling the rural–urban binary and boundaries.³ Intricate diagrams describing management relations and maps outlining agencies geographic scope (pp. 70–85) help to illuminate how spatially vast and incredibly complicated the layers of bureaucracy the three watersheds influence spread — crossing communities and political boundaries, and, in some cases, with overlapping bureaucracies and organisations.

Hoeferlin begins the book by sharing a personal story from his experience of the devastating Hurricane Katrina in 2005 and its catastrophic impact on landscape, people and economies. Decisively unclear was what the role architecture may have during such devastating environmental events. Conceivably, two important design research and book projects, *Mississippi Floods: Designing a Shifting Landscape* by Anuradha Mathur and Dilip da Cunha and *Petrochemical America* by Kate Orff, come to mind when working at this scale and scope of hydrological landscapes.⁴ Both projects, *Mississippi Floods* and *Petrochemical America*, explore the deep structural relationship between the river basin and

human occupation situated at the intersections of ecology, landscape, contamination and, yes, architecture. Hoeferlin continues this discourse in suggesting that the 'Mississippi River has been altered from its natural state into a controlled water system by the main-stem infrastructural developments' (p. 97). In other words, Mathur, da Cunha, Orff, and now Hoeferlin argue that the features of the geographical composition of river waters and flood systems are cultural and political constructs that serve as human-oriented resources. Such design practices respond to the call for action to address climate-related impact. As such, it is critical for the design community to learn from and be informed by the communities involved, including the US Corp of Engineers, native peoples, local farmers and governing river commissions.

Several transect diagrams appear throughout the book as double-width fold-out pages. These drawings meticulously describe the regional circumstances and watershed landscape as a map on one side and, on the other, a sectional drawing to unpack the various infrastructural interventions along the ever-changing elevations along the flow of water into the transitional ecosystems of dams, locks, levees, and basins that are ultimately released into ocean estuaries. Along with the consistent and graphically compelling drawings, the book includes several striking photographs taken from Hoeferlin's own personal accounts and field visits. This type of multi-scalar interpretation of the hydrological infrastructure cited adjacent to one another signals what 'bigness' really means — a regional infrastructural network at the scale of the planet yet constructed at the scale of ubiquitous and repetitive architectural interventions.

What matters is not only the scale of the wicked problems in climate research in relation to design practice. Moving in and out of different scales and extents of research, the number of global watershed maps provides just how much of a scalar breach informed by intimate personal narratives from diverse places and communities can activate agency *through* design research. From large global watershed research, engagement with local communities, and even down to hand-held equipment, additional contributors from over two dozen researchers and scholars in the book complement the various definitions of bigness.

For example, Jesse Vogler suggests that attention should be focused on the transmissions of floodplains that become the 'fundamentally disruptive' region of watersheds, 'disturbing the controlled wildness of the picturesque imaginary' (p. 184). Moreover, Vogler retells the deep histories of the floodplains defined by industrial practices that have 'fractured this [Mississippi River Basin] region into closed parcels of extraction, production, and displacement'.⁵ The story of river bottoms is more than the landscape itself. Shelby Elizabeth Doyle looks to finding alternative design solutions to 'adapt' in a landscape where communities are purposefully moving water across Cambodian midlands for resources, fishing, and irrigation for farming. Moreover, Doyle highlights how global entities become involved, including tensions between Chinese corporations and the US Department of Interior for sharing knowledge to suppress communist reach into the Cambodian watershed region — resulting in a politically motivated hydrological infrastructure, both physical and bureaucratic.⁶

Another notable essay takes a different approach to a 'big' scale problem. In the essay 'Monitor', Duong Van Ni explains the importance of 'appropriate representation of participants' when working with and committing to local community groups, such as farmer associations and youth groups along the Mekong Delta in Vietnam. By providing hand-held equipment to community groups, Ni demonstrates the power of access to achieve three primary goals: offer monitoring systems to community-based organisations, cultivate a network of local communication channels and increase science and environmental education.⁷ By simply giving people access to monitoring kits, with hardware and software included, and teaching communities how to use these tools, power shifts into the hands of those working and shaping the land for local interests and to increase resident resources. In this case, the book is ultimately a call for advocacy at the site of regional river basin landscapes, as described by Neeraj Bhatia. Bhatia reminds us that '[no] longer is the architectural object stable, it is part of the transforming territory'⁸ In other words, it is not an individual 'designer' who will solve 'big' problems but will require rethinking and reworking how design disciplines and architectural practices actively enter conversations through collaborative listening. It calls for a greater recognition of working with large institutions and non-governmental agencies to simultaneously give power back to the hands of those impacted by infrastructural practices since the rise of modernism and the governance of land in late capital economies.

After an initial pass leafing through the substantive 600 pages, the book may appear scattered with various interruptions and secondary voices in-between Hoeflerlin's personal, on-the-ground recordings and site-based research. However, upon a more gradual and deeper reading, this structure adds to the robustness of research and mirrors the complexities of the river basins spatial dynamics and administrative logistics. The book encourages the design fields to engage in projects outside the traditional confines of dense urban cores, including those governed by institutional or private development in the city, and explore 'water-based advocacy' at the world's end and our ecologically sensitive tributaries (p. 39). *Way Beyond Bigness*, and the research it employs, expands disciplinary boundaries and offers an extensive perspective for how, and who, shapes the watershed infrastructure against the rising planetary urban background.

Notes and references

1. Stan Allen, 'Infrastructural Urbanism', in *Points + Lines: Diagrams and Projects for the City* (Princeton, NJ: Princeton Architectural Press, 1999), pp. 46–89.
2. Rem Koolhaas, Bruce Mau, and Hans Werlemann, *S, M, L, XL* (New York, NY: The Monacelli Press, 1995).
3. For more on 'technical lands', see *Technical Lands: A Critical Primer*, ed. by Jeffrey S. Nesbit and Charles Waldheim (Berlin: Jovis, 2023).

4. See Anuradha Mathur and Dilip da Cunha, *Mississippi Floods: Designing a Shifting Landscape* (New Haven, CT: Yale University Press, 2001); and Kate Orff and Richard Misrach, *Petrochemical America* (New York, NY: Aperture, 2014).
5. Mathur and Da Cunha, *Mississippi Floods*, p. 185.
6. Shelby Elizabeth Doyle, 'Adapt', in Derek Hoeferlin, *Way Beyond Bigness: The Need for a Watershed Architecture* (San Francisco, CA: AR+D Publishing, 2023), pp. 355–65.
7. Duong Van Ni, 'Monitor', in *ibid.*, p. 368.
8. Neeraj Bhatia, 'Advocacy', in *ibid.*, p. 527.