

**Critical urban water landscapes –  
A North-South research-by-design university network fostering the co-transfer of  
knowledge for urban areas characterised by changing water regimes**

In the rapidly developing urban regions around the globe, the opportunity to link local urban development with actions targeted to prevent ecological catastrophe has become an imperative. Cities situated in geographical locations characterized by changing water regimes, such as flood exposed urban sites in deltas, on the coast, or along rivers, are particularly critical. Suggesting prevention or adaptation measures in these sites requires a process of interaction between diverse governmental bodies, civil society, and private actors – which is not easy in times of economic and political turbulence.

Hence our commitment aims to activate stakeholder involvement and to facilitate a multidirectional knowledge transfer, recognizing the various levels of interactions necessary to advance both knowledge and action on site, within an ever-decreasing local government budget, and an ever increasing complexity of issues to be addressed by ever more tailor-made strategies – this prompts the quest for new knowledge *transfer* methodologies, responsive to both the local sites/ locally active site actors, and the global knowledge community/ globally active researchers.

The question is then if sustainable socio-territorial transformation can be supported by a *co-transfer* of knowledge, catering to the different demands? Such a transfer concept relies on the co-creation of urban transformation knowledge while also involving the co-creators in the act of continuously translating their knowledge to each other and to different socio-political contexts and geographical locations.

**Transdisciplinarity as a basis**

As academic disciplines *and* professions, urban planning, urban design and landscape architecture deploy the theoretical force of reasoning *and* practice-driven actions. So doing, they model a particular approach to science. Since the 1990s, this has been known in academia as *transdisciplinarity* or Mode 2 science – where those other than scientists become included in the process of knowledge production. Helga Nowotny, social scientist, former European Research Council president and one proponent of this shift, has forcefully argued that science can no longer be practiced by isolated scholars, sitting in academic ivory towers researching abstract issues and offering up their findings to society for implementation (2016, 2001). Scholars of the design disciplines have long understood that the knowledge creation process of planners and designers – a designerly way of knowing – includes practice as well as research (Rittel 1977, Schön 1983, Simon 1996). Design, their followers argue, should be recognized as a Mode 2 knowledge production field, distinct from Mode 1, which is modelled on the natural sciences. Academia plays an important role in this knowledge production process, bridging disciplines and geographies, and ensuring links to professional actors, public authorities, and civil society in their respective localities.

**Beyond Best Practice as a methodology**

To frame the transdisciplinary foundation and the pluralistic actor constellation of our networked research-by-design approach, we use *Beyond Best Practice*, a method derived

from Design Thinking (Diedrich, Kahn & Lindholm 2015), based in an emergent discourse of site theories (Kahn, A. and Burns, C. 2021), stringent enough to capture the complex project set-up academically, and flexible enough to allow for ongoing adaptation practically. Beyond Best Practice takes aim at accepted value-systems and conventionally silo-ed working methods grounding two types of practice activity: professional practice and academic practice. It proposes a framework of research operation:

- a *Motivation* derived from acknowledging problems in need of reformulations
- a process developed through *Collaborations*,
- a method based in *Conversations*,
- a mindset deploying *Speculations*
- an application through *Revaluations*

With their focus on end-game scenarios best practice-based urban development models disregard in-situ qualities, and often lead to generic, '1-size-fits-all' solutions. Conversely, appreciating (in the double sense of recognizing *and* increasing) in-place value lies at the root of 'site-specific' urban transformation. The activity of picking up best practices, whole cloth, from one situation and dropping them down in another suggests a blind faith in what worked 'over there' coupled with blindness to the as-found site conditions and in-place resources characterizing 'over here'. In calling for a move 'beyond' best practice one can question that blind faith and see past that site-blindness – to recognize site-specific potentials, qualities and values already existing in place. A key motivating bias of this methodology might be stated thus: for best practices to accrue value, they must be translated, not simply transplanted.

A viable urban transformation model must produce concepts and processes applicable in more than one place, over time. It needs to include *generative* strategies. This means to detect, interpret and communicate the conceptual and fluctuating aspects of design and planning processes, often overlooked. To be made intelligible these 'evolutionary' elements need a theoretical framework of a kind other than usually connected to end-scenario-driven planning, and design as form-making. We argue this framework can be retrieved from Design Thinking (cf. Lawson & Dorst 2009, Brown 2009, Cross 2007). Design thinking constructs relationships between things previously perceived as unrelated; it separates what has previously been tightly associated. It creates new value by 'crossing the line' (in English – 'acting unacceptably'), messing with and disrupting what we have been taught as the 'right way' to work. The first action in a Design Thinking model is to 'design questions', to ponder the problem from various angles (general and specific) until a meaningful question can be found. By framing and reframing problems, Design Thinking offers an alternative to "solving the wrong problem" by importing a best practice answer that may not actually apply.

### **Networked studio teaching with students based in Buenos Aires, Malmö and Delft**

The Complex Cities Studio, developed by the Urbanism Department of TU Delft and the School of Architecture, Design and Urbanism of the University of Buenos Aires (2006-2018), focused on different socio-physical urban conditions within the Buenos Aires Metropolitan area and was organized on a pre-agreed agenda negotiated between universities, governmental, civil and private parties. Their aim was to investigate the forces that determine the formation of the metropolitan structure, the potential arising for urban regeneration and how to construct spatial strategies for socio-spatial integration with an

integrated and collaborative approach as well as the socio-spatial conditions for development. Taking a relational approach between stakeholders and networks, the involved students explored the need and potential for collaboration of diverse actors in a common search for development based on socio-spatial integrative strategies. This approach defined the main goals of understanding the dynamics of an urban metropolis in a developing country. This included the metropolitan /urban analysis approaches at different scales, the diverse actors and their interests, and recognizing the many systems (functional networks, natural systems) that define the metropolis, the relationship and interactions between diverse stakeholders with divergent interests, the impact on urban development and the distribution of costs and benefits. The exploration of synergies between changes brought by globalization forces in the existing city and the influence (or not) of planning tools, interventions and strategies as well as the exploration of how the performance of the water system can be addressed under a more integral perspective for development. The intent was also to explore, through an urban design intervention, the potential programs and spatial strategies of development by applying research-by-design methodology and to develop a design strategy for socio-spatial integration.

The studio project 'Critical Urbanity: Water cities – Marginal cities', a partnership between the Landscape Department at the Swedish University of Agricultural Sciences in Malmö and the School of Architecture, Design and Urbanism of the University of Buenos Aires (since 2017) introduces a global and cross-disciplinary perspective into learning processes. The objective of the project is to teach young professionals and researchers to reflect critically upon and devise concrete, sometimes hands-on, actions to overcome exclusion in urban landscapes, specifically those characterized by changing water regimes. Climate change and globalizing economies are global challenges that have an impact on the spatial organization of urban sites on a local level. Educating young landscape architects and urbanists from different global localities together intends to address both the global dimension of designing urban water landscapes, and location-specific differences. At the same time, the project immerses young professionals and researchers with different origins and upbringing into specific local and disciplinary contexts, enables them to develop critical conversations and transferal thinking in a global context. The task for them, in each studio, has been to conceive strategies, toolkits, methods, actions and prototypes targeted at local problems instead of promoting a global recipe for local problem solving which would be impossible to succeed. In summary, the project aims to formulate local pedagogical formats for teaching and research across continental, cultural and geographical boundaries.

### **Re-valuing knowledge from one studio project to the next**

Our exploration of co-transfer methodologies has been conducted from the ground up, in focalising on select examples. The *Emscher regeneration* in the Western German Ruhr region has been used as a reference case to co-transfer knowledge to the *Reconquista river sanitation plan* in greater Buenos Aires, Argentina. Insight gained from working with the Reconquista project has prompted transfer of lessons learnt to the *Frihamnen urban transformation* in Göteborg, Sweden. Currently, knowledge transfer is being launched to inform the ongoing *Südliche Friedrichstadt regeneration* project in Berlin, Germany. The selected transformation projects had already been organised as 'urban living labs' in practice by their local authorities, each of them differently, and according to their local complexities. Yet, a common methodology has been adopted to participate in these projects as academic

actors focusing on design studios where students developed spatial designs scenarios and experimental development proposals. As teachers and researchers conducting these studios in a networked research-by-design approach, i.e. in collaborating and conversing both with actors on the site level, and with each other on the academic level, we have been able to work 'beyond best practice', to raise *and* re-value knowledge from each of the individuals studios in order to make it travel from one project and one place to the next (Janches, Diedrich and Sepulveda, in publication; Diedrich & Janches 2016).

### **Co-transfer of knowledge – an exploration through ongoing studio teaching**

Design must be enriched by technical and theoretical knowledge on subjects such as policy, ecological urbanism, transport infrastructure and forthcoming others to keep up with the discipline as it transforms. From topical design questions, research and education can introduce theory and practice of design action and design philosophy. Integrating students into real life challenges enriches local discussions and prompts involving aspects of landscape architecture, planning and urban design, through collaborations and conversations with partners (institutions, governments and communities). From morphological considerations to socio-cultural implications, the integration of thinking across the three disciplines allows us to understand different interpretations on how an urban space can unfold in continuous transition. We have explored urban dynamics and the role of people in different scenarios in the Global South and Global North through exchange programs between our universities and programs to develop opportunities for improving some of the physical and social erosion and the environmental stress that characterize each area as well as to understand possible inertias for integrated urban growth.

These academic exchange programs have been achieved by developing co-transfer approaches for new concepts in landscape, planning and design, and for decision making under uncertain conditions in rapidly changing environments in order to enhance the conditions for the sustainable development. The intention of each studio was to devise urban strategies that would affect the in-between spaces so that they become places for the generation of new forms of civic activities and starting points for the revitalization of each area. Each program has also aimed at rethinking the existing public urban landscapes, in order to create alternative means and strategies for broader social interaction. As researchers, we want to deliver knowledge usable in any situation, without delving into a generic formula. Instead of advising *what to do* we venture to question *how things get done*. Instead of a prescriptive 'best practice recipe' we look for habit-inhibiting generative forces: ways of thinking, ways of problem framing, ways of value spotting, ways to fuel processes of communication. Therefore, we subscribe to an understanding of design 'as transformation', which involves a change from one state to another, it oscillates between finding out what is there and testing what it could become. The existent drives the design, many actors are part of the design. This is not form as object but trans-form-ation as process.

### **References**

- Brown, T. (2009), *Change by Design. How Design Thinking Transforms Organisations and Inspires Innovation* (New York: HarperCollins).
- Cross, N. (2007), *Designerly Ways of Knowing* (Basel: Birkhäuser).

- Diedrich, L., Janches, F. (2016), Critical urbanities: Water cities – marginal cities. Striving for integration through a research-based design pedagogy. *The 9<sup>th</sup> International Conference of the International Forum on Urbanism (IFoU): From Knowledge to Development: New university challenges for a contemporary urban development* (Buenos Aires 2016)
- Diedrich, L., Lindholm, G., Kahn, A. (2015), Beyond Best Practice. Re-valuing Mindsets and Re-imagining Research Models in Urban Transformation. *Transvaluation—Making the World Matter. Proceedings of International Symposium Searching for Alternative Making of Values Through and In Research* (Gothenburg: Chalmers University of Technology).
- Gibbons M., Nowotny H. (2001) *The Potential of Transdisciplinarity*. In: Klein J.T., Häberli R., Scholz R.W., Grossenbacher-Mansuy W., Bill A., Welti M. (eds) *Transdisciplinarity: Joint Problem Solving among Science, Technology, and Society*. Birkhäuser, Basel
- Janches, F.; Sepúlveda, D.; Diedrich, L. (in publication), Exploring critical urbanities: A knowledge co-transfer approach for fragmented cities in water landscapes. Marinic, G.; Meninato. P. (eds.), *Informality and the City* (New York: Springer)
- Kahn, A. & Burns, C. (eds) (2021), *Site Matters – Strategies for Uncertainty through Planning and Design*. 2<sup>nd</sup> edition. (London/ New York: Routledge)
- Lawson, B. and Dorst, K. (2009), *Design Expertise* (Oxford: Elsevier).
- Nowotny, H. (2016), *The Cunning of Uncertainty* (Cambridge: Polity Press)
- Nowotny, H., Scott, P. and Gibbons, M. (2001), *Re-Thinking Science. Knowledge and the Public in an Age of Uncertainty* (Cambridge: Polity Press)
- Rittel, H. and Webber M. (1977), *Dilemmas in a general theory of planning* (Stuttgart: IGP).
- Schön, D. (1983), *The Reflective Practitioner. How Professionals Think in Action* (London: Temple Smith).
- Simon, H. (1996), *The Sciences of the Artificial* (Cambridge: MIT Press).