

# methodology

## **Infrastructural Mapping of the Invisible Influence**

*Speculative 'unveiling' of the hidden territorial dynamics*

### **The Zone of Disassembly**

*Unveiling the hidden flows of e-waste*

North Sea: Landscapes of Coexistence  
Transitional Territories Studio 2018-2019

## INTRODUCTION

In the architectural profession, the research-design relation is a never-ending debate. The strong subjectivity behind these two domains often suggests a variety of possible answers, depending on the arguable specificity of the case. Although many professionals may define design and research as essentially different, the practices are strongly interrelated and dictate the contemporary comprehension and complexity of architecture. For both essential methodologies, “Design by research” and “Research by design”, the outcome per se is different, yet similar ingredients are defining it. However, both research and design strongly affect the conclusion of the prescribed task, leaving no space for compromises regarding the intentions of these two effectively connected practices; the finely balanced symbiosis between them is required for optimized design production.

In the Lecture Series of the Research Methodology a set of methodological apparatuses to architecture has been presented, attempting to extend our current epistemological framework regarding the research practice. Presented from various angles, the bright spectrum of different methods covered by this Lecture Series has fostered the student’s ability to critically recognize the optimal methodological regarding their own problem statements and outcome expectations. Furthermore, every lecture has somehow affected my general understanding of various research methods and has nourished my current position. However, the lecture ‘Drawing the Subsurface’, by Fransje Hooimeijer, focusing on the invisible layers, informing and affecting not only our built environment but also our culture and socio-economic relations, has inspired me the most. Together with the assemblage of the invisible layers influencing the topological network of different domains, the subsurface appears to be essential for both, infrastructural and territorial scale. It is visibly reflected by the formation of the service ‘non-places’<sup>1</sup> emerging from non-human action as purely functional realms.

1. AUGÉ, M. 2008. *Non-Places: An Introduction to Supermodernity*, trans. John Howe. *London and New York: Verso*.

This essay will explore how the agency of mapping can inform of the various effects inherited within the infrastructural domain of the subsurface. The main approach of the ‘Transitional Territories’ Studio relies on the inter-scaler correlation between infrastructural agencies and the North Sea context. At the same time the studio questions the definition of the territory as an outcome of a de facto dualistic character; the fictional outcome of the mapping and physical consequence of it. The main protagonist, the North Sea territory, is regarded as a global infrastructural domain, catalyzing numerous socio-economic relations regarding the local, yet also a global network of flows. While most of these infrastructural practices, being part of the global networks of flow, such as highways, ports, channels, airports remain highly visible, their complexity and effects result in exclusive ‘hidden’ dynamics, ungraspable for the public’s eyes. Focusing on the Free Economic Zones as political, economic and cultural threshold regarding the entire scale-palette, this research will aim to analyze the hidden influence of this spatial agent through mapping and cartography. The main goal behind these methods will be to unveil the hidden potential of this infrastructural domain, yet staying rather objective and site-specific while acting as a ground base for the definition of the design objectives.

## II RESEARCH-METHODOLOGICAL DISCUSSION

Infrastructure is often associated with physical networks: communication, transportation, utility supply, etc. This bounding medium between global and local has become the focal point of access and contact; the domain governing the everyday space. As coined by Keller Easterling, one should consider these networks as a powerful tool, allowing control over the global system of flows and build environment; each system has embedded potential and a certain scope.<sup>2</sup> The hidden and unfolding relationship between these potentials has been labelled as a disposition. Disposition, per se, is nourished by different active forms such

2. EASTERLING, K. 2014. *Extrastatecraft: The power of infrastructure space*, Verso Books.



FIG. 1 | New Logistic Flows- North Sea 2100

3. See *ibid.*; Active forms build disposition—a conditioning substrate or an infrastructural chemistry fundamental in organization.

That disposition is politically powerful in that it can disappear and be discrepant, yet it could also act as the foundational medium that decides what survives. Active forms are meta-agents that can catalyze major changes that precludes a conflict.

4. Free economic zones (FEZ) or 'free zones' are a class of special economic zone (SEZ) designated by the trade and commerce administrations of various countries. The term is used to designate areas in which companies are taxed very lightly or not at all to encourage economic activity. The taxation rules are determined by each country.

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5. MOSTAFAVI, M. 2016. *Cartographic grounds: projecting the landscape imaginary*, Chronicle Books.

6. CORNER, J. 1999. *The agency of mapping: speculation, critique and invention*, na.

7. STORR, R. 1994. *Mapping*, Museum of Modern Art New York.

8. CORNER, J. 1999. *The agency of mapping: speculation, critique and invention*, na.

9. *ibid.*

10. *ibid.*

as multiplied objects and nodes of flows (switches and remotes).<sup>3</sup> Regarding their strategic position, many of these active infrastructural objects embed transition and have become focal points of economic and political interest, allowing specific authorities to expand their territorial and global influence. As in the case of the Free Economic Zones<sup>4</sup>, one could speculate that the access to sovereign power positions certain capitalistic entities in charge of this economic void. Thus, being an example of a transitional space, this infrastructural domain simultaneously affects multiple territorial scales, the forces of which often remain ungraspable due to their high degree of complexity. Paradoxically, the infrastructure facilitating these flows is highly visible, yet its adjustable potential and complex character propose an enigma for its users.

The main method used in the research process to understand these hidden forces is mapping. Due to complexity and ambiguity of this notion, I would like to divide in context mapping and concept mapping; the first being projective and the second one, being speculative.

To fully grasp how these structures influence the built environment and socio-economic conditions, one should focus on developing certain sensitivity towards the different territorial scales and context specificity. To do so, basic cartographic exercises were used as a foundation tool, facilitating the further gathering of information and knowledge about the North Sea environment. Since there is lack of an 'absolute' standards and conventions regarding the notion mapping, the precise techniques for describing the ground conditions can transcend the variety of scales; from the body to the territory and from the aqueous to the terrestrial.<sup>5</sup> Data collection and presentation are often disembodied from the existing ground condition, therefore the objective behind this exercise was to reestablish and determine the project's framework and relation to the site (FIG. 1).

While contextual maps enhance the visual complexity and existing conditions by tracing, the conceptual maps challenge the existing environment by re-imagining the pre-conditions as a tool to discover the concealed properties of the transitional territory.<sup>6</sup> As cartography relies on certain objectivism and accuracy of representation, conceptual maps have essentially fictional status and act as a visual tool unveiling the invisible, often by constructing a different speculative realm.<sup>7</sup> By projecting unseen forces and relation on top of the existing physical attributes of the terrain, mapping allows a profound understanding of various dispositions and complex dynamics. They operate through various scales and emerges outside from the normative by departing from both imagination and creativity.<sup>8</sup> Furthermore, the application of subjectivity and judgement towards the milieu's constitutes is what diversify mapping from traced descriptions. Mapping becomes a project on its own. It is a tool allowing one to liberate himself from the visible limits, by challenging the reality and projecting the research and design's objective beyond the geographical and physical constraints; mapping allows re-evaluation of the hidden effects by re-imagining the essential relationship between essential elements. Robinson and Petchenik claim that 'in mapping, one objective is to discover (by seeing) meaningful physical and intellectual shape organizations in the milieu, structures that are likely to remain hidden until they have been mapped [...].'<sup>9</sup>

Since only what is visible could be changed, the unfolding agency of mapping allows designers and planners to project upon the existing milieus. By visually abstracting the infrastructural and network complexity to a comprehensible degree, they can identify and re-imagine the potential of the unveiled patterns. Therefore, mapping is vital for the conception of the context, yet also fostering one's specific position towards the discovered spatial problematics.

### III RESEARCH-METHODOLOGICAL REFLECTION

Both main methods, tracing and mapping, are somehow difficult to be fully comprehended, partly because of their rich historical background. Since the notion of mapping is so enormously vast, for the purpose of this essay I will focus primarily on the unfolding agency of mapping the invisible; it could focus only on 'what is' (tracing), yet it can (also) speculate about 'what is' and about 'what is not yet' (mapping).<sup>10</sup> Many of the major tracing techniques, such as areal oblique and zenithal views were developed during the 16th century, becoming the main planning, analyzing and constructing a tool for city and landscape domains.

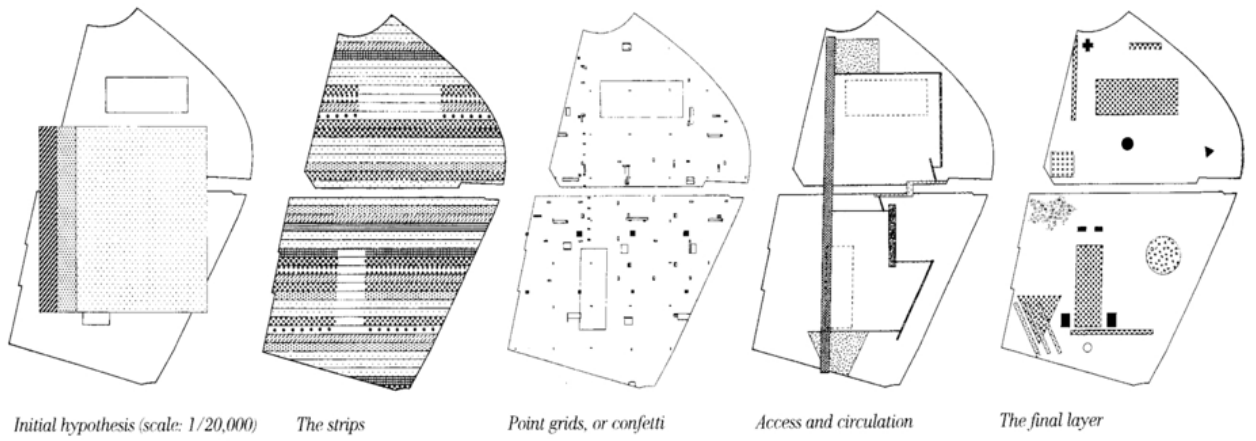


FIG. 2 | The famous layered map of 'Parc la Villette' project created by OMA, isolates various 'systems' and explains the milieu's superimposition as main concept for the project.

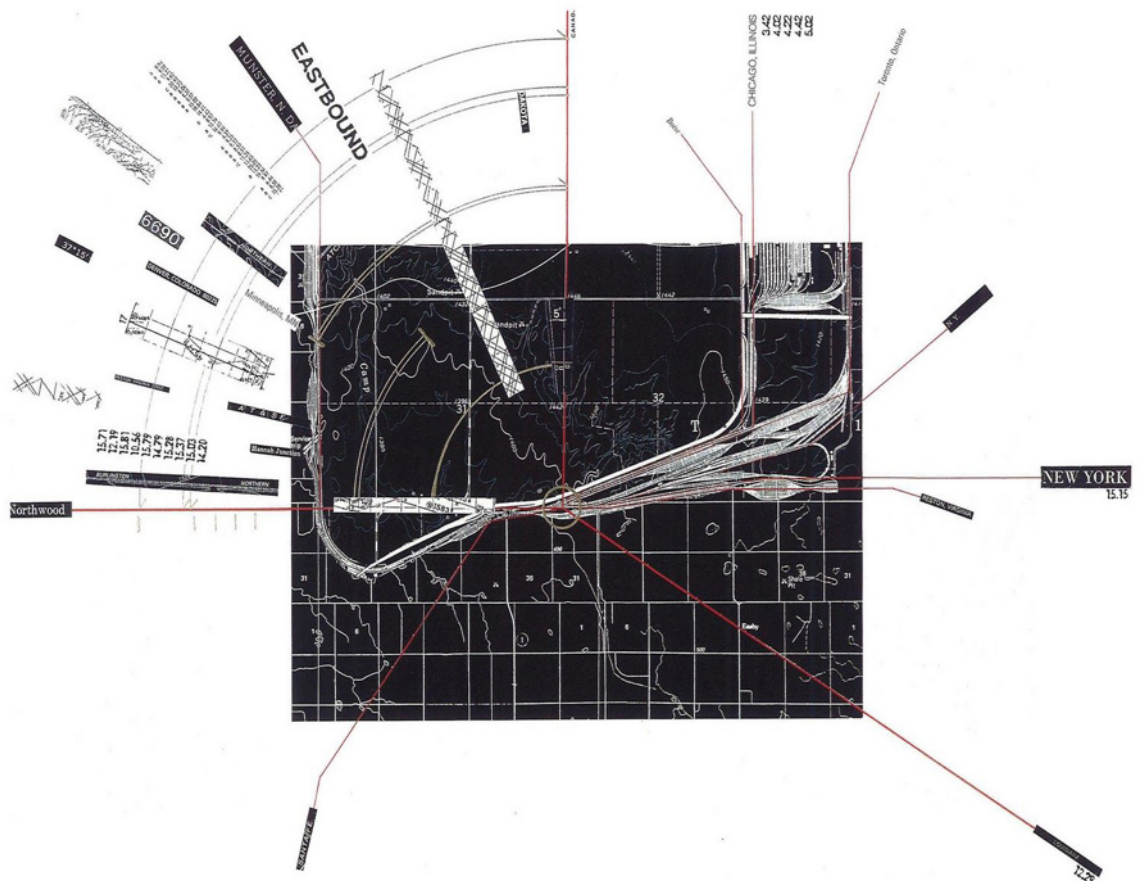


FIG. 3 | 'Rail Network' is example of 'Rhizome' mapping created by James Corner. It depicts a station connectivity to other major American cities, while considering the topography, the legal division, etc. The overlap of information informs on various landscape and territorial dynamics.

11. The Enlightenment was an intellectual and philosophical movement that dominated the world of ideas in Europe during the 18th century, the “Century of Philosophy”.

12. CORNER, J. 1999. *The agency of mapping: speculation, critique and invention*, na.

13. *ibid.*

14. OTTO, F. 2003. *Occupying and connecting*, Edition Axel Menges.

15. PINDER, D. 1996. *Subverting Cartography: The Situationists and Maps of the City. Environment and Planning A: Economy and Space*, 28, 405-427.; COPPOLA, A. 2006. *Introduction au cinéma de Guy Debord et de l'avant-garde situationniste*, Editions Sulliver.

16. KOOLHAAS, R., MAU, B.-S. & OMA, S. 1995. M, L, XL. *New York: Monacelli.*; TSCHUMI, B. 1987. *Cinégram folie, le Parc de la Villette*, Princeton Architectural Pr.

17. DELEUZE, G. & GUATTARI, F. 1988. *A thousand plateaus: Capitalism and schizophrenia*, Bloomsbury Publishing;

18. CORNER, J. 1999. *The agency of mapping: speculation, critique and invention*, na.

However, the distinguishing point between these ‘crude’ projective techniques and the quantitative thematic mapping techniques is considered to be the ‘*Age of Enlightenment*’.<sup>11</sup> As an aftermath of those, various statistical, comparative and ‘zoning’ practices have emerged, preconditioning the current satellite and remote-sensing mapping agencies. In this line of thoughts, James Corner claims that although the apotheosis of these digitalizing processes results in the invention on Geographic Information Systems (GIS), ‘these techniques remain largely unquestioned, conventional devices of inventory, quantitative analysis and legitimization of future plans.’<sup>12</sup> However, the main research objective of these projective techniques is to establish a basic playground for the later speculative, creative mapping practices, revealing the hidden domains.

J. Corner challenges conventional understanding of mapping, by proposing a more social, imaginative and critical application of the domain and techniques. He considers mapping as fully operative tool, the potential of which can be used to expose, but also to connect and structure the hidden possibilities of the specific milieu: ‘this is less a case of mapping to assert authority, stability and control, and more one searching, disclosing and engendering new sets of possibility.’<sup>13</sup> Furthermore, these innovative mapping tendencies become essential for the design process during the postmodernism, allowing designers and architects to study and react upon the urban and landscape dynamics; the relationships between various spatial ‘agents’ whose effects define the contexts and its system of flows. Every form of intervention results in deformation, yet simultaneously correlation to the pre-existing systems of occupation, affecting the territorial patterns of distribution and networks of connectivity.<sup>14</sup> The concept of drifting and layering maps allows the designer to establish, concurrently, a personal engagement with the various constituents and analytically to separate the numerous objective and agendas. While the Situationist’s movement aims to align the otherwise inchoate, disparate elements of the urban topography,<sup>15</sup> the

layering techniques applied by Bernard Tschumi and Rem Koolhaas for the design of Parc de la Villette (FIG. 2) go one step further; they visually organize the different systems (programmatic, logistic and cultural) by establishing certain zoning and hierarchical logic for various spatial components.<sup>16</sup>

Based on these concepts, other complex mapping practices have emerged: ‘Game-board’ and ‘Rhizome’. Being rather speculative and experimental, ‘game-board’ derives from the drift and layering maps’ findings, yet discovering new conditions by reshuffling existing structure under the form of various scenarios. These visual ‘speculations’ precondition for unveiling the invisible dynamics, by redirecting the temporal play of these various forces, just as in the case of the ‘Rhizome’ maps (FIG. 3). The latter, however, is an open-ended, acentric, continually expanding system, with various entryways and exits; based on cycle-logic, this never-ending system is a way to experiment with the reality, as a tool stimulating cognitive processes and innovation.<sup>17</sup> Performance network resembles a set of interconnective systems, which ‘liberate’ various compounds by fostering non-hierarchical communication and ‘relationship among otherwise disparate parts.’<sup>18</sup> This never-ending mapping process, based on ‘disposition-agents’ inclusion rather than exclusion, proposes a whole new perspective over the spatial patterns, networks and context, nourished by the speculative character of the unfolding mapping agency. Therefore, one could easily re-imagining and re-discovering what usually remains hidden simply by speculating and challenging the visible, static organizations.

Regarding the North Sea territory, many of the hidden networks and layers de facto have great influence, although only a specific set of actors has access to those. Maps serve to first define the territorial framework and to classify and structure the objects of interest; by translating and projecting data of existing ‘glocal’ flows, one could recognize the spatial node, affecting the entire chain. Furthermore, unfolding maps could derive from these visual foundations, by considering ‘what is’ to be found and focus on the invisible agents and their connectivity to both global and local infrastructure networks and context. Therefore, the agency of mapping can inform and unveil the correlation between the hidden constitutions, layers and existing structures and organizations. By defining these sensitive territorial points, an acupuncture-like intervention will emerge, aiming to reshuffle these existing systems and re-imagine the

existing network order (political, social, economic etc.). This speculative approach, following the 'research by design' concept, will aim to unveil the power of the hidden infrastructural practices, by displacing and de-territorializing the essential spatial components.<sup>19</sup> Ultimately, unfolding 'Rhizome' and 'Game-board' mappings practices will take place as to visualize and objectify these findings; by aligning them to the specific context, re-territorialization through the multiple scales occurs. Mapping serves as a medium between hidden and visible, existing and speculative, mapper and constitutes, global and local, territory and analogous projection.

#### IV POSITIONING

M. Augé's argumentation leads towards the assemblage of non-historical, non-relation, non-hierarchical spaces, which is not a concern with identity, yet celebrate mobility, economic exchange and global networks.<sup>20</sup> These service spaces often are infrastructural nodes, regarding their context often resemble alienated objects, invisible for the perception and with a hidden disposition for control. As in the lecture presented by Fransje Hooimeijer, the infrastructure allowing the existence of these infrastructural nodes (non-places) is shaped not only by the visible layer, yet contains additional subsurfaces, sustaining the entire system.<sup>21</sup> While the infrastructure domain has such a great impact on our habitat and socio-economic environment, one should pay closer attention to the invisible constitutes and network, shaping our reality. Therefore, regarding the 'sub-surfaces' as an essential object, mapping them can inform a solid foundation. However, this analytical research through mapping provides the designer to construct an argument, to test it within the realm of rationality and reality and ultimately to turn the revealed practices towards more creative, productive and collective objectives.

One of the greatest challenges behind the territorial subjects is to identify what is the role of architecture within them. As deriving from various territorial scale, one will identify also various problematics; ultimately, the architectural intervention will address all of these. Therefore, the urge of precision and solid framework of analytical research through mapping will be needed in order to sustain your respond. Many of the outcomes will be based on speculative statements and abstract mapping, forming new milieu needed to provide the desired test-ground for the different composes. Therefore, the question of feasibility and objectivity will be vital within the Transitional Territories' Studio; keeping pace with the reality and consider the emerging results, spatial and theoretical, within the existing context is essential.

As my research will focus on the dualistic nature of the Free Economics Zones, which sustains some, while limiting others, the architecture will resemble action form acting through scales and networks of connectivity; the physical threshold of flows. The dualistic nature of the project as an infrastructural object, being aware of its architectural value, will tackle the questions toward the functionality and need of the profession. Since architecture is this perfect medium between infrastructure and social culture, absolute consciousness of the objectives, yet also clear personal position and self-awareness are urgent for the outcomes of the research. A further question, regarding the relationship between urbanist and architects, and where one could draw the line between those two strongly interrelated domains will emerge through the course of the design phase.

The current build environment often is a result of the constructed rules and hierarchies, preached by the capitalistic ideology. The design solution, deriving from my research, will aim to react upon those orders; classify the current patterns of flow, identify the different actors and reshuffle their appearance, by re-imagining the nature of the infrastructural node, called 'free zone'.<sup>22</sup> Therefore, the intervention will disobey the current rules and speculate via alternative design, juxtaposed to the existing library of references. In my point of view, architecture as a thinking process should provide more critique of the current issues, yet also come up with concrete solutions. However, I consider superficiality as a huge barrier, separating reality and academia. Many of the problems, addresses by students are abstracted to the level of imagination; questionable design problematics and re-imagination of the

19. VIKTOR, S. & MARION, R. 1965. *Art as Technique. Russian Formalism Criticism: Four Essays.*

20. AUGÉ, M. 2008. *Non-Places: An Introduction to Supermodernity*, trans. John Howe. *London and New York: Verso.*

21. HOOIMEIJER, F. L., LAFLEUR, F. & TRINH, T. T. 2017. Drawing the subsurface: an integrative design approach. *Procedia engineering*, 209, 61-74.

22. EASTERLING, K. 2014. *Extrastatecraft: The power of infrastructure space*, Verso Books.

same concept and/or typology over and over again is a good exercise, but pointless without specific context and accurate problem statement. In order to narrow down the points of interest, mapping resembles an appropriate tool, allowing one to keep the research coherent and unified while shifting among the various scales which the project aims to tackle. The studio's approach of regarding various scales, fits perfectly the ambition of my research, as the ultimate goal will be to deliver a complete product, approaching specific territorial domains and fields of interests. To do so, a clear awareness of the different components, forming and affecting the spectrum of influence of the 'free zones' will be needed.

By understanding the assemblage logic of these components, the unfolding agency of mapping depicts a systematic field of interaction, often invisible to the generic public. These hidden sets of economic and social dynamics form a potent control tool, which once visualized could also change their original purposes. Thus, unfolding mapping appears as an essential method, enabling designers to unveil the 'invisible' effects and potential of those spaces according to the territorial, yet also to the human milieu.





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- FIG 2. OMA. (1982). Program Layers. Parc de La Villete. December 22, 2018 from <http://oma.eu/projects/parc-de-la-villette>
- FIG 3. James Corner, Alex MacLean. (2000). Rail Networks. Taking Measures across the American Landscape. December 22, 2018 from <https://citymovement.wordpress.com/2012/07/12>

