

## **The Zone of Disassembly**

*Unveiling the hidden flows of e-waste*

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

Reflecting on the graduation period, I set out to investigate the assimilation of the hidden e-waste flows and their re-appropriation within the North Sea context. The research derives from the urge for reaction to the existing exceptional status of the free economic zone as a place of inequity, reflecting the current capitalistic dominance. The primary aim of the project was to establish an exception of the exception; a reaction to this imbalance, fostered by the free zone as a catalyst for consumption, production and assembly. To do so, the research investigates one of these so-called hidden planetary flows regarded as consumption's tangible outcome: the Waste Electrical and Electronic Equipment (WEEE). To comprehend the complexity of this problem, multiscale approaches have been applied to every step of the research; the scale-shuffling establishes certain sensitivity towards the various dynamics affected by the e-flows. It presents in the planetary context as to understand the geopolitical context and the 'spatial nodes' of the topic, the North Sea territory as key actor and accelerator within the WEEE dynamics and ends by 'zooming in' to the local context and existing waste-processing network of Germany (German Bight and Hamburg) as location for an exemplary spatial intervention tackling the aforementioned issue.

As part of the Transitional Territories studio, the research and the project positions itself strongly in the existing geopolitical context of the North Sea region. It's acting upon the existing infrastructural and spatial landscape of the North Sea region. as the main territorial objective is to re-imagine the existing network of flows by unveiling and re-introducing the hidden such. As the scope of the research constantly shifts between scales and various contexts it complexity also navigates between these various dimensions. The first objective derived from the research was the territorial one, or how to formulate a spatial intervention which has the potential to unveil these so-called hidden e-flows. This has naturally become the apotheosis of the research process: proposing infrastructural intervention which reshuffles the North Sea flows by transforming waste into 'matter'. With my mentors, it was quickly decided that the design project should be split into two autonomous spatial intervention as a result of the research's complexity and the dynamic context of this overexploited seascape. Therefore, an offshore island aims to navigate the territorial waste and material flows, while local disassembly plant transforms discarded gear into 'matter'. Concurrently, the sub-intention behind the project is to create a framework and define multipliable spatial syntax, which could be translated in various contexts. The design proposals aim to act as a highly site-aware set of interventions, revealing the existing e-waste pressure and communicating the sensitivity of the issue.

Both interventions defining 'The Zone of Disassembly', despite their spatial distance, establish functional coherence while linking sea and land (Fig.1). The first part of the design resembles an offshore WEEE port, which accumulates the existing e-waste flows in the North Sea, by maximising the potential income. This part of the proposal resembles an artificial archipelago, fostered by the absolute potential and undefined spatial density of the sea, by proposing two archetypes: offshore port-station and waste storage units. The approach behind this intention correlates to the so-called 'Medium Design' as it establishes active forms as defined by Keller Easterling and aims to define spatial syntax which can unveil these hidden flows' disposition.<sup>1</sup>

In this line of thoughts, the offshore port-station resembles spatial switch which coordinates the incoming WEEE flows and outgoing secondary raw material streams. At the same time, the storage units act as 'multipliers', which buffer to the existing flows' intensity. Their simplicity enfolds the possibility for hyper flexibility regarding the exponentially increasing e-waste pressure. The offshore intervention's compounds, propose displaceable objects which exact position stops to matter. It acts as a catalyst for a productive landscape fostered by the premise of absolute technology and horizontal densification. The configuration of the two compounds reacts to the pre-existing 'Maritime Spatial Planning' (MSP) policies as this spatial syntax proposes high adaptability to almost any seascape.

1. EASTERLING, K. 2018. Medium Design, Strelka Press, EASTERLING, K. 2014. Extrastatecraft: The power of infrastructure space, Verso Books.

This offshore intervention is a pivotal point addressing the territorial dimension of the research. It extends the scope of the on-land intervention by ensuring the 'effective' perimeter of the disassembly plant. As depicted by my mentors, this seascape intervention strategically establishes compositional ambiguity, which per se nourishes its degree of displaceability and absolute potential to establish a productive landscape of disposal. However, during the design process, a large amount of technical challenge behind such an intervention has been unveiled: as the automated program of the building's urges for a clear definition of the interior strategy for flows' assimilation, the seascape increases immensely the technical aspect of the intervention. This part of the projects also raises the question of architecture's necessity in a no-scale context, where the dehumanising dimensions of the functional productive space take command.

The second part of the project is positioned in a completely different context, establishing a close connection to the pre-existing urban tissue of Hamburg. Placed just next to the Euro-Terminal of the Hamburg Port the plant aim to utilize the existing local infrastructure as an important tool for the reintegration of the plant's disassembled outcome. While the offshore port establishes vital nodes handling the global streams of electronic dumping, the disassembly plant resembles a spatial medium, which blurs the edge condition determined by global and local dynamics. In other words, if the territorial objective sets to unveil the e-waste flows, the on-land intervention uses the domain of architecture to expose them to the urban social context. The exact choice of location prescribes the strong semiotic objective of the plant, as it provides the opportunity to construct strong visual expression of the 'hidden' problematic streams handled in its interior.

One of the big challenges in the design process was to define effective flows strategy within both interventions, which functionally complement each other. Through the elaborated study of the e-waste processing strategies and machines, the spatial dimension and means of the entire project were defined. Translating the entire disassembly process into a single diagram (Fig.2), has helped my comprehension of the spatial compounds forming both the offshore and the on-land spatial interventions. Concurrently, this visual tool had a direct input regarding the question of automated infrastructure by clarifying the processing stages which require manual labour to be included. By doing so, the proposed design of the plant aims to visualise these two different practices of the liner processing, by focusing on the potential for complimentary labour between humans and machines. This very sensitive correlation, firstly not visible in the research, questions the singular scale within the architectural intervention, by blurring and boundaries between automated production and human force. Soon the urge for such symbiosis will become explicit for the architectural practice. The on-land plant addresses this issue and aims to provide a functional interpretation of this problematic.

Furthermore, the disassembly plant aims to establish a potential framework, which spatially differentiates the automated and human-scale components. By stressing on the existing context, the building juxtaposes the offshore station's absolute character, by reacting to the complexity of the existing urban landscape. The continental intervention derives explicitly from the formal demand of the site, yet it questions the matter of scale for such a machine and it's a relation to the human dimensions. Its functional layers establish a symbiosis of flows constantly shifting between manual and automated labour force. Yet the agency of architecture serves as a medium between these two counterparts and defines the exact relation between them.

Simultaneously, the high degree of visual permeability embedded into the façade becomes the backbone of the architectural research question, which is to expose the hidden flows. Hence, the plant performs as spatial medium embedded with the sensitive political tension, surrounding the contradictive relationship between assembly and disassembly, material and scrap.<sup>2</sup> The monstrous intervention representing an actual processing machine sets to use the agency of architecture for its primary functions: to communicate and inform the public. It addresses the various social actors of the context, by exposing the physical acts disassembling. The building act as political infrastructure which transparency visually

2. RANCIÈRE, J. 2013. The politics of aesthetics, Bloomsbury Publishing, ibid.

addresses the urban public while the main act remains the sensitive issues of the material extraction via 'urban mining' processes. It aims to subvert the pre-defined relevance of deconstruction of electronic gear and re-extraction of secondary raw materials and precious metals.

The compositional character of the interventions, based on the spatial syntax track the exact direction of the pre-scribed flows and solves them strategically piece by piece. As a conclusion of the project, the outcomes of the design has shaped new premises for another extended research. The project constructs the disassembly process over various territorial scopes, one can easily 'deconstruct' it and define a new kind of composition based on the existing syntax. The act of 'displacement' fosters the perception of the project and the political integrity of this act of unveiling as it backcasts the design process by re-informing the research and testing the outcome in the territorial context.

In this case, the complementary nature of 'research' and 'design' in my project makes the distinction between both practices in the diploma's process extremely hard. Indeed, the physical intervention derives as a physical manifestation of the preliminary research, yet the processes of designing have blurred the boundaries between both. As the true nature of the research's intentions become tangible via the construction of architectural images, it allows one to tackle the existing problems with a higher degree of accuracy than a vague explanation of 'how it should be'.

3.OZORIO DE ALMEIDA  
MEROZ, J. 2014. Facts and  
artefacts: politics and aesthetics  
in the work of Formafantasma.  
Formafantasma, 177-187.

'The Disassembly Zone' just as emphasised in the research process, aims to use the means of architecture to address the invisible wholes within our current circular economy. During the design of this reverse logistics process, the urge for optimization of the existing assembly processes and production policies becomes highly sensitive. The lacking competence and awareness regarding recycling diminish the possibility for highly effective extraction of materials becomes visible. Currently, there is a huge gap in the design of products' circularity; objects are hard to disassemble and recycled due to lack of competence and economic interest.<sup>3</sup> This issue affected the entire design process of the project since one of the objectives was to propose a fully automated intervention, which due to the current global policies would become highly fictional. Furthermore, the high complexity of e-waste processing plants has barely been tackled before, due to the present nature of this problematic.

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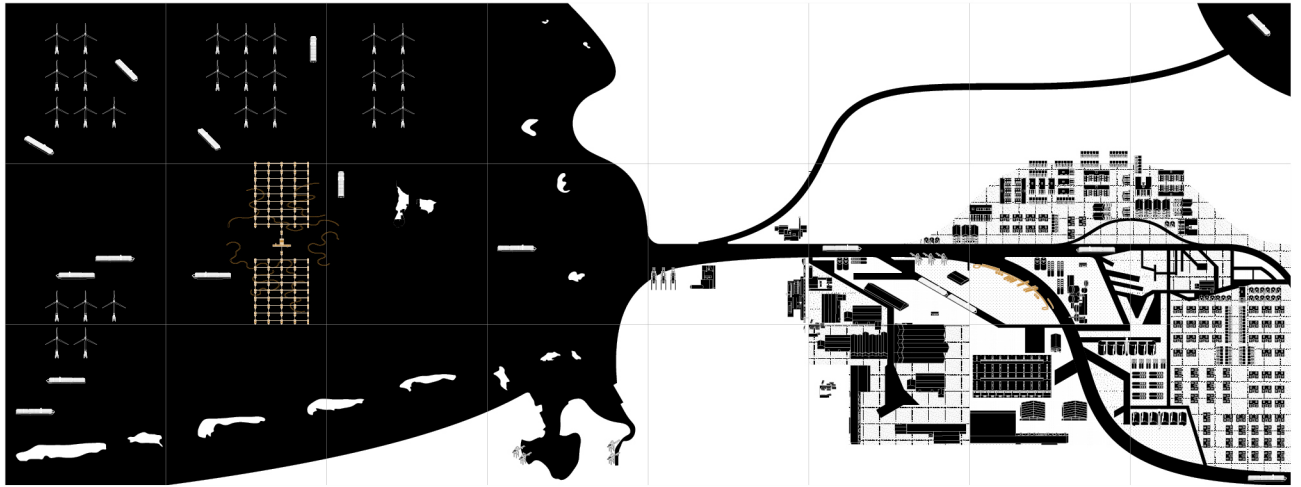


Fig.1 Abstract Territorial Map of the Interventions

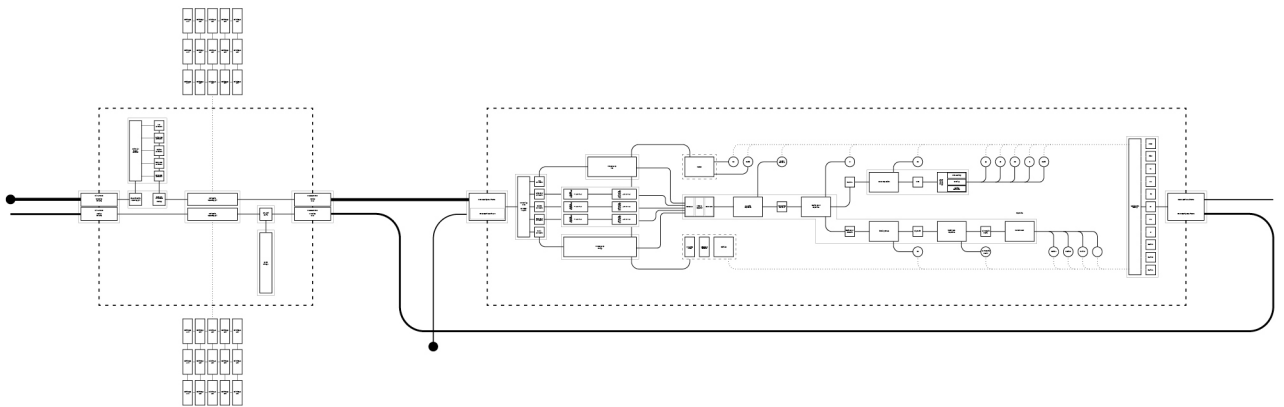


Fig.2 Mapping the Disassembly Process

## BIBLIOGRAPHY

AGAMBEN, G. 2005. *State of exception*, University of Chicago Press.

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

EASTERLING, K. 2018. *Medium Design*, Strelka Press.

GHOSN, R. & JAZAIRY, E. H. 2015. *Geographies of Trash*, Actar Publishers.

KOOLHAAS, R. 2002. *Junkspace*. *October*, 175-190.

LEPAWSKY, J. 2018. *Reassembling rubbish: worlding electronic waste*, MIT Press.

OZORIO DE ALMEIDA MEROZ, J. 2014. *Facts and artefacts: politics and aesthetics in the work of Formafantasma*. *Formafantasma*, 177-187.

RANCIÈRE, J. 2013. *The politics of aesthetics*, Bloomsbury Publishing.

ZAERA, A. & ANDERSON, J. S. 2017. *Imminent Commons: The Expanded City*, Actar Publishers.

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