Reflection

‘Machinic Utopias, Automated Futures’

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The following reflection is a critical assessment and reading of the processes followed throughout my graduation project. The project invoked my interests and broadened my knowledge in my current field of study and beyond. It is a personal and academic journey that I aspire to pursue further in my graduate studies.

Relevance to Graduation Studio

‘Machinic Utopias, Automated Futures’ acknowledges and documents emergent automated technologies in Westland’s horticultural cluster and seeks to conduce the area to sustainable modes of urbanization through shaping technological, productive, and socio-economic processes. The project assumes automation as a condition that supports the transition of Westland to a mixed-use sustainable paradigm. It depicts a design proposal that gradually transforms Westland from a merely productive model to a mixed-use livable city in the context of emergent greenhouse technologies. The project also researches and portrays the implications of greenhouse automated technologies on Westland’s urban fabric and social dynamics. Accordingly, the thesis falls under the Urban Fabrics Research Group, which addresses the impact of technological advancements on the livability, vitality and sustainability of the urban fabric.

Relationship between Research and Design

Automation and its implications on urban form have been an underrepresented theme in architectural and planning discourses. Understanding the societal and economic implications of automation generally and the effects of this phenomenon on the horticultural sector in the Netherlands specifically were the starting points of my research. Analytical drawings that depicted the accretion of greenhouse sizes throughout the years and their relation to automation, revealed the spatial implications of the phenomenon on urban form. It was evident that radical spatial shifts and the growth of the cluster mirrored the ongoing developments in horticultural production. Westland’s urban model is a consequence of capitalist agendas where changes in production patterns reflected in the urban configuration and social dynamics of the area. Theoretical findings
in combination with analytical research led to the formulation of scenarios that depict possible futures for the area in the context of automation. Research of the social and economic implications of automation along with analysis of the site informed the establishment of values and goals that guided the vision, strategy, and design. The values and goals were used as criterion against which proposals for the area were cross checked.

Understanding and documenting production processes and automated technologies, through greenhouse visits, allowed me to devise new spatial strategies for the site. It was clear through field research that automation was the condition that supports vertical stacking of components, enables vertical growth of production firms and minimizes their horizontal expansion. Automation was a prerequisite to vertically marry different programs to create sustainable and livable urban environments.

The design phase of the project consisted of successive iterations that culminated in a proposal for two pilot projects. The iterations represent reflective experiments where new plans were continuously tested and evaluated. The iterations were gradually framed and shaped by rules introduced at different stages. The rules negotiated between existing conditions and proposed values, between ownership, automation, residents, growers, etc. Many proposals were tested, assessed, and later rejected since they either fail to conform to previously set values and goals or relate to the surrounding existing context. This iterative and dialectic design process is a Research by Design where new knowledge gained at every repetition is used in testing new plans. The final proposal reached is not a fixed masterplan but rather a solution that could be further refined to produce new insights. Testing different proposals, molded by sets of rules, is another way of exploring possible scenarios for the areas. Though a desirable scenario was previously selected for the site, relating iterations to previously formulated scenarios raises awareness to what could possibly happen in the future if certain parameters and inputs are considered.

**Assessment of Methods**

Acknowledging that the spatial restructuring of Westland cannot be done at once, the strategy seeks to select pilot projects to test different proposals. These pilot projects are interdependent interventions with cascading implications on the whole site. This method which was termed
throughout the project as “hacking” emphasizes the cascading chain of spatial changes following the restructuring of a key project. Westland is full of active forms with distinct spatial affordances. Rearranging, shifting, and redesigning these active forms, i.e. hacking the active forms, triggers and propels changes in static elements on site and in the urban fabric. Rearranging existing greenhouses in Maasdijk and imported greenhouses from Ter Heijde and merging these active forms with other urban components support the creation of sustainable modes of urbanization.

In transitioning from the overall strategy to the design of the pilot project, it was important to translate the idea of “flipping existing greenhouses from north to south” to a tangible and practical approach. The proposed method would integrate imported greenhouses with existing ones, inform the rearrangement of the hosting site, and negotiate the different parameters (networks, housing, landscapes, ownership) and requirements (productive, economic, and social). The approach consisted of listing existing and proposed units or patterns and gradually merging and rearranging these building blocks to form typologies. The diversity of patterns and typologies enables the creation of different combinations that would later be tested in pilot projects. The flexibility and adaptability of these building blocks facilitate their transferability, replication and implementation in new sites. The Research by Design method allowed me to test and experiment with different typologies and generated new insights at every step of the project.

Social and Ethical Relevancies

Automation is a rife theme that is widely debated on the national and international levels. Governments are considering social and economic measures to mitigate the ramifications of this phenomenon on society and the economy. Automation is likely to result in gender pay gaps and could inordinately affect low-skilled laborers, migrants, and women of ethnic minorities. The project acknowledges the potential repercussions of automation on the future of work and the society through set a series of values that mitigate and respond to ethical and social predicaments. The values emphasize economic and social diversity, the integration of different social groups, equal pay and opportunities, etc. The project also proposes strategies that shift Westland from an economic monotony specializing in horticultural production to an area with diverse economic opportunities. The new proposal employs mixed-use typologies that allow for commercial
premises alongside productive areas and establishes a central business district in Honderland that attracts new companies to Westland. The overall strategy assigns the northern part of Westland as an area for recreation and agro-tourism. These new programs diversify the job market, provide opportunities for low and high skilled workers and compensate for jobs lost to automation.

**Project Transferability**

Mediating between different stakeholders and negotiating different residential, productive, technological, economic, and social parameters was a challenging task. As an urban designer, I was determined to negotiate the site conditions and requirements without sacrificing any of the components or the stakeholders’ demands. Though the thesis is entitled ‘Machinic Utopias, Automated Futures’ the project is not a utopian proposal per se but a radical and bold undertaking that could possibly be implemented in a potential site in Westland. The Research by Design method facilitates the transferability and implementation of the project and allows testing the proposal in practice.

**Limitations**

Despite reviewing municipal documents and visions for the area, a major limitation or weakness was the unsuccessful attempts to establish connection and cooperation with the municipality of Westland. Cooperating with municipality would have allowed me to understand the area further and would have informed the assessment of the municipal visions. Despite communicating with migrants and residents during site visits, documented interviews were mostly conducted with growers or greenhouse owners. Interviewing more residents and migrants could have inspired more goals and covered a larger number of stakeholders.

The different block sizes and forms generated during the design phase may at one point or another raise doubts, questions and confusion if not well explained. Formulating different typologies and block sizes left me with an array of shapes, sizes and possibilities. Clarifying my decisions at every step was important. Despite linking block sizes and typologies to existing production requirements,
the approach and typologies could have been explained further to eliminate any doubts or confusion.

Further research could have been integrated with regards to circularity and sustainability. The graduation project addresses these issues particularly in the formulation of scenarios and throughout the strategy by proposing the exchange of resources between the port and the greenhouse cluster, the use of geothermal energy, the recycling of rainwater, etc. Since the municipality of Westland emphasizes sustainability as a key goal, highlighting possibilities of resource exchange at different scales could have been researched further.

**Conclusion**

Westland is considered a leading Greenport in the Netherlands. The productive cluster’s paramount location and economic position are exploited to attract more capital and investments to the area. However, Westland’s monotony and intensive reliance on horticultural production, the reason behind its apparent success, could in the future become the cause of its obsolescence. In this regard, the solution proposed by this project is not an end-product per se but a premise that responds to long term technological, productive, environmental, social, and economic shifts. It is a sustainable and adaptable approach that enables Westland to race with technology.

As urban designers we should always respond to new shifts and to evolving paradigms. As active agents of change, it is also our role to address technological imperatives that affect our cities. On that account, I conclude this reflection with a quote from Reyner Banham’s book Theory and Design in the First Machine Age, in which he cautions that “the architect who proposes to run with technology knows now that he will be in fast company, and that, in order to keep up, he may have to emulate the Futurists and discard his whole cultural load, including the professional garments by which he is recognized as an architect. If, on the other hand, he decides not to do this, he may find that a technological culture has decided to go on without him.” Banham (1967; 329-330).