

Circular urban energy park

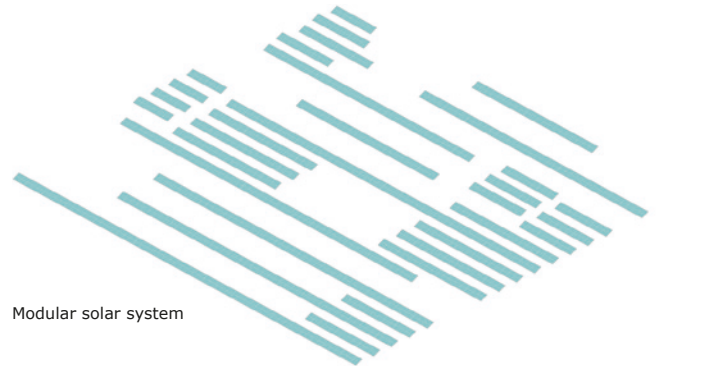
Transformation of the Hemwegcentrale

Yingzi Wang, August 2019 (Master thesis project; Landscape Architecture chair group)

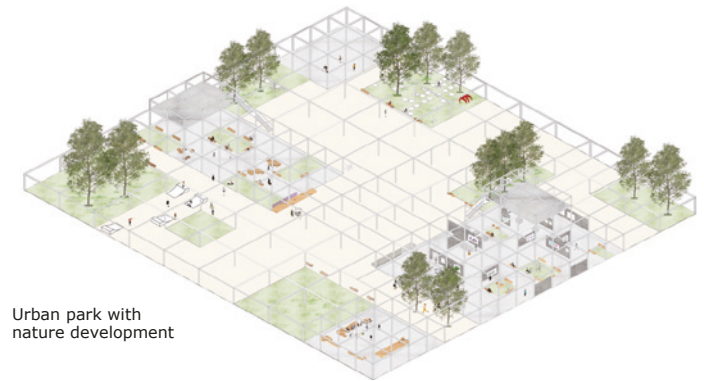
According to the recommendations by the Intergovernmental Panel on Climate Change (IPCC), the Netherlands need to achieve a 95% reduction of CO₂ emissions by 2040 compared to 1990. One of the measures that are taken is the closure of powerplants running on fossil fuels, like the Hemwegcentrale in the harbour of Amsterdam. The area around that landmark is slowly taken over by the growing metropole, and the site itself is expected to become part of the urban area as well (Havenstad).

This project explored the potentials of the Hemwegcentrale area as a sustainable urban energy landscape, in the complex context of a dynamic urban development in the next two decades. The urban context was analysed for the three aspects: *urban development*, *energy demand* and *ecological values* to evaluate the potential impact of the transformation and to select criteria for a sustainable energy landscape. Based on the context analysis, three models of the future Hemwegcentrale area were developed and evaluated by the established criteria. Subsequently, case-specific design strategies were developed and applied in the dynamic design for the Hemwegcentrale area.

The project shows, that the Hemwegcentrale area can indeed be transformed into a sustainable urban energy landscape, which provides sustainable electricity, improves the ecological value of the harbour and forms an attractive social gathering point, while maintaining the identity of the energy landmark. The inclusion of biological and cultural diversity, as well as the recycling of building structures in the design, reveals how the Hemwegcentrale can contribute to the desired identity of Amsterdam. Furthermore, the modularity of solar systems is found to perfectly match the dynamics of urban development, as well as the establishment of flora and fauna within the former industrial area.



Modular solar system



Urban park with nature development

Keywords

Urban, energy transition, Hemwegcentrale, models, criteria, Haven-stad, elevated solar panels, circularity

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