

Learning form the Oil Revolution understanding the past

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Abstract

This project visualizes the history and current presence of oil in our everyday surroundings in order to facilitate long-term urban sustainability and energy innovation. Designers and citizens around the world want buildings and cities to be more sustainable and ecological.

While their initiatives to reduce energy use are relevant, they often concentrate on individual structures rather than larger global flows, and on technological approaches disconnected from history, society, and culture. They fail to build a new ecological mind-set, a widespread popular culture of sustainability. An older culture already characterizes our cities: petroleum has shaped our modern world. To make a new world, we must first understand the pervasiveness of petroleum; how its production, consumption, and physical and financial flows have shaped cities and rural landscapes such as the Rotterdam/Antwerp area; and how oil companies, governments, and citizens co-constructed an oil-based modern culture over the last 150 years.

This project allows practitioners of the built environment and the general public to map how the petroleum revolution has driven architectural and urban design and how it has shaped both our behavior in and our perception of our cities. We seek to increase popular awareness as a foundation to develop new sustainable solutions.

Keywords

history; architecture; urban planning; sustainability; energy; oil revolution; petroleum; Rotterdam; Antwerp

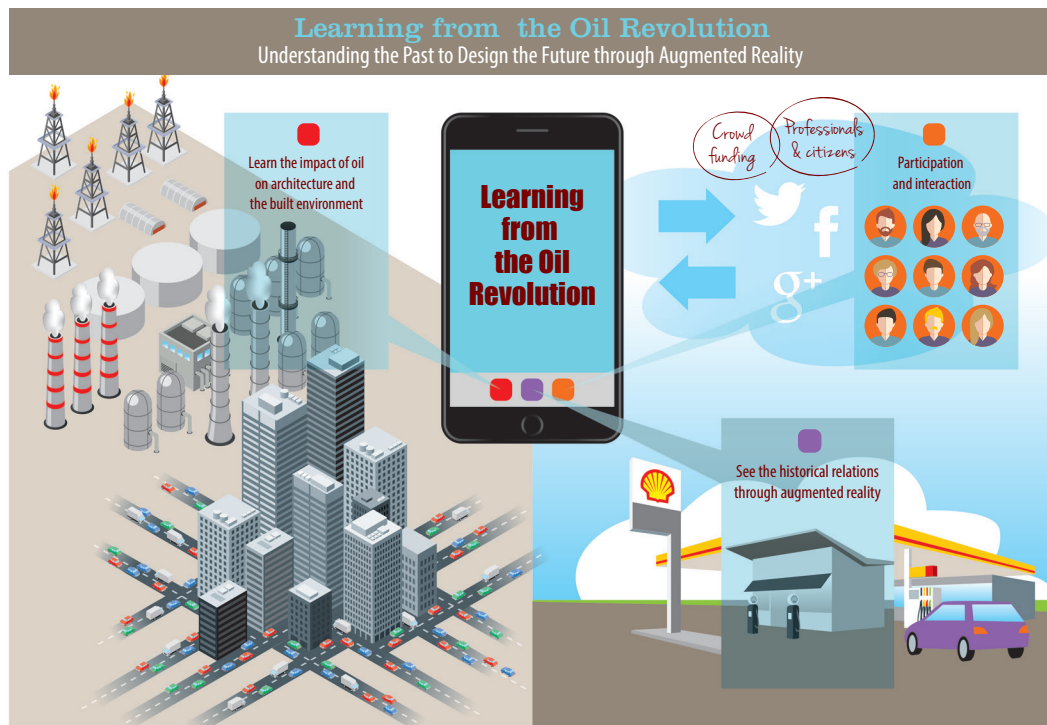


FIGURE 1 Graphical abstract

Concept

The project will develop an open-access digital environment, a technology enabling a variety of users, collectively interested in promoting a more sustainable future, to interact in different ways with information about oil as a global commodity. It draws on geo-information systems and augmented reality that others have used in architectural history guides and crowd-augmented repositories such as MIMOA. Our project will expand these tools by establishing links between related pieces of information: that is, by depicting networks and flows as well as buildings.

Users of this digital environment will track oil through usually hidden networks of pipelines, ships, rail, and roads; of petrochemical production, resale and consumption; and of urban formation and growth. They will be able to visualise the multiple ways (including philanthropy) in which oil products and interests have shaped urban form, architecture, and art. The tool is geared to both the professional community and the general public and will be open access. It may also attract interest from diverse energy companies, including established oil companies engaged in documenting their history and new energy companies seeking to trace their growing presence. As an open, informative platform, it will give producers of green energy, architects, urban planners, policy makers, and citizens additional arguments for establishing a comprehensive approach to a sustainable energy world and for pooling the resources of the general public. Social media and augmented reality companies can use this new tool to visualise content and ways to promote it. The project will be a stepping-stone to documenting other networks in the built environment.

Method

Flows of oil span the globe and intersect with local and national processes in multiple ways. As a case study for understanding how oil builds cities both physically and mentally, we have chosen to investigate the larger Rotterdam area, part of the ARA (Amsterdam Rotterdam Antwerp area) currently the second biggest petrochemical hub in the world. Within Rotterdam, we will document the areas that oil has touched, transformed or built, their interconnections, their past and present. These include port areas where oil tankers unload, where oil is stored and refined, where pipelines lead to petrochemical industries, and where trucks serve numerous gas stations. It also includes buildings and urban areas where Shell and other oil companies have influenced housing, schools, and culture. Several global oil companies, including Shell, helped construct the oil hub in Rotterdam, occupying extensive areas in the port and interacting with public administrations and policies to build master plans and infrastructure. Oil companies constructed their headquarters and offices as well as physical and cultural environments for their employees, ranging from the Hoogvliet neighbourhood that housed Shell workers to company- sponsored leisure activities, events, and magazines documenting the company's achievements. This is also an area where oil has shaped the built environment through philanthropy: the Peace Palace in The Hague sponsored by oil-magnate Carnegie may be the most outstanding example of this dynamic.

Our project is innovative in four ways:

- Using information about the oil industry to analyse the built environment, its physical form, and cultural construction, as part of tangible and intangible flows and networks of oil;
- Translating this novel approach into easily readable digital map overlays and into augmented reality to give visual and spatial expression to historical relations;
- Making this technology available to a broad group of people on computers or cell-phone apps; using social media for the dissemination and crowd-sourcing of information;
- Providing a new foundation for a collective construction of a more sustainable environment.