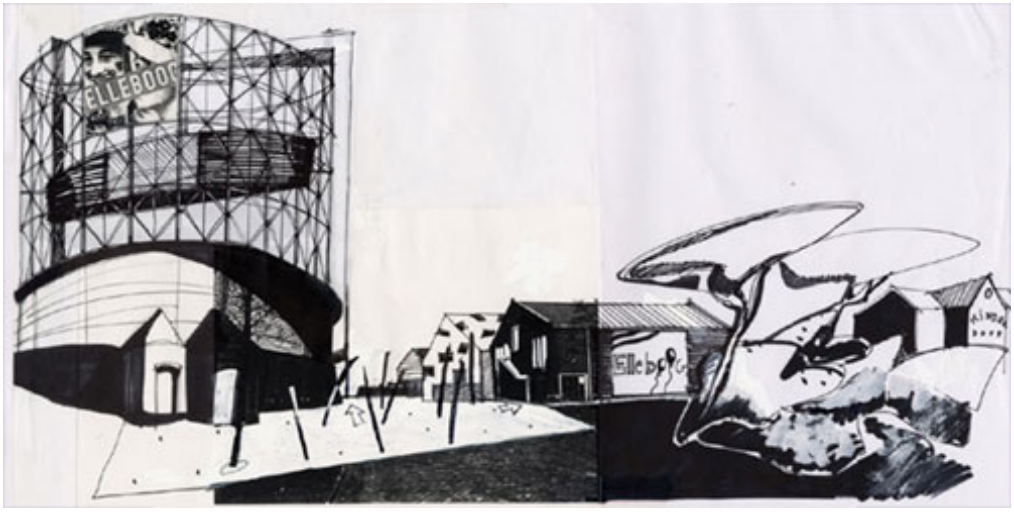
Westergasfabriek, Amsterdam, Netherlands

The Metamorphosis of a Gasworks: Adaptive Reuse of a Brownfield Site

Architect: Kathryn Gustafson (with Mecanoo Architects)
By Julia Reeve and Sarah Marshall

Wetland
Frank J. Varro

The challenge in designing the park was to turn a polluted site with a significant number of historic buildings into a new significant and usable place. The project benefited from the combination of short term use of the area and long term planning. This put the area on the map and in peoples' radar before it was finished. It also allowed for a much more community oriented process and incorporated a greater diversity of interests. A tremendous amount of patience was needed, but ultimately it was more successful.



"The design of the site, which is heavily dominated by the factory, a new structure made the monumental buildings that respect and they do in a whole new context. The plan has a clear structure and offers a limited experience of large surface areas and distant views. The design allows for both connection and contrast with the urban plan of the residential areas and the surrounding green fragments, the Westerpark and the polder."

-Mecanoo Architects

"When the Netherlands changed over to natural gas in the early nineteen sixties, the old coal-gas production facilities shut down one by one..."

Amsterdam Statistics

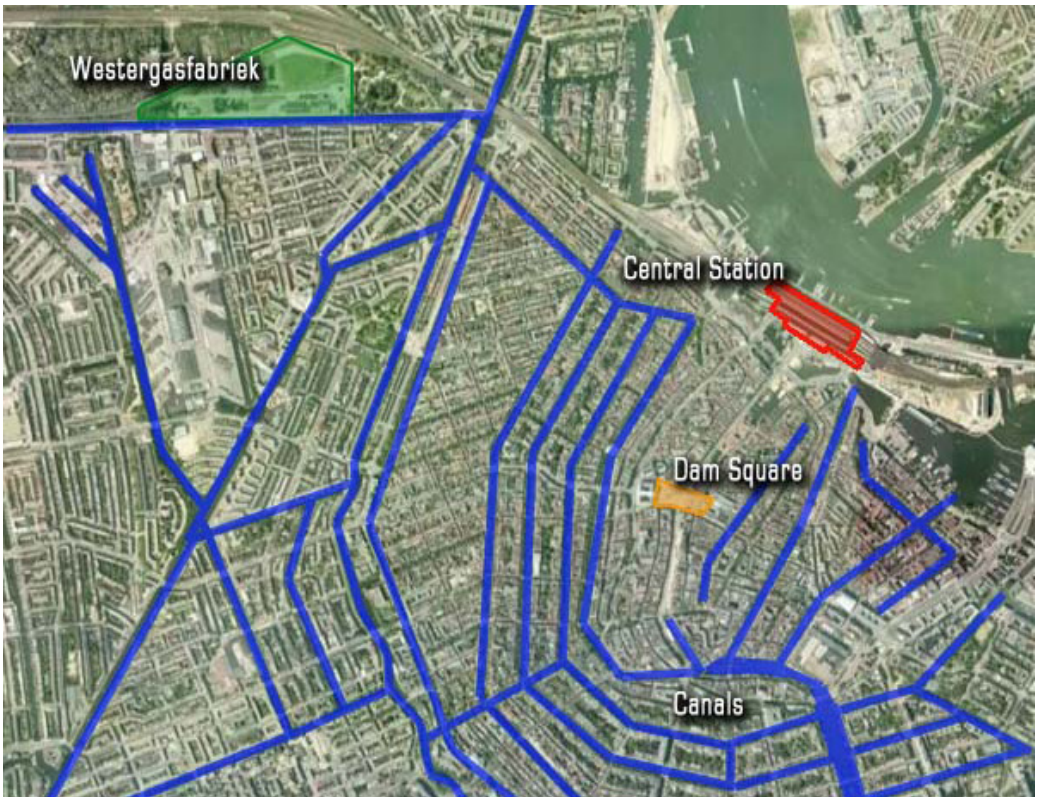
City Population: 750,000 (in city limits)

City Area: 219.4 km^2

Park Acreage: 35.8 acres

Park acreage per 1000 residents:

Governing bodies: Central City Council and MAB



Master Plan

The master plan was done by Kathryn Gustafson and Francine Houben of Mecanoo architecten. The plan was titled "Changement" and proposed a place that changed as you moved through it in time through out the year. The nature of the park changes as you move west to east. The more ridgid or classical design opens up to a more varied and freer design. The plan combines classical elements such as a strong central axis, orchards and meadows with winding paths and variety of native plantings. There is a strong structure and then variety is created by the detailing. The east, where the district offices are located looks to the design of a formal city park. in the middle of the park there are references to 1950's and 1960's parks and this is the space for recreation. At the northwest end the plants are native and the focus is on nature and ecology refering to parks of the 1980's. The most contemporary part is the Westergasbriek site, which refers to the confrontation of humanity and nature as shown in landscape.

There are four main clusters.
Each cluster is to have be unique and have a feel distinct from the others

The Village is the group of buildings between the canal and the Events Field. A large hall for events, shops, studios and cafes are housed in the Purifier Building. The Westergasfabriek BV offices are in the Regulator House. The Machine Building is for incidental leasing and the metering buildings are for public functions such as a kiosk.

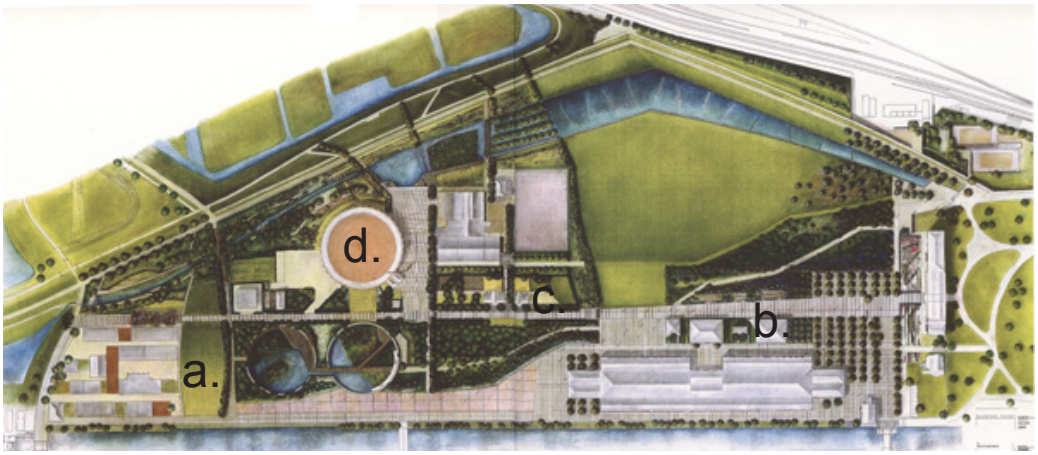
The Spektakeldorp ("Spectacular Village") is for larger events and is comprised of the Gasholder and Transformer Buildings. The Gasholder is the largest indoor space on the site and is to be used for opera, theater and other preformances. It is expected to be a major draw for the site.

The Kinderdorp ("Children's Village) is set aside for childrens activities. The two supervisors houses are in this area.

Cite des Arts - is the area farthest to the West and will contain new buildings. Most of which will be offices for the cultural activites rather than preformance or display space.

Site Plan

a. Cite des Arts
b. The Village
c. Children's Village
d. Spectacular Village



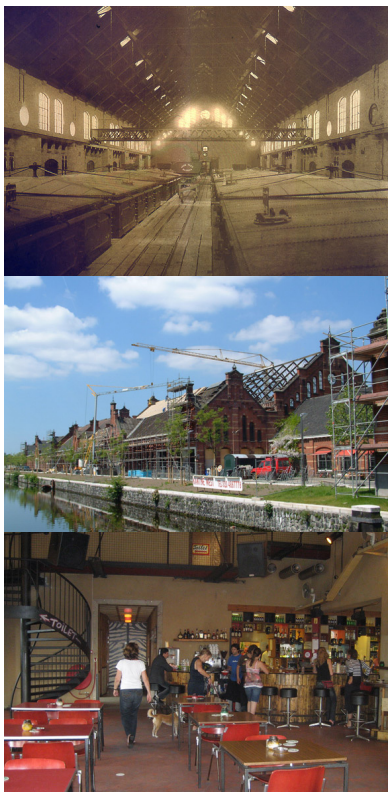
Aerial Rendering:
Computer Generated image by VSTEP

The Metamorphosis of a Gasworks

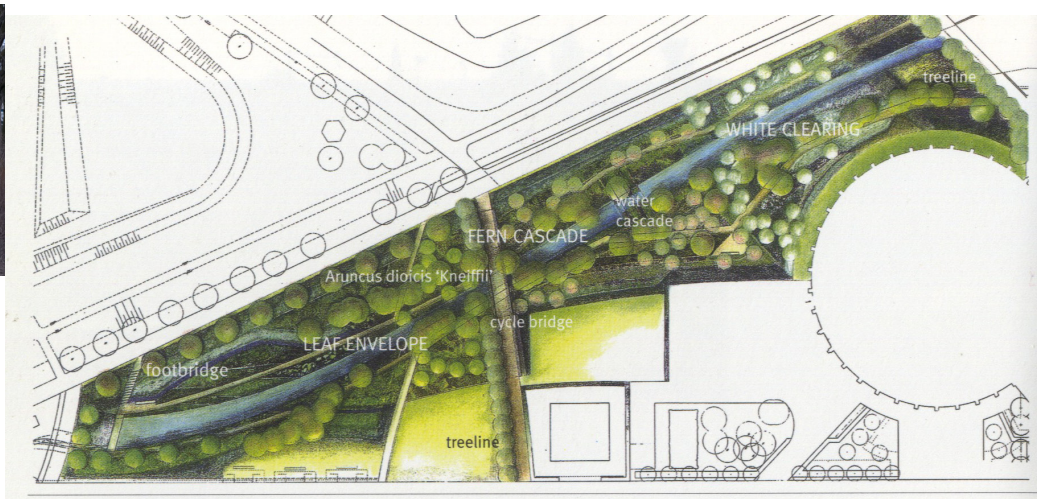
Site

The two transport links in the polders to the west of the centre of Amestrdam dictated the siting of the gasworks. The gas was used for street lighting and thus the gasworks was conviently located between access to rail, roads and water. The site was 14.5 hectares and at its peak was the largest gas plant in Amsterdam. In the original site plan the buildings were layed out symetrically and attention was paid to functionality and aesthetic-sThe site is an ideal location for events. It is easily accessible but also isolated enough to prevent noise distrubances. It is also a large enough area that multiple events can be held without interference.

Transformation of Purification Building



"One of its main objectives is to intermesh the development planning of the buildings and the park, so as to generate a harmony of activities and atmosphere between the inside and the outside of the buildings." (O. Koekebakker)



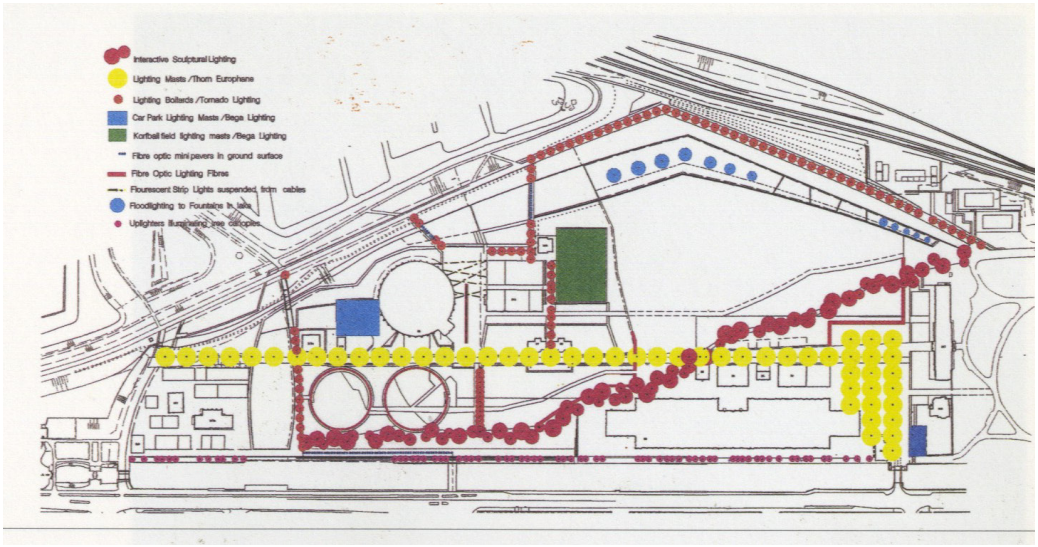
Water System

A closed water circulation system independent of the polluted ground was created by closing off the ground with clay or concrete. Under the Korfball field is a reservior and pump, which may be used in a drought for watering the plants. Water was also an important element of design. There are many ponds throughout the park. The ponds are sealed off from the groundwater by clay and concrete. A reed bed pond is used as a natural purifier.

Lighting system

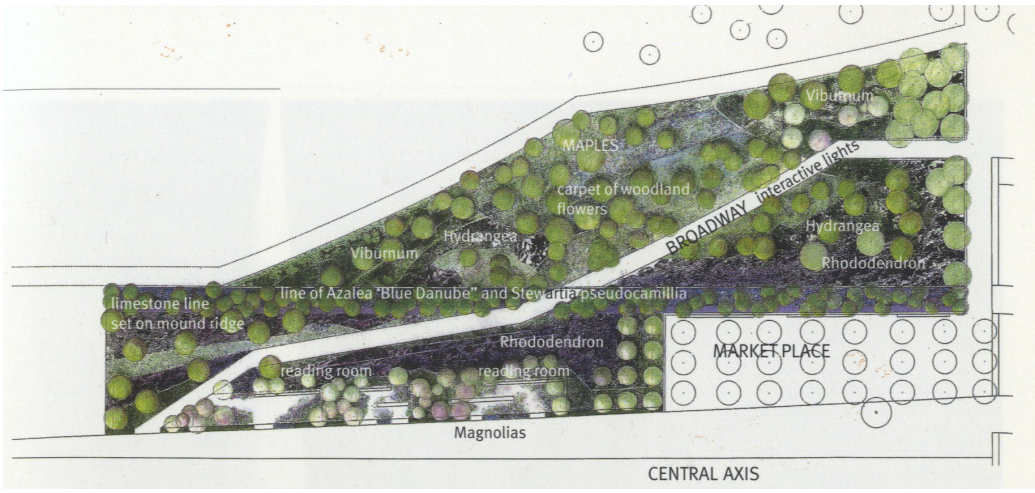
Broadway: Photoelectric sensors are placed along the path and respond to proximity of pedestrians.

Central Axis: Lighting masts light the central axis.



The Metamorphosis of a Gasworks

The years between 1995 and 1999 were the hayday for the project and the culture park flurished. String Quartets played, plays were preformed and art displayed. These years helped support the development of the project even without the music center. The other supporting factor was the possibility in Isolation - plus method of cleaning up the site, which would cost less. FInancial support from the City of Amsterfam was also key.



Circulataion

Central Axis -A clear main structure was crucial in the designing of the park. A central axis served the function of seperating the green planted areas of the park from the stone buildings. The central axis runs east to west along the entire lenght of the park. It is made of 5000 square meters of Asian light yellow stone and narrows as it moves west. From the axis you pass by all parts of the park.

Broadway -Is a winding path that runs the whole length of the park from the yellow square, plaza in the north to the Gasholder Ponds.

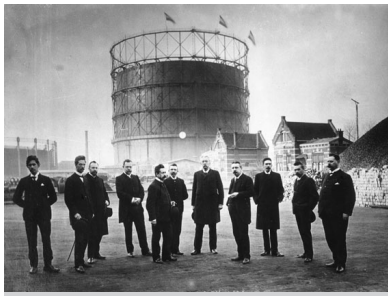
Building History

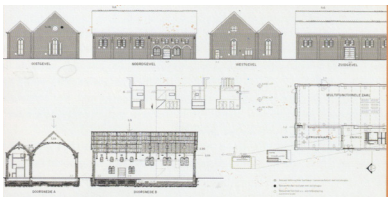
Julius Pazzani (1841-1888) was the techinical planner of the gasworks and site planner in 1883. Isaac Gosschalk, an architect in Amsterdam, designed the buildings. Most of the buildings he designed were in a Dutch Neo-Renaissance style. Symmetry was an important element of his designs. The buildings are made of red and yellow brick and light stone. Step gables, ornantental eaves and arcatures adorn the facades. A later expansion from 1901 -1905 kept the design intentions of Gosschalk. Over time buildings were torn down, including an old water tower, and in 1989 thirteen of the original buildings were protected.

In 1963, they started using the od gasholder building as a storage space.

In 1996 the new development plan called for restoration of the old buildings. The approach placed Historical value as the primary concern and the approach was conservative.

Francine Houben of Mecanoo Architects designed the master plan and the plan for renovations of the existing buildings and design of new buildings. The goal was to create an easy flow between inside and out and integrate all of the uses of the park harmoniously. It was also important that the previous use of the renovated buildings be apparent but not prefectly restored to original state. Hired Braaksma & Roos for the restorative work. The Purifier Building, Transformer Building, GasHolder, Regulator House and Machine Building were all renovated.



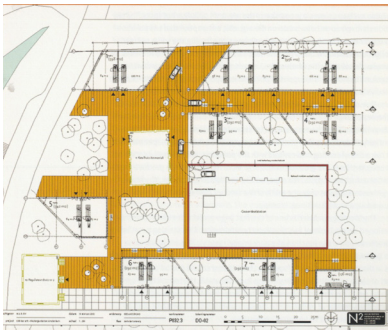


Design Process

The Westergasfabriek was deisgned to create a creative cultural space open to the public. The site was orginally a gas works constructed by the British Imperial Continental Gas Association in 1883 and abandoned in the 1960's after the discovery of natural gas. The buildings were used as storage and garage spaces until the early 1990's. In 1989 the buildings still standing were marked as industrial monuments. The buildings were used as spaces for cultural activity on a temporary basis. The program was successful and the park became a permenant cultural center. In 1996 a development plan was created and in 2003 the park officially opened. The park provided the space for community dinners, festivals, performaces, galleries, shops and other uses. There are spaces for both long term and short term rental allowing for flexibiity in use.

1992 - 2000 Project Team

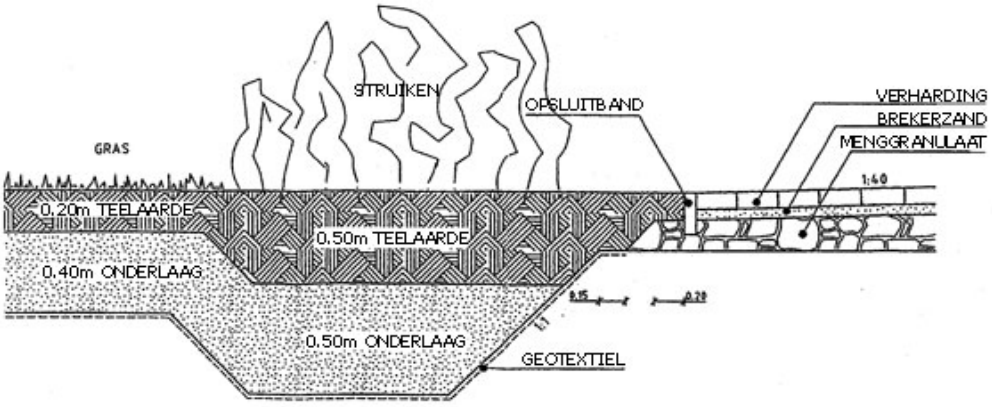
Initially, Evert Verhagen, sector head of council works was in charge of the project. In 1992 he created a team and became project manager. In 1996 one alderman in the central city council was added to aid in communication. The team acted indepedently but the project manager was under the political authority of the council. In the temporary use part of the project diversity, variety and a refreshing cultural life were all key. The intent was to create a lively site. Midstream the permanent use plan was changed when the IJsbreker centre for modern music found another site. The smaller scale temporary projects were a sucess and proved that a domninate user wasn't necessary to support the area.



The challenge in designing the park was to turn a polluted site with a significant number of historic buildings into a new significant and usable place. The project benefited from the combination of short term use of the area and long term planning. This put the area on the map and in peoples' radar before it was finished. It also allowed for a much more community oriented process and incorporated a greater diversity of interests. A tremendous amount of patience was needed, but ultimately it was more successful.

The Cleanup Process

The Isolation - plus Vairant was a method of cleaning up the polluted site. It meant the polluted ground would be isolated but not covered in asphalt. Instead it would be covered by a layer of cloth and then a 'living layer' of clean soil a meter deep. In total 35,000 square meters of soil were brought in and 65,000 square meters of geotextile used.



The Metamorphosis of a Gasworks