

Fig. 1.1.1_ rendering of site and retort

[01][01] LOCATION OF GASWORKS PRECINCT

The chosen Site for the design discourse is the Egoli Gasworks site in Johannesburg. The site is in the suburbs of the Braamfontein Werf and Cotlesloo, partly industrial zoned and partly municipal owned. Owl Street to the North, the University to the East, Annett Street to the West and the University sports grounds to the South border the site in.

image information:
background_rendering
of retort building

[01][02] PROBLEM BACKGROUND AND SITE MOTIVATION

Johannesburg is a victim of the 1990's capital flight to the northern suburbs. In the past 3 years however the city has witnessed a reversal in the downward trend of inner-city decline.

Today the city is putting substantial resources into turning around the troubled central district (CBD). The crime rates are down thanks to intensive policing, occupancy rates are up and investments are increasing as confidence improves.

In September 2002, it was declared by JDA that Braamfontein was set for a major revamp, aimed at renewing its role as a centre of business and entertainment in Johannesburg.

Apart from development schemes to the east of Wits University, the west of Braamfontein is also witnessing major revamps. The Braamfontein Werf west of the university campus was recently transformed into exclusive loft apartments, with a waiting list of 3 years. People are sold on the concept of urban lifestyle, it is evident that the need for city living is making its comeback. (Johannesburg Spatial Development Framework)

The Egoli Gasworks site west of the university is opening up for development opportunities in 2006, when Egoli-Gas's main gas supply will come from Mozambique via a converted gas line through Secunda. In future only one Gas tower on site will be used as a reservoir, and the rest

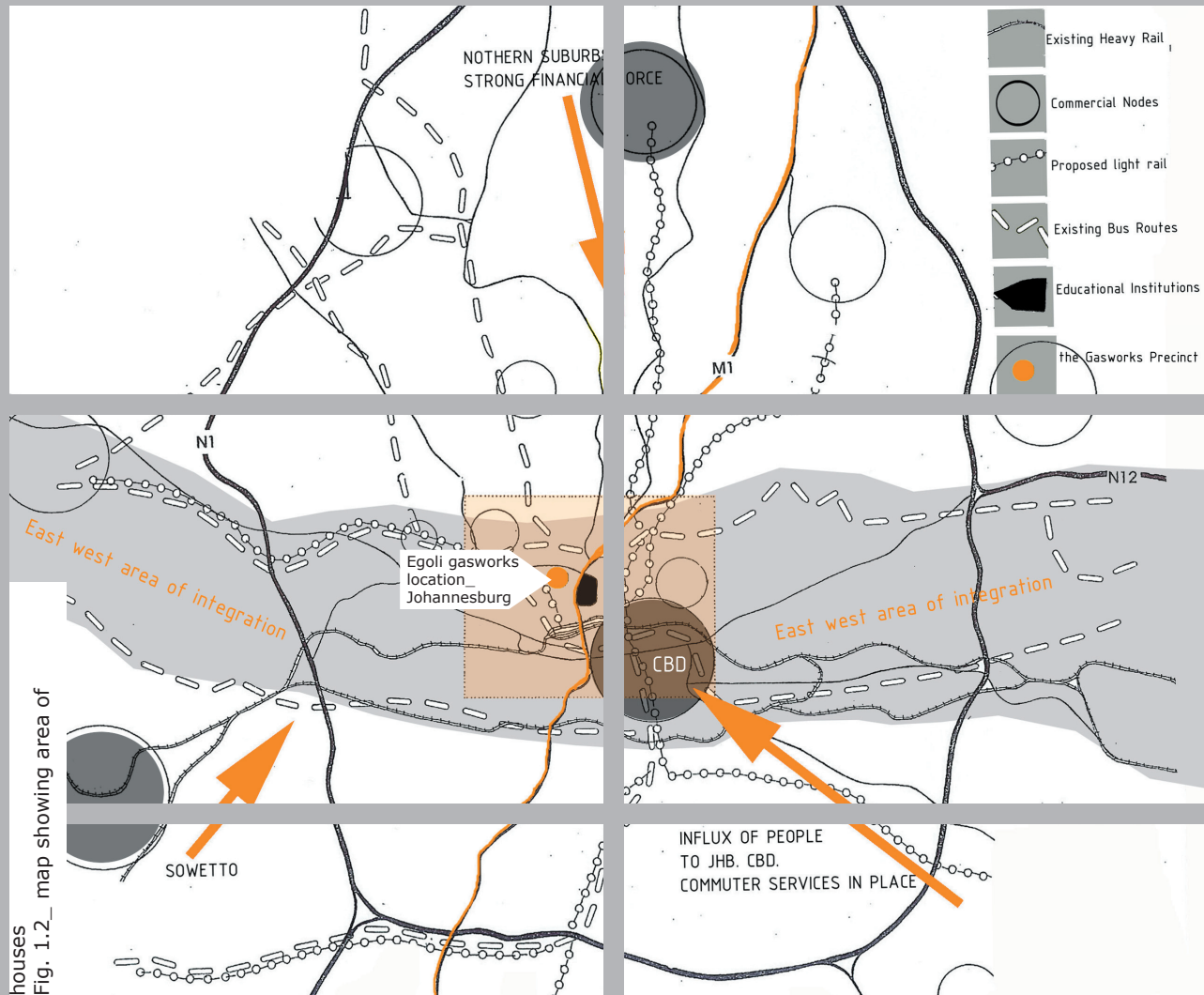
will be declared as redundant.

With this in mind, the majority of the site will lie derelict and it will be classified as contaminated brown-field site. The site will be an isolated land parcel due to its underdeveloped nature, not sufficiently integrated with its denser surroundings.

Apart from the sites excellent situation and access within the CBD, the site offers a contextual character that is uniquely industrial. This inimitability heralds the opportunity for redevelopment, generating a dynamic urban environment, with a definite sense of place

The Need for redevelopment and densification of the site is influenced by the following:

- The public interest in Multi-functional Urban developments
- Johannesburg Spatial Development Framework's vision to integrate individual sites within the east-west corridor of Johannesburg
- Both Atlas Bakery film studios and AFDA film school in immediate adjacency to the Gasworks are seeking ground to expand.
- The Gasworks is an underdeveloped land parcel. Redevelopment of the Gasworks will mend the gap in the urban fabric, reclaiming lost space. The site will no longer function as an isolated site after densification and integration with its immediate surroundings.



[01][03] CITY CONTEXT

Two major corridors have been identified in Johannesburg: the east-west corridor and the north-south corridor. The Gasworks site falls within the east-west corridor.

According to Johannesburg's Spatial Development Framework, the development of corridors has been identified as one of the necessary instruments to restructure the city.

Corridors are linear tracts of land containing a variety of transportation modes, especially public transport, and a variety of intense and dense land uses. Corridors therefore contribute to economies of urbanization; to more efficient service provision; and to better public transport. People living near corridors can access a wide range of opportunities distributed along the corridor.

The east-west corridor runs roughly midway across the city from the eastern boundary to the western boundary. This corridor contains the mining belt which has been traditionally perceived as a barrier to the integration of the northern and southern parts of the city. The corridor accommodates an existing railway line with a number of stations. There are good east-west road linkages but few north-south roads. Many of the existing industrial, commercial, retail and residential areas adjoining this corridor are not operating at optimal levels. The challenge is to harness the opportunities in this area and turn it into a vibrant mixed-use urban environment with a thriving economy. (Johannesburg Spatial Development Framework)

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- upper income
- upper to middel income
- middel income
- low income

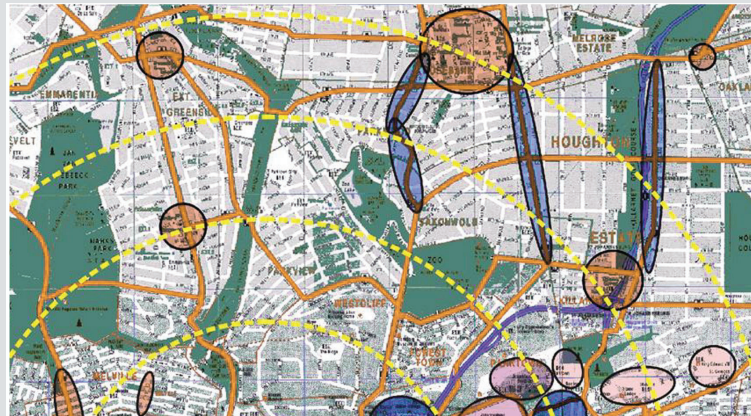
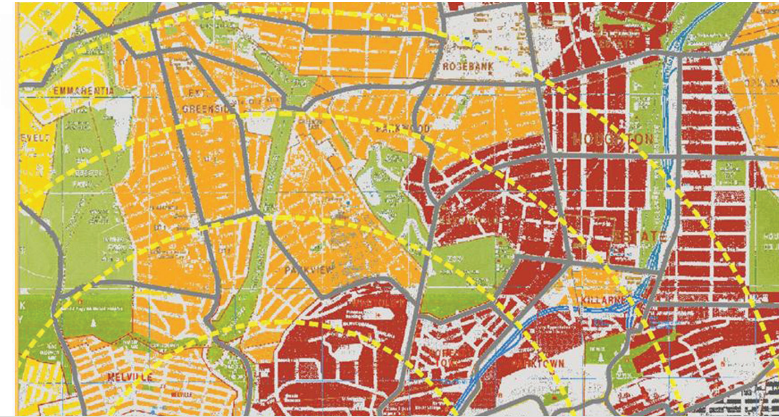
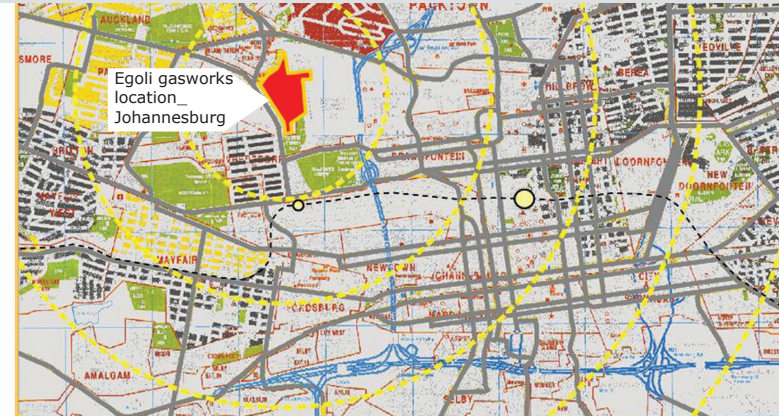


Fig. 1.3_ map showing activity nooks



integration and activity nooks



- institutional nodes
- office nodes
- mixed use nodes
- green open space
- mining and industrial belt
- one circle indicate 4km distance

[01][04] REGIONAL CONTEXT
[01][04][01] ACCESS AND ACTIVITY
NODES

Although the site exists as an isolated land parcel, it is easily accessible and nestled between nodes of high activity. The site is located within walking distance of major access roads (Annette Road, Owl Street and Frost Street, Empire Road) as well as the rail link 11 km to the south.

Furthermore the site is in close physical affiliation to education, commercial and residential facilities, which heralds an increased opportunity for investment and redevelopment.

[01][04][02] RESIDENTIAL STRUCTURE

The Gasworks location is of such that new developments can both serve the wealthy northern suburbs as well as the lower income groups around the CBD.

The most dominant financial force comes from the northern suburbs of the city. Since the gasworks site is physically situated on the edge of the inner city, the development has the potential to make use of people commuting to the CBD from the north.

The new development has the potential to become a true “new-urban” environment, by accommodating diverse income groups’ through a residential component. This may include housing for students, young upcoming professionals and business people making use of the CBD.

The general population density surrounding the Gasworks site is medium to high, with high population density areas within commuter distance of the site. The most prominent high-density area to consider is Johannesburg CBD.



Fig. 1.4_ map showing residential

image information:
background_rendering
of retort building

structure



[01][04][03] LOST SPACE

The site is an isolated land parcel, not sufficiently integrated with its surroundings.

Physical entities contributing to the site's isolation are the Braamfontein Spruit, the University on the east and fast moving traffic along through roads such as Empire Road and Annette Street. The underdeveloped nature of the site further contributes to its isolation, since it exists in contrast to its adjacent denser surroundings.

It is currently the only piece of industrial ground within an area with educational, commercial and residential land-uses. The nearest industrial property is the railway to the south about 2 km away. The site heralds an opportunity to create a special place of identity by capturing the site's industrial history.





[01][05] SITE CONTEXT

[01][05][01] TOPOGRAPHY

Topographically the site is situated between two ridges forming a gateway. The topography creates interesting vistas to and from the site and the visual impact of the redevelopment need to be considered through the design investigation.

[01][05][02] HYDROLOGY

The Braamfontein Spruit flows northwards linking up with the open space of Parkview Golf course, Craighall Park and then Riverclub Golf Course. The potential arise to link these green areas by creating a continuous green corridor of open space.

Fig. 1.5_ aerial

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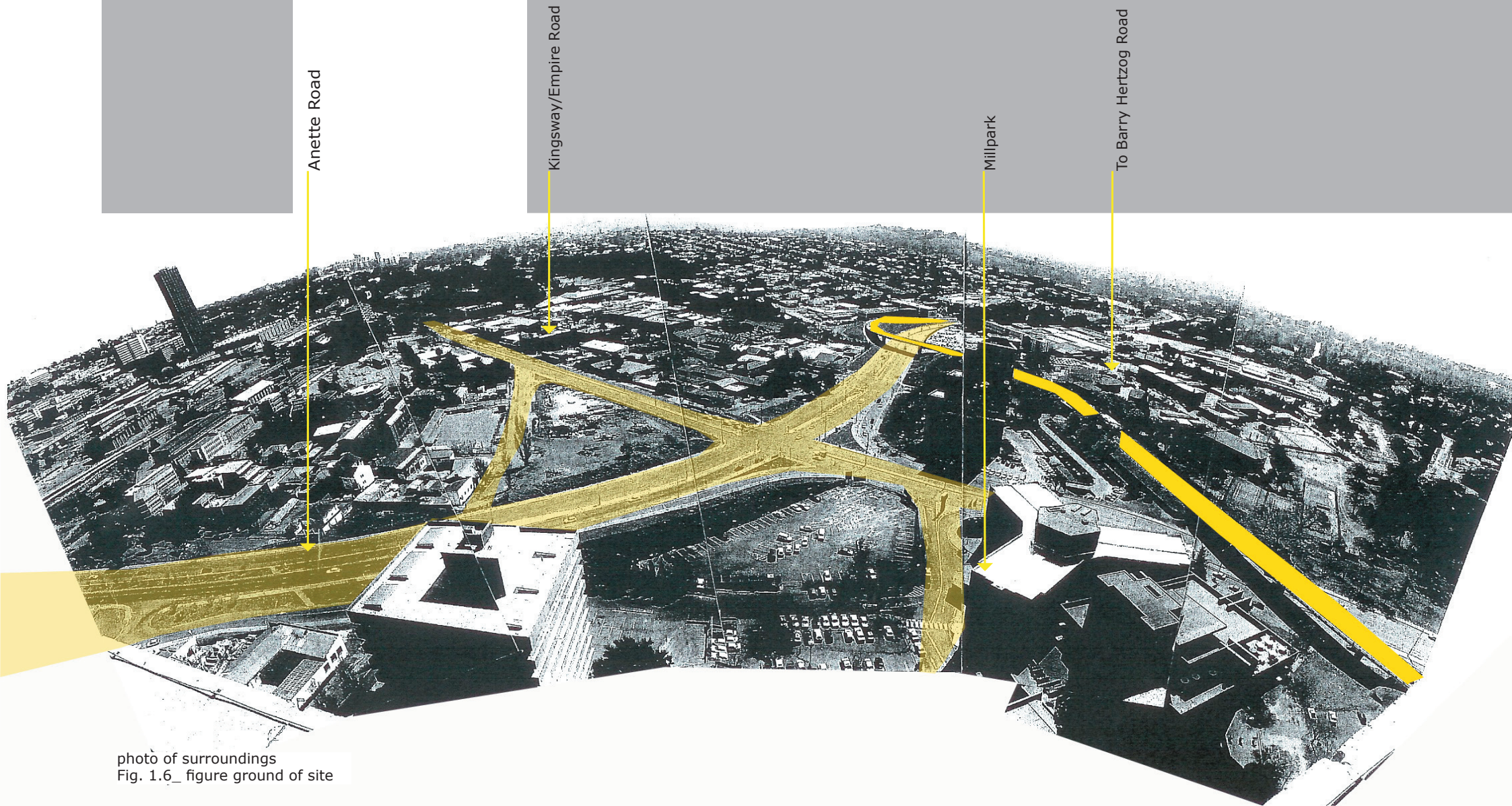
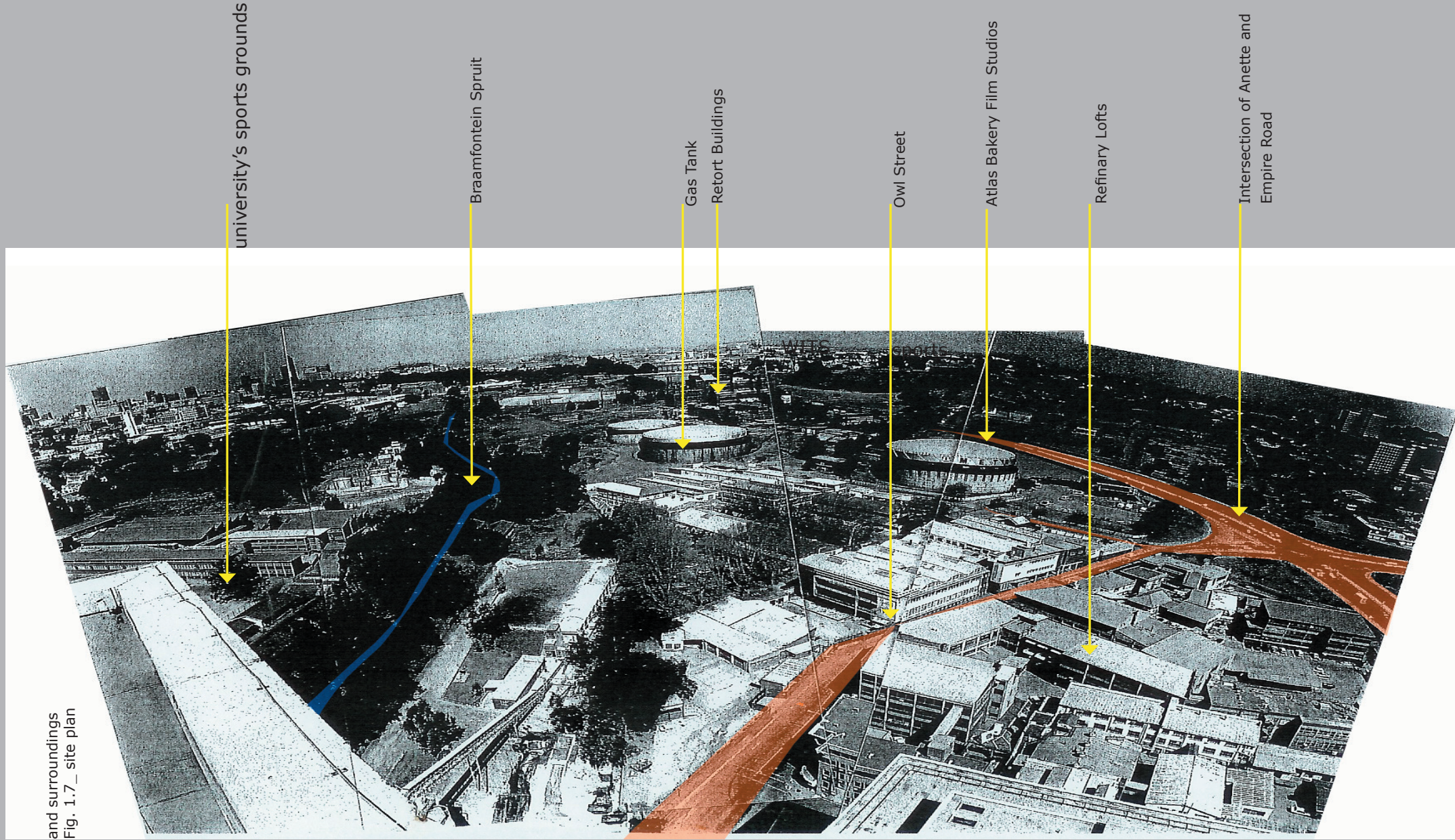


photo of surroundings
Fig. 1.6_ figure ground of site



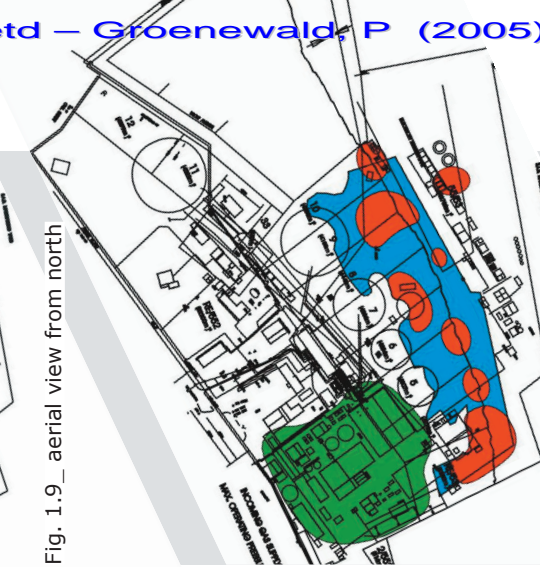
and surroundings
Fig. 1.7 _ site plan

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Fig. 1.8_ aerial view from north taken
from Millpark



Fig. 1.9_ aerial view from north



contaminated area
approximate area of known pollutants
general area of borehole tests

[01][05][03] CLIMATE

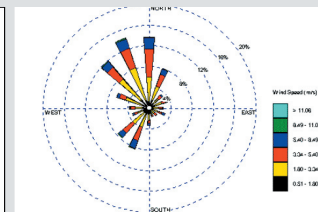
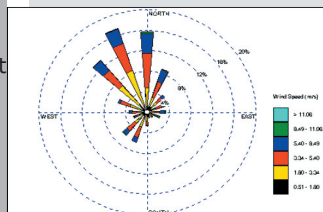
Precipitation averages ranges from 600-800 mm per annum

Some extreme Temperatures and Rainfall Values for Johannesburg are as follows:

Month	Highest Max Temp	Lowest Min Temp	Highest 24 Hour Rainfall	Highest Monthly Rainfall
January	35.4	7.2	188	338
February	33.5	6	56	191
March	31.9	2.1	92	219
April	29.3	0.5	50	130
May	26.4	-2.5	70	80
June	23.1	-8.2	31	59
July	24.4	-5.1	17	22
August	26.2	-3.1	21	47
September	31.1	3.3	62	175
October	32.2	0.2	110	198
November	32.9	1.5	65	230
December	32.4	3.5	102	181
Year	35.4	-8.2	188	1019

South African weather services
www.weathersa.co.za

The prevailing wind direction is generally from the North and North West. August and September show significant wind flocculation. The wind roses included give a better understanding about wind-direction and wind speeds during these months.



[01][05][04] DEVELOPMENT CONSTRAINTS GAS PIPES

An underground gas pipe network covers most of the northern part of the site. Redevelopment options must be cautious to these gas lines, since they will remain operational, providing Johannesburg with gas.

SERVITUDE OF TURBINE COMPLEX

The turbine complex is a back-up diesel generator complex, currently used by the Egoli Gasworks. This complex may function as a backup generator for the new development. A servitude or buffered area is provided around the complex to minimize associated health and safety constraint posed by such a complex.

ENVIRONMENTAL CONTAMINATION

One of the mayor constraints of the site is soil-contamination. The eastern section of the site is contaminated with waste materials accumulated over a period of 60 years. Pollutants include; polyaromatic Hydrocarbons or PAHs, Benz(a)anthrance, arsenic, tar residues, sulphates, ammonia, chloride, manganese and lead.

The waste materials are overlying the concrete culvert that transfers the Braamfontein Spruit and storm water through the site. At present, the culvert demonstrates seepage from overlying waste and there is evidence of corrosion as well as the contamination of the Braamfontein Spruit. Contamination has even reached the deeper aquifer system. The permanent aquifer is ca. 15m below the existing ground surface. There is, however, no evidence that contamination is leaving the site other

[01][06] HISTORICAL CONTEXT**[01][06][01] HISTORY**

The Gasworks site is part of the Farm Braamfontien 127. The suburb of Cottesloe was proclaimed in 1905. The Braamfontien Spruit originally started from the Braamfontien cemetery northwards, fed by natural springs. Storm water drains were installed upstream in a single culvert on the Sturrock Park/ Gas boundary.

The old Gas Works in President Street shut down 23 December 1928 and was moved to the new site in 1928-1929. In the 1930's the culvert continued to Owl Street.

Today the site is only used for storage facilities. The gas is no longer self produced on site, but brought directly from Sasol.

The site offers a rich context of industrial heritage. The heritage manifest in both the built environment and that of the bio-physical environment.

The site includes a collection of red brick industrial buildings with interesting and rare steel functional attachments. The industrial characters of these buildings are enhanced by freestanding steel structures like hoists, chimneys, conveyer belt and walkways.

A historic and conservation assessment was undertaken by Mr. D van den Heever (Director at GAPP Architects and Urban designers, specialist in Conservation and Restoration in architecture. According to him the retort houses (built amid 1939-40) can be classified as a typical example of an industrial building dating from the World War 2 era. The Gas cylinders (containers) were pre-manufactured in England; the earliest in 1936.

than via the seepage of the culvert. There is no data to confirm that seepage from the site is not penetrating the aquifer. It may be possible to intercept the aquifer prior to leaving the site boundaries if necessary

Contamination in the valley of the Braamfontein Spruit is leading to the following forms of water contamination:

- surface water
- piped/culvert water
- ground water and aquifers

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background_rendering
of retort building

taken from Millpark



image information:
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Fig. 1.14_ south-east view of retort

house #1





houses

Fig. 1.15_ south view of retort house #2



Fig. 1.16_ interior of retort house #2



Fig. 1.17_ interior of retort house #1
Fig. 1.18_ gas tank and existing dams



