

LAND AT BROOK ROAD, NORTHFLEET KENT DA11 8DW

**ACTIONS IN RESPONSE TO PRELIMINARY GEO ENVIRONMENTAL STUDY AND
RISK ASSESMENT**



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INTRO

The development includes the demolition of the existing brick store known as The Workshop and the formation of two detached dwellings with garden and allocated parking space.

The report is a preliminary assessment to quantify contaminants and environmental impact assessment including construction workers on the site.

TYPOGRAPHY

The site is located Eastings: Northing: 173345. The site is accessed by existing trackways that surrounding properties also have access to and the land level are relatively even.

GEOLOGY

The site is located on Thanet Formation with exposure to Seaford member of white chalk. The land comprises of fine sand with clay and silt at lower levels resting on eroded chalk.

The chalk is made up of white friable limestone, 95% calcium with scatterings of tabular flint. The upper surface is often convoluted containing pipes filled with more contemporary deposits.

HYDROLOGY AND HYDROGEOLOGY

There are no surface water bodies within 500m of the site.

- **Thanet Formation is a secondary Aquifer [of variable permeability].** The Thanet Formation is a crucial hydrogeological unit in the London Basin of southeastern England, acting as a sandy aquifer that overlies the Chalk Group. It is primarily composed of fine-grained, glauconitic sand, which is dense and often coarsens upwards. **Aquifer Characteristics:** The Thanet Formation acts as a minor aquifer, which is often hydraulically linked to the underlying major Chalk aquifer. It is characterized as a "sandy CLAY" or "clayey SAND," which means it has a relatively high porosity but variable permeability.
- **Groundwater Flow and Yield** The Thanet Formation generally flows toward areas where the hydraulic head has been lowered, such as from historical pumping. It can produce sustainable quantities of water, though it is often underutilized compared to the deeper Chalk.
- **Hydraulic Separation:** While connected to the Chalk, the lower part of the formation often contains higher amounts of fines (clay/silt), which can act as a partial aquitard, hydraulically separating it from the Chalk in certain areas of North Kent.
- **Groundwater Quality:** The groundwater in the Thanet Formation is typically in a reducing state.

- **Engineering Hydrogeology:** Below the water table, the Thanet Sand is known for "running sand" conditions, which pose significant risks in excavation and tunnelling.

SITE HISTORY

See site history document

1863-1865

The site is wholly undeveloped with cottages and orchards 250m to the east.

1897-1900

The site is wholly undeveloped with Ida Cottages and Orchard Terraces to the east

1907-1923

The formation of Springhead Road is apparent and the build up of terrace properties within 150m and a school within 200m to the north

1931

The site surroundings are predominantly built up and the site reads as an undeveloped triangle of land. Quarry areas now showing as allotment areas. Park Avenue Brook Road Perry Street can be identifies

1946

Additional terracing to the south of the site

1962

Quarry areas now showing as allotment garden areas.

1972

The site having been surrounded by incremental development of terrace housing remains as a triangle of undeveloped land. The railway to the north west has been dismantled.

Present



ENVIRONMENTAL INFORMATION

Please refer to Landmark Information Group for environmental data.

Petroleum storage facility, map publish date 1954 95mE

Potential tanks map published date 1954 143mW

Potential tanks map published date 1954 142mW

Electrical sub-station 175mNE

Electrical sub-station 178Mne

Electrical sub-station 220mS

No identified infilled land, waste infill and industrial processes recorded within 250m

- Trade directory entries:
- Wrought ironworks 64mN
- Garage services 114mNE
- Cleaning service-domestic 121mS,150Mse
- Stained glass design 122Me
- Car body repairs 155Me
- Clothing manufacturer 173Me
- Joiners 157 mE
- Furniture retail 164 mE
- Pneumatic engineer 179mE
- Cleaning service – commercial
- Brake and clutch services
- Lock smiths 195 mN
- T shirts 188 mNE
- Coal merchant 179 mNE
- Hydraulic equipment 192 mE
- Precision engineers 197 m
- Distribution services 198mE

Flooding

There is a risk of flooding identified within the site from surface water.

Radon - intermediate probability

No radon protection measures required

SITE

The site consists of a triangular area of land surrounded by mainly twentieth century residential properties. The site is accessed by unsurfaced tracks.

There has been reports of fly tipping taking place to the tracked areas.

The building known as “the workshop” is constructed of corrugated sheets on a concrete base. The site boundary is defined by metal railings at 1800mm high.

The site has remained vacant for the last few years and currently being utilized as a limited store of basic building materials whilst the best use of the land can agreed with the LPA.

As the previous use was likely a small engineering works there is a low to moderate risk of contaminant leakage into the aquifer due to the risk of surface water flooding from:

- Lubricants and solvents
- Residual toxic metal contamination
- Possible Asbestos materials within the construction of the work shop.

It is unlikely the site is at risk from offsite contamination; but a low risk has been factored in.

There are no registered land fill sites identified within 250m and so radon protection measures are not required.

When constructing if excessive quantities of made ground were found beneath the site then further potential gas risk appraisals should be made.

RISK ASSESSMENT

There is possible risk to

- Site workers,
- Future users
- Occupants
- Building fabric
- Plants

Organic contaminants as a result of leakages and spillages of lubricants and solvents eg. TPH, VOC, SVOC

RECOMMENDATIONS

Due to the previous use of the site there is a low to moderate risk to the site from sources of residual contamination; although the site use has not been actively used as such for over 6 years.

A limited intrusive investigation allowing shallow trial pits or boreholes should be carried out with a portable window sampler followed by laboratory testing of soil samples for the presence of metals, hydrocarbons fractions, speciated polyaromatic hydrocarbons [PHA], volatile and semi volatile organic compounds [VOC and SVOC] and the presence of asbestos. The trial holes should target proposed garden areas. It is suggested that 4/5 holes should be investigated. Geotechnical parameters should also be made available to the structural engineer when designing the foundations.

The client may also wish to carry out bearing pressure tests whilst the second stage investigations are being carried out.

Any asbestos containing material should be removed by an experience contractor and disposed of at a licensed waste facility.

Risk Assessment actions.

In response to possible risk of organic contaminants as a result of leakages and spillage of lubricants and solvents eg. TPH, VOC,SVOC

- Limited site investigation to clarify degree of risk. Removal of contaminated soil if necessary.
- Minimise dust, avoid spillages
- Provision of appropriate protective clothing
- Limited site investigation to determine ground water level. Appropriate precautions for storage of contractors fuel and lubricants during construction
- Services to be laid in trenches and surrounded with clean materials. Consult water authority if in doubt over suitable materials.

In response to inorganic contaminants associated with previous engineering processes eg arsenic, lead, etc

- Limited site investigation to clarify degree of risk. Removal of contaminated soil if necessary.
- Minimise dust where possible
- Provision of protective clothing / equipment, minimise dust
- Appropriate precautions with surface water drainage in areas of vehicular movement and parking to safeguard groundwater.

In response to possible risk of phytotoxic metals eg. Copper, zinc etc

- Removal of contaminated soil in garden areas and replacement of top soil.
- Appropriate precautions with surface water drainage in areas of vehicular movement and parking to safeguard groundwater.

In response to risk from the discovery of asbestos

- Removal and disposal by experienced contractor if found to be present within existing building.

In response to possible risk of presence of ground gases eg methane, carbon dioxide.

- No areas of landfilled land within 250m of site. No radon protection measures necessary. Reassessment if excessive made ground discovered.

