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37 HAMILTON ROAD,
TWICKENHAM TW2

Client

Frendcastle Management Ltd

Report No. 2469

30 June 2004

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**37 HAMILTON ROAD,
TWICKENHAM TW2**

DESK STUDY

Synopsis

An investigation has been carried out into the site history at 37 Hamilton Road in Twickenham on the instructions of Frenncastle Management Ltd.

The investigation comprised a walkover survey of the site followed by attendance at the Local Studies section of Richmond Library and the London Metropolitan Archive. In addition, various Environment Agency database searches were carried out. The information obtained from these sources is summarised within.

The available information indicates that there has been light industry and works on the site since the early 1900s, which may have had the potential to cause contamination. The significance of the available information is discussed.

1

Walk over survey

The area under investigation is a approximately rectangular parcel of land 55 meters by 45 meters bounded to the north by the railway line, to the east by housing, to the south by Hamilton Road and housing and to the west by an electricity sub station.

The surrounding area is a mix of residential, commercial and light industrial uses. The site is reasonably flat and level.

It is currently a divided into light industrial workshops, garages and storage. No visual or olfactory evidence of contamination was noted in the walkover survey.

2

Historic Map Records

The history of the site has been gleaned by attendance's at the Local Studies section of Richmond Library and the London Metropolitan Archive, and the map evidence is summarised as follows.

The earliest available map is an Ordnance Survey map dating from 1863, and is reproduced at Figure 1. It shows the site to be undeveloped, with the railway line immediately to the north already constructed. To the west and south west are orchards, while the town of Twickenham is shown developing along the roads to the south and south east.

Figure 2 is the Ordnance Survey of 1915. Since 1863 there had been significant development and urbanisation in the area of the site. Hamilton Road has been constructed and the site is now marked as part of an Electricity Works. There is one large building in the area of the electricity works, part of which occupies an area on the west of our site. There are a number of smaller sheds or outbuildings around the main building. In the north east corner of the site is marked a large tank. To the west of the electricity works is marked a laundry. 75m to the north east is shown a miniature rifle range, while 300m to the north west is a sewage works. Housing now lies to the south and east.

Figure 3 is the Ordnance Survey map dating from 1934. The site is still occupied by large buildings with a chimney now marked on the site, and the number and size of the outbuildings has grown. The tank in the north east corner of the site is still present. There is an inscription in the south of the site 'W.M'; which is thought to mean Water Main. To the immediate north and north east the railway has expanded with the addition of a number of new tracks. In the local area a new area of allotments are shown to the south west and a new laundry is shown further to the south west.

Figure 4 shows the 1960 Ordnance Survey Map, of which the adjoining sheet to the east was not available. It shows the site now marked as a depot, with the building layout as it is today. To the west is marked a well and a two tanks in the nearby laundry, and further to the west is a bakery. To the south west are shown two further tanks and a works.

3

Trade directories

Kelly Directories have been consulted to gain information on the site and its usage history.

The earliest available sources are Kelly's Directory of Twickenham; both the 1910 and 1914 directories list the site as the Twickenham & Teddington Electricity Supply Co. Ltd.

The Kelly's Directories of Twickenham from 1932, 1934 and 1940 lists the site as the T Kinner, Twickenham & District Electricity Supply (London & Home Counties Joint Electricity Authority) (Substation).

4

Database searches

The following information has been gleaned from database searches within a 250m and 500m radius and for the local area of the site.

4.1

Potentially contaminative uses

Analysis of 1:2500 and 1:10 000 scale historical mapping reveals that there are a number of potentially contaminative past land uses within 250m of the site.

At the 1:10 000 scale there is a record of the site being used for 'Electricity production and distribution (inc large transformers)', dated 1920. There is a record of quarrying 53m to the south west and 144m to the west is a record of sewage works dated 1898 to 1949. In the same location is there also a record of Road Haulage, dated 1992. There is a record of Sewage works 173m to the north, dated 1938- to 1949 and 220m to the north west, dated 1920-1949. There are numerous records of railways within 250m of the site.

At the 1:2500 scale the site itself is listed as being a former works, while 46m to the north west, 125m to the north, 144m to the west and 185m to the north west are listed Drainage Works and Warehouses. 243m to the west is listed a motor vehicle works.

The currently active potentially contaminative land uses listed Samsons Transformers (Electrical equipment) and 227m to the south east Juke Box Services (Audio Visual equipment).

4.2

Infilled land, landfill, waste treatment or disposal sites

Historical mapping at 1:10 000 scale reveals 1 record of land filled with unknown material within 250 m of the study site, dated 1992 and located 53m to the south east, on a site where the record showed a quarry from 1898.

There are no non-operational or current waste licenses within 250 m of the site. These are used to licence a range of activities such as landfill sites, waste treatment, transfer or disposal sites.

4.3

Hazardous and regulated installations

No records have been found of Part A (IPC processes) or Part B Licences (LAAPC Process) within 250m of the site.

There are no Radioactive Substance Authorisations, Water Industry Referrals, Red List Discharge Consents or List 1 & 2 Dangerous Substance Inventory sites. The Health and Safety Executive has no records of COMAH or NIHHS sites.

4.4

Subsidence

The British Geological Survey consider the area to have a very low risk of natural subsidence, not related to mining activity.

4.5

Radon

The study site is located in an area where the National Radiological Protection Board surveys suggest that less than 1% of houses exceed the radon action level. The site is not therefore located within a Radon Affected Area.

4.6

Air quality

The following air quality data has been obtained:-

CO rating	High
NO rating	Medium - High
PM10 rating	Medium - High
SO rating	Medium - High
VOC rating	High

4.7

Groundwater vulnerability and soil classification

The site is classified as a major aquifer, and the soil is classified as having a high leaching potential. There are no abstraction licenses within 500m of the site.

4.8

Mining and natural cavities

The site is not thought to be in an area affected by past, present or proposed underground mining. Similarly, it is thought that there is a negligible risk of subsidence relating to shallow mining in the area.

5

Geology

Published records of the British Geological Survey indicate the site to lie on Kempton Park Gravel. Additionally the map identifies an area of worked ground in close proximity to the site, thought to be the quarry identified 53m to the south west of the site.

6

Risk assessment

This risk classification is designed to consider environmental risk in the context of alternative use strategies where redevelopment or a change of use may be required. This must be set in the context of the following hierarchy of risks as follows:-

High: Significant risk of contamination without remediation. Precludes all but the least sensitive of development e.g. car parking. Significant potential for environmental pollution. Remediation measures expensive. Site investigation required.

Medium: Risk of contamination but allowing non-sensitive development e.g. commercial, for reasonable costs of remediation, although more sensitive development, e.g. housing, may require substantial remedial measures. Potential for environmental pollution. Site investigation required.

Low: Little risk of contamination where all development options are likely to be possible with little or no remediation measures. Little potential for environmental pollution. Confirmatory site investigation required.

The information available in this assessment has revealed that there is a medium to high risk of contamination arising from the previous uses of the site.

Surrounding uses form a medium risk of potential contamination predominantly from the works and electricity substation.

With regard to the risk classification developed by AP Geotechnics and in the context of permitted planning uses, it is considered that the site has a medium to high environmental risk given the information available for this appraisal.

7

Discussion

The findings of this study indicate that there is the potential for contamination to be present in the soil and groundwater. It is therefore recommended that an intrusive ground investigation be carried out to assess the extent of any such contamination.

Consideration of the available information indicates that an initial phase of continuous open drive (window) sampler positions or trial pits should be undertaken. In addition some boreholes fitted with standpipes will be required for

water sampling. The standpipes will also require gas valve attachments to satisfy the NHBC expected requirements for a gas risk assessment, due to the presence of unknown infilled ground within 250m of the site.

In view of the previous use as an electricity substation and the immediately adjacent land use as a laundry selected samples of soil and groundwater should be analysed for the general suite of contaminants listed by the former ICRCL^[1] with the addition of total petroleum hydrocarbons (TPH) and Polychlorinated Biphenols (PCBs).

The extent of all aspects of the investigation should be reassessed in the light of the conditions revealed in the early stages, and on consideration of the test results. In particular, significant levels of contamination may warrant further investigation to determine its spatial distribution and mobility.

Health and safety precautions pertinent to the past uses of the site should be taken by personnel involved in the investigations and the exploratory points reinstated to safeguard users of the site.

R Harwood
AP GEOTECHNICS LTD.
30 June 2004

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References

- [1] ICRCCL Guidance Note 59/83
Guidance on the assessment and redevelopment of contaminated land
Interdepartmental Committee on the Redevelopment of Contaminated Land
Second Edition, July 1987

- [2] The Contaminated Land Exposure Assessment Model
Department for Environment, Food and Rural Affairs
The Environment Agency
R & D Publications SGV 8 *et al.*, March 2002

APPENDICES

A Figures

- Figure 1 Extract from the Ordnance Survey of Middlesex,
Sheet XX.15, 1863
- Figure 2 Extract from the Ordnance Survey of Middlesex,
Sheet XX.15, 1915
- Figure 3 Extract from the Ordnance Survey of Middlesex,
Sheet XX.15, 1934
- Figure 4 Extract from the Ordnance Survey Map,
Sheet TQ 1573 SW, 1960

APPENDIX A

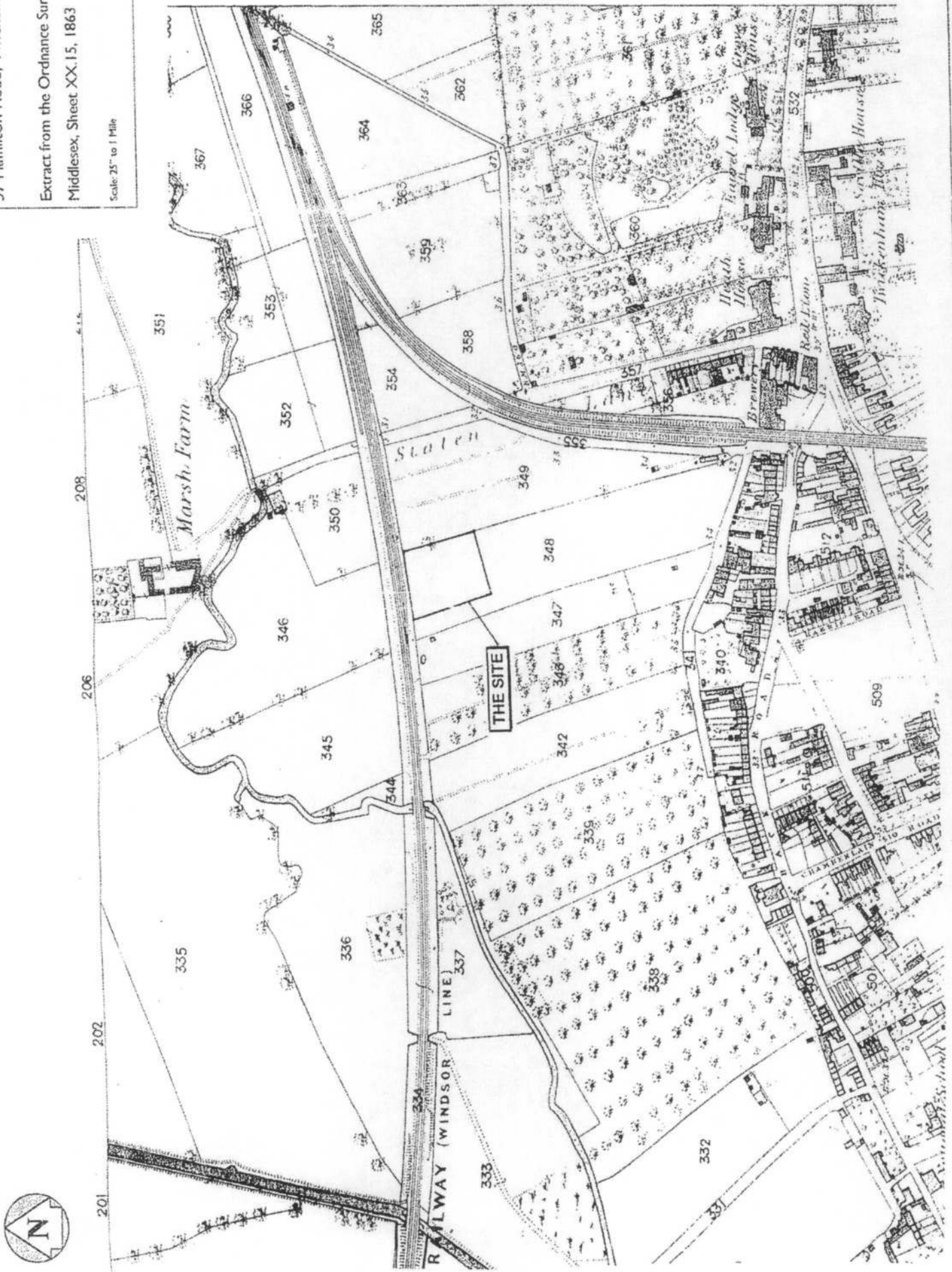
FIGURES

37 Hamilton Road, Twickenham TW2

Extract from the Ordnance Survey of
Middlesex, Sheet XX.15, 1863

Scale: 25" to 1 Mile

Figure 1

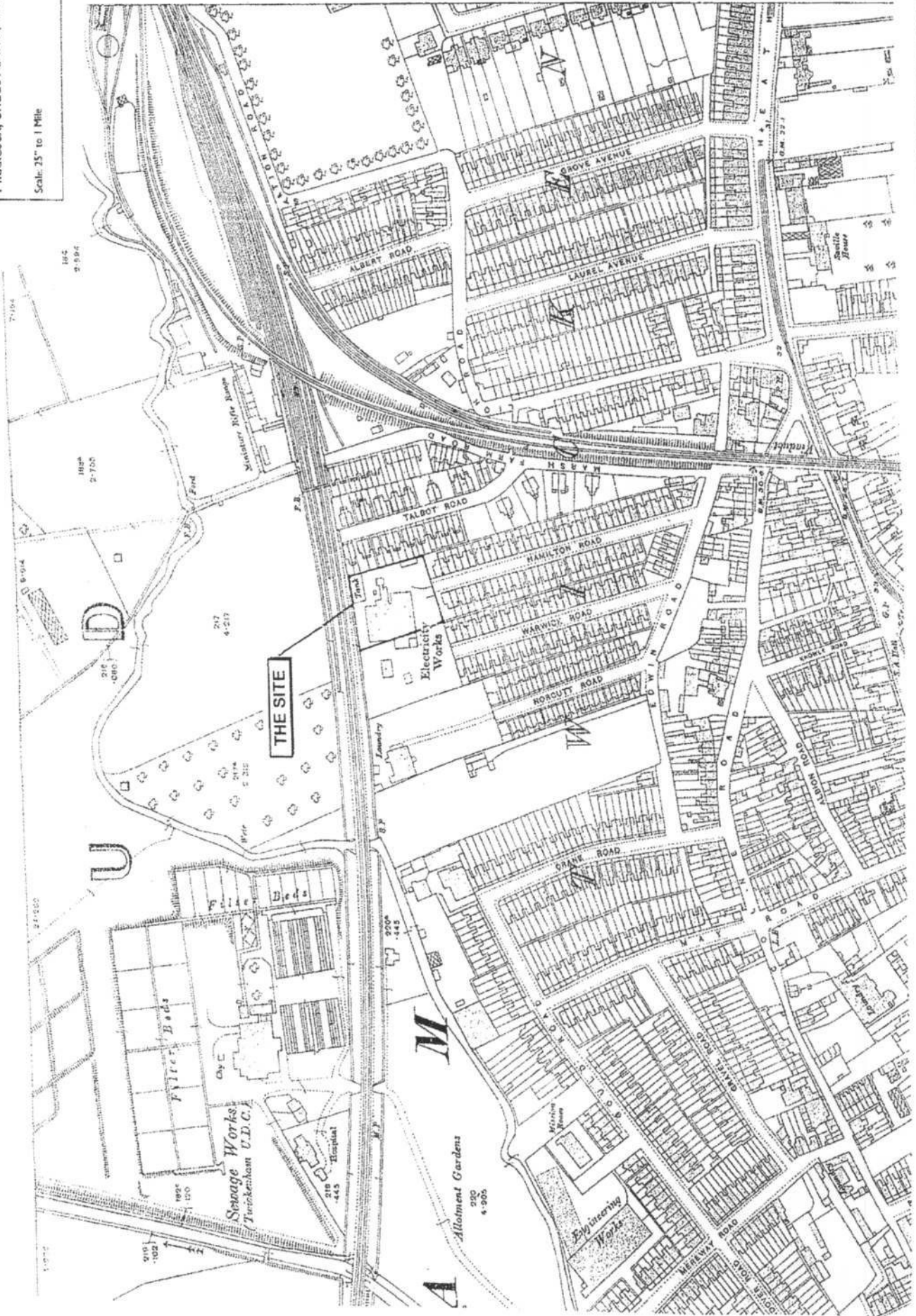


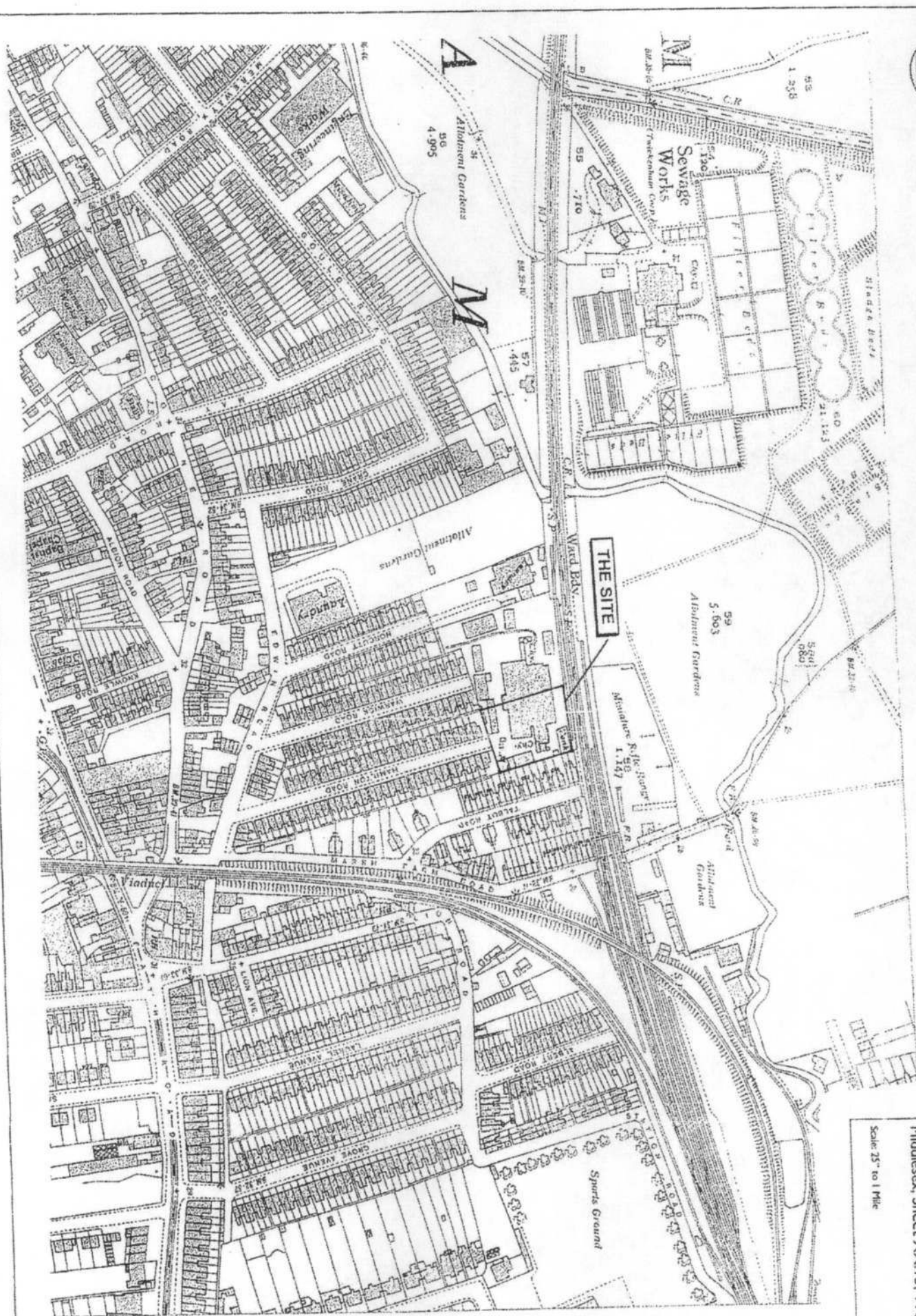
37 Hamilton Road, Twickenham TW2

Extract from the Ordnance Survey of
Middlesex, Sheet XX.15, 1915

Scale: 25" to 1 Mile

Figure 2





37 Hamilton Road, Twickenham TW2
Extract from the Ordnance Survey of
Middlesex, Sheet XX.15, 1934
Scale 25" to 1 Mile

Figure 3



ADS Sewer Map Key

If you have any queries about the symbols on this key call the relevant number below:

Asset Location Team: 0118 923 6664

Commercial Drainage & Water Team: 0118 923 6652

Common public sewers

Foul:

A sewer designed to convey waste water from domestic and industrial sources to a treatment works.

Surface Water:

A sewer used to convey surface water (eg. rain water from roofs, yards and car parks) to watercourses or rivers.

Combined:

Both surface water and foul-sewage flow in the same pipe.

Other public sewers

Point

Trunk Line

Trunk Surface Water

Trunk Combined

Abutment

Manhole

Box Solids (Standard)

Went Pipe

Back Effluent

Proposed

Subsided Watercourse

Gully

Foul Rising Man

Surface Water Rising Man

Combined Rising Man

Sludge Rising Man

Other

Sewer Fittings

A feature sewer that does not affect the flow of liquid in the pipe. Example: a vent is a fitting as the function of a vent is to release excess gas.

- AV Air Valve
- BS Blind Shaft
- CP Catch Pit
- CH Chemical Hazard Manhole
- DC Dam Chase
- DF Double Flushing Tank / Chamber
- M Single Flushing Tank / Chamber
- GP Gauging Point
- GU Gully
- HB Hatch Box
- LH Lamp Hole
- LS Lifting Shaft
- ME Meter
- PH Physical Hazard Manhole
- RE Rodding Eye
- PI Test Point
- VC Vent Column
- VI Vent
- XX Other (Specified on plan)

Operational Controls

A feature in a sewer that changes or diverts the flow of liquid in the sewer. Example: A hydrobrake limits the flow of liquid passing downstream.

- BR Baffle Board
- BD Backdrop Manhole
- BV Butterfly Valve
- CI Clough
- DB Dam Board
- DP Drop Pipe
- DS Drop Shaft
- FI Flume
- FL Flap Valve
- HW Headwall
- HY Hydrobrake
- PI Petrol Interceptor
- PS Penstock
- RV Reflex Valve
- SI Step
- SV Slence Valve
- TA Tank
- WB Weir Board
- WW Weir
- XX Other (specified on map)

NOTES:

- 1) All levels associated with digital plans are to Ordnance Datum Newlyn.
- 2) All measurements on digital maps are metric.
- 3) Arrows (on gravity fed sewers) or checks (on rising mains) indicate direction of flow.
- 4) For symbols referred to as 'Other' on this key, please see digital plan for further information.
- 5) Most private pipe work is not shown on our maps, as in the past, this information has not been recorded.
- 6) -9999.00 or 0 on manhole level indicates that data is unavailable.

End Items

An end symbol is what happens at the start or end of a sewer pipe. Examples: a Undefined End at the start of a sewer indicates that Thames Water has no knowledge of the position of the sewer upstream of that symbol, and Outfall on a surface water sewer indicates that pipe empties into a stream or river.

- EW Effluent Discharge
- SE Soakaway
- OF Outfall
- UE Undefined End
- IF Inlet

Other Symbols

Symbols used on maps which do not fall under other general categories.

- SW Sewerage Treatment Works
- PS Pumping Station
- IL Invert Level
- SW Change of characteristic indicator (C.C.I.)

Areas

Lines denoting areas of underground surveys, etc.

- BOC Building over Case (BOC No.) or Low (Lying Land (LL No.))
- DA Drawing Area
- STW Sewerage Treatment Works or Pumping Station
- RLA Retention tank area
- LA Licence Area
- SA Survey Area
- AA Area under Adoption
- OA Other Area (Specified on plan)

Private Sewer Types

- Foul
- Surface Water
- Combined
- Highway Drain
- Culvert

- 7) The text appearing alongside a sewer line indicates the internal diameter of the pipe in millimetres. Text next to a manhole indicates the manhole reference number and should not be taken as a measurement. When cover and invert levels appear on a plan they are clearly prefixed by 'C' and 'I'. If you are unsure about any text on the plan, please contact the relevant team on the number at the top of this key.
- 8) Physical or Chemical Hazard Manholes are sealed and should not be opened by non Thames Water personnel as they may contain waste that is physically or chemically hazardous.



**37 HAMILTON ROAD,
TWICKENHAM**

**Preliminary
Environmental Assessment**

Synopsis

An investigation has been carried out at 37 Hamilton Road, Twickenham on the instructions of Frenncastle Management Ltd.

The purpose of the investigation was to determine the ground conditions and to provide preliminary recommendations in respect of environmental matters.

Five continuous open drive (window) sampler boreholes were carried out, supported by a programme of in situ and laboratory testing.

The results indicate that some remediation of the site is expected to be required.

A desk study⁽¹⁾ have previously been carried out by APgeotechnics and should be read in conjunction with the recommendations given herein.

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