IMPORTANT

PLEASE NOTE:

The measurements generated from the survey are only to be used as a guide / approximation of distances, additional measurements should be taken before excavations etc. are carried out and we therefore accept no liability for any inaccuracies found.

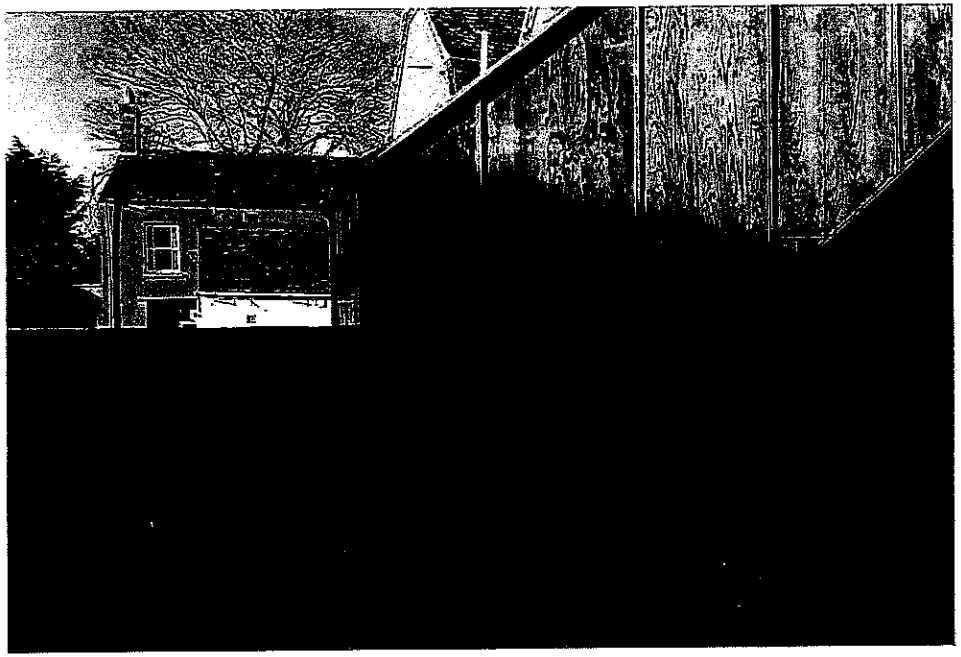
PLEASE NOTE:

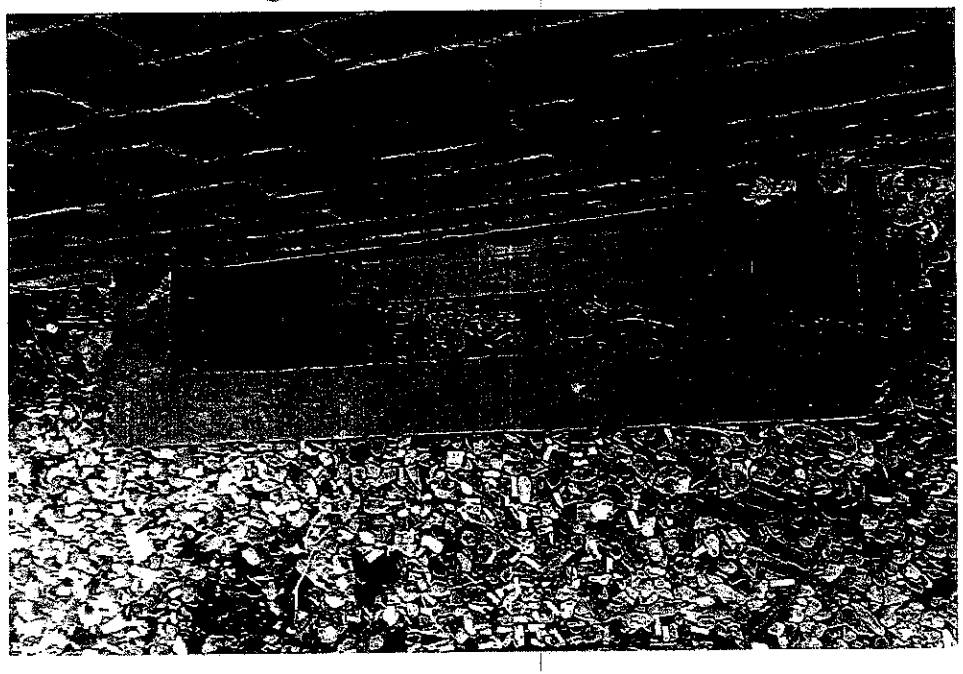
GENESIS RESIDENTIAL CARE HOME, EXISTING DRAIN / MANHOLE ON BOUNDARY

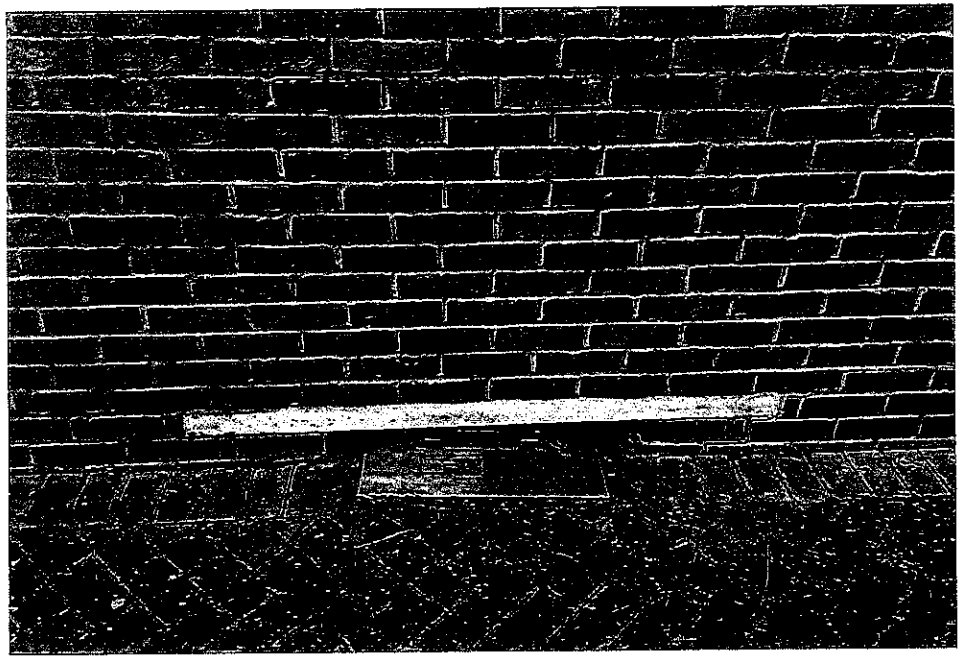


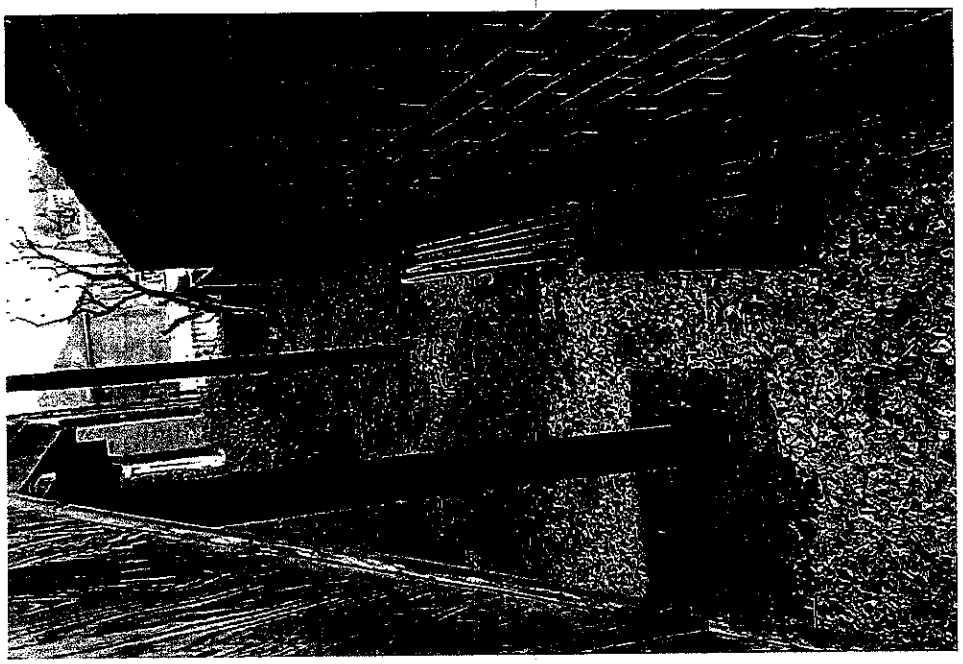


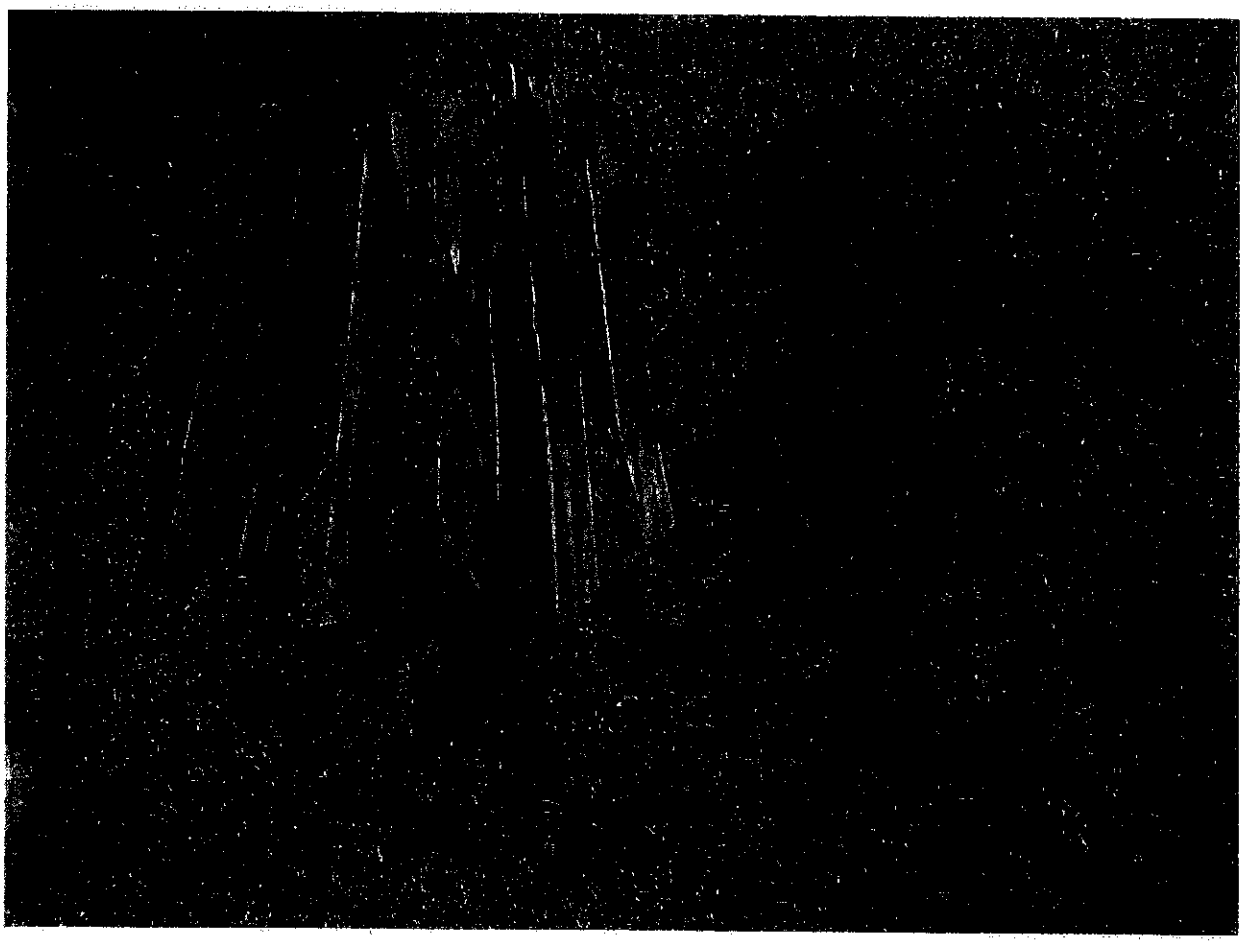
GENESIS RESIDENTIAL CARE HOME – EXISTING DRAIN/MANHOLE ON PROPERTY.

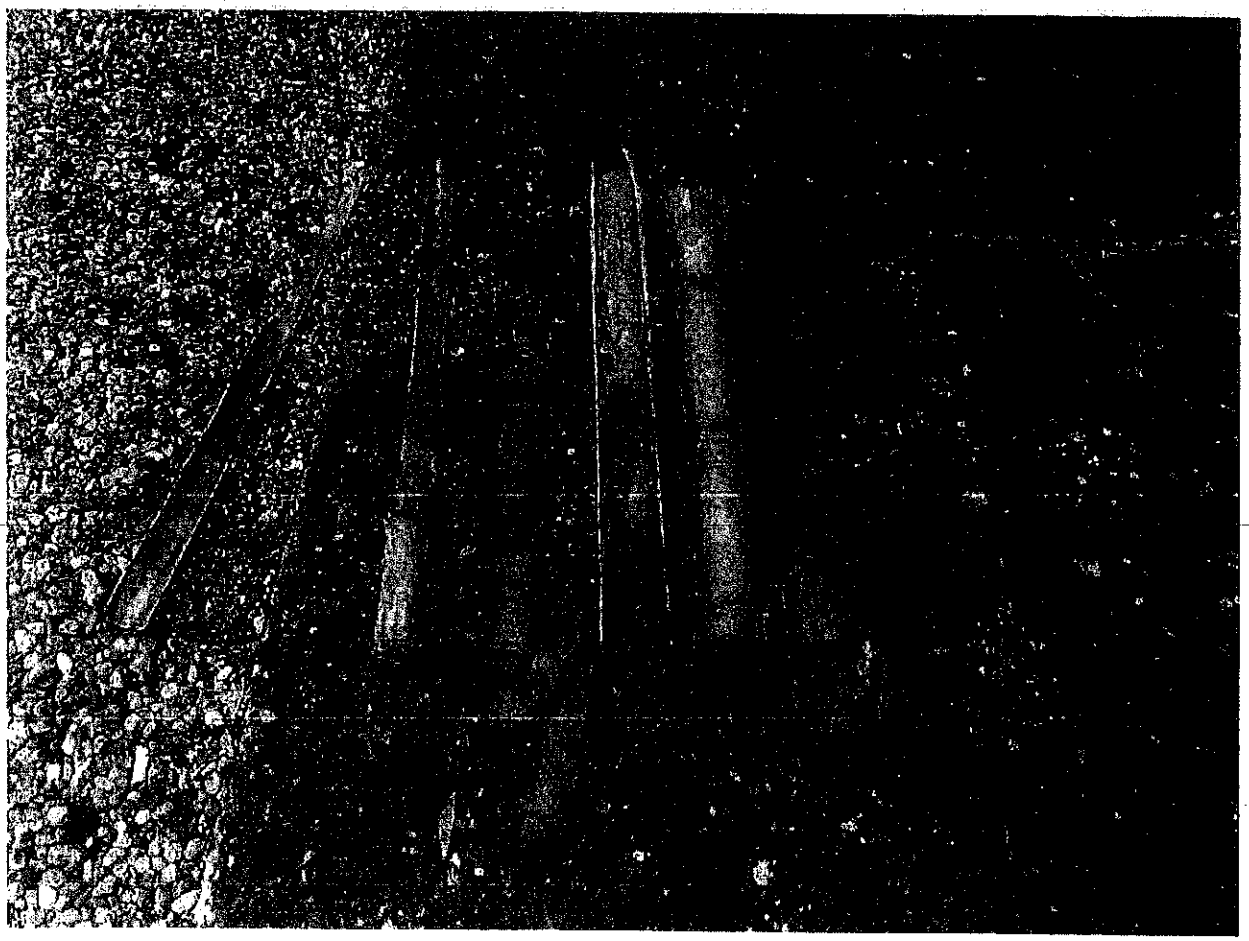










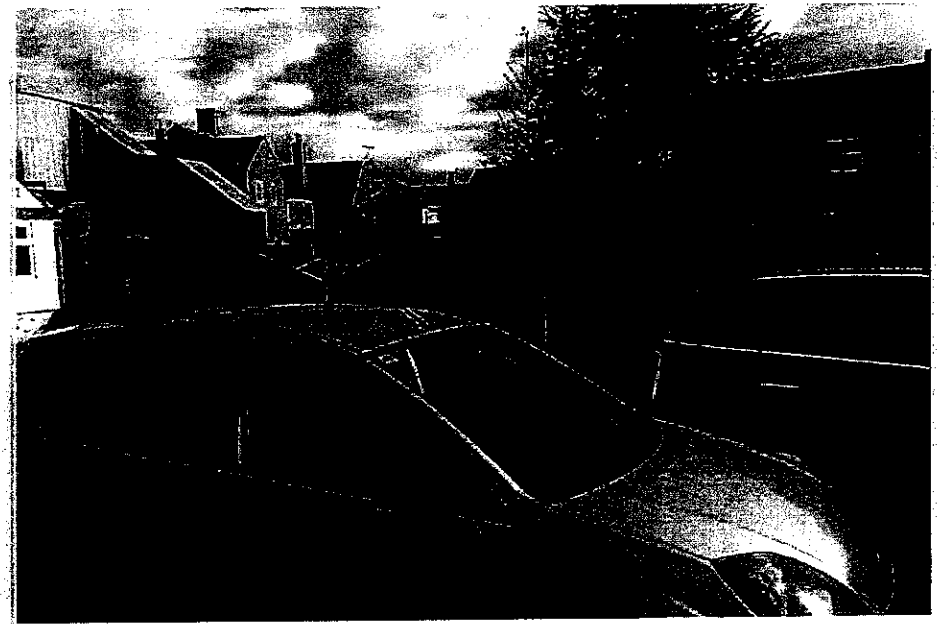


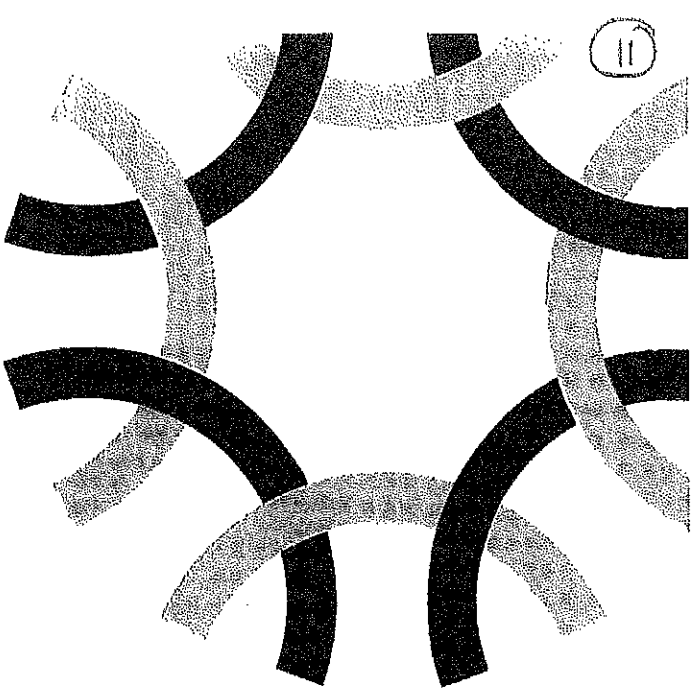
GENESIS RESIDENTIAL CARE HOME – PHOTOGRAPHS OF REAR AREA WHERE EXTENSION IS TO BE CONSTRUCTED











GEOENVIRONMENTAL ASSESSMENT REPORT

PROPOSED EXTENSION TO GENESIS RESIDENTIAL CARE HOME
AT
2 STATION STREET, DONINGTON, SPALDING, PE11 4UQ
FOR
MRS S OOZAGEER

GDP PROJECT NUMBER 1799
10 February 2018

gdp

Brownfield Consulting & Development

Contents

Page No

1.0 INTRODUCTION **4**
1.1 Authorisation and Context 4
1.2 Sources of Information 4
2.0 PRELIMINARY RISK ASSESSMENT **6**
2.1 Objectives of Preliminary Risk Assessment 6
2.2 Environmental Setting 6
2.2.1 Site Setting and Description 6
2.2.2 Historical Map Review Summary 7
2.2.3 Published Geology 7
2.2.4 Hydrogeology 8
2.2.5 Hydrology 8
2.2.6 Flood Risk 8
2.2.7 Radon Gas 8
2.2.8 Mining 8
2.2.9 Environmentally Sensitive Sites 9
2.2.10 Natural Hazards 9
2.4 Qualitative Contaminated Land Assessment 10
2.4.1 Initial Conceptual Site Model 10
2.4.2 Risk Evaluation 11
3.0 SCOPE OF INTRUSIVE GROUND INVESTIGATIONS **16**
3.1 Fieldwork 16
3.2.1 Insitu Testing 17
3.2.2 Laboratory Testing 17
4.0 OBSERVED GROUND CONDITIONS **19**
4.1 Ground Model 19
4.2 Observations of Contamination 20
5.0 ASSESSMENT OF CONTAMINATION **21**
5.1 Generic Assessment Criteria 21
5.2 Geochemical Test Results 21
5.2.1 Public Open Space – Residential land use 22
5.2.2 Asbestos in Soil 23
5.2.3 Ground Gas Risk Assessment 23
5.2.4 Updated Conceptual Site Model 25
6.0 ENGINEERING ASSESSMENT **28**
6.1 Geotechnical Material Properties 28
6.1.1 Classification testing 28
6.2 Existing Foundations 30
6.3 Preliminary Foundation Recommendations 31
6.4 Ground Floors 34
6.5 Design of Buried Concrete 34
6.6 Excavation Stability 34
6.7 SuDS and Drainage 35
7.0 CONCLUSIONS AND RECOMMENDATIONS **36**
7.1 Remediation 36

7.2 Construction H&S Risks....36
7.3 Water Supply Pipes and Utilities....37
7.4 Materials Management and Waste Disposal....37
7.5 Foundations....38
7.6 SuDs and Drainage....38
8.0 LIMITATIONS....39
9.0 REFERENCES....41

TABLES

Table 2.4.1 Initial Conceptual Model
Table 2.4.2 Preliminary Qualitative Risk Assessment
Table 4.1 Ground Model
Table 5.2.1 Comparison of soil samples to relevant GAC for public open space residential (POS_{Resi})
Table 5.2.3 Gas Monitoring Results
Table 5.2.4 Updated CSM
Table 6.1: Plasticity Index and Volume Change Potential
Table 6.4: Aggressive ground assessment

APPENDICES

Appendix 1: Development Plan
Appendix 2: Groundsure Report and Historical Maps
Appendix 3: Site Photographs
Appendix 4: Risk Assessment Methodology
Appendix 5: Exploratory Hole Logs
Appendix 6: Laboratory Test Certificates

Gases can accumulate in excavations to form asphyxiant and/or flammable atmosphere. Suitable assessments should be made prior to personnel entering any excavations.

6.7 SuDS and Drainage

At time of writing it is understood that Anglian Water will not permit additional surface water discharge to the existing combined system in Station Road. Further enquiries are underway. Therefore, it is required to develop a drainage strategy that incorporates a degree of soakaway and storage on the Site with a controlled discharge rate to the existing outfall.

A falling head test was undertaken in WS1 and WS3 on 12th January 2018. The boreholes which have piezometers installed were filled to surface with clean water and then monitoring for 2 hours to determine an infiltration rate. There was no change in water level within 2 hours and a return visit at the end of the day approximately 7 hours later recorded a drop in level of 15mm in WS1 and 25mm in WS3. No infiltration rate could be calculated.

This is not unexpected given the soils are mainly silts and clays and the groundwater table is relatively shallow. It is recommended that a large scale test is undertaken in a shallow trial pit to determine whether a suitable infiltration rate can be calculated to design a shallow infiltration and storage system (crate system is currently proposed).