







NO.	DESCRIPTION	DATE	BY
1	ISSUED FOR CONSTRUCTION	17/02/2023	UG-17
2	ISSUED FOR CONSTRUCTION	17/02/2023	UG-17
3	ISSUED FOR CONSTRUCTION	17/02/2023	UG-17
4	ISSUED FOR CONSTRUCTION	17/02/2023	UG-17
5	ISSUED FOR CONSTRUCTION	17/02/2023	UG-17

**DETECTION METHOD**  
IN ACCORDANCE WITH PAS 128:2014 SURVEY TYPE B

**Drainage Survey**  
All accessible Manholes and Inspection chambers have had their respective covers lifted with pipe scopes, inverts, chamber elevations and service data recorded from ground level. All connections from GPs, Outlets, Drains, VPs, RE's and manholes have been proven wherever possible using suitable connections (AC) and/or sonic instrumentation where applicable. Where these methods have proved unsuccessful then assumed (AR) straight line connections will be shown.

**Electricity**  
Electric cables will have been predominantly located using EML methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required.

**BT Telecom**  
BT cables will have been predominantly located using EML methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required. Due to current laws and legislation protecting all BT apparatus, cabling will only be located externally. We therefore compare all our telecom findings against record information to produce the final service layout. In some instances, where high amount of cable ducts are present, we may only be able to identify a linear centre peak signal rather than identifying the individual duct for further information regarding Telecoms apparatus, please contact Openreach directly.

**Cable TV & Coax**  
Cable TV and Coax cables will have been predominantly located using EML methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required.

**Fire Cables**  
Fire cables will have been predominantly located using EML methodology. This is due to the materials used within fire optic cabling. In some rare instances, tracer cabling or conductive non fire optic cabling will be present within some or all ducting. When this is the case, both EML and GPR methodology will be combined to identify service network and achieve greater quality levels.

**Lighting**  
LC, TS and/or Sec cables will have been predominantly located using EML methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required.

**Water Inc. Fuel Pipes and Hot Water Pipes**  
GASCO and/or WMMVW pipe work will have been attempted and located using both EML & GPR methodology with electronically derived depths shown for the former and depths to crown levels shown for the latter. When the Gas/Water pipe work is constructed using conductive materials, then we are able to employ multiple geophysical techniques to identify service networks and achieve greater quality levels. Where a non conductive material is used, GPR methodology will be employed to locate and plot the final service layout.

**Ground Penetrating Radar**  
GPR methodology is used to identify and locate all non metallic, non conductive piping and cabling. We also employ GPR to obtain a greater accuracy levels on EML located services. The GPR has a greater accuracy rate on pipe or service diameter upward of 200mm/80mm, as size increments increase, so does the chance of detection. The GPR can produce varying results and as such, would not be used as an independent utility surveying instrument.

**Unidentified Traces**  
LC, TS and/or Sec cables will have been predominantly located using EML methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required. Every effort has been made to identify the service but in this instance, it is not achievable. We recommend excavation work to determine identity and depth where applicable.

**Scanning (GIC)**  
Scanning has been identified on site with a potential of an undetectable service present.

**Assumed Routes (AR)**  
Assumed routes (AR) are shown if there is evidence that a service exists but we are unable to trace it whilst on site. The surveyor will attempt to locate various characteristics (service evidence) etc. around the site area to successfully determine an assumed route between these points. If there is little evidence on site but they believe a service is still present, then a common sense approach to an assumed route shall be employed.

**Taken from records (TFR)**  
TFR are service routes that are taken from STAT record plans or previous survey information and overlaid onto our drawings.

**SURVEY RECOMMENDATIONS**

Refer to the 'DETECTION METHOD' section for detailed surveying procedures and quality level requirements.

Refer to the 'DRAWING NOTES' section for specific site-related instructions and warnings.

Refer to the 'GENERAL SYNOPSIS' section for an overview of the survey findings and site conditions.

Refer to the 'DESKTOP UTILITY RECORDS' section for a detailed list of existing services and their locations.

Refer to the 'GENERAL SITE CONDITIONS' section for information on site access, ground conditions, and other relevant factors.

Refer to the 'PRE-REQUISITE UTILITY RECORDS' section for a list of services that were not commissioned for this survey.

Refer to the 'REVISIONS' table for a list of changes made to the drawing during the project.

Refer to the 'CLIENT INFORMATION' section for contact details and project specifications.

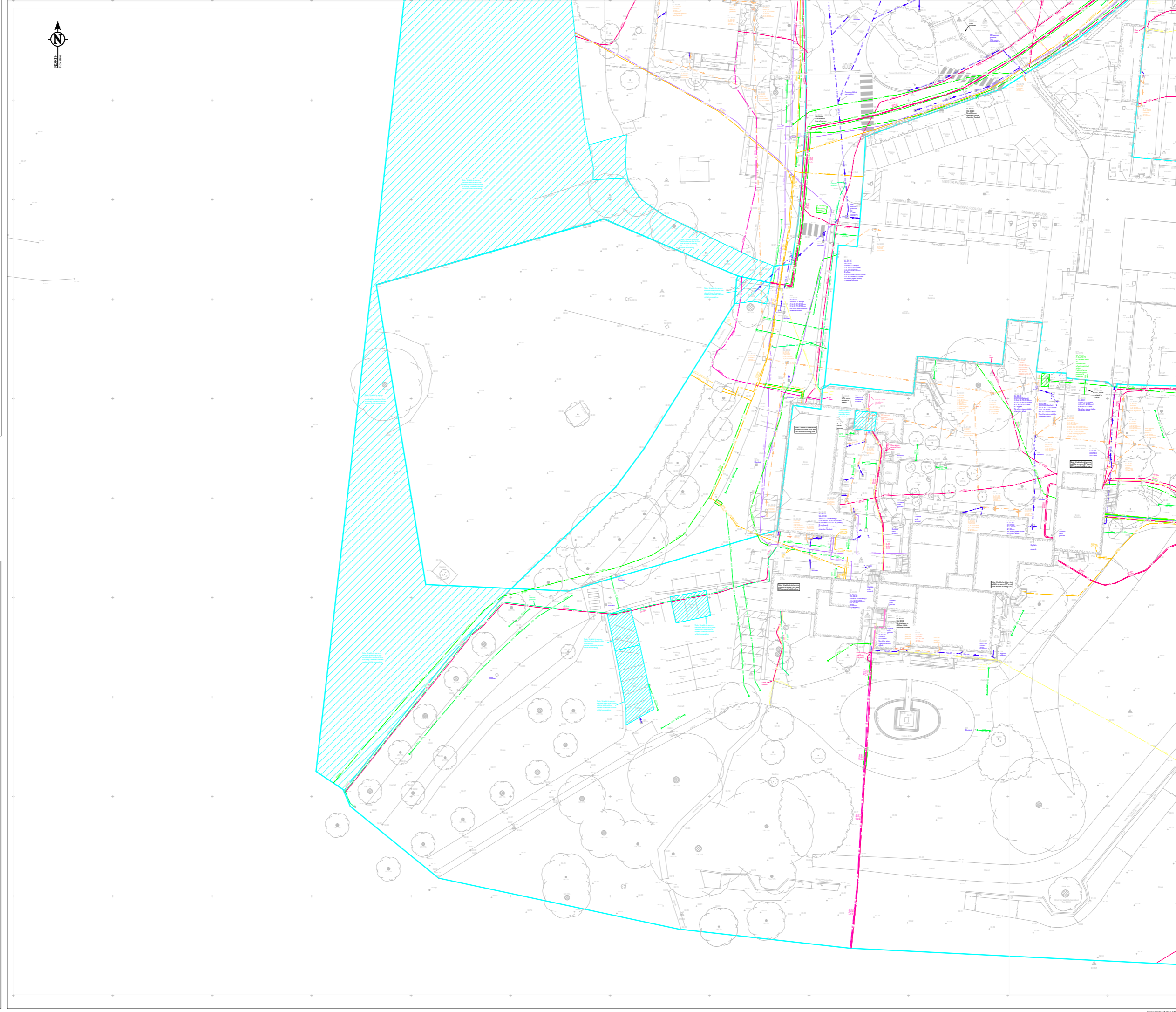
Refer to the 'PROJECT TITLE' section for the name of the project and the client organization.

Refer to the 'DRAWING DETAILS' section for information on the drawing's scale, date, and sheet number.

Refer to the 'CLIENT INFORMATION' section for contact details and project specifications.

Refer to the 'REVISIONS' table for a list of changes made to the drawing during the project.

Refer to the 'CLIENT INFORMATION' section for contact details and project specifications.



**UTILITIES & UNDERGROUND INVESTIGATIONS**

**ABBREVIATIONS & SYMBOLS**

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
ST Cable	ST Cable	Gas Main	Gas Main
Water Main	Water Main	Fire Main	Fire Main
BT Cable	BT Cable	Lighting Cable	Lighting Cable
Cable TV	Cable TV	Unidentified Trace	Unidentified Trace
Fire Cable	Fire Cable	Assumed Route	Assumed Route
Lighting Cable	Lighting Cable	Taken from Records	Taken from Records
Water Main	Water Main	Scanning	Scanning
Gas Main	Gas Main	Unidentified Trace	Unidentified Trace
Fire Main	Fire Main	Assumed Route	Assumed Route
Lighting Cable	Lighting Cable	Taken from Records	Taken from Records
Unidentified Trace	Unidentified Trace	Scanning	Scanning
Assumed Route	Assumed Route	Taken from Records	Taken from Records
Taken from Records	Taken from Records	Scanning	Scanning
Scanning	Scanning	Taken from Records	Taken from Records

**DRAWING NOTES**

All below ground details shown have been identified from above ground without excavation. Survey Solution use electro-magnetic and/or ground penetrating radar (GPR) methods to investigate for underground utilities, services and features. Results using these methods are not infallible and we recommend trial excavations are carried out for verification of positions, depths and identification.

Any areas on the drawing where services or features have not been shown are not necessarily clear of services or features but are an indication that no items have been identified during our investigations. All reasonable care and normal good practice should still be employed during design and construction processes.

Certain types of services such as plastic or concrete pipes, some conduct and during where direct access can not be achieved for tracing may not be shown and alternative locating methods should be used.

Survey Solution has used all reasonable care to research available service records but the completeness or use of the service records supplied to or by Survey Solutions cannot be guaranteed. Therefore Survey Solutions cannot be held responsible for any features annotated as 'taken from records' (TFR).

Depths obtained using electro-magnetic or GPR are affected by ground conditions and should be treated as indicative only. Electro-magnetic depths to utilities and services are generally taken to the centre of a feature. GPR depths to the top of a feature and drainage depth shown to inverts, unless otherwise indicated.

Drainage pipe sizes will be obtained without entering the chamber and therefore should be treated as approximate. Pipe dimensions which have not been obtained visually will be taken from records where available.

All services, drainage and utility routes are assumed straight between access points, unless otherwise stated. The numbers of cables in runs will not be shown unless specifically requested. All services are below ground unless indicated.

Services, utilities and features may not have been surveyed if obstructed or not reasonably visible or accessible at the time of survey.

Survey Solutions accept no responsibility for the completeness or accuracy of either the topographical survey or base mapping on this project.

All critical dimensions and measurements should be checked and verified with any errors or discrepancies notified to Survey Solutions immediately. The accuracy of the digital data is the same as the plotting scale implies. All dimensions are in metres unless otherwise stated.

The contractor must check and verify all site and building dimensions, levels, utilities and drainage details and connections prior to commencing work.

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Do not scale from this drawing.

**GENERAL SYNOPSIS**

This survey has been carried out in accordance with PAS 128:2014 & our version of the Royal Institution of Chartered Surveyors (RICS) specifications for Measured Surveys of Land, Buildings and Utilities. Our survey extents have been agreed and confirmed with formal acceptance of UG-17 from Oaklands College. If you have any queries regarding the final services layout, please may we ask you to carefully read all the information within this block back in its entirety before continuing to do so.

**TOPOGRAPHICAL/DWG DRAWING INFORMATION**

SURVEY TYPE	DESCRIPTION	EFFECT ON SURVEY RESULTS
GPS	Survey Stations	
RTK		
GPS		

**GENERAL SITE CONDITIONS**

ADDITIONAL INFORMATION	EFFECT ON SURVEY RESULTS
Good	

**DESKTOP UTILITY RECORDS (PAS 128:2014 SURVEY TYPE D)**

UTILITY	AVAILABILITY	UTILITY COMPANY PROVIDER
WATER MAIN	NA	
GAS MAIN	NA	
TELECOM PUBLIC	NA	
TELECOM PRIVATE	NA	
ELECTRICITY	NA	
OTHER	NA	

**PRE-REQUISITE UTILITY RECORDS (PAS 128:2014 SURVEY TYPE B)**

UTILITY	AVAILABILITY	UTILITY COMPANY PROVIDER
WATER MAIN	NA	
GAS MAIN	NA	
TELECOM PUBLIC	NA	
TELECOM PRIVATE	NA	
ELECTRICITY	NA	
OTHER	NA	

REV	DESCRIPTION	DRAWN	CHECKED	APPR	SURVEY DATE



**SURVEY SOLUTIONS**  
LAND SURVEYS  
BUILDING SURVEYS  
UNDERGROUND SURVEYS  
SITE SURVEYS  
MOTIONING

0845 040 5969  
survey-solutions.co.uk

PROJECT TITLE  
OAKLANDS COLLEGE,  
ST ALBANS

DRAWING DETAILS  
UTILITIES AND DRAINAGE COMPOSITE DRAWING  
SHEET 17 OF 28

CLIENT  
OAKLANDS COLLEGE

SURVEYOR  
UG-17

SCALE  
1:500

