WB | SHIELS

Issue No. 2 | INCOMING SERVICES & UTILITIES ASSESSMENT

P2389 | KNELLER HALL

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# Document Revision Sheet

| Version | Date | Reason for Issue | Document prepared by | | Document checked by | |
|---|---|---|---|---|---|---|
| | | | Name | Date | Name | Date |
| 2.0 | 14/09/22 | For Planning | TC/VS | 14/09/22 | ES | 14/09/22 |

# CONTENTS

# 1.0 INTRODUCTION

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## 1.1 OVERVIEW

WB Shiels have compiled a utilities statement and review of the existing and proposed development 65 Kneller Road, Twickenham, TW2 7DN.

The redevelopment of the site is intended to provide educational buildings and facilities including indoor and outdoor sports areas, and creative arts spaces, as well as general and specific education classrooms.

The existing site consists of a Ministry of Defence's former Royal Military School of Music, together with ancillary residential accommodation, administration and office space.

The extent of the site is bound in red and highlighted in red below:

Fig. 1 Kneller Hall Site Plan

The scope of this review is to identify the presence and location of existing infrastructure – pipes and ducts, associated with electrical, gas, water, telecommunications and foul drainage utilities which are routed either on or in close proximity to the development site – this information acquired through enquiry with each of the utility service providers.

A utilities search has been requested and completed, with utility providers providing their individual mapping information. This information is appended to the rear of this document.

As might be expected there are existing power, telecoms, gas, water, and foul drainage services located within the site boundary. These are associated with the existing buildings, and where required their relocation will be undertaken as part of the general redevelopment of the site.

The proposals for the site have been evaluated, and formal approaches have been made to the individual utility providers to seek detailed quotations and proposals for the new utility connections and associated cutting back, diversion or relocation works. At this stage, any requirement for the establishment of new wayleaves or easements will be identified – and also any necessary agreements for the potential relinquishing of the existing wayleave agreement which is associated with the existing basement level substation.

In all instances where proximity of services is identified as being 'present' the precise locations, i.e. dimensions, are not given as the general practice is they identify 'approximate' positions only.

## 1.2 PROJECT TEAM

The team representing the client includes the following:

| | |
|---|---|
| Project Manager: | LXA |
| Architect: | ADP Architecture |
| Structural Engineer: | AKSward |
| Cost Consultant | ACS Construction |
| MEP Designer: | WB Shiels Ltd |

# 2.0 SCOPE OF WORKS

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## 2.1 OVERVIEW

The scope of this report is focused on the existing and proposed utility services, and mapping records which have been requested from the utility service providers, with mapping records requested for the following utility services;

- Mains cold water services
- Mains gas supplies
- Foul drainage
- Mains HV & LV electrical supplies
- Telecommunications
- Cable TV

The reported information is based on the information which was requested and subsequently provided by the statutory service providers and other utility services.

Further, the reported information is based on information provided at the time/shortly prior to the issue of this report, and therefore must be read in such context – the greater the time which elapses post first issue of this report, the greater the potential that the information will become outdated.

The report and information provided aims to confirm the approximate location of existing utility and statutory services in the vicinity of the site which are typically buried and concealed from view. The report and information also aims to identify those services which will likely require diversion or alteration as a consequence of the proposed development works.

Surface water/ sewer connections are not considered in this report as these provisions will be detailed separately by the structural engineer. See AKS Ward's Drainage Strategy and Maintenance Plan including Foul Water Drainage Strategy submitted with the planning application.

Street lighting is assumed to be retained as existing in the immediate vicinity of the development.

## 2.2 PLANNING CONTEXT

There is a large amount of legislation, regulatory guidance and codes of practice which exist in connection with the utility industry which will be adhered to. The following table summarises the appropriate references.

Legislation, Regulatory guidance and Codes of Practice

| Utility | Act | Regulator |
|---|---|---|
| Electricity | Electricity Act 1989 | Ofgem |
| Gas | Gas Act 1986 (as amended) | Ofgem |
| Telecommunications | Communications Act 2003 | Ofcom |
| Potable Water | Water Act 2003 | Ofwat |
| Foul Drainage | Water Industry Act 1991 | Ofwat |

The New Roads and Street Works Act (NRSWA) 1991 and the Traffic Management Act 2004 will govern any utility modifications or new installations required in the public highway.

Any diversionary works required will be made based on The Street Works (Recovery Costs) Regulations whereby the utility will recover Allowable Costs for the necessary work.

Guidance for the utilities industry is provided by the HAUC (Highway Authority and Utilities Committee) which brings highway authorities, utilities and government together with the aim to improve working practice to reduce the impact of works on members of the public in the UK.

## 2.3 DIVERSIONS

The mapping information provided indicates that there are no live statutory or utility services on or crossing this site – except those services which serve the site itself or which are associated with the existing UKPN substation.

On this basis, other than cutting back existing live services which will be rendered redundant as a consequence of these works, and the separate issues associated with the UKPN substation, WB Shiels do not anticipate any significant diversion works will be necessary.

Similarly, other than the UKPN substation, there does not appear to be any other utility plant or equipment located within the site demised boundary, so again no necessity or requirement for relocation or accommodating such plant or equipment.

## 2.4 PROJECT STATUS

Currently the project is at RIBA Stage 3 and the designs have been developed to support the formal planning application.

## 2.5 ASSUMPTIONS

With the project currently in the planning stage, the utility design and demand estimate calculations have been developed predominantly through desk top analysis.

It is also noted for good record;

- Offsite Reinforcements

Is being accounted for and assessed by the independent individual utility companies;

- Building Connections

New building connections are indicated on the plans and will be fully detailed through the detailed design stage of the project, including coordination with the architect, the structural engineer and individual utility companies.

- Flood Risk

Flood risk mitigation has been factored into the utility layouts. Utility layouts have been considered to ensure critical infrastructure is not exposed to flooding.

- Utility Demands

The architectural floor plans have been used to ensure the upper quantum of demand is considered at this stage.

- Phasing

The construction phasing will be developed as the detail design works progress, however in principal it is anticipated that the works will be delivered in progressive steps and stages, not completed as a single project.

## 2.6 KEY ISSUES & NEXT STEPS

Pursuant to the planning application, there are a series of primary activities which will continue, including:

- Further engagement with utility companies;

  Ongoing consultation with the relevant Statutory Authorities will continue to establish off-site reinforcement provisions and to confirm the utility strategies detailed in this report.

- Further consultation with stakeholders;

  Areas within the development may require separate connections to utility networks.

- Additional site investigation;

  Current design is based on record information, which can be inaccurate or contradictory. Further site investigation using Ground Penetration Radar (GPR) and strategic trial trenches is there for recommended to confirm the extent and position of existing utilities within the site boundary.

# 3.0 EXISTING INCOMING SERVICES REVIEW

# 4.0 UTILITY STRATEGY & INCOMING SERVICES REVIEW

## 4.1 EXISTING SERVICES

### 4.1.1 UKPN SUBSTATION

The buildings within Kneller Hall compound are currently fed from a Distributed Network Operator (DNO) substation located within the estate. The local DNO is UK Power Networks. It consists of an 800kVA oil- filled transformer with external boundary, open to the sky.

The substation is situated near the boundary wall facing Kneller Road. The UKPN substation can easily be accessed by entering the main Kneller Hall estate entrance.

The external boundary wall is a part of the Grade II listed structure, therefore, there are no intrusions through the wall.

Fig. 2 Existing Location of the Outdoor Transformer

The Electrical substation number is 121277. The transformer within has two outgoing ways for the estate. One serves the Kneller Hall (Main Building) through 2x 185 $mm^2$ cables while the other one feeds a Kiosk 1 with a 185 $mm^2$ underground cable. The Kiosk 1 then feeds the other buildings within the estate.

As the substation is located near residential premises, part of its loads consists of residential townhouses within Kneller Road and Whitton Dene, a day centre and an additional kiosk.

Similarly, it is assumed that the UKPN substation is the subject of an existing wayleave and lease provision. Currently the site does not export electricity.

### 4.1.2 OPENREACH

Within the current scheme, the estate is fed from different BT Boxes located both on Whitton Dene and Kneller Road.

As shown on Fig. 3, supplies for the Kneller Hall Main Building comes from a BT box on Kneller Hall.

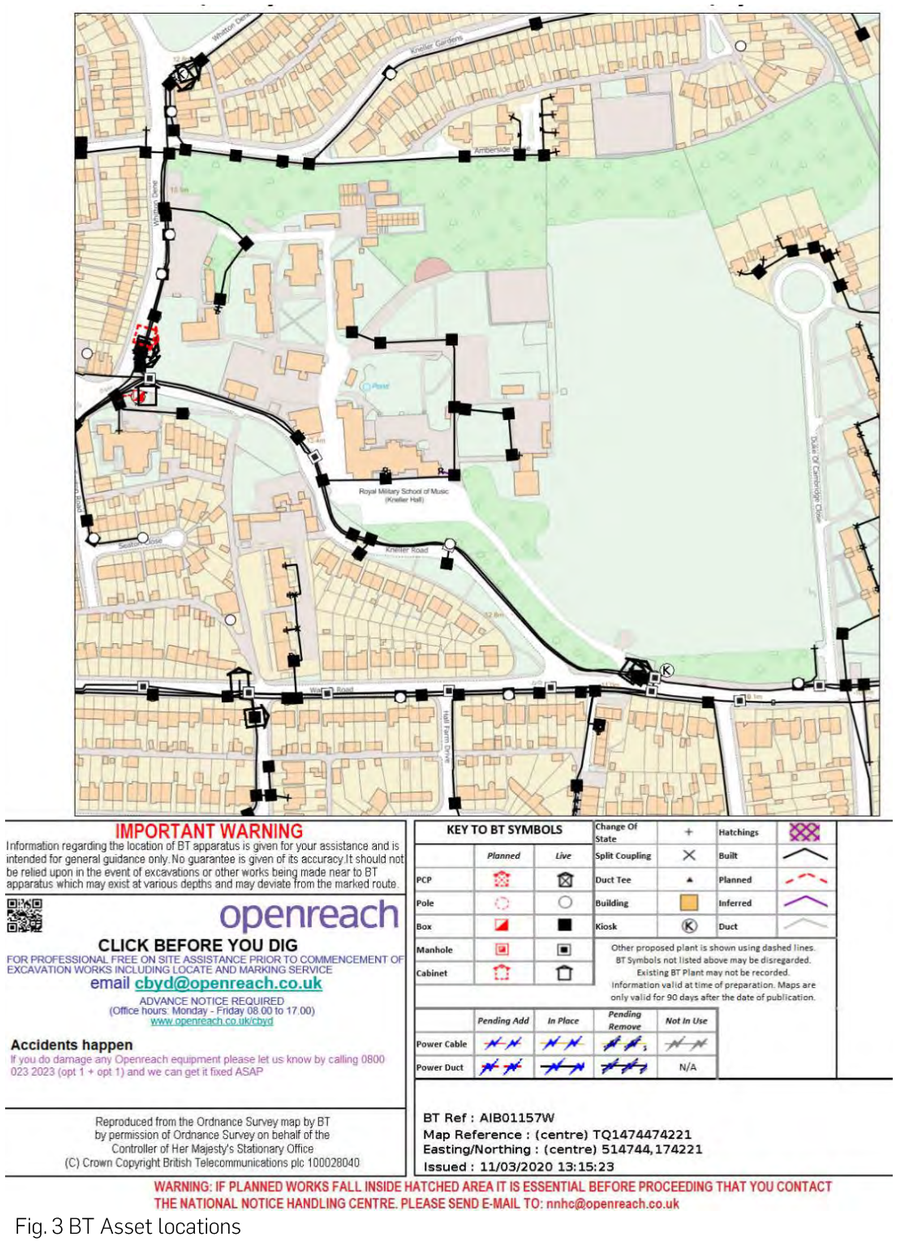


Fig. 3 BT Asset locations

## 4.2 DIVERSIONS

### 4.2.1 UKPN SUBSTATION

The new development calls for cable diversions and upgrade of supplies to cope with the new building electrical demands.

The newly developed scheme will consist of new builds and re-purpose existing buildings below:

1 . Energy Centre 1
2. Energy Centre 2
3. Sports Centre including Swimming Pool
4. Teaching Block
5. School Hall (former Band Practice Hall)
6. Guard House
7. Kneller Hall
8. Sport Pavilion.

Load calculation for the various buildings have been undertaken and it was found that an import capacity of 710 kVA will be required.

Some of the electrical network infrastructure will not be in use and thus requires it to be de-commissioned. Fig 4 shows the cables disconnections that is required. These disconnections bring additional future capacity for the current 800 kVA rated Transformer.

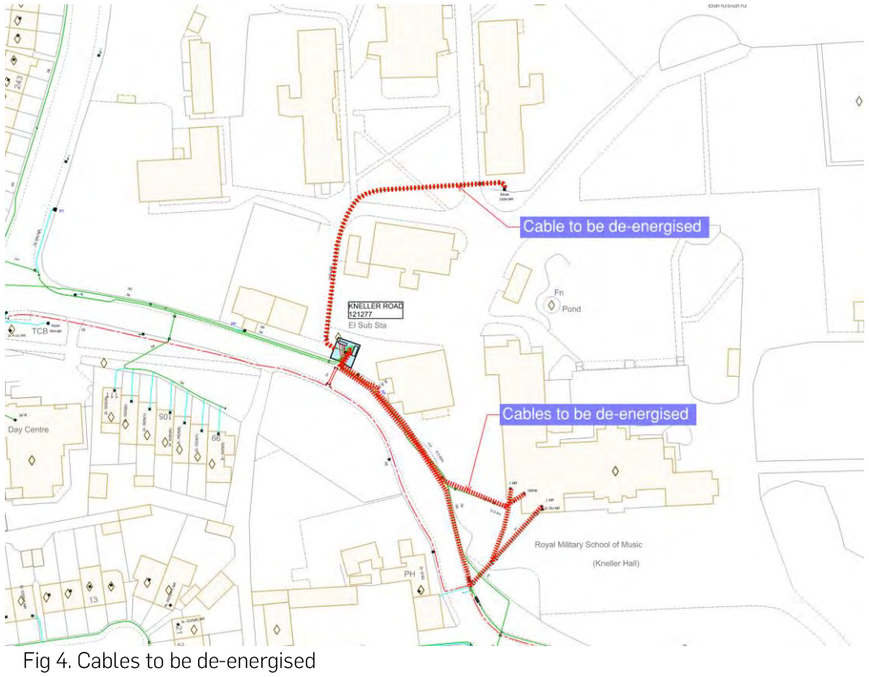


Fig 4. Cables to be de-energised

### 4.2.2 OPENREACH

The current scheme uses copper for the data network distribution. Copper has limited data speed while Fibre Optic is speedier and consumes less space. The new scheme, Fibre To The Premises will be implemented (FTTP).

Fig 5. BT Ducts around estate perimeter

## 4.3 LOW PRESSURE GAS

Visits to the Kneller Hall and review of stats information and record drawings have enabled an assessment of the local gas infrastructure and the current incoming gas supply serving the site and building arrangements.

The site is currently fed by three incoming gas supply mains. One from the north of site, from the low-pressure main running along Amberside Close. One incoming gas main enters the site form the west and Whitton Dene the remaining three incoming gas services enters the site from various positions on Kneller Road to the south.

The incoming gas mains terminate in meter gas housing before continuing on across the stie as buried services to the various buildings and their respective sub-meters.

The incoming gas main to the west from Whitton Dene is known to be currently redundant. As with all incoming services, before alteration and/or disconnection, the service is to be suitably tested for operation and the infrastructure asset owner is to be notified of its condition.

See drawing in Appendix D at the rear of this report for more details of the gas network layout.

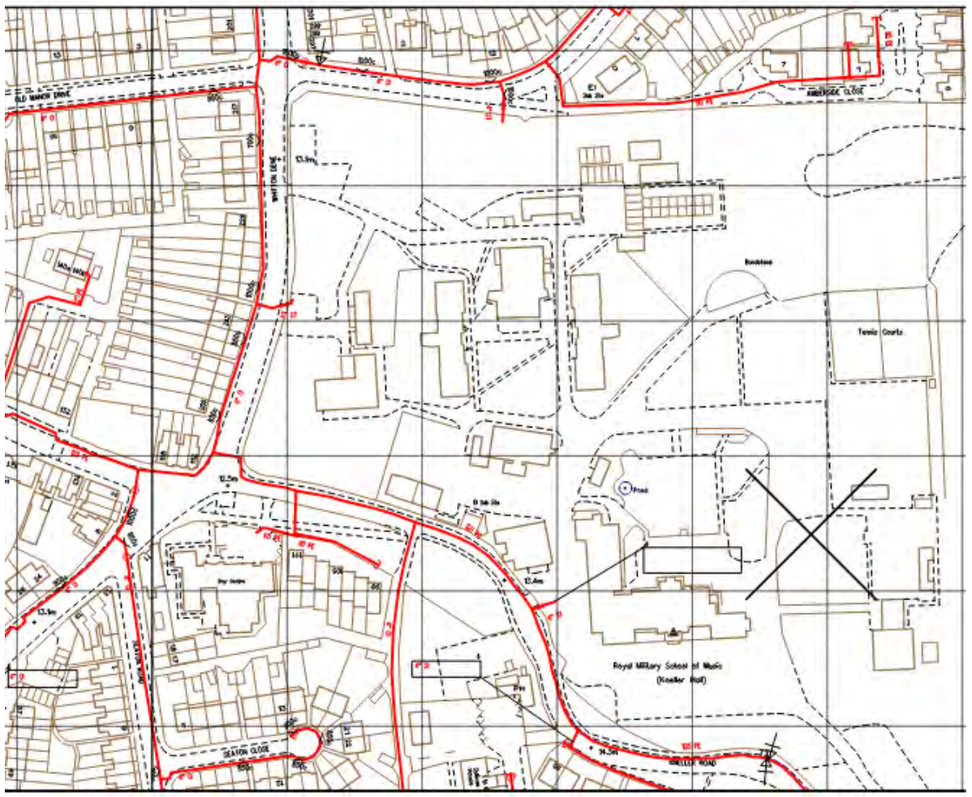


Fig. 6 Current low pressure mains gas infrastructure

Meter house; Kneller Hall

Meter house; Site Boundry

Fig.7,8 & 9 Meter house;

## 4.4 WATER

The site is served by various incoming towns main water supplies, infrastructure owned by Thames Water. There are four incoming supplies to site. One to the west, emanating from Whitton Dene, which terminates in a buried meter at the site boundary.

Fig. 10 shows the connection points as outlined on the Thame Water Asset Information drawing.

The second, third and fourth cold water feeds enter the site from the south from Kneller Road. Again, these buried incoming supplies terminate in permitter meters before being routed across the grounds to the various buildings.

The record information provided by Thames Water shows a PE mains supply serving the site but does not detail the size. It is anticipated that the demolition contractor will engage with the local water authority to arrange transfer of the meter account once vacant possession is obtained.

Refer to drawing reference number 42394-CPL2-XX-XX-RP-C-0001_S2_1 provided by Cornerstone, in Appendix B, for the locations of the potable water network.

The demolition contractor will maintain an existing on-site cold water main to serve as a temporary supply to meet the construction and welfare requirements during the build.

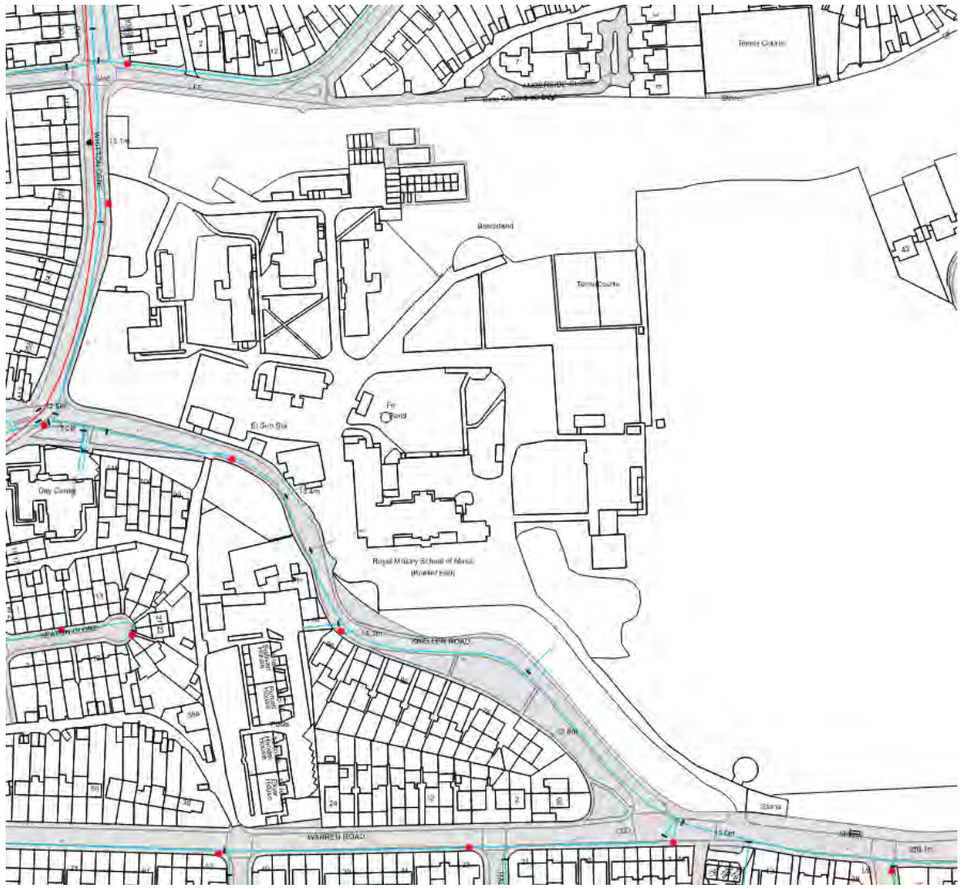


Fig. 10 Current towns main water infrastrucutre

## 4.5 FOUL WATER DRINAGE

Thames Water own and operate the foul water drainage network in the area. Please refer to the Structural Engineers information for further details. See AKS Ward's Drainage Strategy and Maintenance Plan including Foul Water Drainage Strategy submitted with the planning application.

# 4.0 PROPOSED INCOMING SERVICES REVIEW

# 5.0 PROPOSED INCOMING SERVICES

## 5.1 LOW PRESSURE GAS

It is expected the development's gas demand will be less than the existing building's demand. It is anticipated that the gas connection will only be used for educational spaces in the science rooms and the cooking supply in the event of electrical failure.

Cadent have confirmed the nearest main with sufficient capacity is 5 meters from the site boundary and it is a Low Pressure main located in Kneller Gardens.

Load calculation for the various buildings have been undertaken and it was found that an import capacity of 185m³/hr will be required.

A quotation for a single new supply from the gas mains to the gas meter in the teaching block on the west side of the development will be required.

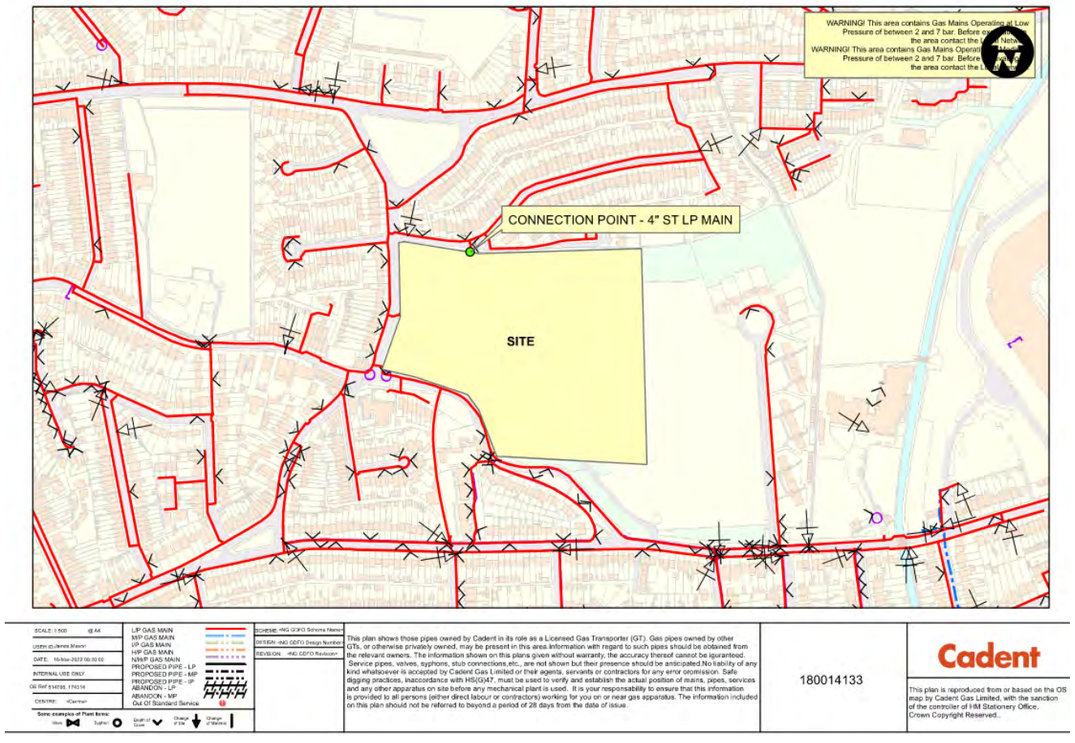


Fig. 11 Current towns main water infrastrucutre

## 5.2 WATER

2No. cold water feeds are proposed for the new development. 1No. cold water main will enter the site from Kneller Road to the southwest and 1No. cold water supply will enter the site from Whitton Dene to the West.

The works by Thames water will terminate with a bulk supply meter, water supplies to the individual buildings will be installed by the mechanical contractor, along with the installation of pulsed output submeters in line with the BREEAM requirements. It has been calculated that the development will require 4.62 l/s of cold-water supply.

A survey by Thames water will be required to facilitate the provision of a quotation.

It is not anticipated that upgrade works are required on the Thames Water network infrastructure at the time of writing, however Thames Water Developer Services will confirm requirements as the design continues and is finalised.

A capped off water main provision will be routed across site to meet the requirements of Phase 2 and Phase 3 of the build.

## 5.3 FOUL WATER DRAINAGE

For further information on the requirements to connect the foul water drainage to the existing network in the area, please refer to the Structural Engineers information for further details. See AKS Ward's Drainage Strategy and Maintenance Plan including Foul Water Drainage Strategy submitted with the planning application.

## 5.4 UKPN SUBSTATION

The combined newly proposed development load with the existing residential loads exceeds the current 800 kVA supply. We would therefore require an additional substation sitting next to the current substation.

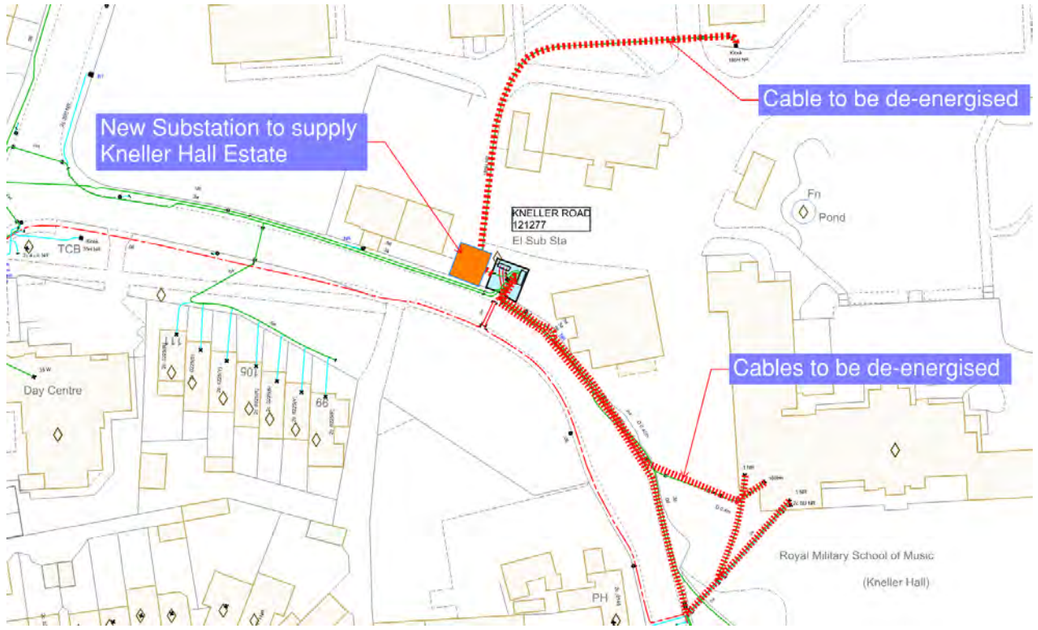


Fig. 12 Site Location of proposed new substation

The newly proposed substation can get its HV ring feed from the adjacent substation. To avoid diversions, its location can be near the existing substation. UKPN has advised the installation of a new 500 kVA unit Transformer unit substation in a GRP next to the current one.

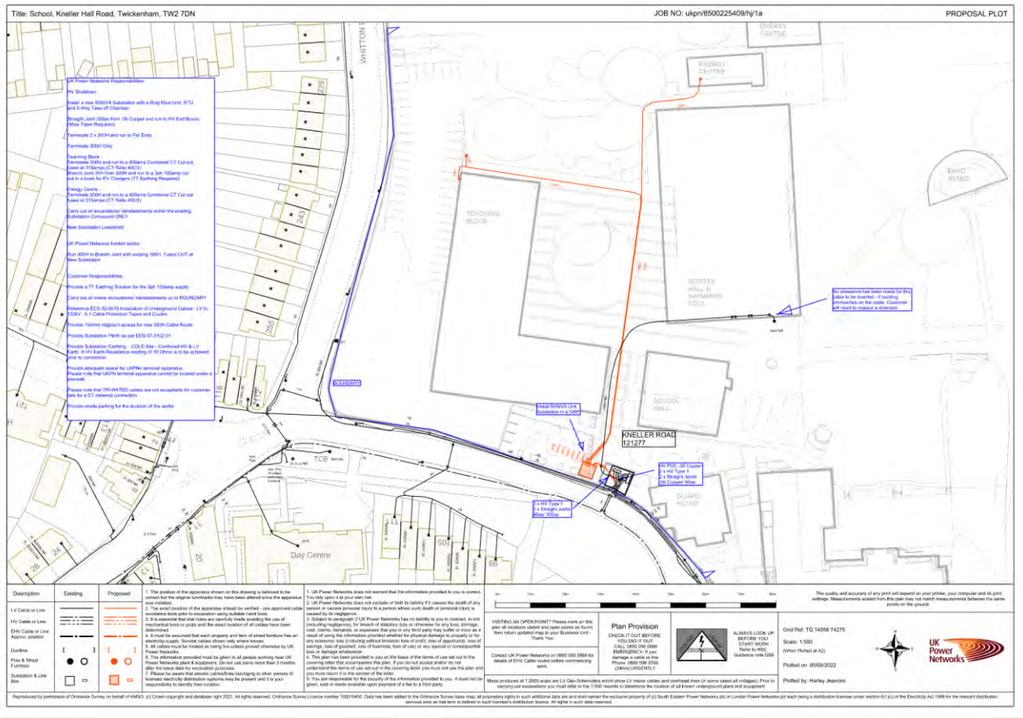


Fig 13. Proposed routing of cables to within the Kneller Hall Estate

HV joints will be made from the current substation to link the new substation. The new substation will then serve the estate electrical loads.

## 5.5 OPENREACH

A new full Fibre network will be implemented. This will ensure that the cable from the Street Cabinets and boxes to the buildings are Optical Fibre. Using this method will allow information to pass faster on the network and serve the different buildings better.

Once the Fibre enters each building, it will be converted back to Copper wires using an Optical Network Terminal (ONT). Running Copper cables within each building will not affect the speed as the data travel distances within the building are small.

# 5.0 APPENDIX

APPENDIX A EXISTING COMBINED UTILITIES

APPENDIX B MAPPING RECORDS UK POWER NETWORKS

APPENDIX C MAPPING RECORDS CADENT GAS

APPENDIX D MAPPING RECORDS THAMES WATER

APPENDIX E BT OPENREACH/VIRGIN MEDIA

APPENDIX F PROPOSED INCOMING MECH./PUB. HEALTH UTILITIES

APPENDIX G PROPOSED INCOMING ELECTRICAL UTILITIES

APPENDIX A EXISTING COMBINED UTILITIES


1:1000 @ A1

0 20m 40m 60m 80m 100m 120m

STANDARD NOTES

1. DO NOT SCALE FROM THIS DRAWING. CONFIRM ALL DIMENSIONS AND STRUCTURAL INFORMATION ON SITE, IF IN DOUBT ASK BEFORE ACTING.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE APPROPRIATE WB|SHIELS REPORT AND SCHEDULES.

NOTES:

LEGEND

- CABLE TV
- CCTV CABLE
- COMM CABLE
- ELECTRICITY CABLE
- FOUL WATER PIPE
- GAS PIPE
- HEATING PIPE
- OVERHEAD CABLE
- OVERHEAD PIPE
- SURFACE WATER PIPE
- TELEPHONE CABLE
- UNIDENTIFIED SERVICE
- WATER PIPE
- PROPOSED BUILDING LOCATION

| REV | DATE | BY | DESCRIPTION | CHK | APP |
|---|---|---|---|---|---|
| P3 | 14/09/22 | ZS | FOR PLANNING | ZS | ES |
| P2 | 05/09/22 | TC | FOR PLANNING | ZS | ES |
| P1 | 24/06/22 | ZS | PRELIMINARY | ZS | ES |

DRAWING STATUS | FOR PLANNING

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WWW.WBSHIELS.COM



PROJECT | KNELLER HALL
FOR PLANNING

TITLE | SITE WIDE
EXISTING INCOMING UTILITIES
DISTRIBUTION

| | |
|---|---|
| DESIGNER \| TC | CHECKED \| ES |
| SCALE \| 1:1000 @ A1 | DRAWN \| TDS |

DRAWING No | P2389_00_X_1 REV | P3

APPENDIX B MAPPING RECORDS UK POWER NETWORKS

Title: School, Kneller Hall Road, Twickenham, TW2 7DN

JOB NO: ukpn/8500225409/hj/1a

PROPOSAL PLOT

UK Power Networks Responsibilities:

HV Shutdown

Install a new 500kVA Substation with a Ring Main Unit, RTU and 5-Way Take off Chamber

Straight Joint 300ax from .06 Copper and run to HV End Boxes (95ax Taper Required)

Terminate 2 x 300H and run to Pot Ends

Terminate 300H Only

Teaching Block -
Terminate 300H and run to a 400amp Combined CT Cut out fused at 315amps (CT Ratio 400:5)
Branch Joint 35H from 300H and run to a 3ph 100amp cut out in a kiosk for EV Chargers (TT Earthing Required)

Energy Centre -
Terminate 300H and run to a 400amp Combined CT Cut out fused at 315amps (CT Ratio 400:5)

Carry out all excavations/ reinstatements within the existing Substation Compound ONLY

New Substation Leasehold

UK Power Networks funded works:

Run 300H to Branch Joint with existing 185H. Fuses OUT at New Substation

Customer Responsibilities:

Provide a TT Earthing Solution for the 3ph 100amp supply

Carry out all onsite excavations/ reinstatements up to BOUNDARY

Reference ECS 02-0019 Installation of Underground Cables : LV to 132kV : 6.1 Cable Protection Tapes and Covers

Provide 150mm ridgiduct access for new 300H Cable Route

Provide Substation Plinth as per EDS 07-3102.01

Provide Substation Earthing - COLD Site - Combined HV & LV Earth. A HV Earth Resistance reading of 10 Ohms is to be achieved prior to connection

Provide adequate space for UKPNs terminal apparatus.
Please note that UKPN terminal apparatus cannot be located under a stairwell

Please note that TRI-RATED cables are not acceptable for customer tails for a CT metered connection.

Provide onsite parking for the duration of the works

ENERGY CENTRE

TEACHING BLOCK

SPORTS HALL & SWIMMING POOL

BAND STAND

SCHOOL HALL

GUARD HOUSE

Day Centre

WHITTON D

KNELLER ROAD
121277

BOUNDARY

Install 500kVA Unit Substation in a GRP

HV POC .06 Copper
2 x HV Type 1
2 x Straight Joints
.06 Copper/ 95ax

2 x HV Type 1
2 x Straight Joints
95ax/ 300ax

No allowance has been made for this cable to be diverted - if building encroaches on the cable, Customer will need to request a diversion

300H

35H

185H NR

TCB 35H NR

2c 4 c/c NR

Ass. Pos.

Ass. Pos. of cables and street furniture

D 0.76m

35 W

| Description | Existing | Proposed |
|---|---|---|
| LV Cable or Line | | |
| HV Cable or Line | | |
| EHV Cable or Line Approx. position | | |
| Ductline | [ ] | [ ] |
| Pole & Street Furniture | | |
| Substation & Link Box | | |

1. The position of the apparatus shown on this drawing is believed to be correct but the original landmarks may have been altered since the apparatus was installed.
2. The exact position of the apparatus should be verified - use approved cable avoidance tools prior to excavation using suitable hand tools.
3. It is essential that trial holes are carefully made avoiding the use of mechanical tools or picks until the exact location of all cables have been determined.
4. It must be assumed that each property and item of street furniture has an electricity supply. Service cables shown only where known.
5. All cables must be treated as being live unless proved otherwise by UK Power Networks.
6. The information provided must be given to all people working near UK Power Networks plant & equipment. Do not use plans more than 3 months after the issue date for excavation purposes.
7. Please be aware that electric cables/lines belonging to other owners of licensed electricity distribution systems may be present and it is your responsibility to identify their location.

1. UK Power Networks does not warrant that the information provided to you is correct. You rely upon it at your own risk.
2. UK Power Networks does not exclude or limit its liability if it causes the death of any person or causes personal injury to a person where such death or personal injury is caused by its negligence.
3. Subject to paragraph 2 UK Power Networks has no liability to you in contract, in tort (including negligence), for breach of statutory duty or otherwise for any loss, damage, cost, claims, demands, or expenses that you or any third party may suffer or incur as a result of using the information provided whether for physical damage to property or for any economic loss (including without limitation loss of profit, loss of opportunity, loss of savings, loss of goodwill, loss of business, loss of use) or any special or consequential loss or damage whatsoever.
4. This plan has been provided to you on the basis of the terms of use set out in the covering letter that accompanies this plan. If you do not accept and/or do not understand the terms of use set out in the covering letter you must not use the plan and you must return it to the sender of the letter.
5. You are responsible for the security of the information provided to you. It must not be given, sold or made available upon payment of a fee to a third party.

0m 10m 20m 30m 40m 50m 60m 70m 80m

The quality and accuracy of any print will depend on your printer, your computer and its print settings. Measurements scaled from this plan may not match measurements between the same points on the ground.

VISITING AN OPEN POINT? Please mark on this plan all locations visited and open points as found, then return updated map to your Business Unit - Thank You.

Contact UK Power Networks on 0800 056 5866 for details of EHV Cable routes before commencing work.

## Plan Provision

CHECK IT OUT BEFORE YOU DIG IT OUT
CALL 0800 056 5866
EMERGENCY- If you damage a cable or line
Phone 0800 096 3766
(24hrs) URGENTLY

LOOK OUT LOOK UP

ALWAYS LOOK UP BEFORE YOU START WORK
Refer to HSE Guidance note GS6

Maps produced at 1:2500 scale are LV Geo-Schematics which show LV mains cables and overhead lines (in some cases all voltages). Prior to carrying out excavations you must refer to the 1:500 records to determine the location of all known underground plant and equipment.

Grid Ref: TQ 14586 74275

Scale: 1:500
(When Plotted at A2)

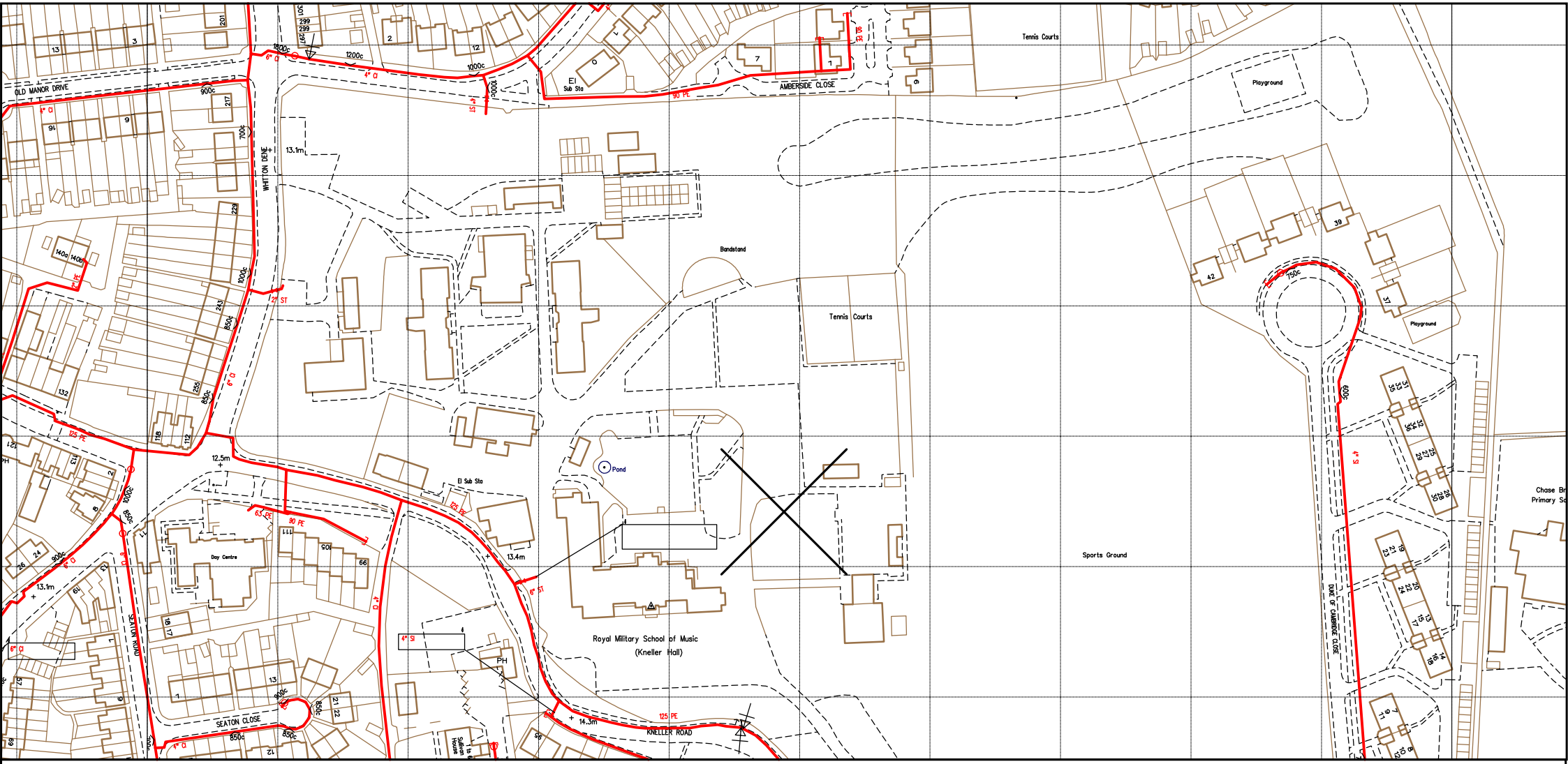
Plotted on: 05/08/2022

Plotted by: Harley Jeavons

N W E S

UK Power Networks

APPENDIX C MAPPING RECORDS CADENT GAS




| | |
|---|---|
| SCALE: Not to scale | LP MAINS |
| USER ID: Charlie | MP MAINS |
| DATE: 11/03/2020 | IP MAINS |
| EXTRACT DATE: 09/12/2019 | LHP MAINS |
| MAP REF: TQ1474 | |
| CENTRE: 514744, 174271 | |

Some examples of Plant Items:

Valve | Depth of Cover | Syphon | Diameter Change | Material Change | Out of Standard Service

This plan shows those pipes owned by Cadent Gas Ltd in their role as a Licensed Gas Transporter (GT). Gas pipes owned by other GTs, or otherwise privately owned, may be present in this area. Information with regard to such pipes should be obtained from the relevant owners. The information shown on this plan is given without warranty, the accuracy thereof cannot be guaranteed. Service pipes, valves, syphons, stub connections, etc. are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Cadent Gas Ltd or their agents, servants or contractors for any error or omission. Safe digging practices, in accordance with HS(G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near gas apparatus. The information included on this plan should not be referred to beyond a period of 28 days from the date of issue. Further information on all DR4s can be determined by calling the DR4 hotline on 01455 892426 (9am-5pm) A DR4 is where a potential error has been identified within the asset record and a process is currently underway to investigate and resolve the error as appropriate.

MAPS Viewer Version 5.8.0.1

Local Machine

APPENDIX D MAPPING RECORDS THAMES WATER

# Asset Location Search Water Map - ALS/ALS Standard/2020_4170260

**TQ1474SE**


The width of the displayed area is 500m and the centre of the map is located at OS coordinates 514750,174250

**The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.**

**Based on the Ordnance Survey Map with the Sanction of the controller of H.M. Stationery Office, License no. 100019345 Crown Copyright Reserved.**

APPENDIX E BT OPENREACH/VIRGIN MEDIA

# Maps by email Plant Information Reply


## IMPORTANT WARNING

Information regarding the location of BT apparatus is given for your assistance and is intended for general guidance only. No guarantee is given of its accuracy. It should not be relied upon in the event of excavations or other works being made near to BT apparatus which may exist at various depths and may deviate from the marked route.

openreach

## CLICK BEFORE YOU DIG

FOR PROFESSIONAL FREE ON SITE ASSISTANCE PRIOR TO COMMENCEMENT OF EXCAVATION WORKS INCLUDING LOCATE AND MARKING SERVICE

email cbyd@openreach.co.uk

ADVANCE NOTICE REQUIRED
(Office hours: Monday - Friday 08.00 to 17.00)
www.openreach.co.uk/cbyd

### Accidents happen

If you do damage any Openreach equipment please let us know by calling 0800 023 2023 (opt 1 + opt 1) and we can get it fixed ASAP



### KEY TO BT SYMBOLS

| | Planned | Live |
|---|---|---|
| PCP | | |
| Pole | | |
| Box | | |
| Manhole | | |
| Cabinet | | |

| | | | |
|---|---|---|---|
| Change Of State | + | Hatchings | |
| Split Coupling | X | Built | |
| Duct Tee | ▲ | Planned | |
| Building | | Inferred | |
| Kiosk | K | Duct | |

Other proposed plant is shown using dashed lines.
BT Symbols not listed above may be disregarded.
Existing BT Plant may not be recorded.
Information valid at time of preparation. Maps are only valid for 90 days after the date of publication.

| | Pending Add | In Place | Pending Remove | Not In Use |
|---|---|---|---|---|
| Power Cable | | | | |
| Power Duct | | | | N/A |

BT Ref : AIB01157W
Map Reference : (centre) TQ1474474221
Easting/Northing : (centre) 514744,174221
Issued : 11/03/2020 13:15:23

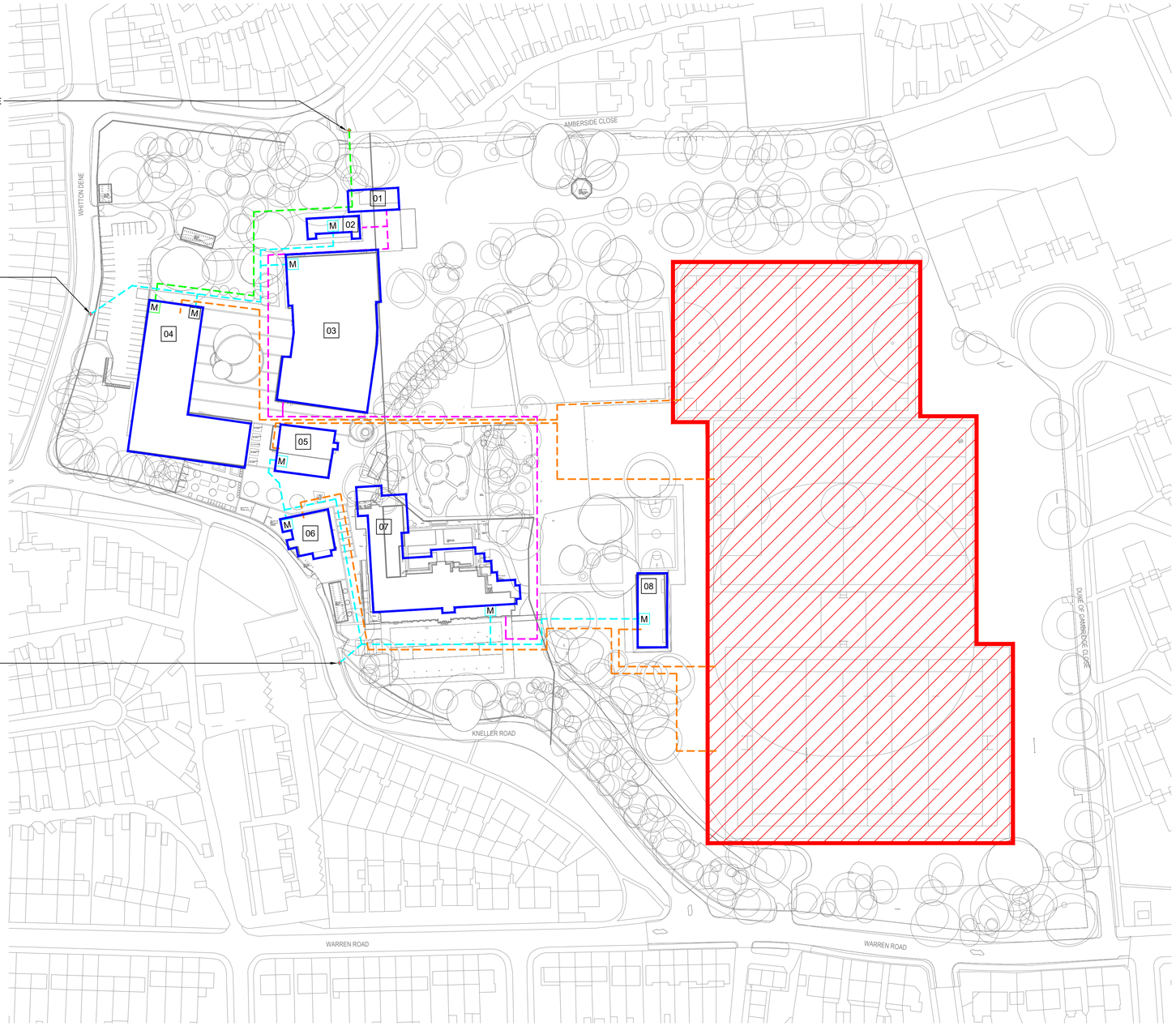
WARNING: IF PLANNED WORKS FALL INSIDE HATCHED AREA IT IS ESSENTIAL BEFORE PROCEEDING THAT YOU CONTACT THE NATIONAL NOTICE HANDLING CENTRE. PLEASE SEND E-MAIL TO: nnhc@openreach.co.uk

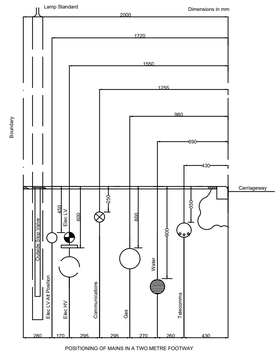
APPENDIX F PROPOSED INCOMING MECH./PUB. HEALTH UTILITIES

LOCATION OF INCOMING GAS SUPPLY TO SITE
FROM CADENT NETWORK INFRASTRUCTURE

LOCATION OF INCOMING MAINS WATER
SUPPLY TO SITE FROM THAMES
WATER NETWORK INFRASTRUCTURE
90mm POTABLE WATER PIPE

LOCATION OF INCOMING MAINS WATER
SUPPLY TO SITE FROM THAMES
WATER NETWORK INFRASTRUCTURE
90mm POTABLE WATER PIPE




POSITIONING OF MAINS IN A TWO METRE FOOTWAY

1:1000 @ A1

0 20m 40m 60m 80m 100m 120m

STANDARD NOTES

1. DO NOT SCALE FROM THIS DRAWING. CONFIRM ALL DIMENSIONS AND STRUCTURAL INFORMATION ON SITE, IF IN DOUBT ASK BEFORE ACTING.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE APPROPRIATE WB|SHIELS REPORT AND SCHEDULES.

NOTES:

1. THIS LAYOUT IS PROVIDED FOR DISCUSSION, FINAL ENERGY CENTRE LOCATION SUBJECT TO WORKSHOP.
2. FINAL ENERGY CENTRE SIZE SUBJECT TO DETAILED DESIGN.
3. BURIED SERVICES PIT & DUCT NETWORK SUBJECT TO SURVEY OF EXISTING ROUTES.

LEGEND

- COLD WATER SUPPLY
- GAS SUPPLY
- ASHP AMBIENT LOOP F&R
- GSHP LOOP F&R

- 01 ENERGY CENTRE 1
- 02 ENERGY CENTRE 2
- 03 SPORTS & POOL HALL
- 04 TEACHING BLOCK
- 05 BAND HALL
- 06 GUARDS HOUSE
- 07 KNELLER HALL
- 08 SPORTS PAVILION

GROUND SOURCE HEAT PUMP PIPEWORK ARRAY

M COLD WATER PULSED OUTPUT SUB METER

M LOW PRESSURE GAS PULSED OUTPUT SUB METER

| REV | DATE | BY | DESCRIPTION | CHK | APP |
|---|---|---|---|---|---|
| P3 | 14/09/22 | TC | FOR PLANNING | ZS | ES |
| P2 | 05/09/22 | TC | FOR PLANNING | ZS | ES |
| P1 | 24/06/22 | ZS | PRELIMINARY | ZS | ES |

DRAWING STATUS | FOR PLANNING


WB|SHIELS

10 CHANCEL STREET, LONDON, SE1 0UX
TEL: +44 (0)203 764 0801
WWW.WBSHIELS.COM



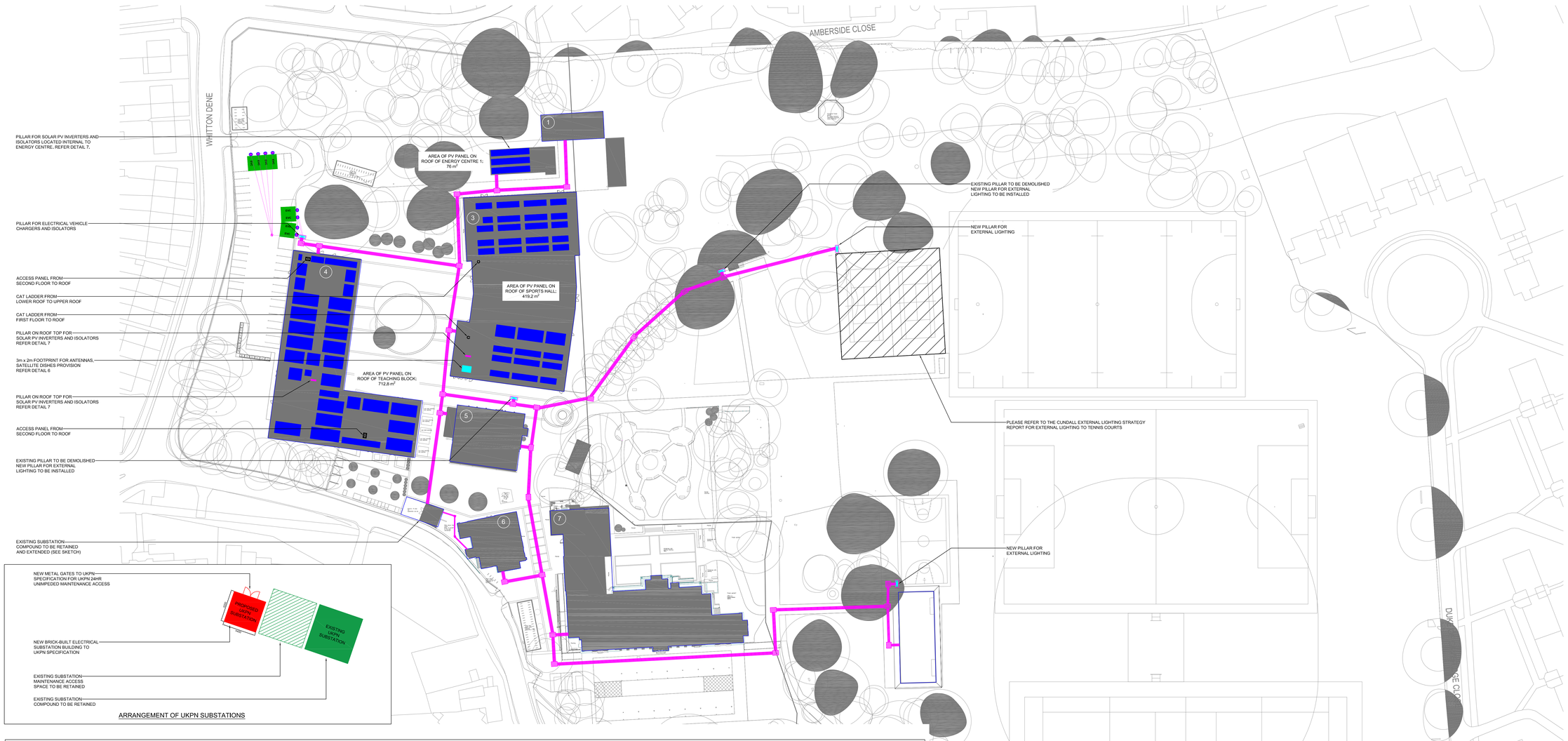

PROJECT | KNELLER HALL
FOR PLANNING

TITLE | MECHANICAL SERVICES
SITE WIDE
DISTRIBUTION

| | |
|---|---|
| DESIGNER \| TC | CHECKED \| ES |
| SCALE \| 1:1000 @ A1 | DRAWN \| TDS |

DRAWING No | P2389_00_X_2 REV | P3

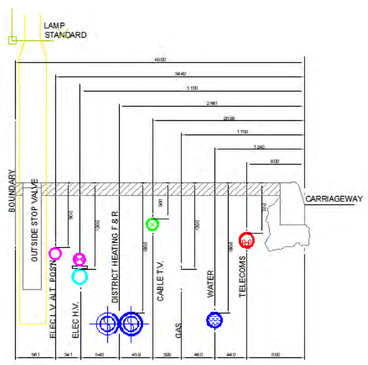
APPENDIX G PROPOSED INCOMING ELECTRICAL UTILITIES



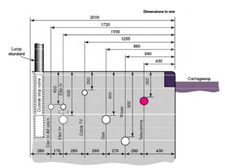




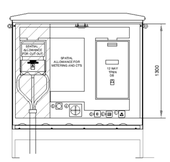
ARRANGEMENT OF UKPN SUBSTATIONS




DETAIL 1 - NATIONAL JOINT UTILITIES GROUP (NJUG) POSITIONING OF UTILITIES MAINS IN 2M FOOTWAY

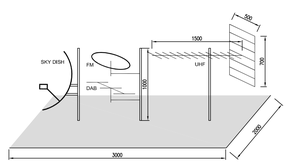



DETAIL 2 - NJUG POSITIONING OF UTILITIES MAINS

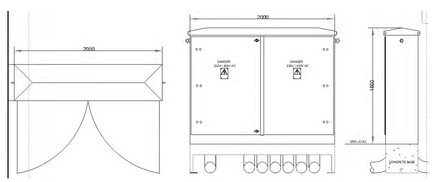


1. SINGLE SWITCHED SOCKET
2. 13A FUSED CONNECTION UNIT FOR TRACE HEATING
3. LIGHT SWITCH
4. FAN UNIT
5. THERMOSTAT

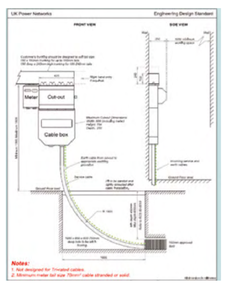
DETAIL 3 - FEEDER PILLAR LAYOUT



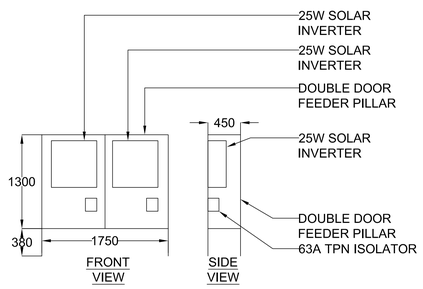

DETAIL 6 - TYPICAL ARRANGEMENT OF TV AND SKY DISTRIBUTION SYSTEM AERIALS & SATELLITE DISH SIZES TBC BY SPECIALIST




DETAIL 4 - EVCP FEEDER PILLAR SIZE




DETAIL 5 - TYPICAL UKPN CUT OUT IN EACH BUILDING




DETAIL 7 - TYPICAL DETAIL OF FEEDER PILLAR-3 FEEDER PILLAR WITH 2 NOS. 25KW SOLAR INVERTER

STANDARD NOTES

1. DO NOT SCALE FROM THIS DRAWING. CONFIRM ALL DIMENSIONS AND STRUCTURAL INFORMATION ON SITE. IF IN DOUBT ASK BEFORE ACTING.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE APPROPRIATE WB|SHIELS REPORT AND SCHEDULES.

NOTES

1. THE ELECTRICAL INSTALLATION SHALL COMPLY WITH BS7671:2018 18TH EDITION.
2. REFER TO ARCHITECTS INFORMATION FOR DIMENSIONS AND FINAL COORDINATED LOCATIONS.
3. REFER TO LANDSCAPE ARCHITECTS INFORMATION FOR DIMENSIONS AND FINAL COORDINATED LOCATIONS OF BOLLARD LIGHTS.
4. REFER TO STRUCTURAL ENGINEERS INFORMATION FOR DIMENSIONS AND FINAL COORDINATED LOCATIONS OF UNDERGROUND PIPES.
5. DESIGN OF CABLE TRENCH AND DUCTBANK TO SPECIALIST'S SPECIFICATION AND DETAIL
6. THE ELECTRICAL INSTALLATION SHALL BE CARRIED OUT IN ACCORDANCE WITH BS 7671.
7. THE ELECTRICAL SUB-CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN AND WORKING DRAWINGS AND COORDINATION.

LEGEND

- PROPOSED BUILDING LOCATION
- 1 ENERGY CENTER 2
- 2 ENERGY CENTER 1
- 3 SPORTS & POOL HALL
- 4 TEACHING BLOCK
- 5 SCHOOL HALL
- 6 GUARD HOUSE
- 7 KNELLER HALL (MAIN BUILDING)
- 8 SPORTS PAVILION
- 9 PROPOSED & EXISTING TRANSFORMER ROOM
- 7.4KW TYPE 2 EV CHARGING STATION
- FEEDER PILLAR
- DUCTS FOR ELECTRICAL / INCOMING FEEDER / TELECOMMUNICATION / FIBRE OPTIC / DATA
- MANHOLE / CABLE DRAW PIT
- TRENCH WITH REMOVABLE COVER
- EVC RESERVED FOR ELECTRIC VEHICLE
- SOLAR PV PANEL
- TV AND SKY DISTRIBUTION SYSTEM AERIALS & SATELLITE DISHES (REFER TO TYPICAL DETAIL)

DESIGN OF CABLE TRENCH AND DUCTBANK TO SPECIALIST'S SPECIFICATION AND DETAIL

| REV | DATE | BY | DESCRIPTION | CHK | APP |
|---|---|---|---|---|---|
| P2 | 14/09/22 | WC | FOR PLANNING | VS | AG |
| P1 | 05/09/22 | WC | DRAFT FOR PLANNING | VS | AG |

DRAWING STATUS | FOR PLANNING

WB | SHIELS
10 CHANCEL STREET, LONDON, SE1 0UX
TEL: +44 (0)203 764 0801
WWW.WBSHIELS.COM



PROJECT | KNELLER HALL FOR PLANNING

TITLE | COMBINED SERVICES SITE WIDE DISTRIBUTION

| | |
|---|---|
| DESIGNER \| WC | CHECKED \| VS |
| SCALE \| 1:500@ A0 | DRAWN \| WC |

DRAWING No | P2389_00_X_1 | REV | P2

1:500 @ A0
0 10m 20m 30m 40m 50m 60m