Whitley Park Primary & Nursery School,
Brixham Road,
Reading,
Berkshire,
RG2 7RB

Flood Risk Assessment
& Drainage Strategy

Project Number: 03770

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Revision P02

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EXECUTIVE SUMMARY

This Flood Risk Assessment and Drainage Strategy has been prepared to support a full planning application for Phase 1 works comprising internal refurbishment, localised internal demolition, new parking, landscaping and boundary treatment, and an outline planning application for Phase 2 works comprising a new teaching block / hall, parking and landscaping to facilitate a new SEN school at Whitley Park Primary and Nursery School, Brixham Road, Reading, within the administrative area of Reading Borough Council. The project includes the re-configuration and refurbishment of the existing school, which has also been considered as part of this Flood Risk Assessment. The assessment has been undertaken to accompany the emerging planning application and demonstrates that flood risk and drainage considerations have been addressed in accordance with national and local planning policy.

The drainage strategy for the Phase 2 car park extension has been developed as part of the current application. An outline drainage strategy is provided for the Phase 2 building extension and associated landscaping, with the detailed SuDS design to be submitted as part of the reserved matters application. The detailed drainage strategy will comply with the National Standards for Sustainable Drainage Systems and the requirements of the Lead Local Flood Authority.

Key findings include:

- The proposals include a reconfiguration of the school, with the existing 630 place 3FE primary school reconfigured to provide a 420 place 2FE primary school, together with 48 SEN secondary places, 26 mainstream nursery places and 8 SEN nursery places. As a result, overall pupil numbers and associated foul water demand are not anticipated to increase when compared to existing conditions.
- The proposed development comprises localised internal demolition for Phase 1 and approximately 330 square metres of new extension floorspace for Phase 2. The changes can be accommodated without increasing flood risk through the implementation of the proposed drainage measures.
- Whitley Park Primary and Nursery School is located entirely within Flood Zone 1 and is at low risk of flooding from rivers and the sea. The site is located away from the River Thames and River Kennet and is not affected by tidal or fluvial flood risk.
- Environment Agency mapping confirms that the site is at Very Low Risk of surface water flooding, with no mapped overland flow routes or ponding areas identified within the school grounds.
- The risk of flooding from foul and surface water sewers and from groundwater is considered to be low or unlikely, based on available records, geological conditions and the implementation of an appropriate drainage strategy.
- Flooding from reservoirs and other artificial sources is considered a residual risk only, and Environment Agency mapping confirms that the site is not affected by breach inundation.

- The existing on-site surface water system operates by gravity and discharges to the public surface water sewer to the south of the site. Phase 1 external works will introduce positively drained permeable paving connected to the existing system through diffuser connections within the porous sub-base. Phase 2 includes a 1,763 square metre car park extension, comprising 729 square metres of existing hard paving and 1,034 square metres of existing greenfield land. Runoff will be attenuated for the 1 in 100 year event including 40 percent climate change, treated and restricted to 2.0 litres per second before connection to the existing system.

Overall, the assessment concludes that the proposed development at Whitley Park Primary and Nursery School is suitable in flood risk terms. Subject to the implementation of the proposed drainage strategy, the development will not increase flood risk on site or elsewhere and is considered acceptable in accordance with the National Planning Policy Framework, Planning Practice Guidance and relevant local policy.

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1 INTRODUCTION

1.1 PURPOSE AND SCOPE OF THE ASSESSMENT

This Flood Risk Assessment and Drainage Strategy (FRA and DS) has been prepared in support of the proposed development at Whitley Park Primary & Nursery School, Brixham Road, Reading, RG2 7RB. The assessment accompanies the associated planning application and considers the potential risk of flooding to the site and the potential for the development to increase flood risk elsewhere.

The purpose of this report is to:

- assess flood risk from all relevant sources in accordance with national guidance
- demonstrate that the proposed development will be safe for its lifetime
- confirm that flood risk will not be increased elsewhere as a result of the development
- set out an appropriate surface water and foul drainage strategy where required

This report has been prepared using a proportionate approach that reflects the nature, scale and location of the proposed development, while ensuring that all relevant flood risk considerations have been explicitly assessed.

1.2 NATIONAL POLICY AND GUIDANCE FRAMEWORK

This Flood Risk Assessment has been prepared in accordance with the following national policy and guidance:

- National Planning Policy Framework (NPPF)
- Planning Practice Guidance Flood risk and coastal change (PPG)
- Water Framework Directive (WFD)
- Environment Agency Flood Risk Assessment Template version 1 (EA FRA Template v1) and associated guidance
- Environment Agency Flood risk assessments applying for planning permission
- Environment Agency Flood risk assessments climate change allowances

Where relevant, reference has also been made to additional guidance including CIRIA guidance on flood resilience and sustainable drainage.

1.3 REGIONAL AND LOCAL PLANNING POLICY

Where applicable, the assessment considers regional and local flood risk policy and evidence relevant to the site, relevant borough Local Plan flood risk and drainage policies, and the Strategic Flood Risk Assessment prepared by the local planning authority.

At a local level, the assessment has had regard to the Reading Borough Local Plan and the Reading Level 2 Strategic Flood Risk Assessment 2025. These documents require development to be directed to areas at lowest risk of flooding, to be safe for its lifetime taking account of climate change, and to manage surface water runoff in accordance with the drainage hierarchy through the use of

Sustainable Drainage Systems. The proposed development has been designed in accordance with these principles.

Where applicable, the assessment has also been informed by the National Sustainable Drainage Systems Standards, which set out requirements for the design, construction, operation and maintenance of Sustainable Drainage Systems. The proposed drainage strategy has been developed to align with these standards where they are in force and relevant to the application.

At a local level, relevant borough Local Plan flood risk and drainage policies have been reviewed to identify any site specific requirements or development management considerations.

The relevant Strategic Flood Risk Assessment has been reviewed to inform this assessment. The SFRA provides local evidence relating to flood risk sources, historic flooding and drainage constraints, which has been used where appropriate to supplement national datasets.

This Flood Risk Assessment and Drainage Strategy has been prepared to demonstrate compliance with the above regional and local policy requirements.

1.4 PROPORTIONATE APPROACH

The level of detail included within this Flood Risk Assessment reflects a proportionate approach, having regard to the scale and complexity of the proposed development and the level of flood risk affecting the site.

A proportionate approach does not mean that flood risk considerations are omitted. All relevant sources of flooding have been considered, including residual risks, but the depth of assessment has been tailored to reflect the level of risk identified. Where flood risk is assessed to be low or very low, this is clearly explained and supported by available evidence.

1.5 LIFETIME OF DEVELOPMENT AND CLIMATE CHANGE ALLOWANCES

In accordance with Planning Practice Guidance (PPG), the lifetime of the proposed development has been assumed as 100 years for a school building, unless otherwise stated.

Flood risk and drainage assessments have been undertaken with due regard to climate change over the lifetime of the development. The assessment considers the appropriate climate change allowances for:

- fluvial and tidal flooding where relevant
- surface water runoff and rainfall intensity
- residual flood risk associated with extreme events beyond design standards

Where drainage design is required, climate change allowances have been applied in accordance with current Environment Agency guidance and Lead Local Flood Authority (LLFA) requirements.

2 SITE AND DEVELOPMENT DESCRIPTION

2.1 SITE LOCATION AND DESCRIPTION

The application site is located at Whitley Park Primary & Nursery School, Brixham Road, Reading, RG2 7RB, with a National Grid Reference of SU 71908 70611and corresponding What3Words location ///unions.later.purple.

The site lies within the administrative area of Reading Borough Council and is bounded by public highways along all boundaries, with neighbouring residential properties located immediately beyond the school boundary. The surrounding area is predominantly residential in character with neighbouring properties comprising a mixture of detached and semi detached dwellings, together with areas of open space, community facilities and other educational buildings.

The total site planning red line boundary area is approximately 19,748 square metres. Further details regarding the site location and surrounding context are provided in Figures 1 to 3.

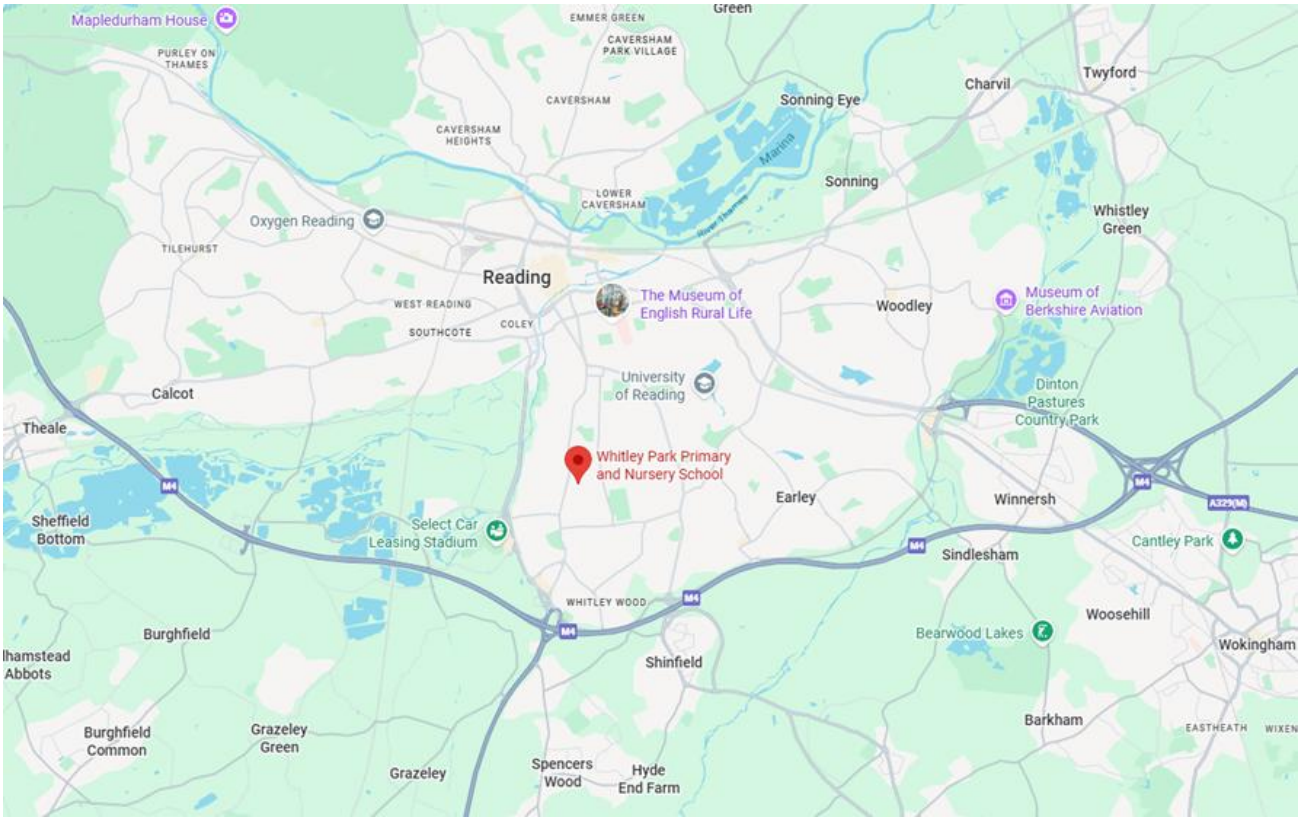


FIGURE 1 Site Location

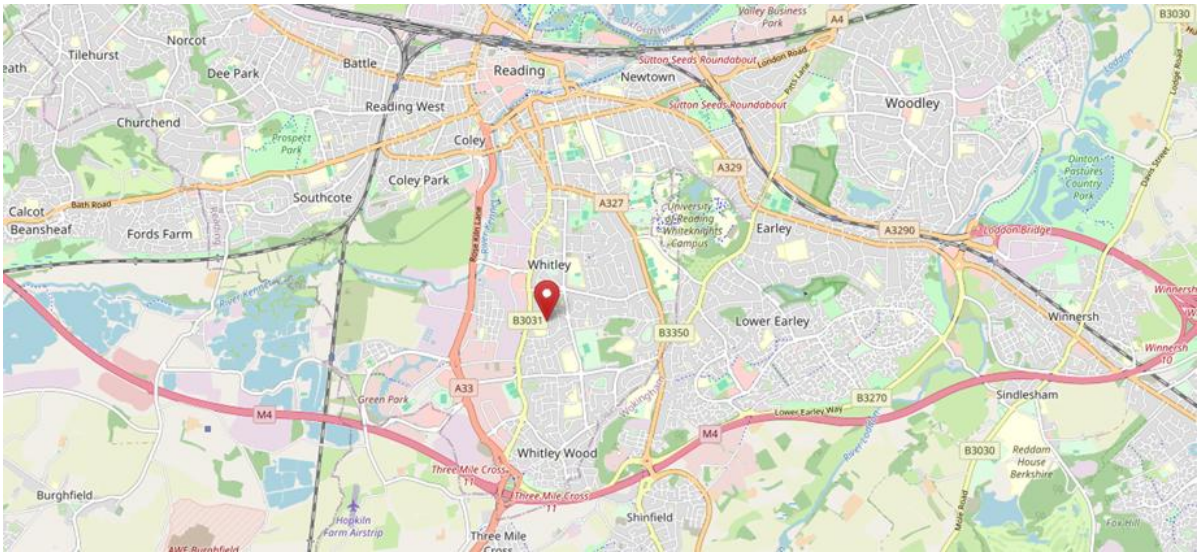


FIGURE 2 Site Location



FIGURE 3 Aerial Image of Site Location

2.2 EXISTING SITE CONDITIONS

The existing site comprises an operational primary school, including school buildings, external play areas, access roads and associated hardstanding. The total panning site red line boundary area is approximately 17,748 square metres. The current extent of impermeable and permeable surfaces is summarised as follows:

- Existing educational buildings approximately 4,282 square metres
- Hardstanding and paved areas including access roads, footpaths and play areas approximately 11,000 square metres
- Soft landscaped and permeable areas comprising the remainder of the site, including grassed playing fields and landscaped areas.

There are no ordinary watercourses, drainage ditches or open channels located within or immediately adjacent to the site. Existing drainage is understood to comprise a combination of surface water and foul drainage infrastructure serving the school buildings and external areas, with further details described in Section 5 where applicable.

There are no recorded flood defences, flood storage areas or formal flood risk management structures located on or adjacent to the site.

2.3 PROPOSED DEVELOPMENT

The proposed development at Whitley Park Primary and Nursery School comprises a planning application for Phase 1 works for new parking, landscaping and boundary treatment and an outline planning application for Phase 2 works for a new teaching block / hall, parking and landscaping to facilitate a new SEN school at the site. comprises a programme of refurbishment and extension works to the existing school buildings. The proposals form part of a wider initiative by Reading Borough Council to enhance educational facilities and increase capacity for pupils with special educational needs.

The proposed works include the extension of two existing classrooms located in the north western part of the site and the construction of a new hall extension to the north teaching block / hall. The project includes the re-configuration and refurbishment of the existing school, although this does not form part of the planning application. In addition, refurbishment works are proposed to existing classrooms, WC facilities and meeting rooms within the western part of the site.

The proposed development comprises localised internal demolition for Phase 1 and approximately 330 square metres of new extension floorspace for Phase 2. The changes can be accommodated without increasing flood risk through the implementation of the proposed drainage measures.

The submitted development proposals, including the site layout and proposed finished floor levels, noting that the new teaching block / hall is an outline planning application with full details not yet

known, form the basis of this Flood Risk Assessment and Drainage Strategy. The relevant drawings are provided in **Appendix A**.

2.4 TOPOGRAPHY

Topographical information for the site has been derived from a topographical survey undertaken in June 2025 by Sumo Services. The evidence base for site levels is provided in **Appendix B**.

Ground levels across the site range from approximately 49.44 metres Above Ordnance Datum (AOD) to 52.34 metres Above Ordnance Datum (AOD), indicating a general fall from the north towards the south east. The overall variation in levels across the site is approximately 2.90 metres.

The site topography does not indicate the presence of pronounced low points or overland flow paths that would increase susceptibility to surface water ponding. The existing gradient provides positive conditions for surface water management and exceedance routing.

The existing buildings on the site have ground floor levels recorded at approximately 51.20 metres Above Ordnance Datum (AOD).

2.5 GEOLOGY AND HYDROGEOLOGY

The geological and hydrogeological context of the site has been informed by publicly available British Geological Survey mapping together with site specific information.

The bedrock geology underlying the site comprises the London Clay Formation, with no recorded superficial deposits present, as illustrated in Figures 4 and 5.

Bedrock geology

The London Clay Formation typically comprises clay with subordinate silt and sand horizons, deposited during the early Eocene within a shallow marine environment. In its unweathered state, the formation generally consists of stiff to very stiff bluish grey silty clay, which may weather near the surface to a firm brown clay.

The formation commonly includes poorly laminated silty to very silty clay, locally sandy clay, with occasional sand partings and thin shell beds. Fissuring is common within the upper zones.

The Main Investigation Report identifies Made Ground overlying the Weathered London Clay Formation and London Clay Formation. These predominantly cohesive strata have low permeability. Falling-head soakage tests undertaken in boreholes WS2 and WS4 demonstrated poor drainage and no soakage rates could be calculated. Groundwater was encountered at approximately 0.95 m below ground level in trial pits FE3 and FE4, with monitoring recording levels between approximately 1.30 m and 1.87 m below ground level during August and September, when groundwater would

generally be expected to approach its seasonal minimum. These conditions confirm that infiltration drainage is not feasible.



FIGURE 4 Bedrock Geology - British Geological Survey Map (www.bgs.co.uk)

Superficial geology

British Geological Survey mapping confirms that there are no recorded superficial deposits underlying the site, and the London Clay Formation is present at or near the surface.

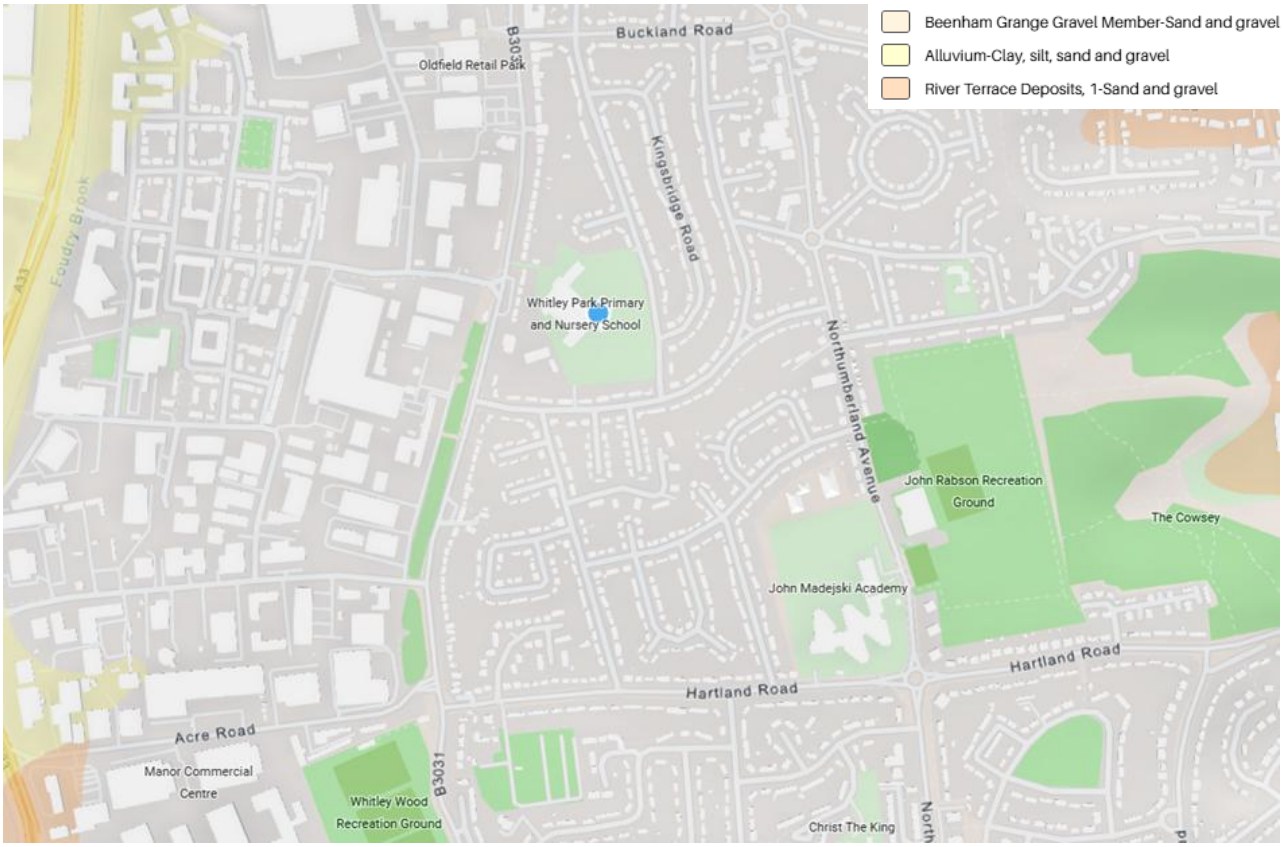


FIGURE 5 Superficial Geology - British Geological Survey Map (www.bgs.co.uk)

Engineering perspective

From an engineering perspective, the absence of superficial deposits and the presence of cohesive London Clay indicates that infiltration potential across the site is likely to be limited.

Infiltration drainage is therefore not considered feasible. Permeable paving will operate as a positively drained source-control system, with runoff collected within the porous sub-base and conveyed through diffuser connections into the surface water drainage network. The drainage strategy consequently relies on source control, attenuation and controlled discharge to the existing surface water system.

Historic borehole information

Historical borehole data (Ref: SU77SW5/A-N), dated February 1975 and obtained from British Geological Survey records, was recorded at Royal Mail Reading Central, 1-3 Gillette Way, Reading RG2 0BS. The borehole, located approximately 372 metres northwest of the assessment site, provides valuable insight into the underlying geological profile.

The recorded data indicates the following stratigraphy:

- 0–0.3m: Topsoil.
- 0.3–2.50m: Firm brown sandy and silty clay, with the occasional small chalk nodules.
- 2.50-5.50m: Firm brown-grey, silty and sandy clay, with lenses of silty clay.
- 5.50–7.00m: Stiff grey silty clay, with partings and pockets of sand and the occasional shell.

- 7.00–15.00m: Stiff red-brown and grey fissured silty clay. Sandy clay also found at some levels.

The borehole was terminated at a depth of 15m.

This information is considered relevant for understanding potential subsurface risks and for informing any future intrusive works or groundwater considerations in the area.

Hydrogeological context
The underlying London Clay Formation is classified by the Environment Agency as an unproductive strata, indicating a low potential for groundwater movement.

Groundwater flow is therefore expected to be limited, although localised perched groundwater may occur following prolonged periods of rainfall.

Further consideration of groundwater flood risk is provided in Section 3 of this report.

3 FLOOD RISK ASSESSMENT

This section assesses the risk of flooding to the site from all relevant sources, both currently and over the lifetime of the development. The assessment considers fluvial, tidal, surface water, sewer, groundwater, reservoir and other artificial sources of flooding, in accordance with the National Planning Policy Framework and Planning Practice Guidance, and with reference to the Reading Borough Council Level 2 Strategic Flood Risk Assessment May 2025.

Unless otherwise stated, the assessment assumes that existing flood risk management infrastructure operates as intended for the design flood event, with residual risk considered separately.

3.1 DEVELOPMENT VULNERABILITY CLASSIFICATION

The vulnerability classification of the proposed development has been determined in accordance with Annex F, Table 2 of the National Planning Policy Framework.

The proposed development comprises primary school accommodation including special educational needs provision and is therefore classified as **More Vulnerable** development.

The Reading Level 2 SFRA confirms that vulnerability classifications and flood zone compatibility should be assessed in accordance with national guidance.

The development will be occupied on a daytime only basis, with users comprising pupils, teaching staff, support staff and visitors. No sleeping accommodation is proposed. While the site will accommodate children, including pupils with special educational needs, the nature of the development is not considered to introduce vulnerabilities that would materially alter the overall flood risk classification or suitability of the site for the proposed use.

3.2 FLOOD ZONE CLASSIFICATION

The Environment Agency Flood Map for Planning identifies areas at risk of flooding from rivers and the sea, categorised into Flood Zones based on the annual probability of flooding.

A review of the Flood Map for Planning confirms that the application site lies entirely within **Flood Zone 1**, as shown on Figure 6.

Flood Zone definitions are summarised as follows:

- Flood Zone 1 Low probability land with less than a 0.1 percent annual probability of flooding from rivers or the sea
- Flood Zone 2 Medium probability land with a 0.1 to 1 percent annual probability of river flooding or 0.1 to 0.5 percent annual probability of sea flooding
- Flood Zone 3a High probability land with a 1 percent or greater annual probability of river flooding or 0.5 percent or greater annual probability of sea flooding

- Flood Zone 3b Functional floodplain land where water has to flow or be stored in times of flood

The Reading Level 2 SFRA 2025 confirms that areas outside the River Thames and River Kennet floodplains are generally located within Flood Zone 1 and are therefore at low fluvial risk.

Reference has also been made to the Reading Level 1 and Level 2 SFRAs to confirm that the site does not lie within Flood Zone 3b Functional Floodplain.

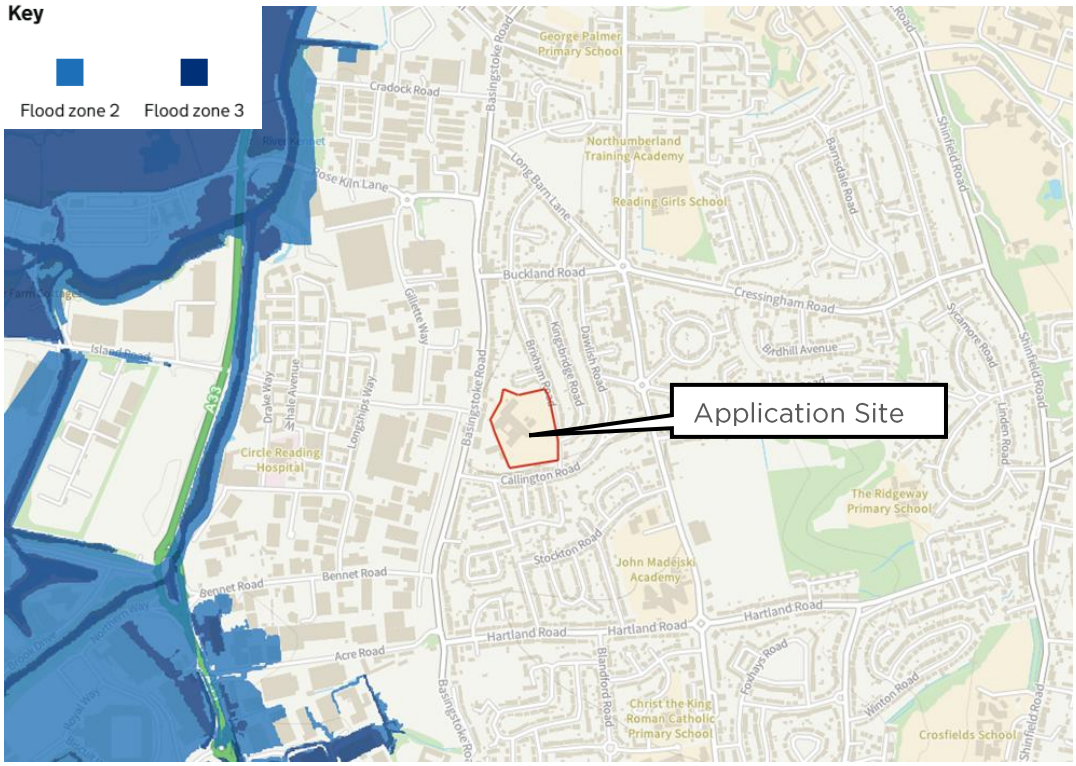


FIGURE 6 Environment Agency Flood Zone Map

3.3 FLOOD ZONE COMPATIBILITY AND POLICY COMPLIANCE

The compatibility of the proposed development with its Flood Zone location has been assessed in accordance with Annex F, Table 3 of the National Planning Policy Framework.

The Reading Level 2 SFRA reproduces national compatibility tables confirming that **More Vulnerable development is appropriate within Flood Zone 1**.

Based on the identified vulnerability classification and Flood Zone location:

- The proposed development is **compatible** with the Flood Zone designation.

The requirement for the Sequential Test has been considered in accordance with Policy F5 of the National Planning Policy Framework. The site-specific assessment demonstrates that no built

development, access or escape routes, land raising or other vulnerable elements would be located within an area at risk of flooding from any source, either now or in the future. In accordance with Policy F5(2)(b)(i), the Sequential Test is therefore not required.

3.4 LIFETIME OF DEVELOPMENT AND DESIGN FLOOD EVENTS

For the purposes of this assessment, the lifetime of the proposed development has been assumed as **100 years**, reflecting the long term and permanent nature of educational development, in accordance with Planning Practice Guidance.

Flood risk has been assessed for both current conditions and future conditions over the lifetime of the development, taking account of climate change where relevant. The design flood events considered within this assessment include:

- Fluvial flooding 1 percent annual exceedance probability event plus climate change allowance
- Tidal flooding 0.5 percent annual exceedance probability event plus climate change allowance where applicable
- Surface water flooding 3.3 percent and 1 percent annual exceedance probability events
- Residual risk associated with exceedance of design standards and blockage or failure of drainage infrastructure

3.5 FLUVIAL AND TIDAL FLOOD RISK

Fluvial flooding refers to flooding from rivers and ordinary watercourses.

The nearest main rivers to the site are the River Thames and the River Kennet, both located several kilometres to the north of the application site. There are no ordinary watercourses, drainage ditches or culverted watercourses within or immediately adjacent to the site.

The Environment Agency Main River consultation area has been reviewed. The site is located outside 20 metres of a designated Main River.

A review of the Environment Agency Flood Map for Planning and the Reading Borough Council Strategic Flood Risk Assessment confirms that the site lies outside Flood Zones 2 and 3 and is not affected by fluvial or tidal flood extents. According to the Environment Agency Flood Risk Summary, the site is classified as **Very Low Risk** of flooding from rivers and the sea for both current conditions and future projections.

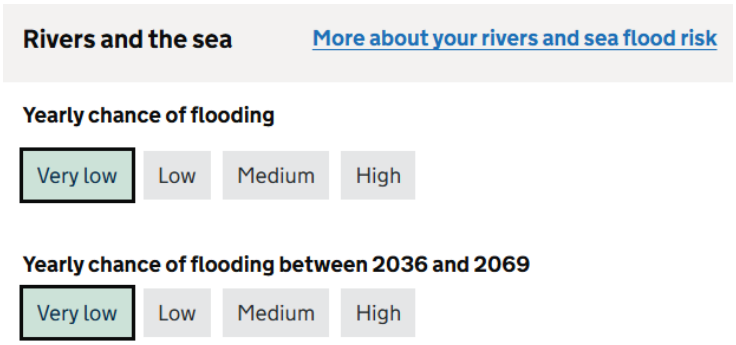


FIGURE 7 Environment Agency Rivers and Sea Flood Risk Summary

The site is located inland and tidal flooding does not present a risk.

As the site lies outside the fluvial and tidal floodplain, no site specific hydraulic modelling has been required. Flood depths, velocities and hazard at the site from fluvial or tidal sources are therefore considered negligible. Access and egress routes are also located outside mapped fluvial and tidal flood extents.

Climate change is expected to increase peak river flows over time. However, as the site is located outside Flood Zones 2 and 3, climate change allowances do not alter the Flood Zone classification or introduce fluvial or tidal flood risk to the site over the lifetime of the development.

Residual fluvial and tidal flood risk is limited to extremely low probability events beyond the design standard and is considered negligible.

3.6 SURFACE WATER FLOOD RISK

Surface water flooding occurs when rainfall exceeds the capacity of the drainage network or infiltration capacity of the ground, resulting in overland flow and localised ponding.

The Reading Level 2 SFRA confirms that surface water flood risk within the borough is typically localised and influenced by topography and drainage capacity.

A review of the Environment Agency Risk of Flooding from Surface Water mapping indicates that the site is predominantly at Very Low risk, with no significant overland flow routes or areas of ponding identified within the proposed development areas, as shown on Figure 8.

Surface water

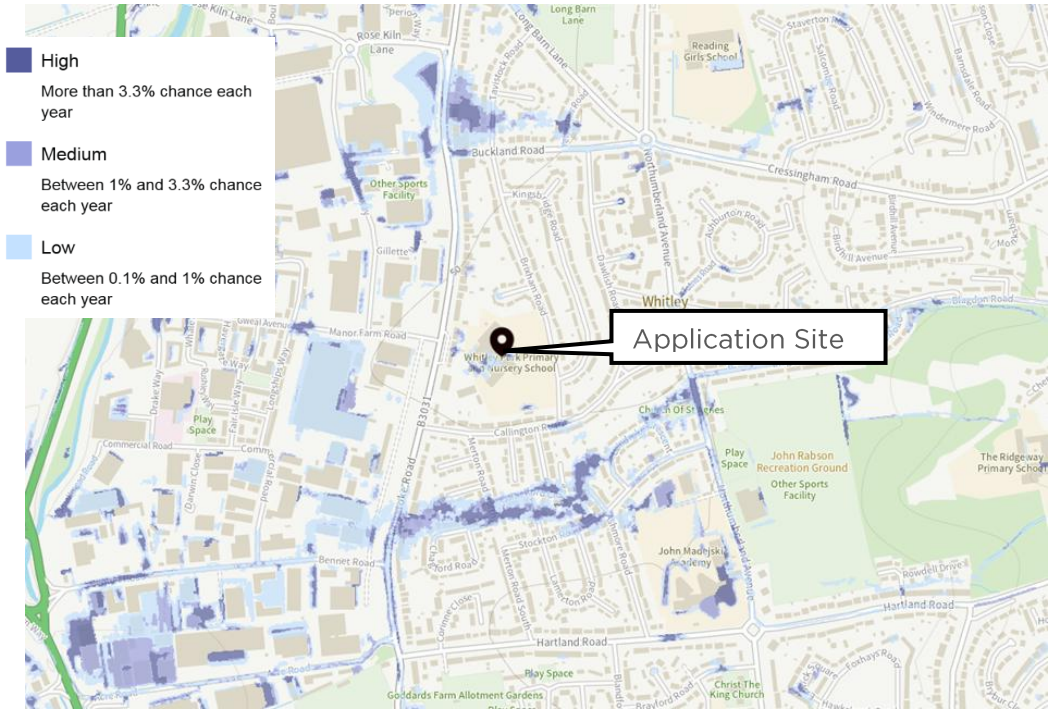


FIGURE 8 Environment Agency Pluvial Flood Risk Map

The Environment Agency Flood Risk Summary confirms that the site is also at **Very Low Risk** of surface water flooding for both current and future conditions.

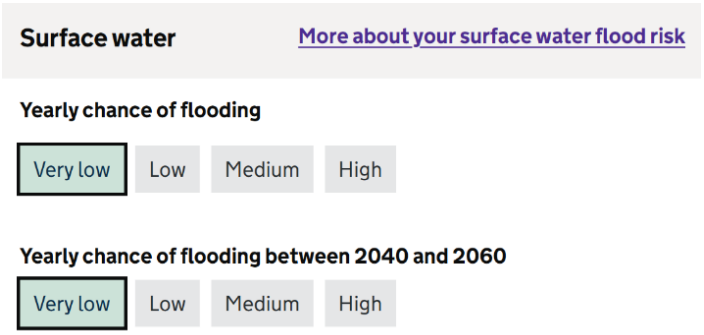


FIGURE 9 Environment Agency Surface Water Flood Risk Summary

The mapping represents a strategic assessment and does not account for site specific drainage infrastructure or detailed topography. Climate change has been taken into account through the proposed drainage strategy, which includes appropriate allowances for increased rainfall intensity.

Residual surface water flood risk may arise during events that exceed the design standard or in the event of drainage blockage or failure. This risk is managed through exceedance routing and the design of surface water drainage infrastructure, as detailed in Section 5.

3.7 SEWER FLOOD RISK

Sewer flooding can occur when the capacity of the public sewer network is exceeded during periods of intense rainfall, resulting in surcharge from manholes or internal flooding of properties.

Adopted surface water and combined sewer networks are typically designed to accommodate rainfall events up to the 1 in 30 year return period. More extreme storm events may exceed this design capacity, resulting in surcharge or temporary flooding. It is therefore important that new development incorporates appropriate on site attenuation and discharge rate restriction to avoid increasing downstream flood risk and pressure on existing infrastructure.

The site is located outside a Critical Drainage Area, as identified by the local Strategic Flood Risk Assessment.

The Environment Agency does not publish detailed or site specific sewer flood risk mapping. Sewer flood risk information is therefore limited and typically informed by a combination of Strategic Flood Risk Assessment (SFRA) data, publicly available sewer flooding incident records, and professional judgement.

A review of available Strategic Flood Risk Assessment information and sewer flooding records does not identify any recorded incidents of sewer flooding affecting the site or its immediate surroundings. The proposed development incorporates measures to manage surface water runoff in accordance with the drainage hierarchy and will not increase foul water discharge when compared to existing conditions. Where connections to the public sewer are retained, these will continue to operate under existing arrangements.

Residual sewer flood risk may arise during extreme rainfall events that exceed the capacity of the sewer network or due to blockage or failure of sewer infrastructure. This residual risk is considered **low** and does not pose a constraint to the proposed development.

3.8 GROUNDWATER FLOOD RISK

Groundwater flooding occurs when groundwater levels rise above the ground surface or enter below ground structures, typically following prolonged periods of rainfall. Groundwater flood risk is influenced by local geology, hydrogeology, topography and seasonal groundwater behaviour.

A review of Environment Agency groundwater flood alert mapping confirms that the site is located **outside of a groundwater flood alert area**. This indicates that the site is not within an area where the Environment Agency issues groundwater flood alerts. However, this designation does not eliminate the possibility of localised groundwater emergence.

The Reading Borough Council Level 2 Strategic Flood Risk Assessment identifies groundwater flooding within the borough as generally localised and influenced by geology and ground conditions. The site is not specifically identified as being at elevated risk of groundwater flooding.

The site is underlain by the London Clay Formation with no overlying superficial deposits present, as confirmed by the site specific ground investigation.

The London Clay Formation is classified by the Environment Agency as unproductive strata and acts as an aquiclude, limiting groundwater movement.

Regional groundwater flow is therefore expected to be limited, with groundwater movement restricted by the low permeability clay strata. Surface water flow is anticipated to follow the site topography.

While localised perched groundwater may occur following prolonged rainfall, there is no evidence from available mapping or site investigation data to indicate groundwater emergence at the ground surface within the site.

Based on Environment Agency mapping, the Strategic Flood Risk Assessment and site specific ground investigation information, groundwater flood risk to the site is considered **low**.

The proposed development comprises extensions and refurbishment of existing buildings with no significant below ground accommodation. Where foundations or drainage infrastructure interact with the ground, appropriate construction detailing will be incorporated where required.

Residual groundwater flood risk during exceptionally prolonged rainfall events is considered low and does not pose a constraint to the proposed development.

3.9 RESERVOIR FLOOD RISK

Reservoir flooding can occur in the event of a failure or uncontrolled release of water from a large, raised reservoir. While such events are extremely rare, they can result in rapid and deep flooding with limited warning.

A review of the Environment Agency Reservoir Flood Risk Map and Reading Level 2 SFRA confirms that the site does not lie within an area that could be affected by flooding in the unlikely event of a reservoir failure.

Reservoir flood risk is therefore considered negligible and does not pose a constraint to the proposed development.

3.10 CANALS AND OTHER ARTIFICIAL SOURCES OF FLOOD RISK

Artificial sources of flooding include canals, docks, retained water bodies, raised channels and other manmade structures that store or convey water.

There are no canals, docks or other artificial water bodies within or immediately adjacent to the site that could pose a flood risk.

Available mapping and strategic assessments do not identify the site as being at risk from artificial sources of flooding. Residual risk from such sources is therefore considered negligible.

3.11 COASTAL EROSION RISK IMPLICATIONS

Coastal erosion can influence flood risk in coastal and estuarine locations where the loss of land or protective features may increase exposure to tidal flooding over time.

The application site is located well inland and is not within an area identified as being at risk of coastal erosion. Coastal erosion does not influence flood risk at the site, and no further assessment is required.

3.12 INTERACTIONS OF FLOOD RISK SOURCES

Flood risk can arise from the interaction of multiple sources occurring simultaneously or sequentially, such as intense rainfall coinciding with high river levels, high tides or limited drainage capacity.

Potential interactions between flood risk sources relevant to the site include:

- surface water runoff interacting with the drainage network during periods of intense rainfall
- surface water runoff coinciding with elevated groundwater levels following prolonged rainfall

The available mapping and site specific ground investigation evidence indicate that there is no significant interaction between flood risk sources at the site. Surface water flooding represents the dominant potential risk mechanism, driven by intense rainfall events, and this is managed through the proposed drainage and exceedance strategy.

Based on the available evidence, interactions between flood risk sources do not materially increase flood risk at the site and do not pose a constraint to the proposed development.

3.13 SUMMARY OF FLOOD RISKS

This section provides a summary of the flood risk sources assessed within this Flood Risk Assessment, considering both current conditions and the future scenario over the lifetime of the development, including climate change and residual risk.

The assessment confirms that flood risk to the site is dominated by surface water, with other sources presenting a low level of risk. All relevant sources of flooding have been considered in accordance with national guidance.

A summary of the flood risk assessment is provided in Table 1 below.

Flood source	Current flood risk	Future flood risk inc. CC	Residual risk	Comments
Fluvial flooding	Very Low	Very Low	Negligible	Based on EA Flood Map for Planning and 2025 Reading Level 2 SFRA
Tidal flooding	Very Low	Very Low	Negligible	Site is inland and non-tidal
Surface water flooding	Very Low	Very Low	Low	Managed through drainage strategy
Sewer flooding	Low	Low	Low	2025 Reading Level 2 SFRA and available records
Groundwater flooding	Low	Low	Low	Based on geology boreholes and ground investigation
Reservoir flooding	None	None	Residual only	Extremely low probability event
Canals and artificial sources	Negligible	Negligible	Negligible	No artificial sources affecting site
Coastal erosion	Not applicable	Not applicable	Not applicable	Site not in coastal zone

Table 1 Summary of Flood Risk to the Site

4 SEQUENTIAL TEST

The National Planning Policy Framework requires development to be directed to areas at lowest risk of flooding through application of the Sequential Test.

The application site is located entirely within Flood Zone 1, which is defined as land having a low probability of flooding with less than a 0.1 percent annual probability of river or sea flooding.

The site-specific assessment demonstrates that no built development, access or escape routes, land raising or other vulnerable elements would be located within an area at risk of flooding from any source, either now or in the future. In accordance with Policy F5(2)(b)(i) of the National Planning Policy Framework, the Sequential Test is therefore not required.

4.1 SEQUENTIAL APPROACH WITHIN THE SITE

The available flood-risk mapping does not identify any material variation in flood risk affecting the proposed buildings, access routes or other vulnerable elements.

Nevertheless, the proposed layout has been informed by an understanding of local topography and site specific conditions, ensuring that finished floor levels and drainage infrastructure are appropriately designed to manage residual surface water risk.

5 DRAINAGE STRATEGY

This section sets out the proposed drainage strategy for the development, with particular focus on the management of surface water runoff. The strategy has been prepared to ensure that surface water is managed in a safe and sustainable manner and that flood risk to the site and surrounding area is not increased.

This section should be read in conjunction with the flood risk assessment presented in Section 3. Where required, this section may be extracted and submitted as a standalone Drainage Strategy to support the planning application.

The surface water drainage strategy has been developed in accordance with national and local policy and guidance, including CIRIA The SuDS Manual C753 and, where applicable, the National Sustainable Drainage Systems Standards. The strategy seeks to demonstrate that the proposed drainage measures meet relevant design performance and maintenance expectations.

5.1 POLICY AND GUIDANCE CONTEXT

The drainage strategy has been prepared in accordance with the following policy and guidance:

- National Planning Policy Framework
- Planning Practice Guidance Flood risk and coastal change
- Water Framework Directive (WFD)
- Local Planning Authority and Lead Local Flood Authority drainage policies
- The Non statutory technical standards for sustainable drainage systems (where applicable)
- CIRIA The SuDS Manual C753
- The National Sustainable Drainage Systems Standards

Where development is proposed in Reading, the drainage strategy has been prepared to align with typical Lead Local Flood Authority expectations.

The drainage strategy has also been prepared with regard to Policy F8 of the National Planning Policy Framework and the National Standards for Sustainable Drainage Systems.

5.2 EXISTING DRAINAGE ARRANGEMENTS

A review of available information has been undertaken to establish the existing drainage arrangements at Whitley Park Primary and Nursery School. This review has included ground investigation reports, available drainage drawings, sewer records and CCTV survey information. Relevant records are provided in **Appendix D**.

The site is served by separate foul and surface water drainage systems.

Foul Water Drainage

The foul drainage system serves WC facilities and internal appliances within the existing school buildings. CCTV survey information confirms that foul flows are conveyed via a network of gravity pipework across the site.

The survey confirms that the foul drainage system operates under gravity and flows towards the Thames Water public foul sewer network. The CCTV survey did not trace the final connection; the receiving sewer and connection location are therefore identified from the available Thames Water asset records.

CCTV survey results have also identified a number of defects within the existing foul drainage network. These comprise minor structural and maintenance related issues, and appropriate remedial works will be undertaken as part of the proposed development.

Notwithstanding the requirement for localised verification and remedial works, the overall drainage regime is understood and will be retained as part of the proposed development.

In the context of the proposed development, which comprises extensions and reconfiguration of the existing school, the existing foul drainage system is not expected to experience a material increase in loading.

Surface Water Drainage

The surface water drainage system comprises a network of pipes and chambers serving roof areas and external hardstanding. Rainwater is collected via external downpipes at building elevations and conveyed to the below ground surface water drainage network.

CCTV survey information confirms the general connectivity and operation of the surface water drainage system across the site, which is understood to function under gravity.

The surveyed surface water system operates by gravity and conveys runoff towards the public surface water sewer to the south of the site. This represents the established drainage destination for the development. Existing drainage affected by the works will be retained, diverted or remediated as appropriate.

CCTV survey results have also identified localised defects within the surface water drainage network. These comprise minor structural and maintenance related issues, and appropriate remedial works will be undertaken as part of the proposed development.

Some areas of the drainage network have not been fully surveyed and will require further verification at detailed design stage.

Condition and Remedial Works

CCTV survey information has identified localised defects within sections of the existing drainage network, comprising minor structural and maintenance related issues.

These will be addressed through remedial works as part of the proposed development.

There are no recorded incidents of internal or external flooding associated with the existing drainage systems.

5.3 DRAINAGE DESTINATION HIERARCHY

Surface water runoff has been considered in accordance with the drainage hierarchy set out within national policy, Planning Practice Guidance and local guidance adopted by Reading Borough Council. The hierarchy prioritises:

1. infiltration to ground
2. discharge to a watercourse
3. discharge to a surface water sewer
4. discharge to a combined sewer

The application of the drainage hierarchy has been considered separately for each phase of development.

Phase 1

Phase 1 comprises refurbishment and internal reconfiguration works together with localised changes to hard-paved and landscaped areas. Positively drained permeable paving will be introduced where practicable and connected to the existing surface water system through diffuser connections within the porous sub-base.

Infiltration to ground represents the highest priority option within the drainage hierarchy. However, the site-specific investigation recorded variable Made Ground over the predominantly cohesive Weathered London Clay Formation and London Clay Formation. Falling-head tests in WS2 and WS4 produced no calculable soakage rate due to poor drainage, and shallow groundwater was encountered. Infiltration is therefore not feasible.

The Phase 1 permeable paving will provide interception, filtration and temporary sub-base storage, but will not infiltrate into the underlying ground because the site investigation confirms low-permeability clay and shallow groundwater.

There are no watercourses located within or immediately adjacent to the site that could provide a viable discharge destination.

CCTV survey information confirms that the existing surface water drainage network discharges to the public surface water sewer, and this represents the established drainage regime for the site.

As Phase 1 principally reconfigures existing hard-paved and landscaped areas and introduces positively drained permeable construction, no separate attenuation tank is required for these localised works. The permeable sub-base will provide source-control storage and delay runoff entering the existing system.

Phase 2

Phase 2 comprises new building extensions, associated roof drainage and the car park extension. The car park extension covers approximately 1,763 square metres, including 729 square metres of existing hard paving and 1,034 square metres of existing greenfield land.

Infiltration to ground represents the highest priority option within the drainage hierarchy. However, based on the underlying London Clay geology and absence of superficial deposits, infiltration is not considered to be a viable drainage solution for Phase 2.
There are no watercourses located within or immediately adjacent to the site that could provide a viable discharge destination.

CCTV survey information confirms that the existing surface water drainage network discharges to the public surface water sewer.

Runoff from the Phase 2 car park extension will be collected within a dedicated surface water system, attenuated and restricted to 2.0 litres per second. Discharge will pass through a proprietary surface water filter chamber before entering the existing gravity system and public surface water sewer to the south of the site.

The Phase 2 building extension and associated landscaping will incorporate positively drained SuDS to provide attenuation and water-quality treatment before controlled discharge to the existing surface water drainage system. The detailed drainage design will be developed and submitted as part of the reserved matters application in accordance with the National Standards for Sustainable Drainage Systems and the requirements of the Lead Local Flood Authority.

The proposed drainage strategy therefore follows the highest feasible option within the drainage hierarchy for each phase of development, taking account of ground conditions, groundwater levels and site constraints.

5.4 PROPOSED SURFACE WATER DRAINAGE STRATEGY

Review of CCTV survey information confirms the presence, general connectivity and condition of the existing surface water drainage network across the site, which discharges to the public surface water sewer.

The ground investigation recorded Made Ground over the Weathered London Clay Formation and London Clay Formation. Falling-head tests in WS2 and WS4 produced no calculable soakage rate due to poor drainage, while shallow groundwater was also encountered. Infiltration is therefore not a feasible drainage destination.

The proposed surface water strategy will therefore combine positively drained permeable paving, below-ground attenuation, water-quality treatment and controlled discharge to the existing surface water system, in accordance with the highest feasible level of the drainage hierarchy.

The proposed surface water drainage strategy will be delivered in two phases.

Phase 1

Phase 1 comprises refurbishment works and localised alterations to existing hard-paved and landscaped areas, including new positively drained permeable paving.

The permeable paving will incorporate a porous sub-base providing interception, filtration and temporary storage. Runoff will be collected through diffuser connections within the sub-base and conveyed to the existing surface water drainage system; infiltration to ground is not proposed.

As these works principally replace or reconfigure existing surfaces, and source-control storage is introduced through the porous sub-base, no separate attenuation tank is required for Phase 1. The proposals will delay and filter runoff compared with conventional impermeable surfacing.

Phase 2

Phase 2 comprises a two-storey building extension, associated landscaping and an extension to the car park.

The drainage design for the Phase 2 car park extension has been completed as part of the current application. The car park extension comprises permeable block-paved parking bays over a porous sub-base, with diffuser connections to a new surface water drainage system. Asphalt circulation areas will drain through channel drains into the same system.

Runoff from the car park extension will be stored within an attenuation tank and restricted to 2.0 litres per second before discharge into the existing gravity surface water system. The attenuation tank has been sized through hydraulic modelling across a range of storm durations to accommodate the critical 1 in 100-year event, including a 40 percent climate-change allowance, without flooding.

The proposed 2.0 litres per second flow rate is a practical minimum that achieves substantial hydraulic betterment while limiting blockage risk within the flow-control device.

The Phase 2 building extension and associated landscaping remain at outline design stage. The outline strategy is for surface water runoff from these areas to be managed using SuDS, with appropriate attenuation, water-quality treatment and controlled discharge to the existing surface water drainage system. The detailed drainage strategy and supporting hydraulic calculations will be developed and submitted as part of the reserved matters application. The detailed design will demonstrate compliance with the National Standards for Sustainable Drainage Systems and the requirements of the Lead Local Flood Authority.

Any existing surface water drainage infrastructure affected by the proposed works will be diverted or upgraded as necessary. CCTV-identified defects will be addressed through remedial works where feasible.

Further details of the completed Phase 2 car park drainage design and supporting calculations are provided in **Appendix E** and Section 5.5.

5.5 EXISTING AND PROPOSED RUNOFF VOLUMES AND FLOW RATES

The existing 729 square metres of hard-paved car park area discharges into the existing gravity surface water system without formal attenuation. The system ultimately discharges to the public surface water sewer to the south of the site.

The proposed drainage strategy seeks to manage surface water runoff in accordance with the drainage hierarchy, with attenuation and controlled discharge to the public surface water sewer representing the most appropriate solution for the site.

Existing brownfield runoff has been assessed using the Rational Method, a runoff coefficient of 1.0 and the FEH 2022 rainfall data for the site. The FEH point at SU 71896 70613 is directly representative of the application site. The assessment uses the average rainfall intensities for the 15-minute duration for the 1 in 1-year, 1 in 30-year and 1 in 100-year events.

Phase 1

Surface water runoff from Phase 1 will be managed through positively drained permeable paving connected to the existing system through diffuser connections within the porous sub-base, together with localised modifications to the existing drainage network.

Phase 1 principally comprises changes between existing hard paving and landscaping. The porous sub-base will provide source-control storage and delay runoff, and the works are not expected to result in a material increase in runoff to the existing system.

Where required, minor improvements to drainage connectivity and condition will be undertaken as part of remedial works identified through CCTV survey.

Phase 2

The Phase 2 car park extension has a total catchment of approximately 1,763 square metres, comprising 729 square metres of existing hard paving and 1,034 square metres of existing greenfield area. This catchment will drain to a new attenuation tank and discharge at 2.0 litres per second. The Phase 2 building extension and associated landscaping are not included within the current hydraulic assessment. Their runoff rates, attenuation requirements and hydraulic performance will be assessed within the detailed drainage strategy submitted as part of the reserved matters application.

The car park attenuation tank will accommodate the critical 1 in 100-year rainfall event, including a 40 percent allowance for climate change, with hydraulic modelling assessing the applicable range of storm durations.

The existing brownfield runoff rate from the 729 m² positively drained hard-paved area has been estimated using the Rational Method, a conservative runoff coefficient of 1.0 and the FEH 2022 15-minute rainfall data for the site.

The estimated runoff rates are approximately 3.32 l/s for the 1 in 1-year event, 17.78 l/s for the 1 in 30-year event and 22.87 l/s for the 1 in 100-year event. These figures provide an indicative comparison based on an assumed 15-minute critical rainfall duration.

The proposed discharge from the complete car park-extension catchment will be restricted to 2.0 l/s. This is below the estimated runoff from the existing 729 m² hard-paved area during all three assessed events and therefore provides betterment over the existing drainage arrangement. The 2.0 l/s rate also represents a practical minimum discharge that reduces the risk of blockage within the flow-control device.

The detailed drainage strategy for the Phase 2 building extension and associated landscaping will demonstrate that surface water runoff can be managed without increasing flood risk on the site or elsewhere.

5.6 CLIMATE CHANGE ALLOWANCE AND RUNOFF VOLUMES

The Phase 2 car park drainage system has been designed to accommodate the 1 in 100-year rainfall event, including a 40 percent climate-change allowance.

The same design standard, or the applicable allowance at the time of submission, will be applied to the detailed drainage strategy for the Phase 2 building extension and associated landscaping at the reserved matters stage.

Rainfall inputs have been derived using FEH22 rainfall data, with the climate change allowance category selected to reflect the nature and lifetime of the proposed development.

Urban creep allowance has not been applied as the proposed development does not comprise residential curtilage areas. The site will remain under controlled operational management as an educational facility, and incremental increases in impermeable area are not anticipated.

The Phase 2 car park drainage strategy is supported by detailed drainage calculations, including assessment of the critical storm duration and storage requirements. These calculations are provided in **Appendix E**. Calculations for the Phase 2 building extension and associated landscaping will be submitted as part of the reserved matters application.

5.7 EXCEEDANCE ROUTING

Exceedance refers to rainfall events that exceed the design standard of the drainage system, including events greater than the one in one hundred year rainfall event plus climate change, or scenarios where drainage components become blocked or fail.

Storm design exceedance has been considered as part of the drainage strategy to ensure that overland flows are managed safely and directed away from buildings and vulnerable areas.

The drainage strategy incorporates exceedance routing to ensure that overland flow paths are directed away from buildings and towards areas where water can be safely stored without causing damage or risk to people.

Exceedance routing for the current Phase 1 works and Phase 2 car park extension is illustrated on the drawings provided in **Appendix F**. Exceedance routing for the Phase 2 building extension and associated landscaping will be developed as part of the reserved matters drainage strategy.

The management of residual exceedance risk is addressed further in Section 7.

5.8 WATER QUALITY TREATMENT

Surface water runoff will be managed in accordance with the Sustainable Drainage Systems treatment train principles set out within CIRIA The SuDS Manual C753, ensuring that appropriate water quality treatment is provided prior to discharge.

The potential pollution risks associated with the proposed development have been assessed having regard to the anticipated land use and activities on site. In accordance with CIRIA guidance, pollution hazard indices have been assigned to relevant land uses and mitigation indices have been used to inform the level of treatment required.

C753 Part E Chapter 26 describes risks posed by surface water runoff to the receiving environment as a function of:

- Pollution hazard at a particular site (i.e. the pollution source).

- The effectiveness of SuDS treatment components in reducing levels of pollutants to environmentally acceptable levels.
- The sensitivity of the receiving environment.

The recommended approach for water quality risk management is set out in Table 26.1 of the SuDS Manual. In accordance with this guidance, the Simple Index Approach has been adopted for this site.

TABLE 26.1 Approaches to water quality risk management

Design method	Hazard characterisation	Risk reduction	
		For surface water	For groundwater
Simple index approach	Simple pollution hazard indices based on land use (eg **Table 26.2** or equivalent)	Simple SuDS hazard mitigation indices (eg **Table 26.3** or equivalent)	Simple SuDS hazard mitigation indices (eg **Table 26.4** or equivalent)
Risk screening[1]	Factors characterising traffic density and extent of infiltration likely to occur (eg **Table 26.5** or equivalent)	N/A	Factors characterising unsaturated soil depth and type, and predominant flow type through the soils (eg **Table 26.5** or equivalent)
Detailed risk assessment	Site specific information used to define likely pollutants and their significance	More detailed, component specific performance information used to demonstrate that the proposed SuDS components reduce the hazard to acceptable levels	
Process-based treatment modelling	Time series rainfall used with generic pollution characteristics to determine statistical distributions of likely concentrations and loadings in the runoff	Models that represent the treatment processes in the proposed SuDS components give estimates of reductions in event mean discharge concentrations and total annual load reductions delivered by the system	

Note

1 Risk assessment may be required as a result of the risk screening process.

Table 26.2 of the SuDS Manual provides pollution hazard indices for different land uses. For the proposed development at Whitley Park Primary and Nursery School, the surface water drainage system will receive runoff from roofs, positively drained permeable paving and asphalt car park areas.

- Roofs - impermeable surface.
- Access Road and Parking - impermeable surface.

To deliver adequate treatment, the selected SuDS components should have a total pollution mitigation index for each contaminant type that equals or exceeds the pollution hazard index for each contaminant type. Therefore, the following will have to be achieved for the surface running off the site.

Total SuDS mitigation index >=pollution hazard index

Pollution Hazard Indices are given for different land uses in Table 26.2 of the SuDS manual.

TABLE 26.2 Pollution hazard indices for different land use classifications

Land use	Pollution hazard level	Total suspended solids (TSS)	Metals	Hydro-carbons
Residential roofs	Very low	0.2	0.2	0.05
Other roofs (typically commercial/ industrial roofs)	Low	0.3	0.2 (up to 0.8 where there is potential for metals to leach from the roof)	0.05
Individual property driveways, residential car parks, low traffic roads (eg cul de sacs, homezones and general access roads) and non-residential car parking with infrequent change (eg schools, offices) ie < 300 traffic movements/day	Low	0.5	0.4	0.4
Commercial yard and delivery areas, non-residential car parking with frequent change (eg hospitals, retail), all roads except low traffic roads and trunk roads/motorways[1]	Medium	0.7	0.6	0.7
Sites with heavy pollution (eg haulage yards, lorry parks, highly frequented lorry approaches to industrial estates, waste sites), sites where chemicals and fuels (other than domestic fuel oil) are to be delivered, handled, stored, used or manufactured; industrial sites; trunk roads and motorways[1]	High	0.8[2]	0.8[2]	0.9[2]

From Table 26.2 the following information is tabulated in Table 2.

Land Use	Destination of Runoff	Pollution Hazard Level	Total Suspended Solids	Metals	Hydrocarbons
Other Roofs	Roofs	Surface water sewer	0.3	0.2	0.05
Car park & playground	Car park and external paving	Surface water sewer	0.5	0.4	0.4

TABLE 2: Pollution Hazard Index and Destination of Runoff for the Proposed Site

To deliver adequate water quality treatment, the selected SuDS components must provide a pollution mitigation index for each contaminant that equals or exceeds the corresponding pollution hazard index.

Mitigation indices for SuDS components discharging to surface water sewers are provided in Table 26.3 of the SuDS Manual.

Water-quality treatment will be provided through a treatment train comprising permeable block paving and porous sub-base filtration to the parking bays, channel drains serving asphalt areas, settlement within the attenuation system and a proprietary surface water filter chamber before discharge to the existing system. The filter chamber will provide independently verified minimum mitigation indices of 0.5 for total suspended solids, 0.4 for metals and 0.4 for hydrocarbons, meeting or exceeding the CIRIA C753 pollution hazard indices for the car park runoff.

TABLE 26.3 Indicative SuDS mitigation indices for discharges to surface waters

	Mitigation indices[1]		
Type of SuDS component	**TSS**	**Metals**	**Hydrocarbons**
Filter strip	0.4	0.4	0.5
Filter drain	0.4[2]	0.4	0.4
Swale	0.5	0.6	0.6
Bioretention system	0.8	0.8	0.8
Permeable pavement	0.7	0.6	0.7
Detention basin	0.5	0.5	0.6
Pond[4]	0.7[3]	0.7	0.5
Wetland	0.8[3]	0.8	0.8
Proprietary treatment systems[5,6]	These must demonstrate that they can address each of the contaminant types to acceptable levels for frequent events up to approximately the 1 in 1 year return period event, for inflow concentrations relevant to the contributing drainage area.		

SuDS mitigation indexes are tabulated in Table 3 as follows:

			Mitigation Indices			
Runoff Source	**Destination of Runoff**	**Mitigation Index Source**	**Type of SuDS Component**	**Total Suspended Solids (TSS)**	**Metals**	**Hydrocarbons**
Car park and external paving	Surface water sewer	Table 26.3	Permeable paving and proprietary filter chamber	Minimum 0.5	Minimum 0.4	Minimum 0.4
Car park & playground	Surface water sewer	Table 26.3				

TABLE 3: SuDS Mitigation Index

The permeable paving will intercept and filter the initial rainfall close to source. As infiltration is not feasible, complete retention of the first 5 mm cannot be achieved; however, the positively drained porous sub-base provides the highest practicable interception and source-control treatment within the site constraints.

The site is located outside a Groundwater Source Protection Zone.

Overall, the proposed combination of SuDS measures provides an appropriate level of water quality treatment for the site and accords with the principles set out within CIRIA C753.

The water-quality treatment requirements for the Phase 2 building extension and associated landscaping will be assessed and confirmed within the detailed drainage strategy submitted as part of the reserved matters application. The proposed treatment train will demonstrate compliance with the National Standards for Sustainable Drainage Systems.

The drainage strategy has also been developed having regard to the objectives of the Water Framework Directive, ensuring that surface water management does not result in deterioration of receiving water body status.

5.9 PROPOSED FOUL WATER DRAINAGE

Foul water generated by the proposed development will discharge to the public foul sewer operated by Thames Water, subject to agreement with the relevant sewerage undertaker.

The existing foul drainage system comprises a network of gravity pipework serving the school buildings. CCTV confirms the direction and connectivity of the on-site network, while Thames Water asset records indicate that it connects to the public foul sewer in Callington Road.

The surveyed drainage network indicates that foul flows currently discharge to the public foul sewer network, and this arrangement will be retained as part of the proposed development.

The foul drainage strategy will be delivered in two phases as set out below.

Phase 1

Phase 1 comprises refurbishment works including internal reconfiguration and the provision of new toilet facilities.

New toilet facilities will, where practicable, connect into existing foul drainage runs and inspection chambers. Where existing infrastructure cannot be utilised, new gravity drainage runs and chambers will be introduced and tied into the existing on site foul network.

These works will not alter the existing off site discharge points and will continue to utilise the established gravity connection to the public foul sewer.

Phase 2

Phase 2 comprises extensions to the existing school buildings.

Foul water generated by the proposed extensions at ground floor level will be conveyed via gravity drainage and will connect into the existing on site foul drainage network, unless detailed design confirms a more appropriate connection point.

No additional off site foul sewer connections are proposed as part of Phase 2.

Capacity and Loading

The proposed development comprises a reconfiguration of the school accommodation, reducing the existing 630 place 3FE primary school to a 420 place 2FE primary school, together with 48 SEN secondary places, 26 mainstream nursery places and 8 SEN nursery places.

On this basis, the overall foul water load generated by the site is not anticipated to increase and may reduce when compared to existing conditions. The existing foul drainage infrastructure is therefore considered suitable to accommodate the proposed development, subject to detailed design verification.

Any existing foul drainage infrastructure affected by the proposed building works will be diverted as necessary. A schedule of defects identified through CCTV survey will be addressed through remedial works.

The proposed foul water drainage strategy will not increase discharge rates to the receiving sewer network and is not anticipated to give rise to any increased flood risk on site or elsewhere.

Foul and surface water drainage systems will remain separate.

5.10 FUTURE MAINTENANCE

The proposed drainage system has been designed to facilitate safe operation inspection and maintenance in accordance with good practice and the principles set out within the National Sustainable Drainage Systems Standards.

The system will comprise positively drained permeable paving, porous sub-base storage and diffusers, channel drains, below-ground pipework, an attenuation tank, flow-control device and proprietary filter chamber.

The school operator or Reading Borough Council will be responsible for long-term maintenance. Requirements will include routine sweeping and inspection of permeable paving, inspection and flushing of diffusers, cleansing of channel drains, inspection of the attenuation tank and flow control, and servicing of the proprietary filter chamber in accordance with the manufacturer's recommendations. The preliminary maintenance document is included in Appendix G.

It is the owner's responsibility to maintain the system to prevent the increase in the risk of flooding on and off site as a result of system failure.

6 MANAGING AND MITIGATING FLOOD RISK

This section describes the measures incorporated into the proposed development to manage and mitigate flood risk. The measures have been informed by the flood risk assessment presented in Section 3 and the drainage strategy set out in Section 5.

The approach reflects the principles of avoiding controlling mitigating and managing flood risk and ensures that the development will be safe for its lifetime and will not increase flood risk elsewhere.

6.1 SUDS HIERARCHY OF SYSTEMS AND JUSTIFICATION OF USAGE

The surface water drainage strategy has been developed in accordance with the principles set out within in the National Planning Policy Framework and CIRIA The SuDS Manual C753, which promotes the management of surface water as close to source as possible and prioritises surface based and multi functional drainage systems over buried or piped solutions where reasonably practicable.

In accordance with CIRIA C753, the drainage strategy has considered the following hierarchy of SuDS approaches:

- source control measures to manage runoff at or close to its point of origin
- site control measures to manage runoff across the development site
- regional control measures where appropriate to manage runoff at a wider scale

The application of the SuDS hierarchy has been considered separately for each phase of development.

Phase 1

Phase 1 comprises refurbishment works and localised changes to hard-paved and landscaped areas, with positively drained permeable paving introduced where practicable.

For Phase 1, source control will be provided through permeable paving over a porous sub-base. Runoff will be filtered and temporarily stored before entering diffuser connections to the existing surface water system. The paving is positively drained and does not rely on infiltration.

The proposed play surfaces are generally considered to be permeable or semi permeable in nature and will not result in a significant increase in impermeable area across the site.

Surface water runoff will be collected and conveyed via the existing piped drainage network, with localised modifications where required to accommodate the proposed layout.

As Phase 1 principally reconfigures existing hard-paved and landscaped areas and introduces positively drained permeable construction, no separate attenuation tank is required for these

localised works. The permeable sub-base will provide source-control storage and delay runoff entering the existing system.

This approach reflects site constraints associated with ground conditions and the operational nature of the school and represents the most feasible application of the SuDS hierarchy.

Phase 2

Phase 2 comprises extensions to the existing school buildings, associated roof drainage and the car park extension.

The drainage design for the Phase 2 car park extension incorporates source control through permeable paving, together with attenuation, water-quality treatment and controlled discharge. The detailed SuDS measures for the Phase 2 building extension and associated landscaping will be selected and assessed as part of the reserved matters drainage strategy in accordance with the National Standards for Sustainable Drainage Systems.

Infiltration-based SuDS have been discounted because site-specific testing in WS2 and WS4 produced no calculable soakage rate, the underlying strata comprise low-permeability London Clay and shallow groundwater was encountered. Attenuation and controlled discharge are therefore the highest feasible remaining drainage solution.

Attenuation storage and controlled discharge are incorporated into the Phase 2 car park drainage design. The reserved matters drainage strategy will demonstrate how runoff from the Phase 2 building extension and associated landscaping will be managed without increasing flood risk elsewhere.

The selection of below ground attenuation components reflects practical constraints associated with the operational nature of the school, safeguarding requirements and available external space. Such systems are proposed only where higher order SuDS measures cannot be delivered effectively, in accordance with CIRIA C753 principles.

Overall, the proposed SuDS strategy represents the highest feasible application of the hierarchy for each phase of development and provides a sustainable and proportionate solution for the site.

6.2 FINISHED FLOOR LEVELS AND SITE LEVELS

Finished floor and external levels for the Phase 2 building extension will be developed at the reserved matters stage with regard to the assessed flood risk and proposed surface water drainage strategy.

The application site lies entirely within Flood Zone 1 and is not affected by fluvial or tidal flood risk. Environment Agency Risk of Flooding from Surface Water mapping indicates that the site is at Very Low risk of surface water flooding, with no significant ponding areas identified within the proposed development footprint.

In the absence of fluvial or tidal flood risk and given the Very Low classification for surface water flooding, no specific flood level constraint applies to the setting of finished floor levels.

Nevertheless, finished floor levels for the proposed extensions will be set above adjacent external ground levels and designed to provide positive drainage away from building perimeters. Threshold levels will incorporate appropriate step ups or drainage detailing to prevent ingress of surface water during intense rainfall events.

Proposed site levels will ensure that surface water runoff is directed away from buildings and towards areas where it can be safely conveyed or temporarily stored during exceedance events. The site layout and drainage strategy avoid creating localised low points adjacent to structures.

No below ground accommodation is proposed.

The detailed finished floor and external levels for the Phase 2 building extension will demonstrate that runoff is directed away from the building and that the development will remain safe over its lifetime. These details will be submitted as part of the reserved matters application.

6.3 FLOOD FLOW ROUTES AND CONVEYANCE

The site lies within Flood Zone 1 and is not affected by fluvial or tidal floodplain extents. As such, there are no mapped floodplain flow routes or conveyance corridors within the site that require safeguarding.

The site is gently sloping, and overland flow will follow the established gradients across hardstanding and landscaped areas.

In the event that the drainage system is exceeded during rainfall events greater than the design standard, surface water will follow topographic gradients across external hardstanding and landscaped areas. Detailed levels for the Phase 2 building extension and associated landscaping will be designed to direct exceedance flows away from building entrances and occupied areas towards locations where they can be safely conveyed or temporarily stored. The proposed exceedance routes will be demonstrated as part of the reserved matters drainage submission.

The proposed attenuation measures incorporated within the drainage strategy provide additional storage capacity, reducing the likelihood of uncontrolled overland flow.

Where required, localised level design will ensure that any exceedance flows are routed away from sensitive receptors and do not increase flood risk to adjacent land.

As the site is not located within the functional floodplain and no floodplain storage is displaced, the proposed development will not obstruct flood conveyance or result in any increase in flood risk elsewhere.

6.4 RISK TO PEOPLE

The assessment confirms that flood risk to people associated with the proposed development is **low**.

The site lies within Flood Zone 1 and is not affected by fluvial or tidal flood risk. Environment Agency Risk of Flooding from Surface Water mapping indicates that the site is at Very Low risk of surface water flooding, with no significant ponding areas identified within the proposed development footprint. The primary potential flood mechanism is localised surface water runoff during intense rainfall events. Such events would be associated with shallow, temporary overland flow rather than deep or fast flowing floodwater.

No significant flood depths, velocities or hazard to people are anticipated at the site under design or extreme event scenarios. The drainage strategy incorporates *attenuation and controlled discharge* measures to manage runoff and reduce the likelihood of uncontrolled surface water accumulation.

The proposed development therefore does not introduce unacceptable risk to occupants, staff or visitors over its lifetime.

Safe access and egress arrangements are addressed further in Section 7.

6.5 RISK TO PROPERTY AND BUILDINGS

The proposed development incorporates measures to minimise the risk of damage to buildings during extreme rainfall events.

The site lies within Flood Zone 1 and is not affected by fluvial or tidal flood risk. Environment Agency mapping indicates a Very Low risk of surface water flooding within the development footprint. As such, no specific flood resistance measures are required to address river or tidal flood risk.

Finished floor levels will be set above adjacent external ground levels and external levels will be designed to promote positive drainage away from building perimeters. The surface water drainage strategy incorporates attenuation and controlled discharge measures to manage runoff in accordance with current guidance.

No below ground accommodation is proposed and no structures are located within areas of predicted flood depth.

Standard good practice construction detailing will be adopted, including appropriate service entry sealing and robust external drainage design, to minimise the potential for water ingress during extreme rainfall events.

On this basis, the risk of flood related damage to buildings is considered **low**.

6.6 RISK TO ESSENTIAL SERVICES

The location of essential services including electricity supply, telecommunications infrastructure and building services plant has been considered with regard to the assessed flood risk at the site.
The site lies within Flood Zone 1 and is not affected by fluvial or tidal flood risk. Environment Agency mapping indicates a Very Low risk of surface water flooding within the development footprint. No areas of significant flood depth have been identified.

All essential services associated with the proposed extensions will be located at ground floor level or above and will be positioned above adjacent external ground levels. No critical plant or infrastructure is proposed below ground level.

The site layout avoids placing vulnerable infrastructure within areas susceptible to localised surface water ponding. The drainage strategy incorporates *attenuation and controlled discharge measures* to reduce the likelihood of uncontrolled surface water accumulation during extreme rainfall events.

Standard good practice design measures will be adopted to ensure that service entries and external connections are appropriately sealed and protected.

On this basis, the risk to essential services from flooding is considered **low**.

6.7 FLOODPLAIN STORAGE AND COMPENSATION

The application site lies entirely within Flood Zone 1 and is not located within the fluvial floodplain or the functional floodplain.

No fluvial flood storage areas are present within the site and the proposed development does not encroach into land identified as Flood Zone 2, Flood Zone 3a or Flood Zone 3b.

As the development is not located within the floodplain, there will be no loss of floodplain storage and no displacement of floodwater.

Floodplain storage compensation is therefore not required.

7 MANAGING RESIDUAL RISK AND EMERGENCY PLANNING

Residual flood risk refers to the risk that remains after all mitigation and management measures have been taken into account. This can arise from events that exceed the design standard, the failure or blockage of drainage infrastructure, or from very low probability events such as reservoir failure.

This section considers how residual flood risk has been managed and how the safety of occupants is ensured during extreme events.

7.1 SAFE ACCESS AND EGRESS

Safe access and egress to and from the site has been assessed with reference to the flood risk sources identified in Section 3.

The site lies entirely within Flood Zone 1 and is not affected by fluvial or tidal flood extents. There are no mapped flood zones affecting the site access points or surrounding highway network.

Environment Agency Risk of Flooding from Surface Water mapping indicates a Very Low risk of surface water flooding across the site and along access routes. No significant flood depths or hazardous flow conditions are anticipated.

In the unlikely event of intense rainfall, any localised surface water ponding would be shallow and temporary in nature and would not pose a risk to life.

On this basis, safe access and egress arrangements are considered appropriate for the proposed development over its lifetime.

7.2 FLOOD WARNING AND RESPONSE

The site lies within Flood Zone 1 and is not located within an Environment Agency Flood Alert or Flood Warning area.

As the site is not at risk of fluvial or tidal flooding, no formal flood warning service applies.

The only credible flood mechanism is localised surface water runoff during intense rainfall. The proposed drainage and exceedance routing strategy has been designed to manage such events safely.

Emergency response would be managed through existing school safeguarding procedures and Reading Borough Council emergency planning arrangements.

7.3 EVACUATION AND EMERGENCY PLANNING

The site lies entirely within Flood Zone 1 and is not affected by fluvial or tidal flood risk. No Environment Agency Flood Warning or Flood Alert service applies to the site.

The only credible flood mechanism is localised surface water runoff during intense rainfall events. Such events are typically short duration and highly localised in nature.

In the unlikely event of extreme rainfall resulting in temporary surface water ponding, occupants would be able to evacuate the site using existing access routes. Emergency response would be supported by established school safeguarding procedures and Reading Borough Council emergency planning arrangements.

Having regard to the scale of the development and the low level of flood risk affecting the site, a site specific Flood Emergency Plan is not required.

7.4 RESIDUAL RISK MANAGEMENT

Residual flood risk relates to flooding that may occur as a result of events exceeding the design standard of the drainage system, blockage of drainage infrastructure or other unforeseen circumstances.

The primary flood mechanism at the site is localised surface water runoff during intense rainfall events. Residual risk has been managed through:

- setting finished floor levels above adjacent external ground levels
- positive site grading to direct runoff away from buildings
- incorporation of *attenuation and controlled discharge measures* within the drainage strategy
- provision of exceedance routing across external areas
- separation of foul and surface water systems

The site is located within Flood Zone 1 and is not affected by fluvial or tidal flood risk. No floodplain storage is displaced and no increase in runoff to third party land will occur.

Based on the assessment, residual flood risk does not pose a constraint to the proposed development and can be managed safely over the lifetime of the development.

7.5 BETTERMENT AND WIDER FLOOD RISK BENEFITS

The proposed development provides betterment in terms of surface water management when compared to existing conditions.

The existing drainage system is understood to discharge to the public sewer network, with elements of the system requiring confirmation of condition and connectivity based on CCTV survey findings.

The proposed development includes:

- verification of existing drainage condition through CCTV survey and targeted investigations
- improved management of surface water runoff through permeable paving source control, attenuation and controlled discharge
- formalised exceedance routing design
- remediation of identified drainage defects
- separation and retention of dedicated foul and surface water systems

Surface water runoff from the proposed development will be managed in accordance with the drainage hierarchy, with discharge rates restricted to ensure that post development runoff does not exceed existing conditions and will seek to achieve betterment where practicable.

These measures represent an improvement over existing drainage arrangements and contribute to maintaining or reducing flood risk both on site and within the surrounding area.

8 SUMMARY AND CONCLUSIONS

8.1 SUMMARY

This Flood Risk Assessment and Drainage Strategy has been prepared in support of a full planning application for Phase 1 works comprising new parking, landscaping and boundary treatment, and an outline planning application for Phase 2 works comprising a new two-storey teaching block and hall, associated parking and landscaping, to facilitate a new SEN school at Whitley Park Primary and Nursery School, Brixham Road, Reading.

The assessment has considered the risk of flooding to the site from all relevant sources, including fluvial, tidal, surface water, sewer, groundwater, reservoir and other artificial sources, together with the potential effects of climate change over the lifetime of the development.

The key outcomes of the assessment are summarised below:

- The site is located within Flood Zone 1 and the proposed development is compatible with its Flood Zone location.
- Flood risk from rivers and the sea is assessed as low and does not pose a constraint to the proposed development.
- Surface water flooding represents a low source of flood risk and has been assessed using Environment Agency mapping and managed through the proposed drainage strategy.
- Flood risk from sewers, groundwater, reservoirs and other artificial sources is assessed as low.
- Residual flood risk associated with exceedance events and infrastructure failure has been considered and can be managed safely through the proposed design and mitigation measures.

The site is underlain by bedrock geology, which has informed the drainage strategy and the limited potential for infiltration based drainage solutions.

The proposed development comprises the reconfiguration of the existing school layout. Phase 1 includes localised internal demolition and refurbishment/reconfiguration works, with no new extension floorspace proposed. Phase 2 includes approximately 330 square metres of new extension floorspace, in addition to the existing 4,282 square metres of educational floor area. The development will deliver a 420 place two form entry primary school, together with 48 SEN secondary places, 26 mainstream nursery places and 8 SEN nursery places. Overall pupil numbers and associated foul water demand are not anticipated to increase when compared to existing conditions.

The surface water drainage strategy will be delivered in two phases. Phase 1 comprises localised changes to hard-paved and landscaped areas, with positively drained permeable paving connected to the existing system through diffuser connections within the porous sub-base. The

drainage design for the Phase 2 car park extension has been completed and incorporates permeable paving, attenuation, water-quality treatment and a restricted discharge of 2.0 litres per second to the existing surface water system. The Phase 2 building extension and associated landscaping remain at outline design stage. A detailed SuDS strategy and supporting hydraulic calculations will be submitted as part of the reserved matters application and will demonstrate compliance with the National Standards for Sustainable Drainage Systems.

The proposed foul water drainage strategy will utilise the existing on site foul drainage infrastructure, which is understood to connect to the public sewer network, subject to localised modifications associated with the proposed works. No new off site foul sewer connections are proposed.

The proposed drainage strategy has been developed in accordance with national and local policy and follows the drainage hierarchy. The strategy ensures that surface water runoff is managed sustainably and that flood risk is not increased elsewhere.

On the basis of the assessment undertaken, the site is suitable for the proposed development from a flood risk and drainage perspective.

8.2 CONCLUSIONS

This Flood Risk Assessment and Drainage Strategy demonstrates that the proposed development can be delivered safely and sustainably from a flood risk and drainage perspective.

The assessment confirms that:

- the site is located entirely within Flood Zone 1 and is at low risk of flooding from rivers and the sea
- surface water flooding represents a low risk and is appropriately managed through the proposed drainage strategy
- flood risk from groundwater, sewers, reservoirs and other artificial sources is low
- flood risk to people, property and essential infrastructure has been appropriately assessed and managed
- the development will not increase flood risk elsewhere
- appropriate mitigation and management measures are incorporated within the design, including positively drained permeable paving, attenuation, proprietary water-quality treatment, controlled discharge and exceedance routing
- the development provides betterment in terms of surface water management through improved control of runoff, verification of existing drainage infrastructure and remediation of identified defects
- foul water demand is not anticipated to increase when compared to existing conditions

The detailed drainage design for the Phase 2 building extension and associated landscaping will be submitted as part of the reserved matters application and will demonstrate compliance with the

National Standards for Sustainable Drainage Systems and that flood risk will not be increased elsewhere.

On this basis, it is concluded that the proposed development is acceptable from a flood risk and drainage perspective and complies with national, regional and local planning policy.

9 APPENDIX A

Development Proposals



1 | Phase 1 Refurbishment Phasing Plan
1 : 500



2 | Phase 2 Extension & Refurbishment Phasing Plan
1 : 500

Landscape is indicative, please refer to Landscape Architect and Transport Consultant drawings for further information.

A1

SCALE
1:500

0 2 5 10 20 25m

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NOTES:

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Drawing to be read in conjunction with all relevent Architectural, Interiors, Structural, M&E, Drainage/ Public Health, Landscape and Civils drawings and specifcations. Any discrepancies between consultant's drawings to be reported to the Architect before any work commences.
The Contractor's attention is drawn to the Health & Safety matters identified in the Health & Safety plan as being potentially hazardous.
These items should not be considered as a full and final list.

The Work Package Contractor's normal Health & Safety obligations still apply when undertaking constructional operations both on and off site.

Ayre Chamberlain Gaunt take no responsibility for the location of legal boundaries indicated on this drawing and advise a separate drawing to be completed by specialist surveyor in order to establish exact boundaries.
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KEY

- Indicative Site Boundary
- Phase 1 Refurbishment
- Phase 1 External Works
- Phase 2 New Build Extension
- Phase 2 Refurbishment
- Phase 2 External Works

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AYRE CHAMBERLAIN GAUNT

PROJECT
Reading SEN Schools
Whitley Park Site - Brixham Rd, Reading, RG2 7RB

DRAWING TITLE
Proposed Phasing Site Plan

REV.	DATE	DESCRIPTION
P3	14.08.26	Revised Stage 3+ Issue
P2	17.07.26	Stage 3+ Issue for Costing
P1	11.12.25	Issued for Coordination

DRWN	CHKD BY	APPD BY
AKG	GP	TH

DRAWING NO.
project code - originator - volume - level - type - role - number
WTL-ACG-XX-00-DR-A-1052

STAGE	SUITABILITY	
RIBA stage	code	description
3+	S4	SUITABLE FOR STAGE APPROVAL



Key:

Notes:
- All materials to be as detailed or accepted equivalent.
- Refer to accompanying outline specification
- Refer also to architectural and engineering drawings as applicable.

Planning application boundary

Existing tree to be retained and protected in accordance with BS 5837:2012

Existing tree RPAs to be retained

Hard Landscape

Existing asphalt to be retained and made good if disturbed

Proposed vehicular asphalt

Proposed pedestrian asphalt

Proposed permable vehicular block paving

Existing concrete paving slabs to be retained

Brick pavers to be retained as existing

Proposed porous resin bound surfacing

Existing artificial grass to be retained

Proposed rubber crumb surface

Proposed resurfaced asphalt Hard PE area

Proposed brushed concrete to refuse and cycle store

Proposed yellow line marking in car park for disabled bay and no parking area

Fencing

Existing fence to be retained

Proposed 2.4m ht. weldmesh fence with matching gates

Proposed 1.2m ht. bowtop fence to classrooms with matching gates

Proposed 3m high ball stop fence to classrooms with matching gates

Soft Landscape

Existing grass to be retained and made good if disturbed

Proposed mown grass path (1.8m wide)

Proposed grass area

Proposed tree

Proposed raised planters

Proposed 750mm wide hedge

Proposed shrub and groundcover planting bed

Proposed sensory planting

Furniture

Proposed benches

Proposed picnic tables to staff outdoor space

Proposed table and chairs

Proposed EV charging units to new parking

Proposals for future potential EV charger

Bib tap locations

Proposed shed

Retain existing canopy

0m 10m 20m

north

- All dimensions in millimetres unless otherwise indicated. All levels in metres relative to Ordnance Datum and are positive (AOD) unless otherwise indicated.
- Figure dimensions only to be taken from this drawing. Dimensions and levels to be checked on site.
- Scaling suitable for planning purposes only, when drawing is reproduced at indicated size.
- All civil/structural matters including existing and proposed services, sub-base construction, site structures and retaining walls are subject to design/confirmation by an appropriately qualified Engineer. Refer to information by others.
- The original version of this drawing was produced in colour - monochrome copies should not be relied upon to accurately reflect all drawing elements.
- This drawing has been prepared for tender purposes only and should not be used for construction.

rev.	date	by	chk	notes
P04	01/09/26	DB	RB	Proposals for existing benches added.
P03	04/08/26	DB	RB	Existing retained/proposed asphalt extents updated; minor graphic updates; key updated.
P02	16/07/26	DB	RB	Updated following design team comments.
P01	11/07/26	SM	RB	Drawing collated from enabling works and planning drawings to show stage 3+ works only

project
Reading SEND

dwg no
WTL-TFC- XX-XX-DR- L- 1020

title
Landscape General Arrangement- site wide (Phase 1a and 1b)

suitability
For Tender

stage	scale @ A1
Stage 3+	1:500

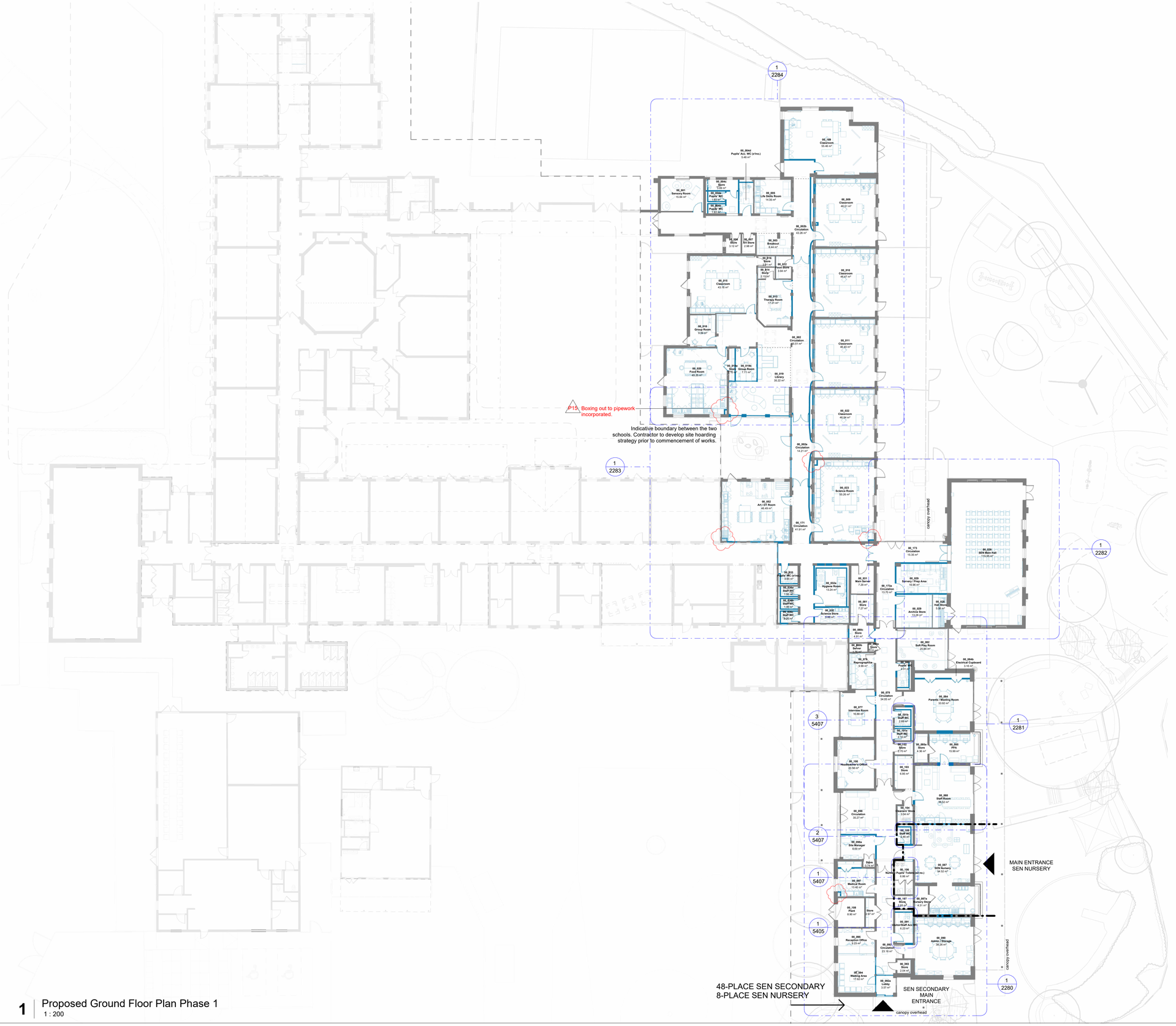
terrafirma
LANDSCAPE ARCHITECTS

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CAD-0003-1.0d

P:\P003\ECT\P3382 Reading SEN School RB\2382 CAD\WTL-TFC-XX-XX-DRL-1020 Landscape GA Stage 3+



1 Proposed Ground Floor Plan Phase 1
1 : 200

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A1

SCALE
1 : 200
0 1 2 5 10m

NOTES:

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KEY:
- Existing
- Proposed
- Main Entrance

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AYRE CHAMBERLAIN GAUNT

PROJECT
Reading SEN Schools
Whitley Park Site - Brixham Rd, Reading, RG2 7RB

DRAWING TITLE
Proposed Ground Floor Plan Phase 1

REV.	DATE	DESCRIPTION
P15	14.08.26	Revised Stage 3+ Issue
P14	17.07.26	Stage 3+ Issue for Costing
P13	13.07.26	Issued for Coordination
P12	10.07.26	Issued for Coordination
P11	26.06.26	Issued for Coordination
P10	23.06.26	Issued for Comment
P9	12.06.26	Issued for Coordination
P8	11.03.26	Issued for Coordination
P7	20.02.26	RIBA Stage 3 Issue
P6	13.02.26	Issued for Coordination
P5	30.01.26	Issued for Coordination
P4	16.01.26	Issued for Information
P3	11.12.25	Issued for Coordination

DRWN BY	CHKD BY	APPD BY
LS	GP	TH

DRAWING NO.
project code - originator - volume - level - type - role - number
WTL-ACG-ZZ-00-DR-A-2201

STAGE	SUITABILITY	
RIBA stage	code	description
3+	S4	SUITABLE FOR STAGE APPROVAL

Key:

Notes:
- All materials to be as detailed or accepted equivalent.
- Refer to accompanying outline specification
- Refer also to architectural and engineering drawings as applicable.

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Proposed shrub and groundcover planting bed

Proposed sensory planting

Furniture

Proposed benches

Proposed picnic tables to staff outdoor space

Proposed table and chairs

Proposed EV charging units to new parking

Proposals for future potential EV charger

Bib tap locations

Proposed shed

Retain existing canopy

Drop off/pick up - vehicles moving

Drop off/pick up - vehicles queuing to drop off / pick up

Drop off/pick up - vehicles dropping off/picking up

SPECIFICATION NOTES

1. General.
This plan to be read in conjunction with the following documents:
- Landscape works specification and other drawings by terra firma

2. General landscaping.
i. Existing levels to be preserved around retained existing trees and vegetation. Existing trees and vegetation to be retained are to be protected in accordance with BS5837: 2012 during construction.
ii. All landscape works to be undertaken by competent persons, with appropriate training and equipment.
iii. All arisings to be removed from site at contractor's expense unless noted otherwise. (e.g. woodchip, gravel, topsoil, timber sleepers).

3. Services.
The contractor must ascertain for himself/herself the exact location of underground services before commencing work.

4. Soil Materials Generally.
i. Purity: Soils shall be free from roots, stolons, rhizomes, propagules of perennial or invasive weeds couch grass, bindweed, docks, Japanese knotweed, giant hogweed and horsetail/marestail (Equisetum avense).
ii. Foreign matter: On visual inspection, free from non-soil material, brick and other building materials and wastes, sharps, and any other foreign matter or material or substance that would render the soil or soil ameliorant unsuitable for use.
iii. Contamination: Do not use topsoil, subsoil, sand or compost contaminated with rubbish or other materials that are:
- Corrosive, explosive or flammable;
- Hazardous to human or animal life;
- Detrimental to healthy plant growth.
iv. Give notice: If any evidence or symptoms of soil contamination are discovered on the site or in topsoil, subsoil, sand or compost or other planting media to be used.

5. Soil testing
Each soil source (imported and site-won subsoil and topsoil - see items 6-8 below) shall be analysed by Tim O'Hare Associates, Howbery Park, Wallingford, Oxon OX10 8BA, Tel: 01491 822653, Email: info@toha.co.uk, www.toha.co.uk (or equivalent approved).

6. Subsoil for general planting areas (sample of site-won and/or imported subsoil to be sent for testing to check compliance with parameters below)
Provide subsoil as necessary to make up deficiency on site. Natural or manufactured subsoil (from approved source) will be acceptable (within parameters given below). Subsoil to be tested to determine suitability for proposed use for planting; test report to be submitted for approval and to enable amelioration recommendations. Subsoil should be free from commonly tested contaminants, including asbestos. Subsoil parameters to be within the following:

Parameter	Unit	Lower Limit	Upper Limit
Clay (<0.002mm)	%	5	35
Silt (0.002-0.05mm)	%	0	35
Sand (0.05-2.0mm) of which at least 40% shall fall into fine to medium sand range	%	50	90
Stones (2-50mm)	%DW	--	50
Stones (>50mm)	%DW	--	0
pH Value	Unit	5.5	8.5
Electrical Conductivity (1:2.5 water extract)	µS/cm	--	1500
Electrical Conductivity (CaSO4 extract)	µS/cm	--	2800
Exchangeable Sodium Percentage	%	--	15
Organic Matter	%	--	1.5

7. Subsoil for tree pits (sample of site-won and/or imported subsoil to be sent for testing to check compliance with parameters below)
Provide subsoil as necessary to make up deficiency on site. Natural or manufactured subsoil (from approved source) will be acceptable (within parameters given below). Subsoil to be tested to determine suitability for proposed use; test report to be submitted for approval and to enable amelioration recommendations. Subsoil should be free from commonly tested contaminants,
including asbestos. Subsoil parameters to be within the following:

Parameter	Unit	Lower Limit	Upper Limit
Clay (<0.002mm)	%	5	18
Silt (0.002-0.05mm)	%	0	25
Sand (0.05-2.0mm) of which at least 40% shall fall into fine to medium sand range	%	60	90
Stones (2-50mm)	% dry wt.	--	50
Stones (>50mm)	% dry wt.	--	0
pH Value	Unit	5.5	8.5
Electrical Conductivity (1:2.5 water extract)	µS/cm	--	1500
Electrical Conductivity (CaSO4 extract)	µS/cm	--	2800
Exchangeable Sodium Percentage	%	--	15
Organic Matter	%	--	1.5

8. Topsoil for general landscapes (sample of site-won and/or imported topsoil to be sent for testing to check compliance with parameters below and to inform any necessary amelioration - see 9. below)
Existing topsoil to be stripped and re-used, provided soil is within parameters given below when analysed. Imported topsoil to be good quality sandy loam or manufactured topsoil (from approved source, meeting parameters given below). Topsoil (site-won or imported) is to be tested to determine suitability for proposed use and should be free from commonly tested contaminants,
including asbestos; test report to be submitted to Landscape Architect for approval and to enable amelioration recommendations to be made:

Parameter	Unit	Lower Limit	Upper Limit
Clay (<0.002mm)	%	5	18
Silt (0.002-0.05mm)	%	0	35
Sand (0.05-2.0mm) of which at least 40% shall fall into fine to medium sand range	%	50	85
Stones (2-20mm)	% dry wt.	0	20
Stones (20-50mm)	% dry wt.	0	15
Stones (>50mm)	% dry wt.	-	0
pH Value	Unit	5.5	8.5
Electrical Conductivity (1:2.5 water extract)	µS/cm	--	1500
Electrical Conductivity (CaSO4 extract)	µS/cm	--	2800
Exchangeable Sodium Percentage	%	--	15
Organic Matter	%	4.0	8.0
Total Nitrogen	%	0.15	--
Carbon: Nitrogen Ratio	--	--	20:1
Extractable Phosphorus	mg/l	26	100
Extractable Potassium	mg/l	240	1200
Extractable Magnesium	mg/l	50	600

9. Ameliorant: fertilizer and compost (contractor is responsible for submitting a sample of imported or site-won topsoil (to inform requirements).
Topsoil amelioration to be determined by analysis. Once amelioration requirements ascertained as required, approved (peat free) composts to PAS100 and/or fertilizers to be incorporated during cultivation at required rate to full depth of growing medium.

10. Soil handling and depths.
Management of soils to be in accordance with the Construction Code of Practice for the Sustainable Use of Soils on Construction Sites
i. Topsoil and subsoil to be handled (i.e. excavated and/or imported, stored, spread, cultivated) in accordance with method agreed in writing by Landscape Architect prior to work commencing. All topsoil and subsoil areas shall be thoroughly cultivated by hand or suitable machinery to the full depth of the topsoil layer, incorporating ameliorants as required. If compaction is suspected in sub-grade, subsoil or topsoil surfaces, these should be ripped as necessary to decompact and ensure adequate drainage.
ii. Hand cultivations shall be carried out to achieve the required finish on areas where machine cultivation is impossible ie adjacent to kerbs, manholes and footpath junctions, around retained trees etc. Surplus plant matter, rubbish and surface stones having any dimension greater than 25 mm shall be collected and removed from the site. Topsoil and subsoil is to be stored in heaps, maximum of 2m in height, providing soil is reasonably dry and friable during stripping and handling - using a tracked excavator. To protect from wet weather once final height is achieved, an excavator should regrade the sides and top of stockpile to firm surface by tracking across it to form a smooth gradient.
iii. Final topsoil depth (allowing for settlement) to be 300mm for tree pits and general planting areas and 150mm for grass. Finished soil levels to be 25mm above/below adjoining paving or kerbs: not less than 150mm below dpc of adjoining buildings; shrub areas to be higher than adjoining grass areas by 25 mm. Topsoil to be spread in lightly compacted layers, max. 150mm depth, gently firm each layer before spreading the next.
iv. Where laying topsoil around manhole access covers in lawn and planting areas contractor to pay careful attention to laying topsoil in layers and gently compacting each layer (as item iii. above), leaving finished soil levels 25mm above access cover level. This is to avoid subsequent settling of soils leaving the cover proud of the adjacent planting bed or lawn. Contractor to allow for topping up and remediation during the defects period if settlement does occur.

11. Plant handling and establishment.
Plant handling shall be in accordance with 'Handling and establishing landscape plants', published by the CPSE through the JCLI. (https://www.csdhub.com/wp-content/uploads/2014/12/The-National-Plant-Specification-Handling-and-Establishment.pdf). The contractor shall comply with Part 3: Recommendations for plant handling from delivery to site to ensure successful establishment.

12. General planting notes.
Details for tree, hedge and general planting to be finalised once final site conditions are known (i.e compaction and permeability of ground). General plant stock to conform to BS 3936, advanced nursery stock to BS 8545, and planting to BS 4428. Plants shall be first class examples of their species or variety, free from all pests and diseases, with good fibrous root systems and materially undamaged. All planting operations to be in general compliance with BS4428: 'Code of Practice for general landscape operations'.
Only carry out all planting while soil and weather conditions are suitable:
- Do not plant during periods of frost or strong winds. Plant only during the following periods
- Deciduous and conifer trees: Late October to late March (rootball and bare root)
- Container grown plants: At any time if ground and weather conditions are favourable. Ensure that adequate watering is provided

Setting out of planting beds to be approved by Landscape Architect before work commences. Ensure that plant beds are neatly defined, and rise from adjacent paved areas as specified above. All tree pits, tree circles in lawn and planting beds are to be mulched with approved bark mulch to 75mm depth after planting.

13. Plant biosecurity
Plant procurement should follow the latest recommendations from DEFRA and landscape contractors should verify the status of all specified species prior to procuring. Plant material should be sourced from UK growers with a sound Biosecurity Policy and management systems that can demonstrate the traceability of their stock with plant health certificates / plant passports or other documentation (commensurate with the HTA Plant Health Assurance Scheme (still in development phase)).
Selected plants, including trees should be propagated and grown on a UK nursery, or containerised and grown-on in the UK for a minimum of 5 years (trees) or 2 years (shrubs). Any Xylella host plants specified must come from a UK nursery and must not be imported from Europe or anywhere else in the world, directly to site. There must be full traceability on the Xylella host plants (ideally back to its origin). The contractor is responsible for checking compliance of growers and to submit their own Biosecurity Plan with their tender

14. Tree planting
Any proposed substitutions of species shown on plan to be approved by landscape architect prior to planting. Details for tree planting to comply with BS8545. As a guide all trees to be planted in square pits with base undisturbed unless drainage / compaction problems known. Plant at a depth where the root flare is clearly visible at the soil surface. Where trees have been supplied with the root flare too deep excess soil or fibrous root growth should be removed before planting. All trees to have 'Pickle' tree irrigation/aeration system installed as supplied by Platipus 01737 762300 www.platipus-anchors.com or approved equivalent. Water-in heavily after planting and mulch surface, ensuring mulch is not in contact with trunk of tree. Tree support to comply with BS 8545: Bare root trees to have a single upright stake; RB or CG trees to have double stake and bridge with adjustable tie; multi stemmed trees or trees on slopes to have angled single stake with adjustable tie; in windy locations or for large trees, install wired guying; tree stakes to be stained black. Any necessary remedial tree works are to be carried out by an approved tree surgeon to BS 3998. Trees planted within grass areas to be set in mulched earth circles, 1m diameter around tree trunk, with turf trimmed neatly to form circle.
i. Trees up to 20cm girth.
Depth of tree pits to be the same as the rootball and with overall width to be 150mm wider than the diameter of the rootball (75mm min. from rootball edge to tree pit side)
Pits to be backfilled with 300mm depth of specified topsoil over subsoil as per spec.

15. Hedges.
Depth of planting trench to be same as root system, overall width150mm wider than rootball (75mm min. from rootball edge to sides of trench). Trench to be backfilled with 300mm depth of specified topsoil over subsoil as per spec. Fertiliser to be incorporated as required to ensure establishment and continued thriving of plants - type and application rate to be determined by analysis. Central post and wire supporting to be provided with two line wires and plants to be tied in using horticultural plastic ties. On planting, hedges to be trimmed to 800mm ht. and sides trimmed to neat shape where necessary.

16. Native hedges.
Depth of planting trench to be same as root system, overall width space 150mm wider than root system (75mm min. from root system edge to sides of trench). Trench to be backfilled with 300mm depth of specified topsoil over subsoil as per spec. Provide and install each plant with an appropriate sized recyclable staked green shrub shelter (available from Tubex Ltd, phone 01621 874201 or similar approved). Position shelter stake on windward side of plant, drive vertically into bottom of pit before planting, to a min. depth of 300mm and consolidate backfill material around stake; attach shelter to stake with a minimum of two ties.

17. Native tree and shrub mix.
All plants to be planted in cultivated planting beds with species randomly mixed for natural effect, and planted in groups of 3-5 plants of any one species. Plants to be notch- or pit-planted. Provide and install each plant with an appropriate sized recyclable staked green tree or shrub shelter (available from Tubex Ltd phone 01621 874201 or similar approved). Position shelter stake on windward side of plant, drive vertically into bottom of pit before planting, to a min. depth of 300mm and consolidate backfill material around stake; attach shelter to stake with a minimum of two ties.

18. Specimen Shrubs.
Depth of planting pit to be same as rootball, overall width space 100mm wider than rootball (50mm min. from rootball edge to sides of pit). Pit to be backfilled with 300mm depth of specified topsoil over subsoil as per spec. Fertiliser to be incorporated as required to ensure establishment and continued thriving of plants - type and application rate to be determined by analysis.

19. Shrub and Ground Cover Planting.
All plants to be planted into cultivated planting beds (with 300mm depth specified topsoil) at densities shown in plant schedule, backfilled with same topsoil. Fertiliser to be incorporated as required to ensure establishment and continued thriving of plants - type and application rate to be determined by analysis.

20. Grass.
Turfing and seeding shall be carried out only during appropriate seasons and while soil and weather conditions are suitable for the relevant operations. Only machinery and tools suitable for the site conditions and the work to be carried out shall be used. Hand tools shall be used around trees, plants and in confined spaces where it is impractical to use machinery. The soil shall be weed free prior to turfing and seeding. Contact herbicide as specified should be applied to all areas of weed growth 4-6 weeks before grassing and repeated if necessary to maintain a weed free bed. Where deep rooted weeds are present (docks, thistles etc.) approved Glyphosate-based herbicide should be applied as a spot treatment. Turf or seed shall be laid on prepared, levelled soil (minimum 150mm depth) in the areas indicated on the drawings in accordance with BS 4428:1989 'Code of practice for general landscape operations'. All grass areas to be approved landscape quality turf for general amenity areas or lawn turf for garden areas, or equivalent seed.

21. Plants in Containers.
Containers to be prepared for planting with a 50mm layer of gravel/broken pot in the base to ensure free drainage, followed by peat-free compost. Once planted, the compost is to be topped with a 30mm layer of buff-coloured decorative stone chips. to give a finished level 30mm below the top of the pot. Container plants are to be fed in late March and late June with a general fertilizer.

22. Maintenance.
Establishment maintenance for all planting for 5 years from Practical Completion to include weed control, watering and replacement of failures to original specification in the planting season following failure.
i. All plant material to receive annual pruning and hedges and groundcover to be trained and edged with minimum 2 trims per year.
ii. Check tree stakes and ties annually and after strong winds.
iii. Check shrub shelters at least twice annually to remove weeds and any soil build up inside tube. Shelters to be removed in year 3 and recycled.
iv. Native shrubs plants to be trimmed during winter just after planting, then twice annually in summer and autumn to encourage lower branching and dense growth.
v. Lawn & amenity grass areas - Mowing is to be carried out using approved machinery to maintain the vegetation length within the limits of 30 mm and 50 mm during April to August inclusive and between 50 mm and 70 mm during the rest of the year.



0m 10m 20m

north

- All dimensions in millimetres unless otherwise indicated. All levels in metres relative to Ordnance Datum and are positive (AOD) unless otherwise indicated.
- Figure dimensions only to be taken from this drawing. Dimensions and levels to be checked on site.
- Scaling suitable for planning purposes only, when drawing is reproduced at indicated size.
- All civil/structural matters including existing and proposed services, sub-base construction, site structures and retaining walls are subject to design/confirmation by an appropriately qualified Engineer. Refer to information by others.
- The original version of this drawing was produced in colour - monochrome copies should not be relied upon to accurately reflect all drawing elements.
- This drawing has been prepared for planning purposes only and should not be used for quantification, tender or construction.

rev.	date	by	chk	notes
P01	14/08/26	DB	RB	First issue.

project
Reading SEND

dwg no
WTL-TFC- XX-XX-DR- L- 1040

title
Landscape General Arrangement- site wide (Phase 2)

suitability
Planning

stage
Stage 3

scale @ A1
1:500

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LANDSCAPE ARCHITECTS

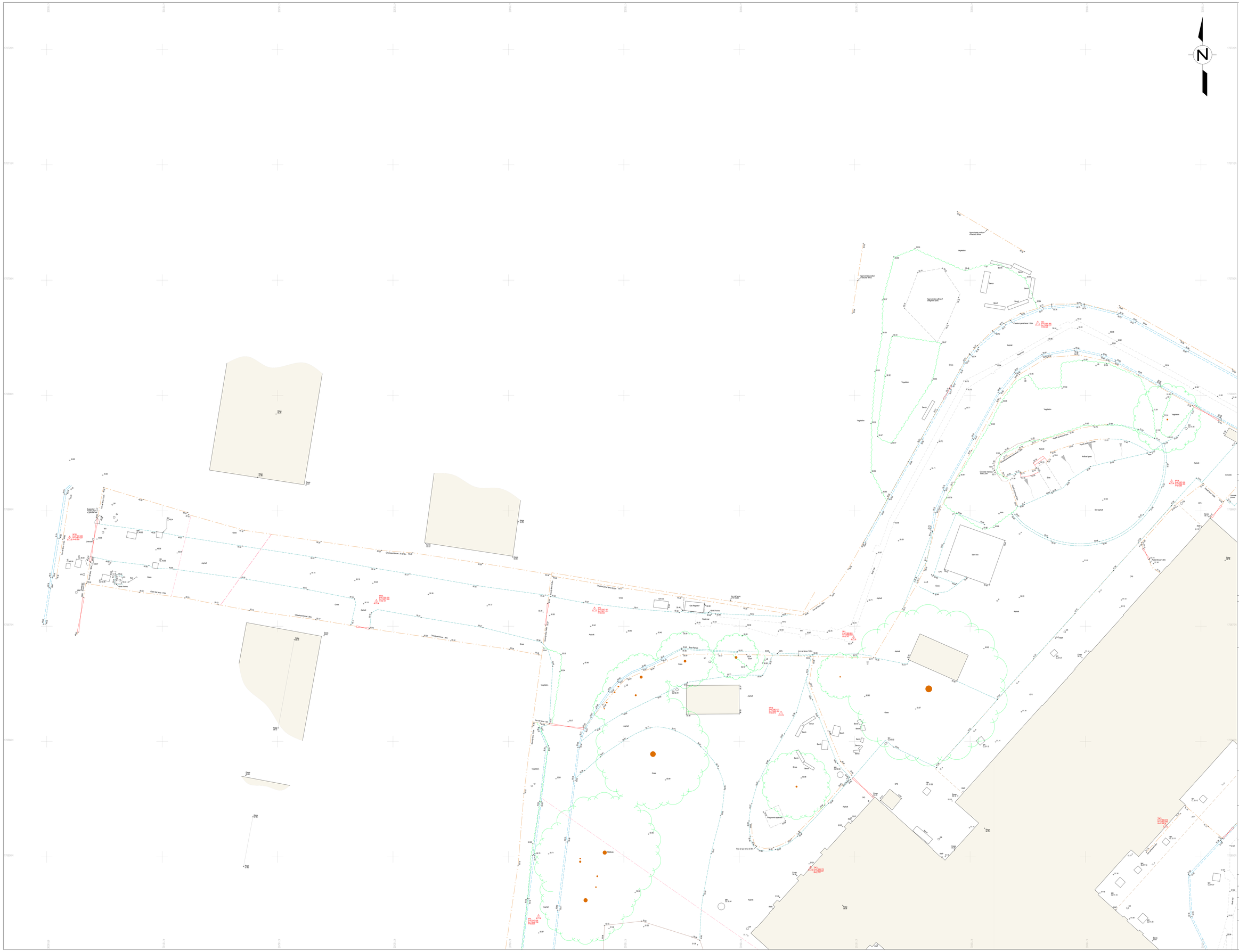
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P:\PROJECTS\3082 Reading SEN School RB\3082 CAD\WTL-TFC-XX-XX-DR-L-1040 Landscape GA Planning Phase 2

10 APPENDIX B

Topographic Survey by SUMO Services Ltd Land Surveys



UTILITY LEGEND

BT	British Telecom	GAS	Gas Pipe
CATV	Cable Television	UGPT	Unknown GPR Target
CCTV	Closed Circuit Television	GPR	Possible Service (PAS only)
UD	Underdrain	HP	High Pressure Gas
SW	Unidentified Drainage	HV	High Voltage Cable
CW	Combined Water	MS	Assumed Service Route
FW	Foul Water	OF	Oil Pipeline
SW	Storm Water	SL	Street Lighting
E	Earth	TC	Traffic Controls
E	Electric Cable	US	Unknown Service
ED	Empty Duct	UC	Unknown Cable
FO	Fibre Optic	UP	Unknown Pipeline
FW	Fire Hydrant Main	WM	Water Main
FUEL	Fuel Pipeline		
	Assumed Route Service highlighted yellow (Example BT)		
ARP/A	Concealed Survey Area	UTS	Unable to Survey
ARP/A	Previously Buried Area	UTT	Unable to Trace (Services)
ARP/A	GPR Data Collection Area	UVT	Unable to Visually Inspect (Within Cover)
(0.800)	Depth to Top of Service	WL	Water Level (Within Cover)
(+0.634)	Approximate Depth to Top of Service	UD	Unable to Trace (Due to Blockage)
(NDA)	No Depth Attainable	UF	Unable to Trace Further
4.75.00	Invert Level (Drainage)	EOT	End of Trace
PE	Polyethylene Pipe Material	UTP	Unable to Trace
UTL	Unable to Lift (Cover)	UTC	Unable to Trace (Capped Port)
	Anomalous Ground		Unable to Survey

NOT TO SCALE - FOR LEGEND ONLY

PAS128 SURVEYS

(0.654 BZP) - 0.654 = Depth in metres, BZ = Quality Level, P = Post processed GPR

Key to Quality Levels
Quality Level	Definition
D	Undefined (Data, desktop records search)
B4	Suspected to exist, not detected by GPR or EML
B3	Horizontal position located by one technique only
B2	Horizontal and vertical position located by one technique only
B1	Horizontal and vertical position located by multiple techniques
A	Horizontal and vertical position verified visually of the service

ABBREVIATIONS

ACU	Air Conditioning Unit	FL	Flood Light	SIG	Service in Ground
BB	Bedina Beacon	GV	Gas Valve	SP	Sign Post
B	Bollard	GU	Gully	SC	Stop Cock
BH	Borehole	IC	Inspection Chamber	SV	Stuice Valve
CAB	Cabinet	LB	Lighting Bollard	TP	Telegraph Pole
CL	Cover Level	LP	Lamp Post	TL	Traffic Light
CPS	Concrete Paving Slabs	LIG	Light in Ground	TM	Ticket Machine
CTV	Cable Television	MH	Manhole Cover	VP	Vent Pipe
EVCP	Charging Point	MKR	Marker Post	UV	Unknown Valve
DP	Down Pipe	PB	Post Box	WP	Waste Pipe
EP	Electric Pole	PM	Phone Mast	WM	Water Meter
ER	Earth Rod	PP	Post	WV	Water Valve
FFL	Finished Floor Level	RE	Rodding Eye		
FP	Feeder Pillar	RG	Road Gully		
FH	Fire Hydrant	RWP	Rain Water Pipe		

TOPOGRAPHIC LEGEND

Building	Embankment Slope		
Bank Bottom	Fence	ARP	
Bank Top	Heras Fence	ARP	
Canopy	Kerb Channel		
Concrete	Kerb Top		
Cover with Chamber Extents	Levels	+ 10.00	
Crash Barrier	Overhead Service		
Drainage Channel	Tree		
Drop Kerb	Wall		
Edge Detail			

GENERAL NOTES

Irrespective of the information provided by a utility survey and statutory plans, excavation work should be undertaken with extreme caution and in accordance with HSE Guidelines - HSG47 Avoiding Danger from Underground Services

Utilities may continue outside of the survey area. Any paint marks outside of the area are for investigative purposes only and may not represent the full extent of the sub-surface utilities.

Where logic indicates a utility exists but which cannot be positively confirmed with the technology, an assumed route (ASR) is recorded. All assumed service routes (ASR) have been highlighted with a background yellow colour for visual enhancement.

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Warranty

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Sheet Layout

Rev	Notes	Drawn	Date

Notes: Survey is referenced to OS Grid and Level Datum.

SUMO Services Ltd
8 Hayward Business Centre
New Lane
Havant
Hampshire
PO9 2NL

TEL:0845 456 1104

www.sumoservices.com

Title: Topographic Survey

Client: Ayre Chamberlain Gaunt

Project: Whitley Park School

Date:	06/05/2025	Postcode:	RG2 7RB
Surveyed:	RS, TT, NF, GB	Scale:	1:100 (A0 Sheet)
Drawn:	MH		
Checked:	RS, TT, NF, GB		
Job No:		Sheet:	Rev:
SUMO-20915		01	



UTILITY LEGEND

BT	British Telecom	G	Gas Pipe
CATV	Cable Television	GPR	Unknown GPR Target
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FW	Foul Water	O	Oil Pipeline
SW	Storm Water	SL	Street Lighting
ER	Earth	TC	Traffic Controls
E	Electric Cable	U	Unknown Service
ED	Empty Duct		Unknown Cable
FO	Fibre Optic		Unknown Pipeline
FM	Fire Hydrant Main	W	Water Main
FUEL	Fuel Pipeline		

Assumed Route Service highlighted yellow (Example BT)

AREA	Contracted Survey Area	UTS	Unable to Survey
AREA	Previous Survey Area	UTT	Unable to Trace (Service)
AREA	GPR Data Collection Area	UVI	Unable to Visually Inspect (Within Cover)
(0.60d)	Depth to Top of Service	WL	Water Level (Within Cover)
(~0.60d)	Approximate Depth to Top of Service	B	Unable to Trace (Due to Blockage)
(NDA)	No Depth Attainable	F	Unable to Trace Further
IL 10.00	Invert Level (Drainage)	E	End of Trace
PE	Polyethylene Pipe Material	U	Unable to Trace
UTL	Unable to Lift (Cover)	C	Unable to Trace (Capped Port)

Anomalous Ground — Unable to Survey

NOT COMMISSIONED

PAS128 SURVEYS

(0.65d B2P) 0.65d = Depth in metres, B2 = Quality Level, P = Post processed GPR

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D	Undefined (Stats, desktop records search)
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FFL	Finished Floor Level	RE	Rodding Eye		
FP	Feeder Pillar	RS	Road Sign		
FH	Fire Hydrant	RWP	Rain Water Pipe		

TOPOGRAPHIC LEGEND

Building	Embankment Slope (Bottom / Top)
Bank Bottom	Fence
Bank Top	Heras Fence (/HF/)
Canopy	Kerb Channel
Concrete	Kerb Top
Cover with Chamber Extents	Levels (+ 10.00)
Crash Barrier	Overhead Service
Drainage Channel	Tree
Drop Kerb	Wall
Edge Detail	

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Sheet 01	Sheet 02
Sheet 03	Sheet 04
Sheet 05	Sheet 06

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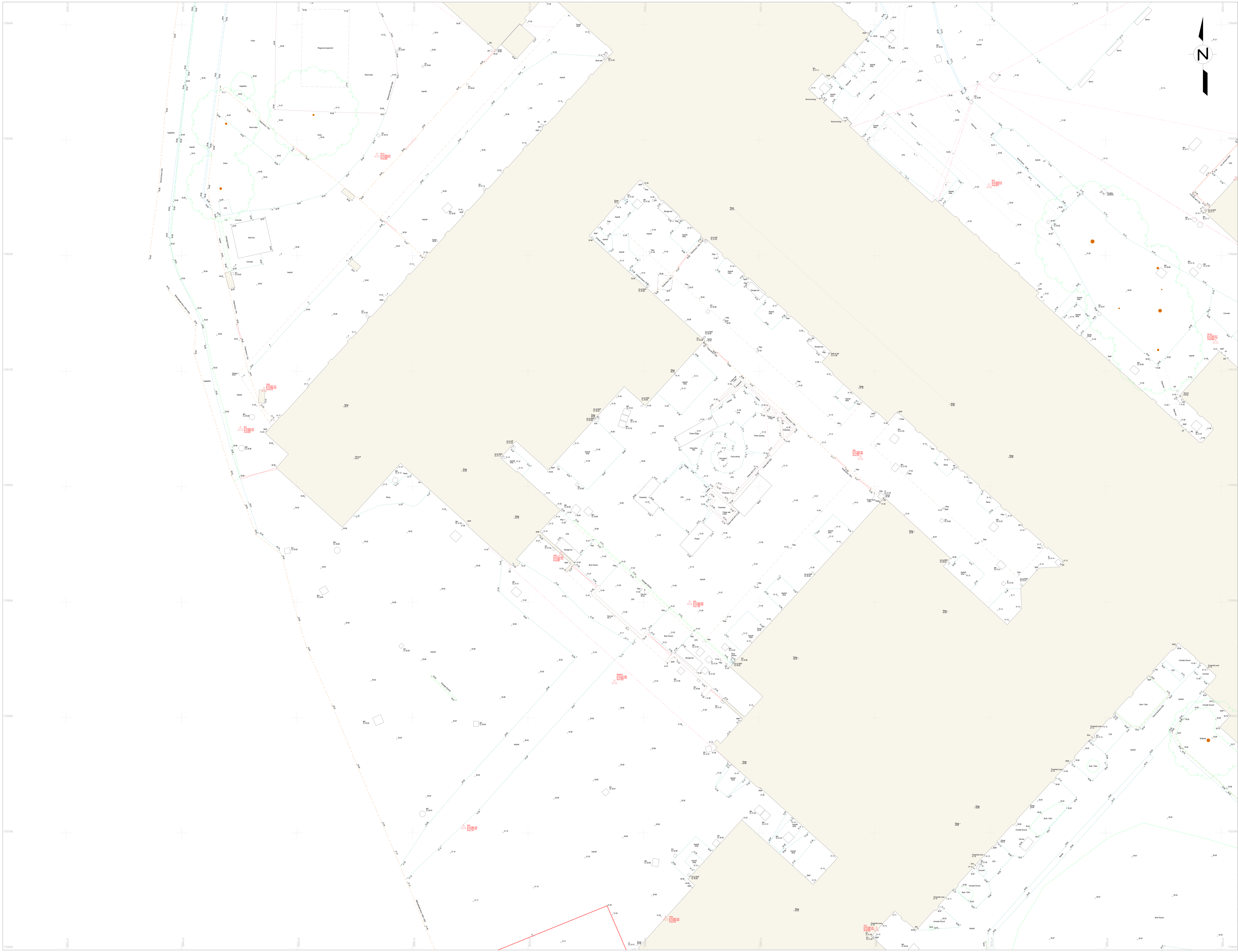
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Job No: SUMO-20915		Sheet: 02	Rev:



UTILITY LEGEND

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Assumed Route Service highlighted yellow (Example BT)

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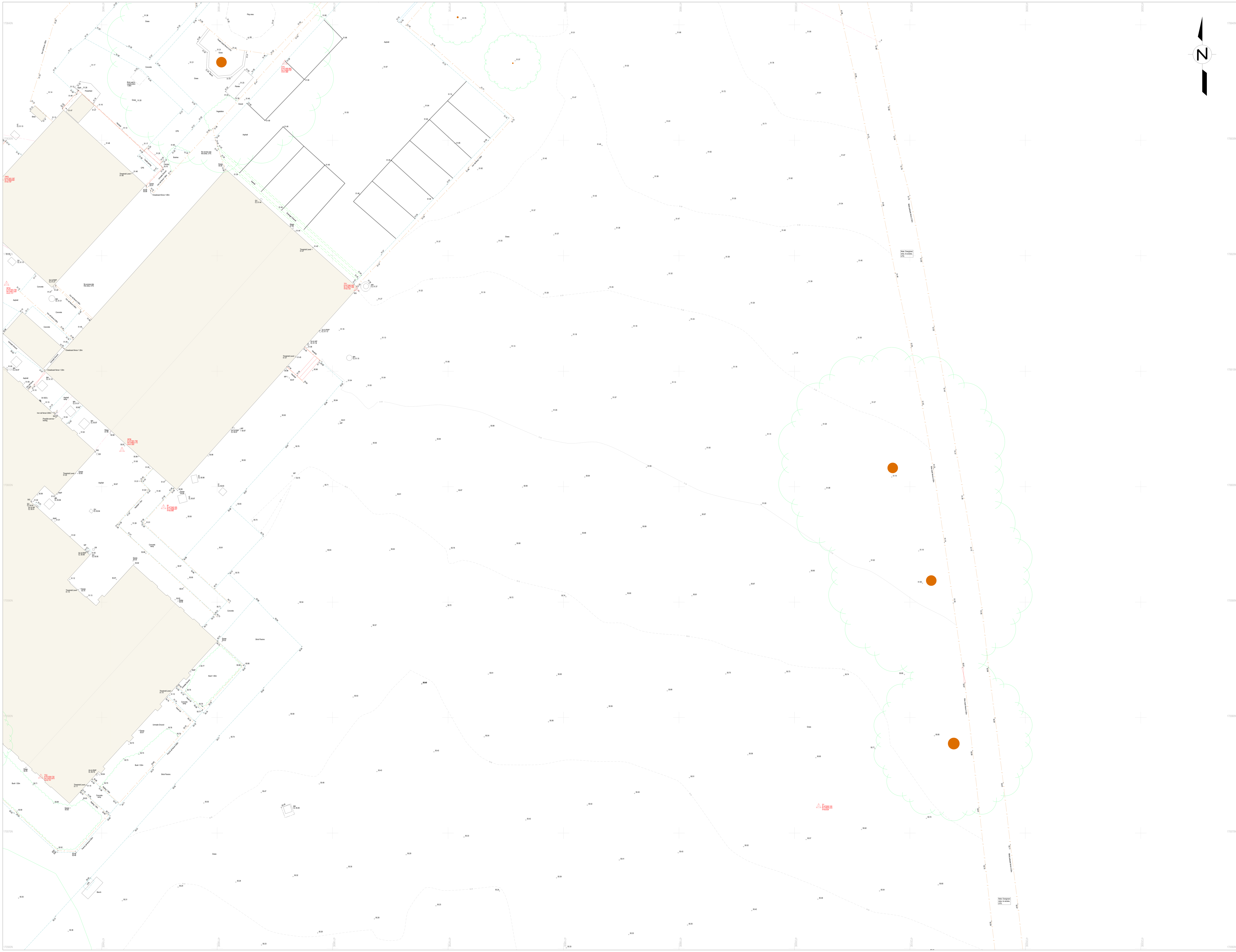
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(~0.60d)	Approximate Depth to Top of Service	B	Unable to Trace (Due to Blockage)
(NDA)	No Depth Attainable	F	Unable to Trace Further
IL 10.00	Invert Level (Drainage)	E	End of Trace
PE	Polyethylene Pipe Material	U	Unable to Trace
UTL	Unable to Lift (Cover)	C	Unable to Trace (Capped Port)

Anomalous Ground — Unable to Survey

NOT COMMISSIONED

PAS128 SURVEYS

(0.65d B2P) 0.65d = Depth in metres, B2 = Quality Level, P = Post processed GPR

Key to Quality Levels

Quality Level	Definition
D	Undefined (Stats, desktop records search)
B4	Suspected to exist, not detected by GPR or EML
B3	Horizontal position located by one technique only
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ABBREVIATIONS

ACU	Air Conditioning Unit	FL	Flood Light	SIG	Service in Ground
BB	Belisha Beacon	GV	Gas Valve	SP	Sign Post
B	Bollard	GU	Gully	SC	Stop Cock
BH	Borehole	IC	Inspection Chamber	SV	Sluice Valve
CAB	Cabinet	LB	Lighting Bollard	TP	Telegraph Pole
CL	Cover Level	LP	Lamp Post	TL	Traffic Light
CPS	Concrete Paving Slabs	LIG	Light in Ground	TM	Ticket Machine
CTV	Cable Television	MH	Manhole Cover	VP	Vent Pipe
EVCP	Charging Point	MKR	Marker Post	UV	Unknown Valve
DP	Down Pipe	PB	Post Box	WP	Waste Pipe
EP	Electric Pole	PM	Phone Mast	WM	Water Meter
ER	Earth Rod	P	Post	WV	Water Valve
FFL	Finished Floor Level	RE	Rodding Eye		
FP	Feeder Pillar	RS	Road Sign		
FH	Fire Hydrant	RWP	Rain Water Pipe		

TOPOGRAPHIC LEGEND

Building	Embankment Slope (Bottom / Top)
Bank Bottom	Fence
Bank Top	Heras Fence (/HF/)
Canopy	Kerb Channel
Concrete	Kerb Top
Cover with Chamber Extents	Levels (+ 10.00)
Crash Barrier	Overhead Service
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Drop Kerb	Wall
Edge Detail	

GENERAL NOTES

Irrespective of the information provided by a utility survey and statutory plans, excavation work should be undertaken with extreme caution and in accordance with HSE Guidelines - HSG47 Avoiding Danger from Underground Services

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Warranty

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TEL:0845 456 1104

www.sumoservices.com

Title: Topographic Survey

Client: Ayre Chamberlain Gaunt

Project: Whitley Park School

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Drawn:	MH		
Checked:	RS, TT, NF, GB		
Job No: SUMO-20915		Sheet: 04	Rev:



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FP	Feeder Pillar	RS	Road Sign		
FH	Fire Hydrant	RWP	Rain Water Pipe		

TOPOGRAPHIC LEGEND

Building, Bank Bottom, Bank Top, Canopy, Concrete, Cover with Chamber Extents, Crash Barrier, Drainage Channel, Drop Kerb, Edge Detail, Embankment Slope, Fence, Heras Fence, Kerb Channel, Kerb Top, Levels, Overhead Service, Tree, Wall

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Client:

Ayre Chamberlain Gaunt

Project:

Whitley Park School

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UTILITY LEGEND

BT	British Telecom	G	Gas Pipe
CATV	Cable Television	GPR	Unknown GPR Target
CCTV	Closed Circuit Television	GPR	Possible Service (PAS only)
C	Unidentified Telecoms	HP	Heating Pipes
DR	Unidentified Drainage	HV	High Voltage Cable
CW	Combined Water	MS	Multiple Service Route
FW	Foul Water	O	Oil Pipeline
SW	Storm Water	SL	Street Lighting
ER	Earth	TC	Traffic Controls
E	Electric Cable	U	Unknown Service
ED	Empty Duct		Unknown Cable
FO	Fibre Optic		Unknown Pipeline
FM	Fire Hydrant Main	W	Water Main
FUEL	Fuel Pipeline		

Assumed Route Service highlighted yellow (Example BT) — BT

AREA	Contracted Survey Area	UTS	Unable to Survey
AREA	Previous Survey Area	UTT	Unable to Trace (Service)
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11 APPENDIX C

Report 22055/PIR Rev 1.2	Preliminary Investigation Report by Soils Limited
Report 22055/MIR Rev 1.0	Main Investigation Report by Soils Limited
Report 22055/GGRA Rev 1.0	Ground Gas Risk Assessment by Soils Limited

soils LIMITED

Preliminary Investigation Report

at
Whitley Park Primary and Nursery School, Brixham Road, Reading, Berkshire, RG2 7RB

for
Ayre Chamberlain Gaunt

Reference: 22055/PIR Rev1.1
September 2025

Control Document

Project
Whitley Park Primary and Nursery School, Brixham Road, Reading, Berkshire, RG2 7RB

Document Type
Preliminary Investigation Report

Document Reference
22055/PIR Rev 1.1

Document Status
Final

Date
September 2025

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First check by
Nikos Sidiropoulos BSc MSc CEng MIMMM RoGEP

Second check by
C Morrison BSc (Hons), FGS, MIEnvSc

This is not a valid document for use in the design of the project unless it is titled Final in the document status box.

Current regulations and good practice were used in the preparation of this report. The recommendations given in this report must be reviewed by an appropriately qualified person at the time of preparation of the scheme design to ensure that any recommendations given remain valid in light of changes in regulation and practice, or additional information obtained regarding the site.

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Quality Systems Certifications Ltd ISO 45001:2018
Quality Systems Certifications Ltd ISO 9001:2015

Commission

This document comprises the Preliminary Investigation Report (PIR) and incorporates the results, discussion, and conclusions to this intrusive works. General site data is recorded below:

Commission Record	
Client	Ayre Chamberlain Gaunt
Site Name	Whitley Park Primary and Nursery School, Brixham Road, Reading, Berkshire, RG2 7RB
Grid Reference	SU719706
Soils Limited Quotation Ref	Q30162 dated 25th July 2025
Clients Purchase Order	PO-0918 dated 29th July 2025

The record of revision is presented below:

Record Of Revisions		
Revision	**Date**	**Reason**
Rev1.0	September 2025	Final
Rev1.0	September 2025	Updated with Local Authority Information

Note: The latest revised document supersedes all previous revisions of the PIR produced by Soils Limited.

Documents associated with this development that must be referred to are given below.

Record Of Associated Documents			
Reference	**Type**	**Date**	**Creator**
03770	Site Investigation Specification	6th August 2025	Marbas
03770	Stage 2 Structural and Civil Engineering Report	31st July 2025	Marbas
SUMO-20915-A	Ground Floor Plan	29th May 2025	Sumo Services
SUMO-20915	Utility Mapping	6th May 2025	Sumo Services

Caveats

Whilst reasonable skill and care has been taken to determine the site history and the environmental setting within the time constraints applied by the project, it should be appreciated that uncertainties may occur owing to the natural variability of soil material within a defined area or as a result of unknowns that are associated with contaminated land assessment in general. The site conditions may be different from that indicated by this Preliminary Investigation, particularly on a site with a history of past development. No responsibility can be accepted should such conditions alter the recommendations made in this report.

Without a drainage survey it is not possible to establish if the surface water drainage is to the main drainage system or soakaways. If there are soakaways on-site, they could act as a potential source. The geology on-site to an extent may determine if soakaways were likely to have been adopted.

Ordinary watercourses (OWs) are defined as rivers (which are not designated as main rivers), streams, ditches, drains, culverts, cuts and sewers (other than public sewers). This includes all OWs that are not mapped. Ordinary watercourse consent (OWC) is

required from the Lead Local Flood Authority (LLFA) when changing/adapting/adding to the cross sections of OWs. Installations of any structure or obstruction into an OW that impedes the flow without consent is prohibited by the Land Drainage Act 1991 Section 23.

Failure to remove obstructions may result in legal action by the LLFA with powers under Section 25 of the Land Drainage Act 1991.

Soils Limited suggest surveying the site for OW usually seen in rural areas as boundary ditches in order to avoid potential impacts to residents downstream and prosecution. OWC can be applied for from your LLFA.

This Preliminary Investigation does not include a detailed UXO risk assessment, it does however contain a basic assessment in accordance with CIRIA C681 and C785. In preparing a Preliminary Investigation reference is made to historical maps and web-based sources to assess the risk of the site potentially having been impacted by bombing during the World Wars. The data readily available is not necessarily definitive. Certain areas were bombed heavily such as centres of industrial manufacture, airfields, shipyards, docklands, railways sidings and junctions. The assessment is based on the likely area risk, bomb patterns (i.e. lines of recorded bomb impacts with gaps where an impact would be anticipated) and the age of structures on and in close proximity to the site.

Explanations

The Preliminary Investigation Report was undertaken to advise the client on the risk pertaining to the site, with special reference to historic and current potential contaminative activities and processes. This also included the assessment of their impact on current and future sensitive receptors such as human health, controlled waters, ecological features, building structures and services.

During the site walkover observations were made in relation to current activities, evidence of historical activities, sources of potential contamination such as fuel storage tanks, oil drums and chemical storage and evidence of contamination. The walkover also looked for evidence of soil contamination in the form of staining odours and stressed or discoloured vegetation.

To assess the vulnerability of groundwater to contamination, consideration must be given to the leaching characteristics of the overlying soils and the characteristics of the strata in the unsaturated zone. Information on the geological strata such as lithological type and permeability characteristics has been combined with the physical properties of the soil to produce varying degrees of vulnerability.

The object of the historic map study was to report on the evidence of site history and redevelopment of the site and its environs from available County Series and Ordnance Survey Maps dating from the mid to late 19th Century to the present day as downloaded from Landmark Environmental.

The published maps only represent a “snap shot” of the site and its environs at the date of the survey. The detail of the information recorded can vary between epochs, map scale and county areas. It should be noted that changes in land uses, processes or activities may have occurred outside of published epochs and these may not have been recorded on subsequent epochs. Also note that as methods of projection, production and recording have changed over time, this can result in geo-reference errors that may indicate the established site boundary is off-centre from its true location on older historical maps. Where this is potentially significant it will be noted.

Any distances quoted for features remote from the site have been scaled from the maps and are only approximate. Where dates have been noted in brackets, these are the actual dates applicable to the map editions and may not reflect the date of the original survey it is based on. The information reported might not represent all pertinent information that could be obtained. The interpretation of the maps and/or other data commented on in this report is subjective.

As part of the review of the historical plans, only features considered to have or to have had a potential contaminative impact on the site and usually within a notional 250m radius are discussed. The north point and approximate extent of the site are indicated on each figure.

Dataset survey is undertaken, and the extent of the search has initially been limited to a radius of 250m as it is considered that sources of contamination beyond 250m are unlikely to impact on the site.

The BGS soil chemistry for environmental assessments dataset coverage, was developed from BGS G-BASE and Imperial College Wolfson Atlas data. It contains estimated ambient As, Cd, Cr, Ni and Pb background concentrations for rural topsoils across Great Britain. It also contains the locations and measured concentrations (mg kg-1) of As, Cd, Cr, Cu, Ni, Pb, Sn and Zn in urban topsoil samples, collected from geochemical surveys in 23 major urban centres.

In accordance with CIRIA C681 and C785 a review has been undertaken of the historic maps and the Zetica UXO risk website.

Legislation and Liability

The primary legislative mechanism for contaminated land management in the UK is Part 2A of the Environmental Protection Act, 2021 (EPA). Part 2A was introduced into the EPA under Section 57 of the Environment Act 1995 to help deal with the substantial legacy of land contamination. The legislation provides powers in relation to the identification, remediation and apportionment of liability for contaminated land. Part 2A applies where there is unacceptable risk, assessed on the basis of the current use and the relevant circumstances of the land. It is not directed to assessing risks in relation to a future use of the land that would require a specific grant of planning permission.

Under Part IIA of the Environment Act 2021, Local Authorities are required to identify contaminated land and serve on every person who is an appropriate person a

remediation notice setting out what is to be done by way of remediation and the period within which it must be done.

If the person who caused, or knowingly permitted, the contaminating substance cannot be found, the owner and/or, occupier for the time being, of the property can be the appropriate person.

Under the legislation, Contaminated Land is defined as: -

"Land which is in such a condition by reason of substances in, on or under the land that significant harm is being caused or that there is a significant possibility of such harm being caused or that pollution of controlled waters is being or is likely to be caused."

Where the Act defines harm as:

"harm to the health of living organisms or other interference with the ecological systems of which they form a part and, in the case of man, includes harm to his property."

and pollution of controlled waters is defined as: -

"the entry into controlled waters of any poisonous, noxious or polluting matter or any solid waste matter."

In addition, The Radioactive Contaminated Land (Modification of Enactments) (England) Regulations 2006 introduced the supplementary definition of harm to include: lasting exposure to any person resulting from the after-effects of a radiological emergency, past practice or past work activity.

With regard to contaminated waters, the Environment Act 1995 amends the Water Resources Act 1991 and provides the Environment Agency with the power to force clean-up of historical contamination by issuing a Works Notice, with remediation paid for by the responsible parties.

The Groundwater Regulations (1998) stated that entry of List 1 substances into groundwater must be prevented, and List II substances must be controlled.

This PIR was made to comply with planning requirements and only covers contaminative land issues unless otherwise specifically noted.

Limitations and Disclaimers

This Preliminary Investigation Report relates to the site located at Whitley Park Primary and Nursery School, Brixham Road, Reading, Berkshire, RG2 7RB and was prepared for the sole benefit of the Client for the brief described in the Commission of this report.

The contents, recommendations and advice given in the report are subject to the Terms and Conditions given in the Soils Limited Quotation and the subsequent Clients Purchase Order.

Soils Limited disclaims any responsibility to the Client and others in respect of any matters outside the scope of the above.

This report has been prepared by Soils Limited, with all reasonable skill, care and diligence within the terms of the contract with the Client, incorporation of our General Conditions of Contract of Business and taking into account the resources devoted to us by agreement with the Client.

The report is personal and confidential to the Client and Soils Limited accept no responsibility of whatever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report wholly at its own risk.

The Client may not assign the benefit of the report or any part to any third party without the written consent of Soils Limited.

The ground is a product of continuing natural and artificial processes. As a result, the ground will exhibit a variety of characteristics that vary from place to place across a site, and also with time. Whilst a ground investigation will mitigate to a greater or lesser degree against the resulting risk from variation, the risks cannot be eliminated.

The investigation, interpretations, and recommendations given in this report were prepared for the sole benefit of the client in accordance with their brief. As such these do not necessarily address all aspects of ground behaviour at the site.

Current regulations and good practice were used in the preparation of this report. An appropriately qualified person must review the recommendations given in this report at the time of preparation of the scheme design to ensure that any recommendations given remain valid in light of changes in regulation and practice, or additional information obtained regarding the site.

There may be other sources of information not included in those listed that hold data relevant to the Preliminary Investigation Report undertaken at the site that could materially affect the conclusions made in this report.

It should be noted that a detailed survey of the possible presence or absence of invasive species, such as Japanese Knotweed, is outside of the scope of investigation.

Ownership of land brings with it onerous legal liabilities in respect of harm to the environment. “Contaminated Land” is defined in Section 57 of the Environment Act 2021.

Where a contaminative use is identified in the Preliminary Investigation Report this does not determine whether contamination has actually occurred, or if it has the degree to which it may have taken place. An intrusive investigation(s) and analysis is required to establish the nature and degree of any contamination present.

All works are undertaken in the context of, and in compliance with, BS10175+A2 2017 and LCRM (EA 2021) and all other pertinent planning, standards, documentation and

guidance appropriate to the site at the time of production which may include, but are not necessarily limited to, documents provided by BS/CEN/ISO, NHBC, AGS, CIEH, CIRIA, SoBRA and CLAIRE.

Ownership of copyright of all printed material including reports, survey data, drawings, laboratory test results, trial pit and borehole log sheets, including drillers log sheets remains with Soils Limited. License is for the sole use of the client and may not be assigned, transferred or given to a third party. This license is only valid once we have been paid in full for this engagement. In the event of non-payment for our services, we reserve the right to retract the license for all project data, preventing their use and any reliance upon such data by the client or any other third party. We may also contact parties other than the client to notify them of this retraction.

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Appendix E Site Photographs

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Appendix G Risk Assessment Criteria

Section 1 Site Conditions and Proposed Development

1.1 Site Walkover

A site walkover was undertaken in August 2025, by Soils Limited. The notes of the site walkover are presented in Table 1.1 and Table 1.2.

Table 1.1 Site Walkover Record (On-site)

Use of Site	Site was used as a primary school, with a playground, a large field and a car park
Structures	Single storey school
Site Topography	Site is dipping <2° towards the west
Site Covering	Soft landscaping, concrete, brick, tarmacadam, asphalt
Vegetation	Mature trees, shrubs, bushes and grass
Potential Contamination Sources	Car park, rubbish piles
Odour	None noted
Drainage	Assumed to be connected to the mains

Table 1.2 Site Walkover Record (Off-site)

Use of Land	North: Residential South: Residential East: Main road, Residential West: Industrial estate, main road, Travelodge
Area Topography	Dipping down <2° towards the west
Vegetation	Mature trees, shrubs, bushes and grass
Potential Contamination Sources	Industrial estate, main road

1.2 Site Drainage

Surface water and foul drainage anticipated to be connected to the mains system. Confirmation would be via a drainage survey.

1.3 Site Photographs

The site photographs have been included within Appendix E.

1.4 Proposed Development

The proposed development involves the refurbishment of Whitely Park Primary School to meet the need for SEN pupil spaces.

It should be understood that the design is still at a very early concept stage with regards to the structural and civil engineering calculations, drawings, coordination etc. and therefore may be subject to change, as the project progresses into the Developed and Technical Design phases. Therefore, at time of writing, there are no drawings of the proposed development.

The recommendations provided within this report are made exclusively in relation to the scheme outlined above and must not be applied to any other scheme without further consultation with Soils Limited. Soils Limited must be notified about any change or deviation from the anticipated scheme outlined.

Section 2 Geology, Hydrogeology, Hydrology and Radon

2.1 Anticipated Geology

The 1:50,000 BGS Geology map showed the site to be situated on the London Clay Formation bedrock, with no overlying superficial deposits. Made Ground is noted 300m to the west where there is landfill.

2.1.1 London Clay Formation Bedrock

The London Clay Formation comprises stiff grey fissured clay, weathering to brown near surface. Concretions of argillaceous limestone in nodular form (Claystones) occur throughout the formation. Crystals of gypsum (Selenite) are often found within the weathered part of the London Clay, and precautions against sulphate attack to concrete are sometimes required.

The upper boundary member of the London Clay Formation is known as the Claygate Member and marks the transition between the deep water, predominantly clay environment and succeeding shallow-water, sand environment of the Bagshot Formation.

The lower boundary is generally marked by a thin bed of well-rounded flint gravel and/or a glauconitic horizon. The formation overlies the Harwich Formation or where the Harwich Formation is absent the Lambeth Group.

2.2 Hydrogeology

Table 2.1 presents the hydrological data that is relevant to the site.

Table 2.1 Hydrogeological Assessment

Hydrogeological Data		Comment
On-site Aquifers	Superficial	None
	Bedrock	Unproductive strata linked with the London Clay Formation
Groundwater Vulnerability		None
Source Protection Zones (SPZ)		None within 1000m
Abstraction	Potable	None within 1000m
	Non-potable	517m west – Laundry Use
Sensitive Land Uses		Nitrate vulnerable zone – on site
Surface Water Features		470m NE – River Kennet
Flood Risk from Rivers or Seas		None
Flood Risk from Surface Water		Surface water flooding 1 in 100 years – on site
Flood Risk from Groundwater		None

Note(s): [2] Unproductive strata are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.

Any works or development which has the potential to have an impact on surface water, aquifer or groundwater quality must be approved by the Environment Agency prior to implementation.

2.3 Hydrology

The approximate elevation of the site was ~50m Above Ordnance Datum (AOD) using Google Earth Pro™. The anticipated groundwater flow direction is given in Table 2.2.

Table 2.2 Hydrological Assessment

Type	Direction	Notes
Surface water	W	Anticipated to flow west in line with the overall topography
Groundwater	W	Anticipated to flow west in line with the overall topography however groundwater flow is likely to be limited due to the impermeability of the London Clay Formation (subject to localised sand and gravel content)

2.4 Radon Gas

The site is not located in a radon affected area. Less than 1% of homes are at or above the Action Level therefore, in the absence of any proposed basements within the development proposal, no protection measures are anticipated to be required.

Section 3 Site History

3.1 Historic Map Study

The historic maps referred to are appended to this report (Appendix A).

Table 3.1 Historic Development of the Site

Site History	Date Range	
	From	To
The site was noted to be a farm which included a pond	1874	1879
No change noted	1874	1913
The farm was demolished, the pond was infilled and a school replaced it	1913	1932-1937
The school was extended out towards the north east	1932-1937	1948
No change noted	1948	1971-1973
A swimming pool was constructed towards the east of site	1971-1973	1976-1979
A car park was constructed on the northern boundary and three outbuildings were constructed towards the south and east of the school	1976-1979	1988
No change noted	1988	2006
Part of the school was demolished towards the northern boundary.	2006	2010
A new building replaced the previously demolished one	2010	2014[1]
No change noted	2014	2025[1]

Notes: [1]Using Google Earth Pro™

Table 3.2 Historic Off-site Development

Off-site Development	Date Range	
	From	To
The surrounding area of the site was primarily undeveloped land with a main road 1m west from site.	1874	1879
Small allotments were noted 50m west from site extending out to 120m west from site	1879	1899
No change noted	1899	1913
Residential houses were constructed in the north, east and the south extending out to 250m from site. The allotment gardens were noted to have extended out to further in the north west of site	1913	1932-1937
Works were constructed 110m west from site. Allotment gardens were noted 75m south from site	1932-1937	1938
Further works were constructed 120m west of site	1938	1948
No change noted	1948	1958-1965
The works were noted to be a steel factory and an engineering factory. A substation was noted 245m west from site and tanks were noted 230m west from site. Further allotment gardens were noted 45m north from site.	1958-1965	1960-1975
A skill centre replaced part of the allotment gardens 150m west from site.	1960-1975	1976-1979
The allotment gardens were replaced with further works 85m north west and a superstore noted 200m north from site. Five substations were noted 100m west, 200m north west, 140m north west, 175m and 160m north of site	1976-1979	1988

Off-site Development	Date Range	
	From	To
The allotment gardens 75m south were replaced with residential housing	1988	1996
No change noted	1996	2016[1]
The skill centre was now noted to be a depot	2016	2025[1]

Notes: [1]Using Google Earth Pro™

Table 3.3 Potential Sources of Pollution Indicated from Historic Maps

Source	Direction	Distance (m)	Date Range	
			From	To
Farm	-	0	1874	1913
Infilled pond	-	0	1913	2025
Car park	-	0	1976-1979	2025
Made Ground from demolition material	-	0	2006	2010
Main road	W	1	1874	2025
Allotment Gardens	NW/W	50	1879	1976-1979
Steel Factory	W	110	1932-1937	2025
Engineering Factory	W	110	1932-1937	2025
Allotment Gardens	S	75	1932-1937	1988
Substation	W	245	1958-1965	2025
Substation	W	100	1976-1979	2025
Substation	NW	200	1976-1979	2025
Substation	NW	140	1976-1979	2025
Substation	N	175	1976-1979	2025
Substation	N	160	1976-1979	2025
Works	NW	85	1976-1979	2025
Allotment Gardens	N	45	1960-1975	2025
Depot	W	150	2016	2025

3.2 Bomb Damage and the Potential for Unexploded Ordnance

A Preliminary Risk Assessment was carried out by Primely in August 2025 and has been summarised below. The full report has been presented in Appendix F.

'Reading experienced approximately 20 air-raid events during WWII, the most significant being a singular raid on 10 February 1943 when a Dornier 217E-4 dropped four bombs on the town centre, killing 41 people at the People's Pantry location, 2.8km north of the site. No bomb incidents are recorded in the school's local area, and wartime bombing was focused on Reading's commercial core. Bombing density in central Reading was moderate to low overall, with RG2 postcode lying outside main strike zones. No bomb incidents recorded within or adjacent to the site. No historical military activity identified on the site footprint. The site has been regularly accessed and substantially developed post-war, reducing the likelihood of undiscovered UXO. Therefore, considering the historical evidence, the preliminary analysis suggests a low probability of encountering any German high-explosive bomb or other WWII UXO beneath the school grounds.

No further UXO Investigation is warranted at this stage

Section 4 Environmental Records and Consultation

4.1 Dataset Information

A copy of the report is appended to this report in Appendix B and summarised in Table 4.1, Table 4.2 and Table 4.3.

Table 4.1 Environmental Significance of Data within 500m

Source	Direction	Distance (m)
Contaminated Land Register Entries and Notices	None	None
Discharge Consents	None	None
Integrated Pollution Prevention and Control	W	269[1]
Local Authority Pollution Prevention and Controls	None	None
Local Authority Pollution Prevention and Control Enforcements	None	None
Nearest Surface Water Feature	NE	470
Pollution Incidents to Controlled Waters (Significant Incidents only)	None	None
Prosecutions Relating to Authorized Processes	None	None
Registered Radioactive Substances	NW	104[2]
Substantiated Pollution Incident Register	None	None
Nearest Potable Abstraction Point	None	None
Nearest Non-Potable Abstraction Point	W	517[3]
Water Industry Act Referrals	None	None
Source Protection Zones	None	None
Extreme Flooding from Rivers or Sea Without Defences	None	None
Flooding from Rivers or Sea Without Defences	None	None
Areas Benefiting from Flood Defences	None	None
Flood Water Storage Areas	None	None
Flood Defences	None	None
BGS Recorded Landfill Sites	None	None
Historical Landfill Sites	W	298[4]
Licensed Waste Management Facilities	SW	494[5]
Local Authority Recorded Landfill Sites	None	None
Potentially Infilled Land (Non-Water)	None	None
Potentially Infilled Lane (Water)	-	0[6]
Registered Landfill Sites	None	None
Registered Waste Transfer Sites	None	None
Registered Waste Treatment or Disposal Sites	None	None
Control of Major Accident Hazards Sites (COMAH)	W	318[7]
Notification of Installations Handling Hazardous Substances	W	314[8]
Planning Hazardous Substance Consents	SW	245[9]

Note(s): [1]Gillette UK – organic chemicals, surface active agents [2]Thames Water Utilities [3]Clean Linen Services(laundry) [4]Manor Farm [5]Clinical Waste Transfer Station [6]infilled in 1913 [7]Gillette UK – Active [8]Gillette UK – Inactive [9]Gillette UK – LPG and natural Gas

The contemporary trades listed in Table 4.2 are only those considered to be viable potential sources of contamination that could impact the site.

Table 4.2 Contemporary Trade Directory

Contemporary Trade Directory within 250m	Direction	Distance (m)	Status
Aa Contract Cleaning (domestic cleaning)	SW	103	Inactive
A L K (chemist wholesalers)	NW	103	Active
T M C I (Uk) Ltd (Engineers)	W	117	Inactive

Contemporary Trade Directory within 250m	Direction	Distance (m)	Status
Water Quality Centre (Laboratories)	NW	122	Active
Lee's Mobile Tyres (Tyre repair)	SE	170	Inactive
Mr Oven Sheen (oven cleaning)	S	204	Inactive
W E – Enterprises (perfume suppliers)	E	211	Inactive
C C F (Builder's Merchants)	W	214	Active
Reading Borough Council - Pest Control	NW	220	Inactive
Crown-Bird Enterprises (Commercial Cleaning)	E	225	Inactive
Whitley Social Services (printers and textiles)	NE	234	Inactive
Cool Serv (Air conditioning contractors)	NW	247	Inactive

Table 4.3 Geological Hazards

Source	Nearest Distance from Site/Type
Coal Mining Affected Areas	None
Mining Instability	None
Natural and Mining Cavities	None within 500m
Potential for Collapsible Ground Stability Hazards	Very Low – on site
Potential for Compressible Ground Stability Hazards	No hazard – on site
Potential for Ground Dissolution Stability Hazards	No hazard – on site
Potential for Landslide Ground Stability Hazards	Very low – on site
Potential for Running Sand Ground Stability Hazards	Very low – on site
Potential for Shrinking or Swelling Ground Stability Hazards	Low – on site

4.2 Site Sensitivity Maps

No other significant potential sources of contamination were shown on the Landmark Envirocheck Site Sensitivity Maps, which have not been listed in Table 4.1, Table 4.2 and Table 4.3, and copies of which are appended to this report (Appendix B).

4.3 Regulatory Enquires

As part of the Preliminary Investigation Report the local authority was contacted and asked to provide any information on potential risks pertaining the site. The Local Authority's response has been summarised below. The full report has been presented in Appendix D.

> '*The council does not hold information on the history of the site. Three units were noted in the west of site from 1965-1988 as well as a depot (1936-1959 to 1960) and a works (1936-1959 to 2005). The council holds no information regarding previous desk studies, landfill, unexploded ordnance and petroleum licences'*

4.4 Soil Geochemistry

The results of this survey are contoured on the Landmark Environmental check report (Appendix C). The results of the local soil chemistry are presented in Table 4.4.

Table 4.4 Soil Geochemistry

Determinant	Indicated Soil Geochemistry (mg kg^{-1})
Arsenic	<15
Cadmium	<1.8
Chromium	60-90
Lead	<100
Nickel	15-30

Based on the Human Health Risk Assessment with a 'Public Open Space' end use, none of the metals presented in Table 4.4 show any exceedances.

Section 5 Data Collection Summary

5.1 General

Table 5.1 summarises the site Environs, which include geology, hydrogeology, the risk from radon and potential risk from flooding.

Table 5.1 Site Environs

Environs	Summary
Geology	London Clay Formation with no overlying superficial deposits
Hydrogeology	Unproductive strata associated with the London Clay Formation
Source Protection Zone (SPZ)	None
Surface Water Flow	Anticipated to flow west in line with the overlying topography
Groundwater Flow	Anticipated to flow west in line with the overall topography however groundwater flow is likely to be limited due to the impermeability of the London Clay Formation
Radon	No radon protection measures were anticpated
Flooding	On site surface water flooding 1 in 100 year return
Geological Hazard	No hazard to low risk on site
Local Authority Response	'The council does not hold information on the history of the site. Three units were noted in the west of site from 1965-1988 as well as a depot (1936-1959 to 1960) and a works (1936-1959 to 2005). The council holds no information regarding previous desk studies, landfill, unexploded ordnance and petroleum licences'
Soil Chemistry	No exceedances
Ecological	Nitrate Vulnerable zone – on site

Table 5.2 provides a summary of potential on-site and off-site contamination sources identified during the study of the historic maps, the Landmark Envirocheck Dataset Report and the Site Walkover

Table 5.2 Summary of Potential Contamination Sources

Contaminative Source	Direction	Distance (m)	Date Range		Data Source
			From	To	
On-Site					
Farm	-	0	1874	1913	HM/DS
Infilled pond	-	0	1913	2025	HM/DS
Car park	-	0	1976-1979	2025	HM/GE /SW
Made Ground from demolition material	-	0	2006	2010	HM
Rubbish Piles	-	0		2025	SW
Off-Site					
Main road	W	1	1874	2025	HM/GE
Allotment Gardens	NW/W	50	1879	1976-1979	HM/DS /GE
Steel Factory	W	110	1932-1937	2025	HM/DS /GE/LA
Engineering Factory	W	110	1932-1937	2025	HM/DS /GE/LA

Contaminative Source	Direction	Distance (m)	Date Range		Data Source
			From	To	
Allotment Gardens	S	75	1932-1937	1988	HM/DS
Substation	W	245	1958-1965	2025	HM/DS /GE
Substation	W	100	1976-1979	2025	HM/DS /GE
Substation	NW	200	1976-1979	2025	HM/DS /GE
Substation	NW	140	1976-1979	2025	HM/DS /GE
Substation	N	175	1976-1979	2025	HM/DS /GE
Substation	N	160	1976-1979	2025	HM/DS /GE
Works	NW	85	1976-1979	2025	HM/DS /GE
Allotment Gardens	N	45	1960-1975	2025	HM/DS /GE
Depot	W	150	2016	2025	HM/DS /GE
Aa Contract Cleaning (domestic cleaning)	SW	103	Inactive		DS
A L K (chemist wholesalers)	NW	103	Active		DS
T M C I (Uk) Ltd (Engineers)	W	117	Inactive		DS
Water Quality Centre (Laboratories)	NW	122	Active		DS
Lee's Mobile Tyres (Tyre repair)	SE	170	Inactive		DS
Mr Oven Sheen (oven cleaning)	S	204	Inactive		DS
W E – Enterprises (perfume suppliers)	E	211	Inactive		DS
C C F (Builder's Merchants)	W	214	Active		DS
Reading Borough Council - Pest Control	NW	220	Inactive		DS
Crown-Bird Enterprises (Commercial Cleaning)	E	225	Inactive		DS
Whitley Social Services (printers and textiles)	NE	234	Inactive		DS
Cool Serv (Air conditioning contractors)	NW	247	Inactive		DS
Integrated Pollution and prevention control (Gillette UK – organic chemicals and surface agents)	W	269			DS
Radioactive substances (Thames Water)	NW	104			DS
Historical Landfill Sites (Manor Farm)	W	298			DS
Licensed Waste Management Facilities (Clinical Waste Transfer Station)	SW	494			DS
COMAH (Gillette UK)	W	318	Active		DS
NIHHS (Gillette UK)	W	314	Inactive		DS
Planning Hazardous Substance Consents (Gillette UK, natural gas)	SW	245			DS

Note(s): SW – Site walkover, HM – Historic Maps, DS – Datasheet, GE Google Earth, LA – Local authority

Section 6 Preliminary Conceptual Site Model

6.1 Sources and Pathways of Contamination

The Landmark Site Specific Envirocheck Report and Site Walkover have been used to identify potential contaminative sources. These sources have been presented in Table 5.2. An assessment of the likely pathways and the likelihood of each contaminative source that was considered a risk has been presented in Sections 6.2 to 6.4.

6.2 Potential Pathways

A review of the potential pathways on and off the site has been undertaken based on the site, ground conditions, hydrology and scientific knowledge of the behaviour of the contaminants in the ground. The pathways applicable to the site and the proposed development have been marked in Table 6.1.

Table 6.1 Applicable Pathways

Pathway	Present	Comment
Inhalation of dust	✓	Site workers/end users/off site users
Inhalation of vapour/gases	✓	
Ingestion and absorption via direct contact	✓	Site workers/residents
Migration via surface runoff	✓	Site workers/off site users
Migration in solution via groundwater	✓	Limited migration through the London Clay
Migration of gases via permeable soils	✓	Formation
Direct contact with construction material	✓	Buried structures
Services and utilities	✓	Buried services

6.3 Potential Sources of On-site Contamination.

The sources are presented in Table 6.2.

Table 6.2 On-site Potential Contamination Sources

Source	Likely	Reasoning
Farm		Demolished a long time ago
Infilled pond	✓	Ground Gas risk
Car park	✓	Contaminants from cars
Made Ground from demolition material	✓	Ground gas risk, may contain harmful substances
Rubbish Piles	✓	May contain harmful substances

6.4 Potential Off-site Sources of Contamination

These sources have been presented in given in Table 6.3.

Table 6.3 Off-site Potential Contamination Sources

Source	Direction	Distance (m)	Likely	Reasoning
Allotment Gardens	NW/W	50		Down hydraulic gradient

Source	Direction	Distance (m)	Likely	Reasoning
Steel Factory	W	110		
Engineering Factory	W	110		
Allotment Gardens	S	75		Off hydraulic gradient
Substation	W	245		Contaminants from substations are very heavy and due to the distance from the site, unlikely to cause contamination
Substation	W	100		
Substation	NW	200		
Substation	NW	140		
Substation	N	175		
Substation	N	160		
Works	NW	85		Down hydraulic gradient
Allotment Gardens	N	45		
Depot	W	150		
Aa Contract Cleaning (domestic cleaning)	SW	103		
A L K (chemist wholesalers)	NW	103		
T M C I (Uk) Ltd (Engineers)	W	117		
Water Quality Centre (Laboratories)	NW	122		
Lee's Mobile Tyres (Tyre repair)	SE	170		
Mr Oven Sheen (oven cleaning)	S	204		
W E – Enterprises (perfume suppliers)	E	211		Distance from site
C C F (Builder's Merchants)	W	214		Down hydraulic gradient, distance from site
Reading Borough Council - Pest Control	NW	220		
Crown-Bird Enterprises (Commercial Cleaning)	E	225		Distance from site
Whitley Social Services (printers and textiles)	NE	234		Down hydraulic gradient, distance from site
Cool Serv (Air conditioning contractors)	NW	247		
Integrated Pollution and prevention control (Gillette UK – organic chemicals and surface agents)	W	269		
Radioactive substances (Thames Water)	NW	104		Down hydraulic gradient
Historical Landfill Sites (Manor Farm)	W	298	✓	Ground Gas Risk
Licensed Waste Management Facilities (Clinical Waste Transfer Station)	SW	494		Down hydraulic gradient, distance from site
COMAH (Gillette UK)	W	318		
NIHHS (Gillette UK)	W	314		

Source	Direction	Distance (m)	Likely	Reasoning
Planning Hazardous Substance Consents (Gillette UK, natural gas)	SW	245		

6.5 Potential Contaminants

Table 7.4 presents the range of possible contaminants associated with the onsite and off-site activities and sources identified following a review of historical maps and datasets.

Table 6.4 Potential Contaminants

Potential Contaminative Sources	Contaminants / Chemical Properties
Infilled pond	Metals, Semi-metals and non-metals, PAHs, TPHs, Asbestos, pH, Ground Gas
Car park	
Made Ground from demolition material	
Rubbish Piles	
Historic landfill	

6.6 Potential Exposure Receptors

The assessment for potential receptors is presented in Table 6.5.

Table 6.5 Potential Receptors

Potential Receptor		Present
Human Health	Future users of the site (End Users)	✓
	Construction workers on-site (Site Workers)	✓
	Service and maintenance workers (Site Maintenance)	✓
	Site neighbours and wider public (Off-site Users)	✓
Groundwater / Controlled Waters	Surface Water	✓
	Shallow Aquifer	
	Deep Aquifer	✓
Buildings & Materials	Buildings and Confined Spaces	✓
	Buried Structures	✓
	Buried Services	✓
Ecosystems	Flora and fauna	✓

6.7 Preliminary Conceptual Site Model and Risk Assessment

A preliminary risk assessment has been undertaken based on the proposed development. The assessment has been based on the likelihood of the presence of a pollutant linkage.

A pollutant linkage is the relationship between a contaminant source, a pathway and a receptor. Unless all three elements of a pollutant linkage are present, a risk is not considered to exist. Each of the three elements has been considered within Table 6.1 to Table 6.5. The preliminary conceptual site model and risk assessment is presented in Table 6.6. The classification tables on which the level of risk has been determined have

been modified from ‘Contaminated land risk assessment: A guide to good practice, 2001, CIRIA C552’ and are presented in Appendix G.

Table 6.6 Preliminary Conceptual Site Model and Risk Assessment Methodology

Source (Table 6.2 & Table 6.3)	Potential Contaminant (Table 6.4)	Exposure Pathway (Table 6.1)	Receptor (Table 6.5)	Initial Assessment from Preliminary Investigation Report Information			Comments	Proposed Investigation
				Severity	Probability	Risk		
On Site - Infilled pond - Car park - Made Ground from demolition material - Rubbish Piles	Metals, Semi-metals and non-metals, PAHs, Asbestos	Inhalation of dust	Site Workers/Site Maintenance	Mild	Low	Low	Site located on bedrock of the London Clay Formation, which was classified as unproductive strata and would act as an aquiclude to the groundwater receptors.	Phase II ground investigation to confirm the ground conditions present and chemical testing prior to undertaking a generic quantitative risk assessment.
			End Users	Minor	Low	Very Low		
			Off-site Users	Minor	Low	Very Low		
	PAHs, TPHs, Ground Gas	Inhalation of vapour/gases	Site Workers/Site Maintenance	Medium	Low	Moderate/Low		
			End Users					
			Off-site Users	Mild	Low	Low		
	Metals, Semi-metals and non-metals, PAHs, TPHs, pH	Ingestion and absorption via direct contact	Site Workers/Site Maintenance	Mild	Low	Low		
			End Users	Minor	Low	Very Low		
	Metals, Semi-metals and non-metals, PAHs, TPHs, pH	Migration via surface runoff	Surface Water	Minor	Low	Very Low		
		Migration in solution via groundwater	Surface Water	Minor	Low	Very Low		
			Shallow Aquifer	Minor	Low	Very Low		
			Deep Aquifer	Minor	Low	Very Low		
		Direct contact with construction material	Buried Structures	Mild	Low	Low		
			Buried Services					
	PAHs, TPHs, Ground Gas	Migration of gases via permeable soils	Site Workers/Site Maintenance	Medium	Low	Moderate/Low		
			End Users					
			Off-site Users	Medium	Low	Moderate/Low		
			Building and Confined Spaces					
			Site Workers					
Off Site - Historic Landfill	Metals, Semi-metals and non-metals, PAHs, Asbestos	Inhalation of dust	Site Workers/Site Maintenance	Mild	Low	Low		
			End Users	Mild	Low	Low		
	PAHs, TPHs, Ground Gas	Inhalation of Vapour/gases (including Radon)	Site Workers/Site Maintenance	Mild	Low	Low		
			End Users	Mild	Low	Low		
	Metals, Semi-metals and non-metals, PAHs, TPHs, pH	Ingestion and absorption via direct contact	Site Workers/Site Maintenance	Mild	Low	Low		
			End Users	Mild	Low	Low		
	Metals, Semi-metals and non-metals, PAHs, TPHs, pH	Migration via surface runoff	Surface Water	Mild	Low	Low		
		Migration in solution via groundwater	Surface Water	Mild	Low	Low		
			Shallow Aquifer	Mild	Low	Low		
			Deep Aquifer	Mild	Low	Low		
		Direct contact with construction material	Buried structures	Mild	Low	Low		
			Buried Services	Mild	Low	Low		
	PAHs, TPHs, Ground Gas	Migration of gases via permeable soils	Site Workers/Site Maintenance	Mild	Low	Low		
			End Users	Mild	Low	Low		
			Building and confined spaces	Mild	Low	Low		

Section 7 Recommendations

7.1 General

Based on the information obtained during the compilation of this Preliminary Investigation and the preliminary conceptual site model, a potential for a **Very Low to Moderate/Low** risk of contamination has been identified.

7.2 Unexploded Ordnance (UXO)

Considering the historical evidence, the preliminary analysis suggests a low probability of encountering any German high-explosive bomb or other WWII UXO beneath the school grounds. No further UXO Investigation is warranted at this stage

7.3 Radon

No further action is required

7.4 Proposed Further Site Works

The general requirements for further environmental investigation are presented in .

Table 7.1 Proposed Further Environmental Investigation

Proposed Works	General Purpose	Required
Investigatory Holes	To collect sufficient samples for a robust assessment	✓
Laboratory Testing	To quantify the risks identified in the Conceptual Site Model	✓
Risk Assessment	Assess pollutant linkages based on current contaminated land guidance and screening criteria's	✓
Borehole well installation	To allow for continued groundwater and/or gas monitoring	✓
Remediation	If the site-specific risk assessment reveals that the site was contaminated	TBC
Validation & Verification	To validate and verify the remedial objectives based on the site-specific risk assessment	TBC

Note(s): TBC – To be confirmed

7.5 Discovery Strategy

There may be areas of contamination not identified during the course of the investigation. Such occurrences may also be discovered during the demolition and construction phases for the redevelopment of the site.

List of Figures

Figure 1 – Site Location Map 19

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Appendix A Country Series and Ordnance Survey Maps

Appendix B Landmark Envirocheck Report

Appendix C Site Sensitivity Maps

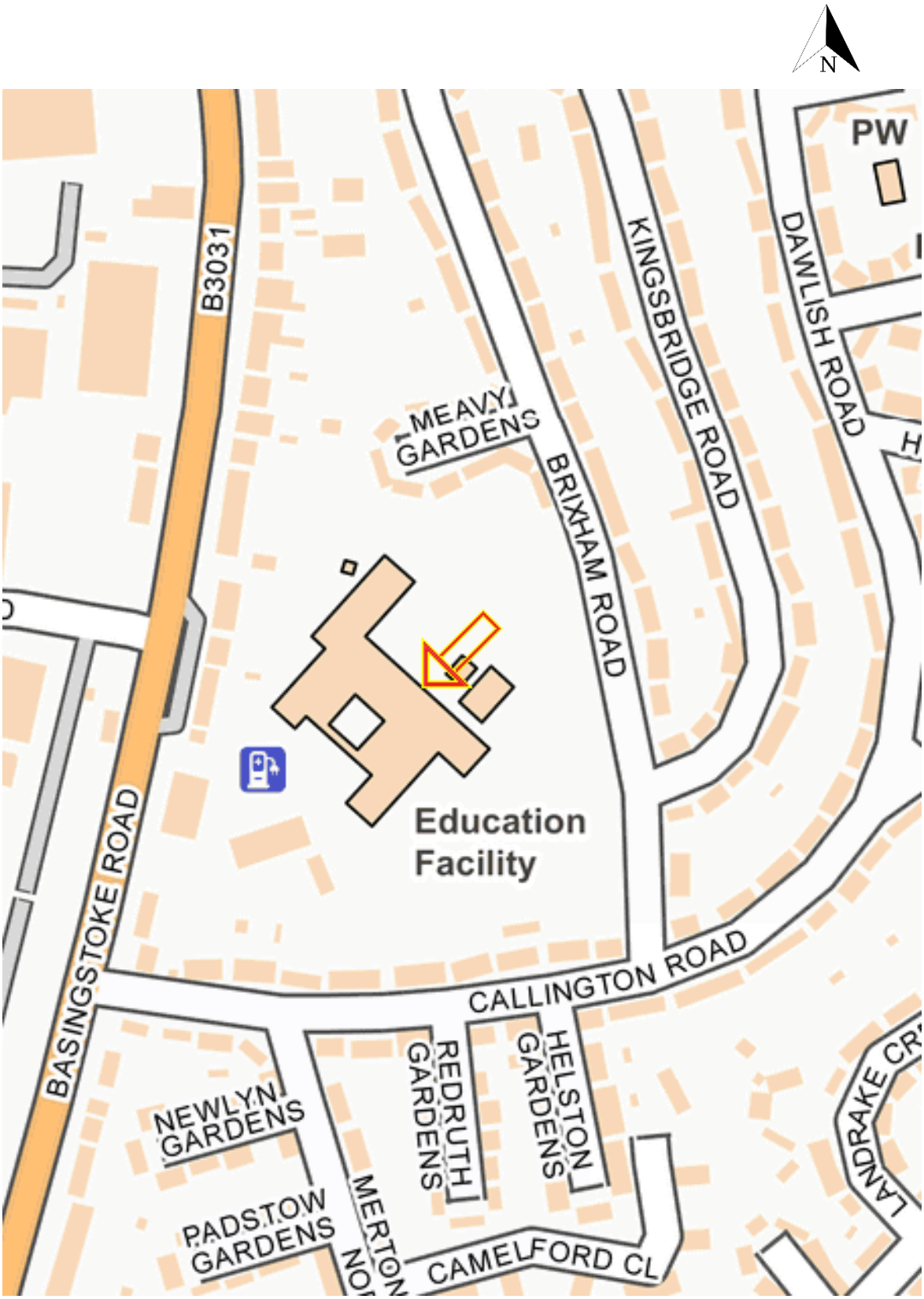
Appendix D Local Authority Search Data

Appendix E Site Photographs

Appendix F Preliminary UXO Report

Appendix G Risk Assessment Criteria

Figure 1 – Site Location Map



Appendix A Country Series and Ordnance Survey Maps

Appendix B Landmark Envirocheck Report

Appendix C Site Sensitivity Maps

Appendix D Local Authority Search Data

Appendix E Site Photographs



Photo 1:	Photo of a playing field, mature trees, school



Photo 2:	Photo of the playground



Photo 3:	Photo of playground and school;



Photo 4:	Photo of play area and school



Photo 5:	Photo of rubbish pile



Photo 6:	Photo of main entrance of school

Appendix F Preliminary UXO Report

Appendix G Risk Assessment Criteria

The classification presented in Table G.1 to Table G.4 below are modified from, 'contaminated land risk assessment: A guide to good practice, 2001, CIRIA C552'.

Table G.1. Classification of Consequence

Classification	Definition
Severe	Short-term (acute) risk to human health likely to result in "significant harm" as defined by the Environmental Protection Act 1990, Part IIA. Short term risk of pollution (note: Water Recourses Act contains no scope for considering significance of pollution) of sensitive water resource. Catastrophic damage to buildings/property. A short-term risk to a particular ecosystem (note: the definitions of ecological systems within the Draft Circular on Contaminated Land, DETR, 2000.)
Medium	Chronic damage to Human Health ("significant harm" as defined in DETR, 2000). Pollution of sensitive water recourse (note: Water Recourses Act contains no scope for considering significance of pollution). A significant change in a particular ecosystem (note: the definitions of ecological systems within the Draft Circular on Contaminated Land, DETR, 2000.)
Mild	Pollution of non-sensitive water recourses. Significant damage to crops, buildings, structures and services ("significant harm" as defined in the Draft Circular on Contaminated Land, DETR, 2000.)
Minor	Harm, although not necessarily significant harm, which may result in a financial loss, or expenditure to resolve. Non-permanent health effects to human health (easily prevented by means such as personal protective clothing etc.)

Table G.2. Classification of Probability

Classification	Definition
High likelihood	There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable over the long term or there is evidence at the receptors of harm or pollution.
Likely	There is a pollution linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable but possible in the short term and likely over the long term.
Low likelihood	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such event would take place and is less likely in the short term.
Unlikely	There is a pollution linkage, but circumstances are such that it is improbable that an event would occur even in the long term.

Table G.3. Comparison of Consequence Against Probability

Probability	Consequence			
	Severe	Medium	Mild	Minor
High likelihood	Very high risk	High risk	Moderate risk	Moderate/low risk
Likely	High risk	Moderate risk	Moderate/low risk	Low risk
Low likelihood	Moderate risk	Moderate/low risk	Low risk	Very low risk
Unlikely	Moderate risk	Low risk	Very low risk	Very low risk

Table G.4. Risk Classifications

Very High	There is a high probability that severe harm could arise to a designated receptor from an identified hazard at the site without remediation action OR there is evidence that severe harm to a designated receptor is already occurring. Realisation of that risk is likely to present a substantial liability to be site owner/or occupier. Investigation is required as a matter of urgency and remediation works likely to follow in the short-term.
High	Harm is likely to arise to a designated receptor from an identified hazard at the site without remediation action. Realisation of the risk is likely to present a substantial liability to the site owner/or occupier. Investigation is required as a matter of urgency to clarify the risk. Remediation works may be necessary in the short-term and are likely over the longer term.
Moderate	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, and if any harm were to occur it is more likely, that the harm would be relatively mild. Further investigative work is normally required to clarify the risk and to determine the potential liability to site owner/occupier. Some remediation works may be required in the longer term.
Low	It is possible that harm could arise to a designated receptor from identified hazard, but it is likely at worst, that this harm if realised would normally be mild. It is unlikely that the site owner/or occupier would face substantial liabilities from such a risk. Further investigative work (which is likely to be limited) to clarify the risk may be required. Any subsequent remediation works are likely to be relatively limited.
Very low	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.
None	No potential risk if no pollution linkage has been established.

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12 APPENDIX D

Asset Search Location	Thames Water Property Searches

Asset Location Search

Property Searches

Baker & Associates Ltd
BAKER & ASSOCIATES LTD, WESSEX
EASTLEIGH
SO50 9FD

Search address supplied Whitley Park Primary and Nursery School
Brixham Rd
RG2 7RB

Your reference P2394 Whitley Park Primary School

Our reference ALS/ALS Standard/2025_5267121

Search date 17 December 2025

Keeping you up-to-date

Notification of price changes

We're changing our report prices from 4th June 2025. The price will increase by 3.5% based on Retail Price Index (RPI).

Find our new prices on our website thameswater.co.uk/property-searches

Any Questions? We're happy to talk through the changes with you – give our Property Searches team a call on 0800 009 4540 .

Thames Water Utilities Ltd
Property Searches,
Clearwater Court, Vastern Road, Reading RG1 8DB

property.searches@thameswater.co.uk
thameswater.co.uk/propertysearches

0800 009 4540

Asset Location Search

Property Searches

Search address supplied: Whitley Park Primary and Nursery School, Brixham Rd, RG2 7RB

Dear Sir / Madam

An Asset Location Search is recommended when undertaking a site development. It is essential to obtain information on the size and location of clean water and sewerage assets to safeguard against expensive damage and allow cost-effective service design.

The following records were searched in compiling this report: - the map of public sewers & the map of waterworks. Thames Water Utilities Ltd (TWUL) holds all of these.

This search provides maps showing the position and size of Thames Water assets close to the proposed development and also manhole cover and invert levels, where available.

Please note that none of the charges made for this report relate to the provision of Ordnance Survey mapping information. The replies contained in this letter are given following inspection of the public service records available to this company. No responsibility can be accepted for any error or omission in the replies.

You should be aware that the information contained on these plans is current only on the day that the plans are issued. The plans should only be used for the duration of the work that is being carried out at the present time. Under no circumstances should this data be copied or transmitted to parties other than those for whom the current work is being carried out.

Thames Water do update these service plans on a regular basis and failure to observe the above conditions could lead to damage arising to new or diverted services at a later date.

Contact Us

If you have any further queries regarding this enquiry please feel free to contact a member of the team on 0800 009 4540, or use the contact details below:

Thames Water Utilities Ltd
Property Searches
Clearwater Court
Vastern Road
Reading
RG1 8DB

Email: property.searches@thameswater.co.uk
Web: thameswater.co.uk/propertysearches

Waste Water Services

Please provide a copy extract from the public sewer map.

The following quartiles have been printed as they fall within Thames' sewerage area:

SU7270NW
SU7270SW
SU7170NE
SU7170SE

Enclosed is a map showing the approximate lines of our sewers. Our plans do not show sewer connections from individual properties or any sewers not owned by Thames Water unless specifically annotated otherwise. Records such as "private" pipework are in some cases available from the Building Control Department of the relevant Local Authority. Where the Local Authority does not hold such plans it might be advisable to consult the property deeds for the site or contact neighbouring landowners. The public sewer map relates only to sewerage apparatus of Thames Water Utilities Ltd, it does not disclose details of cables and or communications equipment that may be running through or around such apparatus. The sewer level information contained in this response represents all of the level data available in our existing records. Should you require any further Information, please refer to the relevant section within the 'Further Contacts' page found later in this document.

For your guidance:

- The Company is not generally responsible for rivers, watercourses, ponds, culverts or highway drains. If any of these are shown on the copy extract they are shown for information only.
- Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an ‘as constructed’ record. It is recommended these details be checked with the developer.

Clean Water Services

Please provide a copy extract from the public water main map.

The following quartiles have been printed as they fall within Thames' water area:

SU7270NW
SU7270SW
SU7170NE
SU7170SE

Enclosed is a map showing the approximate positions of our water mains and associated apparatus. Please note that records are not kept of the positions of individual domestic supplies. For your information, there will be a pressure of at least 10m head at the outside stop valve. If you would like to know the static pressure, please contact our Customer Centre on 0800 316 9800. The Customer Centre can also arrange for a full flow and pressure test to be carried out for a fee.

For your guidance:

- Assets other than vested water mains may be shown on the plan, for information only.
- If an extract of the public water main record is enclosed, this will show known public water mains in the vicinity of the property. It should be possible to estimate the likely length and route of any private water supply pipe connecting the property to the public water network.

Further contacts:

Waste Water queries

Should you require verification of the invert levels of public sewers, by site measurement, you will need to approach the relevant Thames Water Area Network Office for permission to lift the appropriate covers. This permission will usually involve you completing a TWOSA form. You can do this by emailing customer.feedback@thameswater.co.uk with the email subject header 'Enquiry – TWOSA', along with details of the request.

If you have any questions regarding sewer connections, budget estimates, diversions or building over issues please direct them to our service desk which can be contacted by writing to:

Developer Services (Waste Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB

Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

Clean Water queries

Should you require any advice concerning clean water connections, please contact:

Developer Services (Clean Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB

Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

Asset Location Search Sewer Map - ALS/ALS Standard/2025_5267121

SU7270NW



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 472250,170750

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 (2024) with the Sanction of the controller of H.M. Stationery Office, License no. AC0000849556 Crown Copyright Reserved.

NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

Manhole Reference	Manhole Cover Level	Manhole Invert Level
3702	51.69	50.47
371D	n/a	n/a
471J	n/a	n/a
371C	n/a	n/a
371E	n/a	n/a
471D	n/a	n/a
471I	n/a	n/a
471E	n/a	n/a
471F	n/a	n/a
471H	n/a	n/a
471G	n/a	n/a
4750	54.54	52.57
371B	n/a	n/a
371A	n/a	n/a
471B	n/a	n/a
471A	n/a	n/a
371F	n/a	n/a
3704	53.51	51.05
3753	53.48	51.31
3751	53.06	50.94
4853	54.81	52.54
4804	54.84	52.26
381A	n/a	n/a
4851	56.5	54.95
4802	56.51	54.47
3602	n/a	n/a
4602	52.65	50.04
4653	52.67	50.59
3601	51.07	49.31
461A	n/a	n/a
461B	n/a	n/a
461C	n/a	n/a
4650	51.88	n/a
4651	52.89	50.91
4652	53.61	51.85
4701	53.22	50.49
3750	51.32	49.28
4702	53.86	51.79
451B	n/a	n/a
451A	n/a	n/a
3501	50.4	47.35
4501	52.1	49.06
3550	50.66	48.4
3551	50.69	48.35
4502	52.52	49.49
4654	52.5	50.07
0902	52.14	48.84
0950	52.22	49.22
1901	51.99	49.22
1950	52	49.6
191O	51.143	n/a
191T	n/a	n/a
191M	51.192	n/a
191R	n/a	50.5
191F	51.195	49.95
191L	51.211	n/a
191Q	51.24	50.27
191S	n/a	n/a
191J	51.057	49.617
191K	51.224	n/a
191H	51.11	49.53
191G	51.024	49.654
191B	51.068	49.128
191E	n/a	n/a
191I	51.08	49.43
191D	n/a	n/a
191C	n/a	n/a
0901	50.85	48.8
291I	n/a	n/a
391A	n/a	n/a
3950	54.34	52.47
3901	54.32	52.17
3851	54.69	52.79
3802	54.68	52.43
4901	55.2	53.24
4801	56.43	53.98
4950	55.22	53.61
4850	56.43	54.37
491B	n/a	n/a
491A	n/a	n/a
4951	n/a	n/a
4902	56.47	54.62
481B	n/a	n/a
291F	51.099	48.679
291B	n/a	n/a
291A	n/a	n/a
291G	n/a	n/a
281E	n/a	n/a
291E	51.347	48.547
281C	n/a	n/a
281B	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
281D	n/a	n/a
281A	n/a	n/a
2950	52.85	50.25
2901	52.82	48.8
2951	53.45	51.19
2902	53.1	51.18
4903	58.52	56.44
4803	57.92	55.54
4852	57.89	55.19
1701	n/a	n/a
1750	53.65	51.69
181E	n/a	n/a
1751	53.28	n/a
1702	53.21	n/a
181A	n/a	n/a
171E	n/a	n/a
1851	53.46	n/a
1802	53.45	n/a
181C	n/a	n/a
181F	n/a	n/a
181B	n/a	n/a
171B	n/a	n/a
171D	n/a	n/a
171C	n/a	n/a
2850	53.36	51.16
2801	53.37	49.36
2750	52.79	50.39
2701	52.78	49.99
271B	n/a	n/a
271A	n/a	n/a
3701	51.84	50.24
371H	n/a	n/a
3801	53.93	51.81
3850	53.97	52.16
371G	n/a	n/a
3703	53.01	50.57
381B	n/a	n/a
161E	n/a	n/a
171A	n/a	n/a
0750	53.45	n/a
0701	53.52	51.36
071A	n/a	n/a
071B	n/a	n/a
1850	53.76	51.16
1801	53.75	50.78
081C	n/a	n/a
081D	n/a	n/a
081B	n/a	n/a
0850	52.81	n/a
0801	52.79	n/a
081A	n/a	n/a
161J	n/a	n/a
261A	n/a	n/a
261E	n/a	n/a
261D	n/a	n/a
261B	n/a	n/a
261C	n/a	n/a
2601	n/a	n/a
2650	50.92	48.77
3752	51.56	49.6
361E	n/a	n/a
361D	n/a	n/a
361C	n/a	n/a
361B	n/a	n/a
361A	n/a	n/a
461D	n/a	n/a
461E	n/a	n/a
151D	n/a	n/a
151A	n/a	n/a
151C	n/a	n/a
1501	51.2	49.22
1550	51.18	49.6
151B	n/a	n/a
161B	n/a	n/a
161A	n/a	n/a
161C	n/a	n/a
161D	n/a	n/a
1603	52.41	50.31
1604	52.37	50.66
161G	n/a	n/a
161I	n/a	n/a
1602	52.96	50.94
1651	53.15	51.27
161F	n/a	n/a
251F	n/a	n/a
2553	49.01	46.8
2501	49.2	46.55
351C	n/a	n/a
2551	49.51	47.1
2552	49.32	47.2
251G	n/a	n/a
2550	49.41	n/a
0501	51.05	49.21

Manhole Reference	Manhole Cover Level	Manhole Invert Level
0550	51.07	49.54
051B	n/a	n/a
051A	n/a	n/a
051C	n/a	n/a
061D	n/a	n/a
061E	n/a	n/a
061B	n/a	n/a
1650	52.26	n/a
0651	52.48	50.89
1601	53.22	n/a
0602	52.46	n/a
161K	n/a	n/a
061C	n/a	n/a
0650	52.36	50.87
0601	52.42	50.59
061A	n/a	n/a
0603	53	51.14
0652	53.12	51.49
2502	48.22	46.11
1552	n/a	n/a
1503	n/a	n/a
1551	48.62	46.44
1502	n/a	n/a
0502	50.13	n/a
0551	50.14	n/a
3552	49.16	47.34
2554	49.06	46.51
2555	49.31	46.06
251B	n/a	n/a
251A	n/a	n/a
351B	n/a	n/a
351A	n/a	n/a
251C	n/a	n/a
251D	n/a	n/a
251E	n/a	n/a
481A	n/a	n/a

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Asset Location Search Sewer Map - ALS/ALS Standard/2025_5267121

SU7270SW



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 472250,170250

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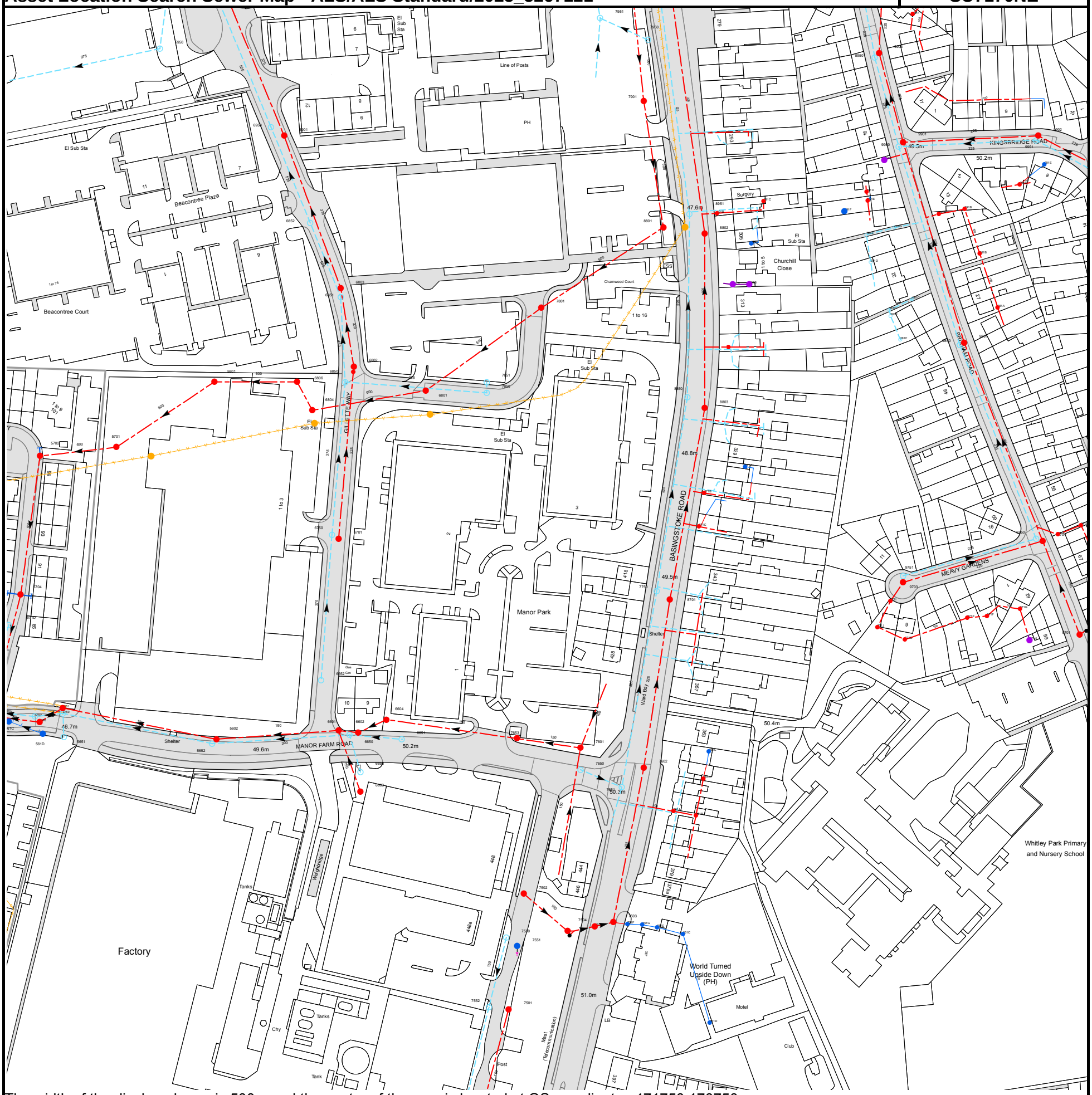
Manhole Reference	Manhole Cover Level	Manhole Invert Level
111C	n/a	n/a
111B	n/a	n/a
111A	n/a	n/a
121H	n/a	n/a
201C	n/a	n/a
201B	n/a	n/a
241G	n/a	n/a
241H	n/a	n/a
011A	n/a	n/a
021A	n/a	n/a
021C	n/a	n/a
0402	n/a	n/a
1401	47.47	45.32
141A	n/a	n/a
1454	47.87	45.67
0302	n/a	n/a
0401	46.63	44.41
041A	n/a	n/a
141D	n/a	n/a
141C	n/a	n/a
1450	46.16	45.05
1451	46.3	45.11
1452	46.27	45.22
141B	n/a	n/a
131A	n/a	n/a
1453	n/a	n/a
1351	47.36	45.53
131D	n/a	n/a
1301	47.47	44.92
131F	n/a	n/a
131C	n/a	n/a
131E	n/a	n/a
2350	n/a	n/a
3202	49.92	47.5
3251	49.91	47.92
3350	49.82	47.85
3301	49.82	47.37
231B	n/a	n/a
2301	n/a	n/a
231C	n/a	n/a
231A	n/a	n/a
241A	n/a	n/a
2401	48.43	45.92
241B	n/a	n/a
2451	48.34	46.05
2450	48.51	46.54
241F	n/a	n/a
3401	n/a	n/a
3450	n/a	n/a
241C	n/a	n/a
2452	n/a	n/a
241D	n/a	n/a
241E	n/a	n/a
0201	46.88	44.75
1251	n/a	n/a
0202	46.63	44.48
021D	n/a	n/a
121A	n/a	n/a
021E	n/a	n/a
1202	46.7	44.7
121G	n/a	n/a
0250	46.36	44.74
121C	n/a	n/a
121B	n/a	n/a
121E	n/a	n/a
121D	n/a	n/a
1203	46.25	43.9
1250	n/a	n/a
1201	n/a	n/a
1350	46.3	44.6
0301	n/a	n/a
0304	n/a	n/a
1352	n/a	n/a
131H	n/a	n/a
0307	n/a	n/a
0305	n/a	n/a
0356	n/a	n/a
131G	n/a	n/a
0358	n/a	n/a
4051	52.48	49.77
3050	n/a	n/a
0002	n/a	n/a
1001	n/a	n/a
1002	n/a	n/a
2001	n/a	n/a
2002	n/a	n/a
3001	n/a	n/a
0102	49.64	47.75
0151	49.63	47.91
0101	48.66	46.68

Manhole Reference	Manhole Cover Level	Manhole Invert Level
4150	n/a	n/a
0150	48.56	46.94
1150	n/a	n/a
411C	n/a	n/a
1101	n/a	n/a
4101	n/a	n/a
011B	n/a	n/a
4151	n/a	n/a
121F	n/a	n/a
121I	n/a	n/a
3201	50.05	47.76
3250	49.98	48.12
401C	n/a	n/a
401E	n/a	n/a
401D	n/a	n/a
401B	n/a	n/a
411A	n/a	n/a
411B	n/a	n/a
101A	n/a	n/a
201A	n/a	n/a
301A	n/a	n/a
301B	n/a	n/a
301C	n/a	n/a
301F	n/a	n/a
4050	52.14	50.02
301E	n/a	n/a
301D	n/a	n/a
4001	52.81	49.56
1051	n/a	n/a
1050	50.28	47.95
3002	51.09	49.12
2050	n/a	n/a
031H	n/a	n/a
031G	n/a	n/a
0453	n/a	n/a
0454	n/a	n/a
0450	48.06	n/a
0403	48.48	46.59
0451	48.5	46.99
0306	45.77	43.42
0359	n/a	n/a
0357	n/a	n/a
031E	n/a	n/a
0308	n/a	n/a
031A	n/a	n/a
0303	n/a	n/a
0352	n/a	n/a
0351	n/a	n/a
0309	n/a	n/a
0360	n/a	n/a
0361	n/a	n/a
001B	n/a	n/a
001E	n/a	n/a
001D	n/a	n/a
0050	51.92	49.48
0001	51.89	49.87
001G	n/a	n/a
001F	n/a	n/a

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Asset Location Search Sewer Map - ALS/ALS Standard/2025_5267121

SU7170NE



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 471750,170750

The width of the displayed area is 500m and the centre of the map is located at OS coordinates 471750,170750

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.

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NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

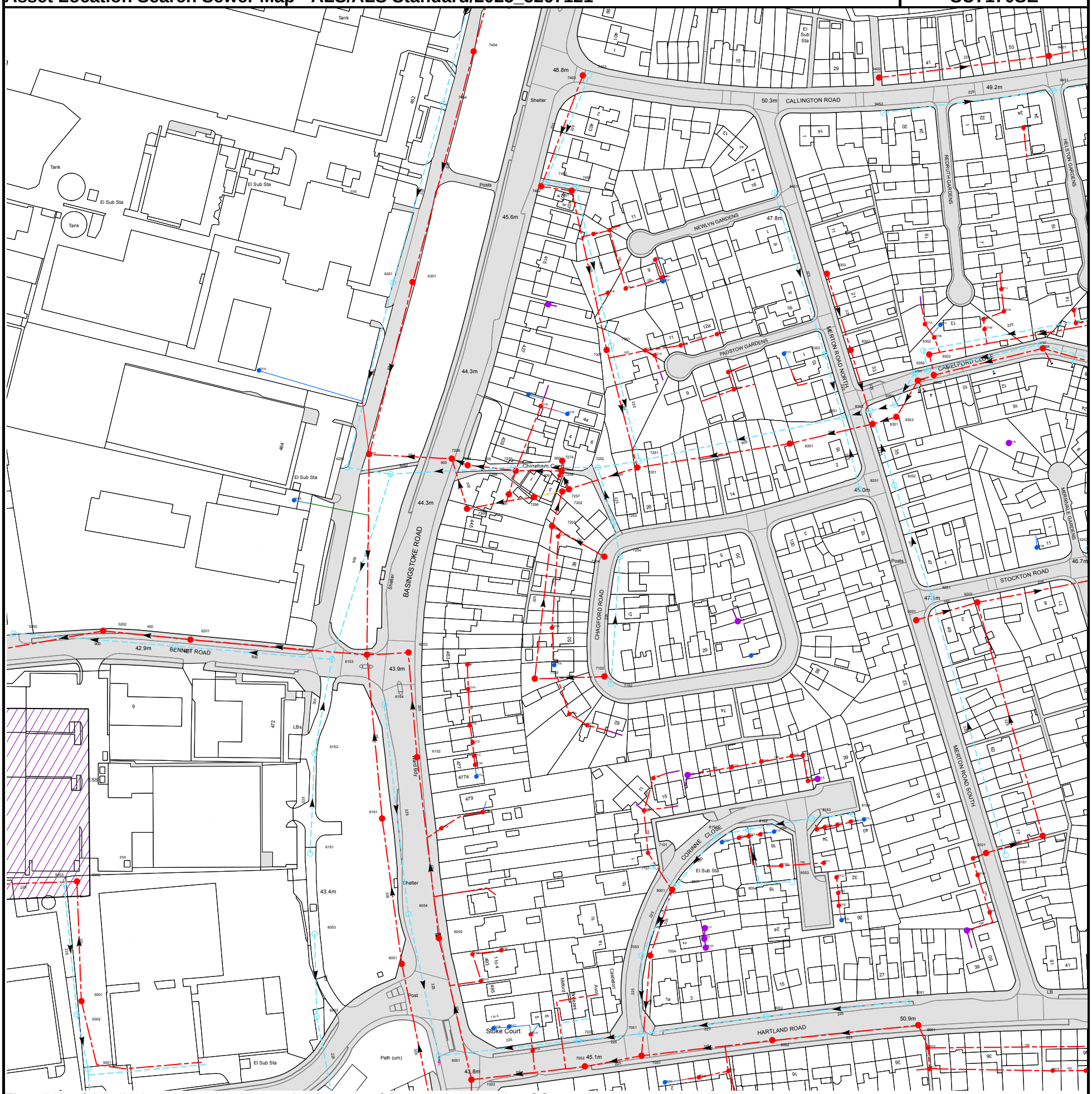
Manhole Reference	Manhole Cover Level	Manhole Invert Level
881A	n/a	n/a
8802	47.64	45.37
891B	n/a	n/a
891F	n/a	n/a
891C	n/a	n/a
891E	n/a	n/a
891D	n/a	n/a
991F	n/a	n/a
981B	n/a	n/a
991A	n/a	n/a
991B	n/a	n/a
991D	n/a	n/a
991E	n/a	n/a
9951	50.31	n/a
9902	50.33	n/a
7801	47.07	41.81
7750	n/a	n/a
8701	n/a	n/a
8850	n/a	n/a
871B	n/a	n/a
8803	48.52	46.16
n/a	n/a	n/a
871A	n/a	n/a
981D	n/a	n/a
981E	n/a	n/a
981F	n/a	n/a
9703	50.55	n/a
9751	50.56	n/a
971D	n/a	n/a
981C	n/a	n/a
9850	50.82	n/a
9801	50.84	47.59
971E	n/a	n/a
971F	n/a	n/a
981A	n/a	n/a
971G	n/a	n/a
971H	n/a	n/a
9750	51.8	48.31
9704	51.81	47.85
9701	52.16	n/a
971C	n/a	n/a
971B	n/a	n/a
851D	n/a	n/a
851C	n/a	n/a
7504	51.49	49.57
751E	n/a	n/a
751A	n/a	n/a
751G	n/a	n/a
751F	n/a	n/a
7503	51.3	48.58
861B	n/a	n/a
861A	n/a	n/a
7651	50.31	n/a
861D	n/a	n/a
7650	50.3	49.1
7602	50.17	n/a
861C	n/a	n/a
7601	50.44	49.32
5950	n/a	n/a
6950	45.66	43.7
6901	45.66	43.89
6852	46.38	44.49
6803	47.17	43.99
7951	46	45.29
7901	48.2	42.5
7950	46.71	45.36
891A	n/a	n/a
8801	47.9	42.04
8951	47.54	n/a
881C	n/a	n/a
881B	n/a	n/a
881E	n/a	n/a
881D	n/a	n/a
8950	48.43	n/a
9903	48.4	46.09
991C	n/a	n/a
981G	n/a	n/a
9950	49.52	47.65
9901	49.49	47.27
571D	47.66	44.1
5704	46.63	40.85
5702	47.38	41.185
5601	46.62	45.41
5650	46.67	45.366
5701	48.33	41.28
5801	48.26	41.55
6806	48.3	41.57
6804	48.24	41.58
6652	49.67	n/a
6750	48.98	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
6701	49.03	46.79
6851	47.29	45.15
6850	48.06	45.61
6802	47.96	45.75
6604	n/a	n/a
6801	47.7	41.6
7850	47.42	45.79
7851	47.69	45.93
871C	n/a	n/a
561C	n/a	44.8
5657	46.64	44.418
5656	46.55	43.043
561D	n/a	n/a
7502	51.22	49.83
6603	50.31	48.99
6653	50.41	48.64
5652	48.55	46.56
5602	48.78	46.48
6651	50.29	48.8
7653	n/a	n/a
5651	46.82	45.34
6650	50.08	47.56
6602	50.23	48.26
6601	50.15	47.23
7552	n/a	n/a
7550	51.11	49.9
7501	50.5	48.72
7551	50.93	n/a

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Asset Location Search Sewer Map - ALS/ALS Standard/2025_5267121

SU7170SE



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 471750,170250

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.

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NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

Manhole Reference	Manhole Cover Level	Manhole Invert Level
731K	n/a	n/a
731J	n/a	n/a
831F	n/a	n/a
831H	n/a	n/a
731H	n/a	n/a
731D	n/a	n/a
731C	n/a	n/a
801H	n/a	n/a
801I	n/a	n/a
901G	n/a	n/a
801J	n/a	n/a
901I	n/a	n/a
901H	n/a	n/a
911A	n/a	n/a
811N	n/a	n/a
811M	n/a	n/a
811L	n/a	n/a
811K	n/a	n/a
811J	n/a	n/a
821B	n/a	n/a
821A	n/a	n/a
921B	n/a	n/a
921A	n/a	n/a
931M	n/a	n/a
931L	n/a	n/a
931K	n/a	n/a
731I	n/a	n/a
931J	n/a	n/a
5002	42.64	40.24
811O	n/a	n/a
811Q	n/a	n/a
811T	n/a	n/a
811R	n/a	n/a
811P	n/a	n/a
711N	n/a	n/a
721B	n/a	n/a
721A	n/a	n/a
6203	43.91	41.51
731F	n/a	n/a
731E	n/a	n/a
731G	n/a	n/a
631A	n/a	n/a
9253	46.67	45.02
621A	n/a	n/a
6153	43.95	41.16
6251	43.69	42.03
6201	43.95	41.31
6252	43.89	41.89
6351	44.74	42.88
6202	n/a	n/a
6301	n/a	n/a
7454	46.83	44.98
7206	44.12	41.61
7205	40.07	37.57
711I	n/a	n/a
7260	40.02	37.52
7404	47.92	45.37
7272	n/a	n/a
7255	44.09	42.71
7259	40.01	37.66
7256	40.3	37.73
7402	46.55	44.59
7452	46.6	44.97
7203	44.46	42.34
5053	n/a	n/a
5052	41.42	40.56
5001	42.38	40.77
5051	42.33	40.31
6151	43.45	42.31
6053	43.27	41.75
6152	43.74	42.17
6052	43.24	41.48
6101	44.2	40.07
6154	43.78	42.7
6001	43.66	40.23
6054	43.76	42.47
6102	43.8	40.64
5251	42.79	40.53
5201	43.03	39.79
5252	41.71	39.9
5202	42.34	39.71
8451	48.61	46.78
7401	47.28	44.23
7451	47.47	44.7
941B	n/a	n/a
941A	n/a	n/a
9452	49.85	47.94
9402	49.99	48.08
7453	48.25	46.5
7403	48.18	46.2

Manhole Reference	Manhole Cover Level	Manhole Invert Level
9451	48.38	46.85
9401	48.79	46.98
9306	n/a	n/a
931D	n/a	n/a
931C	n/a	n/a
7301	n/a	n/a
7351	n/a	n/a
731B	n/a	n/a
731A	n/a	n/a
831B	n/a	n/a
831A	n/a	n/a
831C	n/a	n/a
8353	n/a	n/a
8303	46.77	44.92
8302	45.51	n/a
9352	45.49	43.86
931A	n/a	n/a
9356	n/a	n/a
9302	45.46	43.41
931B	n/a	n/a
931I	n/a	n/a
9357	n/a	n/a
9201	47.68	45.58
9202	47.05	45.01
9251	47.16	45.71
7204	44.73	43.1
7254	45.06	43.29
7253	44.76	43.11
7202	40.3	37.87
8251	45	43.73
7257	40.3	37.8
9252	45.35	43.77
7258	44.2	41.91
7252	44.52	42.77
7201	n/a	n/a
7251	n/a	n/a
7274	n/a	n/a
8201	n/a	n/a
8301	44.85	42.79
8351	45.03	43.36
9303	n/a	n/a
8352	45.01	43.36
9354	n/a	n/a
831D	n/a	n/a
9304	n/a	n/a
9305	n/a	n/a
9355	n/a	n/a
831E	n/a	n/a
8001	47.22	44.91
8051	47.11	45.37
811F	n/a	n/a
8151	48.02	46.58
811E	n/a	n/a
8152	n/a	n/a
8054	n/a	n/a
811G	n/a	n/a
8052	48.3	46.4
811H	n/a	n/a
811D	n/a	n/a
8053	n/a	n/a
811C	n/a	n/a
811B	n/a	n/a
8153	50.37	48.71
811A	n/a	n/a
811I	n/a	n/a
801G	n/a	n/a
801F	n/a	n/a
801E	n/a	n/a
801D	n/a	n/a
8154	n/a	n/a
9051	51.44	49.52
9001	51.24	48.98
9101	51.25	49.65
9151	51.48	49.67
9102	n/a	n/a
6002	43.65	40.79
711A	n/a	n/a
711H	n/a	n/a
711E	n/a	n/a
701F	n/a	n/a
711D	n/a	n/a
711C	n/a	n/a
711M	n/a	n/a
711L	n/a	n/a
701G	n/a	n/a
711B	n/a	n/a
701B	n/a	n/a
701E	n/a	n/a
701C	n/a	n/a
701A	n/a	n/a
7103	n/a	n/a
711G	n/a	n/a
711F	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
7102	45.41	43.4
7152	45.46	43.65
7051	45.69	44.3
7053	46.34	44.88
711K	n/a	n/a
7101	46.99	45.19
7004	46.5	44.48
7151	47.02	45.55
711J	n/a	n/a
801C	n/a	n/a
7003	43.68	40.89
801A	n/a	n/a
801B	n/a	n/a
901C	n/a	n/a
7002	45.01	42.89
7001	45.79	43.85
6051	43.65	42.3
701D	n/a	n/a
901D	n/a	n/a
8002	48.06	45.93
7052	n/a	n/a
901F	n/a	n/a
901E	n/a	n/a

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Asset Location Search - Sewer Key

Public Sewer Types (Operated and maintained by Thames Water)

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

Surface Water Sewer: A sewer designed to convey surface water (e.g. rain water from roofs, yards and car parks) to rivers or watercourses.

Combined Sewer: A sewer designed to convey both waste water and surface water from domestic and industrial sources to a treatment works.

- Storm Sewer
- Sludge Sewer
- Foul Trunk Sewer
- Surface Trunk Sewer
- Combined Trunk Sewer
- Foul Rising Main
- Surface Water Rising Main
- Combined Rising Main
- Vacuum
- Thames Water Proposed
- Vent Pipe
- Gallery

Other Sewer Types (Not operated and maintained by Thames Water)

- Sewer
- Culverted Watercourse
- Proposed
- Decommissioned Sewer
- Content of this drainage network is currently unknown
- Ownership of this drainage network is currently unknown

Sewer Fittings

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

- Air Valve
- Meter
- Dam Chase
- Vent
- Fitting

Operational Controls

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

- Ancillary
- Drop Pipe
- Control Valve
- Weir

End Items

End symbols appear at the start or end of a sewer pipe. Examples: an 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. Outfall on a surface water sewer indicates that the pipe discharges into a stream or river.

- Inlet
- Outfall
- Undefined End

Other Symbols

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

- Change of Characteristic Indicator
- Public / Private Pumping Station
- Invert Level
- Summit

Areas

Lines denoting areas of underground surveys, etc.

- Agreement
- Chamber
- Operational Site

Ducts or Crossings

- Casement

Ducts may contain high voltage cables. Please check with Thames Water.

- Conduit Bridge
- Subway
- Tunnel

Notes:

1) All levels associated with the plans are to Ordnance Datum Newlyn.
2) All measurements on the plan are metric.
3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate the direction of flow.
4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.
5) 'na' or '0' on a manhole indicates that data is unavailable.
6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in millimeters. Text next to a manhole indicates the manhole reference number and should not be taken as a measurement. If you are unsure about any text or symbology, please contact Property Searches on 0800 009 4540.

Asset Location Search Water Map - ALS/ALS Standard/2025_5267121

SU7270NW



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 472250,170750

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.

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Asset Location Search Water Map - ALS/ALS Standard/2025_5267121

SU7270SW



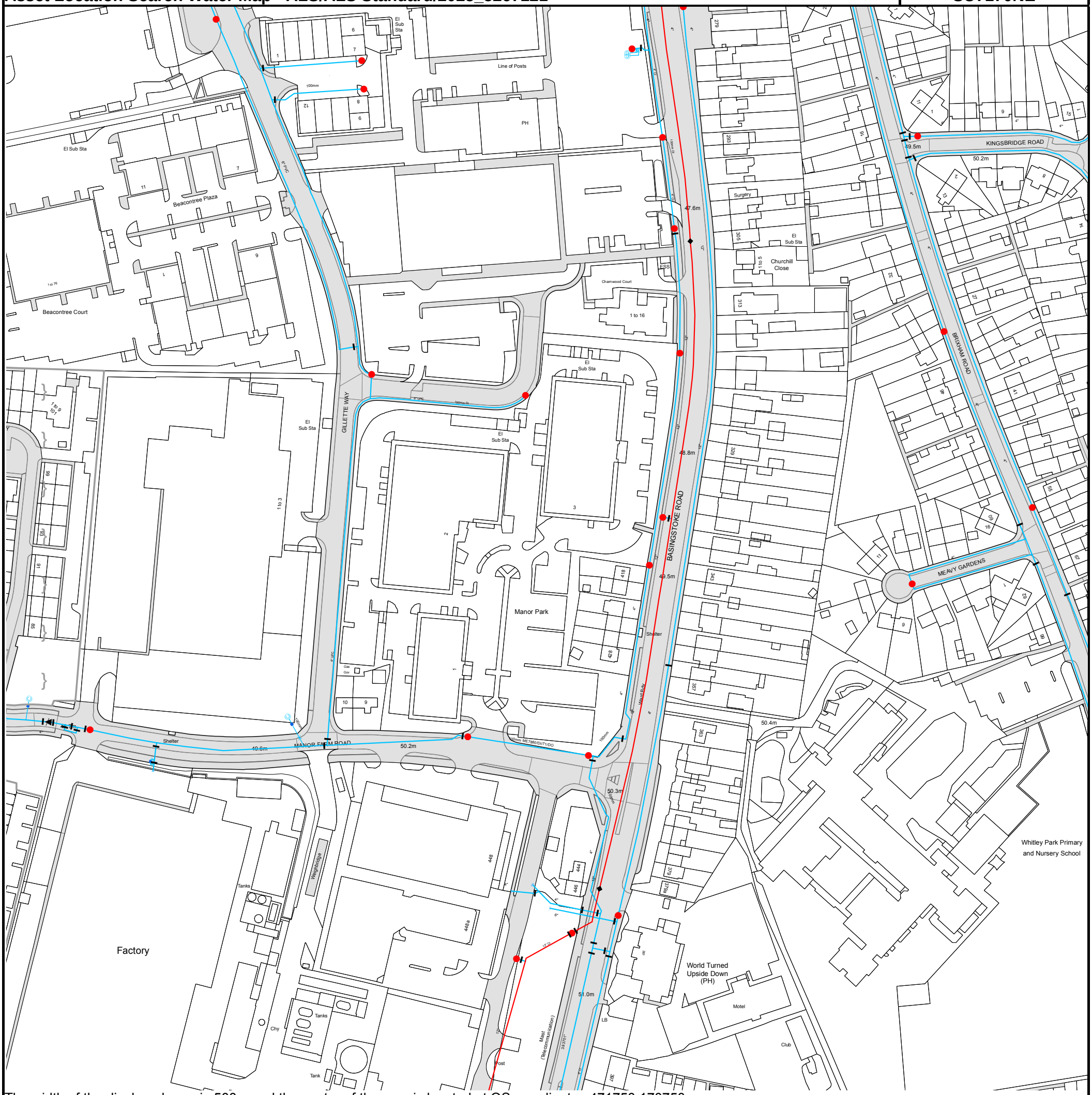
The width of the displayed area is 500m and the centre of the map is located at OS coordinates 472250,170250

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.

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Asset Location Search Water Map - ALS/ALS Standard/2025_5267121

SU7170NE



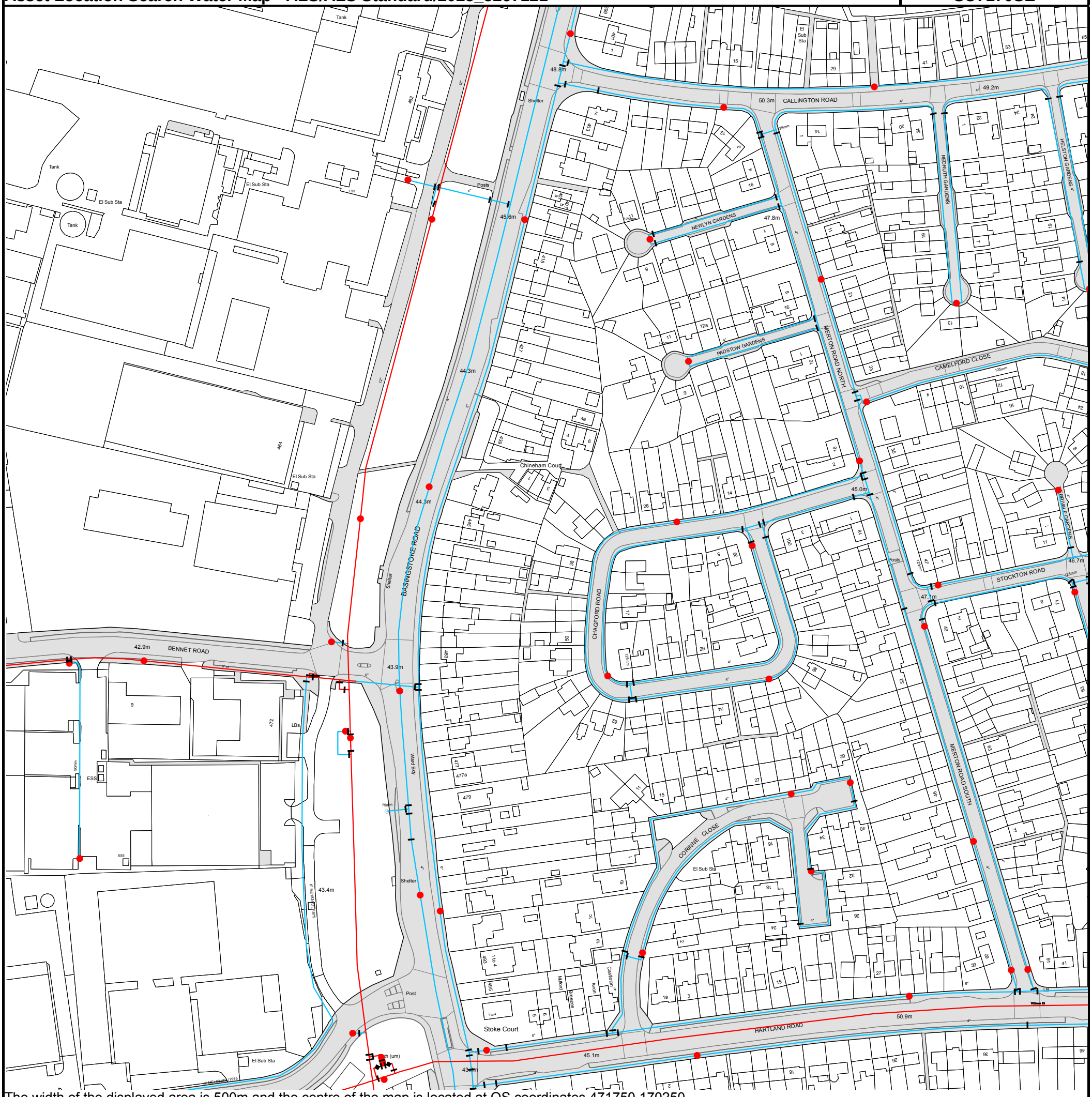
The width of the displayed area is 500m and the centre of the map is located at OS coordinates 471750,170750

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.

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Asset Location Search Water Map - ALS/ALS Standard/2025_5267121

SU7170SE



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 471750,170250

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Asset Location Search - Water Key

Water Pipes (Operated & Maintained by Thames Water)

4"

Distribution Main: The most common pipe shown on water maps. With few exceptions, domestic connections are only made to distribution mains.

16"

Trunk Main: A main carrying water from a source of supply to a treatment plant or reservoir, or from one treatment plant or reservoir to another. Also a main transferring water in bulk to smaller water mains used for supplying individual customers.

3" SUPPLY

Supply Main: A supply main indicates that the water main is used as a supply for a single property or group of properties.

3" FIRE

Fire Main: Where a pipe is used as a fire supply, the word FIRE will be displayed along the pipe.

3" METERED

Metered Pipe: A metered main indicates that the pipe in question supplies water for a single property or group of properties and that quantity of water passing through the pipe is metered even though there may be no meter symbol shown.

Transmission Tunnel: A very large diameter water pipe. Most tunnels are buried very deep underground. These pipes are not expected to affect the structural integrity of buildings shown on the map provided.

Proposed Main: A main that is still in the planning stages or in the process of being laid. More details of the proposed main and its reference number are generally included near the main.

Valves

- General Purpose Valve
- Air Valve
- Pressure Control Valve
- Customer Valve

Hydrants

- Single Hydrant

Meters

- Meter

End Items

Symbol indicating what happens at the end of a water main.

- Blank Flange
- Capped End
- Emptying Pit
- Undefined End
- Manifold
- Customer Supply
- Fire Supply

Operational Sites

- Booster Station
- Other
- Other (Proposed)
- Pumping Station
- Service Reservoir
- Shaft Inspection
- Treatment Works
- Unknown
- Water Tower

Other Symbols

- Data Logger
- **Casement:** Ducts may contain high voltage cables. Please check with Thames Water.

PIPE DIAMETER	DEPTH BELOW GROUND
Up to 300mm (12")	900mm (3')
300mm - 600mm (12" - 24")	1100mm (3' 8")
600mm and bigger (24" plus)	1200mm (4')

Other Water Pipes (Not Operated or Maintained by Thames Water)

Other Water Company Main: Occasionally other water company water pipes may overlap the border of our clean water coverage area. These mains are denoted in purple and in most cases have the owner of the pipe displayed along them.

Private Main: Indiates that the water main in question is not owned by Thames Water. These mains normally have text associated with them indicating the diameter and owner of the pipe.

13 APPENDIX E

Proposed Below Ground Drainage Design

Drainage Calculations and Hydraulic Modelling Outputs

N

INDICATIVE ONLY

DRAINAGE LEGEND

EXISTING FEATURES

- EXISTING SURFACE WATER SEWER AND MANHOLE TO BE RETAINED
- EXISTING SURFACE WATER DRAIN AND MANHOLE TO BE RETAINED
- ASSUMED EX SWD — ASSUMED EXISTING SURFACE WATER DRAIN
- DEFECTED EXISTING SURFACE WATER DRAIN
- EXISTING FOUL WATER SEWER AND MANHOLE TO BE RETAINED
- EXISTING FOUL WATER DRAIN AND MANHOLE TO BE RETAINED
- ASSUMED EXISTING FOUL WATER DRAIN
- DEFECTED EXISTING FOUL WATER DRAIN
- EX FW RISING MAIN
- EXISTING UNKNOWN DRAIN/UTILITY AND MANHOLE WHICH REQUIRES FURTHER INVESTIGATION
- X – X – X — EXISTING FOUL/SURFACE/COMBINED WATER DRAIN AND MANHOLE TO BE ABANDONED. CONTRACTOR TO CONFIRM THAT NO LIVE CONNECTIONS REMAIN. PIPES TO BE FULLY REMOVED.

PROPOSED FEATURES

- SURFACE WATER DRAIN
- RG — ROAD GULLY (TRAPPED)
- SUMP / DRAINAGE CHANNEL — CHANNEL DRAIN SYSTEM WITH SUMP UNIT
- SUMP / SLOT DRAINAGE CHANNEL — SLOT CHANNEL SYSTEM WITH SUMP UNIT
- STORM WATER MANHOLE TYPE D
  INTERNAL DIMENSIONS 450mm MINIMUM
  DEPTH FROM COVER TO SOFFIT OF PIPE UP TO 3m
  RESTRICT ACCESS TO Ø350 IF DEPTH FROM COVER TO SOFFIT OF PIPE IS MORE THAN 1.2m
  (MAX PIPE DIAMETER 150mm 450Ø/475Ø)
  (MAX PIPE DIAMETER 225mm 600Ø)
- STORM WATER FILTER MANHOLE
- STORM WATER FLOW CONTROL MANHOLE
- SEL ENVIRONMENTAL LTD
  DIFFUSER UNIT WITHIN SUB-BASE
- PERMEABLE PAVING
  PERMEABLE SURFACE WITH STORAGE SUB-BASE
  400mm SUB-BASE
- VENT / LIFT — STORM WATER SOAKAWAY / ATTENUATION TANK
  GL = GROUND LEVEL
  TOTL = TOP OF TANK LEVEL
  BOTL = BOTTOM OF TANK LEVEL
- FOUL WATER DRAIN
- FOUL WATER RISING MAIN
- FW • — ABOVE GROUND FOUL WATER CONNECTION - REFER TO PUBLIC HEALTH ENGINEERS/ARCHITECTS DRAWINGS FOR DETAILS
- TG ■ — TRAPPED GULLY
- FOUL WATER MANHOLE TYPE D
  INTERNAL DIMENSIONS 450mm MINIMUM
  DEPTH FROM COVER TO SOFFIT OF PIPE UP TO 3m
  RESTRICT ACCESS TO Ø350 IF DEPTH FROM COVER SOFFIT OF PIPE IS MORE THAN 1.2m
  (MAX PIPE DIAMETER 150mm)
- FOUL WATER PUMP CHAMBER
- FW MH 01.00 / CL 00.00 / IL 00.00 / TYPE C MH / D400 — MANHOLE REFERENCE: COVER LEVEL, INVERT LEVEL, MH TYPE, COVER GRADE
- RW — RW — RETAINING WALL
- FFL: XX.XXX — ARCHITECTURAL FINISHED FLOOR LEVEL
- COMPULSORY — A COMPULSORY ACTION
- CONSTRUCTION WARNING — SPECIAL ATTENTION BY THE CONTRACTOR
- INFORMATIVE — FOR INFORMATION

EXTERNAL FINISHES LEGEND

- RUBBER CRUMB (POROUS WITH OPEN GRADED CRUSHED ROCK) SUB-BASE DEPTH TBC 400mm MINIMUM
- POROUS ASPHALT SUB-BASE TBC 400mm MINIMUM
- RESIN BOND SURFACE (POROUS WITH OPEN GRADED CRUSHED ROCK) SUB-BASE DEPTH TBC 400mm MINIMUM
- ARTIFICIAL GRASS (POROUS WITH OPEN GRADED CRUSHED ROCK) SUB-BASE DEPTH TBC 400mm MINIMUM
- ARTIFICIAL GRASS (POROUS WITH TANKED STORAGE) SUB-BASE DEPTH TBC 400mm MINIMUM
- PERMEABLE BLOCK PAVING PARKING BAYS SUB-BASE 400mm

IMPORTANT NOTE: CAUTION

CONSTRUCTION WARNING

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FOR CONTINUATION SEE DRAWING 03770-C-0852

FOR CONTINUATION SEE DRAWING 03770-C-0853

NOTES:

1. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECT AND ENGINEERING DETAILS, DRAWINGS AND SPECIFICATIONS.
2. ANY DISCREPANCIES SHOULD BE REPORTED TO THE ARCHITECT AND/OR ENGINEER IMMEDIATELY, SO THAT CLARIFICATION CAN BE SOUGHT PRIOR TO THE COMMENCEMENT OF WORK.

DRAINAGE NOTES

3. ALL PIPES TO BE ADOPTED, OR CONNECTING TO ADOPTED SEWERS, AND/OR SITUATED UNDER HIGHWAY TO BE VITRIFIED CLAY TO BS EN 295 & BS65 (SWS ONLY), OR CONCRETE PIPES TO BE EN 1916 & BS5911:PART 1, OR THERMOPLASTIC STRUCTURED WALL SEWER PIPES TO WIS 4-35-01 (CLASS 8KN/SQM) AND BE CAPABLE OF WITHSTANDING 4000 PSI JETTING PRESSURE. PRIVATE PIPES MAY BE VC OR PLASTIC.
4. ADOPTABLE HIGHWAY WORKS ARE TO BE IN ACCORDANCE WITH LOCAL AUTHORITY DESIGN GUIDANCE.
5. ANY WORKS ASSOCIATED WITH THE HIGHWAY/EXTERNAL WORKS INCLUDING HIGHWAY DRAINAGE, SHALL BE IN ACCORDANCE WITH THE HIGHWAYS AGENCY MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS, VOL 1' (MCHW), UNLESS OTHERWISE SPECIFIED.
6. FOR CONSTRUCTION DETAILS REFER TO THE RELEVANT MARBAS DRAWING NUMBERS LISTED ON THE DRAWING ISSUE SHEET.
7. ALL ADOPTABLE DRAINAGE WORKS TO BE CONSTRUCTED AS DETAILED IN "THE CODE" FOR ADOPTION DESIGN AND CONSTRUCTION GUIDANCE AND THE LOCAL WATER AUTHORITY'S LOCAL PRACTICE NOTE.
8. ALL ADOPTABLE SEWERS WITH LESS THAN 1.20m OF COVER WHEN LAID BENEATH THE ROADS, OR 0.90m OF COVER IN OTHER AREAS, SHALL HAVE CONCRETE PROTECTION IN ACCORDANCE WITH EITHER OF THE DETAILS SHOWN ON THE STANDARD DRAWING PROVIDED.
9. ALL DRAINAGE WORKS SHOULD COMMENCE AT THE PROPOSED DOWNSTREAM CONNECTION POINT, THE WORKS CONTINUING UPSTREAM FOLLOWING CONFIRMATION OF THE TIE-IN INVERT LEVELS TO THE ENGINEER. CONNECTIONS TO MANHOLES OR LARGER SIZED PIPES ETC. SHOULD BE SOFFIT TO SOFFIT UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER, IF THIS IS NOT POSSIBLE INFORM THE ENGINEER IMMEDIATELY
10. COVER LEVELS SHOWN ARE APPROXIMATE. COVERS AND FRAMES SHALL BE SET TO FINISHED GROUND LEVELS AND FALLS.
11. ROAD GULLY PIPES ARE TO BE 150mm DIA. WITH CONCRETE SURROUND AND FLEXIBLE JOINTS, ALL OTHER UN-REFERENCED PIPES ARE ASSUMED TO BE 100mm DIA.
    - FW MIN GRADIENT - 1 IN 40 (100 DIA) NO WC'S CONNECTED
    - FW MIN GRADIENT - 1 IN 80 (100 DIA) MIN 1 WC CONNECTED
    - FW MIN GRADIENT - 1 IN 150 (150 DIA) MIN 5 WC'S CONNECTED
    - SW MIN GRADIENT - 1 IN 100 (100 DIA)
    - SW MIN GRADIENT - 1 IN 150 (150 DIA)
12. ALL GULLIES SHALL BE FITTED WITH GRADE D400 GRATINGS AND FRAMES TO BS EN124, UNLESS OTHERWISE STATED.
13. IN ORDER TO MAINTAIN THE SATISFACTORY FUNCTIONING OF SURFACE WATER SEWERS, ALL ROAD AND YARD GULLIES ARE TO BE "TRAPPED".
14. ALL NON ADOPTABLE LATERALS BENEATH THE HIGHWAY SHALL BE BACK FILLED WITH A TYPE 1 GRANULAR MATERIAL AS CL.803 (MCHW) APPROVED BY THE ENGINEER.
15. ALL PRIVATE DRAINAGE TO BE IN ACCORDANCE WITH THE BUILDING REGULATIONS APPROVED DOCUMENT PART-H, AND TO THE SATISFACTION OF THE BUILDING CONTROL INSPECTOR.
16. WHERE DRAINS PASS THROUGH FOUNDATIONS OR CONNECT TO MANHOLES, A FLEXIBLE PIPE JOINT SHOULD BE PROVIDED TO FORM A ROCKER PIPE IN ACCORDANCE WITH THE STANDARD DETAIL PROVIDED..
17. SHALLOW PRIVATE DRAINS MAY REQUIRE PROTECTION USING CLASS 'Z' CONCRETE SURROUND OR PAVING SLABS BRIDGING THE TRENCH SUBJECT TO THE NHBC INSPECTOR'S REQUIREMENTS.
18. WHERE DRAINAGE RUNS PASS CLOSE TO BUILDINGS OR THEIR INVERT LEVELS ARE BELOW FOUNDATION LEVEL, THEN THE TRENCHES ARE TO BE BACK FILLED IN ACCORDANCE WITH THE STANDARD DETAIL PROVIDED.
19. REFERENCE SHOULD BE MADE TO THE STRUCTURAL ENGINEERS DETAILS FOR ALL ASPECTS OF FOUNDATION DESIGN AND CONSTRUCTION.
20. THE CONTRACTOR IS TO KEEP A RECORD OF ANY VARIATIONS MADE ON SITE, INCLUDING THE RELOCATION OF SEWERS OR DRAINS, SO THAT AN AS CONSTRUCTED DRAWING CAN BE PREPARED UPON COMPLETION OF THE PROJECT.
21. THE CONTRACTOR SHOULD CHECK ALL DIMENSIONS ON SITE. NO DIMENSIONS ARE TO BE SCALED FROM THESE DRAWINGS.
22. IT IS THE CONTRACTORS/SUBCONTRACTORS RESPONSIBILITY TO ENSURE COMPLIANCE WITH THE CURRENT BUILDING REGULATIONS AND CODES OF PRACTICE.
23. STUB CONNECTIONS TO ADOPTABLE MANHOLES SHALL BE MADE FROM VITRIFIED CLAY AND CONSIST OF TWO ROCKER PIPES LAID AT THE SAME GRADIENT AS THE UP OR DOWNSTREAM PIPE.
24. ALL DOWNPIPES ARE TO BE SEALED, IE CONNECTED DIRECTLY TO THE STORMWATER DRAIN. ACCESS POINTS TO BE PROVIDED 1m ABOVE GROUND LEVEL FOR EXTERNAL RWP'S AND 1m ABOVE FFL FOR INTERNAL RWP'S.
25. UNLESS OTHERWISE NOTED OR SIMILAR APPROVED CHANNEL DRAINS TO BE ACO MULTI DRAIN WITH A15 GRATING IN PEDESTRIAN AREAS, C250 IN CAR PARKS AND D400 IN CARRIAGEWAYS. SLOTTED CHANNEL TO BE USED FOR AREAS WITH FALLS <1:15 MESH GRATING TO BE USED WHERE FALLS >1:15.
26. GULLY AND CHANNEL DRAIN POSITIONS ARE LIABLE TO AMENDMENT WHEN THE DESIGN LEVELS HAVE BEEN DETERMINED.
27. MODULAR GEOCELLULAR STORAGE/SOAKAWAY SYSTEM TO CONFORM TO CIRIA C793 THE SUDS MANUAL, C680 STRUCTURAL DESIGN OF MODULAR GEOCELLULAR DRAINAGE TANKS & C698 SITE HANDBOOK FOR THE CONSTRUCTION OF SUDS. THE MANUFACTURER SHOULD PROVIDE A COMPLETE SET OF INDEPENDENT TEST RESULTS FOR A PROPOSED SYSTEM INCLUDING, AS A MINIMUM, STRESS/STRAIN CURVES FOR VERTICAL AND LATERAL COMPRESSION, AND CREEP TESTS UNDER SUSTAINED LONG-TERM LOADS. A BBA CERTIFICATE IS NOT INDEPENDENT TEST DATA.
28. ALL REDUNDANT DRAINAGE TO BE ABANDONED ONCE THE CONTRACTOR HAS SATISFIED HIMSELF THAT NO CONNECTIONS REMAIN LIVE. REDUNDANT DRAINAGE TO BE GRUBBED OUT.
29. ALL BELOW GROUND CONCRETE TO ACCORD WITH BS8328:1997,SULPHATE CLASS TBA.
30. IF ANY SUB SOIL DRAINAGE SYSTEMS ARE UNCOVERED DURING THE WORKS CONTACT THE ENGINEER FOR INSTRUCTIONS. GENERALLY SUB SOIL DRAINS AFFECTED ARE TO BE DIVERTED AROUND NEW WORKS AND CONNECTED INTO THE SURFACE WATER DRAINAGE SYSTEM. PIPE DIAMETERS AND GRADIENTS ARE TO BE MAINTAINED.
31. BEFORE COMMENCING CONSTRUCTION THE CONTRACTOR MUST CHECK THE INVERT LEVELS OF EXISTING SEWERS TO WHICH CONNECTIONS ARE MADE. IN ADDITION THE CONTRACTOR MUST LOCATE AND DETERMINE INVERT LEVELS OF THE EXISTING SPURS TO WHICH CONNECTIONS ARE PROPOSED. ADDITIONAL SPUR/MANHOLE CONNECTIONS ARE TO BE AGREED WITH THE RELEVANT ADOPTING AUTHORITY. ANY DISCREPANCIES ARE TO BE NOTIFIED TO THE ENGINEER IMMEDIATELY, PRIOR TO CONSTRUCTION.
32. ROAD REINSTATEMENTS ARE TO BE TO THE HIGHWAY AUTHORITY APPROVAL.
33. NO PRIVATE AREAS ARE TO DRAIN ONTO ADOPTABLE AREAS AND VICE VERSA.

REV	DATE	BY	DESCRIPTION
P02	21/08/26	SPB	UPDATED TO SUIT COMMENTS/UPDATED FLOOR AND SITE PLAN
P01	17/07/26	SPB	STAGE 3+ ISSUE

DRAWING STATUS: PRELIMINARY

marbas

CLIENT: READING BOROUGH COUNCIL

PROJECT: WHITLEY PARK PRIMARY SCHOOL
READING, RG2 7RB

DRAWING TITLE: PROPOSED BELOW GROUND DRAINAGE DESIGN
PHASE 1 SHEET 1 OF 6

DRAWING No.	REV.
03770-C-0851	P02

SCALE	DATE	DRAWN	CHECKED	SHT.
1:200	05/01/26	SB	SF	A1

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INDICATIVE ONLY

DRAINAGE LEGEND

EXISTING FEATURES

- EXISTING SURFACE WATER SEWER AND MANHOLE TO BE RETAINED
- EXISTING SURFACE WATER DRAIN AND MANHOLE TO BE RETAINED
- ASSUMED EX SWD — ASSUMED EXISTING SURFACE WATER DRAIN
- DEFECTED EXISTING SURFACE WATER DRAIN
- EXISTING FOUL WATER SEWER AND MANHOLE TO BE RETAINED
- EXISTING FOUL WATER DRAIN ISND MANHOLE TO BE RETAINED
- ASSUMED EXISTING FOUL WATER DRAIN
- DEFECTED EXISTING FOUL WATER DRAIN
- EX FW RISING MAIN
- EXISTING UNKNOWN DRAIN/UTILITY AND MANHOLE WHICH REQUIRES FURTHER INVESTIGATION
- EXISTING FOUL/SURFACE/COMBINED WATER DRAIN AND MANHOLE TO BE ABANDONED. CONTRACTOR TO CONFIRM THAT NO LIVE CONNECTIONS REMAIN. PIPES TO BE FULLY REMOVED.

PROPOSED FEATURES

- SURFACE WATER DRAIN
- RG — ROAD GULLY (TRAPPED)
- SUMP / DRAINAGE CHANNEL — CHANNEL DRAIN SYSTEM WITH SUMP UNIT
- SUMP / SLOT DRAINAGE CHANNEL — SLOT CHANNEL SYSTEM WITH SUMP UNIT
- STORM WATER MANHOLE TYPE D
  INTERNAL DIMENSIONS 450mm MINIMUM
  DEPTH FROM COVER TO SOFFIT OF PIPE UP TO 3m
  RESTRICT ACCESS TO Ø350 IF DEPTH FROM COVER TO SOFFIT OF PIPE IS MORE THAN 1.2m
  (MAX PIPE DIAMETER 150mm 450Ø/475Ø)
  (MAX PIPE DIAMETER 225mm 600Ø)
- STORM WATER FILTER MANHOLE
- STORM WATER FLOW CONTROL MANHOLE
- SEL ENVIRONMENTAL LTD DIFFUSER UNIT WITHIN SUB-BASE
- PERMEABLE PAVING
  PERMEABLE SURFACE WITH STORAGE SUB-BASE
  400mm SUB-BASE
- VENT PIPE — STORM WATER SOAKAWAY / ATTENUATION TANK
  GL = GROUND LEVEL
  TOTL = TOP OF TANK LEVEL
  BOTL = BOTTOM OF TANK LEVEL
- FOUL WATER DRAIN
- FOUL WATER RISING MAIN
- FW • — ABOVE GROUND FOUL WATER CONNECTION - REFER TO PUBLIC HEALTH ENGINEERS/ARCHITECTS DRAWINGS FOR DETAILS
- TG ■ — TRAPPED GULLY
- FOUL WATER MANHOLE TYPE D
  INTERNAL DIMENSIONS 450mm MINIMUM
  DEPTH FROM COVER TO SOFFIT OF PIPE UP TO 3m
  RESTRICT ACCESS TO Ø350 IF DEPTH FROM COVER SOFFIT OF PIPE IS MORE THAN 1.2m
  (MAX PIPE DIAMETER 150mm)
- FOUL WATER PUMP CHAMBER
- FW MH 01.00 / CL 00.00 / IL 00.00 / TYPE C MH / D400 — MANHOLE REFERENCE: COVER LEVEL, INVERT LEVEL, MH TYPE, COVER GRADE
- RW RW — RETAINING WALL
- FFL: XX.XXX — ARCHITECTURAL FINISHED FLOOR LEVEL
- COMPULSORY — A COMPULSORY ACTION
- CONSTRUCTION WARNING — SPECIAL ATTENTION BY THE CONTRACTOR
- INFORMATIVE — FOR INFORMATION

EXTERNAL FINISHES LEGEND

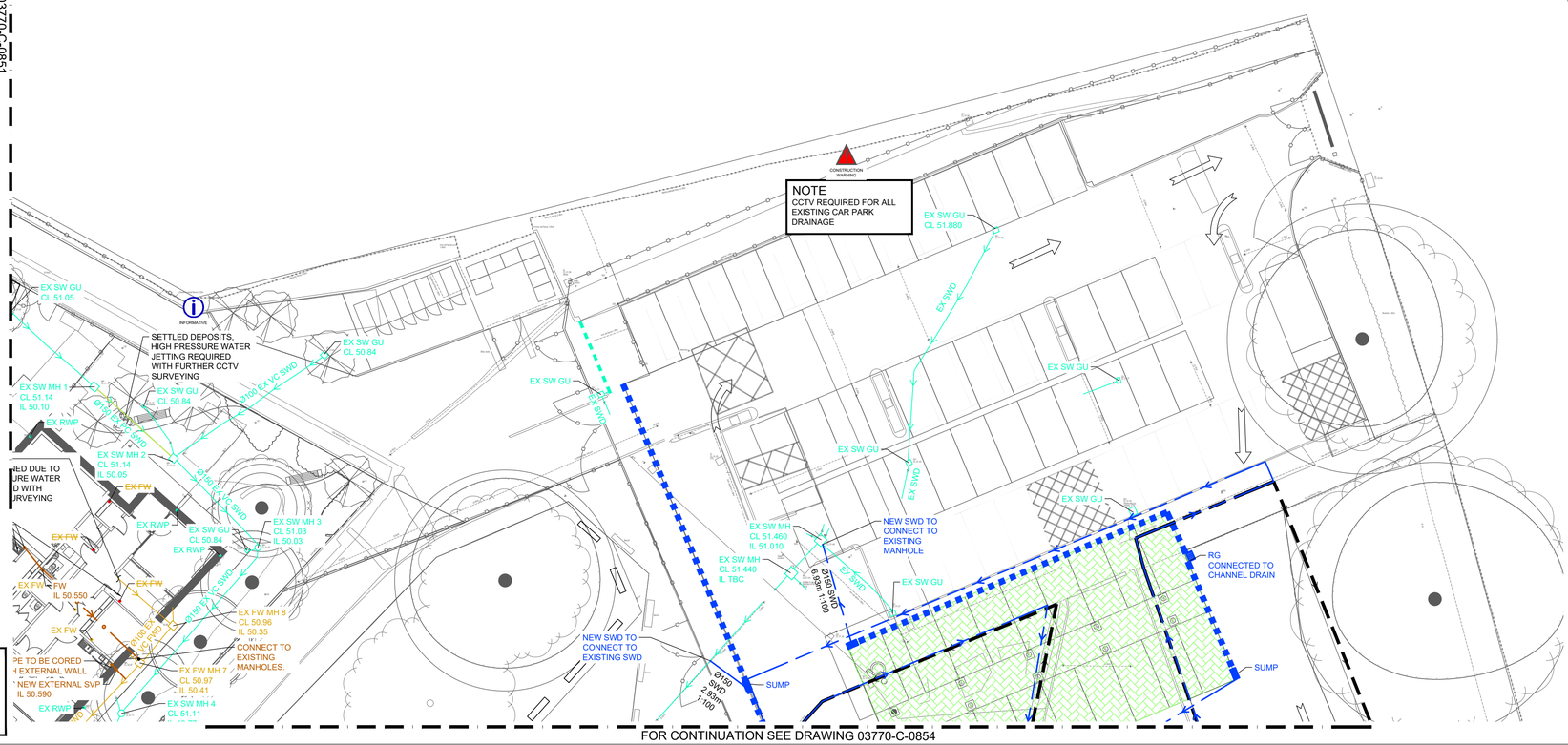
- RUBBER CRUMB (POROUS WITH OPEN GRADED CRUSHED ROCK) SUB-BASE DEPTH TBC 400mm MINIMUM
- POROUS ASPHALT SUB-BASE TBC 400mm MINIMUM
- RESIN BOND SURFACE (POROUS WITH OPEN GRADED CRUSHED ROCK) SUB-BASE DEPTH TBC 400mm MINIMUM
- ARTIFICIAL GRASS (POROUS WITH OPEN GRADED CRUSHED ROCK) SUB-BASE DEPTH TBC 400mm MINIMUM
- ARTIFICIAL GRASS (POROUS WITH TANKED STORAGE) SUB-BASE DEPTH TBC 400mm MINIMUM
- PERMEABLE BLOCK PAVING PARKING BAYS SUB-BASE 400mm

CONSTRUCTION WARNING

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FOR CONTINUATION SEE DRAWING 03770-C-0851



FOR CONTINUATION SEE DRAWING 03770-C-0854

NOTES:

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    - SW MIN GRADIENT - 1 IN 150 (150 DIA)
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16. WHERE DRAINS PASS THROUGH FOUNDATIONS OR CONNECT TO MANHOLES, A FLEXIBLE PIPE JOINT SHOULD BE PROVIDED TO FORM A ROCKER PIPE IN ACCORDANCE WITH THE STANDARD DETAIL PROVIDED..
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25. UNLESS OTHERWISE NOTED OR SIMILAR APPROVED CHANNEL DRAINS TO BE ACO MULTI DRAIN WITH A15 GRATING IN PEDESTRIAN AREAS, C250 IN CAR PARKS AND D400 IN CARRIAGEWAYS. SLOTTED CHANNEL TO BE USED FOR AREAS WITH FALLS <1:15 MESH GRATING TO BE USED WHERE FALLS >1:15.
26. GULLY AND CHANNEL DRAIN POSITIONS ARE LIABLE TO AMENDMENT WHEN THE DESIGN LEVELS HAVE BEEN DETERMINED.
27. MODULAR GEOCELLULAR STORAGE/SOAKAWAY SYSTEM TO CONFORM TO CIRIA C753 THE SUDS MANUAL, C680 STRUCTURAL DESIGN OF MODULAR GEOCELLULAR DRAINAGE TANKS & C698 SITE HANDBOOK FOR THE CONSTRUCTION OF SUDS. THE MANUFACTURER SHOULD PROVIDE A COMPLETE SET OF INDEPENDENT TEST RESULTS FOR A PROPOSED SYSTEM INCLUDING, AS A MINIMUM, STRESS/STRAIN CURVES FOR VERTICAL AND LATERAL COMPRESSION, AND CREEP TESTS UNDER SUSTAINED LONG-TERM LOADS. A BBA CERTIFICATE IS NOT INDEPENDENT TEST DATA.
28. ALL REDUNDANT DRAINAGE TO BE ABANDONED ONCE THE CONTRACTOR HAS SATISFIED HIMSELF THAT NO CONNECTIONS REMAIN LIVE. REDUNDANT DRAINAGE TO BE GRUBBED OUT.
29. ALL BELOW GROUND CONCRETE TO ACCORD WITH BS8328:1997,SULPHATE CLASS TBA.
30. IF ANY SUB SOIL DRAINAGE SYSTEMS ARE UNCOVERED DURING THE WORKS CONTACT THE ENGINEER FOR INSTRUCTIONS. GENERALLY SUB SOIL DRAINS AFFECTED ARE TO BE DIVERTED AROUND NEW WORKS AND CONNECTED INTO THE SURFACE WATER DRAINAGE SYSTEM. PIPE DIAMETERS AND GRADIENTS ARE TO BE MAINTAINED.
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32. ROAD REINSTATEMENTS ARE TO BE TO THE HIGHWAY AUTHORITY APPROVAL.
33. NO PRIVATE AREAS ARE TO DRAIN ONTO ADOPTABLE AREAS AND VICE VERSA.

REV	DATE	BY	DESCRIPTION
P02	21/08/26	SPB	UPDATED TO SUIT COMMENTS/UPDATED FLOOR AND SITE PLAN
P01	17/07/26	SPB	STAGE 3+ ISSUE

DRAWING STATUS: PRELIMINARY

marbas

CLIENT: READING BOROUGH COUNCIL

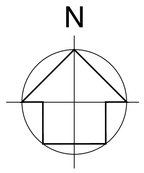
PROJECT: WHITLEY PARK PRIMARY SCHOOL
READING, RG2 7RB

DRAWING TITLE: PROPOSED BELOW GROUND DRAINAGE DESIGN
PHASE 1 SHEET 2 OF 6

DRAWING No.	REV.
03770-C-0852	P02

SCALE	DATE	DRAWN	CHECKED	SHT.
1:200	05/01/26	SB	SF	A1

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INDICATIVE ONLY

DRAINAGE LEGEND

EXISTING FEATURES

- EXISTING SURFACE WATER SEWER AND MANHOLE TO BE RETAINED
- EXISTING SURFACE WATER DRAIN AND MANHOLE TO BE RETAINED
- ASSUMED EXISTING SURFACE WATER DRAIN
- DEFECTED EXISTING SURFACE WATER DRAIN
- EXISTING FOUL WATER SEWER AND MANHOLE TO BE RETAINED
- EXISTING FOUL WATER DRAIN AND MANHOLE TO BE RETAINED
- ASSUMED EXISTING FOUL WATER DRAIN
- DEFECTED EXISTING FOUL WATER DRAIN
- EX FW RISING MAIN
- EXISTING UNKNOWN DRAIN/UTILITY AND MANHOLE WHICH REQUIRES FURTHER INVESTIGATION
- EXISTING FOUL/SURFACE/COMBINED WATER DRAIN AND MANHOLE TO BE ABANDONED. CONTRACTOR TO CONFIRM THAT NO LIVE CONNECTIONS REMAIN. PIPES TO BE FULLY REMOVED.

PROPOSED FEATURES

- SURFACE WATER DRAIN
- RG — ROAD GULLY (TRAPPED)
- SUMP — DRAINAGE CHANNEL — CHANNEL DRAIN SYSTEM WITH SUMP UNIT
- SUMP — SLOT DRAINAGE CHANNEL — SLOT CHANNEL SYSTEM WITH SUMP UNIT
- STORM WATER MANHOLE TYPE D
  INTERNAL DIMENSIONS 450mm MINIMUM
  DEPTH FROM COVER TO SOFFIT OF PIPE UP TO 3m
  RESTRICT ACCESS TO Ø350 IF DEPTH FROM COVER TO SOFFIT OF PIPE IS MORE THAN 1.2m
  (MAX PIPE DIAMETER 150mm 450Ø/475Ø)
  (MAX PIPE DIAMETER 225mm 600Ø)
- STORM WATER FILTER MANHOLE
- STORM WATER FLOW CONTROL MANHOLE
- SEL ENVIRONMENTAL LTD
  DIFFUSER UNIT WITHIN SUB-BASE
- PERMEABLE PAVING
  PERMEABLE SURFACE WITH STORAGE SUB-BASE
  400mm SUB-BASE
- VENT — STORM WATER SOAKAWAY / ATTENUATION TANK
  GL = GROUND LEVEL
  TOTL = TOP OF TANK LEVEL
  BOTL = BOTTOM OF TANK LEVEL
- FOUL WATER DRAIN
- FOUL WATER RISING MAIN
- FW • — ABOVE GROUND FOUL WATER CONNECTION - REFER TO PUBLIC HEALTH ENGINEERS/ARCHITECTS DRAWINGS FOR DETAILS
- TG ■ — TRAPPED GULLY
- FOUL WATER MANHOLE TYPE D
  INTERNAL DIMENSIONS 450mm MINIMUM
  DEPTH FROM COVER TO SOFFIT OF PIPE UP TO 3m
  RESTRICT ACCESS TO Ø350 IF DEPTH FROM COVER SOFFIT OF PIPE IS MORE THAN 1.2m
  (MAX PIPE DIAMETER 150mm)
- FOUL WATER PUMP CHAMBER
- FW MH 01.00 / CL 00.00 / IL 00.00 / TYPE C MH / D400 — MANHOLE REFERENCE: COVER LEVEL, INVERT LEVEL, MH TYPE, COVER GRADE
- RW ▬ RW — RETAINING WALL
- FFL: XX.XXX — ARCHITECTURAL FINISHED FLOOR LEVEL
- COMPULSORY — A COMPULSORY ACTION
- CONSTRUCTION WARNING — SPECIAL ATTENTION BY THE CONTRACTOR
- INFORMATIVE — FOR INFORMATION

EXTERNAL FINISHES LEGEND

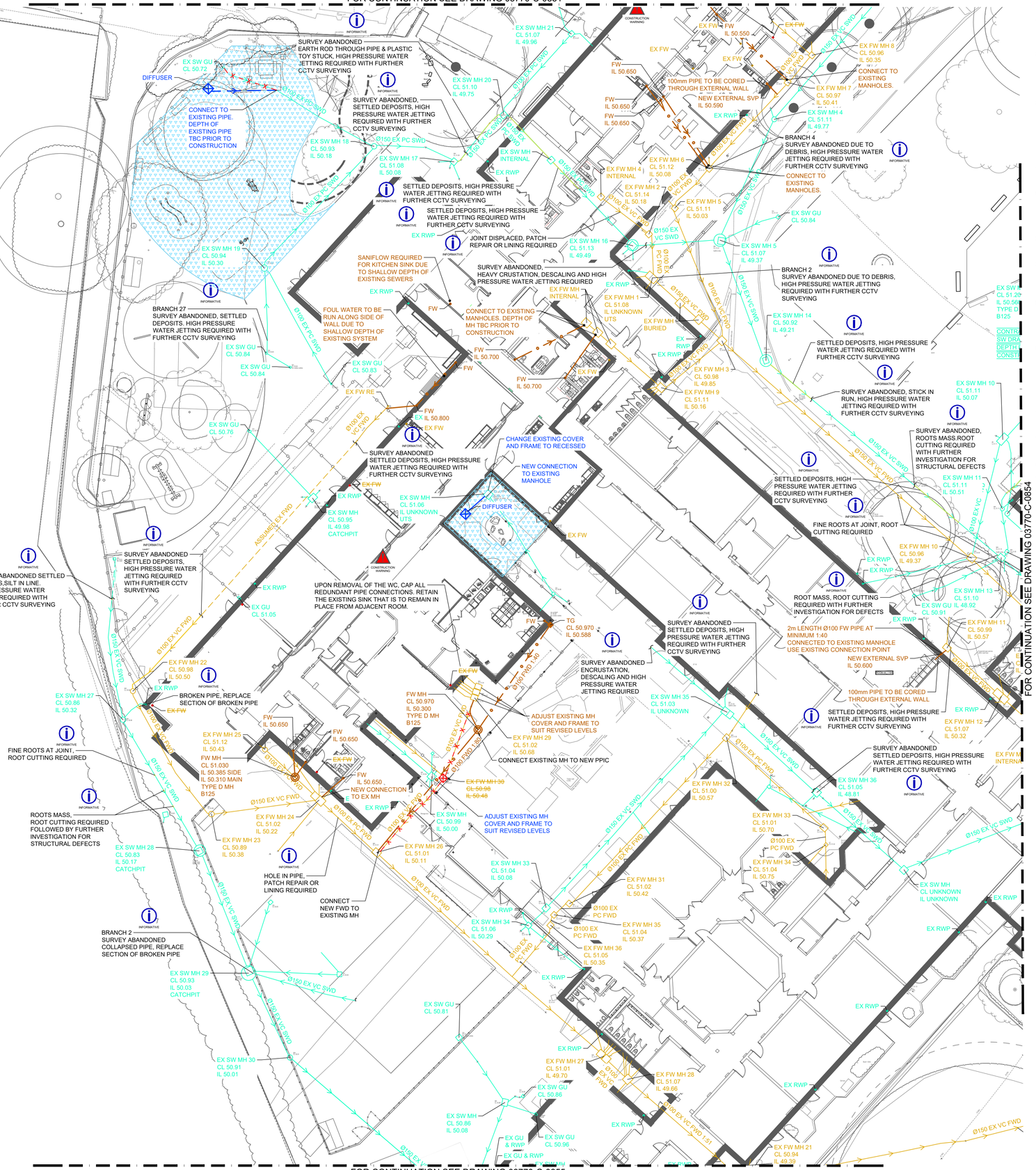
- RUBBER CRUMB (POROUS WITH OPEN GRADED CRUSHED ROCK) SUB-BASE DEPTH TBC 400mm MINIMUM
- POROUS ASPHALT SUB-BASE TBC 400mm MINIMUM
- RESIN BOND SURFACE (POROUS WITH OPEN GRADED CRUSHED ROCK) SUB-BASE DEPTH TBC 400mm MINIMUM
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- ARTIFICIAL GRASS (POROUS WITH TANKED STORAGE) SUB-BASE DEPTH TBC 400mm MINIMUM
- PERMEABLE BLOCK PAVING PARKING BAYS SUB-BASE 400mm

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FOR CONTINUATION SEE DRAWING 03770-C-0851



FOR CONTINUATION SEE DRAWING 03770-C-0854

FOR CONTINUATION SEE DRAWING 03770-C-0855

NOTES:

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2. ANY DISCREPANCIES SHOULD BE REPORTED TO THE ARCHITECT AND/OR ENGINEER IMMEDIATELY, SO THAT CLARIFICATION CAN BE SOUGHT PRIOR TO THE COMMENCEMENT OF WORK.

DRAINAGE NOTES

3. ALL PIPES TO BE ADOPTED, OR CONNECTING TO ADOPTED SEWERS, AND/OR SITUATED UNDER HIGHWAY TO BE VITRIFIED CLAY TO BS EN 295 & BS65 (SWS ONLY), OR CONCRETE PIPES TO BE EN 1916 & BS911:PART 1, OR THERMOPLASTIC STRUCTURED WALL SEWER PIPES TO WIS 4-35-01 (CLASS 8KN/SQM) AND BE CAPABLE OF WITHSTANDING 4000 PSI JETTING PRESSURE. PRIVATE PIPES MAY BE VC OR PLASTIC.
4. ADOPTABLE HIGHWAY WORKS ARE TO BE IN ACCORDANCE WITH LOCAL AUTHORITY DESIGN GUIDANCE.
5. ANY WORKS ASSOCIATED WITH THE HIGHWAY/EXTERNAL WORKS INCLUDING HIGHWAY DRAINAGE, SHALL BE IN ACCORDANCE WITH THE HIGHWAYS AGENCY MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS, VOL 1' (MCHW), UNLESS OTHERWISE SPECIFIED.
6. FOR CONSTRUCTION DETAILS REFER TO THE RELEVANT MARBAS DRAWING NUMBERS LISTED ON THE DRAWING ISSUE SHEET.
7. ALL ADOPTABLE DRAINAGE WORKS TO BE CONSTRUCTED AS DETAILED IN "THE CODE" FOR ADOPTION DESIGN AND CONSTRUCTION GUIDANCE AND THE LOCAL WATER AUTHORITY'S LOCAL PRACTICE NOTE.
8. ALL ADOPTABLE SEWERS WITH LESS THAN 1.20m OF COVER WHEN LAID BENEATH THE ROADS, OR 0.90m OF COVER IN OTHER AREAS, SHALL HAVE CONCRETE PROTECTION IN ACCORDANCE WITH EITHER OF THE DETAILS SHOWN ON THE STANDARD DRAWING PROVIDED.
9. ALL DRAINAGE WORKS SHOULD COMMENCE AT THE PROPOSED DOWNSTREAM CONNECTION POINT, THE WORKS CONTINUING UPSTREAM FOLLOWING CONFIRMATION OF THE TIE-IN INVERT LEVELS TO THE ENGINEER. CONNECTIONS TO MANHOLES OR LARGER SIZED PIPES ETC. SHOULD BE SOFFIT TO SOFFIT UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER, IF THIS IS NOT POSSIBLE INFORM THE ENGINEER IMMEDIATELY
10. COVER LEVELS SHOWN ARE APPROXIMATE. COVERS AND FRAMES SHALL BE SET TO FINISHED GROUND LEVELS AND FALLS.
11. ROAD GULLY PIPES ARE TO BE 150mm DIA. WITH CONCRETE SURROUND AND FLEXIBLE JOINTS, ALL OTHER UN-REFERENCED PIPES ARE ASSUMED TO BE 100mm DIA.
    - FW MIN GRADIENT - 1 IN 40 (100 DIA) NO WC'S CONNECTED
    - FW MIN GRADIENT - 1 IN 80 (100 DIA) MIN 1 WC CONNECTED
    - FW MIN GRADIENT - 1 IN 150 (150 DIA) MIN 5 WC'S CONNECTED
    - SW MIN GRADIENT - 1 IN 100 (100 DIA)
    - SW MIN GRADIENT - 1 IN 150 (150 DIA)
12. ALL GULLIES SHALL BE FITTED WITH GRADE D400 GRATINGS AND FRAMES TO BS EN124, UNLESS OTHERWISE STATED.
13. IN ORDER TO MAINTAIN THE SATISFACTORY FUNCTIONING OF SURFACE WATER SEWERS, ALL ROAD AND YARD GULLIES ARE TO BE "TRAPPED".
14. ALL NON ADOPTABLE LATERALS BENEATH THE HIGHWAY SHALL BE BACK FILLED WITH A TYPE 1 GRANULAR MATERIAL AS CL.803 (MCHW) APPROVED BY THE ENGINEER.
15. ALL PRIVATE DRAINAGE TO BE IN ACCORDANCE WITH THE BUILDING REGULATIONS APPROVED DOCUMENT PART-H, AND TO THE SATISFACTION OF THE BUILDING CONTROL INSPECTOR.
16. WHERE DRAINS PASS THROUGH FOUNDATIONS OR CONNECT TO MANHOLES, A FLEXIBLE PIPE JOINT SHOULD BE PROVIDED TO FORM A ROCKER PIPE IN ACCORDANCE WITH THE STANDARD DETAIL PROVIDED..
17. SHALLOW PRIVATE DRAINS MAY REQUIRE PROTECTION USING CLASS 'Z' CONCRETE SURROUND OR PAVING SLABS BRIDGING THE TRENCH SUBJECT TO THE NHBC INSPECTOR'S REQUIREMENTS.
18. WHERE DRAINAGE RUNS PASS CLOSE TO BUILDINGS OR THEIR INVERT LEVELS ARE BELOW FOUNDATION LEVEL, THEN THE TRENCHES ARE TO BE BACK FILLED IN ACCORDANCE WITH THE STANDARD DETAIL PROVIDED.
19. REFERENCE SHOULD BE MADE TO THE STRUCTURAL ENGINEERS DETAILS FOR ALL ASPECTS OF FOUNDATION DESIGN AND CONSTRUCTION.
20. THE CONTRACTOR IS TO KEEP A RECORD OF ANY VARIATIONS MADE ON SITE, INCLUDING THE RELOCATION OF SEWERS OR DRAINS, SO THAT AN AS CONSTRUCTED DRAWING CAN BE PREPARED UPON COMPLETION OF THE PROJECT.
21. THE CONTRACTOR SHOULD CHECK ALL DIMENSIONS ON SITE. NO DIMENSIONS ARE TO BE SCALED FROM THESE DRAWINGS.
22. IT IS THE CONTRACTORS/SUBCONTRACTORS RESPONSIBILITY TO ENSURE COMPLIANCE WITH THE CURRENT BUILDING REGULATIONS AND CODES OF PRACTICE.
23. STUB CONNECTIONS TO ADOPTABLE MANHOLES SHALL BE MADE FROM VITRIFIED CLAY AND CONSIST OF TWO ROCKER PIPES LAID AT THE SAME GRADIENT AS THE UP OR DOWNSTREAM PIPE.
24. ALL DOWNPIPES ARE TO BE SEALED, IE CONNECTED DIRECTLY TO THE STORMWATER DRAIN. ACCESS POINTS TO BE PROVIDED 1m ABOVE GROUND LEVEL FOR EXTERNAL RWP'S AND 1m ABOVE FFL FOR INTERNAL RWP'S.
25. UNLESS OTHERWISE NOTED OR SIMILAR APPROVED CHANNEL DRAINS TO BE ACO MULTI DRAIN WITH A15 GRATING IN PEDESTRIAN AREAS, C250 IN CAR PARKS AND D400 IN CARRIAGEWAYS. SLOTTED CHANNEL TO BE USED FOR AREAS WITH FALLS <1:15 MESH GRATING TO BE USED WHERE FALLS >1:15.
26. GULLY AND CHANNEL DRAIN POSITIONS ARE LIABLE TO AMENDMENT WHEN THE DESIGN LEVELS HAVE BEEN DETERMINED.
27. MODULAR GEOCELLULAR STORAGE/SOAKAWAY SYSTEM TO CONFORM TO CIRIA C793 THE SUDS MANUAL, C680 STRUCTURAL DESIGN OF MODULAR GEOCELLULAR DRAINAGE TANKS & C698 SITE HANDBOOK FOR THE CONSTRUCTION OF SUDS. THE MANUFACTURER SHOULD PROVIDE A COMPLETE SET OF INDEPENDENT TEST RESULTS FOR A PROPOSED SYSTEM INCLUDING, AS A MINIMUM, STRESS/STRAIN CURVES FOR VERTICAL AND LATERAL COMPRESSION, AND CREEP TESTS UNDER SUSTAINED LONG-TERM LOADS. A BBA CERTIFICATE IS NOT INDEPENDENT TEST DATA.
28. ALL REDUNDANT DRAINAGE TO BE ABANDONED ONCE THE CONTRACTOR HAS SATISFIED HIMSELF THAT NO CONNECTIONS REMAIN LIVE. REDUNDANT DRAINAGE TO BE GRUBBED OUT.
29. ALL BELOW GROUND CONCRETE TO ACCORD WITH BS8328:1997,SULPHATE CLASS TBA.
30. IF ANY SUB SOIL DRAINAGE SYSTEMS ARE UNCOVERED DURING THE WORKS CONTACT THE ENGINEER FOR INSTRUCTIONS. GENERALLY SUB SOIL DRAINS AFFECTED ARE TO BE DIVERTED AROUND NEW WORKS AND CONNECTED INTO THE SURFACE WATER DRAINAGE SYSTEM. PIPE DIAMETERS AND GRADIENTS ARE TO BE MAINTAINED.
31. BEFORE COMMENCING CONSTRUCTION THE CONTRACTOR MUST CHECK THE INVERT LEVELS OF EXISTING SEWERS TO WHICH CONNECTIONS ARE MADE. IN ADDITION THE CONTRACTOR MUST LOCATE AND DETERMINE INVERT LEVELS OF THE EXISTING SPURS TO WHICH CONNECTIONS ARE PROPOSED. ADDITIONAL SPUR/MANHOLE CONNECTIONS ARE TO BE AGREED WITH THE RELEVANT ADOPTING AUTHORITY. ANY DISCREPANCIES ARE TO BE NOTIFIED TO THE ENGINEER IMMEDIATELY, PRIOR TO CONSTRUCTION.
32. ROAD REINSTATEMENTS ARE TO BE TO THE HIGHWAY AUTHORITY APPROVAL.
33. NO PRIVATE AREAS ARE TO DRAIN ONTO ADOPTABLE AREAS AND VICE VERSA.

REV	DATE	BY	DESCRIPTION
P02	21/08/26	SPB	UPDATED TO SUIT COMMENTS/UPDATED FLOOR AND SITE PLAN
P01	17/07/26	SPB	STAGE 3+ ISSUE

DRAWING STATUS: PRELIMINARY

marbas

CLIENT: READING BOROUGH COUNCIL

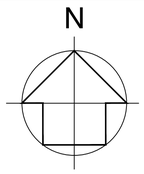
PROJECT: WHITLEY PARK PRIMARY SCHOOL
READING, RG2 7RB

DRAWING TITLE: PROPOSED BELOW GROUND DRAINAGE DESIGN PHASE 1 SHEET 3 OF 6

DRAWING No.	REV.
03770-C-0853	P02

SCALE	DATE	DRAWN	CHECKED	SHT.
1:200	05/01/26	SB	SF	A1

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INDICATIVE ONLY

DRAINAGE LEGEND

EXISTING FEATURES

- EXISTING SURFACE WATER SEWER AND MANHOLE TO BE RETAINED
- EXISTING SURFACE WATER DRAIN AND MANHOLE TO BE RETAINED
- ASSUMED EX SWD — ASSUMED EXISTING SURFACE WATER DRAIN
- DEFECTED EXISTING SURFACE WATER DRAIN
- EXISTING FOUL WATER SEWER AND MANHOLE TO BE RETAINED
- EXISTING FOUL WATER DRAIN AND MANHOLE TO BE RETAINED
- ASSUMED EXISTING FOUL WATER DRAIN
- DEFECTED EXISTING FOUL WATER DRAIN
- EX FW RISING MAIN
- EXISTING UNKNOWN DRAIN/UTILITY AND MANHOLE WHICH REQUIRES FURTHER INVESTIGATION
- EXISTING FOUL/SURFACE/COMBINED WATER DRAIN AND MANHOLE TO BE ABANDONED. CONTRACTOR TO CONFIRM THAT NO LIVE CONNECTIONS REMAIN. PIPES TO BE FULLY REMOVED.

PROPOSED FEATURES

- SURFACE WATER DRAIN
- RG — ROAD GULLY (TRAPPED)
- SUMP / DRAINAGE CHANNEL — CHANNEL DRAIN SYSTEM WITH SUMP UNIT
- SUMP / SLOT DRAINAGE CHANNEL — SLOT CHANNEL SYSTEM WITH SUMP UNIT
- STORM WATER MANHOLE TYPE D INTERNAL DIMENSIONS 450mm MINIMUM DEPTH FROM COVER TO SOFFIT OF PIPE UP TO 3m RESTRICT ACCESS TO Ø350 IF DEPTH FROM COVER TO SOFFIT OF PIPE IS MORE THAN 1.2m (MAX PIPE DIAMETER 150mm 450Ø/475Ø) (MAX PIPE DIAMETER 225mm 600Ø)
- STORM WATER FILTER MANHOLE
- STORM WATER FLOW CONTROL MANHOLE
- SEL ENVIRONMENTAL LTD DIFFUSER UNIT WITHIN SUB-BASE
- PERMEABLE PAVING PERMEABLE SURFACE WITH STORAGE SUB-BASE 400mm SUB-BASE
- VENT PIPE — STORM WATER SOAKAWAY / ATTENUATION TANK GL = GROUND LEVEL TOTL = TOP OF TANK LEVEL BOTL = BOTTOM OF TANK LEVEL
- FOUL WATER DRAIN
- FOUL WATER RISING MAIN
- FW — ABOVE GROUND FOUL WATER CONNECTION - REFER TO PUBLIC HEALTH ENGINEERS/ARCHITECTS DRAWINGS FOR DETAILS
- TG — TRAPPED GULLY
- FOUL WATER MANHOLE TYPE D INTERNAL DIMENSIONS 450mm MINIMUM DEPTH FROM COVER TO SOFFIT OF PIPE UP TO 3m RESTRICT ACCESS TO Ø350 IF DEPTH FROM COVER SOFFIT OF PIPE IS MORE THAN 1.2m (MAX PIPE DIAMETER 150mm)
- FOUL WATER PUMP CHAMBER
- FW MH 01.00 / CL 00.00 / IL 00.00 / TYPE C MH / D400 — MANHOLE REFERENCE: COVER LEVEL, INVERT LEVEL, MH TYPE, COVER GRADE
- RW ▬ RW — RETAINING WALL
- FFL: XX.XXX — ARCHITECTURAL FINISHED FLOOR LEVEL
- COMPULSORY — A COMPULSORY ACTION
- CONSTRUCTION WARNING — SPECIAL ATTENTION BY THE CONTRACTOR
- INFORMATIVE — FOR INFORMATION

EXTERNAL FINISHES LEGEND

- RUBBER CRUMB (POROUS WITH OPEN GRADED CRUSHED ROCK) SUB-BASE DEPTH TBC 400mm MINIMUM
- POROUS ASPHALT SUB-BASE TBC 400mm MINIMUM
- RESIN BOND SURFACE (POROUS WITH OPEN GRADED CRUSHED ROCK) SUB-BASE DEPTH TBC 400mm MINIMUM
- ARTIFICIAL GRASS (POROUS WITH OPEN GRADED CRUSHED ROCK) SUB-BASE DEPTH TBC 400mm MINIMUM
- ARTIFICIAL GRASS (POROUS WITH TANKED STORAGE) SUB-BASE DEPTH TBC 400mm MINIMUM
- PERMEABLE BLOCK PAVING PARKING BAYS SUB-BASE 400mm

IMPORTANT NOTE: CAUTION

CONSTRUCTION WARNING

ALL INFORMATION SHOWN ON THIS DRAWING FOR UNDERGROUND SERVICES/STATUTORY UNDERTAKERS' PLANT IS APPROXIMATE AND IS *PROVIDED FOR THE CONTRACTOR'S INFORMATION ONLY*. IT SHOULD NOT BE RELIED ON FOR EXCAVATION OR ANY OTHER WORKS PURPOSES AND CONTRACTORS MUST SATISFY THEMSELVES OF THEIR LOCATIONS PRIOR TO THE COMMENCEMENT OF WORKS.

FOR CONTINUATION SEE DRAWING 03770-C-0852

FOR CONTINUATION SEE DRAWING 03770-C-0853

FOR CONTINUATION SEE DRAWING 03770-C-0856

NEW SWD TO CONNECT TO EXISTING SWD

EX SW MH CL 51.440 IL TBC

Ø150 SWD 0.95m 1:100

EX SWD

CONNECTED TO CHANNEL DRAIN

EX SW GU

SUMP

Ø150 SWD 2.90m 1:100

DIFFUSER UNIT

EX SW MH CL 51.500 IL TBC

EX SWD

NOTE
GULLY AND CHANNEL DRAIN LOCATION SUBJECT TO DETAILED LEVELS DESIGN

Ø150 SWD 0.02m 1:100

SW MH CL 51.520 IL 50.795 SIDE IL 50.720 MAIN TYPE D MH D400

SW MH CL 51.700 IL 50.975 SIDE IL 50.900 MAIN TYPE D MH D400

EX SW MH CL 51.200 IL 50.560 TYPE D MH B125

EX SUMP

EX SUMP CL 51.300 IL 50.700

CONTRACTOR TO LOCATE SW DRAIN AND CONFIRM DEPTH PRIOR TO CONSTRUCTION

Ø150 EX VC SWD 13.0m

EX DIFFUSER

EX YG CL 51.250 IL 50.800

EX YG CL 51.130 IL 50.680

EX YG CL 51.220 IL 50.770

INFORMATIVE

SILT, HIGH PRESSURE WATER JETTING REQUIRED WITH FURTHER CCTV SURVEYING

Ø150 SWD 3.14m 1:100

INFORMATIVE

CAPPED RUN.

VENT PIPE

ATTENUATION TANK USING CELLULAR STORAGE DESIGNED FOR 1:100 YEAR RETURN PERIOD PLUS 40% ADDITIONAL STORAGE TO ALLOW FOR CLIMATE CHANGE
CL: 51.60-51.49
TOTL: 50.665
BOTL: 49.865
SIZE: 20.0mx5.5m(110.0m²)x0.80m DP
88.000m³ STORAGE
83.60m³ WATER STORAGE (95% VOIDS)
TANK REQUIRES VENTILATION
DETAILS TBC BY MANUFACTURER

EX SW MH 9 CL 51.11 IL 50.41

EX SW MH 7 CL UNKNOWN IL UNKNOWN

EX SW MH 8 CL UNKNOWN IL UNKNOWN

Ø150 SWD 4.27m 1:100

SW FILTER MANHOLE

Ø100 EX PC SWD

Ø150 SWD 15.48m 1:100

NEW SWD TO CONNECT TO EXISTING MANHOLE

Ø150 SWD 31.15m 1:100

SW MH CL 51.350 IL 49.815 FLOW CONTROL MH RESTRICTING FLOWS TO 2L/S B125

EX SW MH 6 CL 51.31 IL 50.60

EX SW MH 12 CL 51.09 IL UNKNOWN UTL

INFORMATIVE

BRICK OBSTRUCTION, INVESTIGATE CHAMBER STRUCTURE AND REMOVE BRICK

EX SW MH 23 CL 51.37 IL UNKNOWN

Ø150 EX VC SWD

EX FW MH 16 CL 51.10 IL 50.29

Ø100 EX PC FWD

Ø150 EX VC FWD

EX FW MH CL UNKNOWN IL UNKNOWN

INFORMATIVE

BRANCH 17 JOINT DISPLACED, PATCH REPAIR OR LINING REQUIRED

EX SW MH 22 CL 50.98 IL UNKNOWN UTL

EX FW MH CL UNKNOWN IL UNKNOWN

Ø100 EX VC FWD

EX FW MH INTERNAL

Ø150 EX VC FWD

EX RWP

EX FW MH 13 CL 50.99 IL 49.99

EX FW MH 14 CL 50.97 IL UNKNOWN UTL

Ø100 EX PC FWD

EX FW MH 15 CL 50.93 IL UNKNOWN UTL

CONSTRUCTION WARNING

NEW SWD TO CONNECT TO EXISTING MANHOLE, DEPTH OF EXISTING MANHOLE TO BE CONFIRMED PRIOR TO CONSTRUCTION

INFORMATIVE

SURVEY ABANDONED OBSTRUCTION, HIGH PRESSURE WATER JETTING REQUIRED WITH FURTHER CCTV SURVEYING

EX GU & RWP

EX RWP

Ø150 EX VC FWD

EX FW MH 18 CL 50.46 IL 48.48

Ø225 EX VC SWD

Ø150 EX VC FWD

INFORMATIVE

METAL PLATE ACROSS INVERT, INVESTIGATE FURTHER AND REPLACE SECTION OF BROKEN PIPE

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REV	DATE	BY	DESCRIPTION
P02	21/08/26	SPB	UPDATED TO SUIT COMMENTS/UPDATED FLOOR AND SITE PLAN
P01	17/07/26	BLT	STAGE 3+ ISSUE

DRAWING STATUS: PRELIMINARY

marbas

CLIENT: READING BOROUGH COUNCIL

PROJECT: WHITLEY PARK PRIMARY & NURSERY SCHOOL
READING, RG2 7RB

DRAWING TITLE: PROPOSED PHASE 1 BELOW GROUND DRAINAGE DESIGN
PHASE 1 SHEET 4 OF 6

DRAWING No.	REV.
03770-C-0854	P02

SCALE	DATE	DRAWN	CHECKED	SHT.
1:200	05/01/26	BT	SB	A1

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DRAINAGE LEGEND

EXISTING FEATURES

- EXISTING SURFACE WATER SEWER AND MANHOLE TO BE RETAINED
- EXISTING SURFACE WATER DRAIN AND MANHOLE TO BE RETAINED
- ASSUMED EX SWD — ASSUMED EXISTING SURFACE WATER DRAIN
- DEFECTED EXISTING SURFACE WATER DRAIN
- EXISTING FOUL WATER SEWER AND MANHOLE TO BE RETAINED
- EXISTING FOUL WATER DRAIN AND MANHOLE TO BE RETAINED
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- DEFECTED EXISTING FOUL WATER DRAIN
- EX FW RISING MAIN
- EXISTING UNKNOWN DRAIN/UTILITY AND MANHOLE WHICH REQUIRES FURTHER INVESTIGATION
- EXISTING FOUL/SURFACE/COMBINED WATER DRAIN AND MANHOLE TO BE ABANDONED. CONTRACTOR TO CONFIRM THAT NO LIVE CONNECTIONS REMAIN. PIPES TO BE FULLY REMOVED.

PROPOSED FEATURES

- SURFACE WATER DRAIN
- RG — ROAD GULLY (TRAPPED)
- SUMP / DRAINAGE CHANNEL — CHANNEL DRAIN SYSTEM WITH SUMP UNIT
- SUMP / SLOT DRAINAGE CHANNEL — SLOT CHANNEL SYSTEM WITH SUMP UNIT
- STORM WATER MANHOLE TYPE D
  INTERNAL DIMENSIONS 450mm MINIMUM
  DEPTH FROM COVER TO SOFFIT OF PIPE UP TO 3m
  RESTRICT ACCESS TO Ø350 IF DEPTH FROM COVER TO SOFFIT OF PIPE IS MORE THAN 1.2m
  (MAX PIPE DIAMETER 150mm 450Ø/475Ø)
  (MAX PIPE DIAMETER 225mm 600Ø)
- STORM WATER FILTER MANHOLE
- STORM WATER FLOW CONTROL MANHOLE
- SEL ENVIRONMENTAL LTD
  DIFFUSER UNIT WITHIN SUB-BASE
- PERMEABLE PAVING
  PERMEABLE SURFACE WITH STORAGE SUB-BASE
  400mm SUB-BASE
- VENT PIPE — STORM WATER SOAKAWAY / ATTENUATION TANK
  GL = GROUND LEVEL
  TOTL = TOP OF TANK LEVEL
  BOTL = BOTTOM OF TANK LEVEL
- FOUL WATER DRAIN
- FOUL WATER RISING MAIN
- FW • — ABOVE GROUND FOUL WATER CONNECTION - REFER TO PUBLIC HEALTH ENGINEERS/ARCHITECTS DRAWINGS FOR DETAILS
- TG ■ — TRAPPED GULLY
- FOUL WATER MANHOLE TYPE D
  INTERNAL DIMENSIONS 450mm MINIMUM
  DEPTH FROM COVER TO SOFFIT OF PIPE UP TO 3m
  RESTRICT ACCESS TO Ø350 IF DEPTH FROM COVER SOFFIT OF PIPE IS MORE THAN 1.2m
  (MAX PIPE DIAMETER 150mm)
- FOUL WATER PUMP CHAMBER
- FW MH 01.00 / CL 00.00 / IL 00.00 / TYPE C MH / D400 — MANHOLE REFERENCE: COVER LEVEL, INVERT LEVEL, MH TYPE, COVER GRADE
- RW ▬ RW — RETAINING WALL
- FFL: XX.XXX — ARCHITECTURAL FINISHED FLOOR LEVEL
- COMPULSORY — A COMPULSORY ACTION
- CONSTRUCTION WARNING — SPECIAL ATTENTION BY THE CONTRACTOR
- INFORMATIVE — FOR INFORMATION

EXTERNAL FINISHES LEGEND

- RUBBER CRUMB (POROUS WITH OPEN GRADED CRUSHED ROCK) SUB-BASE DEPTH TBC 400mm MINIMUM
- PORUS ASPHALT SUB-BASE TBC 400mm MINIMUM
- RESIN BOND SURFACE (POROUS WITH OPEN GRADED CRUSHED ROCK) SUB-BASE DEPTH TBC 400mm MINIMUM
- ARTIFICIAL GRASS (POROUS WITH OPEN GRADED CRUSHED ROCK) SUB-BASE DEPTH TBC 400mm MINIMUM
- ARTIFICIAL GRASS (POROUS WITH TANKED STORAGE) SUB-BASE DEPTH TBC 400mm MINIMUM
- PERMEABLE BLOCK PAVING PARKING BAYS SUB-BASE 400mm

IMPORTANT NOTE: CAUTION

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FOR CONTINUATION SEE DRAWING 03770-C-0853



NOTES:

1. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECT AND ENGINEERING DETAILS, DRAWINGS AND SPECIFICATIONS.
2. ANY DISCREPANCIES SHOULD BE REPORTED TO THE ARCHITECT AND/OR ENGINEER IMMEDIATELY, SO THAT CLARIFICATION CAN BE SOUGHT PRIOR TO THE COMMENCEMENT OF WORK.

DRAINAGE NOTES

3. ALL PIPES TO BE ADOPTED, OR CONNECTING TO ADOPTED SEWERS, AND/OR SITUATED UNDER HIGHWAY TO BE VITRIFIED CLAY TO BS EN 295 & BS65 (SWS ONLY), OR CONCRETE PIPES TO BE EN 1916 & BS5911:PART 1, OR THERMOPLASTIC STRUCTURED WALL SEWER PIPES TO WIS 4-35-01 (CLASS 8KN/SQM) AND BE CAPABLE OF WITHSTANDING 4000 PSI JETTING PRESSURE. PRIVATE PIPES MAY BE VC OR PLASTIC.
4. ADOPTABLE HIGHWAY WORKS ARE TO BE IN ACCORDANCE WITH LOCAL AUTHORITY DESIGN GUIDANCE.
5. ANY WORKS ASSOCIATED WITH THE HIGHWAY/EXTERNAL WORKS INCLUDING HIGHWAY DRAINAGE, SHALL BE IN ACCORDANCE WITH THE HIGHWAYS AGENCY 'MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS, VOL 1' (MCHW), UNLESS OTHERWISE SPECIFIED.
6. FOR CONSTRUCTION DETAILS REFER TO THE RELEVANT MARBAS DRAWING NUMBERS LISTED ON THE DRAWING ISSUE SHEET.
7. ALL ADOPTABLE DRAINAGE WORKS TO BE CONSTRUCTED AS DETAILED IN "THE CODE" FOR ADOPTION DESIGN AND CONSTRUCTION GUIDANCE AND THE LOCAL WATER AUTHORITY'S LOCAL PRACTICE NOTE.
8. ALL ADOPTABLE SEWERS WITH LESS THAN 1.20m OF COVER WHEN LAID BENEATH THE ROADS, OR 0.90m OF COVER IN OTHER AREAS, SHALL HAVE CONCRETE PROTECTION IN ACCORDANCE WITH EITHER OF THE DETAILS SHOWN ON THE STANDARD DRAWING PROVIDED.
9. ALL DRAINAGE WORKS SHOULD COMMENCE AT THE PROPOSED DOWNSTREAM CONNECTION POINT, THE WORKS CONTINUING UPSTREAM FOLLOWING CONFIRMATION OF THE TIE-IN INVERT LEVELS TO THE ENGINEER. CONNECTIONS TO MANHOLES OR LARGER SIZED PIPES ETC. SHOULD BE SOFFIT TO SOFFIT UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER, IF THIS IS NOT POSSIBLE INFORM THE ENGINEER IMMEDIATELY
10. COVER LEVELS SHOWN ARE APPROXIMATE. COVERS AND FRAMES SHALL BE SET TO FINISHED GROUND LEVELS AND FALLS.
11. ROAD GULLY PIPES ARE TO BE 150mm DIA. WITH CONCRETE SURROUND AND FLEXIBLE JOINTS, ALL OTHER UN-REFERENCED PIPES ARE ASSUMED TO BE 100mm DIA.
    - FW MIN GRADIENT - 1 IN 40 (100 DIA) NO WC'S CONNECTED
    - FW MIN GRADIENT - 1 IN 80 (100 DIA) MIN 1 WC CONNECTED
    - FW MIN GRADIENT - 1 IN 150 (150 DIA) MIN 5 WC'S CONNECTED
    - SW MIN GRADIENT - 1 IN 100 (100 DIA)
    - SW MIN GRADIENT - 1 IN 150 (150 DIA)
12. ALL GULLIES SHALL BE FITTED WITH GRADE D400 GRATINGS AND FRAMES TO BS EN124, UNLESS OTHERWISE STATED.
13. IN ORDER TO MAINTAIN THE SATISFACTORY FUNCTIONING OF SURFACE WATER SEWERS, ALL ROAD AND YARD GULLIES ARE TO BE "TRAPPED".
14. ALL NON ADOPTABLE LATERALS BENEATH THE HIGHWAY SHALL BE BACK FILLED WITH A TYPE 1 GRANULAR MATERIAL AS CL.803 (MCHW) APPROVED BY THE ENGINEER.
15. ALL PRIVATE DRAINAGE TO BE IN ACCORDANCE WITH THE BUILDING REGULATIONS APPROVED DOCUMENT PART-H, AND TO THE SATISFACTION OF THE BUILDING CONTROL INSPECTOR.
16. WHERE DRAINS PASS THROUGH FOUNDATIONS OR CONNECT TO MANHOLES, A FLEXIBLE PIPE JOINT SHOULD BE PROVIDED TO FORM A ROCKER PIPE IN ACCORDANCE WITH THE STANDARD DETAIL PROVIDED..
17. SHALLOW PRIVATE DRAINS MAY REQUIRE PROTECTION USING CLASS 'Z' CONCRETE SURROUND OR PAVING SLABS BRIDGING THE TRENCH SUBJECT TO THE NHBC INSPECTOR'S REQUIREMENTS.
18. WHERE DRAINAGE RUNS PASS CLOSE TO BUILDINGS OR THEIR INVERT LEVELS ARE BELOW FOUNDATION LEVEL, THEN THE TRENCHES ARE TO BE BACK FILLED IN ACCORDANCE WITH THE STANDARD DETAIL PROVIDED.
19. REFERENCE SHOULD BE MADE TO THE STRUCTURAL ENGINEERS DETAILS FOR ALL ASPECTS OF FOUNDATION DESIGN AND CONSTRUCTION.
20. THE CONTRACTOR IS TO KEEP A RECORD OF ANY VARIATIONS MADE ON SITE, INCLUDING THE RELOCATION OF SEWERS OR DRAINS, SO THAT AN AS CONSTRUCTED DRAWING CAN BE PREPARED UPON COMPLETION OF THE PROJECT.
21. THE CONTRACTOR SHOULD CHECK ALL DIMENSIONS ON SITE. NO DIMENSIONS ARE TO BE SCALED FROM THESE DRAWINGS.
22. IT IS THE CONTRACTORS/SUBCONTRACTORS RESPONSIBILITY TO ENSURE COMPLIANCE WITH THE CURRENT BUILDING REGULATIONS AND CODES OF PRACTICE.
23. STUB CONNECTIONS TO ADOPTABLE MANHOLES SHALL BE MADE FROM VITRIFIED CLAY AND CONSIST OF TWO ROCKER PIPES LAID AT THE SAME GRADIENT AS THE UP OR DOWNSTREAM PIPE.
24. ALL DOWNPIPES ARE TO BE SEALED, IE CONNECTED DIRECTLY TO THE STORMWATER DRAIN. ACCESS POINTS TO BE PROVIDED 1m ABOVE GROUND LEVEL FOR EXTERNAL RWP'S AND 1m ABOVE FFL FOR INTERNAL RWP'S.
25. UNLESS OTHERWISE NOTED OR SIMILAR APPROVED CHANNEL DRAINS TO BE ACO MULTI DRAIN WITH A15 GRATING IN PEDESTRIAN AREAS, C250 IN CAR PARKS AND D400 IN CARRIAGEWAYS. SLOTTED CHANNEL TO BE USED FOR AREAS WITH FALLS <1:15 MESH GRATING TO BE USED WHERE FALLS >1:15.
26. GULLY AND CHANNEL DRAIN POSITIONS ARE LIABLE TO AMENDMENT WHEN THE DESIGN LEVELS HAVE BEEN DETERMINED.
27. MODULAR GEOCELLULAR STORAGE/SOAKAWAY SYSTEM TO CONFORM TO CIRIA C793 THE SUDS MANUAL, C680 STRUCTURAL DESIGN OF MODULAR GEOCELLULAR DRAINAGE TANKS & C698 SITE HANDBOOK FOR THE CONSTRUCTION OF SUDS. THE MANUFACTURER SHOULD PROVIDE A COMPLETE SET OF INDEPENDENT TEST RESULTS FOR A PROPOSED SYSTEM INCLUDING, AS A MINIMUM, STRESS/STRAIN CURVES FOR VERTICAL AND LATERAL COMPRESSION, AND CREEP TESTS UNDER SUSTAINED LONG-TERM LOADS. A BBA CERTIFICATE IS NOT INDEPENDENT TEST DATA.
28. ALL REDUNDANT DRAINAGE TO BE ABANDONED ONCE THE CONTRACTOR HAS SATISFIED HIMSELF THAT NO CONNECTIONS REMAIN LIVE. REDUNDANT DRAINAGE TO BE GRUBBED OUT.
29. ALL BELOW GROUND CONCRETE TO ACCORD WITH BS8328:1997,SULPHATE CLASS TBA.
30. IF ANY SUB SOIL DRAINAGE SYSTEMS ARE UNCOVERED DURING THE WORKS CONTACT THE ENGINEER FOR INSTRUCTIONS. GENERALLY SUB SOIL DRAINS AFFECTED ARE TO BE DIVERTED AROUND NEW WORKS AND CONNECTED INTO THE SURFACE WATER DRAINAGE SYSTEM. PIPE DIAMETERS AND GRADIENTS ARE TO BE MAINTAINED.
31. BEFORE COMMENCING CONSTRUCTION THE CONTRACTOR MUST CHECK THE INVERT LEVELS OF EXISTING SEWERS TO WHICH CONNECTIONS ARE MADE. IN ADDITION THE CONTRACTOR MUST LOCATE AND DETERMINE INVERT LEVELS OF THE EXISTING SPURS TO WHICH CONNECTIONS ARE PROPOSED. ADDITIONAL SPUR/MANHOLE CONNECTIONS ARE TO BE AGREED WITH THE RELEVANT ADOPTING AUTHORITY. ANY DISCREPANCIES ARE TO BE NOTIFIED TO THE ENGINEER IMMEDIATELY, PRIOR TO CONSTRUCTION.
32. ROAD REINSTATEMENTS ARE TO BE TO THE HIGHWAY AUTHORITY APPROVAL.
33. NO PRIVATE AREAS ARE TO DRAIN ONTO ADOPTABLE AREAS AND VICE VERSA.

FOR CONTINUATION SEE DRAWING 03770-C-0856

REV	DATE	BY	DESCRIPTION
P02	21/08/26	SPB	UPDATED TO SUIT COMMENTS/UPDATED FLOOR AND SITE PLAN
P01	17/07/26	SPB	STAGE 3+ ISSUE

DRAWING STATUS: PRELIMINARY

marbas

CLIENT: READING BOROUGH COUNCIL

PROJECT: WHITLEY PARK PRIMARY SCHOOL
READING, RG2 7RB

DRAWING TITLE: PROPOSED BELOW GROUND DRAINAGE DESIGN
PHASE 1 SHEET 5 OF 6

DRAWING No.	REV.
03770-C-0855	P02

SCALE	DATE	DRAWN	CHECKED	SHT.
1:200	05/01/26	SB	SF	A1

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INDICATIVE ONLY

DRAINAGE LEGEND

EXISTING FEATURES

- EXISTING SURFACE WATER SEWER AND MANHOLE TO BE RETAINED
- EXISTING SURFACE WATER DRAIN AND MANHOLE TO BE RETAINED
- ASSUMED EX SWD — ASSUMED EXISTING SURFACE WATER DRAIN
- DEFECTED EXISTING SURFACE WATER DRAIN
- EXISTING FOUL WATER SEWER AND MANHOLE TO BE RETAINED
- EXISTING FOUL WATER DRAIN AND MANHOLE TO BE RETAINED
- ASSUMED EXISTING FOUL WATER DRAIN
- DEFECTED EXISTING FOUL WATER DRAIN
- EX FW RISING MAIN
- EXISTING UNKNOWN DRAIN/UTILITY AND MANHOLE WHICH REQUIRES FURTHER INVESTIGATION
- X – X – X — EXISTING FOUL/SURFACE/COMBINED WATER DRAIN AND MANHOLE TO BE ABANDONED. CONTRACTOR TO CONFIRM THAT NO LIVE CONNECTIONS REMAIN. PIPES TO BE FULLY REMOVED.

PROPOSED FEATURES

- SURFACE WATER DRAIN
- RG — ROAD GULLY (TRAPPED)
- SUMP / DRAINAGE CHANNEL — CHANNEL DRAIN SYSTEM WITH SUMP UNIT
- SUMP / SLOT DRAINAGE CHANNEL — SLOT CHANNEL SYSTEM WITH SUMP UNIT
- STORM WATER MANHOLE TYPE D
  INTERNAL DIMENSIONS 450mm MINIMUM
  DEPTH FROM COVER TO SOFFIT OF PIPE UP TO 3m
  RESTRICT ACCESS TO Ø350 IF DEPTH FROM COVER TO SOFFIT OF PIPE IS MORE THAN 1.2m
  (MAX PIPE DIAMETER 150mm 450Ø/475Ø)
  (MAX PIPE DIAMETER 225mm 600Ø)
- STORM WATER FILTER MANHOLE
- STORM WATER FLOW CONTROL MANHOLE
- SEL ENVIRONMENTAL LTD
  DIFFUSER UNIT WITHIN SUB-BASE
- PERMEABLE PAVING
  PERMEABLE SURFACE WITH STORAGE SUB-BASE
  400mm SUB-BASE
- VENT PIPE — STORM WATER SOAKAWAY / ATTENUATION TANK
  GL = GROUND LEVEL
  TOTL = TOP OF TANK LEVEL
  BOTL = BOTTOM OF TANK LEVEL
- FOUL WATER DRAIN
- FOUL WATER RISING MAIN
- FW • — ABOVE GROUND FOUL WATER CONNECTION - REFER TO PUBLIC HEALTH ENGINEERS/ARCHITECTS DRAWINGS FOR DETAILS
- TG ■ — TRAPPED GULLY
- FOUL WATER MANHOLE TYPE D
  INTERNAL DIMENSIONS 450mm MINIMUM
  DEPTH FROM COVER TO SOFFIT OF PIPE UP TO 3m
  RESTRICT ACCESS TO Ø350 IF DEPTH FROM COVER SOFFIT OF PIPE IS MORE THAN 1.2m
  (MAX PIPE DIAMETER 150mm)
- FOUL WATER PUMP CHAMBER
- FW MH 01.00 / CL 00.00 / IL 00.00 / TYPE C MH / D400 — MANHOLE REFERENCE: COVER LEVEL, INVERT LEVEL, MH TYPE, COVER GRADE
- RW ■ RW — RETAINING WALL
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- ARTIFICIAL GRASS (POROUS WITH TANKED STORAGE) SUB-BASE DEPTH TBC 400mm MINIMUM
- PERMEABLE BLOCK PAVING PARKING BAYS SUB-BASE 400mm

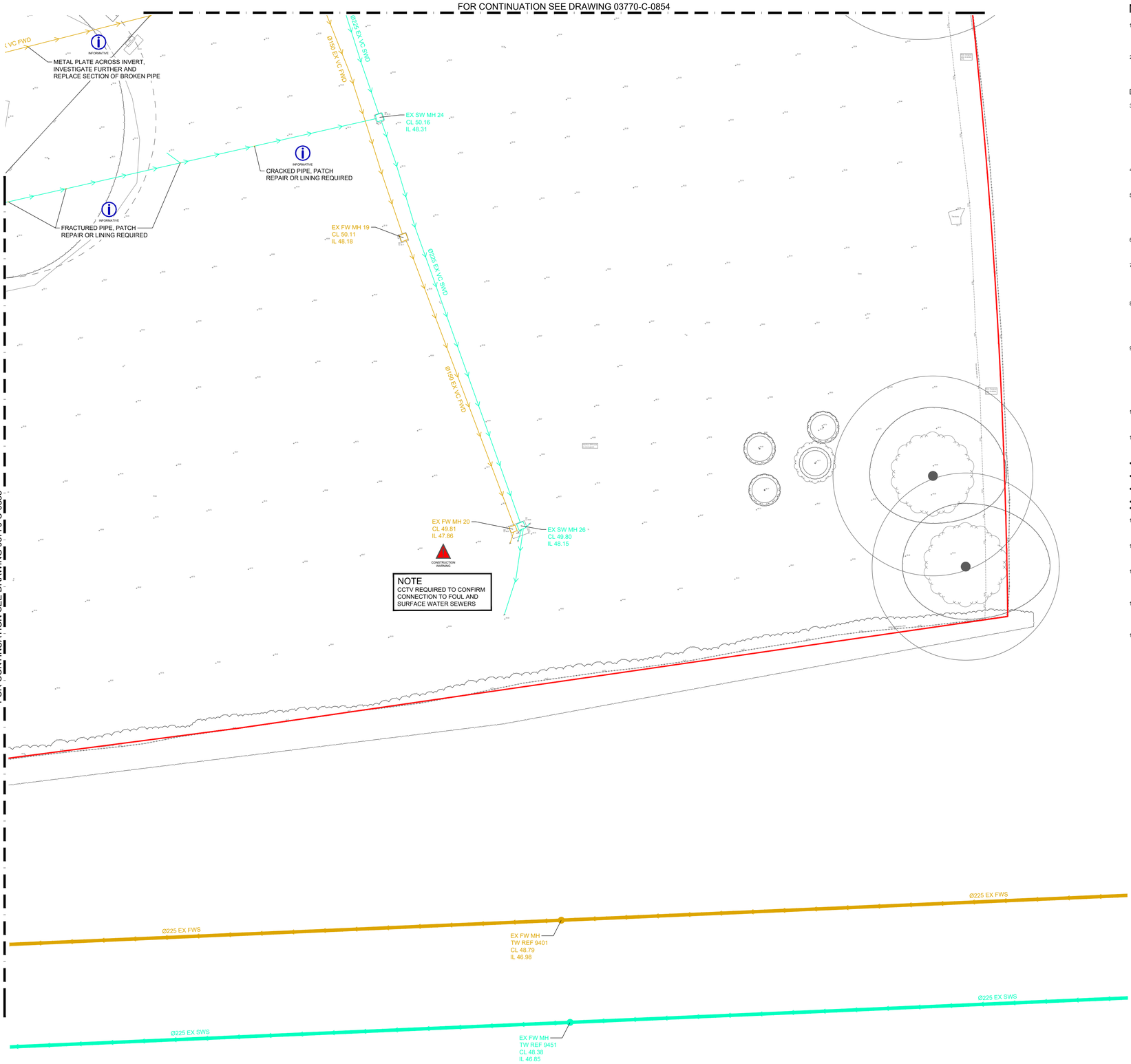
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CONSTRUCTION WARNING

FOR CONTINUATION SEE DRAWING 03770-C-0854

FOR CONTINUATION SEE DRAWING 03770-C-0855



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4. ADOPTABLE HIGHWAY WORKS ARE TO BE IN ACCORDANCE WITH LOCAL AUTHORITY DESIGN GUIDANCE.
5. ANY WORKS ASSOCIATED WITH THE HIGHWAY/EXTERNAL WORKS INCLUDING HIGHWAY DRAINAGE, SHALL BE IN ACCORDANCE WITH THE HIGHWAYS AGENCY 'MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS, VOL 1' (MCHW), UNLESS OTHERWISE SPECIFIED.
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    - FW MIN GRADIENT - 1 IN 40 (100 DIA) NO WC'S CONNECTED
    - FW MIN GRADIENT - 1 IN 80 (100 DIA) MIN 1 WC CONNECTED
    - FW MIN GRADIENT - 1 IN 150 (150 DIA) MIN 5 WC'S CONNECTED
    - SW MIN GRADIENT - 1 IN 100 (100 DIA)
    - SW MIN GRADIENT - 1 IN 150 (150 DIA)
12. ALL GULLIES SHALL BE FITTED WITH GRADE D400 GRATINGS AND FRAMES TO BS EN124, UNLESS OTHERWISE STATED.
13. IN ORDER TO MAINTAIN THE SATISFACTORY FUNCTIONING OF SURFACE WATER SEWERS, ALL ROAD AND YARD GULLIES ARE TO BE "TRAPPED".
14. ALL NON ADOPTABLE LATERALS BENEATH THE HIGHWAY SHALL BE BACK FILLED WITH A TYPE 1 GRANULAR MATERIAL AS CL.803 (MCHW) APPROVED BY THE ENGINEER.
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25. UNLESS OTHERWISE NOTED OR SIMILAR APPROVED CHANNEL DRAINS TO BE ACO MULTI DRAIN WITH A15 GRATING IN PEDESTRIAN AREAS, C250 IN CAR PARKS AND D400 IN CARRIAGEWAYS. SLOTTED CHANNEL TO BE USED FOR AREAS WITH FALLS <1:15 MESH GRATING TO BE USED WHERE FALLS >1:15.
26. GULLY AND CHANNEL DRAIN POSITIONS ARE LIABLE TO AMENDMENT WHEN THE DESIGN LEVELS HAVE BEEN DETERMINED.
27. MODULAR GEOCELLULAR STORAGE/SOAKAWAY SYSTEM TO CONFORM TO CIRIA C793 THE SUDS MANUAL, C680 STRUCTURAL DESIGN OF MODULAR GEOCELLULAR DRAINAGE TANKS & C698 SITE HANDBOOK FOR THE CONSTRUCTION OF SUDS. THE MANUFACTURER SHOULD PROVIDE A COMPLETE SET OF INDEPENDENT TEST RESULTS FOR A PROPOSED SYSTEM INCLUDING, AS A MINIMUM, STRESS/STRAIN CURVES FOR VERTICAL AND LATERAL COMPRESSION, AND CREEP TESTS UNDER SUSTAINED LONG-TERM LOADS. A BBA CERTIFICATE IS NOT INDEPENDENT TEST DATA.
28. ALL REDUNDANT DRAINAGE TO BE ABANDONED ONCE THE CONTRACTOR HAS SATISFIED HIMSELF THAT NO CONNECTIONS REMAIN LIVE. REDUNDANT DRAINAGE TO BE GRUBBED OUT.
29. ALL BELOW GROUND CONCRETE TO ACCORD WITH BS8328:1997,SULPHATE CLASS TBA.
30. IF ANY SUB SOIL DRAINAGE SYSTEMS ARE UNCOVERED DURING THE WORKS CONTACT THE ENGINEER FOR INSTRUCTIONS. GENERALLY SUB SOIL DRAINS AFFECTED ARE TO BE DIVERTED AROUND NEW WORKS AND CONNECTED INTO THE SURFACE WATER DRAINAGE SYSTEM. PIPE DIAMETERS AND GRADIENTS ARE TO BE MAINTAINED.
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32. ROAD REINSTATEMENTS ARE TO BE TO THE HIGHWAY AUTHORITY APPROVAL.
33. NO PRIVATE AREAS ARE TO DRAIN ONTO ADOPTABLE AREAS AND VICE VERSA.

REV	DATE	BY	DESCRIPTION
P02	21/08/26	SPB	UPDATED TO SUIT COMMENTS/UPDATED FLOOR AND SITE PLAN
P01	17/07/26	SPB	STAGE 3+ ISSUE

DRAWING STATUS: PRELIMINARY

marbas

CLIENT: READING BOROUGH COUNCIL

PROJECT: WHITLEY PARK PRIMARY SCHOOL
READING, RG2 7RB

DRAWING TITLE: PROPOSED BELOW GROUND DRAINAGE DESIGN
PHASE 1 SHEET 6 OF 6

DRAWING No.	REV.
03770-C-0856	P02

SCALE	DATE	DRAWN	CHECKED	SHT.
1:200	05/01/26	SB	SF	A1

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Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	2	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	0.750	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
FC MH			51.350	1200	472491.370	170623.190	1.381	49.969
TANK	0.145	5.00	51.600	50	472489.110	170628.350	1.575	50.025

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	TANK	FC MH	5.633	0.600	50.025	49.969	0.056	100.6	150	5.09	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	1.002	17.7	19.7	1.425	1.231	0.145	0.0	150	1.020

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	5.633	100.6	150	Circular	51.600	50.025	1.425	51.350	49.969	1.231

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	TANK	50	Manhole	Adoptable	FC MH	1200	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections		Link	IL (m)	Dia (mm)
FC MH	472491.370	170623.190	51.350	1.381	1200		1	1.000	49.969	150
TANK	472489.110	170628.350	51.600	1.575	50		0	1.000	50.025	150

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	0.750	Drain Down Time (mins)	240	Check Discharge Volume	x
Winter CV	0.840	Additional Storage (m³/ha)	20.0		

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440

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Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)	Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0	100	40	0	0
30	0	0	0				

Node FC MH Online ACO Q-Brake Control

Flap Valve	x	Design Depth (m)	1.350	Min Node Diameter (mm)	1050
Replaces Downstream Link	x	Design Flow (l/s)	2.0	Orifice Diameter (m)	0.063
Invert Level (m)	49.969	Min Outlet Diameter (m)	0.095		

Node TANK Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	50.025
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	110.0	110.0	0.800	110.0	139.7	0.801	0.0	139.7

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Results for 1 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	FC MH	164	50.103	0.134	3.5	0.1516	0.0000	OK
180 minute winter	TANK	128	50.095	0.070	3.6	7.4647	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute winter	FC MH	ACO Q-Brake		1.6				17.4
180 minute winter	TANK	1.000	FC MH	3.3	0.540	0.189	0.0672	

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Results for 30 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute winter	FC MH	176	50.419	0.450	3.0	0.5088	0.0000	OK
180 minute winter	TANK	176	50.419	0.394	13.2	41.9406	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
180 minute winter	FC MH	ACO Q-Brake		2.0				41.3
180 minute winter	TANK	1.000	FC MH	3.0	0.554	0.168	0.0992	

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Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.93%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	FC MH	236	51.248	1.279	3.4	1.4463	0.0000	OK
240 minute winter	TANK	236	51.249	1.224	18.9	85.9077	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute winter	FC MH	ACO Q-Brake		2.0				42.3
240 minute winter	TANK	1.000	FC MH	3.4	0.538	0.191	0.0992	

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14 APPENDIX F

Proposed Exceedance Routing Plan

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INDICATIVE ONLY

EXEEDANCE ROUTE LEGEND

SURFACE WATER ABOVE GROUND EXCEEDANCE ROUTE



NOTES:

1. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECT AND ENGINEERING DETAILS, DRAWINGS AND SPECIFICATIONS.
2. ANY DISCREPANCIES SHOULD BE REPORTED TO THE ARCHITECT AND/OR ENGINEER IMMEDIATELY, SO THAT CLARIFICATION CAN BE SOUGHT PRIOR TO THE COMMENCEMENT OF WORK.

CONSTRUCTION WARNING

IMPORTANT NOTE: CAUTION

ALL INFORMATION SHOWN ON THIS DRAWING FOR UNDERGROUND SERVICES/STATUTORY UNDERTAKERS' PLANT IS APPROXIMATE AND IS *PROVIDED FOR THE CONTRACTOR'S INFORMATION ONLY*. IT SHOULD NOT BE RELIED ON FOR EXCAVATION OR ANY OTHER WORKS PURPOSES AND CONTRACTORS MUST SATISFY THEMSELVES OF THEIR LOCATIONS PRIOR TO THE COMMENCEMENT OF WORKS.

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marbas

CLIENT: READING BOROUGH COUNCIL

PROJECT: WHITLEY PARK PRIMARY SCHOOL
READING, RG2 7RB

DRAWING TITLE: EXCEEDANCE ROUTING DRAWING

DRAWING No.	REV.
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1:500	05/01/26	BLT	SPB	A1

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15 APPENDIX G

Drainage Systems Maintenance Report Marbas

Whitley Park Primary & Nursery School
Brixham Road
Reading
Berkshire
RG2 7RB

Drainage System Maintenance Requirements

Project Number: 03770

23rd December 2025

Revision P01

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This report has been prepared for the sole benefit, use and information of the commissioning Client. The liability of Marbas Group Limited in respect of the information contained within this report will not extend to any third party.

Author	Becky Taylor
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Date	23/12/2025

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P01	First Issue	23/12/2025

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1 INTRODUCTION

Marbas have been appointed to provide this Drainage System Maintenance Requirements report for the proposed refurbishment and extension works at Whitley Park Primary and Nursery School, located on Brixham Road, Reading. The current proposals comprise a combination of light to more extensive refurbishment works, together with the construction of new extensions to the existing school buildings. These works form part of a wider programme commissioned by Reading Borough Council to enhance existing school facilities and support the delivery of improved educational accommodation, including provision for pupils with special educational needs.

This report outlines the necessary inspection and maintenance protocols required to ensure the long term effectiveness of the surface water drainage strategy serving the site.

The primary objective of this document is to establish a structured maintenance plan to be implemented by a dedicated maintenance contractor operating on behalf of the site owner or operator. This plan is intended to ensure that the drainage system continues to function effectively, preventing blockages, deterioration or inefficiencies that could compromise surface water management across the site.

Failure to adhere to the maintenance requirements detailed in this report could result in increased risk of surface water accumulation, damage to drainage infrastructure, and potential flooding of buildings and surrounding external areas. Regular and proactive maintenance is therefore essential to safeguard the operation of the development and to maintain compliance with relevant drainage, environmental and health and safety requirements.

2 DESIGN AND OPERATION

The proposed foul water drainage strategy for Whitley Park Primary and Nursery School will utilise the existing foul drainage infrastructure serving the site. Foul drainage from the proposed extensions will connect into the existing on site foul drainage network, which conveys flows via gravity pipework to the public foul sewer operated by Thames Water.

The proposed surface water drainage strategy is based on a controlled discharge to the existing public surface water sewer network. Surface water runoff from the proposed extensions and reconfigured external areas will be collected via new and reconfigured drainage pipework and connected into the existing surface water drainage system serving the site. The strategy does not rely on infiltration and incorporates on site attenuation and flow control to manage runoff in accordance with current policy requirements.

Following the construction of the proposed drainage infrastructure and the connection of drained surfaces to the system, the drainage network will enter its operational phase. During this phase, periodic monitoring and maintenance will be required in accordance with the procedures set out in this document to ensure ongoing performance.

The maintenance requirements for the drainage system will be detailed within the handover documentation provided to the site operator upon completion of the development. This documentation will include Health and Safety files together with Operation and Maintenance manuals setting out inspection frequencies, maintenance tasks and record keeping requirements.

As illustrated on the Drainage Strategy drawing, the drainage system incorporates a range of drainage and SuDS components designed to collect, convey, attenuate and control surface water runoff prior to discharge to the public sewer network.

Responsibility for the management and maintenance of the drainage and SuDS components will rest with the site owner or appointed managing body. Where any drainage assets are offered for adoption by a statutory undertaker or highway authority, future management responsibilities will be governed by the relevant legal and technical agreements.

For the purposes of this document, maintenance responsibilities for each drainage and SuDS component are defined under the categories of monitoring, regular maintenance, occasional maintenance and remedial maintenance.

3 OWNERSHIP AND MAINTENANCE

For the lifetime of the development, the responsibility for the ongoing management and maintenance of SuDS components will rest with the landowner or asset owner, where ownership has been transferred.

The SuDS components incorporated within the development, along with their general locations, ownership, and maintenance duty holders, are summarised in the following table:

- **Below Ground Drainage (Private):** Includes pipes, access and inspection chambers, manholes, and silt traps/catchpits, located on private land and maintained by the landowner.

Where SuDS components are not adopted by a Water Authority or dedicated to a Highway Authority, it is expected that an appropriate organisation, such as a management company, may be appointed to oversee the monitoring and maintenance of the surface water drainage system during its operational phase. Maintenance regimes developed by this organisation will adhere to the requirements outlined in this document, along with any additional requirements specified in the handover documentation.

4 HEALTH AND SAFETY REQUIREMENTS

The design of the surface water drainage system will comply with the Construction (Design and Management) (CDM) Regulations 2015. This ensures designers assess foreseeable risks during construction and maintenance, aiming to minimise these risks through the following hierarchy:

- Avoid
- Reduce
- Identify and mitigate residual risks

Designers' risk assessments and maintenance statements will be included in the handover information to inform contractors and others about the risks associated with managing and maintaining the system.

The maintenance and monitoring works required for the surface water drainage system will also adhere to the Health and Safety at Work Act and related regulations. These activities will always be subject to thorough risk assessment.

The organisation responsible for maintenance and monitoring, as outlined in this document, must take appropriate health and safety precautions to ensure compliance and minimise risks during operations.

5 COMPONENTS OF THE SYSTEM

The following components form part of the drainage system and need to be maintained as indicated within this document.

- Pipes, foul and surface water system. Clay or Plastic
- Inspection chambers and manholes
- Flow control manholes
- Filter manholes
- Attenuation tank

The following tables outline the maintenance requirements for various SuDS components.

Operation and Maintenance Activity	**Below Ground Drainage**
Inspection	
Removal of litter and debris	
Grass cutting	
Control of weeds and invasive vegetation	
Management of trees and shrubs	
Management of shoreline vegetation	
Management of aquatic vegetation	
Management and removal of accumulated sediment *	
Replacement of vegetation	
Sweeping and brushing with vacuum	
Rehabilitation and repair of structures	
Reconditioning of infiltration surfaces	

Key:



Will be required
May be required
Not required

***** Sediment should be collected and managed in pre-treatment systems, upstream of the main SuDS component.

6 MAINTENANCE SCHEDULES

The below sets out the requirements for maintenance of the on-site drainage system.

The maintenance requirements are based on durations and the occurrence of severe storms. However, should water be found ponding on any hard surface around channel drains, road gullies, or foul drains become blocked then this visual identifier will trigger the requirements for investigation and maintenance.

If issues are found to be the cause of failure or lack of maintenance on parts of the drainage system that do not fall under the responsibility of the maintenance company, the maintenance company is to notify the third party who has responsibility.

A severe storm is defined as any aspect of weather that poses risk to life, property or requires the intervention of authorities. Severe weather warnings will be issued by the Met Office.

The appointed maintenance company is to keep a log of all maintenance and remedial works carried out at the site. This log is to be passed on should the maintenance contract be given to another organisation.

6.1 PIPES, FOUL AND SURFACE WATER SYSTEM. CLAY OR PLASTIC

Required Action	Required Frequency
Monitoring	
Conduct visual inspections of manholes, silt traps, vortex separator inlet and outlet headwalls, and the attenuation basin to check for signs of silt accumulation, damage, or blockages.	Every 2 months during the first 12 months, followed by every 6 months thereafter.
Occasional Maintenance	
Conduct CCTV surveys of the pipes periodically to assess their structural condition. Implement any necessary actions based on the survey recommendations.	Every 5 years, or as required based on monitoring.
Remedial Actions	
Trim any roots that may be obstructing or causing blockages.	As required.
Remove blockages using methods such as rodding, jetting, hydraulic rams, or a suction tanker.	As required.
Replace any pipe sections that are structurally damaged.	As required.

6.2 INSPECTION CHAMBERS AND MANHOLES

Required Action	Required Frequency
Monitoring	
General inspection of chamber covers for signs of damage, wear, and rocking.	Every 6 months.
Structural inspection of chamber cover surrounds.	Every 6 months.
Inspection of chamber internals for evidence of pipe surcharging.	Every 6 months.
Inspection of silt accumulation rates and establishment of appropriate removal frequencies.	Monthly during the first year of operation, then every 6 months thereafter
Regular Maintenance	
Removal of accumulated deposits by suction tanker.	Every 6 months, or as determined by monitoring requirements.
Occasional Maintenance	
Washing down of sides, benching, and channels with clean water jetting.	Every 6 months, or as determined by monitoring requirements.
Removal of accumulated deposits by suction tanker following high return period storm or period of poor performance.	As required.
Remedial Actions	
Replacement of damaged chamber covers and bedding.	As required.
Sealing and repair of cracked/spalled concrete and benching.	As required.

6.3 FLOW CONTROL MANHOLES

To be checked annually and after a severe storm by visual survey and debris removed. A list of defects should be complied and with high, medium and low risk of failure. High risk defects should be fixed immediately, medium risk should be fixed within 6 months and low risk to be monitored annually.

6.4 FILTER MANHOLES

To be checked annually and after a severe storm. Debris to be removed and outlets to be checked that they are free flowing.

6.5 ATTENUATION TANK

To be maintained in accordance with Table 21.3 of Ciria C753.

TABLE 21.3 Operation and maintenance requirements for attenuation storage tanks	
Required Action	**Required Frequency**
Monitoring	
Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed	Annually
Survey inside of tank for sediment build-up and remove if necessary	Every 5 years or as required
Regular Maintenance	
Inspect and identify any areas that are not operating correctly. If required, take remedial action	Monthly for 3 months, then annually
Remove debris from the catchment surface (where it may cause risks to performance)	Monthly
For systems where rainfall infiltrates into the tank from above, check surface of filter for blockage by sediment, algae or other matter; remove and replace surface infiltration medium as necessary.	Annually
Remove sediment from pre-treatment structures and/ or internal forebays	Annually, or as required
Remedial Actions	
Repair/rehabilitate inlets, outlets, overflows and vents	As required
Flush channels to remove accumulated debris.	Annually, or as determined by monitoring requirements.
Remedial Actions	
Replace damaged gully tops.	As required.