Land West of Kings Business Centre
Reeds Lane, Sayers Common

Flood Risk Assessment and Drainage Strategy

For

Reside Holdings Limited

motion

Document Control Sheet

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Reeds Lane, Sayers Common

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This document has been issued and amended as follows:

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1.0 Introduction

1.1 This report has been prepared by Motion on behalf of Reside Holdings Limited in support of a detailed planning application on land west of Kings Business Centre, Reeds Lane, Sayers Common, BN6 9LS.

1.2 The proposed development consists of 80 new residential dwellings (use Class C3), including affordable housing units, vehicular pedestrian and cycle access (including new footpath links to the east and west of the site along Reeds Lane), landscaping and open space, parking, sustainable drainage and other related works. Plans detailing the extent of the proposed development can be found in **Appendix A**.

1.3 As the site is larger than one hectare (ha) in size, a Flood Risk Assessment (FRA) is required to understand the flood risks shown on site, how to mitigate these flood risks, and what the residual flood risk is once mitigation has been added.

1.4 Additionally, because the proposed development is considered 'major' in planning terms and has the potential to contribute to surface water runoff in the surrounding area, a drainage strategy is required to demonstrate how the development will manage and discharge surface water generated in all rainfall events, up to and including the 1 in 100-year storm event plus the required climate change allowance for the peak rainfall event. Exceedance events will also need to be considered, along with how the drainage infrastructure should be managed and maintained going forward.

1.5 Therefore, this FRA and Drainage Strategy will discuss the risks to the proposed development from all sources of flooding. This report will also define how the site will manage surface water so that the development does not increase flood risk in the area or to neighbouring properties.

1.6 This FRA and Drainage Strategy follows the guidance set out in:

- West Sussex LLFA Policy for the Management of Surface Water (November 2018);
- 2024 National Planning Policy Framework (NPPF);
- Technical Guidance to the NPPF;
- CIRIA SuDS Manual 2015 (C753);
- Environment Agency (EA) Rainfall and Runoff Management for Developments; and
- The New National Standards for SuDS.

1.7 The FRA and Drainage Strategy pertains only to the drainage system for the built site. It does not provide details of how the site will be drained during the construction phase. This is considered to be temporary works and can only be prescribed and provided by the eventual appointed contractor.

1.8 Similarly, this report does not provide information on how the drainage infrastructure will be protected during the construction phase of the project. The provision of this information is the responsibility of the appointed contractor.

2.0 Existing Site Conditions

2.1 Table 2.1 below provides a summary of the existing development site, which is set out in further detail within this report.

Table 2.1: Site Summary

Site Name	Land West of Kings Business Centre
Location	Reeds Lane, Sayers Common, West Sussex, BN6 9LS
Grid Reference	TQ 26249 18189 (centre of development site)
Site Area	4.45 hectares (ha)
Development Type	Residential Development (Class C3)
EA Flood Zone	Flood Zone 1
Surface Water Flood Risk	Area of High Risk along Western Site Boundary and North-Eastern Corner
Groundwater Susceptibility	Negligible Risk of Flooding
Local Planning Authority	Mid Sussex District Council
Lead Local Flood Authority	West Sussex County Council

Site Location

2.2 The proposed development site is located on land west of Kings Business Centre, Reeds Lane, Sayers Common, West Sussex. The site postcode is BN6 9LS, and the grid reference for the site is TQ 26249 19189. The area of the development site's red line boundary is approximately 4.45 hectares (ha).

2.3 The existing site is an undeveloped green field with an existing gated field access located in the south-east corner of the site, served by a shared access gravel track. It is currently in an area that is generally rural in character, bounded by residential areas along the site's eastern boundary.

2.4 The development proposals consist of the erection of 80 new residential dwellings (Use Class C3), including affordable housing dwellings, with vehicular, pedestrian and cycle access (including new footpath links to the east and west of the site along Reeds Lane), provision of landscaping and open space, parking, sustainable drainage and other associated works. An architectural plan of the proposed development can be viewed in **Appendix A**, and an extract of the site layout is provided in Figure 2.1 below.

Figure 2.1: Proposed Site Layout

Topography

2.5 A topographical survey of the site was conducted by Hook Survey in November 2022, and has since been updated in September 2025. A copy of the full topographical survey has been provided in **Appendix B**.

2.6 The survey shows the levels to metres Above Ordnance Datum (mAOD) across the site, as well as the position of existing trees along the boundary and within the development site. Additionally, the survey shows the location and extent of open drainage features such as ditches, telegraph poles and overhead lines, boundary fences for the field and development site, and the position of the public footpath which crossed the site.

2.7 The site falls from east to west at an average slope gradient of 1 in 45, with the highest recorded level of 17.95 mAOD located along the southern boundary near to the southeastern corner and existing field access, and the lowest recorded level of 14.09 mAOD recorded along the western site boundary, near the top half of the development site.

2.8 Furthermore, there is an open ditch which runs along the bottom half of the development site's western boundary, which has the lowest recorded invert level of 13.96 mAOD at the northern end of the ditch.

Geology

2.9 The British Geological Survey's (BGS) online GeoIndex Onshore mapping defines the development site's primary bedrock geology as Weald Clay Formation, consisting primarily of mudstone. There are no records of superficial deposits present within the development site extents.

2.10 Furthermore, the Department for the Environment, Food and Rural Affairs (DEFRA) online 'Magic Mapping' defines the soilscape within the development site areas as *'slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils'*. An extract of the soilscape has been provided in Figure 2.2 below.

Figure 2.2: Soilscape Map (Extract taken from DEFRA online Magic Map – Scale 1:50,000)

2.11 The nearest borehole logs to the site, obtained from BGS online records are located approximately 835m north-west of the development site (TQ21NE2A/B) and 800m east of the development site (TQ21NE125) respectively. Copies of both borehole records can be found in full in **Appendix C**.

2.12 Borehole record TQ21NE2A/B, provides the record for two separate borehole, and identifies the bedrock geology consisting of a mixture of mottled clay, brown clay and blue clay over a depth of 130 feet for

both boreholes (approximately 40 metres), with a 150mm thick vein of claystone recorded at approximately 12 metres below Ground Level (mBGL).

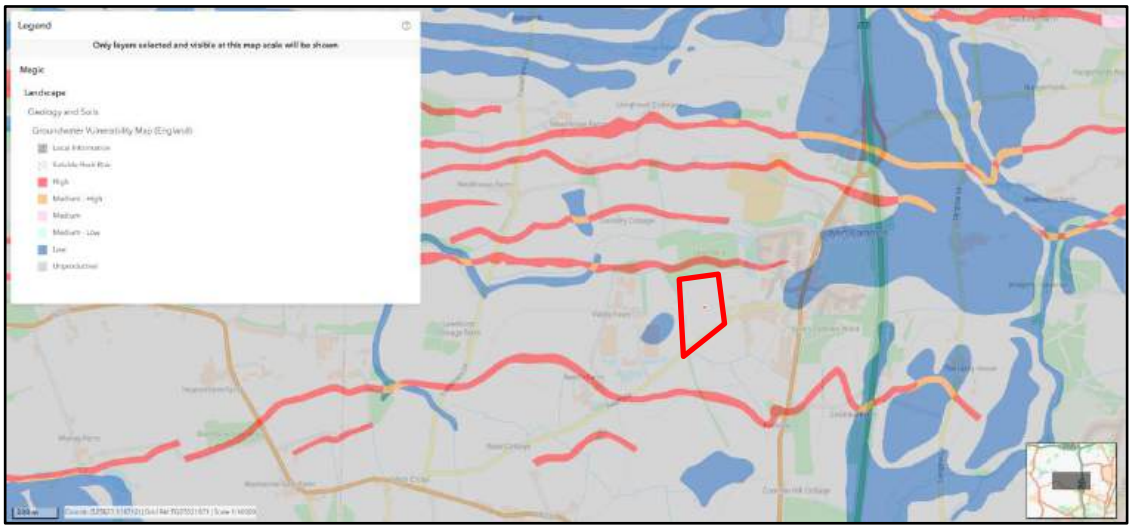
2.13 Borehole record TQ21NE125 further identifies the bedrock geology as am 800mm thick layer consisting of soft, brown mottled grey slightly silty slightly sandy clay with occasional fine to medium claystone fragments, starting at 0.3 mBGL and is situated above a layer of firm, dark grey mottled brown slightly gravelly slightly silty clay starting at 1.2 mBGL.

2.14 These borehole records support the findings of the BGS online mapping that the development site's bedrock geology is Weald Clay formation, as described above.

Hydrogeology

2.15 DEFRA's Magic Mapping indicates that the site is located within an area that is unproductive for groundwater emergence, as shown in Figure 2.3 below, and therefore carries a negligible groundwater vulnerability. However, the online mapping shows that there are narrow bands of land north of the development site that are at high risk of groundwater emergence, which may impact the site. The site is located outside of any Groundwater Source Protection Zone.

Figure 2.3: Groundwater Vulnerability Map (DEFRA Magic Map – Scale 1:10,000)



2.16 An Envirocheck Flood Screening Report has been obtained to further identify historical flood events and groundwater vulnerability within the development site. A copy of the complete flood screening report can be found in **Appendix D**. The BGS Flood Data Map (1:50,000) provided within the report shows that the site is located wholly outside of land susceptible to groundwater flooding and therefore has a negligible risk of groundwater flooding to occur within the development site, which is also confirmed on the GeoSmart Information Groundwater Flood Map (1:50,000).

2.17 In addition to the above, the borehole record TQ21NE2A/B (**Appendix C**) indicates that there is a high groundwater table present within the local geology, with water struck at approximately 4.5 mBGL and 12 mBGL within borehole A, and a recorded rest level of water within borehole B of approximately 7 mBGL. This suggests that groundwater gets captured within the upper geological layers and is prevented from filtering to the surface by the clay geology

2.18 Soils Limited has undertaken site investigations within the development site, and includes winter groundwater monitoring completed over a 15-week period, starting 4th November 2024 and ending 14th February 2025. A full copy of the groundwater monitoring report, including results, can be viewed in full in **Appendix E**.

2.19 The groundwater monitoring report indicates that the site is subject to a high groundwater table during the winter months (with groundwater levels recorded at approximately 0.5 mBGL or shallower across the development site). This supports the findings of the BGS borehole records of a high groundwater table within the clay geology.

2.20 Therefore, it is recommended that any open and sealed drainage features within the development site are lined with a suitable impermeable geomembrane to prevent groundwater ingress occurring within the drainage system and reducing any proposed site attenuation storage volume.

2.21 As the site geology consists primarily of clay, which is hydraulically unproductive, it is therefore concluded that drainage by infiltration is not possible for this site, and no further site infiltration testing is required to confirm this. This is supported by the findings of the borehole records and site groundwater monitoring confirming a high groundwater table, which precludes infiltration as a viable method of discharging the site due to a lack of a 1 m unsaturated zone between the base of any proposed soakaway and the groundwater table.

Hydrology

2.22 The nearest main river to the development site is Herrings Stream, which falls in a westerly direction and is located approximately 1.10 km north of the development site. The Herrings Stream is a tributary of the River Adur, which is located approximately 2.65 km northwest of the development site and falls in a westerly direction.

2.23 There is an unnamed ditch identified within the topographical survey (**Appendix B**), which is located adjacent to the bottom half of the western development site boundary, which falls in a northerly direction. Before leaving the development site extents and falling in a north-westerly direction away from the development site, which eventually connects to Herrings Stream and the River Adur to the west of the development site.

Existing Drainage

2.24 Asset location records were obtained from Southern Water to identify the position of existing public sewers within close proximity to the development site. A copy of these records can be viewed in full in **Appendix F**.

2.25 The Southern Water asset records suggest that there are no surface water or foul sewers located within the development site extents or within the immediate vicinity of the development site (i.e. along Reeds Lane along the southern site boundary). The nearest Southern Water sewer is a 150mm diameter foul sewer which starts approximately 205m east of the proposed development site access junction and falls in an easterly direction.

2.26 Although the records did not provide recorded cover levels invert levels for the existing foul sewer, asset records were identified from an FRA report submitted for a planning application for two previous developments (planning application reference: DM/25/1434 and DM/22/0640) which included details of the Southern Water foul sewer cover levels and invert levels. This information has been expanded on in further chapters of this report.

3.0 Planning Policy and Legacy Framework

Flood and Water Management Act

3.1 The Flood and Water Management Act 2010 (FWMA) received Royal Assent on 8th April 2010. The Act was introduced to enforce some of the key proposals set out within UK Government flood and water strategies along with UK Government's response to the Sir Michael Pitt's Review of the summer 2007 floods.

3.2 Following the 2007 floods and the independent Pitt Report, the FWMA transposed local flood risk leadership into UK law. As part of this fundamental change in flood risk management responsibilities, Lead Local Flood Authorities (LLFA) have a responsibility under the FWMA to develop, maintain, apply and monitor the application of a strategy for local flood risk in their area.

3.3 Local flood risk is defined as flood risk arising from surface run-off, groundwater and ordinary watercourses (i.e. non main rivers). The Environment Agency (EA) plays a role in managing the watercourses designated as 'main rivers'.

3.4 As of April 2015, the LLFA became a statutory consultee on all major planning applications. The LLFA is required to assess planning applications in respect of surface water drainage and sustainable drainage systems. The LLFA for the Sayers Common / Hassocks Area is West Sussex County Council (WSCC).

3.5 The WSCC Draft Local Flood Risk Management Strategy (2025 – 2030) sets out how WSCC will carry out its flood risk responsibilities that are a statutory requirement of the FWMA.

The Environment Agency Flood Map for Planning

3.6 The Environment Agency's (EA) Flood Map for Planning gives an indicative prediction of areas at risk of fluvial and tidal flooding. The mapping is an amalgamation of modelled flood levels and historical flood event outlines.

3.7 The Flood Map is split into 'Flood Zones', which demarcate the extent of flooding from rivers or the sea for different return periods. The Flood Map for Planning shows the extent of the natural floodplain if there were no defences or other man-made structures. They do not provide a definitive picture of where flooding would occur; rather, they provide an indicative prediction of areas at risk.

3.8 Table 3.1, below, lists the flood zone categories and explains the flood risk probabilities they represent.

Table 3.1: Flood Zone Categories

Flood Zone	Definition
Zone 1 Low Probability	Land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map – all land outside Zones 2 and 3)
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain	This zone comprises land where water has to flow or be stored in times of flood. This is generally delineated as land having a 1 in 30 or greater annual probability of flooding. Local planning authorities should identify in their SFRAs areas of functional floodplain and its boundaries accordingly, in agreement with the EA. (Not separately distinguished from Zone 3a on the Flood Map)

The National Planning Policy Framework

3.9 The NPPF (December 2024, with minor updates in February 2025) sets out the Government's national policies on different aspects of land use planning in England in relation to flood risk. The Technical Guidance to the NPPF provides further information on the policies set out in the NPPF. It encourages development to take place in areas of lower flood risk wherever possible and stresses the importance of preventing increases in flood risk off-site to the wider catchment area. This includes ensuring that flood risk is taken into account at all stages of the planning process, avoiding inappropriate development in areas at risk of flooding and directing development away from those areas where risks are highest.

3.10 A site-specific FRA is required for proposals of 1 ha or greater in Flood Zone 1, all proposals for development in Flood Zones 2 and 3, or in an area within Flood Zone 1 that has critical drainage problems (as notified to the local planning authority by the EA) or is subject to other sources of flooding. The FRA should identify and assess the risks of all forms of flooding to and from the development and demonstrate how these flood risks will be managed so that the development remains safe throughout its lifetime, taking climate change into account.

3.11 Within each Flood Zone, a key factor in determining planning applications for development is the flood risk vulnerability of a development. Table 2 of the Technical Guidance to the NPPF categorises different development types according to their vulnerability to flooding. These categories are:

- Essential infrastructure;
- Highly vulnerable development;
- More vulnerable development;
- Less vulnerable development; and
- Water-compatible development.

3.12 Within the different Flood Zones each of the above development categories are considered appropriate or not permissible. The Technical Guidance to the NPPF lists these as:

Flood Zone 1:

- All the development categories listed above are appropriate.

Flood Zone 2:

- Water-compatible, less vulnerable development, more vulnerable development and essential infrastructure is appropriate in this zone.

Flood Zone 3a:

- Water-compatible and less vulnerable development is appropriate in this zone. Highly vulnerable development should not be permitted in this zone.

Flood Zone 3b:

- Only water-compatible development and essential infrastructure that has to be there should be permitted in this zone.

3.13 The above information sets out the basis by which developments must be assessed in terms of flood risk. Later in this report the proposed development will be reviewed against the Flood Zone in which it is located. This will inform the appropriateness of the proposed development, as per the advice within the Technical Guidance to the NPPF.

The New National Standards for SuDS

3.14 On 19 June 2025 the UK government published its new National Standards for Sustainable Drainage Systems (SuDS). The new standards are an evolution of industry standards and current best practice, many of which practitioners and design engineers have already been actively incorporating in their drainage strategies. Therefore, while the new National Standards do not fundamentally change current standards, they are a welcome step in clarifying points that had previously been uncertain and has enshrined them in a single piece of guidance.

3.15 The standards emphasise how sustainable drainage and flood risk should be considered in developments, and the importance of site appraisal and early, integrated design with the site's natural features and proposed infrastructure. However, the Planning Balance and other technical factors/policy requirements must always be considered.

3.16 The new National Standards for SuDS outline that;

- SuDS are mandatory for major developments and drainage strategies must conform with the new national criteria and LLFA guidance.
- There is a stronger emphasis on the 'four pillars' of SuDS. Drainage strategies must demonstrate benefits for water quantity and quality as well as amenity, and biodiversity. This pushes designers to incorporate more surface level SuDS and rely less on below-ground attenuation.
- There is also greater emphasis on using water recycling within developments, especially in water-stressed areas.
- There is more clarity on long-term adoption & maintenance of SuDS system and LPA's will expect clearer maintenance and management strategies for drainage systems and require stronger evidence of deliverability.

3.17 As stated before, this is a minor evolution of the current approach to drainage design, but there are subtle differences in the design factors, which could lead to an increase in size of attenuation features. In addition to the above overarching principles of the New National Standards for SuDS, the below specific points should be borne in mind by designers and included in any drainage strategies:

- Standard 2 provides explicit guidance on the management of everyday rainfall. The first 5mm of rainfall (the 'first flush') must be managed by interception and should not leave the site. Instead, it should either collected for reuse, infiltrated into the ground, or else captured, conveyed, and stored within SuDS features (but there are specific criteria that make this last point acceptable).
- The latest standards now formalise that the minimum permissible infiltration rate for discharging surface water via a 'System A' (Total Infiltration) solution. The minimum infiltration coefficient that can support an infiltration-based drainage solution is 1.0×10^{-6} m/sec. Additionally, the standards now add that the half drain in the 3.3% AEP event should be less than 24 hours.
- A 'relaxation factor' should instead be applied to the target greenfield runoff rates on brownfield site. It defines that the maximum relaxation factor for runoff rates should be no greater than five times the greenfield rates. This allows for easier implementation on heavily developed urban sites, especially where LLFA's previously demanded greenfield runoff rates.
- The new National Standards confirm a previous 'grey area' by stating that SuDS features should be included in the contributing catchment area. It also notes that there is no requirement to provide attenuation for external overland flows entering the site, but these flows should be considered for capacity of the pipe network.
- Standard 3 of the new National Standards for SuDS clarifies the expectations with regards to urban creep. It says "*within developments an urban creep uplift factor shall be applied by adding a percentage increase to the calculated area of the impermeable area within the property curtilages.*

This shall be 10% for all developments unless there are no external private permeable spaces, for example, flats and apartments, when it shall be 0%."

3.18 There are also other specific technical calculations and approaches that need to be balanced in site design (such as the allowable ratio of contributing areas to permeable pavements when discharging via infiltration, as one such example) that also must be taken into account. These should be assessed and balanced on a site-by-site basis.

Mid Sussex District Council Position Statement

3.19 In the absence of a Mid Sussex District Plan, which is currently under review, two Position Statements have been drafted in response to Delivering Sustainable Development (Position Statement 1) and Infrastructure (Position Statement 2). Both Position Statements are due to be submitted by the end of the year.

3.20 The principles for flood risk and sustainable drainage set out in Position Statement 1 are as follows:

- All development should consider flood risk in line with national guidance at the time of assessment, including the need to consider and assess flood risk from all sources consistently (fluvial, pluvial, groundwater, infrastructure and reservoirs.
- Development proposals should reduce overall flood risk and will be expected to address the extent to which mitigation measures could address wider flooding issues.
- Where flood management and mitigations are proposed to be utilised within a development, proposals should prioritise the use of natural flood management and nature-based solutions and need to be designed to maximise wildlife and habitat opportunities.
- Surface water drainage to the foul sewer and combined sewer network will be resisted in order to maximise the capacity of foul sewage to reduce the risk of sewer flooding.
- According to the new National Standards for SuDS (June 2025), the preferred hierarchy of managing surface water drainage from any development is:
  - Priority 1: collected for non-potable use.
  - Priority 2: infiltrated to ground.
  - Priority 3: discharged to an above ground surface water body.
  - Priority 4: discharged to a surface water sewer, or another piped surface water drainage system.
  - Priority 5: discharged to a combined sewer.

4.0 Current Flood Risk

4.1 Flooding can arise from a variety or combination of sources. These may be natural or artificial and may be affected by climate change. These are discussed in the following two sections of this report and summarised in the next chapter. The probability of any likely impacts are also assessed.

Fluvial Flooding

4.2 The nearest main river to the development site is Herrings Stream, which falls in a westerly direction and is located approximately 1.10 km north of the development site. The Herrings Stream is a tributary of the River Adur, which is located approximately 2.65 km northwest of the development site and falls in a westerly direction.

4.3 The Environment Agency's (EA) Flood Map for Planning shows that the development site is wholly located within Flood Zone 1 (less than 1 in 1,000-year annual probability of flooding from rivers or the sea). The full EA Flood Map for Planning ca be viewed in **Appendix G**.

4.4 Furthermore, the EA released updated flood risk mapping following the new National Flood Risk Assessment (NaFRA2) in early 2025. The updated mapping uses new and improved methods to assess flood risk. An extract of the updated tidal and fluvial flood mapping can be found in **Appendix G**, and are also provided in Figures 4.1 and 4.2 below. These extracts confirm that the site is not at risk of fluvial and tidal flooding.

4.5 The Envirocheck Flood Screening Report (**Appendix D**) EA/NRW Historic Flood Map (1:10,000) confirms that there are no historical records of the site having flooded from fluvial sources.

Figure 4.1: EA Risk of Flooding from Rivers and the Sea – Yearly Chance of Flooding

Figure 4.2: EA Risk of Flooding from Rivers and the Sea – Yearly Chance of Flooding between 2036 and 2069.

Therefore, the development site is considered to be at very low risk of fluvial flooding. Residential development is considered to be 'Less Vulnerable', in accordance with Table 2 of the Technical Guidance to the 2024 NPPF, and therefore the site is located appropriately.

Surface Water Flooding

4.6 Surface water, or pluvial flooding, results from rainfall-generated overland flow, where rainwater has not yet reached a watercourse or sewer and where the local drainage systems become overwhelmed. Pluvial flooding often occurs during short, very intense storms, but can also occur during longer periods of rainfall when the ground is already saturated, or where land has low permeability due to development.

4.7 In these conditions surface water can build up where the topography allows it to converge or pond. Where it gathers it will travel down prevailing gradients. Pluvial flooding then occurs at locations where significant surface water flow paths converge, at localised low points and/or due to overland obstructions. In urban areas pluvial flooding often occurs where the built environment channels overland flow routes (for example, down roads that are bounded by kerbs) or where there are obstacles to the natural overland flow routes. Boundary walls and buildings are often the main causes and, hence, the likelihood of pluvial flooding to impact property and gardens.

4.8 Pluvial flooding is exacerbated in many cases by the mistreatment or failure of the below ground infrastructure (including partial or full blockages of gullies and/or within the combined sewers and the accumulation of fats, oils and greases within the sewer networks).

4.9 Generally speaking, pluvial flooding is less impactful in rural areas. This is partly because the natural 'greenfield' state of land allows for the interception of rainfall and the slowing down of overland flow, so the accumulation of surface water is less likely. It is also because there are much less 'receptors' of surface water flooding in rural areas and many incidences of surface water flooding in rural areas go unnoticed or unreported as they are of low consequence.

4.10 The Envirocheck Flood Screening Report (**Appendix D**) provides detailed information on surface water flood risk on the site. Referring to the Jeremy Benn Associates (JBA) Comprehensive Flood Maps (CFM), these show that, for the 1 in 75-year, 1 in 200-year and 1 in 1,000-year pluvial flood events, the majority of the site is not at risk of surface water flooding. However, the land along the western site boundary

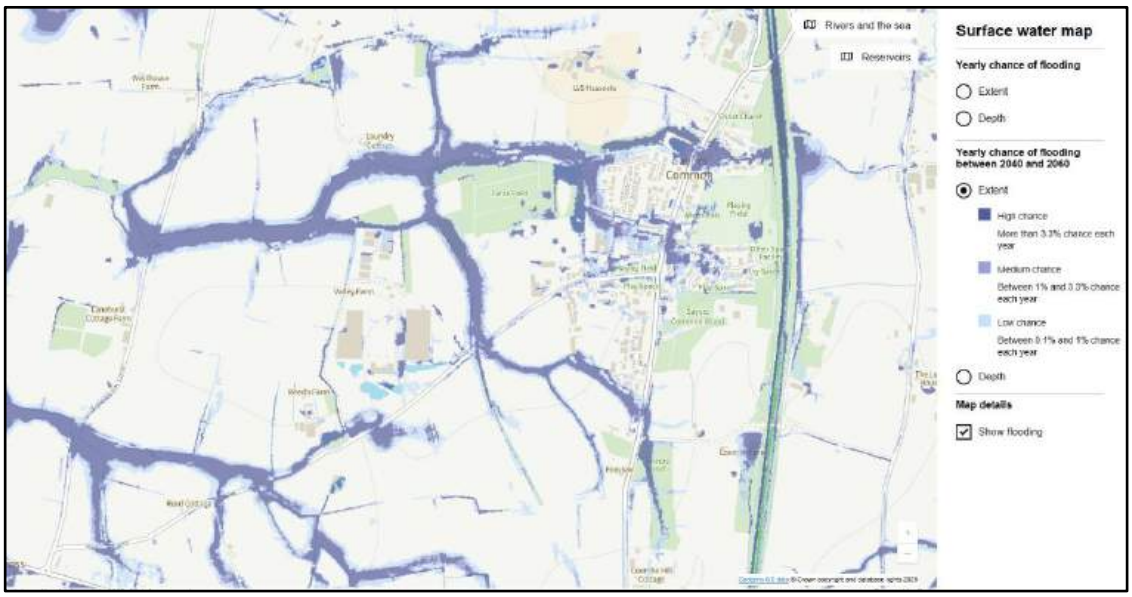
adjacent to the existing dich is at risk of surface water flooding for all pluvial flood events, with predicted flood depths of between 0.1 m and 1.0 m. Additionally, for the 1 in 1,000-year pluvial flood event, there is a small, isolated area in the north-eastern corner of the development site which is at risk of surface water flooding, with predicted flood depths of 0.1m.

4.11 The EA's Risk of Flooding from Surface Water (RoFSW) map can be viewed in **Appendix H**. The maps show that the majority of the development site is not at risk of surface water flooding (i.e. less than 1 in 1,000-year annual probability of flooding). However, there is a significant area of land along the western site boundary at high risk of surface water flooding (i.e. higher than 1 in 30-year annual probability of flooding), which follows the flow path of the existing ditch. There is also an area at high risk of surface water flooding in the north-eastern corner which is isolated from other areas of surface water flooding, indicating a localised low spot in the site's topography at this location.

4.12 Further to the above, the EA released updated flood risk mapping following the new National Flood Risk Assessment (NaFRA2) in early 2025. The updated mapping uses new and improved methods to assess flood risk. An extract of the surface water flood risk mapping can be found in **Appendix H**, with extracts provided in Figures 4.3 and 4.4 below. The updated surface water flood maps show that, currently and in the future, the majority of the development site is not at risk of surface water flooding, with the exception of the areas highlighted in the paragraph above.

Figure 4.3: EA Risk of Flooding from Surface Water – Yearly Chance of Flooding

Figure 4.4: EA Risk of Flooding from Surface Water – Yearly Chance of Flooding between 2040 and 2060



4.13 Detailed surface water flood modelling has been undertaken by Ardent, a copy of which is included in **Appendix I**. The Ardent flood modelling confirms that flooding occurs along the western development site boundary, with a maximum recorded flood depth of approximately 0.75m above existing site levels outside of the ditch, as well as an isolated area of surface water flooding in the north-eastern corner of the development site, with a maximum recorded flood depth of approximately 0.30m above existing site levels.

4.14 Referring to the proposed site layout (**Appendix A**), it is understood that the identified surface water flooding extents falls outside of the proposed hardstanding areas and residential development footprint, and therefore the surface water flooding within the development site can be managed by an appropriate drainage strategy, which is further developed within later chapters of this report.

The site is therefore considered to be at medium risk of surface water flooding. The identified surface water flooding located along the western site boundary is a continuous surface water flow path, which the development site has been designed to avoid impacting. Additionally, the area of surface water flooding in the north-eastern corner of the development is site generated and not as a result of an overland flow entering the site, therefore it can be mitigated by an appropriate drainage strategy, which is further developed within this report.

Residential development is considered to be 'More Vulnerable', in accordance with Table 2 of the Technical Guidance to the 2024 NPPF, and the anticipated residential units are located in areas at low and very low risk of surface water flooding. Therefore, the development is appropriately located.

Groundwater Flooding

4.15 The risk of groundwater flooding is dependent on local geological and hydrogeological conditions at any given time. Groundwater flooding commonly occurs during wet winter months after long periods of rainfall, where groundwater levels are seasonally high and exceed the capacity of the aquifers, rising above the surface topsoil. In very wet winter conditions, rising groundwater levels can reactivate flows in ephemeral streams that only flow for part of the year, or even lead to flooding of normally dry land.

4.16 Groundwater flooding is also likely to occur in low-lying areas underlain by regional aquifers of commonly chalk or sandstone. The area of the proposed development site is underlain by Weald Clay Formation.

This type of geology is hydraulically unproductive, and therefore the site is assumed to be unsusceptible to groundwater flooding.

4.17 As stated in chapter 2 of this report, the Envirocheck Flood Screening Report (**Appendix D**) indicates that the site falls outside of areas with geological and hydrogeological indicators that have the potential for groundwater flooding to occur. Additionally, the BGS Groundwater Flooding Susceptibility Map indicates that the site is located within an area of negligible risk for groundwater flooding.

4.18 The BGS borehole record TQ21NE2A/B (**Appendix C**) identifies groundwater emergence at a highest recorded depth of 5.5 mBGL over a total borehole depth of 40 metres, and subsequently groundwater monitoring undertaken by Soils Limited within the development site (**Appendix E**) confirmed a very high groundwater table within the development site (0.5 m or shallower). However, it is unlikely that groundwater emergence at surface will occur within the undeveloped site due to the existing clay geology being hydraulically unproductive, and therefore it is assumed that the groundwater is captured within the upper geological layers and prevented from filtering to the surface.

The site is therefore considered to be at low risk of groundwater flooding. It is understood that the high groundwater table can be mitigated by an appropriate drainage strategy and the inclusion of impermeable geomembrane linings for proposed drainage features.

Flooding from Infrastructure Failure

4.19 Sewer flooding can occur when the capacity of the infrastructure is exceeded by excessive flows, or because of a reduction in capacity due to collapse, siltation, blockage, or if the downstream system becomes surcharged. This can lead to sewers flooding onto the surrounding ground via manholes and gullies, which can generate overland flows.

4.20 Typically, sewer systems are constructed to accommodate rainstorms with a 30-year return period or less, depending on their age. Consequently, rainstorms greater than 1 in 30-years would be expected to result in surcharging of some parts of the sewer system. In fact, due to most gullies being poorly maintained and often partially blocked with silt, leaves and other debris, their capacity is often estimated to be closer to the 1 in 10-year storm event.

4.21 The Southern Water asset records (**Appendix F**) confirm that there are no publicly owned sewers present within the development site extents or along Reeds Lane fronting the development site.

4.22 Concerns have been raised regarding historical flooding issues that occur within the village centre of Sayers Common village, located east of the development site, due to limited capacity of an existing combined sewer. However, the site's topography (**Appendix B**) falls to the west, and subsequently any surface water runoff would drain to the surrounding ditch network and be conveyed in a northerly and westerly direction, away from the area of identified historical flooding. Therefore, the surface water flows generated by the proposed development would not add any surface water flows to the existing village system and instead will drain away from the village.

The site is therefore considered to be at very low risk of flooding from infrastructure failure.

Flooding from Artificial Sources

4.23 The EA provides a map showing the maximum potential flood extent in the event that all reservoirs with a capacity of greater than 25,000 cubic meters were to fail and release the water they hold.

4.24 The EA reservoir flood map shows the site falls outside the recorded reservoir flood extents and would therefore not experience flooding from reservoir failure. There are no other significant artificial sources of flooding in the vicinity of the development site, such as canals.

The site is therefore considered to be at very low risk of flooding from artificial sources.

The Sequential and Exception Tests

4.25 In December 2024, Chapter 14 of the NPPF was updated with changes that require all plans to take into account all sources of flooding and apply a sequential, risk-based approach to the location of the development. This was specifically laid out in in paragraphs 171 and 172, which stated that the aim should be to steer new development to areas with the lowest risk of flooding from any source and opportunities should be provided for new green and other infrastructure that can reduce the causes and impacts of flooding.

4.26 With specific regard to the proposed development, the EA Flood maps confirmed that the whole of the site is located wholly within Flood Zone 1. The site is at low risk of infrastructure failure and of flooding from artificial sources.

4.27 The updated NaFRA2 surface water flood maps show that, currently and in the future, the majority of the site is not at risk of surface water flooding. However, there are some areas of the site at 'low', 'medium' and 'high' risk of surface water flooding, specifically where the existing ditch is located along the western development site boundary and in a localised low point within the north-eastern corner of the development site. It is understood that the proposed areas of residential hardstanding are located in areas at 'low' or 'very low' risk of surface water flooding, and therefore the areas at 'medium' or 'high' risk of surface water flooding can be managed by an appropriate drainage strategy, which is provided in further detail in later chapters of this report.

4.28 Residential land is classified as a 'More Vulnerable' land use by Table 2 of the Technical Guidance to the NPPF 2024. Table 4.1 below, which is an extract of Table 3 of the NPPF, states that all development is suitable in Flood Zone 1, and therefore the site is appropriately located without the requirement for an exception test.

Table 4.1: An extract of Table 3 of the NPPF – Flood Risk Vulnerability and Flood Zone Compatibility

Flood Zones	**Flood Risk Vulnerability Classification**				
	Essential Infrastructure	**Highly Vulnerable**	**More Vulnerable**	**Less Vulnerable**	**Water Compatible**
Zone 1	√	√	√	√	√
Zone 2	√	Exception Test Required	√	√	√
Zone 3a	Exception Test Required	X	Exception Test Required	√	√
Zone 3b	Exception Test Required	X	X	X	√

4.29 The site is not perceived to be at significant risk of flooding from groundwater emergence, infrastructure failure or from artificial sources. The main source of flooding to the site is associated with the surface water flows from the existing ditch along the western site boundary.

4.30 Paragraph 175 of the NPPF states that a sequential test is not required where a site-specific FRA demonstrates that no built development within the site boundary will be at risk of flooding from any source. This is also confirmed in paragraph 27 of the PPG which states that where a site-specific FRA demonstrates that the development will remain safe from current and future surface water flooding for the lifetime of the development. Therefore, the Sequential Test need not be applied.

5.0 Future Flood Risk and Climate Change

5.1 The 2024 NPPF and the supporting Technical Guidance document sets out how flood risk should be considered over the lifetime of a development. This requires an increase in flood risk due to climate change to be taken into account. Both peak river flows and rainfall intensity should be assessed.

Peak River Flow

5.2 The nearest main river to the development site is Herrings Stream, which falls in a westerly direction and is located approximately 1.10 km north of the development site. The Herrings Stream is a tributary of the River Adur, which is located approximately 2.65 km northwest of the development site and falls in a westerly direction.

5.3 The EA Flood Map for Planning (**Appendix G**) shows that the development site is wholly located within Flood Zone 1. As the site is not located near any other higher risk fluvial flood zones, increases in future peak river flows do not need to be considered.

Peak Rainfall Intensity

5.4 With climate change it is becoming more common to see rainfall events of higher intensity, particularly in the southeast of England. Increased rainfall intensity affects river levels and drainage systems, with the result being an increase in surface water flooding and sewerage surcharge.

5.5 The NPPF states that, for flood risk assessments, the Peak Rainfall Allowances Map should be referenced to find out what the anticipated changes in peak rainfall are. The development site lies within the Adur and Ouse Management Catchment and the peak rainfall allowances for this catchment are provided in Table 5.1, below:

Table 5.1: Climate Change Allowances for the Adur and Ouse Management Catchment

1 in 30-year Rainfall Event (3.3% AEP)	**Central Allowance**	**Upper End Allowance**
2050's epoch	20%	35%
2070's epoch	20%	40%
1 in 100-year Rainfall Event (1% AEP)	**Central Allowance**	**Upper End Allowance**
2050's epoch	20%	45%
2070's epoch	25%	45%

5.6 For a residential development, which could have a lifespan of up to 100 years, the allowances recorded in the 2070's epoch should be used. Additionally, the NPPF advises that for developments with a lifetime beyond 2100, Flood Risk Assessments should assess the upper end allowance for both the 3.3% and 1% Annual Exceedance Period (AEP) events.

5.7 Therefore, for the proposed development, the upper end climate change allowance that should be applied to the hydraulic modelling and drainage strategy are 40% for the 1 in 30-year rainfall event and 45% for the 1 in 100-year rainfall event.

5.8 With the climate change allowances outlined above, it is unlikely that the surface water flood risk will increase on the site to the extent that the development would become inappropriate due to the capacity of the proposed drainage strategy, which is set out in further detail in future chapters of this report. The intervention of the proposed drainage strategy, which will be designed to attenuate and sustainably discharge surface water from the 1 in 100-year rainfall event, plus 45% climate change allowance, means that this area of surface water flood risk will be attenuated and subsequently not pose a risk of inundation to the proposed development and adjacent land uses.

Residual Flood Risk

5.9 It is important to recognise that flood risk can never by fully mitigated and there will always be a residual risk of flowing. The residual risk is associated with several potential risk factors, including (but not limited to):

- A flood event that exceeds that for which the local flood defences or local drainage system has been designed to withstand.
- A residual danger posed to property and life because of flood defence failure through overtopping or structural collapse.
- General uncertainties inherent in the prediction of flooding.

5.10 Modelling of flood events is not an exact science. Therefore, there is an inherent uncertainty in the prediction of flood levels and extents used in the assessment of flood risk. The EA's Flood Map for Planning is largely based upon detailed modelling within the area. However, other mapping products require numerous assumptions to be made. Whilst they all provide a good depiction of flood risk for specific modelled conditions, all modelling requires the making of core assumptions and these might not occur in the open and dynamic environment of a flood event. Additionally, the EA's Flood Map for Planning and other flood modelling is updated regularly. Interested parties are recommended to keep abreast of this so that a significant change or increase in flood risk can be determined.

5.11 Table 5.2, below, summarises the residual level of flood risk from all sources, once mitigating factors, site design and climate change has been considered (as laid out in Chapters 4 and 5, above).

Table 5.2 – Summary of Residual Food Risk

Flood Source	Risk Level				Comment
	High	Medium	Low	Very Low	
Fluvial / Tidal				X	Site is wholly located in Flood Zone 1.
Surface Water			X		The JBA CFM's and EA's RoFSW maps shows that the development site has areas of high risk surface water flooding along the western site boundary and in the north-eastern corner of the development site. These areas do not encroach on the proposed residential footprint and can be managed by an appropriate drainage strategy.
Groundwater			X		Site geology is clay and therefore unproductive in terms of groundwater emergence. High groundwater table can be mitigated with a suitable impermeable geomembrane lining.
Infrastructure Failure				X	Asset records and site investigations indicate there are no public sewers or private drains running through the development site.
Canals				X	There are no canals in the vicinity.
Reservoirs				X	There are no reservoirs in the vicinity.
Increase due to Climate Change		X			Increased peak river flows and rainfall intensities are not expected to affect the development site and will be mitigated by the drainage strategy for the development site.

6.0 Surface Water Drainage Strategy

6.1 The following three chapters of this report sets out the Drainage Strategy for the development site, as well as any maintenance requirements that need to be considered for the proposed network. This chapter will focus on the Surface Water Drainage Strategy requirements, including allowances within the strategy for residential urban creep, exceedance flows during extreme storm events, surface water quality and maintenance requirements for any proposed drainage features.

Drainage Strategy Overview

6.2 To achieve betterment over the existing runoff rates, the drainage strategy for the proposed development will provide permeable paving, swales and attenuation basins within the footprint of the new development, and the surface water drainage will be restricted to existing greenfield runoff rate and directed to outfall to the existing ditch along the western site boundary.

6.3 It has been established in Section 2 of this report that infiltration into the existing ground is not viable due to the existing clay geology. As such, Type C (Non-infiltration) permeable paving has been utilised within this drainage strategy. Due to the high groundwater table, all drainage features will be lined with an impermeable geomembrane to prevent groundwater ingress into the site's drainage network.

6.4 West Sussex County Council, as the LLFA, recommend the completion of their Surface Water Drainage Summary Proforma to be submitted for both outline and detailed planning applications, which should accompany the site-specific Flood Risk Assessment and Drainage Strategy and aims to provide a summary of the existing site conditions, existing site runoff rates and proposed runoff rates where development is proposed. The completed drainage summary proforma is provided in **Appendix J**, with detailed information of the drainage strategy provided within this report chapter.

Site Areas

6.5 The total development site area is approximately 4.45 hectares (ha). The development site areas have been assessed in relation to the proposed impermeable areas. A full breakdown of the site areas is provided in Table 6.1 below, and a plan outlining the site's proposed impermeable areas has been provided in full in **Appendix K**.

Table 6.1: Site Areas

Breakdown of Site Areas	Proposed Area (ha)	Percentage Coverage (%)
Dwellings (Roof Areas)	0.51	11%
Parking / Access / Hardstanding	0.96	21%
Landscaping / Flowerbeds / Gardens	2.98	67%
TOTAL	**4.45**	**100%**

Sustainable Drainage Policy Overview

6.6 Current planning policy and Environment Agency guidance requires developments to employ SuDS (Sustainable urban Drainage System) techniques wherever feasible. Careful design of SuDS features can ensure that a development's surface water drainage network closely reflects the natural hydrology of the pre-developed site.

6.7 The key benefits of SuDS are as follows:

- Improving water quality over a conventional piped system by removing pollutants from diffuse pollutant sources, i.e. roads;

- Improving amenity through provision of open green space;
- Improving biodiversity through increased areas for wildlife habitat; and
- Enabling a natural drainage regime that recharges groundwater (where possible).

6.8 SuDS provide a flexible approach to drainage, with a wide range of components from soakaways to large-scale basins or ponds. The individual techniques should be used where possible in a management train that mimics the natural pre-developed pattern of drainage.

Greenfield Runoff Rate

6.9 The greenfield runoff rates have been calculated using the QMed value, which is the index flow rate provided in the Flood Estimation Handbook (FEH). QMed has been estimated for rural values using the catchment descriptors methodology, which includes the following input values:

- Site Location
- SAAR – Standard Average Annual Rainfall – 863 mm
- SPR – Standard Percentage Runoff derived from Hydrology of Soil Types (HOST) soils data
- URBEXT – The Extent of Urban and Suburban cover
- BFIHOST – Baseflow Index derived from HOST soils data

6.10 The QMed Greenfield Runoff Rate has been estimated using the HR Wallingford online tool, and the results have are provided in full in **Appendix L**. Table 6.2 below provides a summary of the calculated QMed values for the site, as taken from the results of the HR Wallingford calculations.

Table 6.2: QMed Greenfield Runoff Rates

FEH QMed Hectare Rate (l/s/ha)	FEH QMed Site Rate (l/s)
8.5	37.7

6.11 The calculated QMed site rate of 37.7 l/s applies to the whole site catchment area of 4.45 ha. For the proposed impermeable areas which are to be positively drained, it is recommended that the greenfield runoff catchment is scaled to suit the proposed site impermeable areas of 1.47 ha, which results in a calculated greenfield runoff rate of 12.4 l/s for the drainage strategy.

Design Criteria

6.12 This drainage strategy has been designed in accordance with the design criteria outlined in West Sussex County Council's LLFA Policy for the Management of Surface Water. This ensures that the drainage strategy accords with the local policy requirements (as well as those of the NPPF). This includes:

- Using FEH2025 Annual Maximum Catchment data rather than FSR data.
- Using a runoff coefficient (CV) of 1.0 in all hydraulic modelling.
- Reducing the MADD Factor (which assumes 10 m^3 of pipe storage per hectare) to zero.
- Urban Creep has been considered and included in parts of the site to which it applies.
- The full suite of rainfall events has been used (up to the 5,760-minute storm, which is the maximum allowable rainfall event when using FEH data).
- The maximum rainfall intensity has been raised to 550mm/hr to ensure that the full hydrograph is included in the hydraulic calculations.

Urban Creep

6.13 Urban creep can be described as future urban expansion within a development, such as extensions to buildings and paved gardens as the development matures. These activities increase the impermeable area of a site and often sit outside of the development control process. An appropriate allowance should be made for urban creep throughout the lifetime of the development, as per BS 8582:2013 '*Code of Practice for Surface Water Management for Developed Sites*'.

6.14 West Sussex County Council (the LLFA) have produced their own guidance on the percentage of urban creep that should be applied to a development site. They state that the consideration of urban creep should be assessed on a site-by-site basis but is limited to residential development only. The allowances set out in Table 5.2 of the WSCC LLFA Policy for the Management of Surface Water must be applied to the impermeable areas within the private property curtilage, according to the proposed development density. The urban creep allowances are provided in Table 6.3 below:

Table 6.3: Extract of Table 5.2 of WSCC Policy for the Management of Surface Water

Residential Development Density (Dwellings per Hectare)	**Change Allowance (%age of Impermeable Area)**
<25	10%
30	8%
35	6%
45	4%
>50	2%
Flats and Apartments	0%

6.15 Flats and apartments cannot contribute to urban creep, which means that the proposed apartment block of 8 flats and 2 maisonette apartments will not contribute to increased future impermeable areas.

6.16 The site has 70 remaining separate residential houses spread across the 4.45 hectare development site, the site therefore has a residential development density of 15 dwellings per hectare and is subject to an urban creep change allowance of 10% to the impermeable areas, as per the following:

- The private building impermeable areas of the development site total 5,070 m^2 (0.51 ha), and the site's total impermeable areas, without urban creep, are 1.47 ha.
- An addition of 10% to the private building impermeable areas of 5,070 m^2 increases these by 507 m^2 to 0.56 ha and the overall impermeable areas from 1.47 ha to 1.52 ha.

6.17 This increase due to urban creep, and the full area of 1.52 ha, has been included within the InfoDrainage hydraulic modelling calculations, which are provided in full in **Appendix M** and discussed in further detail later in this chapter.

The Drainage Hierarchy

6.18 The National Planning Policy Framework (NPPF) states that opportunities to reduce overall flood risk should be sought and achieved through sustainable development of careful drainage design. This can be achieved through the layout and form of development, including green infrastructure and the appropriate application of SuDS.

6.19 To deliver SuDS benefits and ensure that development reduces overall flood risk, there is an established hierarchy of surface water drainage methods that should be considered. The most preferable and sustainable area at the top and the least preferable and least sustainable at the bottom.

6.20 The drainage hierarchy is a sequential check that intends to ensure that all practical and reasonable measures are taken to manage surface water as high up the hierarchy as possible, with '1' being the highest, and that the amount of surface water managed at the bottom of the hierarchy is minimised. The Planning Practice Guidance (PPG) to the NPPF states that: *"Generally, the aim should be to discharge surface run off as high up the following hierarchy of drainage options as reasonably practicable"*.

6.21 The drainage hierarchy presented in the NPPF presents only four tiers of drainage options. This has been expanded on and adopted by others and now can be viewed as the following tiers:

1. Store rainwater for later use.
2. Use infiltration techniques, such as porous surfaces in non-clay areas.
3. Attenuate rainwater in ponds or open water features for gradual release.
4. Attenuate rainwater by storing in tanks or sealed water features for gradual release.
5. Discharge rainwater direct to a watercourse.
6. Discharge rainwater to a surface water sewer / drain.
7. Discharge rainwater to the combined sewer.
8. Discharge rainwater to the foul sewer.

6.22 The first two tiers of the drainage hierarchy ensure that surface water is retained within the site boundary and does not increase flood risk to others. This is always the most preferable method of surface water management.

6.23 The next six tiers of the hierarchy provide regional control, but with decreasing levels of pollution removal and reduced potential for amenity and habitat creation with each tier of the drainage hierarchy.

6.24 Within the lower six tiers of the drainage hierarchy, there must be some form of flow restriction, so that discharge to off-site surface water routes resemble the pre-developed greenfield runoff rate, as much as reasonably practicable/ This requires on-site storage facilities, which may include ponds, swales, subsurface storage tanks and System C (non-infiltration) porous paving with flow control devices. Again, methods that provide the most potential for amenity provision and pollution removal should be prioritised.

6.25 Each tier of the drainage hierarchy has been considered for the surface water Drainage Strategy for the development site. In order of preference, the outcome of these considerations is set out in further detail below.

Tier 1 – Store Rainwater for Later Use

6.26 Water re-use systems can rarely mange 100% of the surface water discharged from a development. This requires the surface water yield from the building and hardstanding areas to balance perfectly with the demand from the proposed development; too much demand will result in a lack of water supply, whilst too little demand will cause the storage systems to become overwhelmed and could result in flooding when the next rainfall event happens. Consequently, even if there are opportunities and a need for rainwater recycling systems, further solutions for attenuating and discharging surface water will almost always be required.

6.27 There is likely to be a moderate rainwater yield from the roof areas of the development that could be used for domestic non-potable uses. Additionally, the proposed development includes landscaping that may benefit from having a supply of recycled rainwater for the watering of gardens, flowerbeds, etc.

6.28 The opportunity for water re-use and recycling on site has been explored, and therefore it is proposed that rainwater harvesting tanks are installed for each residential dwelling / apartment building. This will

be installed to attenuate rainwater from the proposed roof areas, in order to meet the demand for the proposed development and achieve the requirements for intercepting surface water as set out in the New National Standards for SuDS. The water collected by the rainwater harvesting system will then be utilised for non-potable water uses, such as flushing toilets and in washing machines.

6.29 The site has an estimated 5% annual rainwater yield of approximately 121,880 litres and a 5% annual water demand of approximately 115,390 litres. Therefore, rainwater harvesting tanks will provide a total storage volume of around 110,000 litres for the development site, which equates to 110 m^3 of storage as part of the proposed development. A table calculating the rainwater yield for the overall development site and total rainwater harvesting tank storage volume is provided in **Appendix N**.

6.30 It is also recommended that the new residential buildings are fitted with water butts. These will reduce the reliance on potable water supplies during activities such as gardening or car washing. They can also provide small amounts of surface water storage and assist in achieving zero discharge for rainfall depths up to 5 mm, which covers 50% of annual rainfall events, according to the EA's Rainfall Runoff Management for Developments report (SC030219).

6.31 For the purposes of this report, the volume of surface water storage provided by these water butts is not included within the drainage strategy calculations and drainage strategy layout.

Tier 2 – Use Infiltration Techniques, such as Porous Surfaces in Non-Clay Areas

6.32 As stated in chapter 2 of this report, the existing site is underlain by clay, which is hydraulically unproductive. It is therefore assumed that infiltration techniques will not be possible as a viable means for discharging surface water on site. Therefore, this tier of the drainage hierarchy is not included within the surface water drainage strategy.

Tier 3 – Attenuate Rainwater in Ponds or Open Water Features for Gradual Release

6.33 In order to attenuate surface water runoff from the proposed development, it is proposed to excavate and form an attenuation basin in the north-western corner of the development site. The attenuation basin will be constructed as follows:

- Basin invert / base level: 14.25 mAOD.
- Basin storage depth: 0.7 m.
- Basin freeboard: 0.3m.
- Side slopes: 1:3 gradient.

6.34 The pond has been sized to accommodate surface water runoff for the whole development site, with an available storage volume of 1,525 m^3. Details of the pond size, shape and location are provided on the drainage strategy, which is found in **Appendix O**.

6.35 It is also proposed to implement rain gardens within the development site to capture surface water runoff instead of conventional drainage, which complies with the requirements set out in Standard 2 of the new National Standards for SuDS for management and interception of everyday rainfall.

Tier 4 – Attenuate Rainwater by Storing in Tanks or Sealed Water Features for Gradual Release

6.36 There are private car parking areas located upstream of the attenuation basin which have been identified as an opportunity to provide 'System C' (Non-Infiltration) permeable pavement to attenuate surface water runoff close to the primary source (i.e. building roof runoff, road runoff). The permeable paving construction in these areas will include a 450mm thick open graded sub-base pavement foundation, MOT Type 3 or equivalent approved granular material, with 30% voids in the pavement layer allowing for surface water attenuation volume of approximately 145 m^3 within the pavement layers.

6.37 Due to the existing site topography, it is not possible to positively drain the whole site to the new attenuation basin, specifically Plots 1-8 and Plots 12-20 located in the southern half of the development site. It is therefore proposed to split the site into two catchments, with the northern catchment draining to the attenuation basin and the southern catchment draining to a permeable paving consisting of a 700mm thick open graded sub-base pavement layer, MOT Type 3 or equivalent approved, with 30% voids in the pavement layer allowing for a surface water attenuation volume of 140 m^3 in the pavement layer.

6.38 The permeable paving extents is provided in further detail in **Appendix O**.

Tier 5 – Discharge Rainwater Direct to a Watercourse

6.39 The topographical survey (**Appendix B**) confirms the position of a ditch located along the western development site boundary. It is therefore proposed to discharge the surface water drainage to the open watercourse via a new piped connection from the attenuation basin for the northern catchment and the permeable paving for the southern catchment.

6.40 It is recommended to restrict surface water flows within the site's impermeable areas to maintain or provide betterment for the existing greenfield runoff rate, which will be achieved with catchpit chambers installed upstream of the open watercourse outfall, with appropriate flow control devices (either orifice plates or Hydro-Brake valve), restricting flows to 5.0 l/s for the southern catchment and 6.5 l/s for the northern catchment. Details of the flow control chamber position can be found in full in **Appendix O**.

6.41 As part improving the capacity of the existing surface water ditches within the vicinity of the development site, it is also proposed to clean out the existing ditch bed along the southern side of Reeds Lane and within the existing development site and remove silt and large debris within the ditches. This will improve the existing site context in terms of surface water flooding and subsequently improve the existing invert levels of the ditch that the onsite surface water drainage network will outfall to.

6.42 Hydraulic modelling for the anticipated site drainage network has been produced using InfoDrainage to represent the proposed drainage of the built site, which is based on FEH2025 rainfall data (modelling results provided in **Appendix M**). The model was run for a number of events, which are as follows:

- 1 in 2-year rainfall event for 15, 30, 60, 120, 240, 360, 480, 960, 1440, 2880 and 5760-minute storm durations.
- 1 in 30-year rainfall event plus 40% climate change allowance, for 15, 30, 60, 120, 240, 360, 480, 960, 1440, 2880 and 5760-minute storm durations.
- 1 in 100-year rainfall event plus 45% climate change allowance, for 15, 30, 60, 120, 240, 360, 480, 960, 1440, 2880 and 5760-minute storm durations.

6.43 The InfoDrainage modelling results confirm that there is sufficient storage within the surface water drainage network to prevent the site from flooding during the 1 in 2-year rainfall event and the 1 in 30-year rainfall events listed above, and minimal flooding occurring within the development site during the larger storm durations of the 1 in 100-year rainfall event. The maximum recorded flooding within the site's drainage network during the 1 in 100-year rainfall event plus 45% climate change allowance is approximately 5 m^3 of surface water, which is equivalent to approximately 3 mm of standing water across the impermeable areas of the development site, and therefore falls within acceptable tolerances of flooding within the development site during the 1 in 100-year rainfall event.

Tier 6 – Discharge Rainwater to a Surface Water Sewer / Drain

6.44 This tier of the drainage hierarchy is not required for surface water discharge from this development.

Tier 7 – Discharge Rainwater to a Combined Sewer

6.45 This tier of the drainage hierarchy is not required for surface water discharge from this development.

Tier 8 – Discharge Rainwater to a Foul Sewer

6.46 This tier of the drainage hierarchy is not required for surface water discharge from this development.

Exceedance Flows

6.47 Exceedance events are those greater than the design rainfall event (i.e., greater than the 1 in 100-year rainfall event plus 45% climate change allowance).

6.48 Any rainfall events greater than the design rainfall event may cause flooding due to them 'exceeding' the capacity of the drainage system. In this situation, it is imperative to check whether flooding would and, if so, whether it needs to be contained onsite. Exceedance flows should not ingress into any properties on-site and should not cause nuisance to any neighbouring sites or buildings.

6.49 The drainage system has some 'freeboard' within it that would provide attenuation during exceedance events. This allows for the attenuation of some surface water in storms beyond the 1 in 100-year plus 45% rainfall event.

6.50 Should an exceedance event cause the drainage system to surcharge, the topography of the developed site would allow surface water to directly flow into the existing ditch along the western site boundary without impacting residential properties or land owned by a third party. There are some industrial business which are a local 'downstream' receptor for any exceedance flows, and therefore it is important that exceedance flows are managed on-site to minimise and mitigate any off-site impact.

6.51 An Exceedance Routing Plan for surface water runoff is provided in **Appendix P**. this plan details where the surface water would flow on the site and the area above ground where surface water can accumulate and be stored during extreme rainfall events until it will then be discharged into the existing ditch.

Surface Water Runoff Quality

6.52 The NPPF states that the development should not have a detrimental impact on the environment, including the water environment. The technical guidance to the NPPF provides further advice on the benefits of ensuring runoff quality is to an appropriate standard.

6.53 The CIRIA SuDS Manual provides guidance on the treatment of surface water runoff. With regards to the parking areas, main access road and shared surface areas on the site, Table 4.3 of the CIRIA SuDS Manual rates the pollution hazard from the site of 80 residential dwellings as 'low'. To mitigate a 'low' pollution hazard, the CIRIA SuDS Manual recommends using a simple index approach in line with Section 26.7.1. This is discussed, below.

6.54 Table 26.2 of the CIRIA SuDS Manual provides pollution hazard indices for different land use classifications. The land use classification that requires consideration for the site is in Table 6.4 below.

Table 6.4: Excerpt from Table 26.2 of CIRIA SuDS Manual (C753)

Land Use	Pollution Hazard Level	Total Suspended Solids (TSS)	Metals	Hydro-Carbons
Residential roofs	Very Low	0.2	0.2	0.05
Individual property driveways, residential car parks, low traffic roads (e.g. cul-de-sacs, home zones and general access roads) and non-residential car parking with infrequent change (e.g. schools, offices) i.e. < 300 traffic movements/day	Low	0.5	0.4	0.4

6.55 To deliver adequate pollution treatment and mitigation, the CIRIA SuDS Manual recommends using a SuDS component that has a total pollution mitigation index (for each contaminant type) that equals or exceeds the pollution hazard index (for each contaminant type).

6.56 Where the mitigation index of an individual SuDS component is insufficient, it is recommended to provide two (or more) SuDS components that are connected in series, with a factor of 0.5 applied on the second and subsequent SuDS components to account for the reduced performance of secondary or tertiary components associated with reduced inflow concentrations.

6.57 Table 26.3 of the CIRIA SuDS Manual provides indicative SuDS mitigation indices for each SuDS type. Table 6.4, below, which is an excerpt from Table 26.3, shows the mitigation index for permeable paving and detention basins.

Table 6.5: Excerpt from Table 26.3 of CIRIA SuDS Manual (C753)

Type of SuDS Component	Total Suspended Solids (TSS)	Metals	Hydro-Carbons
Permeable Pavement	0.7	0.6	0.7
Detention Basin	0.5	0.5	0.6

6.58 The mitigation indices for permeable pavements exceed those of the highest pollution hazard index figures from Table 6.4, and the mitigation indices for the attenuation basin match or exceed the highest pollution hazard index figures from Table 6.4.

6.59 The above evidence shows how the proposed SuDS features provide more than sufficient pollution mitigation to ensure all pollution hazards generated by the development are completely mitigated and cannot pollute the existing ditch where the site will discharge surface water.

New National Standards for SuDS

6.60 The following provides a summary of how the proposed surface water drainage strategy and SuDS meet the requirements of the new National Standards for SuDS.

Standard 1 – Runoff Destinations

6.61 The proposed development will incorporate rainwater harvesting systems which meets priority 1 of standard 1.

Standard 2 – Management of Everyday Rainfall (Interception)

6.62 The proposed surface water drainage strategy will provide interception by utilising the following SuDS features:

- Rainwater Harvesting;
- Rain Gardens; and
- Permeable Paving.

Therefore, the site meets the requirements of Standard 2.

Standard 3 – Management of Extreme Rainfall and Flooding

6.63 The proposed drainage system will control runoff from the site to QMed, which is equivalent to the 1 in 2-year event (50%AEP), and therefore the surface water drainage strategy is compliant with Standard 3.

Standard 4 – Water Quality

6.64 The proposed SuDS will ensure that any surface water discharging to the watercourse will meet the necessary water quality standards, see paragraphs 6.52 to 6.59. Therefore, the proposals meet the requirements of Standard 4.

Standard 5 – Amenity

6.65 The surface drainage system works with the wider landscape proposals for the site to provide opportunities for amenity through multi-functional places. Therefore, the proposals meet standard 5.

Standard 6 – Biodiversity

6.66 The SuDS maximises the biodiversity benefits of the site by utilising open SuDS where possible. The detention basin also incorporates wetland areas to enhance the biodiversity of the site and rain gardens have been included to provide additional benefits. Therefore, the proposal meets the requirements of Standard 6.

Standard 7 – Design of Drainage for Construction, Operation, Maintenance, Decommissioning and Structural Integrity

6.67 The drainage strategy has been designed to ensure that the drainage system can be easily and safely constructed, operated and maintained. Section 6 sets out the proposed maintenance regime for the SuDS. At the detailed design stage, a full Management and Maintenance Plan will be developed for the site. Therefore, the site will meet Standard 7.

7.0 SuDS Maintenance Regime

7.1 Whilst the drainage strategy for the site has been designed to current standards, there will remain a small residual risk of flooding due to blockage or failure of on-site infrastructure. Therefore, appropriate and regular maintenance of the drainage infrastructure should be undertaken by the site management company or their agents (and the residents, where applicable).

7.2 This chapter describes the proposed management and schedules for the maintenance of proposed Sustainable Urban Drainage Systems (SuDS) to reduce the risk of the proposed network flooding due to poor maintenance.

Piped Network Maintenance

7.3 The piped network shall be maintained by either Southern Water or an approved maintenance company, in accordance with the Water UK Design and Construction Guidance for Foul and Surface Water Sewers (DCG) and the manufacturer's guidance.

7.4 The maintenance schedule should include clearing gullies, removed any large obstructions within the pipes and cleaning catchpits at regular intervals to ensure the correct operation of the sewer network.

Permeable Paving / Attenuation Basin / Swales Maintenance Regime

7.5 The proposed SuDS features are to have a routine maintenance schedule that conforms to the CIRIA SuDS Manual (C753) 2015 guidance. An approved maintenance company is to adhere to the maintenance schedule provided in Table 7.1, for permeable paving, and Table 7.2, for the swales and attenuation basin, to ensure the correct operation and maintenance of the drainage system.

Table 7.1: Operation and Maintenance Schedule for Permeable Paving

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Brushing and vacuuming (standard cosmetic sweep over whole surface).	Once a year, after autumn leaf fall, or reduced frequency as required, based on site specific observations of clogging or manufacturer's recommendations - pay particular attention to areas where water runs onto pervious surface from adjacent impermeable areas as this area is most likely to collect the most sediment.
Occasional Maintenance	Stabilise and mow contributing and adjacent areas.	As required.
	Removal of weeds or management using glyphosate applied directly into the weeds by an applicator rather than spraying.	As required - once per year on less frequently used pavements.
Remedial Actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised within 50mm of the level of the paving.	As required.
	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to structural performance or a hazard to users, and replace lost jointing material.	As required.
	Rehabilitation of surface and upper substructure by remedial sweeping.	Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging).
Monitoring	Initial inspection	Monthly for 3 months after installation.
	inspect for evidence of poor operation and/or weed growth – if required, take remedial action.	Three-monthly, 48h after large storms in first 6 months.
	Inspect silt accumulation rates and establish appropriate brushing frequencies.	Annually.
	Monitor inspection chambers	Annually.

Table 7.2: Operation and Maintenance Schedule for Swales and Attenuation Basins

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Remove litter and debris.	Monthly, or as required.
	Cut grass – to retain grass height within specified design range.	Monthly (during growing season), or as required,
	Manage other vegetation and remove nuisance plants.	Monthly (at start, then as required).
	Inspect inlets, outlets, and overflows for blockages, and clear if required.	Monthly.
	Inspect vegetation coverage.	Monthly for 6 months, quarterly for 2 years, then half-yearly.
	Inspect inlets and facility surface for silt accumulation, establish appropriate silt removal frequencies.	Half-yearly, or as required.
Occasional Maintenance	Re-seed areas of poor vegetation growth, alter plant types to better suit conditions, if required.	As required or if bare soil is exposed over 10% or more of the treatment area.
Remedial Actions	Repair erosion or other damage by re-seeding or re-turfing.	As required.
	Re-level uneven surface and reinstate design levels.	As required.
	Scarify and spike topsoil layer to improve infiltration performance, break up silt deposits and prevent compaction of the soil surface.	As required.
	Remove and dispose of oils or petrol residues using safe standard practices.	As required.

8.0 Foul Drainage Strategy

8.1 This chapter of the report outlines the existing foul sewerage network and the requirements to provide a new foul connection, as well as assess the peak foul flow rate for the proposed scale of development.

Existing Foul Sewer Network

8.2 The Southern Water asset records (**Appendix F**) confirm the position of a publicly owned sewer within the carriageway of Reeds Lane east of the development site (manhole reference 4101). This foul sewer is a 150mm diameter vitrified clay pipe that falls in an easterly direction away from the development site. There are no other foul sewers within the vicinity of the development site.

8.3 The obtained records only provide the cover level for Southern Water manhole 4101 (17.04 mAOD), and no invert levels for the other identified manholes. However, Southern Water asset records obtained from historical planning applications for adjacent development sites (application references DM/25/1434 and DM/22/0640) confirm that the invert level for Southern Water manhole 4101 is 16.08 mAOD.

Peak Foul Flow Rate

8.4 The peak foul flow rate for the development has been based on the requirements of the Building Regulations '*Approved Document H*' and the British Water Code of Practice '*Flows and Loads 4: Sizing Criteria, Treatment Capacity for Sewage Treatment Systems*':

- Standard residential loading: 150 litres per person per day.
- Total number dwellings: 80 dwellings.
- Assumed average 4 people per dwelling: 4 x 80 = 320 people.
- Modifier for domestic peak flow rate: 6.
- 150 x 320 = 48,000 l/day.
- (48,000 x 6) / 86,400 = 3.33 l/s

8.5 The calculated peak foul flow rate is therefore 3.3 l/s.

Foul Drainage Strategy

8.6 It is proposed to provide a new foul connection from the development site to the existing Southern Water sewer along Reeds Lane, which will be sized to accommodate the flows for 80 new residential dwellings. The new connection will require agreement with Southern Water via their Section 106 application process for connections to their existing sewers, which would be progressed at detailed design stage.

8.7 As the cover levels for the site will be lower than the recorded invert level of the existing sewer where connection is proposed, it is proposed to provide a pumping station and foul rising main to drain the foul sewage. As the site is constrained by surface water flood risk areas along the western development site boundary, it is proposed to provide a privately-owned package pumping station which is sized to accommodate a minimum foul effluent storage capacity of 12.0 m^3 and a pump rate of 3.3 l/s within the proposed foul rising main, which matches the peak foul flow rate and will prevent the build-up of silts within the proposed impeller pumps. Details of the foul drainage strategy are provided on the proposed drainage strategy plan (**Appendix O**).

8.8 The development site's foul sewerage network will be designed and constructed in compliance with the current Building Regulations, BS EN 752 'Drainage and Sewer Systems Outside Buildings', the Local Authority Building Control Specification and Requirements, the Water UK Design and Construction Guidance for Foul and Surface Water Sewers (DCG), and the Civil Engineering Specification for the Water Industry, 8th Edition.

9.0 Summary and Conclusions

9.1 This report, prepared by Motion for Reside Holdings Limited, supports a detailed planning application for land west of Kings Business Centre, Reeds Lane, Sayers Common (BN6 9LS). The proposals comprise 80 residential dwellings (Use Class C3), including affordable units, with new vehicular, pedestrian, and cycle access, landscaping, open space, parking, sustainable drainage, and associated works.

9.2 The FRA and Drainage Strategy address the permanent drainage system only. Temporary construction drainage will be determined by the appointed contractor.

9.3 The site slopes east to west at approximately 1 in 45, ranging from 17.95 mAOD at the southeast corner to 14.09 mAOD along the western boundary.

9.4 BGS mapping identifies the bedrock as Weald Clay Formation (mudstone), with no superficial deposits. Infiltration drainage is therefore unsuitable, and no further testing is required.

9.5 Groundwater monitoring indicates a high water table in winter (c.0.5 mBGL). All drainage features should be lined with impermeable geomembrane to prevent groundwater ingress and loss of attenuation capacity.

9.6 EA Flood Maps confirm the site lies wholly within Flood Zone 1, with no records of fluvial flooding.

9.7 EA surface water maps show most of the site is low risk. Localised high-risk areas occur along the western boundary (ditch flow path) and in the northeast corner (topographical low spot). These areas fall outside proposed hardstanding and residential footprints and can be managed through the drainage strategy.

9.8 Envirocheck and BGS mapping indicate negligible groundwater flood risk.

9.9 Southern Water records show no public sewers within the site or along Reeds Lane. Historic flooding in Sayers Common village is unrelated, as site topography directs flows westward, away from the village system.

9.10 EA reservoir flood maps confirm the site lies outside reservoir flood extents, with no other artificial flood sources nearby.

9.11 Rainwater harvesting tanks are proposed for each dwelling to intercept roof runoff, meeting SuDS standards and providing non-potable water for toilets and washing machines. Water butts will further reduce potable demand for gardening and car washing, while offering small-scale attenuation for minor rainfall events.

9.12 Surface water runoff will be managed via a 1,525 m^3 attenuation basin in the northwest and permeable paving in the southern catchment (700 mm sub-base, 30% voids, 140 m^3 storage).

9.13 Discharge will occur to the western ditch via piped connections, restricted to 6.5 l/s (north) and 5.0 l/s (south). Existing ditches along Reeds Lane will be cleared of silt and debris to improve capacity and invert levels.

9.14 Foul drainage will connect to the Southern Water sewer in Reeds Lane, subject to Section 106 approval. A pumping station and rising main will provide 12 m^3 storage and a pump rate of 3.3 l/s, matching peak flows and preventing silt build-up.

9.15 The proposed strategy ensures the development will not increase flood risk on-site or to neighbouring areas, meeting the requirements of the 2024 NPPF.

Appendix A

Proposed Site Layout

CDM 2015 Health & Safety Information

This information relates only to 'Significant Hazards' identified on this drawing and is to be read in conjunction with the Designer's Hazard Register.

5.0m SHARED SURFACE
4.1m PRIVATE DRIVE
5.0m MAIN ACCESS
PUBLIC RIGHT OF WAY
Attenuation Basin
Underground Private FW Pumping Station
Play Area
Plaza
Amenity Lawn
Wildflower Meadow
Swale
car port
Sub station
FB
CR
rcp
Millennium H

Pedestrian/Cycle link to adjacent development

1.8m high close boarded fence to gardens along eastern boundary, with 3m planted buffer zone on eastern side

Presentation House

Off-site acoustic fence

King Business Centre

Pavilion House

Proposed footpath link to village south of King Business Centre

Existing public right of way incorporated within development with green corridor adjacent to this

Proposed footpath to cross ditch and link on to Reeds Lane

Rev	Date	Revision Details	Dr	Ch
E	25.11.25	Landscape Updated	CV	KE
D	20.11.25	Amended Red Line	MC	KE
C	13.11.25	Amended Layout to Client Comments	MC	KE
B	06.11.25	Car Spaces and Pumping Station Updated	CV	KE
A	05.11.25	Amended Layout to Tracking Comments	MC	KE

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Client's Name
Reside

Job Title
Land at Reeds Lane, Sayers Common

Drawing Title
Site Layout

Scale
1:500 @ A1 / 1:1000 @ A3

metres 10 20 30 40 50

Drawn	Checked	Date
KE	AK	23.10.25

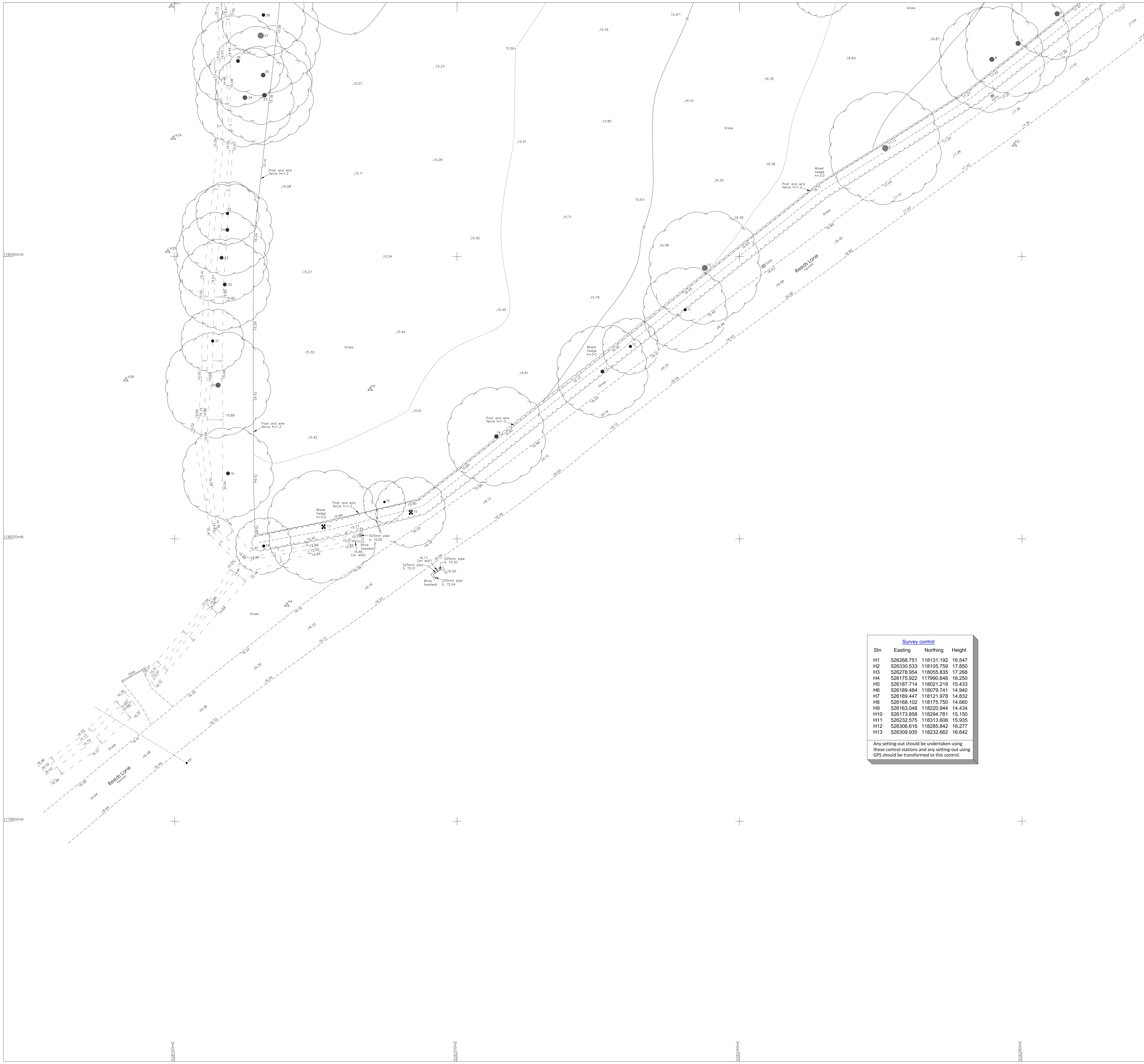
Job No	Drawing No	Rev
7463	PL-02	E

Status
INFORMATION

CAD Plot date: 25/11/2025 - 16:42:51 7463-site.dwg

Appendix B

Topographical Survey



Survey control

Stn	Easting	Northing	Height
H1	526268.751	118131.192	16.547
H2	526330.533	118105.759	17.850
H3	526278.954	118055.835	17.268
H4	526175.922	117990.648	16.250
H5	526187.714	118021.219	15.433
H6	526189.484	118079.741	14.940
H7	526189.447	118121.978	14.832
H8	526168.102	118175.750	14.660
H9	526163.048	118220.944	14.434
H10	526173.858	118294.781	15.150
H11	526232.575	118313.608	15.935
H12	526306.616	118285.842	16.277
H13	526309.935	118232.662	16.642

Any setting-out should be undertaken using these control stations and any setting-out using GPS should be transformed to this control.

Tree Schedule

1	Oak	d=0.65	h= 15
2	Oak	d=0.45	h= 12
3	Ash	d=0.45	h= 12
4	Oak	d=0.8	h= 15
5	Oak	d=0.6	h= 15
6	Oak	d=0.65	h= 12
7	Oak	d=0.65	h= 12
8	Oak	d=0.65	h= 12
9	Oak	d=0.8	h= 15
10	Oak	d=0.75	h= 15
11	Oak	d=0.4	h= 12
12	Ash	d=0.4	h= 12
13	Oak	d=0.5	h= 12
14	Oak	d=0.55	h= 15
15	Oak	multibole	h= 12
16	Hawthorn	d=0.3	h= 5
17	Oak	multibole	h= 15
18	Ash	d=0.4	h= 12
19	Oak	d=0.5	h= 12
20	Oak	d=0.65	h= 15
21	Ash	d=0.4	h= 12
22	Oak	d=0.5	h= 12
23	Oak	d=0.5	h= 12
24	Oak	d=0.5	h= 12
25	Ash	d=0.4	h= 12
26	Oak	d=0.25	h= 5
27	Oak	d=0.25	h= 5
28	Oak	d=0.25	h= 6
29	Oak	d=0.1	h= 5
30	Oak	d=0.25	h= 6
31	Oak	d=0.25	h= 6
32	Oak	d=0.25	h= 6
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34	Oak	d=0.6	h= 15
35	Oak	d=0.6	h= 15
36	Oak	d=0.5	h= 15
37	Oak	d=0.8	h= 15
38	Oak	d=0.45	h= 10
39	Oak	d=0.5	h= 15
40	Oak	d=0.5	h= 15
41	Oak	d=0.25	h= 10
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44	Oak	d=0.35	h= 12
45	Oak	d=0.35	h= 12
46	Oak	d=0.35	h= 12
47	Ash	d=0.4	h= 12
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50	Oak	d=0.35	h= 8
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52	Birch	d=0.4	h= 15
53	Birch	d=0.4	h= 15
54	Birch	d=0.4	h= 15
55	Oak	d=0.7	h= 15
56	Oak	d=0.7	h= 15
57	Oak	d=0.25	h= 7
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60	Oak	d=0.6	h= 15
61	Oak	d=0.6	h= 15
62	Hazel	multibole	h= 5
63	Hazel	multibole	h= 5
64	Hazel	multibole	h= 5
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124	Oak	d=0.55	h= 15
125	Oak	d=0.55	h= 15
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128	Oak	d=0.35	h= 12
129	Oak	d=0.5	h= 15
130	Oak	d=0.5	h= 15
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132	Oak	d=0.35	h= 12
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152	Oak	d=0.2	h= 5
153	Oak	d=0.2	h= 5
154	Oak	d=0.15	h= 5
155	Oak	d=0.15	h= 5
156	Oak	d=0.25	h= 6
157	Unknown	d=0.4	h= 10

Topographical Survey Legend

Hedge	Telephone line
Undergrowth	Power line
Tree	Banking
Bush	Contour line 64
Building	Survey Station H5
Glass Building	Gate
Open Building	Level .115.28

Ordnance Survey Benchmark — OSBM

Foul Drainage — 100mm — FW MH CL 117.10 IL 116.75

Storm Drainage — 100mm — SW MH CL 117.10 IL 116.75

Abbreviations

Animal Sett	Sett
Air Valve	AV
Borehole	BH
Bus Stop	BS
Cover Level	CL
Earth Rod	ER
Electricity Pole	EP
Fire Hydrant	FH
Inspection Cover	IC
Invert Level	IL
Lamp Post	LP
Manhole	MH
Marker	MK
Name Plate	RNP
Power Pole	PP
Rain water Pipe	RWP
Road Sign	RS
Rodding Eye	RE
Reinforced Steel Joint	RSJ
Soil Vent Pipe	SVP
Stop Valve	SV
Survey Station	STN
Telegraph Pole	TP
Tree Stump	Stump
Trial Hole	TH
Unable To Lift	UTL
Vent Pipe	VP
Water Valve	WV

Metres
0 5 10
Scale

Notes

All trees are identified where possible. Species, spread, height and girth are indicative only.

Drainage has been surveyed where found, and traced where possible.

Eaves and ridge heights of surrounding buildings have been surveyed where possible.

Sheet Layout

3
2
1

Rev A:

Additional survey to ditches on west side. September 2025

HOOK SURVEY
Land & Building Surveyors
www.hooksurvey.com

Project :
Land at Reeds Lane, Sayers Common, Hassocks BN6 9LS

Client :
Reside Developments Limited

Drawing title :
Topographical Survey

Job No. : S22/9095	Dwg No. : S22/9095/01	Revision : A
Scale : 1.200	Date : November 2022	Drawn by : D.S.

Grid & Levels related to :
Ordnance survey coordinate system using GPS related to the Leica Smartnet RTK network. Based around 3 survey stations with a scale factor of 1.000, only the fixed survey stations H1, H2 and H7 are true Ordnance Survey positions.

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Metres
0 5 10
Scale

Notes

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are indicative only.

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and traced where possible.

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3
2
1

Rev A:

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Project :

Land at Reeds Lane, Sayers Common,
Hassocks BN6 9LS

Client :

Reside Developments Limited

Drawing title :

Topographical Survey

Job No. :	Dwg No. :	Revision :
S22/9095	S22/9095/02	A
Scale :	Date :	Drawn by :
1.200	November 2022	D.S.

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Survey control

Stn	Easting	Northing	Height
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H12	526306.616	118285.842	16.277
H13	526309.935	118232.662	16.642

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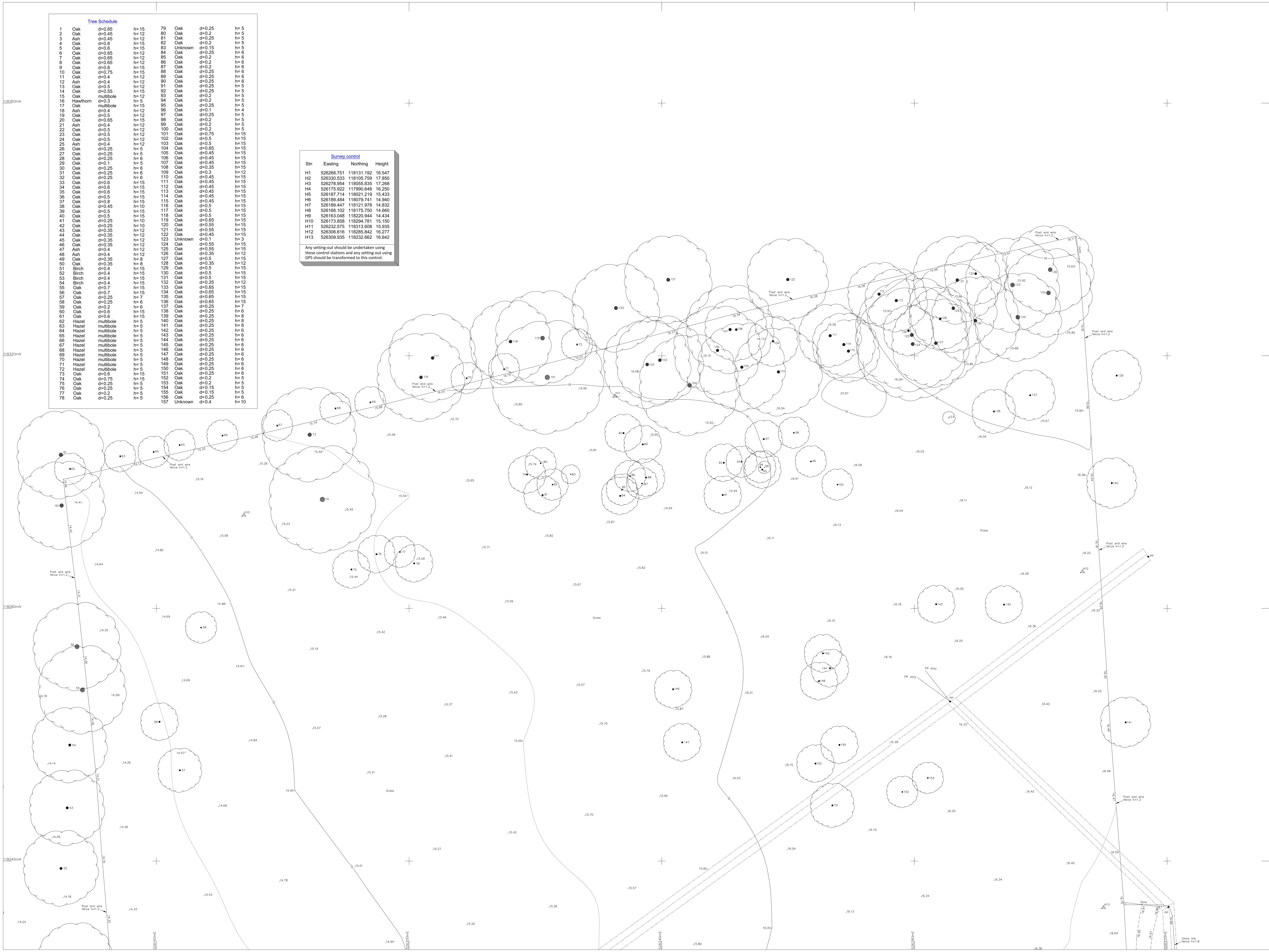
King Business Centre



Tree Schedule

No.	Species	d	h
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2	Oak	d=0.45	h= 12
3	Ash	d=0.45	h= 12
4	Oak	d=0.8	h= 15
5	Oak	d=0.6	h= 15
6	Oak	d=0.65	h= 12
7	Oak	d=0.65	h= 12
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9	Oak	d=0.8	h= 15
10	Oak	d=0.75	h= 15
11	Oak	d=0.4	h= 12
12	Ash	d=0.4	h= 12
13	Oak	d=0.5	h= 12
14	Oak	d=0.55	h= 15
15	Oak	multibole	h= 12
16	Hawthorn	d=0.3	h= 5
17	Oak	multibole	h= 15
18	Ash	d=0.4	h= 12
19	Oak	d=0.5	h= 12
20	Oak	d=0.65	h= 15
21	Ash	d=0.4	h= 12
22	Oak	d=0.5	h= 12
23	Oak	d=0.5	h= 12
24	Oak	d=0.5	h= 12
25	Ash	d=0.4	h= 12
26	Oak	d=0.25	h= 5
27	Oak	d=0.25	h= 5
28	Oak	d=0.25	h= 6
29	Oak	d=0.1	h= 5
30	Oak	d=0.25	h= 6
31	Oak	d=0.25	h= 6
32	Oak	d=0.25	h= 6
33	Oak	d=0.6	h= 15
34	Oak	d=0.6	h= 15
35	Oak	d=0.6	h= 15
36	Oak	d=0.5	h= 15
37	Oak	d=0.8	h= 15
38	Oak	d=0.45	h= 10
39	Oak	d=0.5	h= 15
40	Oak	d=0.5	h= 15
41	Oak	d=0.25	h= 10
42	Oak	d=0.25	h= 10
43	Oak	d=0.35	h= 12
44	Oak	d=0.35	h= 12
45	Oak	d=0.35	h= 12
46	Oak	d=0.35	h= 12
47	Ash	d=0.4	h= 12
48	Ash	d=0.4	h= 12
49	Oak	d=0.35	h= 8
50	Oak	d=0.35	h= 8
51	Birch	d=0.4	h= 15
52	Birch	d=0.4	h= 15
53	Birch	d=0.4	h= 15
54	Birch	d=0.4	h= 15
55	Oak	d=0.7	h= 15
56	Oak	d=0.7	h= 15
57	Oak	d=0.25	h= 7
58	Oak	d=0.25	h= 6
59	Oak	d=0.2	h= 6
60	Oak	d=0.6	h= 15
61	Oak	d=0.6	h= 15
62	Hazel	multibole	h= 5
63	Hazel	multibole	h= 5
64	Hazel	multibole	h= 5
65	Hazel	multibole	h= 5
66	Hazel	multibole	h= 5
67	Hazel	multibole	h= 5
68	Hazel	multibole	h= 5
69	Hazel	multibole	h= 5
70	Hazel	multibole	h= 5
71	Hazel	multibole	h= 5
72	Hazel	multibole	h= 5
73	Oak	d=0.6	h= 15
74	Oak	d=0.75	h= 15
75	Oak	d=0.25	h= 5
76	Oak	d=0.25	h= 5
77	Oak	d=0.2	h= 5
78	Oak	d=0.25	h= 5
79	Oak	d=0.25	h= 5
80	Oak	d=0.2	h= 5
81	Oak	d=0.25	h= 5
82	Oak	d=0.2	h= 5
83	Unknown	d=0.15	h= 5
84	Oak	d=0.25	h= 6
85	Oak	d=0.2	h= 6
86	Oak	d=0.2	h= 6
87	Oak	d=0.2	h= 6
88	Oak	d=0.25	h= 6
89	Oak	d=0.25	h= 6
90	Oak	d=0.25	h= 6
91	Oak	d=0.25	h= 5
92	Oak	d=0.25	h= 5
93	Oak	d=0.2	h= 5
94	Oak	d=0.2	h= 5
95	Oak	d=0.25	h= 5
96	Oak	d=0.1	h= 4
97	Oak	d=0.25	h= 5
98	Oak	d=0.2	h= 5
99	Oak	d=0.2	h= 5
100	Oak	d=0.2	h= 5
101	Oak	d=0.75	h=15
102	Oak	d=0.5	h=15
103	Oak	d=0.5	h=15
104	Oak	d=0.65	h=15
105	Oak	d=0.45	h=15
106	Oak	d=0.45	h=15
107	Oak	d=0.45	h=15
108	Oak	d=0.35	h=15
109	Oak	d=0.3	h=12
110	Oak	d=0.45	h=15
111	Oak	d=0.45	h=15
112	Oak	d=0.45	h=15
113	Oak	d=0.45	h=15
114	Oak	d=0.45	h=15
115	Oak	d=0.45	h=15
116	Oak	d=0.5	h=15
117	Oak	d=0.5	h=15
118	Oak	d=0.5	h=15
119	Oak	d=0.65	h=15
120	Oak	d=0.55	h=15
121	Oak	d=0.55	h=15
122	Oak	d=0.45	h=15
123	Unknown	d=0.1	h= 3
124	Oak	d=0.55	h=15
125	Oak	d=0.55	h=15
126	Oak	d=0.35	h=12
127	Oak	d=0.5	h=15
128	Oak	d=0.35	h=12
129	Oak	d=0.5	h=15
130	Oak	d=0.5	h=15
131	Oak	d=0.5	h=15
132	Oak	d=0.35	h=12
133	Oak	d=0.65	h=15
134	Oak	d=0.65	h=15
135	Oak	d=0.65	h=15
136	Oak	d=0.65	h=15
137	Oak	d=0.25	h= 7
138	Oak	d=0.25	h= 6
139	Oak	d=0.25	h= 8
140	Oak	d=0.25	h= 8
141	Oak	d=0.25	h= 8
142	Oak	d=0.25	h= 6
143	Oak	d=0.25	h= 6
144	Oak	d=0.25	h= 6
145	Oak	d=0.25	h= 6
146	Oak	d=0.25	h= 6
147	Oak	d=0.25	h= 6
148	Oak	d=0.25	h= 6
149	Oak	d=0.25	h= 6
150	Oak	d=0.25	h= 6
151	Oak	d=0.25	h= 6
152	Oak	d=0.2	h= 5
153	Oak	d=0.2	h= 5
154	Oak	d=0.15	h= 5
155	Oak	d=0.15	h= 5
156	Oak	d=0.25	h= 6
157	Unknown	d=0.4	h= 10

Survey control

Stn	Easting	Northing	Height
H1	526268.751	118131.192	16.547
H2	526330.533	118105.759	17.850
H3	526278.954	118055.835	17.268
H4	526175.922	117990.648	16.250
H5	526187.714	118021.219	15.433
H6	526189.484	118079.741	14.940
H7	526189.447	118121.978	14.832
H8	526168.102	118175.750	14.660
H9	526163.048	118220.944	14.434
H10	526173.858	118294.781	15.150
H11	526232.575	118313.608	15.935
H12	526306.616	118285.842	16.277
H13	526309.935	118232.662	16.642

Any setting-out should be undertaken using these control stations and any setting-out using GPS should be transformed to this control.

Topographical Survey Legend

Hedge — Telephone line
Undergrowth — Power line
Tree — Banking
Bush — Contour line 64
Building — Survey Station H5
Glass Building — Gate
Open Building — Level .115.28
Ordnance Survey Benchmark — OSBM
Foul Drainage — 100mm — FW MH CL 117.10 IL 116.75
Storm Drainage — 100mm — SW MH CL 117.10 IL 116.75

Abbreviations

Animal Sett	Sett
Air Valve	AV
Borehole	BH
Bus Stop	BS
Cover Level	CL
Earth Rod	ER
Electricity Pole	EP
Fire Hydrant	FH
Inspection Cover	IC
Invert Level	IL
Lamp Post	LP
Manhole	MH
Marker	MK
Name Plate	RNP
Power Pole	PP
Rain water Pipe	RWP
Road Sign	RS
Rodding Eye	RE
Reinforced Steel Joint	RSJ
Soil Vent Pipe	SVP
Stop Valve	SV
Survey Station	STN
Telegraph Pole	TP
Tree Stump	Stump
Trial Hole	TH
Unable To Lift	UTL
Vent Pipe	VP
Water Valve	WV

Metres 0 5 10
Scale

Notes

All trees are identified where possible. Species, spread, height and girth are indicative only.

Drainage has been surveyed where found, and traced where possible.

Eaves and ridge heights of surrounding buildings have been surveyed where possible.

Indicative N

Sheet Layout

3
2
1

Rev A:

Additional survey to ditches on west side. September 2025

HOOK SURVEY
Land & Building Surveyors
www.hooksurvey.com

Project : Land at Reeds Lane, Sayers Common, Hassocks BN6 9LS

Client : Reside Developments Limited

Drawing title : Topographical Survey

Job No. : S22/9095	Dwg No. : S22/9095/03	Revision : A
Scale : 1.200	Date : November 2022	Drawn by : D.S.

Grid & Levels related to :
Ordnance survey coordinate system using GPS related to the Leica Smartnet RTK network. Based around 3 survey stations with a scale factor of 1.000, only the fixed survey stations H1, H2 and H7 are true Ordnance Survey positions.

Head Office
Unit 1, Bybow Farm
Orchard Way
Dartford, Kent
DA2 7ER
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Midlands Office
42 Hanson Avenue
Shipston-on-Stour
Warwickshire
CV36 4HS
Email - midlands@hooksurvey.com
Tel - 01608 523118

www.hooksurvey.com

Appendix C

BGS Borehole Records

TQ21NE 20

a. 2572.1883
b. 2576.1899

318/9 **Stuccles Farm, Hurstpierpoint**

(a) (Sealed). W.S.Sx. III, p. 138. Surface +59. Bore 130. Lining tubes: 84 × 4 in from surface. Water struck at +44 and +19. Yield 300 g.p.h. (7 min. test). *LeGrand, 1921.*

(b) Surface +68. Lining tubes: 62 × 4½ in from surface; 72 × 3 in from 60 down (perforated 66¼ to 132). R.W.L. +45. Suction -18. Yield 300 g.p.h. Hardness: total 34. Anal. *Dando, Oct. 1935.*
Yield 1,000 g.p.d. *1940.* Windpump. *1959.*

(b) WC		132	132

Weald Clay	Hard blue & Brown clay	21	21
	Red Clay	7	28
	Base Brown & Red clay	16	44
	Blue & Red clay	7	51
	Blue clay with veins of red clay	81	132

(A)

		Thickness Ft.	Depth Ft.
Weald Clay	Made ground	1	1
	Clay	11	12
	Mottled clay	3	15
	Blue sandy clay	10	25
	Brown clay	4½	29½
	Blue clay	6½	36
	Blue sandy clay	3	39
	Claystone	½	39½
	Blue clay	40½	80
	Brown clay	2½	82½
	Blue clay	25½	108
	Blue clay, sandy parting	5	113
	Blue clay	17	130

6094

(66237B) Wt 28270/58 2,500 2/35
H, J, K & T, Ltd Gp 616

TQ21/30 A+B

318/9 **Stuccles Farm, Hurstpierpoint**

(a) (Sealed). W.S.Sx. III, p. 138. Surface +59. Bore 130. Lining tubes: 84 × 4 in from surface. Water struck at +44 and +19. Yield 300 g.p.h. (7 min. test). *LeGrand, 1921.*

(b) Surface +68. Lining tubes: 62 × 4½ in from surface; 72 × 3 in from 60 down (perforated 66¼ to 132). R.W.L. +45. Suction -18. Yield 300 g.p.h. Hardness: total 34. Anal. *Dando, Oct. 1935.*
Yield 1,000 g.p.d. *1940.* Windpump. *1959.*

(b) WC	... ...	132	132

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(A)

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	Blue clay	6½	36
	Blue sandy clay	3	39
	Claystone	½	39½
	Blue clay	40½	80
	Brown clay	2½	82½
	Blue clay	25½	108
	Blue clay, sandy parting	5	113
	Blue clay	17	130

1

TQ21/30A
318/9

318/9A

TQ2572 1882

HURSTPIERPOINT.

Hurstpierpoint—Map N.S.G. 318.

270. STUCKHOLD'S FARM, $\frac{1}{6}$ mile S.E. Newhouse Farm and 1 mile S.S.E. of Twineham Church. 1921. Ht. above O.D. 59 ft. Map 38 N.E.

		Thickness Ft.	Depth Ft.
Weald Clay	Made ground	1	1
	Clay	11	12
	Mottled clay	3	15
	Blue sandy clay	10	25
	Brown clay	4½	29½
	Blue clay	6½	36
	Blue sandy clay	3	39
	Claystone	½	39½
	Blue clay	40½	80
	Brown clay	2½	82½
	Blue clay	25½	108
	Blue clay, sandy parting	5	113
	Blue clay	17	130

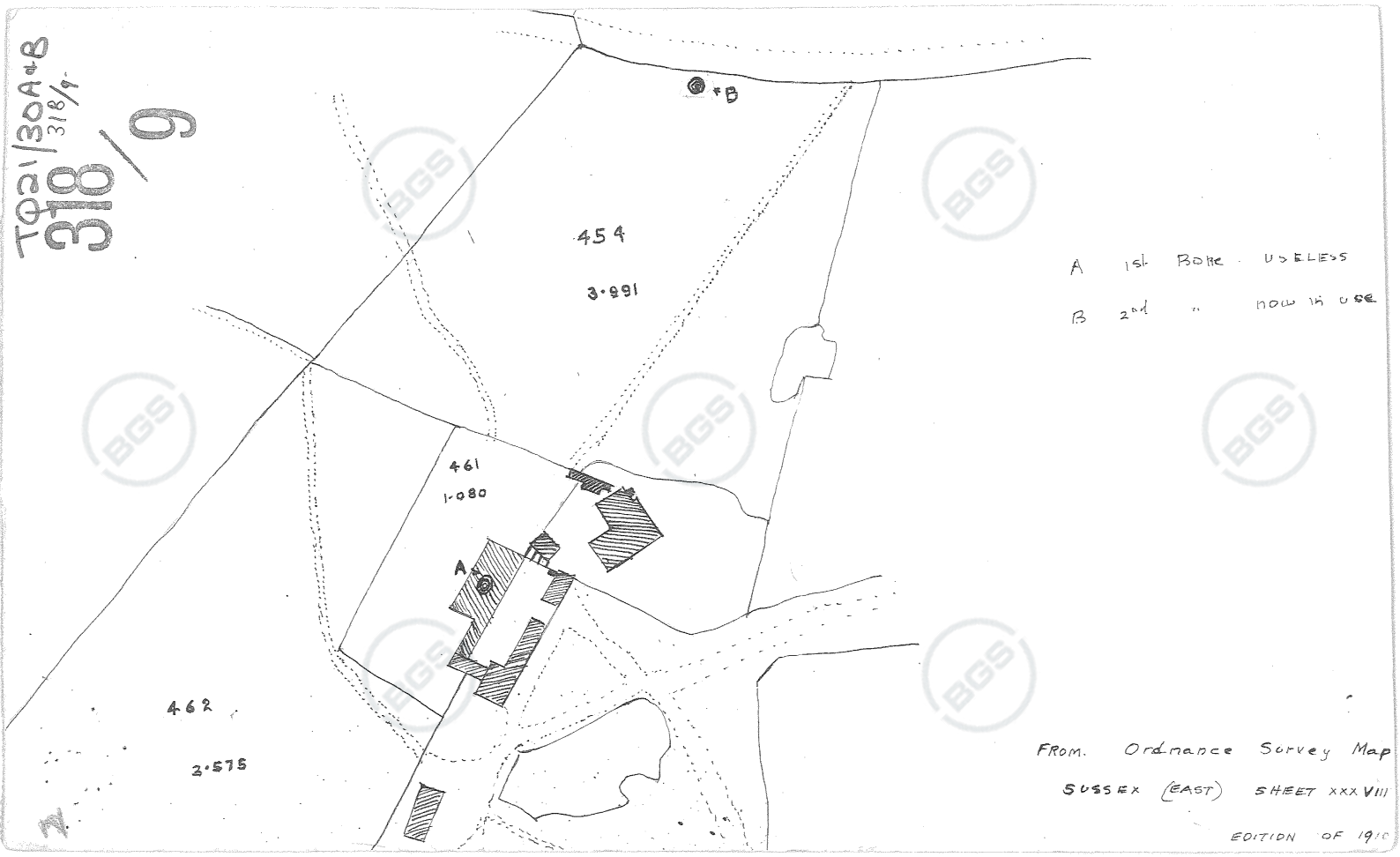
Little water at 15 ft. and at 40 ft. Test at 100 ft., 5 g. p. minute for 7 minutes. Lined 84 ft. of 4 in. tubes. Information from Messrs. LeGrand, Sutcliff and Gell, Ltd. from surface.

Ref. 9509/30 ~~Mate~~ April 1 1940 [Staecles]
Site plan obtained. O.D. +59. 6 inch Sussex 38 N.E
Issued

Sussex 38 NE/W

Visited. Corrected over. O.D. + 59. 19-5-59 CSR.

W. S. Sx. III, p. 138.


TQ21/30A+B
318/9
318/9
454
3·991
461
1·080
462
2·575
FB
A
A 1st Boke USELESS
B 2nd " now in use
FROM. Ordnance Survey Map
SUSSEX (EAST) SHEET XXXVIII
EDITION OF 19

TQ21NE 12+4
a. 2572.1883
b. 2576.1899

318/9 Stuccles Farm, Hurstpierpoint

(a) (Sealed). W.S.Sx. III, p. 138. Surface +59. Bore 130. Lining tubes: 84 × 4 in from surface. Water struck at +44 and +19. Yield 300 g.p.h. (7 min. test). *LeGrand, 1921.*

(b) Surface +68. Lining tubes: 62 × 4½ in from surface; 72 × 3 in from 60 down (perforated 66¼ to 132). R.W.L. +45. Suction -18. Yield 300 g.p.h. Hardness: total 34. Anal. *Dando, Oct. 1935.*
Yield 1,000 g.p.d. *1940.* Windpump. *1959.*

(b) WC		132	132
Weald Clay	Hard blue & Brown clay	21	21
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	Blue & Red clay	7	51
	Blue clay with veins of red clay	81	132

(A)

		Thickness Ft.	Depth Ft.
Weald Clay	Made ground	1	1
	Clay	11	12
	Mottled clay	3	15
	Blue sandy clay	10	25
	Brown clay	4½	29½
	Blue clay	6½	36
	Blue sandy clay	3	39
	Claystone	½	39½
	Blue clay	40½	80
	Brown clay	2½	82½
	Blue clay	25½	108
	Blue clay, sandy parting	5	113
	Blue clay	17	130

6094

(66237B) Wt 28270/58 2,500 2/35 H, J, K & T, Ltd Gp 616

TQ21/30 A+B

318/9 **Stuccles Farm, Hurstpierpoint**

(a) (Sealed). W.S.Sx. III, p. 138. Surface +59. Bore 130. Lining tubes: 84 × 4 in from surface. Water struck at +44 and +19. Yield 300 g.p.h. (7 min. test). *LeGrand, 1921.*

(b) Surface +68. Lining tubes: 62 × 4½ in from surface; 72 × 3 in from 60 down (perforated 66¼ to 132). R.W.L. +45. Suction -18. Yield 300 g.p.h. Hardness: total 34. Anal. *Dando, Oct. 1935.*
Yield 1,000 g.p.d. *1940.* Windpump. *1959.*

(b) WC	... ...	132	132

Weald Clay	Hard blue & Brown clay	21	21
	Red clay	7	28
	Bare Brown & Red clay	16	44
	Blue & Red clay	7	51
	Blue clay with veins of red clay	81	132

(A)

		Thickness Ft.	Depth Ft.
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	Brown clay	4½	29½
	Blue clay	6½	36
	Blue sandy clay	3	39
	Claystone	½	39½
	Blue clay	40½	80
	Brown clay	2½	82½
	Blue clay	25½	108
	Blue clay, sandy parting	5	113
	Blue clay	17	130

RECORD of WELL or BORING

TQ 21/30B

Survey No.
1" N.S. 318
1" O.S.

at (house or farm) Stuccles (~~or Stuckholds~~). Farm TQ 2576 1899

Town, Village, &c Hurstpierpoint, County Sussex. Six-inch map xxxvii N.E.

Exact site (unless a tracing from a map is supplied, give distance and direction from parish church, cross-roads, or other object shown on maps). 3/4 mile S.S.E. of Twineham Church. Popular Edition (Sheet of one-inch map. (Square

Surface level of ground 68 ft. above Ordnance Datum. Well or Bore commenced at 0 ft. below surface level of ground.

Sunk - ft., diameter - ft. Bored 132 ft.; diameter of boring: at top 4½ in., at bottom 3 in.

Details of lining tubes (internal diameters preferred) 4½" int.dia Tubes to 62' 0"
3" int dia. Tubes 60' 0" to 132' 0" perforated from 66' 4".

Water struck at depths of (feet)

Rest-level of water ~~below~~ above top of well or bore 23 ft. Pumping level ft. Time of recovery hours.

Suction at 86 ft. depth. Yield: (i) on test 300 galls. per hr., (ii) normal 300 galls. per hr.

Quality (attach copy of analysis if available) below

Made by Duke & Ockenden Ltd., for ~~Mr.~~ Capt. F.D. Heath. Date of boring Oct. 1935.

Information from Duke & Ockenden Ltd., Artesian Well Engineers, London & Littlehampton.

(For Survey use only). GEOLOGICAL CLASSIFICATION.	NATURE OF STRATA. (and any additional remarks)	THICKNESS. Feet.	THICKNESS. Inches.	DEPTH. Feet.	DEPTH. Inches.
Weald Clay	Hard Blue and Brown Clay	21	0	21	0
	Red Clay	7	0	28	0
	Brown and Red Clay	16	0	44	0
	Blue and Red Clay	7	0	51	0
	Blue Clay with veins of red clay	81	0	132	0

Analysis.

	grs. per gal.
Total solids	128. 0
Chlorine	24. 4
Ammonia	0.0494
" Alb.	Absent
N.as Nitrites	Absent
N. as Nitrates	Trace
Metals	absent
Total Hardness	2.4°

Proportion of Na Cl. rather high

Ref. 9509/30 April 1st 1940 [Stuccles]
Site plan obtained. O.D. +60. 6 in Sussex 38 N.E.
Using about 1000 g.p.day

Visited. In use for farm (30 dairy cows) + 400 poultry, 3 houses and farm house. Windpump. Mains only used when no wind (rarely)
O.D. +68. 19-5-59 ASR.

DATA Bank

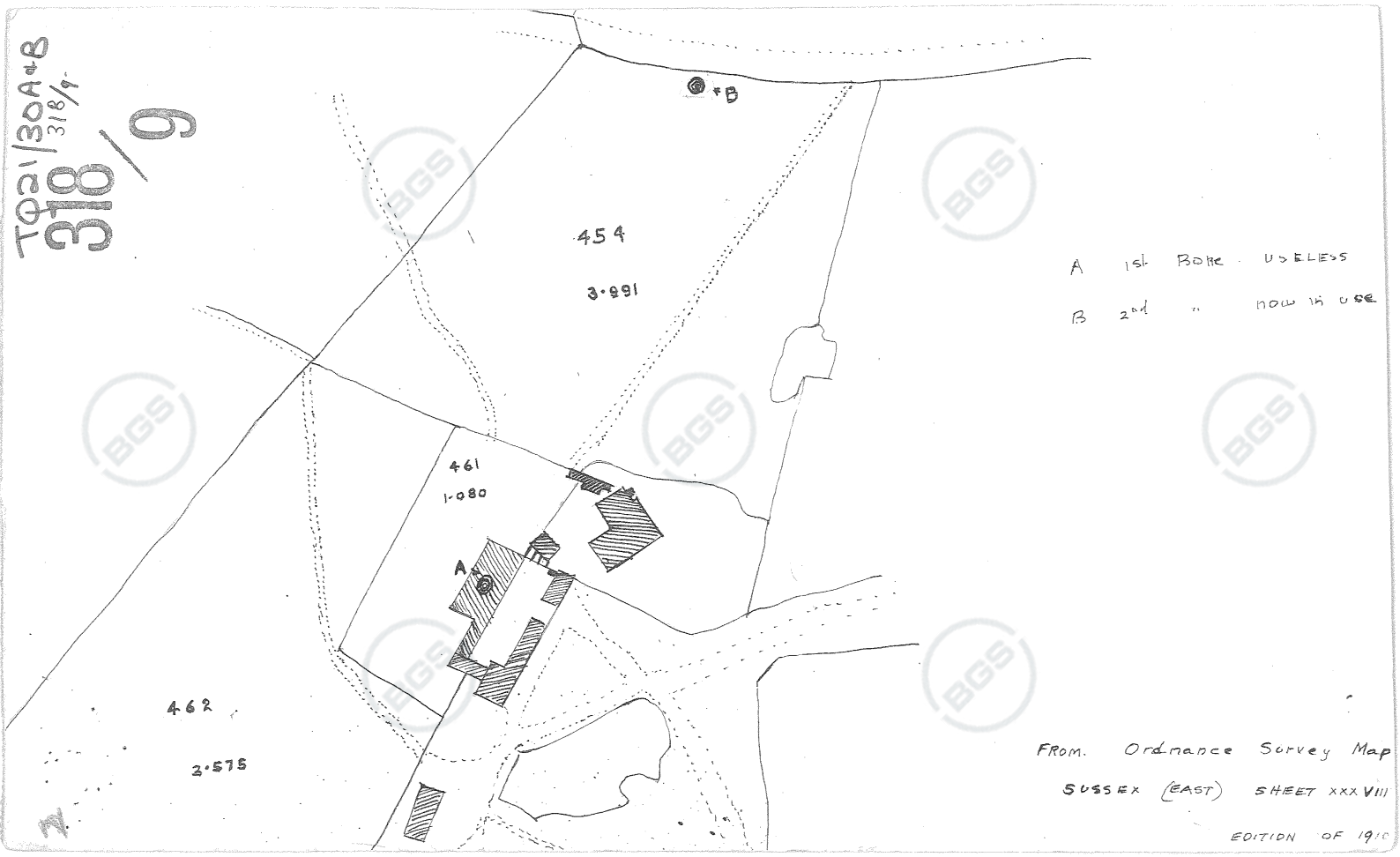
Geological Survey and Museum, South Kensington, London, S.W.7.

For Survey use only.

Date received.	G.S.M.	M. of H. notified.	Site marked on 1" map.
	6094		

(66237B) Wt 28270/58 2,500 2/35 H, J, R & L, Ltd Gp 614

BGS ID: 584207 : BGS Reference: TQ21NE2/B
British National Grid (27700) : 525760,118990



CONCEPT SITE INVESTIGATIONS
8 Warple Mews, Warple Way
London W3 0RF
Telephone: 020 8811 2880 Fax: 020 8811 2881
E-mail: si@conceptconsultants.co.uk

Trial Pit No TP01

Project A23 Sayers Common Wood

Job No	Date Started / Date Completed	Ground Level (mOD)	Co-Ordinates	Final Depth
11/2371	11/04/11 / 11/04/11			1.50m

Client	Method/ Plant Used	Sheet
The Highways Agency	Hand Excavated	1 of 1

Water	Level (mOD)	Legend	Depth (Thickness)	Strata Description	Sample Depth	Type No	Test Result	Field Records
			(0.35) 0.35	Soft, brown slightly sandy slightly silty CLAY. (TOPSOIL)	0.30 0.30	ES01 B02		... Roots encountered throughout the trial pit
			(0.80) 1.15	Soft, brown mottled grey slightly silty slightly sandy CLAY with occasional fine to medium grey claystone fragments. (MADE GROUND) ... becoming slightly gravelly below 0.50m	0.80 0.80	ES03 B04		
			(0.35) 1.50	Firm, dark grey mottled brown slightly gravelly slightly silty CLAY. Gravel is subangular fine to coarse flint.	1.20-1.50 1.20-1.50	ES05 B06		
				End of Trial Pit				

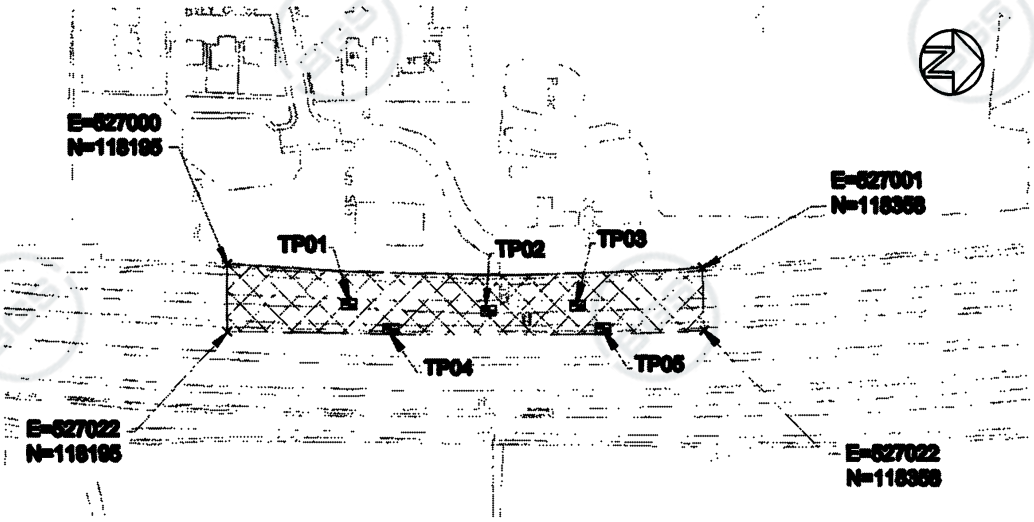
GENERAL REMARKS

1. Weather was clear and dry.
2. Trial pit was dry and stable.
3. Trial pit backfilled with soil arisings upon completion.
4. Trial pit dimensions: 0.40m x 0.40m x1.50m deep.

Issue No.	Logged By	
01	DS	AGS

NOTES

1. This drawing should not be scaled.



KEY

TP - Hand Excavated Trial Pit

No	Revision	Drawn	Checked	Passed	Date

CONCEPT SITE INVESTIGATIONS
Unit 8, Warple Mews
Warple Way
London W3 0RF
Tel: 020 8811 2880
Fax: 020 8811 2881
e-mail: concept@conceptconsultants.co.uk
www.conceptconsultants.co.uk

Client:	The Highways Agency
Project:	A23 Sayers Common Wood
Title:	Exploratory Hole Location Plan
Dwg. No:	11/2371
Status:	Issue
Scale:	NTS

Drawn	Checked	Passed	Date
OS	DS	MD	April 2011

Appendix D

Soils Limited Winter Groundwater Monitoring Report

soils LIMITED

Winter Groundwater Monitoring Report

at
Land at Reeds Lane, Sayers West, Hassocks, West Sussex BN6 9LS

for
Reside Holdings Ltd

Reference: 21666/GWT Rev1.0
May 2025

Control Document

Project
Land at Reeds Lane, Sayers West, Hassocks, West Sussex BN6 9LS

Document Type
Winter Groundwater Monitoring Report

Document Reference
21666/GWT Rev 1.0

Document Status
FINAL

Date
May 2025

Prepared by
J Davies BSc, MSc, MCSM, FGS
(jjd@soilslimited

First check by
Nikos Sidiropoulos BSc MSc CEng MIMMM RoGEP

Second check by
Eur Ing R B Higginson BSc, PGDip, CEng, MICE, FGS.

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.

Commission

This document comprises the Winter Groundwater Monitoring Report (GWT) and incorporates the results to this intrusive works. General site data is recorded below:

Commission Record	
Client:	Reside Holdings Ltd
Site Name:	Land at Reeds Lane, Sayers West, Hassocks, West Sussex BN6 9LS
Grid Reference:	TQ262181
Clients Signed Purchase Order ref:	Q29337, dated 21st October 2024

The record of revision to this document is presented below:

Record Of Revisions		
Revision	**Date**	**Reason**
1.0	May 2025	Original issue to Client

Note(s): The latest revised document supersedes all previous revisions of the GWT produced by Soils Limited.

Limitations and Disclaimers

The report was prepared solely for the brief described in Section 1.1 of this report.

The contents, recommendations and advice given in the report are subject to the Terms and Conditions given in Soils Limited's Quotation

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 was 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.

If the term "competent person" is used in this report or any Soils Limited document, it means an engineering geologist or civil engineer with a minimum of three years post graduate experience in the understanding and application of the appropriate codes of practice.

This report is a Winter Groundwater Monitoring Report and is not a Ground Investigation Report as defined by EC7 (Eurocode 7 Part 1, §3.4, Part 2, §6.1) or a Geotechnical Design Report (Eurocode 7 Part 1, §2.8) as defined by Eurocode 7 and as such may not characterise the ground conditions and additional works may be required to comply with the requirements of EC7.

Within the report reference to ground level relates to the site level at the time of the investigation, unless otherwise stated.

Exploratory hole is a generic term used to describe a method of direct investigation. The term trial pit, borehole or window sample borehole implies the specific technique used to

produce an exploratory hole.

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Section 1 Introduction

1.1 Objective of Investigation

The Client commissioned Soils Limited to undertake groundwater monitoring to prepare a Winter Groundwater Monitoring Report for the season 2024 – 2025. The scope of the investigation was set out in Soils Limited Quotation ref: Q29337, dated 21st October 2024 and comprised the drilling of four windowless sampler boreholes, the installation of one groundwater monitoring well within each borehole and manually dipping these wells on six occasions over the course of the winter with the aim of recording the groundwater level across the site over the monitoring period.

1.2 Site Description

The site was located on land at Reeds Lane, Sayers West, Hassocks, West Sussex BN6 9LS and had an O.S Land Ranger Grid Reference of TQ262181. At the time of the initial well installation (November 2024), the site primarily comprised open land covered in grass and rare mature and semi-mature trees, accessed from the east via a gravel track.

The site was bound to the north, west and south by dense mature and semi-mature trees and shrubs. A stream was present along the southern portion of the site's western boundary, branching away towards the northwest at the site's approximate midpoint. Reeds Lane was noted to immediate south with open land beyond. Further open land was noted to the west, with a commercial space beyond. Dense woodland was noted beyond the northern site boundary. The site was bounded to the east by the gravel access track leading from Reeds Lane to the site and a new residential development to the northeast. Commercial space was located beyond the site boundary to the southeast.

A walled site compound occupied an area approximately 40m in length (N-S) by 30m in width (E-W), joining with the gravel track along the site's eastern boundary. Soil embankments approximately 1m in height were constructed parallel with the eastern and northern walls of the compound. Soil was stockpiled to approximately 3m in hight in the northeastern site area, enclosed within a perimeter of Heras fencing, associated with the redevelopment of the adjacent (eastern) plot. The remaining site topography dipped slightly to the west at approximately 1° (Source: topographical survey supplied to Soils Limited by the Client ref: S22/9095/01 to S22/9095/03, dated November 2022, produced by Hook Survey Limited).

The site location plan is given in Figure 1. An aerial photograph of the site and its close environs has been included in Figure 2.

1.3 Proposed Development

The proposal comprised the construction of circa 100 low-rise residential units with associated areas of hardstanding (access roads/parking bays) and soft landscaping including domestic gardens, communal open space and surface water features. The

vegetated perimeter would be retained, and a new entrance would be installed from Reeds Lane in the south.

In compiling this report reliance was placed on drawing 30496A_100E, by Clague Architects, undated.

Development plans provided by the Client are presented in Appendix C.

1.4 Anticipated Geology

The 1:50,000 BGS map showed the site to be directly situated on the Weald Clay Formation bedrock, with no overlying superficial deposits.

1.4.1 Weald Clay Formation

The Weald Clay Formation consists of shales and mudstones with occasionally thin beds of siltstones, sandstone, shelly limestone and clay ironstone. When fresh the beds are normally dark grey weathering to mottled yellow and brown near the surface or at outcrop. Bands of red clay occur within the bed, usually in association with the sandstone.

Section 2 Ground Conditions

2.1 Ground Conditions

On 1st November 2024 four windowless sampler boreholes (WS1 to WS4) were drilled, using a Premier windowless sampler drilling rig, to depths of 5.00m below ground level (bgl) at locations selected by the Soils Limited and agreed with the Client.

A standpipe was installed within each of the windowless sampler boreholes (WS1 to WS4) to allow for continued monitoring of groundwater conditions.

The Exploratory Hole Plan has been presented in Figure 3.

The maximum depths of exploratory holes have been included in Table 2.1.

Table 2.1 Exploratory Hole Detail

Exploratory Hole	Depth (m bgl)
WS1 [W]	5.00
WS2 [W]	5.00
WS3 [W]	5.00
WS4 [W]	5.00

Note(s): [W] Monitoring Well. The depths given in this table are taken from the ground level on-site at the time of investigation.

The soil conditions encountered were recorded and soil sampling commensurate with the purposes of the investigation was carried out. The depths given on the exploratory hole logs and quoted in this report were measured from ground level.

Topsoil (TS)
Weald Clay Formation (WCF)

The ground conditions encountered in the exploratory holes are summarised in Table 2.2.

Table 2.2 Ground Conditions

Strata	Depth Encountered (m bgl)		Typical Thickness (m)	Typical Description
	Top	Bottom		
TS	0.00	0.20 – 0.50	0.40	Very soft greyish brown mottled orangish brown slightly gravelly slightly sandy silty CLAY. Sand is fine. Gravel is fine of flint. Frequent rootlets. Occasional lignite.
WCF	0.20 – 0.50	5.00+[1]	Not proven	Soft becoming stiff brownish grey mottled orangish brown slightly sandy silty CLAY. Sand is fine and occurs in partial lenses. Occasional lignite.

Note(s): [1] Final depth of exploratory hole. [2] Base of strata not encountered. The depths given in this table are taken from the ground level on-site at the time of investigation.

The soils encountered from immediately below ground surface have been described in the following manner. Where the soil incorporated an organic content such as either decomposing leaf litter or roots or has been identified as part of the in-situ weathering profile, it has been described as Topsoil both on the logs and within this report. Where man has clearly either placed the soil, or the composition altered, with say greater than an estimated 5% of a non-natural constituent, it has been referred to as Made Ground both on the log and within this report.

For complete information on the ground conditions encountered see the exploratory hole logs presented in Appendix B.1.

Section 3 Groundwater Monitoring

3.1 Groundwater

Groundwater was not encountered during the intrusive site investigation works in November 2024 within any of the four windowless sampler boreholes (WS1 to WS4).

33mm standpipe piezometers were installed into each borehole, and six groundwater monitoring visits were undertaken within the standpipes, as detailed in Table 3.1.

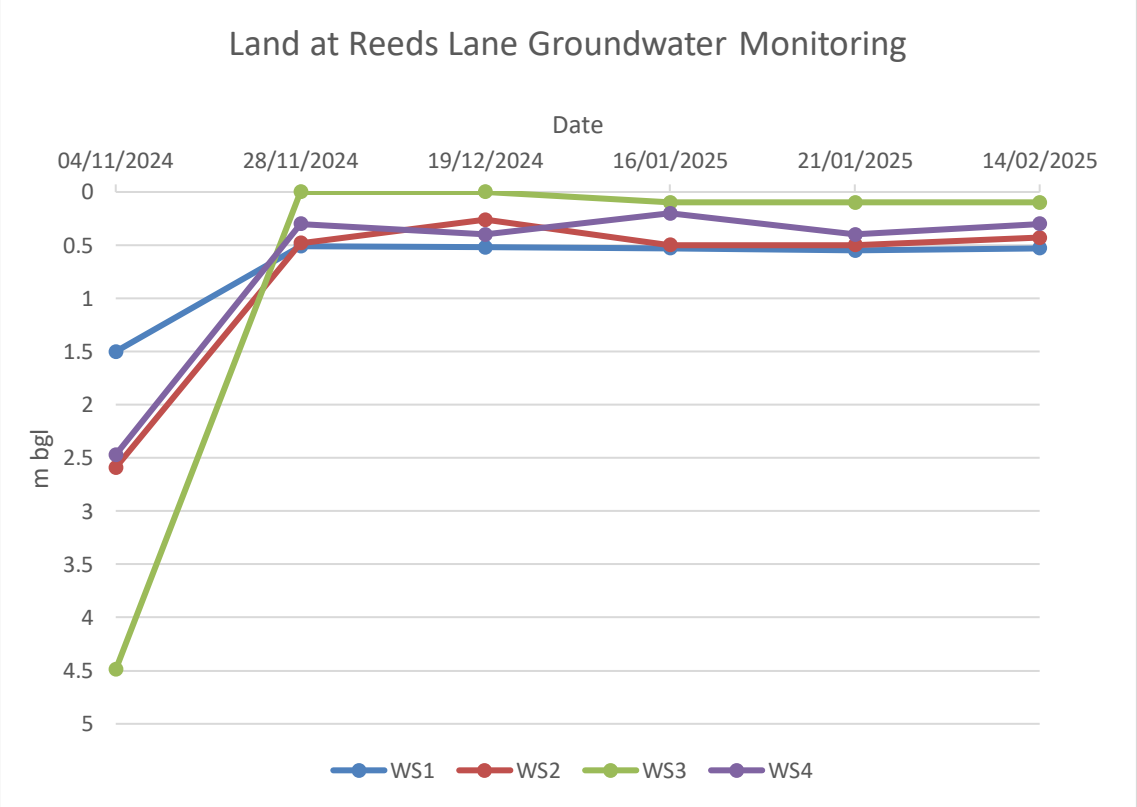
Table 3.1 Groundwater Observations

Exploratory Hole	Well Depth (m bgl)	Depth to Water (m bgl)					
		4/11/24	28/11/24	19/12/24	16/01/25	21/01/25	14/02/25
WS1 [W]	5.00	1.50	0.51	0.52	0.53	0.55	0.53
WS2 [W]	5.00	2.59	0.48	0.26	0.50	0.50	0.43
WS3 [W]	5.00	4.49	G.L.[6]	G.L.[6]	0.10	0.10	0.10
WS4 [W]	5.00	2.47	0.30	0.40	0.20	0.40	0.30

Notes: [1] Could not locate monitoring well. [2] Well location buried under materials. [3] Well location buried under bund. [4] Could not locate the well due to the ongoing sitework. -[5] Destroyed. [6] Area locally noted to be waterlogged at the time, with water noted at ground level

The Winter Groundwater monitoring 2024 – 2025 was conducted from November 2024 to February 2025, as shown in Graph 3.1.

Graph 3.1 Groundwater Monitoring Winter 2024 - 2025



3.2 Discussion

Changes in groundwater level occur for a number of reasons including seasonal effects and variations in drainage. The investigation was conducted between November (2024), when groundwater levels should be rising from their annual minimum (lowest) elevation, (typically around September) and March (2025) when groundwater levels should be around the annual maximum (highest).

Following the initial reading in early November 2024, groundwater was seen to rise significantly, with levels generally stabilising for the final five readings at depths between ground level (WS3) and 0.50m bgl.

Ground conditions for the initial monitoring visit were described as “moist”. Conditions for the subsequent five monitoring visits were described as “wet”, with the exception of the fourth visit in January 2025, where the site was described as being “flooded”. It was concluded that fluctuations in groundwater levels on site are anticipated to be as a response to rainfall events, and that soils on site were generally of poor draining characteristics. Fluctuations in water levels within the small stream along the site’s western boundary would likely also have a direct impact on groundwater levels across the site.

The highest groundwater levels, including two water readings at ground level, were recorded at location WS3, near the western boundary, which was expected, given the low elevation of the area, considering the site fall to the west and the low-permeability of the underlying soils of the Weald Clay Formation. It was noted that shallow groundwater was consistently encountered within the four wells, each located within low-permeable soils of the Weald Clay Formation, despite lower than average rainfall over the monitoring period (Met Office Seasonal Assessment – Winter 2025).

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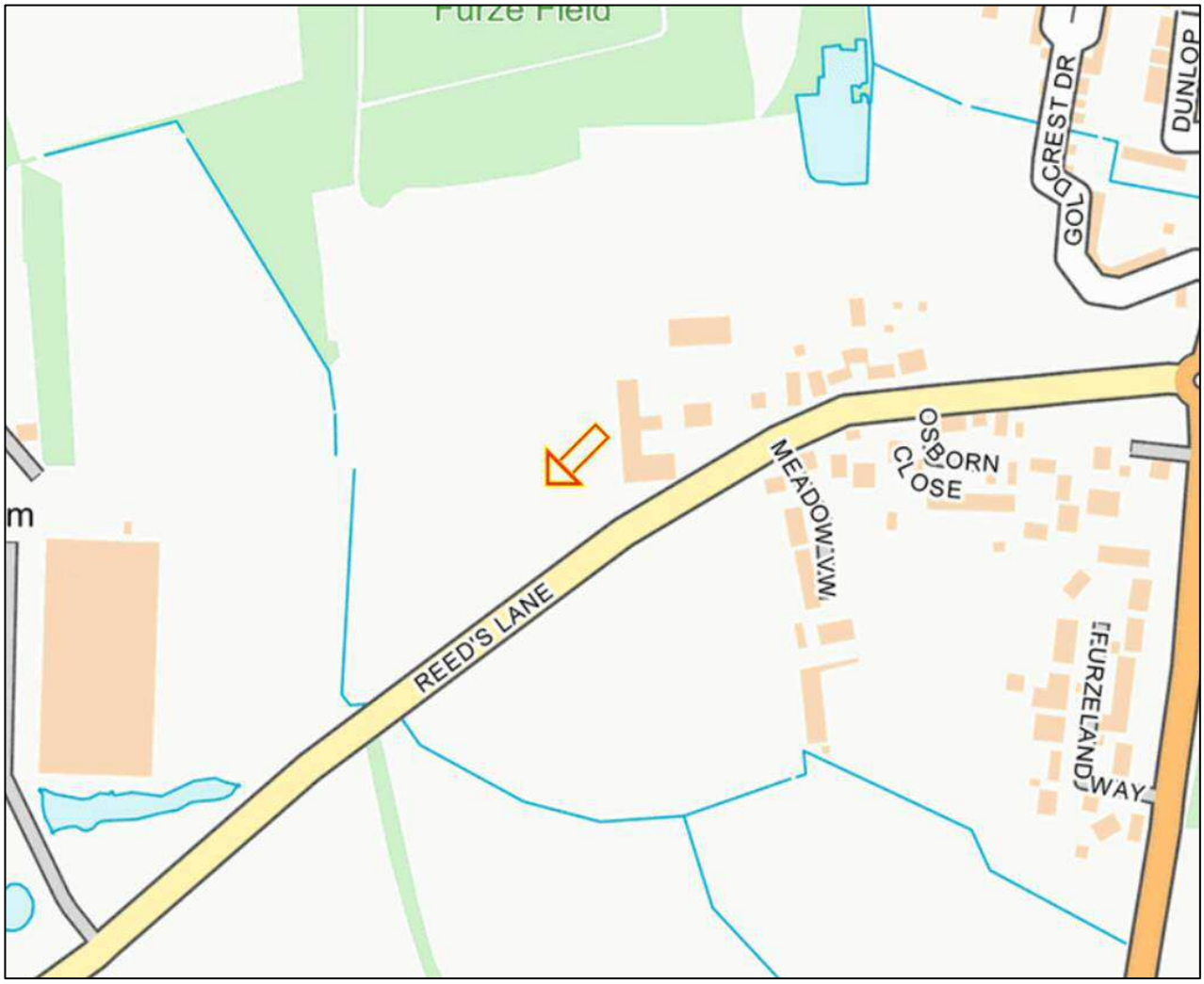


Figure 1 – Site Location Map

Job Number 21666	**Project** Land at Reeds Lane, Sayers West, Hassocks, West Sussex BN6 9LS
Client Reside Holdings Ltd	**Date** May 2025

Figure 2 – Aerial Photograph

Job Number 21666	**Project** Land at Reeds Lane, Sayers West, Hassocks, West Sussex BN6 9LS
Client Reside Holdings Ltd	**Date** May 2025

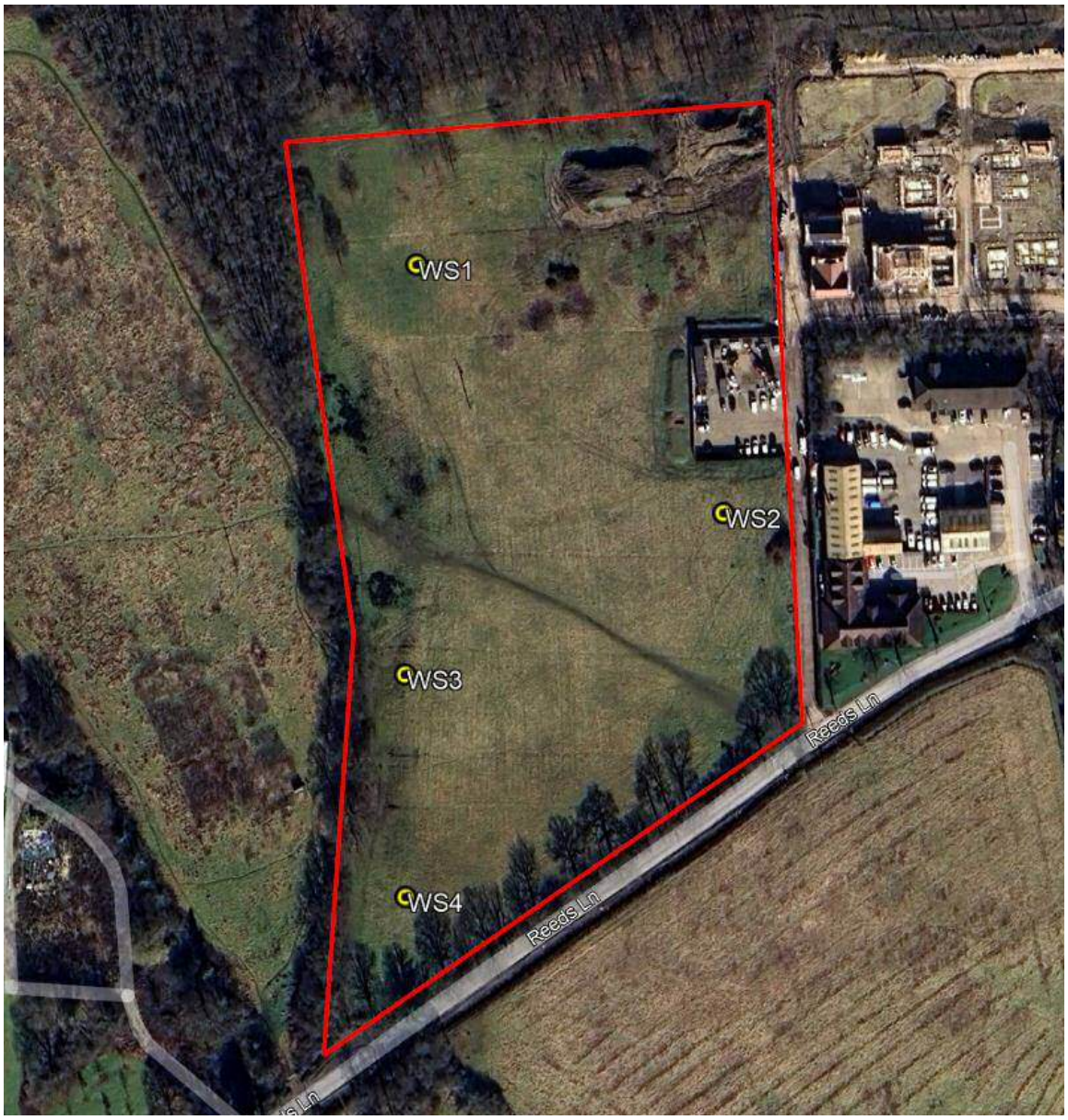


Figure 3 – Exploratory Hole Plan

Job Number 21666	**Project** Land at Reeds Lane, Sayers West, Hassocks, West Sussex BN6 9LS
Client Reside Holdings Ltd	**Date** May 2025

Appendix A Standards and Resources

The site works and soil descriptions were undertaken in accordance with the following standards where applicable:

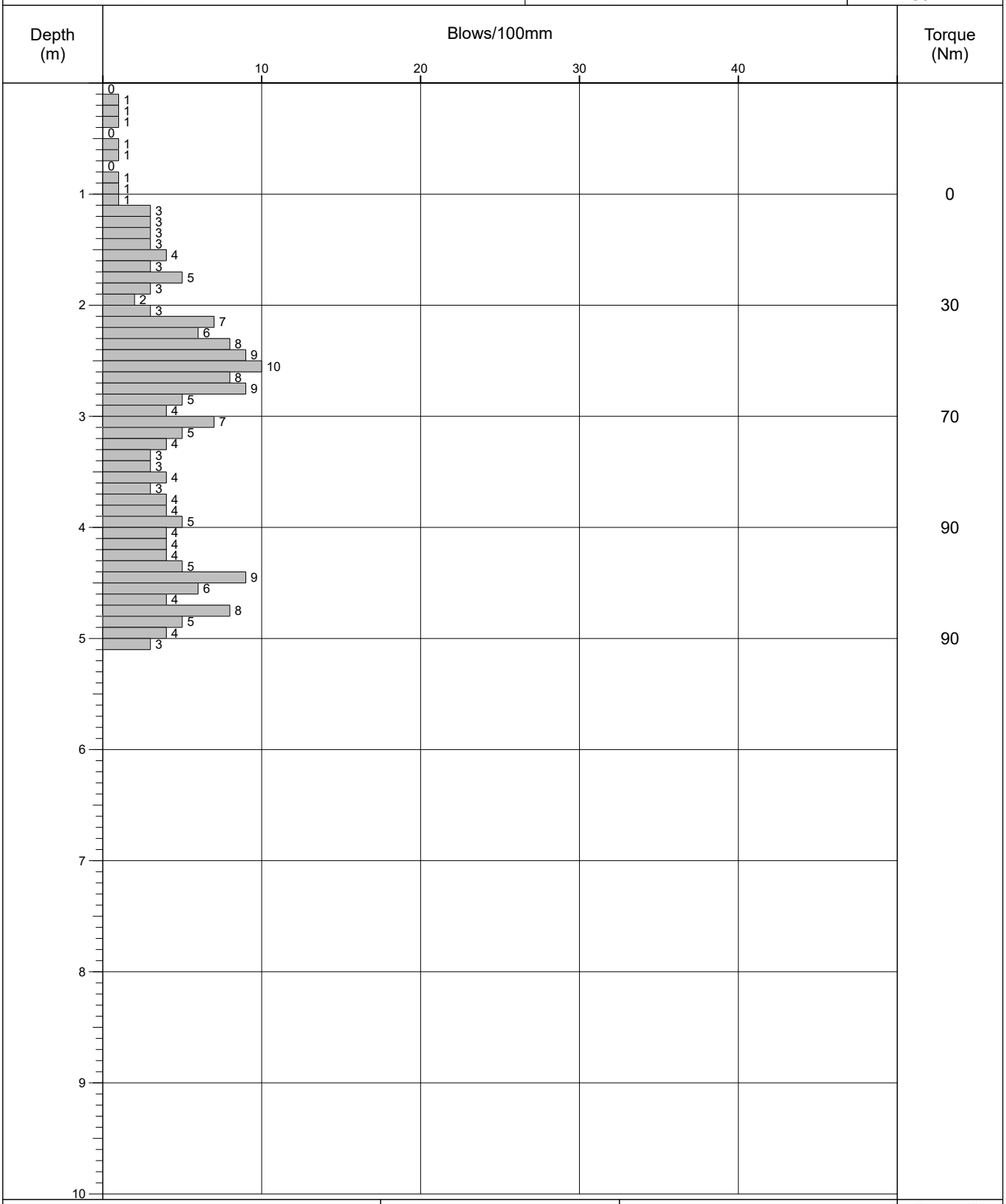
- BS EN ISO 14688-1:2018 - Geotechnical investigation and testing - Identification and description
- BS EN ISO 14688-2:2018 - Geotechnical investigation and testing - Principles for a classification
- Google Earth
- Met Office Seasonal Assessment – Winter 2025
- British Geological Survey Website & iGeology App

Appendix B Site Works

Appendix B.1 Exploratory Hole Logs

Soils Limited Newton House, Cross Road, Tadworth KT20 5SR Tel: 01737 814221 Email: admin@soilslimited.co.uk		**Probe Log**	Probe No. **DP1** Sheet 1 of 1

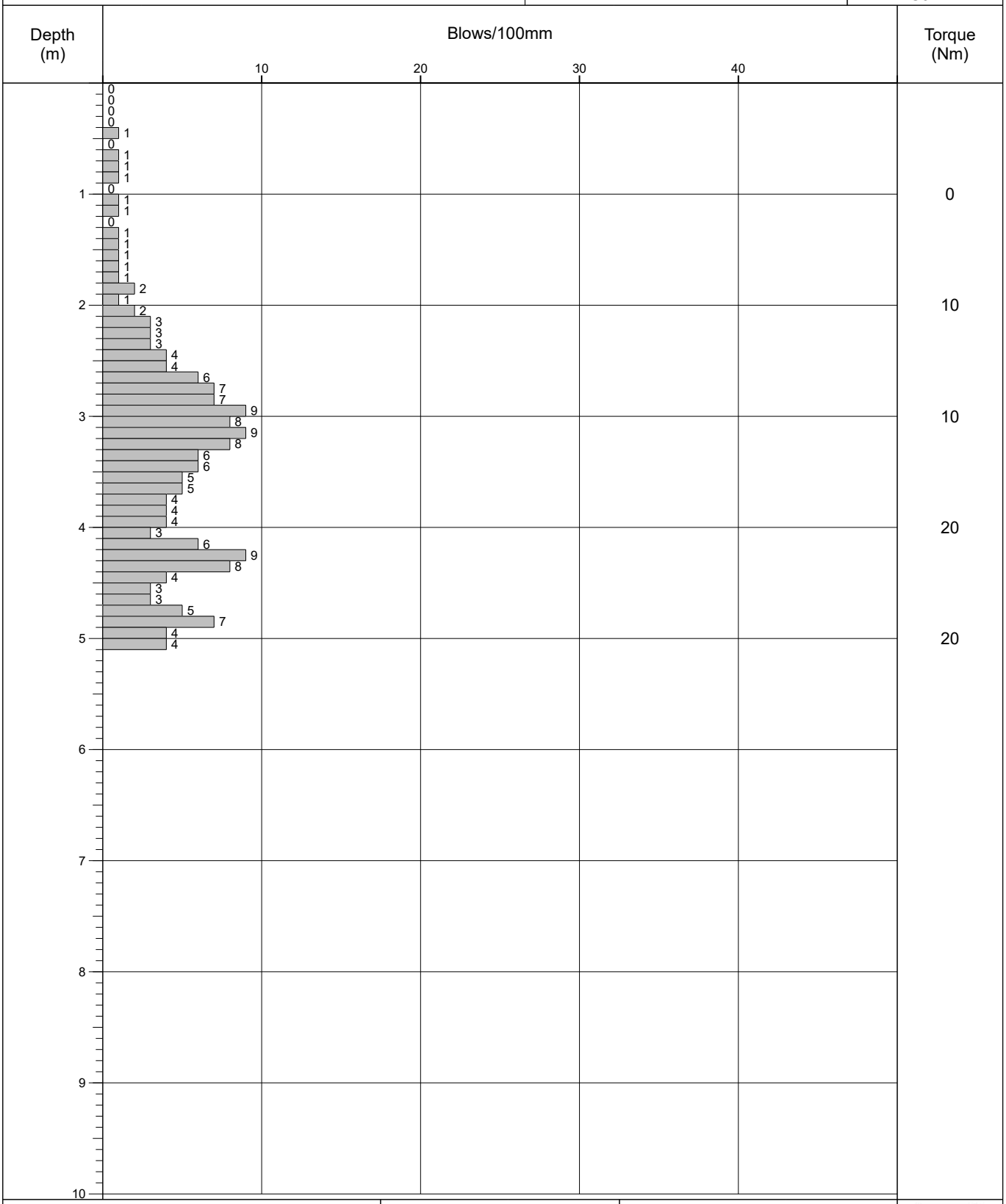
Project Name:	Land at Reeds Lane, Sayers West, Hassocks, West Sussex, BN6 9LS	Project No. 21666	Co-ords:	Hole Type DP
Location:	Land at Reeds Lane, Sayers West, Hassocks, West Sussex, BN6 9LS		Level: m AOD	Scale 1:50
Client:	Reside Group		Dates: 01/11/2024	Logged By GJB



Remarks Fell under hammer weight from 0.10 to 0.30m bgl.	Fall Height	760mm	Cone Base Diameter	50mm	AGS REGISTERED USER 2020
	Hammer Weight	kg	Final Depth	5m	
	Probe Type	DPSH	Energy Ratio (Er)	90.53%	

Soils Limited Newton House, Cross Road, Tadworth KT20 5SR Tel: 01737 814221 Email: admin@soilslimited.co.uk	**Probe Log**	Probe No. **DP2** Sheet 1 of 1

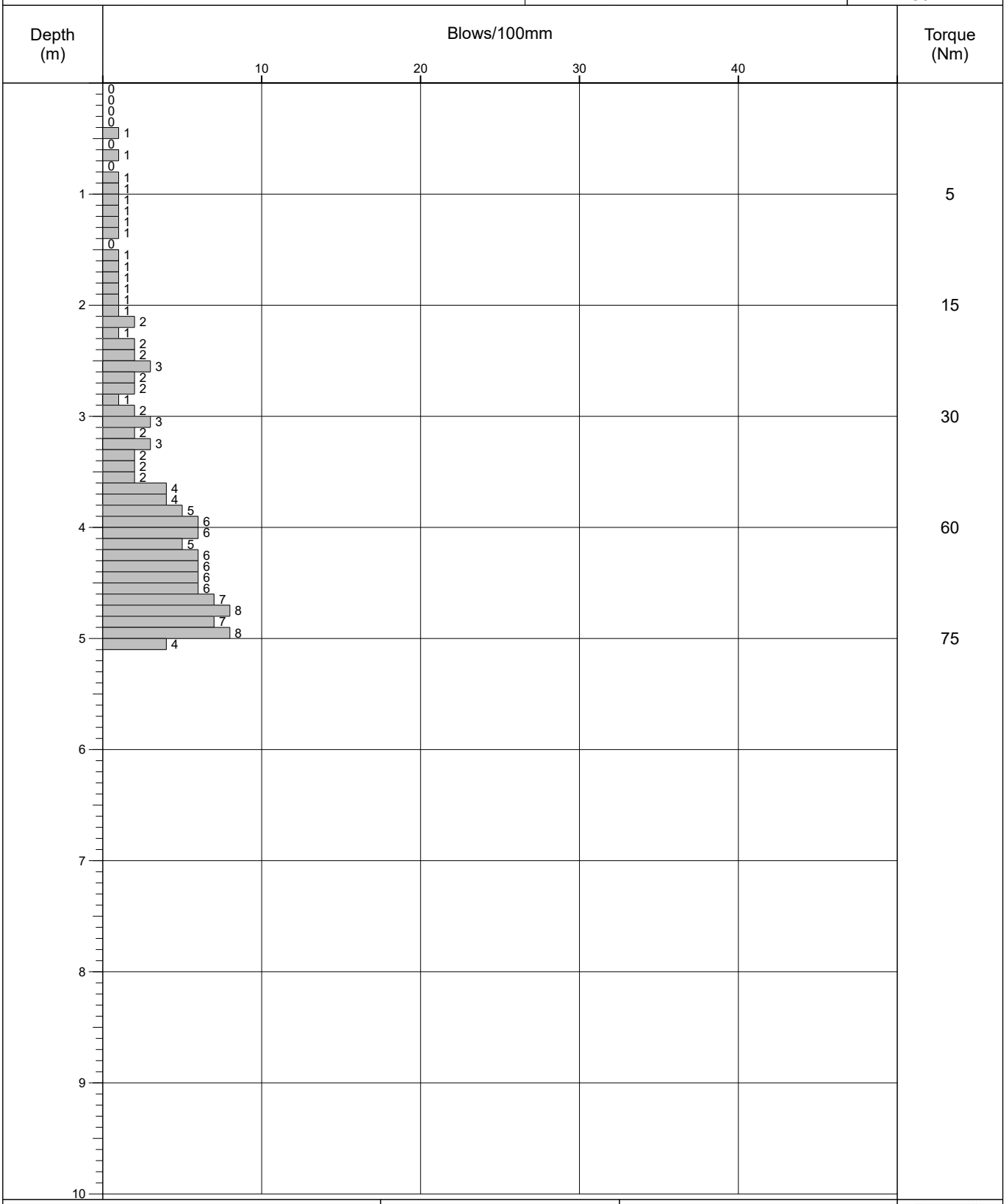
Project Name:	Land at Reeds Lane, Sayers West, Hassocks, West Sussex, BN6 9LS	Project No. 21666	Co-ords:	Hole Type DP
Location:	Land at Reeds Lane, Sayers West, Hassocks, West Sussex, BN6 9LS		Level: m AOD	Scale 1:50
Client:	Reside Group		Dates: 01/11/2024	Logged By GJB



Remarks					
Fell under hammer weight from 0.10 to 0.30m bgl.	Fall Height	760mm	Cone Base Diameter	50mm	AGS REGISTERED USER 2020
	Hammer Weight	kg	Final Depth	5m	
	Probe Type	DPSH	Energy Ratio (Er)	90.53%	

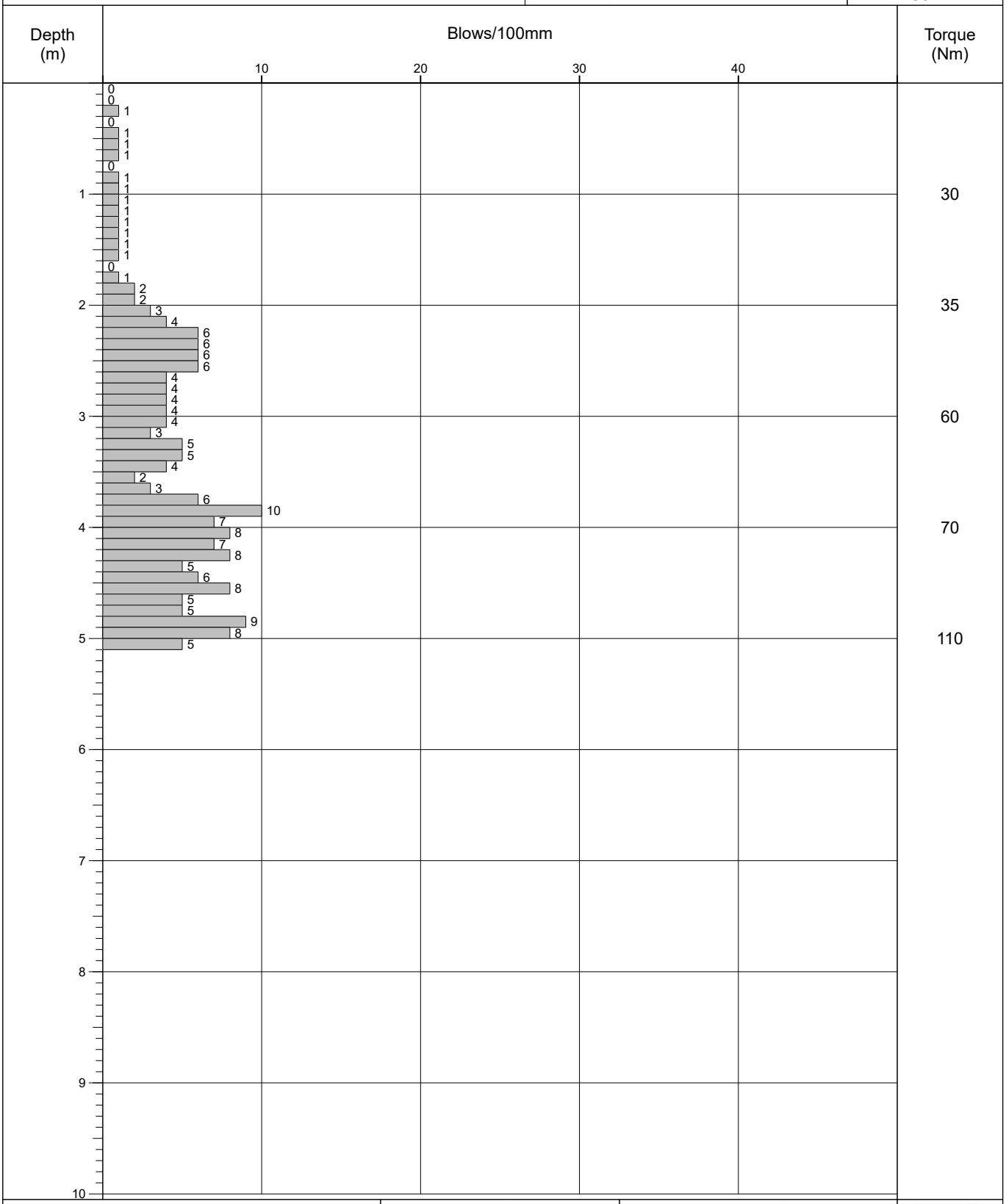
Soils Limited Newton House, Cross Road, Tadworth KT20 5SR Tel: 01737 814221 Email: admin@soilslimited.co.uk		**Probe Log**	Probe No. **DP3** Sheet 1 of 1

Project Name:	Land at Reeds Lane, Sayers West, Hassocks, West Sussex, BN6 9LS	Project No. 21666	Co-ords:	Hole Type DP
Location:	Land at Reeds Lane, Sayers West, Hassocks, West Sussex, BN6 9LS		Level: m AOD	Scale 1:50
Client:	Reside Group		Dates: 01/11/2024	Logged By GJB



Remarks Fell under hammer weight at 0.10m bgl.	Fall Height	760mm	Cone Base Diameter	50mm	AGS REGISTERED USER 2020
	Hammer Weight	kg	Final Depth	5m	
	Probe Type	DPSH	Energy Ratio (Er)	90.53%	

Soils Limited Newton House, Cross Road, Tadworth KT20 5SR Tel: 01737 814221 Email: admin@soilslimited.co.uk		**Probe Log**	Probe No. **DP4** Sheet 1 of 1
Project Name: Land at Reeds Lane, Sayers West, Hassocks, West Sussex, BN6 9LS	Project No. 21666	Co-ords:	Hole Type DP
Location: Land at Reeds Lane, Sayers West, Hassocks, West Sussex, BN6 9LS		Level: m AOD	Scale 1:50
Client: Reside Group		Dates: 01/11/2024	Logged By GJB



Remarks Fell under hammer weight at 0.10m bgl.	Fall Height	760mm	Cone Base Diameter	50mm	AGS REGISTERED USER 2020
	Hammer Weight	kg	Final Depth	5m	
	Probe Type	DPSH	Energy Ratio (Er)	90.53%	

soils LIMITED

Contract Name:		Client:			Hole ID:
Land at Reeds Lane, Sayers West, Hassocks, West Sussex, BN6 9LS		Reside Group			**WS1**
Contract Number:	Start and End Date:	Logged By:	Checked By:	Status:	Hole Type:
21666	01/11/24	JM	JD	FINAL	**WS**
Easting:	Northing:	Ground Level:	Plant Used:	Print Date:	Scale:
			Premier 3	13/05/2025	1:50

Weather: Overcast | Termination: Target depth reached. | Sheet 1 of 1

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Type	Results	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
0.10	ES			0.20		Very soft greyish brown slightly sandy slightly gravelly silty CLAY. Gravel is subrounded medium to coarse flint. Sand is fine. Abundant rootlets. TOPSOIL		
0.30	D ES			(0.70)		Very soft light grey mottled light orange and orangish brown silty CLAY. Occasional rootlets and desiccated rootlets. WEALD CLAY FORMATION		
0.80	D ES			0.90				
1.30	D			(1.00)		Soft light grey mottled multicoloured slightly sandy silty CLAY. Sand is fine. Occasional lignite. WEALD CLAY FORMATION		
1.80	D			1.90				
2.30	D			(1.30)		Soft brownish grey mottled multicoloured slightly sandy silty CLAY. Sand is fine. Sand and silt occur in lenses. Occasional lignite. WEALD CLAY FORMATION		
2.80	D			3.20				
3.30	D			(1.20)		Soft light brownish grey mottled orangish brown slightly sandy silty CLAY. Sand is fine and occurs in partial lenses. Occasional lignite. WEALD CLAY FORMATION		
3.80	D			4.40				
4.20	D			(0.60)		Firm grey mottled light grey slightly sandy silty CLAY. WEALD CLAY FORMATION		
4.70	D			5.00		End of Borehole at 5.00m		

1 2 3 4 5 6 7 8 9 10

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Remarks:
Rootlets and desiccated rootlets observed to 1.0m bgl. No groundwater observed.

Chiselling				Installation			
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)
				0.00	1.00	PLAIN	50
				1.00	5.00	SLOTTED	50

Water Strikes					
Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Hand vane (HV), Hand penetrometer (HP) reported in kPa. PID reported in ppm.

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Contract Name:		Client:			Hole ID:
Land at Reeds Lane, Sayers West, Hassocks, West Sussex, BN6 9LS		Reside Group			**WS2**
Contract Number:	Start and End Date:	Logged By:	Checked By:	Status:	Hole Type:
21666	01/11/24	JM	JD	FINAL	**WS**
Easting:	Northing:	Ground Level:	Plant Used:	Print Date:	Scale:
			Premier 3	13/05/2025	1:50

Weather: Overcast | Termination: Target depth reached. | Sheet 1 of 1

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Type	Results	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
0.10	ES			0.20		Very soft greyish brown slightly sandy silty CLAY. Sand is fine. Abundant roots and rootlets. TOPSOIL		
0.30	D ES			(0.30)		Very soft greyish brown mottled orangish brown slightly sandy silty CLAY. Sand is fine. Frequent rootlets. Rare fine flint gravel. TOPSOIL		
0.80	D ES			0.50		Soft light orangish mottled light grey and orangish brown slightly sandy silty CLAY. Sand is fine. Frequent rootlets. Rare fine flint gravel. WEALD CLAY FORMATION		
1.30	D			(1.10)				
				1.60		Soft light grey mottled multicoloured slightly sandy silty CLAY. Sand is fine. Occasional lignite. Frequent rootlets and desiccated rootlets. WEALD CLAY FORMATION		
				(0.90)				
2.80	D			2.50		Firm to stiff brown mottled multicoloured slightly sandy silty CLAY. Sand is fine. Occasional weak subrounded medium mudstone. WEALD CLAY FORMATION		
						Weak mudstone laminations.		
3.30	D			(1.50)				
3.80	D							
				4.00		Firm to stiff brownish grey mottled orangish brown slightly sandy silty CLAY. Sand is fine and occasionally occurs in partial lenses. Frequent fine selenite crystals that occur in partial lenses. WEALD CLAY FORMATION		
4.30	D			(1.00)				
4.80	D							
				5.00		End of Borehole at 5.00m		

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Remarks:
Rootlets and desiccated rootlets observed to 2.0m bgl. Perched water strikes throughout.

Chiselling			
From (m)	To (m)	Duration	Remarks

Installation			
Top (m)	Base (m)	Type	Dia (mm)
0.00	1.00	PLAIN	50
1.00	5.00	SLOTTED	50

Water Strikes					
Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Hand vane (HV), Hand penetrometer (HP) reported in kPa. PID reported in ppm.

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Contract Name:	Client:	Hole ID:
Land at Reeds Lane, Sayers West, Hassocks, West Sussex, BN6 9LS	Reside Group	**WS3**

Contract Number:	Start and End Date:	Logged By:	Checked By:	Status:	Hole Type:
21666	01/11/24	JM	JD	FINAL	**WS**

Easting:	Northing:	Ground Level:	Plant Used:	Print Date:	Scale:
			Premier 3	13/05/2025	1:50

Weather: Overcast | Termination: Target depth reached. |

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Type	Results	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
0.05	ES			0.20		Very soft greyish brown slightly sandy silty CLAY. Sand is fine. Abundant rootlets. TOPSOIL		
0.10	D			(0.30)		Very soft greyish brown mottled orangish brown slightly sandy silty CLAY. Sand is fine. Frequent rootlets. Occasional lignite. Rare fine flint gravel. TOPSOIL		
0.35	D			0.50		Soft light grey mottled light orange and orangish brown slightly silty CLAY. Frequent rootlets. Rare subrounded fine to medium flint gravel. WEALD CLAY FORMATION		
	ES							
0.80	D							
	ES							
1.30	D			(1.50)				
1.80	D			2.00		Light greyish brown mottled bluish grey and orangish brown slightly silty CLAY. Frequent coarse sand sized selenite crystals throughout, occur in clusters. Occasional desiccated rootlets. WEALD CLAY FORMATION		
2.30	D			(1.10)		*Dark brown*		
2.80	D			3.10		Firm to stiff brown mottled multicoloured slightly sandy silty CLAY. Sand is fine. Occasional weak mudstone laminations throughout. WEALD CLAY FORMATION		
3.30	D			(1.10)				
3.80	D			4.20		Firm brown mottled orangish brown slightly sandy silty CLAY. Sand is fine. Occasional very weak mudstone laminations throughout. WEALD CLAY FORMATION		
4.30	D			(0.80)				
4.70	D			5.00		End of Borehole at 5.00m		

1 2 3 4 5 6 7 8 9 10

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Remarks:
Rootlets observed to 2.1m bgl. Desiccated rootlets observed to 3.0m bgl. Perched water strikes throughout.

Chiselling				Installation			
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)
				0.00	1.00	PLAIN	50
				1.00	5.00	SLOTTED	50

Water Strikes					
Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Hand vane (HV), Hand penetrometer (HP) reported in kPa. PID reported in ppm.

soils LIMITED

Contract Name:		Client:			Hole ID:
Land at Reeds Lane, Sayers West, Hassocks, West Sussex, BN6 9LS		Reside Group			**WS4**
Contract Number:	Start and End Date:	Logged By:	Checked By:	Status:	Hole Type:
21666	01/11/24	JM	JD	FINAL	**WS**
Easting:	Northing:	Ground Level:	Plant Used:	Print Date:	Scale:
			Premier 3	13/05/2025	1:50

Weather: Overcast | Termination: Target depth reached. | Sheet 1 of 1

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Type	Results	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
0.05	ES			0.10		Very soft greyish brown slightly sandy silty CLAY. Sand is fine. Abundant roots and rootlets. TOPSOIL		
0.25	ES			(0.30)				
0.30	D			0.40		Very soft greyish brown mottled orangish brown slightly sandy silty CLAY. Sand is fine. Frequent rootlets. Occasional lignite. Rare fine flint gravel. TOPSOIL		
0.60	ES					Very soft light grey mottled multicoloured slightly sandy silty CLAY. Sand is fine. Frequent rootlets. WEALD CLAY FORMATION		
				(0.60)		*Singular subangular coarse concrete.* *Subangular fine to coarse flint gravel. Abundant lignite.*		
0.90	D			1.00		Very soft to soft light grey mottled orangish brown silty CLAY. Occasional rootlets and desiccated rootlets. WEALD CLAY FORMATION		
1.30	D							
1.70	D			(1.50)		*Weak mudstone and coarse sand sized selenite crystals.*		
2.00	D					*Brownish grey mottled reddish brown and orangish brown weak laminated mudstone.*		
						Brownish grey mottled reddish brown and orangish brown weak laminated mudstone.		
2.60	D			2.50		Very stiff brownish grey interbedded orangish brown and cream slightly sandy silty CLAY. Sand is fine. Very weak mudstone laminations throughout. Rare selenite crystals. WEALD CLAY FORMATION		
				(0.30)				
3.10	D			2.80		Stiff dark grey mottled orangish brown slightly sandy silty CLAY. Sand is fine and occurs in partial lenses. Very weak mudstone laminations throughout. Rare desiccated rootlets to 3.1m bgl. Rare rootlets at 4.1m bgl. WEALD CLAY FORMATION		
3.60	D							
4.10	D			(2.20)				
4.60	D							
				5.00		End of Borehole at 5.00m		

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Chiselling			
From (m)	To (m)	Duration	Remarks

Installation			
Top (m)	Base (m)	Type	Dia (mm)
0.00	1.00	PLAIN	50
1.00	5.00	SLOTTED	50

Remarks:

Rootlets observed to 1.8m bgl. Rare rootlets observed at 4.1m bgl. Desiccated rootlets observed to 3.0m bgl. Perched water strikes throughout.

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Hand vane (HV), Hand penetrometer (HP) reported in kPa. PID reported in ppm.

Appendix C Information Provided by the Client

Reside Holdings Ltd

NOTE. Subject to Survey

30496A_100E | Proposed Site Layout Plan

Proposed residential development at Reeds Lane, Sayers Common

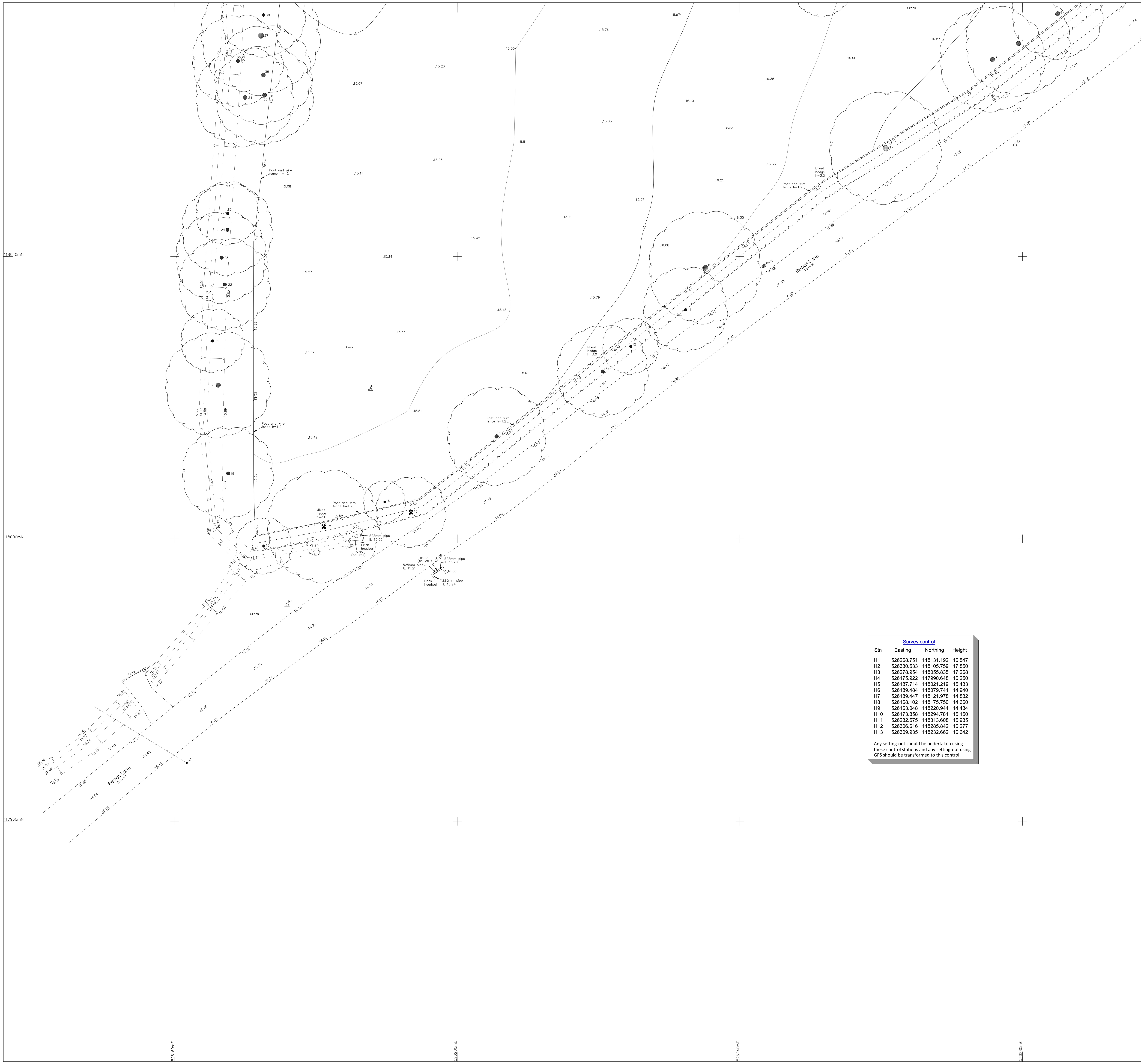
N

0 50m 100m

1:1000

CLAGUE ARCHITECTS

62 Burgate Canterbury CT1 2BH t: 01227 762060



Survey control

Stn	Easting	Northing	Height
H1	526268.751	118131.192	16.547
H2	526330.533	118105.759	17.850
H3	526278.954	118055.835	17.268
H4	526175.922	117990.648	16.250
H5	526187.714	118021.219	15.433
H6	526189.484	118079.741	14.940
H7	526189.447	118121.978	14.832
H8	526168.102	118175.750	14.660
H9	526163.048	118220.944	14.434
H10	526173.858	118294.781	15.150
H11	526232.575	118313.608	15.935
H12	526306.616	118285.842	16.277
H13	526309.935	118232.662	16.642

Any setting-out should be undertaken using these control stations and any setting-out using GPS should be transformed to this control.

Tree Schedule

1	Oak	d=0.65	h= 15
2	Oak	d=0.45	h= 12
3	Ash	d=0.45	h= 12
4	Oak	d=0.8	h= 15
5	Oak	d=0.6	h= 15
6	Oak	d=0.65	h= 12
7	Oak	d=0.65	h= 12
8	Oak	d=0.65	h= 12
9	Oak	d=0.8	h= 15
10	Oak	d=0.75	h= 15
11	Oak	d=0.4	h= 12
12	Ash	d=0.4	h= 12
13	Oak	d=0.5	h= 12
14	Oak	d=0.55	h= 15
15	Oak	multibole	h= 12
16	Hawthorn	d=0.3	h= 5
17	Oak	multibole	h= 15
18	Ash	d=0.4	h= 12
19	Oak	d=0.5	h= 12
20	Oak	d=0.65	h= 15
21	Ash	d=0.4	h= 12
22	Oak	d=0.5	h= 12
23	Oak	d=0.5	h= 12
24	Oak	d=0.5	h= 12
25	Ash	d=0.4	h= 12
26	Oak	d=0.25	h= 5
27	Oak	d=0.25	h= 5
28	Oak	d=0.25	h= 6
29	Oak	d=0.1	h= 5
30	Oak	d=0.25	h= 6
31	Oak	d=0.25	h= 6
32	Oak	d=0.25	h= 6
33	Oak	d=0.6	h= 15
34	Oak	d=0.6	h= 15
35	Oak	d=0.6	h= 15
36	Oak	d=0.5	h= 15
37	Oak	d=0.8	h= 15
38	Oak	d=0.45	h= 10
39	Oak	d=0.5	h= 15
40	Oak	d=0.5	h= 15
41	Oak	d=0.25	h= 10
42	Oak	d=0.25	h= 10
43	Oak	d=0.35	h= 12
44	Oak	d=0.35	h= 12
45	Oak	d=0.35	h= 12
46	Oak	d=0.35	h= 12
47	Ash	d=0.4	h= 12
48	Ash	d=0.4	h= 12
49	Oak	d=0.35	h= 8
50	Oak	d=0.35	h= 8
51	Birch	d=0.4	h= 15
52	Birch	d=0.4	h= 15
53	Birch	d=0.4	h= 15
54	Birch	d=0.4	h= 15
55	Oak	d=0.7	h= 15
56	Oak	d=0.7	h= 15
57	Oak	d=0.25	h= 7
58	Oak	d=0.25	h= 6
59	Oak	d=0.2	h= 6
60	Oak	d=0.6	h= 15
61	Oak	d=0.6	h= 15
62	Hazel	multibole	h= 5
63	Hazel	multibole	h= 5
64	Hazel	multibole	h= 5
65	Hazel	multibole	h= 5
66	Hazel	multibole	h= 5
67	Hazel	multibole	h= 5
68	Hazel	multibole	h= 5
69	Hazel	multibole	h= 5
70	Hazel	multibole	h= 5
71	Hazel	multibole	h= 5
72	Hazel	multibole	h= 5
73	Oak	d=0.6	h= 15
74	Oak	d=0.75	h= 15
75	Oak	d=0.25	h= 5
76	Oak	d=0.25	h= 5
77	Oak	d=0.2	h= 5
78	Oak	d=0.25	h= 5
79	Oak	d=0.25	h= 5
80	Oak	d=0.2	h= 5
81	Oak	d=0.25	h= 5
82	Oak	d=0.2	h= 5
83	Unknown	d=0.15	h= 5
84	Oak	d=0.25	h= 6
85	Oak	d=0.2	h= 6
86	Oak	d=0.2	h= 6
87	Oak	d=0.2	h= 6
88	Oak	d=0.25	h= 6
89	Oak	d=0.25	h= 6
90	Oak	d=0.25	h= 6
91	Oak	d=0.25	h= 5
92	Oak	d=0.25	h= 5
93	Oak	d=0.2	h= 5
94	Oak	d=0.2	h= 5
95	Oak	d=0.25	h= 5
96	Oak	d=0.1	h= 4
97	Oak	d=0.25	h= 5
98	Oak	d=0.2	h= 5
99	Oak	d=0.2	h= 5
100	Oak	d=0.2	h= 5
101	Oak	d=0.75	h= 15
102	Oak	d=0.5	h= 15
103	Oak	d=0.5	h= 15
104	Oak	d=0.65	h= 15
105	Oak	d=0.45	h= 15
106	Oak	d=0.45	h= 15
107	Oak	d=0.45	h= 15
108	Oak	d=0.35	h= 15
109	Oak	d=0.3	h= 12
110	Oak	d=0.45	h= 15
111	Oak	d=0.45	h= 15
112	Oak	d=0.45	h= 15
113	Oak	d=0.45	h= 15
114	Oak	d=0.45	h= 15
115	Oak	d=0.45	h= 15
116	Oak	d=0.5	h= 15
117	Oak	d=0.5	h= 15
118	Oak	d=0.5	h= 15
119	Oak	d=0.65	h= 15
120	Oak	d=0.55	h= 15
121	Oak	d=0.55	h= 15
122	Oak	d=0.45	h= 15
123	Unknown	d=0.1	h= 3
124	Oak	d=0.55	h= 15
125	Oak	d=0.55	h= 15
126	Oak	d=0.35	h= 12
127	Oak	d=0.5	h= 15
128	Oak	d=0.35	h= 12
129	Oak	d=0.5	h= 15
130	Oak	d=0.5	h= 15
131	Oak	d=0.5	h= 15
132	Oak	d=0.35	h= 12
133	Oak	d=0.65	h= 15
134	Oak	d=0.65	h= 15
135	Oak	d=0.65	h= 15
136	Oak	d=0.65	h= 15
137	Oak	d=0.25	h= 7
138	Oak	d=0.25	h= 6
139	Oak	d=0.25	h= 8
140	Oak	d=0.25	h= 8
141	Oak	d=0.25	h= 8
142	Oak	d=0.25	h= 6
143	Oak	d=0.25	h= 6
144	Oak	d=0.25	h= 6
145	Oak	d=0.25	h= 6
146	Oak	d=0.25	h= 6
147	Oak	d=0.25	h= 6
148	Oak	d=0.25	h= 6
149	Oak	d=0.25	h= 6
150	Oak	d=0.25	h= 6
151	Oak	d=0.25	h= 6
152	Oak	d=0.2	h= 5
153	Oak	d=0.2	h= 5
154	Oak	d=0.15	h= 5
155	Oak	d=0.15	h= 5
156	Oak	d=0.25	h= 6
157	Unknown	d=0.4	h= 10

Topographical Survey Legend

Hedge	Telephone line
Undergrowth	Power line
Tree	Banking
Bush	Contour line — 64 —
Building	Survey Station H5
Glass Building	Gate
Open Building	Level .115.28

Ordnance Survey Benchmark — OSBM

Foul Drainage — 100mm — FW MH CL 117.10 IL 116.75

Storm Drainage — 100mm — SW MH CL 117.10 IL 116.75

Abbreviations

Animal Sett	Sett
Air Valve	AV
Borehole	BH
Bus Stop	BS
Cover Level	CL
Earth Rod	ER
Electricity Pole	EP
Fire Hydrant	FH
Inspection Cover	IC
Invert Level	IL
Lamp Post	LP
Manhole	MH
Marker	MK
Name Plate	RNP
Power Pole	PP
Rain water Pipe	RWP
Road Sign	RS
Rodding Eye	RE
Reinforced Steel Joint	RSJ
Soil Vent Pipe	SVP
Stop Valve	SV
Survey Station	STN
Telegraph Pole	TP
Tree Stump	Stump
Trial Hole	TH
Unable To Lift	UTL
Vent Pipe	VP
Water Valve	WV

Metres
0 5 10
Scale

Notes

All trees are identified where possible. Species, spread, height and girth are indicative only.

Drainage has been surveyed where found, and traced where possible.

Eaves and ridge heights of surrounding buildings have been surveyed where possible.

Sheet Layout

3

2

1

HOOK SURVEY
Land & Building Surveyors
w w w . h o o k s u r v e y . c o m

Project :
Land at Reeds Lane, Sayers Common, Hassocks BN6 9LS

Client :
Reside Developments Limited

Drawing title :
Topographical Survey

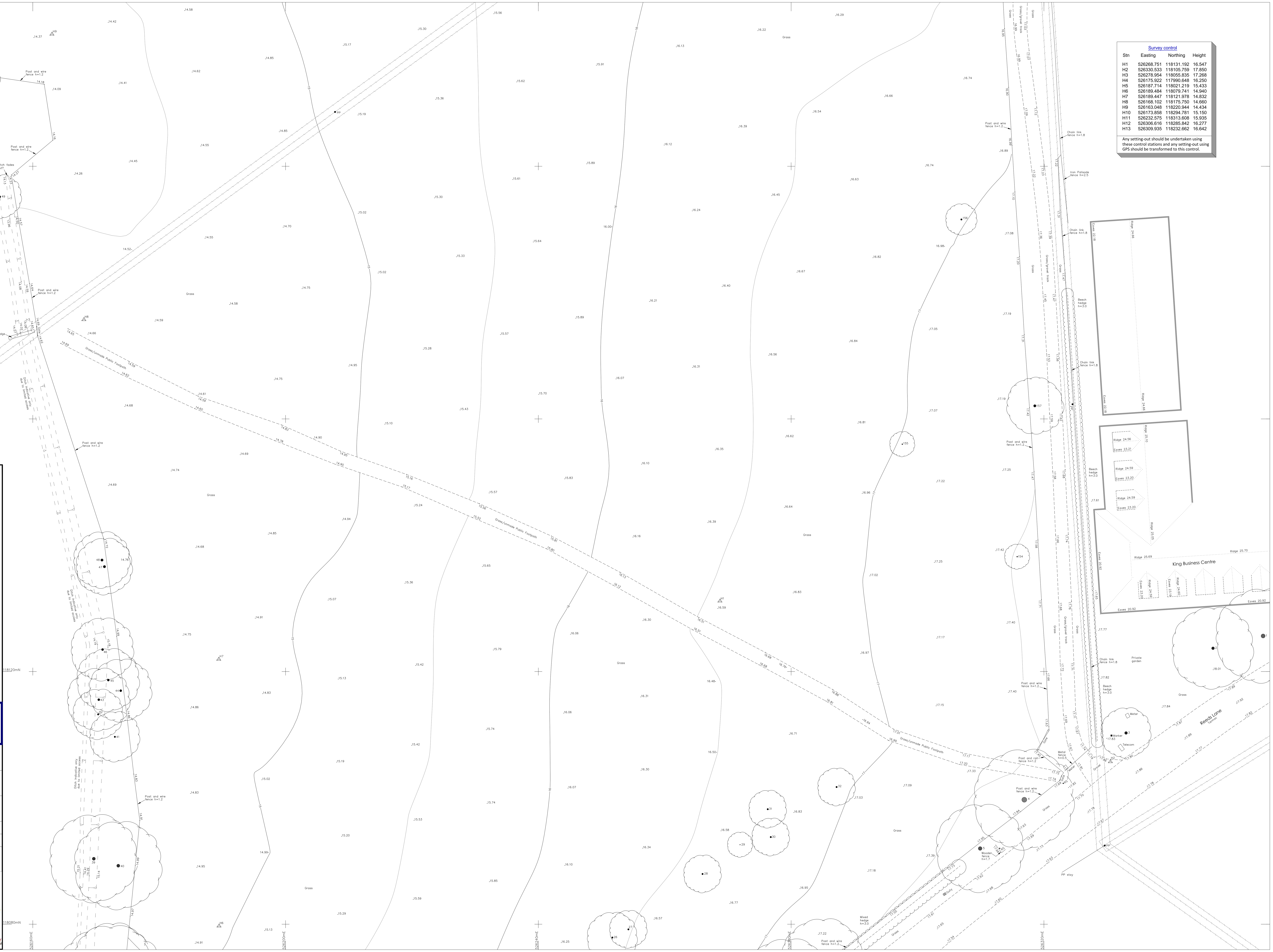
Job No. : S22/9095	Dwg No. : S22/9095/01	Revision : -
Scale : 1.200	Date : November 2022	Drawn by : D.S.

Grid & Levels related to :
Ordnance survey coordinate system using GPS related to the Leica Smartnet RTK network. Based around 3 survey stations with a scale factor of 1.000, only the fixed survey stations H1, H2 and H7 are true Ordnance Survey positions.

Head Office
Unit 1, Bybow Farm
Orchard Way
Dartford, Kent
DA2 7ER
Email - mail@hooksurvey.com
Tel - 01322 277221

Midlands Office
42 Hanson Avenue
Shipston-on-Stour
Warwickshire
CV36 4HS
Email - midlands@hooksurvey.com
Tel - 01608 523118

w w w . h o o k s u r v e y . c o m



Survey control

Stn	Easting	Northing	Height
H1	526268.751	118131.192	16.547
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H11	526232.575	118313.608	15.935
H12	526306.616	118285.842	16.277
H13	526309.935	118232.662	16.642

Any setting-out should be undertaken using these control stations and any setting-out using GPS should be transformed to this control.

Metres
0 5 10
Scale

Notes

All trees are identified where possible. Species, spread, height and girth are indicative only.

Drainage has been surveyed where found, and traced where possible.

Eaves and ridge heights of surrounding buildings have been surveyed where possible.

Indicative
N

Sheet Layout

3
2
1

HOOK SURVEY
Land & Building Surveyors
www.hooksurvey.com

Project :
Land at Reeds Lane, Sayers Common, Hassocks BN6 9LS

Client :
Reside Developments Limited

Drawing title :
Topographical Survey

Job No. :	Dwg No. :	Revision :
S22/9095	S22/9095/02	-
Scale :	**Date :**	**Drawn by :**
1.200	November 2022	D.S.

Grid & Levels related to :
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42 Hanson Avenue
Shipston-on-Stour
Warwickshire
CV36 4HS
Email - midlands@hooksurvey.com
Tel - 01608 523118

Tree Schedule

1	Oak	d=0.65	h= 15
2	Oak	d=0.45	h= 12
3	Ash	d=0.45	h= 12
4	Oak	d=0.8	h= 15
5	Oak	d=0.6	h= 15
6	Oak	d=0.65	h= 12
7	Oak	d=0.65	h= 12
8	Oak	d=0.65	h= 12
9	Oak	d=0.8	h= 15
10	Oak	d=0.75	h= 15
11	Oak	d=0.4	h= 12
12	Ash	d=0.4	h= 12
13	Oak	d=0.5	h= 12
14	Oak	d=0.55	h= 15
15	Oak	multibole	h= 12
16	Hawthorn	d=0.3	h= 5
17	Oak	multibole	h= 15
18	Ash	d=0.4	h= 12
19	Oak	d=0.5	h= 12
20	Oak	d=0.65	h= 15
21	Ash	d=0.4	h= 12
22	Oak	d=0.5	h= 12
23	Oak	d=0.5	h= 12
24	Oak	d=0.5	h= 12
25	Ash	d=0.4	h= 12
26	Oak	d=0.25	h= 5
27	Oak	d=0.25	h= 5
28	Oak	d=0.25	h= 6
29	Oak	d=0.1	h= 5
30	Oak	d=0.25	h= 6
31	Oak	d=0.25	h= 6
32	Oak	d=0.25	h= 6
33	Oak	d=0.6	h= 15
34	Oak	d=0.6	h= 15
35	Oak	d=0.6	h= 15
36	Oak	d=0.5	h= 15
37	Oak	d=0.8	h= 15
38	Oak	d=0.45	h= 10
39	Oak	d=0.5	h= 15
40	Oak	d=0.5	h= 15
41	Oak	d=0.25	h= 10
42	Oak	d=0.25	h= 10
43	Oak	d=0.35	h= 12
44	Oak	d=0.35	h= 12
45	Oak	d=0.35	h= 12
46	Oak	d=0.35	h= 12
47	Ash	d=0.4	h= 12
48	Ash	d=0.4	h= 12
49	Oak	d=0.35	h= 8
50	Oak	d=0.35	h= 8
51	Birch	d=0.4	h= 15
52	Birch	d=0.4	h= 15
53	Birch	d=0.4	h= 15
54	Birch	d=0.4	h= 15
55	Oak	d=0.7	h= 15
56	Oak	d=0.7	h= 15
57	Oak	d=0.25	h= 7
58	Oak	d=0.25	h= 6
59	Oak	d=0.2	h= 6
60	Oak	d=0.6	h= 15
61	Oak	d=0.6	h= 15
62	Hazel	multibole	h= 5
63	Hazel	multibole	h= 5
64	Hazel	multibole	h= 5
65	Hazel	multibole	h= 5
66	Hazel	multibole	h= 5
67	Hazel	multibole	h= 5
68	Hazel	multibole	h= 5
69	Hazel	multibole	h= 5
70	Hazel	multibole	h= 5
71	Hazel	multibole	h= 5
72	Hazel	multibole	h= 5
73	Oak	d=0.6	h= 15
74	Oak	d=0.75	h= 15
75	Oak	d=0.25	h= 5
76	Oak	d=0.25	h= 5
77	Oak	d=0.2	h= 5
78	Oak	d=0.25	h= 5
79	Oak	d=0.25	h= 5
80	Oak	d=0.2	h= 5
81	Oak	d=0.25	h= 5
82	Oak	d=0.2	h= 5
83	Unknown	d=0.15	h= 5
84	Oak	d=0.25	h= 6
85	Oak	d=0.2	h= 6
86	Oak	d=0.2	h= 6
87	Oak	d=0.2	h= 6
88	Oak	d=0.25	h= 6
89	Oak	d=0.25	h= 6
90	Oak	d=0.25	h= 6
91	Oak	d=0.25	h= 5
92	Oak	d=0.25	h= 5
93	Oak	d=0.2	h= 5
94	Oak	d=0.2	h= 5
95	Oak	d=0.25	h= 5
96	Oak	d=0.1	h= 4
97	Oak	d=0.25	h= 5
98	Oak	d=0.2	h= 5
99	Oak	d=0.2	h= 5
100	Oak	d=0.2	h= 5
101	Oak	d=0.75	h=15
102	Oak	d=0.5	h=15
103	Oak	d=0.5	h=15
104	Oak	d=0.65	h=15
105	Oak	d=0.45	h=15
106	Oak	d=0.45	h=15
107	Oak	d=0.45	h=15
108	Oak	d=0.35	h=15
109	Oak	d=0.3	h=12
110	Oak	d=0.45	h=15
111	Oak	d=0.45	h=15
112	Oak	d=0.45	h=15
113	Oak	d=0.45	h=15
114	Oak	d=0.45	h=15
115	Oak	d=0.45	h=15
116	Oak	d=0.5	h=15
117	Oak	d=0.5	h=15
118	Oak	d=0.5	h=15
119	Oak	d=0.65	h=15
120	Oak	d=0.55	h=15
121	Oak	d=0.55	h=15
122	Oak	d=0.45	h=15
123	Unknown	d=0.1	h= 3
124	Oak	d=0.55	h=15
125	Oak	d=0.55	h=15
126	Oak	d=0.35	h=12
127	Oak	d=0.5	h=15
128	Oak	d=0.35	h=12
129	Oak	d=0.5	h=15
130	Oak	d=0.5	h=15
131	Oak	d=0.5	h=15
132	Oak	d=0.35	h=12
133	Oak	d=0.65	h=15
134	Oak	d=0.65	h=15
135	Oak	d=0.65	h=15
136	Oak	d=0.65	h=15
137	Oak	d=0.25	h= 7
138	Oak	d=0.25	h= 6
139	Oak	d=0.25	h= 8
140	Oak	d=0.25	h= 8
141	Oak	d=0.25	h= 8
142	Oak	d=0.25	h= 6
143	Oak	d=0.25	h= 6
144	Oak	d=0.25	h= 6
145	Oak	d=0.25	h= 6
146	Oak	d=0.25	h= 6
147	Oak	d=0.25	h= 6
148	Oak	d=0.25	h= 6
149	Oak	d=0.25	h= 6
150	Oak	d=0.25	h= 6
151	Oak	d=0.25	h= 6
152	Oak	d=0.2	h= 5
153	Oak	d=0.2	h= 5
154	Oak	d=0.15	h= 5
155	Oak	d=0.15	h= 5
156	Oak	d=0.25	h= 6
157	Unknown	d=0.4	h=10

Survey control

Stn	Easting	Northing	Height
H1	526268.751	118131.192	16.547
H2	526330.533	118105.759	17.850
H3	526278.954	118055.835	17.268
H4	526175.922	117990.648	16.250
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H6	526189.484	118079.741	14.940
H7	526189.447	118121.978	14.832
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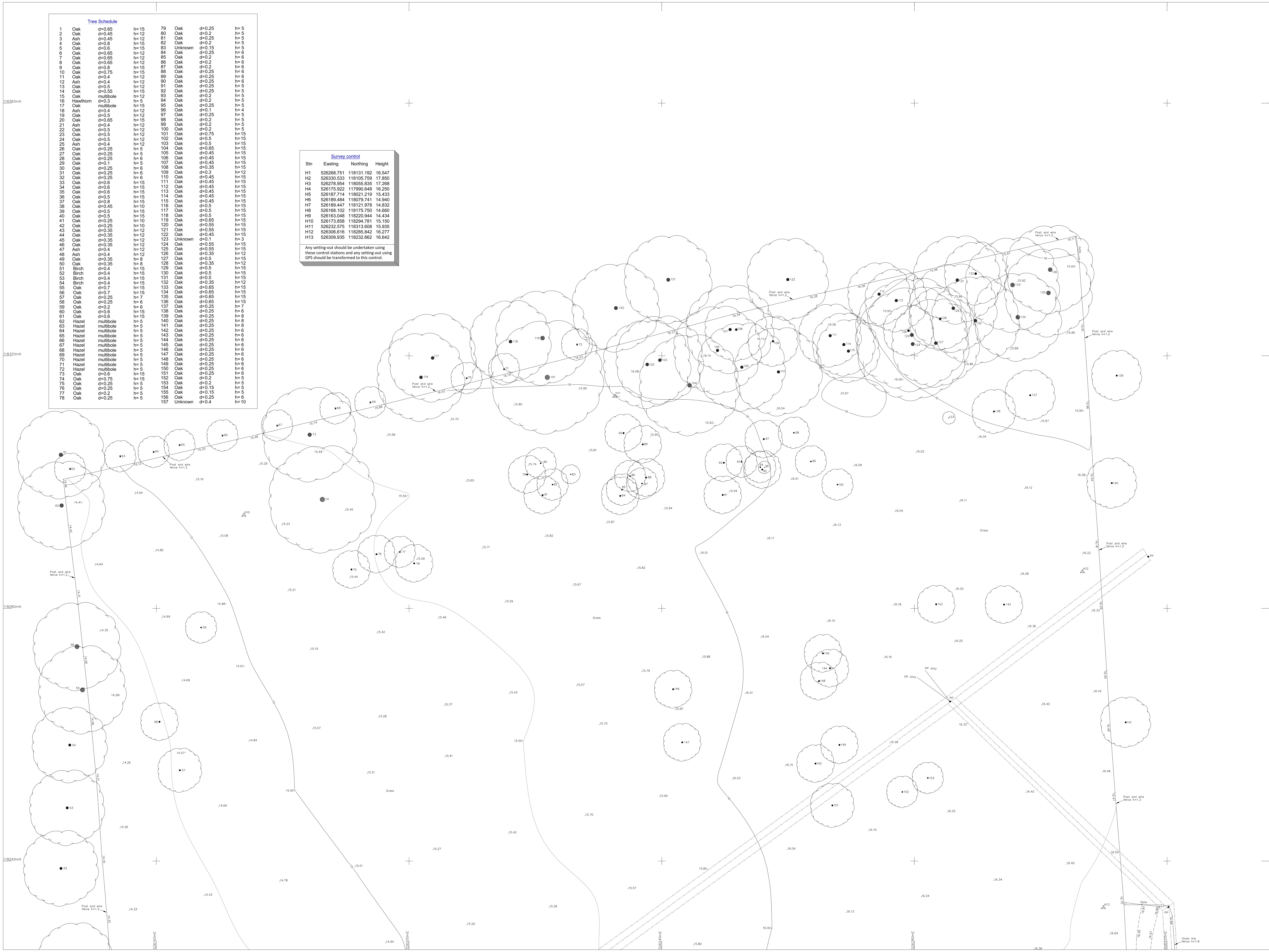
Any setting-out should be undertaken using these control stations and any setting-out using GPS should be transformed to this control.



Topographical Survey Legend

Hedge
Undergrowth
Tree
Bush
Building
Glass Building
Open Building
Telephone line
Power line
Banking
Contour line 64
Survey Station H5
Gate
Level .115.28
Ordnance Survey Benchmark OSBM
Foul Drainage 100mm FW MH CL 117.10 IL 116.75
Storm Drainage 100mm SW MH CL 117.10 IL 116.75

Abbreviations

Animal Sett	Sett
Air Valve	AV
Borehole	BH
Bus Stop	BS
Cover Level	CL
Earth Rod	ER
Electricity Pole	EP
Fire Hydrant	FH
Inspection Cover	IC
Invert Level	IL
Lamp Post	LP
Manhole	MH
Marker	MK
Name Plate	RNP
Power Pole	PP
Rain water Pipe	RWP
Road Sign	RS
Rodding Eye	RE
Reinforced Steel Joint	RSJ
Soil Vent Pipe	SVP
Stop Valve	SV
Survey Station	STN
Telegraph Pole	TP
Tree Stump	Stump
Trial Hole	TH
Unable To Lift	UTL
Vent Pipe	VP
Water Valve	WV

Metres 0 5 10
Scale

Notes

All trees are identified where possible. Species, spread, height and girth are indicative only.

Drainage has been surveyed where found, and traced where possible.

Eaves and ridge heights of surrounding buildings have been surveyed where possible.

Indicative N

Sheet Layout

3
2
1

HOOK SURVEY
Land & Building Surveyors
www.hooksurvey.com

Project : Land at Reeds Lane, Sayers Common, Hassocks BN6 9LS

Client : Reside Developments Limited

Drawing title : Topographical Survey

Job No. : S22/9095	Dwg No. : S22/9095/03	Revision : -
Scale : 1.200	Date : November 2022	Drawn by : D.S.

Grid & Levels related to : Ordnance survey coordinate system using GPS related to the Leica Smartnet RTK network. Based around 3 survey stations with a scale factor of 1.000, only the fixed survey stations H1, H2 and H7 are true Ordnance Survey positions.

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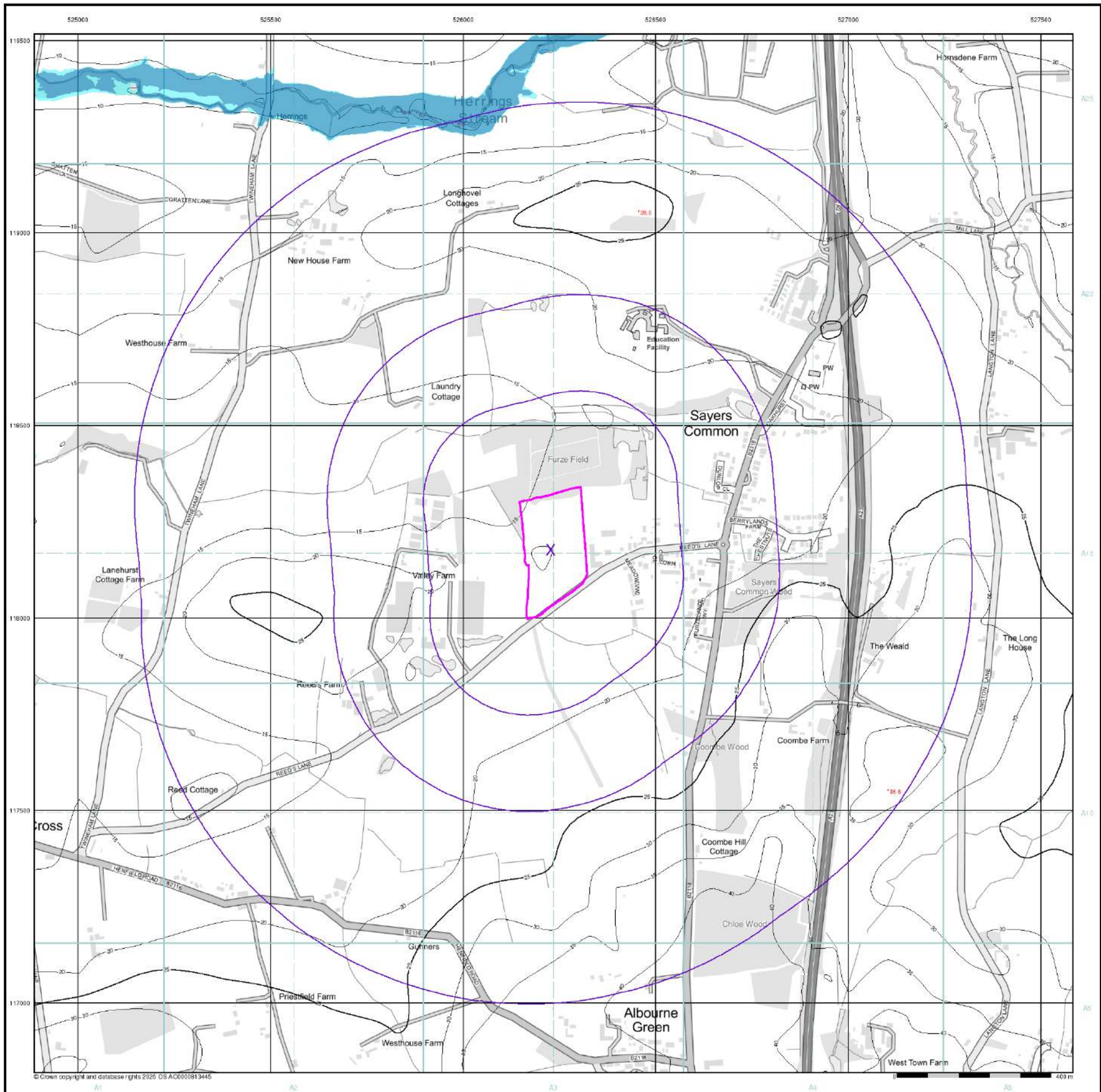
Appendix E

Envirocheck Flood Screening Report



motion

EA/NRW Flood Data Map (1:10,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Flood Data

- Extreme Flooding from Rivers or Sea without Defences (Zone 2)
- Flooding from Rivers or Sea without Defences (Zone 3)
- Area Benefiting from Flood Defence
- Flood Water Storage Areas
- Flood Defence

Contours (height in metres)

Standard Contour 105 100 95

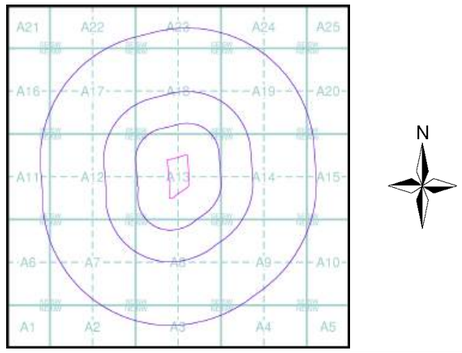
Master Contour

Spot Height 167.8

MLW Mean Low Water

MHW Mean High Water

EA/NRW Flood Data Map - Slice A



Order Details

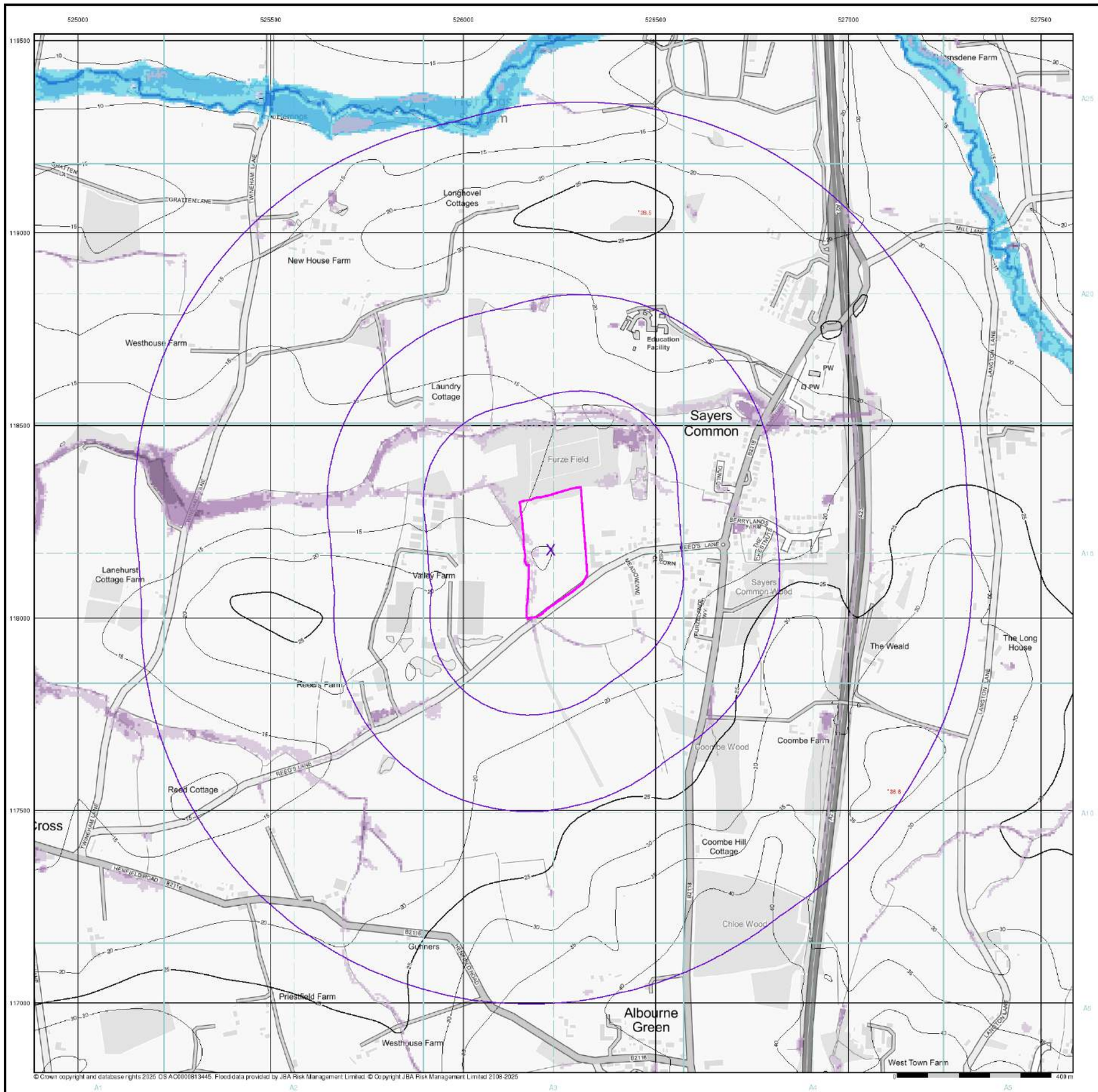
Order Number:	390288130_1_1
Customer Ref:	1rdsay 2406076
National Grid Reference:	526230, 118180
Slice:	A
Site Area (Ha):	4.37
Search Buffer (m):	1000

Site Details

G J King Ltd, King Business Centre, Reeds Lane, Sayers Common, HASSOCKS, BN6 9LS

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



motion

JBA 75 Year Return Flood Map (Undefended) (1:10,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Modelled Flood Depth

Pluvial Depth	Fluvial Depth	Coastal Depth
0.1m	0.01m - 0.05m	0.01m - 0.05m
0.1m - 0.3m	0.05m - 0.1m	0.05m - 0.1m
0.3m - 1m	0.1m - 0.3m	0.1m - 0.3m
>1m	0.3m - 1m	0.3m - 1m
	>1m	>1m

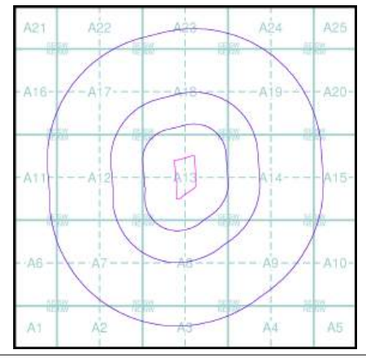
Contours (height in metres)

Standard Contour 105 100 95 — MLW Mean Low Water

Master Contour — MHW Mean High Water

Spot Height 157.8

JBA 75 Year Return Flood Map (Undefended) - Slice A



Order Details

Order Number:	390288130_1_1
Customer Ref:	1rdsay 2406076
National Grid Reference:	526230, 118180
Slice:	A
Site Area (Ha):	4.37
Search Buffer (m):	1000

Site Details

G J King Ltd, King Business Centre, Reeds Lane, Sayers Common, HASSOCKS, BN6 9LS

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