

FLOOD RISK ASSESSMENT

Mowbray, North Horsham, West Sussex
Employment Land Road



Prepared for: Legal & General (Strategic Land North Horsham) Limited
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1.0 Introduction

1.1 This Flood Risk Assessment has been prepared by Glanville Consultants on behalf of Legal & General (Strategic Land North Horsham) Limited to support full planning for the proposed primary road through the employment land within the Mowbray development, North Horsham, West Sussex.

1.2 Outline planning permission was granted in March 2018 for the following development on Land North of Horsham (planning application reference: DC/16/1677):

"Outline planning application with all matters reserved except access for a mixed use strategic development to include housing (up to 2,750 dwellings), business park (up to 46,450m²), retail, community centre, leisure facilities, education facilities, public open space, landscaping and related infrastructure."

1.3 Whilst outline planning application has been granted for the Mowbray development, an application for the approval of all Reserved Matters in connection with the proposed primary road through the employment land has not been submitted within the required timescale, so a full application is necessary. However, the principles and parameters remain consistent with those agreed through the outline planning permission, and are referenced throughout this report.

1.4 The employment land road is an extension of the section of primary road that has been constructed leading northwards away from the A264 dual carriageway where a new signal-controlled left-in / left-out junction has also been constructed to provide access to the employment land and Phase 2 of the Mowbray development. Full planning permission is now sought for the extension of the primary road eastwards through the employment land for around 780 metres.

1.5 The description of development is as follows:

"Construction of Primary Road from the Left-In, Left-Out junction with the A264 (constructed pursuant to Outline Planning Permission DC/16/1677) to Bush Lane (Bridleway 1585), footpaths and cycleways, foul and surface water drainage including a SUDS basin and foul pumping station, landscaping, substations and associated infrastructure."

1.6 The purpose of this document is to assess the existing level of flood risk to the site and its surroundings within the context of the development proposals and to demonstrate suitable drainage strategies for the disposal of foul and surface water from the site.

1.7 This assessment has been prepared in accordance with the following documents:

- The National Planning Policy Framework (NPPF) (Dec 2024)
- Planning Practice Guidance (PPG) (Aug 2022)
- CIRIA document C753 'The SuDs Manual' (2015)

1.8 This assessment was undertaken with reference to information provided and/or published by the Water and Sewerage Undertaker, Horsham District Council. West Sussex County Council and the Environment Agency.

- 1.9 This report concludes that the development is not at risk of flooding and can be developed safely without increasing flood risk elsewhere, and therefore the development proposals comply with relevant planning policy concerning flood risk. The report demonstrates that suitable provision for the disposal of foul and surface water from the proposed development can be provided.



2.0 Existing Situation

Site Context

- 2.1 The wider Mowbray development at North Horsham is currently under construction with various applications for the approval of reserved matters for individual infrastructure elements and sub-phases, both under consideration and determined. Prior to development, the wider Mowbray site had a mix of uses, including agricultural land and associated buildings, and dwellings.
- 2.2 The application site is located to the north of the A264. A location plan showing the extent of the application site edged in red is provided in Appendix A.
- 2.3 The application site currently comprises previously undeveloped land used in the past for agricultural purposes.
- 2.4 The site is an irregular shape. Therefore, the topography, geology and hydrogeology is described for the wider context i.e. a parcel of land bounded by the railway line to the south-east, the A264 to the south-west, Wimland Road to the east and Channells Brook to the remaining boundaries.

Topography

- 2.5 Land generally falls away from the railway line towards Channells Brook, initially at a gradient of around 1:20 in a north-westerly direction, then at a gradient of 1:100 in a westerly direction in the northern part of the parcel close to Channells Brook. The railway line, the A264 and Wimland Road are also raised, with embankments down to the site levels. Extract of the topographical survey are included in Appendix B.

Geological Setting

- 2.6 GESL undertook ground investigation in 2022 for the wider Mowbray site. Areas 8 and 9 in their investigation covered this land parcel. Extracts of the site investigation are included in Appendix C.
- 2.7 The investigation generally found topsoil overlying Weald Clay in the northern part of parcel and Tunbridge Wells Sand in the southern part of the parcel. Some areas of made ground were found alongside the railway line.
- 2.8 Groundwater was struck between 1.20m and 3.00m below ground level across the parcel, with groundwater monitoring generally finding groundwater seepages between 1.00m and 2.90m below ground level, understood to be perched groundwater within permeable less cohesive horizons. Artesian groundwater was struck at 8.5-12.0m below ground level.
- 2.9 Falling head soakage tests were undertaken in several boreholes. Infiltration was found to be negligible due to the cohesive nature of both the Weald Clay Formation and the Tunbridge Wells Sand Formation. As such, infiltration drainage techniques will not be a feasible means of surface water disposal from the site.

Groundwater Vulnerability

- 2.10 The Environment Agency (EA) defines Source Protection Zones (SPZs) for groundwater sources such as wells, boreholes and springs used for public drinking water supply. These zones show the risk of contamination from any activities that might cause pollution in the area. The SPZs mapping indicates that the site is not located within a SPZ.
- 2.11 The site is not in a nutrient neutrality catchment.
- 2.12 The bedrock Aquifer Designation Map published by the EA indicates that the bedrock underlying the southern part of the parcel (associated with the Tunbridge Wells Sand) is designated as Secondary A. Secondary A aquifers are permeable layers of rock or drift deposits that are capable of supporting water supplies at a local scale.
- 2.13 The superficial Aquifer Designation Map published by the EA indicates that the superficial drift in the northern part of the site, associated with Arun Terrace Deposits, is classed as a Secondary A Aquifer. However, it should be noted that the intrusive site investigation did not find any Arun terrace Deposits as part of intrusive site works in this area.

Existing Watercourses

- 2.14 Channells Brook is located along the northern and western parcel boundaries, flowing in a westerly then south-westerly direction. A network of field drainage ditches are locate within the parcel. A drainage ditch crosses the site flowing in a westerly direction to a confluence with Channells Brook, and a ditch flow in first a north-westerly then north-easterly direction towards a confluence with this aforementioned ditch. A toe drain is present along the toe of the embankment of the A264.



Figure 1: Watercourse Network

3.0 Proposed Development

- 3.1 The proposals for which full planning permission is sought comprise the extension of the primary road eastwards from the newly constructed left-in / left-out signal-controlled junction that provides access to the employment land from the A264 for around 780 metres, together with associated infrastructure and landscaping.
- 3.2 The proposals include a surface water drainage network that serves the road infrastructure as well as adjoining development parcels that will be subject to future planning applications.
- 3.3 Similarly, the proposals include a foul water pumping station, rising main and gravity foul water network which will serve adjoining development parcels as well as a proportion of Phase 2 of the future development, all of which will be subject to future planning applications.
- 3.4 Drawings illustrating the proposals are provided as separate planning documents, as follows:

MOW-RMA2-PH2-1001 – General Arrangement Sheet 1 of 3
MOW-RMA2-PH2-1002 – General Arrangement Sheet 2 of 3
MOW-RMA2-PH2-1003 – General Arrangement Sheet 3 of 3
MOW-RMA2-PH2-1006 – Long Sections Location Plan
MOW-RMA2-PH2-1007 – Long Sections Sheet 1 of 5
MOW-RMA2-PH2-1008 – Long Sections Sheet 2 of 5
MOW-RMA2-PH2-1009 – Long Sections Sheet 3 of 5
MOW-RMA2-PH2-1010 – Long Sections Sheet 4 of 5
MOW-RMA2-PH2-1011 – Long Sections Sheet 5 of 5
MOW-RMA2-PH2-1012 – Levels & Contours Sheet 1 of 3
MOW-RMA2-PH2-1013 – Levels & Contours Sheet 2 of 3
MOW-RMA2-PH2-1014 – Levels & Contours Sheet 3 of 3
MOW-RMA2-PH2-1018 – Adoption Plan Sheet 1 of 3
MOW-RMA2-PH2-1019 – Adoption Plan Sheet 2 of 3
MOW-RMA2-PH2-1020 – Adoption Plan Sheet 3 of 3

4.0 Planning Policy and Guidance

- 4.1 Set out below is a summary of the national and local planning policy and guidance relating to flood risk and surface water management that are relevant to the development proposals.

National

- 4.2 At a national level, the National Planning Policy Framework (NPPF, February 2019, as amended in December 2024) and the Planning Practice Guidance (PPG, 2014, as amended in August 2022) to the NPPF ensure flood risk is taken into account at all stages of the planning process, to avoid inappropriate development in areas at risk of flooding and to direct development towards areas at lowest flood risk. The NPPF retains a risk-based approach to the planning process and defines four Flood Zones to be used as the basis for applying the sequential test to consider a development in terms of Flood Risk Vulnerability Classifications, which define the type of development that is considered appropriate within each zone.

Local

Horsham District Council Strategic Flood Risk Assessment Level 1 (SFRA) – 2020

- 4.3 This Level 1 SFRA was produced by Aecom in 2020. The SFRA provides the flood risk evidence and long-term strategy to support the management and planning of development, protect the environment, deliver infrastructure and promote sustainable communities within in the Local Plan area. It also provides information and guidance to be used in the preparation of Flood Risk Assessments (FRAs) in support of site-specific planning applications. The SFRA includes flood maps covering the entire district.

Horsham District Council Strategic Flood Risk Assessment Level 1 (SFRA) Update – 2024

- 4.4 This Level 1 SFRA Update was produced by Aecom in 2024. This is an update to the 2020 SFRA following a number of changes in planning policy and improvements in available flood mapping and modelling datasets.

5.0 Flood Risk Assessment

- 5.1 Flood risk to the site has been considered from all likely sources of flooding, as defined in the NPPF and the PPG. These include tidal, artificial sources (reservoir), fluvial, surface water, sewer and groundwater. The following paragraphs consider flood risk to the site from all of these sources.
- 5.2 Whilst the assessment is generally in accordance with the approved outline planning application (DC/16/1677), the assessment has been updated to be based on the most recent mapping from the Environment Agency and modelling undertaken by Glanville.

Tidal

- 5.3 Given that there is no tidally influenced watercourse on or within the vicinity of the site, there is no tidal flood risk to the site.

Assessment

- 5.4 Therefore, tidal flooding is not an issue that would prevent the development of the site for its intended end use.

Fluvial

- 5.5 On the GOV.UK website, the Environment Agency (EA) publishes its Flood Map for Planning showing Flood Zones in accordance with national planning policy, and Rivers and Sea flood maps which shows the maximum extent of fluvial flooding.
- 5.6 The Flood Zone mapping shows that there are areas of Flood Zone 2 and 3 along Channells Brook and an associated floodplain in the northern part of the site. The Rivers and Sea Flooding Map shows the same extent of flooding for the equivalent flood events. Extracts of the GOV.UK maps are shown in Figure 2.

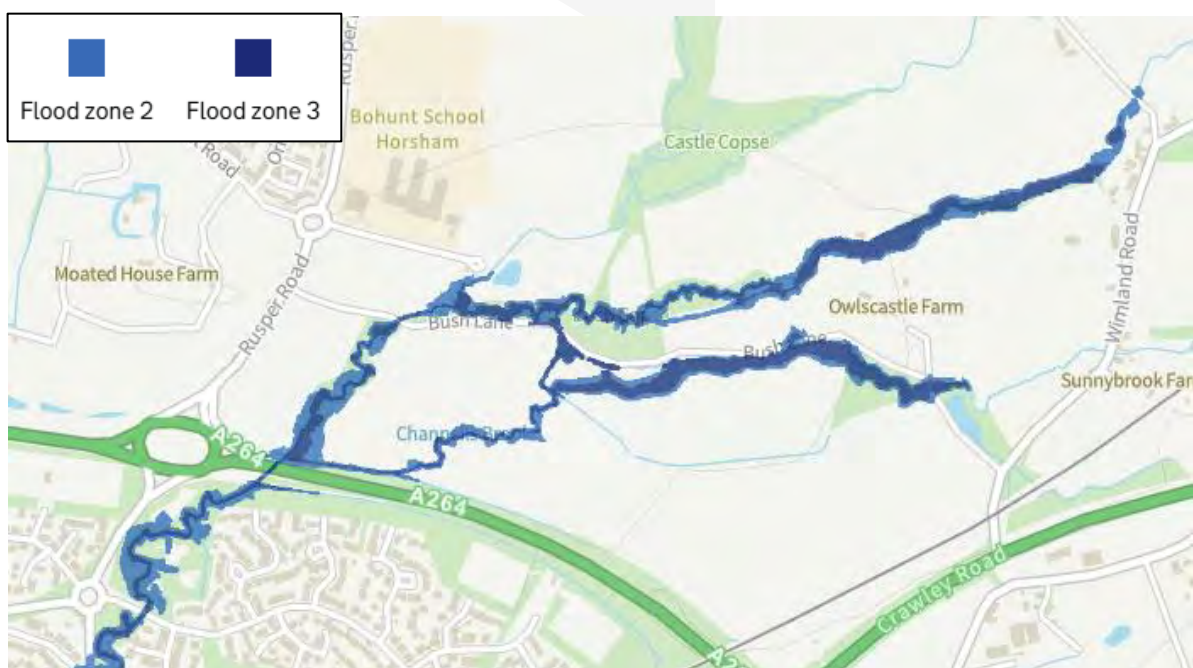


Figure 2a: Flood Map for Planning: Flood Zones 2 and 3



Figure 2b: Risk of Flooding from Rivers and Sea



Figure 2c: Risk of Flooding from Rivers and Sea (with climate change)

- 5.7 Detailed local hydraulic modelling is more accurate than the Environment Agency's broad-scale mapping. Hydraulic modelling of Channells Brook was carried out by Stantec in 2022 and updated by Glanville to support the RMA1 Bailey Road Extension reserved matters application in 2023 (Application Reference: DC/23/2328). Despite the modelling undertaken by Stantec / Glanville being older than the latest EA mapping, no substantial changes have been made since 2022 to modelling techniques. One of the key recent changes affecting the models are climate change allowances, however the most up-to-date allowances have been used in the latest 2023 Glanville model. The Glanville model has also been created using the latest software packages, such as Flood Modeller and Tuflow (1D/2D).

- 5.8 For these reasons, the 2023 Glanville hydraulic modelling is considered to most accurately represent flood risk along the main watercourses within the wider Mowbray development site, instead of the EA rivers and sea and surface water flood mapping. The modelled flood extents alongside the development proposals are shown on the plan included in Appendix D.
- 5.9 No built development is proposed within areas that are at risk of fluvial flooding according to the Glanville hydraulic model. As such, the development follows the sequential approach and a Sequential Test is not required.
- 5.10 Buildings proposed as part of the planning application (sub-stations) will be raised above existing ground levels and a minimum of 300mm above the closest 1 in 100 year plus climate change flood level.
- 5.11 Infrastructure located within the fluvial flood extents includes a shared pedestrian and cycle route (along the alignment of an existing Public Right of Way) and landscaping. These proposals will not include land raising and as such no flood compensation is required. The pedestrian and cycle route is a leisure route and therefore does not form a key access or egress route for any existing buildings or future development parcels which form part of the wider Mowbray development. Safe and dry access and egress for all existing and proposed buildings is provided via the main road infrastructure.
- 5.12 Beyond and to the north-east of the red line boundary defining the extent of this planning application, the road crosses Channells Brook, which will need to be culverted. The road also crosses a bridleway called Bush Lane (Bridleway 1585) that runs on an east to west alignment, connecting Wimland Road, to the east, with Rusper Road, to the west. A signal-controlled Pegasus crossing suitable for use by pedestrians, cyclists and equestrians, is proposed where the bridleway crosses the road. Due to the complex interactions in this location, the design of the section of road and associated culvert beyond the extent of the current planning application has been developed to a similar level of detail but any information shown on the application drawings beyond the red line boundary is provided for illustrative and contextual purposes only as this section of road will be subject to a separate planning application in due course.
- 5.13 An update to the aforementioned Glanville hydraulic model has been undertaken to size the new box culvert under the road to accommodate the 1 in 100 year plus climate change flood event. The modelling demonstrates that there is no increase in flood risk upstream or downstream of the culvert as a result of the culverting of the watercourse and the installation of the road infrastructure, which is raised above existing levels.
- 5.14 Given that the road in this location is raised above the flood levels, dry and safe access and egress to the future parcels in Phase 2 beyond the planning application boundary is provided.
- 5.15 Hydraulic modelling and culvert sizing has not been provided as part of this report as it will be provided as part of a future planning application that is submitted covering this piece of road infrastructure.

Summary

- 5.16 It is considered that the risk of fluvial flooding to the site is very low to the majority of the site. Where fluvial flood risk exists, built development will be avoided, therefore taking a sequential approach to development of the site. Appropriate mitigation measures for proposed development will also be employed. Therefore, fluvial flood risk is not an issue that would prevent development of the site for its intended end use.

Reservoir

- 5.17 The EA publishes indicative mapping on the GOV.UK website which shows the maximum extent of reservoir flooding in the unlikely event that a reservoir should fail. The mapping indicates that the site is located outside of a reservoir flood risk area.

Summary

- 5.18 Therefore, reservoir flooding is not an issue that would prevent the development of the site for its intended end use.

Sewer

- 5.19 No public sewers are known to exist within the development site boundary. Sewers exist in the vicinity of the site, both constructed as part of the wider development site and Southern Water's Faygate rising main (which follows the route of the aforementioned bridleway). This drainage infrastructure has been designed to modern standards and as such these sewers will not pose a flood risk to the development site.

Summary

- 5.20 Therefore, sewer flooding is not an issue that would prevent the development of the site for its intended end use.

Surface Water

- 5.21 The EA Risk of Flooding from Surface Water (RoFSW) map is derived primarily from identifying topographical flow paths of existing watercourses or dry valleys that contain some isolated ponding locations in low-lying areas. This map shows the risk of flooding based on rainfall events with different return periods. An extract from the GOV.UK surface water flood map is included in Figure 3 both with and without climate change, and is also included on the flood risk map included in Appendix D.
- 5.22 The mapping indicates that the majority of the site is at 'very low' risk of surface water flooding, with an annual probability of flooding of less than 1:1,000 (0.1% AEP). However, areas of low to high risk exist associated with low valleys and depressions in the topography.
- 5.23 On a site-specific scale it is recommended that the RoFSW is used in conjunction with other sources of data to assess the likely risk. Therefore, a detailed site-specific surface water flood risk assessment has been undertaken in order to understand the risks posed to the proposed development and is provided in Table 1 overleaf.



Figure 3a: Risk of Flooding from Surface Water



Figure 3b: Risk of Flooding from Surface Water (with climate change)

Table 1: Surface Water Flood Risk Areas (refer to Appendix D)

Area Ref.	1	2	3
Description	Area closely associated with the ditches at the western end of the site, before flowing overland via a low valley in the topography to Channells Brook.	A local ground depression in the north of the site, which also correlates with an area of fluvial flood risk.	An area of low risk in the south-eastern corner of the site associated with an overland flow path.
Catchment Assessment	The site and future development parcels forming part of the wider Mowbray site, and the A264 embankment.	The site and future development parcels forming part of the wider Mowbray site.	The site, Wimland Road and the railway embankment.
Post-Development	Flows will be reduced due to the majority of the catchment being developed, with surface water run-off directed to the new surface water drainage system.	Flows will be reduced due to the majority of the catchment being developed, with surface water run-off directed to the new surface water drainage system.	No change post-development.
Risk Assessment	An assessment has been undertaken to show that the existing ditches and proposed culverts have sufficient capacity to accommodate surface water flows from the future (post-development) catchment areas. As such, surface water flows up to and including the 1 in 100 year plus climate change event will be contained within the ditch/culvert network into Channells Brook and the flood risk along the low valley will not exist as shown on the maps.	Risk will exist post-development but is likely to be reduced due the urbanisation of the catchment.	Risk will exist post-development but is limited to the extreme in 1,000 year flood event.
Risk to Development	Given that surface water flows will be contained within the existing ditch and proposed culvert network, surface water will not pose a risk to any built development in the flood risk areas identified on the EA maps.	No built development is proposed in this area as it coincides with an area of fluvial flood risk. As such there is no risk to proposed development.	No built development is proposed in this area. As such there is no risk to proposed development.

Area Ref.	1	2	3
Mitigation Measures	Building finished floor levels will be raised a minimum of 300mm above the closest surface water flood level.	No land raising will occur within the identified area.	Where land is raised as part of the proposals, consideration will be given to directing exceedance flows (1 in 1,000 year event) through this parcel to ensure that flows are channelled away from infrastructure and buildings, and that there no increase in risk of flooding to the site and surrounding area.
Access and egress	Given that the proposed road and footpaths are raised above existing levels, with culverts designed to accommodate the design event below the proposed roads / footpaths, safe and dry access and egress is capable of being provided.	No access routes are proposed within the identified area.	The pedestrian and cycle route is a leisure route does not form a key access or egress route for any development parcel. Safe and dry access and egress is provided via the main road infrastructure.

5.24 The risk assessment and mitigation measures outlined in Table 1 demonstrate that:

- no built development will be located in areas identified to be at risk in the post-development scenario, and therefore the site is sequentially planned;
- development of the site will not increase flood risk to the site or surrounding area; and
- safe access and egress can be provided.

5.25 Catchment assessments for each of the proposed culverts and existing ditches is found in Table 2. Catchment areas for each culvert are based on the temporary situation that the road infrastructure that forms part of this planning application is constructed, but the adjoining future development parcels have not yet been constructed. The flow rates detailed in the table demonstrate that the existing ditches and proposed culverts have more than adequate capacity for the design flow rate 91 in 100 year plus 45% climate change event) in this temporary situation. For locations C3, C4, C5 and C6 in particular, these results demonstrate that surface water overland flow would be directed via the ditch and culvert network, as described under Area (a) in Table 1, therefore preventing surface water overspilling from the ditch network and flowing along the low valley in the topography as identified on the surface water flood risk maps.

5.26 Given that the capacity assessment has been undertaken for the temporary situation, and that the remainder of the catchments will be urbanised in the permanent situation, the culvert and ditches will have more than the required capacity in the permanent post-development situation, therefore providing a robust approach.

5.27 Culvert locations and catchments are shown on the drawings included in Appendix E and culvert and ditch capacity assessments are provided in Appendix F.

5.28 Ordinary Watercourse Consent pre-application discussions with West Sussex County Council (WSCC) have been undertaken regarding the design of culverts C1 to C6. WSCC confirmed that:

- the capacity assessment based on the temporary situation (where the road infrastructure is constructed but the adjoining future development parcels have not yet been constructed) is acceptable. It was acknowledged that this might lead to some localised flooding in the event of a high return period rainfall event in the short-term temporary situation, however this was acceptable as it will be contained within the developer's land ownership. A Construction Surface Water Management Plan will be developed at the appropriate design and construction stage accordingly.
- Minimum 450mm pipe diameters for all culverts are required.
- The pipe diameters outlined in Table 2 are acceptable.

Table 2: Culvert and Ditch Capacity Assessment

Location Reference	Catchment Area (m ²)	Existing Watercourse Capacity ¹ (l/s)	Proposed Culvert Diameter (mm)	Proposed Culvert Capacity ¹ (l/s)	1 in 100 year plus 45% climate change design flow ² (l/s)
C1	6,007 ³	1,117	450	346	54 ³
C2	6,007 ³	1,156	450	203	54 ³
C3	6,007 ³	1,355	450	389	54 ³
C4	6,007 ³	1,702	450	359	54 ³
C5	27,180	807	450	299	245
C6	61,684	3,051	600	763	555
C7	1,521	4,850	450	481	14

¹ Based on Manning's Equation

² Based on the Wallingford Procedure 60 min storm

³ Assessment for C1 to C4 are based on the worst-case C4 catchment for simplicity

Summary

5.29 The site-specific surface water flood risk assessment demonstrates that in the post-development scenario there will be no risk to built development, due to the sequential planning of the site as well as directing and containing overland flows via existing ditches and proposed culverts. Surface water flood risk will not increase to the site or surrounding area as a result of the development proposals. Therefore, surface water flooding is not an issue that would prevent or constrain development of the site.

Groundwater

5.30 The Level 1 SFRA includes the Areas Susceptible to Groundwater Flooding (AStGWF), which is a strategic scale map showing where groundwater flooding could occur on a 1km square grid. It shows the proportion of each 1km grid square where geological and hydrogeological conditions show that groundwater flooding could occur. The susceptible areas are represented by one of four categories showing the proportion of each 1km square that is susceptible to groundwater emergence. It does not show the likelihood of groundwater flooding occurring. This map indicates that less than 25% of the 1 km grid squares associated with the site are susceptible to groundwater flooding.

- 5.31 The 2020 Level 1 SFRA and 2024 Update includes the GeoSmart groundwater flood risk map which is based on a model on a 5m grid displaying the likelihood of groundwater flooding greater than 1% annual probability of occurrence (1 in 100 chance each year). The map is intended to provide a useful initial view but does not provide an alternative to a site-specific assessment. It indicates that the site is located within an area at negligible risk of groundwater flooding. This means that any groundwater flooding incidence has a less than 1% annual probability of occurrence.
- 5.32 The intrusive site investigation found groundwater levels 1.00-2.90m below ground level.
5. It is likely that groundwater levels will be in conductivity with the watercourse and fluvial flood levels, and as such that groundwater flooding may occur in conjunction with fluvial flooding within areas identified to be at fluvial flood risk, at the low end of the site. This area of the site is considered to be at low risk of groundwater flooding, with the remainder of the site is considered to be at negligible risk.
- 5.33 The following measures will also be employed to mitigate against this risk:
- Areas where groundwater levels are most likely to be high (i.e. areas at risk of fluvial flooding) will be avoided for built development, therefore taking a sequential approach; and
 - No below ground development (e.g. basements) are proposed.
- 5.34 The mitigation measures proposed are considered to adequately address the low risk of groundwater flooding on the site.
- Summary*
- 5.35 Therefore, groundwater flooding is not an issue that would prevent or constrain development of the site.
- Summary*
- 5.36 Parts of the site are considered to be at risk of surface water and fluvial flooding. The development will be planned around the areas of identified flood risk, therefore taking a sequential approach in-line with national policy. Surface water flows will be directed and contained within existing ditches and proposed culverts. Appropriate mitigation measures are also proposed to ensure that proposed buildings are not at risk and access and egress routes are safe and dry, as well as to ensure that there is no increase in flood risk to the site or surrounding area as a result of the development of the site.

4As such, the development of the site for its intended end use is acceptable in flood risk planning terms.

6.0 Surface Water Drainage Strategy

6.1 This section provides details of the proposed disposal arrangements for surface water run-off generated by the application site. Whilst this planning application is a new full planning application, this section has been prepared with reference to the site wide surface water drainage strategy, approved under the discharge of Condition 17 of the outline approval (application reference: DISC/19/0214), Site-Wide Surface Water Strategy Report (Rev. A, August 2019). The strategy proposed is generally in-line with the approved site-wide strategy principles, however has been updated to be in-line with West Sussex County Council (WSCC) local drainage standards.

6.2 The site is split into two catchments, Catchment 6 and Catchment 7:

- Catchment 6 drains surface water run-off into the surface water drainage network that serves the A264 Left-In Left-Out junction, approved under planning application reference DC/22/1026. This network including pond and flow control has now been constructed (Verification Report submitted and approved under application reference DISC/25/0091). As such, this report only seeks to verify that the catchment area proposed to drain into this network matches the catchment area it was designed for.
- Catchment 7 drains surface water run-off from the remainder of the development site, including wider development parcels subject to future planning applications.

As such, this report will focus on Catchment 7.

Sustainable Drainage Systems

6.3 The PPG recommends that priority should be given to the use of Sustainable Drainage Systems (SuDS) as they are designed to control surface water run-off where it falls and mimic natural drainage characteristics as closely as possible. SuDS also provide opportunities for the following:

- reducing the causes and impacts of flooding;
- removing pollutants from urban run-off at source; and
- combining water management and green space with benefits for amenity, recreation and wildlife.

6.4 SuDS encompass a wide range of drainage techniques intended to minimise the rate of discharge, volume and environmental impact of run-off and include:

- pervious pavements;
- swales and basins;
- green roofs and rainwater reuse;
- infiltration trenches and filter drains; and
- ponds and wetlands.

6.5 When used across a site these techniques control the rate of discharge, attenuate flow, provide storage and improve water quality. The combination of techniques that are appropriate will be dependent upon ground conditions, topography and other site-specific characteristics.

6.6 Rainwater from roofs and paved areas is carried away from surface to discharge to one of the following, listed in order of priority:

- a) an adequate soakaway or some other adequate infiltration system; where that is not practical;
- b) a watercourse; or, where that is not practical
- c) a sewer.

Strategy Principles

Surface Water Outfall

6.7 In the absence of infiltration drainage being feasible (see Section 2), the site-wide surface water drainage strategy established in accordance with the drainage hierarchy that all discharges from the development will be to the local network of watercourses running through and around the site.

6.8 Given the above, it is proposed to discharge surface water run-off generated by Catchments 6 and 7 to the watercourses running through the site, as per the existing situation.

Discharge Rate Approach

6.9 The site-wide surface water strategy employed a staged discharge approach to restrict discharge from the development to the greenfield run-off rates – Q1 for the 1 in 1 year event and Q100 for the 1 in 100 years plus climate change event. The strategy was approved and Condition 17 discharged accordingly.

6.10 However, West Sussex County Council (WSCC) in their role as Lead Local Flood Authority (LLFA) now require all rainfall events up to the 1 in 100 year plus climate change event to be restricted to QBAR. As such, all rainfall events will be restricted to QBAR in accordance with this latest guidance for Catchment 7.

6.11 Based on the ICP SuDS Manual, QBAR is 5.7 l/s/ha. Calculations are provided in Appendix G.

6.12 The site-wide strategy identified that the southern part of the site was underlain by Tunbridge Wells Sand instead of Weald Clay and therefore had the potential to be more permeable. Therefore, a lower greenfield run-off rate was used for this area of the site in the site-wide strategy. A ground investigation including infiltration testing has since been undertaken (see Section 2), both within the Weald Clay and Tunbridge Wells Sand. These tests demonstrated that the infiltration capacity of the Tunbridge Wells Sand was no greater, and in fact was lower than that of the Weald Clay. As such, the same greenfield run-off rate calculated for the Weald Clay formation has been used in all areas (QBAR = 5.7 l/s/ha)

Rainfall Data and Climate Change

6.13 The latest FEH 2022 rainfall dataset has been used for both Catchment 6 and 7.

6.14 Condition 17 of the outline application states that a 20% allowance for the effects of climate change should be assessed for surface water drainage systems, with an exceedance event equivalent to the 1 in 100 year plus 40% climate change event also be assessed for surface water drainage systems. This approach has therefore been used for Catchment 6 as it was approved under a previous Reserved Matters application which used these allowances (DC/22/1026).

- 6.15 The latest climate change guidance given by the Environment Agency suggests that a peak rainfall intensity allowance of plus 45% should be assessed for this type of development for the 1 in 100 year event, and 40% for the 1 in 30 year event. As such, these climate change allowances have been adopted for Catchment 7.

Impermeable Areas

- 6.16 The site-wide surface water drainage strategy calculated impermeable areas based on housing density within each drainage catchment, with an additional allowance for highway infrastructure where appropriate.
- 6.17 The surface water drainage system for both Catchments 6 and 7 will serve a combination of highway infrastructure, which will be approved under this planning application, as well as future development parcels, which will be approved under future applications.
- 6.18 Given the above, and that detailed proposals for each future development parcel are not available at the time of writing this report, impermeable areas for each development parcel is calculated based on a percentage of the overall catchment area. An impermeable area of 65% of the total developable area is used for each residential catchment and 80% for non-residential areas.
- 6.19 A further 10% allowance for urban creep has also been included for residential areas only, in accordance with WSCC latest standards.

Catchment 6

- 6.20 Catchment 6 comprises the first section of highway up to the first roundabout, and adjoining development parcels to the north and south of the road (health centre, leisure parcel, and employment land parcel).
- 6.21 As discussed, Catchment 6 drains surface water run-off into the approved and built surface water drainage network that serves the A264 Left-In Left-Out junction. As such, this report only seeks to verify that the catchment area proposed to drain into this network matches the catchment area it was designed for.
- 6.22 The design parameters (approved under planning application reference DC/22/1026), as well as the as-built details (as approved under application reference DISC/25/0091) are provided in Table 3. Updated modelling has been undertaken incorporating the latest proposals for the road and adjoining development parcels which form part of this application as well as future applications. The outcome of this modelling is also included in Table 3, and demonstrates that the existing pond and flow control are designed appropriately for the future catchment they will serve, in-line with the parameters approved at the time.

Table 3: Approved / Built Parameters against Updated Modelling

Parameter	Design	As-Built	Updated Modelling
Impermeable Area	3.833 ha	N/A	3.833 ha
Pond Storage Volume ¹	2843 m ³	2854 m ³	2843 m ³
Maximum Pond Water Level ¹	52.535 mAOD	52.535 mAOD	52.535 mAOD
Discharge Rate ¹	19.8	19.8	19.8

¹ Design 1 in 100 year plus 20% climate change event

6.23 The surface infrastructure (pipe network) proposed as part of this planning application is shown on the Drainage Layout drawings included in Appendix H.

6.24 Calculations are provided in Appendix I to demonstrate that the existing infrastructure can accommodate the catchment areas included as part of this application, and that the surface water piped drainage network proposed as part of this planning application is appropriately sized.

Catchment 7

6.25 Catchment 7 comprises the remainder of the road infrastructure within this application, as well as future residential and non-residential development parcels to the north and south of the road which will be subject to future planning applications.

6.26 Flows from Catchment 7 currently discharge to Channells Brook, via a combination of overland flow and the existing ditch network. The proposed surface water outfall is into Channells Brook, as per existing.

6.27 As discussed, the drainage within this catchment will be designed to the latest national and local standards, not the approved site wide surface water strategy principles.

6.28 The proposed strategy strives to utilise sustainable drainage techniques in accordance with the guidance described in CIRIA document C753 'The SuDs Manual' (2015) to accommodate run-off from all rainfall events up to and including the 1 in 100 year event, with a 45% allowance for climate change.

6.29 An attenuation basin is located at the low end of the catchment to provide surface water storage. The footprint of the basin has been maximised based on existing constraints- fluvial flood risk, an existing hedgerow and existing Public Right of Way. The attenuation basin will provide a maximum storage volume of 5,334m³.

6.30 The total catchment area and impermeable areas are shown in Table 4.

Table 4: Catchment 7 Impermeable Areas

Parcel	Type	Total Catchment Area (ha)	Impermeability Factor (%)	Impermeable Area (ha)	Urban Creep (%)	Total Impermeable Area (ha)
A	Industrial	0.707	90%	0.636	0	0.636
B	Industrial	0.201	90%	0.181	0	0.181
C	Industrial	0.835	90%	0.752	0	0.752
D	Industrial	2.807	90%	2.526	0	2.526
E	Industrial	0.350	90%	0.315	0	0.315
F	Industrial	0.292	90%	0.263	0	0.263
G	Industrial	0.600	90%	0.540	0	0.540
H	Industrial	1.968	90%	1.771	0	1.771
I	Industrial	3.054	90%	2.749	0	2.749
J	Residential	0.335	65%	0.218	10	0.240
K	Industrial	0.615	90%	0.554	0	0.554
L	Residential	0.566	65%	0.368	10	0.405
M	Industrial	1.893	90%	1.704	0	1.704
N	Industrial	0.529	90%	0.476	0	0.476
Road	Road	1.249	100%	1.249	0	1.249
Total	-	16.001	-	14.301	-	14.359

- 6.31 The QBAR greenfield run-off rate for the catchment area is 74.4 l/s, based on the total impermeable area of the catchment.
- 6.32 A total storage volume of 12,650 – 18,911m³ is therefore required based on a Quick Storage Estimate.
- 6.33 Therefore, additional storage is required in addition to the proposed basin. It is therefore proposed that each development parcel within Catchment 7 will have a flow restriction and provide storage within its own parcel area in order to meet the flow rate and storage requirements of the whole catchment. The details of the type and location of the storage features within each parcel will be detailed under the future planning application(s) for these parcels, however indicative flow restrictions and storage volumes for each parcel are indicated on the Drainage Layout and in Table 5 in order to demonstrate for the purposes of this application how this would be achieved. Flow rate restrictions and storage volume requirements within each development parcel may be redistributed once more detailed proposals for each development parcel is available. Any change to the split of rates and volumes will be dealt with under the forementioned future planning application(s), and will demonstrate compliance with the principles outlined in this report.
- 6.34 Hydraulic calculations for Catchment 7 are provided in Appendix J including the 1 in 2 year, 1 in 30 year (with and without 35% climate change) and 1 in 100 year (with and without 45% climate change) events. In the hydraulic calculations, storage in each future development parcel upstream of the proposed flow controls has not been modelled and therefore is shown as a "Flooded Volume" matching those outlined in Table 5 at each of these nodes. It should also be noted that "Surcharge" occurs in the 1 in 2 year event upstream of all flow controls; this is necessary due to water backing up upstream of the flow control.

Table 5: Catchment 7 Flow Controls and Storage Volumes

Parcel	Type	Total Catchment Area (ha)	Discharge Rate (l/s)	Storage Volume (m ³)
A	Industrial	0.707	4.0	544
B	Industrial	0.201	2.0	136
C	Industrial	0.835	4.5	677
D	Industrial	2.807	15.5	2163
E	Industrial	0.350	2.0	261
F	Industrial	0.292	2.0	200
G	Industrial	0.600	3.5	425
H	Industrial	1.968	11.0	1427
I	Industrial	3.054	17.0	2335
J	Residential	0.335	2.0	171
K	Industrial	0.615	3.5	452
L	Residential	0.566	2.5	334
M	Industrial	1.893	10.5	1393
N	Industrial	0.529	3.0	386
Road	Road	1.249	-	-
	Basin	-	-	5334
Total	-	16.001	-	16,238

SuDS Design Considerations

- 6.35 The attenuation basin is proposed to be dry, filling only during higher order storm events. The basin will incorporate a shelf part way down the slope in order to provide visual interest and a safe flat area for maintenance and access. The basin also includes a low-flow channel to direct flows in the most frequent events, therefore remaining dry for the majority of the year and preventing the base of the basin becoming silty and muddy.
- 6.36 The maximum slope gradient of the basin is proposed to be 1 in 3, enabling ease of access and egress both by users of the site, as well as in an emergency.
- 6.37 The proposed diverted Public Right of Way (with permissive rights for cyclists) is located 4m away from the top of basin bank and therefore risk of accidental over-run from the cycle route into the basin is unlikely. Therefore, given the shallow side slopes and considering that fencing is not desirable and can in fact hinder rescue, fencing to the basin is not considered to be required.

Pollution Control

- 6.38 The use of SuDS for the development would help to remove urban pollutants from run-off before discharge to the ground or watercourses.
- 6.39 The SuDS Manual indicates the minimum treatment indices for contributing pollution hazards for different land use classifications. In order to deliver adequate treatment, the selected SuDS components should have a total pollution mitigation index (for each contaminant type) that equals or exceeds the pollution hazard index.
- 6.40 In order to provide an adequate level of treatment, an assessment using this method should be carried out for each land use parcel and their respective SuDS features. This will be undertaken for each future development parcel as part of future planning applications, once detailed site proposals are available.
- 6.41 Nevertheless, an initial appraisal of the outline strategy can be undertaken at this stage. Pollution hazard indices for different land use classifications in accordance with Table 26.2 of the SuDS Manual are shown in Table 6.
- 6.42 A detention basin has mitigation induces of 0.5, 0.5 and 0.6 for TSS, Metals and Hydrocarbons respectively. As such, the proposed detention basin on its own is sufficient to address the risk from all roofs, individual property driveways, residential car parks, low traffic roads and non-residential car parking with infrequent change.
- 6.43 Additional pollution control is required for all other areas and it is expected that this will be provided within the future development parcels. It is expected that all parking bays within the Employment Land will be constructed as pervious paving in order to provide additional water quality benefits.
- 6.44 Each development parcel will be expected to provide an additional level of pollution control appropriate to the pollution hazard generated by that parcel. The details of the type and location of the additional pollution control within each parcel will be detailed under the future planning application(s) for these parcels.

Table 6: Pollution Hazard Indices

Sub-Catchment	Pollution Hazard Level	Total Suspended Solids (TSS)	Metals	Hydro-carbons
Residential roofs	Very low	0.2	0.2	0.05
Other roofs (commercial / industrial)	Low	0.3	0.2	0.05
Individual property driveways, residential car parks, low traffic 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
Commercial yard and delivery areas, non-residential car parking with frequent change (e.g. hospitals, retail), all roads except low traffic roads and trunk roads/motorways	Medium	0.7	0.6	0.7
Sites with heavy pollution (eg haulage yards, lorry parks, highly frequented lorry approaches to industrial estates, waste sites), sites where chemicals and fuels (other than domestic fuel oil) are to be delivered, handled, stored, used or manufactured; industrial sites; trunk roads and motorways ¹	High	0.8	0.8	0.9

Adoption and Maintenance Measures

- 6.45 All new surface water infrastructure will be designed and constructed in accordance with the Building Regulations, adoptable standards, and best practice, as appropriate.
- 6.46 The proposed surface water pipe network and associated drainage infrastructure serving the road and future residential parcels will be offered for adoption by the Water and Sewerage Undertaker, while the basins will remain private and be the responsibility of a management company. This follows the approach taken throughout Phase 1 of the development.
- 6.47 Gullies, gully connections and other surface water drainage infrastructure solely serving highway land will be offered for adoption to WSCC as highway authority.
- 6.48 The SuDS Management and Maintenance Plan included in Appendix K outlines typical maintenance tasks for drainage infrastructure. This plan will be implemented by the management company upon completion of the related drainage works associated with this development site.

Surcharged Outfall

- 6.49 The worst-case flood level of 52.750 mAOD and 54.025 mAOD has been used to model a surcharged outfall at the surface water outfalls for Catchments 6 and 7 respectively. These flood levels are based on modelling that was approved as part of the Left-In Left Out / Sports Hub reserved matters application (DC/22/1026).

- 6.50 Hydraulic calculations are provided in Appendix L. These calculations demonstrate that when the outfalls are surcharged, there is no flooding within the development site, with some of the freeboard within the attenuation basins being utilised to provide additional storage in this event.

Exceedance Flows

- 6.51 The site levels will be designed such that exceedance flows from the on-site catchments are directed via the road network, away from proposed buildings and towards green corridors and existing drainage ditches. An indicative exceedance flow plan is included in Appendix M.

Summary

- 6.52 A detailed surface water drainage strategy has been developed for the site, with surface water run-off proposed to be discharged at the pre-development greenfield rate to existing watercourses.
- 6.53 As discussed in Section 5, the proposed drainage strategy will provide protection against any surface water flood risk by providing a positive drainage system, which will intercept overland flows generated within the site. The development layout will incorporate road routes throughout the site, and any potential overland exceedance flows would be routes via the road network and green corridors, away from buildings.
- 6.54 This section demonstrates that a sustainable drainage strategy can be implemented on the site, in accordance with national and local planning policy, as well as taking into consideration recommendations outlined in the SuDS Manual.

7.0 Foul Water Drainage

- 7.1 This section outlines the proposals for foul water disposal from the proposed development on the application site.

Site-Wide Principles

- 7.2 The site wide foul water drainage strategy, dated August 2016, submitted within the consented outline planning application (application ref. DC/16/1677) generally follows the topography of the site, draining within various natural catchments. This results in five main proposed pump stations (FWPS1 – FWPS5) indicated within the strategy being required due to an inability to gravitate to the existing Southern Water foul network. Further smaller (and some private) pump stations are located within the development, where required, pumping to these five main pump stations.
- 7.3 Network reinforcement works are required to facilitate the wider proposed development. The developer and Southern Water have been working together since Outline planning permission was granted in order to ensure that these works are undertaken in-line with development phasing programme. Southern Water's latest programme (shared on 16 February 2025) indicates that the network reinforcement works will be completed by December 2026.
- 7.4 Construction of the infrastructure works proposed as part of this planning application are expected to start in 2026. Given that this application does not seek consent for any built development, just the foul water infrastructure required to facilitate future development, the connection of further built development will occur after the network reinforcement works are expected to be completed.
- 7.5 This planning application does not propose any changes to the principles of the approved site-wide foul water drainage strategy. Whilst this application does not include any buildings or works that generate foul flows, consideration has been given to the flow rates from future development parcels which drain to this site. Foul flow rates have been agreed with Southern Water as part of ongoing discussions and this planning applications does not seek to change the flow rates agreed with Southern Water in February / March 2024
- 7.6 Southern Water have a statutory duty under Section 94 of the Water Industry Act 1991 to provide off-site sewerage for purposes and to accommodate growth.
- 7.7 As such, off-site network capacity is not an issue nor a reason to prevent or constrain development of the site.

Foul Water Drainage Strategy

- 7.8 The foul water drainage strategy proposed has been designed such that the foul water sewers have sufficient capacity to accommodate foul effluent generated by the upstream parcels of Phase 2 and the employment land.
- 7.9 The proposed foul water gravity sewers will convey flows generated by the upstream parcels and discharge into a new pumping station, FWPS3, which forms part of this planning application. Flows from this pumping station will then be pumped via a 921m long rising main to the existing Southern Water network at the Rusper Road / A264 junction. The first c. 350m of this rising main form part of this planning application, whilst the remainder of this rising main forms part of the approved Left-In Left-Out and Sports Hub works (DC/22/1026).

- 7.10 As part of the proposals to connect into the existing foul network, a Section 106 (Water Industry Act) application was submitted to Southern Water (application reference: PAPER_19451). The submitted Section 106 application received approval in February 2023 as detailed in the Approval Letter included in Appendix N.
- 7.11 Given the works subject of this application will be completed prior to construction of the adjacent future development parcels, foul drainage spurs will be constructed up to the land parcel boundaries such that each parcel has a point of connection into the principal foul sewerage network.

Sewer Adoption

- 7.12 All new foul water infrastructure will be designed in accordance with the Building Regulation Part H, adoptable standards, and best practice, as appropriate.
- 7.13 The proposed foul water pipe network and associated drainage infrastructure will be offered for adoption by the Water and Sewerage Undertaker.

Summary

- 7.14 Consideration has been given to the disposal of foul water from both the site and surrounding future development parcels which form part of the wider Mowbray development. This demonstrates that development these proposals will not prejudice or constrain the future development of the wider Mowbray site.
- 7.15 This demonstrates that a suitable foul water solution is possible for the development, and wider allocation, and should therefore not prevent permission being granted.

8.0 Summary and Conclusions

Summary

- 8.1 This Flood Risk Assessment has been prepared by Glanville Consultants on behalf of Legal & General (Strategic Land North Horsham) Limited to support full planning for the proposed primary road through the employment land within the Mowbray development, North Horsham, West Sussex.
- 8.2 This assessment has been prepared in accordance with the requirement of National Planning Policy Framework (NPPF), Planning Practice Guidance (PPG), flood risk and drainage guidance and with reference to the Horsham District Council Strategic Flood Risk Assessment (SFRA).

Flood Risk

- 8.3 Parts of the site are located in Flood Zone 2 and 3, at medium to high risk of fluvial flooding. Built development will be avoided within Flood Zone 2 and 3, therefore taking a sequential approach to development of the site. Appropriate mitigation measures for proposed development will also be employed, such as avoiding land raising in fluvial flood risk areas. Therefore, fluvial flood risk is not an issue that would prevent development of the site for its intended end use.
- 8.4 Some localised areas of the site are indicated to be at varying risk of surface water flooding. However, the majority of the surface water flood risk has been found to be generated by the site itself and therefore will not exist post-development, given the introduction of a positive drainage network. The site-specific surface water flood risk assessment demonstrates that in the post-development scenario there will be no risk to built development, due to the sequential planning of the site as well as directing and containing overland flows via existing ditches and proposed culverts. Surface water flood risk will not increase to the site or surrounding area as a result of the development proposals. Therefore, surface water flooding is not an issue that will prevent or constrain development of the site.
- 8.5 Groundwater flood risk is generally low, however it is likely that groundwater levels will be in conductivity with the watercourse and fluvial flood levels, and as such that groundwater flooding may occur in conjunction with fluvial flooding, at the low end of the site. The remainder of the site is considered to be at very low risk of groundwater flooding. The mitigation measures proposed are considered to adequately address the low risk of groundwater flooding on the site. Therefore, groundwater flooding is not an issue that would prevent or constrain development of the site.
- 8.6 The site is considered to be at very low risk from all other sources of flooding, including an allowance for the potential effects of climate change.
- 8.7 Whilst the assessment is generally in accordance with the approved outline planning application (DC/16/1677), the assessment has been updated to be based on the most recent mapping from the Environment Agency and modelling undertaken by Glanville.

Surface Water Drainage

- 8.8 Due to ground conditions, infiltration methods are likely to be ineffective, so it is proposed that the development site will discharge surface water run-off via existing drainage ditches at pre-development greenfield run-off rates. Sustainable Drainage Systems (SuDS) will be incorporated to attenuate surface water flows for all events up to and including the 1 in 100-year event, including an allowance for a 45% increase in rainfall intensity due to climate change. The surface water drainage strategy will ensure that flood risk will not increase either on-site or elsewhere as a result of development.
- 8.9 The site is split into two catchments, Catchment 6 and Catchment 7:
- Catchment 6 drains surface water run-off into the surface water drainage network that serves the A264 Left-In Left-Out junction, which has been approved and constructed. As such, this report has only sought to verify that the catchment area proposed to drain into this network matches the catchment area it was designed for.
 - Catchment 7 drains surface water run-off from the remainder of the development site, including wider development parcels subject to future planning applications. An attenuation basin and flow control device is proposed as part of this planning application, with further storage to be provided upstream within each individual development parcel, which will be designed and approved under future planning applications.
- 8.10 The basin will provide effective pollution control for the surface water run-off from the proposed development, however additional measures will be required for each of the wider development parcels.
- 8.11 Maintenance, adoption and exceedance flows have also been considered in the drainage strategy.
- 8.12 The strategy proposed is generally in-line with the approved site-wide strategy principles approved as part of the outline planning application (DC/16/1677) and subsequent condition discharge, however has also been updated to be in-line with the latest WSCC local drainage standards.

Foul Water

- 8.13 Whilst the proposals for this site do not include any building that will generate foul flows, foul water from Phase 2 and the employment land will be discharged via this application site to the existing Southern Water network off-site. A gravity foul water network, pumping station and rising main will form part of the foul water drainage infrastructure within this site. This infrastructure has been designed to accommodate flows from the upstream catchments, and the pumped flow rate discharging to the Southern Water network has been discussed and agreed with Southern Water as part of ongoing discussions between the developer and Southern Water.
- 8.14 As such, a suitable foul water drainage strategy is employed that will not prejudice future development of the wider Mowbray site.
- 8.15 The strategy proposed is generally in-line with the approved site-wide strategy principles approved as part of the outline planning application (DC/16/1677) and subsequent condition discharge.

Conclusion

8.16 In conclusion, this report has demonstrated that the proposed development:

- is in accordance with national and local planning policy relating to flood risk and drainage;
- will not be at an unacceptable risk from fluvial flooding or other sources;
- will not increase flood risk elsewhere;
- will employ a surface water drainage strategy based on the principles of sustainable drainage;
- will provide effective nitrate mitigation measures for the surface water run-off from the proposed development;
- will employ a suitable foul water drainage strategy;
- will not prejudice the future development of the remainder of the wider Mowbray site for its intended end use as approved as part of the Outline planning permission DC/16/1677; and
- is in general accordance with the principles approved under the outline planning permission (DC-/16/1677) and subsequent condition discharge applications.

8.17 Therefore, the site is suitable to accommodate the development proposed, and any potential impacts can be overcome through appropriate mitigation. As such, the proposals are considered to fully comply with National and Local planning policies in respect of flood risk, foul and surface water drainage.

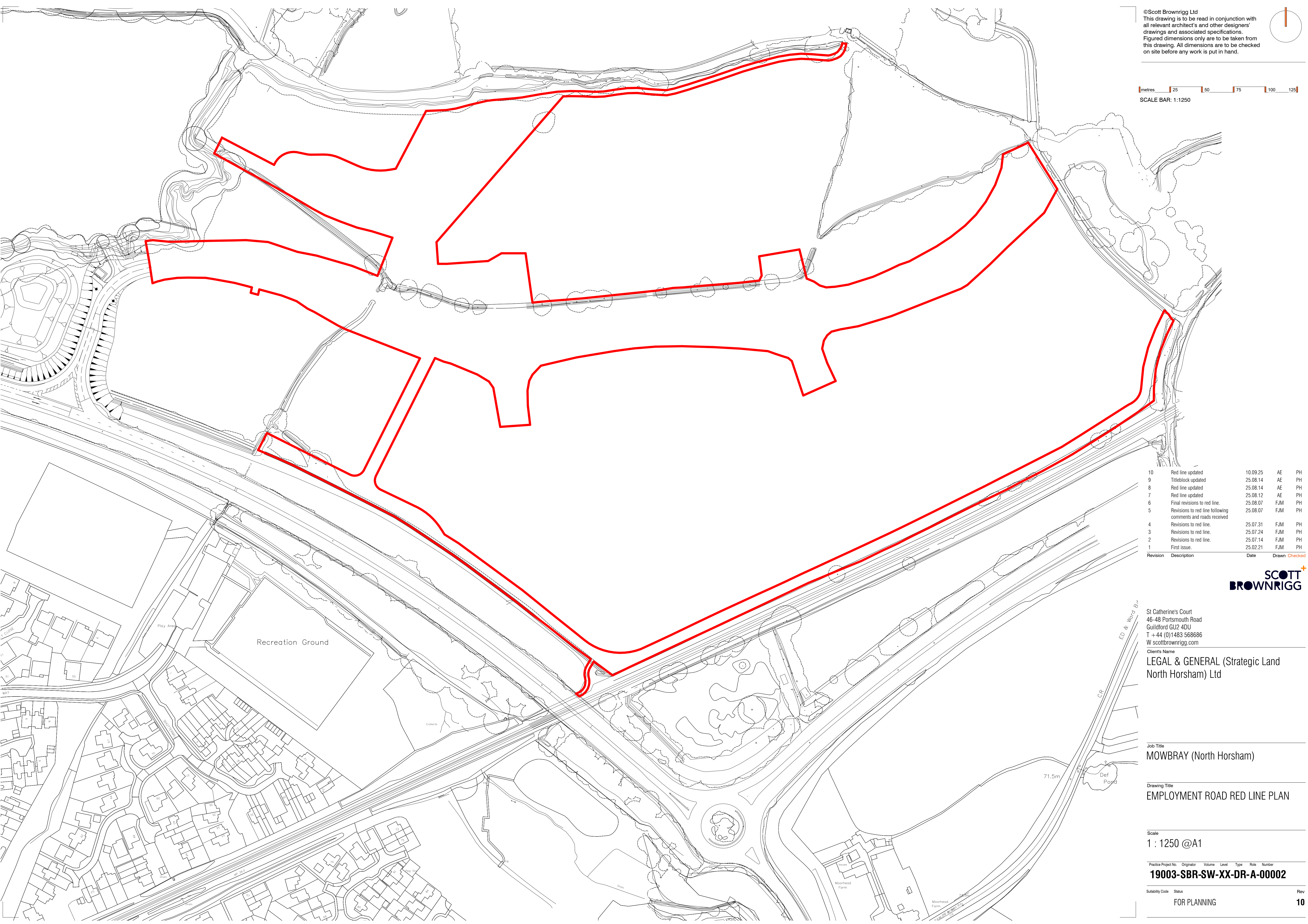
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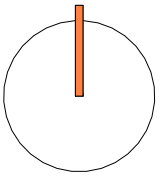


Appendix A

Site Location Plan



©Scott Brownrigg Ltd
This drawing is to be read in conjunction with
all relevant architect's and other designers'
drawings and associated specifications.
Figured dimensions only are to be taken from
this drawing. All dimensions are to be checked
on site before any work is put in hand.



metres 25 50 75 100 125

SCALE BAR: 1:1250

10	Red line updated	10.09.25	AE	PH
9	Titleblock updated	25.08.14	AE	PH
8	Red line updated	25.08.14	AE	PH
7	Red line updated	25.08.12	AE	PH
6	Final revisions to red line.	25.08.07	FJM	PH
5	Revisions to red line following comments and roads received	25.08.07	FJM	PH
4	Revisions to red line.	25.07.31	FJM	PH
3	Revisions to red line.	25.07.24	FJM	PH
2	Revisions to red line.	25.07.14	FJM	PH
1	First issue.	25.02.21	FJM	PH

Revision	Description	Date	Drawn	Checked
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Client's Name
**LEGAL & GENERAL (Strategic Land
North Horsham) Ltd**

Job Title
MOWBRAY (North Horsham)

Drawing Title
EMPLOYMENT ROAD RED LINE PLAN

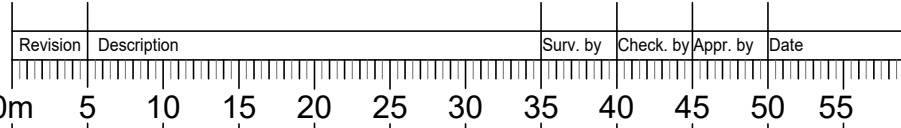
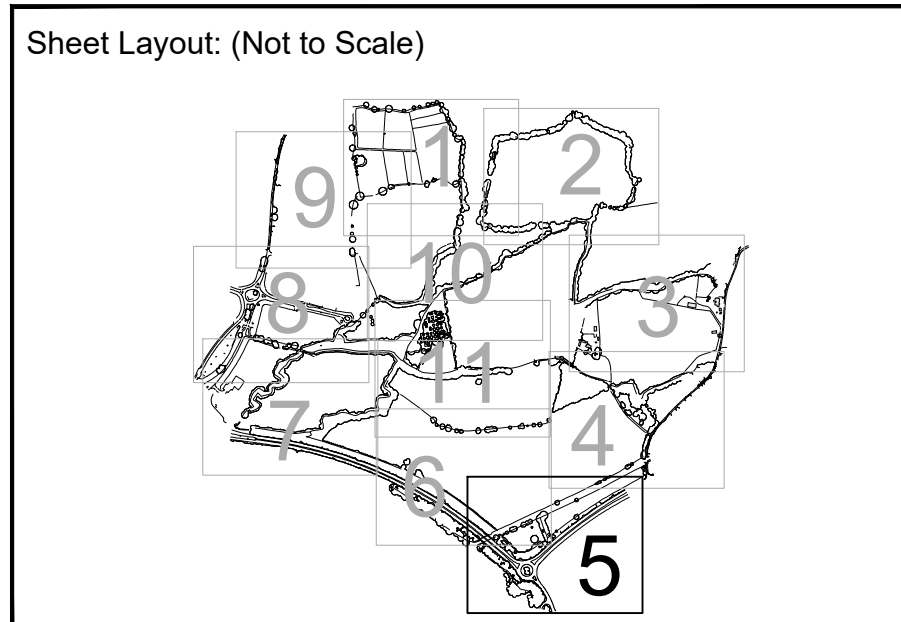
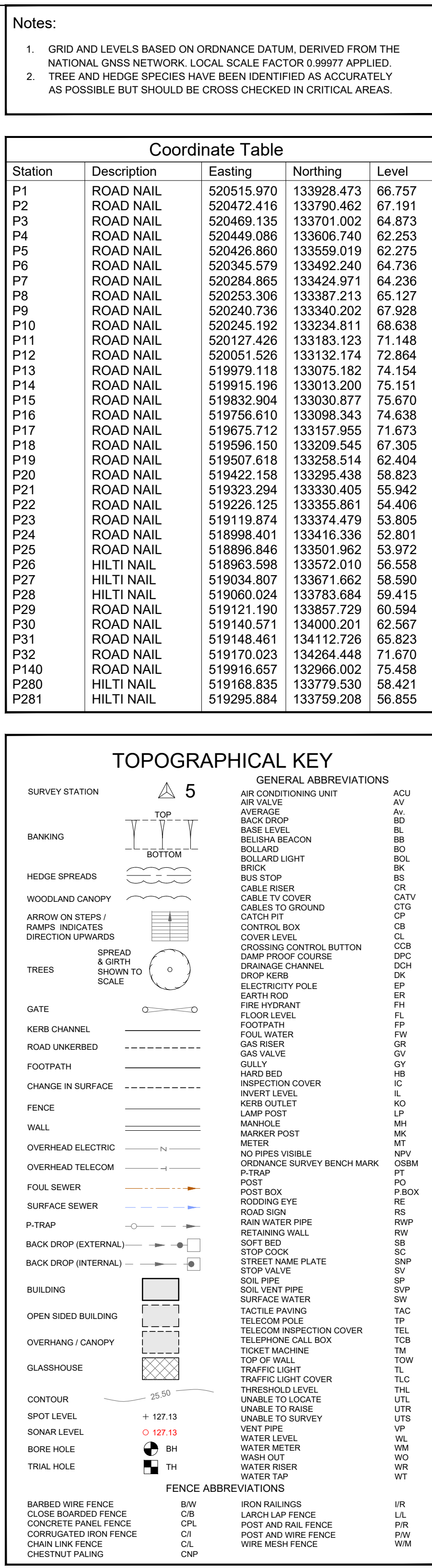
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Practice Project No.	Originator	Volume	Level	Type	Role	Number
19003-SBR-SW-XX-DR-A-00002						

Suitability Code	Status	Rev
FOR PLANNING		10

Appendix B

Topographical Survey Extracts



Topographical Survey

Client



Mowbray
A264
Horsham
West Sussex

Scale: 1:500	Sheet Size: A0	Sheet Number: 5	Date: May 2022		
Project Number: 31246		Rev: -	Surveyed by: JL/RG/JM	Checked by: NC	Approved by: CP

mksurveys

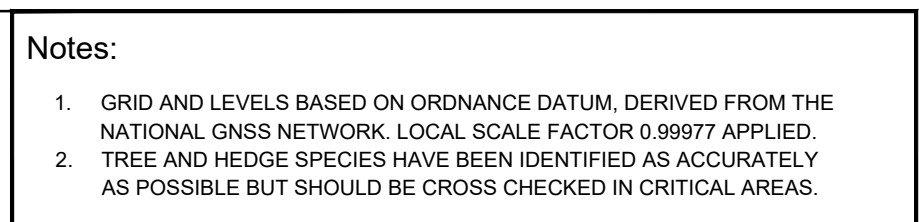




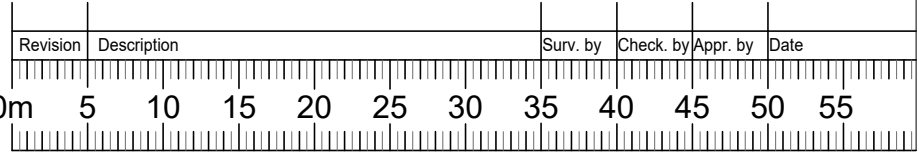
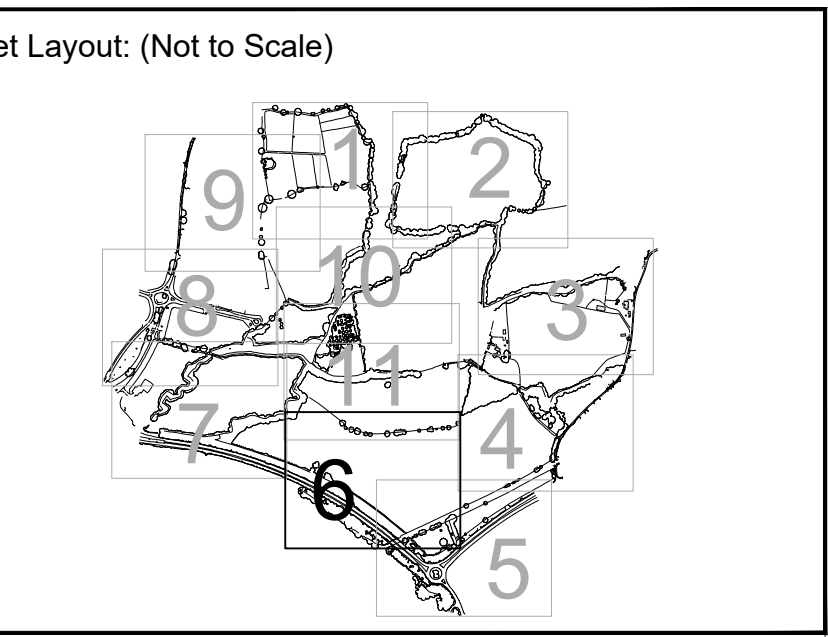


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Coordinate Table				
Station	Description	Easting	Northing	Level
P1	ROAD NAIL	9200519570	13929842.473	66.767
P2	ROAD NAIL	9200519570	13929842.473	66.767
P3	ROAD NAIL	9204699.135	139070.002	64.873
P4	ROAD NAIL	9204493.986	139060.740	62.253
P5	ROAD NAIL	9204493.986	139060.740	62.253
P6	ROAD NAIL	9203435.779	1393462.240	64.736
P7	ROAD NAIL	9203435.779	1393462.240	64.736
P8	ROAD NAIL	9202533.306	133847.213	65.127
P9	ROAD NAIL	9202430.736	133847.213	67.928
P10	ROAD NAIL	9202430.736	133847.213	67.928
P11	ROAD NAIL	9201274.626	1338183.123	71.148
P12	ROAD NAIL	9200515.526	1338183.123	72.864
P13	ROAD NAIL	9200715.526	1338183.123	72.864
P14	ROAD NAIL	9195191.196	1330120.100	75.151
P15	ROAD NAIL	9195191.196	1330120.100	75.151
P16	ROAD NAIL	919756.610	133098.343	74.638
P17	ROAD NAIL	919576.712	133157.955	71.673
P18	ROAD NAIL	919576.712	133157.955	71.673
P19	ROAD NAIL	919507.618	133268.514	62.045
P20	ROAD NAIL	919422.158	133296.438	58.823
P21	ROAD NAIL	919422.158	133296.438	58.823
P22	ROAD NAIL	919296.125	133585.861	40.046
P23	ROAD NAIL	919296.125	133585.861	40.046
P24	ROAD NAIL	918998.401	133416.336	52.801
P25	ROAD NAIL	918998.401	133501.962	53.972
P26	ROAD NAIL	918998.401	133501.962	53.972
P27	HILTI NAIL	919034.807	133871.662	58.590
P28	HILTI NAIL	919034.807	133871.662	58.590
P29	ROAD NAIL	919121.819	133763.968	59.415
P30	ROAD NAIL	919121.819	133763.968	59.415
P31	ROAD NAIL	919140.571	134001.201	62.567
P32	ROAD NAIL	919140.571	134001.201	62.567
P33	ROAD NAIL	919170.023	134264.448	71.670
P34	ROAD NAIL	919196.687	133296.002	75.458
P35	ROAD NAIL	919196.687	133296.002	75.458
P481	HILTI NAIL	919258.884	133798.228	56.855

[illegible]

Topographical Survey



Mowbray
A264
Horsham
West Sussex

Scale: 1:500	Sheet Size: A0	Sheet Number: 6	Date: May 2022		
Project Number: 31246		Rev: -	Surveyed by: JL/RG/JM	Checked by: NC	Approved by: CP

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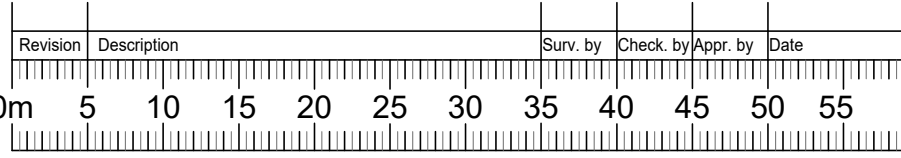
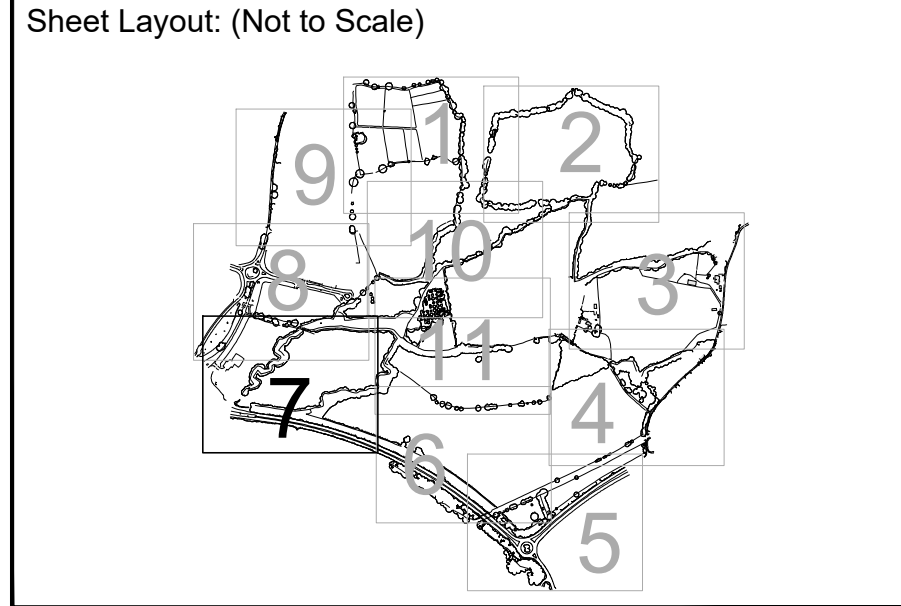
    

www.mksurveys.com www.surveys4bim.co.uk
Head Office: Milton Keynes t: 01908 565561 e: mail@mksurveys.co.uk

Notes:
1. GRID AND LEVELS BASED ON ORDNANCE DATUM, DERIVED FROM THE NATIONAL GRID NETWORK. LOCAL SCALE FACTOR 0.9997 APPLIED.
2. TREE AND HEDGE SPECIES HAVE BEEN IDENTIFIED AS ACCURATELY AS POSSIBLE BUT SHOULD BE CROSS CHECKED IN CRITICAL AREAS.

Coordinate Table			
Station	Description	Easting	Northing
P1	ROAD NAIL	520515.970	133928.473
P2	ROAD NAIL	520472.416	133780.462
P3	ROAD NAIL	520469.135	133701.002
P4	ROAD NAIL	520449.086	133606.740
P5	ROAD NAIL	520426.860	133559.019
P6	ROAD NAIL	520345.579	133492.240
P7	ROAD NAIL	520284.865	133424.971
P8	ROAD NAIL	520253.306	133387.213
P9	ROAD NAIL	520240.736	133340.202
P10	ROAD NAIL	520245.192	133234.811
P11	ROAD NAIL	520127.426	133183.123
P12	ROAD NAIL	519852.506	133132.174
P13	ROAD NAIL	519979.118	133075.182
P14	ROAD NAIL	519915.196	133013.200
P15	ROAD NAIL	519592.904	133030.877
P16	ROAD NAIL	519756.610	133098.343
P17	ROAD NAIL	519675.712	133157.955
P18	ROAD NAIL	519507.618	133258.514
P19	ROAD NAIL	519422.153	133296.436
P20	ROAD NAIL	519323.294	133330.405
P21	ROAD NAIL	519226.125	133355.861
P22	ROAD NAIL	519119.874	133374.475
P23	ROAD NAIL	518998.401	133416.336
P24	ROAD NAIL	518896.846	133501.962
P25	HILTI NAIL	518962.588	133572.010
P26	HILTI NAIL	519034.807	133671.662
P27	HILTI NAIL	519006.024	133783.684
P28	ROAD NAIL	519121.180	133857.729
P29	ROAD NAIL	519140.571	134000.201
P30	ROAD NAIL	519148.461	134112.726
P31	ROAD NAIL	519110.023	134264.446
P140	ROAD NAIL	519916.657	132966.002
P280	HILTI NAIL	519168.835	133779.530
P281	HILTI NAIL	519265.864	133759.208

TOPOGRAPHICAL KEY	
	SURVEY STATION
	BARRAGE
	HEDGE SPREADS
	WOODLAND CANOPY
	ARROWS ON STEPS
	RAMPS
	DIRECTION UNWARRANTED
	TREES
	GATE
	KILN CHANNEL
	ROAD UNKERBED
	FOOTPATH
	CHANGE IN SURFACE
	FENCE
	WALL
	OVERHEAD ELECTRIC
	OVERHEAD TELECOM
	FOIL SENSOR
	SURFACE SENSOR
	P-TRAP
	BACK DROP (EXTERNAL)
	BACK DROP (INTERNAL)
	BUILDING
	OPEN SIDED BUILDING
	OVERHANG / CANOPY
	GLASSHOUSE
	CONTOUR
	SPOT LEVEL
	BORE HOLE
	TRIAL HOLE
	BARBED WIRE FENCE
	CLOSE BOARDED FENCE
	CONCRETE PANEL FENCE
	CHAIN LINK FENCE
	GREEN NET FENCING
	SURVEY STATION
	BARRAGE
	HEDGE SPREADS
	WOODLAND CANOPY
	ARROWS ON STEPS
	RAMPS
	DIRECTION UNWARRANTED
	TREES
	GATE
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	ROAD UNKERBED
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	CLOSE BOARDED FENCE
	CONCRETE PANEL FENCE
	CHAIN LINK FENCE
	GREEN NET FENCING



Topographical Survey

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			CP

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