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Flood Risk Assessment and Preliminary Drainage Strategy

Proposed Residential Development at

Land South of Burleigh Lane, Crawley Down

On behalf of

BKJS Developments Limited

November 2025

Document History and Status

Project Number 24025

Date	Version	Prepared By	Reviewed By	Approved By
28 Nov 2025	1.0	Steve Doughty Director	Stuart Magowan IEng MICE	Stuart Magowan IEng MICE
02 Dec 2025	1.1	Steve Doughty Director	Stuart Magowan IEng MICE	Stuart Magowan IEng MICE

The information contained within this document takes precedence over that contained within any previous version.

CONTENTS

1 Non Technical Summary

1.1 This Flood Risk Assessment has been undertaken in accordance with the National Planning Policy Framework on behalf of BKJS Developments Limited in support of a Planning Application for the construction of 8 self-build / custom build residential dwellings with associated access roads, car parking and landscaping on land south of Burleigh Lane, Crawley Down.

1.2 This Report is to be read in conjunction with all planning, architectural and other reports that accompany the Outline Planning Application for the proposed development.

1.3 The site is located in Flood Zone 1.

1.4 The proposed development will incorporate a sustainable drainage system which will discharge surface water at a suitably restricted rate to the watercourses adjacent to the northern and southern site boundaries and provide storage for all storm return periods up to and including the 1 in 100 year rainfall event with an allowance for climate change.

1.5 An onsite pumping station will be required to lift foul water and discharge it to the existing public foul sewer located beneath Sandhill Lane to the west of the site.

1.6 Alternatively foul water could be collected into individual cess pits within each curtilage and tankered away on a monthly basis.

1.7 This report concludes that the site is not at risk of flooding from tidal or fluvial sources, or groundwater and that the risk of surface water ponding can be mitigated in the detailed design for the development proposals.

1.8 In terms of flood risk the proposed development is suitable at this location.

2 Planning Policy Context

2.1 National Planning Policy Framework

2.1.1 The current version of the National Planning Policy Framework is dated December 2024 and was amended on 7 February 2025 to correct cross references from footnotes 7 and 8 and amend the end of the first sentence of paragraph 155 in relation to development in the Green Belt to make its intent clear.

2.1.2 With regard to planning and flood risk the National Planning Policy Framework states that *'when determining any planning applications, local planning authorities should ensure that flood risk is not increased elsewhere. Where appropriate, applications should be supported by a site-specific flood-risk assessment[63]. Development should only be allowed in areas at risk of flooding where, in the light of this assessment (and the sequential and exception tests, as applicable) it can be demonstrated that:*

a) within the site, the most vulnerable development is located in areas of lowest flood risk, unless there are overriding reasons to prefer a different location;

b) the development is appropriately flood resistant and resilient such that, in the event of a flood, it could be quickly brought back into use without significant refurbishment;

c) it incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate;

d) any residual risk can be safely managed; and

e) safe access and escape routes are included where appropriate, as part of an agreed emergency plan.'

2.1.3 Footnote 63 states that *'a site-specific flood risk assessment should be provided for all development in Flood Zones 2 and 3. In Flood Zone 1, an assessment should accompany all proposals involving: sites of 1 hectare or more; land which has been identified by the Environment Agency as having critical drainage problems; land identified in a strategic flood risk assessment as being at increased flood risk in future; or land that may be subject to other sources of flooding, where its development would introduce a more vulnerable use.*

2.1.4 With regard to major developments the NPPF states that *'sustainable drainage systems provided as part of proposals for major development should:*

a) take account of advice from the Lead Local Flood Authority;

b) have appropriate proposed minimum operational standards; and

c) have maintenance arrangements in place to ensure an acceptable standard of operation for the lifetime of the development.'

2.1.5 Major development is defined as follows:

'For housing, development where 10 or more homes will be provided, or the site has an area of 0.5 hectares or more'

2.2 National Standards for Sustainable Drainage Systems (SuDS)

2.2.1 The National Standards for Sustainable Drainage Systems were published on 19 June 2025.

2.2.2 The standards are intended to be used in conjunction with the National Planning Policy Framework and remain non statutory guidance.

2.2.3 **Standard 1: runoff destinations** states:

'1.1 a 'SuDS approach' shall be adopted to address the management of surface water by the development and where it should be discharged. Runoff shall be treated as a resource and managed in a way that avoids negative impacts of the development on flood risk, the morphology and water quality of receiving waters and the associated ecology.

1.2 Runoff from the development shall be discharged to the following final destinations, to the maximum extent practicable, in accordance with the below hierarchy:

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

Note 1: priority 1 is the highest priority and priority 5 is the lowest.

Note 2: for the purposes of this standard, a combined sewer is a sewer intended to receive both foul sewage and surface runoff and does not include a sewer intended to receive only foul sewage, even if it has the capacity to accommodate additional flows or has an element of surface water in it already.

1.3 To utilise a lesser priority final destination, appropriate evidence shall be provided that demonstrates all higher priority final destinations have been utilised to the maximum extent practicable. Higher cost alone shall not be a reason to utilise lower priority final destinations.

1.4 Where more than one final destination is utilised, each final destination's ability to accept runoff shall be maximised in order of priority.'

2.2.4 **Standard 2: management of everyday rainfall (interception)** states:

'2.1 Apply a 'SuDS approach' so that at least the first 5mm of rainfall for the majority of rainfall events does not result in runoff from the site to surface waters or piped drainage systems.

2.2 Evidence shall be provided that the approach to managing runoff from 'everyday' rainfall has been developed alongside and in support of the management of runoff quality (standard 4) and the delivery of amenity and biodiversity benefits (standards 5 and 6).'

2.2.5 **Standard 3: management of extreme rainfall and flooding** states:

'3.1 A 'SuDS approach' shall be adopted to address the management of development runoff during extreme rainfall, including allowances for climate change and urban creep to:

- *protect people and property on the development from flooding of the surface water drainage system*
- *mitigate any increased flood risk to people and property adjacent to or downstream of the development*
- *protect the receiving water body from morphological damage or minimise the impact on sewer capacity*

3.2 When discharging to an infiltration feature, the system shall be appropriately sized to accommodate the design event based on ground conditions and contributing areas.

3.3 When discharging to an above ground surface water body, sewer or other piped drainage system, the surface water runoff (rate and volume) for the 1% annual exceedance probability (AEP) event shall be controlled to ensure the runoff from the development does not increase flood risk elsewhere.

3.4 When discharging to an above ground surface water body, sewer or other piped drainage system, the surface water runoff rate for the 50% AEP event

shall be controlled to ensure development runoff from an event of this magnitude has no negative impact.

3.5 Any flooding from the surface water drainage system for events up to the 1% AEP event shall be managed within the development.

3.6 Any flooding from off-site sources for the 1% AEP event should be managed on site or safely routed through the site, ensuring any downstream risks are not increased compared to the pre-development scenario.

3.7 The risks (both on and off the development) associated with flooding from the surface water drainage system for exceedance events greater than the 1% AEP event shall be appropriately managed.

2.2.6 **Standard 4: water quality** states:

'4.1 Apply a 'SuDS approach' that protects surface waters, groundwater and coastal waters by managing the quality of the surface water runoff to adequately address water quality risks from the development.

4.2 The proposed SuDS management train(s) shall be based on a robust water quality risk assessment, appropriate to the pollution hazard and sensitivity of receiving waters, reflecting industry recognised guidance or other quantitative assessment as agreed with the approving body and permitting requirements.'

2.2.7 **Standard 5: amenity** states:

'5.1 A 'SuDS approach' shall be adopted that maximises benefits for amenity through the creation of multi-functional places and landscapes.'

2.2.8 **Standard 6: biodiversity** states:

'6.1 A 'SuDS approach' shall be adopted to ensure the surface water drainage system maximises biodiversity benefits throughout the development lifecycle.

6.2 The surface water drainage system shall add biodiversity value by:

- *creating diverse, self-sustaining, resilient local ecosystems which contribute to net gains in biodiversity*
- *supporting and promoting natural local habitat and species, for example, through local nature recovery strategies (LNRS)*
- *contributing to the delivery of local biodiversity strategies*
- *contributing to habitat connectivity'*

2.2.9 **Standard 7: design of drainage for construction, operation, maintenance, decommissioning and structural integrity** states:

'7.1 A 'SuDS approach' shall be adopted to ensure that surface water drainage systems are designed so they can be easily and safely constructed, operated and maintained taking account of the need to minimise negative impacts on natural resources and the environment.

7.2 The designer shall provide a management and maintenance plan [that supports the design objectives detailed in standards 1 to 6 and ensures the performance of the surface water drainage system with regards to runoff destinations, everyday and extreme rainfall, water quality, amenity and biodiversity is maintained throughout the lifetime of the development.

7.3 Surface water drainage design shall examine for the likelihood and consequences of potential failure scenarios that may occur during the operation phase and safely manage the associated risks.

7.4 The surface water drainage system shall be designed to ensure structural integrity of all components under anticipated loading conditions for the design life of the development so that it does not affect the structural integrity of any existing or proposed components within, or adjacent to, the development.'

2.3 Lead Local Flood Authority

2.3.1 As part of its role as Lead Local Flood Authority West Sussex County Council has commissioned and produced the following documents:

- Strategic Flood Risk Assessment - January 2010
- Preliminary Flood Risk Assessment - May 2011
- Local Flood Risk Management Strategy 2025-2030 - July 2025

2.3.2 The above documents have been reviewed in the preparation of this report.

2.4 Mid Sussex District Council

2.4.1 Mid Sussex District Council has commissioned and produced the following documents:

- The Mid Sussex District Plan 2014-2031 - March 2018
- Level 1 Strategic Flood Risk Assessment - July 2024
- Strategic Flood Risk Assessment Level 2 - August 2024

2.4.2 The above documents have been reviewed in the preparation of this report.

2.5 Local Planning Policy

2.5.1 The Mid Sussex District Plan 2014-2031 adopted by Mid Sussex District Council in March 2018.

2.5.2 The following policy is of specific relevance to this Flood Risk Assessment:

2.5.3 **Policy DP41:** Flood Risk and Drainage Strategic states that *'proposals for development will need to follow a sequential risk-based approach, ensure development is safe across its lifetime and not increase the risk of flooding elsewhere. The District Council's Strategic Flood Risk Assessment (SFRA) should be used to identify areas at present and future flood risk from a range of sources including fluvial (rivers and streams), surface water (pluvial), groundwater, infrastructure and reservoirs.*

Particular attention will be paid to those areas of the District that have experienced flooding in the past and proposals for development should seek to reduce the risk of flooding by achieving a reduction from existing run-off rates.

Sustainable Drainage Systems (SuDS) should be implemented in all new developments of 10 dwellings or more, or equivalent non-residential or mixed development unless demonstrated to be inappropriate, to avoid any increase in flood risk and protect surface and ground water quality. Arrangements for the long term maintenance and management of SuDS should also be identified.

For the redevelopment of brownfield sites, any surface water draining to the foul sewer must be disconnected and managed through SuDS following the remediation of any previously contaminated land.

SuDS should be sensitively designed and located to promote improved biodiversity, an enhanced landscape and good quality spaces that improve public amenities in the area, where possible.

The preferred hierarchy of managing surface water drainage from any development is:

1. *Infiltration Measures*
2. *Attenuation and discharge to watercourses; and if these cannot be met,*
3. *Discharge to surface water only sewers.*

Land that is considered to be required for current and future flood management will be safeguarded from development and proposals will have regard to relevant flood risk plans and strategies.'

3 Existing Site

3.1 Site Location

3.1.1 The development site is located on land south of Burleigh Lane, Crawley Down at Ordnance Survey reference TQ 351 371. The nearest postcode is RH10 4LF.

Image 1: Site Location

3.1.2 The site is bounded to the north by Burleigh Lane, to the east by a residential property and to the south and the west by fields.

3.1.3 A copy of the site location plan is located in Appendix 1 at the rear of this report.

3.2 Site Description

3.2.1 The site is approximately 1.8ha in area and currently comprises an undeveloped field.

3.2.2 The site is elevated ground orientated east to west across the centre of the site and the site falls to the northern and southern site boundaries.

3.2.3 Existing ground levels are highest at the northeast corner of the site at approximately 128m AOD.

3.2.4 The lowest level is at the southeast corner at approximately 125m AOD.

3.2.5 There are drainage ditches adjacent to the northern and southern site boundaries.

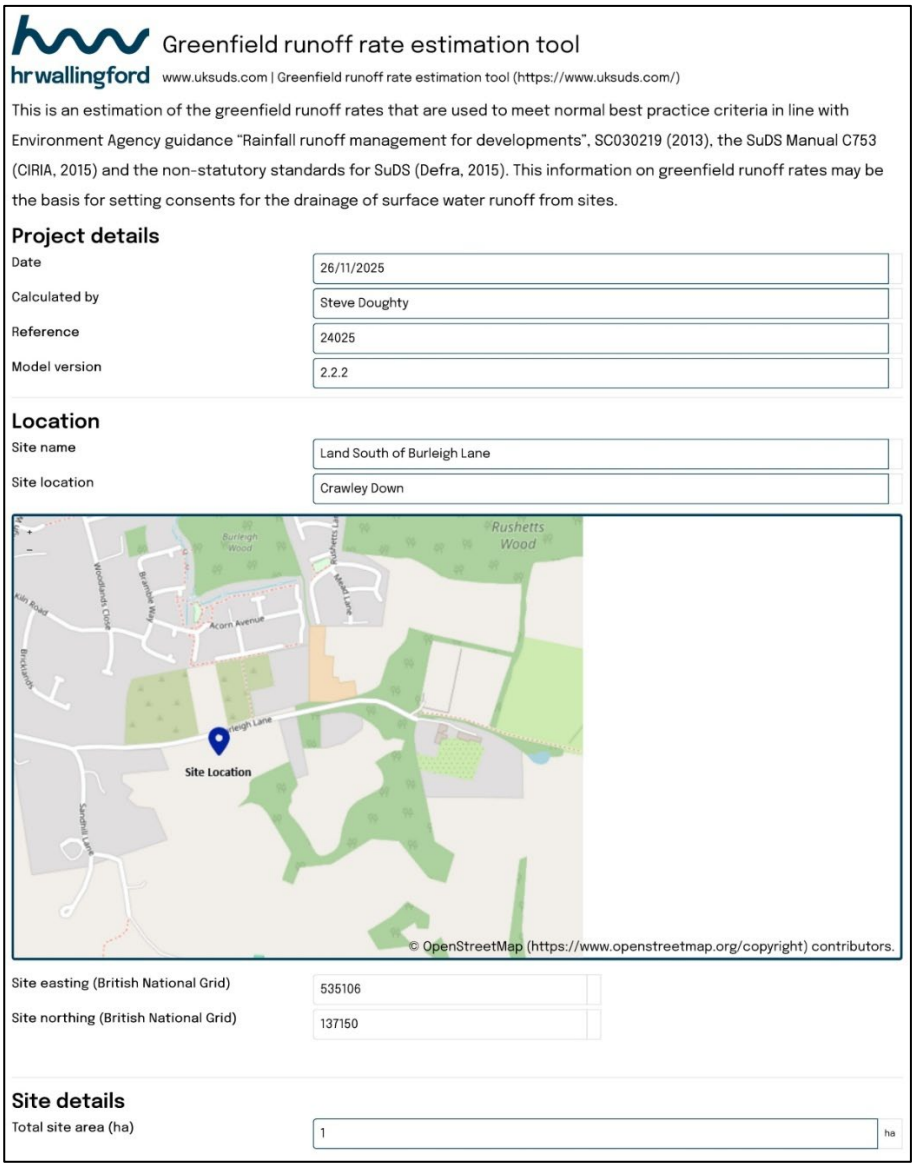
3.2.6 A copy of the existing site layout plan is located in Appendix 2 at the rear of this report.

3.3 Existing Drainage

3.3.1 The site currently has no positive surface water or foul water drainage infrastructure.

3.3.2 Rainfall currently discharges in part to ground and in part overland as a greenfield runoff to the drainage ditches adjacent to the northern and southern site boundaries.

3.3.3 Pre-developed greenfield runoff rates have been established using the HR Wallingford tool for Greenfield Runoff Estimation based on the FEH Statistical Method for rainfall estimation.



Greenfield runoff rate estimation tool

hr wallingford www.uksuds.com | Greenfield runoff rate estimation tool (https://www.uksuds.com/)

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Project details

Date	26/11/2025
Calculated by	Steve Doughty
Reference	24025
Model version	2.2.2

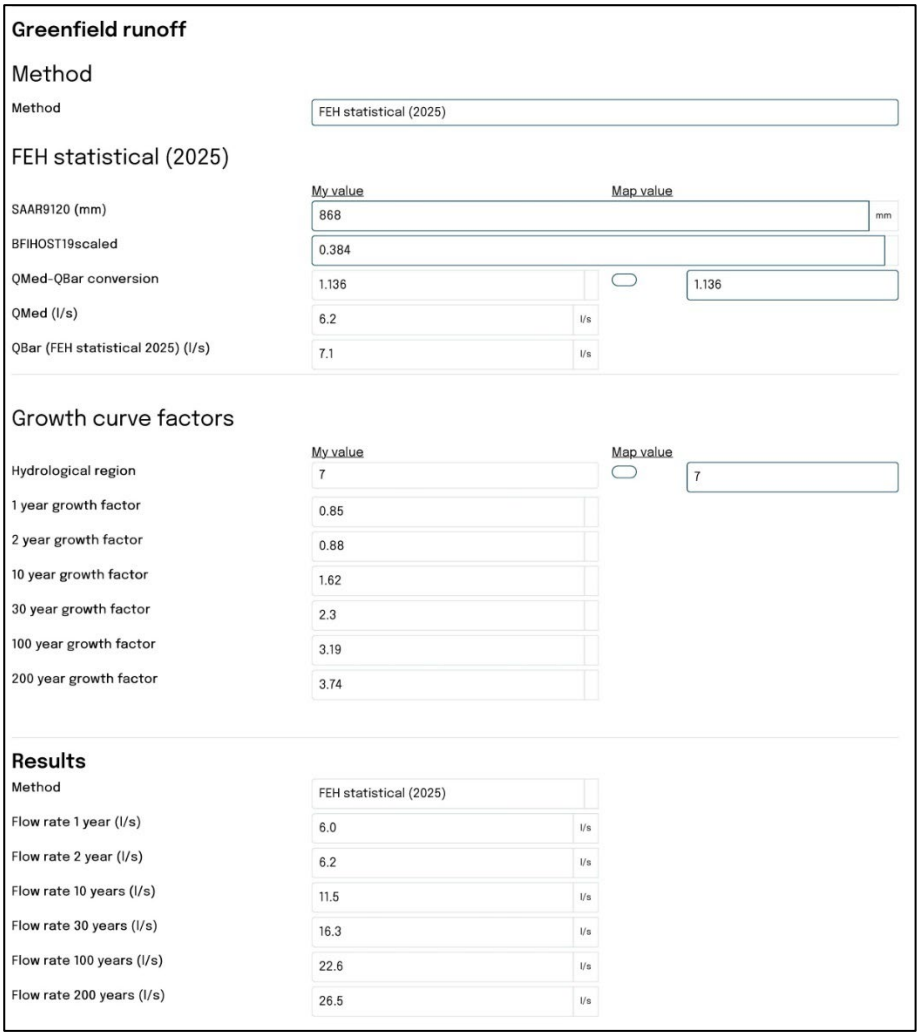
Location

Site name	Land South of Burleigh Lane
Site location	Crawley Down

Site easting (British National Grid)	535106
Site northing (British National Grid)	137150

Site details

Total site area (ha)	1 ha



Greenfield runoff

Method

Method	FEH statistical (2025)

FEH statistical (2025)

	My value		Map value	
SAAR9120 (mm)	868	mm		
BFIHOST19scaled	0.384			
QMed-QBar conversion	1.136		1.136	
QMed (l/s)	6.2	l/s		
QBar (FEH statistical 2025) (l/s)	7.1	l/s		

Growth curve factors

	My value	Map value
Hydrological region	7	7
1 year growth factor	0.85	
2 year growth factor	0.88	
10 year growth factor	1.62	
30 year growth factor	2.3	
100 year growth factor	3.19	
200 year growth factor	3.74	

Results

Method	FEH statistical (2025)	
Flow rate 1 year (l/s)	6.0	l/s
Flow rate 2 year (l/s)	6.2	l/s
Flow rate 10 years (l/s)	11.5	l/s
Flow rate 30 years (l/s)	16.3	l/s
Flow rate 100 years (l/s)	22.6	l/s
Flow rate 200 years (l/s)	26.5	l/s

Image 2: Greenfield Runoff Calculation

3.3.4 The pre-developed greenfield runoff rates are as follows:

- Q_{bar} 6.2 l/s/ha
- 1 in 30 year 16.3 l/s/ha
- 1 in 100 year 22.6 l/s/ha

3.3.5 There is a 150mm diameter public foul sewer located beneath Sandhill Lane approximately 150m to the west of the site.

3.3.6 A copy of the sewer records is located in Appendix 3 at the rear of this report.

3.4 Geology and Groundwater

3.4.1 British Geological Survey records include borehole records located 1.2km southeast of the site and 1.3km to the northwest.

3.4.2 Those records confirm a 2-5m layer of sand over clay to the northwest of the site over clay and clay from a depth of approximately 0.6m below ground level to at least 5m below ground level to the southeast.

3.4.3 The highest groundwater level reported was 2.5m below ground level.

3.4.4 Site specific investigation will be required to confirm the exact site geology but given the clay geology and the presence of watercourses adjacent to the northern and southern site boundaries the substrata is unlikely to support infiltration.

3.4.5 Copies of the geological borehole records are located in Appendix 4 at the rear of this report.

4 Flood Zone and Flood History

4.1 Tidal Flood Zone

4.1.1 The Environment Agency's online mapping confirms that the site is located in Tidal Flood Zone 1 and is not at risk of tidal flooding from anything less extreme than a 1 in 1,000 year flood event.

4.2 Fluvial Flood Zone

4.2.1 The Environment Agency's online mapping confirms that the site is located in Fluvial Flood Zone 1 and is not at risk of fluvial flooding from anything less extreme than a 1 in 1,000 year flood event.

4.3 Flood History

4.3.1 Environment Agency

4.3.1.1 The Environment Agency's online map of historic flood incidents does not identify any historic incidents of flooding affecting the site or within the vicinity of the site.

4.3.2 West Sussex County Council

4.3.2.1 Neither the Strategic Flood Risk Assessment dated January 2010, the Preliminary Flood Risk Assessment dated May 2011, nor the Local Flood Risk Management Strategy 2025-2030 dated July 2025 identify any specific flood incidents within the vicinity of the site.

4.3.3 Mid Sussex District Council

4.3.3.1 Neither the Level 1 Strategic Flood Risk Assessment dated July 2024 nor the Strategic Flood Risk Assessment Level 2 dated August 2024 identify any specific flood incidents within the vicinity of the site.

4.3.4 Copies of the available flood maps are located in Appendix 5 at the rear of this report.

5 Flooding Potential

5.1 Tidal Flooding

5.1.1 The site is located 35km from the coast and is not at risk of tidal flooding.

5.2 Fluvial Flooding

5.2.1 The site is located in fluvial Flood Zone 1 and is not at risk of fluvial flooding from anything less extreme than a 1 in 1000 year flood event.

5.3 Surface Water Flooding

5.3.1 The Environment Agency's online flood maps indicate surface water ponding to a depth of 30cm in the northwest corner of the site during the 1 in 30 year storm for both the current year event and future year 2040-2060 event.

5.3.2 Topographical data does not suggest that the ponding is due to surface water entering the site via overland flow but that this ponding occurs due to site levels falling to a low point at the northeast corner of the site and the risk of surface water ponding can be mitigated in the detailed design for the development proposals.

5.4 Groundwater Flooding

5.4.1 The British Geological Survey borehole log information in the wider area of the site recorded groundwater at a depth of 2.5m below ground level.

5.4.2 There are no records identified within West Sussex County Council's Strategic Flood Risk Assessment, Preliminary Flood Risk Assessment or Flood Risk Management Strategy or in Mid Sussex District Council's Level 1 or Level 2 Strategic Flood Risk Assessments of groundwater flooding affecting the site.

6 Development Proposals

6.1 Description

6.1.1 The development proposals are for the construction of 8 self-build / custom build residential dwellings with associated access roads, car parking and landscaping.

6.1.2 The areas of the various positively drained elements of the development are as follows:

- Roof Areas 1,285m^2
- Green Roof Areas 545m^2
- Access Road 1,181m^2
- Footways 433 m^2
- Private Drives 385m^2

6.1.3 A copy of the proposed site layout plan showing the positively drained areas is located in Appendix 6 at the rear of this report.

6.2 Surface Water Drainage

6.2.1 CIRIA report C753 The SuDS Manual-v6 provides guidance on surface water drainage. The aim for surface water runoff is to match greenfield runoff rates and volumes where reasonably achievable.

6.2.2 The National Standards for Sustainable Drainage Systems set out the drainage hierarchy for surface water drainage and notes the following list of drainage options in order of preference:

- 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

6.2.3 As previously noted given the clay geology and the presence of watercourses adjacent to the northern and southern site boundaries the substrata is unlikely to support infiltration.

6.2.4 The drainage strategy has therefore been based on a restricted discharge to the drainage ditch to the north of the site.

6.2.5 The total positively drained area of the site taking account of a 15% reduction due to green roof areas will be approximately 3,747m^2 and the equivalent greenfield runoffs are as follows:

- Q_{bar} (approximate 1 in 2 year) at 6.2 l/s/ha 2.3 l/s
- 1 in 30 year at 16.3 l/s/ha 6.1 l/s
- 1 in 100 year at 22.6 l/s/ha 8.5 l/s

6.2.6 The National Standards for Sustainable Drainage Systems notes that *'the peak allowable discharge rate from the development to surface waters or sewers for the 50% AEP event shall be limited to the equivalent 50% AEP greenfield runoff rate, or 3 l/s/ha, whichever is the greater.*

Where the volume of runoff discharged from the development to surface waters or sewers for the 1% AEP, 6-hour rainfall event is greater than the volume of greenfield runoff for the same rainfall event, the peak allowable discharge rate from the development for the 1% AEP event shall be limited to the 50% AEP greenfield runoff rate or 3l/s/ha, whichever is the greater.'

6.2.7 This equates to a peak discharge rate of 2.3 l/s during a 1:100 year +45% climate change event.

6.2.8 Preliminary calculations have been prepared in order to demonstrate that surface water drainage can be adequately accommodated within the site without increasing flood risk elsewhere.

6.2.9 An additional 10% of roof area has been included within the calculations to account for potential future urban creep amounting to a total positively drained area of 3,875m^2.

6.2.10 Permeable access and parking areas are proposed with a 30% voided subbase coupled with an additional crates storage system (or similar) sized with sufficient storage to accommodate a 1:100 year storm event including an additional 45% to account for the predicted effects of future climate change.

6.2.11 The retention of the first 5mm of rainfall for 'every day' rainfall required by Standard 2 of the National standards for sustainable drainage systems can be met with the provision of the permeable pavement.

6.2.12 The drainage proposals will be confirmed at detailed design stage subject to further site investigations and testing and if infiltration is found to be viable an infiltration drainage system will be progressed.

6.3 Foul Drainage

6.3.1 Foul water will either be discharged to the existing public foul water sewer located beneath Sandhill Lane to the east of the site via an onsite pumping station and an approximate rising main length of 150m, or collected into individual cess pits within each curtilage and tankered away on a monthly basis.

6.3.2 A copy of the preliminary drainage strategy plan together with calculations is located in Appendix 7 at the rear of this report.

6.4 Water Quality

6.4.1 The proposed development is for residential use. In accordance with CIRIA SuDS Manual 2015 (Report C753), the pollution hazard level for this type of development is classified as between very low and low depending on depending on the various elements of the site.

6.4.2 The surface water drainage scheme will include mitigation to ensure that surface water is suitably treated and any pollution risk adequately managed prior to discharge.

6.4.3 Table 26.2 in Chapter 26 of CIRIA report C753 The SuDS Manual provides Pollution Hazard Indices for varying land types. Those of relevance to the development proposals are as follows:

Land Use	Pollution hazard level	Total suspended solids (TSS)	Metals	Hydrocarbons
Residential roofs	Very Low	0.2	0.2	0.05
Individual property driveways, residential car park, low-traffic roads	Low	0.5	0.4	0.4

Table 1: Pollution Hazard Indices

6.4.4 The detailed drainage design will be undertaken such that its combined elements meet the target treatment level required for runoff with a very low to low risk of pollution and may include a number if the following elements:

SuDS Type	Total suspended solids (TSS)	Metals	Hydrocarbons
Swale	0.5	0.6	0.6
Permeable pavement	0.7	0.6	0.7

Table 2: Pollution Mitigation Indices

6.4.5 An interim drainage management and maintenance plan is located in Appendix 8 at the rear of this report.

7 Safe Development

7.1 Flood Zone Compatibility

7.1.1 The site and its wider area are in Flood Zone 1 and will remain so for the foreseeable future.

7.1.2 With reference to Annex 3 of the National Planning Policy Framework and Table 2 of the Government Guidance on Flood Risk and Coastal Change at https://www.gov.uk/guidance/flood-risk-and-coastal-change:

- Annex 3: Flood Risk Vulnerability Classification

  Residential development is classified as More Vulnerable.

- Table 2: Flood Risk Vulnerability and Flood Zone Compatibility

  More Vulnerable development is considered appropriate in Flood Zone 1.

7.2 Risk to Others

7.2.1 The proposed surface water drainage system will be designed to current SuDS standards and incorporate attenuation and storage which will minimise runoff leaving the site during times of heavy rainfall.

7.2.2 Allowance has been made for a 45% increase in rainfall intensity which accords with the latest figures published by the Environment Agency and with the requirements under the National Planning Policy Framework.

7.2.3 The proposed drainage system will incorporate sufficient treatment prior to final discharge thus mitigating the risk of pollution from the site.

7.2.4 The preliminary surface water drainage design ensures that runoff from the proposed development will be discharged at a restricted rate equivalent to the pre developed Q_{bar} storm event.

7.3 Surface Water Exceedance Route

7.3.1 In the event that part of the onsite surface water drainage network was to become blocked, suffer a failure due to lack of maintenance or be inundated with a storm beyond the 1 in 100 year +45% design storm surface water would migrate overland towards the ditches adjacent to the northern and southern site boundaries.

7.3.2 A surface water exceedance route plan is located in Appendix 9 at the rear of this report.

8 Conclusions

8.1 The site is located within Flood Zone 1 and is not at risk of flooding from tidal or fluvial sources, or groundwater.

8.2 The Environment Agency's online flood maps indicate surface water ponding to a depth of 30cm in the northwest corner of the site during the 1 in 30 year storm for both the current year event and future year 2040-2060 event. The risk of surface water ponding can be however mitigated in the detailed design for the development proposals.

8.1 There are no historic records of flooding from any source affecting the site or its immediate area.

8.2 The geology of the area is predominantly clay and is unlikely to provide suitable permeability to accommodate an infiltration drainage system.

8.3 A suitable SuDS drainage system is proposed which accords with the requirements of national and local policy.

8.4 Preliminary calculations indicate that surface water runoff generated by the proposed development can be attenuated on site for all rainfall events up to the 1 in 100 year event including an allowance for climate change.

8.5 Water quality improvement will be provided to mitigate against any risk to any receiving waterbody.

8.6 An onsite pumping station will be required to lift foul water and discharge it to the existing public foul sewer located beneath Sandhill Lane to the west of the site.

8.7 Alternatively foul water could be collected into individual cess pits within each curtilage and tankered away on a monthly basis.

8.8 In terms of flood risk planning the proposed development is safe and will manage surface water from all rainfall events up to the 1 in 100 year plus climate change event so as not to increase flood risk elsewhere.

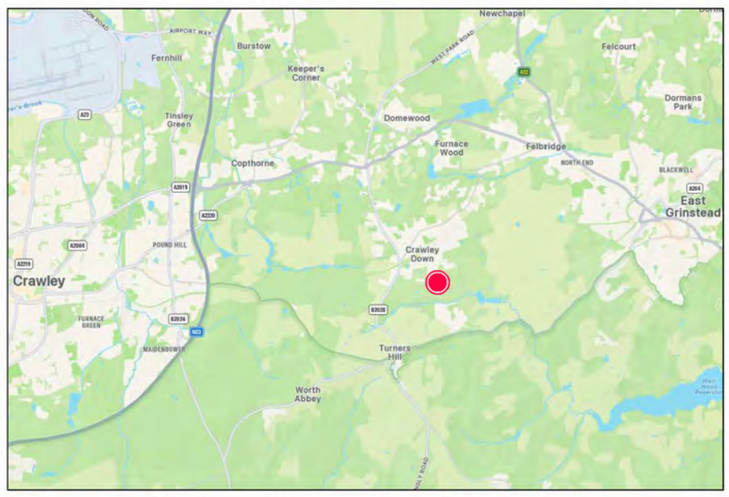
8.9 The development proposals are suitable at this location.

9 List of Appendices, Images and Tables

Appendix 1

Site Location Plan

Site Location



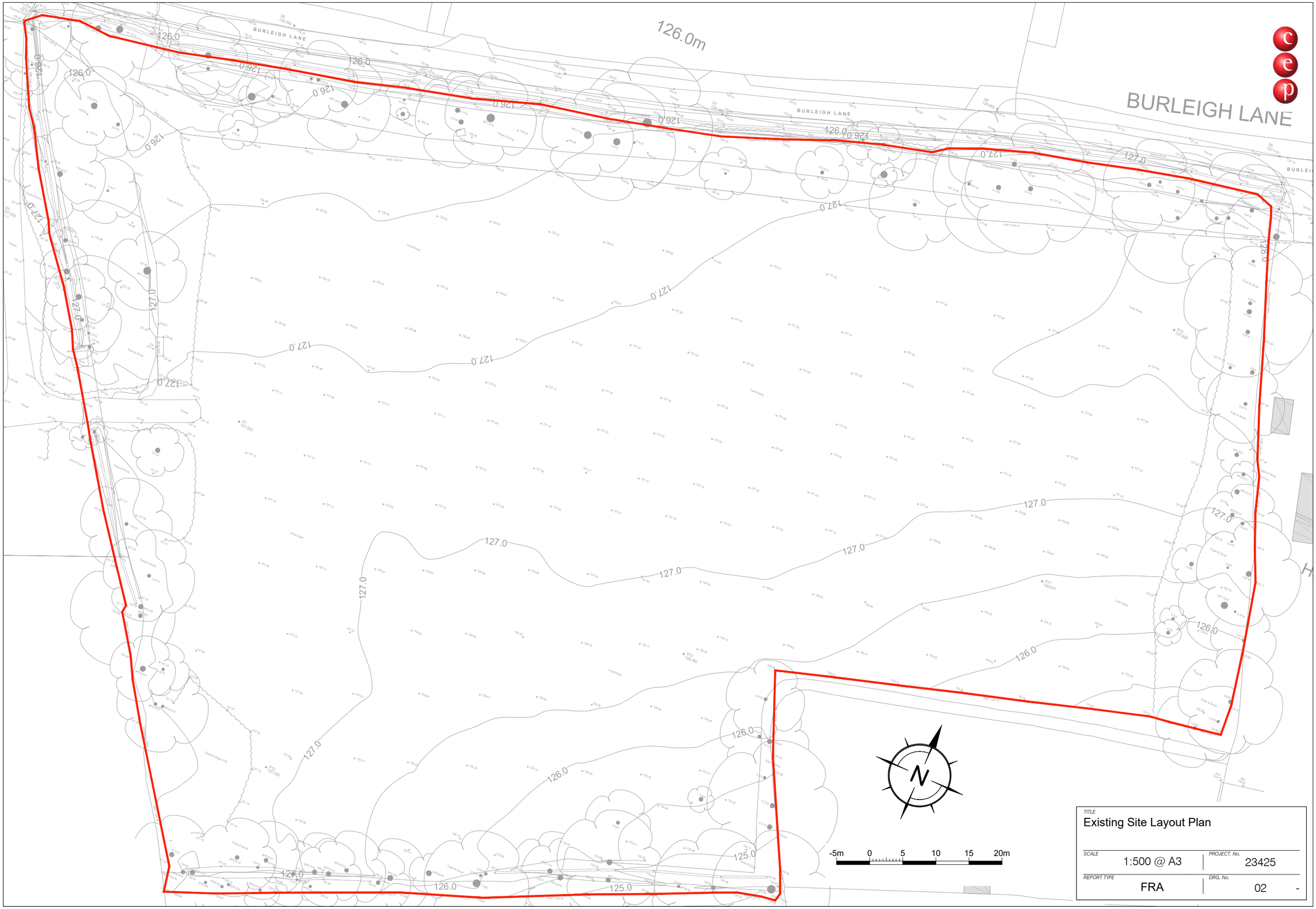
Site Location
Grid Reference:
TQ 35100 37100
Easting, Northing:
E535100, N137100
Address : Burleigh Lane Crawley Down
RH10 4LF

TITLE: Site Location Plan

SCALE	PROJECT. No.
1:12,500 @ A3	23425
REPORT TYPE	DRG. No.
FRA	01 -

Appendix 2

Existing Site Layout Plan



TITLE
Existing Site Layout Plan

SCALE	PROJECT. No.
1:500 @ A3	23425
REPORT TYPE	DRG. No.
FRA	02 -

Appendix 3

Sewer Records

Date: 08/07/25

Scale: 1:1250

Map Centre: 535088,137137

Data updated: 27/06/25

Our Ref: 1819556 - 1

Wastewater Plan A1
Powered by digdat

The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy. The actual positions should be determined on site. This plan is produced by Southern Water Services Ltd (c) Crown copyright and database rights 2025 Ordnance Survey AC0000808122 .This map is to be used for the purposes of viewing the location of Southern Water plant only. Any other uses of the map data or further copies is not permitted.

WARNING: BAC pipes are constructed of Bonded Asbestos Cement.

WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement.

Foul Gravity Sewer
Combined Gravity Sewer
Culverted Water Course or Treated Effluent
Surface Water Gravity Sewer
Rising Main, Vacuum or Syphon
Combined Outfall
Surface Water Outfall
Foul Outfall
Surface Water Inlet
Combined Pumping Station
Surface Water Pumping Station
Foul Pumping Station
WTW Water Treatment Works
Section 104 Area
Building Over Agreement Area
Foul Manhole
Combined Manhole
Surface Water Manhole
Side Entry Manhole, Demarcation Chamber, Valve Chamber or Surface Water Soakaway

mat@civil.co.uk

Burleigh Lane SW

WATER for LIFE from Southern Water.

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert
0301	F	119.95	118.40	
0302	F	119.55	0.00	
0303	F	120.10	118.27	
1301	F	121.00	118.57	
1302	F	122.10	120.80	
1303	F	123.00	121.25	
1304	F	123.75	123.37	
1305	F	124.15	123.50	
2401	F	123.47	121.60	
5301	F	0.00	0.00	
6301	F	117.09	0.00	
6302	F	117.50	115.31	
6303	F	0.00	0.00	
6304	F	121.14	119.19	
6407	F	116.05	114.06	
6409	F	0.00	0.00	
6410	F	0.00	0.00	
6411	F	0.00	0.00	
7100	F	128.95	127.33	
7202	F	127.47	125.50	
7301	F	117.04	115.68	
7302	F	0.00	0.00	
7303	F	0.00	0.00	
7405	F	116.45	0.00	
7406	F	0.00	0.00	
7407	F	115.42	114.76	
7408	F	115.22	114.75	
8001	F	133.22	130.74	
8101	F	130.01	128.58	
8102	F	130.88	129.08	
8201	F	0.00	0.00	
8202	F	0.00	0.00	
8301	F	0.00	0.00	
8302	F	117.69	0.00	
8303	F	0.00	0.00	
8304	F	0.00	0.00	
8401	F	117.81	0.00	
9001	F	134.08	131.46	
9301	F	0.00	0.00	
9302	F	0.00	0.00	
9303	F	0.00	0.00	
9304	F	0.00	0.00	
9305	F	0.00	0.00	
9401	F	0.00	0.00	
9402	F	0.00	0.00	
9403	F	0.00	0.00	
5351	S	0.00	0.00	
6351	S	0.00	0.00	
6352	S	0.00	0.00	
6353	S	117.50	115.17	
6354	S	0.00	0.00	
6453	S	116.18	0.00	
7452	S	0.00	0.00	
7453	S	0.00	0.00	
7454	S	0.00	0.00	
8250	S	0.00	0.00	

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert

Appendix 4

Geological Borehole Records

British Geological Survey

GeoIndex Onshore

Enter location

Data

Borehole records

Add Data | Show Legend

TQ33NW100
TQ33NW98
TQ33NW99
TQ33NE7
TQ33NE44
TQ33NE43
TQ33NE42
TQ33NE4

King George's Field
Buckley Pl
Squires Close
Bowers Pl
Station Rd
Burleigh Way
Station Wood
Rushetts Wood
Hazel Way
Burleigh Wood
Kiln Wood
Front Wood
Huntsland House
All Saints Church
Vicarage Rd
B2028
Crawley Down
Grange Rd
Kiln Rd
Brickfields
Burleigh Larches
Sandhill La
Burleigh La
Burleigh House Farm
Garden Cottage
Rainbow Shaw
Hundred Acres
Turners Hill Rd
Lean Shaw
Partridge Pl
Woodpecker Way
Wren St
Home Wood
Peartree Shaw
Stream Cottage
Warren Wood
Clarke's Field
Forest Barn Farm
Burleigh Oaks Farm
Burleigh Arches Wood
Burleigh Oaks Farmhouse
Mill Wood
Miswell Wood
North St
Medway
Siskin Ave
Fen Place Farm
East St
B2110
Furzewood Farm
Castle Shaw
Target Shaw

TQ33 NW100

TQ33/40

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

INFORMATION MANAGEMENT PROGRAMME

3 of 3

A SITE DETAILS SOAKAWAY

Borehole drilled for: PMC CONSTRUCTION

Location: TURNERS HILL RH10 4HE

NGR (8 figures): TQ33861 37842

Ground Level (if known): Please attach site plan

Drilling Company: NICHOLLS BOREHOLES

Date of Drilling: Commenced 26/03/14 Completed 26/03/14

B CONSTRUCTION DETAILS

Borehole Datum (if not ground level) above / m below GL

(point from which all measurements of depth are taken e.g. flange, edge of chamber, etc.)

Borehole drilled diameter	200 mm	from	0	to	9 m/depth
	mm	from		to	m/depth
	mm	from		to	m/depth
Casing material STEEL and type (e.g. if plain steel, plastic slotted) diameter	200 mm	from	0	to	1.5 m/depth
Casing material PLASTIC SOLID diameter	165 mm	from	0	to	3 m/depth
Casing material PLASTIC SLOTTED diameter	165 mm	from	3	to	9 m/depth
Casing material diameter	mm	from		to	m/depth

Grouting details 4 x SHINGLE 2-9m, 2 x MIKOLIT 0-2M

Water struck at 5 m (depth below datum - mbd)

m (depth below datum - mbd)

Rest water level on completion mbd

C TEST PUMPING SUMMARY (Please supply full details on Forms WR-39)

Test Pumping Datum (if different from borehole datum) m above / below borehole datum (mbd)

Pump Suction depth mbd

Water Level (Start of Test) mbd

Water Level (End of Test) mbd

Pumping rate m³/d:l/s

for days/hours

Recovery to (from end of pumping) mbd in mins: hrs: days

Date(s) of measurements

Please supply chemical Analysis if available

TQ 33 NW 100

D STRATA LOG

Geological Classification (BGS only)	Description of strata	Thickness m	Depth m
	MADE UP GROUND	1	0-1.
	GREEN SANDS	2	1-3
	GREY CLAY	6	3-9
	(continue on separate page if necessary)		
	Other comments (e.g. gas encountered, saline water intercepted, etc.)		

FOR OFFICIAL USE ONLY

FILE	CONSENT NO	NGS REF NO:
LIC NO:	PURPOSE:	EA REF NO:
DATE REC:	COPY TO:	ENTERED BY:

TQ33NW 98

TQ33/38

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

INFORMATION MANAGEMENT PROGRAMME

SOAKAWAY

A SITE DETAILS

Borehole drilled for: ~~SOAKAWAY~~ PMC CONSTRUCTION
Location: TURNERS HILL RH10 4HE
NGR (8 figures): TQ33873 37825
Ground Level (if known): Please attach site plan
Drilling Company: NICHOLLS BOREHOLES
Date of Drilling: Commenced 24/03/14 Completed 24/03/14

B CONSTRUCTION DETAILS

Borehole Datum (if not ground level) above / m below GL
(point from which all measurements of depth are taken e.g. flange, edge of chamber, etc.)

Borehole drilled diameter	200 mm	from 0	to 11	m/depth
	mm	from	to	m/depth
	mm	from	to	m/depth
Casing material STEEL diameter	200 mm	from 0	to 3	m/depth
Casing material PLASTIC SOLID diameter	165 mm	from 0	to 7	m/depth
Casing material PLASTIC SLOTTED diameter	165 mm	from 7	to 11	m/depth
Casing material diameter	mm	from	to	m/depth

and type (e.g. if plain steel, plastic slotted)

Grouting details SHINGLE - 5m - 11m, MIKOLIT 0M - 5M
Water struck at 4 m (depth below datum - mbd)
m (depth below datum - mbd)
Rest water level on completion 2.5 mbd

C TEST PUMPING SUMMARY (Please supply full details on Forms WR-39)

Test Pumping Datum (if different from borehole datum) ____ m above / below borehole datum (mbd)
Pump Suction depth ____ mbd
Water Level (Start of Test) ____ mbd
Water Level (End of Test) mbd
Pumping rate ____ m^3/d:l/s
for ____ days/hours
Recovery to (from end of pumping) ____ mbd in ____ mins: hrs: days
Date(s) of measurements ____
Please supply chemical Analysis if available

TQ 33NW 98

D STRATA LOG

Geological Classification (BGS only)	Description of strata	Thickness m	Depth m
	MADE UP GROUND	1	0-1
	GREEN SANDS	4	1-5
	BALLAST / SHINGLE	1	5-6
	GREY CLAY	5	6-11
	(continue on separate page if necessary)		
	Other comments (e.g. gas encountered, saline water intercepted, etc.)		

FOR OFFICIAL USE ONLY

FILE	CONSENT NO	NGS REF NO:
LIC NO:	PURPOSE:	EA REF NO:
DATE REC:	COPY TO:	ENTERED BY:

TQ33NW99

TQ33/39

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

INFORMATION MANAGEMENT PROGRAMME

2 of 3

A SITE DETAILS SOAKAWAY

Borehole drilled for: PMC CONSTRUCTION

Location: TURNERS HILL RH10 4HE

NGR (8 figures): TQ33888 37806

Ground Level (if known): Please attach site plan

Drilling Company: NICHOLLS BOREHOLES.

Date of Drilling: Commenced 25/03/14 Completed 25/03/14

B CONSTRUCTION DETAILS

Borehole Datum (if not ground level) _____ above / m below GL

(point from which all measurements of depth are taken e.g. flange, edge of chamber, etc.)

Borehole drilled diameter 200 mm from 0 to 9 m/depth

_____ mm from _____ to _____ m/depth

_____ mm from _____ to _____ m/depth

Casing material STEEL diameter 200 mm from 0 to 1.5 m/depth
and type (e.g. if plain steel, plastic slotted)

Casing material PLASTIC SOLID diameter 165 mm from 0 to 3 m/depth

Casing material PLASTIC SLOTTED diameter 165 mm from 3 to 9 m/depth

Casing material _____ diameter _____ mm from _____ to _____ m/depth

Grouting details 3x SHINGLE 2-9m 2x MIXOLIT. 0-2m

Water struck at 3 m (depth below datum - mbd)

_____ m (depth below datum - mbd)

Rest water level on completion _____ mbd

C TEST PUMPING SUMMARY (Please supply full details on Forms WR-39)

Test Pumping Datum (if different from borehole datum) _____ m above / below borehole datum (mbd)

Pump Suction depth _____ mbd

Water Level (Start of Test) _____ mbd

Water Level (End of Test) _____ mbd

Pumping rate _____ m^3/d:l/s

for _____ days/hours

Recovery to (from end of pumping) _____ mbd in _____ mins: hrs: days

Date(s) of measurements _____

Please supply chemical Analysis if available

TQ 33 NW 99

D STRATA LOG

Geological Classification (BGS only)	Description of strata	Thickness m	Depth m
	MADE UP GROUND	1	0-1
	GREEN SANDS	5	1-6
	GREY CLAY	3	6-9
	(continue on separate page if necessary)		
	Other comments (e.g. gas encountered, saline water intercepted, etc.)		

FOR OFFICIAL USE ONLY

FILE	CONSENT NO	NGS REF NO:
LIC NO:	PURPOSE:	EA REF NO:
DATE REC:	COPY TO:	ENTERED BY:

TQ33NE7

TQ33NE7

RECORD OF WELL (SHAFT OR BORE)

For Survey use only TQ33/13 N.

302/117

Licence No.

EXACT SITE OF WELL
At Fen Place Mill

Town or Village Turners Hill

County Sussex. Six-inch quarter sheet Sussex 4SE/E.

For State whether owner, tenant, builder, contractor, consultant, etc.:—

Address (if different from above) 3625 3668

Level of ground surface above sea-level (O.D.) ft. If well-top is not at ground level, state how far above: below: ft.

SHAFT 13 ft.; diameter ft.; Full details of headings (dimensions and directions)

BORE ft.; diameter of bore: at top ins.; at bottom ins.

Full details of permanent lining tubes (position, length, diameter, plain, slotted etc.)

Water struck at depths of ft. below well-top.

TEST CONDITIONS
Rest level of water 7 ft. above/below well-top. Suction at ft. Yield on hours'/days' test pumping at galls. per with depression to ft. below well-top.

Recovery to rest-level in mins./hours Capacity of pump g.p.h. Date of measurements

NORMAL CONDITIONS
DESCRIPTION OF PERMANENT PUMPING EQUIPMENT:

Make and/or type Motive power

Capacity gallons per hour. Suction at ft.

Amount pumped 150 galls. per day. Estimated consumption galls. per week.

Well made by Date of well

Information from Letter from J. Moser, Chief Officer DWS, County of E. Sussex AEC. Filed WE/302/Turners Hill.

ADDITIONAL NOTES

ANALYSIS (please attach copy if available)

Yield 150 gallons per day.
Sited by ⊙ on 6" map Sussex 4SE/E 2.8.56

(1527) D6574/WE7153 15,000 8/54 JC&S Gp689

LOG OF STRATA OVERLEAF.

Geological Survey and Museum, South Kensington, London, S.W.7.		Section 6.	Date Received	1" O.S. Map No.	Site marked on 1" Map	(use symbol) on 6" Map
					⊙	⊙

TQ33NE7

TQ 33/13

RECORD OF WELL (SHAFT OR BORE)

For Survey use only
N.

302/17

EXACT SITE OF WELL

At Fen Place Mill
TQ 3623 3669

Town or Village Turners Hill, East Grinstead.

Licence No.

County Sussex

Six-inch quarter sheet Sussex 4 SE/E

For

State whether owner, tenant, builder, contractor, consultant, etc.:—

Address (if different from above)

Level of ground surface above sea-level (O.D.) +299 ft.

If well-top is not at ground level, state how far above: below; ft.

SHAFT 13 ft.; diameter ft.; Full details of headings (dimensions and directions)

BORE ft.; diameter of bore: at top ins.; at bottom ins.

Full details of permanent lining tubes (position, length, diameter, plain, slotted etc.)

Water struck at depths of ft. below well-top.

TEST CONDITIONS

Rest level of water 1 ft. ~~above~~ below well-top. Suction at ft. Yield on hours'/days' test

pumping at galls. per with depression to ft. below well-top.

Recovery to rest-level in mins./hours Capacity of pump g.p.h. Date of measurements 9 July 1956.

NORMAL CONDITIONS

DESCRIPTION OF PERMANENT PUMPING EQUIPMENT:

Make and/or type Motive power

Capacity gallons per hour. Suction at ft.

Amount pumped 150 galls. per day. Estimated consumption galls. per week.

Well made by Date of well

Information from Letter from S. Mowe, Chief Officer WW., [illegible] AEL
Filed WE/302/Turners Hill.

ADDITIONAL NOTES

ANALYSIS (please attach copy if available)

"Yield 150 gall. per day at present decreasing to half that amount in dry periods." July 1956.
Sited by [illegible] on 6" map Sussex 4 SE/E [illegible]

Visited.
Yield as above. Petrol engine pump. Owner: Mr B.R. Sprake.
O.D + 299. 15.11.57. BH.

Sited on LTW (c 70ft above base). R.G. 3.12.64.

LOG OF STRATA OVERLEAF.

Geological Survey and Museum, South Kensington, London, S.W.7.		Section 6.	Date Received	1" O.S. Map No.	Site marked on 1" Map	(use symbol) on 6" Map
					⊙	⊙

(1527) Dd574/Wt37583 12,000 8/54 JC&S Gp669

TQ 33 NE 43

LOCATION	DATE	TRIALPIT : 2
TURNERS HILL - EAST GRINSTEAD	10th Nov 1987	

DESCRIPTION	REDUCED LEVEL m	DEPTH m	LEGEND	SAMPLE TYPE	SAMPLE DEPTH	THICKNESS m	SPT	REMARKS
		0.00						
HARDCORE FILL						0.60		Ground water ran through FILL
		0.60						
Firm brown CLAY				U38	1.00	0.80		--741 /2 / 1.0U
		1.40						
Stiff grey brown CLAY						0.70		
		2.10						
Hard grey laminated SILTSTONE				U38	2.20			--741 /2 / 2.2U
						1.00		
				B	3.00			--741 /2 / 3.0B
		3.10						

TERRAMECH INVESTIGATIONS LIMITED
183 LONG LANE TILEHURST READING

REMARKS :

U100 = 100mm dia. UNDISTURBED SAMPLE U38 = 38mm dia. UNDISTURBED SAMPLE
D = SMALL DISTURBED SAMPLE B = BULK SAMPLE W = WATER SAMPLE
SPT = STANDARD PENETRATION TEST CPT = CONE PENETRATION TEST

TQ 33 NE 44

LOCATION	DATE	TRIALPIT : 3
TURNERS HILL - EAST GRINSTEAD	10th Nov 1987	

DESCRIPTION	REDUCED LEVEL m	DEPTH m	LEGEND	SAMPLE TYPE	SAMPLE DEPTH	THICKNESS m	SPT	REMARKS
		0.00						
HARDCORE FILL						1.10		
Firm brown CLAY		1.10		U38	1.20			--741 /3 / 1.2U
						0.70		
Stiff brown CLAY		1.80						
				U38	2.00	0.40		--741 /3 / 2.0U
Stiff grey laminated shaley CLAY		2.20						
						1.70		
				B	3.80			--741 /3 / 3.8B
Very stiff grey laminated MUDSTONE		3.90				0.10		
Very stiff grey laminated shaley CLAY		4.00						
						1.00		
				B	4.80			--741 /3 / 4.8B
		5.00						

TERRAMECH INVESTIGATIONS LIMITED
183 LONG LANE TILEHURST READING

REMARKS :

U100 = 100mm dia. UNDISTURBED SAMPLE U38 = 38mm dia. UNDISTURBED SAMPLE
D = SMALL DISTURBED SAMPLE B = BULK SAMPLE W = WATER SAMPLE
SPT = STANDARD PENETRATION TEST CPT = CONE PENETRATION TEST

TQ 33 NE 42

LOCATION: TURNERS HILL - EAST GRINSTEAD

DATE: 10th Nov 1987

TRIALPIT : 1

DESCRIPTION	REDUCED LEVEL m	DEPTH m	LEGEND	SAMPLE TYPE	SAMPLE DEPTH	THICKNESS m	SPT	REMARKS
		0.00						
HARDCORE FILL						0.70		
Firm brown CLAY		0.70		U38	1.10	1.00		--741 /1 / 1.1U
Firm red grey mottled CLAY		1.70		U38	2.00	0.40		--741 /1 / 2.0U
		2.10						

TERRAMECH INVESTIGATIONS LIMITED
183 LONG LANE TILEHURST READING

REMARKS :

U100 = 100mm dia. UNDISTURBED SAMPLE U38 = 38mm dia. UNDISTURBED SAMPLE
D = SMALL DISTURBED SAMPLE B = BULK SAMPLE W = WATER SAMPLE
SPT = STANDARD PENETRATION TEST CPT = CONE PENETRATION TEST