



Pullar House 35 Kinnoull Street Perth PH1 5GD Tel: 01738 475300 Email: onlineapps@pkc.gov.uk

Applications cannot be validated until all the necessary documentation has been submitted and the required fee has been paid.

Thank you for completing this application form:

ONLINE REFERENCE 100749913-002

The online reference is the unique reference for your online form only. The Planning Authority will allocate an Application Number when your form is validated. Please quote this reference if you need to contact the planning Authority about this application.

Applicant or Agent Details

Are you an applicant or an agent? * (An agent is an architect, consultant or someone else acting on behalf of the applicant in connection with this application)

Applicant Agent

Agent Details

Please enter Agent details

Company/Organisation:	Houghton Planning Ltd		
Ref. Number:		You must enter a Building Name or Number, or both: *	
First Name: *	Paul	Building Name:	Alloa Business Centre
Last Name: *	Houghton MRTPI	Building Number:	
Telephone Number: *	07780117708	Address 1 (Street): *	Whins Road
Extension Number:		Address 2:	Alloa
Mobile Number:		Town/City: *	Clacks
Fax Number:		Country: *	Scotland
		Postcode: *	FK10 3RF
Email Address: *	paul@houghtonplanning.co.uk		

Is the applicant an individual or an organisation/corporate entity? *

Individual Organisation/Corporate entity

Applicant Details

Please enter Applicant details

Title:	<input type="text" value="Mr"/>	You must enter a Building Name or Number, or both: *	
Other Title:	<input type="text"/>	Building Name:	<input type="text"/>
First Name: *	<input type="text" value="Stuart"/>	Building Number:	<input type="text" value="1"/>
Last Name: *	<input type="text" value="Heslop"/>	Address 1 (Street): *	<input type="text" value="Rosebank Gardens"/>
Company/Organisation	<input type="text"/>	Address 2:	<input type="text" value="Wallacestone"/>
Telephone Number: *	<input type="text"/>	Town/City: *	<input type="text" value="Falkirk"/>
Extension Number:	<input type="text"/>	Country: *	<input type="text" value="Scotland"/>
Mobile Number:	<input type="text"/>	Postcode: *	<input type="text" value="FK10 3RF"/>
Fax Number:	<input type="text"/>		
Email Address: *	<input type="text" value="paul@houghtonplanning.co.uk"/>		

Site Address Details

Planning Authority:

Full postal address of the site (including postcode where available):

Address 1:	<input type="text"/>
Address 2:	<input type="text"/>
Address 3:	<input type="text"/>
Address 4:	<input type="text"/>
Address 5:	<input type="text"/>
Town/City/Settlement:	<input type="text"/>
Post Code:	<input type="text"/>

Please identify/describe the location of the site or sites

<input type="text" value="Land 50 metres South East of Craighurn House, Flawcraig, Rait, Perth, PH2 7RY"/>
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Northing	<input type="text"/>	Easting	<input type="text"/>
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Description of Proposal

Please provide a description of your proposal to which your review relates. The description should be the same as given in the application form, or as amended with the agreement of the planning authority: *
(Max 500 characters)

Erection of dwellinghouse (in principle)

Type of Application

What type of application did you submit to the planning authority? *

- Application for planning permission (including householder application but excluding application to work minerals).
- Application for planning permission in principle.
- Further application.
- Application for approval of matters specified in conditions.

What does your review relate to? *

- Refusal Notice.
- Grant of permission with Conditions imposed.
- No decision reached within the prescribed period (two months after validation date or any agreed extension) – deemed refusal.

Statement of reasons for seeking review

You must state in full, why you are seeking a review of the planning authority's decision (or failure to make a decision). Your statement must set out all matters you consider require to be taken into account in determining your review. If necessary this can be provided as a separate document in the 'Supporting Documents' section: * (Max 500 characters)

Note: you are unlikely to have a further opportunity to add to your statement of appeal at a later date, so it is essential that you produce all of the information you want the decision-maker to take into account.

You should not however raise any new matter which was not before the planning authority at the time it decided your application (or at the time expiry of the period of determination), unless you can demonstrate that the new matter could not have been raised before that time or that it not being raised before that time is a consequence of exceptional circumstances.

See Local Review Statement

Have you raised any matters which were not before the appointed officer at the time the Determination on your application was made? *

Yes No

If yes, you should explain in the box below, why you are raising the new matter, why it was not raised with the appointed officer before your application was determined and why you consider it should be considered in your review: * (Max 500 characters)

Please provide a list of all supporting documents, materials and evidence which you wish to submit with your notice of review and intend to rely on in support of your review. You can attach these documents electronically later in the process: * (Max 500 characters)

Application as submitted. Report of Handling. Decision Notice. Local Review Statement.

Application Details

Please provide the application reference no. given to you by your planning authority for your previous application.

26/00461/IPL

What date was the application submitted to the planning authority? *

02/04/2026

What date was the decision issued by the planning authority? *

12/05/2026

Review Procedure

The Local Review Body will decide on the procedure to be used to determine your review and may at any time during the review process require that further information or representations be made to enable them to determine the review. Further information may be required by one or a combination of procedures, such as: written submissions; the holding of one or more hearing sessions and/or inspecting the land which is the subject of the review case.

Can this review continue to a conclusion, in your opinion, based on a review of the relevant information provided by yourself and other parties only, without any further procedures? For example, written submission, hearing session, site inspection. *

Yes No

Please indicate what procedure (or combination of procedures) you think is most appropriate for the handling of your review. You may select more than one option if you wish the review to be a combination of procedures.

Please select a further procedure *

By means of inspection of the land to which the review relates

Please explain in detail in your own words why this further procedure is required and the matters set out in your statement of appeal it will deal with? (Max 500 characters)

To see the plot and the hedge surrounding it.

In the event that the Local Review Body appointed to consider your application decides to inspect the site, in your opinion:

Can the site be clearly seen from a road or public land? *

Yes No

Is it possible for the site to be accessed safely and without barriers to entry? *

Yes No

If there are reasons why you think the local Review Body would be unable to undertake an unaccompanied site inspection, please explain here. (Max 500 characters)

Private land.

Checklist – Application for Notice of Review

Please complete the following checklist to make sure you have provided all the necessary information in support of your appeal. Failure to submit all this information may result in your appeal being deemed invalid.

Have you provided the name and address of the applicant?. *

Yes No

Have you provided the date and reference number of the application which is the subject of this review? *

Yes No

If you are the agent, acting on behalf of the applicant, have you provided details of your name and address and indicated whether any notice or correspondence required in connection with the review should be sent to you or the applicant? *

Yes No N/A

Have you provided a statement setting out your reasons for requiring a review and by what procedure (or combination of procedures) you wish the review to be conducted? *

Yes No

Note: You must state, in full, why you are seeking a review on your application. Your statement must set out all matters you consider require to be taken into account in determining your review. You may not have a further opportunity to add to your statement of review at a later date. It is therefore essential that you submit with your notice of review, all necessary information and evidence that you rely on and wish the Local Review Body to consider as part of your review.

Please attach a copy of all documents, material and evidence which you intend to rely on (e.g. plans and Drawings) which are now the subject of this review *

Yes No

Note: Where the review relates to a further application e.g. renewal of planning permission or modification, variation or removal of a planning condition or where it relates to an application for approval of matters specified in conditions, it is advisable to provide the application reference number, approved plans and decision notice (if any) from the earlier consent.

Declare – Notice of Review

I/We the applicant/agent certify that this is an application for review on the grounds stated.

Declaration Name: Mr Paul Houghton MRTPI

Declaration Date: 18/05/2026

Payment Details

Pay Direct

Created: 18/05/2026 10:18

Local Review Statement

INTRODUCTION

This Local Review Statement has been prepared by Houghton Planning Ltd on behalf of Mr Stuart Heslop in relation to the recent refusal of planning permission for the “*Erection of dwellinghouse (in principle)*” at land 50 Metres South East of Craighburn House, Flawcraig, Rait, Perth, PH2 7RY (ref: 26/00461/IPL).

The planning application was refused for a single reason as follows:

“The proposal is contrary to Policy 19 Housing in the Countryside of the Perth and Kinross Council Local Development Plan 2 (2019) and the associated Housing in the Countryside Supplementary Guidance 2020 (SG). Whilst the site is located adjacent to a building group it cannot be considered to extend the group into a definable site as the landscaping/hedging which has been planted along the south-western boundary of the site has been planted with the sole purpose of creating a development site. The SG explicitly states that “fencing or young trees or hedging planted with the specific intention of creating a site will not be accepted as existing landscape features for the purposes of this Supplementary Guidance”. The proposal also fails to meet any of the other categories of development outlined in the SG. The proposal is also contrary to Policy 9(b) of National Planning Framework 4 (NPF4) as the proposal is on a greenfield site and is not explicitly supported by policies of the Perth and Kinross Local Development Plan 2 (2019). The proposal also fails to meet any of the categories of development allowed by Policy 17: Rural Homes of NPF4”.

This Statement is set out in the same way as the Report of Handling, and responds to that only as necessary to make the applicant’s case as to why planning permission in principle should be granted, particularly at a time where there is a housing emergency in Perth and Kinross, and more widely across Scotland.

It should be noted that this application has been submitted by someone wishing to live on the site with his family and contribute to the local community and economy.

BACKGROUND AND DESCRIPTION OF PROPOSAL

The planning appeal was 17 years ago, and relates to a site whose boundaries were less well defined, and a time when the housing emergency was less acute. It is respectfully contended that the planning history whilst a material consideration should carry no weight whatsoever in the determination of this application.

SITE HISTORY

No comment.

DEVELOPMENT PLAN

No comment.

OTHER MATERIAL CONSIDERATIONS

Scottish Government - Tackling Scotland's Housing Emergency (September 2025)
<https://www.gov.scot/publications/tackling-scotlands-housing-emergency/>

Scottish Government - Letter from the Cabinet Secretary for Housing and Minister for Public Finance sent to planning authorities (October 2025)
<https://www.gov.scot/publications/housing-sme-homebuilders-ministerial-letter-october-2025/>

CONSULTATION RESPONSES

No comment.

REPRESENTATIONS

No comment.

APPRAISAL

Principle

The proposal complies with the Council's housing in the countryside guidance by being a site that will be part of an existing Building Group.

It has a well-established existing landscape feature being a hedge. It is appreciated that this feature was not so established back in 2006 and 2009 when development on the plot was last considered. However, that has changed markedly in the intervening 17 years, and the plot is now considered compliant with guidance being surrounded by a mature hedge that is the best part of 20 years old from when it was first planted.

Visual Impact and Layout

No comment.

Drainage

No comment.

Flood Risk

The Flood Risk Assessment clearly shows that the site can be developed.

Access

No comment.

Ecology

No comment.

Developer Contributions

A developer contribution is acceptable.

Prime Agricultural Land

No comment.

Economic Impact

The economic impact of the proposal has significance as a material consideration in that it is highly likely that construction will be by a local company employing local people. At a time when construction jobs are being lost, particularly by smaller companies, and some smaller construction companies are going out of business, it is important to allow for a steady stream of these smaller sites that are the lifeblood of this part of the housebuilding industry.

The Scottish Government recognises the importance of SME housebuilders and councillors are requested to consider the letter from the Cabinet Secretary for Housing and Minister for Public Finance sent to planning authorities in October 2025

<https://www.gov.scot/publications/housing-sme-homebuilders-ministerial-letter-october-2025/>

CONCLUSION

The proposal complies with the Development Plan. This is a plot within a Building Group that has a well-established, and defined, landscape boundary.

However, if there is any doubt around that, for example councillors are persuaded by the argument relating to the planning history, then material considerations justify overriding the Development Plan as follows.

- The planning history is 17 years old. That should carry no weight whatsoever.
- The hedge is now 17 years older.

- There is a housing emergency Scotland-wide that should carry significant weight in any decision on new housing, even just one house in the countryside, as required by the Scottish Government.
- The economic benefit is more than the case officer implies given the need to support local construction companies, and to support SME housebuilders as requested by the Scottish Government.

It is, therefore, respectfully requested that councillors allow this local review.



Mr Stuart Heslop
c/o Houghton Planning Ltd
Paul Houghton MRTPI
Alloa Business Centre
Whins Road
Alloa
Clacks
FK10 3RF

2 High Street
Perth
PH1 5PH

Date of Notice : 12th May 2026

**Town and Country Planning (Scotland) Act (as amended)
Planning, etc. (Scotland) Act 2006 (as amended)**

Application Reference: **26/00461/IPL**

I am directed by the Planning Authority under the Town and Country Planning (Scotland) Acts currently in force, to **refuse** your application registered on 14th April 2026 for permission for **Erection of dwellinghouse (in principle) Land 50 Metres South East Of Craighburn House Flawcraig Rait Perth PH2 7RY** for the reasons undernoted.

Kristian Smith
Development Management & Building Standards Service Manager

Reasons for Refusal

1. The proposal is contrary to Policy 19 Housing in the Countryside of the Perth and Kinross Council Local Development Plan 2 (2019) and the associated Housing in the Countryside Supplementary Guidance 2020 (SG). Whilst the site is located adjacent to a building group it cannot be considered to extend the group into a definable site as the landscaping/hedging which has been planted along the south-western boundary of the site has been planted with the sole purpose of creating a development site. The SG explicitly states that "fencing or young trees or hedging planted with the specific intention of creating a site will not be accepted as existing landscape features for the purposes of this Supplementary Guidance". The proposal also fails to meet any of the other categories of development outlined in the SG. The proposal is also contrary to Policy 9(b) of National Planning Framework 4 (NPF4) as the proposal is on a greenfield site and is not explicitly supported by policies of the Perth and Kinross Local Development Plan 2 (2019). The proposal also fails to meet any of the categories of development allowed by Policy 17: Rural Homes of NPF4.

Justification

1. The proposal is not in accordance with the Development Plan and there are no material reasons which justify departing from the Development Plan.

Notes

The plans and documents which form part of this decision are listed below and are displayed as 'refused' on Perth and Kinross Council's website at www.pkc.gov.uk "Online Planning Applications" page

Plan Reference

**01
02
03
04
05**

Should you require further information regarding the decision please contact either developmentmanagement@pkc.gov.uk or call 01738 475300, quoting the above planning reference number, and you'll be directed to the most appropriate person.

REPORT OF HANDLING

DELEGATED REPORT

Ref No	26/00461/IPL	
Ward No	P1- Carse Of Gowrie	
Due Determination Date	13th June 2026	
Draft Report Date	12th May 2026	
Report Issued by	John Williamson	Date 12 May 2026

PROPOSAL: Erection of dwellinghouse (in principle)

LOCATION: Land 50 Metres South East Of Craighurn House Flawcraig
Rait Perth PH2 7RY

SUMMARY:

This report recommends **refusal** of the application as the development is considered to be contrary to the relevant provisions of the Development Plan and there are no material considerations apparent which justify setting aside the Development Plan.

BACKGROUND AND DESCRIPTION OF PROPOSAL

Planning permission in principle is sought for the erection of a single dwellinghouse on land located to the south-east of Craighurn House and to the north-east of the settlement of Rait, as identified on the attached Location Plan and Proposed Indicative Site Plan. The site is bounded by an existing access track along its south-east and north-east boundaries, with the Craig Burn located on the far side of the access track to the north-east. A leylandii hedge forms the boundary to the south-west, with Craighurn House situated immediately to the north-west. The application seeks to establish the acceptability of the principle of residential development on this plot, with all detailed matters reserved for future consideration. The proposal is assessed against the Development Plan, comprising National Planning Framework 4 and the Perth and Kinross Local Development Plan (2019), together with other relevant material considerations, including site context, constraints and planning history.

The site has a relevant planning history, having previously been the subject of two applications for residential development (06/00793/FUL and 09/00634/FUL), both of which were refused by the Planning Authority and subsequently dismissed on appeal by the Scottish Government. These decisions are material considerations in the assessment of the current proposal. The site lies within the Sidlaw Hills Local

Landscape Area and is located close to, though outwith, the Fingask Castle Historic Garden and Designed Landscape, which is situated approximately 100 metres to the north-west.

SITE HISTORY

06/00793/FUL - Erection of 2 dwellinghouses – Refused August 2006 and Appeal Dismissed by Scottish Government

09/00634/FUL – Erection of 2 dwellinghouses with integral garages – Refused July 2009 and Appeal Dismissed by Scottish Government

PRE-APPLICATION CONSULTATION

Pre application Reference: 25/00061/PREAPL

DEVELOPMENT PLAN

The Development Plan for the area comprises National Planning Framework 4 (NPF4) and the Perth and Kinross Local Development Plan 2 (2019) (LDP2).

National Planning Framework 4

The National Planning Framework 4 (NPF4) is the Scottish Government's long-term spatial strategy with a comprehensive set of national planning policies. This strategy sets out how to improve people's lives by making sustainable, liveable and productive spaces.

NPF4 was adopted on 13 February 2023. NPF4 has an increased status over previous NPFs and comprises part of the statutory development plan.

The Council's assessment of this application has considered the following policies of NPF4:

Policy 3: Biodiversity

Policy 4: Natural Places

Policy 6: Forestry, Woodland and Trees

Policy 13: Sustainable Transport

Policy 14: Design, Quality and Place

Policy 16: Quality Homes

Policy 17: Rural Homes

Policy 18: Infrastructure First

Policy 22: Flood Risk and Water Management

Perth and Kinross Local Development Plan 2 – Adopted November 2019

The Local Development Plan 2 (LDP2) is the most recent statement of Council policy and is augmented by Supplementary Guidance.

The principal policies are:

Policy 1A: Placemaking

Policy 1B: Placemaking

Policy 5: Infrastructure Contributions

Policy 19: Housing in the Countryside

Policy 39: Landscape

Policy 40B: Forestry, Woodland and Trees: Trees, Woodland and Development

Policy 41: Biodiversity

Policy 52: New Development and Flooding

Policy 53B: Water Environment and Drainage: Foul Drainage

Policy 53C: Water Environment and Drainage: Surface Water Drainage

Policy 60B: Transport Standards and Accessibility Requirements: New Development Proposals

Statutory Supplementary Guidance

- [Supplementary Guidance - Airfield Safeguarding](#) (adopted in 2020)
- [Supplementary Guidance - Delivering Zero Waste](#) (adopted in 2020)
- [Supplementary Guidance - Developer Contributions & Affordable Housing](#) (adopted in 2020)

- [Supplementary Guidance - Flood Risk and Flood Risk Assessments](#) (adopted in 2021)
- [Supplementary Guidance - Forest & Woodland Strategy](#) (adopted in 2020)
- [Supplementary Guidance - Green & Blue Infrastructure](#) (adopted in 2020)
- [Supplementary Guidance - Housing in the Countryside](#) (adopted in 2020)
- [Supplementary Guidance - Landscape](#) (adopted in 2020)
- [Supplementary Guidance - Placemaking](#) (adopted in 2020)

OTHER MATERIAL CONSIDERATIONS

Non-Statutory Guidance

- [Planning Guidance - Planning & Biodiversity](#)
- [Supplementary Guidance - Renewable & Low Carbon Energy](#) (draft)

National Guidance

The Scottish Government expresses its planning policies through, Planning Advice Notes, Creating Places, Designing Streets, National Roads Development Guide and a series of Circulars.

National Roads Development Guide 2014

This document supports Designing Streets and expands on its principles and is considered to be the technical advice that should be followed in designing and approving of all streets including parking provision.

Local Place Plans

Local Place Plans are community-led plans setting out proposals for the development and use of land and set out a community's aspirations for its future development. There is no Local Place Plan for this site.

CONSULTATION RESPONSES

EXTERNAL

Scottish Water – no objection

Perth And Kinross Heritage Trust – no objection

INTERNAL

Transportation And Development – no objection subject to conditions

Development Contributions Officer – condition recommended to require compliance with infrastructure contributions policy

Structures And Flooding – no comments

REPRESENTATIONS

Number of representations received: 2

The letters of representation both object to the application and the comments may be summarised as follows:

- Contrary to Development Plan
- Planning history of refusal and appeal dismissal
- Prime agricultural land
- Manipulated and engineered site due to hedge planting
- Setting of precedent
- Traffic and access safety

The comments above are addressed within the appraisal section below.

Additional Statements Received:

Screening Opinion	Not Required
Environmental Impact Assessment (EIA): Environmental Report	Not applicable
Appropriate Assessment under Habitats Regulations	Habitats Regulations AA Not Required
Design Statement or Design and Access Statement	Not Required
Report on Impact or Potential Impact eg Flood Risk Assessment	Submitted

APPRAISAL

Sections 25 and 37 (2) of the Town and Country Planning (Scotland) Act 1997 require that planning decisions be made in accordance with the development plan unless material considerations indicate otherwise. The Development Plan comprises NPF4

and the Perth and Kinross Local Development Plan 2019. The relevant policy considerations are outlined in the policy section above and are considered in more detail below. In terms of other material considerations, involving considerations of the Council's other approved policies and supplementary guidance, these are discussed below only where relevant.

The determining issues in this case are whether; the proposal complies with development plan policy; or if there are any other material considerations which justify a departure from policy.

Principle

The principle of development on this site was addressed in detail within the Council's pre-application response (ref. 25/00061/PREAPL) dated 12 May 2025, and the assessment below is consistent with that advice. The proposal has been considered against the Development Plan, comprising National Planning Framework 4 (NPF4) and the Perth and Kinross Local Development Plan 2019 (LDP2), together with the associated Supplementary Guidance.

Policy 19 of the LDP2 (Housing in the Countryside) acknowledges that opportunities exist for new housing in rural areas where this supports the viability of communities, meets identified development needs in appropriate locations and safeguards the character of the countryside through a high standard of siting and design. The policy supports the development of single houses or groups of houses where proposals fall within one of six defined categories. This approach is reflected in NPF4, where Policy 9 supports development on greenfield land only where this is explicitly supported by policies in the Local Development Plan. NPF4 Policy 17 is also relevant and seeks to support rural housing where it is appropriately located and meets specified criteria.

In this instance, the only category within Policy 19 which may be applicable is Category 1 – Building Groups. The proposal does not represent an infill site, does not fall within the defined site categories set out in the Supplementary Guidance, does not involve the renovation or replacement of an existing building or the conversion of a redundant non-domestic building, and the site does not meet the definition of rural brownfield land.

The Housing in the Countryside Supplementary Guidance (adopted 2020) clarifies that a building group is defined as three or more existing buildings of a size at least equivalent to a traditional cottage which appear as a group within their landscape setting, with the majority of buildings being residential or capable of conversion to residential use. The guidance allows for development which extends a building group into a readily definable adjacent site, formed by existing topography, roads or well-established landscape features such as a watercourse or mature tree belt. It also requires that new housing respects the character, scale and form of the existing group and is integrated into the existing layout and building pattern.

While the buildings adjacent to the site are considered, in isolation, to meet the

definition of a building group, the critical issue is whether the application site itself constitutes a readily definable site for the purposes of the Supplementary Guidance. This matter has been examined previously through two planning applications on the site (06/00793/FUL and 09/00634/FUL), both of which were refused and subsequently dismissed on appeal by the Scottish Government.

The appeal decision for application 06/00793/FUL concluded that, although the site was bounded by a driveway and woodland to the east, there were no established landscape features along the south-west boundary to define the site. The subsequent application in 2009 (09/00634/FUL) was refused on similar grounds, with the Reporter concluding that the site did not represent an identifiable site formed by landscape features and that the Housing in the Countryside policy does not support sites created through artificial boundaries.

It is noted that the Council's updated Housing in the Countryside Supplementary Guidance (2025) retains the same core principles, including the requirement that sites extending building groups must be defined by landscape features or topography and must not be artificially created. The current guidance explicitly states:

“Fencing or young trees or hedging planted with the specific intention of creating a site will not be accepted as existing landscape features for the purposes of this Supplementary Guidance”.

Review of historic and more recent imagery indicates that the hedge along the south-west boundary of the site was planted shortly before the determination of the 2009 application. In the view of the Planning Authority, and consistent with the previous appeal decisions, this hedge was planted with the intention of creating a development plot artificially and cannot be relied upon as a defining landscape feature. The passage of time does not alter its artificial origin for the purposes of policy assessment.

Accordingly, as advised in the pre-application response dated 12 May 2025, the site is not considered to comprise a definable site for the extension of a building group under Policy 19 and its associated Supplementary Guidance as it has been created artificially. The proposal therefore fails to meet the requirements of the Local Development Plan. As NPF4 supports greenfield development only where it accords with relevant LDP policies, the proposal is also contrary to national policy. The previous appeal decisions represent a material consideration, and no substantive change in policy or site circumstances has been identified which would justify a different conclusion in this case.

Visual Impact and Layout

Generally, the design and scale of development should respect its surroundings and adhere to Policies 1A and B of LDP2 which relate to placemaking and Policy 14 of NPF4 which seeks to deliver well designed development. Further guidance is also provided within the associated Placemaking Supplementary Guidance. The proposal also requires the landscape character of Local Landscape Area and meet the

requirements of Policy 39 of the LDP2. Policy 4(a) of NPF4 is also applicable and seeks to ensure that the development does not have an unacceptable impact on the natural environment.

As this is an application in principle this detail cannot be assessed at this stage.

Drainage

The application form indicates that the site is to connect to a private drainage system with surface water system catered for through a SUDS system. This is in accordance with Policy 53B and C of the LDP2 and Policy 22 of NPF4. The proposed introduction of a sustainable urban drainage system is considered to be sufficient to cater for surface water drainage at the site.

The proposed development is supported by a Drainage Impact Assessment which confirms that surface water will be managed on site in accordance with Policy 53C of the Perth and Kinross Local Development Plan (2019) and Policy 22 of National Planning Framework 4, through the use of an infiltration-based Sustainable Drainage System. Surface water runoff from roof areas is to be directed to a soakaway designed to accommodate a 1 in 200 year rainfall event with an allowance for climate change. In accordance with Policy 53B, foul drainage is to be addressed by a private secondary treatment system, with treated effluent discharged to ground via a soakaway, reflecting the absence of a public sewer connection. Subject to final detailed design and regulatory approvals, the proposed drainage arrangements are considered acceptable in principle.

Flood Risk

The application site is identified on SEPA's indicative Flood Maps as being subject to medium to high likelihood fluvial flooding from the Craig Burn. This mapping therefore indicates the site to be potentially at risk of flooding for the purposes of Policy 22 of National Planning Framework 4. However, the applicant has submitted a site-specific Flood Risk Assessment (dated 30 March 2026) which undertakes a detailed technical evaluation of flood risk, including a screening assessment, peak flow calculations incorporating climate change allowances, bridge capacity analysis and channel capacity assessment of the Craig Burn. The Flood Risk Assessment concludes that the Craig Burn has sufficient capacity to convey the design flood event (200-year plus climate change) and that no flooding within the site boundary is predicted. On this basis, the residual flood risk to the site is assessed as low, and the development is not considered to be located within a "flood risk area" as defined by NPF4 Policy 22. While SEPA's flood mapping represents a precautionary, strategic-level assessment, the site-specific technical evidence is considered to provide a more accurate representation of flood risk at this location. Subject to the conclusions of this assessment being accepted, and the implementation of recommended freeboard levels, it is therefore considered that the

proposal could comply with national and local flood risk policy requirements.

Access

The site is served by an existing private access lane. In accordance with Policy 60B of the Perth and Kinross Local Development Plan (2019), Policy 13 of National Planning Framework 4 and the National Roads Development Guide, development is required to demonstrate that safe and suitable access arrangements can be achieved. Transport Planning has confirmed that, in principle, the use of the existing private lane to serve the proposed single dwelling is acceptable and no objection has been raised to the proposal at this stage. The detailed design of the access, including any requirements relating to visibility, surface treatment and turning provision, would be secured by planning condition and would require to be submitted for approval as part of any subsequent detailed application.

Ecology

The application site currently comprises managed grassland with no evidence of priority habitats, mature trees or features of ecological significance, and is therefore considered to be of limited ecological value. Having regard to Policy 41 of the Perth and Kinross Local Development Plan (2019) and Policy 3 of National Planning Framework 4, which seek to safeguard and enhance biodiversity, it is not considered that the proposed development would result in any significant adverse impacts on habitats or protected species. On this basis, and given the nature and condition of the site, an ecological assessment is not required to support the application.

Developer Contributions

The Council Developer Contributions Supplementary Guidance requires a financial contribution towards increased primary school capacity in areas where a primary school capacity constraint has been identified. A capacity constraint is defined as where a primary school is operating at over 80% and is likely to be operating following completion of the proposed development, extant planning permissions and Local Development Plan allocations, at or above 100% of total capacity.

This proposal is within the catchment of Abernyte Primary School and the requirement for a developer contribution can be secured by condition and considered further at the detailed application stage.

Prime Agricultural Land

The Land Capability for Agriculture mapping identifies the site as Class 3.1 agricultural land. Policy 5 of National Planning Framework 4 seeks to protect prime agricultural land, which includes Classes 1, 2 and 3.1; however, particular emphasis is placed on safeguarding Class 1 and Class 2 land, which represent the best and most versatile agricultural resources capable of producing a wide range of crops. While Class 3.1 land is technically classified as prime agricultural land, it is of a lower quality than Classes 1 and 2 and is afforded a lesser degree of protection in planning terms. In this case, the proposal affects only a small area of Class 3.1 land when considered in the context of the extensive agricultural landholding and wider farmland resource in the surrounding area, and does not involve the loss of the highest quality agricultural land. On this basis, the impact on agricultural land is not considered to present a determining constraint in the assessment of the proposal against NPF4 Policy 5.

Economic Impact

The economic impact of the proposal is likely to be minimal and limited to the construction phase of the development.

PLANNING OBLIGATIONS AND LEGAL AGREEMENTS

None required.

DIRECTION BY SCOTTISH MINISTERS

None applicable to this proposal.

CONCLUSION AND REASONS FOR DECISION

To conclude, the application must be determined in accordance with the Development Plan unless material considerations indicate otherwise. In this respect, the proposal is considered to be contrary to the Development Plan. Account has been taken of the relevant material considerations and none has been found that would justify overriding the Development Plan.

Accordingly, the proposal is refused on the grounds identified below.

Reason for Refusal

1 The proposal is contrary to Policy 19 Housing in the Countryside of the Perth and Kinross Council Local Development Plan 2 (2019) and the associated Housing in the

Countryside Supplementary Guidance 2020 (SG). Whilst the site is located adjacent to a building group it cannot be considered to extend the group into a definable site as the landscaping/hedging which has been planted along the south-western boundary of the site has been planted with the sole purpose of creating a development site. The SG explicitly states that "fencing or young trees or hedging planted with the specific intention of creating a site will not be accepted as existing landscape features for the purposes of this Supplementary Guidance". The proposal also fails to meet any of the other categories of development outlined in the SG. The proposal is also contrary to Policy 9(b) of National Planning Framework 4 (NPF4) as the proposal is on a greenfield site and is not explicitly supported by policies of the Perth and Kinross Local Development Plan 2 (2019). The proposal also fails to meet any of the categories of development allowed by Policy 17: Rural Homes of NPF4.

Justification

The proposal is not in accordance with the Development Plan and there are no material reasons which justify departing from the Development Plan.

Informatives

None

Procedural Notes

Not Applicable.

PLANS AND DOCUMENTS RELATING TO THIS DECISION

01
02
03
04
05



Pullar House 35 Kinnoull Street Perth PH1 5GD Tel: 01738 475300 Email: onlineapps@pkc.gov.uk

Applications cannot be validated until all the necessary documentation has been submitted and the required fee has been paid.

Thank you for completing this application form:

ONLINE REFERENCE 100749913-001

The online reference is the unique reference for your online form only. The Planning Authority will allocate an Application Number when your form is validated. Please quote this reference if you need to contact the planning Authority about this application.

Type of Application

What is this application for? Please select one of the following: *

- Application for planning permission (including changes of use and surface mineral working).
- Application for planning permission in principle.
- Further application, (including renewal of planning permission, modification, variation or removal of a planning condition etc)
- Application for Approval of Matters specified in conditions.

Description of Proposal

Please describe the proposal including any change of use: * (Max 500 characters)

Dwellinghouse

Is this a temporary permission? *

Yes No

If a change of use is to be included in the proposal has it already taken place?
(Answer 'No' if there is no change of use.) *

Yes No

Has the work already been started and/or completed? *

No Yes – Started Yes - Completed

Applicant or Agent Details

Are you an applicant or an agent? * (An agent is an architect, consultant or someone else acting on behalf of the applicant in connection with this application)

Applicant Agent

Agent Details

Please enter Agent details

Company/Organisation:	Houghton Planning Ltd		
Ref. Number:		You must enter a Building Name or Number, or both: *	
First Name: *	Paul	Building Name:	Alloa Business Centre
Last Name: *	Houghton MRTPI	Building Number:	
Telephone Number: *		Address 1 (Street): *	Whins Road
Extension Number:		Address 2:	Alloa
Mobile Number:		Town/City: *	Clacks
Fax Number:		Country: *	Scotland
		Postcode: *	FK10 3RF
Email Address: *			

Is the applicant an individual or an organisation/corporate entity? *

Individual Organisation/Corporate entity

Applicant Details

Please enter Applicant details

Title:	Mr	You must enter a Building Name or Number, or both: *	
Other Title:		Building Name:	
First Name: *	Stuart	Building Number:	
Last Name: *	Heslop	Address 1 (Street): *	
Company/Organisation		Address 2:	
Telephone Number: *		Town/City: *	
Extension Number:		Country: *	
Mobile Number:		Postcode: *	
Fax Number:			
Email Address: *			

Site Address Details

Planning Authority:

Perth and Kinross Council

Full postal address of the site (including postcode where available):

Address 1:

Address 2:

Address 3:

Address 4:

Address 5:

Town/City/Settlement:

Post Code:

Please identify/describe the location of the site or sites

Land 50 metres South East of Craighurn House, Flawcraig, Rait, Perth, PH2 7RY

Northing

Easting

Pre-Application Discussion

Have you discussed your proposal with the planning authority? *

Yes No

Pre-Application Discussion Details Cont.

In what format was the feedback given? *

Meeting Telephone Letter Email

Please provide a description of the feedback you were given and the name of the officer who provided this feedback. If a processing agreement [note 1] is currently in place or if you are currently discussing a processing agreement with the planning authority, please provide details of this. (This will help the authority to deal with this application more efficiently.) * (max 500 characters)

.

Title:

Mr

Other title:

First Name:

John

Last Name:

Williamson

Correspondence Reference Number:

25/00061/PREAPL

Date (dd/mm/yyyy):

12/05/2025

Note 1. A Processing agreement involves setting out the key stages involved in determining a planning application, identifying what information is required and from whom and setting timescales for the delivery of various stages of the process.

Site Area

Please state the site area:

0.20

Please state the measurement type used:

Hectares (ha) Square Metres (sq.m)

Existing Use

Please describe the current or most recent use: * (Max 500 characters)

Vacant ground.

Access and Parking

Are you proposing a new altered vehicle access to or from a public road? *

Yes No

If Yes please describe and show on your drawings the position of any existing. Altered or new access points, highlighting the changes you propose to make. You should also show existing footpaths and note if there will be any impact on these.

Are you proposing any change to public paths, public rights of way or affecting any public right of access? *

Yes No

If Yes please show on your drawings the position of any affected areas highlighting the changes you propose to make, including arrangements for continuing or alternative public access.

Water Supply and Drainage Arrangements

Will your proposal require new or altered water supply or drainage arrangements? *

Yes No

Are you proposing to connect to the public drainage network (eg. to an existing sewer)? *

- Yes – connecting to public drainage network
 No – proposing to make private drainage arrangements
 Not Applicable – only arrangements for water supply required

As you have indicated that you are proposing to make private drainage arrangements, please provide further details.

What private arrangements are you proposing? *

- New/Altered septic tank.
 Treatment/Additional treatment (relates to package sewage treatment plants, or passive sewage treatment such as a reed bed).
 Other private drainage arrangement (such as chemical toilets or composting toilets).

Please explain your private drainage arrangements briefly here and show more details on your plans and supporting information: *

See Drainage Impact Assessment

Do your proposals make provision for sustainable drainage of surface water?? *
(e.g. SUDS arrangements) *

Yes No

Note:-

Please include details of SUDS arrangements on your plans

Selecting 'No' to the above question means that you could be in breach of Environmental legislation.

Are you proposing to connect to the public water supply network? *

Yes

No, using a private water supply

No connection required

If No, using a private water supply, please show on plans the supply and all works needed to provide it (on or off site).

Assessment of Flood Risk

Is the site within an area of known risk of flooding? *

Yes No Don't Know

If the site is within an area of known risk of flooding you may need to submit a Flood Risk Assessment before your application can be determined. You may wish to contact your Planning Authority or SEPA for advice on what information may be required.

Do you think your proposal may increase the flood risk elsewhere? *

Yes No Don't Know

Trees

Are there any trees on or adjacent to the application site? *

Yes No

If Yes, please mark on your drawings any trees, known protected trees and their canopy spread close to the proposal site and indicate if any are to be cut back or felled.

All Types of Non Housing Development – Proposed New Floorspace

Does your proposal alter or create non-residential floorspace? *

Yes No

Schedule 3 Development

Does the proposal involve a form of development listed in Schedule 3 of the Town and Country Planning (Development Management Procedure (Scotland) Regulations 2013 *

Yes No Don't Know

If yes, your proposal will additionally have to be advertised in a newspaper circulating in the area of the development. Your planning authority will do this on your behalf but will charge you a fee. Please check the planning authority's website for advice on the additional fee and add this to your planning fee.

If you are unsure whether your proposal involves a form of development listed in Schedule 3, please check the Help Text and Guidance notes before contacting your planning authority.

Planning Service Employee/Elected Member Interest

Is the applicant, or the applicant's spouse/partner, either a member of staff within the planning service or an elected member of the planning authority? *

Yes No

Certificates and Notices

CERTIFICATE AND NOTICE UNDER REGULATION 15 – TOWN AND COUNTRY PLANNING (DEVELOPMENT MANAGEMENT PROCEDURE) (SCOTLAND) REGULATION 2013

One Certificate must be completed and submitted along with the application form. This is most usually Certificate A, Form 1, Certificate B, Certificate C or Certificate E.

Are you/the applicant the sole owner of ALL the land? * Yes No

Is any of the land part of an agricultural holding? * Yes No

Are you able to identify and give appropriate notice to ALL the other owners? * Yes No

Certificate Required

The following Land Ownership Certificate is required to complete this section of the proposal:

Certificate B

Land Ownership Certificate

Certificate and Notice under Regulation 15 of the Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013

I hereby certify that

(1) - No person other than myself/the applicant was an owner [Note 4] of any part of the land to which the application relates at the beginning of the period of 21 days ending with the date of the accompanying application;

or –

(1) - I have/The Applicant has served notice on every person other than myself/the applicant who, at the beginning of the period of 21 days ending with the date of the accompanying application was owner [Note 4] of any part of the land to which the application relates.

Name:

Address:

Morris Leslie Partnership First Floor, South Inch Business Park, Shore Road, Perth, Scotland, PH2 8BW

Date of Service of Notice: *

02/04/2026

(2) - None of the land to which the application relates constitutes or forms part of an agricultural holding;

or –

(2) - The land or part of the land to which the application relates constitutes or forms part of an agricultural holding and I have/the applicant has served notice on every person other than myself/himself who, at the beginning of the period of 21 days ending with the date of the accompanying application was an agricultural tenant. These persons are:

Name:

Address:

Date of Service of Notice: *

Signed: Paul Houghton MRTPI

On behalf of: Mr Stuart Heslop

Date: 02/04/2026

Please tick here to certify this Certificate. *

Checklist – Application for Planning Permission

Town and Country Planning (Scotland) Act 1997

The Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013

Please take a few moments to complete the following checklist in order to ensure that you have provided all the necessary information in support of your application. Failure to submit sufficient information with your application may result in your application being deemed invalid. The planning authority will not start processing your application until it is valid.

a) If this is a further application where there is a variation of conditions attached to a previous consent, have you provided a statement to that effect? *

Yes No Not applicable to this application

b) If this is an application for planning permission or planning permission in principle where there is a crown interest in the land, have you provided a statement to that effect? *

Yes No Not applicable to this application

c) If this is an application for planning permission, planning permission in principle or a further application and the application is for development belonging to the categories of national or major development (other than one under Section 42 of the planning Act), have you provided a Pre-Application Consultation Report? *

Yes No Not applicable to this application

Town and Country Planning (Scotland) Act 1997

The Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013

d) If this is an application for planning permission and the application relates to development belonging to the categories of national or major developments and you do not benefit from exemption under Regulation 13 of The Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013, have you provided a Design and Access Statement? *

Yes No Not applicable to this application

e) If this is an application for planning permission and relates to development belonging to the category of local developments (subject to regulation 13. (2) and (3) of the Development Management Procedure (Scotland) Regulations 2013) have you provided a Design Statement? *

Yes No Not applicable to this application

f) If your application relates to installation of an antenna to be employed in an electronic communication network, have you provided an ICNIRP Declaration? *

Yes No Not applicable to this application

g) If this is an application for planning permission, planning permission in principle, an application for approval of matters specified in conditions or an application for mineral development, have you provided any other plans or drawings as necessary:

Site Layout Plan or Block plan.

Elevations.

Floor plans.

Cross sections.

Roof plan.

Master Plan/Framework Plan.

Landscape plan.

Photographs and/or photomontages.

Other.

If Other, please specify: * (Max 500 characters)

Provide copies of the following documents if applicable:

A copy of an Environmental Statement. * Yes N/A

A Design Statement or Design and Access Statement. * Yes N/A

A Flood Risk Assessment. * Yes N/A

A Drainage Impact Assessment (including proposals for Sustainable Drainage Systems). * Yes N/A

Drainage/SUDS layout. * Yes N/A

A Transport Assessment or Travel Plan Yes N/A

Contaminated Land Assessment. * Yes N/A

Habitat Survey. * Yes N/A

A Processing Agreement. * Yes N/A

Other Statements (please specify). (Max 500 characters)

Declare – For Application to Planning Authority

I, the applicant/agent certify that this is an application to the planning authority as described in this form. The accompanying Plans/drawings and additional information are provided as a part of this application.

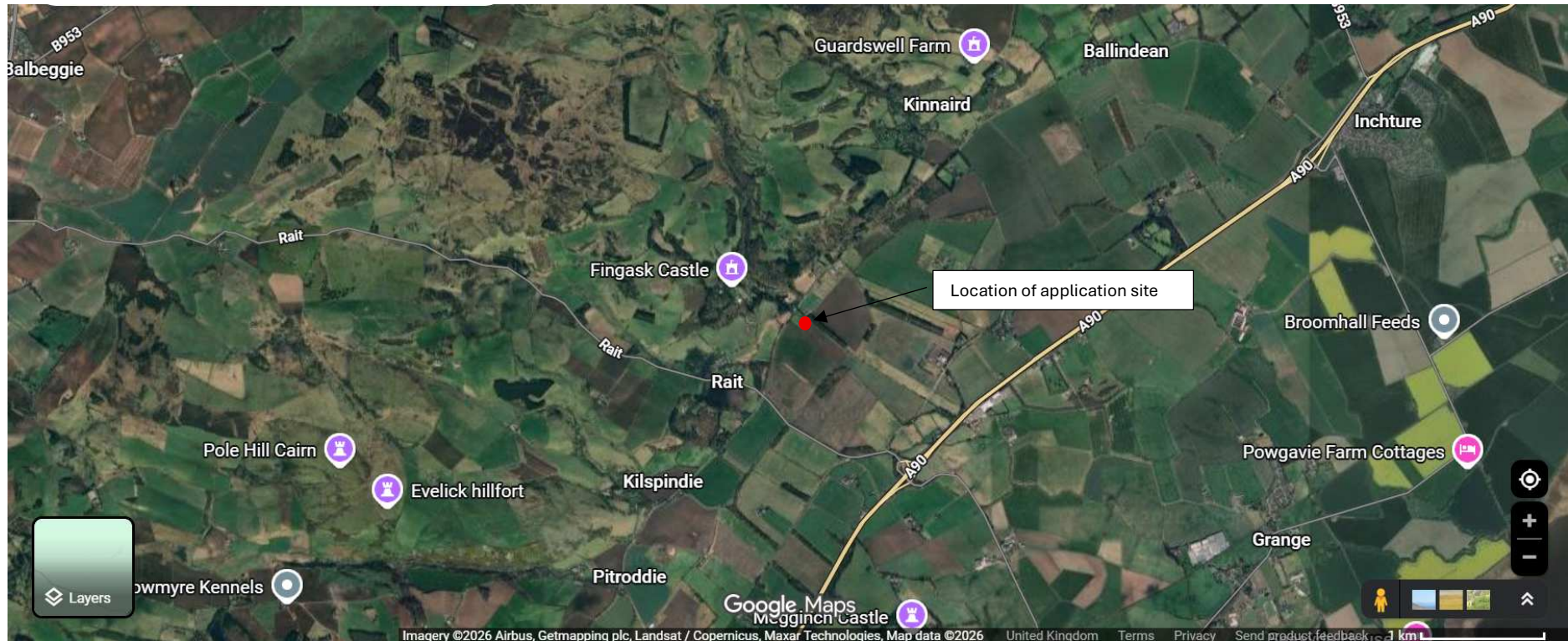
Declaration Name: Mr Paul Houghton MRTPI

Declaration Date: 02/04/2026

Payment Details

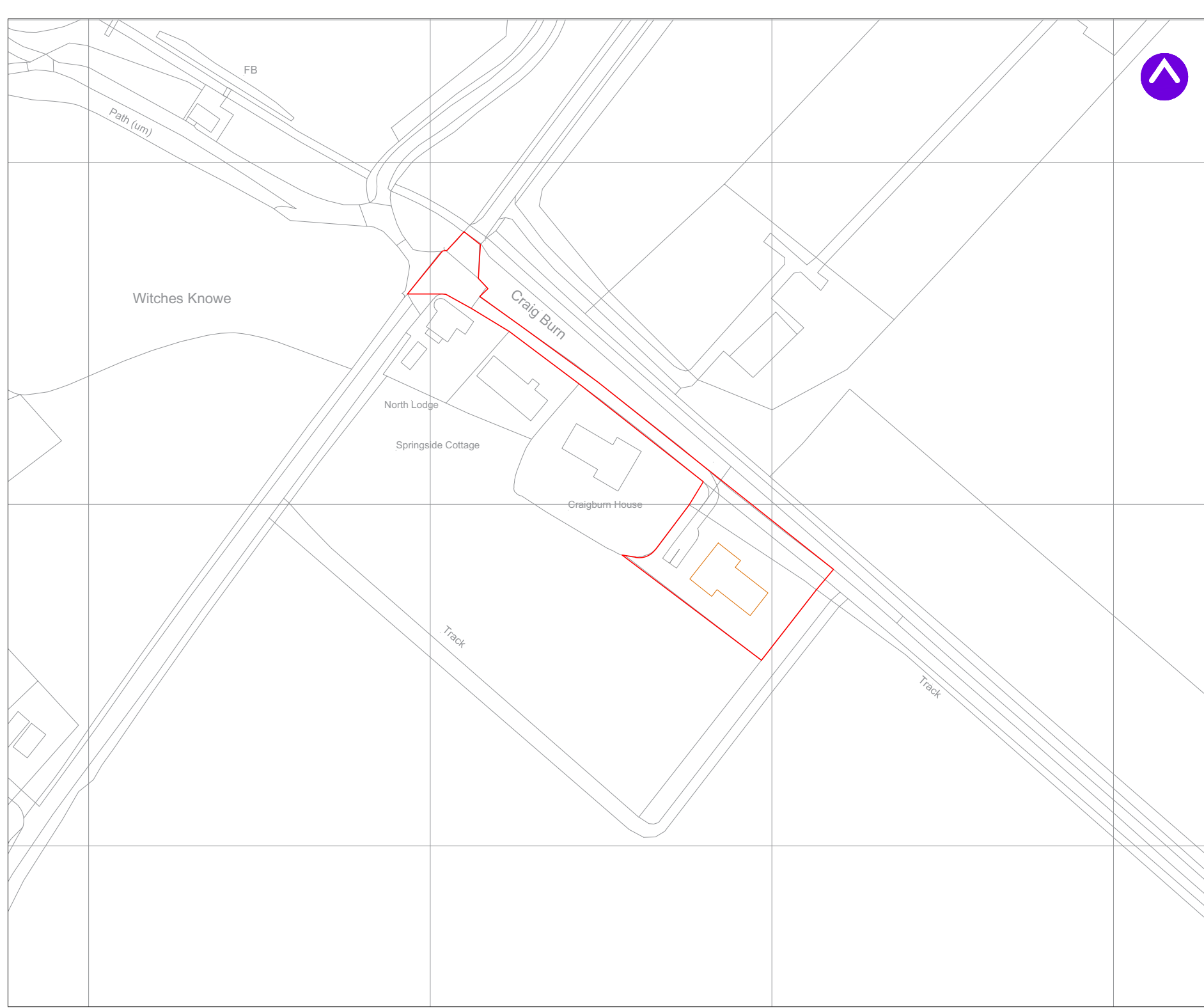
Pay Direct




Created: 02/04/2026 10:02

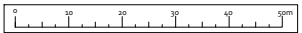


Land 50 metres South East of Craighurn House, Flawcraig, Rait, PH2 7RY





- Legend**
-  Site Boundary
 -  Proposed single dwelling house
 -  Proposed driveway and 2 no. parking spaces



Project: Land SE of Craigburn House, Flawcraig, Rait, Perth, PH2 7RY		Client: Stuart Heslop	
Drawing Title: Site Plan			
Scale: 1:500 @ A1 / 1:1,000 @ A3	Date: 28 / 03 / 2026		
Drawing No: CRA-HP-SP-02	Status: Planning		
Drawn by: L Houghton	Checked by: P Houghton		
☎ 07780 117708 🌐 houghtonplanning.co.uk			



GONDOLIN
Land & Water
Civil Engineering & Environmental Solutions

Craigburn House, Rait – Proposed Residential Development

Flood Risk Assessment

Client: Stuart Heslop
Project/Proposal No: GON.694.0406
Version: 2
Date: 30/03/2026





Document Information

Project Name:	Craigburn House, Rait – Proposed Residential Development
Document Title:	Flood Risk Assessment
Client Name:	Stuart Heslop
Document Status:	Final for Issue
Author:	Duncan Bowie
Reviewed:	Zak Ritchie
Approved:	Zak Ritchie
Approver Qualifications:	BEng(hons), MSc, C.WEM, C.Eng, MCIWEM
Date:	30/03/2026
Version:	2
Project/Proposal Number:	GON.694.0406

Revision History

Version	Date	Authored	Reviewed	Approved	Notes
1	22/04/2025	Duncan Bowie	Zak Ritchie	Zak Ritchie	For Issue
2	30/03/2026	Duncan Bowie	Zak Ritchie	Zak Ritchie	Revised Issue

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Appendix B – Peak Flow Analysis

Appendix C – Scottish Water Asset Plans

Appendix D – Site Photography

Drawings

Drawing FRA-001 – Site Location Plan

Drawing FRA-002 – Flood Risk Summary



1. Introduction

1.1 Preamble

Gondolin Land and Water Ltd (Gondolin) has been appointed by Mr Stuart Heslop (the Client) to prepare a Flood Risk Assessment (FRA) report in support of a planning application for the development of a dwelling house and associated works on land at Craighburn House, Fingask, Rait, Perth & Kinross, PH2 7RU.

This report addresses any potential flood risk to the proposed development from all possible sources in accordance with best practice and in accordance with policies presented by the National Planning Framework for Scotland 4 (NPF4)¹ and Perth and Kinross Council². A signed compliance certificate is included in Appendix A, to certify that this assessment has been carried out in accordance with the relevant guidance and legislation. A completed SEPA FRA checklist is also included within Appendix A.

The site was visited in January 2025 by a suitably qualified Hydrologist / Civil Engineer to inform the assessment and assessment overseen by a Chartered Hydrologist / Civil Engineer with >14 years experience of undertaking FRAs in Scotland.

1.2 Site Context and Proposed Development

The development site is located to the south of the existing Craighburn properties at approximate National Grid Reference (NGR): NO 23331 27173. The proposals are for a single residential dwelling on a 0.13ha plot in the east of the site neighbouring the existing properties. This plot is part of the wider 0.97ha site. There are no current proposals for this area. However, it will be included in this FRA for completeness.

The site is bounded by the existing Craighburn properties to the north, a minor road to the northwest and agricultural land on all other sides. Access is provided from the existing track bounding the site to the northeast or from the minor road in the west. The site currently consists of improved grassland surrounded by large hedges.

A site location plan is included as Drawing FRA-001.

1.3 Topography

An assessment of site topography has been undertaken using 1m resolution LiDAR data sourced from the Scottish Remote Sensing Portal in conjunction with on-site observations and measurements. The site slopes down to the south at an approximate gradient of 1 in 15. The maximum elevation of 20.5mAOD is located in the north next to the existing public road and the approximate minimum elevation of 14.8mAOD is found at the southern extent.

1.4 Geology and Hydrogeology

1.4.1 Geology

1.4.1.1 Superficial

Review of the British Geological Survey³ (BGS) online geology maps indicates that superficial deposits at the proposed development site are Glaciofluvial Ice Contact Deposits of gravel, sand and silt. The area around the site takes the appearance of an Alluvial Fan, formed on the Carse of Gowrie around the apex of the constricted upstream channel of the Craig Burn.

¹ The Scottish Government (2023) National Planning Framework 4, February 2023

² Perth & Kinross Council (2021) Flood Risk and Flood Risk Assessments

³ British Geological Survey (2025) Natural Environment Research Council – GeoIndex Onshore Viewer, available at: <https://www.bgs.ac.uk/map-viewers/geoindex-onshore/> (accessed on 20th February 2025)



1.4.1.2 Bedrock

Review of the BGS online geology maps shows that the bedrock geology at the development area is of the Glenvale Sandstone Formation. Brown, yellow, red, purple and cream feldspathic sandstones of the Devonian Epoch. Approximately 30m upgradient to the northwest, the bedrock transitions to andesite and pyroxene of the Ochil Volcanic Formation.

1.4.2 Hydrogeology

Review of the BGS online hydrogeology maps indicates that the underlying bedrock at the development area is of the Stratheden Group and hence is a moderately productive aquifer with Sandstone, partly pebbly with subordinate siltstone and mudstone producing moderate amounts of groundwater through intergranular flow.

1.5 Local Hydrology

Review of the Flood Estimation Handbook (FEH) Web Service⁴ and other available mapping shows that the Craig Burn passes the site approximately 10m to the northeast of the development boundary. The FEH Web Service provides a catchment of 5.61km² for the Craig Burn where it passes the development site. During the site hydrological survey, relevant site observations and measurements were taken of the Craig Burn, flood flow paths and other relevant information pertinent to this study. It was observed that the burn had been artificially straightened and deepened as is typical for 'pow' watercourses in the Gowrie region.

No other open watercourses are recorded within the vicinity of the proposed development area.

A hydrological summary and characteristics for the Craig Burn catchment at the development site are shown in Table 1 below. The data shown is taken from the FEH Web Service and the catchment characteristics of the site have been delineated from NGR: NO 23400 27200, a point in the watercourse immediately adjacent to the site.

Table 1 Catchment Hydrological Summary

Waterbody Catchment	Area (km ²)	SAAR ¹ (mm)	URBEXT ² (%)	PROPWET ³	SPRHOST ⁴ (%)	ALTBAR ⁵ (m)
Craig Burn	5.61	771	0	0.46	29.68	200

¹SAAR = Standard Annual Average Rainfall between 1961-1990

²URBEXT = Extent of Urban and Suburban Land Cover (1990)

³PROPWET = Proportion of Time the Soil Moisture Deficit (SMD) was equal to, or below, 6mm during 1961-1990

⁴SPRHOST = Standard Percentage Runoff using UK Hydrology of Soil Types (HOST) Classification

⁵ALTBAR = Mean Catchment Altitude

The FEH data indicates that the Craig Burn catchment experiences a moderate SAAR value for a Scottish catchment and that the catchment is essentially rural. An SPRHOST value of 29.68% indicates a low-moderate runoff potential.

2. Planning & Policy Context

2.1 Overview

This assessment has been completed in accordance with guidance presented within the National Planning Framework for Scotland 4 (NPF4) and taking cognisance of the Flood Risk Management (Scotland) Act 2009.

The assessment also references and takes due consideration (where appropriate) of the following principal guidance and policy documents:

- CIRIA (2004) Development and Flood Risk – Guidance for the Construction Industry, Report C624;

⁴ UK Centre for Ecology and Hydrology (2025) Flood Estimation handbook Web Service, available at: <https://fehweb.ceh.ac.uk/> (accessed on 27th February 2025)



- Perth & Kinross Council (2021) Flood Risk and Flood Risk Assessments, Adopted March 2021
- Angus Council (2016) Tay Estuary and Montrose Basin Local Flood Risk Management Plan (2016 – 2022);
- Angus Council (2021) Tay Estuary and Montrose Basin Local Flood Risk Management Plan (2022 – 2028);
- Scottish Environment Protection Agency (2024) Flood Risk and Land Use Vulnerability Guidance, Version 5, July 2024;
- Scottish Environment Protection Agency (2018) SEPA Development Plan Guidance Note 2a: Development Management Guidance: Flood Risk (Reference: LUPS-DM-GU2a), Version 2, July 2018;
- Scottish Environment Protection Agency (2023) Climate Change Allowances for Flood Risk Assessment in Land Use Planning (Reference: LUPS-CC1), Version 5, July 2024;
- Scottish Environment Protection Agency (2024) Flood Risk Standing Advice for Planning Authorities, July 2024.
- Scottish Environment Protection Agency Flood Risk Management Plan Tay Estuary and Montrose Basin Local Plan District (LPD7) (2021); and
- Scottish Environment Protection Agency (2022) Technical Flood Risk Guidance for Stakeholders (Reference: SS-NFR-P-002) June 2022.

It is noted that the recent release of NPF4 has resulted in potential incompatibility of some current SEPA and other stakeholder technical and policy guidance documents with regards to flood risk assessment in particular. SEPA have acknowledged that some of their current guidance documents are currently being reviewed / updated to align with NPF4 and information contained within their documents may no longer be valid. Therefore, it is unknown to what extent reliance can be placed on existing flood risk guidance / policy which has not been updated to reflect the principles of NPF4 Policy 22. These are matters entirely outwith Gondolin's control and professional judgement has been applied accordingly.

2.2 National Planning Policy

This report has been prepared in accordance with NPF4 Policy 22 relating to Flood Risk and Water Management, which states:

"Policy Intent:

To strengthen resilience to flood risk by promoting avoidance as a first principle and reducing the vulnerability of existing and future development to flooding.

Policy Outcomes:

- *Places are resilient to current and future flood risk.*
- *Water resources are used efficiently and sustainably.*
- *Wider use of natural flood risk management benefits people and nature."*

Furthermore, NPF4 states that development proposals at **risk of flooding or in a flood risk area** will only be supported if they are for:

- *"Essential infrastructure where the location is required for operational reasons;*
- *Water compatible uses;*
- *Redevelopment of an existing building or site for an equal or less vulnerable use; or.*
- *Redevelopment of previously used sites in built up areas where the LDP has identified a need to bring these into positive use and where proposals demonstrate that long-term safety and resilience can be secured in accordance with relevant SEPA advice".*

The definition of '**flood risk area**' or '**at risk of flooding**' in NPF4 is as follows:



"For planning purposes, at risk of flooding or in a flood risk area means land or built form with an annual probability of being flooded of greater than 0.5% which must include an appropriate allowance for future climate change. This risk of flooding is indicated on SEPA's future flood maps or may need to be assessed in a flood risk assessment. An appropriate allowance for climate change should be taken from the latest available guidance and evidence available for application in Scotland. The calculated risk of flooding can take account of any existing, formal flood protection schemes in determining the risk to the site. Where the risk of flooding is less than this threshold, areas will not be considered 'at risk of flooding' for planning purposes, but this does not mean there is no risk at all, just that the risk is sufficiently low to be acceptable for the purpose of planning. This includes areas where the risk of flooding is reduced below this threshold due to a formal flood protection scheme."

2.3 SEPA Flood Risk and Land Use Vulnerability Guidance

This guidance outlines how SEPA assess the vulnerability to flooding of different land use with the following categories:

- Most Vulnerable Uses;
- Highly Vulnerable Uses;
- Least Vulnerable Uses;
- Essential Infrastructure; and
- Water Compatible uses.

The following excerpt from the guidance is provided for context:

"This guidance supports [Policy 22 of the National Planning Framework 4 \(NPF4\)](#) by explaining vulnerability in a flooding context, and the relative vulnerability of different land uses to flooding. Policy 22 sets out exceptions where development can be permitted in a flood risk area. This guidance aims to support application of the first three of those exceptions, specifically the emboldened terms:

- i. **Essential infrastructure** where the location is required for operational reasons.
- ii. **Water compatible uses**; and
- iii. Redevelopment of an existing building or site for **an equal or less vulnerable use**."

2.4 SEPA Flood Risk Classifications

SEPA's online indicative Flood Map is used to categorise fluvial, surface water and coastal flood risk and these are defined as follows:

- **High Likelihood:** A flood event is likely to occur in the defined area on average once in every ten years (1:10) or a 10% AEP chance of happening in any one year;
- **Medium Likelihood:** A flood event is likely to occur in the defined area on average once in every two hundred years (1:200) or a 0.5% AEP chance of happening in any one year; and
- **Low likelihood:** A flood event is likely to occur in the defined area on average once in every thousand years (1:1000) or a 0.1% AEP chance of happening in any one year.

2.5 Proposed Development Suitability

With reference to SEPA Flood Risk and Land Use Vulnerability guidance the proposed development is considered to be in the **Highly Vulnerable Uses** category (i.e. residential dwellings) and will be suitable in flood risk planning terms if the site is not located within a 'flood risk area'. It is not expected that any of the exceptions outlined in Section 2.3 will apply to this site.



3. Flood Risk Assessment

3.1 Screening Assessment of Potential Source of Flood Risk

3.1.1 Overview

There are a number of potential sources of flooding which should be evaluated in accordance with best practice and NPF4 such as:

- Flooding from rivers or fluvial flooding;
- Flooding from the sea or tidal / coastal flooding;
- Flooding from land;
- Flooding from groundwater;
- Flooding from sewers; and
- Flooding from reservoirs, canals, and other artificial sources.

The flood risk from each of these potential sources is discussed in the following sections and a 'screening assessment' is presented in Section 3.1.9 which summarises the potential flood risk sources and if applicable, those requiring a more detailed analysis and specification of bespoke mitigation measures.

Flood 'risk' definitions within the screening exercise are based on a qualitative technical assessment and professional judgement taking into account the information reviewed, risk to site users and the proposed development itself.

3.1.2 Flood History

Fingask, Craighburn and the surrounding area is not classed as a Potentially Vulnerable Area (PVA) under the Tay Estuary and Montrose Basin Local Flood Risk Management Plan (LFRMP)⁵ and as such there is limited information available in regards to the flood history. SEPA's Flood Risk Management Maps do not identify any people or properties at risk of flooding and no record of historical flooding could be found elsewhere.

3.1.3 Fluvial Flooding

Review of SEPA's Fluvial Flood Map for the site indicates that a large area through the centre of the site is at '**Medium**' to '**High**' risk of fluvial flooding from the Craig Burn. The Craig Burn runs approximately 10 – 20m upgradient to the northeast in an artificially straightened channel. If the channel has inadequate capacity to convey the design flood, then it would overtop in a southerly direction towards the site as indicated on the maps.

As such, there is sufficient evidence to consider a potential '**High Risk**' of fluvial flooding at the site and therefore a further technical flood risk assessment will be conducted in a subsequent section.

3.1.4 Tidal/Coastal Flooding

Review of SEPA's Coastal Flooding Map for the site indicates that the site is located sufficiently inland and upgradient from tidally influenced waters and the coast, thus is not subject to any tidal or coastal flood risk.

As such there is '**No Risk**' of Flooding from this source and it is therefore not considered further in this assessment.

⁵ Scottish Environment Protection Agency (2021) Flood Risk Management Plan: Tay Estuary and Montrose Basin Local Plan District (LPD 7)



3.1.5 Flooding from Land (Pluvial or Surface Water Flooding)

Review of SEPA's Surface Water Flood Map shows no flood risk from this source at the development site. The site has a natural slope to the south which would allow rainfall runoff generated to be readily shed overland in the form of sheet flow.

Taking the above into account it is considered that there is '**Low Risk**' of surface water flooding to the site and it is therefore not considered further.

3.1.6 Groundwater Flooding

Review of SEPA's Groundwater Flood Map indicates the site and the surrounding local area are not located within a groundwater flooding area. Review of the site geology confirms the bedrock is a Class 1B aquifer producing moderate amounts of groundwater through intergranular flow.

Taking the above into account it is considered that there is a '**Low Risk**' of groundwater flooding and therefore flooding from this source is not considered further.

3.1.7 Flooding from Sewers / Drainage Systems

Scottish Water Asset Plans have been sourced for the area of the development and are appended to this document as Appendix C. These confirm there are no public sewers in the vicinity of the site. The three existing properties at Craighburn operate on small private wastewater treatment systems which do not present a material flood risk to the site. No other drainage features (road drainage, land drainage etc.) were observed during the site visit.

Taking this into account, it is considered that there is '**No Risk**' of flooding to the site from sewers and drainage systems and therefore this source is not considered further in the assessment.

3.1.8 Flooding from Infrastructure Failure / Blockage

Review of SEPA's Reservoir Flood Mapping indicates that there are no significant impoundments of water immediately upgradient and in hydraulic continuity with the site which would pose a flood risk to the site in the event of failure.

However, further upstream the Craig Burn passes through Fingask Castle Gardens. This includes two decorative ponds created with small dam structures, the largest of which is situated approximately 200m upstream of the site. These structures were inspected during the site visit and appeared in good condition, with outflows controlled by weirs. The weir at the downstream pond may have limited capacity due to the footbridge spanning it at a low level. However, should any backing-up occur, the pond would overflow onto the road to the southwest before returning to the watercourse shortly downstream. As exceedance flows from the pond would take this route, there is no erosional risk to the structure during an overtopping scenario.

A small historic reservoir known as the Mill Dam is also located approximately 1.1km upstream of the site to serve the now defunct Fingask Sawmill. However, due to the limited size, distance upstream and number of structures impeding flow downstream, any failure at this point is not predicted to result in a significant rapid release of water capable of affecting the proposed development site.

A small, covered (Scottish Water operated) reservoir dating from the 1950s is located upgradient at approximate NGR: NO 22684 27818 in the catchment of the Craig Burn. Historically failure of such structures has been an extreme low probability event and the water supply asset will be subject to rigorous monitoring and maintenance regime by Scottish Water. Therefore, the risk of failure is considered extremely low and the overall volume of water which could be released would be sufficiently attenuated / spread upstream of the site that it would not overwhelm channel / bridge capacities downstream and thus impact the site.

The covered reservoir is fed by a pumping station approximately 120m to the west of the site boundary, to the north of the existing minor road. In the event of a failure or leak at this location, flows would follow the natural topography to the south and away from the site. Two Scottish Water distribution mains (200mm and 250mm Ductile Iron) run from the pumping station across the southern corner of the site from west to east. In the extremely unlikely event of a leak / failure of the mains, flows will follow the topography and rapidly shed offsite to the south.



A curling pond is also marked on some maps; however, curling ponds are shallow temporary structures and as such are immaterial from a flood risk perspective.

In the event of failure of the aforementioned upstream culverts / structures on the Craighburn – due to the channel geometry / local topography, upstream flows would readily re-join the downstream channel and the effects would be very time limited before remedial actions are taken.

There are no other known water infrastructure features at / in proximity to the site which would pose a material flood risk in the event of failure.

Considering all the points above, the development site is at '**Low Risk**' of flooding from this source and therefore is not considered further in the assessment.

3.1.9 Flood Risk Screening Assessment Review

A summary of the potential flood risk to the site from the sources reviewed is presented in Table 2 below.

This 'Screening Assessment' is used to identify if any sources of flood risk are required to be investigated in more detail i.e. a 'Technical' more detailed assessment which would include consideration / specification of bespoke flood mitigation measures for the site development.

Table 2 Flood Risk Screening Assessment

Potential Flood Source	Screening Assessment of Flood Risk at Site ¹	Requiring Further Consideration i.e. Technical Assessment?
Fluvial flooding	High Risk	Yes
Tidal flooding	No Risk	No
Flooding from land / surface water	Low Risk	No
Groundwater flooding	Low Risk	No
Flooding from sewers / drainage systems	No Risk	No
Flooding due to infrastructure failure / blockage	Low Risk	No

Notes: ¹only Flood Risks designated as being 'medium' or 'high' warrant further investigation

The Screening Assessment above indicates that Fluvial Flooding requires further consideration in the context of the proposed development. This is discussed in detail in Section 4. All other sources of flooding have been identified as low risk or lower and therefore will not be considered further.

3.2 Climate Change

3.2.1 Context

The most recent Climate Change (CC) projections published by The UK Climate Impacts Programme are presented in report 'UKCP18'. Central estimates published in UKCP18 indicate marked increases in winter rainfall and decrease in summer rainfall but with more intense storms under all CO2 emissions scenarios across the majority of the country.

SEPA's most recent climate change allowances were published in April 2023⁶ and are based on UKCP18 findings in conjunction with The Centre for Ecology and Hydrology's (CEH) 2020 study⁷.

A climate change allowance in drainage and flood risk assessment terms is a prediction of anticipated change in peak river flow, peak rainfall intensity and sea level rise caused by future climate change.

⁶ Scottish Environment Protection Agency (2023) Climate change allowances for flood risk assessment in land use planning

⁷ Centre for Ecology & Hydrology (2021) Climate change impacts on peak river flows: Combining national-scale hydrological modelling and probabilistic projections



The allowances applied for sea level rise, peak river flow and peak rainfall intensity are determined by river basin regions across Scotland. SEPA have developed a web map⁸ to allow any location in Scotland to be identified for its applicable river basin region and respective climate change uplift allowances.

3.2.2 Peak River flow

With reference to SEPA's online climate change map service, the site is located within the Tay River Basin Region. The peak river flow allowance until 2100 for this region is a 53% uplift.

The Technical Fluvial Flood Risk Assessment has been carried out using the Peak Rainfall Intensity Allowance as SEPA guidance⁹ indicates this is more appropriate for small catchments.

3.2.3 Peak rainfall intensity

The peak rainfall intensity allowance until 2100 for the Tay River Basin Region is 39%.

A Technical Fluvial Flood Risk Assessment has been carried out with the above climate change allowance incorporated into the assessment. Therefore, the increase in peak river flow due to climate change has been accounted for. Further detail is available in Section 4.2.

3.2.4 Sea Level Rise

The cumulative sea level rise allowance until 2100 for the Tay River Basin Region is a 0.85m uplift.

This increase in predicted Sea Level rise will not increase the coastal flood risk to the site due to the distance from the site to the closest tidally influenced waters and elevation differential.

4. Technical Fluvial Flood Risk Assessment

4.1 Context

The screening assessment outlined above considers a potential **'High'** risk of flooding from fluvial sources attributed to the Craig Burn. SEPA's flood maps are not produced at a suitably accurate local scale to be relied upon for site specific assessments (as caveated by SEPA themselves) and thus a more detailed quantitative assessment has been undertaken to better understand the site-specific risk. As such, a technical assessment of fluvial flooding at the site has been undertaken.

The following sections provide an overview of the approach undertaken to more accurately determine the potential flood risk at the site. The approach included the estimation of peak flow within the Craig Burn using industry standard software and estimating the channel capacity at specific cross-sections upstream and adjacent to the development site.

4.2 Craig Burn Peak Flow Assessment

To inform the channel capacity assessment, an estimate of the peak flow has been undertaken using catchment characteristics obtained from the FEH Web Service in combination with the industry standard Revitalised Flood Hydrograph V.2 (ReFH2) software. Table 3 below presents the peak flow estimates for a range of return periods. The full ReFH2 analysis is included as Appendix B.

Table 3 Craig Burn Peak Flow Summary

Return Period (years)	AEP (%)	ReFH2 Peak Flow (m ³ /s)
2	50	1.54
10	10	2.49
30	3.3	3.23

⁸ SEPA Climate Change Allowances for Flood Risk Assessment in Land Use Planning: <https://scottishsepa.maps.arcgis.com/apps/webappviewer/index.html?id=2cdf84e295334f6b93bd0dbbb9ad7417>

⁹ Scottish Environment Protection Agency, Flood Modelling Guidance for Responsible Authorities, Version 1.1



Return Period (years)	AEP (%)	ReFH2 Peak Flow (m ³ /s)
100	1	4.28
200	0.5	5.03
200 +39% CC ¹	0.5 +39% CC	7.33
1,000	0.1	7.05

Notes: ¹ Climate change uplift of 39% applied to peak river flow estimates

As per SEPA guidance the flood design criteria for the site will be taken as the 200yr plus climate change uplift estimate of **7.33m³/s** as this yields the highest peak flow estimate (when compared with the 1,000yr estimate).

It is noted that the flood hydrograph at the site is likely to be heavily attenuated due to the presence of multiple bridges, culverts, ponds and weirs in the upstream catchment. The catchment descriptors and ReFH2 modelling methodology are unlikely to have fully accounted for this and therefore it is likely that above estimate of design flow is more conservative than that produced by other industry standard flow methods.

4.3 Bridge Capacity Assessment

4.3.1 Overview

Immediately upstream of the site, the Craig Burn passes beneath two arch bridges, which in the event of surcharging or blockage may back up to inundate areas outwith the natural floodplain of the watercourse. Therefore, a capacity assessment of the structures has been undertaken to determine their capability to convey the peak flow in the river.

4.3.2 Assessment

The capacity of the Bridge S-01 (upstream) has been assessed using the application of the Colebrook-White equation for calculating flow within a pipe. A summary of the calculations conducted is provided in Table 4 below.

Table 4 Bridge Capacity Assessment

Parameter	Units	Value	Notes
Cross-sectional Area	m ²	2.014	Based on site specific measurements
Slope	-	0.025	Measured from LiDAR data
Roughness Coefficient	-	15	Conservative assumption for old brickwork
Estimated Capacity	m ³ /s	9.25	Estimated from published hydraulic tables
Design Peak Flow	m ³ /s	7.33	As per Section 4.2.

The above assessment indicates the bridge has sufficient capacity to convey the design peak and as such would not materially restrict the peak flow and create a material backing up effect and / or overtopping of the structure. It is likely there would be some localised 'afflux' and throttling of flow through the structure due to the geometry of the bridge and channel.

Bridge S-02 (downstream) has approximately double the cross-sectional area of Bridge S-01 and as such will also have adequate capacity to accommodate the peak flow.

4.3.3 Blockage Scenarios & Exceedance Routes

If a blockage / overtopping scenario were to occur upstream of the site, it would occur at Bridge S-01 as this is upstream and has a significantly more limited cross section than Bridge S-02. Water would back-up along the river channel to an elevation of approximately 22.0mAOD before overtopping the road and immediately returning to channel on the downstream side. There are no walls or parapets on the road to inhibit exceedance flows at this location.



4.4 Channel Capacity Assessment

4.4.1 Overview

An assessment of channel capacity within the Craig Burn at the site location has been undertaken downstream of the road bridge (S-02) to determine if the channel can convey the expected peak flow as estimated above. 4no. cross-sections have been assessed at positions upstream and adjacent to the site which were considered to have the highest risk of flooding out of bank (e.g. least capacity). The channel capacity has been estimated using the open channel Manning's Equation, information obtained from site observations / measurements and LiDAR data sourced from the Scottish Remote Sensing Portal. Table 5 below provides an overview of the measured parameters and estimated capacity for the respective cross sections. The location of each cross section is provided on Drawing FRA-002.

Table 5 Manning's Equation Channel Capacity Summary

Parameter	Units	CS-01	CS-02	CS-03	CS-04	Notes
Area (A)	m ²	6.42	6.94	9.13	7.63	Based on site specific measurements
Wetted Perimeter (P)	m	7.66	7.59	10.30	8.74	Based on site specific measurements
Hydraulic Radius (R)	m	0.838	0.914	0.886	0.873	$R = \frac{A}{P}$
Slope (S)	-	0.0182	0.0182	0.0182	0.0182	Measured using LiDAR data (slope estimation of watercourse between cross-sections) and adopting a conservative approach by using the lowest slope value
Manning's Coefficient (n)	-	0.045	0.045	0.045	0.045	Conservative published value for channel roughness based on site observations
Velocity (V)	m/s	2.665	2.823	2.766	2.739	$V = \frac{R^{0.67} \times S^{0.5}}{n}$
Channel Capacity (Q)	m ³ /s	17.12	19.57	25.27	20.91	$Q = VA$

The assessment has provided channel capacities ranging from **17.12m³/s** to **25.27m³/s** upstream to downstream. This will provide adequate capacity to contain the design peak estimate of **7.33m³/s**.

4.4.2 Outcomes

The channel capacity assessment shown above clearly indicates that during the design flood event (200yr + 39%), flows would be retained within the channel of the Craig Burn. It is clear that SEPA's Fluvial Flood Maps do not accurately represent fluvial flood risk from the Craig Burn. It is highly likely that the indicative modelling methodology adopted by the SEPA Flood Maps (which are not to be relied upon for site specific assessments) use at best a 5m DTM at the site / surrounding area and this resolution is not sufficient to capture the channel with sufficient detail. Site observations and more detailed LiDAR data sourced from the Scottish Remote Sensing Portal clearly support this.

4.5 Fluvial Flood Risk Summary

The Bridge Capacity Assessment has shown that both bridges have more than sufficient capacity for the design peak flow on the Craig Burn (200 yr + 39%). In the case of an exceedance flood flow considerably greater than this, or a major blockage scenario at the structure, flows would overtop the bridge and return to channel immediately downstream.

The Channel Capacity Assessment confirms that under the most conservative assumptions the channel would contain the peak flow with ample freeboard. As such no fluvial flooding within the site boundary is predicted.



Taking into account the points above, it is considered that the residual flood risk from fluvial sources is considered to be **'Low'**. Therefore, the development is not located in a 'Flood Risk Area' as defined by NPF4 Policy 22 and the development proposals are compliant with current policy regarding flood risk.

4.6 Recommendations

Due to the Low Risk of flooding assessed, no formal flood risk mitigation measures are proposed for the site based on the FRA undertaken.

However, in accordance with current best practice and guidance provided by CIRIA, it is recommended that a minimum freeboard of 600mm is provided between the finished ground floor level of the development and existing surrounding ground levels.

5. Closure

Gondolin Land and Water Ltd (Gondolin) has been appointed by Mr Stuart Heslop (the Client) to prepare a Flood Risk Assessment (FRA) report in support of a planning application for the development of a residential dwelling and associated works on land at Craighburn, Fingask, Rait, Perth & Kinross, PH2 7RU.

In accordance with national planning policy and guidance, all potential sources of flooding to the site have been considered. The Flood Risk Screening Assessment confirms that the site is overall of 'Low Risk' or lower from flooding from all sources with the exception of fluvial flooding.

A further Technical Assessment for fluvial flood risk was conducted, incorporating a Bridge Capacity Assessment and a Channel Capacity Assessment for the Craig Burn. The results confirmed the design flood on the watercourse would be contained by the channel and therefore there is a 'Low Risk' of fluvial flooding within the site boundary.

As per NPF4 Policy 22, the proposed development is considered not to be located in a 'Flood Risk Area' and therefore the proposals are compliant in flood risk planning policy terms.

Taking all of the above into account it is considered there is no impediment to the proposed development being granted planning permission in principle on the grounds of flood risk.



APPENDICES



Appendix A

PKC Certification and SEPA Checklist

Appendix B - Assessment Compliance Certification and Insurance

Assessment Compliance Certification

I certify that all reasonable skill, care and attention has been exercised in undertaking the attached Flood Risk Assessment/ Drainage Impact Assessment/Surface Water Drainage Design* (*delete as appropriate*). The documentation has been prepared for the below noted development in accordance with the PKC Developers' Guidance Note on Flooding and Drainage.

Name of Development

Craigburn House - Proposed Residential Development

Address of Development

Craigburn

Fingask, Rait,
Perth & Kinross, PH2 7RU

Name of Developer

Stuart Heslop

Planning Application Number

N/A

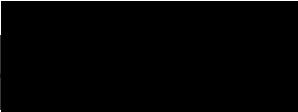
Name and Address of Organisation Preparing this Assessment

Gondolin Land & Water Ltd

26 Leith Walk

Edinburgh, EH6 5AA

Signed



Name

Zak Ritchie

Position Held

Managing Director

Engineering Qualification⁽¹⁾

C.Eng, C.WEM, MCIWEM

⁽¹⁾ Chartered Engineer or equivalent from an appropriate Engineering Institution.

Date

30/03/2026

Insurance

Please attach a copy of your professional indemnity insurance policy to this document.



Flood Risk Assessment (FRA) Checklist

Scotland's 4th National Planning Framework has recently been published. This document is therefore being reviewed and updated to reflect the new policies. You can still find useful and relevant information here but be aware that some parts may be out of date and our responses to planning applications may not match the information set out here.

(SS-NFR-F-001 - Version 16 - Last updated 27/08/2019)

This document must be attached within the front cover of any Flood Risk Assessments issued to Local Planning Authorities (LPA) in support of a development proposal which may be at risk of flooding. The document will take only a few minutes to complete and will assist SEPA in reviewing FRAs, when consulted by LPAs. This document should not be a substitute for a FRA.

Development Proposal Summary

Site Name:	Craigburn House		
Grid Reference:	Easting: 323333	Northing: 727179	
Local Authority:	Perth and Kinross Council		
Planning Reference number (if known):	N/A		
Nature of the development:	Residential	If residential, state type:	2no. Residential Properties
Size of the development site:	0.97	Ha	
Identified Flood Risk:	Source: Fluvial	Source name:	Craig Burn

Land Use Planning

Is any of the site within the functional floodplain? (refer to SPP para 255)	No	If yes, what is the net loss of storage?		m ³
Is the site identified within the local development plan?	No	Local Development Plan Name:		Year of Publication:
If yes, what is the proposed use for the site as identified in the local plan?	Select from List	Allocation Number / Reference:		
Does the local development plan and/or any pre-application advice, identify any flood risk issues with or requirements for the site.	Select from List	If Other please specify:		
What is the proposed land use vulnerability?	Highly Vulnerable	If so, please specify:		
		Do the proposals represent an increase in land use vulnerability?	Yes	

Supporting Information

Have clear maps / plans been provided within the FRA (including topographic and flood inundation plans)?	Yes		
Has sufficient supporting information, in line with our Technical Guidance, been provided? For example: site plans, photos, topographic information, structure information and other site specific information.	Yes		
Has a historic flood search been undertaken?	Yes	If flood records in vicinity of the site please provide details:	
Is a formal flood prevention scheme present?	No	If known, state the standard of protection offered:	
Current / historical site use:	Agricultural		
Is the site considered vacant or derelict?	No		

Development Requirements

Freeboard on design water level:		m
Is safe / dry access and egress available?	Vehicular and Pedestrian	Min access/egress level: m AOD
Design levels:	Ground level:	Min FFL: m AOD

Mitigation

Can development be designed to avoid all areas at risk of flooding?	Yes
Is mitigation proposed?	No
If yes, is compensatory storage necessary?	Select from List
Demonstration of compensatory storage on a "like for like" basis?	Select from List
Should water resistant materials and forms of construction be used?	Select from List

Flood Risk Assessment (FRA) Checklist

(SS-NFR-F-001 - Version 16 - Last updated 27/08/2019)

Hydrology	
Is there a requirement to consider fluvial flooding?	Yes
Area of catchment:	5.61 km ²
Estimation method(s) used (please select all that apply):	<input type="checkbox"/> Pooled Analysis <input type="checkbox"/> Single Site Analysis <input type="checkbox"/> Enhanced Single Site <input checked="" type="checkbox"/> ReFH2 <input type="checkbox"/> FEH RRM <input type="checkbox"/> Other
Estimate of 200 year design flood flow:	5.03 m ³ /s
Qmed estimate:	m ³ /s
Statistical Distribution Selected:	Select from List
Is a map of catchment area included in FRA?	No
If Pooled analysis have group details been included?	Select from List
If other (please specify methodology used):	
Method:	Catchment Descriptors
Reasons for selection:	
Hydraulics	
Hydraulic modelling method:	Manning
Number of cross sections:	4
Source of data (i.e. topographic survey, LiDAR etc):	Site measurements
Modelled reach length:	m
Any changes to default simulation parameters?	
Model timestep:	
Model grid size:	Select from List
Any structures within the modelled length?	
Maximum observed velocity:	m/s
Brief summary of sensitivity tests, and range:	
variation on flow (%)	%
variation on channel roughness (%)	%
blockage of structure (range of % blocked)	%
boundary conditions:	
(1) type	Upstream
(2) does it influence water levels at the site?	Downstream
Has model been calibrated (gauge data / flood records)?	Select from List
Is the hydraulic model available to SEPA?	Select from List
Design flood levels:	
Cross section results provided?	200 year N/A m AOD
Long section results provided?	Select from List
Cross section ratings provided?	Select from List
Tabular output provided (i.e. levels, velocities)?	Select from List
Mass balance error:	%
200 year plus climate change	N/A m AOD
Coastal	
Is there a requirement to consider coastal / tidal flooding?	Select from List
Estimate of 200 year design flood level:	m AOD
Estimation method(s) used:	Select from List
Allowance for climate change (m):	m
Allowance for wave action etc (m):	m
Overall design flood level:	m AOD
Approved by:	Zak Ritchie
Organisation:	Gondolin Land & Water
Date:	30/03/2026
<p>Note: Further details and guidance is provided in 'Technical Flood Risk Guidance for Stakeholders' which can be accessed here:- CLICK HERE</p>	



Appendix B

Peak Flow Estimation

UK Design Flood Estimation

Generated on 21 February 2025 09:22:32 by DuncanBowie
Printed from the ReFH2 Flood Modelling software package, version 4.1.8879.22466

Summary of estimate using the Flood Estimation Handbook revitalised flood hydrograph method (ReFH2)

Site details

Checksum: D4EF-CBD6

Site name: Craig Burn

Easting: 323400

Northing: 727200

Country: Scotland

Catchment Area (km²): 5.61

Using plot scale calculations: No

Model: 2.3

Site description: None

Model run: 200 year 1.39 CC

Summary of results

Rainfall - FEH22 (mm):	84.76	Total runoff (ML):	91.81
Total Rainfall (mm):	55.25	Total flow (ML):	295.06
Peak Rainfall (mm):	9.43	Peak flow (m ³ /s):	7.33

Parameters

Where the user has overridden a system-generated value, this original value is shown in square brackets after the value used.

** Indicates that the user locked the duration/timestep*

Rainfall parameters (Rainfall - FEH22)

Name	Value	User-defined?
Duration (hh:mm:ss)	03:45:00	No
Timestep (hh:mm:ss)	00:15:00	No
SCF (Seasonal correction factor)	0.68	No
ARF (Areal reduction factor)	0.96	No
Seasonality	Winter	No
Climate change factor	1.39	Yes

Loss model parameters

Name	Value	User-defined?
Cini (mm)	100.55	No
Cmax (mm)	434.46	No
Use alpha correction factor	No	No
Alpha correction factor	n/a	No

Routing model parameters

Name	Value	User-defined?
Tp (hr)	2	No
Up	0.65	No
Uk	0.8	No

Baseflow model parameters

Name	Value	User-defined?
BF0 (m ³ /s)	0.11	No
BL (hr)	31.61	No
BR	2.23	No

Urbanisation parameters

Name	Value	User-defined?
Sewer capacity (m ³ /s)	0	No
Exporting drained area (km ²)	0	No
Urban area (km ²)	0.03	No
Effective URBEXT2000	0	n/a
Impervious runoff factor	0.7	No
Imperviousness factor	0.4	No
Tp scaling factor	0.75	No
Depression storage depth (mm)	0.5	No

Time series data

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
00:00:00	0.826	0.000	0.193	0.000	0.114	0.114
00:15:00	1.207	0.000	0.285	0.006	0.113	0.119
00:30:00	1.759	0.000	0.421	0.028	0.112	0.140
00:45:00	2.557	0.000	0.625	0.072	0.112	0.184
01:00:00	3.700	0.000	0.931	0.149	0.113	0.263
01:15:00	5.319	0.000	1.393	0.277	0.116	0.393
01:30:00	7.542	0.000	2.087	0.479	0.122	0.600
01:45:00	9.427	0.000	2.792	0.792	0.132	0.923
02:00:00	7.542	0.000	2.381	1.260	0.149	1.409
02:15:00	5.319	0.000	1.758	1.884	0.175	2.058
02:30:00	3.700	0.000	1.261	2.615	0.212	2.827
02:45:00	2.557	0.000	0.890	3.406	0.263	3.668
03:00:00	1.759	0.000	0.621	4.211	0.327	4.537
03:15:00	1.207	0.000	0.430	4.983	0.404	5.387
03:30:00	0.826	0.000	0.296	5.668	0.493	6.161
03:45:00	0.000	0.000	0.000	6.198	0.592	6.791
04:00:00	0.000	0.000	0.000	6.491	0.698	7.189
04:15:00	0.000	0.000	0.000	6.526	0.806	7.331
04:30:00	0.000	0.000	0.000	6.358	0.912	7.270
04:45:00	0.000	0.000	0.000	6.048	1.013	7.061
05:00:00	0.000	0.000	0.000	5.642	1.107	6.749
05:15:00	0.000	0.000	0.000	5.177	1.193	6.369
05:30:00	0.000	0.000	0.000	4.684	1.270	5.953
05:45:00	0.000	0.000	0.000	4.192	1.337	5.529
06:00:00	0.000	0.000	0.000	3.736	1.396	5.131
06:15:00	0.000	0.000	0.000	3.333	1.447	4.779
06:30:00	0.000	0.000	0.000	2.972	1.491	4.463
06:45:00	0.000	0.000	0.000	2.643	1.528	4.171
07:00:00	0.000	0.000	0.000	2.335	1.560	3.895
07:15:00	0.000	0.000	0.000	2.044	1.586	3.630
07:30:00	0.000	0.000	0.000	1.767	1.607	3.374
07:45:00	0.000	0.000	0.000	1.502	1.623	3.125
08:00:00	0.000	0.000	0.000	1.247	1.634	2.881
08:15:00	0.000	0.000	0.000	1.002	1.641	2.643

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
08:30:00	0.000	0.000	0.000	0.771	1.644	2.415
08:45:00	0.000	0.000	0.000	0.561	1.643	2.204
09:00:00	0.000	0.000	0.000	0.384	1.638	2.022
09:15:00	0.000	0.000	0.000	0.248	1.631	1.879
09:30:00	0.000	0.000	0.000	0.153	1.621	1.774
09:45:00	0.000	0.000	0.000	0.089	1.611	1.700
10:00:00	0.000	0.000	0.000	0.048	1.599	1.647
10:15:00	0.000	0.000	0.000	0.022	1.587	1.609
10:30:00	0.000	0.000	0.000	0.008	1.575	1.583
10:45:00	0.000	0.000	0.000	0.001	1.563	1.564
11:00:00	0.000	0.000	0.000	0.000	1.550	1.550
11:15:00	0.000	0.000	0.000	0.000	1.538	1.538
11:30:00	0.000	0.000	0.000	0.000	1.526	1.526
11:45:00	0.000	0.000	0.000	0.000	1.514	1.514
12:00:00	0.000	0.000	0.000	0.000	1.502	1.502
12:15:00	0.000	0.000	0.000	0.000	1.490	1.490
12:30:00	0.000	0.000	0.000	0.000	1.479	1.479
12:45:00	0.000	0.000	0.000	0.000	1.467	1.467
13:00:00	0.000	0.000	0.000	0.000	1.455	1.455
13:15:00	0.000	0.000	0.000	0.000	1.444	1.444
13:30:00	0.000	0.000	0.000	0.000	1.432	1.432
13:45:00	0.000	0.000	0.000	0.000	1.421	1.421
14:00:00	0.000	0.000	0.000	0.000	1.410	1.410
14:15:00	0.000	0.000	0.000	0.000	1.399	1.399
14:30:00	0.000	0.000	0.000	0.000	1.388	1.388
14:45:00	0.000	0.000	0.000	0.000	1.377	1.377
15:00:00	0.000	0.000	0.000	0.000	1.366	1.366
15:15:00	0.000	0.000	0.000	0.000	1.355	1.355
15:30:00	0.000	0.000	0.000	0.000	1.345	1.345
15:45:00	0.000	0.000	0.000	0.000	1.334	1.334
16:00:00	0.000	0.000	0.000	0.000	1.324	1.324
16:15:00	0.000	0.000	0.000	0.000	1.313	1.313
16:30:00	0.000	0.000	0.000	0.000	1.303	1.303
16:45:00	0.000	0.000	0.000	0.000	1.293	1.293
17:00:00	0.000	0.000	0.000	0.000	1.282	1.282

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
17:15:00	0.000	0.000	0.000	0.000	1.272	1.272
17:30:00	0.000	0.000	0.000	0.000	1.262	1.262
17:45:00	0.000	0.000	0.000	0.000	1.252	1.252
18:00:00	0.000	0.000	0.000	0.000	1.242	1.242
18:15:00	0.000	0.000	0.000	0.000	1.233	1.233
18:30:00	0.000	0.000	0.000	0.000	1.223	1.223
18:45:00	0.000	0.000	0.000	0.000	1.213	1.213
19:00:00	0.000	0.000	0.000	0.000	1.204	1.204
19:15:00	0.000	0.000	0.000	0.000	1.194	1.194
19:30:00	0.000	0.000	0.000	0.000	1.185	1.185
19:45:00	0.000	0.000	0.000	0.000	1.175	1.175
20:00:00	0.000	0.000	0.000	0.000	1.166	1.166
20:15:00	0.000	0.000	0.000	0.000	1.157	1.157
20:30:00	0.000	0.000	0.000	0.000	1.148	1.148
20:45:00	0.000	0.000	0.000	0.000	1.139	1.139
21:00:00	0.000	0.000	0.000	0.000	1.130	1.130
21:15:00	0.000	0.000	0.000	0.000	1.121	1.121
21:30:00	0.000	0.000	0.000	0.000	1.112	1.112
21:45:00	0.000	0.000	0.000	0.000	1.103	1.103
22:00:00	0.000	0.000	0.000	0.000	1.095	1.095
22:15:00	0.000	0.000	0.000	0.000	1.086	1.086
22:30:00	0.000	0.000	0.000	0.000	1.078	1.078
22:45:00	0.000	0.000	0.000	0.000	1.069	1.069
23:00:00	0.000	0.000	0.000	0.000	1.061	1.061
23:15:00	0.000	0.000	0.000	0.000	1.052	1.052
23:30:00	0.000	0.000	0.000	0.000	1.044	1.044
23:45:00	0.000	0.000	0.000	0.000	1.036	1.036
24:00:00	0.000	0.000	0.000	0.000	1.028	1.028
24:15:00	0.000	0.000	0.000	0.000	1.020	1.020
24:30:00	0.000	0.000	0.000	0.000	1.011	1.011
24:45:00	0.000	0.000	0.000	0.000	1.004	1.004
25:00:00	0.000	0.000	0.000	0.000	0.996	0.996
25:15:00	0.000	0.000	0.000	0.000	0.988	0.988
25:30:00	0.000	0.000	0.000	0.000	0.980	0.980
25:45:00	0.000	0.000	0.000	0.000	0.972	0.972

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
26:00:00	0.000	0.000	0.000	0.000	0.965	0.965
26:15:00	0.000	0.000	0.000	0.000	0.957	0.957
26:30:00	0.000	0.000	0.000	0.000	0.949	0.949
26:45:00	0.000	0.000	0.000	0.000	0.942	0.942
27:00:00	0.000	0.000	0.000	0.000	0.935	0.935
27:15:00	0.000	0.000	0.000	0.000	0.927	0.927
27:30:00	0.000	0.000	0.000	0.000	0.920	0.920
27:45:00	0.000	0.000	0.000	0.000	0.913	0.913
28:00:00	0.000	0.000	0.000	0.000	0.905	0.905
28:15:00	0.000	0.000	0.000	0.000	0.898	0.898
28:30:00	0.000	0.000	0.000	0.000	0.891	0.891
28:45:00	0.000	0.000	0.000	0.000	0.884	0.884
29:00:00	0.000	0.000	0.000	0.000	0.877	0.877
29:15:00	0.000	0.000	0.000	0.000	0.870	0.870
29:30:00	0.000	0.000	0.000	0.000	0.863	0.863
29:45:00	0.000	0.000	0.000	0.000	0.857	0.857
30:00:00	0.000	0.000	0.000	0.000	0.850	0.850
30:15:00	0.000	0.000	0.000	0.000	0.843	0.843
30:30:00	0.000	0.000	0.000	0.000	0.837	0.837
30:45:00	0.000	0.000	0.000	0.000	0.830	0.830
31:00:00	0.000	0.000	0.000	0.000	0.823	0.823
31:15:00	0.000	0.000	0.000	0.000	0.817	0.817
31:30:00	0.000	0.000	0.000	0.000	0.811	0.811
31:45:00	0.000	0.000	0.000	0.000	0.804	0.804
32:00:00	0.000	0.000	0.000	0.000	0.798	0.798
32:15:00	0.000	0.000	0.000	0.000	0.792	0.792
32:30:00	0.000	0.000	0.000	0.000	0.785	0.785
32:45:00	0.000	0.000	0.000	0.000	0.779	0.779
33:00:00	0.000	0.000	0.000	0.000	0.773	0.773
33:15:00	0.000	0.000	0.000	0.000	0.767	0.767
33:30:00	0.000	0.000	0.000	0.000	0.761	0.761
33:45:00	0.000	0.000	0.000	0.000	0.755	0.755
34:00:00	0.000	0.000	0.000	0.000	0.749	0.749
34:15:00	0.000	0.000	0.000	0.000	0.743	0.743
34:30:00	0.000	0.000	0.000	0.000	0.737	0.737

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
34:45:00	0.000	0.000	0.000	0.000	0.731	0.731
35:00:00	0.000	0.000	0.000	0.000	0.726	0.726
35:15:00	0.000	0.000	0.000	0.000	0.720	0.720
35:30:00	0.000	0.000	0.000	0.000	0.714	0.714
35:45:00	0.000	0.000	0.000	0.000	0.709	0.709
36:00:00	0.000	0.000	0.000	0.000	0.703	0.703
36:15:00	0.000	0.000	0.000	0.000	0.697	0.697
36:30:00	0.000	0.000	0.000	0.000	0.692	0.692
36:45:00	0.000	0.000	0.000	0.000	0.687	0.687
37:00:00	0.000	0.000	0.000	0.000	0.681	0.681
37:15:00	0.000	0.000	0.000	0.000	0.676	0.676
37:30:00	0.000	0.000	0.000	0.000	0.670	0.670
37:45:00	0.000	0.000	0.000	0.000	0.665	0.665
38:00:00	0.000	0.000	0.000	0.000	0.660	0.660
38:15:00	0.000	0.000	0.000	0.000	0.655	0.655
38:30:00	0.000	0.000	0.000	0.000	0.650	0.650
38:45:00	0.000	0.000	0.000	0.000	0.644	0.644
39:00:00	0.000	0.000	0.000	0.000	0.639	0.639
39:15:00	0.000	0.000	0.000	0.000	0.634	0.634
39:30:00	0.000	0.000	0.000	0.000	0.629	0.629
39:45:00	0.000	0.000	0.000	0.000	0.624	0.624
40:00:00	0.000	0.000	0.000	0.000	0.619	0.619
40:15:00	0.000	0.000	0.000	0.000	0.615	0.615
40:30:00	0.000	0.000	0.000	0.000	0.610	0.610
40:45:00	0.000	0.000	0.000	0.000	0.605	0.605
41:00:00	0.000	0.000	0.000	0.000	0.600	0.600
41:15:00	0.000	0.000	0.000	0.000	0.595	0.595
41:30:00	0.000	0.000	0.000	0.000	0.591	0.591
41:45:00	0.000	0.000	0.000	0.000	0.586	0.586
42:00:00	0.000	0.000	0.000	0.000	0.581	0.581
42:15:00	0.000	0.000	0.000	0.000	0.577	0.577
42:30:00	0.000	0.000	0.000	0.000	0.572	0.572
42:45:00	0.000	0.000	0.000	0.000	0.568	0.568
43:00:00	0.000	0.000	0.000	0.000	0.563	0.563
43:15:00	0.000	0.000	0.000	0.000	0.559	0.559

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
43:30:00	0.000	0.000	0.000	0.000	0.555	0.555
43:45:00	0.000	0.000	0.000	0.000	0.550	0.550
44:00:00	0.000	0.000	0.000	0.000	0.546	0.546
44:15:00	0.000	0.000	0.000	0.000	0.542	0.542
44:30:00	0.000	0.000	0.000	0.000	0.537	0.537
44:45:00	0.000	0.000	0.000	0.000	0.533	0.533
45:00:00	0.000	0.000	0.000	0.000	0.529	0.529
45:15:00	0.000	0.000	0.000	0.000	0.525	0.525
45:30:00	0.000	0.000	0.000	0.000	0.521	0.521
45:45:00	0.000	0.000	0.000	0.000	0.516	0.516
46:00:00	0.000	0.000	0.000	0.000	0.512	0.512
46:15:00	0.000	0.000	0.000	0.000	0.508	0.508
46:30:00	0.000	0.000	0.000	0.000	0.504	0.504
46:45:00	0.000	0.000	0.000	0.000	0.500	0.500
47:00:00	0.000	0.000	0.000	0.000	0.496	0.496
47:15:00	0.000	0.000	0.000	0.000	0.492	0.492
47:30:00	0.000	0.000	0.000	0.000	0.489	0.489
47:45:00	0.000	0.000	0.000	0.000	0.485	0.485
48:00:00	0.000	0.000	0.000	0.000	0.481	0.481
48:15:00	0.000	0.000	0.000	0.000	0.477	0.477
48:30:00	0.000	0.000	0.000	0.000	0.473	0.473
48:45:00	0.000	0.000	0.000	0.000	0.470	0.470
49:00:00	0.000	0.000	0.000	0.000	0.466	0.466
49:15:00	0.000	0.000	0.000	0.000	0.462	0.462
49:30:00	0.000	0.000	0.000	0.000	0.459	0.459
49:45:00	0.000	0.000	0.000	0.000	0.455	0.455
50:00:00	0.000	0.000	0.000	0.000	0.451	0.451
50:15:00	0.000	0.000	0.000	0.000	0.448	0.448
50:30:00	0.000	0.000	0.000	0.000	0.444	0.444
50:45:00	0.000	0.000	0.000	0.000	0.441	0.441
51:00:00	0.000	0.000	0.000	0.000	0.437	0.437
51:15:00	0.000	0.000	0.000	0.000	0.434	0.434
51:30:00	0.000	0.000	0.000	0.000	0.431	0.431
51:45:00	0.000	0.000	0.000	0.000	0.427	0.427
52:00:00	0.000	0.000	0.000	0.000	0.424	0.424

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
52:15:00	0.000	0.000	0.000	0.000	0.420	0.420
52:30:00	0.000	0.000	0.000	0.000	0.417	0.417
52:45:00	0.000	0.000	0.000	0.000	0.414	0.414
53:00:00	0.000	0.000	0.000	0.000	0.411	0.411
53:15:00	0.000	0.000	0.000	0.000	0.407	0.407
53:30:00	0.000	0.000	0.000	0.000	0.404	0.404
53:45:00	0.000	0.000	0.000	0.000	0.401	0.401
54:00:00	0.000	0.000	0.000	0.000	0.398	0.398
54:15:00	0.000	0.000	0.000	0.000	0.395	0.395
54:30:00	0.000	0.000	0.000	0.000	0.392	0.392
54:45:00	0.000	0.000	0.000	0.000	0.388	0.388
55:00:00	0.000	0.000	0.000	0.000	0.385	0.385
55:15:00	0.000	0.000	0.000	0.000	0.382	0.382
55:30:00	0.000	0.000	0.000	0.000	0.379	0.379
55:45:00	0.000	0.000	0.000	0.000	0.376	0.376
56:00:00	0.000	0.000	0.000	0.000	0.373	0.373
56:15:00	0.000	0.000	0.000	0.000	0.370	0.370
56:30:00	0.000	0.000	0.000	0.000	0.368	0.368
56:45:00	0.000	0.000	0.000	0.000	0.365	0.365
57:00:00	0.000	0.000	0.000	0.000	0.362	0.362
57:15:00	0.000	0.000	0.000	0.000	0.359	0.359
57:30:00	0.000	0.000	0.000	0.000	0.356	0.356
57:45:00	0.000	0.000	0.000	0.000	0.353	0.353
58:00:00	0.000	0.000	0.000	0.000	0.350	0.350
58:15:00	0.000	0.000	0.000	0.000	0.348	0.348
58:30:00	0.000	0.000	0.000	0.000	0.345	0.345
58:45:00	0.000	0.000	0.000	0.000	0.342	0.342
59:00:00	0.000	0.000	0.000	0.000	0.340	0.340
59:15:00	0.000	0.000	0.000	0.000	0.337	0.337
59:30:00	0.000	0.000	0.000	0.000	0.334	0.334
59:45:00	0.000	0.000	0.000	0.000	0.332	0.332
60:00:00	0.000	0.000	0.000	0.000	0.329	0.329
60:15:00	0.000	0.000	0.000	0.000	0.326	0.326
60:30:00	0.000	0.000	0.000	0.000	0.324	0.324
60:45:00	0.000	0.000	0.000	0.000	0.321	0.321

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
61:00:00	0.000	0.000	0.000	0.000	0.319	0.319
61:15:00	0.000	0.000	0.000	0.000	0.316	0.316
61:30:00	0.000	0.000	0.000	0.000	0.314	0.314
61:45:00	0.000	0.000	0.000	0.000	0.311	0.311
62:00:00	0.000	0.000	0.000	0.000	0.309	0.309
62:15:00	0.000	0.000	0.000	0.000	0.306	0.306
62:30:00	0.000	0.000	0.000	0.000	0.304	0.304
62:45:00	0.000	0.000	0.000	0.000	0.302	0.302
63:00:00	0.000	0.000	0.000	0.000	0.299	0.299
63:15:00	0.000	0.000	0.000	0.000	0.297	0.297
63:30:00	0.000	0.000	0.000	0.000	0.295	0.295
63:45:00	0.000	0.000	0.000	0.000	0.292	0.292
64:00:00	0.000	0.000	0.000	0.000	0.290	0.290
64:15:00	0.000	0.000	0.000	0.000	0.288	0.288
64:30:00	0.000	0.000	0.000	0.000	0.285	0.285
64:45:00	0.000	0.000	0.000	0.000	0.283	0.283
65:00:00	0.000	0.000	0.000	0.000	0.281	0.281
65:15:00	0.000	0.000	0.000	0.000	0.279	0.279
65:30:00	0.000	0.000	0.000	0.000	0.276	0.276
65:45:00	0.000	0.000	0.000	0.000	0.274	0.274
66:00:00	0.000	0.000	0.000	0.000	0.272	0.272
66:15:00	0.000	0.000	0.000	0.000	0.270	0.270
66:30:00	0.000	0.000	0.000	0.000	0.268	0.268
66:45:00	0.000	0.000	0.000	0.000	0.266	0.266
67:00:00	0.000	0.000	0.000	0.000	0.264	0.264
67:15:00	0.000	0.000	0.000	0.000	0.262	0.262
67:30:00	0.000	0.000	0.000	0.000	0.260	0.260
67:45:00	0.000	0.000	0.000	0.000	0.257	0.257
68:00:00	0.000	0.000	0.000	0.000	0.255	0.255
68:15:00	0.000	0.000	0.000	0.000	0.253	0.253
68:30:00	0.000	0.000	0.000	0.000	0.251	0.251
68:45:00	0.000	0.000	0.000	0.000	0.249	0.249
69:00:00	0.000	0.000	0.000	0.000	0.247	0.247
69:15:00	0.000	0.000	0.000	0.000	0.246	0.246
69:30:00	0.000	0.000	0.000	0.000	0.244	0.244

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
69:45:00	0.000	0.000	0.000	0.000	0.242	0.242
70:00:00	0.000	0.000	0.000	0.000	0.240	0.240
70:15:00	0.000	0.000	0.000	0.000	0.238	0.238
70:30:00	0.000	0.000	0.000	0.000	0.236	0.236
70:45:00	0.000	0.000	0.000	0.000	0.234	0.234
71:00:00	0.000	0.000	0.000	0.000	0.232	0.232
71:15:00	0.000	0.000	0.000	0.000	0.230	0.230
71:30:00	0.000	0.000	0.000	0.000	0.229	0.229
71:45:00	0.000	0.000	0.000	0.000	0.227	0.227
72:00:00	0.000	0.000	0.000	0.000	0.225	0.225
72:15:00	0.000	0.000	0.000	0.000	0.223	0.223
72:30:00	0.000	0.000	0.000	0.000	0.222	0.222
72:45:00	0.000	0.000	0.000	0.000	0.220	0.220
73:00:00	0.000	0.000	0.000	0.000	0.218	0.218
73:15:00	0.000	0.000	0.000	0.000	0.216	0.216
73:30:00	0.000	0.000	0.000	0.000	0.215	0.215
73:45:00	0.000	0.000	0.000	0.000	0.213	0.213
74:00:00	0.000	0.000	0.000	0.000	0.211	0.211
74:15:00	0.000	0.000	0.000	0.000	0.210	0.210
74:30:00	0.000	0.000	0.000	0.000	0.208	0.208
74:45:00	0.000	0.000	0.000	0.000	0.206	0.206
75:00:00	0.000	0.000	0.000	0.000	0.205	0.205
75:15:00	0.000	0.000	0.000	0.000	0.203	0.203
75:30:00	0.000	0.000	0.000	0.000	0.201	0.201
75:45:00	0.000	0.000	0.000	0.000	0.200	0.200
76:00:00	0.000	0.000	0.000	0.000	0.198	0.198
76:15:00	0.000	0.000	0.000	0.000	0.197	0.197
76:30:00	0.000	0.000	0.000	0.000	0.195	0.195
76:45:00	0.000	0.000	0.000	0.000	0.194	0.194
77:00:00	0.000	0.000	0.000	0.000	0.192	0.192
77:15:00	0.000	0.000	0.000	0.000	0.191	0.191
77:30:00	0.000	0.000	0.000	0.000	0.189	0.189
77:45:00	0.000	0.000	0.000	0.000	0.188	0.188
78:00:00	0.000	0.000	0.000	0.000	0.186	0.186
78:15:00	0.000	0.000	0.000	0.000	0.185	0.185

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
78:30:00	0.000	0.000	0.000	0.000	0.183	0.183
78:45:00	0.000	0.000	0.000	0.000	0.182	0.182
79:00:00	0.000	0.000	0.000	0.000	0.180	0.180
79:15:00	0.000	0.000	0.000	0.000	0.179	0.179
79:30:00	0.000	0.000	0.000	0.000	0.178	0.178
79:45:00	0.000	0.000	0.000	0.000	0.176	0.176
80:00:00	0.000	0.000	0.000	0.000	0.175	0.175
80:15:00	0.000	0.000	0.000	0.000	0.173	0.173
80:30:00	0.000	0.000	0.000	0.000	0.172	0.172
80:45:00	0.000	0.000	0.000	0.000	0.171	0.171
81:00:00	0.000	0.000	0.000	0.000	0.169	0.169
81:15:00	0.000	0.000	0.000	0.000	0.168	0.168
81:30:00	0.000	0.000	0.000	0.000	0.167	0.167
81:45:00	0.000	0.000	0.000	0.000	0.165	0.165
82:00:00	0.000	0.000	0.000	0.000	0.164	0.164
82:15:00	0.000	0.000	0.000	0.000	0.163	0.163
82:30:00	0.000	0.000	0.000	0.000	0.161	0.161
82:45:00	0.000	0.000	0.000	0.000	0.160	0.160
83:00:00	0.000	0.000	0.000	0.000	0.159	0.159
83:15:00	0.000	0.000	0.000	0.000	0.158	0.158
83:30:00	0.000	0.000	0.000	0.000	0.156	0.156
83:45:00	0.000	0.000	0.000	0.000	0.155	0.155
84:00:00	0.000	0.000	0.000	0.000	0.154	0.154
84:15:00	0.000	0.000	0.000	0.000	0.153	0.153
84:30:00	0.000	0.000	0.000	0.000	0.152	0.152
84:45:00	0.000	0.000	0.000	0.000	0.150	0.150
85:00:00	0.000	0.000	0.000	0.000	0.149	0.149
85:15:00	0.000	0.000	0.000	0.000	0.148	0.148
85:30:00	0.000	0.000	0.000	0.000	0.147	0.147
85:45:00	0.000	0.000	0.000	0.000	0.146	0.146
86:00:00	0.000	0.000	0.000	0.000	0.145	0.145
86:15:00	0.000	0.000	0.000	0.000	0.143	0.143
86:30:00	0.000	0.000	0.000	0.000	0.142	0.142
86:45:00	0.000	0.000	0.000	0.000	0.141	0.141
87:00:00	0.000	0.000	0.000	0.000	0.140	0.140

Time (hh:mm:ss)	Rain (mm)	Sewer Loss (m ³ /s)	Net Rain (mm)	Runoff (m ³ /s)	Baseflow (m ³ /s)	Total Flow (m ³ /s)
87:15:00	0.000	0.000	0.000	0.000	0.139	0.139
87:30:00	0.000	0.000	0.000	0.000	0.138	0.138
87:45:00	0.000	0.000	0.000	0.000	0.137	0.137
88:00:00	0.000	0.000	0.000	0.000	0.136	0.136
88:15:00	0.000	0.000	0.000	0.000	0.135	0.135
88:30:00	0.000	0.000	0.000	0.000	0.134	0.134
88:45:00	0.000	0.000	0.000	0.000	0.132	0.132
89:00:00	0.000	0.000	0.000	0.000	0.131	0.131
89:15:00	0.000	0.000	0.000	0.000	0.130	0.130
89:30:00	0.000	0.000	0.000	0.000	0.129	0.129
89:45:00	0.000	0.000	0.000	0.000	0.128	0.128
90:00:00	0.000	0.000	0.000	0.000	0.127	0.127
90:15:00	0.000	0.000	0.000	0.000	0.126	0.126
90:30:00	0.000	0.000	0.000	0.000	0.125	0.125
90:45:00	0.000	0.000	0.000	0.000	0.124	0.124
91:00:00	0.000	0.000	0.000	0.000	0.123	0.123
91:15:00	0.000	0.000	0.000	0.000	0.122	0.122
91:30:00	0.000	0.000	0.000	0.000	0.121	0.121
91:45:00	0.000	0.000	0.000	0.000	0.120	0.120
92:00:00	0.000	0.000	0.000	0.000	0.120	0.120
92:15:00	0.000	0.000	0.000	0.000	0.119	0.119
92:30:00	0.000	0.000	0.000	0.000	0.118	0.118
92:45:00	0.000	0.000	0.000	0.000	0.117	0.117
93:00:00	0.000	0.000	0.000	0.000	0.116	0.116
93:15:00	0.000	0.000	0.000	0.000	0.115	0.115

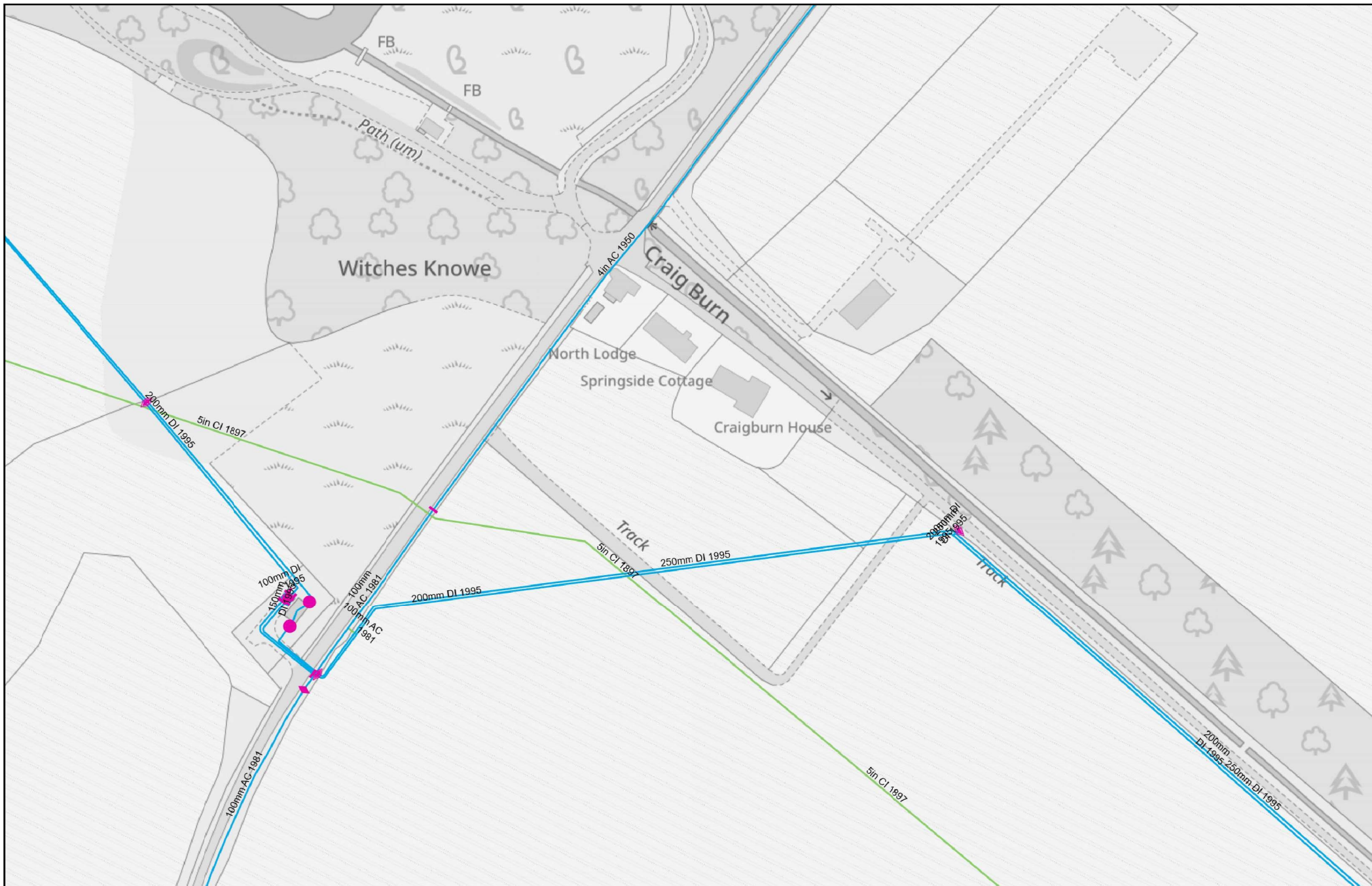
Appendix

Catchment descriptors

Name	Value	User-defined value used?
Area (km ²)	5.61	No
ALTBAR	200	No
ASPBAR	155	No
ASPVAR	0.28	No
BFIHOST	0.6	No
BFIHOST19	0.51	No
DPLBAR (km)	3.05	No
DPSBAR (mkm ⁻¹)	147.8	No
FARL	0.98	No
LDP	5.26	No
PROPWET	0.46	No
RMED1H	9.1	No
RMED1D	35.8	No
RMED2D	46.4	No
SAAR (mm)	771	No
SAAR4170 (mm)	810	No
SPRHOST	29.68	No
URBEXT2000	0	No
URBEXT1990	0	No
URBCONC	0	No
URBLOC	0	No
DDF parameter C	-0.02	No
DDF parameter D1	0.46	No
DDF parameter D2	0.41	No
DDF parameter D3	0.26	No
DDF parameter E	0.25	No
DDF parameter F	2.2	No
DDF parameter C (1km grid value)	-0.02	No
DDF parameter D1 (1km grid value)	0.48	No
DDF parameter D2 (1km grid value)	0.43	No
DDF parameter D3 (1km grid value)	0.29	No
DDF parameter E (1km grid value)	0.25	No
DDF parameter F (1km grid value)	2.15	No



Appendix C
Scottish Water Asset Plans



Warning! Damaging a large diameter trunk main (12"/300mm and above) can result in loss of life and major water supply and water quality problems. If you're planning any extension work in the vicinity of any large diameter mains shown on our maps, you must contact Scottish Water to arrange a site visit 08000 778 778 WELL IN ADVANCE OF THE WORKS

Plotted By: Duncan.bowie@gondolinktd.co.uk



The representation of physical assets and the boundaries of areas in which Scottish Water and others have an interest does not necessarily imply their true positions. For further details contact the appropriate District office.

Date: 28/02/2025

Craighurn Water & Wastewater Plans

0 5 10 20 Meters

SCALE: 1:1,323

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The Bridge
 6 Buchanan Gate
 Stepps
 Glasgow
 G33 6FB

Tel No: 08000 778 778

Fittings

Valve	End Cap
Valve - Abandoned	Abandoned
Valve	Adopted
Pressure Management Valve	In Use
Abandoned	Isolated
Adopted	Proposed
Isolated	Removed
Pressure Reducing	Unknown
Pressure Relief	Air Shaft
Pressure Sustaining	Abandoned
Proposed	Adopted
Removed	Isolated
Unknown	Pipe
Hydrant	Proposed
Abandoned	Removed
Adopted	Shaft
Ball	Unknown
Fire	Swab Chamber
Isolated	Abandoned
Proposed	Adopted
Removed	Hatch Box
Shipping	Isolated
Unknown	Joint
Washout	Proposed
Stop Cock	Removed
Abandoned	T and Blank Plate
Adopted	Unknown
In Use	Boundary Box
Isolated	
Proposed	Pressure Monitoring Point
Removed	
Unknown	

Chamber Box	Air Valve
Abandoned	AV
Access Chamber	Abandoned
Adopted	Adopted
Danelaw Box	Air Cock
General	DAV
Isolated	HAV
Lucy Box	Isolated
Other	Proposed
Proposed	Removed
Removed	SAV
Swabbing	TAV
Unknown	Unknown
Collecting Chamber	Blank Tee
	Abandoned
Discharge Point	Adopted
Buchan Trap	Flanged Plate
Isolated	Isolated
New Subtype	Other
Other	Other_
Proposed	Proposed
Proudfoot Box	Removed
Removed	Unknown
Undefined Scour Point	
Unknown	
Unknown End	
Wet Chamber	

Pipes

Main - Water Distribution Public	Main - Water Distribution Private
Abandoned, Public	Abandoned, Private
Adopted, Public	Abandoned, Private (Operated by Scottish Water)
Bypass, Public	Adopted, Private
Distribution, Public	Bypass, Private
Drain, Public	Distribution, Private
Fire, Public	Distribution, Private (Operated by Scottish Water)
Isolated, Public	Drain, Private
Overflow, Public	Distribution, Private (Operated by Scottish Water)
Proposed, Public	Fire, Private
Removed, Public	Fire, Private (Operated by Scottish Water)
Sludge, Public	Isolated, Private
Trunk, Public	Overflow, Private
Washout, Public	Overflow, Private (Operated by Scottish Water)
Main - Water Distribution	Proposed, Private
Service Pipe	Proposed, Private (Operated by Scottish Water)
Abandoned	Removed, Private
Communication	Sludge, Private
Communication - Fire Connection	Sludge, Private (Operated by Scottish Water)
Isolated	Trunk, Private
Proposed	Washout, Private
Removed	Washout, Private (Operated by Scottish Water)
Service	Main - Raw Water
Supply - Common	Abandoned
Supply - Fire Main	Isolated
Supply - Single	Overflow
Service Pipe General	Proposed
Aqueduct	Raw Supply
Abandoned	Removed
Aqueduct	Syphon
Tunnel - Aqueduct	Washout
Viaduct	



Fittings

Access (Lateral)

- Abandoned
- Combined (C)
- Foul (F)
- Proposed
- Surface Water (S)

Chamber

- Abandoned
- CSO
- Combined
- Foul
- Dual Manhole - Foul
- Dual Manhole - Surface
- Isolated
- Natural Water
- Not Applicable
- Other
- Planned
- Proposed
- Surface Water
- Trade Effluent
- Treated Effluent
- Unknown
- Unknown_

Combined Sewer Overflow

- CSO-COMB SEW O/FL

Balancing Pond



Basin



Bifurcation Chamber

- Abandoned
- Combined (C)
- Foul (F)
- Isolated
- Planned
- Proposed
- Surface Water (S)
- Unknown

Sewerage Air Valve

- Combined (C)
- Isolated
- Abandoned
- CSO (O)
- Foul (F)
- Other
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Unknown

Buchan Trap

- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Isolated
- Natural Water (W)
- Other
- Proposed
- Surface Water (S)
- Treated Effluent (E)
- Unknown(Z)

Capped End

- Abandoned
- Accepted
- Adopted
- In Use
- Isolated
- Not Applicable
- Planned
- Proposed
- Removed
- Unknown

Unknown End

- Abandoned
- Unknown End

Washout

- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Natural Water (W)
- Other
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Unknown

Wetland



Vent Column



Outfall

- Planned
- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Isolated
- Natural Water (W)
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Unknown
- Unknown_

Pond



Trench



Sluice Valve

- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Isolated
- Natural Water (W)
- Other
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)

Hatchbox

- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Isolated
- Natural Water (W)
- Other
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Unknown

Hydraulic Control Chamber

- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Natural Water (W)
- Planned
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Unknown

Pipes

Gravity Pipe

- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Natural Water (W)
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Gravity Pipe General

Connection (Lateral)

- Abandoned
- Combined (C)
- Foul (F)
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Connection (Lateral) General

Rising Main

- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Rising Main General

Syphon

- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Natural Water (W)
- Surface Water (S)
- Treated Effluent (E)



Appendix D
Site Photography













DRAWINGS



LEGEND

-  PLANNING BOUNDARY
-  ASSESSMENT AREA

01	03/26	REVISED ISSUE	DB	ZR
00	04/25	INITIAL ISSUE	DB	ZR
REV	DATE	DESCRIPTION	BY	CHK

CLIENT:
STUART HESLOP

PROJECT:
CRAIGBURN HOUSE

DRAWING TITLE:
SITE LOCATION PLAN

SCALE:
1:2,000 @ A3

DATE:
MARCH 2026

DRAWING NUMBER:
FRA-001

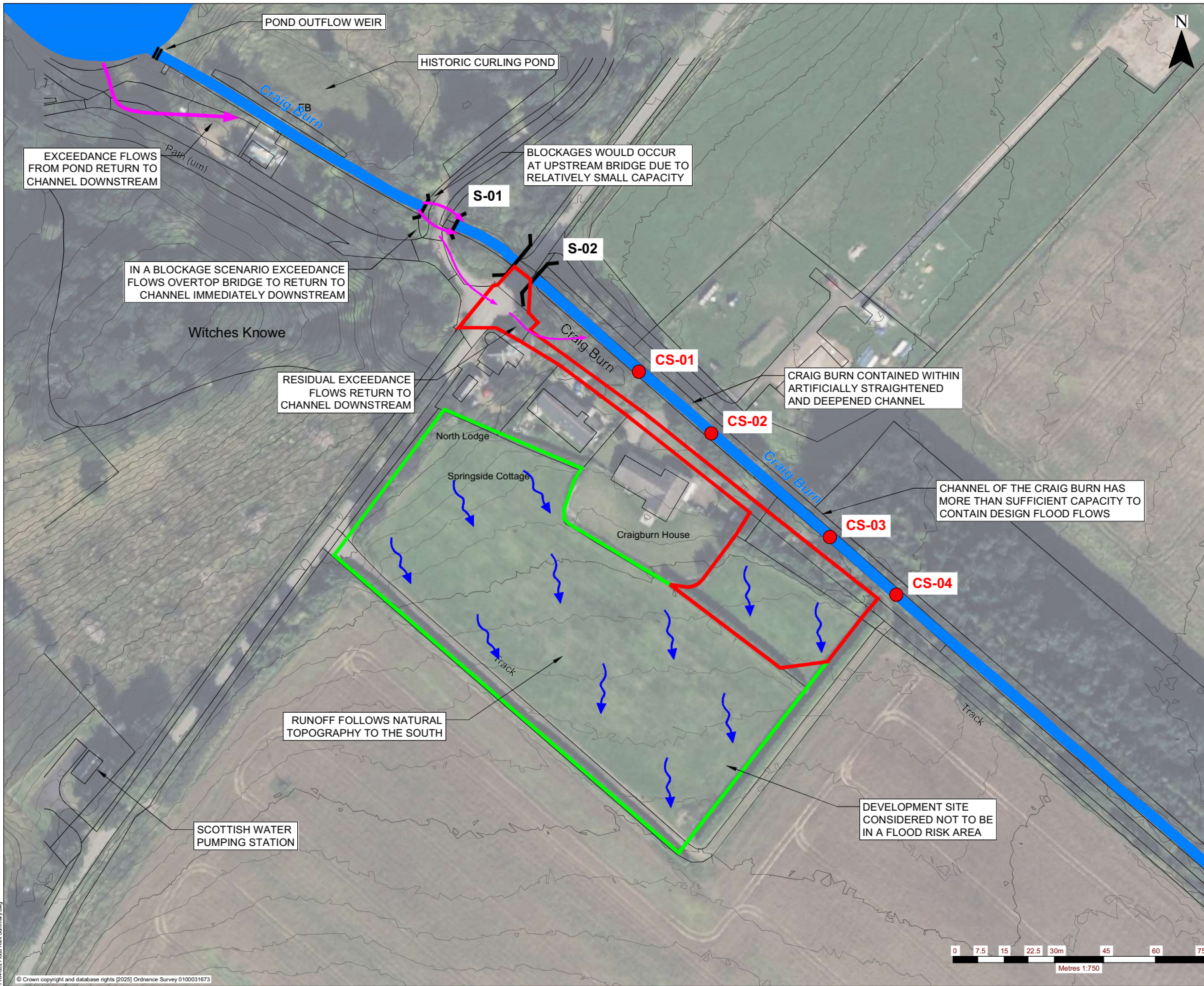
REV:
01

DRAWING STATUS:
FOR PLANNING

GONDOLIN LAND & WATER LTD
15 Quayside Street
Edinburgh
EH6 6EJ
Registered Company No. SC706920




FRA-001 Site Location Plan_01.dwg



NOTES

1. TOPOGRAPHY DERIVED FROM LIDAR DATA SOURCED FROM THE SCOTTISH REMOTE SENSING PORTAL.

LEGEND

- PLANNING BOUNDARY
- ASSESSMENT AREA
- LAND OWNERSHIP BOUNDARY
- EXISTING MAJOR CONTOURS (2.5m INTERVAL)
- EXISTING MINOR CONTOURS (0.5m INTERVAL)
- CRAIG BURN
- EXISTING POND
- ~ OVERLAND FLOWPATH
- ~ EXCEEDANCE FLOWPATH
- } EXISTING BRIDGE
- || EXISTING WEIR
- CS-xx CROSS-SECTION

01	03/26	REVISED ISSUE	DB	ZR
00	04/25	INITIAL ISSUE	DB	ZR
REV	DATE	DESCRIPTION	BY	CHK

CLIENT:
STUART HESLOP

PROJECT:
CRAIGBURN HOUSE

DRAWING TITLE:
FLOOD RISK SUMMARY

SCALE: 1:750 @ A2 DATE: MARCH 2026

DRAWING NUMBER: **FRA-002** REV: **00**

DRAWING STATUS:
FOR PLANNING

GONDOLIN LAND & WATER LTD
15 Quayside Street
Edinburgh
EH6 9EJ
Registered Company No. SC706920



FRA-002 Flood Risk Summary.dwg



GONDOLIN
Land & Water

Civil Engineering and Environmental Solutions

Gondolin Land and Water Ltd is a small environmental and engineering consultancy business based in Scotland with coverage throughout the UK.

Office Address:

15 Quayside Street

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SC706920

Sectors:

Onshore Renewables & Storage | Infrastructure | Mining and Minerals
Property & Urban Regeneration | Retail, Industrial & Manufacturing |
Waste Management



GONDOLIN
Land & Water
Civil Engineering & Environmental Solutions

Craigburn House, Rait – Proposed Residential Development

Drainage Impact Assessment

Client: Stuart Heslop
Project/Proposal No: GON.1123.0578
Version: 1
Date: 30/03/2026





Document Information

Project Name:	Craigburn House, Rait – Proposed Residential Development
Document Title:	Drainage Impact Assessment
Client Name:	Stuart Heslop
Document Status:	Final for Issue
Author:	Duncan Bowie
Reviewed:	Zak Ritchie
Approved:	Zak Ritchie
Approver Qualifications:	BEng(hons), MSc, C.WEM, C.Eng, MCIWEM
Date:	30/03/2026
Version:	1
Project/Proposal Number:	GON.1123.0578

Revision History

Version	Date	Authored	Reviewed	Approved	Notes
1	30/03/2026	Duncan Bowie	Zak Ritchie	Zak Ritchie	For Issue

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1. Introduction

1.1 Preamble

Gondolin Land and Water Ltd (Gondolin) have been appointed by Mr Stuart Heslop (the Client) to prepare a Drainage Impact Assessment (DIA) report in support of a planning application for the development of a single residential dwelling and associated works on land at Craighurn House, Fingask, Rait, Perth & Kinross, PH2 7RU.

This report provides the relevant design information for the proposed site surface water drainage / SuDS scheme taking due cognisance of local / national drainage design guidance (CIRIA Report C753), Perth and Kinross Councils supplementary guidance¹. A signed compliance certificate is included in Appendix A, to certify that this assessment has been carried out in accordance with the relevant guidance and legislation.

The site was visited in January 2025 by a suitably qualified Civil Engineer to inform the assessment and assessment overseen by a Chartered Hydrologist / Civil Engineer with >14 years experience of undertaking drainage designs in Scotland.

1.2 Site Context and Proposed Development

The development site is located to the south of the existing Craighurn properties at approximate National Grid Reference (NGR): NO 23331 27173. The proposals are for 1 no. residential dwelling on a 0.13ha plot in the east of the site neighbouring the existing properties.

The site is bounded by the existing Craighurn properties to the north, a minor road to the northwest and agricultural land on all other sides. Access is provided from the existing track bounding the site to the northeast or from the minor road in the west. The site currently consists of improved grassland surrounded by large hedges.

A site location plan is included as Drawing DIA-001.

1.3 Topography

An assessment of site topography has been undertaken using 1m resolution LiDAR data sourced from the Scottish Remote Sensing Portal in conjunction with on-site observations and measurements. The site slopes down to the south at an approximate gradient of 1 in 15. The maximum elevation of 20.5mAOD is located in the north next to the existing public road and the approximate minimum elevation of 14.8mAOD is found at the southern extent.

1.4 Geology and Hydrogeology

1.4.1 Geology

1.4.1.1 Superficial

Review of the British Geological Survey² (BGS) online geology maps indicates that superficial deposits at the proposed development site are Glaciofluvial Ice Contact Deposits of gravel, sand and silt. The area around the site takes the appearance of an Alluvial Fan, formed on the Carse of Gowrie around the apex of the constricted upstream channel of the Craig Burn.

1.4.1.2 Bedrock

Review of the BGS online geology maps shows that the bedrock geology at the development area is of the Glenvale Sandstone Formation. Brown, yellow, red, purple and cream feldspathic sandstones of the Devonian Epoch. Approximately 30m upgradient to the northwest, the bedrock transitions to andesite and pyroxene of the Ochil Volcanic Formation.

¹ Perth & Kinross Council (2021) Flood Risk and Flood Risk Assessments

² British Geological Survey (2025) Natural Environment Research Council – GeoIndex Onshore Viewer, available at: <https://www.bgs.ac.uk/map-viewers/geoindex-onshore/> (accessed on 19th December 2025)



1.4.2 Hydrogeology

Review of the BGS online hydrogeology maps indicates that the underlying bedrock at the development area is of the Stratheden Group and hence is a moderately productive aquifer with Sandstone, partly pebbly with subordinate siltstone and mudstone producing moderate amounts of groundwater through intergranular flow.

1.5 Existing Hydrology & Drainage System

Surface runoff from the site would follow the natural topography to the south in the form of sheet flow, potentially with some minor gullying towards the base of the hedges on the southwestern boundary. A hydrological summary and characteristics of the site are shown in Table 1 below. The data is taken from the Flood Estimation Handbook (FEH)³ Web Service and the point characteristics of the site has been delineated from NGR: NO 23369 27197.

Table 1 Hydrological Summary

Catchment Location (NGR)	BFIHOST19 ¹	PROPWET ²	SAAR ³ (mm)
NO 23369 27197	0.424	0.46	709

¹BFIHOST19 = Base Flow Index derived using the UK Hydrology of Soil Types (Host) classification (released 2019)

²PROPWET = Proportion of Time the Soil Moisture Deficit (SMD) was equal to, or below, 6mm during 1961-1990

³SAAR= Standard Annual Average Rainfall

A hydrological overview of the site is available in Drawing DIA-002.

Review of the Flood Estimation Handbook (FEH) Web Service⁴ and other available mapping shows that the Craig Burn passes the site approximately 10m to the northeast of the development boundary. The FEH Web Service provides a catchment of 5.61km² for the Craig Burn where it passes the development site. It was observed that the burn had been artificially straightened and deepened as is typical for 'pow' watercourses in the Gowrie region. No other open watercourses are recorded within the vicinity of the proposed development area.

A hydrological summary and characteristics for the Craig Burn catchment at the development site are shown in Table 2 below. The data shown is taken from the FEH Web Service and the catchment characteristics of the site have been delineated from NGR: NO 23400 27200, a point in the watercourse immediately adjacent to the site.

Table 2 Catchment Hydrological Summary

Waterbody Catchment	Area (km ²)	SAAR ¹ (mm)	URBEXT ² (%)	PROPWET ³	SPRHOST ⁴ (%)	ALTBAR ⁵ (m)
Craig Burn	5.61	771	0	0.46	29.68	200

¹SAAR = Standard Annual Average Rainfall between 1961-1990

²URBEXT = Extent of Urban and Suburban Land Cover (1990)

³PROPWET = Proportion of Time the Soil Moisture Deficit (SMD) was equal to, or below, 6mm during 1961-1990

⁴SPRHOST = Standard Percentage Runoff using UK Hydrology of Soil Types (HOST) Classification

⁵ALTBAR = Mean Catchment Altitude

The FEH data indicates that the Craig Burn catchment experiences a moderate SAAR value for a Scottish catchment and that the catchment is essentially rural. An SPRHOST value of 29.68% indicates a low-moderate runoff potential.

The flood risk presented by the Craig Burn has been considered in a separate Flood Risk Assessment (FRA) report also produced by Gondolin (separate submission document which accompanies the planning application).

³ UK Centre for Ecology & Hydrology (2024) Flood Estimation Handbook Web Service: <https://fehweb.ceh.ac.uk/> (accessed: 19th December 2025)

⁴ UK Centre for Ecology and Hydrology (2025) Flood Estimation handbook Web Service, available at: <https://fehweb.ceh.ac.uk/> (accessed on 19th December 2025)



2. Proposed Surface Water Drainage Design

2.1 Design Overview

The management of surface water drainage from the development has been developed taking due cognisance of national and local guidance – as follows:

- CIRIA, Report C753 – the SuDS Manual, 2015
- CIRIA, Report C635 – Designing for Exceedance in Urban Drainage, Good Practice (2006)
- Perth and Kinross Council – Flood Risk and Flood Risk Assessments, 2021
- SEPA, WAT-RM-08 – Sustainable Urban Drainage Systems (SuDS), 2019
- Scottish Water – Sewers for Scotland v4, 2018
- Scottish Government – Building Standards Technical Handbook, 2026
- Building Research Establishment (BRE) – Digest 365, Soakaway Design

The proposed drainage / SuDS scheme for the site is for a surface water drainage soakaway in the southeast of the site to allow storm water to safely discharge to ground. The system will manage surface water runoff from all impermeable areas of the site. Rainwater downpipes shall be installed on the proposed dwelling house to convey surface water runoff directly to the drainage system. The proposed access and parking area will be constructed from unbound permeable material to allow direct infiltration to ground, as such these areas are not included within the drainage / SuDS scheme for the site.

The Proposed Drainage Layout scheme for the development is provided as Drawing DIA-003 and typical drainage details are shown on Drawing DIA-004.

2.2 Design Criteria

2.2.1 Drainage Discharge Locations

In accordance with the aforementioned guidance documents, the hierarchy for favoured disposal options of surface water runoff from development sites is as follows:

1. Infiltration to Ground;
2. Discharge to Surface Waters; or
3. Discharge to Sewer.

Table 3 below discusses the disposal method suitability in the context of the site and proposed development.

Table 3 Suitability of Surface Water Disposal Methods

Surface Water Disposal Method	Suitability Description	Method Suitable? (Y/N)
Infiltration to Ground	As outlined in Section 1.4.1 superficial deposits at the site are Glaciofluvial ice contact deposits of gravel, sand and silt. As such, the geology is likely to be favourable to infiltration-based SuDS techniques.	Y
Surface Water Discharge	The Craig Burn runs adjacent to the site on the opposite side of the existing access to the northeast and could serve as a potential outlet option.	Y
Sewer Discharge	Scottish Water Asset Plans have been sourced for the development site and have been appended to this document as Appendix B. No surface water or combined sewers are available for a connection to be made.	N



Review of Table 3 above confirms that infiltration to ground is the most suitable method for the development site and is also the most favoured solution within the hierarchy of options. Therefore, infiltration to ground is chosen as the proposed discharge method for the site.

Infiltration testing will be conducted at the post planning stages of development to confirm the viability of the method and inform the final drainage design. This requirement can readily be secured via an appropriately worded planning condition attached to a planning consent. In the unlikely event infiltration to ground would not be viable, a discharge to surface waters at the adjacent Craig Burn would also be feasible.

2.2.2 Storm Events and Hydraulic Design Criteria

The hydraulic design of the system has been prepared in accordance with CIRIA Report C753 and Section 2.6 of Sewers for Scotland, as follows:

- No flooding occurs in conveyance features or in any part of the site up to the 1:30-year event; and,
- Where flooding occurs in the 1:200-year event (plus 39% climate change), measures are taken to ensure that access and egress to the site for emergency vehicles is not impeded, and appropriate overland flood routes are considered / integrated into the site layout design.

In addition, the following criteria have also been applied:

- None of the system 'surcharges' under the 1:2-year event;
- The proposed soakaway area is sized to contain and safely discharge the 1:200-year event (plus 39% climate change) to ground without flooding.

These criteria provide a betterment to those required by Sewers for Scotland.

All drainage features have been sized using industry standard methods and the MicroDrainage software suite.

2.2.3 Drainage Exceedance Considerations

Exceedance flow routes from the proposed soakaway and drainage network would follow the natural topography of the land and flow overland to the southeast with no risk to neighbouring properties – i.e. flows would follow the existing natural hydrological regime.

2.2.4 Water Quality Review (Simple Index Approach)

In accordance with CIRIA Report C753, it is necessary to undertake a 'Water Quality Risk Management' assessment to determine the suitability of SuDS methods from a water quality perspective. The approach outlined below is based on the 'Simple Index Approach' for discharge to groundwater as detailed in the SuDS Manual (Section 26.7, Tables 26.2 and 26.4).

Table 4 below compares the SuDS Mitigation Indices (MI) against the maximum Pollution Hazard Index (PI) for the proposed development. This is based on the application of a constructed soakaways with suitable underlying (unsaturated) soil media of at least 300mm depth.

Table 4 SuDS Water Quality Design Criteria: Index Approach Review

Land Use	Pollution Hazard and SuDS Mitigation Indices Comparison					
	Total Suspended Solids (TSS)		Metals		Hydro-Carbons	
	Pollution Index	Mitigation Index	Pollution Index	Mitigation Index	Pollution Index	Mitigation Index
Residential Roofs (accommodation)	0.2	0.4	0.2	0.4	0.05	0.4

Notes: Mitigation Index based on permeable paving discharging to groundwater

The SuDS Mitigation Index offered by the proposed SuDS is \geq Pollution Hazard Index therefore the water quality assessment criteria is satisfied.



2.3 SuDS Performance Review

2.3.1 Key Design Details

The SuDS system has been sized to accommodate the 1:200yr plus 39% climate change event, and details are presented on Drawing DIA-003 and Drawing DIA-004. The key design parameters / geometry is summarised in Table 5 below.

Table 5 Soakaway - Provisional Summary Design Details

Parameter	Unit	Value	Notes
Total depth	m	1.4	Topsoil depth + soakaway depth
Minimum topsoil depth	mm	200	Above soakaway
Gravel storage area depth	mm	1200	Cover level – wrapped in a permeable geotextile / liner
Minimum surface area	m ²	58.5	Measured from AutoCAD drawing
Storage porosity	-	35%	Standard value as per CIRIA report C753
Storage volume	m ³	24.57	Calculated as: (58.5m ² x 1.2m x 35%)
Contributing impermeable area	m ²	214	Impermeable developed areas of site with a runoff coefficient of 1 applied as a conservative estimate
Design infiltration rate	m/hr	0.005	Mid-range estimate for silt loam. Does not include Safety Factor applied in accordance with best practice guidance – refer to Appendix C

2.3.2 Hydraulic Analysis

The proposed SuDS infiltration system has been modelled using the industry standard MicroDrainage software suite and a summary of the modelling results is included as Table 6 below.

Table 6 SuDS System - Hydraulic Modelling Summary

Return Period Event (1 in X)	Max. Water Depth (m)	Freeboard Allowance (mm)	Storage Volume (m ³)	Critical Storm Duration (hours)	Half Drain Time (mins)
2	0.251	949	3.8	16	546
10	0.356	844	6.0	16	818
30	0.450	750	7.9	16	1041
100	0.579	621	10.5	24	1319
200	0.668	532	12.4	24	1500
200 + 39% CC	0.977	223	18.7	36	2046
1000	0.897	303	17.0	24	1920

The results above confirm that runoff from the impermeable areas of development can be adequately contained within the 1200mm deep soakaway storage depth area for all rainfall events up to and including the design 200yr + 39% climate change event. Suitable freeboard depth allowance is also included within the design for all design storm events.

Full copies of the hydraulic modelling and model details are enclosed as Appendix C.

As the consequences of failure are minor for this site, a factor of safety of 1.5 has been applied as per Table 25.2 of the SuDS Manual. This also factors in a reduction in soakaway performance over time due to siltation. Furthermore, silt traps will be installed on the incoming upstream surface water pipe runs to allow for pre-settlement to reduce silt ingress into the system.

MicroDrainage modelling software calculated a maximum inflow to the pipe network of 13.8l/s for the worst-case 15 min summer storm event. The capacity of the pipe network was checked against



published tables for the hydraulic design of pipes⁵ using the Colebrook-White equation method. Design assumed 150mm UPVC pipes and a minimum gradient of 1:200. This provides a maximum flowrate of 15.3l/s, and as such provides adequate capacity to prevent overloading of the network. It is noted that this is a very conservative estimate given that greater gradients are easily achievable at this site.

2.4 Outline Maintenance Schedule

2.4.1 Overview

To ensure efficient operation of the proposed surface water management / SuDS scheme, drainage components should be inspected and maintained throughout the life of the development. Regular inspection / maintenance will ensure efficient operation and prevent potential failure / blockage of drainage components.

The following provisional maintenance plan has been developed from best practice guidance, professional experience and information provided in CIRIA Report C753 (The SuDS Manual).

All drainage components will be retained under private ownership, with the Applicant remaining responsible for ongoing maintenance. This maintenance schedule will be integrated into the overall site operating and maintenance strategy and tailored / refined over time as required.

The following sections provide maintenance actions for specific drainage elements.

2.4.2 Surface Water Soakaway

Table 7 below provides the inspection and maintenance recommendations set out in Table 13.1 of CIRIA Report C753 for Soakaways.

Table 7 Soakaway Outline Maintenance Requirements

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Inspect for sediment and debris in pre-treatment components and floor of inspection tube or chamber and inside of concrete manhole rings	Annually
	Cleaning of gutters and any filters on downpipes	Annually (or as required based on inspections)
	Trimming any roots that may be causing blockages	Annual (or as required)
Occasional Maintenance	Remove sediment and debris from pre-treatment components and floor of inspection tube or chamber and inside of concrete manhole rings	As required, based on inspections
Remedial Actions	Reconstruct soakaway and/or replace or clean void fill if performance deteriorates or failure occurs	As required
	Replacement of clogged geotextile (will require reconstruction of soakaway in some circumstances)	As required
Monitoring	Inspect silt traps and note rate of sediment accumulation	Monthly in the first year and then annually
	Check soakaway to ensure emptying is occurring	Annually

⁵ HR Wallingford and D.I.H Barr (2006) Tables for the hydraulic design of pipes, sewers and channels, 8th Edition, Volume I & II



2.4.3 Inspection Chambers and Manholes

It is recommended that the inspection chamber and manhole covers are lifted at least half yearly to check for debris / silt accumulations, and to check the drainage runs are flowing freely.

Any silt / debris accumulations should be manually removed, and jet washed where required.

3. Wastewater Drainage Design

3.1 Overview

The proposed development will generate wastewater flows in the form of 'domestic' sewage and thus a wastewater drainage design has been prepared.

In terms of wastewater drainage disposal, the favoured hierarchy of options is as follows:

1. Discharge to public sewer
2. Discharge to ground via soakaway
3. Discharge to surface waters
4. Discharge to raised soakaway mound

Scottish Water asset plans have been sourced for the site and have been appended to this document as Appendix B. It is confirmed that there are no public sewers in the vicinity of the development to which a connection could be made.

The Craig Burn could in principle accept a treated wastewater discharge depending on dilution rates, catchment area etc however the superficial deposits present at the site indicate that discharge to ground (Option 2) is likely to be feasible and this is the preferred choice over Options 3 and 4.

As such the proposed Wastewater Drainage Scheme is for wastewater to be collected from proposed dwelling via conventional sealed pipework which will discharge to a EN12566 (Part 3) Certified Secondary Treatment plant providing provisional treatment standards as outlined in Table 8 below.

Table 8 Proposed Provisional Treatment Standards

Parameter	Unit	Value
BOD Discharge Limit	mg/l	10
Ammonia (as N) Discharge Limit	mg/l	5
Suspended Solids Discharge Limit	mg/l	20

The final treatment standards would be confirmed at the detailed design / post planning stages through a formal EASR Application made to SEPA.

3.2 Wastewater Loading Calculations

With reference to British Water Flows and Loads 4 a summary of the wastewater loading calculations is outlined in Table 9 below. Full calculations are provided in Appendix E for reference.

Table 9 Wastewater Loading Calculations

Parameter	Unit	Value	Notes
No of units	-	1	Single domestic dwelling
Total Population Equivalent (p.e.)	-	5	As specified by SEPA in WAT-G-057 Guidance
Daily flow per person	l	150	As per British Flows and Loads 4
Total maximum daily flow	l	750	p.e. multiplied by daily flow per person



Parameter	Unit	Value	Notes
Instantaneous Average Flow	l/s	0.0087	Over 24-hour period
Peak Flow Rate	l/s	0.0217	2.5x multiplication factor as per Scottish Water advice

3.3 Soil Infiltration Rate

Review section 1.4.1.1 indicates that the site is underlain by Glaciofluvial Ice Contact Deposits of gravel, sand and silt. The immediate area around the site sits on an alluvial fan formed where the Craig Burn drops from the Sidlaw Hills onto the Carse of Gowrie. Alluvial fans are typically formed of a wide ranging diamicton of clay through to boulders, but predominantly consist of sand, gravel and silt. As such, infiltration is likely to be feasible at the site. However, no specific infiltration testing has been conducted and therefore the conservative mid-range assumption of 70s/mm has been made. This allows for a precautionous approach to the wastewater soakaway design.

3.4 Soakaway Sizing

As per Scottish Building Standards the soakaway is sized via the following formula:

$$A = Vp \times p.e \times 0.20$$

Where: A = Surface Area in (m^2)
 Vp = Soil Percolation Rate in (s/mm)
 $p.e.$ = Total Population Equivalent
 0.2 = reduction factor for use of a Secondary Treatment Plant

Based on the above formula and with reference to Table 9 previously the minimum required area of the soakaway is 70m².

The proposed field drainage soakaway is located more than 10m from any surface water body and more than 5m from the proposed dwelling house and the client's land ownership boundary.

Soil percolation rate testing will be conducted at the post planning stages (and secured via an appropriately worded planning conditions) to validate the infiltration rate adopted and it is noted there remains additional space within the site to extend the sizing if required. In the highly unlikely event the soil percolation rate testing indicates a discharge to ground is not viable then a treated wastewater discharge to the adjacent Craig Burn would be pursued as a 'back up' option.

3.5 Pipe Network Design

In accordance with Sewers for Scotland 4, the wastewater drainage pipes are to be minimum 150mm diameter and the alignment has a minimum gradient of 1:60 to the treatment plant.

4. Closure

Gondolin Land and Water Ltd (Gondolin) has been appointed by Mr Stuart Heslop (the Client) to prepare a Drainage Impact Assessment (DIA) report in support of a planning application for the development of a dwelling house and associated works on land at Craighburn, Fingask, Rait, Perth & Kinross, PH2 7RU.

This report provides the relevant design information for the proposed site surface water drainage / SuDS scheme taking due cognisance of local / national drainage design guidance (CIRIA Report C753), Perth and Kinross Council specific guidance and Scottish Water Sewers for Scotland 4th Edition.



The site was visited in January 2025 by a suitably qualified Civil Engineer to inform the assessment and assessment overseen by a Chartered Hydrologist / Civil Engineer with >14 years' experience of undertaking drainage designs in Scotland.

A conservative approach has been adopted within the design by incorporating appropriate factors of safety, adopting a conservative infiltration rate at the SuDS location, inclusion of a freeboard allowance and inclusion of a +39% climate change uplift.

Additionally, wastewater drainage arising from the site has been incorporated into the site design and details presented in this assessment. The wastewater will be routed via a wastewater treatment system, to discharge to ground via soakaway and conservative soil percolation rates have been used.

Taking all the above into account it is considered there is no impediment to the development proposals being granted planning permission on the grounds of surface water or wastewater drainage provision.



APPENDICES



Appendix A
PKC Certification

Appendix B - Assessment Compliance Certification and Insurance

Assessment Compliance Certification

I certify that all reasonable skill, care and attention has been exercised in undertaking the attached Flood Risk Assessment/ Drainage Impact Assessment/Surface Water Drainage Design* (*delete as appropriate*). The documentation has been prepared for the below noted development in accordance with the PKC Developers' Guidance Note on Flooding and Drainage.

Name of Development

Craigburn House - Proposed Residential Development

Address of Development

Craigburn

Fingask, Rait,
Perth & Kinross, PH2 7RU

Name of Developer

Stuart Heslop

Planning Application Number

N/A

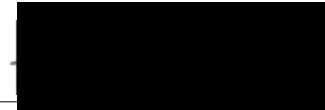
Name and Address of Organisation Preparing this Assessment

Gondolin Land & Water Ltd

26 Leith Walk

Edinburgh, EH6 5AA

Signed



Name

Zak Ritchie

Position Held

Managing Director

Engineering Qualification⁽¹⁾

C.Eng, C.WEM, MCIWEM

⁽¹⁾ Chartered Engineer or equivalent from an appropriate Engineering Institution.

Date

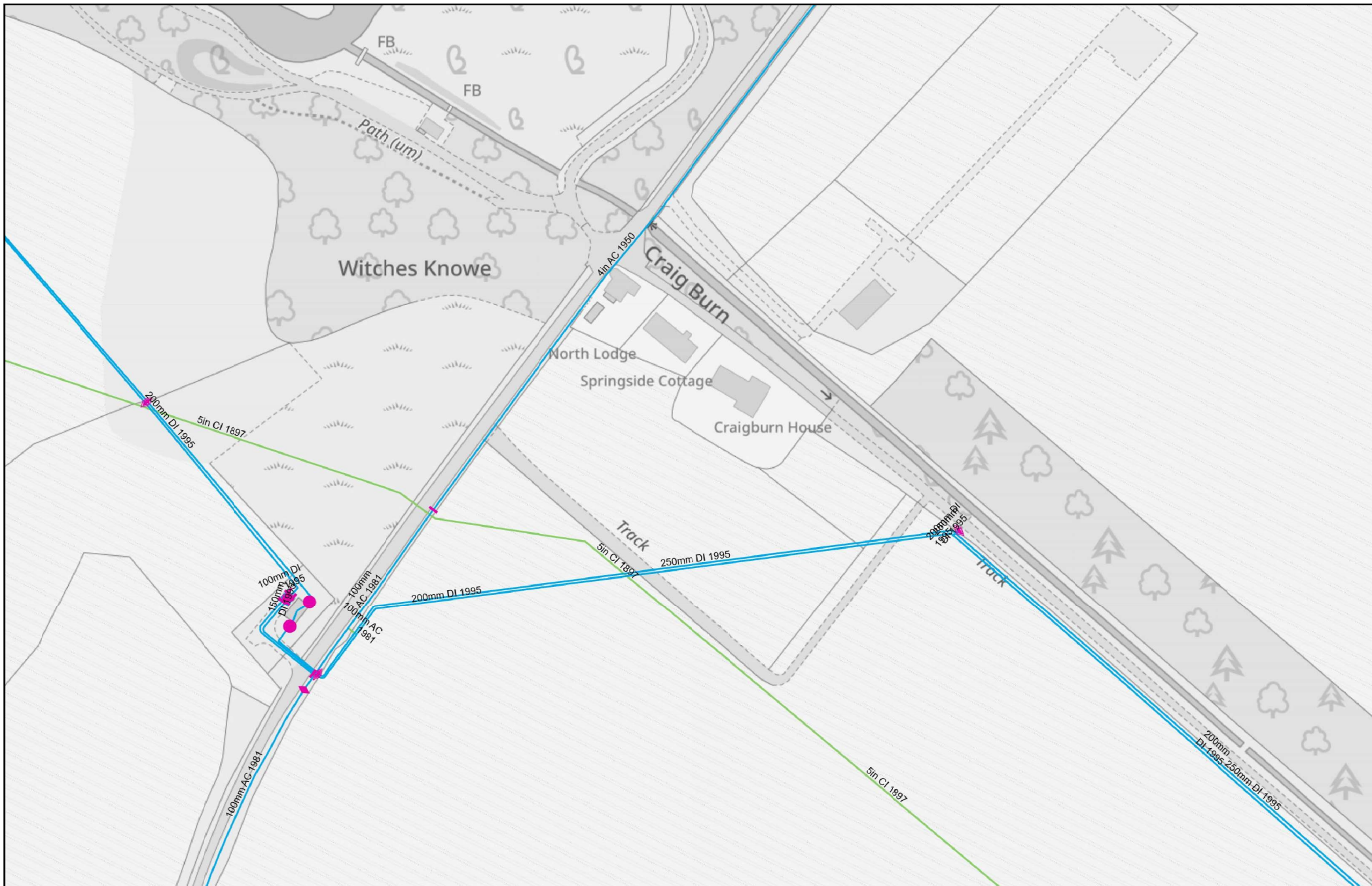
30/03/2026

Insurance

Please attach a copy of your professional indemnity insurance policy to this document.



Appendix B
Scottish Water Asset Plans



Warning! Damaging a large diameter trunk main (12"/300mm and above) can result in loss of life and major water supply and water quality problems. If you're planning any extension work in the vicinity of any large diameter mains shown on our maps, you must contact Scottish Water to arrange a site visit 08000 778 778 WELL IN ADVANCE OF THE WORKS

Plotted By: Duncan.bowie@gondolinktd.co.uk



The representation of physical assets and the boundaries of areas in which Scottish Water and others have an interest does not necessarily imply their true positions. For further details contact the appropriate District office.

Date: 28/02/2025

Craighurn Water & Wastewater Plans

0 5 10 20 Meters

SCALE: 1:1,323

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The Bridge
 6 Buchanan Gate
 Stepps
 Glasgow
 G33 6FB

Tel No: 08000 778 778

Fittings

Valve	End Cap
Valve - Abandoned	Abandoned
Valve	Adopted
Pressure Management Valve	In Use
Abandoned	Isolated
Adopted	Proposed
Isolated	Removed
Pressure Reducing	Unknown
Pressure Relief	Air Shaft
Pressure Sustaining	Abandoned
Proposed	Adopted
Removed	Isolated
Unknown	Pipe
Hydrant	Proposed
Abandoned	Removed
Adopted	Shaft
Ball	Unknown
Fire	Swab Chamber
Isolated	Abandoned
Proposed	Adopted
Removed	Hatch Box
Shipping	Isolated
Unknown	Joint
Washout	Proposed
Stop Cock	Removed
Abandoned	T and Blank Plate
Adopted	Unknown
In Use	Boundary Box
Isolated	
Proposed	Pressure Monitoring Point
Removed	
Unknown	

Chamber Box	Air Valve
Abandoned	AV
Access Chamber	Abandoned
Adopted	Adopted
Danelaw Box	Air Cock
General	DAV
Isolated	HAV
Lucy Box	Isolated
Other	Proposed
Proposed	Removed
Removed	SAV
Swabbing	TAV
Unknown	Unknown
Collecting Chamber	Blank Tee
	Abandoned
Discharge Point	Adopted
Buchan Trap	Flanged Plate
Isolated	Isolated
New Subtype	Other
Other	Other_
Proposed	Proposed
Proudfoot Box	Removed
Removed	Unknown
Undefined Scour Point	
Unknown	
Unknown End	
Wet Chamber	

Pipes

Main - Water Distribution Public	Main - Water Distribution Private
Abandoned, Public	Abandoned, Private
Adopted, Public	Abandoned, Private (Operated by Scottish Water)
Bypass, Public	Adopted, Private
Distribution, Public	Bypass, Private
Drain, Public	Distribution, Private
Fire, Public	Distribution, Private (Operated by Scottish Water)
Isolated, Public	Drain, Private
Overflow, Public	Distribution, Private (Operated by Scottish Water)
Proposed, Public	Fire, Private
Removed, Public	Fire, Private (Operated by Scottish Water)
Sludge, Public	Isolated, Private
Trunk, Public	Overflow, Private
Washout, Public	Overflow, Private (Operated by Scottish Water)
Main - Water Distribution	Proposed, Private
Service Pipe	Proposed, Private (Operated by Scottish Water)
Abandoned	Removed, Private
Communication	Sludge, Private
Communication - Fire Connection	Sludge, Private (Operated by Scottish Water)
Isolated	Trunk, Private
Proposed	Washout, Private
Removed	Washout, Private (Operated by Scottish Water)
Service	Main - Raw Water
Supply - Common	Abandoned
Supply - Fire Main	Isolated
Supply - Single	Overflow
Service Pipe General	Proposed
Aqueduct	Raw Supply
Abandoned	Removed
Aqueduct	Syphon
Tunnel - Aqueduct	Washout
Viaduct	



Fittings

Access (Lateral)

- Abandoned
- Combined (C)
- Foul (F)
- Proposed
- Surface Water (S)

Chamber

- Abandoned
- CSO
- Combined
- Foul
- Dual Manhole - Foul
- Dual Manhole - Surface
- Isolated
- Natural Water
- Not Applicable
- Other
- Planned
- Proposed
- Surface Water
- Trade Effluent
- Treated Effluent
- Unknown
- Unknown_

Combined Sewer Overflow

- CSO-COMB SEW O/FL

Balancing Pond



Basin



Bifurcation Chamber

- Abandoned
- Combined (C)
- Foul (F)
- Isolated
- Planned
- Proposed
- Surface Water (S)
- Unknown

Sewerage Air Valve

- Combined (C)
- Isolated
- Abandoned
- CSO (O)
- Foul (F)
- Other
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Unknown

Buchan Trap

- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Isolated
- Natural Water (W)
- Other
- Proposed
- Surface Water (S)
- Treated Effluent (E)
- Unknown(Z)

Capped End

- Abandoned
- Accepted
- Adopted
- In Use
- Isolated
- Not Applicable
- Planned
- Proposed
- Removed
- Unknown

Unknown End

- Abandoned
- Unknown End

Washout

- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Natural Water (W)
- Other
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Unknown

Wetland



Vent Column



Outfall

- Planned
- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Isolated
- Natural Water (W)
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Unknown
- Unknown_

Pond



Trench



Sluice Valve

- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Isolated
- Natural Water (W)
- Other
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)

Hatchbox

- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Isolated
- Natural Water (W)
- Other
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Unknown

Hydraulic Control Chamber

- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Natural Water (W)
- Planned
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Unknown

Pipes

Gravity Pipe

- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Natural Water (W)
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Gravity Pipe General

Connection (Lateral)

- Abandoned
- Combined (C)
- Foul (F)
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Connection (Lateral) General


Rising Main

- Abandoned
- CSO (O)
- Combined (C)
- Foul (F)
- Proposed
- Surface Water (S)
- Trade Effluent (T)
- Treated Effluent (E)
- Rising Main General



Appendix C

MicroDrainage Modelling Results

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26 Leith Walk Edinburgh EH6 5AA	Craig Burn Surface Water Soakaway	
Date 27/02/2026 File CRAIGBURN HOUSE SOAKAWA...	Designed by DB Checked by ZR	
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Rainfall Details

Rainfall Model	FEH
Return Period (years)	200
FEH Rainfall Version	2013
Site Location	GB 323369 727197 NO 23369 27197
Data Type	Point
Summer Storms	Yes
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Shortest Storm (mins)	15
Longest Storm (mins)	10080
Climate Change %	+39

Time Area Diagram

Total Area (ha) 0.021

Time (mins)		Area
From:	To:	(ha)
0	4	0.021


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Model Details

Storage is Online Cover Level (m) 1.200

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.00500	Trench Width (m)	4.5
Infiltration Coefficient Side (m/hr)	0.00500	Trench Length (m)	13.0
Safety Factor	1.5	Slope (1:X)	100.0
Porosity	0.35	Cap Volume Depth (m)	0.000
Invert Level (m)	0.000	Cap Infiltration Depth (m)	0.000


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Summary of Results for 2 year Return Period

Half Drain Time : 546 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	0.114	0.114	0.0	1.0	O K
30 min Summer	0.132	0.132	0.1	1.4	O K
60 min Summer	0.150	0.150	0.1	1.7	O K
120 min Summer	0.177	0.177	0.1	2.3	O K
180 min Summer	0.192	0.192	0.1	2.6	O K
240 min Summer	0.201	0.201	0.1	2.8	O K
360 min Summer	0.212	0.212	0.1	3.0	O K
480 min Summer	0.218	0.218	0.1	3.1	O K
600 min Summer	0.222	0.222	0.1	3.2	O K
720 min Summer	0.225	0.225	0.1	3.3	O K
960 min Summer	0.227	0.227	0.1	3.3	O K
1440 min Summer	0.226	0.226	0.1	3.3	O K
2160 min Summer	0.219	0.219	0.1	3.1	O K
2880 min Summer	0.209	0.209	0.1	3.0	O K
4320 min Summer	0.189	0.189	0.1	2.5	O K
5760 min Summer	0.171	0.171	0.1	2.2	O K
7200 min Summer	0.156	0.156	0.1	1.9	O K
8640 min Summer	0.144	0.144	0.1	1.6	O K
10080 min Summer	0.135	0.135	0.1	1.4	O K
15 min Winter	0.121	0.121	0.1	1.2	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	26.978	0.0	19
30 min Summer	18.221	0.0	33
60 min Summer	11.984	0.0	62
120 min Summer	8.217	0.0	122
180 min Summer	6.454	0.0	182
240 min Summer	5.402	0.0	240
360 min Summer	4.174	0.0	360
480 min Summer	3.466	0.0	418
600 min Summer	2.996	0.0	484
720 min Summer	2.658	0.0	552
960 min Summer	2.199	0.0	684
1440 min Summer	1.672	0.0	966
2160 min Summer	1.265	0.0	1384
2880 min Summer	1.036	0.0	1788
4320 min Summer	0.780	0.0	2556
5760 min Summer	0.639	0.0	3336
7200 min Summer	0.550	0.0	4040
8640 min Summer	0.488	0.0	4752
10080 min Summer	0.442	0.0	5448
15 min Winter	26.978	0.0	18

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Summary of Results for 2 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
30 min Winter	0.140	0.140	0.1	1.5	O K
60 min Winter	0.161	0.161	0.1	2.0	O K
120 min Winter	0.192	0.192	0.1	2.6	O K
180 min Winter	0.209	0.209	0.1	3.0	O K
240 min Winter	0.221	0.221	0.1	3.2	O K
360 min Winter	0.235	0.235	0.1	3.5	O K
480 min Winter	0.242	0.242	0.1	3.6	O K
600 min Winter	0.246	0.246	0.1	3.7	O K
720 min Winter	0.248	0.248	0.1	3.8	O K
960 min Winter	0.251	0.251	0.1	3.8	O K
1440 min Winter	0.248	0.248	0.1	3.7	O K
2160 min Winter	0.234	0.234	0.1	3.5	O K
2880 min Winter	0.217	0.217	0.1	3.1	O K
4320 min Winter	0.184	0.184	0.1	2.4	O K
5760 min Winter	0.157	0.157	0.1	1.9	O K
7200 min Winter	0.136	0.136	0.1	1.5	O K
8640 min Winter	0.124	0.124	0.1	1.2	O K
10080 min Winter	0.116	0.116	0.1	1.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
30 min Winter	18.221	0.0	33
60 min Winter	11.984	0.0	62
120 min Winter	8.217	0.0	120
180 min Winter	6.454	0.0	178
240 min Winter	5.402	0.0	236
360 min Winter	4.174	0.0	348
480 min Winter	3.466	0.0	456
600 min Winter	2.996	0.0	558
720 min Winter	2.658	0.0	588
960 min Winter	2.199	0.0	740
1440 min Winter	1.672	0.0	1052
2160 min Winter	1.265	0.0	1496
2880 min Winter	1.036	0.0	1932
4320 min Winter	0.780	0.0	2724
5760 min Winter	0.639	0.0	3464
7200 min Winter	0.550	0.0	4112
8640 min Winter	0.488	0.0	4760
10080 min Winter	0.442	0.0	5544


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Summary of Results for 10 year Return Period

Half Drain Time : 818 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	0.157	0.157	0.1	1.9	O K
30 min Summer	0.189	0.189	0.1	2.5	O K
60 min Summer	0.225	0.225	0.1	3.3	O K
120 min Summer	0.257	0.257	0.1	3.9	O K
180 min Summer	0.276	0.276	0.1	4.3	O K
240 min Summer	0.287	0.287	0.1	4.6	O K
360 min Summer	0.301	0.301	0.1	4.8	O K
480 min Summer	0.309	0.309	0.1	5.0	O K
600 min Summer	0.312	0.312	0.1	5.1	O K
720 min Summer	0.314	0.314	0.1	5.1	O K
960 min Summer	0.317	0.317	0.1	5.2	O K
1440 min Summer	0.315	0.315	0.1	5.1	O K
2160 min Summer	0.307	0.307	0.1	5.0	O K
2880 min Summer	0.296	0.296	0.1	4.7	O K
4320 min Summer	0.272	0.272	0.1	4.2	O K
5760 min Summer	0.249	0.249	0.1	3.8	O K
7200 min Summer	0.228	0.228	0.1	3.3	O K
8640 min Summer	0.210	0.210	0.1	3.0	O K
10080 min Summer	0.194	0.194	0.1	2.6	O K
15 min Winter	0.168	0.168	0.1	2.1	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	48.768	0.0	19
30 min Summer	33.179	0.0	34
60 min Summer	21.775	0.0	64
120 min Summer	13.547	0.0	122
180 min Summer	10.188	0.0	182
240 min Summer	8.303	0.0	242
360 min Summer	6.208	0.0	362
480 min Summer	5.054	0.0	480
600 min Summer	4.311	0.0	594
720 min Summer	3.787	0.0	642
960 min Summer	3.089	0.0	762
1440 min Summer	2.315	0.0	1026
2160 min Summer	1.733	0.0	1448
2880 min Summer	1.411	0.0	1848
4320 min Summer	1.053	0.0	2680
5760 min Summer	0.857	0.0	3464
7200 min Summer	0.733	0.0	4248
8640 min Summer	0.646	0.0	4936
10080 min Summer	0.582	0.0	5656
15 min Winter	48.768	0.0	19

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Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
30 min Winter	0.204	0.204	0.1	2.8	O K
60 min Winter	0.245	0.245	0.1	3.7	O K
120 min Winter	0.282	0.282	0.1	4.4	O K
180 min Winter	0.303	0.303	0.1	4.9	O K
240 min Winter	0.318	0.318	0.1	5.2	O K
360 min Winter	0.335	0.335	0.1	5.5	O K
480 min Winter	0.346	0.346	0.1	5.7	O K
600 min Winter	0.352	0.352	0.1	5.9	O K
720 min Winter	0.355	0.355	0.1	5.9	O K
960 min Winter	0.356	0.356	0.1	6.0	O K
1440 min Winter	0.353	0.353	0.1	5.9	O K
2160 min Winter	0.340	0.340	0.1	5.6	O K
2880 min Winter	0.321	0.321	0.1	5.3	O K
4320 min Winter	0.282	0.282	0.1	4.4	O K
5760 min Winter	0.245	0.245	0.1	3.7	O K
7200 min Winter	0.213	0.213	0.1	3.0	O K
8640 min Winter	0.185	0.185	0.1	2.5	O K
10080 min Winter	0.162	0.162	0.1	2.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
30 min Winter	33.179	0.0	33
60 min Winter	21.775	0.0	62
120 min Winter	13.547	0.0	120
180 min Winter	10.188	0.0	180
240 min Winter	8.303	0.0	238
360 min Winter	6.208	0.0	352
480 min Winter	5.054	0.0	466
600 min Winter	4.311	0.0	578
720 min Winter	3.787	0.0	686
960 min Winter	3.089	0.0	886
1440 min Winter	2.315	0.0	1110
2160 min Winter	1.733	0.0	1576
2880 min Winter	1.411	0.0	2020
4320 min Winter	1.053	0.0	2892
5760 min Winter	0.857	0.0	3688
7200 min Winter	0.733	0.0	4464
8640 min Winter	0.646	0.0	5184
10080 min Winter	0.582	0.0	5856


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Summary of Results for 30 year Return Period

Half Drain Time : 1041 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	0.190	0.190	0.1	2.6	O K
30 min Summer	0.235	0.235	0.1	3.5	O K
60 min Summer	0.285	0.285	0.1	4.5	O K
120 min Summer	0.322	0.322	0.1	5.3	O K
180 min Summer	0.343	0.343	0.1	5.7	O K
240 min Summer	0.357	0.357	0.1	6.0	O K
360 min Summer	0.375	0.375	0.1	6.3	O K
480 min Summer	0.385	0.385	0.1	6.5	O K
600 min Summer	0.391	0.391	0.1	6.7	O K
720 min Summer	0.394	0.394	0.1	6.7	O K
960 min Summer	0.396	0.396	0.1	6.8	O K
1440 min Summer	0.396	0.396	0.1	6.8	O K
2160 min Summer	0.390	0.390	0.1	6.7	O K
2880 min Summer	0.380	0.380	0.1	6.5	O K
4320 min Summer	0.355	0.355	0.1	5.9	O K
5760 min Summer	0.329	0.329	0.1	5.4	O K
7200 min Summer	0.305	0.305	0.1	4.9	O K
8640 min Summer	0.282	0.282	0.1	4.4	O K
10080 min Summer	0.261	0.261	0.1	4.0	O K
15 min Winter	0.205	0.205	0.1	2.9	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	65.914	0.0	19
30 min Summer	45.323	0.0	34
60 min Summer	29.748	0.0	64
120 min Summer	17.832	0.0	124
180 min Summer	13.184	0.0	182
240 min Summer	10.635	0.0	242
360 min Summer	7.856	0.0	362
480 min Summer	6.354	0.0	482
600 min Summer	5.397	0.0	600
720 min Summer	4.727	0.0	720
960 min Summer	3.840	0.0	836
1440 min Summer	2.869	0.0	1096
2160 min Summer	2.147	0.0	1496
2880 min Summer	1.746	0.0	1908
4320 min Summer	1.301	0.0	2728
5760 min Summer	1.056	0.0	3568
7200 min Summer	0.898	0.0	4328
8640 min Summer	0.788	0.0	5104
10080 min Summer	0.706	0.0	5856
15 min Winter	65.914	0.0	19

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Summary of Results for 30 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
30 min Winter	0.256	0.256	0.1	3.9	O K
60 min Winter	0.313	0.313	0.1	5.1	O K
120 min Winter	0.355	0.355	0.1	5.9	O K
180 min Winter	0.379	0.379	0.1	6.4	O K
240 min Winter	0.396	0.396	0.1	6.8	O K
360 min Winter	0.417	0.417	0.1	7.2	O K
480 min Winter	0.431	0.431	0.1	7.5	O K
600 min Winter	0.440	0.440	0.1	7.7	O K
720 min Winter	0.446	0.446	0.1	7.8	O K
960 min Winter	0.450	0.450	0.1	7.9	O K
1440 min Winter	0.448	0.448	0.1	7.8	O K
2160 min Winter	0.439	0.439	0.1	7.7	O K
2880 min Winter	0.422	0.422	0.1	7.3	O K
4320 min Winter	0.381	0.381	0.1	6.5	O K
5760 min Winter	0.340	0.340	0.1	5.6	O K
7200 min Winter	0.301	0.301	0.1	4.8	O K
8640 min Winter	0.266	0.266	0.1	4.1	O K
10080 min Winter	0.235	0.235	0.1	3.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
30 min Winter	45.323	0.0	33
60 min Winter	29.748	0.0	62
120 min Winter	17.832	0.0	122
180 min Winter	13.184	0.0	180
240 min Winter	10.635	0.0	238
360 min Winter	7.856	0.0	354
480 min Winter	6.354	0.0	470
600 min Winter	5.397	0.0	584
720 min Winter	4.727	0.0	694
960 min Winter	3.840	0.0	912
1440 min Winter	2.869	0.0	1156
2160 min Winter	2.147	0.0	1620
2880 min Winter	1.746	0.0	2076
4320 min Winter	1.301	0.0	2980
5760 min Winter	1.056	0.0	3808
7200 min Winter	0.898	0.0	4616
8640 min Winter	0.788	0.0	5440
10080 min Winter	0.706	0.0	6152


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Innovyze	Source Control 2020.1.3	

Summary of Results for 100 year Return Period

Half Drain Time : 1319 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	0.228	0.228	0.1	3.3	O K
30 min Summer	0.290	0.290	0.1	4.6	O K
60 min Summer	0.357	0.357	0.1	6.0	O K
120 min Summer	0.399	0.399	0.1	6.8	O K
180 min Summer	0.424	0.424	0.1	7.3	O K
240 min Summer	0.441	0.441	0.1	7.7	O K
360 min Summer	0.465	0.465	0.1	8.2	O K
480 min Summer	0.480	0.480	0.1	8.5	O K
600 min Summer	0.490	0.490	0.1	8.7	O K
720 min Summer	0.497	0.497	0.1	8.8	O K
960 min Summer	0.503	0.503	0.1	9.0	O K
1440 min Summer	0.507	0.507	0.1	9.1	O K
2160 min Summer	0.504	0.504	0.1	9.0	O K
2880 min Summer	0.495	0.495	0.1	8.8	O K
4320 min Summer	0.468	0.468	0.1	8.3	O K
5760 min Summer	0.440	0.440	0.1	7.7	O K
7200 min Summer	0.411	0.411	0.1	7.1	O K
8640 min Summer	0.384	0.384	0.1	6.5	O K
10080 min Summer	0.359	0.359	0.1	6.0	O K
15 min Winter	0.248	0.248	0.1	3.7	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	86.001	0.0	19
30 min Summer	59.721	0.0	34
60 min Summer	39.152	0.0	64
120 min Summer	22.906	0.0	124
180 min Summer	16.754	0.0	182
240 min Summer	13.437	0.0	242
360 min Summer	9.877	0.0	362
480 min Summer	7.967	0.0	482
600 min Summer	6.756	0.0	602
720 min Summer	5.913	0.0	720
960 min Summer	4.805	0.0	952
1440 min Summer	3.593	0.0	1182
2160 min Summer	2.688	0.0	1560
2880 min Summer	2.185	0.0	1988
4320 min Summer	1.621	0.0	2812
5760 min Summer	1.310	0.0	3632
7200 min Summer	1.110	0.0	4464
8640 min Summer	0.970	0.0	5192
10080 min Summer	0.865	0.0	6048
15 min Winter	86.001	0.0	19

Gondolin Land & Water Ltd		Page 10
26 Leith Walk Edinburgh EH6 5AA	Craig Burn Surface Water Soakaway	
Date 27/02/2026 File CRAIGBURN HOUSE SOAKAWA...	Designed by DB Checked by ZR	
Innovyze	Source Control 2020.1.3	

Summary of Results for 100 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
30 min Winter	0.318	0.318	0.1	5.2	O K
60 min Winter	0.393	0.393	0.1	6.7	O K
120 min Winter	0.441	0.441	0.1	7.7	O K
180 min Winter	0.470	0.470	0.1	8.3	O K
240 min Winter	0.491	0.491	0.1	8.7	O K
360 min Winter	0.519	0.519	0.1	9.3	O K
480 min Winter	0.538	0.538	0.1	9.7	O K
600 min Winter	0.551	0.551	0.1	10.0	O K
720 min Winter	0.561	0.561	0.1	10.2	O K
960 min Winter	0.574	0.574	0.1	10.4	O K
1440 min Winter	0.579	0.579	0.1	10.5	O K
2160 min Winter	0.573	0.573	0.1	10.4	O K
2880 min Winter	0.559	0.559	0.1	10.1	O K
4320 min Winter	0.517	0.517	0.1	9.3	O K
5760 min Winter	0.472	0.472	0.1	8.3	O K
7200 min Winter	0.427	0.427	0.1	7.4	O K
8640 min Winter	0.385	0.385	0.1	6.6	O K
10080 min Winter	0.346	0.346	0.1	5.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
30 min Winter	59.721	0.0	33
60 min Winter	39.152	0.0	64
120 min Winter	22.906	0.0	122
180 min Winter	16.754	0.0	180
240 min Winter	13.437	0.0	240
360 min Winter	9.877	0.0	356
480 min Winter	7.967	0.0	472
600 min Winter	6.756	0.0	586
720 min Winter	5.913	0.0	700
960 min Winter	4.805	0.0	924
1440 min Winter	3.593	0.0	1342
2160 min Winter	2.688	0.0	1668
2880 min Winter	2.185	0.0	2136
4320 min Winter	1.621	0.0	3068
5760 min Winter	1.310	0.0	3928
7200 min Winter	1.110	0.0	4760
8640 min Winter	0.970	0.0	5616
10080 min Winter	0.865	0.0	6360


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26 Leith Walk Edinburgh EH6 5AA	Craig Burn Surface Water Soakaway	
Date 27/02/2026 File CRAIGBURN HOUSE SOAKAWA...	Designed by DB Checked by ZR	
Innovyze	Source Control 2020.1.3	

Summary of Results for 200 year Return Period

Half Drain Time : 1500 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	0.252	0.252	0.1	3.8	O K
30 min Summer	0.325	0.325	0.1	5.3	O K
60 min Summer	0.402	0.402	0.1	6.9	O K
120 min Summer	0.448	0.448	0.1	7.8	O K
180 min Summer	0.477	0.477	0.1	8.4	O K
240 min Summer	0.497	0.497	0.1	8.8	O K
360 min Summer	0.524	0.524	0.1	9.4	O K
480 min Summer	0.543	0.543	0.1	9.8	O K
600 min Summer	0.557	0.557	0.1	10.1	O K
720 min Summer	0.566	0.566	0.1	10.3	O K
960 min Summer	0.577	0.577	0.1	10.5	O K
1440 min Summer	0.583	0.583	0.1	10.6	O K
2160 min Summer	0.580	0.580	0.1	10.6	O K
2880 min Summer	0.571	0.571	0.1	10.4	O K
4320 min Summer	0.542	0.542	0.1	9.8	O K
5760 min Summer	0.511	0.511	0.1	9.1	O K
7200 min Summer	0.480	0.480	0.1	8.5	O K
8640 min Summer	0.451	0.451	0.1	7.9	O K
10080 min Summer	0.422	0.422	0.1	7.3	O K
15 min Winter	0.275	0.275	0.1	4.3	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	98.442	0.0	19
30 min Summer	68.744	0.0	34
60 min Summer	44.965	0.0	64
120 min Summer	26.145	0.0	124
180 min Summer	19.077	0.0	182
240 min Summer	15.278	0.0	242
360 min Summer	11.211	0.0	362
480 min Summer	9.042	0.0	482
600 min Summer	7.669	0.0	602
720 min Summer	6.713	0.0	722
960 min Summer	5.452	0.0	960
1440 min Summer	4.072	0.0	1238
2160 min Summer	3.038	0.0	1620
2880 min Summer	2.462	0.0	2020
4320 min Summer	1.821	0.0	2852
5760 min Summer	1.467	0.0	3688
7200 min Summer	1.240	0.0	4472
8640 min Summer	1.081	0.0	5280
10080 min Summer	0.963	0.0	6056
15 min Winter	98.442	0.0	19

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26 Leith Walk Edinburgh EH6 5AA	Craig Burn Surface Water Soakaway	
Date 27/02/2026 File CRAIGBURN HOUSE SOAKAWA...	Designed by DB Checked by ZR	
Innovyze	Source Control 2020.1.3	

Summary of Results for 200 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
30 min Winter	0.356	0.356	0.1	6.0	O K
60 min Winter	0.443	0.443	0.1	7.7	O K
120 min Winter	0.496	0.496	0.1	8.8	O K
180 min Winter	0.529	0.529	0.1	9.5	O K
240 min Winter	0.553	0.553	0.1	10.0	O K
360 min Winter	0.586	0.586	0.1	10.7	O K
480 min Winter	0.609	0.609	0.1	11.1	O K
600 min Winter	0.627	0.627	0.1	11.5	O K
720 min Winter	0.640	0.640	0.1	11.8	O K
960 min Winter	0.657	0.657	0.1	12.1	O K
1440 min Winter	0.668	0.668	0.1	12.4	O K
2160 min Winter	0.662	0.662	0.1	12.2	O K
2880 min Winter	0.649	0.649	0.1	11.9	O K
4320 min Winter	0.605	0.605	0.1	11.1	O K
5760 min Winter	0.557	0.557	0.1	10.1	O K
7200 min Winter	0.509	0.509	0.1	9.1	O K
8640 min Winter	0.463	0.463	0.1	8.2	O K
10080 min Winter	0.420	0.420	0.1	7.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
30 min Winter	68.744	0.0	33
60 min Winter	44.965	0.0	64
120 min Winter	26.145	0.0	122
180 min Winter	19.077	0.0	180
240 min Winter	15.278	0.0	240
360 min Winter	11.211	0.0	356
480 min Winter	9.042	0.0	472
600 min Winter	7.669	0.0	588
720 min Winter	6.713	0.0	702
960 min Winter	5.452	0.0	926
1440 min Winter	4.072	0.0	1356
2160 min Winter	3.038	0.0	1712
2880 min Winter	2.462	0.0	2164
4320 min Winter	1.821	0.0	3108
5760 min Winter	1.467	0.0	3984
7200 min Winter	1.240	0.0	4832
8640 min Winter	1.081	0.0	5704
10080 min Winter	0.963	0.0	6464


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26 Leith Walk Edinburgh EH6 5AA	Craig Burn Surface Water Soakaway	
Date 27/02/2026 File CRAIGBURN HOUSE SOAKAWA...	Designed by DB Checked by ZR	
Innovyze	Source Control 2020.1.3	

Summary of Results for 200 year Return Period (+39%)

Half Drain Time : 2046 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	0.326	0.326	0.1	5.3	O K
30 min Summer	0.428	0.428	0.1	7.4	O K
60 min Summer	0.536	0.536	0.1	9.6	O K
120 min Summer	0.604	0.604	0.1	11.0	O K
180 min Summer	0.646	0.646	0.1	11.9	O K
240 min Summer	0.677	0.677	0.1	12.5	O K
360 min Summer	0.721	0.721	0.1	13.4	O K
480 min Summer	0.753	0.753	0.1	14.1	O K
600 min Summer	0.777	0.777	0.1	14.6	O K
720 min Summer	0.796	0.796	0.1	15.0	O K
960 min Summer	0.822	0.822	0.1	15.5	O K
1440 min Summer	0.845	0.845	0.1	16.0	O K
2160 min Summer	0.849	0.849	0.1	16.1	O K
2880 min Summer	0.843	0.843	0.1	15.9	O K
4320 min Summer	0.816	0.816	0.1	15.4	O K
5760 min Summer	0.783	0.783	0.1	14.7	O K
7200 min Summer	0.750	0.750	0.1	14.0	O K
8640 min Summer	0.718	0.718	0.1	13.4	O K
10080 min Summer	0.686	0.686	0.1	12.7	O K
15 min Winter	0.357	0.357	0.1	6.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	136.834	0.0	19
30 min Summer	95.554	0.0	34
60 min Summer	62.502	0.0	64
120 min Summer	36.341	0.0	124
180 min Summer	26.516	0.0	184
240 min Summer	21.237	0.0	244
360 min Summer	15.583	0.0	362
480 min Summer	12.568	0.0	482
600 min Summer	10.660	0.0	602
720 min Summer	9.331	0.0	722
960 min Summer	7.578	0.0	962
1440 min Summer	5.660	0.0	1430
2160 min Summer	4.223	0.0	1776
2880 min Summer	3.422	0.0	2160
4320 min Summer	2.531	0.0	2980
5760 min Summer	2.039	0.0	3808
7200 min Summer	1.723	0.0	4616
8640 min Summer	1.502	0.0	5448
10080 min Summer	1.338	0.0	6256
15 min Winter	136.834	0.0	19

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26 Leith Walk Edinburgh EH6 5AA	Craig Burn Surface Water Soakaway	
Date 27/02/2026 File CRAIGBURN HOUSE SOAKAWA...	Designed by DB Checked by ZR	
Innovyze	Source Control 2020.1.3	

Summary of Results for 200 year Return Period (+39%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
30 min Winter	0.472	0.472	0.1	8.3	O K
60 min Winter	0.593	0.593	0.1	10.8	O K
120 min Winter	0.671	0.671	0.1	12.4	O K
180 min Winter	0.719	0.719	0.1	13.4	O K
240 min Winter	0.755	0.755	0.1	14.1	O K
360 min Winter	0.806	0.806	0.1	15.2	O K
480 min Winter	0.845	0.845	0.1	16.0	O K
600 min Winter	0.875	0.875	0.1	16.6	O K
720 min Winter	0.898	0.898	0.1	17.1	O K
960 min Winter	0.933	0.933	0.1	17.8	O K
1440 min Winter	0.968	0.968	0.1	18.5	O K
2160 min Winter	0.977	0.977	0.1	18.7	O K
2880 min Winter	0.967	0.967	0.1	18.5	O K
4320 min Winter	0.930	0.930	0.1	17.7	O K
5760 min Winter	0.880	0.880	0.1	16.7	O K
7200 min Winter	0.829	0.829	0.1	15.6	O K
8640 min Winter	0.778	0.778	0.1	14.6	O K
10080 min Winter	0.729	0.729	0.1	13.6	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
30 min Winter	95.554	0.0	34
60 min Winter	62.502	0.0	64
120 min Winter	36.341	0.0	122
180 min Winter	26.516	0.0	180
240 min Winter	21.237	0.0	240
360 min Winter	15.583	0.0	358
480 min Winter	12.568	0.0	474
600 min Winter	10.660	0.0	590
720 min Winter	9.331	0.0	708
960 min Winter	7.578	0.0	934
1440 min Winter	5.660	0.0	1384
2160 min Winter	4.223	0.0	2012
2880 min Winter	3.422	0.0	2276
4320 min Winter	2.531	0.0	3200
5760 min Winter	2.039	0.0	4144
7200 min Winter	1.723	0.0	5040
8640 min Winter	1.502	0.0	5880
10080 min Winter	1.338	0.0	6760

Summary of Results for 1000 year Return Period

Half Drain Time : 1920 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	0.315	0.315	0.1	5.1	O K
30 min Summer	0.417	0.417	0.1	7.2	O K
60 min Summer	0.521	0.521	0.1	9.3	O K
120 min Summer	0.582	0.582	0.1	10.6	O K
180 min Summer	0.621	0.621	0.1	11.4	O K
240 min Summer	0.649	0.649	0.1	12.0	O K
360 min Summer	0.690	0.690	0.1	12.8	O K
480 min Summer	0.718	0.718	0.1	13.4	O K
600 min Summer	0.738	0.738	0.1	13.8	O K
720 min Summer	0.753	0.753	0.1	14.1	O K
960 min Summer	0.772	0.772	0.1	14.5	O K
1440 min Summer	0.781	0.781	0.1	14.7	O K
2160 min Summer	0.774	0.774	0.1	14.5	O K
2880 min Summer	0.760	0.760	0.1	14.2	O K
4320 min Summer	0.723	0.723	0.1	13.5	O K
5760 min Summer	0.684	0.684	0.1	12.7	O K
7200 min Summer	0.648	0.648	0.1	11.9	O K
8640 min Summer	0.613	0.613	0.1	11.2	O K
10080 min Summer	0.581	0.581	0.1	10.6	O K
15 min Winter	0.345	0.345	0.1	5.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	131.355	0.0	19
30 min Summer	92.677	0.0	34
60 min Summer	60.600	0.0	64
120 min Summer	34.950	0.0	124
180 min Summer	25.431	0.0	184
240 min Summer	20.338	0.0	242
360 min Summer	14.890	0.0	362
480 min Summer	11.978	0.0	482
600 min Summer	10.132	0.0	602
720 min Summer	8.845	0.0	722
960 min Summer	7.143	0.0	960
1440 min Summer	5.282	0.0	1398
2160 min Summer	3.899	0.0	1732
2880 min Summer	3.135	0.0	2128
4320 min Summer	2.293	0.0	2940
5760 min Summer	1.835	0.0	3752
7200 min Summer	1.544	0.0	4608
8640 min Summer	1.341	0.0	5440
10080 min Summer	1.192	0.0	6248
15 min Winter	131.355	0.0	19

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Date 27/02/2026 File CRAIGBURN HOUSE SOAKAWA...	Designed by DB Checked by ZR	
Innovyze	Source Control 2020.1.3	

Summary of Results for 1000 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
30 min Winter	0.459	0.459	0.1	8.1	O K
60 min Winter	0.577	0.577	0.1	10.5	O K
120 min Winter	0.647	0.647	0.1	11.9	O K
180 min Winter	0.691	0.691	0.1	12.8	O K
240 min Winter	0.724	0.724	0.1	13.5	O K
360 min Winter	0.771	0.771	0.1	14.5	O K
480 min Winter	0.805	0.805	0.1	15.2	O K
600 min Winter	0.831	0.831	0.1	15.7	O K
720 min Winter	0.850	0.850	0.1	16.1	O K
960 min Winter	0.876	0.876	0.1	16.6	O K
1440 min Winter	0.897	0.897	0.1	17.0	O K
2160 min Winter	0.889	0.889	0.1	16.9	O K
2880 min Winter	0.871	0.871	0.1	16.5	O K
4320 min Winter	0.819	0.819	0.1	15.4	O K
5760 min Winter	0.763	0.763	0.1	14.3	O K
7200 min Winter	0.707	0.707	0.1	13.2	O K
8640 min Winter	0.655	0.655	0.1	12.1	O K
10080 min Winter	0.606	0.606	0.1	11.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
30 min Winter	92.677	0.0	34
60 min Winter	60.600	0.0	64
120 min Winter	34.950	0.0	122
180 min Winter	25.431	0.0	180
240 min Winter	20.338	0.0	240
360 min Winter	14.890	0.0	358
480 min Winter	11.978	0.0	474
600 min Winter	10.132	0.0	590
720 min Winter	8.845	0.0	706
960 min Winter	7.143	0.0	934
1440 min Winter	5.282	0.0	1382
2160 min Winter	3.899	0.0	1988
2880 min Winter	3.135	0.0	2248
4320 min Winter	2.293	0.0	3160
5760 min Winter	1.835	0.0	4096
7200 min Winter	1.544	0.0	4976
8640 min Winter	1.341	0.0	5800
10080 min Winter	1.192	0.0	6664



Appendix D
Site Photography



Entrance junction



Existing access track



Proposed dwelling house plot looking southwest



Proposed dwelling house plot looking west



Proposed dwelling house plot looking northwest



Neighbouring plot to west



Appendix E

Wastewater Loading Calculations



GONDOLIN
Land & Water
Civil Engineering & Environmental Solutions

LOADING CALCULATIONS								
Item ^{(1),(2)}	Per Activity Per Person				Totals			Notes
	Flow (l)	BOD (g)	NH ₃ (g)	Qty	Flow (l)	BOD (g)	NH ₃ (g)	
Domestic Dwellings - Standard Residential.	150	60	8	5	750	300	40	Single domestic dwelling. Assumed less than or equal to 3 bedrooms.
	Grand Totals				750	300	40	
				Population Equivalent	5	5		
				Maximum Daily Flow (m ³ /d)	0.750			
				Average Flow Rate (l/s)	0.009			
				Peak flow rate	0.02			Average Flow rate multiplied by 2.5 as per Scottish Water advice
Notes: 1. From British Water Flows and Loads Code of Practice 4								
2. All units in person / activity / day unless specified otherwise								



DRAWINGS



LEGEND

 PLANNING BOUNDARY

00	03/26	INITIAL ISSUE	DB	ZR
REV	DATE	DESCRIPTION	BY	CHK

CLIENT:
STUART HESLOP

PROJECT:
CRAIGBURN HOUSE

DRAWING TITLE:
SITE LOCATION PLAN

SCALE:
1:1,250 @ A3

DATE:
MARCH 2026

DRAWING NUMBER:
DIA-001

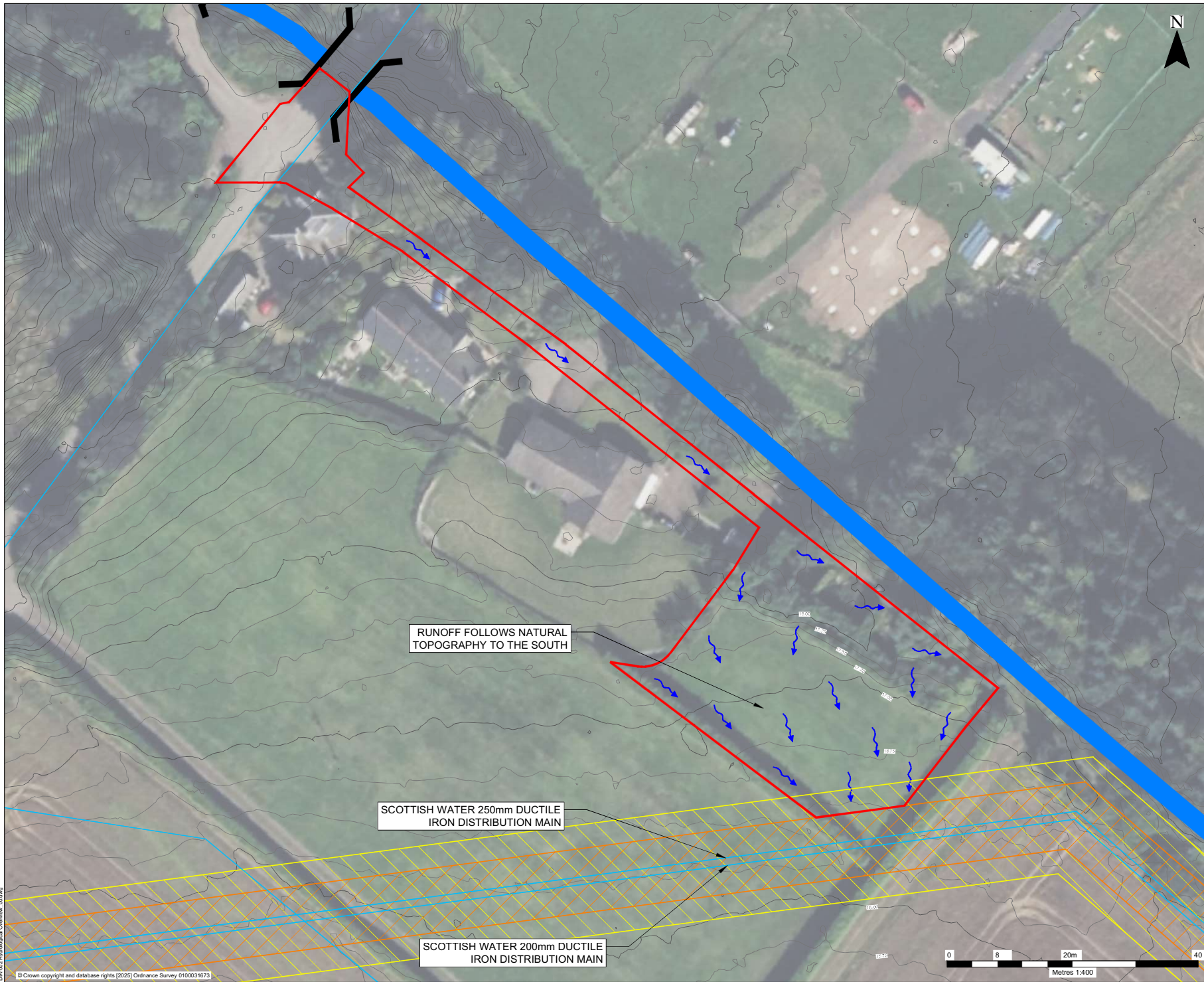
REV:
00

DRAWING STATUS:
FOR PLANNING

GONDOLIN LAND & WATER LTD
26 Leith Walk
Edinburgh
EH6 5AA
Registered Company No. SC706920




DIA-001 Site Location Plan_00.dwg



NOTES

1. TOPOGRAPHY DERIVED FROM LIDAR DATA SOURCED FROM THE SCOTTISH REMOTE SENSING PORTAL.
2. ALIGNMENT OF SCOTTISH WATER MAINS APPROXIMATE AND BASED ON ASSET PLAN SOURCED FROM THE SCOTTISH WATER GIS EXTRANET DATED 19/12/25.

LEGEND

	PLANNING BOUNDARY
	EXISTING MAJOR CONTOURS (1.0m INTERVAL)
	EXISTING MINOR CONTOURS (0.25m INTERVAL)
	CRAIG BURN
	EXISTING SCOTTISH WATER MAIN
	4.5m ACCESS DISTANCE FROM SCOTTISH WATER MAINS
	8.25m STAND-OFF DISTANCE FROM SCOTTISH WATER MAINS
	OVERLAND FLOWPATH

RUNOFF FOLLOWS NATURAL TOPOGRAPHY TO THE SOUTH

SCOTTISH WATER 250mm DUCTILE IRON DISTRIBUTION MAIN

SCOTTISH WATER 200mm DUCTILE IRON DISTRIBUTION MAIN

00	03/26	INITIAL ISSUE	DB	ZR
REV	DATE	DESCRIPTION	BY	CHK

CLIENT:
STUART HESLOP

PROJECT:
CRAIGBURN HOUSE

DRAWING TITLE:
HYDROLOGICAL OVERVIEW

SCALE: 1:400 @ A2 DATE: MARCH 2026

DRAWING NUMBER: **DIA-002** REV: **00**

DRAWING STATUS:
FOR PLANNING



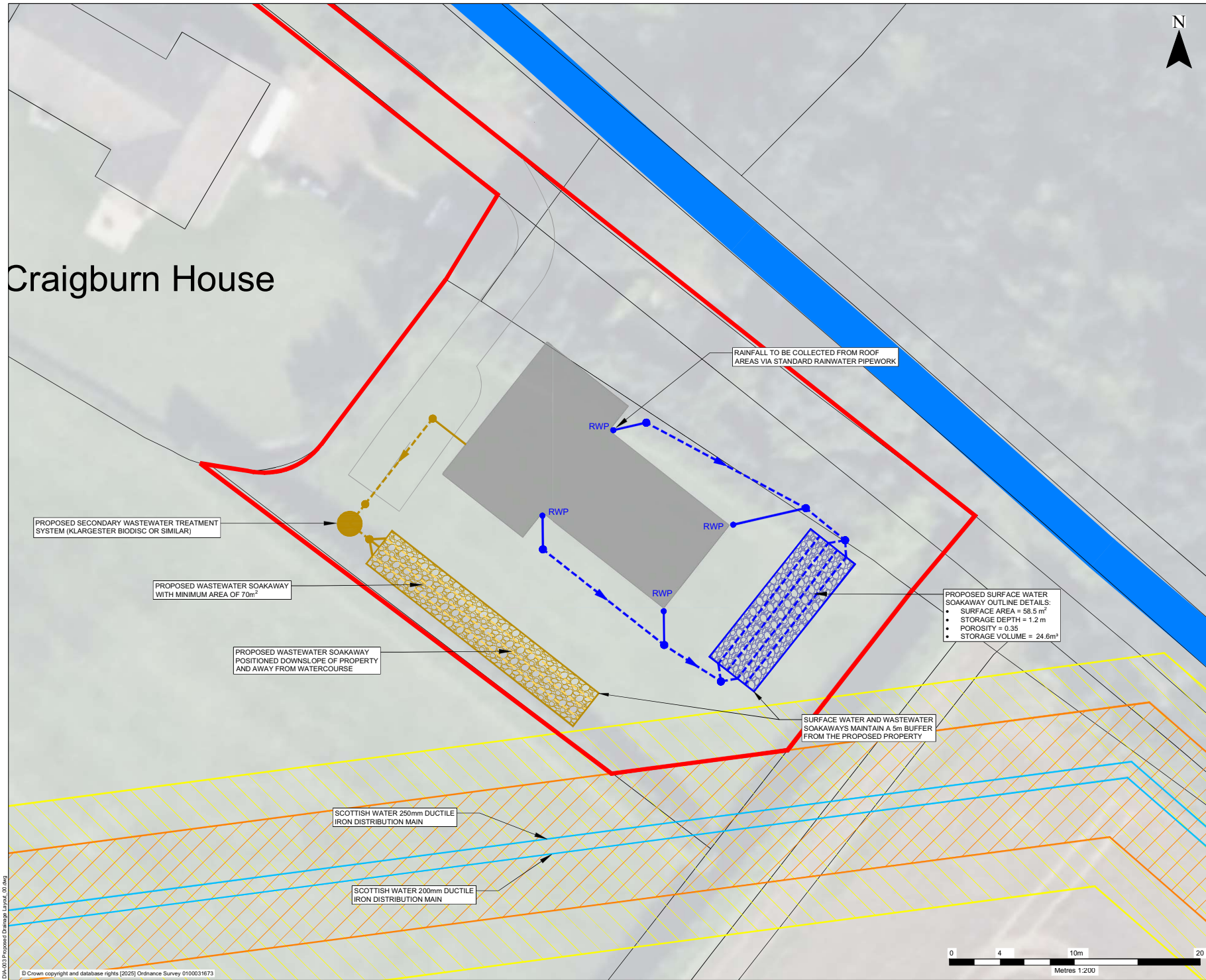
GONDOLIN LAND & WATER LTD
28 Leith Walk
Edinburgh
EH6 6AA
Registered Company No. SC709920

DIA-002-Hydrological Overview_00.dwg

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Craigburn House



- NOTES**
1. TOPOGRAPHY DERIVED FROM LIDAR DATA SOURCED FROM THE SCOTTISH REMOTE SENSING PORTAL.
 2. ALIGNMENT OF SCOTTISH WATER MAINS APPROXIMATE AND BASED ON ASSET PLAN SOURCED FROM THE SCOTTISH WATER GIS EXTRACT DATED 19/12/25.
 3. SOAKAWAY SIZING APPROXIMATE AND BASED ON TYPICAL VALUES FOR THE SUPERFICIAL DEPOSITS INDICATED. INFILTRATION TESTING REQUIRED AT LATER PROJECT STAGE TO CONFIRM.
 4. DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER SCHEME DRAWINGS.
 5. DESIGN SHOULD BE CONSIDERED PROVISIONAL OUTLINE DETAIL TO BE REFINED AT DETAILED DESIGN STAGE.

- LEGEND**
- PLANNING BOUNDARY
 - CRAIG BURN
 - 4.5m ACCESS DISTANCE FROM SCOTTISH WATER MAINS
 - 8.25m STAND-OFF DISTANCE FROM SCOTTISH WATER MAINS
 - INDICATIVE SURFACE WATER SOAKAWAY
 - PROPOSED CONVENTIONAL DRAINAGE
 - INDICATIVE RAINWATER DOWNPIPES
 - PROPOSED MANHOLE / INSPECTION CHAMBER
 - INDICATIVE WASTEWATER SOAKAWAY
 - INDICATIVE WASTEWATER TREATMENT PLANT
 - PROPOSED FOUL WATER PIPEWORK
 - PROPOSED FOUL WATER DRAINAGE MANHOLE / INSPECTION CHAMBER

PROPOSED SECONDARY WASTEWATER TREATMENT SYSTEM (KLARGESTER BIODISC OR SIMILAR)

PROPOSED WASTEWATER SOAKAWAY WITH MINIMUM AREA OF 70m²

PROPOSED WASTEWATER SOAKAWAY POSITIONED DOWNSLOPE OF PROPERTY AND AWAY FROM WATERCOURSE

RAINFALL TO BE COLLECTED FROM ROOF AREAS VIA STANDARD RAINWATER PIPEWORK

PROPOSED SURFACE WATER SOAKAWAY OUTLINE DETAILS:
 • SURFACE AREA = 58.5 m²
 • STORAGE DEPTH = 1.2 m
 • POROSITY = 0.35
 • STORAGE VOLUME = 24.6m³

SURFACE WATER AND WASTEWATER SOAKAWAYS MAINTAIN A 5m BUFFER FROM THE PROPOSED PROPERTY

SCOTTISH WATER 250mm DUCTILE IRON DISTRIBUTION MAIN

SCOTTISH WATER 200mm DUCTILE IRON DISTRIBUTION MAIN

00	03/26	INITIAL ISSUE	DB	ZR
REV	DATE	DESCRIPTION	BY	CHK

CLIENT:
STUART HESLOP

PROJECT:
CRAIGBURN HOUSE

DRAWING TITLE:
PROPOSED DRAINAGE LAYOUT

SCALE: 1:200 @ A2 DATE: MARCH 2026

DRAWING NUMBER: **DIA-003** REV: **00**

DRAWING STATUS:
FOR PLANNING

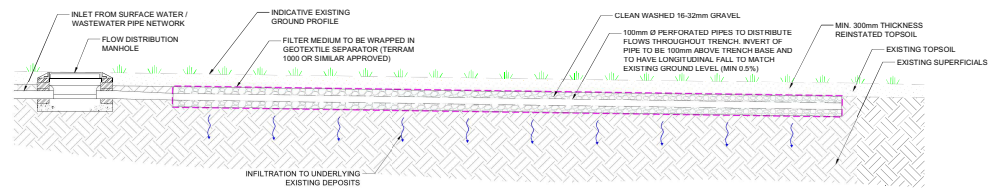
GONDOLIN LAND & WATER LTD
 28 Leith Walk
 Edinburgh
 EH6 5AA
 Registered Company No. SC708920



DIA-003-Proposed Drainage Layout_01.dwg

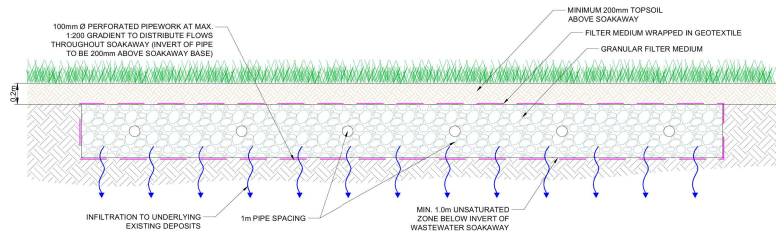


- NOTES**
1. ALL DRAINAGE TO BE INSTALLED IN ACCORDANCE WITH SEWERS FOR SCOTLAND / SCOTTISH TECHNICAL HANDBOOK WHERE REQUIRED.
 2. DESIGN SHOULD BE CONSIDERED OUTLINE ENGINEERING DESIGN. FINAL LEVELS, ALIGNMENTS AND GRADIENTS TO BE CONFIRMED AT DETAILED DESIGN STAGE.

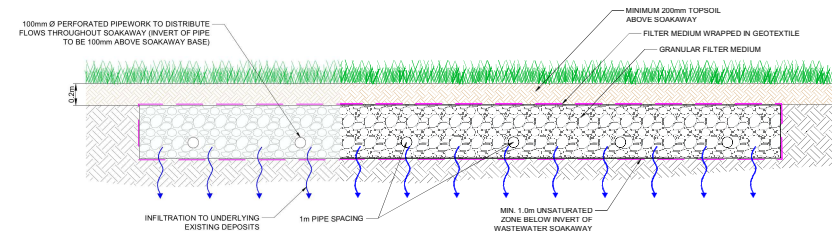


LONG-SECTION THROUGH FIELD DRAINAGE SOAKAWAY
NTS

- WASTEWATER SOAKAWAY NOTES:**
1. TO BE CONSTRUCTED IN ACCORDANCE WITH BS 6297:2007+A1:2008
 2. PIPES SHALL BE LAID WITH A UNIFORM GRADIENT
 3. THE INFILTRATION PIPE SHALL BE A SOCKET JOINTED PERFORATED OR SLOTTED PIPE. FLAIN ENDED DRAINPIPES SHOULD NOT BE USED
 4. THE INFILTRATION PIPE SHOULD HAVE DOWNWARD FACING HOLES OR SLOTS AND A SMOOTH INTERNAL INNER SURFACE. SLOTS IN THE PIPES SHOULD HAVE A MINIMUM EQUIVALENT OPEN AREA OF 1000mm² PER LINEAR METRE
 5. SOAKAWAY SHOULD NOT BE EXCAVATED DEEPER THAN NECESSARY AND NO DEEPER THAN 1m BELOW GROUND LEVEL



SECTION THROUGH PROPOSED WASTEWATER SOAKAWAY
1:25

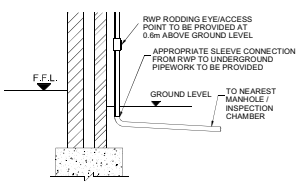


SECTION THROUGH PROPOSED SURFACE WATER SOAKAWAY
1:25

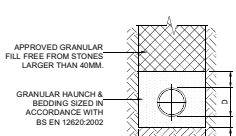
NOTE: RIGID PIPES BUILT INTO MANHOLES SHALL HAVE A FLEXIBLE JOINT AS CLOSE AS FEASIBLE TO THE EXTERNAL FACE OF THE STRUCTURE AND THE LENGTH OF THE NEXT TROCKER PIPE SHALL BE AS IN THE TABLE BELOW.

MIN ROCKER PIPE LENGTH	
NOMINAL DIAMETER (mm)	L (mm)
150 to 600	600
over 600 to 750	1000
over 750	1250

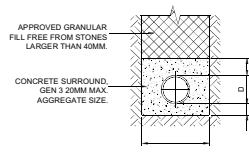
INTERNAL DIAMETER OF CONCRETE MANHOLES	
DIAMETER OF LARGEST PIPE IN MANHOLE (MM)	INTERNAL DIAMETER OF MANHOLE (MM)
LESS THAN 375	1200
375 to 450	1350
500 to 700	1500
750 to 900	1800
>900	PIPE DIAMETER +100



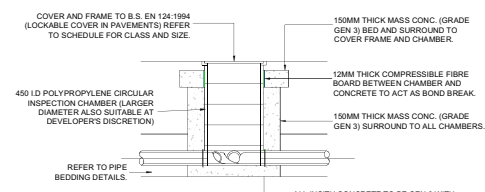
RWP CONNECTION DETAIL



CLASS 'S' PIPE BEDDING & BACKFILLING DETAIL
PIPES WHERE COVER TO CROWN IS GREATER THAN 1200MM UNDER ROADS AND FOOTPATHS



CLASS 'Z' PIPE BEDDING & BACKFILLING DETAIL
PIPES WHERE COVER TO CROWN IS LESS THAN 1200MM UNDER ROADS AND FOOTPATHS



TYPICAL INSPECTION CHAMBER DETAIL
1:25

INTERNAL DIAMETER OF INSPECTION CHAMBERS

DIAMETER OF LARGEST PIPE IN MANHOLE (MM)	DIAMETER OF INSPECTION CHAMBER (MM)
LESS THAN 160	450
160 to 300	600
300 to 450	750

TRENCH DIMENSIONS

D	100	150	225	300	375
W	450	600	700	850	1050

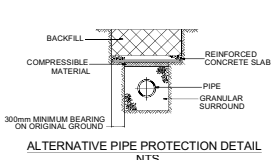
TRENCH BEDDING AND FILL MATERIALS

GRANULAR BEDDING TYPE 'A'								
TYPE	NOMINAL PIPE (DIA.)	63	37.5	20	14	10		
A10	<300	-	-	-	100	85.1	0.25	2.36

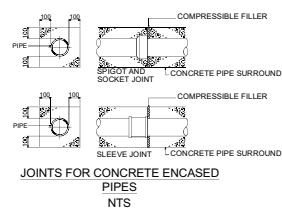
TYPE 'B' FILL MATERIAL

TYPE	NOMINAL PIPE (DIA.)	63	37.5	20	14	10		
B10	<300	-	-	-	100	85.1	0.25	2.36

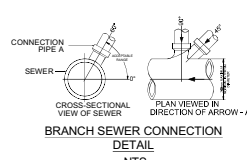
NOTE: TYPE 'B' NOT TO BE USED UNDER CARRIAGEWAYS AND PARKING AREAS ON CLAY SITES INDICATED ON SECTIONS. IT IS TO BE SUBSTITUTED BY DOT TYPE 2.



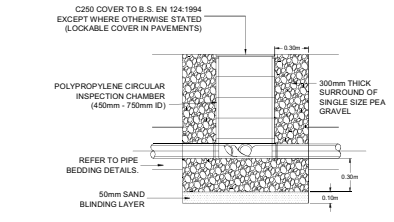
ALTERNATIVE PIPE PROTECTION DETAIL
NTS



JOINTS FOR CONCRETE ENCASED PIPES
NTS



BRANCH SEWER CONNECTION DETAIL
NTS



TYPICAL INSPECTION CHAMBER DETAIL (GRAVEL SURROUND - NON-TRAFFICKED AREAS)
NTS

NO	03/26	INITIAL ISSUE	DB	ZR
REV	DATE	DESCRIPTION	BY	CHK
CLIENT STUART HESLOP				
PROJECT: CRAIGBURN HOUSE				
DRAWING TITLE TYPICAL DRAINAGE DETAILS				
SCALE AS SHOWN @ A1		DATE MARCH 2026		
DRAWING NUMBER DIA-004		REV. 00		
DRAWING STATUS FOR PLANNING				
GONDOLIN LAND & WATER LTD 25 Leith Walk LEITH EH6 5SA Tel: 0131 624 4444 Email: info@gondolin.co.uk Gondolin Company No. SC796830				



GONDOLIN
Land & Water

Civil Engineering and Environmental Solutions

Gondolin Land and Water Ltd is a small environmental and engineering consultancy business based in Scotland with coverage throughout the UK.

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