

Flood Risk Assessment and Drainage Strategy Addendum Report

Project name **Land West of Turners Hill Road and South of Huntsland, Crawley Down**
Project no. **1620011691 - 014**
Client **Wates Developments Ltd**
Version **1.0**

Prepared by **AP**
Checked by **CL**
Approved by **TS**

1 Introduction

The following information is provided to supplement that already detailed in the following reports:

- Flood Risk Assessment by Ramboll, 17/01/2025, Version 5.0 (FRA); and
- Drainage Strategy by Ramboll, 17/01/2025, Version 6.0 (Drainage Strategy).
- Flood Risk Assessment and Drainage Strategy Addendum Report, 24/03/2025, Version 1.0.

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This Addendum Report is in response to additional comments from the Lead Local Flood Authority (LLFA) dated 30 April 2025, regarding applications DM/25/0014 and DM/25/0015, and the requested further information:

2 Required Further Information

The following sections present the LLFA requirements as detailed in the comments dated 30 April 2025, and the requested further information:

LLFA Comment/Request

1. *Cv value 0.75 is still being used in calculations. This underestimates the volume of water entering the drainage system therefore could increase flood risk elsewhere so has to be addressed as part of outline to ensure there is enough storage provided in masterplan.*

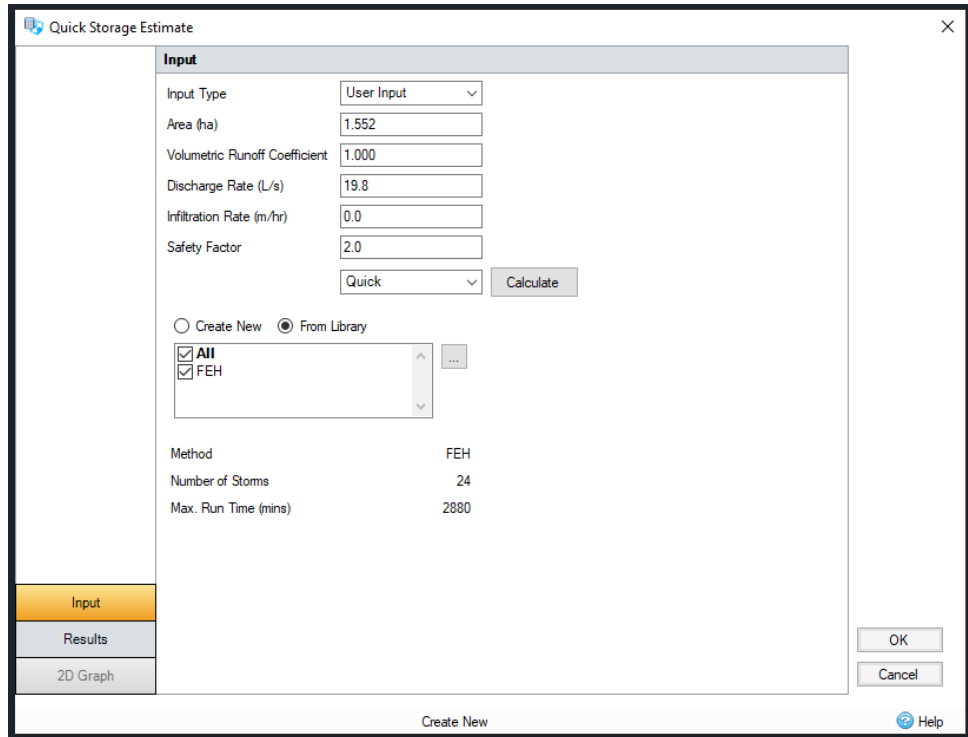
Response

The volumetric runoff coefficient (Cv value), has been checked with a worst-case scenario by using a value of 1. The storage requirement range has slightly

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increased as shown below. Storage provision on site remains within estimated range as shown on updated drainage layout plan within Appendix A.

Catchment 1:



Quick Storage Estimate

Input

Input Type: User Input

Area (ha): 1.552

Volumetric Runoff Coefficient: 1.000

Discharge Rate (L/s): 19.8

Infiltration Rate (m/hr): 0.0

Safety Factor: 2.0

Quick

Calculate

☐ Create New ☒ From Library

☒ All ☒ FEH

Method: FEH

Number of Storms: 24

Max. Run Time (mins): 2880

Input

Results

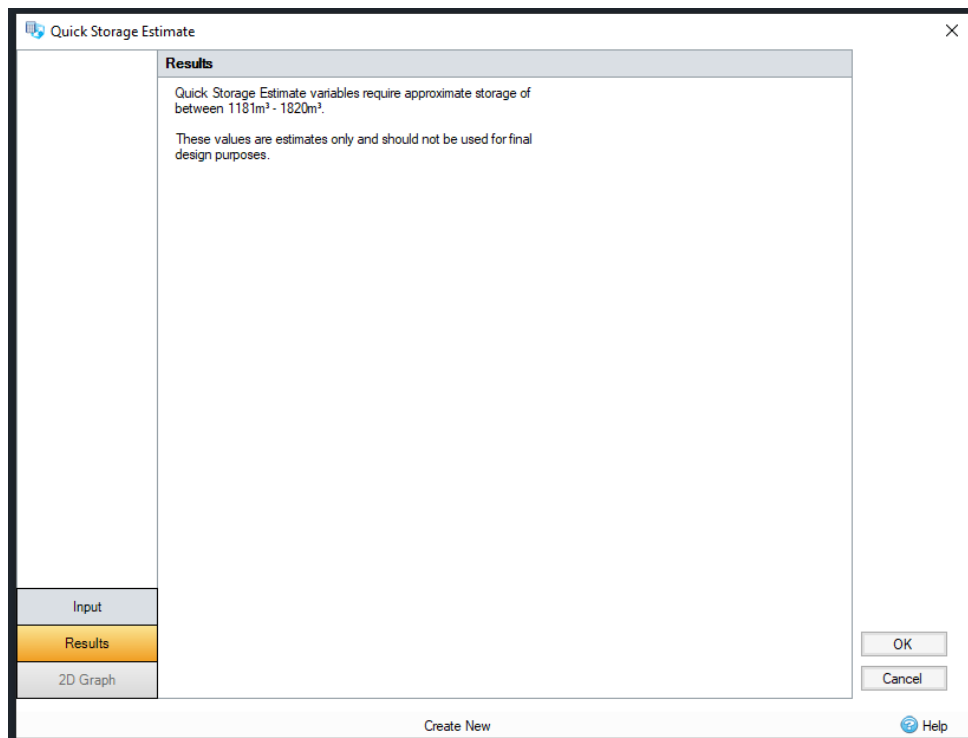
2D Graph

OK

Cancel

Create New

Help



Quick Storage Estimate

Results

Quick Storage Estimate variables require approximate storage of between 1181m³ - 1820m³.

These values are estimates only and should not be used for final design purposes.

Input

Results

2D Graph

OK

Cancel

Create New

Help

Catchment 2:

Quick Storage Estimate

Input

Input Type: User Input

Area (ha): 4.325

Volumetric Runoff Coefficient: 1.000

Discharge Rate (L/s): 41.6

Infiltration Rate (m/hr): 0.0

Safety Factor: 2.0

Quick

Calculate

☐ Create New ☒ From Library

☒ All

☒ FEH

Method: FEH

Number of Storms: 24

Max. Run Time (mins): 2880

Input

Results

2D Graph

OK

Cancel

Create New

Help

Quick Storage Estimate

Results

Quick Storage Estimate variables require approximate storage of between 3618m³ - 5424m³.

These values are estimates only and should not be used for final design purposes.

Input

Results

2D Graph

OK

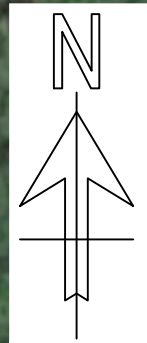
Cancel

Create New

Help

3 Appendices

3.1 Appendix A – Updated Drainage Plans



DISCHARGE TO NATURAL OUTFALL POINT ON GRAVE RD. RESTRICTED TO PER GREENFIELD RATE. FLOW RESTRICTION 19.8L/s

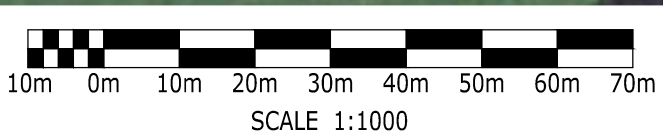
SURFACE WATER REQUIREMENTS:
CATCHMENT 1: 1.1941ha
10% QRA RAINFALL: 19.8L/s
CONTRIBUTING AREA: 10514.51m²
STORAGE REQUIRED: +1840m³

SURFACE WATER ATTENUATION PROVISION:
1. 100% STORAGE WITHIN 200mm PERMEABLE PAVING
2. 50% STORAGE IN SWALES
3. 50% STORAGE IN ATTENUATION BASINS (1.5m DEEP)
TOTAL PROVISION APPROXIMATELY 1871m³

SURFACE WATER REQUIREMENTS:
CATCHMENT 2: 7.1921ha
10% QRA RAINFALL: 41.4L/s
CONTRIBUTING AREA: 45246.20m²
STORAGE REQUIRED: +4620m³

SURFACE WATER ATTENUATION PROVISION:
1. 100% STORAGE WITHIN 200mm PERMEABLE PAVING
2. 50% STORAGE IN SWALES
3. 50% STORAGE IN ATTENUATION BASINS (1.5m DEEP)
TOTAL PROVISION APPROXIMATELY 4620m³

COMPLIANCE SWALES TO INTERCEPT OVER LANDSLIDE, PROTECTING THE ADJACENT PROPERTY AND DISCHARGE TO THE PIPED CONNECTION TO SWALE SOUTH OF HIGHWAY. WHERE EXISTING FLOWS ULTIMATELY DISCHARGE.



KEY:

- ExFW — EXISTING FOUL WATER DRAINAGE
- FW — PROPOSED FOUL WATER DRAINAGE
- PROPOSED FOUL WATER RISING MAIN
- PUBLIC SEWER FOUL WATER DRAINAGE
- PROPOSED FOUL WATER MANHOLE/INSPECTION CHAMBER
- PROPOSED SURFACE WATER MANHOLE/INSPECTION CHAMBER
- FLOW CONTROL CHAMBER
- SW — PROPOSED SURFACE WATER DRAINAGE
- EXISTING DITCH RETAINED
- EXISTING CULVERT
- HEADWALL (EXISTING & PROPOSED)
- PERMAVOID STORAGE CRATES
- PERMEABLE PAVING
- SWALE / ATTENUATION BASIN
- FOUL PUMPING STATION
- SITE BOUNDARY

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- Notes
- DO NOT SCALE FROM THIS DRAWING.
 - ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE.
 - ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM UNLESS SHOWN OTHERWISE.
 - THE CONTRACTOR IS TO ENSURE THAT ALL BURIED SERVICES ARE LOCATED PRIOR TO CARRYING OUT ANY EXCAVATION.
 - FOR DETAILS OF DRAINAGE STRUCTURES REFER TO RELEVANT STRUCTURE GENERAL ARRANGEMENT DRAWINGS.
 - DRAINS TO BE LAID CURVED ON PLAN WHERE SHOWN ON DRAWINGS.
 - EXISTING DRAINAGE INFORMATION SHOWN ON THESE DRAWINGS ARE NOT EXHAUSTIVE. EXISTING DRAINS TO BE RETAINED ARE SHOWN. DRAINAGE TO BE ABANDONED NOT SHOWN. EXISTING DRAINAGE ENCOUNTERED NOT SHOWN ON THESE DRAWINGS SHALL BE TREATED AS DIRECTED BY THE ENGINEER.
 - WHERE SHOWN TO BE RETAINED, THE LOCATION OF EXISTING DRAINAGE SHALL BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION. THE CONDITION OF THIS EXISTING DRAINAGE SHALL ALSO BE VERIFIED, AS PART OF THE WORKS, IN ACCORDANCE WITH THE SPECIFICATION. EXISTING DRAINAGE FOUND TO BE DEFECTIVE IN ANY WAY SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ENGINEER.
 - ALL EXISTING AND DIVERTED STATUTORY SERVICE INFORMATION IS SHOWN INDICATIVELY FOR REFERENCE ONLY. THE CONTRACTOR SHALL UNDERTAKE ALL NECESSARY INVESTIGATIONS TO DETERMINE THE EXACT LOCATION OF UNDERGROUND/OVERGROUND PLANT.

P02	PRELIMINARY ISSUE			
	AP	CL	CL	02.05.2025
P01	PRELIMINARY ISSUE			
	NJ	DF	CL	24.03.2025
Rev	Description			
	Drawn	Checked	Approved	Date
Purpose of Issue:				
FOR INFORMATION				
Status:				
S1				
LAND WEST OF CRAWLEY DOWN				
RAMBOLL				
tel 023 8081 7500 southampton@ramboll.co.uk www.ramboll.co.uk				
DRAINAGE LAYOUT SHEET 1				
Project No:		Scale (@A1):		Date:
1620011691		1:1000		FEB 25
Drawn:		Designed by:		
NJ		DF		
Drawing No:		Rev:		
RAM-HDG-XX-DR-C-00001		P02		