



**ARCH
ASSOCIATES**

DRAINAGE DESIGNER'S RESPONSE



FORMER POST OFFICE,
EASTLEIGH



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for

FORMER POST OFFICE
EASTLEIGH

Client:
PMC Construction
116 High St
Cosham

ISSUE		A	B	C
Issued By	C Hendry			
Date	06.12.2022			
Purpose	Information			
Approved By	CH			

Project No. PMC285



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1.0 Introduction

Arch Associates Limited has been commissioned by PMC to provide the detailed drainage design for the proposed development at the former Post Office site, High Street, Eastleigh.

Hampshire County Council's LLFA have provided comments on the Drainage Design Statement prepared by Arch Associates Limited and dated September 2022.

This document provides our response to each item raised and highlights any supporting documentation for ease of reference when checking.

2.0 Designer's Response to LLFA Comments

LLFA Comment

The revised drainage strategy has not considered flood risk at this site any further than the original strategy.

Arch Associates Response

The site is less than 1 ha and lies within Flood Zone 1. Refer to image below from the EA's Flood Map for Planning. No further assessment of flood risk other than surface water drainage exceedance events has therefore been considered necessary.



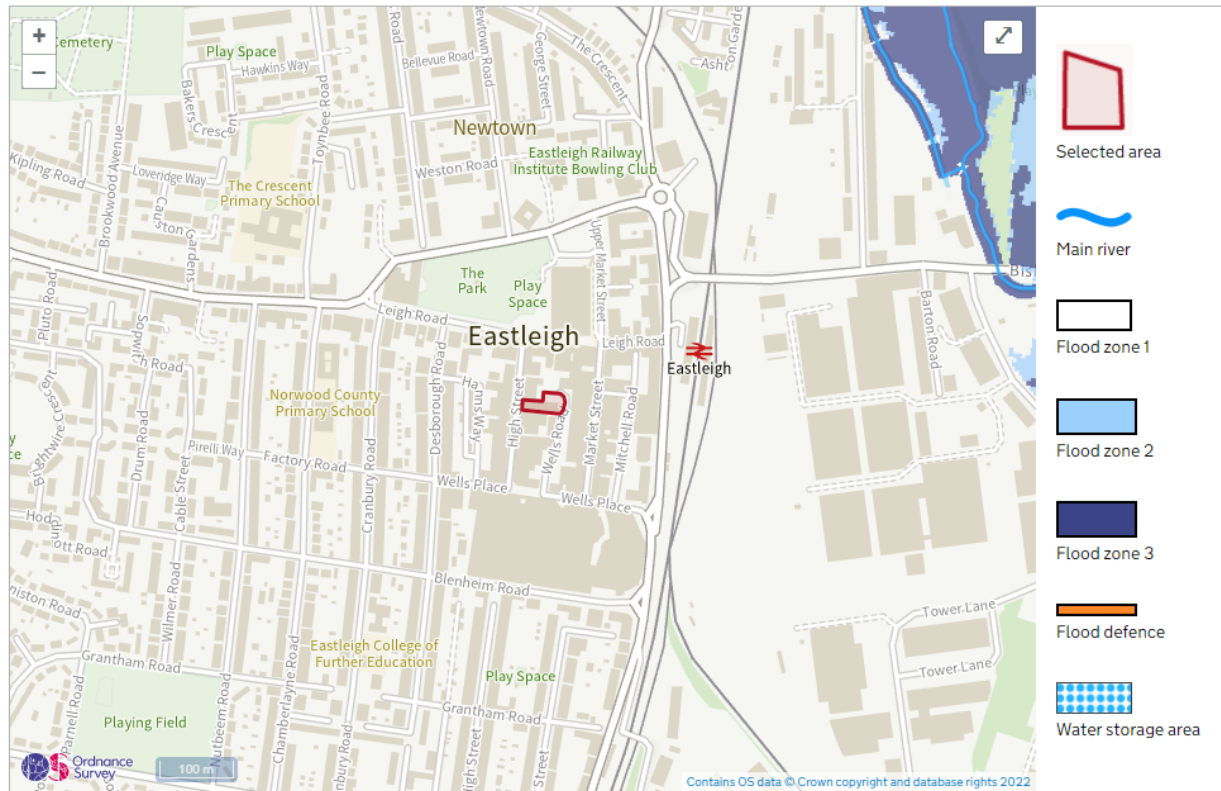


Figure 1. EA's Flood Map for Planning – site outlined in red

LLFA Comment

No further evidence has been provided to support the proposed discharge rate. No correspondence with Southern Water has been included to show that the rate is acceptable.

Arch Associates Response

Southern Water have been consulted and their response is still pending. A S106 is submitted for the connection of both the foul and storm connections. Southern Water's response to this is also pending.



LLFA Comment

Network calculations have been submitted showing that no flooding occurs for the 6 hour 1 in 100 year storm event plus an allowance for climate change. All storms should be considered in the calculations to determine the critical storm.

Arch Associates Response

The network was run through the APT module of MicroDrainage and all storms were considered. See extract from Page 5 of the output calculations below, which was included in the Drainage Statement. The storm ranges are listed and the level results are given for the worst case events.

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m ³ /ha Storage	2.000
Hot Start Level (mm)	0	Inlet Coefficient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

Number of Input Hydrographs	0	Number of Storage Structures	4
Number of Online Controls	1	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.350
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	19.600	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 30, 100
Climate Change (%)	0, 0, 40

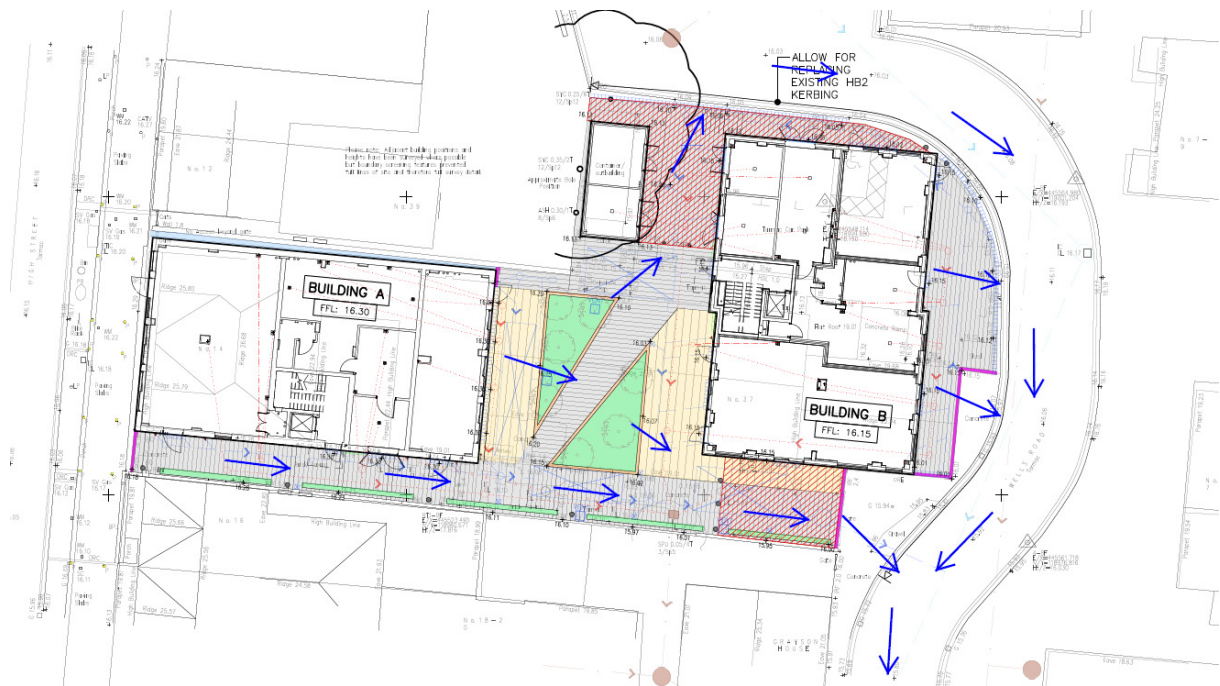
PN	US/MH		Return Period	Climate Change	First (X) Surchage	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
	Name	Storm							
1.000	ACO	15 Winter	100	+40%	30/15 Summer				16.149
1.001	S8	15 Winter	100	+40%	30/15 Summer				16.010
1.002	S7	15 Winter	100	+40%	30/15 Summer				15.940
1.003	S6	15 Winter	100	+40%	30/15 Summer				15.836
1.004	S5	30 Winter	100	+40%	30/15 Summer				15.505
2.000	S4	15 Summer	100	+40%	100/15 Summer				15.616
2.001	S3	60 Winter	100	+40%	100/15 Summer				15.434
1.005	S2	60 Winter	100	+40%	30/15 Summer				15.415
1.006	S1	60 Winter	100	+40%	30/15 Summer				15.326

LLFA Comment

Exceedance flood flow routes have been described but have not been shown on a plan

Arch Associates Response

Refer to diagram below for exceedance flow routes



LLFA Comment

Water treatment information has not been submitted. Maintenance information for the proposed surface water drainage system has been submitted.

Arch Associates Response

Based on the guidance in CIRIA C753, the following analysis has been undertaken with the relative mitigation indices for the proposed levels of treatment taken from CIRIA C753 Tables 26.3 (surface waters) and Table 26.4. The resultant assessment is summarised

within the Table below. A First Defence filter manhole has been added to the design to provide the required mitigation indices, which were obtained directly from Hydro International.

Element	Pollution Hazard Indices			
	Pollution Hazard Level	Total Suspended Solids	Metals	Hydrocarbons
Roofs	Very Low	0.2	0.2	0.05
	Pollution Mitigation Indices			
Hydro- International First Defence		0.5	0.4	0.8
Sufficiency		Sufficient	Sufficient	Sufficient