Christopher Harrison

From:	Simon Blacker
Sent:	03 November 2021 16:01
To:	Christopher Harrison
Cc:	David Wright; Telford, Paul
Subject:	Re: CBC, UU and CCC Response To Application Ref. 4/20/2455/0F1 Waters Edge.
Attachments:	1839-009 Bin Location Layout.pdf; 1839-008 Affordable Housing.pdf; 1839-007 Location Plan.pdf; 1839-006 Plot Types.pdf; 1839-004 Hard Surfaces.pdf; 1839-003 Parking Layout.pdf; 1839-002 Boundary Treatments.pdf; 1839-001 Site Layout.pdf

Hello Chris,

Firstly the parking plan is attached as requested, this has all required the updating of all plans, which are attached but parking is the only change. Paul Telford at CCC has reviewed the parking prior to submission. That addresses all of the Highways queries.

There are 3 queries from the LLFA perspective on the consultation response.

On the exceedance route point:

The Gleeson Homes drainage engineer has commented as follows:

It can cope with the flood water and we have contained all required storms by CCC, the system has been designed to contain 100 yr storm plus 40% CC, urban creep and CV's set at 1 which is a requirement of CCC. Therefore, the exceedance flows only show which manholes would flood over and above CCC requirements. There is absolutely no avoiding this, we cannot change the shape of the land, we can only control the storms which are required to be analysed and have data associated with them via historic research.

The vast majority of the site goes toward the exceedance route to the west, out towards the coastal land as suggested, and then the final area is initially to garden land within the site. This cannot be controlled further, and again it is stressed this is above CCC requirements.

Urban Creep:

Urban creep has been added to the Gleeson calculation as stated above. There is no urban creep added to the Story Homes site.

Manholes S1 & S14:

The Story Homes drainage engineer has commented as follows:

The flooding shown at S14 and S1 is minimal (see below). The flood water will sit on the highway outside of plots 18 and 19 (low spot with double gullies).

The flooding can be eradicated at S14 by upsizing the storage to 83.6m3 from 82.1m3.

Pipe Number	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	C
1.000	G1	15 minute 100 year Winte	94.537	93.521	0.184	0.000	0.77	
2.000	G8	15 minute 100 year Winte	94.528	93.873	0.545	0.000	0.43	
3.000	G11	15 minute 100 year Winte	95.601	93.894	0.469	0.000	0.47	
2.001	G9	15 minute 100 year Winte	95.361	93.841	0.667	0.000	1.21	
2.002	G10	15 minute 100 year Winte	95.174	93.770	0.662	0.000	1.24	
1.001	G2	15 minute 100 year Winte	94.199	93.203	0.458	0.000	1.97	
1.002	G3	15 minute 100 year Winte	94.233	92.797	0.157	0.000	1.09	
4.000	G6	360 minute 100 year Wint	94.904	92.696	0.771	0.000	0.01	
4.001	G7	360 minute 100 year Wint	94.476	92.696	0.804	0.000	0.01	
1.003	G4	360 minute 100 year Wint	94.080	92.696	0.837	0.000	0.09	
1.004	G5HB	360 minute 100 year Wint	93.686	92.696	1.482	0.000	0.06	
1.005	S8	360 minute 100 year Wint	93.000	90.822	-0.267	0.000	0.03	
1.006	S9	15 minute 100 year Sumn	91.835	90.214	-0.186	0.000	0.30	
1.007	S10	360 minute 100 year Wint	90.897	89.671	0.116	0.000	0.06	
1.008	S14 HB	360 minute 100 year Wint	89.662	89.664	1.355	2.478	0.02	
5.000	S1	15 minute 100 year Winte	92.778	92.778	1.304	0.160	1.69	
6.000	S6	15 minute 100 year Winte	92.762	92.530	0.883	0.000	1.12	
6.001	S7	15 minute 100 year Winte	92.494	92.016	0.776	0.000	1.63	
5.001	S2	15 minute 100 year Winte	91.867	90.799	0.017	0.000	1.00	
1.009	S3	15 minute 100 year Winte	89.394	87.239	-0.083	0.000	0.86	
7.000	S11	15 minute 100 year Winte	88.765	87.903	0.419	0.000	0.92	
7.001	S12	15 minute 100 year Winte	88.272	87.625	0.532	0.000	1.58	
1.010	S4	15 minute 100 year Winte	89.080	86.577	-0.178	0.000	0.54	
1.011	S15	15 minute 100 year Winte	85.182	83.564	-0.212	0.000	0.39	
1.012	SBD	360 minute 100 year Wint	81.914	81.393	0.379	0.000	0.00	
1.013	S17A	360 minute 100 year Wint	81.583	81.393	2.690	0.000	0.07	
1.014	S25 H-B	360 minute 100 year Wint	81.481	81.391	3.195	0.000	0.23	
1.015	S18	360 minute 100 year Wint	79.021	77.283	-0.161	0.000	0.18	
1.016	S19	360 minute 100 year Wint	76.183	74.458	-0.169	0.000	0.14	
1.017	S20	360 minute 100 year Wint	71.774	70.000	-0.133	0.000	0.36	
1.018	35	360 minute 100 year Wint	70.976	69.905	-0.131	0.000	0.37	

With regards to the original Storys scheme, flooding occurred at manhole S1 and S25 for the 100 yr +40% event, though the system will not have been designed for such an event. Refer to the summary below.

100 year return period Critical Summary of Results by Maximur

Pipe Number	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flo Ca
1.000	S8	15 minute 100 year Summ	93.000	90.789	-0.300	0.000	
1.001	S9	15 minute 100 year Winte	91.835	90.206	-0.194	0.000	
1.002	S10	15 minute 100 year Winte	90.897	89.355	-0.200	0.000	
1.003	S14 HB	15 minute 100 year Winte	89.662	88.122	-0.187	0.000	
2.000	S1	15 minute 100 year Winte	92.778	92.778	1.304	0.160	1
3.000	S6	15 minute 100 year Winte	92.762	92.530	0.883	0.000	1
3.001	S7	15 minute 100 year Winte	92.494	92.016	0.776	0.000	1
2.001	S2	15 minute 100 year Winte	91.867	90.799	0.017	0.000	1
1.004	S3	15 minute 100 year Winte	89.394	87.398	0.076	0.000	1
4.000	S11	15 minute 100 year Winte	88.765	87.903	0.419	0.000	
4.001	S12	15 minute 100 year Winte	88.272	87.625	0.532	0.000	1
1.005	S4	15 minute 100 year Winte	89.080	86.408	-0.144	0.000	
1.006	S15	15 minute 100 year Winte	85.182	83.386	-0.187	0.000	
1.007	SBD	240 minute 100 year Wint	81.914	81.498	0.484	0.000	
1.008	S17A	240 minute 100 year Wint	81.583	81.498	2.795	0.000	
1.009	S25 H-B	240 minute 100 year Wint	81.481	81.495	3.299	14.313	
1.010	S18	240 minute 100 year Wint	79.021	77.284	-0.160	0.000	
1.011	S19	240 minute 100 year Wint	76.183	74.459	-0.168	0.000	
1.012	S20	240 minute 100 year Wint	71.774	70.001	-0.132	0.000	
1.013	35	240 minute 100 year Wint	70.976	69.905	-0.131	0.000	

I trust that addresses all of the queries, but please let me know if anything else is required.

Kind regards,

Simon

Simon Blacker MRTPI

Planning & Development Consultancy

Good morning Simon,

Please see the attached as now received.

I would welcome your comments/response to the matters raised.

Thanks in anticipation.

Chris

Chris Harrison
Principal Planning Officer
Copeland Borough Council

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