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19 July 2023

South Dublin City Council
County Hall, Tallaght
Dublin 24
D24 A3XC

RE: Development within the Townlands of Cappagh, Clonburris Little Kishoge, Co. Dublin REG. REF. SDZ22A/0018

Dear Sir/Madam

In response to a Further Information Request issued by SDCC after a Planning Application was submitted for the subject development, please find below and enclosed responses to items related to the Civil Engineering design. Note that where relevant, additional information may be provided elsewhere by other members of the design team.

Item no. 1 Phasing/Density

Item no. 1 (c)

The applicant is requested to demonstrate that the strategic pedestrian / cycle route to the north of the site, along the railway, links to the cycle track proposed on the adjacent sites.

Item no. 9 Roads

DBFL have prepared a comparison drawing showing consistency between the wider Clonburris movement concept as set out in the Clonburris SDZ, figure 2.2.7 and the proposed wider Clonburris movement concept. Refer to the enclosed drawing CLB-1B-95-SW-DTM-DR-DBFL-CE-1002, indicating the continuous shared pedestrian/cycle route, linking the subject Clonburris T2 development and the adjacent proposed developments consistent with the SDZ. The proposed Clonburris T3 development directly west of Clonburris T2 (planning ref.SDZ22A/0017) has been granted planning permission as well as Clonburris T1 directly to the south (planning ref. SDZ21A/0022), which is currently under construction.

Item no. 9.1

The applicant is requested to submit construction/loading specifications for the reinforced grass strip along Block D and F east facades.



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DBFL Response

Detail of the proposed reinforced grass product and proposed build-up used is included on the enclosed drawing CLB-CLB-1B-95-SW-DTM-DR-DBFL-CE-5003, Figure E. The reinforced grass as proposed is suitable for a 30 ton fire tender.

Paved Areas (Grasscrete) Specification Clause:

"The Contractor shall install a Grasscrete paved surface as per location shown on drawing 200012-DBFL-RD-SP-DR-C-1001 and installed as per drawing CLB-1B-95-SW-DTM-DR-DBFL-CE-5003. Grasscrete formers type GC2, 150mm deep laid on a consolidated sub-base with a 50mm blinding layer of sharp sand. Steel mesh reinforcement to BS4483 reference A252. Concrete 30MN/m² at 28 days with air entrainment of 3%. 10mm maximum aggregate and a 25mm slump placed around formers and mesh and levelled to tops of formers. After 48 hours melt exposed tops of formers and fill with soil. Following settlement sow Grassmix No GC1 at a rate of 50g/m² and top up with fine friable topsoil, apply fertiliser as necessary. The Grasscrete shall be installed on a 250mm subbase. Expansion joints shall be incorporated at maximum 10 x 10m centres and shall consist of 25mm wide foamboard filler with 20mm diameter x 300mm long sawn mild steel dowels at 400mm centres with cap and debond to one side.

Note 1 The capping thickness is subject to finished level and in-situ testing A maximum CBR value of 2.5% has been assumed at design stage for all areas.

Note 2. The requirement for use of geogrid in the capping layers for pavement construction is subject to in-situ testing."

Item no. 9.2

The applicant should provide justification for the inclusion of Local Streets to South and West of Block G as the SDZ plan designates these streets as a Homezones.

DBFL Response

Refer to the movement concept drawing CLB-1B-95-SW-DTM-DR-DBFL-CE-1002 showing a comparison between the wider Clonburris proposed movement concept and the movement concept in the Clonburris SDZ.

The SDZ movement diagram indicates 4 Local Streets north of Street 12 and 3 Intimate Local Streets north of Street 12, matching the number of Street types proposed for the subject development based on Street hierarchy.

The SDZ indicates Street 14 as a Local Street, though it was recommended through a further information request for the adjacent development Clonburris T3, which has been granted Planning, that Street 14 be converted to an Intimate Local Street (Homezone).



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Street 18 is proposed as an Intimate Local Street (Homezone) to maintain the 4 Local Streets north of Street 12 and to maintain the Local Street Link north from Street D (Clonburris T1) since Street C has been converted to a Cycle Link instead of a Local Street.

While recognising the desire to match the exact street hierarchy as shown in the SDZ movement diagram, adjacent development phases, natural topography and tie-in locations to existing infrastructure has informed the proposed movement diagram which satisfies the overall objectives of the SDZ movement concept.

Item no. 9.3

The applicant is requested to submit a revised layout showing adequate sightlines for the development's junctions.

DBFL Response

All sight lines have been indicated on the enclosed roads drawing CLB-1B-95-SW-DTM-DR-DBFL-CE-1001 and care has been taken to ensure there are no obstructions to these sight lines.

Item no. 9.4

The applicant shall submit a Stage 1 Road Safety Audit.

DBFL Response

The Road Safety Audit is enclosed in this submission and all items have been taken into account for the revised Roads Layout drawing and associated details.

Item no. 9.6

The applicant is requested to submit a revised drawing showing the proposed Bin Collection Points located in areas that can be easily accessed at any time by refuse collectors. Bin Collection Points should not be located behind parking bays. This should be accompanied by a swept path analysis showing the collection route of a refuse vehicle.

DBFL Response

All bin store locations have been indicated on the enclosed road layout CLB-1B-95-SW-DTM-DR-DBFL-CE-1001. Refuse vehicle routes to these bin store locations have been tracked to ensure adequate access for refuse collectors and shown on drawing CLB-1B-95-SW-DTM-DR-DBFL-CE-1001.

Item no. 9.7

The applicant is requested to clarify the road surface materials at the junction between Blocks A, B & E, which is part of the Main Street Axis. All items and areas for taking in charge shall be undertaken to a taking in charge standard.



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DBFL Response

The junction between Blocks A, B & E have been revised as well as the proposed construction materials to ensure the design is to SDCC "taking-in-charge" standard as shown on the roads layout drawing CLB-1B-95-SW-DTM-DR-DBFL-CE-1001 and the construction details drawing CLB-1B-95-SW-DTM-DR-DBFL-CE-5003.

The revised junction shows a raised intersection with a hot rolled asphalt surfacing with white chips rolled in. The proposed road crossing includes appropriate tactiles and dropped kerbs at crossing points.

Item no. 10 Drainage

Item 10(a)

The proposed local surface water attenuation of 975m³ is undersized by approximately 85% for urban areas for a 1 in 100 year storm event. The applicant is requested to submit a report to show revised attenuation calculations use for proposed site at Clonburris.

DBFL Response

The proposed attenuation pond provides a storage volume of 2300m³ with a maximum water level of 59.00m AOD. However, the top of water level for the attenuation pond is 58.366m AOD for the 1:00 year storm event, requiring a storage volume of 1382m³. Surface water storage calculations are provided in Appendix C of the Infrastructure Design Report. Further details for the proposed attenuation pond are shown on the provided planning drawing CLB-1B-94-SW-DTM-DR-DBFL-CE-5005.



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Summary of Critical Results by Maximum Level (Rank 1) for SW 1

PN	US/MH Name	Flow / Overflow Cap. (l/s)	Maximum Vol (m ³)	Pipe Flow (l/s)	Status
S1.000	SM2	1.04	0.983	63.6	SURCHARGED
S1.001	SM2	1.14	4.133	124.8	SURCHARGED
S2.000	SM3	0.25	0.706	17.9	SURCHARGED
S1.002	SM3	0.92	8.811	206.5	SURCHARGED
S3.000	SM9	0.90	0.784	64.1	SURCHARGED
S3.001	SM10	0.95	3.053	124.6	SURCHARGED
S1.003	SM4	1.08	8.629	386.7	SURCHARGED
S4.000	SM12	0.34	0.832	65.3	SURCHARGED
S1.004	SM5	1.60	18.540	502.7	SURCHARGED
S1.005	SM6	0.06	8.301	71.1	OK
S5.000	SM11	0.55	1.225	31.3	SURCHARGED
S5.001	SM12	0.63	4.477	61.7	FLOOD RISK
S5.002	SM13	0.57	6.610	93.8	FLOOD RISK
S5.003	SM14	1.70	8.434	179.9	SURCHARGED
S5.004	SM15	2.25	2.258	270.6	SURCHARGED
S5.005	SM16	1.86	2.790	265.8	SURCHARGED
S5.006	SM17	0.24	4.129	33.1	SURCHARGED
S5.007	SM18	0.28	3.652	33.0	SURCHARGED
S1.006	SM7	0.05	1381.796	13.2	SURCHARGED
S1.007	SM8	0.06	1.487	15.8	OK
S1.008	SM9	0.09	2.823	21.6	OK

REQUIRED ATTENUATION VOLUME WITHIN ATTENUATION POND

Note the lowest building floor level within the subject development is 59.600m AOD and the floor level of the adjacent T1 development west of the proposed attenuation pond is 59.900m AOD, providing sufficient freeboard over and above the proposed top of water level for the attenuation.

The allowable attenuation outflow rate Qbar is 3.1l/s required by the Clonburriss Surface Water Management Plan.



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PN	US/MH Name	Event	Duration (mins)	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)
S1.000	SM2	15 minute 100 year Winter I+20%	15	59.668	59.074	0.574	0.000
S1.001	SM2	15 minute 100 year Winter I+20%	15	59.759	58.898	0.484	0.000
S2.000	SM3	15 minute 100 year Winter I+20%	15	59.707	58.701	0.329	0.000
S1.002	SM3	15 minute 100 year Winter I+20%	15	59.517	58.676	0.197	0.000
S3.000	SM9	15 minute 100 year Winter I+20%	15	59.600	59.042	0.398	0.000
S3.001	SM10	15 minute 100 year Winter I+20%	15	59.600	58.916	0.413	0.000
S1.003	SM4	15 minute 100 year Winter I+20%	15	59.485	58.655	0.199	0.000
S4.000	SM12	15 minute 100 year Winter I+20%	15	59.020	58.552	0.291	0.000
S1.004	SM5	15 minute 100 year Winter I+20%	15	59.503	58.438	0.157	0.000
S1.005	SM6	720 minute 100 year Winter I+20%	720	59.458	58.371	-0.229	0.000
S5.000	SM11	15 minute 100 year Winter I+20%	15	59.660	59.088	0.788	0.000
S5.001	SM12	15 minute 100 year Winter I+20%	15	59.240	59.028	0.790	0.000
S5.002	SM13	15 minute 100 year Winter I+20%	15	58.966	58.958	0.782	0.000
S5.003	SM14	15 minute 100 year Winter I+20%	15	59.512	58.863	0.831	0.000
S5.004	SM15	15 minute 100 year Winter I+20%	15	59.556	58.753	0.742	0.000
S5.005	SM16	15 minute 100 year Winter I+20%	15	59.618	58.512	0.536	0.000
S5.006	SM17	720 minute 100 year Winter I+20%	720	59.477	58.368	0.454	0.000
S5.007	SM18	720 minute 100 year Winter I+20%	720	59.269	58.366	0.504	0.000
S1.006	SM7	720 minute 100 year Winter I+20%	720	59.316	58.366	0.441	0.000
S1.007	SM8	120 minute 100 year Summer I+20%	120	59.397	57.499	-0.284	0.000
S1.008	SM9	120 minute 100 year Summer I+20%	120	59.560	57.495	-0.152	0.000

ATTENUATION POND TOP OF WATER LEVEL FOR THE 1:100 YEAR STORM EVENT

Item 10(b)

The applicant is requested submit a drawing with increased surface water attenuation and show the surface water layout to include connection to main surface water sewer in spine road. Clarify on drawing where proposed subsequent surface water attenuation systems will be.

DBFL Response

As detailed in the "Item 10(a)", sufficient surface water attenuation storage has been provided within the attenuation pond as proposed on drawings CLB-1B-94-SW-DTM-DR-DBFL-CE-5005 and CLB-1B-94-SW-DTM-DR-DBFL-CE-1001.

The tie-in points to the downstream surface water network and regional attenuation ponds are as required by the greater Clonburris SDZ Surface Water Management Plan shown in the image below.



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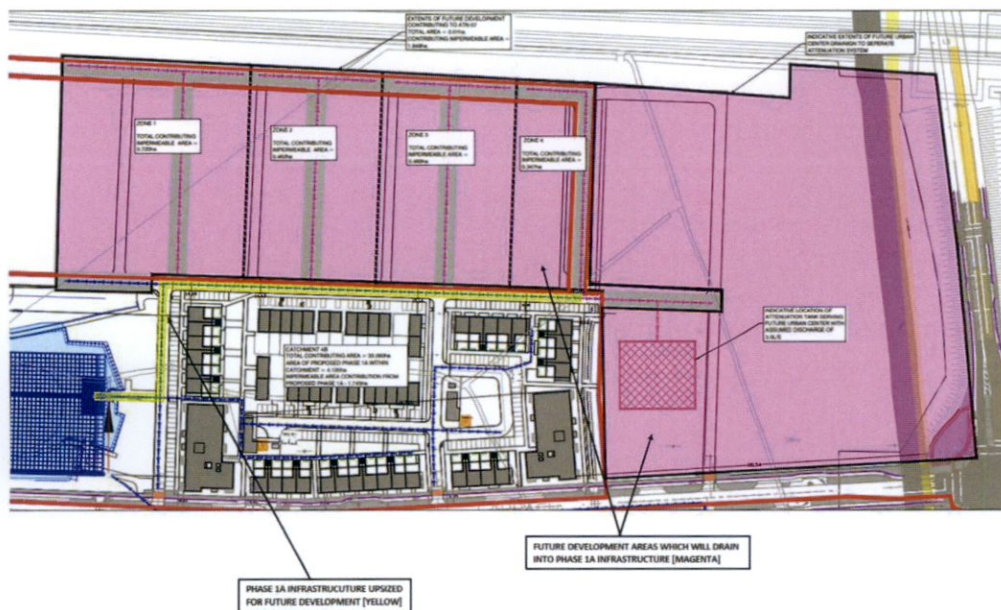
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A comparison between the discharge allowed for from the proposed development to be regionally attenuated again further downstream within the separately permitted regional attenuation basin ATN 07 and ATN 08 (planning ref SDZ20A/0021) and the actual discharge is provided in section 3.11 of the Infrastructure Design Report.



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Further, please refer to the enclosed drawing CLB-1B-95-SW-DTM-DR-DBFL-CE-1002 for an overview of the wider Clonburris Drainage Strategy designed in accordance with the Clonburris SDZ.

Item 10(c)

The applicant is requested submit up to date surface water drawings. Show how surface water layout drawings compare to drawings at pre designed stage of Clonburris Site.

DBFL Response

See response to Item 10(b)

Item 10(d)

The applicant is requested include SuDS (Sustainable Drainage Systems) in proposed development such as a Green Roof, Swales, permeable paving and other such SuDS. Examples of SuDS can be found in the SDCC SuDS Guide.

DBFL Response

Green roofs, permeable paving, SuDS tree pits and a large SuDS attenuation pond are provided as part of a suite of the proposed SuDS measures shown on drawing CLB-1B-94-SW-DTM-DR-DBFL-CE-1001. Details of the proposed SuDS features are shown on drawing CLB-1B-94-SW-DTM-DR-DBFL-CE-5003 to CLB-1B-94-SW-DTM-DR-DBFL-CE-5004. The functioning of these SuDS elements are also described in section 3.3 of the Infrastructure Design Report.

Item 10(e)

The applicant is requested contact water services in SDCC to discuss above issues before resubmitting additional information required.

DBFL Response

DBFL met with Brian Harkin as requested on 20/03/2023 to discuss all drainage related FI items and agree on all FI responses set out in the letter.

Yours sincerely

Dieter Bester
Chartered Engineer
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