JBA Consulting Stormwater Audit Stage 1 - Rev 1 Project: Residential Development at St Teres's, Temp

Residential Development at St Teres's, Temple Hill Rd, Blackrock Project Nr. Date: 2019s0083 22/09/2021 JBA Reviewers Chris Wason - Principal Engineer

Item No.	JBA Review Comment	Comment/Clarification Request/Suggested Mitigation	Response from Client/Client Representative
Date:	22/09/2021	22/09/2021	
	Information Provided		
	C1 - Existing Site C1 - Existing Site Plan.pdf		
	C11 - Roof Areas.pdf		
	C13 - Foul Discharge.pdf		
	C14 - Diversion mannole details.pdf		
	C2-0 - Foul and Surface Water - A0.ndf		
	C2-1 - Foul and Surface Water.pdf		
	C2-10- Foul Long Section.pdf		
	C2-11 - Combined Long Section.pdf		
	C2-2 - Foul and Surface Water.pdf		
	C2-3 - Foul and Surface Water.pdf		
	C2-4 - Foul and Surface Water.pdf		
	C2-5 - Foul and Surface Water.pdf		
	C2-7 - Foul and Surface Water.pdf		
	C2-9 - Storm Long Section.pdf		
	C3 - Qbar.pdf		
	C5 - Tree Root Protection.pdf		
	C6-1 - Suds Zone.pdf		
	C6-2 - Zone 1 Attenuation.pdf		
	C6-3 - Zone 2 Attenuation.pdf		
	D1 - Demolition Plan.pdf		
	El-1 - Flood Directions Site Plan ndf		
	F1-2 - Flood Return Period.pdf		
	G01 - Water Main Layout.pdf		
	Planning Report - Vol 1.pdf		
	Si-1 - Soakaway Tests.pdf Plan.pdf		
	General		
1	Microdrainage Calculation	A full design including the tank configurations and simulation	Updated Causeway calculations issued on the 27.09.21
	Microdrainage calculations were not provided but they appear to be similar	runs for the 30 and 100 year storms should be provided to	
	those previously reviewed at Pre planning stage which were designed on 100	ensure that the required levels of service are achieved	
	year storm return but maximum 50mm/hr rainfall.		
	Tanks were not sized in the model and no simulation runs carried out		
2	Attenuation tanks		Tanks have been sized using local rainfall data which is greater than that generated by the model
	1 - The spreadsheet used for the storage calculation uses a fixed discharge	The tanks sizing should be confirmed at detailed design stage	Both tanks volume includes a 20% increase in volume for climate change.
	head. GDSDS recommends that the volume should be increased by 20-30% to	in the Hydraulic model.	Stormtech Tank in Zone 1 has an additional 0.6m layer of angular stone giving an additional storage volume of 100m ³
	allow for a varying head relationship although it is acknowledged that the		Concrete Tank in Zone 2 has a free bore of 0.95m which gives an additional 370m ³ storage.
	spreadsneet uses locally derived rainfall which is greater than that generated		
	by the model and little difference in volume may be the result.		
	2 - the 100 year flood level would indicate that the flow controls and outfalls		
	may be surcharged.	Should the the storage units and flow controls should be	Both tanks have additional storage of at least 20% for climate change and an additional 100m ³ in the Stormtch Tank and 370m ³ in the concrete
		checked against a surcharged head?	
	3 - the flow control head adopted for tank 1 is 1.4m and that for tank 2 is 3m		
	in the report and drawings with pass forward flow of 4.65 l/s. The details	Ensure the details provided match the proposals and that	Heads have been co-ordinated on the drawings, report and hydro-InternationI design calculations.
	provided in the Appendix do not tally with the proposals	TWL level on tank as shown in the drawing is as proposed.	
	4 - no details of groundwater are provided	Does GW affect the stormtech tank? should it be lined to	
		protect GW?	Trail hole has been dug to formation and left open at the Stormtech locations, no water ingress, see response to queries from DLRCoCo
	5 - pg. 14 Qbar of 11.63 l/s should be corrected to 9.35 l/s		
		JJC to correct or clarify	
			Qbar has been amended.
L		1	

ive	Acceptable / Not Acceptable
	Accepted
	Accepted
lume of 100m³	tanks have been modelled in FLOW - No Flood 100 yr +10% CC.
	A final check against possible surcharge should be made in
	FLOW at detailed design stage.
itormtch Tank and 370m ³ in the concrete tank.	
	No response provided. For
	DLRCC to comment
sponse to queries from DLRCoCo	

Item No.	JBA Review Comment	Comment/Clarification Request/Suggested Mitigation	Response from Client/Client Representative	Acceptable / Not Acceptable
3	Filter drains	the use of filter drains/trenches will assist in the interception	We will review the use of filter drains at detailed design stage. The mature trees being retained make the wide spread use of filter drains difficult.	Accepted
	The full extent of the drainage network has not yet been fully designed and	of runoff and could be considered in the detail design phase .	Similar issue arise with the traditional pipe drainage which had to be designed to avoid the heavily rooted areas.	
	detailed. Consideration could be given for the use of filter drains where	Can consideration could be given to soakaways in some areas		
	possible.	of the site where ground conditions are more suitable?	Infiltration tests indicate that the site is not suitable for soakaways.	
4	Interception and treatment			Not Acceptable
	interception of 5mm run off is proposed but this is via a total storage	JJC to clarify how all areas are intercepted for 5mm of run off	Interception storage is split up into two separate zones, Z1 and Z2 and is split 50/50. See drawing C7 for clarification	(see note 7)
	capacity calculation which does not show that each impermeable area is	and compliance with table 24.6 of CIRIA 753.		See 7 below
	intercepted and compliant with CIRIA 753 table 24.6.			
	Is it assumed that the volume beneath any overflow nine in the nermeable			
	paying is available for interception of flow?	JJC to clarify and provide calculations if necessary to show	Volume below interception storage is available for interception flow. Areas are shown on drawing C7	
	P	areas intercepted		
	green roofs are deemed to satisfy but how are non green roofs intercepted.		All new building have green roofs, min 60%.	
		JJC to clarify	Existing St Catherines Hosue has no green roof but the roof area is 330m ² , which is only 0.8% of the overall area of the site.	
			The existing Gate Lodge roof will discharge to the new extesnion roof to the rear of the gate lodge, which is a green roof	
5	Basement Drainage	Details should be provided at detailed design stage.	Basement drainge drawings C4-1 and C4-1 were issued on the 27.09.21	Accepted
	No details of basement drainage provided.	Please confirm if basement drainage is to go to the foul		
6	Other SuDs measures	Consider using tree pits for new trees if they are to bring any	To be investigated with Mitchell and Associates (Landscape Architects)	Accepted
	possible use of tree pits where new trees are to be introduced	additional benefits.		
	<u>12/10/2021</u>			<u>08/11/2021</u>
7	Interception of 5mm is required from all impermeable surfacing. A high level	JJC to demonstarate how ALL areas are adequately	See updated Interception Drawing C7.	Accepted
	of interception provided in some area does not compensate for no	intercepted and in accordance with guidance given in table	Interception is broken in Z1 and Z2, roughly 43% / 57% in each Zone.	(see revised Planning Report.
	interception in other areas.	24.7. Green roofs are deemed to satisfy for the area covered.	Interception within Zones 1 and Zone 2 is broken down into a further 13 zones.	Non-green roofs to discharge to
	A total volume calculation of the site interception does not demonstrate how	It is not clear from table 24.7 if non green roofs can also be	Direction of flow from paved areas into Interception with the 13 zones is shown on drawing C7.	green roof element)
	all areas are adequatelky intercepted in accordance with guidance given in	considered to contribute to green roots and JJC should	Because of mature trees the widespread use of Swales / Infiltration trenches was examined but could not be implemented but swales / infiltarion	
	Table 24.7 of the CIRIA manual	coordie on this aspect and/of seek LA approval.	trenches have been intoduced where they do not damage existing mature trees, see C7 and C2.	