

APPENDIX C

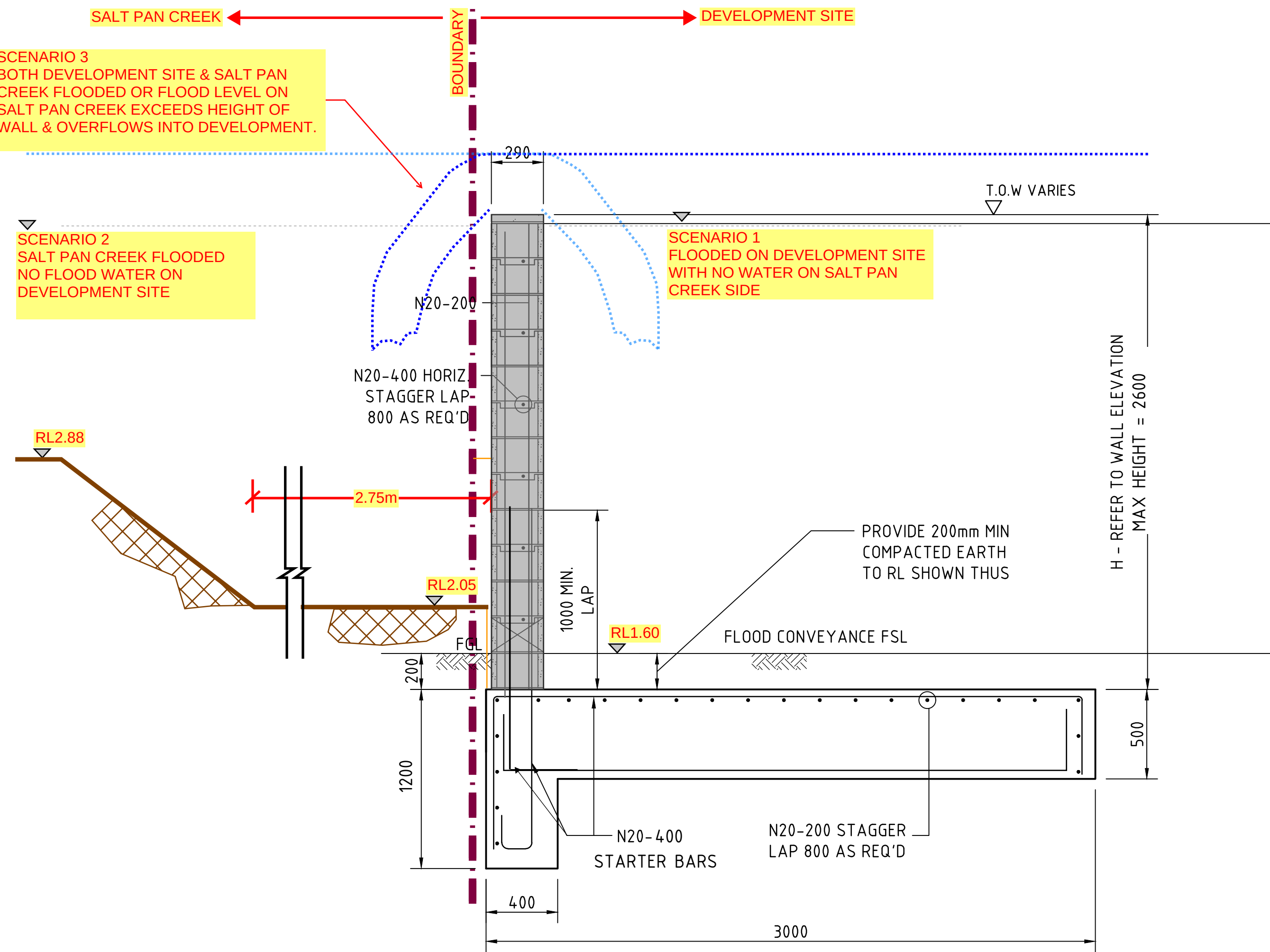
LEEVE WALL STRUCTURAL DESIGN SUMMARY

CO13924.02-SK-241017-01-LEEVE WALL SKETCH & CALCULATIONS

Note that there are different maximum loading scenarios to consider

Scenario 1: The development site is flooded and the Salt Pan Creek side is dry.
Scenario 2: The development site is dry and the Salt Pan Creek side is flooded.
Scenario 3: Both the development site and Salt Pan Creek are flooded (Probable Maximum Flood), OR flood level on salt pan creek exceeds height of wall and overflows into development.

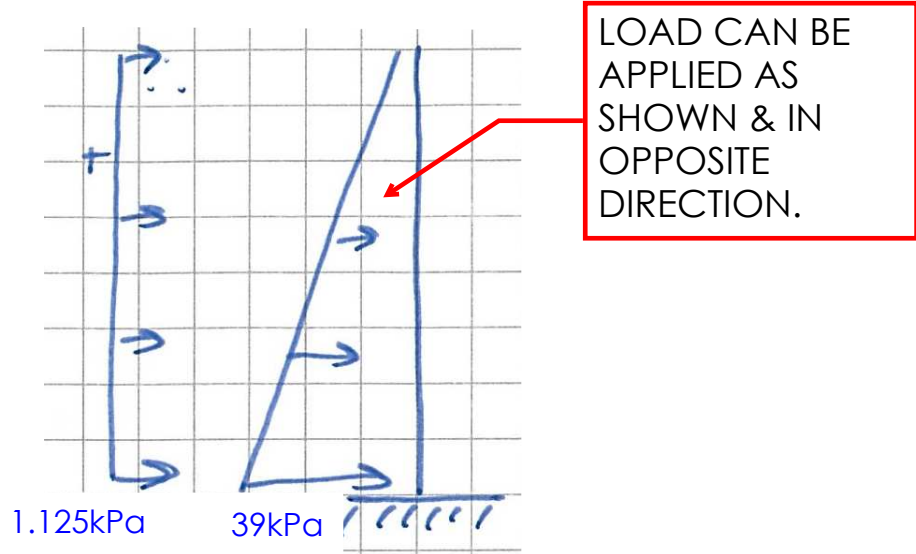
Governing design scenario for strength is scenario 1 and 2 (bending alternate directions)
Governing design scenario for stability is scenario 2 -> no restoring moment from the water assist in overturning.



INDICATIVE SKETCH OF WALL
(Reinforcement shown indicatively only, not to be used for construction)

SCENARIO 1 & 2 - LOADING

LIVE LOAD:
Q1 = HYDROSTATIC PRESSURE, TRIANGULAR DISTRIBUTION = $Y_h = 10\text{kN/m}^3 \times 2.6\text{m} = 26\text{kPa}$
ADOPT LIVE LOAD FACTOR $\Rightarrow 1.5Q = 39\text{kPa}$
ADDITIONAL PRESSURE DUE TO VELOCITY, VELOCITY = 1.5m/s, density $\rho = 1000\text{kg/m}^3$
 $P_{\text{velocity}} = 1.125\text{kPa}$ (RECTANGULAR DISTRIBUTION)



STRENGTH OF WALL

1m DESIGN STRIP
MAXIMUM BENDING MOMENT = +/- 47.74kNm
MAXIMUM SHEAR FORCE = 53.625kN

290 THICK CORE FILLED MASONRY H-BLOCKS. $f_{uc} = 15\text{MPa}$, GROUT = 20MPa, M3 MORTAR, REINFORCED WITH N20-400 EACH FACE. 65 COVER EACH FACE.

DESIGNED IN ACCORDANCE WITH AS3700
 $\Phi = 0.75$
Design Bending Capacity, $\Phi M_d = +/- 55.7\text{kNm} > 47.74\text{kNm}$ OK
Design Shear Capacity, $\Phi V_d = 86.42\text{kN} > 53.625\text{kN}$ OK

STABILITY OF WALL

SCENARIO 2 GOVERNS (SALT PAN CREEK FLOODED, DEVELOPMENT DRY)

1m DESIGN STRIP
BULK WEIGHT CONCRETE = 24kN/m³
WEIGHT FOOTING = 42.72kN
CENTROID FTG, X = 1.295m
WEIGHT WALL (2.6m) = 18.096kN

OVERTURNING RESISTANCE
FOOTING + WALL
 $\Phi = 0.8$
 $\Phi M_{\text{resist}} = 99.6\text{kNm} > 47.74\text{kNm}$ OK

SLIDING RESISTANCE
FOUNDING SOIL PROPERTIES (Geotechnical Investigation Report by PSM, Reference PSM4771-106R dated 23 October 2023)
BULK UNIT WEIGHT = 18kN/m³
FRICTION ANGLE = 30 DEGREES
ALLOWABLE BEARING PRESSURE = 150kPa

$\Phi = 0.8$
 $\Phi V_{\text{resist}} = 59.43\text{kN} > 53.625\text{kN}$ OK



Sketch #: Co13924.02-SKS-241017-01

Title: SUMMARY CRITICAL CALCULATIONS

Designer: EM Date: 17/10/2024

Issued For: INFORMATION ONLY Rev: -

ISSUED FOR CONSTRUCTION			04.09.24	0
ISSUED FOR CONSTRUCTION APPROVAL			28.06.24	C
ISSUED FOR CO-ORDINATION			26.04.24	B
ISSUED FOR CO-ORDINATION			24.04.24	A
AMENDMENTS			DATE	ISSUE

ARCHITECT	PACE ARCHITECTS
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BUILDER / PROJECT MANAGER	VAUGHAN CONSTRUCTIONS
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PROJECT	MOXON ROAD, MULTI LEVEL WAREHOUSE
45-57 MOXON ROAD, PUNCHBOWL	
NSW, 2196	
DESIGNED	AH
DRAWN	RN
DATE	MAR '24
CHECKED	DS
SIZE	A1
SCALE	AS SHOWN
CAD REF:	CO13924.02-C650

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CIVIL & STRUCTURAL ENGINEERS	

DRAWING TITLE	SKETCH ONLY - LEVEE WALL SUMMARY
DRAWING No	Co13924.02-SKS-241017-01
ISSUE	0

APPENDIX D
COUNCIL COMMENTS
DATED 21 AUGUST 2024

21 August 2024

Mike Chi
Senior Project Manager
Tactical Group Australia & New Zealand
Level 15
124 Walker Street
North Sydney, NSW 2060

Dear Mike,

Re:45-57 Moxon Road, Punchbowl - State Significant Development Application (SSD-71454709) Post-Approval Consultation - Canterbury Bankstown City Council

Canterbury Bankstown Council (Council) has reviewed the Stormwater Detailed Design Package (PAE-73704215) submitted for Post-Approval consultation, which was issued to Council on 22 July 2024 in accordance with condition B46. Please note that this response should be reviewed in conjunction with Council's submission for the Construction Traffic Management Plan.

Based on this review, the following comments outline Council's considerations regarding the proposal and provide recommendations that should be addressed prior to the commencement of construction.

Table 1 below presents Council's detailed key considerations. For context, Council's comments from the previous submission (November 2023) relevant to the Stormwater Detailed Design are included in **red**. Council's formal responses to the Stormwater Detailed Design Package are provided following each statement.

Table 1. Key Considerations in relation to the Applicant's Stormwater detailed design as per condition B46

Key Considerations	Council's Comments
General	- As noted in Council's November 2023 submission, there are several pits located on Moxon Road, towards the eastern end of the site, that currently provide service. However, there are no existing Council connections to Little Salt Pan Creek on the western side of the site. Additionally, it is noted that Council does not own any drainage infrastructure traversing the site. - In Council's November 2023 submission, it was also acknowledged that there is drainage infrastructure present on Moxon Road. Specifically, there is an existing surface inlet pit and a combined kerb inlet pit in front of the property at 57 Moxon Road. These pits drain via a DN375 and DN450 pipe, respectively, to the DN750 trunk on the eastern side of the road, which then connects to the open channel.
Stormwater Detailed Design	a) <i>Previous Response issued in November 2023: Council requests that reference should be made to the recently released Council's DCP and LEP 2023.</i> Response to Stormwater Detailed Design: Council notes that References in Rev F of the Civil Engineering Report and Draft B of the Flood Management Plan/Flood Emergency Response Plan have not been updated to DCP 2023. As such, Council requests that all references to Council's DCP refer to the Canterbury-Bankstown DCP 2023.

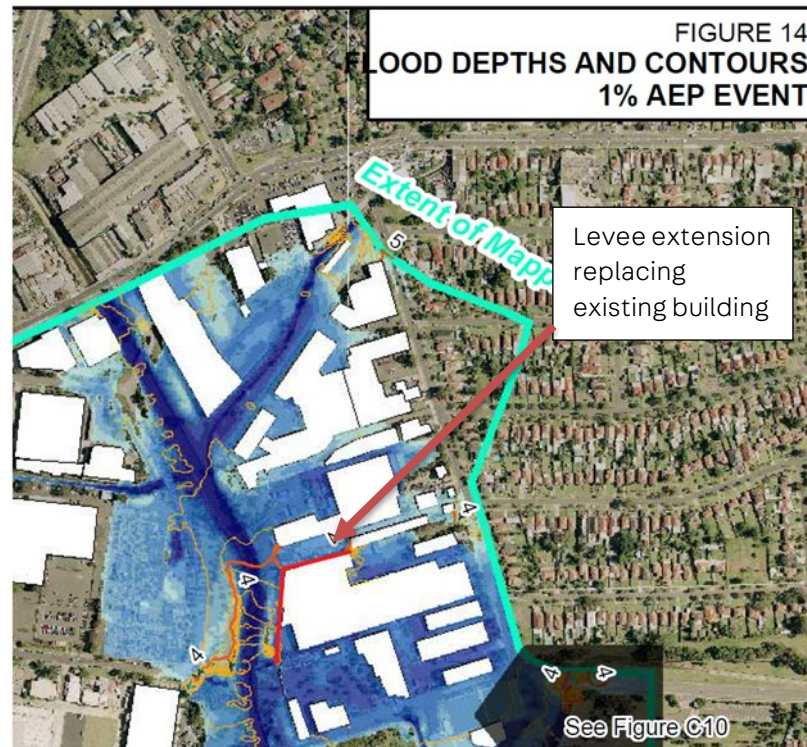
- b) *Previous Response issued in November 2023: Council notes that significant flood impacts (flood level increase >0.01m) are found on adjacent properties including 59 Moxon Road Punchbowl, properties upstream of Moxon Road and Salt Pan Creek Tributary D for the simulated flood events, i.e., 20%, 5%, 1%, 0.5%, 0.2% AEP. It was not clear why the true flood impact extent for the 1% AEP event was not shown in Afflux Map C013924.01-F03 but it can be deduced that the peak flood levels have increased, e.g. 3.16 m AHD for pre-development vs 3.22 m AHD for post-development at 59 Moxon Road. Council also notes that a further the PMF afflux map was not provided.*

Response to Stormwater Detailed Design: Council acknowledges the applicant's comments regarding the above-mentioned impacts. However, Council requests that a sensitivity modelling assessment be conducted to evaluate the impacts of the columns/piers on flood storage displacement. Additionally, the potential for the suspended slab to obstruct floodwaters during rarer events should be assessed, particularly when flood levels reach the soffit of the slab.

- c) *Previous Response issued in November 2023: Council notes it was not clear whether the levee along the western boundary has been included in the flood model, and whether the levee would be extended north in the post-development scenario following the demolition of the existing building. Should the levee be demolished, the site would be exposed to mainstream flooding from Salt Pan Creek for more frequent events. Should the levee be retained, it is unclear how the flows would be discharged downstream via the proposed flood conveyance zone.*

Response to Stormwater Detailed Design: Council acknowledges the applicant's response to the above-mentioned considerations. However, Council requests that the level of the new (extension) levee wall along the northern and western boundaries of the development site be raised above the Salt Pan Creek mainstream 1% AEP flood level plus a 0.5m freeboard, resulting in a minimum elevation of 4.5m AHD along the northern boundary (based on the 1% AEP level contours in Figure 14 of the Salt Pan Creek Flood Study (2011)). This adjustment will also account for the impacts of sea level rise. Additionally, Council requests that certification be provided to demonstrate that

both the existing and new (extension) levees can withstand the forces of floodwaters.



- d) *Previous Response issued in November 2023: Council requests confirmation on the current height of the levee to help establish whether the site is currently protected from mainstream flooding from Salt Pan Creek up to the 1% AEP event as claimed in the report. It should be noted that mainstream floodwaters can still enter the site from the south (via 59 Moxon Road) where there is no levee.*

Response to Stormwater Detailed Design: Council acknowledges the applicant's response to the above-mentioned impacts and accepts that the following impacts have been satisfactorily addressed.

- e) *Previous Response issued in November 2023: In view of the above, Council requests that a flood assessment should be undertaken for mainstream flooding from Salt Pan Creek in addition to overland flow flooding.*

Response to Stormwater Detailed Design: Council acknowledges the applicant's response to the above-mentioned impacts and accepts that the following impacts have been satisfactorily addressed.

- f) *Previous Response issued in November 2023: Council notes that the statement describing that the site will not be affected by sea level rise is incorrect. The Salt Pan Creek Flood Study (2011) indicated that peak flood level increase in the order of 0.06m can be expected on Moxon Road for the +0.55m sea level rise scenario and increase of 0.14m can be expected for the +0.91m sea level rise scenario. The sensitivity of the site flood levels to sea level rise should be assessed based on the service life of the development as per ARR2019 recommendations.*

Response to Stormwater Detailed Design: Council acknowledges the applicant's response to the above-mentioned impacts and accepts that the following impacts have been satisfactorily addressed.

- g) *Previous Response issued in November 2023: With the provision of flood storage on-site, Council recommends that longer storm durations be assessed as the storm which will produce the peak volume at the flood storage on-site is unlikely to be the shorter duration storm such as the 45-minute as adopted in the assessment. The mean/median temporal pattern adopted for the flood modelling should be reported.*

Response to Stormwater Detailed Design: Council acknowledges the applicant's response to the above-mentioned impacts and accepts that the following impacts have been satisfactorily addressed.

- h) *Previous Response issued in November 2023: Council recommends that an assessment be undertaken based on a concurrent mainstream and overland flow flooding scenario (assuming the levee is retained/extended) as it is likely the overland flow would not be able to discharge into Salt Pan Creek in the event of elevated creek levels, and assuming the pumps do not have sufficient capacity to discharge overland flows downstream of the levee in time.*

Response to Stormwater Detailed Design: Council acknowledges the applicant's response to the above-mentioned impacts and accepts that the following impacts have been satisfactorily addressed.

- i) *Previous Response issued in November 2023: Council notes that it is not clear whether the columns/piers under the suspended slabs have been included in the flood model. Consideration should be given to the potential loss in flood storage displaced by the columns/piers.*

Response to Stormwater Detailed Design: Council requests that a sensitivity modelling assessment be conducted to determine the impacts of the columns/piers on flood storage displacement. Additionally, the potential for the suspended slab to obstruct floodwaters during less frequent events should be evaluated, particularly when flood levels reach the soffit of the slab.

- j) *Previous Response issued in November 2023: Council requests that a site-specific flood emergency response plan will need to be developed considering the high hazard flows anticipated, with H3 hazard found even in the 20% AEP event, cutting access to the south-eastern warehouse completely and preventing evacuation. Council has significant concern for the risk to life and property/goods for the proposed development in view of the high hazard flows anticipated around the site.*

Response to Stormwater Detailed Design: Council requests the provision of appropriate flood signage for the designated access and egress route during a flood emergency. Given that the northernmost driveway is designated for exiting traffic only, Council advises that appropriate signage should be installed to permit the entry of emergency services vehicles during an emergency.

Council also notes that, based on the proposed slab finished levels, the slab would be inundated during a 0.2% AEP event and above, indicating that off-site evacuation may not be feasible for events rarer than the 0.2% AEP.

Council requests that the Flood Emergency Response Plan be developed to include appropriate emergency responses for all flood events up to the Probable Maximum Flood (PMF).

- k) *Previous Response issued in November 2023: Considering the adverse impacts caused by the proposed development, Council notes that the proposed imported/net fill of 26,200m³ is not acceptable.*

Response to Stormwater Detailed Design: Council acknowledges the applicant's response to the above-mentioned impacts. However, Council requests that a sensitivity modelling assessment be undertaken to evaluate the impacts of the columns/piers on flood storage displacement.

- l) Previous Response issued in November 2023: Council requests that a comparison of the peak flood levels around the site should be provided in a tabular format to confirm the model validation results.*

Response to Stormwater Detailed Design: Council acknowledges the applicant's response to the above-mentioned impacts and accepts that the following impacts have been satisfactorily addressed.

