Job No: 1018747
23 September 2021

TEC-C Investments Pty Ltd
L1/377 New South Head Road
Double Bay
NSW2028

Attention: [redacted]

Dear [redacted]

Gap Road Battery - Initial High Level Qualitative Flood Hazard Assessment

Tonkin & Taylor Pty Ltd (T+T) has been engaged by TEC-C Investments Pty Ltd (TEC-C) to conduct a flood and hydrological study for the proposed battery facility at 380 Gap Road, Cowes.

This letter outlines the findings of the qualitative assessment based on available ground elevation data for the Gap Road Battery Project. This assessment is required to determine whether or not any surface flooding related sensitivity to specific horizontal location of the proposed battery exists.

This work has been carried out in accordance with our proposal dated 10 September 2021.

This qualitative flood assessment is the first of two deliverables for this project, with the second deliverable being a more detailed flood hazard assessment which will be based on the results of a hydraulic model developed specifically for this site. No model has been used for this first assessment.

Information provided/ obtained to date has been:

1 Topographical survey, covering the subject site
2 Digital Terrain Model derived from LiDAR data limited to the site and immediate surrounding area (not suitable for detailed hydraulic analysis)
3 Planning for Sea Level Rise Guidelines February 2017 – Port Phillip and Westernport Region Report
4 Bass Coast Municipal Flood and Storm Emergency Plan, A sub-Plan of the Municipal Emergency Management Plan (version 3.2 December 2018) Report
5 Melbourne Water Flood Certificate (Appendix A)

The Planning For Sea level Rise Guidelines report is not applicable to the site (as the site is not adjacent to the coast). The Bass Coast Municipal Flood and Storm Emergency Plan report refers to "Water over Road" at Gap Road, however no information was provided regarding the specific data associated with the water over road classification including location, depth, velocity etc.

The flood certificate from Melbourne Water states that there are "*no applicable flow rate velocity associated with the site*" and that "*information available at Melbourne Water indicates that the property is not subject to flooding from Melbourne Water's drainage system, based on a rainfall event which has a 1% Annual Exceedance Probability (AEP)*". This however is not supported by any

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information regarding the drainage at the site, nor by metadata to show the basis of this information (i.e. type of hydraulic analysis undertaken, any design calculations etc).

The site is situated at 380 Back Beach Road, and the proposed battery platform is bounded by a road side drain and Gap Road to the east, an open drain to the south and south west, and the property boundary to the north. The site drains east to west at an approximate slope of 0.3%. As this slope is considered to be very flat, we have inferred that the site is likely to be poorly drained.

The Digital Terrain Model derived from LiDAR data shows that the drains surrounding the site on the east and south appear to be of a general v-shape with:

- The road side drain being approximately 3 m wide and up to 0.5 m deep,
- The southern drain is 7-8 m wide and up to 0.9 m deep.

Based on the above dimensions and the general site slope, our qualitative assessment indicates that drain conveyance capacity is likely to be limited and surface runoff is likely to exceed the drain capacity in significant rainfall events (such as the 1% Annual Exceedance Probability (AEP) event). Events of this magnitude may cause surface flooding over the site.

The available topographical information indicates that slightly elevated ground exists adjacent to the southern drain. However, we understand that there is community interest to maintain separation to the drain from any development. On this basis we see the proposed site of the platform at the north eastern corner of the site to be suitable for the proposed development. The required ground elevation of the platform will be confirmed once the detailed flood hazard assessment has been completed in the next stage of this work as this will help identify flood levels, flood velocity and flood depth at the site. From this information we will be able to recommend the battery site platform level.

In summary, based on the available information to date, and recognising the lack of available data at the site the following can be stated:

1 The site is likely to experience some degree of surface flooding in response to severe rainfall events.

2 Surface flooding that may occur at the site is likely to be to a relatively uniform depth over the site, with relatively low flow velocity. Because of this there is no sensitivity to the location of the battery on the site that is driven by flood management needs.

3 We recognise the need to maintain the existing road-side drain to maintain the existing surface flow configuration. We also recognise that the battery site will need to be filled to reduce the likelihood of flooding. In placement of this fill it will be important to establish fill batters that do not interfere with surface drainage and do not cause runoff to be shed towards neighbouring property. To this end we recommend that a margin of approximately 5m be established between the toe of any fill batter to both the northern boundary and to the drain alongside Gap road to the east. Drainage within the filled platform should be established using cross-fall to the south and/or west (refer to Figure 1 below).

Outside of the constraints stated in 3 above, the location of the platform is not likely to change due to the hydraulic analysis to be undertaken as a part of the next deliverable, i.e. there is no flood related sensitivity to the battery location, therefore the site location is unlikely to change within the 80m by 80m land parcel.

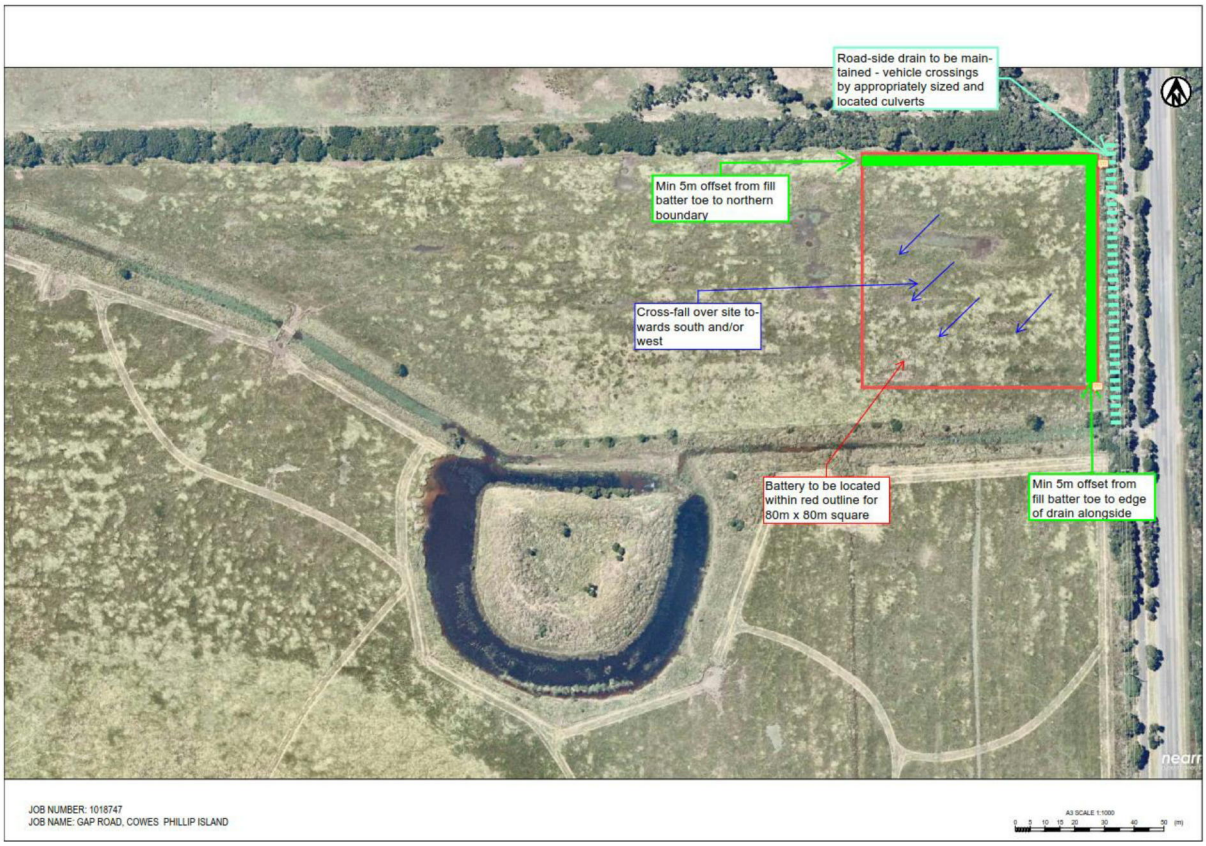

Figure 1: Site layout showing 5 m offset from fill batters and a drainage cross fall over site

Applicability

This report has been prepared for the exclusive use of our client TEC-C Investments Pty Ltd, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

Tonkin & Taylor Pty Ltd

Environmental and Engineering Consultants

Report prepared by:

[redacted]

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[redacted]

Authorised for Tonkin & Taylor Pty Ltd by:

[redacted]

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[redacted]

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Appendix A: Melbourne Water Flood Certificate

21 September 2021

Sze-Fei Peng
Tonkin and Taylor Pty Ltd
Kings Technology Park, Level 3, 99 Coventry Street
Southbank VIC 3006

Dear Sze-Fei,

Proposal: Flood level certificates
Site location: Lot No 1, 380 BACK BEACH ROAD COWES 3922

Melbourne Water reference: MWA-1224814
Date referred: 14/09/2021

Applicable Flood Level:

Flooding may be associated with the Melbourne Water regional drainage system and/or the local Council drainage systems. Information available at Melbourne Water indicates that the property is not subject to flooding from Melbourne Water's drainage system, based on a rainfall event which has a 1% Annual Exceedance Probability (AEP), that is, a 1% probability of being equalled or exceeded in any one year.

To determine if a property is subject to flooding from the local Council drainage system you will need to contact the relevant Council for flood information. For the purposes of the Building Code of Australia - Building in Flood Hazard Areas, there is no applicable flow rate velocity associated with the above property. Melbourne Water does not have any information in relation to flow velocities associated with the local Council drainage system.

Important to note:

Melbourne Water provides flood advice under Section 202(2) of the Water Act 1989.

This letter does not constitute approval for any proposed development for planning or building.

To obtain flow rate velocity information or Melbourne Water's requirements for any proposed development, please contact our Customer Service Centre on 131 722 or make an application here.

The flood level advice provided is based on the most accurate information currently available. This estimated flood information may change and is valid for 3 months from the date of this letter. If you are proposing to develop this land after such time, it is recommended that new advice be obtained from Melbourne Water.

Melbourne Water ABN 81 945 386 953
990 La Trobe Street Docklands VIC 3008
PO Box 4342 Melbourne VIC 3001 Australia
T 131 722 F +61 3 9679 7099
melbournewater.com.au

Disclaimer

This letter does not constitute approval for any proposed development for planning or building. Melbourne Water provides flood advice under Section 202(2) of the Water Act 1989.

This certificate provides information as a general reference source only and has taken all reasonable measures to ensure that the material in this letter is as accurate as possible at the time of publication. However, Melbourne Water makes no representation and gives no warranty about the accuracy, reliability, completeness or suitability for any particular purpose of the information. To the full extent that it is able to do so in law, Melbourne Water disclaims all liability, (including liability in negligence), for losses and damages, (including indirect and consequential loss and damage), caused by or arising from anyone using or relying on the information for any purpose whatsoever.

The flood information provided represents the best estimates based on currently available information. This information is subject to change as new information becomes available and as further studies are carried out.

This estimated flood information may change and is valid for 3 months from the date of this letter. If you are proposing to develop this land after such time, it is recommended that new advice be obtained from Melbourne Water.

Advice

For more information in relation to flooding or additional services that Melbourne Water can provide please visit our website.

For general development enquiries contact our Customer Service Centre on 131722.

Regards,

[redacted]

Tristan Aldridge
CSR