

PSM5226-017E Preliminary landslide risk assessment 3 Penny Lane, McCrae, VIC

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Date: Tue, 07 Jan 2025 17:30:59 +1100
Attachments: Photo 1.HEIC (5.11 MB); Photo 2.HEIC (5.74 MB); Figure 1 .jpg (358.33 kB)

Hi Matt,

A landslide has impacted a property at 3 Penny Lane, McCrae, VIC. At your request, Dane Pope (Principal of PSM) attended Site on 6/01/2025 to assess the risk to property owners impacted by the Landslide.

More details of the event can be provided at a later stage in a report. Recommendations for actions are provided to reduce risks to As Low As Reasonably Practicable (ALARP).

PSM has completed a preliminary risk assessment of the affected dwellings which includes:

- 10-12 View Point Road (Above the Landslide, source of the Landslide) referred to herein as Property "P1".
- 3 Penny Lane (impacted by debris) – Property "P2"
- 607-609 Point Nepean Road (downstream of potential landslide activity – Property "P3".

The Landslide had the following approximate characteristics:

- Initiated from in front of a recently constructed retaining wall on P1 and has impacted the rear of P2, Photo 1.
- The Landslide initiated on the night of Sunday 5th January 2025 following two days of dry, hot weather. Rainfall followed the event.
- Translational slide which has evacuated materials down to the natural granitic soils at the base of the Landslide.
- A sub-vertical head scarp up to 1.5 m high, Photo 2.
- A significant portion of the headscarp was saturated and with measurable flow of water (0.15-0.2 L/s) flowing along the base and down the hill. The seepage was observed at the contact with surficial soils (fills/ancient landslide debris) and the underlying natural soils.
- Volume in the range of 15 to 20 m³.

Near the head scarp, unstable zones in the order of 3 to 6 m³ were observed. These were typically on the southwestern flank of the Landslide (or right hand side in Photo 2).

A preliminary risk assessment has been completed for volumes in the order of 5 to 10 m³. These volumes represent unstable volumes observed on site and do not reflect long term volumes that are assessed for the life of the properties.

The results indicate, over the immediate short term (where temporary controls are introduced and repairs are made):

- Risk to life for P1 is tolerable.
- Risk to life for P2 is unacceptable. PSM supports the actions/advice of the MPSC Building Surveyors that the house must not be occupied.
- Risk to life for P3 varies from unacceptable to tolerable depending on the conditions of the Landslide and with what energy it strikes the dwelling.

As discussed, steps should be taken to reduce risks to ALARP so that residents in P3 can remain. This will also help to avoid protracted discussions regarding risk to life calculations.

Some of the Property owners should take steps to mitigate the risk of further landslide activity while cause/repairs are investigated further, and insurers respond. Each property owner should do so with the support of Geotechnical Engineers who are experienced in mitigation of landslide hazards.

Property	Actions
P1	• Monitor slopes immediately behind the failure for signs of change and or deterioration. • Cease all garden watering in the vicinity of the Landslide. • Surficial cut off bund with Coir logs or sandbags behind the retaining wall to direct surface water away from the head scarp. • Seek advice from their engaged Geotechnical engineer to make safe as best as is practical.
P2	• Monitor slopes immediately behind the house for signs of change and or deterioration. • Remove mud from between the house and the rear retaining wall. Do not disturb mud upslope of the retaining wall unless cutting temporary cut off drains. If the retaining wall has collapsed, seek further advice. Caution in areas of potentially unstable walls of the dwelling. This may require a spotter to monitor uphill slope behaviour. • Divert surface water around the dwelling (use hand cut off drains, Coir logs/sand bags). • Install a secondary cut off drain under the deck (hand dig, divert to east, Figure 1 • Install weep holes in northern most retaining wall as required (following installation and assessment of hand dug cut off drains/Coir logs)

	• Install one to two x ballasted shipping containers (2 x 20 ft or 1 x40 ft containers), 2.44 m wide) in the northern most section of lawn, Figure 1. These should be offset from the P3 retaining wall by at least the height of that retaining wall (~1.2m) and be aligned to protect P3. Ballast may be soil, F type barriers or plastic crash barriers filled with water. Temporary tie downs may be required (screw piles or equivalent). The containers should be back tilted into the slope without undercutting the existing retaining walls. This may require local cut/fill to achieve a 5 to 10% back tilt. Where bulk earthworks or retaining wall loading constraints apply, the containers may need to sit on screw piles or equivalent. Further advice should be sought to detail the design.
P3	• No Actions.

Happy to run through this in a meeting tomorrow as needed.
Regards,

Dane Pope

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