Our Ref: ID 1817
Your Ref: DA22-1086 (CNR-48934)

23 December 2022

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Dear Ryan,

Development Application for 106-172 Lord Sheffield Circuit Penrith

Thank you for the opportunity to provide advice on the Development Application (DA) for 106-172 Lord Sheffield Circuit Penrith. It is understood that the proposal seeks to:

- Construct two mixed use 8 storey residential towers (up to 288 residential apartments) above a 2 storey podium comprising 11 retail and 18 commercial spaces.
- Three basement levels containing all car parking and servicing for the development (421 spaces).

It is noted that in 2011, the Concept Plan MP10_0075 was approved, involving the staged construction of 900-1000 residential dwellings supported by retail, commercial and industrial development as well as recreational, community and open space facilities.

The NSW State Emergency Service (NSW SES) is the agency responsible for dealing with floods, storms and tsunami in NSW. This role includes, planning for, responding to and coordinating the initial recovery from floods. As such, the NSW SES has an interest in the public safety aspects of the development of flood prone land, particularly the potential for changes to land use to either exacerbate existing flood risk or create new flood risk for communities in NSW.

Penrith City Council, under the Adaptive Management Framework 2019 stage one, have a limit of 4050 additional dwellings within the Penrith City Centre up to 2026.

NSW SES advice has been sought regarding this DA in line with the letter from Brett Whitworth to Penrith City Council (MDPE21/1789) dated 17 July 2021:

> *The Department will establish an interim measure for Penrith, Hawkesbury and Blacktown councils, to commence on 14 July 2021 and conclude once the regional land-use planning framework has been finalised. Under this interim measure, when assessing against clause 5.21 (2) (c) to determine if an application exceeds the capacity of evacuation routes the following conditions can apply:*

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1. If a development application increases the capacity of a development by more than 150 dwellings, or 200 employee vehicles for a commercial development, the Department will coordinate a response with Infrastructure NSW (INSW) and NSW SES.

The NSW SES recommends due consideration and application of the requirements of the NSW Government's Flood Prone Land Policy occurs, as set out in the Floodplain Development Manual and relevant planning directions under the *EP&A Act*.

Attention is drawn to the following principles outlined in the Manual which are of importance to the NSW SES role as described above:

- **Development should not result in an increase in risk to life, health or property of people living on the floodplain.**

  The high point on the site is RL27.98m AHD and lowest point is RL26.92m AHD.

  Overland flooding

  According to the Flood Impact and Risk Management Report this site is affected by overland flows towards the east site boundary. There would be little to no warning time available for the overland flooding. However, the depth and velocity of floodwater appear not to be greater than 0.5m in the vicinity of the proposed development. Therefore it is unlikely to result in structural damage and we note that stormwater infrastructure has been designed to further minimise the risk. The site appears to be outside the study area of the Penrith CBD Floodplain, Risk Management Study and Plan by Molino Stewart (2020). However, it is isolated by relatively frequent (5% AEP) flooding (Penrith Overland Flow Flood "Overview Study", 2006).

  Riverine flooding

  According to the Nepean River Flood Study 2018 and Hawkesbury-Nepean Valley Regional Flood Study 2019, the site is not affected by 1% AEP flooding.

  The flood level during the PMF event is approximately 30.45m AHD with varying flood depths of 3-4m. The hazard category is estimated to be around H5, which is unsafe for vehicles and people and all buildings are vulnerable to structural damage.

  We also note that the interim results from the new HN 2D Regional Flood Study indicate that the 1% AEP level at Penrith is around 1m higher than the current height based on the calibration against the March 2021 flood event and more detailed modelling. This equates to approximately 26.8m AHD. This 2D flood study is expected to be finalised in the first half of 2023. Council is aware of the interim results and is part of the Technical Working Group for the Study. At this stage the interim results are not likely to change significantly.

- **Risk assessment should consider the full range of flooding, including events up to the Probable Maximum Flood (PMF) and not focus only on the 1% AEP flood.**

  This has been included in the Flood Impact and Risk Management Report.

- **Risk assessment should have regard to flood warning and evacuation demand on existing and future access/egress routes. Consideration should also be given to the impacts of localised flooding on evacuation routes. Evacuation must not require people to drive or walk through flood water.**

  The site becomes isolated in overland flooding events, with little to no warning time. The hazard at the site is not anticipated to result in structural damage to the buildings in an overland flood. The site also becomes isolated, therefore loses its evacuation route, in a flood equivalent to the current 1 in 500 year riverine flood event. This is likely to be more frequent, based on the preliminary results from the HN 2D Regional Flood Study.

  The basement consists of 421 car spaces, 133 bicycle spaces and associated services. The basement entrance is proposed to be at 27.62m AHD, which is slightly above the 1% AEP for the local catchment flooding. It is recommended that the height of the access to the basement is increased to reduce the risk of basement flooding, particularly for the flash flooding.

  Evacuation of the site would be challenging even in a riverine flood event, particularly due to "one-way" traffic restrictions along the Crescent. Any evacuation would have the potential to have significant traffic delays, despite land above the PMF being nearby. However, as the hazard is high in larger flood events and the duration would be several days, it is critical that evacuation occurs. Failure to do so at this site would increase the number of people exposed to the effects of flooding and other secondary emergencies such as fires and medical emergencies.

- **In the context of future development, self-evacuation of the community should be achievable in a manner which is consistent with the NSW SES's principles for evacuation.**

- **Development must not conflict with the NSW SES's flood response and evacuation strategy for the existing community.**

  The Flood Impact and Risk Management Report recommends evacuation at 22.3m AHD at Victoria Bridge, equivalent to a 1 in 5 to 1 in 10 year event. This is very conservative and inappropriate for residential dwellings or apartments. Taking a precautionary approach and closing businesses and employment activities at this level is appropriate given the flood risk in the Penrith floodplain. However triggering evacuation of residential areas at this low flood level in the Nepean River at is not appropriate as evacuated people may require assistance and accommodation, and

NSW SES and welfare agencies would not usually establish evacuation centres and emergency accommodation when floods at this low level. Evacuation of residential premises for in response to regional Nepean River flooding should therefore be triggered by NSW SES, currently as a part of the North Penrith B4 subsector.

- **Development strategies relying on deliberate isolation or sheltering in buildings surrounded by flood water are not equivalent, in risk management terms, to evacuation.**

  'Shelter in place' strategy is not an endorsed flood management strategy by the NSW SES for future development. Such an approach is only considered suitable to allow existing dwellings that are currently at risk to reduce their risk, without increasing the number of people subject to such risk. The flood evacuation constraints in an area should not be used as a reason to justify new development by requiring the new development to have a suitable refuge above the PMF. Allowing such development will increase the number of people exposed to the effects of flooding. Other secondary emergencies such as fires and medical emergencies may occur in buildings isolated by floodwater. During flooding it is likely that there will be a reduced capacity for the relevant emergency service agency to respond in these times. Even relatively brief periods of isolation, in the order of a few hours, can lead to personal medical emergencies that have to be responded to.

- **Development strategies relying on an assumption that mass rescue may be possible where evacuation either fails or is not implemented are not acceptable to the NSW SES.**

  This may occur at this site if evacuation is not successful in a PMF event.

- **The NSW SES is opposed to the imposition of development consent conditions requiring private flood evacuation plans rather than the application of sound land use planning and flood risk management.**

  Although NSW SES encourages homes and businesses to be prepared and has developed a home FloodSafe toolkit and a Business FloodSafe toolkit, even well written plans are dependent on human application and often rely on technical support systems. Most plans will rely on the actions of one or more third parties and all plans require regular maintenance and review, and most importantly an ongoing commitment from all participants. These conditions are difficult enough to implement and monitor over the long term for a full-time emergency service and are unlikely to be achieved at all in a private ownership context where there is no external audit or monitoring.

  It should also be noted that the Manual specifically precludes the practice of consent conditions requiring a site plan if that plan is trying to overcome an underlying flood risk that would otherwise be considered too high to permit approval (see Manual

Annex L-3). In other words, if the existence of a flood plan is ignored, is the underlying flood risk unacceptable in the context of the proposed development?

- **NSW SES is opposed to development strategies that transfer residual risk, in terms of emergency response activities, to NSW SES and/or increase capability requirements of the NSW SES.**

- **Consent authorities should consider the cumulative impacts any development will have on risk to life and the existing and future community and emergency service resources in the future.**

You may also find the following Guidelines, originally developed for the Hawkesbury Nepean Valley and available on the NSW SES website useful:

- Reducing Vulnerability of Buildings to Flood Damage

Please feel free to contact Elspeth O'Shannessy via email at rra@ses.nsw.gov.au should you wish to discuss any of the matters raised in this correspondence. The NSW SES would also be interested in receiving future correspondence regarding the outcome of this referral via this email address.

Yours Sincerely

Melissa Daley
A/Senior Manager, Emergency Risk Management
NSW State Emergency Service