

11 September 2018

The General Manager
City of Parramatta Council
PO Box 32,
Parramatta NSW 2124
Our ref: ID 850
Your ref: PP_2017_COPAR_01_00
Attention: Ms Felicity Roberts

Dear Ms Roberts

RE: PLANNING PROPOSAL (REZONING) FOR 20 MACQUARIE ST PARRAMATTA

Thank you for the opportunity to review the Planning Proposal for 20 Macquarie St Parramatta, which intends to amend the *Parramatta Local Environmental Plan (PLEP) 2011*.

As the Central City District Plan has recognised Parramatta CBD is the most flash-flood affected major CBD in Australia (p 121). Objective 37 of the Greater Sydney Region Plan aims to *reduce the exposure to natural hazards*. Strategy 37.1 of the Sydney Region Plan aims to create a Greater Sydney that is a resilient city through...'***consider(ing) options to limit the intensification of development in existing urban areas most exposed to hazards (p 178)***'. The Central City District Plan suggests '*consideration of natural hazards and their cumulative impacts includes avoiding growth and development in areas exposed to natural hazards and limiting growth in existing communities that are exposed and vulnerable to natural hazards.*' (p 121)

Planning Proposals in Parramatta CBD, such as the Planning Proposal for 20 Macquarie St Parramatta, that seek to intensify development in areas prone to high hazard flooding in less probable but more severe flood events appear to be in conflict with achieving the Objectives and strategies of the Greater Sydney Region Plan and priority in the Central City District Plan relating to natural hazards.

The NSW SES supports development that is appropriate taking into account the flood risk to the community, and development that is 'planned first and foremost on terms of evacuation capability.'ⁱ Evacuation from Parramatta CBD, including the site to which the Planning Proposal relates, is constrained in flood events above the 1% annual exceedance probability (AEP) flood. The depth of floodwater throughout the CBD can be significant and can pose a risk to life of future and current occupants of the CBD.

If any new development or urban renewal is to proceed in the higher risk locations of the CBD, such as 20 Macquarie St, Parramatta, there will be an increase in risk to the Parramatta CBD community. This will increase the burden to the NSW SES and other emergency services during a flood emergency.

With this in mind, the NSW SES has assessed the Planning Proposal and highlights the areas of concern in the addendum. The NSW SES position is that development to which the Planning Proposal relates is not ideal considering the flood risk in the area especially when there are other locations with lower flood risk in the Parramatta CBD. Intensifying development in an area that is already prone to high hazard flood water will mean more people are placed in a position at risk from the impacts and effects of flooding and may need to be rescued by members of the NSW SES.

Should Council and the Department of Planning (as delegate of the Greater Sydney Commission) finds that this increase risk is acceptable for the Planning Proposal, the same design considerations relating to 180 George St, Parramatta (**Attachment 1**) should be applied to 20 Macquarie St to minimise the increased risk to life of future occupants at the site. This would be consistent with the considerations in the Central City District Plan which state that *appropriate design measures to strengthen the resilience of buildings and the public domain in a flood event* should be considered (p 121).

The NSW SES acknowledges previous discussions with the Department of Planning and Environment (DPE) regarding spot rezoning in the Parramatta CBD and hopes to have ongoing involvement with Council and DPE in guiding development decisions in Parramatta CBD and other areas in Parramatta local government area to minimise the increased flood risk to the community. Please contact **Marcus Morgan** on **(02) 4251 6665** or marcus.morgan@ses.nsw.gov.au if you wish to discuss any of the matters raised in this correspondence.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Kaylene Jones', is positioned above the printed name.

Kaylene Jones
Director, Planning and Preparedness
NSW State Emergency Service

Cc: Peter Cinque, Region Controller; George Jeoffreys, Deputy Region Controller;
Ailsa Schofield, Manager Emergency Risk Management; Planning Coordinator.

Addendum

Key aspects of the Planning Proposal for 20 Macquarie St Parramatta

The land that is subject of the Planning Proposal is currently zoned B4 mixed use under the *Parramatta Local Environmental Plan 2011*. The Planning Proposal seeks an amendment to the Parramatta LEP 2011 to increase the permissible building height of 36m to 90m and permissible floor space ratio from 4:1 to 10:1.

The Planning Proposal states that it will deliver between 93 and 110 apartments (Planning Proposal, page 19) and between 80-84 car parking spaces. The Reference Design (May, 2017) indicates there will be retail offices on the ground floor and levels 1-3 and residential dwellings on level 4 and above. The Design proposes four-five levels of basement car parking.

Flood constraints and risk at the site

The site subject of the Planning Proposal is partially flood affected in a 100-year Average Recurrence Interval (ARI) event at the Macquarie Street and Marsden Street frontages. The site is entirely inundated in a probable maximum flood (PMF) with flood depths of over 4m.

The Planning Proposal states that the site has moderate hydraulic hazard in a 1% AEP flood (Planning Proposal, p 17), although the Flood Impact Statement produced by Wood and Grieve Engineers (25 July 2016) suggests the site is only low hydraulic hazard (p 4). However, in a more severe but less probable event, the flood depths alone would indicate the proposed site would be characterised as high hydraulic hazard according to the Floodplain Development Manual (Appendix L5, p L-3). The depth of floodwater at the site in a PMF is modelled to be 4.02m (3.68m above the 1% AEP) (Flood Impact Statement, p 3).

NSW SES issues with the Planning Proposal

The Planning Proposal will significantly increase the number of people that are potentially surrounded by high hazard floodwater and exposed to the effects of flooding in Parramatta CBD. This will increase the risk to life of future occupants who will be in a building and surrounded by high hazard floodwater in a flood somewhere between the 1% AEP flood and larger but less probable flood up to the PMF. There will also be a transient population that may be at the street level accessing the retail shops and offices which will be exposed to high hazard floodwater.

Parramatta CBD is in an area that is subject to flash flooding. Flash flooding is characterised by short warning time with often high hazard floodwater impacting a community that is built within proximity to the watercourses. During such flood events, roads that are used to convey flow or cross watercourses are potentially hazardous. Under the current proposal, above the 1% AEP flood and below the PMF (to which exact information has not been provided or is unknown), the proposed occupants will have their access to and from the building cut and become isolated.

The current strategy proposed by the consultant in the Flood Impact Statement annexed to the Planning Proposal states that a flood evacuation plan will be prepared for the development (p 6). However, it is known that evacuation from this site will be limited and the only safe option for future occupants will be to remain in the building as evacuating when there is not enough time will increase the chance of a person being impacted by hazardous floodwater.

Development strategies relying on deliberate isolation or sheltering in buildings surrounded by flood water (i.e. the so called 'vertical evacuation' or 'shelter in place'), are not equivalent in a risk management context to evacuation. When considering future development, self-evacuation of the community should be achievable in a manner which is consistent with the NSW SES's principles for evacuation.

Generally, sheltering in buildings surrounded by high hazard flood water presents a greater risk than a well-conducted evacuation. 'Sheltering in place' should only be used where evacuation is not possible due to greater risks of evacuating, or where evacuation from an at-risk area has failed. Where evacuation is not possible, the risks of sheltering should be adequately assessed to determine the tolerability of isolation, before any strategy of sheltering in place can be accepted. In the current proposal, there is no analysis of whether it will be tolerable or not for the future occupants of the site to be isolated during a flood. **Attachment 3** provides the considerations of how to determine what constitutes an acceptable period of isolation.

1. Inconsistency with the objectives relating to natural hazards in the Greater Sydney Region Plan and Central City District Plan

The Planning Proposal is inconsistent with Objective 37 and Strategy 37.1 in the Greater Sydney Region Plan and Priority C20 in the Eastern City District Plan. Objective 37 seeks to ***reduce the exposure to natural hazards***. Strategy 37.1 of the Sydney Region Plan aims to create a Greater Sydney that is a resilient city. The Planning Proposal conflicts with Strategy 37.1 which seeks to:

*Avoid locating new urban development in areas exposed to natural and urban hazards and **consider options to limit the intensification of development in existing urban areas most exposed to hazards** (p 178)*

Planning Priority C20 -*adapting to the impacts of urban and natural hazards and climate change* - in the Central City District Plan gives effect to Objective 37. In achieving Planning Priority C20 it specifically states:

*'Placing developments **in hazardous areas or increasing the density of development in areas with limited evacuation options** increases risk to people and property (para 4, p 120) (emphasis added)*

...

*'Consideration of natural hazards and their cumulative impacts includes **avoiding growth and development in areas exposed to natural hazards and limiting growth in existing communities that are exposed and vulnerable to natural hazards**. In exceptional circumstances, there may be a need to reduce the number of people and amount of property vulnerable to natural hazards through managed retreat of development.'* (para 3, p 121) (emphasis added)

The Planning Proposal does not give effect to achieving Objectives 37 and is contrary to the strategies and planning priorities that seek to achieve the objective.

2. Risks in relation to the proposed underground parking

The proposal specifies that there should be four levels of basement car parking and that crest to the entry to the basement car park should be the current street height without any modification and that a flood gate would ensure safety up to the 1% AEP flood height plus 0.5m freeboard.

However, within the proposal there is no consideration of the risks to persons or facilities in the basement when this level is exceeded.

Above the proposed threshold of the flood gates there is likely to be damage to property and risk to life of occupants who may become trapped in a basement carpark during a large enough flood (i.e. a flood with heights above the 1% AEP plus 0.5m freeboard). There is no analysis in the current proposal to say if such damage will be acceptable to the current or future community. The risk of damage and acceptability of this risk during a flood should be addressed in the proposal. A research paper by Collier et al. (2017) provides a thorough analysis of the risks to people and property

associated with basement car parks when considering flooding up to the PMF, especially in high hazard flood environments. This is attached for consideration (**Attachment 4**).

Moreover, the NSW SES questions the efficacy of a floodgate to protect the basement in an area that is subject to flooding in larger but less probable floods.

3. Other emergency management considerations

The NSW SES refers Council to **Attachment 5** which details the emergency management principles to guide future decisions on development that is constrained by flooding. **Attachment 6** also provides Council with information regarding the use of private or site-specific evacuation plans as a condition of consent.

References

1. Haynes, K., Coates, L. & van den Honert, R. An analysis of human fatalities and building losses from natural disasters: Annual project report 2015-2016. (Bushfire and Natural Hazards CRC, 2016).

Attachments

1. Design considerations relating to 180 George St, Parramatta
2. Figure 10 from Update of Parramatta Floodplain Risk Management Plans (Molino Stewart, Draft for Parramatta City Council, February 2016).
3. Considerations in assessing tolerability of isolation
4. Collier, L. Phillips, D & Griffin, M. 'Basement development in the floodplain – quantifying and managing risk.' Paper presented at the 2017 Floodplain Management Australia National Conference, May 2017.
5. Emergency management principles
6. Evacuation plans as condition of consent
 - a. Relevant excerpts of the NSW Floodplain Development Manual (April 2005).
 - b. NSW SES 'Developers Guide'

Attachment 1 Planning Proposal for 180 George St Parramatta – NSW SES submission and design considerations.

Attachment 2: Figure 10 from Update of Parramatta Floodplain Risk Management Plans (Molino Stewart, Draft for Parramatta City Council, February 2016)

