NSW GOVERNMENT | Planning, Industry & Environment

Our ref: DOC19/1043099
Senders ref: SSD 8114

Navdeep Singh Shergill
Social Other Infrastructure Assessments
NSW Department of Planning, Industry and Environment
GPO BOX 39
SYDNEY NSW 2001

Dear Mr Singh Shergill,

Subject: Request for Advice on Response to Submissions – Lindfield Learning Village phase 2 and 3 (SSD-8114)

I refer to your e-mail dated 20 November 2019 requesting comments from Environment, Energy and Science (EES) in the Department of Planning, Industry and Environment on the Response to Submissions for Lindfield Learning Village (SSD-8114) (Ku-ring-gai) phase 2 and 3.

EES have reviewed the relevant documentation and provide comments in Attachment 1 on biodiversity, flooding and evacuation management matters.

Should you have any queries regarding this matter, please contact Marnie Stewart, 9995 6868 or marnie.stewart@environment.nsw.gov.au

Yours sincerely

S. Harrison 20/12/19

Susan Harrison

Senior Team Leader Planning
Greater Sydney Branch
Climate Change and Sustainability

Attachment 1 – EES comments on Lindfield Learning Village phase 2 and 3 (SSD-8114) – Response to Submissions

Biodiversity

Section 4.2 in the Addendum Biodiversity Assessment Report (ABAR) for Stages 2-3, states that a total of 17 credits are required (16 credits of PCT 1782 and 1 credit of PCT 1776), whereas Table 4.1 and 4.2 state that 16 credits are required (10 credits of PCT 1782 and 6 credits of PCT 1776).

EES recommends that this inaccuracy be rectified.

Flood risk management

Response to Submissions Phase 2 and 3 of Lindfield Learning Village SSD 16_8114 report (RTS) and seeks the following additional information.

Section 7.10 Flooding and Evacuation Management
Dot point 4 states that "*Due to the depth and velocity depth product, the North face of the property is defined as a high hydraulic hazard area in the 1%AEP – resulting in a Low Flood Risk Precinct, but with a high hydraulic hazard with flow velocities in excess of 3m/sec".*

EES seeks clarification on what criteria define 'Low Flood Risk Precinct'. This is because the Floodplain Development Manual Appendix L defines flow with velocity higher than 2m/s for any depth high hazard. This area would therefore be high hazard and likely be a high flood risk area.

The last two dot points state:
• "*Inundation of the property would be minimal due its location, situated upon the apex of the Ridge.*
• *The site will be safe from flooding and flood damage associated with the design flood standard as defined in part 24 of the Ku-Ring-Gai DCP part 24r.7 and will not adversely affect any other structures or properties".*

The RTS indicates that the PMF level is 66.89m AHD and the flood planning level is 66.28m AHD which indicates there is a possibility of inundation above floor level up to 0.61m in a PMF event.

On Site Refuge During a Flood Emergency
The first paragraph states that "*The lowest floor level at the site has been nominated at RL66.28m AHD which is approximately 500mm above the 1%AEP flood level (66.79m AHD). This is 0.61m below the probable maximum flood (PMF) level (66.89 AHD)".*

EES seeks clarification on whether 66.79m AHD for the 1%AEP flood level is a typo error.

The second paragraph states that "*The Auditorium has been nominated as the emergency assembly point for the proposed development. Levels in this area range from approximately 59m AHD to 63m AHD, above the 1% AEP flood level which would be approximately 200 to 250mm above the exiting levels. As a result, the most vulnerable students should be positioned at the top of the stairs at the highest point, including kindergarten and students with mobility limitations".*

EES advises that the above general paragraph is not adequate for flood emergency for the proposed learning facility. Learning facilities can be classified as Special Purpose Facilities. From a floodplain risk management perspective, a new facility should be planned to have flood refuge area with a floor level greater than or equal to the PMF flood level, with acceptable structural soundness of its buildings and available road access up to the PMF. Moreover, in determining the impact of flooding on the site the flood assessment should consider the vulnerability of the site users, particularly students, teachers, parents, carers and other members of the school community.

Flood Report Lindfield Learning Village Phase 2 and 3

Section 3 Model Development
Section 3.1 states that "*The site is located atop of arete and run off flows are contained within the existing roadways, as indicated above sections".*

EES advises that this sentence may not be relevant for large and rarer flood events where large flows in these events may not be contained in the roadways but inundate adjacent properties.

Section 3.1 also indicates that the DRAINS model utilised 2016 AR&R ensemble methodology. However, section 3.2 indicates that rainfall data is derived from 1987 AR&R.

ESS recommends that the consultant clarify this matter. In addition, adopted loss parameters has not been mentioned in the report.

Section 3.4.3 Underground car park
The report mentions that there are numerous underground car parks, but assumes that car parks however are not intended to be inundated in large floods.

EES advises that there is no information to justify the above assumption. Therefore, the entry of underground car parks should be designed to be at the PMF level to prevent flood water from entering and inundating the car parks. In addition, safety signs should be designed and incorporated in the flood emergency plan of the site to ensure risk to life is minimal.

Section 4 Design Flood Conditions and 5 Design Flood Results
Catchments results presented in Table 4.2 are limited to the 1% AEP with no information on larger flood events up to the PMF.

Table 5-1 and Section 5.3 limit the discussion of the results up to the 1% AEP (the design flood).

EES advises that presenting the results for events larger than the adopted design flood, i.e. the 1% AEP flood, for the full range of flooding is essential to comprehensively understand the flood behaviour and the risk associated with these rarer events for emergency management purposes.

In addition, Section 5.6 discusses hydraulic categorisation and indicates that preliminary hydraulic category mapping for the 1% AEP and PMF design events is included in Appendix A (Figure A- 25 to Figure A- 26). However, these figures are not included in Appendix A of the report. Similarly, hazard categories Figure A- 27 to Figure A- 30 are also missing.

Summary of EES comments
EES recommends that the report be updated to address EES comments and provide clarification on the following prior to the determination of the application:

- the 1% AEP flood level
- the PMF design flood event
- the emergency assembly point
- the missing figures
- mapping of the flood extent, function and hazard
- model parameters used
- building and development controls that will be applied (specifically the structural soundness, underground carparks, emergency management, floor level in relation to the flood planning level).

End of Submission