

SYDNEY WESTERN CITY PLANNING PANEL

ADDENDUM REPORT

Panel Reference	PPSSWC-125
DA Number	DA-1059/2020
LGA	Liverpool City Council
Proposed Development	Concept DA for the construction of a cemetery, including mausoleums, crematoria, chapel, hall, gatehouse, administration buildings, café, car park, access roads, landscaping, earthworks and flood management works. Stage 1 seeks consent for the demolition of existing structures, bulk excavation and flood mitigation works for the entire site, including construction of 4 pads, construction of Pad 1 access road, administration buildings, crematoria, waste water treatment and car parking.
Street Address	1290 Greendale Road, Wallacia NSW 2745 (Lot 1 DP 776645)
Applicant/Owner	MKD Architects Pty Ltd/ Soukutsu Pty Ltd
Date of DA Lodgement	15 December 2020
Number of Submissions	56 objections (including 49 individual submissions and 7 proformas)
Recommendation	Deferred commencement approval
Regional Development Criteria (Schedule 6 of the SEPP (Planning Systems) 2021	<p>Clause 2 of Schedule 6 - Development with a Capital Investment Value (CIV) of over \$30 million.</p> <p>The CIV of this application as outlined in a detailed cost report by a registered Quantity Surveyor is \$95,829,528 (excluding GST).</p>
List of all relevant s4.15(1)(a) matters	<ul style="list-style-type: none"> • <i>List all of the relevant environmental planning instruments: s4.15(1)(a)(i)</i> <ul style="list-style-type: none"> ○ State Environmental Planning Policy (Transport and Infrastructure) 2021; ○ State Environmental Planning Policy (Planning Systems) 2021; ○ State Environmental Planning Policy (Biodiversity and Conservation) 2021; ○ State Environmental Planning Policy (Resilience and Hazards) 2021; ○ State Environmental Planning Policy (Precincts – Western Parkland City) 2021; and ○ Liverpool Local Environmental Plan (LLEP) 2008. • <i>List any proposed instrument that is or has been the subject of public consultation under the Act and that has been notified to the consent authority: s4.15(1)(a)(ii)</i> <ul style="list-style-type: none"> ○ No draft Environmental Planning Instruments apply to the site. • <i>List any relevant development control plan: s4.15(1)(a)(iii)</i> <ul style="list-style-type: none"> ○ Liverpool Development Control Plan 2008 (LDCP 2008) <ul style="list-style-type: none"> ▪ Part 1 – General Controls for All Development ▪ Part 5 – Development in Rural and E3 Zones

	<ul style="list-style-type: none"> List any relevant planning agreement that has been entered into under section 7.4, or any draft planning agreement that a developer has offered to enter into under section 7.4: s4.15(1)(a)(iia) <p>No offer or draft offer to enter into a voluntary planning agreement has been made</p> <ul style="list-style-type: none"> List any relevant regulations: s4.15(1)(a)(iv) <ul style="list-style-type: none"> Consideration of the provisions of the National Construction Code (NCC).
List all documents submitted with this report for the Panel's consideration	<ol style="list-style-type: none"> Architectural plans Revised Architectural Plans Statement of Environmental Effects DCP Variation Written Justification to Building Height Flood Report Biodiversity Assessment Report (BAR) Stormwater Concept Plans Water and Waste Water Assessment Vegetation Management Plan Contamination and Waterways Constraints Assessment Preliminary and Detailed Site Investigation Reports (PSI & DSI) Wildlife Hazard Review Waste Management Plan Geotechnical Assessment Report Aboriginal Heritage Due Diligence Assessment Traffic Impact Assessment (TIA) Air Quality Assessment Water Sensitive Urban Design: Stormwater Assessment (WSUD) Draft Plan of Management Quantitative Surveyor Report SWCPP – Record of Briefing Response to Planning Panel – Flood Assessment Response to Planning Panel - Flood Modelling
Clause 4.6 requests	None
Summary of key submissions	<ul style="list-style-type: none"> Flooding impact Increased building heights
Report date	15 July 2022

Summary of s4.15 matters

Have all recommendations in relation to relevant s4.15 matters been summarised in the Executive Summary of the assessment report?

Yes

Legislative clauses requiring consent authority satisfaction

Have relevant clauses in all applicable environmental planning instruments where the consent authority must be satisfied about a particular matter been listed, and relevant recommendations summarized, in the Executive Summary of the assessment report? e.g. Chapter 4 of SEPP (Resilience and Hazards) 2021, Clause 4.6(4) of the relevant LEP

Yes

Clause 4.6 Exceptions to development standards

If a written request for a contravention to a development standard (clause 4.6 of the LEP) has been received, has it been attached to the assessment report?

N/A

Special Infrastructure Contributions

Does the DA require Special Infrastructure Contributions conditions (S7.11EF)?

N/A

Note: Certain DAs in the Western Sydney Growth Areas Special Contributions Area may require specific Special Infrastructure Contributions (SIC) conditions

Conditions

Yes

Have draft conditions been provided to the applicant for comment?

Note: in order to reduce delays in determinations, the Panel prefer that draft conditions, notwithstanding Council's recommendation, be provided to the applicant to enable any comments to be considered as part of the assessment report

1. REASONS FOR ADDENDUM REPORT TO SYDNEY WESTERN CITY PLANNING PANEL

This addendum report was prepared in response to additional information received from the applicant on 10 May 2022, 15 May 2022 and 18 May 2022, respectively. This information was prompted by the previous decision of the Sydney Western City Panel Report (SWCPP) on 27 April 2022 which recommended deferral of the determination as follows:

Reasons for deferral

1. *During the public meeting, the Panel heard from a number of members of the public as well as a representative of the Wallacia Progress Association. Specifically:*
 - a) *Joe Grech spoke as a local resident who had worked on the Warragamba Dam spillway. He was concerned that the flooding data relied upon by the Applicant in its reporting does not in his view sufficiently address backwater flooding after the release of water from Warragamba Dam.*
 - b) *Terry Hay Floods and Jan Tibbotts each of 679 Greendale Road addressed a number of amenity concerns about the proposal. They included the cumulative impacts on the local road system from 3 cemeteries which rely on Greendale Road for access as well as increases with increasing development in the South West. Mr Hay was concerned about the proposed flood mitigation works and filling obstructing movement of water during the Duncan's Creek floods and the need to allow for water from dams on land owned by the Leppington Pastoral Company. Ms Tibbotts noted that there were no guidelines to limit the number of cemeteries, but argued that they should not be considered in isolation. She said she expected 75% of traffic from the proposal to be directed through Wallacia Village. She noted that the path of travel to the Wallacia village included stretches of 70km and 50km per hour which she said were not properly allowed for in the Applicant's traffic report, and that blind corners near the site of the proposal created safety risks. She was concerned that the impact of particle fallout from the crematorium had not been adequately considered, noting that local residents rely on tank water collected from roofs.*
 - c) *Jacob Gunther of 1300 Greendale Road referred to the existence of what he described as an alluvial soil profile (not firmer/stiffer residual clays), and proposed side batters of the detention basin and new fill of steeper than 2H:1V which he said would be at risk of severe erosion during a flood event, particularly when factoring seepage which would destabilise the slopes. He reported evidence of land slips on the opposite side of the river. He felt that the geotechnical issues arising from the DA had not properly been considered in the proposal and the study undertaken was based on incorrect information.*
 - d) *Margaret Stepniewski spoke on behalf of the Wallacia Progress Association. In addition to some of the issues raised by previous speakers she raised concerns that flood evacuation had not adequately been addressed in the proposal. She*

said that cumulative traffic impacts could not be properly considered based on the Applicant's studies, which she said relied upon traffic figures from 2014. She said that visual impacts from 38 metre high towers would be considerable and out of character. She was also concerned about air pollution and the effects of air borne particulate matter coming from the proposed crematorium. She said that the proposal conflicted with the content of the Liverpool Land Study and particularly the objectives of protecting agricultural lands.

2. The Panel was briefed by Council's independent flood consultant and was assisted by Greg Britton (a Technical Director with more than 40 years professional experience in the investigation, design and documentation, planning, environmental assessment and project management of coastal, estuary and maritime projects) being one of its members.
3. Upon its preliminary review of the available material including the GHD responses to the peer review comments on GHD's flooding assessments, the Panel identified two matters requiring further information to enable the Panel to assess the proposal:
 - a) Item 4 - updating of the XP-RAFTS model to account for the missing catchment area and to have the correct probability neutral rainfall losses applied to ensure compliance with the Australian Rainfall and Runoff jurisdictional advice for NSW, and;
 - b) Item 16 - further verification of the adopted floodway extent.
4. Importantly, the life of the proposed staged development is expected to be in excess of 100 years and could be up to 200 years, with later stages of the development potentially being carried out in a different context. One important consideration arising from that fact is that the flooding assessment has not taken into account the potential impacts of climate change, which is a particularly relevant consideration for a proposed development having such a long life-span.

The Panel expected the Applicant's flooding consultants to advise how climate change could impact on the flooding assessment and how such impacts have been taken into account in the design of the proposed development.

5. According to the geotechnical report, the depth of cut on the site is typically 4 to 6m, but is up to 14m in the north west corner where it would be similar to the water level in the Nepean River. In that context, the Applicant should be asked to confirm if the cut over the site at any location would intercept the groundwater table and, if so, what impact is anticipated on the proposed cut and fill balance to ensure no loss in flood storage.
6. The Panel was of the view that the visual and compatibility considerations associated with the proposal were important such that an inspection of the site and its surrounds was appropriate.
7. On that basis the Panel resolved to defer its determination to allow for a site inspection. It was anticipated that during the deferral period, the outstanding issues of flooding could be resolved with the expectation that all supplementary flooding material from the Applicant (addressing the matters identified above and the matters raised in the Council assessment report) should be submitted by 18 May 2022, with the Council to supply an addendum report taking that additional material into account by 28 May 2022 together with a report as to the conditions that would be recommended if the Panel was to resolve to approve the DA.

8. *It is anticipated that the Panel will then confer by circulation of documents to reach a final determination by electronic means.*
9. *The decision to defer the matter was unanimous, after the Panel had adjourned to deliberate on the matter and formulate a resolution.*

The supplementary documentation by the applicant incorporates the following information in response to the above reasons for deferral.

- Response to the above reasons for deferral by the SWCPP dated 18 May 2022;
- Peer review of the flood modelling (updated XP-RAFTS model) by Council's flood engineering consultant, Catchment Simulation Solutions (CSS) as specified in Item 3(a) of the SWCPP record of deferral dated 10 May 2022;
- Verification of the adopted floodway extent by CSS as required in Item 3(b) of the SWCPP record of deferral dated 10 May 2022;
- Peer review of the flood study in regard to the potential impacts of climate change by CSS as required in Item 4 of the SWCPP record of deferral dated 10 May 2022;
- Review by the applicant's flood engineer (GHD) in response to Items 3 and 4 of the SWCPP record of deferral dated 10 May 2022; and
- Clarification of the potential impacts on the groundwater table in response to Item 5 of the SWCPP record of deferral dated 15 May 2022.

Additionally, a site inspection was undertaken by the Panel on 23 May 2022 as required in item 6 of the SWCPP record of deferral dated 27 April 2022. The following key issues were raised for further discussion at the site inspection:

"The inspection party walked to the lower portion of the site across the treelined creek.

Significant observations and questions raised in discussions between the attending Panel members on site based on observations of the attending panel members were:

1. *The alluvial area comprising the lower portion of the site was part of an area of high scenic quality pasture extending to the horizon both up and down river, which is presently unbuilt upon with a strong rural character. The screening of any development in that portion of the site would be important.*
2. *Is there any reason why the proposed development is not restricted to the relatively high ground at the site, as opposed to encroaching to the Nepean River? Is it because of the assessed scale of demand for the facilities? A comment was made on site by Council's Planner, Kevin Kim, that there were ecological constraints to development on some of the higher ground?*
3. *Standing water was observed within drains on the lower portion of the site, e.g. drain adjacent to the access road leading to the Nepean River. It was not clear if this standing water represented rainfall perched on relatively impermeable soils or if it represented groundwater 'daylighting' on the site. Can it be confirmed that the excavation in the lower section of the site would not intercept the groundwater table, which, if so, would affect the assessment of the impact of the proposed cut and fill on flood storage. Note that this matter was raised as part of the Record of Deferral.*
4. *There would be a level of visual impact for residents of the existing small acreages located on the opposite side of the Nepean River. This land is within the Penrith LGA and it is understood these residents were not consulted regarding the proposed development. Should these residents be notified of the development?*

5. *The sight distances available at the entrance to the proposed development off Greendale Road in both directions should be checked with regard to traffic safety/entry design by Council's traffic officers before determination.*"

The applicant has provided their response to the above key issues for discussion from the site inspection on 31 May 2022, which is provided in **Section 2.2** (Site Inspection) below.

Note: For more detailed assessment of the proposal, please refer to the previous Council assessment report.

2. ASSESSMENT

The following assessment addresses the above matters raised in the Panel's deferral, site inspection and how additional information addresses the concerns of the author as outlined in Section 1.4 of the previous Council assessment report.

2.1 Timeline of the Assessment

- i) A pre-DA meeting (PL-34/2020) was held on 2 June 2020.
- ii) The subject application (DA-1059/2020) was lodged on 15 December 2020.
- iii) Application was exhibited between 20 January 2021 and 18 February 2021 and it was further extended to 18 March 2021, in accordance with the Liverpool Community Participation Plan. Fifty-six (56) submissions were received in relation to the proposed development.
- iv) First additional information letter was sent out to the applicant on 18 February 2021.
- v) Second additional information letter was sent out to the applicant on 5 March 2021.
- vi) Third additional information letter was sent out to the applicant on 19 March 2021.
- vii) The Application was briefed with the SWCPP on 23 April 2021.
- viii) Council resolved at the 24 February 2021 meeting to prepare a Planning Proposal to prohibit cemeteries and crematoria in Wallacia.
- ix) Council resolved at the 26 May 2021 meeting to forward the Planning Proposal to prohibit cemeteries and crematoria in Wallacia to the DPE for a Gateway Determination.
- x) A community consultation meeting for the interest of local residents was held on 17 June 2021.
- xi) The Planning Proposal to prohibit cemeteries and crematoria in Wallacia was rejected by the DPE on 12 July 2021 for the following reasons:
 - *The proposal is inconsistent with the Greater Sydney Region Plan and Western City District Plan, in particular Planning Priority W3 which identifies the need for additional land for burials and cremations in Greater Sydney;*
 - *There is insufficient evidence to demonstrate the supply of cemeteries and crematoria will not be impacted;*
 - *There is insufficient evidence to demonstrate that cemeteries and crematoria will adversely impact scenic and rural values of Wallacia; and*
 - *It will create an undesirable precedent that restricts the land available in Greater Sydney for cemetery and crematoria purposes.*
- xii) Council received additional information and amended architectural plans on 13 October 2021.

- xiii) Correspondence was sent to the applicant that requested a peer review by a third-party flood engineering consultant due to the issues raised by Council's Flood Engineering section on 12 November 2021.
- xiv) The Application was briefed with the SWCPP for the second time on 15 November 2021.
- xv) Amended flood study issued to the external peer reviewer on 9 December 2021.
- xvi) Peer review by Council's flood consultant completed and additional information regarding the flood study was requested on 24 January 2022.
- xvii) In response to the above, Council received the applicant's response to the findings of the peer reviewer on 4 March 2022.
- xviii) Council's Flood Engineer has reviewed the applicant's response to the peer review and completed their referral on 31 March 2022 requesting further information.
- xix) The Application was briefed with the SWCPP for the third time on 27 April 2022 and it was deferred for the reasons detailed in this report.
- xx) Council received additional information in response to the Panel's deferral on 10 May and 18 May 2022, respectively.
- xxi) A site inspection for the interest of the Panel, Applicant and Council was held on 23 May 2022.
- xxii) Council's Flood Engineer has reviewed the applicant's response and completed their referral on 26 May 2022 requesting further information.
- xxiii) Council's Flood Engineer has reviewed the applicant's response and completed their referral on 4 July 2022 raising no objection subject to the deferred commencement conditions of consent.

2.2 Reasons for the Panel's deferral

- 1 *a) Joe Grech spoke as a local resident who had worked on the Warragamba Dam spillway. He was concerned that the flooding data relied upon by the Applicant in its reporting does not in his view sufficiently address backwater flooding after the release of water from Warragamba Dam.*

Applicant's response:

"The backwater issue was extensively investigated in the flooding report by GHD.

The flooding and the flood way in Duncan's creek were all due to backwater from Nepean River and the spillway effect from released water from the Nepean River, without the backwater there would be minimal increase in water levels in Duncan's Creek.

This has all been agreed between both Flooding engineers, both GHD and Councils external Flooding Consultant (CSS)".

Council's response: Council's Flood Engineer has reviewed the latest flood study and raised no objection subject to deferred commencement conditions of consent. This issue is considered to be resolved.

- 1 *b) Terry Hay Floods and Jan Tibbotts each of 679 Greendale Road addressed a number of amenity concerns about the proposal. They included the cumulative impacts on the local road system from 3 cemeteries which rely on Greendale Road for access as well as increases with increasing development in the South West. Mr Hay was concerned about*

the proposed flood mitigation works and filling obstructing movement of water during the Duncan's Creek floods and the need to allow for water from dams on land owned by the Leppington Pastoral Company. Ms Tibbotts noted that there were no guidelines to limit the number of cemeteries but argued that they should not be considered in isolation.

She said she expected 75% of traffic from the proposal to be directed through Wallacia Village. She noted that the path of travel to the Wallacia village included stretches of 70km and 50km per hour which she said were not properly allowed for in the Applicant's traffic report, and that blind corners near the site of the proposal created safety risks. She was concerned that the impact of particle fallout from the crematorium had not been adequately considered, noting that local residents rely on tank water collected from roofs.

Applicant's response:

"In relation to this item, Traffic has been resolved and all reports take into consideration, of all development approvals along Greendale Road and increase in population build up in the surrounding areas.

The Flood mitigation works has been agreed between the two Flood engineers both from Councils external and GHD. Water movement will not be impacted or diverted with our flood mitigation works.

The water from the Leppington pastoral company has been allowed for in our flood modelling. The modelling has also allowed for any overflow water coming from the Airports dams, this was requested by Liverpool Council.

The storage area has shown in the modelling to have in excess of the required storage capacity required from all events.

The traffic entering the Cemetery has a clear visual line as indicated in the traffic report. There will be a slip lane constructed for property side which will allow for easy access and no risk to sight lines. This has been clearly documented in the drawing for the slipway and the entry point of the property, with sight lines.

The Crematorium will not discharge any waste, it is the latest technology with an advance filtration system, this was approved by the EPA and has no risk to drinking water. This is clearly documented within the specifications of the proposed units".

Council's response: In terms of the traffic assessment, including potential impacts on the surrounding road network and vehicle movements, Council's Traffic Engineering section raised no objection for the following reasons:

"The TfNSW Guide to traffic generating developments does not have figures on the trip generation of cemeteries. As a result, the Traffic Impact Assessment (TIA) has assessed the trip generation of the comparable Macquarie Park Cemetery (approx. 60ha) and Forest Lawn Cemetery to get understanding of the traffic generation of the proposed cemetery.

On that basis, it estimates the traffic generation of the proposed cemetery at some 160 – 180 vehicular trips per hour (vtph) (two way) and concludes that it will not present any adverse operational issues for the surrounding road network, taking into account the low

traffic volume on Greendale Road and the fact that the generated traffic will only occur outside the peak period.

Traffic and Transport has no objections to this proposed development subject to the requirements of the DCP and Australian Standards, and the intersection treatment of the proposed new access off Greendale Road being CHR(S) as per the Road Safety Audit recommendation including Council's comments on the design including cross section, submitted by the applicant".

In regard to the flooding concern raised, Council's Flood Engineer has reviewed the latest flood study and raised no objection subject to deferred commencement conditions of consent. This issue is considered to be resolved.

1 c) Jacob Gunther of 1300 Greendale Road referred to the existence of what he described as an alluvial soil profile (not firmer/stiffer residual clays), and proposed side batters of the detention basin and new fill of steeper than 2H:1V which he said would be at risk of severe erosion during a flood event, particularly when factoring seepage which would destabilise the slopes. He reported evidence of land slips on the opposite side of the river. He felt that the geotechnical issues arising from the DA had not properly been considered in the proposal and the study undertaken was based on incorrect information.

Applicant's response:

"The Geotechnical report that was provided to council was an extensive report with 19 borehole throughout the site. Bore Hole (BH) 4 was carried out to a depth of 13m and showed no sign of risk that Mr. Jacob refers to.

With all respect to Mr. Jacob, this site has been tested and reviewed by many engineers and geotechnical advisers. All aspects of the design have been reviewed. Our Geotech report and subsequent consultants have had no issue with what is proposed and to base his position on a visual observation across the river cannot be compared to years of testing investigation and design. Also Mr. Jacobs refers to seepage found from Groundwater, there has been no Groundwater found in any of the test holes".

Council's response: The submitted bulk earthworks and civil drawings indicate that the area in question is BH4 is near Pad 2 on the north western corner of the site as indicated in **Figures 1 and 2** below.

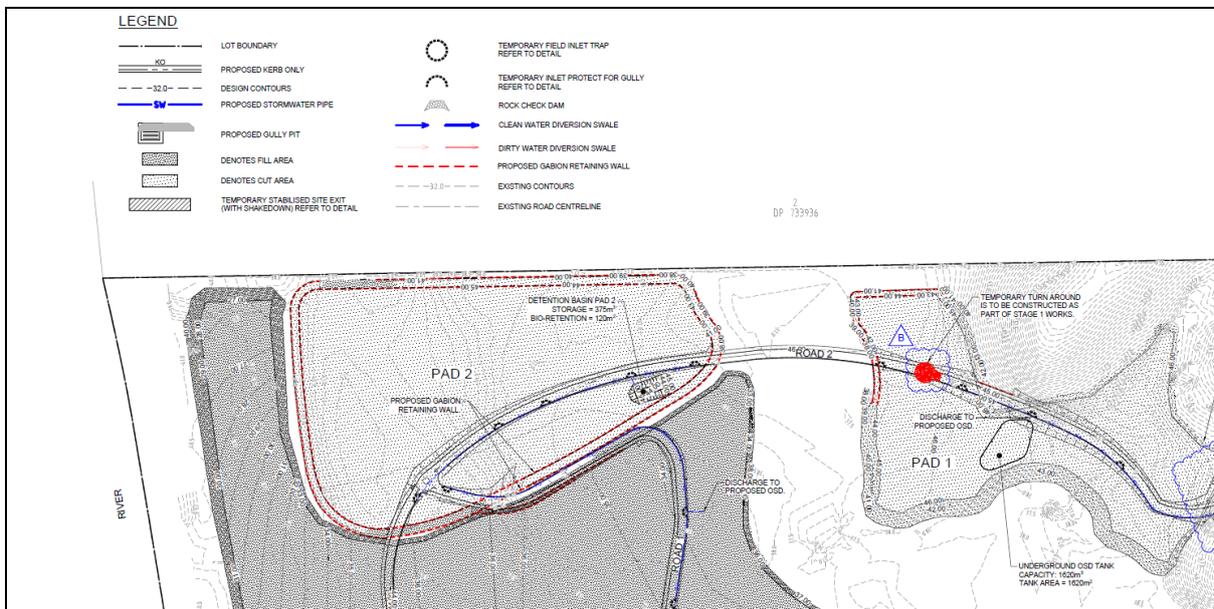


Figure 1: Extract of Sediment Control and Erosion Control Plan confirming the location of Pad 2.



Figure 2: Extract of Borehole Location Plan confirming the location of BH3, 4, 8 and 19.

The submitted Geotechnical report confirmed that no groundwater was found near Pad 2: Only Bore Hole 11 (BH11) on Pad 4 showed any ground water (south east corner of the site).

Furthermore, it is noted that Pad 2 is not part of Stage 1 of the proposed development which is the subject of this application. Council's Land Development Engineer has reviewed the proposal and raised no objection subject to standard conditions requiring sediment and

erosion control measures during construction and any retaining structures to be designed and certified by a structural engineer at later stage of the development.

This issue is considered to be resolved.

- 1 *d) Margaret Stepniewski spoke on behalf of the Wallacia Progress Association. In addition to some of the issues raised by previous speakers she raised concerns that flood evacuation had not adequately been addressed in the proposal. She said that cumulative traffic impacts could not be properly considered based on the Applicant's studies, which she said relied upon traffic figures from 2014. She said that visual impacts from 38 metre high towers would be considerable and out of character. She was also concerned about air pollution and the effects of air borne particulate matter coming from the proposed crematorium. She said that the proposal conflicted with the content of the Liverpool Land Study and particularly the objectives of protecting agricultural lands.*

Applicant's response:

"Evacuation in this area is based over a 12 hour period, the flood levels are slow rising and no flash flooding in the area has been identified in any report since reporting in the area had been carried out. This is a BATHTUB effect. The traffic data is self-explanatory and covers off all the details in relation to traffic numbers. It should also be noted that this is a Cemetery and when there is a high risk weather event the Cemetery is able to be closed.

The Mausoleums do not raise 38metres out of the ground but rather more 8.5metres which is the same height as a barn. These structures will be in the valley floor and not be seen from any vantage point. This is a misconception that these structures will be seen.

The development is set back 15m from all boundaries, on some boundaries further. The structures are set back even further (hundreds of metres), screened with trees planted in stage 1. The trees will have 60 year plus to grow before the first Mausoleum is built, allowing for advanced screening to this project.

It should also be noted that the agricultural land rezoning some 3km East of the property will have structural heights of between 10m to 30m at RL 50 (Ground level) these structures alone will dominate the sky line. This will be the main visual impact from the residence not the Cemetery. The pads are also stepped in as they rise allowing for screen planting around the pad at various heights, additionally the boundary will be planted with trees providing additional screening. The property will be a green parkland from every vista point, the structures will have no impact on the surrounding properties.

The land itself is not functioning agricultural land, the properties in Wallacia are not large enough to create working farm's, allowing for the low level properties and potential excessive water on the property (through rain and storage) it is not contusive to plant produce on the property. Most of the surrounding area is either large homesteads with no agricultural business or waste transfer stations, top soil mining, quarries or tip's. There are a few market gardens that are on the Silverwater side that are out of the flooding area. These properties are not agricultural property but small hobby farms. Council through rezoning has redirected agricultural land to the East side of 1290 Greendale Road near the Airport, in vertical farms in buildings to be built to a height of 10m to 30m".

Council's response: Council's Flood Engineer has reviewed the latest flood study and raised no objection subject to deferred commencement conditions of consent. This issue is considered to be resolved.

2 The Panel was briefed by Council's independent flood consultant and was assisted by Greg Britton (a Technical Director with more than 40 years professional experience in the investigation, design and documentation, planning, environmental assessment and project management of coastal, estuary and maritime projects) being one of its members.

Comment: noted.

3 Upon its preliminary review of the available material including the GHD responses to the peer review comments on GHD's flooding assessments, the Panel identified two matters requiring further information to enable the Panel to assess the proposal:

a) Item 4 - updating of the XP-RAFTS model to account for the missing catchment area and to have the correct probability neutral rainfall losses applied to ensure compliance with the Australian Rainfall and Runoff jurisdictional advice for NSW

Applicant's response:

"The XP-RAFTS model has been updated to include the missing catchment and simulate in accordance with Australian Rainfall and Runoff 2019 and recommended value documented in the XP-RAFTS user manual. In addition, several further adjustments were made on the recommendation of Council's Peer Reviewer. These include update of one particularly questionable lag parameter and separation of impervious from pervious areas. This model will be used in the future simulation of the Duncan' Creek hydrology for ensuring stages of the project. The updated model has been provided to Council's Peer Reviewer, Catchment Simulations Solutions (CSS)".

Council's response: Council's Flood Engineer has raised no objection stating that "Council is generally satisfied that the above two items (3a and 3b) have been now addressed by GHD and agree in principle that the identified floodway by GHD can be adopted on the site for the purpose of subject development proposal."

3 Upon its preliminary review of the available material including the GHD responses to the peer review comments on GHD's flooding assessments, the Panel identified two matters requiring further information to enable the Panel to assess the proposal:

b) Item 16 - further verification of the adopted floodway extent

Applicant's response:

"Two separate workshops were undertaken on 29 April 2022 and 3 May 2022 with Council's Peer Reviewer, CSS. The workshops directed further simulation of floodplain constrictions for the Nepean River. Agreement was thus reached between the proponent and Council's Peer Reviewer that the floodway delineation proposed in GHD's letter dated 4 March 2020 (previous response to flooding issue) is appropriate, with the potential of a secondary floodway at the southern site boundary".

Council's response: Council's Flood Engineer has raised no objection stating that "Council is generally satisfied that the above two items (3a and 3b) have been now addressed by GHD and agree in principle that the identified floodway by GHD can be adopted on the site for the purpose of subject development proposal."

4 Importantly, the life of the proposed staged development is expected to be in excess of 100 years and could be up to 200 years, with later stages of the development potentially being carried out in a different context. One important consideration arising from that fact is that the flooding assessment has not taken into account the potential impacts of climate change, which is a particularly relevant consideration for a proposed development having such a long life-span.

The Panel expected the Applicant's flooding consultants to advise how climate change could impact on the flooding assessment and how such impacts have been taken into account in the design of the proposed development.

Applicant's response:

"Australian Rainfall and Runoff 2019 recommends the use of Representative Concentration Pathway (RCP) 4.5 and RCP 8.5 values for climate change assessment. The percentage increase in the figure below (provided in the response) to the year 2090 as tabulated by BOM. The results show that flood levels at the site under these future climate scenarios would increase by 250mm to 300mm in approach 1 and 500mm in approach 500mm. Recognizing that extremely conservative RCP 8.5 rainfall increases have been simulated, noting that increases are expected to remain below or close to the freeboard provided to building floor levels (1 in 100 AEP flood level plus 500mm) and noting that none of the buildings are habitable, it is considered that the site makes adequate allowance for future climate".

Council's response: Council's Flood Engineer has reviewed the latest flood study and raised no objection subject to deferred commencement conditions of consent. This issue is considered to be resolved.

5 According to the geotechnical report, the depth of cut on the site is typically 4 to 6m, but is up to 14m in the north west corner where it would be similar to the water level in the Nepean River. In that context, the Applicant should be asked to confirm if the cut over the site at any location would intercept the groundwater table and, if so, what impact is anticipated on the proposed cut and fill balance to ensure no loss in flood storage.

Applicant's response:

"In relation to item 5 on the planning panels deferral record, we have reviewed all the data between the Geotech report and the cut/fill drawings by MKD Architects.

The conclusion is that our cut does not intercept any ground water. We have had 19 bore holes over this site and only Bore Hole 11 (BH11) showed any ground water (south east corner). Bore hole 11 (at 13.5m) is found under pad 4 and does not have any cut. This is a fill location and no cutting is carried out.

In relation to bore holes (BH1, BH2, BH3 and BH4), which is located in the deepest cut area, there has been no ground water found.

BH 4 (which is in the north west corner) was drilled to a level of 12.5m, this hole had no indication of any ground water.

All other bore holes drilled, were below the cut level and none of the bore holes had any ground water.

With the above information and the report from JC Geotechnics Pty Ltd Report it is a clear indication, that our cut/fill does not have to be altered. We are at no risk of intercepting any ground water with our cut at any location.

I have attached the Hydrogeology & Groundwater data in the immediate area of registered Bore Holes as provided by Trace Environmental Services, this clearly indicates that the closest registered Bore Hole is 395m away and was drilled to a depth of 79m to achieve Groundwater supply in the Bore Hole.

So, in summary;

- Our excavation does not intercept any ground water*
- The cut and fill balance is not effected*
- There is no loss of flood storage”.*

Council’s response: The submitted Geotechnical report states that “Groundwater was encountered in one standpipe only (BH11) within a groundwater monitoring well, at a depth of 6.3m below the existing ground surface level, 8 days following drilling.

A basic recharge test was undertaken on 9 July 2020 which showed that the groundwater quickly recharged to the observed standing water level. We infer that the extremely weathered shale material between 13m to 13.5m depth at the location of BH11 is likely fractured or may contain high permeability joints”.

Furthermore, the supplementary borehole location plan provided in the Geotechnical report prepared by JC Geotechnics Pty Ltd confirms the BH11 is located within the proposed Pad 4 which is located on the south eastern corner of the site (refer to **Figure 3** below).

It is noted that Pad 4 requires filling up to 6m above the existing levels with no excavation within this portion of the site.

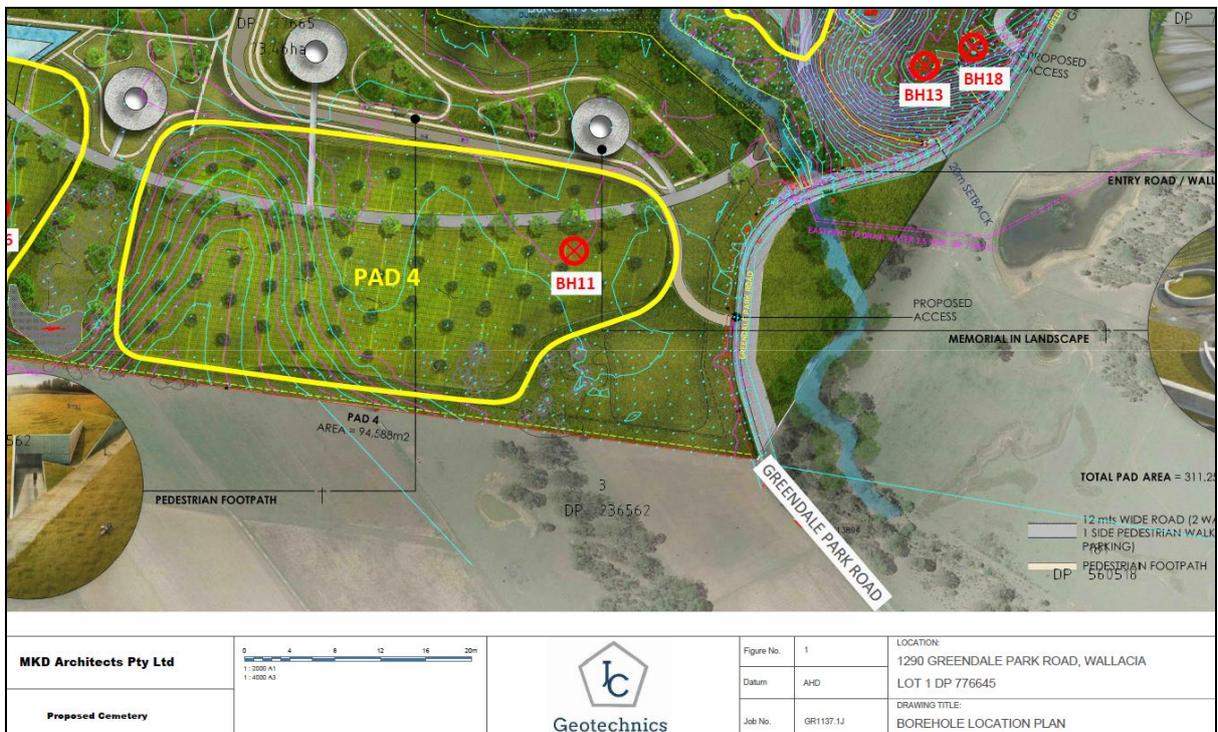


Figure 3: Extract of Borehole Location Plan confirming the location of BH11.

The applicant has satisfactorily confirmed that there is no likely interception of ground water by the cut proposed for the site and as such this issue is considered to be resolved.

6 The Panel was of the view that the visual and compatibility considerations associated with the proposal were important such that an inspection of the site and its surrounds was appropriate.

Council's response: A site inspection was undertaken by the Panel on 23 May 2022.

2.3 Key issues discussed at the Site Inspection

1 The alluvial area comprising the lower portion of the site was part of an area of high scenic quality pasture extending to the horizon both up and down river, which is presently unbuilt upon with a strong rural character. The screening of any development in that portion of the site would be important.

Applicant's response:

"The property is screened extensively. We have perimeter planting around the whole of the property. Additional to this we have screen planting along the steps of the rising pad. Also we have extensive planting with the Cemetery pads. The surrounding areas will only see trees from any view into the property. The landscaping has been intensified on this property to form a screening which will give a forest feel from the exterior. This is well depicted in the landscape plans. The plans have also been amended to remove the structure to the west out of the floodway. Please see attached an amended drawing."

Council's response: Landscaping and earthworks are used as screening for proposed structures of Stage 1 and mausoleums (later Stages 4-9) of the development. The proposed structures as part of Stage 1 will appropriately setback from the site boundary and screened with the existing vegetation within the north eastern corner of the site.

The final design of the mausoleums at Stages 4-9 will be subject to a future separate Development Application are likely to be some 40-90 years from the initial stage of the development. A condition of consent can be imposed to require perimeter planting at earlier stages of the development to allow predominant trees to mature in time for the mausoleums in order to provide effective screening of proposed structures.

2. *Is there any reason why the proposed development is not restricted to the relatively high ground at the site, as opposed to encroaching to the Nepean River? Is it because of the assessed scale of demand for the facilities? A comment was made on site by Council's Planner, Kevin Kim, that there were ecological constraints to development on some of the higher ground?*

Applicant's response:

"The higher area has a riparian zone that was dealt with extensively in our reports and with NRAR. Additionally, the longevity of the facility is important to the perpetual maintenance of the property. This was extensively dealt with in the 11th hour report. It is also noted that even with the Varroville and Wallacia approved cemeteries burials would run out within the next 20 years. The facilities are now considered state significant, which reflects the dire need for more Cemeteries."

Council's response: The submitted Biodiversity Assessment Report (BAR) with the application confirms that a large portion of the high ground (north eastern part of the site) contains existing native vegetation as illustrated in **Figure 4** below.

The proposed development incorporates a vegetation management plan that maximises the retention of existing native vegetation with an overall increase in 9.96ha of vegetation to compensate the loss of native vegetation. This is achieved by keeping the high ground part of the site unchanged with existing native vegetation. Therefore the development has been designed to provide structures that are scattered across the site that are identified as being appropriate in regard to other environmental constraints.

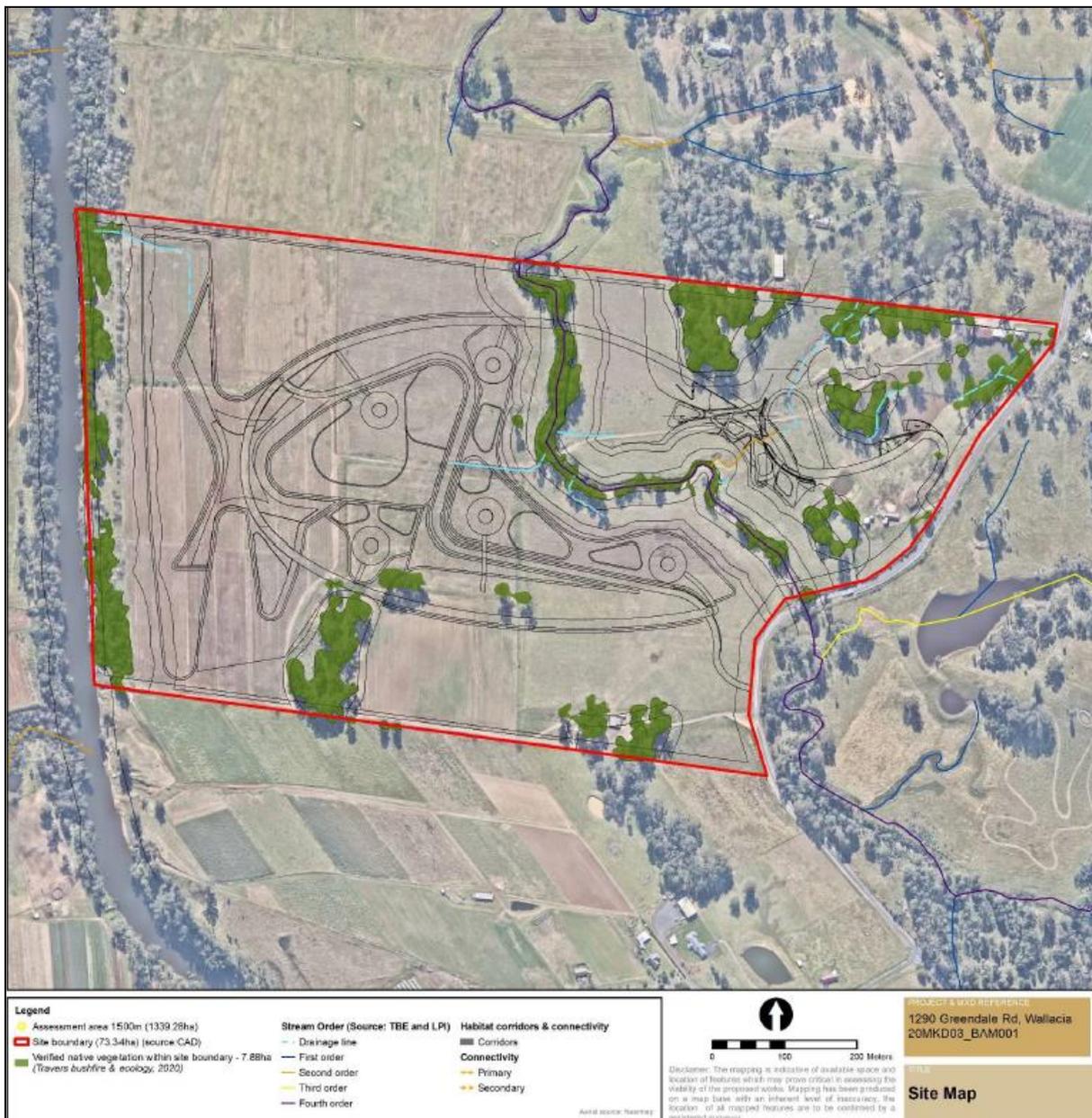


Figure 4: Vegetation Mapping of the Cumberland Plain (source: NSW NPWS 2002).

- 3 Standing water was observed within drains on the lower portion of the site, e.g. drain adjacent to the access road leading to the Nepean River. It was not clear if this standing water represented rainfall perched on relatively impermeable soils or if it represented groundwater 'daylighting' on the site. Can it be confirmed that the excavation in the lower section of the site would not intercept the groundwater table, which, if so, would affect the assessment of the impact of the proposed cut and fill on flood storage. Note that this matter was raised as part of the Record of Deferral.

Applicant's response:

"Due to the size of the site, the tenant has formed a mini trench dams over the site to help with irrigation periodically around the site. The trenches are built to hold water so that he could have easy access to the water sources. The property holds a water license and tenant periodically pumps water to various part of the site to allow water to be stored for his irrigation use and cattle drinking source. The pump for the water license is found on the banks of the Nepean River. The tenant owns a water cart and transport water around the site via the cart. There was intense rain fall on the last 24 hours prior to our attendance and prior to us leaving it started raining again. There are no ground water issues as shown in the

Geotechnical report. There is no risk of intercepting ground water during our excavation as indicated in the depth of drilling in the Geotechnical report.”

Council’s response: As mentioned earlier in the report, the proposed excavation is unlikely to intercept any ground water. As part of testing included in the Geotechnical Report, 19 bore holes were tested over this site and only 1 x Bore Hole (BH11) showed any ground water (south east corner). Bore hole 11 (at 13.5m) is found under Pad 4 and does not have any cut. This is a fill location and no cutting is carried out.

4 *There would be a level of visual impact for residents of the existing small acreages located on the opposite side of the Nepean River. This land is within the Penrith LGA and it is understood these residents were not consulted regarding the proposed development. Should these residents be notified of the development?*

Applicant’s response:

“The property has been subjected to two advertising periods due to advertising taking place over Christmas, one statutory advertising period and one additional advertising period imposed by Council. I believe that Council also undertook a community consultation meeting. The property has been subject to two news articles. The property was also referred to Penrith City Council and Wollondilly Council for feedback. We have also received a number of objectors from Silverdale during the advertising period, additional to this we have had two resident action groups advertise the development extensively on social media. We believe that this property has had extensive exposure and that these residences would be well versed in the proposed development.”

Council’s response: In accordance with Community Participation Plan 2019, Council has notified all properties within 1000m of the subject site including neighbouring LGAs (Wollondilly residents within 1000m) as well as Penrith Council (outside 1000m of the site)

5 *The sight distances available at the entrance to the proposed development off Greendale Road in both directions should be checked with regard to traffic safety/entry design by Council’s traffic officers before determination.”*

Applicant’s response:

“The sight lines have been extensively reviewed by TTPA. A further review was carried out after an RFI from Council Traffic Engineer was received. Further work was carried out by James Wyndham Prince, which has led to the current design agreed on by the Council Traffic Engineer.”

Council’s response: Council’s Traffic Engineer has reviewed the proposal and traffic study submitted with the application and raised no concern in relation to traffic safety/entry design of the development.

2.4 Key issues identified in the previous Council assessment report

i) Flooding Impact

The proposal fails to achieve the objectives and comply with Council’s floodplain management requirements specified in the LDCP 2008 and LLEP 2008. Council’s flood engineer has raised concerns on a number of issues of the applicant’s submission in relation to hydrology, hydraulics and floodway extent and therefore insufficient information has been submitted with the application to determine the full extent of flood impact on the proposed

development. Consequently, the proposal fails to respond to the known site constraints in its built form (levels, building footprint and height) and amount of earthworks related to Stage 1 (Pads 1-4) and to enable a detailed and complete assessment of the concept master plan for the site.

This issue that emerged from the referral has been discussed in Section 6.8 (Referrals) of this report and has not been resolved at the time of this report.

Council's response: Council's Flood Engineer has reviewed the latest flood study and raised no objection subject to deferred commencement conditions of consent. This issue is considered to be resolved.

ii) Increased building height

Part 5 of LDCP 2008 limits all non-residential buildings to have a maximum building height of 8.5m. The proposal seeks a variation to the maximum building height of 8.5m with an increased building height up to 38m above the ground level. The LDCP 2008 stipulates that "the above heights (8.5m) are a guide only, and a merit based assessment will occur for all development above 8.5m for a non-residential building".

The applicant has submitted a written request for this DCP variation that includes justification for the breach in building height due to the ground level changes and extent of earthworks required as a result of the flood mitigation works.

However, the non-complaint building height of mausoleums, chapel and crematorium cannot be considered and supported at the time of this report for the following reasons:

- *The subject application is for the Concept DA and Stage 1 of the development. Importantly, Stage 1 (subject of this application) is proposed to establish the development footprint for the entire site resulting from the proposed bulk excavation and associated flood mitigation works.*
- *Insufficient information has been submitted with the application whereby Council's Flood Engineer has not completed their review and requested additional information relating to hydrology, hydraulics and floodway extent at pre and post development conditions. This information is required to determine the full extent of flood impact on the subject site and surrounding area.*
- *As a result of the abovementioned outstanding information to enable a detailed and complete assessment of the Concept DA and Stage 1, it is unclear as to whether the proposal is designed to respond to the known site constraints with flooding in its built form, such as the final levels, building footprint and building height that are subject to further changes to satisfy the flood mitigation works required to facilitate the proposal.*
- *In the absence of a detailed and complete flood study that conforms with the LDCP 2008, the exact height of buildings as well as footprint and levels (ground levels and ridge levels) cannot be quantified and therefore the DCP variation to the maximum height for mausoleums, chapel and crematorium cannot be considered.*
- *Despite the limitation of concept DAs, the building envelope and massing of these structures forming part of the Concept DA is critical to set the parameter of the overall masterplan as the major issues relate to the protection of rural setting and vegetation and site suitability due to the flooding risk and the scale of the development.*

Council's response: The LDCP 2008 stipulates that “the above heights (8.5m) are a guide only, and that a merit-based assessment will occur for all development above 8.5m for a non-residential building.

The areas of non-compliant building height are summarised in the table below:

	Crematorium (stack)	Chapel (roof feature)	Mausoleums (Type 1 only)
Maximum height	15.8m	17.81m	22.41m (roof) – 38m (fin walls) from the new ground level Relative heights of the mausoleums to the RL of new pads are (Council recommended RL46.1) are: 10.6m (roof level RL56.7) and 25.3m (fin walls RL 71.4), respectively.
Permissible height	8.5m	8.5m	8.5m
Exceedance height and height variation (%)	Max. 7.3m (85%)	Max. 9.31m (110%)	Max. 2.1m (25%) to the roof line and 16.8m (198%) to the top of the fin walls relative to the new pad level of RL 46.1.
Total site area = 734,600m ²			
Area of non-compliance (%) roof area non-complaint compared to the site area	Less than 500m ² (0.06% of the site area)	480m ² (0.06% of the site area)	Approx. 70m diameter for each type 1 mausoleum. Approx. 3,800m ² x 5 = 19,000m ² (2.5% of the site area)

NB: The proposed height above ground relates to new ground levels resultant from the new pads 1-4.

The applicant is seeking a variation to the maximum 8.5m height limit and provided a response to the key issue raised by the Panel at the 15 November 2021 meeting as follows:

“In relation to the case law that you have referenced, in Zhang, once 12 months trial period was finalised in 2014 the case went back to the LEC NSW and was successful. The DCP was a guide only and not referenced further. Zhang v Canterbury City Council [2004] 10449 of 2004.

In relation to Stockland, the case did not turn on the DCP, but on the LEP that Manly Council had amended for the site with community consultation and the vendor of the site. Point 82 of the judgement is clear on what the case turns on and its focal point is the LEO and how it came about prior to Stockland's purchase of the site.

We note that we respect the DCP and its guidance but due to the flood heights that we must work to it, it is not possible to comply with the DCP.

If we had extended the pads to conceal the structures, then this would not be an issue that is at the front of this discussion. The structures are completely concealed within the property and not visible from surrounding properties.

In the new rezoning of agricultural and surrounding the new Western Sydney Airport, the heights are far more excessive than what we are proposing. These structures within the agricultural zone will dominate the landscape once completed.

This is totally different on our case, as the mausoleums are sited within a valley and protrudes 8.5m on top of the pads which gives an artistic and well-articulated farm/silo like fell which is intended.

Additionally, we must remember that these stages are in future years anticipated to be some 60 to 90 years away from construction."

Additionally, the applicant's planning consultant has provided a written justification for the non-compliant building height as follows:

"The Chapel and Crematorium have maximum heights ranging from 15.80m to 17.81m these buildings will be sited below the existing ridgeline to the northeast portion of the site and will be screened by vegetation.

With regard to the 4 to 5 storey Mausoleums, these buildings are predominantly sited centrally within the new Valley floor and will be subsequently screened by the four (4) Pads created via the proposed earthworks. The surrounding pads will be extensively landscaped in accordance with the Vegetation Management Plan.

Within the context of the proposed alterations to the levels of the site coupled with landscaped screening the proposed buildings heights are considered acceptable and will not adversely impact the rural setting".

The applicant's written request to vary the DCP building height requirement has been considered and it is concluded that there are sufficient environmental planning grounds to justify varying the DCP building height requirement. This conclusion has been reached for the following reasons:

- Variations to the building height is for less than 2.7% of the total site area and are mainly located either in the centre of the site with setbacks of 122m (to the northern side boundary), 218m (to the southern side boundary), 385m (to the Nepean River) and 200m (to the front boundary) and away from the main street frontage. When viewed from the street the additional heights are not readily visible. As such the areas of height non-compliance are relatively minimal and will not result in additional environmental impacts upon adjacent properties, public domain or the wider streetscape. The additional height for the mausoleums will also have minimal visual

impact at key public view locations from the Nepean River with the provision of landscape screening.

- The proposal includes chapel and crematorium features that have architectural roof features (such as vertical stacks and articulated fins) as well the mausoleums have fin walls that have minimal visual impacts.
- The development is unlikely to cause any visual detrimental impacts on the adjoining properties with the increased building height given the setbacks proposed. Furthermore, the life of the proposed staged development is expected in excess of 100 years and as such it is considered that the proposal can allow sufficient time for landscaping to establish within the site for the appropriate screening of the proposed structures.
- There are limited opportunities for inground burial plots within the site due to site constraints related to flood level and native vegetation.
- The additional height to the development does not result in any additional privacy or shadow impacts to adjoining developments. The additional shadows from the increased height of the buildings cast mainly on the development itself.
- The proposed development is indicative of and consistent with future character and scale for the area where it is undergoing an urban transformation with various development types near the new aerotropolis.

2.5 Public Submissions

The development application was exhibited between 20 January 2021 and 18 February 2021 and it was further extended to 18 March 2021, in accordance with the Liverpool Community Participation Plan. It is noted that Council has notified all properties within 1000m of the subject site including neighbouring LGAs (Wollondilly residents within 1000m) as well as Penrith Council (outside 1000m of the site) as required under the Liverpool Community Participation Plan.

In addition, a community consultation meeting for the interest of local residents was held on 17 June 2021.

Fifty six (56) objections were received and raised the following concerns in relation to the proposed development, raising the following matters:

- Flooding, impact on the Nepean River and surroundings and potential health risk.
- Vehicular access, traffic and parking.
- Compliance with the relevant provisions of Act, EPIs and DCP.
- Suitability of the site.
- Scale, heritage character and rural character of the area and undesirable precedent for the area.
- Air pollution and air quality.
- Environmental impacts and environmental management consideration.

Notice of Motion

It shall be noted that at the Ordinary Council meeting, held on 24 February 2021, a notice of motion was declared in response to concerns raised by the residents of Mulgoa Valley and Wallacia whom oppose the amount of scale of cemeteries and crematoriums in their community.

The Notice of Motion (submitted by Clr Hagarty) includes the following:

That Council:

1. Notes its opposition to DA-1059/2020, a proposal for the construction of a cemetery at 1290 Greendale Road, Wallacia, housing 775,000 burials.

The motion was moved by Clr Hagarty and seconded by former Clr Hadchiti.

2.6 Council Referrals

The following comments have been received from Council's Internal Departments:

Department	Response
Building section	No objection, subject to conditions
Land Development Engineer	Approval subject to conditions of consent (concept DA and Stage 1)
Flood Engineer	Approval subject to deferred commencement conditions of consent
Natural Environment – Landscape Officer	No additional information required
Environmental Health	No objection, subject to conditions
Community Planning	Comments made in relation to site constraints (flooding, earthworks, accessibility, SIA and consideration of submissions received). This has been considered as part of the pervious Council assessment report.
Traffic and Transport	Approval subject to conditions of consent
Heritage	Approval subject to conditions of consent
Natural resources Planner	Approval subject to conditions of consent

(Flood Engineering Referral)

As mentioned earlier in the report, the submitted flood study was peer reviewed by an external consultant at Council's request in December 2021. As a result of the peer review, the applicant was requested to provide additional information which was received by Council on 4 March 2022 and 5 May 2022 (referred as GHD responses below).

Upon the review of the GHD responses, Council's flood engineer supports the proposal for the following reasons:

“Assessment

This assessment should be read in conjunction with previous assessment referrals dated 26/02/2021, 09/06/2021, 04/04/2022 and subsequent assessment prepared at various times up to date.

GHD together with the peer reviewer CSS have worked on refining and developing a more appropriate floodway for the development site. GHD submitted a letter dated 5 May 2022 (response to peer review comment) outlining floodway modelling refinement and flood mapping for Nepean River and Duncan Creek. Council was generally satisfied with the identified floodway and agreed that the identified floodway can be adopted for the purpose subject development on the site. Subsequently a revised masterplan (Revision E May 2022 MKD Architects) for the staged development was submitted reflecting identified floodway and adjusting the fill pads locations on the site. Council requested additional information such as detailed modelling assessment for the revised master plan adopting concept engineering details of the proposed work.

Following discussion with the applicant and PDU unit of DPE it was agreed that the approval process of the DA can be considered under deferred commencement conditions.

Conclusion

DA is approved subject to deferred commencement conditions.”

2.7 External Referrals

The following comments have been received from External Authorities:

Agency	Response
Rural Fire Service (RFS) NSW	No objection to the development, subject to GTAs.
Natural Resources Access Regulator (NRAR)	No objection to the development, subject to GTAs.
Department of Infrastructure, Regional Development and Cities	Returned – to be referred to Western Sydney Airport to provide relevant input
Western Sydney Airport	No objection, subject to conditions.
Environment Protection Agency (EPA) NSW	No referral or concurrence required as the proposal is not prescribed as a scheduled activity and is not ‘integrated development’.

3. CONCLUSION

This development application has been considered in accordance with the requirements of the Environmental Planning and Assessment Act 1979 (**the Act**) and the Environmental Planning and Assessment Regulations 2021 (**the Regulations**). It is considered that the matters raised by the SWCPP in the Records of Deferral dated 27 April 2022 and site inspection dated 23 May 2022 have been adequately addressed and the Applicant’s submission of additional information.

The site’s location, zoning and permitted land use make it suitable for the proposed development and it is considered that the overall social and economic impacts of the proposed development would be minimal, and that potential impacts on the natural and built environments will be mitigated through design measures and the imposition of specific conditions of consent.

Based on the assessment of the application and the additional information and amendments made by the applicant, it is recommended that the DA be approved, subject to the deferred commencement and recommended conditions of consent.

4. RECOMMENDATION

- (i) That the variation to the maximum height of non-residential buildings in RU1 Primary Production zone pursuant to the Liverpool DCP 2008, be supported.
- (ii) That pursuant to Section 4.16(1)(a) of the Environmental Planning and Assessment Act, 1979, Development Application DA-1059/2020 for a concept DA for the construction of a cemetery, including mausoleums, crematoria, chapel, hall, gatehouse, administration buildings, café, car park, access roads, landscaping, earthworks and flood management works. Stage 1 seeks consent for the demolition of existing structures, bulk excavation and flood mitigation works for the entire site, including construction of 4 pads, construction of Pad 1 access road, administration buildings, crematoria, waste water treatment and car parking, be approved subject to deferred commencement conditions of consent.
- (iii) That residents who have lodged a submission in respect to the application be notified of the determination of the application.

5 ATTACHMENTS

- Architectural plans
- Revised Architectural Plans
- Statement of Environmental Effects
- DCP Variation Written Justification to Building Height
- Flood Report
- Biodiversity Assessment Report (BAR)
- Stormwater Concept Plans
- Water and Waste Water Assessment
- Vegetation Management Plan
- Contamination and Waterways Constraints Assessment
- Preliminary and Detailed Site Investigation Reports (PSI & DSI)
- Wildlife Hazard Review
- Waste Management Plan
- Geotechnical Assessment Report
- Aboriginal Heritage Due Diligence Assessment
- Traffic Impact Assessment (TIA)
- Air Quality Assessment
- Water Sensitive Urban Design: Stormwater Assessment (WSUD)
- Draft Plan of Management
- Quantitative Surveyor Report
- SWCPP – Record of Briefing
- Additional Submission (photographs)