



henry&hymas

08 April 2022

Our Ref: 19F64

City of Parramatta
PO Box 32
Parramatta 2124

Attn: Sohini Sen – Senior development Assessment Officer

Dear Sohini,

**RE: PROPOSED RESIDENTIAL AGED CARE FACILITY
235-237 MARSDEN ROAD,
CARLINGFORD NSW
Response to Additional Council DA RFIs – CIVIL ENGINEERING**

Refer to my responses below to Council's RFIs which relate to the civil engineering design for the aforementioned project.

1. Site Discharge

The site levels/drainage design shall be revised in the southeast area of the site so that flows are not directed to the neighbouring property and to a legal discharge point. This is so that the development is consistent with Council's DCP, Stormwater disposal policy and Engineering Guidelines; "stormwater, including overland flows entering and discharging from the site, must be managed. The site drainage network must provide the capacity to safely convey stormwater run-off resulting from design storm events listed in Council's Design and Development Guidelines." – Design Principle 8, Parramatta Development Control Plan 2011.

Refer to the following excerpt from the Parramatta Council Development Control Plan:

"Adequate provision is to be made for the control and disposal of stormwater run-off from the site to ensure that it has no adverse impact on Council's stormwater drainage systems, the development itself, or adjoining properties...Stormwater, including overland flows entering and discharging from the site, must be managed."

It is my understanding that the proposed stormwater design does indeed manage and control the disposal of stormwater run-off from the subject site. The total flows discharging across the boundary have been greatly reduced compared to the existing condition, especially when considering the size and impervious nature of the existing catchment. It is maintained that the proposed stormwater works have no adverse impacts on adjoining properties, and furthermore the adjoining properties will benefit from the proposed stormwater works.

In addition to the above, the collection and discharge of the south eastern catchment into the stormwater easement is not considered appropriate for the following reasons:



- Existing trees 93-97 as identified by the accompanying arborist report are to be retained. Any stormwater trenching works or filling works in this area will result in the removal of these trees.
- The south eastern area is in fact the lowest part of the site and at a lower level than where the stormwater easement traverses the site. If a stormwater connection is made from this low point into the stormwater easement, then it will create a surcharge point that will result in increased flows spilling across the boundary and a reduction in the capacity of the stormwater pipe within the easement.

A phone conversation with Council's development engineer Martin Warda on the 6th of April 2022 has clarified Council's position on this item, which is to support the filling of this south eastern area and the construction of a retaining wall along this boundary. This alternative option has been reviewed by the design team and is not considered suitable given the removal of trees 93-97 that would be required. The proposed detailed stormwater design appropriately responds to the accompanying specialist reports and supports the retention of vegetation across the site in the first instance. Accordingly, it is considered that the proposed stormwater design results in less impact to the environment and is therefore within acceptable limits.

2. Easement

The Pipe in the easement downstream of the property must demonstrate that it can convey the 1% AEP storm event as it is draining the On-Site Detention System, not the 5% AEP storm event. Full details and survey of Stormwater drainage within the easement to a legal point of discharge. The following shall be shown on any stormwater plans where an easement is proposed:

- Full details of Stormwater drainage within the easement to a legal point of discharge.*
- A long section of the drainage pipe within the easement to the point of discharge.*
- The drainage easement location shall not disturb any structures or root zone of existing trees within the property/properties.*
- All structures and trees within, overhanging or within 5m of the proposed easement shall be accurately indicated on the plans*

Hydraulic modelling using the software DRAINS has been undertaken to ensure that the stormwater system within the easement and immediately downstream of the site can cater for the 1% AEP storm events. Refer to the attached DRAINS model demonstrating this. Refer to the attached drawing 19F64_DA_C201[06] showing additional pits W-1 and W-2 which are proposed to collect flows from the swale and direct them into the piped system. Refer to drawing 19F64_DA_C210[02] showing a long section of the existing and proposed stormwater within the easement, from boundary to boundary. Refer to the previously issued site plan DA_C101 which does in fact show all trees and adjacent structures that are within 5m of the stormwater easement. It should be noted that although the existing downstream stormwater system does have the capacity to convey the 1% AEP storm, Council has not made it clear as to which part of the DCP, Development Engineering Design Guidelines, or the UPRCT Handbook establishes this requirement. It is my understanding that the proposed stormwater works should instead only be required to ensure there is no loss of capacity within this stormwater system, and that there is no increase in flows being discharged to this stormwater system.



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3. *On-Site Detention (OSD)*

When an OSD system incorporates storm filter cartridges, it is to be designed to 4th Edition Upper Parramatta River Catchment Trust (UPRCT) handbook. Council has a technical guideline on its website to assist designers.

The OSD system needs to provide the following:

- a) The primary and secondary outlets shall be provided and designed to the UPRCT 4th edition handbook requirements (1.5 yr and 100 yr outlets)*
- b) A dissipation wall should be included.*
- c) All remaining surrounding walls are to be full height or at a minimum height equal to the 1% AEP TWL within the OSD system.*
- d) Overflow from the SF chamber shall discharge to the main OSD storage area where the primary outlet is located.*
- e) Treated flow via the cartridge underdrain pipes will discharge directly to the outlet/overflow chamber and bypass all orifice controls.*
- f) An equivalent flow to the SF chamber outflow shall be reduced from the Site Reference Discharge from the extended detention storage (SRDL) in the OSD calculations and the 1.5yr orifice size should be adjusted to account for the flow through the SF chamber.*

All areas draining to the OSD shall be graded at minimum 1% to the OSD, including the carpark and outer courtyards. This is to ensure the site drains to the OSD system in the event of a blockage.

Council's Engineer (Johnny Su, Senior development engineer) has already provided advice in relation to OSD design requirements, which is recorded within the pre-lodgement advice. The advice states that either the 3rd edition or 4th edition upper parramatta river catchment trust (UPRCT) handbook may be used to design the on-site detention tank. This is in line with Council's development engineering guidelines, which states that "the OSD system must be designed in accordance with either the 3rd of 4th edition of the UPRCT handbook". In addition to the above, a phone conversation with Council's development engineer Martin Warda on the 6th of April 2022, has confirmed Council's position; that the above design changes for item #3 will no longer be required to be made. This is with the exception to changing the weir height for the water quality chamber within the OSD tank to equal to the top water level within the tank. This has been incorporated into the design and is shown in the attached plan 19F64_DA_C201[06].

I trust this letter provides sufficient clarification on the various civil engineering issues. Please do not hesitate to contact the undersigned if further clarification is required.

Yours faithfully,

NICK HEAZLEWOOD

For, and on behalf of,
H & H Consulting Engineers Pty Ltd