
PENRITH HEALTH
REDEVELOPMENT
STAGE 3 – MENTAL HEALTH

STORMWATER REPORT

SEPTEMBER 2010



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REPORT

*Penrith Health
Redevelopment
Stage 3 – Mental Health*



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1.0 INTRODUCTION

This report has been prepared in support of a Part 3A application to the Department of Planning for the development of a new Mental Health facility on the Nepean Hospital site.

2.0 EXISTING CONDITIONS

The Nepean Hospital site is located at the crest of an area of elevated ground. Therefore the stormwater from the site drains to different catchments of Penrith City Council's stormwater system. A plan showing the details of the Council stormwater system in the streets surrounding the hospital site is included as Appendix A of this report.

The current stormwater system for the hospital comprises:

- On-site detention storage basin located behind the West Block
- On-site detention storage basin located behind the Pialla building
- Underground detention tank located adjacent the East Block (currently under construction)
- On-site detention storage basin located near the Cancer Care building
- Open drain along Parker Street
- Council floodway around the Cancer Care building
- Site floodway following the Sydney water services easement crossing the site in an east-west direction from the end of Barber Avenue

The above stormwater detention facilities do not cater for the existing part of the Hospital site which is being redeveloped for Mental Health.

The existing stormwater drainage system serving the proposed Mental Health site is shown on Drg No. 10S234-DAC01 included as Appendix B of this report. An existing 300mm diameter stormwater pipe is located on the Derby Street boundary. This pipe runs in an easterly direction to the vicinity of the Derby Street/Somerset Street intersection. At this point it connects to the existing Penrith City Council stormwater system in Derby Street.

The internal drainage system serving the area of the proposed Mental Health facility, currently a carpark and maintenance workshops, does not collect any stormwater flows from upstream of the proposed Mental Health facility. Therefore, the demolition or relocation of the existing stormwater system during the construction of the Mental Health facility will have no adverse impact on the remainder of the Hospital's site stormwater system.

No stormwater quality facilities currently exist on the stormwater system located within the envelope of the proposed Mental Health facility.

3.0 PROPOSED CONDITIONS

The proposed stormwater drainage system is shown on Drg No. 10S234-DAC01 included as Appendix B of this report. Discussions have occurred with Penrith City Council regarding its requirements for stormwater detention on the site. Council has advised that the post-development stormwater flows shall not be greater than the pre-development flows from the site. In order to comply with this requirement, and because of the increase in impervious area for the proposed development, a stormwater detention volume of approximately 85 cubic metres is required. The location of the 2 No. detention tanks are shown on Drg No. DAC01. The detention tanks discharge to the relocated stormwater pipeline located adjacent to the Derby Street boundary.

It is proposed to install stormwater pipes on the eastern and western sides of the proposed Mental Health building to accept run-off from the building roof, and minor hardstand areas. Gross Pollutant Traps (GPT's) will be installed on the downstream ends of these stormwater pipes, immediately prior to the proposed stormwater detention tanks. The detention tanks will comprise underground tanks sized in accordance with Penrith City Council's requirements. A section of existing stormwater pipe adjacent the Derby Street boundary will be required to be replaced to relocate it outside the footprint of the proposed Mental Health Facility. The existing internal site stormwater system downstream of the Mental Health building has sufficient capacity to cater for the stormwater flows from the building.

Stormwater overland flow paths, for storm events in excess of the capacity of the piped stormwater system and up to the 100 year ARI storm event, will generally follow the existing flow patterns on the site. To the west of the proposed building, overland flows will occur along the existing road between South Block and the proposed Mental Health facility. To the east of the proposed building, overland flows will occur along the setback between the existing Administration offices and the proposed Mental Health facility. This interface will need to be carefully treated to ensure that the existing building is protected from inundation from overland flows. These overland flow paths will ensure that the proposed development will not be adversely affected by storm events up to the 100 year ARI storm.

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4.0 EROSION AND SEDIMENT CONTROL

The proposed erosion and sediment control measures are shown on Drg No. 10S234-DAC02 included as Appendix B of this report. The mitigation measures shown on the attached drawing comply with the recommendations included in the Geotechnical Investigation Report prepared by Golder Associates for the Mental Health site.

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APPENDIX A

Map



Map Scale: 1:4,438

About this Document

This map has been created for the purpose of showing basic locality information over Penrith City Council. Property boundary line network data is maintained by Council. Any errors should be reported to the GIS Section, Penrith City Council.

Disclaimer

This map is a representation of the information currently held by Penrith City Council. While every effort has been made to ensure the accuracy of the product, Council accepts no responsibility for any errors or omissions. Any feedback on omissions or errors would be appreciated.

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APPENDIX B