

6 September 2019

**Project Reference:** 11294

Att: James Kingston  
Senior Planner  
City Plan Services  
120 Sussex Street  
Sydney NSW 2000

**Bonacci Group (NSW) Pty Ltd**  
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**Goulburn Base Hospital Redevelopment SSDA Modification**

Dear James,

Bonacci Group (NSW) have been engaged for the civil and structural design for the above mentioned project. We have produced the attached updated Civil Documents for the project, to accommodate the changes to the Project Design. We confirm that the Civil Design currently documented is consistent with the previously approved/referenced Civil Design. The changes have generally been confined to civil layout only and have been annotated on the attached drawing. The design complies with water quantity and quality requirements.

Yours Sincerely

**For Bonacci Group (NSW) Pty Ltd**



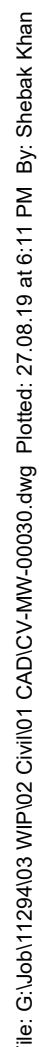
Stephen Naughton MIEAust NER RPEQ  
Associate Director



John Williams FIEAust NER  
Director

Enc: Drawing 11294\_CV-MW-00030[J]  
Drawing 11294\_CV-MW-00032[E]





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<i>A</i>	<i>RE - ISSUED FOR 100% DD</i>	<i>19.05.19</i>	<i>SK</i>	<i>-</i>	<i>I</i>	<i>ISSUED FOR 100% DD</i>	<i>26.08.19</i>	<i>DV</i>	<i>-</i>
<i>D</i>	<i>RE - ISSUED FOR 100% DD</i>	<i>29.05.19</i>	<i>SK</i>	<i>-</i>	<i>I</i>	<i>RE - ISSUED FOR 100% DD</i>	<i>20.08.19</i>	<i>DV</i>	<i>-</i>
<i>C</i>	<i>ISSUED FOR 100% DD</i>	<i>10.05.19</i>	<i>SK</i>	<i>-</i>	<i>H</i>	<i>UPDATED ARCHITECTURAL LAYOUT</i>	<i>6.08.19</i>	<i>DV</i>	<i>-</i>
<i>B</i>	<i>ISSUED FOR 80% DD</i>	<i>03.05.19</i>	<i>SK</i>	<i>-</i>	<i>G</i>	<i>RE - ISSUED FOR 100% DD</i>	<i>21.08.19</i>	<i>DV</i>	<i>-</i>
<i>A</i>	<i>ISSUED FOR 50% DD</i>	<i>28.03.19</i>	<i>LS</i>	<i>-</i>	<i>F</i>	<i>RE - ISSUED FOR 100% DD</i>	<i>14.06.19</i>	<i>SK</i>	<i>-</i>
Rev	Description	Date	By	App	Rev	Description	Date	By	App



STORMWATER CATCHMENT  
ADJUSTED TO MATCH REVISED  
ARCHITECTURAL LAYOUT

WATER QUANTITY

UN-DEVELOPED MAIN WORKS:

- TOTAL SITE AREA = 0.912 Ha
- IMPERVIOUS = 0%

POST DEVELOPED MAIN WORKS:

- TOTAL SITE AREA = 0.912 Ha
- IMPERVIOUS = 0.80Ha (87.7%)
- \*FOR CONSERVATIVE APPROACH, TIME OF CONCENTRATION IS TAKEN AS 5 MINUTES

HYDRAULIC CALCULATIONS

- IN ACCORDANCE WITH GOULBURN COUNCIL "Post development" flows must be less than Pre development (green site) flows in all storm events up to 100 Years ARI

COMPARISON OF PRE TO POST DEVELOPED FLOWS CALCULATED IN DRAINS SOFTWARE

ARI	PRE-DEV	POST-DEV WITH OSD
5 YRS	0.127	0.125
20 YRS	0.238	0.191
100YRS	0.337	0.161

OSD TANK VOLUME REQUIRED = 120m<sup>3</sup> (VOLUME OF TANK PROVIDED = 125m<sup>3</sup>)  
15m<sup>3</sup> RAINWATER TANK CREDIT IS TAKEN FOR 30KL TANKS PROVIDED

WATER QUALITY

- IN ACCORDANCE TO SYDNEY WATER CATCHMENT, NoB/E IS ADOPTED FOR WATER QUALITY TARGETS FOR THE SITE.

THE FOLLOWING WATER QUALITY STRATEGIES ARE ADOPTED IN ORDER TO ACHIEVE NoB/E:

- 25m<sup>2</sup> BIORETENTION FOR NORTHERN CARPARK
- ENVIROPODS AT PITS B1, B5, B6
- RE-USE OF THE EXISTING RAINWATER TANKS FOR THE BUILDING (30KL IN TOTAL)
- 5 STORMWATER FILTER CARTRIDGES IN OSD TANK

STORMWATER CATCHMENT  
ADJUSTED TO MATCH REVISED  
ARCHITECTURAL LAYOUT



ALL EXISTING PROPERTY SERVICES' LOCATIONS AND DEPTHS ARE APPROXIMATE AND MUST BE VERIFIED ON SITE. THE CONTRACTOR SHOULD SUPPLY PRECISE LOCATIONS AND DEPTHS TO THE ENGINEER FOR REVIEW PRIOR TO ANY WORKS THAT MAY AFFECT THESE SERVICES.

SCALE 1:500



THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

Rev	Description	Date	By	App
E	RE-ISSUED FOR 100% DD	06.09.19	SK	-
D	RE-ISSUED FOR 100% DD	12.06.19	DV	-
C	RE-ISSUED FOR 100% DD	29.05.19	DV	-
B	ISSUED FOR 100% DD	10.05.19	SK	-
A	ISSUED FOR 80% DD	03.05.19	SK	-

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B	ISSUED FOR 100% DD	10.05.19	SK	-
A	ISSUED FOR 80% DD	03.05.19	SK	-



Project Name	GOULBURN HOSPITAL AND HOSPITAL SERVICES REDEVELOPMENT
Drawing Title	STORMWATER CATCHMENT PLAN

100% DESIGN DEVELOPMENT			
Designed	SK	Project Director Approved	Date
Drawn	SK		
Scale	1:250	Project Ref	Drawing No
Date	MAY 19		Rev
Sheet	B1	CV-MW-00032	E