

23 July 2020

Jurgen Spangl & Karin Mundesperger
7 Bower Street
Manly NSW 2095

c/o ryan@cplusc.com.au

Stormwater design in support of the proposed development at 7 Bower Street, Manly

Dear Jurgen and Karin

Please find attached the drawings describing the stormwater management plan for the proposed development at 7 Bower Street, Manly.

The stormwater management plan is described in the following Stellen Consulting drawings:

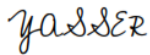
<i>DR-000</i>	<i>Revision 0</i>	<i>Legend</i>
<i>DR-001</i>	<i>Revision 0</i>	<i>Pipe Layout</i>
<i>DR-002</i>	<i>Revision 0</i>	<i>Details</i>
<i>DR-003</i>	<i>Revision 0</i>	<i>Site Areas</i>

The stormwater management plan conforms to the relevant requirements of the following:

- Australian Standard AS3500.3 (2018) – *“Plumbing and Drainage: Part 3 Stormwater Drainage”*
- Northern Beaches Council (Manly) – *“Specification for On-site Stormwater Management” (as amended September 2004)*

We recommend the stormwater design (as described in the drawings) as a safe and practical solution to support the development.

Kind regards,



Yasser Yahya Al-Ashmori
Engineer

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Drawing List

Architectural Drawings by CplusC Architectural
Workshop from DA 000 to DA 020 all dated
23/07/2020.

7 BOWER STREET, MANLY

STORMWATER MANAGEMENT PLAN

DRAWING NUMBER	DRAWING TITLE
DR-000	LEGEND
DR-001	PIPE LAYOUT
DR-002	DETAILS
DR-003	SITE AREAS

NOTES:

1. ALL DIMENSIONS TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION.

2. SITE LAYOUT BASED ON ARCHITECTURAL PLANS BY CPLUSC ARCHITECTURAL WORKSHOP (23/07/2020).

3. LOCATION OF ALL SERVICES MUST BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF EXCAVATION WORKS.

4. ALL STORMWATER DRAINAGE PIPES AND ASSOCIATED DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE RELEVANT STANDARDS, THE BUILDING CODE OF AUSTRALIA, MANUFACTURER’S RECOMMENDATIONS, SYDNEY CATCHMENT AUTHORITY RECOMMENDED PRACTICE, AND LOCAL COUNCIL, AS APPLICABLE.

5. ALL INVERT LEVELS PROVIDED ON THIS DRAWING ARE REDUCED TO AHD AND BASED ON INTERPOLATED SURFACE LEVELS AND SYSTEM REQUIREMENTS
6. WHERE POSSIBLE, PIPEWORK SHALL BE LOCATED EXTERNAL TO THE BUILDING.

7. DOWNPIPES AND STORMWATER LINES TO BE SEALED DN100 uPVC UNLESS OTHERWISE NOTED.

8. STORMWATER PIPES TO BE GRADED AT A MINIMUM 1% UNLESS NOTED OTHERWISE.

9. ALTERNATIVE GUTTER AND DOWNPIPE CONFIGURATION MAY BE INSTALLED PROVIDED IT COMPLIES WITH AS3500.

10. ALL PIPE AND CONDUITS TO BE MARKED IN ACCORDANCE WITH AS1345 – 1995.

11. TRENCHES AND SERVICE SEPARATIONS IN ACCORDANCE WITH AS/NZS 5601, AS/NZS 3500, AND AS/CA S009.

LEGEND:

- 

DOWNPIPE
- 

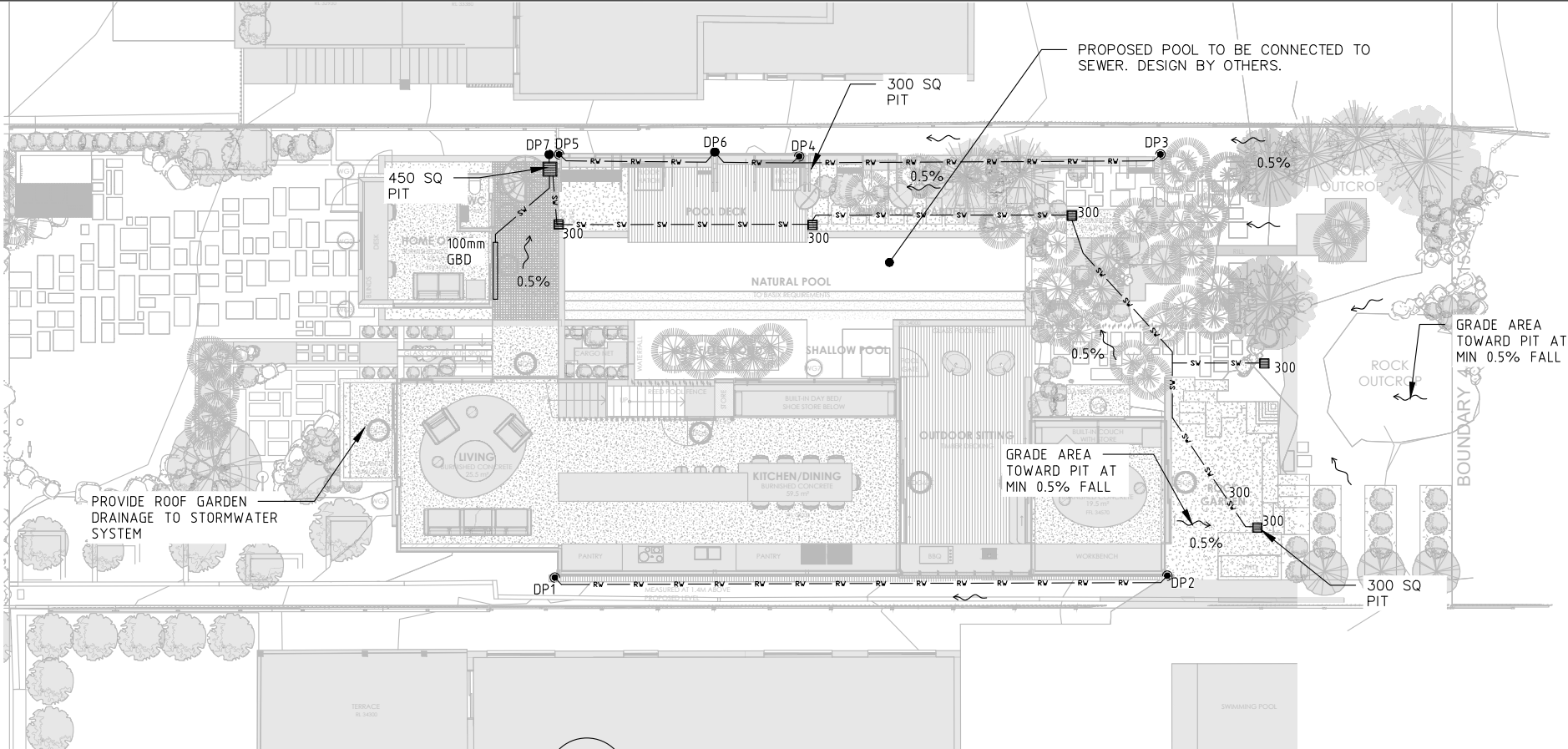
SW STORMWATER PIPE
- 

RW RAINWATER PIPE
- 

DRAINAGE PIT

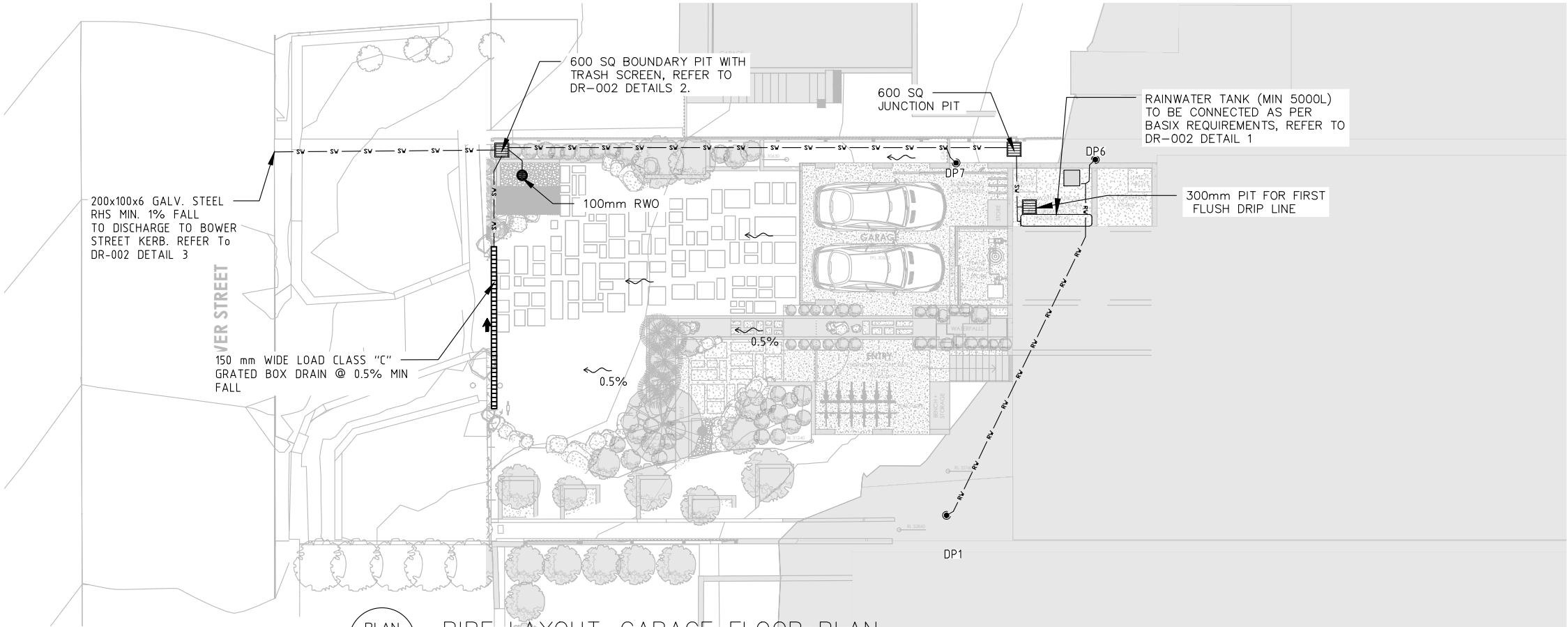
NOT FOR CONSTRUCTION

This drawing is confidential and shall only be used for the purposes of this project.						Scale NA DO NOT SCALE. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED	THE SIGNING OF THIS TITLE BLOCK CONFIRMS THE DESIGN AND DRAFTING OF THIS PROJECT HAVE BEEN PREPARED AND CHECKED IN ACCORDANCE WITH THE STELLEN QUALITY ASSURANCE SYSTEM				 Stellen Consulting ABN 61 149 095 189	This design complies with: AS3500.3:2018	7 BOWER STREET, MANLY				
REVISIONS							DESIGNED	YYA	CHECKED	LES			LEGEND				
							DRAWN	YYA	CHECKED	LES							
	0	YYA	23/07/2020	APPROVED FOR DA SUBMISSION			LES										
	A	YYA	10/07/2020	APPROVED FOR CLIENT REVIEW			LES										
No.	BY	DATE	DESCRIPTION		APPD								Size	A3	Status	APPROVED FOR DA SUBMISSION	Dwg No.



PLAN
1

PIPE LAYOUT-GROUND FLOOR PLAN
1:200



PLAN
2

PIPE LAYOUT-GARAGE FLOOR PLAN
1:200

NOT FOR CONSTRUCTION

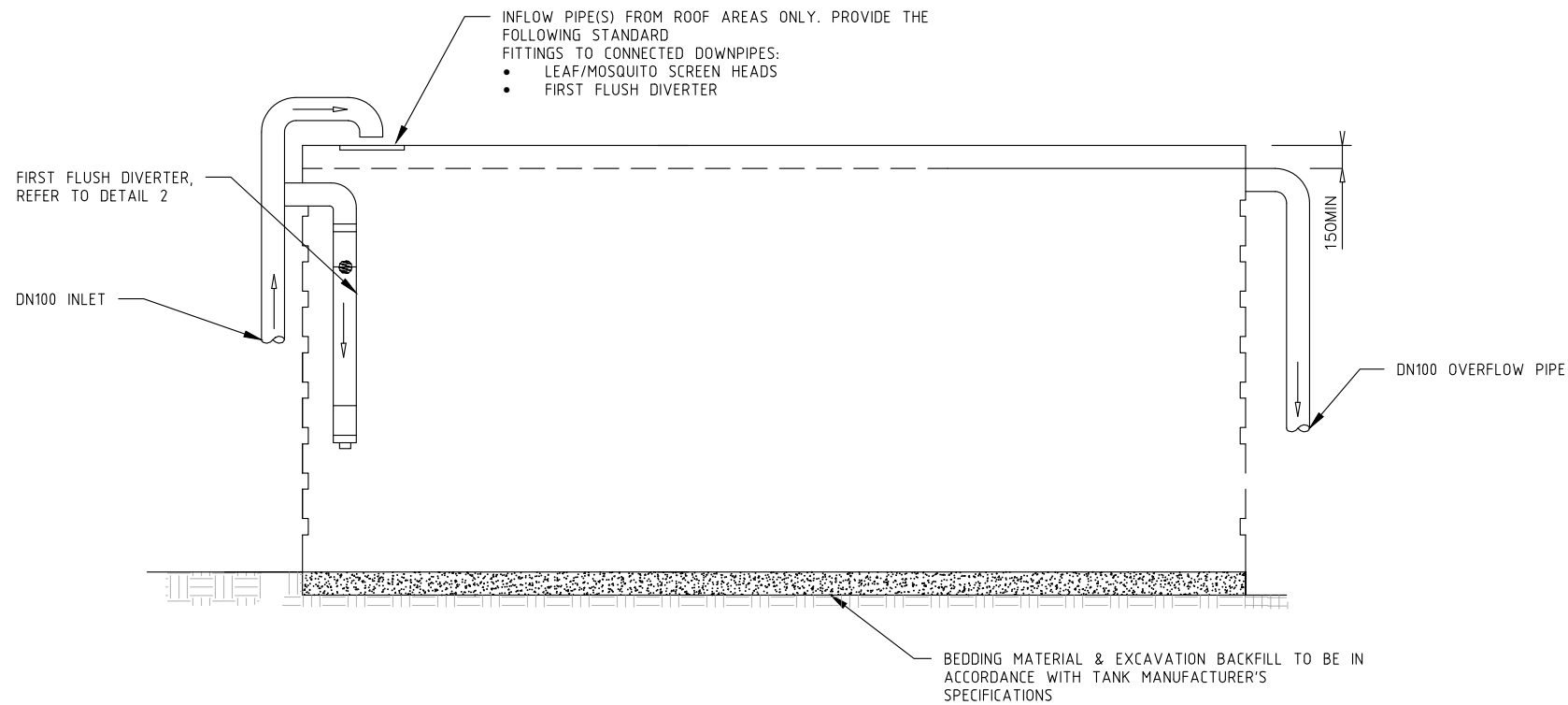
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APPROVED	LES	DATE	23/07/2020



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	PIPE LAYOUT			
	Size A3	Status APPROVED FOR DA SUBMISSION	Drw No. DR-001	Rev. 0



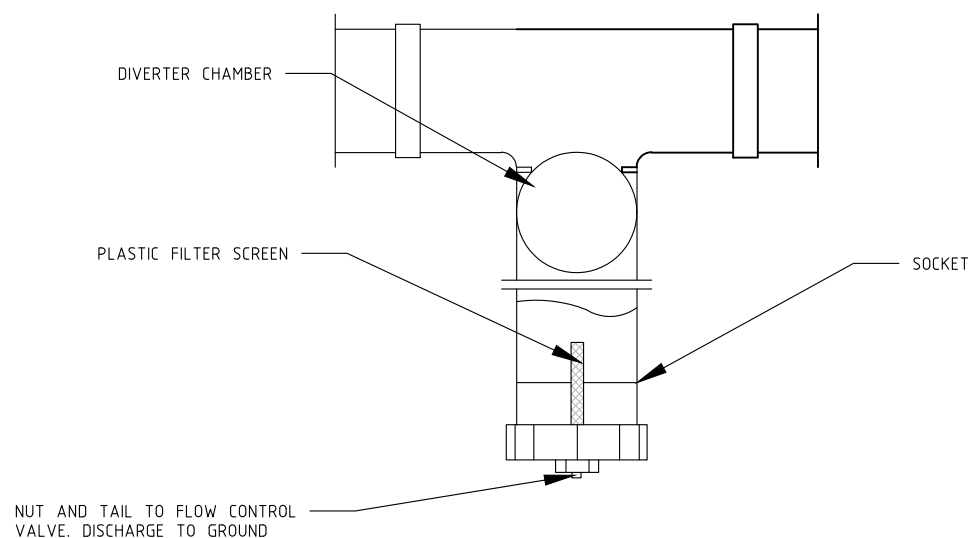
DETAIL
1

TYPICAL RAINWATER REUSE TANK ELEVATION

NOT TO SCALE

NOTES:

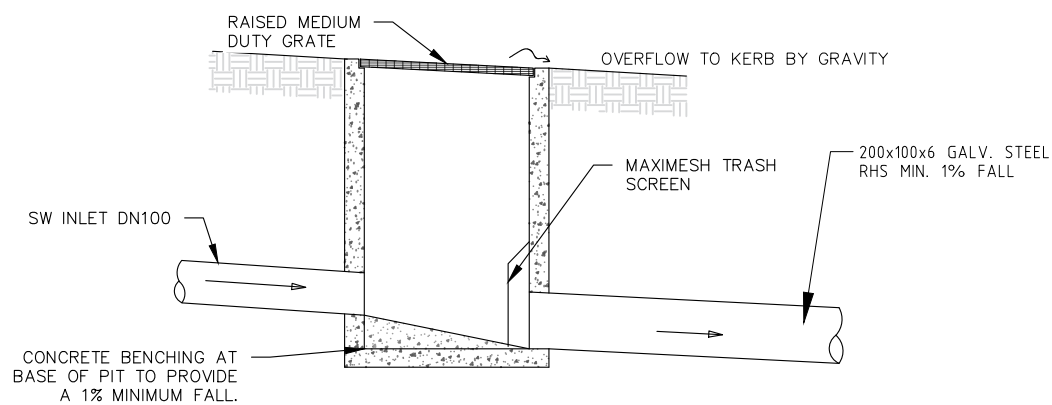
1. RAINWATER TANK TO BE AT LEAST 5000 LITRES.
2. RAINWATER TANK MUST MEET, AND BE INSTALLED IN ACCORDANCE WITH, THE REQUIREMENTS OF ALL APPLICABLE REGULATORY AUTHORITIES.
3. THE APPLICANT MUST CONFIGURE THE RAINWATER TANK TO COLLECT RAINWATER RUNOFF FROM AT LEAST 40 SQUARE METRES OF ROOF AREA.



DETAIL
A

FIRST FLUSH DIVERTER

NOT TO SCALE



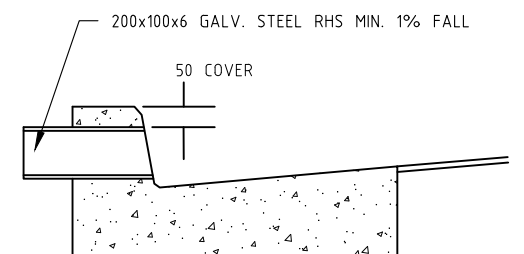
DETAIL
2

600 SQUARE MEDIUM DUTY PIT

NOT TO SCALE

NOTES:

1. 'LYSAGHT' MAXIMESH RH3030 (HOT DIPPED GALVANISED) OR EQUIVALENT.
2. MAXI MESH SCREENS MUST BE PLACED SUCH THAT THE LONG AXIS OF THE OVAL SHAPED HOLES ARE ORIENTATED HORIZONTALLY WITH THE PROTRUDING LIP ANGLED UPWARDS AND FACING TOWARDS THE OUTLET.



DETAIL
3

TYPICAL KERB CONNECTION

NOT TO SCALE

NOT FOR CONSTRUCTION

REVISIONS				
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A	YYA	10/07/2020	APPROVED FOR CLIENT REVIEW	LES

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APPROVED	LES	DATE	23/07/2020


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This design complies with:
AS3500.3:2018

7 BOWER STREET, MANLY			
DETAILS			
Size	A3	Status	APPROVED FOR DA SUBMISSION
Drwg No.	DR-002	Rev.	0



PLAN
3

SITE AREAS – EXISTING
1:200

EXISTING

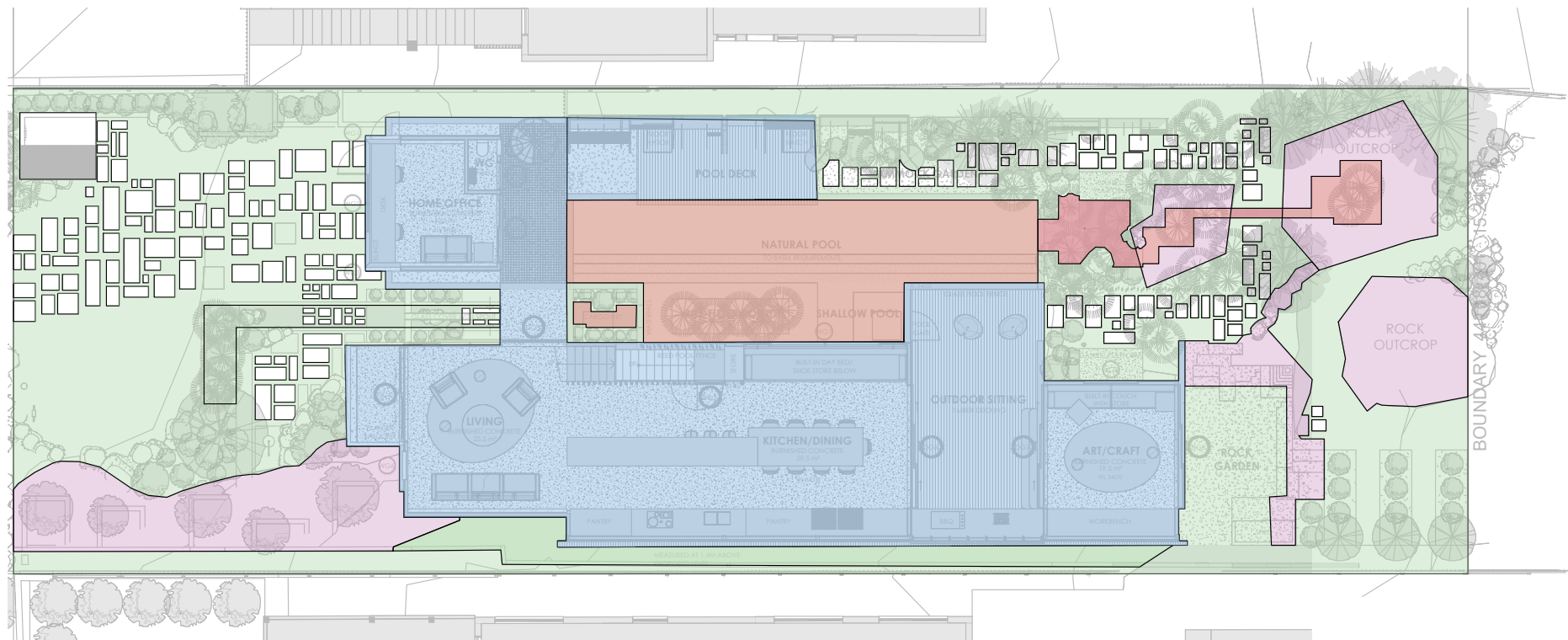
SITE AREA:	696.8 m ²
PERVIOUS:	371.7 m ²
IMPERVIOUS (BUILDINGS AND PAVING):	166.0 m ²
IMPERVIOUS (NATURAL ROCK)	167.8 m ²

LEGEND

	PERVIOUS
	IMPERVIOUS
	NATURAL ROCK
	POOL

PROPOSED

SITE AREA:	696.8 m ²
PERVIOUS :	419.9 m ²
IMPERVIOUS (BUILDING AREA):	218.8 m ²
IMPERVIOUS (NATURAL ROCK):	58.1 m ²



PLAN
4

SITE AREAS – PROPOSED
1:200

Part 4.3.2 Determination of OSD requirements in Stormwater Zone 1			
Part 4.3.2.1 For A New Building			
1) Exemption	a) Is the site area less than 400?	Yes ☐	No ☒
	b) Is the post-development impervious area less than 190 m ² ?	Yes ☐	No ☐
If yes to both questions, OSD is not required. If no to any of the above questions, please proceed to calculation			
2) Calculation	a) Site area 696.8 m ² x 0.35 = 243.9m² + 50 = 293.9m²		
	b) Post-development impervious area 218.8m²		
OSD will not be required when (b) is less than 250 m ² and (a) is greater than (b). Is OSD required for this development? Yes ☐ No ☒			
If yes, provide a design in accordance with the section 9.3.3.2 of Council's Water Management for Development Policy. If no, OSD is not required and please proceed to part 5.			

NOTES

- OSD NOT REQUIRED IN ACCORDANCE WITH PART 4.3.2 TOTAL IMPERVIOUS FRACTION < 35% AND < 250m2
- OSD IMPERVIOUS CALCULATION BASED ON DEVELOPED IMPERVIOUS AREA AND EXCLUDES NATURAL ROCK

NOT FOR CONSTRUCTION

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A	YYA	10/07/2020	APPROVED FOR CLIENT REVIEW	LES

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APPROVED	LES	DATE	23/07/2020

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AS3500.3:2018

7 BOWER STREET, MANLY			
SITE AREAS			
Size A3	Status APPROVED FOR DA SUBMISSION	Dwg No. DR-003	Rev. 0