

# CONCEPT STORMWATER MANAGEMENT PLANS

## PROPOSED NEW RESIDENTIAL DEVELOPMENT

### LOT 13 BUBALO STREET, WARRIEWOOD NSW 2102

#### LEGEND

	<b>GRATED INLET PIT</b>
450x450	<b>450mm SQUARE INTERNAL</b>
GRT 75.54	<b>GRATE LEVEL = RL 75.54</b>
IL 75.12	<b>INVERT LEVEL = RL 75.12</b>
o ID	<b>INSPECTION OPENING CAP</b>
o DP	<b>PROPOSED DOWNPIPE 90mm dia or 100mm x 50mm RECTANGULAR UNO</b>
	<b>EXISTING TREE</b>
	<b>GRATED TRENCH DRAIN</b>
	<b>GRATED ROUND OUTLET 100mm DIAMETER</b>
	<b>PROPOSED DOWNPIPE SPREADER</b>
	<b>STRUCTURE No 1 (FOR HYDRAULIC CALCS)</b>
	<b>STORMWATER DRAINAGE</b>
	<b>100 DIA CHARGED/1% MIN ROOF AREA ONLY UNO</b>

#### NORTHERN BEACHES COUNCIL-STORMWATER MANAGEMENT DESIGN REQUIREMENTS

DESIGN CODE: NORTHERN BEACHES COUNCIL- STORMWATER MANAGEMENT CODE.

PROPOSED DEVELOPMENT: NEW SINGLE DWELLING DEVELOPMENT.  
SITE AREA = 270m<sup>2</sup>

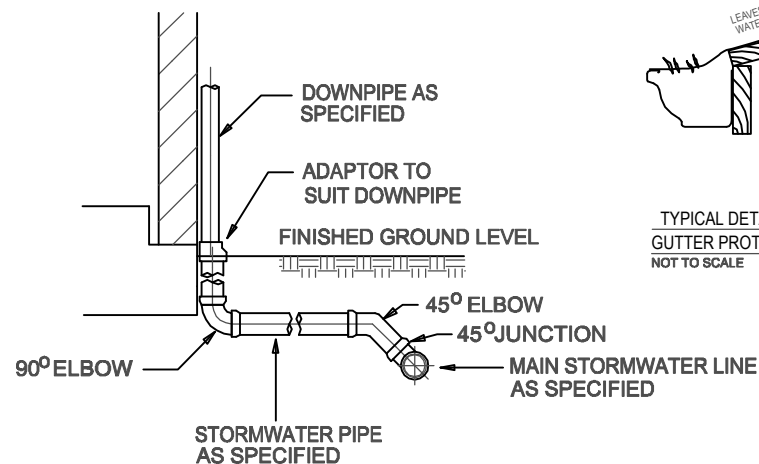
COMMUNITY OSD BASIN BUILT AS PART OF RECENT SUBDIVISION. REFER TO 88B INSTRUMENT

THEREFORE COLLECT NEW ROOF AREA OF DWELLING AND DISCHARGE INTO 4030 LITRE BASIX RAINWATER TANK WITH THE OVERFLOW AND DRIVEWAY RUNOFF DISCHARGING TO THE KERB & GUTTER ON BUBALO STREET.

**DESIGN BASED ON AR & R, AS3500 & RELEVANT STORMWATER MANAGEMENT CODE.**

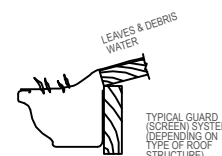
#### GENERAL NOTES

1. FINAL LOCATION OF NEW DOWNPIPES TO BE DETERMINED BY BUILDER/ARCHITECT AT TIME OF CONSTRUCTION.
2. THESE DRAWINGS TO BE READ IN CONJUNCTION WITH ARCHITECTS AND OTHER CONSULTANTS DRAWINGS. ANY DISCREPANCIES TO BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH WORK.
3. ALL MATERIALS AND WORKMANSHIP TO BE IN ACCORDANCE WITH AS/NZS 3500.3:2003 STORMWATER DRAINAGE, BCA AND LOCAL COUNCIL POLICY/CONSENT/REQUIREMENTS.
4. ALL DIMENSIONS AND LEVELS TO BE VERIFIED BY BUILDER ON-SITE PRIOR TO COMMENCEMENT OF WORKS. THESE DRAWINGS ARE NOT TO BE SCALED FOR DIMENSIONS NOR TO BE USED FOR SETOUT PURPOSES.
5. ALL SURVEY INFORMATION AND PROPOSED BUILDING AND FINISHED SURFACE LEVELS SHOWN IN THESE DRAWINGS ARE BASED ON LEVELS OBTAINED FROM DRAWINGS BY OTHERS.
6. THESE DRAWINGS DEPICT THE DESIGN OF SURFACE STORMWATER RUNOFF DRAINAGE SYSTEMS ONLY AND DO NOT DEPICT ROOF DRAINAGE OR SUBSOIL DRAINAGE SYSTEMS UNLESS NOTED OTHERWISE. THE DESIGN OF ROOF AND SUBSOIL DRAINAGE SYSTEMS IS THE RESPONSIBILITY OF OTHERS.
7. ALL STORMWATER DRAINAGE PIPES ARE TO BE 100mm DIAMETER uPVC AT MINIMUM 1% GRADE UNLESS NOTED OTHERWISE.
8. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE AND LEVEL ALL EXISTING SERVICES OR OTHER STRUCTURES WHICH MAY AFFECT/BE AFFECTED BY THIS DESIGN PRIOR TO COMMENCEMENT OF WORKS.
9. ALL PITS WITHIN DRIVEWAYS TO BE 150mm THICK CONCRETE OR EQUAL.
10. THIS PLAN IS THE PROPERTY OF EZE DRAINAGE SOLUTIONS PTY LTD AND MAY NOT BE USED OR REPRODUCED WITHOUT WRITTEN PERMISSION FROM EZE DRAINAGE SOLUTIONS PTY LTD.

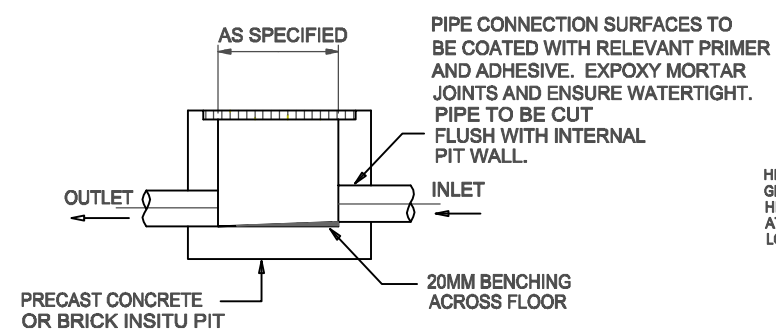


**TYPICAL DETAIL - DOWNPIPE CONNECTION**

NOT TO SCALE

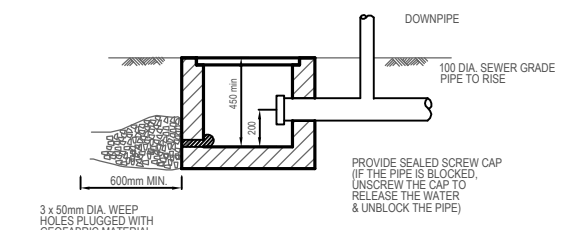
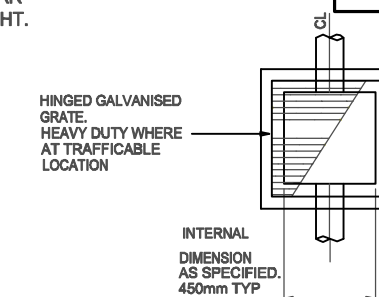


TYPICAL DETAIL OF GUTTER PROTECTION NOT TO SCALE



**TYPICAL DETAIL - STANDARD PIT**

NOT TO SCALE



TYPICAL DETAIL - CHARGED SYSTEM CLEANOUT PIT NOT TO SCALE

A	28.08.19	DA ISSUE
ISS	DATE	AMENDMENT

ARCHITECT/BUILDER	WINCREST HOMES
CLIENT	MR. & MRS. POWER

**EZE DRAINAGE SOLUTIONS**  
Pty Ltd ACN 619 135 198

CONSULTING ENGINEERS  
CIVIL & STORMWATER MANAGEMENT

Ph: (02) 97067767 Mobile: 0405507654  
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DWG TITLE	COVER SHEET & DESIGN SUMMARY TABLE
PROJECT TITLE	PROPOSED NEW RESIDENTIAL DEVELOPMENT LOT 13, BUBALO STREET, WARRIEWOOD NSW 2102

DESIGNED BY :	EZ	ISSUED BY :	BE MIE AUST PENG
JOB No	DWG No	No IN SET	ISSUE
18016	D1	3	A

**BASIX COMMITMENT**  
**PROPOSED DWELLING TO HAVE A 4030 LITRE (MINIMUM) RAINWATER TANK TO BE CONNECTED TO 60m<sup>2</sup> OF ROOF AREA IN ACCORDANCE WITH BASIX REQUIREMENTS.**

**NOTE**  
 LOCATION OF NEW DOWNPIPES SHOWN ON THIS DRAWING ARE SUBJECT TO VERIFICATION BY BUILDER DURING CONSTRUCTION. DOWNPIPE LOCATION MAY BE VARIED PROVIDED INTENT OF THIS DESIGN IS MAINTAINED.

**NOTE**  
 CONNECT ONLY ROOF AREA TO PROPOSED RAINWATER TANK. FIRST FLUSH DEVICES TO BE INSTALLED TO MANUFACTURERS SPECIFICATIONS.

**NOTE**  
 THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS :  
**WINCREST HOMES**  
**JOB NO.17264 ISSUE E**  
**DATED 31.07.2019**

**NOTE**  
 LOCATION OF NEW PITS SHOWN ON THIS DRAWING ARE SUBJECT TO VERIFICATION BY BUILDER DURING CONSTRUCTION. PIT LOCATIONS MAY BE VARIED PROVIDED INTENT OF THIS DESIGN IS MAINTAINED.

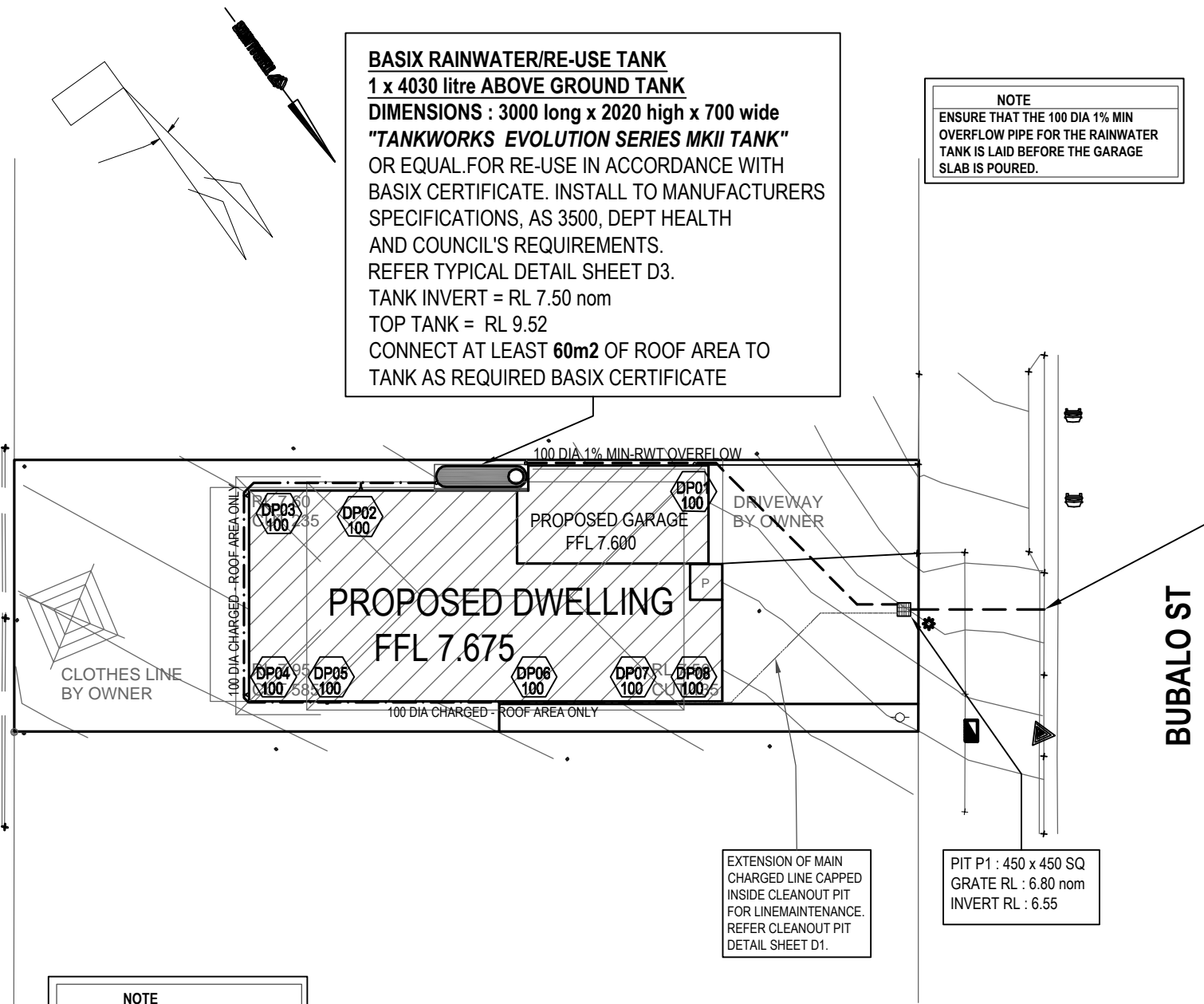
**NOTE**  
 THIS DRAWING IS FOR STORMWATER MANAGEMENT DESIGN AND DOES NOT COVER ANY OVERLAND FLOW DESIGN REQUIREMENTS.

100 DIA ROOF ONLY.  
 CHARGED LINE PRESSURE GRADE uPVC SOLVENT WELDED.  
 NOTE CHARGED SYSTEM TO BE FULLY SEALED FROM TANK INLET TO ROOF GUTTER LEVEL.  
 ROOF GUTTER RL = 10.30, 13.15  
 TANK INLET RL = 9.50  
 DIFFERENTIAL HEAD = **0.80, 3.65**  
 SUFFICIENT TO DRIVE SYSTEM.

**BASIX RAINWATER/RE-USE TANK**  
**1 x 4030 litre ABOVE GROUND TANK**  
**DIMENSIONS : 3000 long x 2020 high x 700 wide**  
**"TANKWORKS EVOLUTION SERIES MKII TANK"**  
 OR EQUAL FOR RE-USE IN ACCORDANCE WITH BASIX CERTIFICATE. INSTALL TO MANUFACTURERS SPECIFICATIONS, AS 3500, DEPT HEALTH AND COUNCIL'S REQUIREMENTS. REFER TYPICAL DETAIL SHEET D3.  
 TANK INVERT = RL 7.50 nom  
 TOP TANK = RL 9.52  
 CONNECT AT LEAST **60m<sup>2</sup>** OF ROOF AREA TO TANK AS REQUIRED BASIX CERTIFICATE

**NOTE**  
 ENSURE THAT THE 100 DIA 1% MIN OVERFLOW PIPE FOR THE RAINWATER TANK IS LAID BEFORE THE GARAGE SLAB IS POURED.

DISCHARGE TO KERB & GUTTER TO COUNCIL REQUIREMENTS. USE 100 DIA uPVC AT 1% MIN GRADE. **PIPE INVERT RL 6.50 AHD** TO BE CONFIRMED PRIOR TO COMMENCEMENT OF WORKS.

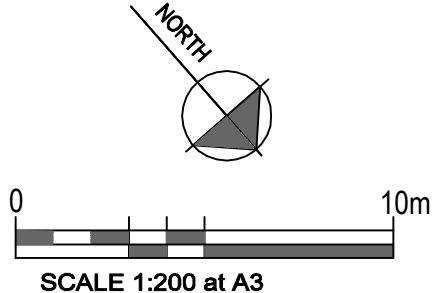


**NOTE**  
 THIS DRAWING IS NOT TO BE USED FOR SETOUT PURPOSES- REFER TO ARCHITECTURAL DRAWINGS.

**WARNING**  
 LOCATION AND DEPTH OF ALL UNDERGROUND SERVICES TO BE INVESTIGATED WITH THE RELEVANT AUTHORITIES PRIOR TO COMMENCING WORKS.



**STORMWATER MANAGEMENT PLAN**  
 SCALE 1:200 A3



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**WINCREST HOMES**  
 CLIENT  
**MR. & MRS. POWER**

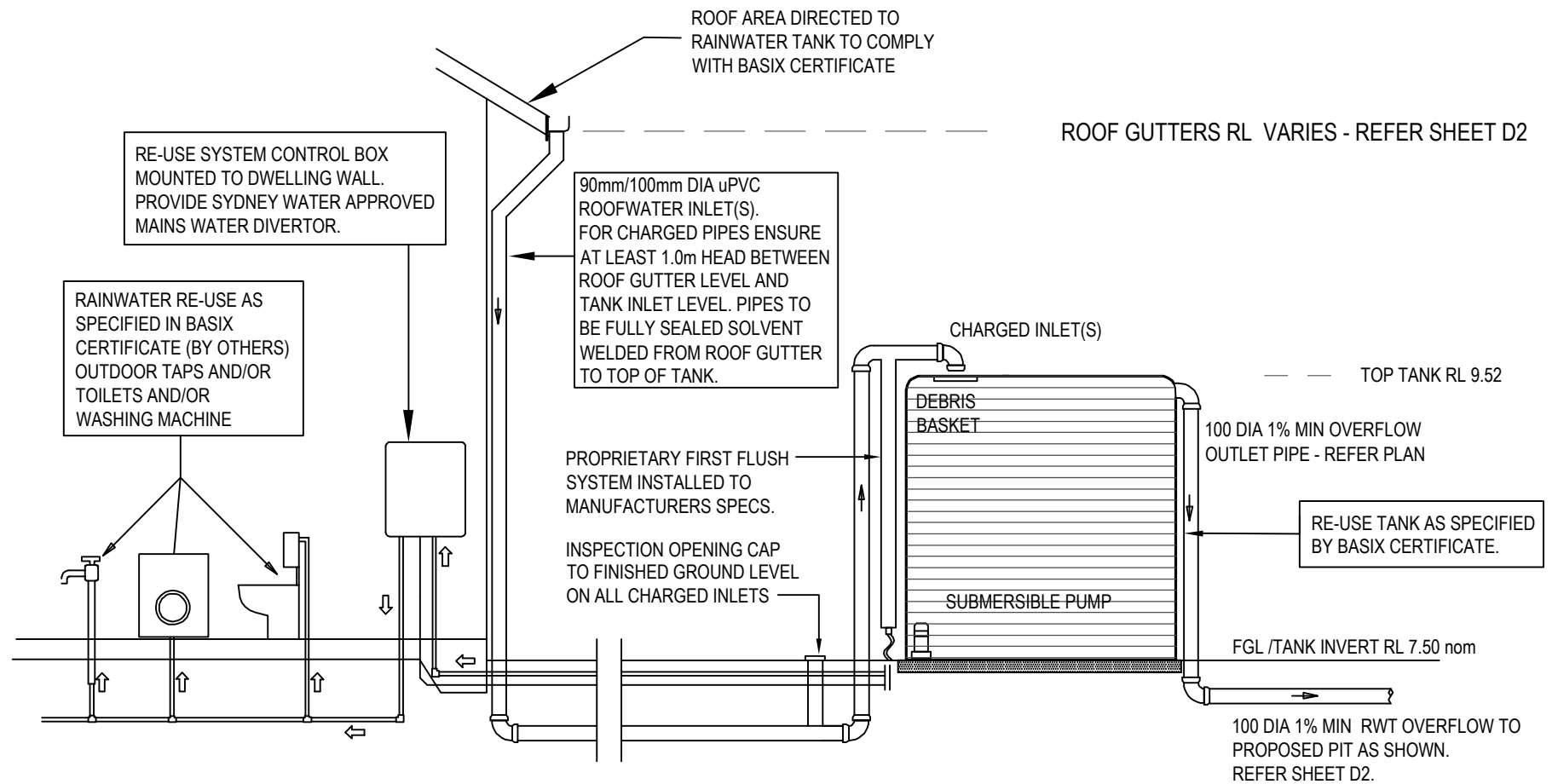
**EZE DRAINAGE SOLUTIONS**  
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DWG TITLE **STORMWATER MANAGEMENT PLAN**  
 PROJECT TITLE  
**PROPOSED NEW RESIDENTIAL DEVELOPMENT**  
**LOT 13, BUBALO STREET, WARRIEWOOD NSW 2102**

DESIGNED BY : <b>EZ</b>	ISSUED BY : 		
JOB No 18016	DWG No D2	No IN SET 3	ISSUE A

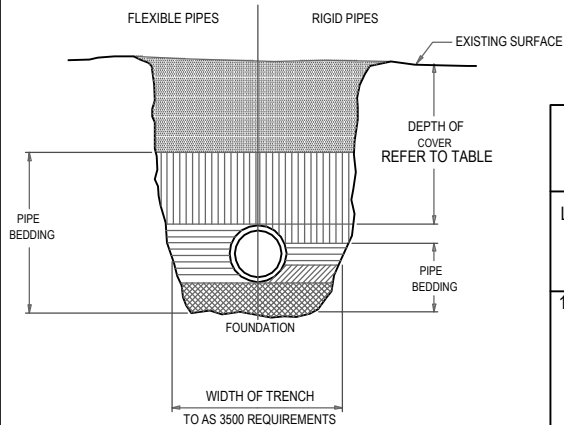
## RAINWATER RE-USE SYSTEM NOTES

- TOWNWATER CONNECTION TO RAINWATER TANK TO BE TO THE SATISFACTION OF SYDNEY WATER. THIS MAY REQUIRE PROVISION OF:
  - PERMANENT AIR GAP.
  - A BACKFLOW PREVENTION DEVICE.
  - NO DIRECT CONNECTION BETWEEN TOWN WATER SUPPLY AND THE RAIN WATER SUPPLY.
  - AN APPROVED STOP VALVE AND/OR PRESSURE LIMITING VALVE AT THE RAINWATER TANK.
- PROVIDE AT LEAST ONE (1) EXTERNAL HOSE COCK ON THE TOWN WATER SUPPLY FOR FIRE FIGHTING.
- PROVIDE APPROPRIATE FLOAT VALVES AND/OR SOLENOID VALVES
- ALL PLUMBING WORKS ARE TO BE CARRIED OUT BY LICENSED PLUMBERS IN ACCORDANCE WITH AS3500.1 NATIONAL PLUMBING AND DRAINAGE CODE.
- PRESSURE PUMP ELECTRICAL CONNECTION TO BE CARRIED OUT BY LICENSED ELECTRICIAN.
- ONLY ROOF RUN-OFF IS TO BE DIRECTED TO THE RAINWATER TANK. SURFACE WATER INLETS ARE NOT TO BE CONNECTED.
- PIPE MATERIALS FOR RAINWATER SUPPLY PLUMBING ARE TO BE APPROVED MATERIALS TO AS 3500 PART 1 SECTION 2 AND TO BE CLEARLY AND PERMANENTLY IDENTIFIED "RAINWATER". THIS MAY BE ACHIEVED FOR BELOW GROUND PIPES USING IDENTIFICATION TAPE (MADE IN ACCORDANCE WITH AS 2648) OR FOR ABOVE GROUND PIPES BY USING ADHESIVE PIPE MARKERS (MADE IN ACCORDANCE WITH AS1345).
- EVERY RAINWATER SUPPLY OUTLET POINT AND THE RAINWATER TANK ARE TO BE LABELLED "RAINWATER" ON A METALLIC SIGN IN ACCORDANCE WITH AS 1319.
- ALL INLETS AND OUTLETS TO THE RAINWATER TANK ARE TO HAVE SUITABLE MEASURES PROVIDED TO PREVENT MOSQUITO AND VERMIN ENTRY.
- SYSTEM TO COMPLY WITH SYDNEY WATER REQUIREMENTS AND ANY CONDITIONS OF LOCAL COUNCIL DEVELOPMENT CONSENT.



TYPICAL DETAIL - RAINWATER RE-USE TANK

NOT TO SCALE



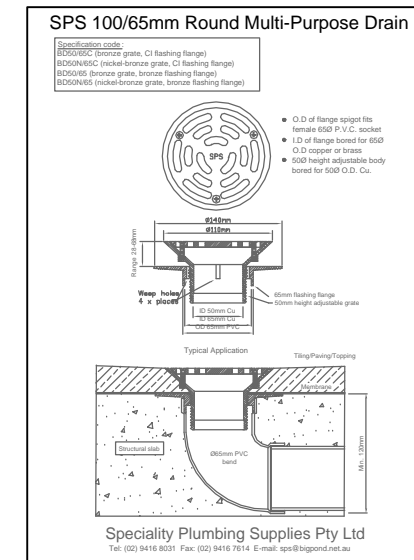
**NOTE A**  
STORMWATER DRAINS CONSTRUCTED OF OTHER THAN CAST IRON, DUCTILE IRON OR GALVANISED STEEL HAVING COVER LESS THAN THAT SPECIFIED IN TABLE SHALL BE COVERED WITH AT LEAST 50mm OVERLAY AND SHALL BE PAVED WITH AT LEAST—  
(a) 100mm THICKNESS OF REINFORCED CONCRETE WHERE SUBJECT TO HEAVY VEHICULAR LOADING

LEGEND - TRENCH BACKFILL

SYMBOL	FLEXIBLE PIPES	RIGID PIPES
[Pattern]	BACKFILL	
[Pattern]	PIPE OVERLAY	
[Pattern]	PIPE SIDE SUPPORT	SIDE ZONE
[Pattern]	—	HAUNCH ZONE
[Pattern]	PIPE UNDERLAY	BED ZONE

LOCATION	MINIMUM PIPE COVER (mm) (FROM FINISHED SURFACE TO TOP OF PIPE)	
	CAST/DUCTILE IRON GAL STEEL	OTHER AUTHORISED PRODUCTS (*)
1. NOT SUBJECT TO VEHICULAR LOADING: A. WITHOUT PAVEMENT: i. FOR SINGLE DWELLINGS - ii. OTHER THAN SINGLE DWELLINGS -	0 0	100 300
B. WITH PAVEMENT OF BRICK/UNREINFORCED CONCRETE -	0 (**)	50 (**)
2. SUBJECT TO VEHICULAR LOADING: A. OTHER THAN ROADS: i. WITHOUT PAVEMENT - ii. WITH PAVEMENT OF: - REINF. CONC. FOR HEAVY VEHICLES - - BRICK/UNREINF. CONC LIGHT VEHICLES -	300 0 (** #) 0 (** #)	450 100 (** #) 75 (** #)
B. ROADS i. SEALED ii. UNSEALED	300 300	500 (#) 500 (#)
3. SUBJECT TO CONSTRUCTION VEHICLES OR IN EMBANKMENT CONDITIONS	300	500 (#)

(\*) INCLUDES OVERLAY ABOVE THE TOP OF THE PIPE OF NOT LESS THAN 50mm THICK  
(\*\*) BELOW THE UNDERSIDE OF THE PAVEMENT  
(#) SUBJECT TO COMPLIANCE WITH AS1762, AS2033, AS/NZS 2566.1, AS3725 OR AS 4060



TYPICAL DETAIL - BALCONY DRAINAGE SYSTEM

NOT TO SCALE

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CLIENT <b>MR. &amp; MRS. POWER</b>

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DWG TITLE <b>TYPICAL DETAILS</b>
PROJECT TITLE <b>PROPOSED NEW RESIDENTIAL DEVELOPMENT LOT 13, BUBALO STREET, WARRIEWOOD NSW 2102</b>

DESIGNED BY: <b>EZ</b>	ISSUED BY: 		
JOB No 18016	DWG No D3	No IN SET 3	ISSUE A