9-11 Bowen Bridge Road, Bowen Hills
Lot 11 & 12 RP9940
Our ref: 130743

SITE BASED STORMWATER MANAGEMENT PLAN
JULY 2014

sellick consultants

structural civil hydraulic engineers

Report Amendment Record

No	Description	Design & Documentation	Reviewed	Date
1	Client Review	Mark Richardson / Alex McLennan	Bernie Cusack	28 January 2014
2	For Development Approval	Mark Richardson / Alex McLennan	Bernie Cusack	29 January 2014
3	Client Review	Mark Richardson	Alex McLennan	29 July 2014

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1. Introduction

1.1. Description of proposed development

The proposed development comprises the relocation of existing building, with the construction of a new multi storey building to occupy the entire site.

1.2. Study team

Study of site completed by Sellick Consultants

1.3. Risk classification for the site ('high' or 'low')

The site is Low risk (based on definition Stormwater Management Code, Brisbane City Plan 2014)

2. Site characteristics

2.1. Location (including catchment and planning unit)

The site is located at 9-11 Bowen Bridge Road, Bowen Hills, between Bowen Bridge Road and Walden Lane

2.2. Topography

The site falls towards the north east corner (Bowen Bridge Rd) with approx. 2m of fall diagonally 50m across the two lots in a northwestern direction

2.3. Site survey plan to Australian height datum (AHD)

Refer survey drawing provided by PJ Riley Surveyors and Architectural drawing for preliminary design verge levels interface.

2.4. Existing land use (on-site and adjacent properties)

Lot 12 has a single timber building and lot 11 is currently undeveloped

2.5. Proposed land use

The site is intended to be used as a mixed use development, with basement car parking below ground and at ground level, retail space fronting Bowen Bridge Road and residential use on levels 1 - 9

2.6. Soils

Based on information available on Brisbane City Council Website, the site soil is expected to be Shallow Gravelly Soil

2.7. Watercourses (within or adjacent to the site)

There are no known watercourses within the site

A review of the flood flag map indicates that the site is located outside the overland flow paths and flood risk zones for Enoggera Creek, within the Breakfast Creek catchment.

2.8. Vegetation within the waterway corridor (within or adjacent to the site)

There are no known watercourses within the site

3. Data

3.1. Previous waterway-related studies (regional and local)

None known

3.2. Description of existing stormwater/waterway infrastructure (regional and local)

There is an existing stormwater main on Walden St. While existing records note it as being 100mm diameter a survey identified the outlet of the existing gully as being 300mm diameter.

To the north is Ennogera Creek. Existing records shown that the stormwater mains discharge to this creek, however no survey or investigation has been conducted to confirm.

4. Opportunities and constraints

4.1. Summary of key site characteristics (eg amount of impervious surfaces, increased Runoff from site, potential for stormwater pollution, potential for infiltration of Stormwater, etc)

The developed site is to be fully impervious, and as such there is limited scope for infiltration. Any infiltration below the building would require a detailed design review quantifying the geotechnical and structural issues.

There will be an increase to impervious area, with an associated increase in stormwater flow. Refer to section 5 for further analysis.

4.2. Existing drainage pattern (if retaining) or proposed modification (modification to ensure no adverse flooding impact on adjoining properties)

Given the existing topography, there is no anticipated affect on overland flow paths to / from adjacent land.

Since the proposed development will completely develop the site, all drainage will be roof drainage.

A surcharge pit will be provided along the Bowen Bridge Road frontage to permit surcharge to the street in the event of pipe blockage. This is considered possible given the fact that the entirety of the drainage will be roofed and that there will be no levels issues associated with pavement drainage.

4.3. Requirements from previous studies (regional and local)

No requirements known

4.4. Waterway corridor requirements from city plan (where relevant)

No requirements known

4.5. Parkland contributions(where relevant)

No requirements known

4.6. Key stakeholder needs/wants

No requirements known

5. Water quantity (hydrology & hydraulics)

5.1. Methodology adopted

Section 7.5.2 of the Brisbane City Plan (2014) provides guidance on when stormwater detention is required. Below is assessment against these criteria:

Brisbane City Council Plan Statement	**Comment**
(1) As a general rule, stormwater detention is less likely to be required at the bottom one-third of the catchment.	The site is considered to be in the bottom third of the catchment
(2) The majority of infill development should not require stormwater detention, although stormwater detention may be required under 3 specific conditions, being:	-
(a) when a development is likely to increase run-off to such an extent that the downstream drainage (both piped and overland) cannot cater for the additional capacity or adverse impacts are created;	The development will increase runoff, however it will be discharged by pipe to below ground infrastructure, with surcharge to the street
(b) where there is no practical way to increase the downstream system capacity;	Upgrading of the downstream system would require a detailed assessment of the overall catchment
(c) if the increase in flows from the development would cause adverse flooding impacts to adjacent or downstream properties.	There will be no discharge to adjacent private properties
(3) Stormwater detention requirements may be waived where:	-
(a) The development will not cause adverse impacts or actionable nuisance to surrounding properties;	There will be no discharge to adjacent private properties
(b) the site discharges directly into the Brisbane River or Moreton Bay where flooding is controlled by river flooding or storm tide;	Not applicable
(c) the site discharges directly into the lower catchments of creeks or major drains where it would generally be undesirable to have detention where it may allow peak flows from the site to coincide with the wider catchment flood peak;	Not applicable

Brisbane City Council Plan Statement	Comment
(d) the proposal is for residential development where stormwater is disposed to Council's kerb and channel or piped stormwater system and major flows from the site would drain to Councils road reserve;	The development discharge is mainly by pipe to below ground infrastructure, with major overland flow surcharge to the council road reserve
(e) for infill development only, the development site has an existing actual impervious fraction greater than 60%;	Not applicable. The existing impervious area is 20%
(f) the applicant can demonstrate to Council's satisfaction that, if the total catchment containing the site were developed to its full potential while maintaining the existing infrastructure, stormwater detention on the subject site would not be of benefit in reducing adverse flooding impacts on downstream roads, properties and open watercourses, which may be the case at the lower end of major catchments;	It would not be possible to determine this without a detailed assessment of the entire existing stormwater catchment to be discharged to. A CCTV survey has been conducted on the stormwater main on Walden Lane running north-south, and the existing properties in this zone do not connect to the pipe. Refer report by Lambert Surveys, 30 / 6 /2014
(g) the downstream drainage system has been upgraded, or is proposed to be upgraded by the development to cater for fully developed peak flows from the catchment to the Council's standard of service;	Not known
(h) the development site is located entirely within the 1% AEP floodplain (waterway/creek or river flooding sources).	The development is outside the 1% floodplain

A stormwater quantity analysis and design for this site was conducted using Drains. Rainfall data was taken from Brisbane City Plan.

Refer to the following table for a summary of the relevant return periods and rainfall intensities assessed.

Rainfall Duration (mins)	10 year Intensity (mm/hr)	50 year Intensity (mm/hr)
5	215	291
10	167	227
15	142	194
20	125	172
25	113	155
30	103	142
45	83	115
60	70	97
120	45	62
180	34	47

Table 5.1 – Comparison between Pre and post development stormwater Characteristics

Brisbane policy states that stormwater management for sites smaller than 2Ha can utilize a simplified stormwater method.

5.2. Selection of analytical approach

Considering the scale of the development (857sqm), Drains is considered to be an appropriate means for analyzing the stormwater

An assessment has been conducted based on BCC City Plan 2014 simplified method.

Considering that the pre-development impervious area is 10% - 40%, this site is considered to be category D2 (as per BCC City Plan).

Based on this category and the fact that the proposed impervious percentage is 100%, the following requirements will apply:

Site Storage Requirement (SSR):

180cum / Ha;

15.5cum for this site

Permissible Site Discharge (PSD):

2 year ARI:

300 L / s / Ha;

25.8L/s for this site

100 year ARI:

710 L/ s / Ha

61.06 L / s for this site

5.3. Proposed management measures (if any)

Stormwater management measures can be implemented based on council advice and feedback based on the commentary provided in section 5.1 above.

An assessment has been conducted to reduce the design flow to predevelopment conditions for 100 year return period storms. A stormwater detention tank would be provided in this instance.

5.4. Comparison of existing and proposed conditions in terms of increased runoff and its redistribution and flood levels

Please see Table 5.2 below for a summary of the modified impervious surfaces and associated modification in flow.

	Existing	**Proposed**	**Actual Increase**	**Percent increase**
Impervious Area	171 sqm	857 sqm	686 sqm	-
Overall Area	857 sqm	857 sqm	-	-
Percent Impervious	20%	100%	-	80%
10 Year ARI Flow (max from assessed storm durations – no flow control)	43 L/s	52 L/s	9L/s	21%
50 Year ARI Flow (max from assessed storm durations – no flow control)	56 L/s	69 L/s	13L/s	23%

Table 5.2 – Modification to Impervious Area and Flow (No Flow Reduction)

Since the existing overland flow path is to Bowen Bridge, and the newly proposed stormwater connection is to Walden Lane, some stormwater flows that were previously directed towards Bowen Bride Rd would now be directed towards Walden Lane. These flows are not considered to be large and hence should not cause any adverse impacts.

5.5. Detailed drainage plan showing the proposed routes of the drainage networks

All stormwater drainage will be within the building and can be provided at detailed design stage.

5.6. Proposed mitigation measures due to development (structural and non-structural)

Stormwater management measures can be implemented based on council advice and feedback based on the commentary provided in section 5.1 above.

If it is required to mitigate the increased flows from the site and ensure no flood impacts, reduction in 2 and 100 year flows to pre development conditions can be provided to meet the PSD requirements described in section5.2 above.

This would be done through the use of a detention tank with a 200mm orifice outlet on a 300mm pipe. The tank will be placed in a void between the lower and

upper level ground floor slab. The tank would be min 50 sqm area with 550mm depth, and an integrated surcharge overflow.

This design is subject to actual levels on the stormwater main.

Please see below Table 5.3 for summary of assessment results based on the critical storms.

ARI	Storm Duration	Peak Pre-Development Flow (L/s)	Peak Post Development Tank Inflow (L/s)	Required Tank Volume (kL)	Tank Outflow (L/s)
2	5 min	15	36	5.1	15
	30 min	26	33	7.8	22
	1 hour	22	30	7.3	21
	2 hour	16	22	5.7	17
100	5 min	47	77	12.7	32
	30 min	61	69	18.5	42
	1 hour	55	68	18.3	42
	2 hour	39	51	13.5	34

Table 4.2 – Overview of Flow Reduction

The site's stormwater will be connected to the existing stormwater main on Walden Lane via a new stormwater pipe and manhole. Details of this can be provided at detailed design stage.

A surcharge pit will be incorporated on site on the Bowen Bridge Road side of the development, to allow for surcharge in the event of pipe blockage. A weir will be installed in the tank which will overflow to this secondary outlet.

Refer drawing C401 for the stormwater management plan indicating the proposed arrangement, in Appendix A.

6. Water quality

6.1. Pollutants of concern

There are no specific pollutants of concern, only an increased pervious area. See below for a comparison of the pre and post catchments.

a) The pre development catchment comprises a mix of landscape, gravel car parking area and a roofed timber building.

b) The post development catchment will comprise a roofed structure occupying the entire development.

6.2. Receiving waters, environmental values and water quality objectives

The stormwater is intended to connect to the existing stormwater main on Walden Lane.

Current Queensland State planning policy, December 2013 identifies that stormwater treatment is not required for developments smaller than 2,500 sqm.

This policy has been implemented by Brisbane City Council, as per the Brisbane City Plan Stormwater Code.

Given that our site is less than 2,500sqm in area (857 sqm) formal stormwater treatment is not required

6.3. Model selection

None.

6.4. Modelling assumptions

None.

6.5. Existing conditions

Not applicable.

6.6. Impact of development (only qualitative assessment for 'low risk' development)

Not applicable

6.7. Potential management strategies/sqbmps (structural and non-structural)

Formal treatment is not required, however the incorporation of gutter guards on roof gutters is recommended to mitigate the effects of leaf litter on the building stormwater drainage system.

This would limit the potential for blockage of the stormwater detention system.

7. Stormwater management options

7.1. Selection and assessment of water quantity controls

Stormwater quantity management measures can be implemented based on council advice and feedback based on the commentary provided in section 5.1 above.

Option 1:

Provide detention tank as described in Section 5.6 above.

Option 2

Council to waive the requirement for stormwater detention.

7.2. Selection and assessment of water quality controls (sqbmps)

No formal stormwater treatment is to be implemented. Refer section 6.7 above.

7.3. Integration with waterway corridor

The site is not within a waterway corridor

7.4. Recommended stormwater management strategy (including actions, responsibilities, deadlines, etc)

A stormwater tank can be implemented based on council advice and feedback based on the commentary provided in section 5.1 above.

No formal treatment devices are to implemented. Only gutter guards as outlined in section 6.7 above.

Any constructed items will be built as part of the development.

8. Lifecycle cost assessment

8.1. Capital cost of proposed strategy

The capital cost has not been determined at this stage, however will be borne by the developer.

8.2. Maintenance cost of proposed strategy

Cost not available. Refer section 10 for further information on maintenance.

8.3. Asset life of proposed strategy

Not available.

8.4. Lifecycle cost of proposed strategy

The lifecycle cost will be a combination of the capital and maintenance costs as outlined above.

9. Water Quality Monitoring Program

None proposed.

10. Maintenance Plans

10.1. Inspection forms and plans (for large structural controls)

To be provided at detailed design stage.

10.2. Responsibilities for maintenance of structural controls (eg role of body corporate or Similar)

Any on site stormwater management devices are expected to be retained as owned and maintained by the body corporate for the development.

Any off site stormwater management devices, including kerbs, driveways, as well new stormwater pipework and/or manholes are expected to be maintained by the Council in accordance with their own costing schedule.

Appropriate monitoring during construction of items to be handed over to council should be done to ensure they are constructed in accordance with Council requirements. This should keep maintenance to a minimum.

11. Asset hand-over

11.1. Process and timing for asset hand-over to council (where relevant)

Handover is expected to be done once all relevant works are completed. The handover procedure is expected to be prescribed by Council, in accordance with their own procedures

12. References

12.1. Detailed design and/or policy references

- Brisbane City Council City Plan 2014
- Brisbane City Council Stormwater Code (June 2014)
- Queensland Government, Department of State Development, Infrastructure and Planning - State Planning Policy, December 2013

Appendix A

Statement against Stormwater Code Performance Criteria

Performance outcomes	**Acceptable outcomes**	Proposal
Section A—If for a material change of use, reconfiguring a lot, operational work or building work Note—Compliance with the performance outcomes and acceptable outcomes in this section should be demonstrated by the submission of a site-based stormwater management plan for high risk development only.		
PO1 Development provides a stormwater management system which achieves the integrated management of stormwater to: minimise flooding; protect environmental values of receiving waters; maximise the use of water sensitive urban design; minimise safety risk to all persons; maximise the use of natural waterway corridors and natural channel design principles. Editor's note—The stormwater management system to be developed to address PO1 is not intended to require management of stormwater quality.	**AO1** Development provides a stormwater management system designed in compliance with the Infrastructure design planning scheme policy.	The stormwater system has been designed in accordance with Infrastructure design planning scheme policy. Refer section 5 above
PO2 Development ensures that the stormwater management system and site work does not adversely impact flooding or drainage characteristics of premises which are up slope, down slope or adjacent to the site.	**AO2.1** Development does not result in an increase in flood level or flood hazard on up slope, down slope or adjacent premises.	Piped discharge is to existing stormwater mains. Surcharge is by overland flow path to street.
	AO2.2 Development provides a stormwater management system which is designed in compliance with the standards in the Infrastructure design planning scheme policy.	The stormwater system has been designed in accordance with Infrastructure design planning scheme policy. Refer section 5 above
PO3 Development ensures that the stormwater management system does not direct stormwater run-off through existing or proposed lots and property where it is likely to adversely affect the safety of, or cause nuisance to properties.	**AO3.1** Development ensures that the location of the stormwater drainage system is contained within a road reserve, drainage reserve, public pathway, park or waterway corridor.	Piped discharge is to existing stormwater mains. Surcharge is by overland flow path to street.
	AO3.2 Development provides a stormwater management system which is designed in compliance with the	

	standards in the Infrastructure design planning scheme policy.	
	AO3.3 Development obtains a lawful point of discharge in compliance with the standards in the Infrastructure design planning scheme policy.	
	AO3.4 Where on private land, all underground stormwater infrastructure is secured by a drainage easement.	
PO4 Development provides a stormwater management system which has sufficient capacity to safely convey run-off taking into account increased run-off from impervious surfaces and flooding in local catchments.	**AO4.1** Development provides a stormwater conveyance system which is designed to safely convey flows in compliance with the standards in the Infrastructure design planning scheme policy.	The stormwater system has been designed in accordance with Infrastructure design planning scheme policy. Refer section 5 above
	AO4.2 Development provides sufficient area to convey run-off which will comply with the standards in the Infrastructure design planning scheme policy.	
PO5 Development designs stormwater channels, creek modification works, bridges, culverts and major drains to protect and enhance the value of the waterway corridor or drainage path for fauna movement.	**AO5** Development ensures the design of stormwater channels, creek modifications or other infrastructure, permits terrestrial and aquatic fauna movement.	No works of these type proposed for this development
PO6 Development ensures that location and design of stormwater detention and water quality treatment: minimises risk to people and property; provides for safe access and maintenance; minimises ecological impacts to creeks and waterways.	**AO6.1** Development locates stormwater detention and water quality treatment: outside of a waterway corridor; offline to any catchment not contained within the development.	All stormwater management systems will be on site
	AO6.2 Development providing for stormwater detention and water quality treatment devices are designed in compliance with the standards in the Infrastructure design planning scheme policy.	The stormwater system has been designed in accordance with Infrastructure design planning scheme policy. Refer section 5 above

PO7 Development is designed, including any car parking areas and channel works to: reduce property damage; provide safe access to the site during the defined flood event.	**AO7.1** Development (including any ancillary structures and car parking areas) is located above minimum flood immunity levels in Table 9.4.9.3.B, Table 9.4.9.3.C, Table 9.4.9.3.D, Table 9.4.9.3.E and Table 9.4.9.3.F. Note—Compliance with this acceptable outcome can be demonstrated by the submission of a hydraulic and hydrology report identifying flood levels and development design levels (as part of a site-based stormwater management plan).	
	AO7.2 Development including the road network provides a stormwater management system that provides safe pedestrian and vehicle access in accordance with the standards in the Infrastructure design planning scheme policy.	
PO8 Development designs stormwater channels, creek modification works and the drainage network to protect and enhance the environmental values of the waterway corridor or drainage path.	**AO8.1** Development ensures natural waterway corridors and drainage paths are retained.	No woks of this type proposed
	AO8.2 Development provides the required hydraulic conveyance of the drainage channel and floodway, while maximising its potential to maximise environmental benefits and minimise scour. Editor's note—Guidance on natural channel design principles can be found in the Council's publication Natural channel design guidelines.	
	AO8.3 Development provides stormwater outlets into waterways, creeks, wetlands and overland flow paths with energy dissipation to minimise scour in compliance with the standards in the Infrastructure design planning scheme policy.	
	AO8.4 Development ensures that the design of modifications to the existing design of new stormwater channels,	

	creeks and major drains is in compliance with the standards in the Infrastructure design planning scheme policy.	
PO9 Development is designed to manage run-off and peak flows by minimising large areas of impervious material and maximising opportunities for capture and re-use.	**AO9** No acceptable outcome is prescribed.	The stormwater system has been designed in accordance with Infrastructure design planning scheme policy. Refer section 5 above
PO10 Development ensures that there is sufficient site area to accommodate an effective stormwater management system. Note—Compliance with the performance outcome should be demonstrated by the submission of a site-based stormwater management plan for high-risk development only.	**AO10** No acceptable outcome is prescribed.	The stormwater system has been designed in accordance with Infrastructure design planning scheme policy. Refer section 5 above
PO11 Development provides for the orderly development of stormwater infrastructure within a catchment, having regard to the: existing capacity of stormwater infrastructure within and external to the site, and any planned stormwater infrastructure upgrades; safe management of stormwater discharge from existing and future up-slope development; implication for adjacent and down-slope development.	**AO11.1** Development with up-slope external catchment areas provides a drainage connection sized for ultimate catchment conditions that is directed to a lawful point of discharge.	The stormwater system has been designed in accordance with Infrastructure design planning scheme policy. Refer section 5 above
	AO11.2 Development ensures that existing stormwater infrastructure that is undersized is upgraded in compliance with the Priority infrastructure plan and the standards in the Infrastructure design planning scheme policy.	
PO12 Development provides stormwater infrastructure which: remains fit for purpose for the life of the development and maintains full functionality in the design flood event; can be safely accessed and maintained cost effectively; ensures no structural damage to existing stormwater infrastructure.	**AO12.1** The stormwater management system is designed in compliance with the Infrastructure design planning scheme policy.	All maintenance is to be by the body corporate
	AO12.2 Development provides a clear area with a minimum of 2m radius from the centre of an existing manhole cover and with a minimum height clearance of 2.5m.	
PO13 Development ensures that all reasonable and practicable measures are taken to manage the impacts	**AO13** No acceptable outcome is prescribed.	To be managed on site by the contractor

of erosion, turbidity and sedimentation, both within and external to the development site from construction activities, including vegetation clearing, earthworks, civil construction, installation of services, rehabilitation, revegetation and landscaping to protect: the environmental values and water quality objectives of waters; waterway hydrology; the maintenance and serviceability of stormwater infrastructure. Note—The Infrastructure design planning scheme policy outlines the appropriate measures to be taken into account to achieve the performance outcome.		
PO14 Development ensures that: unnecessary disturbance to soil, waterways or drainage channels is avoided; all soil surfaces remain effectively stabilised against erosion in the short and long term.	**AO14** No acceptable outcome is prescribed.	To be managed on site by the contractor
PO15 Development does not increase: the concentration of total suspended solids or other contaminants in stormwater flows during site construction; run-off which causes erosion either on site or off site.	**AO15** No acceptable outcome is prescribed.	To be managed on site by the contractor

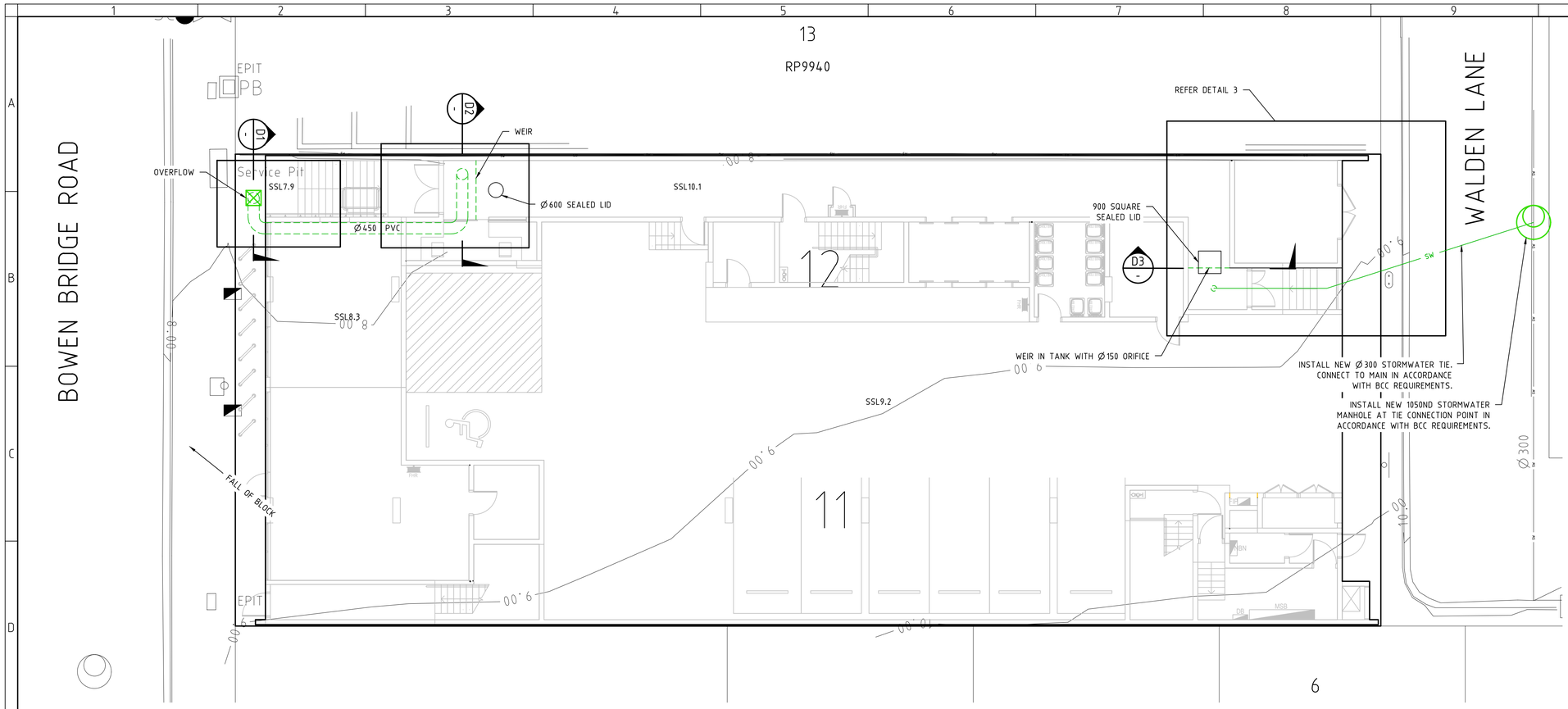
Section B—Additional criteria which apply to high-risk development, being one or more of the following:
a material change of use for an urban purpose which involves greater than 2,500m^2 of land that:
will result in an impervious area greater than 25% of the net developable area; or
will result in 6 or more dwellings.
reconfiguring a lot for an urban purpose that involves greater than 2,500m^2 of land and will result in 6 or more lots;
(c) operational work for an urban purpose which involves disturbing greater than 2,500m^2 of land.

PO16 Development ensures that the entry and transport of contaminants into stormwater is avoided or	**AO16** Development provides a stormwater management system which is designed in compliance with the standards	**Not Applicable**

minimised to protect receiving water environmental values. Note—Prescribed water contaminants are defined in the Environmental Protection Act 1994. Note—Compliance with the performance outcome should be demonstrated by the submission of a site-based stormwater management plan for high-risk development only.	in the Infrastructure design planning scheme policy.	
PO17 Development ensures that: the discharge of wastewater to a waterway or external to the site is avoided; or if the discharge cannot practicably be avoided, the development minimises wastewater discharge through re-use, recycling, recovery and treatment. Note—The preparation of a wastewater management plan can assist in demonstrating achievement of this performance outcome. Editor's note—This code does not deal with sewerage which is the subject of the Wastewater code.	**AO17** No acceptable outcome is prescribed.	**Not Applicable**

Appendix B

Stormwater Management Plan



LEGEND

SW — STORMWATER

SSD — SUBSOIL DRAINAGE

STRUCTURES

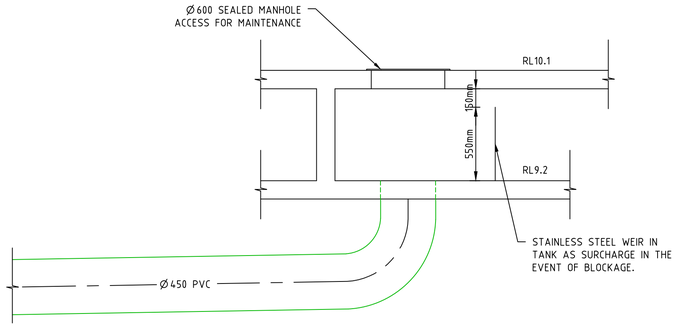
EXISTING	1:500 @ A1	PROPOSED
	ENDCAP	
	MANHOLE	
	GRATED PIT	
	KERB INLET SUMP	
	QS TYPE SUMP	
	R TYPE SUMP	
	PLANTATION SUMP	

MINIMUM INTERNAL DIMENSIONS FOR STORMWATER INLET PITS

DEPTH TO INVERT OF OUTLET	MINIMUM INTERNAL DIMENSIONS		
	RECTANGULAR		CIRCULAR
	WIDTH	LENGTH	DIAMETER
≤600	450	450	600
>600<900	600	600	900
>900<1200	600	900	1000
>1200	900	900	1000

AS3500.3.2 TABLE 8.2

DETAIL 1
1:25



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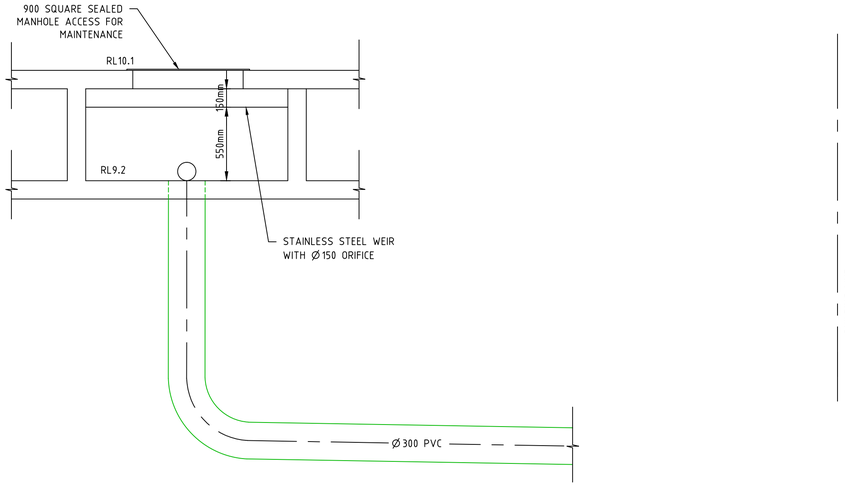

DETAIL 3
1:25

ISSUE	DESCRIPTION	DATE	DRAWN
A	FOR CLIENT REVIEW	28.01.14	MR

AMEND	DESCRIPTION	DATE	DRAWN

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PROJECT TITLE
MIXED USE DEVELOPMENT

CLIENT
DAMELINE DEVELOPMENTS

DESIGNED BY: MR
CHECKED BY: BC
AUTHORISED BY:
DATE: 29/07/2014

DRAWING TITLE
STORMWATER MANAGEMENT CONCEPT PLAN

PROJECT LOCATION
9-11 BOWEN BRIDGE RD
BOWEN HILLS, BRISBANE QLD

SCALE
0m 1 2 3 4 5
1:100 @A1 1:200 @A3

JOB NO. 130743

DRAWING NO. C401