



09 September 2010

Goodman International
Level 10 60 Castlereagh Street
Sydney NSW 2000

Our ref: 21/16225/135599
Your ref:

Attn: Adrian Tesoriero

Dear Adrian

Central Project Application No. 1 - Estate Works & DHL Stormwater Management Strategy

1 Introduction

This letter report has been prepared as an addendum to the Water Sensitive Urban Design (WSUD) Strategy report prepared by GHD (GHD, December 2007). This addendum specifically considers the works proposed under Project Application Number One, which involves the development of Buildings 1A and 2A (DHL) of the Central Precinct.

The stormwater management strategy described herein relates to Buildings 1A and 2A of the Central Precinct development area.

Figure 1 provides a diagrammatic representation of the proposed stormwater management strategy for Buildings 1A and 2A referred to in the following sections.

2 Stormwater Quantity

Stormwater detention will be provided for each building via on site detention (OSD).

From the preliminary hydrologic modelling performed as part of the Oakdale WSUD Strategy report (GHD, December 2007) it was found a volume of approximately 250 m³/ha is required for stormwater detention with a permissible site discharge (PSD) of 140L/s/ha for the 100-year Average Recurrence Interval (ARI) event. This configuration has been adopted for this addendum.

The final design will be completed in accordance with Fairfield City Council Guidelines whereby other ARI events will need to be modelled to show the post-development flow rates are maintained at pre-development levels for various ARI events.

The Austral Brickworks to the east of Old Wallgrove Road from an external catchment that flows in the northeast corner of the Central Precinct. The Brickworks may be redeveloped in the future and it has been assumed that stormwater detention will be provided east of Old Wallgrove Road. Hence no stormwater detention is being provided for the Brickworks in the Central Precinct area.

Table 1 Approximate Detention Parameters (100-year ARI Event)

Location	OSD (m ³)	PSD (l/s)
Lot 1A	878	491
Lots 2A	1,743	977

3 Flooding

The flood study carried out as part of the Oakdale WSUD Strategy Report (GHD, December 2007) has been reviewed and updated using detailed field survey. The detailed field survey is considered more accurate than the airborne laser survey data used previously. An updated 100-year Average Recurrence Interval (ARI) flood extents map for the Central Precinct (East) is attached to this report.

4 Stormwater Quality

Stormwater quality treatment for Buildings 1A and 2A will ultimately be provided by the proposed bio-retention basin and bio-swale along the northern perimeter of the precinct. The basin and bio-swale have been sized to meet the objectives outlined in the WSUD Strategy Report for the ultimate configuration, that is, the entire Central (East) Precinct. Buildings 1A and 2A will initially be serviced by the bio-swale as it will be constructed as part of the first stages of development. The bio-retention basin will be constructed as further stages of development proceed..

The WSUD strategy for Central (East) Precinct which includes Buildings 1A and 2A has been modelled using MUSIC software. The results of the analysis are summarised in Table 2.

Table 2 Water Quality Modelling Results

Pollutant	Sources	Residual Load	Reduction	Required Reduction
Total Suspended Solids (kg/yr)	40,600	5070	87.5 %	85 %
Total Phosphorus (kg/yr)	66.3	20.3	69.3%	65 %
Total Nitrogen (kg/yr)	494	270	45.4 %	45 %
Gross Pollutants (kg/yr)	7,240	0 (approx)	99 % (approx)	90 %

5 Open Channels

5.1 Southern Channel

A channel will be required on the northern side of Burley Road (which is unmade in this area) to intercept stormwater runoff from the CSR-PGH Brickworks to the watercourse that runs through the Central Precinct. Fairfield City Council requires a velocity in the channel of less than 2 m/s. Preliminary hydraulic calculations indicate a channel width of 10 metres will be required (depth 1m, base 2m, 1:4 side slopes, 1.5% longitudinal grade).

5.2 Northern Channel

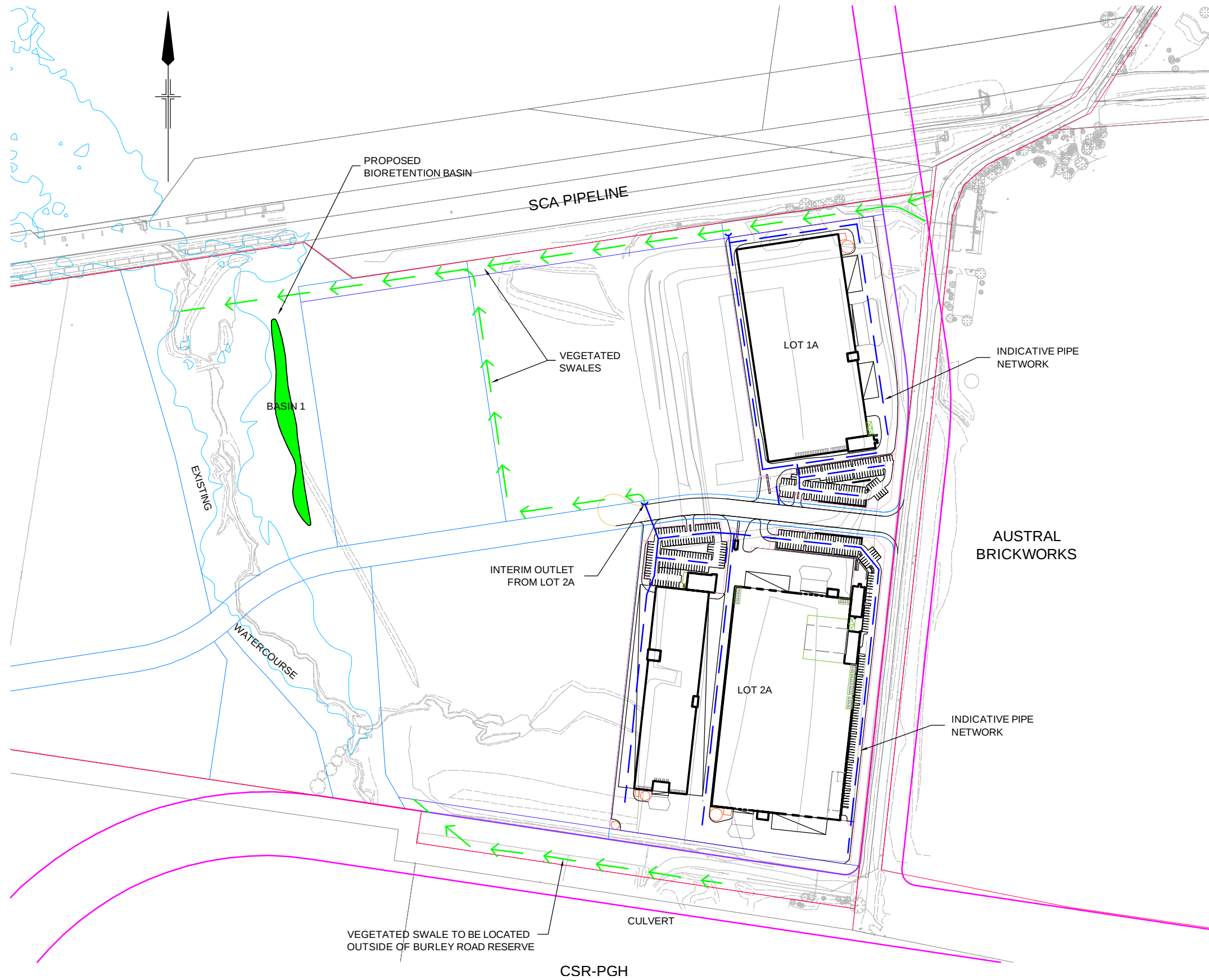
A channel running adjacent to the proposed Link Road is indicated on Figure 1. This has been sized to convey the 100-year ARI storms from the northern allotments as well as the external Austral Brickworks catchment mentioned in Section 2. The channel has a 1.1% longitudinal grade, 1.4 side slopes and a 2m base. The minimum depth of the channel is 1.2m.

Yours faithfully
GHD Pty Ltd



Frank Carrozza
Senior Civil Engineer
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Attachment: Figure 1 - Stormwater Management Strategy
100-yr Flood Extents Map



DRAFT

0 40 80 120m
SCALE 1:4000 AT ORIGINAL SIZE



CLIENTS | PEOPLE | PERFORMANCE

GOODMAN INTERNATIONAL LTD
OAKDALE CENTRAL PROJECT APPLICATION (PA1)
ESTATE WORKS & DHL
STORMWATER STRATEGY
scale | 1:4000 for A3 date | SEP 2010

job no. | 21-16225
rev no. | G

Figure 1

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Flood Depths (m)

