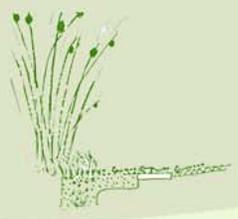


# City of Kingston

## **Achieving Water Sensitive Urban Design In Infill Development (i.e. In Clause 55 Applications)**

Peter Jumeau

Senior Development Engineer



# The Planning Scheme

## Clause 56 Vs Clause 55

### Clause 56

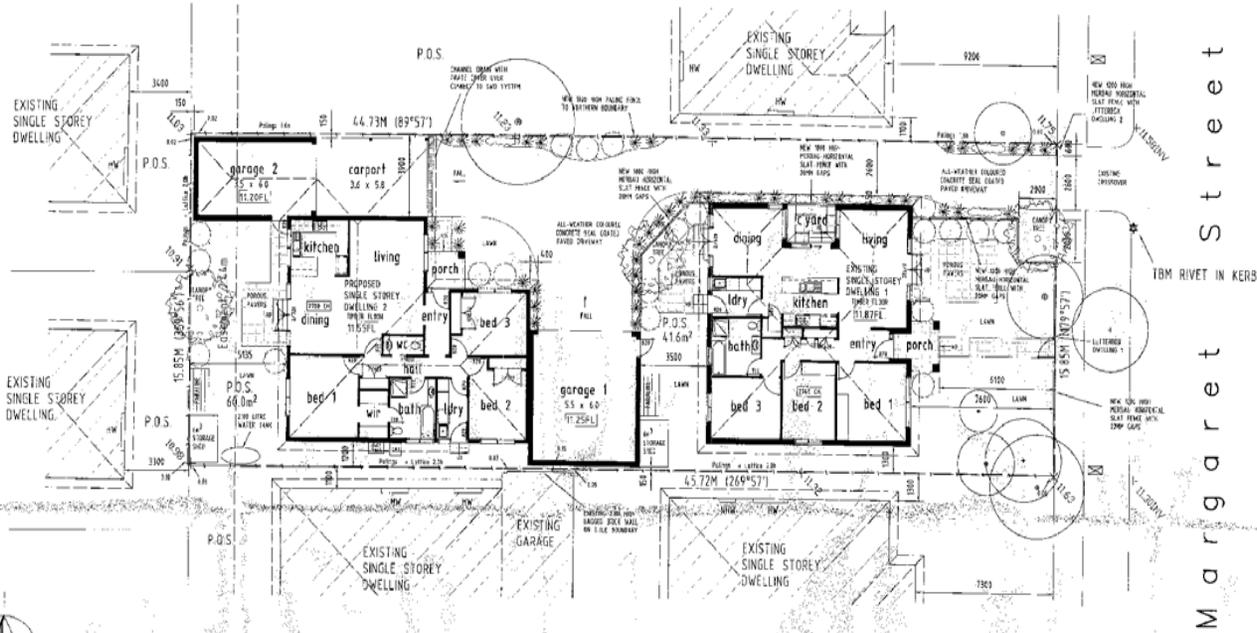
**Applies To A Planning Application  
To **Subdivide Land** For  
Residential Development**

### Clause 55

**Applies To A Planning Application  
To **Construct Two Or More  
Dwellings** On A Lot**



# Clause 55



Margaret Street



Site & ground floor plan

1:1000

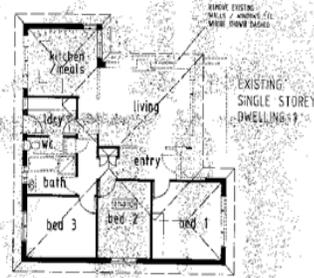
NOTE: LEVELS ARE TO AUSTRALIAN HEIGHT DATUM A.H.D. REFER SURVEY PLAN.

NOTE: LANDSCAPING SHOWN IS INDICATIVE ONLY REFER ALSO TO LANDSCAPING PLAN

NOTE: REFER ALSO TO SITE ANALYSIS & DESIGN RESPONSE PLANS & PLAN OF SURVEY

H.W. - HABITABLE ROOM WINDOW  
P.O.S. - PRIVATE OPEN SPACE

AREAS:	
<b>TOWNHOUSE No. 1 (EXISTING)</b>	
EXISTING DWELLING 1	10.9 sqm
PROPOSED ADDITIONS	11.4 sqm
<b>TOTAL</b>	<b>22.3 sqm</b>
PROPOSED GARAGE 1	4.1 sqm
PRIVATE OPEN SPACE:	13.0 sqm
<b>TOWNHOUSE No. 2 (PROPOSED)</b>	
PROPOSED DWELLING 2	12.3 sqm
PROPOSED GARAGE/CARPORIT	5.1 sqm
PRIVATE OPEN SPACE:	26.8 sqm
<b>TOTAL SITE AREA</b>	<b>124.7 m<sup>2</sup></b>
SITE COVERAGE	45.4 %
SITE PERMEABILITY	38.0 %



existing conditions

1:1000

**LEGEND:**  
 Existing walls  
 Proposed walls

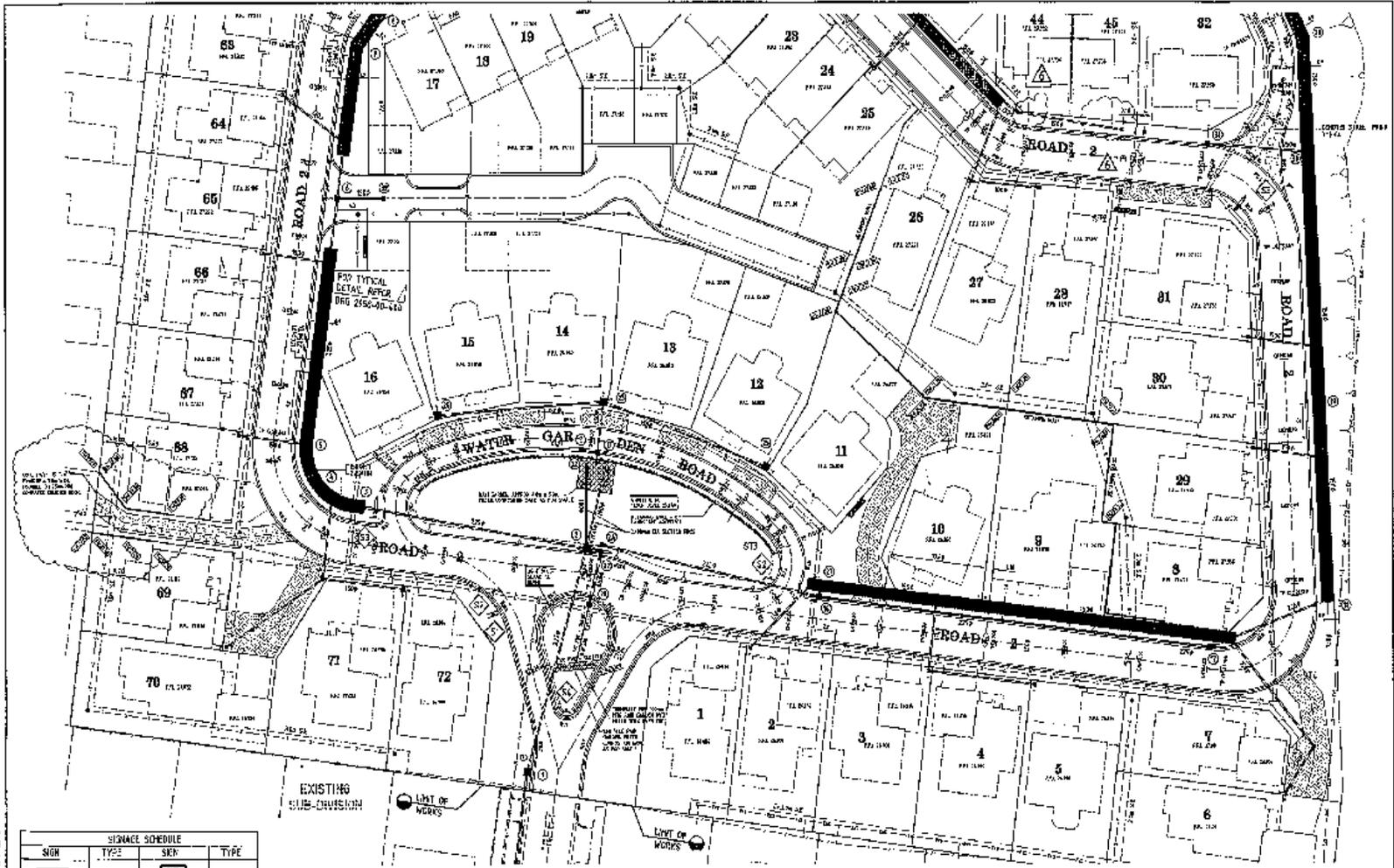
DATE: 2014/05/05	1:10
SCALE: 1:1000	PLAN

PROJECT:  
 PROPOSED DUAL OCCUPANCY  
 No 6 MARGARET STREET,  
 PARKDALE  
 CLIENT:  
 A. GRURY



DATE: 2014/05/05	1:10
SCALE: 1:1000	PLAN
PROJECT: 14/001	24/03/14
CLIENT: A. GRURY	21/03/14

# Clause 55



SIGNAGE SCHEDULE			
SIGN	TYPE	SKP	TYPE
R1 - CA	S1	H2 - 17A	S2
R2 - CA	S2	R2 - 3A	S3

- LEGEND**
- EXIST. ROAD
  - EXIST. PATH
  - EXIST. DRIVEWAY
  - EXISTING GREEN SPACES



**RESERVED SIGNINGS**

MARK	EXISTING	NOTIFIED
ST	STREET LIGHT	STREET LIGHT
ST	STREET LIGHT	STREET LIGHT
ST	STREET LIGHT	STREET LIGHT
ST	STREET LIGHT	STREET LIGHT
ST	STREET LIGHT	STREET LIGHT
ST	STREET LIGHT	STREET LIGHT

**WARNING**

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATELY CORRECT AND THEIR DEPTH. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UNDERGROUND SERVICES CAUSED BY THE CONTRACTOR'S WORK.

**WARNING**

BE AWARE OF UNDERGROUND SERVICES. THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATELY CORRECT AND THEIR DEPTH IS NOT KNOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UNDERGROUND SERVICES CAUSED BY THE CONTRACTOR'S WORK.

**CONSTRUCTION**  
ISSUED FOR CONSTRUCTION

NO.	REVISION	DATE	BY	CHECKED
1	ISSUED FOR CONSTRUCTION	2024-07-15	[Signature]	[Signature]

NO.	REVISION	DATE	BY	CHECKED
1	ISSUED FOR CONSTRUCTION	2024-07-15	[Signature]	[Signature]

<b>BALTUSROL</b>	<b>AUSTRALAND</b>
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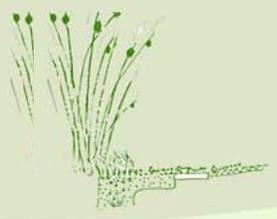
<b>JITAI LAM'S PLAN SHEET 2</b>	<b>DATE: 2024-07-15</b>
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**WBCM group**

WBCM GROUP  
WBCM GROUP  
WBCM GROUP

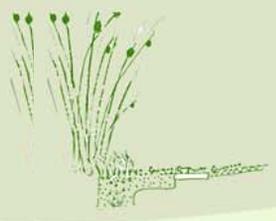
NO. 7	7
SCALE AT 1:250	
2958-00-004	

1:250 (SCALE) 2024-07-15 10:00 AM 2958-00-004



# City of Kingston

**“But Why Does This (i.e WSUD)  
Need To Be Done?”**



# **WSUD Questioned By:**

**Town Planning Consultants**

**Building Surveyors**

**Developers**

**Builders & Contractors**

**Engineering Consultants**

**Building Industry Associations**

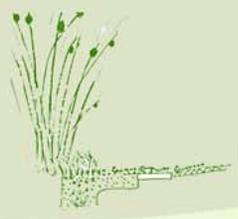


# WSUD Challenge With Clause 55

- 1. No Integrated Water Management Provision Like Clause 56 (Oct 2006)**
- 2. A Subdivision Application **After** Construction Cannot Be Assessed Under Clause 56**
- 3. The **'No Legislation Then No Need To Do!'** Attitude Of Some In The Building Industry**

# What To Do With The Challenge





# The Formula To Achieve WSUD

**Win  
For  
WSUD** = **Education  
In  
Policy  
&  
Technical  
Literature** + **Persuasion  
Via  
Planning Conditions  
&  
Assistance  
&  
Negotiation**



# Education

**The Planning Scheme**

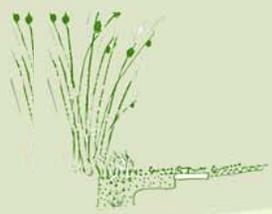
**Melbourne 2030**

**BPEM Guidelines**

**Melbourne Water Literature**

**Trade Industry Websites**

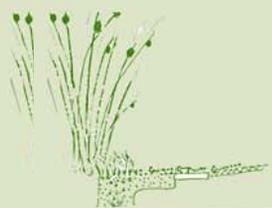
**(e.g Plumbing Industry Commission)**



**Baltusrol Circuit, Heatherton – 72 Dwellings**



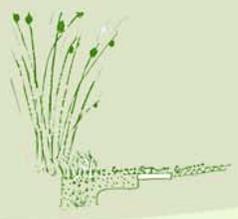
**Baltusrol Circuit, Heatherton**



**12 Sinclair Street, Cheltenham – 2 Dwellings**

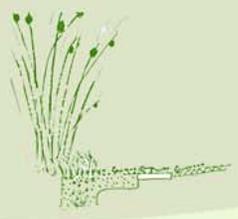


**12 Sinclair Street, Cheltenham**



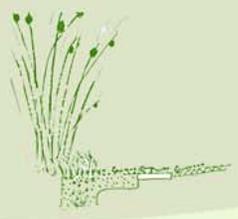
# The Formula

$$\begin{array}{l} \text{Win} \\ \text{For} \\ \text{WSUD} \end{array} = \begin{array}{l} \text{Education} \\ \text{In} \\ \text{Policy} \\ \& \\ \text{Technical} \\ \text{Literature} \end{array} + \begin{array}{l} \text{Persuasion} \\ \text{Via} \\ \text{Planning Conditions} \\ \& \\ \text{Assistance} \\ \& \\ \text{Negotiation} \end{array}$$



# Persuasion Techniques

## 1) Planning Permit Conditions



# Planning Conditions

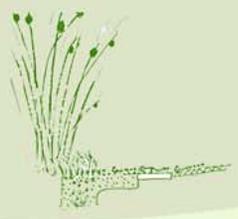
**Up To 2002**

**Before The Development Commences A**

**Drainage Plan Showing The Stormwater**

**Discharge To The Nominated Point Must Be**

**Submitted To The RA For Approval**

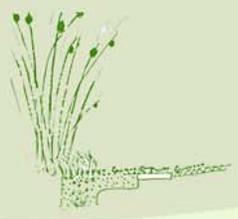


# Planning Conditions

**2007**

**1)The Site Must Be Provided With Stormwater Works Which Incorporates WSUD To Improve Stormwater Runoff Quality And Which Also Retains Any Increase In Runoff.**

**Council's Development Engineer Can Advise On Options Which May Include The Use Of An Infiltration Or Bioretention System, Rainwater Tanks Connected For Reuse And A Detention System.**



# Planning Conditions

**2007 (cont)**

**2) Before The Development Commences, A Stormwater Plan Must Be Submitted Showing The Stormwater Works To The Nominated Point Of Discharge And Must Be Prepared To The Satisfaction Of The Responsible Authority.**



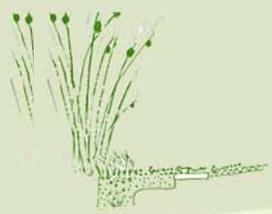
**11 Alden Ct, Cheltenham – 2 Dwellings**



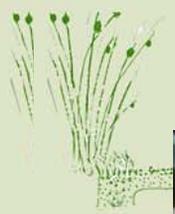
**11 Alden Ct, Cheltenham**



**11 Alden Ct, Cheltenham**



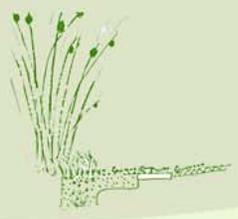
**72 Nepean Hwy, Aspendale – 4 Dwellings**



**72 Nepean Hwy, Aspendale**



**Taj Mahal Boulevard, Agra**



# VCAT & Building Commission

**Issues With:**

**Inappropriate Conditions On  
Planning Permits**

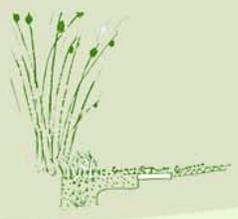
**Conflict With Responsibility For The  
Stormwater Management Plan**



# VCAT Case Hasan Vs Moreland Council (Sept 2005)

## **Removal of Sustainability Conditions Because:**

- 1. Already Covered By Building Regulations**
- 2. Rainwater Tanks Only One Of Many Ways To Achieve WSUD**



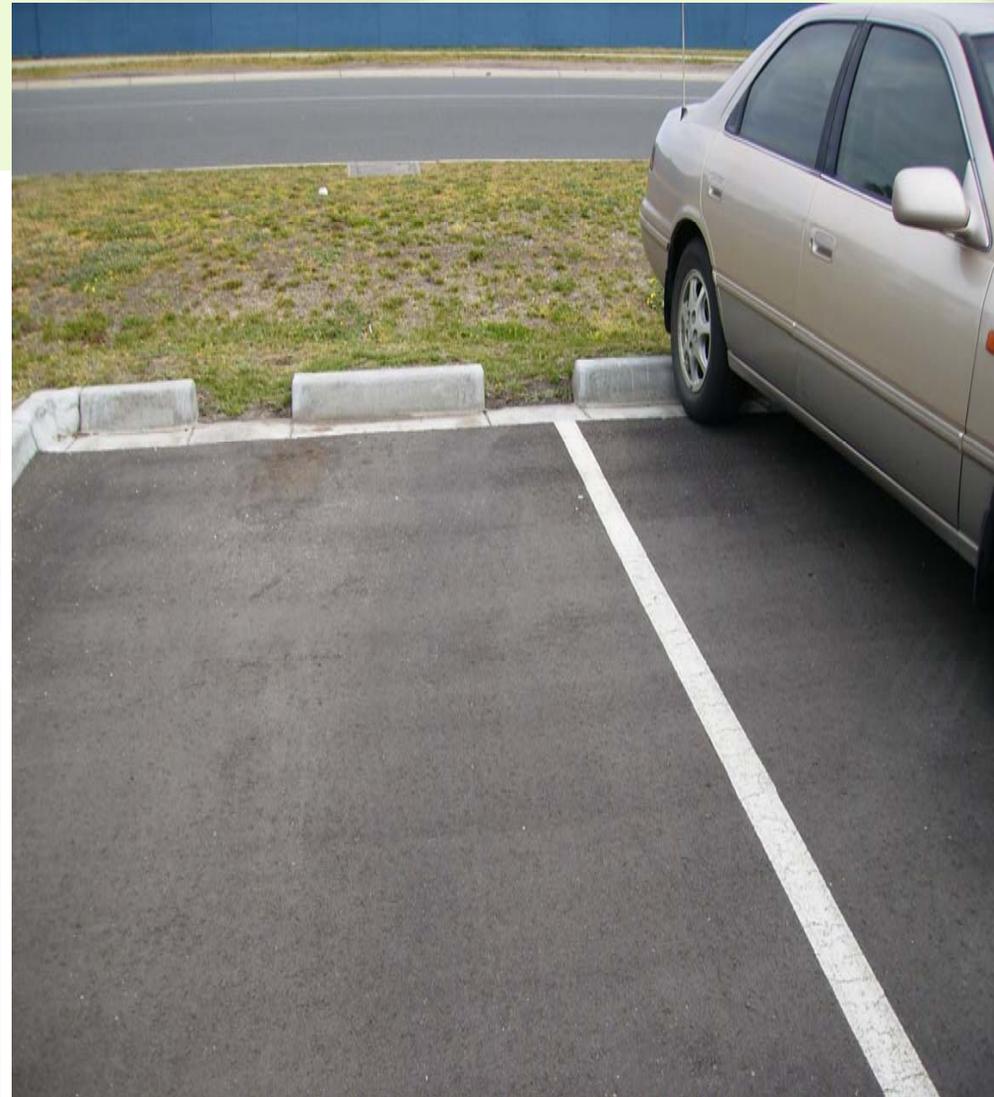
# Not Allowed Conditions

1. Hot Water To The New Dwellings **Must Be Provided From A Gas-Boosted Solar Hotwater System...To The Satisfaction Of The RA**
2. Stormwater From All Roof Areas **Must Flow Through Rainwater Tanks With Only Overflow Discharging To The LPD And The Contents Of The Tank Used For Toilet Flushing Purposes Tto The Satisfaction Of The RA**
3. The Development **Must Achieve A Minimum 5-Star Energy Rating With The “FirstRate” System.**

# Test Planning Condition

The Site Must Be Provided With Stormwater Works  
Which Incorporates WSUD To  
**Improve Stormwater Runoff Quality** And Which Also  
**Retains Any Increase In Runoff.**

Council's Development Engineer Can **Advise**  
**On Options** Which May Include The Use Of  
An **Infiltration** Or **Bioretention** System, **Rainwater**  
**Tanks** Connected For Reuse And A **Detention** System.



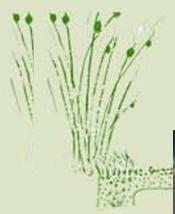
**11 Corporate Drive, Heatherton – Office**



**11 Corporate Drive, Heatherton**



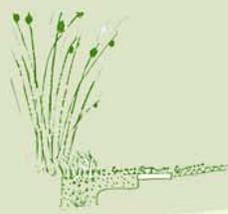
**Nepean Highway, Cheltenham - Office**



**387 Old Dandenong Road, Dingley – Church Carpark**



**798 Springvale Road, Braeside - Church Carpark**



# Building Commission

**Issues With:**

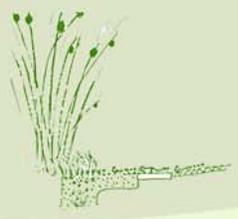
**Conflict Of Responsibility For The  
Stormwater Management Plan**



# Role of Building Surveyors Vs Council

## Building Surveyors

- 1) Building Regulations: “The Design of Every Stormwater System Must Be Approved By The Building Surveyor”**
- 2) Approval Based On Compliance With AS3500: Stormwater Drainage – Acceptable Solutions**
- 3) AS3500 Only For Piped Drainage Systems**



# Role of Building Surveyors Vs Council

## Council

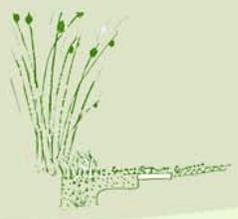
- 1) Planning Role: To Protect Public Assets and The Natural Environment**
- 2) Ensure Stormwater Is Connected To An Appropriate Point In Existing System**
- 3) Ensure Any Increase In Runoff Is Mitigated On Site**
- 4) Ensure Pollutants Are Reduced (WSUD)**

# Role of Council?



# Role of Council?

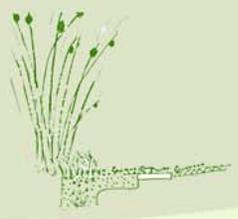




# Quick Survey

# Encouraging WSUD Businesses





# Persuasion Techniques

**1) Planning Conditions**

**2) Assistance**



# **Persuasion Techniques**

**Provide Assistance Through:**

**In-House Design Advice**

**Pay For WSUD Consultant**

# Using In-House Design Advice



**Derrybeg Lane, Edithvale**



# Using In-House Design Advice



# Using WSUD Consultant

## NOTE

PLEASE REFER TO LANDSCAPE PLAN (DRAWINGS NO. 06-206-TP) BY JOHN PATRICK LANDSCAPE ARCHITECTS FOR ALL LANDSCAPING DETAILS AND LAYOUTS.



## UNIT SCHEDULE

no. TYPE 1 units	8
no. TYPE 2 units	8
no. TYPE 3 units	8
no. TYPE 4 units	8
no. TYPE 5 units	1
no. TYPE 6 units	1
<b>total no. stand alone units</b>	<b>34</b>
car parking	2 per unit

## APARTMENT SCHEDULE

no. 1 bed apartment	1
no. 2 bed apartments	48
<b>total no. apartments</b>	<b>49</b>

## CARPARKING SCHEDULE

no. garage spaces	34 (1 per unit)
no. visitor spaces in driveways	34 (1 per unit)
staff car spaces	3
apartments parking	27
total local visitor spaces	20

## NOTE

- ALL CARPARKING BAYS TO BE 4.9m X 2.6m WITH 0.6m AISLES.
- ALL STREET LIGHTS TO BE IN ACCORD WITH THE RELEVANT AUSTRALIAN STANDARDS.
- REFER TO QUAKING'S TPO & RPO7 FOR DETAILED PLANS OF EACH UNIT TYPE.

SITE LAYOUT PLAN

NO.	REVISION	DATE
1	ISSUED FOR PERMIT	07 JULY 2022
2	ISSUED FOR PERMIT	07 JULY 2022
3	ISSUED FOR PERMIT	07 JULY 2022
4	ISSUED FOR PERMIT	07 JULY 2022
5	ISSUED FOR PERMIT	07 JULY 2022
6	ISSUED FOR PERMIT	07 JULY 2022
7	ISSUED FOR PERMIT	07 JULY 2022
8	ISSUED FOR PERMIT	07 JULY 2022
9	ISSUED FOR PERMIT	07 JULY 2022
10	ISSUED FOR PERMIT	07 JULY 2022
11	ISSUED FOR PERMIT	07 JULY 2022
12	ISSUED FOR PERMIT	07 JULY 2022
13	ISSUED FOR PERMIT	07 JULY 2022
14	ISSUED FOR PERMIT	07 JULY 2022
15	ISSUED FOR PERMIT	07 JULY 2022
16	ISSUED FOR PERMIT	07 JULY 2022
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98	ISSUED FOR PERMIT	07 JULY 2022
99	ISSUED FOR PERMIT	07 JULY 2022
100	ISSUED FOR PERMIT	07 JULY 2022

no. 660 Springvale Road, Dingley  
RETIREMENT VILLAGE



SITE LAYOUT PLAN  
REV. SCHEMATIC PLAN

DATE: 07 JULY 2022  
DRAWN BY: [Name]  
CHECKED BY: [Name]  
SCALE: AS SHOWN  
PROJECT NO: [Number]

**TPOO**

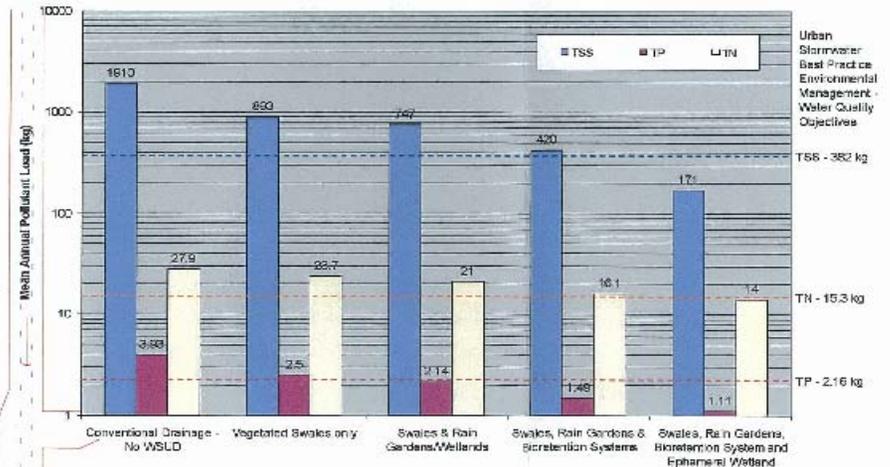
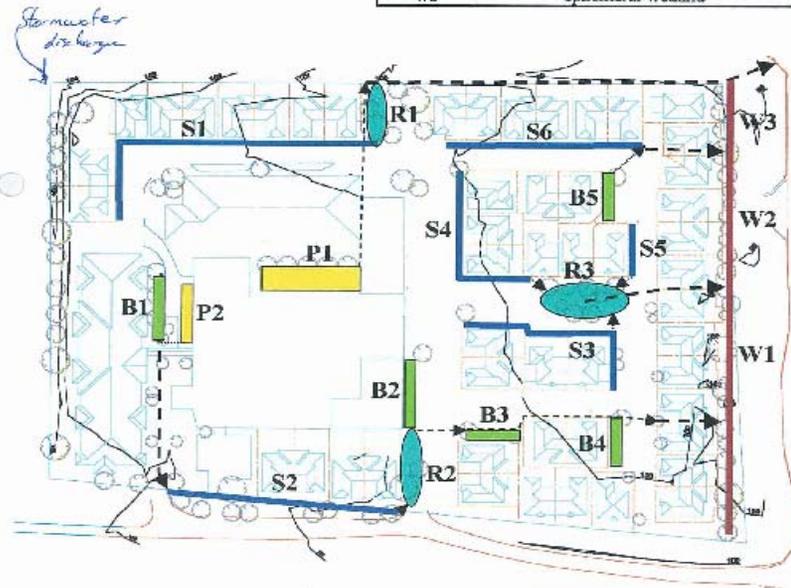
REVISED 13



# Using WSUD Consultant

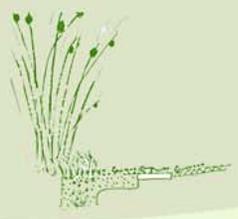


Treatment Measures	Type	Length (m)	Average Width (m)	Area (m <sup>2</sup> )	Extended Detention Depth (m)	Filter Depth (m)	k (m/s)	Filter Medium Particle Diameter (mm)	Comments
S1	swale	90							
R1	rain garden/wetland	15	4	60	0.3				3:1 SS, 0.5 m base, 0.3 deep wetland, 3:1 SS, 0.5 m deep
P1	planter box	20	7	140	0.1	0.6	$1 \times 10^{-5}$	0.1	bioretention system
P2	planter box	17	2.5	42.5	0.15	0.6	$1 \times 10^{-5}$	0.1	bioretention system
B1	Bioretention system (roof and car park)	15	3	45	0.15	0.6	$1 \times 10^{-5}$	0.1	bioretention system
S2	vegetated swale	65							3:1 SS, 0.5 m base, 0.3 deep wetland, 3:1 SS, 0.5 m deep
R2	rain garden/wetland	20	5	100	0.3				3:1 SS, 0.5 m base, 0.3 deep wetland, 3:1 SS, 0.5 m deep
B2	carpark bioretention system	18	0.5	9	0.15	0.6	$5 \times 10^{-5}$	0.3	bioretention system
B3	carpark bioretention system	11	0.5	5.5	0.15	0.6	$5 \times 10^{-5}$	0.3	bioretention system
B4	carpark bioretention system	16	0.5	8	0.15	0.6	$5 \times 10^{-5}$	0.3	bioretention system
W1	ephemeral wetland	65	3	195	0.3				Linear ephemeral wetland
S3	vegetated swale	55							3:1 SS, 0.5 m base, 0.3 deep
S4	vegetated swale	45							3:1 SS, 0.5 m base, 0.3 deep
S5	vegetated swale	15							3:1 SS, 0.5 m base, 0.3 deep
R3	rain garden/wetland	25	6	150	0.3				Modelled as wetland
W2	ephemeral wetland	50	4	200	0.3				Linear ephemeral wetland
B5	carpark bioretention system	12	0.5	6	0.15	0.6	$5 \times 10^{-5}$	0.3	bioretention system
S6	vegetated swale	55							3:1 SS, 0.5 m base, 0.3 deep
W3	ephemeral wetland	20	4	80	0.3				Linear ephemeral wetland



Retirement Village – 660 Springvale Road, Dingley  
 Water Sensitive Urban Design Opportunities

Prof. Corra

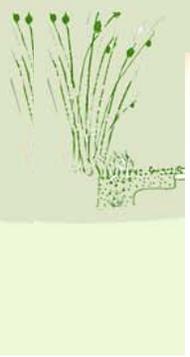


# Persuasion Techniques

**1) Planning Conditions**

**2) Assistance**

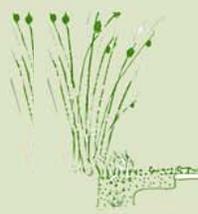
**3) Good Negotiation Techniques**



**“WSUD? No Way!”**



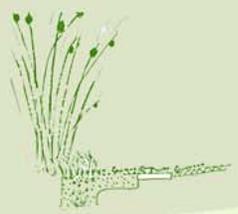
**“See You At VCAT”**



**“No Worries”**



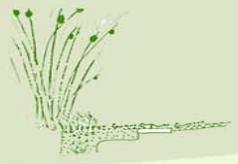
**“Go WSUD”**



# Summary Of Kingston's Approach To Achieve WSUD

## 1) Use The Formula

$$\begin{array}{l} \text{Win} \\ \text{For} \\ \text{WSUD} \end{array} = \begin{array}{l} \text{Education} \\ \\ \text{In} \\ \text{Policy} \\ \text{\&} \\ \text{Technical} \\ \text{Literature} \end{array} + \begin{array}{l} \text{Persuasion} \\ \\ \text{Via} \\ \text{Planning Conditions} \\ \text{\&} \\ \text{Assistance} \\ \text{\&} \\ \text{Negotiation} \end{array}$$



# Summary Of Kingston's Approach To Achieve WSUD

## 2) Choose Appropriate Projects

