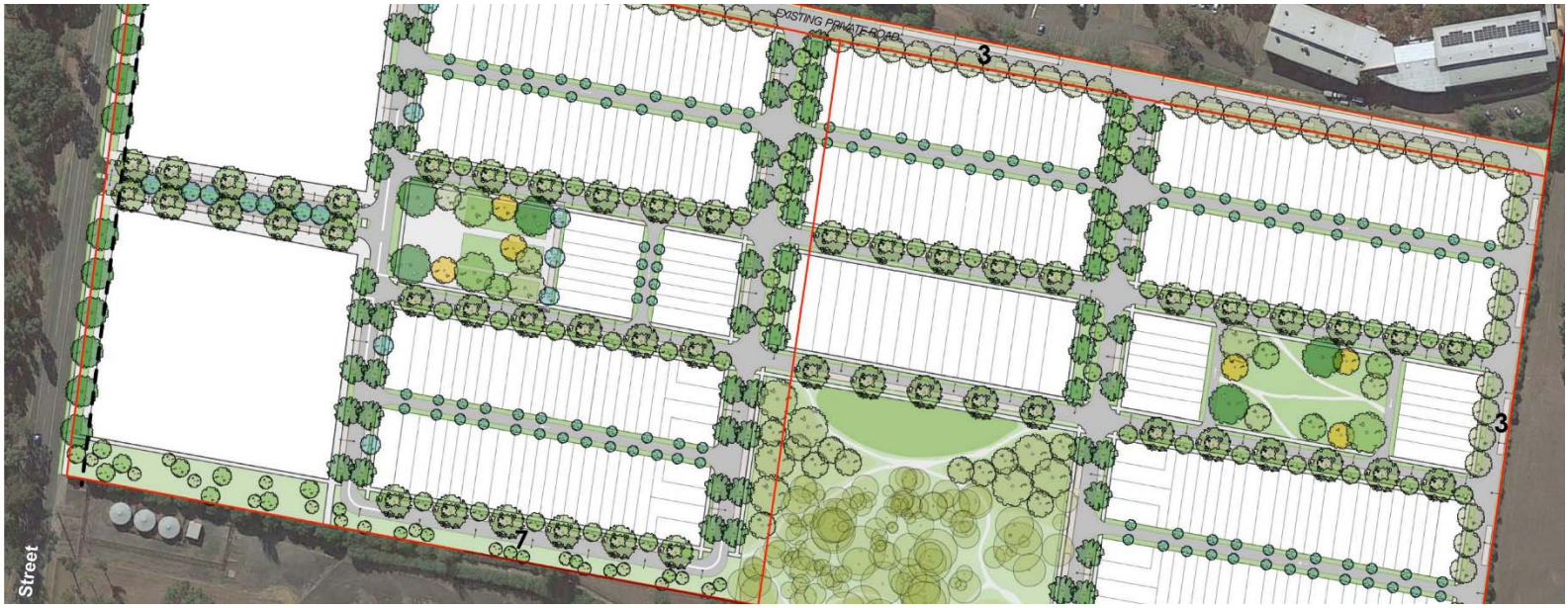


CWG Development

Caddens Development

Waste Management Plan

September 2017

Table of contents

Table index

Figure index

Appendices

1. Introduction

1.1 Proposed development

CWG Development (CWG) is proposing to develop land at 46-66 and 46A O'Connell Street, Caddens in Western Sydney. The project is being managed by APP Corporation.

The development will be on a greenfield site adjacent to Nepean College TAFE and vacant land owned by Western Sydney University. Three lots of land are proposed to be developed for a total of about 12 ha.

This waste management plan covers 320 dwellings, including 70 garage-top units, to be built over most of the site. The site will also feature roads, landscape open space, on-site detention basins and services.

A proposed concept plan is shown in Figure 1.

Figure 1 Proposed Concept Plan

1.2 Scope and limitations

This report: has been prepared by GHD for CWG Development and may only be used and relied on by CWG Development for the purpose agreed between GHD and the CWG Development as set out this report.

GHD otherwise disclaims responsibility to any person other than CWG Development arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no

responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report on the basis of information provided by CWG Development and others who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

2. Council requirements

2.1 Waste management plan

Penrith City Council's Penrith Development Control Plan 2014 specifies that a waste management plan is required for this development.

The waste management plan should include:

- Supporting scaled waste management drawings that assist in demonstrating compliance with the provisions of this Plan
- The types and volumes of wastes and recyclables likely to be generated as a result of the development;
- How waste and recyclables will be stored and treated on site;
- How the residual non-reusable or non-recyclable wastes and recyclables are to be disposed of and
- How ongoing waste management will operate once the development is complete (for the life of the development).

Council has also published several guidelines that apply to this development, specifically:

- Residential Flat Building Developments Waste Management Guidelines
- Multi-Unit Dwellings Waste Management Guidelines
- Residential Subdivisions Waste Management Guidelines.

2.2 Kitchen storage

The kitchen of each dwelling should have space for the interim storage of one day's organic waste, other recyclable waste and non-recyclable waste to enable source separation of those wastes.

2.3 Composting

An area for composting is to be provided on site and made available for residents' use. The siting of composting facilities should consider proximity of dwellings (including those adjoining the subject property), to minimise likely odour impacts/nuisance, location of the drainage system, whether the facility is appropriately designed for composting and signposting to ensure inappropriate waste is not added to the compost.

2.4 Waste storage areas

2.4.1 All dwellings

The waste bin storage area in the development must be large enough to accommodate all required waste bins associated with the development. In residential flat buildings this is to be achieved through the provision of a communal waste storage area or multiple waste bin storage areas. All waste streams must be catered for, including general waste, bulky waste and recyclable waste.

Space must be provided to manoeuvre, clean and maintain all waste and recycling bins for the development and for any required equipment to manage waste, waste bins (including washing and cleaning) and the waste bin storage area.

The waste bin storage area is to be located within the basement footprint of the development on the ground level for multi-unit housing developments where its use and operation will not adversely impact the amenity of development occupants in terms of noise and odour.

If the waste bin storage area is to be used as the collection point (for multi-unit housing), it must be located and designed to meet the applicable requirements for servicing.

The waste bin storage area is to be designed so movement and servicing of bins is not restricted. An aisle space of 1.2 m is required to access and manoeuvre the bins. Whether waste bins are required to be rotated should be considered and if they are to be rotated, additional room size to aisle width will be required.

Waste bin storage rooms must have floors constructed of concrete at least 75 mm thick and graded and drained to a Sydney Water approved drainage fitting. Floors must be finished to a smooth even surface. Walls must be constructed of solid impervious material. Ceilings must be finished with a smooth faced non-absorbent material capable of being cleaned. Walls, ceilings and floors must be finished in a light colour.

There must be an adequate supply of hot and cold water mixed through a centralised mixing valve with hose cock and a close fitting and self-closing door openable from within the room. The room must be constructed to prevent the entry of vermin and provided with adequate light and ventilation. The light source must be through controlled light switches located both outside and inside the room.

The design and location of waste storage areas/facilities should complement the design of both the development and the surrounding streetscape and not be visually prominent from public areas.

2.4.2 Dwelling houses and dual occupancies

In addition to the above, in dwelling houses[1] and dual occupancies, that is, buildings with up to three dwellings, waste containers are to be stored in a suitable and easily accessible location on site with unobstructed access to Council's usual collection point and to avoid vandalism, nuisance and visual clutter.

2.5 Council collection vehicles

Council uses side-lift collection vehicles to empty kerbside bins. The DCP provides information on the specifications for these vehicles which is reproduced in Table 1 below.

Table 1 Council vehicle dimensions

Measure	Figure
Overall Length	12.5 m
Operational Length	14.5 m
Design Width	2.8 m
Design Height	3.7 m
Swept Circle	22.5 m
Clearance (travel height)	4.5 m
Weight Fully Loaded	22.5 t
Capacity	24 m^3
Front Chassis Clearance	13^o
Rear Chassis Clearance	16^o

[1] Defined in the Penrith LEP 2010 as 'a building containing only one dwelling.'

Waste collection is expected to take place mostly from the rear lanes, which will be rated for heavy vehicles.

3. Waste management plan

3.1 Development of the waste system

The development features 320 two- and three-bedroom terraces and 70 over-garage dwellings for a total of 390 dwellings.

The development of the waste management system for the terraces and over-garage dwellings has involved significant consultation with Council. All parties have been working towards providing a safe, convenient, efficient, equitable and visually appealing system.

Figure 2 shows the main features of the proposed waste management system.

Figure 2 Main features of the waste management system

3.2 Blocks A, B, C, D and E

In the lanes between rows of dwellings in Blocks A, B, C, D and E, underground bin systems will be installed. Council has specified that:

- Each block will have four underground units which will comprise two 1100L bins, one for garbage and the other for recyclables. No organics bin will be required.
- The units will be distributed evenly along the lanes to permit roughly equal travel distances for residents.
- The maximum travel distance for individual residents to travel to each unit will be 16m.
- The units will be configured in the lanes to provide traffic calming measures.
- The units are for residential use only.

A Bulky Waste Area, or areas, of a total minimum of 8 m^2 will be allowed for in each block. These areas will be located at the end of the block.

Diagrams of, and brochures for, underground systems similar to that proposed are provided in Appendix A.

3.3 Blocks F, G, H, I

Dwellings in these blocks will be provided with Council's standard service of three 240 L bins for garbage, recyclables and organic waste.

Bins will be stored on each property and presented according to Council's requirements in the DCP.

This will include an unobstructed bin presentation area large enough to accommodate two 240 L bins, the minimum dimensions of which are 2 m wide by 1 m deep. Adequate space on each property for the presentation of Council's bulky waste collection service.

In Block G, pedestrian lanes will be constructed between every second dwelling that provides access to the rear of groups of four dwellings to allow residents to take their bins to the street for collection.

4. Summary

Residents in Blocks A, B, C, D and E will use underground bin stations, four of which will be provided in the lane that runs through each block. Each unit will comprise two 1100L bins, one for garbage and the other for recyclables. No organics bin will be required. An 8 m^2 area will be provided for bulky waste at the end of each block.

Dwellings in Blocks F, G, H and I will be provided with Council's standard service of three 240 L bins for garbage, recyclables and organic waste. In Block G, pedestrian lanes will be constructed between every second dwelling to all allow residents to take bins from the rear of their properties to the street for collection.

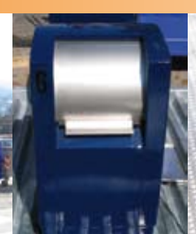
Appendix A – Underground bin systems details

Total Parking and Lifting Solutions Ltd
Suite 129, 70 Churchill Square
Kings Hill, West Malling
Kent ME19 4YU

Tel: 0845 604 3668 **Fax:** 01732 523404
info@totalliftingsolutions.co.uk
www.totalliftingsolutions.co.uk

ECOWaste
Communal Waste Management Solutions

TLS
TOTAL LIFTING SOLUTIONS



FORMATOVERDE
Waste Solutions

Contenedores Soterrados

1// Oculta la basura

Elimina el impacto estético que genera la basura en la calle. Oculta los contenedores que se encuentran en superficie, consiguiendo espacios diáfanos y transitables. Cada contenedor es sustituído por un buzón.

2// Dignifica el entorno

Dignifica el espacio urbano, pudiéndose recuperar para otros usos acordes al centro de una ciudad, restaurantes, plazas, terrazas, ... además de minimizar el mobiliario urbano visible.

3// Fomenta la recogida selectiva

Fomenta la recogida selectiva, por el impacto que causa su instalación, y la facilidad de acceso y uso.

4// Mejora la accesibilidad

Facilita al ciudadano el depósito de su basura.
Es accesible para cualquier usuario: niños, mayores, discapacitados...

5// Reduce los malos olores

La basura queda bajo suelo, cubierta con una tapa con cierre de goma lo que reduce los malos olores que salen a la superficie.

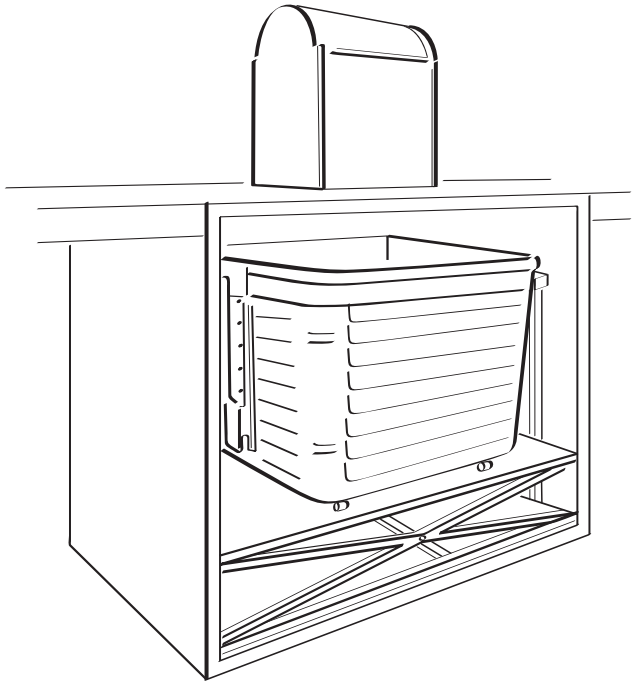
6// Mejora la higiene

Impide el acceso a la basura a personas no autorizadas y que los animales la esparzan.

Antes & Después

Los Contenedores Soterrados están destinados a la recogida de Residuos Sólidos Urbanos. La basura queda bajo tierra enterrando el contenedor que tradicionalmente estaba a la vista, quedando éste oculto bajo una tapa con el mismo acabado que la acera.

El sistema consiste en una serie de plataformas elevadoras, con tapa pavimentada, en un foso de hormigón, quedando a la vista solamente el buzón de depósito, manteniendo un aspecto agradable, discreto e integrado con el espacio que los rodea.



Componentes

Buzón Ringo

El buzón Ringo es el único elemento del sistema soterrado que queda visible y accesible al usuario, por ello su diseño ha sido pensado para integrarse de la mejor manera al espacio urbano actual, creando una continuación entre este entorno y el equipo.

Ringo intenta responder de la mejor manera a las necesidades del usuario consiguiendo accesibilidad, seguridad y sofisticación en todos sus movimientos.

Es compatible con todos los sistemas de soterramiento actuales.

Sistema Side

Compatible con camiones y contenedores de Carga Lateral

Para 1 ó 2 contenedores de Carga Lateral (2.400l, 3.200l, 4.000l).

Para posicionar los contenedores en superficie, se acciona el sistema hidráulico de elevación de la plataforma y mientras ésta asciende se abre la tapa automáticamente. Los contenedores posicionados en superficie, pueden ser tomados como cualquier otro contenedor convencional.

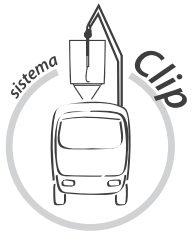
El equipo Side es el mas versátil, ya que además de contenedores de carga lateral permite trabajar con contenedores de carga trasera y carga pluma. Permitiendo al ayuntamiento cualquier cambio de sistema de recogida sin sobrecostes.

Sistema Back

Compatible con camiones y contenedores de Carga Trasera

Para soterrar de 2 a 4 contenedores de Carga Trasera.

Para posicionar los contenedores en superficie, se eleva la plataforma. Una vez posicionados al nivel de la acera, son extraídos rodando como en la recogida en superficie.



Sistema Clip

Compatible con camiones y contenedores de Carga Pluma

Para soterrar de 1 a 4 contenedores de Carga Pluma de 2 a 5m³ de capacidad cada uno.

El sistema de apertura se realiza mediante uno o dos cilindros hidráulicos dependiendo del número de contenedores.

La tapa del equipo abate 90º, permitiendo el acceso a los ganchos del contenedor.

La manipulación de los contenedores es idéntica a la de cualquier contenedor convencional de Carga Pluma.

TOTAL LIFTING SOLUTIONS

The Product

Total Parking & Lifting Solutions has produced a new system for the collection and deposit of urban solid waste (USW) within cities and urban communities for residential/commercial areas.

The TP&LS system allows, in its flexible design and dimensions, for the underground collection and containment of differentiated waste collection bins.

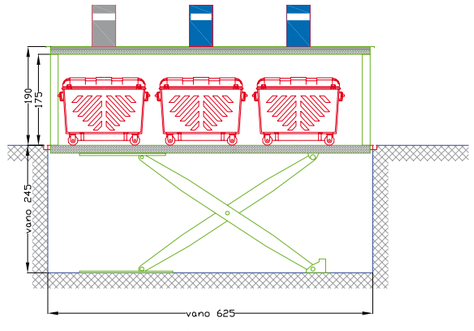
In place of the old system, where different types, colours and sizes of bins are placed at street level, there will be small deposit bins which can be incorporated into the surrounding landscape.

The Procedure

Users of the system will deposit their sorted waste into the small external bins, the waste then falls into the larger skips hidden below street level.

Periodically, the skips are elevated to street level by the refuse collection operators so that they can be emptied, cleaned and disinfected.

This is done by raising the underground platform to street level via a key operated control. Once the operation is complete, the platforms are lowered to their original position and are immediately ready for use again.



Technical Characteristics

Overall dimensions	625 x 295 cm
Platform dimensions	615 x 285 cm

Overall and platform dimensions
The measurements vary with respect to the requirements of the client and the number of refuse skips required.

Height between platforms	< 245 cm
Capacity	4,000 kgs
Structural materials	Galvanised steel
Lift operating speed	3 cm/sec
Hydraulic pump motor	6.0 kw
Electrical supply	3 phase, 415 v
Hydraulic pump unit (size (cm)/position)	40 x 60 x 55 H / within the lift chamber
Electrical control board in secure cabinet	20 x 40 x 50 H
Key control	10 x 10 x 20 H with removable key & emergency stop button
Security/safety	Emergency stop button
Operation	By operator removable key
Platform height control	Electrically controlled to upper & lower limits by PLC & pre-set micro switches
Safety	Flashing light when moving

Supply options - Overall dimensions
Specification based on the requirements of the client

Special finish	By request. Note maximum additional weight not to exceed 80 kgs/sqm
Drainage system	Small drainage duct around the perimeter of the upper platform
Additional safety during operation	Infrared anti-intrusion barrier
Electrical back up system	Available on request

Advantages

The TP&LS system transforms over ground waste disposal to under ground disposal, keeping in line with the principle of differentiated waste collection. The advantages are evident in that:

The skips are stored under ground

The small collection bins at ground level blend into the surrounding landscape

The small collection bins free up space that would normally be required for larger surface positioned skips

The visual impact of waste collection is kept to a minimum

Increased capacity for waste collection can be utilised without impacting on the surrounding landscape

Waste is secure within the under ground chamber and cannot be tampered with or spill out

Increased time between collections due to increased waste skip sizes reduces labour costs

Waste is contained within the differentiated confines.

It is also possible to introduce personalised waste disposal with automatic weighing of USW

ECOWaste
Communal Waste Management Solutions

Total Parking and Lifting Solutions Ltd
Suite 129, 70 Churchill Square
Kings Hill, West Malling
Kent ME19 4YU

Tel: 0845 604 3668 **Fax:** 01732 523404
info@totalliftingsolutions.co.uk
www.totalliftingsolutions.co.uk

SCT

Rear loading underground containers

2-3-4
Containers up to 1300 l.

3.900 kg
Nominal max. weight

PnP
Equipment without installation

10 %
Maximun gradiert

COLUMNS

Milenium

Europa

EVO

Austral

Cité

FEATURES

Column

Millenium, Europa and Cité models manufactured from high-density polyethylene.

EVO and Austral models manufactured from galvanised or stainless steel.

Available with apertures for glass, paper and plastics, or pedal-operated single/ dual drum with capacities ranging from 30 to 120 litres.

Meets the most stringent accessibility standards.

Platform

Manufactured from an S275-JR tubular steel structure and 3 mm sheet steel.

Fully hot-dip galvanised to meet the ISO 1461 standard.

Platform finished with a 3/5 mm hot-dip galvanised anti-slip checker plate or tray for paving (45 mm) .

Adjustable for gradients of up to 10%.

lifting structure

Manufactured from an S275-JR tubular steel structure and 3 mm sheet steel.

Lifting mechanism based on two hydraulic cylinders manufactured with an ST-52 sleeve and F-114 Ø 40 mm chrome valve rod, with a total lifting capacity of 3,900 kg.

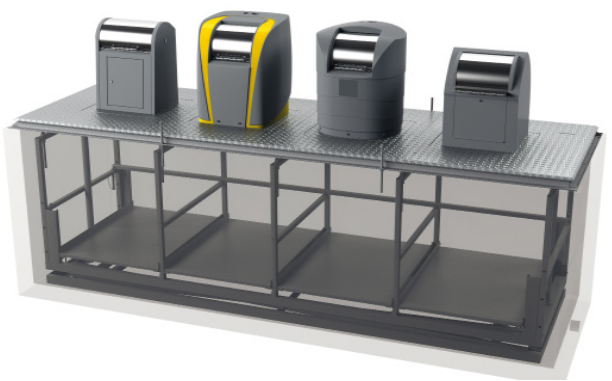
Fitted with parachute safety valves and lock bolts for maintenance work.

Prefabricated concrete

Monoblock enclosure manufactured using a self-compacting mould and HA-35 (C40/50) concrete.

Classified as XS3 under the EN 206 standard.

OPERATING THE EQUIPMENT



Truck quick coupling mechanism

The equipment is operated via a quick coupling (3/8”) male connection on the walk-on platform.

The lorry must have a female connection connected to the hydraulic circuit of the compactor, which must be able to provide 155 bar and 16l min.

Times

15 seconds up.
15 seconds down.

Hydraulic lifting system

The equipment can be operated using an autonomous 4 kW hydraulic lifting system located in a separate chamber with a programmable remote control mechanism.

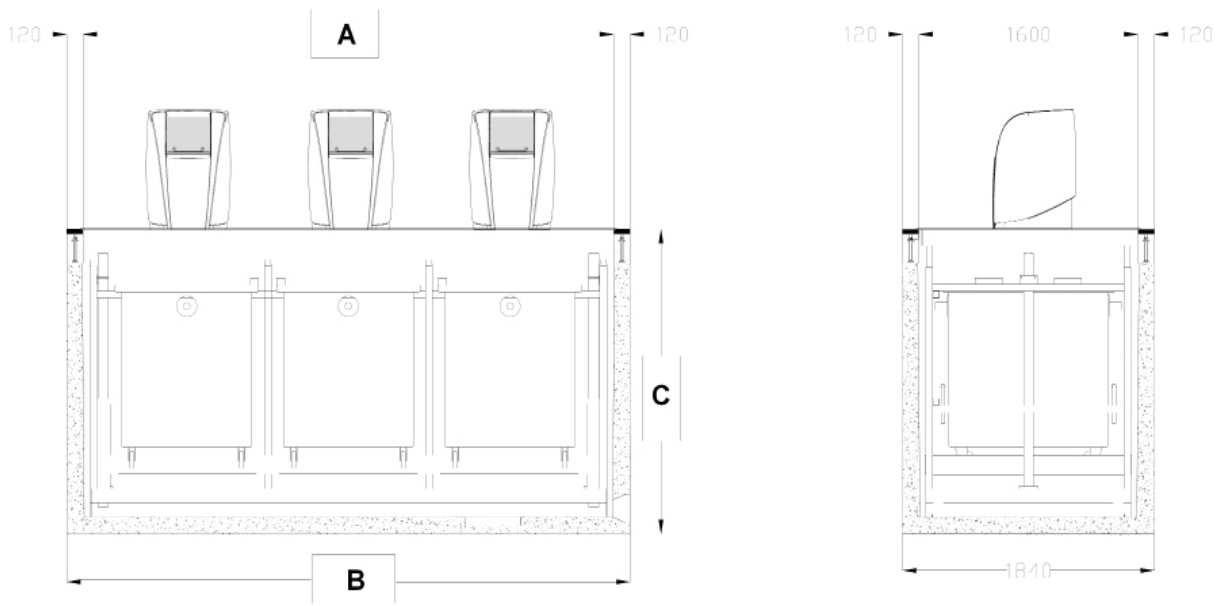
This system can operate up to 5 units (not simultaneously).

Times

Programmable to meet customer requirements.

15 seconds up (standar).
15 seconds down (standar).

DIMENSIONS



GENERALE DIMENSIONS			
	SCT 2	**SCT 3**	**SCT 4**
Number of containers	2	3	4
Length (A) / Width / Height (mm) (Inner)	2860 x 1600 x 1800	4010 x 1600 x 1800	5200 x 1600 x 1800
Length (B) / Width / Height (C) (mm) (Outer)	3100 x 1840 x 1920	4250 x 1840 x 1920	5440 x 1840 x 1920
Surface height	951 mm	951 mm	951 mm

CUSTOMISATION AND ACCESSORIES

COLOURS

Columns can be painted in any colour from the RAL standard.

CRESTS AND LOGOS

Customisation with the client's crest/logo and recycling symbols.

ACCESS CONTROL

Adapted to ensure compatibility with the most common systems.

FILL CONROL SYSTEM

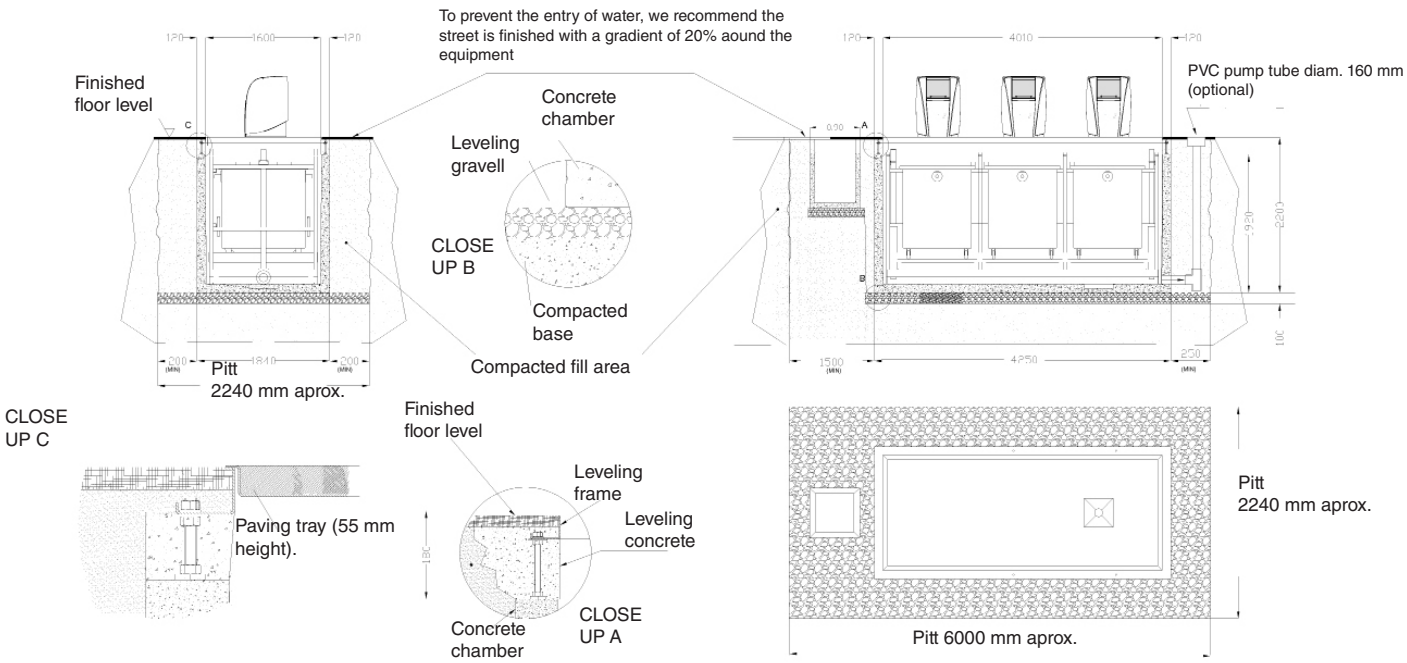
Adapted to ensure compatibility with the most common systems.

CIVIL WORKS

SCT underground containers have been produced to minimise the cost and time required for civil works. All equipment is supplied ready for use. All that is needed is to fit the waste deposit column (for installations in streets without a gradient). The dimensions of the system are designed to optimise excavation and the fill ratios of the container.

During the installation process, the Technical Department will provide customer support to ensure the correct execution of civil works. It is vital that all parties involved work together closely. We provide solutions, not just high-quality, durable equipment.

DIMENSIONS IN mm.



Important: Before installing the equipment, ensure the base of the pit is level and the soil has sufficient bearing capacity (minimun of 3 kg/cm2.

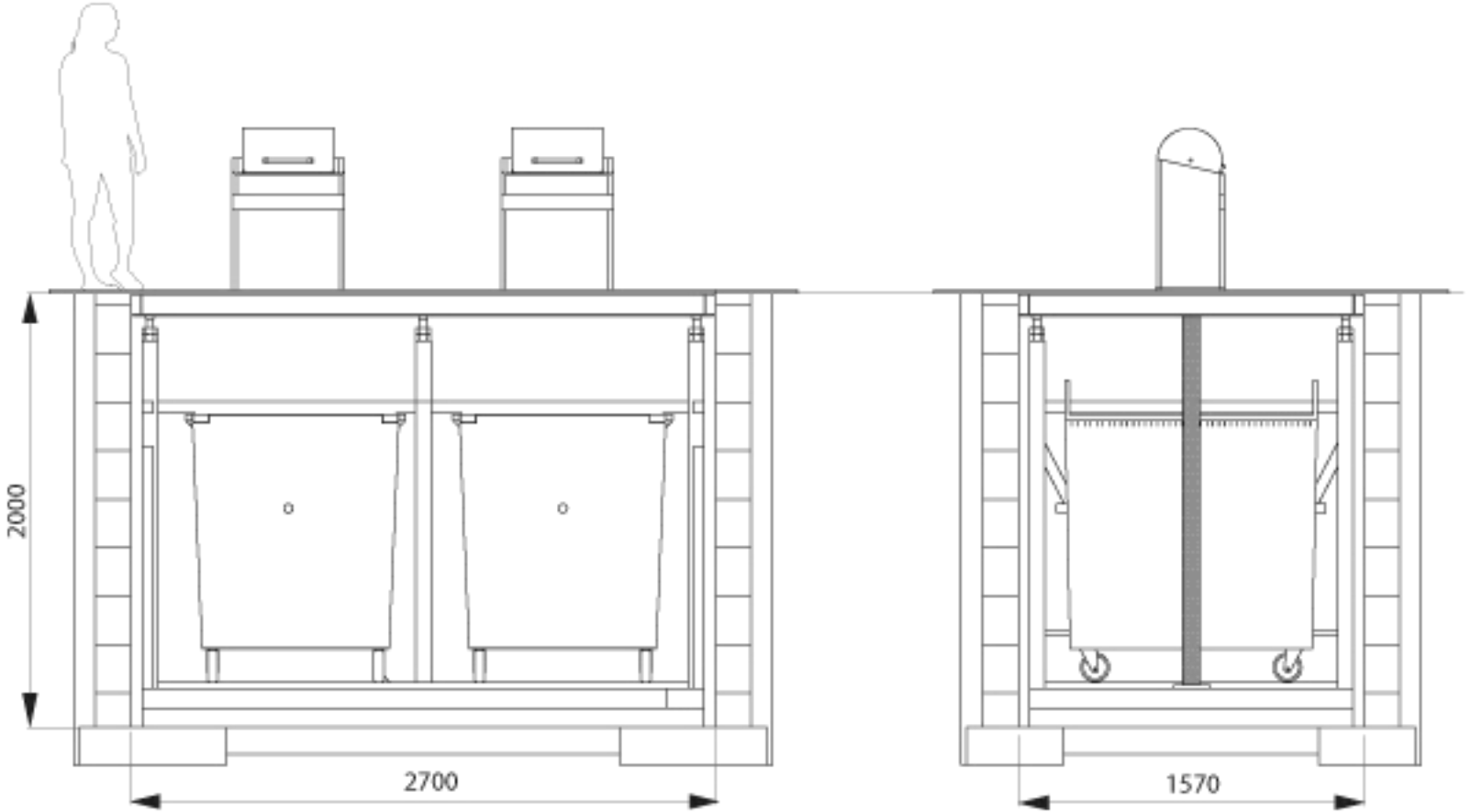
Soils with a lower capacity shoiuld be strengthened with a 10 cm single reinforced concrete floor.

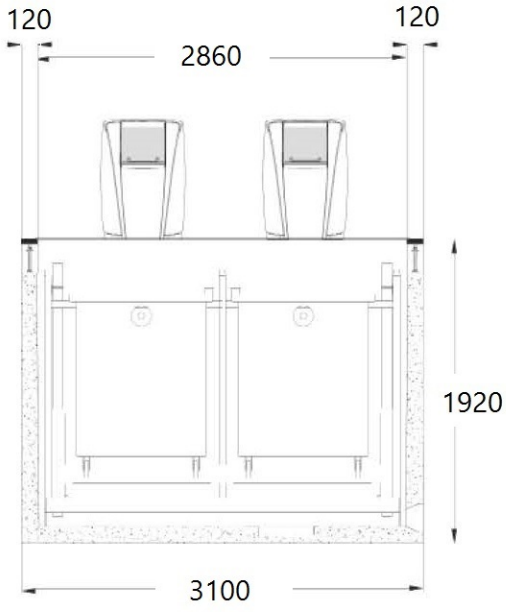
Note 2: For installation in areas with a gradient, the level of the pit referred to in the drawings is the level of the lowest point (downstream).
The equipment can be adapted to a maximun gradient of 6%. For steeper gradients, contact the Research Department.

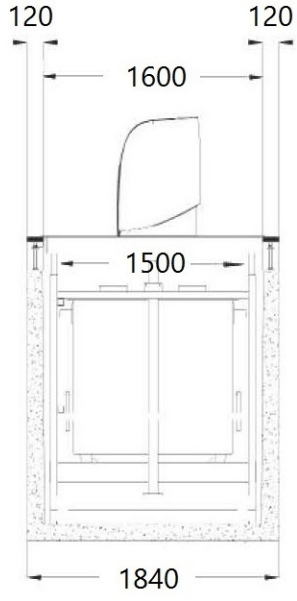
MAINTENANCE

SCT systems are characterised by their durability and low maintenance costs, and have been designed for use in harsh environments with an average lifespan of over 15 years.

As with any piece of machinery, we recommend periodic maintenance and cleaning to ensure the durability, hygiene and safety of the equipment. The equipment comes with a detailed manual with information on recommended maintenance tasks and frequencies.


2000
2700
1570



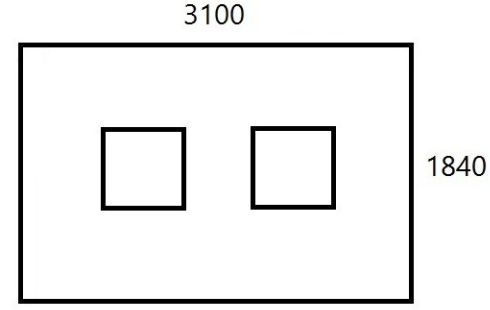


SCT

Rear loading underground containers

Merlin Industrial Products - UK

https://www.merlin-industrial.co.uk/environmental/waste-management/1058-underground-waste-storage-system

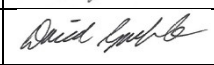
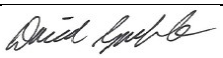
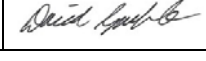
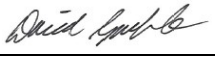


GHD

Level 15
133 Castlereagh Street
T: 61 2 9239 7100 F: 61 2 9239 7199 E: sydmail@ghd.com

2125934-48197/https://projects.ghd.com/oc/Sydney/wasteplanforoconnell/Delivery/Documents/2125934-REP-1_Waste Management Plan for Caddens Development - Copy.docx

Document Status

Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
A	A Quinn	D Gamble	DRAFT	A Quinn	DRAFT	26/10/16
Rev 0	A Quinn	D Gamble		A Quinn		18/11/16
Rev 1	A Quinn	A Montgomery		A Quinn		19/1/17
Rev 2	A Quinn (APC)	D Gamble		D Gamble		12/9/17
Rev 3	A Quinn (APC)	D Gamble		D Gamble		15/9/17

www.ghd.com