

Anti Vandal Restroom

TECHNICAL SPECIFICATION

METROS

Mettros™ restrooms have been designed for today's public toilet requirements;

- anti-vandal
- accessible
- re-locatable
- low maintenance
- sustainable
- long life cycle

The focused design intent was to ensure the materials, robustness, space and over-all usability was to exceed any other restroom on the market. While meeting all technical requirements the Mettros™ restroom has exceeded all user and owner expectations. It provides asset owners a low total cost of ownership for the life of the facility while providing the community a safe, hygienic continued high use restroom.

We believe the Landmark Mettros™ restroom to be the best available due to its unique features and benefits to the community as a whole.



Mettros - 1 Disable, 1 Ambulant with custom graphics

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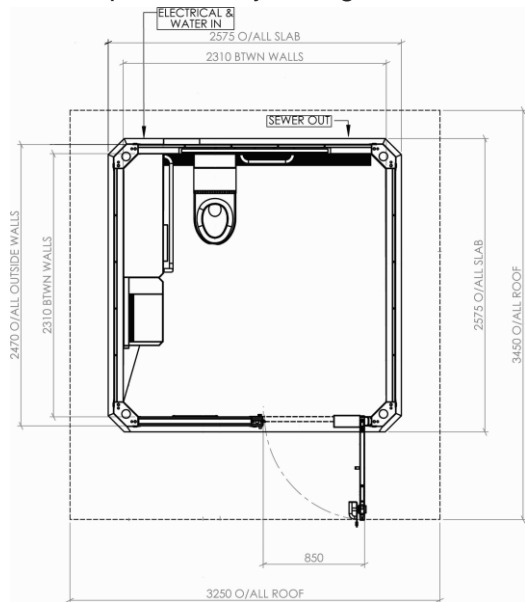
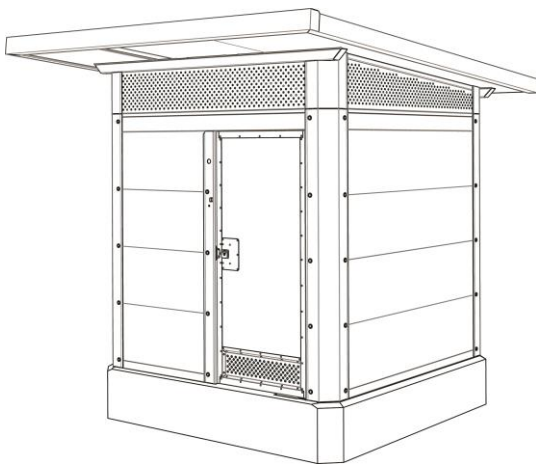


Configurations

As standard Mettros restrooms come in two designs, a 1D and a 1D1C. These designs cater for the most required public restrooms.

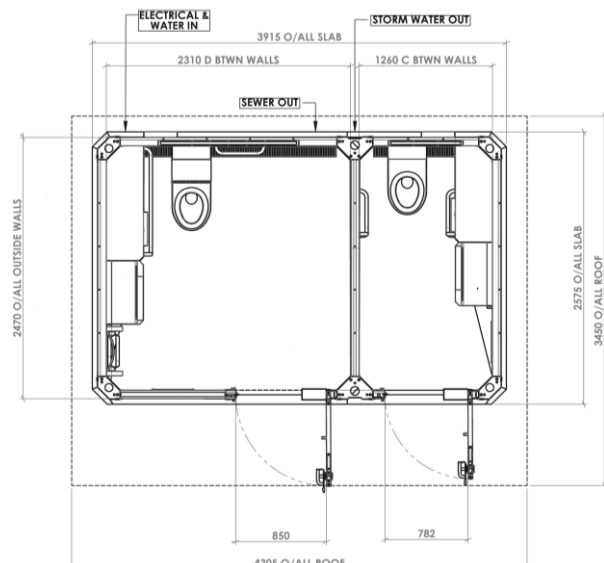
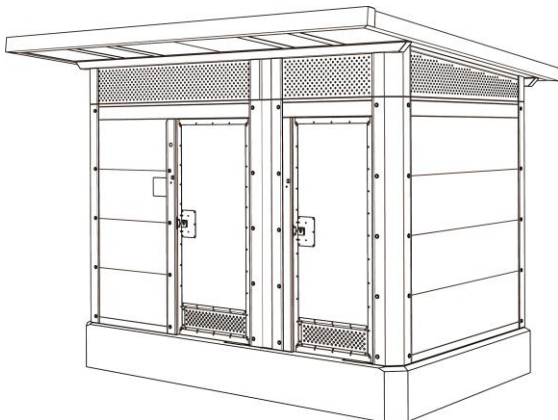
1D

A 1D restroom (one disabled access cubical) is suited for use by all people, given age, gender and physical conditions where space is a premium. It allows for wheel chair mobility and a host of varying impairments in compliance with AS1428 (designed for access and mobility). It also caters for parents and carers of small children and babies having the room for an optional baby change table.



1D1C

A 1D1C (one disabled access cubical and one ambulant access cubical) is perfectly suited where space is not an issue. The ambulant access adds an additional facility for higher traffic areas while still providing support for those that are aging, slight physical impairments and the general public.





Anti-Vandal Design



Mettros™ restrooms are specifically designed for optimum vandal resistance. Vandalism issues such as arson, graffiti and physical abuse have been vastly reduced using Crime Prevention Through Environmental Design (CPTED) principles. Where other restrooms fail is the high ongoing maintenance issues with vandalism, these are significantly reduced with Landmarks Mettros™.

- Constructed largely of 316 stainless steel the structure is highly resilient against physical impact and provides a surface with lower contrast to applied Graffiti and is hence a less desirable canvas to vandal.
- Smooth Colorbond® external wall panels can be readily painted over if necessary to remove graffiti, or panels easily replaced.
- All accessible materials with exception of the skylight panels are non-flammable.
- The unique structural posts allow for concealment of all anchors, roofing tie-downs and wall panel fastenings and the ducting of utility services, where they cannot be vandalised or tampered with.
- The wall panels are not required for cross bracing, allowing for low cost *in situ* wall panel replacement if required.
- Ceilings are constructed from 100mm insulated foam panel which is smooth, easy to clean, robust, and non-flammable.
- Doors are open out and constructed from stainless steel providing a very strong deterrent for those trying to enter after hours or when locked.
- Auto locking features can be added as an option to protect the services in unused times.
- The Skylight provides additional free light, this has been shown to deter the opportunist vandal and reduce suspect activities.
- The interior sensor light is activated with movement, light deters vandals and reduce suspect activities.
- The toilet pan is a full robust stainless steel construction with integrated seat.
- The wash basin is a full robust stainless steel construction with sharp edges removed and angles to provide strength and durability.
- The 3 in 1 hand wash unit option has been designed with full stainless steel construction and all outlets are angled for extra strength. The services are located in the internal cabinet away from sight & vandalism.
- The stainless steel baby change table option has Marblo® polymer based solid surface material which can handle high impact and is easily cleaned.
- The hand rails in the Mettros are high strength and coated for maximum resistance against abuse.
- The drain is integrated into the solid cast floor using stainless steel for maximum strength.
- Having a high strength cast concrete floor means there are no tiles or minimising vandalism and maintenance costs.
- The Mettros has upgraded anti vandal signage, this means that the impaired and blind can use these services more often as the standard signage offered is more susceptible to damage.
- The mirror is polished stainless steel ensuring the lowest vandal opportunity.



Access for Disabilities and Impairments



METTROS™ restrooms can be manufactured to meet or exceed the National Construction Code requirements of AS1428 and holds independent access evaluation.

- A minimum clear entry width of 850mm minimum in the 1D unit ensures that wheel chairs have easy entry.
- Inside circulation space requirements for those using wheel chairs complies to AS1428.
- Floor surfaces are moulded precisely to NCC gradients and have a tested slip resistance, there are no tiled gaps and undulations making it easy to manoeuvre in a wheel chair or using a walking frame. This reduces the risks of trips, slips or rolling hazards.
- The proprietary 3 in 1 automated hand wash unit complies with AS1428. Sensor controls allow easy operation for those with impairments.
- The basin has an integrated shelf making it easy to use the facilities.
- Anti-vandal signage uses symbols, colours and brail making it easy for people with impairments.
- Hand rails comply with AS1428.
- The toilet pans comply with AS1428.
- The proprietary basin incorporates an integrated shelf for ease of use.





Relocatable Asset Management



METTROS™ restrooms are fully factory assembled using integrated lifting hooks in the slab for simple, fast on-site placement. The Slab encloses all the plumbing requirements for fast, easy, efficient connection to all services.

- The Mettros™ is fully factory assembled within Landmarks ISO9001 quality management system.
- Lifting hooks have been cast in the concrete slab providing a safe, quick and easy lift, move and set down.
- The site only requires a minimal 100mm blinding slab and services ready for restroom installation, as plumbing is integrated within the 450mm pre-cast structural slab.
- The restroom is assembled using Engineer approved designs, which have all been tried and tested, leaving no assembly matters to be resolved onsite.
- Installation requires minimal site preparation and disturbance to traffic, businesses and the public in general.
- Mettros™ restrooms can be relocated. They are easily decommissioned and deployed at a new location to manage changes in user loading over time.
- The Mettros can be relocated easily by using the same installation techniques over and over again, giving greater flexibility as areas grow, update or change in requirements.



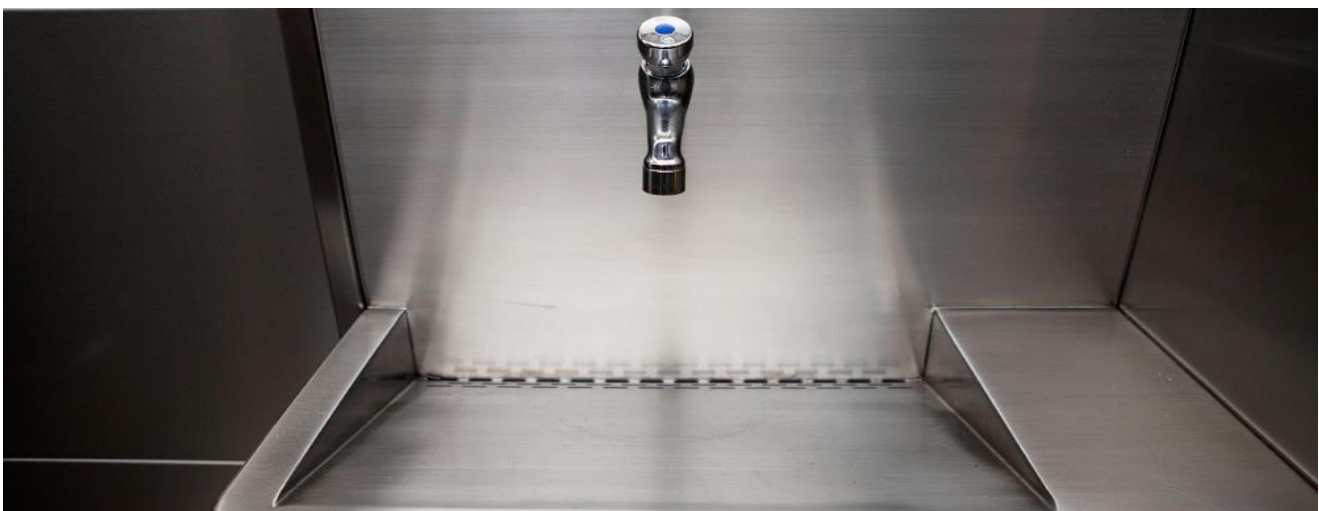


Low Maintenance Requirements



METTROS™ restrooms are specifically designed to minimise overall maintenance. All components and materials are robust, hygienic, easy to clean and maintain while ensuring optimum vandal resistance and ease of replacement.

- Polished concrete floor slab with integrated drainage and concealed service ducting provide an easy-to-clean, seamless floor surface with no grout to maintain or tiles to replace. Sealing the concrete only needs to be carried out approximately every 3 years.
- Stainless steel interior cladding, fixtures and components are robust, hygienic and easy to maintain.
- Materials are non-flammable and offer a high resilience to physical vandalism and graffiti. This results in a high value aesthetic outcome with easily cleaned surfaces.
- Concealed lighting reflects off the ceiling to provide even lighting in the cubicle, and offers vandal resistant and easily maintained illumination.
- Individual wall panels are easy to replace *in situ*, allowing for cost effective panel replacement or rejuvenation.
- Programmable automatic unlocking in the morning and locking in the evening minimises the need for physical attendance of staff. Adjustment can be made to set times and can key over-ride at any time including extended periods for special events.
- Lockable services cabinet.
- Option of single or jumbo toilet roll holder
- Robust materials with innate high strength and inherent low maintenance include:
 - a. 316 grade stainless steel
 - b. 40 Mpa precast concrete
 - c. Polycarbonate sheeting
 - d. Colorbond sheeting





Environmentally Sustainable Elements



The environmental impact was considered at every stage of design, and addresses contemporary requirements for water-wise flushing, minimum electricity consumption, recyclable materials, and a reduced lifetime carbon footprint.

- Mettros™ restrooms have huge skylights in each cubicle with 81% light transmittance. Diffused light shines into the cubicles while indirectly through eve/clerestory vent panels, providing optimum use of natural light.
- Lighting used is low voltage fluorescent tubes which only switch on with movement, these are up to 80% more efficient than incandescent bulbs while providing a much cleaner bright light.
- Ventilation takes place through the eve/clerestory vent panels in addition to the lower door level vent to provide natural circulation. This circulation of fresh air aids in drying out areas notorious for odour production.
- Roof and wall insulation reduces heat in the cubicle, improving user comfort. The walls have a twin sided environmentally friendly foam filled 80mm panel while the roofing is 100mm thick.
- Mettros™ toilet pans are WELS rated for 4.5L full and 3L half flush (3.3L average) resulting in a 4 star water rating.
- The 3 in 1 hand wash basin is flow adjustable, set at 2.5 litres per minute results in a 6 star water rating.
- The precast floor slab is **Green Star*** rated concrete with 25% fly ash displacing cement, contributing to a lower carbon footprint
- Walls and post cover plates can be replaced if damaged or requiring aesthetic updating, rather than requiring entire building replacement. Materials are 100% recyclable.
- The entire building can be disassembled into component parts and recycled. High pricing for scrap Stainless Steel encourages end of life component or building material capture and recycling.
- The majority of the structure is stainless steel which has a 100% recycled content (ASSDA) and has inherent resilience to vandalism and weathering.
- The restroom is re-locatable, allowing a change of site to suit usage requirements, thus further extending useful lifespan. See life cycle under.
- The floor sealer is Green Star*compliant and low in Volatile Organic Compounds (VOC). No breathing apparatus is required during installation, and the product is not flammable during application or after it has cured.
- The extended service life of the building through resilience to the rigors of public use is the key to reduced lifecycle cost.

* Green Star is a comprehensive national, environmental rating system, which evaluates the design and construction of buildings.



Life Cycle



25-50 year life cycle



relocatable



anti vandal fixtures



low maintenance

METTROS™ restrooms have been assessed to carry a 50 year structural life cycle, and with all of the features and benefits makes the whole of life cost an attractive proposition.

- 50 year structural life cycle means this asset can achieve many years of relocation and/or service. Replacement wall panels can be used to just update the outside aesthetic to blend into a new location if relocated.
- The Anti-vandal properties makes for low maintenance compared with standard low value restrooms.
- Most common restrooms are not relocatable and after a few years could lower utilisation and therefore community value.
- Being environmentally sustainable in every sense of the word, means that you not only reduce the ongoing costs but at the end of the usable life a very large percentage of the materials used can be recycled.

Component	Main Material Type	Recyclable (%)	Useful Life (average yrs)
Roof	Steel & Foam	80%	20 years
Posts	Stainless Steel	100%	50 years
Post Covers	Stainless Steel	100%	50 years
External Walls	Steel & Foam	80%	20 years
Floor	Concrete	100%	50 years
Internal Walls	Stainless Steel	100%	50 years
Pan	Stainless Steel	100%	50 years
Plumbing	HDPE & PVC	100%	30 years
Basin	Stainless Steel	100%	50 years
Fixtures and Fittings	Steel and Stainless Steel	100%	30 years
Electrical Fittings	Cooper, plastics and Steel	70%	25 years
Drainage Grate	Stainless Steel	100%	50 years

*average yrs dependant on environment and maintenance conditions.

Standard Inclusions and Options

Exterior Inclusions

- 1 Skillion roof 100mm Stratco Cooldek CGI insulated panel
- 2 Skylight to each cubicle using 10mm Ampelite thermoclear twin wall lexan polycarbonate in "OPAL"
- 3 Smooth colorbond® bonded 80mm insulated walls with 316 stainless steel internal cladding
- 4 N3/C1 (W41) Stainless steel hidden structural posts
- 5 316 high strength anti vandal stainless steel post covers hiding post and wall fixings
- 6 316 high strength bonded stainless steel door that opens out with venting to bottom section. 1D cubicle has a minimum of 850mm of clear access (AS1428)
- 7 40 Mpa precast, polished and coated concrete flooring with built-in plumbing and integrated drain
- 8 Anti vandal signs
- 9 Cast in slab crane hooks for easy site installation and relocation



Interior Inclusions

1
316 stainless steel walls for easy cleaning and anti vandal properties

2
Full anti vandal stainless steel toilet system with remote flushing to WELS 3L half and 4.5L full flush

3
Access compliant and anti vandal stainless steel pan with integrated seat (1D unit only)

4
Access compliant grab rails in high-vis yellow

5
Locking service duct

6
Stainless steel polished anti vandal mirror

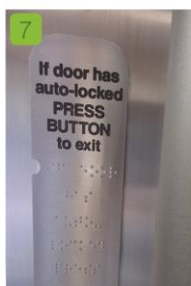
7
Anti vandal signs

8
Ambulant compliant and anti vandal stainless steel pan with integrated seat (1C unit only)

9
Anti vandal push tap with WELLS 6 star water rating to ASNZS 3718

10
Anti vandal concealed sensor lighting

11
Stainless steel coat hook



Options

1
Colour combinations



2
Graphics and logo incorporated in the clerestory panels



3
Extended eaves and/or screens when extended eaves are fitted (1D option only)



4
LED flush anti vandal eye light



5
N5/C3 (W60) High strength steel hidden structural posts, galvanised, primed and powder coated



6
Automated curfew locking with programmable time adjustment



7
Automated anti vandal 3 in 1 hand cleaning station in hygienic stainless steel with proprietary sensor operated soap dispensing, water and hand drier



8
Proprietary baby change table in hygienic and strong stainless steel with Marblo polymer based solid surface (1D option only)



9
Jumbo stainless steel toilet roll holder



10
Stainless steel wall mounted sharps container



Transportation

TRUCK



1D
8.5 tonne capacity low rise trailer

1D1C
10 tonne capacity low rise trailer

CRANE



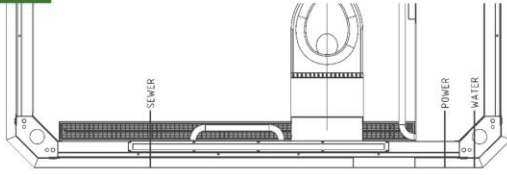
1D
25 tonne Franner with standard spreader bar

1D1C
25 tonne Franner with adjustable 30 tonne spreader bar

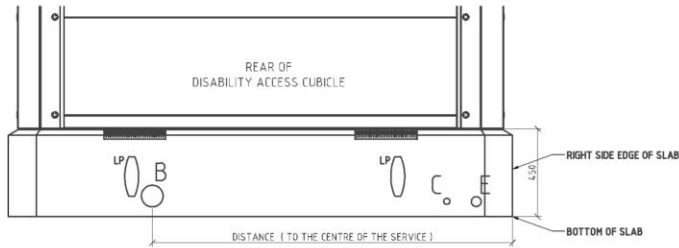


Site Preparation - Services

1D



METTROS RESTROOM - PLAN VIEW
SCALE (1:15)

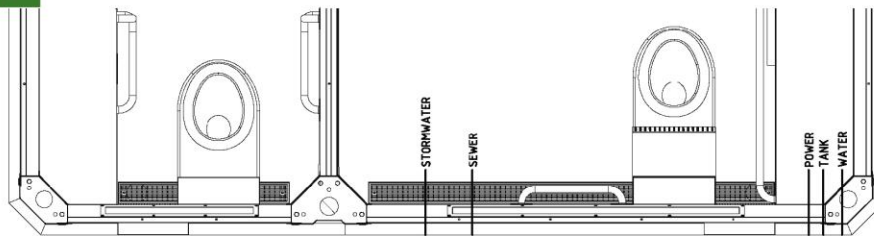


METTROS RESTROOM - REAR VIEW
SCALE (1:15)

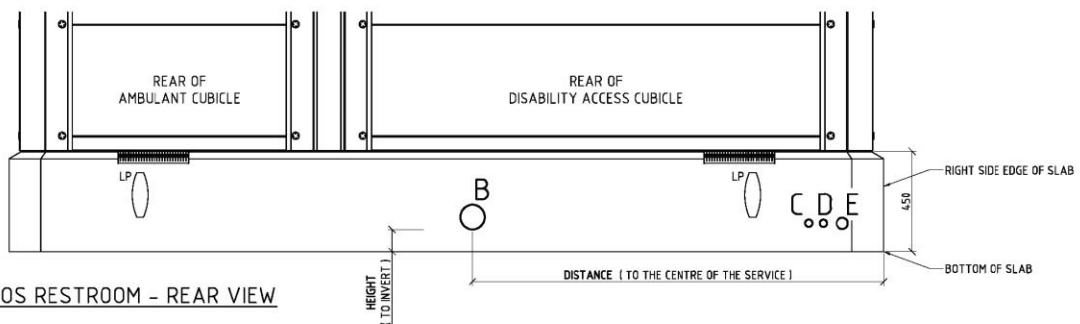


B = 110mm HDPE Sewer outlet, distance = 1840mm, invert height = 50mm
 C = 32mm Conduit Power outlet, distance = 335mm, invert height = 62mm
 E = 50mm Conduit Water outlet, distance = 185mm, invert height = 52mm
 *invert height is from the bottom of the slab to the bottom of the outlet.

1D1C



METTROS RESTROOM - PLAN VIEW
SCALE (1:15)

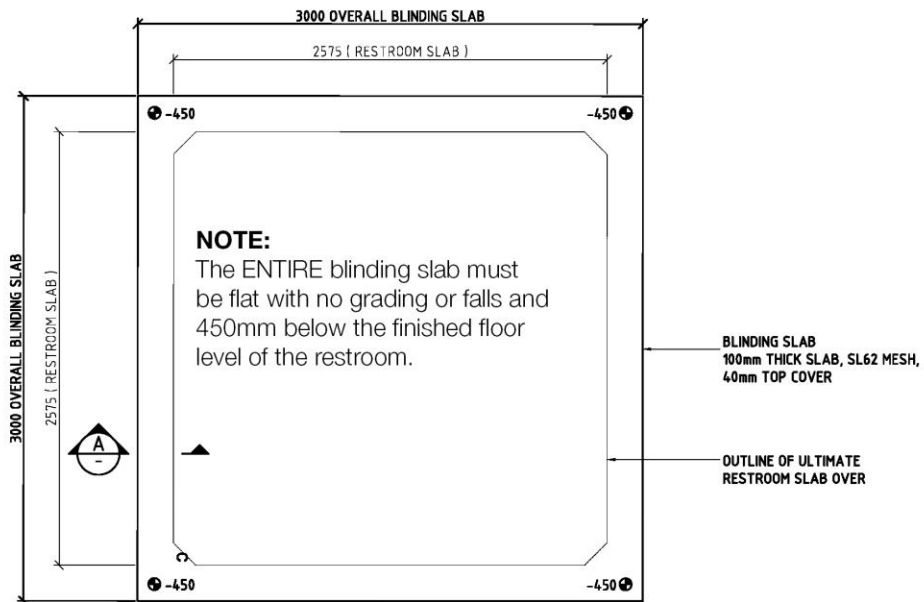


METTROS RESTROOM - REAR VIEW
SCALE (1:15)

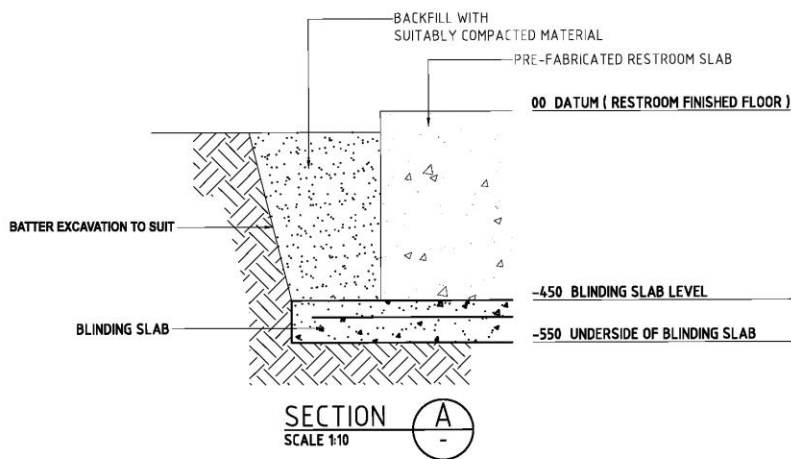
B = 110mm HDPE Sewer outlet, distance = 1810mm, invert height = 95mm
 C = 50mm Spare outlet, distance = 95mm, invert height = 125mm
 D = 40mm Conduit Power outlet, distance = 220mm, invert height = 125mm
 E = 50mm Conduit Water outlet, distance = 145mm, invert height = 125mm
 *invert height is from the bottom of the slab to the bottom of the outlet.

Site Preparation - 1D Blinding Slab

A blinding slab is required to sit the Mettros restroom on, this aid ensures the restroom has the correct falls on the inside of the cubicles slab to promote water drainage on wash out and quick drying methods.



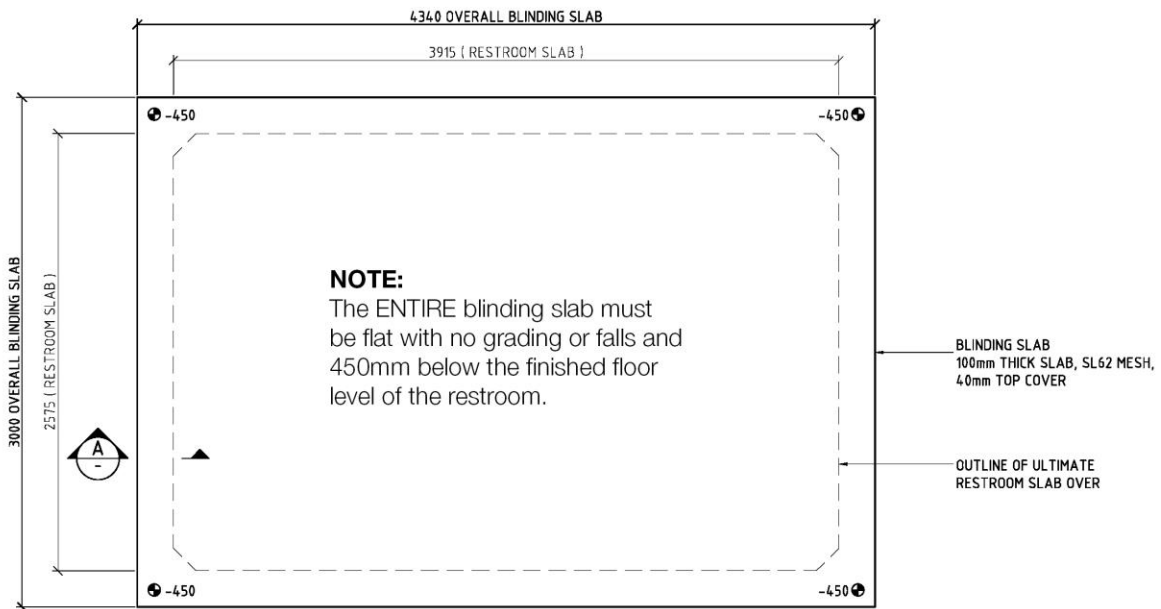
BLINDING SLAB PLAN
SCALE (1:25)



SECTION A
SCALE 1:10

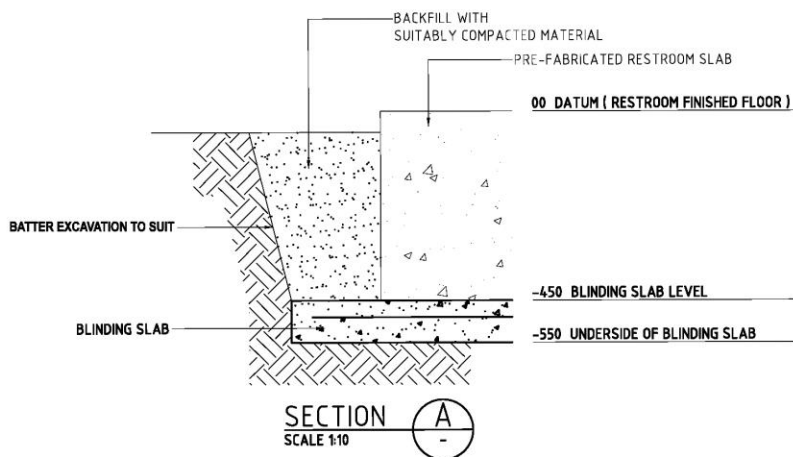
Site Preparation - 1D1C Blinding Slab

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BLINDING SLAB PLAN

SCALE 1:25

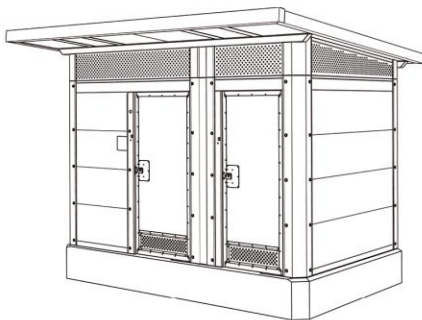


1D



Landmark Mettros 1D
Anti Vandal Restroom
1D - Disabled cubicle only
Stainless steel interior walls
Concrete slab flooring
Replaceable wall panels

1D1C



Landmark Mettros 1D1C
Anti Vandal Restroom
1D1C - Disabled cubicle / Ambulant cubicle
Stainless steel interior walls
Concrete slab flooring
Replaceable wall panels

FREQUENTLY ASKED QUESTIONS

- Q. Is there an additional fee for the maintenance of the toilets or is it included in the supply and installation cost?**
- A. Periodic cleaning and maintenance checks are not included in the price, however METTROS™ restrooms are designed to reduce maintenance requirements of both the structure and components by focusing on the high quality of materials used and Crime Prevention Through Environmental Design vandal resistance principles. We can help arrange a maintenance program with using the professional services of Urban Maintenance Systems if required (<http://www.ums.com.au>).
- Q. Does the supply price include the cost of the concrete slab?**
- A. The polished concrete slab is pre-cast and forms part of the overall structure. It is included in the supply price of the restroom. The binding slab is a separate cost.
- Q. How far from the edge of the restroom building does the reinforced concrete slab extend, how deep is it, and how is it finished?**
- A. The slab extends 50mm past the outside wall line and the distance from the finished floor level to the underside of concrete slab is 450mm. The entire slab is polished to a set finish to maintain the high level slip resistance with a smooth form-finish angled at 30 degrees down on the edges.
- Q. Is the internal and external stainless steel cladding 316 marine grade or equivalent, and how is it finished?**
- A. METTROS™ restrooms utilise only 316-grade stainless steel, with a brush polished finish for ease of maintenance to all walls and proprietary items.
- Q. Is the waste water that goes out the drain along the back of the restroom connected to the sewer?**
- A. The long drain across the back of the cubicle has an increased surface area to prevent blockage and flows to sewer. An overflow can occur if water exceeds the drain weir height of 50mm. In the event of a blocked drain or excessive flow the drain will overflow to the ground at the rear of the building rather than filling the floor space. Landmark recommends a garden area at the rear of the building, or that a spoon or grated path drain be installed to direct any potential overflow.
- Q. Is there a failsafe mechanism in the event that a blind person is in the restroom at cubicle lockout time? How would they know to use the touch button to get out?**
- A. Research suggests that a visually impaired person would feel for an alternate mechanism if the door fails to open. An exit override button and signage is installed at the height required by the Code. Landmark has also installed dedicated, Code compliant text and Braille signage at their commended signage height on the door jamb next to the latch, directing users to the 'press to exit' button which is also on the door jamb. This unlocks the door for 60 seconds (adjustable as desired). When the door closes again the auto lock will sense the closed position and latch.
- Q. Is there a failsafe mechanism in the event that an intellectually impaired or non-English speaking person is in the restroom at cubicle lockout time?**
- A. The green exit button will light up after lockout. This is a strong indication of its function. The button is round and the light is green as in 'go' and 'exit'. The proximity, shape and colour are all strong international indicators of the 'press to exit' function. The manual locking mechanism also has an

escape function providing a safe exiting compliant system that opens the door from the inside with just throwing the handle down as per a normal lock.

Q. What happens if a person requires medical attention after the restroom has locked down for the night, how does one gain entry from the outside?

A. The council master key can gain access via an over-ride mechanism.

Q. Can the timing of the lockdown be set to open again for a few minutes after the lock down is initiated?

A. Yes. This can be done with the standard METTROS™ lockout timer. The timer is accessible to the facilities provider in the main hidden service duct and can be programmed for just such a schedule.

Q. What about vagrants learning the lock down times and using the restroom as a sleeping area?

A. Most facilities require a daily visit from maintenance staff. If the cleaning visit is timed at or after the curfew locking time, the cleaner will be the last person with access.

Q. We prefer push button taps and hand dryers and have no requirement for a soap dispenser?

A. Landmark can provide a push or lever tap fitted to the splash back of the basin. The push button or sensor hand dryer can be mounted on the end of the hidden service cabinet.

Q. Can an external light be fitted?

A. METTROS™ toilets can incorporate a low voltage, low power consumption LED light into the eaves, this is a desirable option when the restroom is in a location that wishes to be used during times of low light or night.

Q. What is the best method of cleaning and keeping clean the stainless steel?

A. The stainless steel is sent to site with a layer of paraffin oil wiped over it which assists in the ease of cleaning. We recommend the continued use of paraffin oil as this makes paint and other vandalism materials not able to adhere to the surface and tend to further deter vandalism.

Q. How often does the concrete slab internal require recoating and what should I use?

A. The polished concrete slab has been pre-coated with Concrete Colour Systems decrathane satin water based urethane sealer. You should get approximately 3 years of good life with this sealer, less in really high traffic areas and where the soils are acidic. We recommend cleaning and recoating with the same sealer.

mettros
anti vandal restroom solution