ATTACHMENT B

PARK TOILET STANDARDISATION STUDY – SUMMARY RECOMMENDATIONS

CITY OF SYDNEY

Sydney2030/Green/Global/Connected

Park Toilet

Standardisation Report

city of villages

contents

Version 2		
1	12 May 2016	PCG initial feedback
2	22 Jun 2016	Steering Committee Approval

1. Purpose

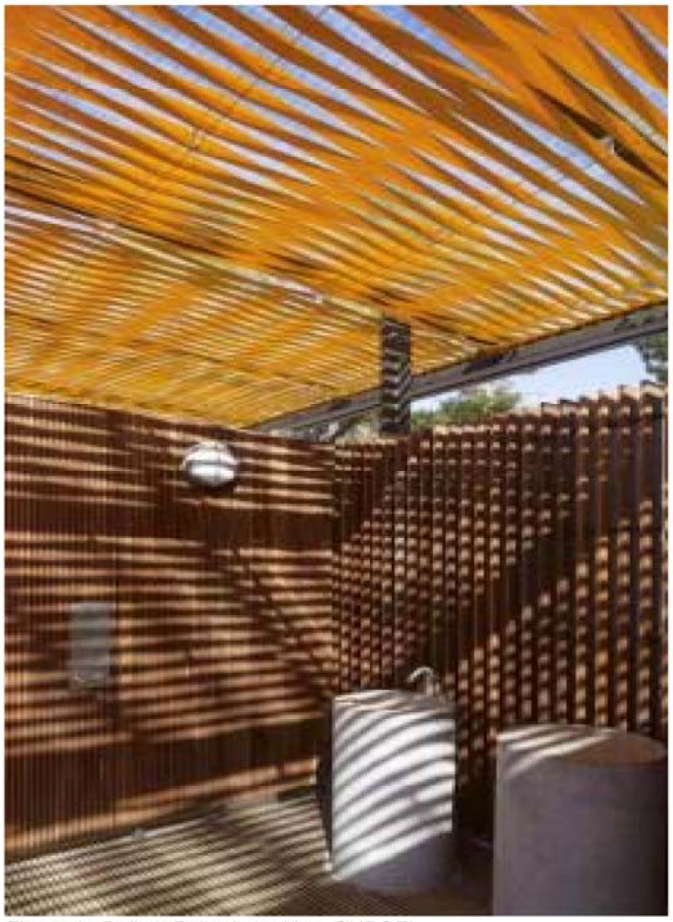


Figure 1 ; Ballast Point Amenities, CHROFI

"A successful standardised system sets the right balance between uniformity and adaptability"

This report presents proposals for a Standardised Park Toilet design.

Initiation

A working group was established to investigate opportunities for standardisation comprising:

- Chris Thomas, Matthew Gribben (City Projects)
- Joel Johnson, Mark Driver (City Greening and Leisure)
- Bridget Smyth, Laurie Johnson (City Design)
- Tracey Hargans, Scott Young (City Property)
- Graham Jahn (City Planning)

3 areas were identified for review:

- Provision
- External finishes
- Interior finishes and fixtures

The Study process included:

- Precedent Study
- Current success and issues including customer feedback and operational input
- Current maintenance issues

Recommendation

This report makes recommendations for the three areas identified:

- Standardised Provision
  - Modular approach.
  - Base construction with 'skin' to minimise costs and maximise maintenance and modification flexibility.
- Exterior
  - 2 'skin' options are proposed depending on location/ heritage considerations
    - Timber clad.
    - Metal clad.
- Interior
  - Tiled finish.
  - Consistent, robust fittings.

Application

The City of Sydney currently has over 40 park toilets. There are currently over 10 new park toilets in design or identified for delivery in the City of Sydney Toilet Strategy 2014. Refer to Delivery, Attachment a3.

These standards will be provided to park toilets currently in design to be incorporated where possible.

"Standardised design allows the complex tasks in Research and Design to be thoroughly done, once. Delivery becomes simpler with fewer unknowns "

If adopted, the concepts in this report will be developed to create a *Standard Parks Toilet Design Guide*.

A Standard Parks Toilet Design Guide can be used as a whole for the specification of a new facility, or used in part to guide the selection of fittings or materials to all public toilets in all council facilities to ensure they are consistent, safe, robust & suitable.

Aim

The aim of the standard parks toilet (SPT) design is to deliver:

- Quality
- Efficiency
- Consistency
- Fitness for purpose
- Value for money and
- Flexibility
- Surety that parts and products have been tested to suite each location simply and easily.

The success of a standardised system relies on the right balance between uniformity and adaptability. The efficiency and reliability of a tested, repeatable design needs to balance with requirements of different sites, user types and usage frequency.

Benefits of Standardisation

There are many benefits to using a standardised design, both from an operational perspective and from a user perspective. Development of a standard design will address 'design and management' principles outlined in the City's Public Toilet Strategy 2013, In particular, standardised design offers the following benefits:

1. Proven Design

Standardised design eliminates the challenges of 'one off' design. By sufficient testing in development, there is opportunity to improve design and performance in:

- Product selection
- Material detailing
- Layout design
- Simplified Construction details

Increased time spent the initial research and design phase on basic material and design parameters provides benefits with a simpler delivery process and greater assurance of a cost effective, quality and fit for purpose result.

2. Identity + Compatible Wayfinding

By using a consistent design the toilets become recognisable and more easily identifiable. Building typology is a primary element of wayfinding, more effective at a distance than signage and more quickly perceived than text based identification[1].

1

Other wayfinding devices including signage and text directions are supplementary and they easily complement a facility that has a design Identity.

3. Urgency

Public Toilet design should acknowledge that often users will need to find the facility with urgency and higher levels of stress. Being able to easily find a public toilet is a performance requirement.

4. Equity, Dignity & Accessibility

By providing a rigorous design phase to the standard prototype, there is opportunity to consistently address accessibility and go beyond basic compliance to consider improvements for a wide range of users, including ideal separation distances, circulation patterns and improved shorelining. These requirements cannot always be considered in a one-off design due to time and scope limitations.

Built identity is a more equal and dignified cue than some signage symbols, for example the traditional man and woman symbols which are not suited to transgender or genderqueer users.

5. Cost and Delivery Efficiency

Standard elements allow cost efficiencies. Selection of suitable and efficient materials and details allows the construction cost to be controlled and a standardised design can make delivery faster, easier and more efficient. Cost for design is reduced or controlled. Planning approval may be simplified, and typical building techniques and requirements will be proven with each new roll-out.

6. Maintenance

Repeatable details, materials, fittings and fixtures mean that maintenance can be minimised and simplified, offering efficiency. Common replacement parts allow simplified ordering, and-stock reserves.

7. Sustainability

Sustainability can be improved through the design and selection of tested, well researched materials:

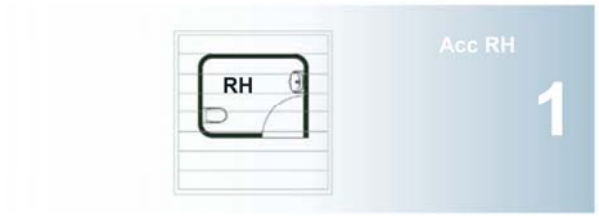
- Material selection- products with a small carbon footprint,
- Low or zero off-gassing or chemical sensitivity issues
- Passive energy use
- Water efficient fittings and fixtures.
- Reduced lifecycle /maintenance cost

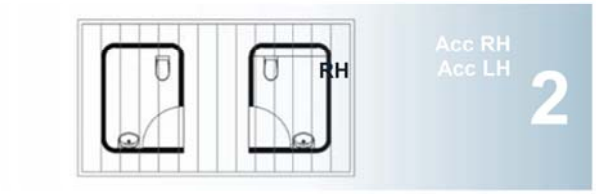
Attribute	Standardised Design	Custom Design
Proven Design	●	
Identity + Wayfinding	●	
Urgency	●	○
Dignified Accessibility	●	●
Known Cost	●	
Delivery Efficiency	●	
Simplified Maintenance	●	○
Sustainability	●	●
Bespoke identity		●
Extreme cost high or low		●

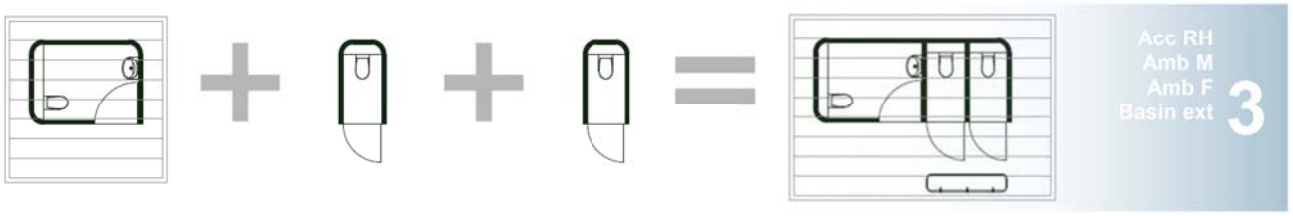
Table 1 – Attributes of standard v's custom design

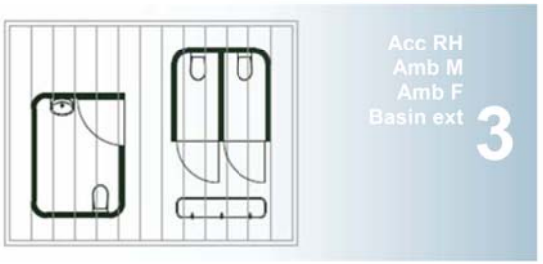
● Achieves attribute
○ May be possible of achieving attribute

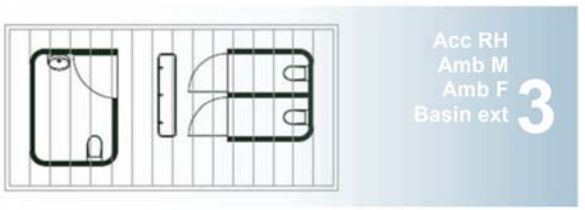
2. Provision

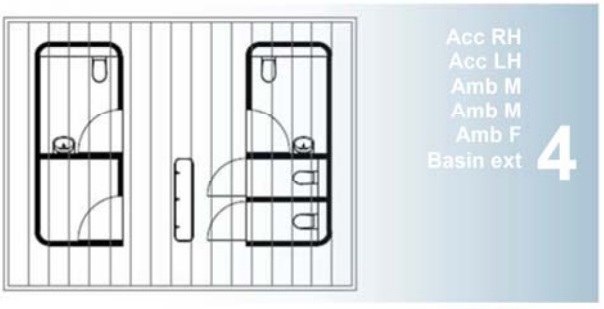


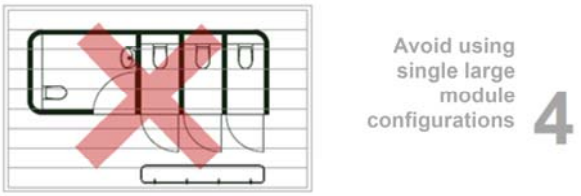












Scalable Modules

The standard park toilet (SPT) is designed to provide a range of facility sizes, from a single WC cubicle to multiple cubicles with urinal and external basin. The cubicle modules, canopy and cladding can be used by applying simple rules to build up the required facility.

Principles

The principle of the modules are to:

- Standardised units; easily combined to create a site specific toilet using standard modular parts
- Minimise the 'building' volume in greenspaces by keeping each unit small and well-spaced, avoiding large single facility blocks.

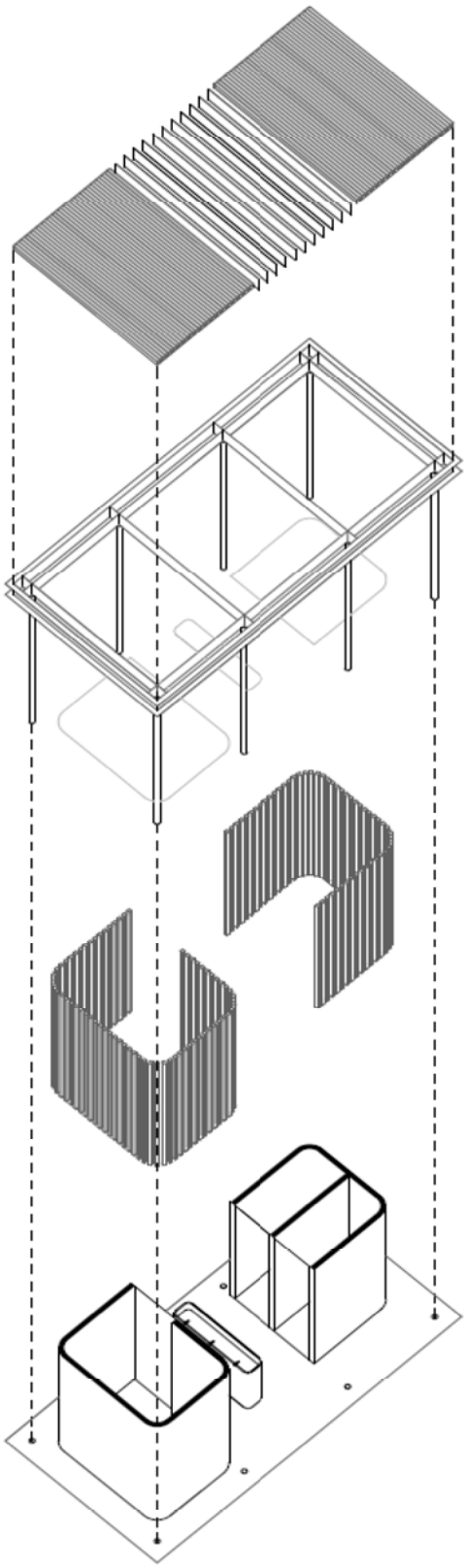
Composition

The facility will be comprised of:

- Accessible single unisex module and;
- Accessible additional unisex module where required. Where demand requires the installation of two accessible modules, both modules should be unisex, one left handed and one right handed. This configuration offers a better range of accessible facilities than assigning the accessible modules as male and female. However it is noted that female users in particular report a strong preference for gender separated facilities, to be addressed in each provision.
- Ambulant Individual unisex or ambulant pair male/female module.
- External shared basin(s)
- Unifying canopy and floor slab

These can be arranged in any combination according to need. Additional amenities such as Store room and kiosk can be added as required, within the module design. Weatherproof cover is provided to modules only, not external basins.

3. External Elements



Four Simple Elements

An external elements system is proposed that comprises 4 simple elements that can be arranged as required:

- Base slab
- Brick wall modules
- External Cladding
- Canopy

The principle is to provide a low cost wall module that can be clad externally and internally to provide the finish.

The exterior cladding is set off the brickwork to allow surface service fixings and modifications.

There is a range of finishes for the external cladding that can be easily changed out or replaced for access, maintenance or renewal purposes.

A canopy structure provides a unifying device- as well as providing shade to the basin area and weatherproofing to the toilet modules as required. It is independent of the other structures for ease of construction and sits above other structures to allow passive illumination and ventilation.

Siting principles will be required, such as;

- number of units required
- visual / passive surveillance
- accessible paths and gradients
- proximity to active uses areas such as playgrounds.

Base Slab

Concrete base slab- finish to match park paving.

Brick wall modules

The basic brick wall module is constructed on the slab according to standard, simple details. The brickwork will be covered externally and internally so finish is not critical.

External cladding

The external cladding is simply applied to:

- Dress the economical module construction and hide the brick surface and any services
- Cladding is changeable to suit park identity
- Can be simply replaced at end of life / vandalism

Canopy

Steel frame and columns providing shading and weatherproofing where required. Independent of the toilet modules. It provides:

- Unifying element
- Shade to the basin area and weatherproofing to the toilet modules.

3.1 Exterior Cladding

The material selection of cladding must be robust, reliably supplied, economical, environmentally sustainable.

The Modular standard design is based on using an economical load bearing module wall such as non-facebrick masonry which can then be clad in a finish material. Because the load bearing masonry is not the finished face, it can be laid quickly to more forgiving tolerances if it was to be built to architectural finished face standards.

Two cladding materials are proposed that respond to different park settings:

- **Timber**; to suggest 'natural' materiality
- **Metal**; an option for more urban or heritage parks

Cladding Material A - Timber Batten

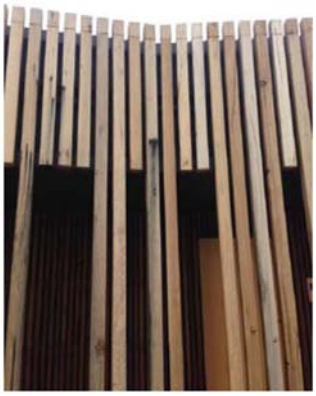
Timber battens mounted on frames off the basic masonry structures:

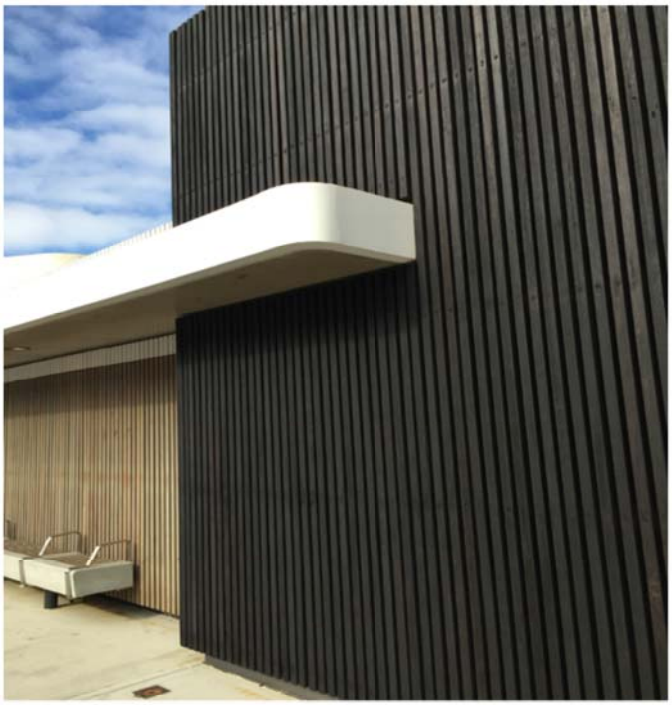
- Thinner members give an inappropriate domestic sensibility
- Larger member sizes more suited to civic context
- Use recycled timbers where possible
- Battens can allow for ventilation
- Can be easily removed or replaced for maintenance, access or renewal. The entire cladding can be replaced to give a 'new' look without replacing structure.

Finish options:

- Natural timber will weather to silver, this is acceptable as a finish, it does not denote poor maintenance. Education through environmental signage is needed to communicate to some users.
- Stain or Paint finish can be used in high traffic or vandalism areas.
- Can consider flame retardant or use alternate metal cladding in vulnerable settings.
- Research longevity of composite & recycled products

2 Marks Park amenities, Sam Crawford Architects





3 Bondi Beach toilets - Sam Crawford Architects

Cladding Material B – Metal

In some locations metal cladding may be a suitable alternative cladding material.

Metal cladding can be simply fixed and made to be robust and vandal resistant.

Metal work patterns may reference historic construction materials such as pressed metal, or fluted or metal batten finish. Considerations are:

- Openings- not climbable
- Cladding sheets in modular and easily handled sizes- cost and buildability.
- Robust finishes- vandal resistance, repairability, replicability, refinishing
- Consider surface heat gain from sun exposure

Other Material Considerations

Other exterior cladding options considered were:

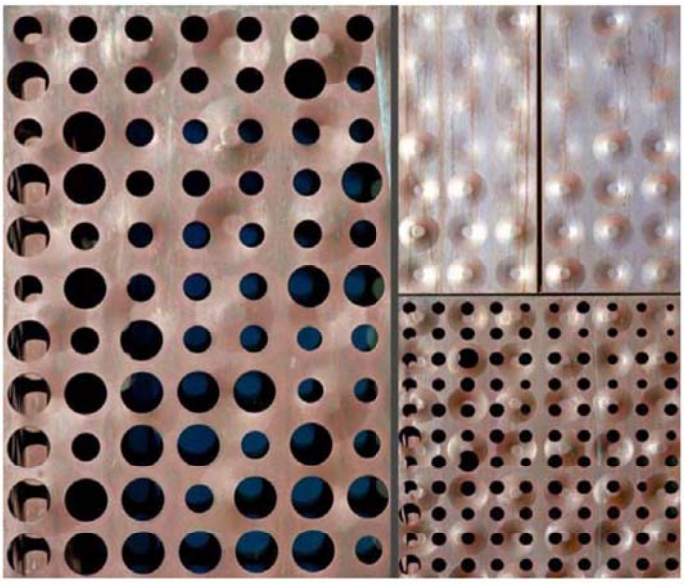
- Brick
- Tile

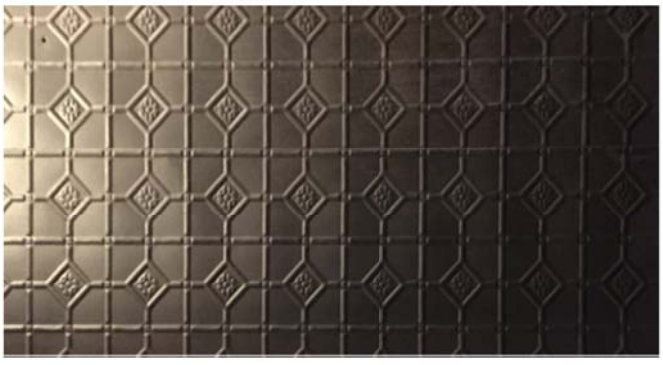
These finishes require detailed set-out and preparation that add to construction time and cost. They are also unable to be simply replaced and repaired like a cladding.

Brick is also considered too dark and heavy to convey the desired clean and well serviced appearance by many users.

- 'Green' Walls

While a quality landscape setting is very important, stakeholder feedback is that they obscure sight lines and reduce security. Green walls can be a useful 'park' element but must be considered very carefully- generally as an exception than a standard.





3.2 Canopy

Principal & Benefits

The canopy defines a collected space over the individual Amenity component. It is a simple way to bring unity to different groupings of modules, and can vary to suit a variety of amenity provisions.

A canopy provides an extremely efficient way to provide maximum shelter while minimising bulk and cost of material:

- The Canopy is defined by a simple, minimal support structure that holds a thin, light weight roof element over the building modules below.
- Importantly the canopy roof element has a vertical separation from wall elements. Being independent of the walls below, it is simple to construct, able to span a collection of room modules and allows natural light and ventilation.
- A canopy provides rain and sun protection over toilet and basin modules and the spaces.
- With no wall to ceiling junctions a canopy provides ease of cleaning.

Construction

The canopy proposed is a simple paint finish steel frame with robustness and simple geometry. It is infilled with either a shading, non-shelter cladding, or a full weatherproof infill as required for each situation:

- Weatherproof Infill- can be light transmitting polycarbonate
- Shading- Pergola type timber rafters for open areas.

4 - Chrofi with McGregor Coxall for Western Sydney Park Authority.

Chrofi. Ballast Park Amenities.

Weatherproof- Polycarbonate

The properties of polycarbonate make it ideal as a weatherproof layer in the canopy structure. Polycarbonate can achieve

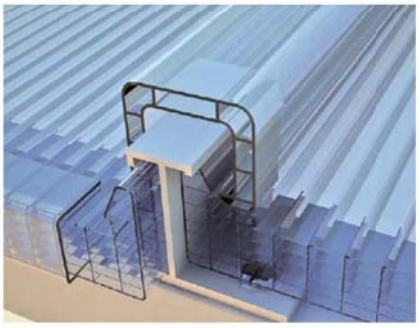
- Suitable spans
- Trafficable
- UV stable and UV filtering if required
- Offers a variety finishes from Clear to translucent and uncoloured to bright colours.

Suitable products for design development include Gallina & Everbright.

Shading - Timber Batten Pergola

In most conditions, the more important canopy quality is to provide shade and a sense of privacy. The dappled light or solid shade below a canopy also define its space and establish a threshold.

A timber batten pergola provides a high quality, natural finish. It is easy simple to install, avoids the weight and cost of steel and replacement is simple and easily available.



4. Interior Materials

4.1 Walls

The internal wall finish must be hygienic, robust, easily maintained and cost efficient. The internal finish should be direct applied to the structural wall to make economic use of space. As for the external cladding, an internal cladding is recommended to the structural wall to provide an efficient and high quality finish, this is a faster and more flexible solution than building the structural wall itself as a finish quality face.

Tile finish walls

Tile finish is recommended to the internal walls of the toilet spaces. For ease of maintenance, cleaning and improved robustness, the tile should be applied full height, floor to top of wall.

Tile testing recommends gloss ceramic tile finish as the least likely to absorb stains from soap and cosmetic products. Epoxy Grout is recommended for improved life span, stain and germ removal.

5.2 Floors

Concrete finish

Concrete floor finish provides a suitable non-slip surface. It also allows material continuity from outside the rooms, to inside and is a suitable finish for both inside and out. Concrete is suitable maintainable and can be cleaned suitably.

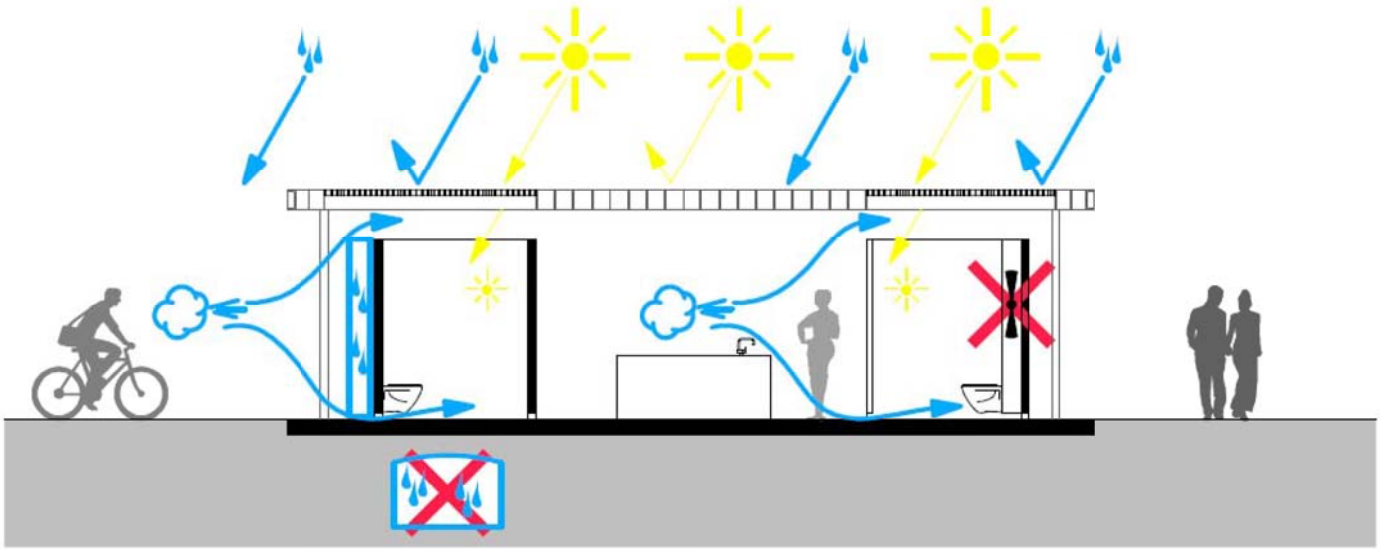
5.3 Ceilings

Canopy finish

Walls will stop at a distance below the canopy roof. Detail resolution will provide security to prevent a person gaining access over the wall, under the canopy. Material options:

- Prodema
- Timber
- Painted fibre cement
- Polycarbonate

a2. Sustainability



Objective

CoS sustainable Sydney 2030 Objective 2.5: The City of Sydney's operations and activities demonstrate leadership in environmental performance

Principles

The standard toilet will be:

- Made from low embodied energy materials
- Minimise energy usage
- Minimise water consumption
- Reduce chemical cleaning requirements

Water

Facilities will use water efficient WELLS rated fittings & fixtures, including auto shut off valves & dual flush cisterns.

Toilets should be connected to Recycled water or Park wide harvested rainwater where it is available. Underground tanks specifically built for the toilet are not recommended due to the cost and energy use in construction and ongoing pumping.

Design will investigate slim, concealed, above ground rainwater tanks for toilet use. Consideration needs to be given to the requirements of water filtration.

Energy

Minimised by using borrowed light from adjacent, existing park lighting and using natural daylight. The design will be low energy use by minimising electric parts such as sensors, or automatic doors.

Movement and Daylight Sensors are to be used to reduce lighting consumption

- LED: for all light sources
- PV panels to be investigated, noting that PV cells can complicate connection and increase distribution board cost.
- Hand dryers are recommended, although these create electricity consumption, they also reduce consumables (paper towels) and the energy footprint of daily servicing and re-stocking of towels.
- Skylights help reduce lighting power requirements

Ventilation

All ventilation will be by natural airflow over, under and through the raised, batten walls.

Materials

Embodied energy of materials will be reviewed in design and will impact timber selection.

Opportunities for recycling, such as flyash concrete bricks with up to 98% recycled material will be investigated.

Precast items, such as concrete columns will be investigated, reducing the need for new steel.

Finishes that require reduced chemical cleaning, such as