



## Case Projects

# VicRoads VIC

## Restrooms with CWT Collection Well System

Roadside rest area toilet facilities are an essential element of road transport. The vast distances covered by Australian roads means rest stops are essential, and also that these rest stops are remote and prone to vandal attack.

Driver fatigue is recognised by road authorities as a major factor in managing road trauma, so rest area upgrades are essential and ongoing.

Environmental issues also impact, as these remote sites have no water, sewer or power services. Therefore human waste must be managed.

Disabled access needs must also be addressed.

In short, road side rest area toilet facilities present huge challenge in design, construction and ongoing management. All these issues had to be confronted and resolved in a recent project designed and constructed for Vic Roads at a site near Mildura on the Sturt Highway and at two sites west of Nhill on the Western Highway.

Compliance obligations to be addressed were:

- AS1428 disabled access
- AS1546 collection well
- AS1547 toilet pedestal
- BCA general construction
- Engineering certification
- Geological investigations
- Local government development applications/ construction certificates.
- State mandated public building directives such as CPTeP
- Crime Prevention Through Environmental Design

### Our Unique Solution:

Waste management systems integrated in the design solution at these three sites was a CWT Collection Well Technology system. The CWT system is a zero discharge system housed in an AS1546.1 compliant 10,000 litre concrete collection well. Compliance with the Australian Standard ensures that there is no leakage of human waste to the adjacent land. More often than not, rest areas are adjacent to rivers and roadside drains. Environmental obligations for road authorities are therefore solved. These collection wells can be positioned almost totally underground, negating the need for elevated ramp access for disabled access.



These ramps are a common site on existing toilets using proprietary composters. Our experience is that the ramps can be of matching cost as the building itself. The concrete construction of the collection well is fire proof. Plastic bodied site management units have a history of fire destruction through vandal attack.

A site specific Management Plan is created for each site and a CWT endorsed waste contractor inducted and briefed on the regular waster removal. Thus, the potentially environmental issues are avoided. Likewise any facility manager's OH&S obligations for employees working with human waste are outsourced. The endorsed CWT waste contractor takes responsibility for this component of management.

Odour management is addressed by a passive wind driven and solar assisted ventilation system, and within the CWT Management Plan. The weekly cleaning/maintenance programme specified in the management plan has provision for dosing with an agent that suppresses foul odour generation. Provided the maintenance regime is adhered to, the facilities are pleasant to use. Solar voltaic systems are avoided as they are too fragile for these remote applications, and the panels and batteries are instant targets to theft.

The 12 volt fans generally used in these systems are totally inadequate for the highly acidic air that they have to operate in. The passive ventilation system has good functionality, minimum maintenance requirements and good service life.

#### **Other Ancillaries:**

Water storage for hand washing has usually been achieved by constructing steel water tanks linked to the structure and harvesting rain water from the roof. These have proved to be not satisfactory in the long term. Generally the roof area is insufficient to harvest adequate amounts of rain water, and the steel tanks were subject to theft or bullets rupturing the tanks. The latter is virtually impossible to field repair. The solution is a Pureblue FWT Fresh Water Tank system. This uses a CWT 3000 concrete tank configured for water storage, mounted on a similar tank for elevation. Water delivery port with an optional camlock connector is cast in to the lid of the FWT. All connection plumbing is mounted within the elevating tank stand or underground, away from view and vandal attack. Water supply is again outsourced to an accredited fresh water supply contractor. "Water not suitable for drinking" signs are attached to bypass any future litigation issues that may arise.





