

VACUUM
PLUMBING
SYSTEMS

FOR
CORRECTIONAL FACILITIES



AVAC AUSTRALIA PTY LTD

Avac Australia P/L pioneered point of use vacuum drainage systems to the Australian Correctional Facility market in the early 1990's. The system drains all liquid wastes generated in a facility including toilets, basins, showers, sinks etc.

Our vacuum drainage systems are currently in use in over 2500 cells in maximum security prisons in Australia. We also have systems in public amenity complexes, police stations, and commercial supermarkets. These systems provide safe and reliable drainage plumbing for critical use locations, and employ the very latest technology in systems engineering and equipment.

For the Australian correctional market, Avac has (in conjunction with State authorities) developed a complete package including suicide resistant stainless steel combination toilet and basin fixture (comby). This comby offers a compact solution for modern cell designs. As well as comby's, all other specialized fixtures required are available from Avac.

Our Correctional package includes not only fixtures and central plant & equipment, but also includes qualified professional engineering services, including preparation of construction documentation. Additionally we offer site services including contractor supervision, system start-up and commissioning, preparation of comprehensive O & M manuals, training of maintenance personnel in system management, as well as off-site system monitoring.

The use of the Avac system can remove drainage from the construction critical path, thus reducing construction time significantly. This "worlds best" technology offers the facility management significant operational advantages, particularly in contraband control, significantly reduced water consumption, protection of the environment from pollution by sewage and significantly reduced maintenance callouts.

Contact us today to discuss your individual project.

What is a Vacuum Plumbing System?

An Avac vacuum plumbing system is an engineered system which uses vacuum and air to transport waste from plumbing fixtures, such as toilets, sinks and showers, through a piping network to a vacuum collection centre. The vacuum collection centre maintains vacuum throughout the piping network that allows control of the system.

Features

Reduced Water Usage

The Avac toilet uses 2 litres of water per flush. Water supplies and sewage disposal costs are dramatically reduced. Sewer connection fees are also reduced.

Smaller Diameter Piping

The piping network is installed with smaller diameter pipe & fittings which will reduce material and labor costs.

Flexibility

The vacuum plumbing system can be installed horizontally or vertically. This allows flexibility in the layout and design of both new construction and remodeling projects.

Security & Control Benefits

The vacuum plumbing system is designed using pressure differential in transporting waste. This results in **fewer blockages**. When blockages do occur, they are easily located and the abusers can be identified. Section areas are easy to isolate and cross connection is eliminated.

VACUUM: A FLEXIBLE & ECONOMIC ALTERNATIVE TO GRAVITY PLUMBING

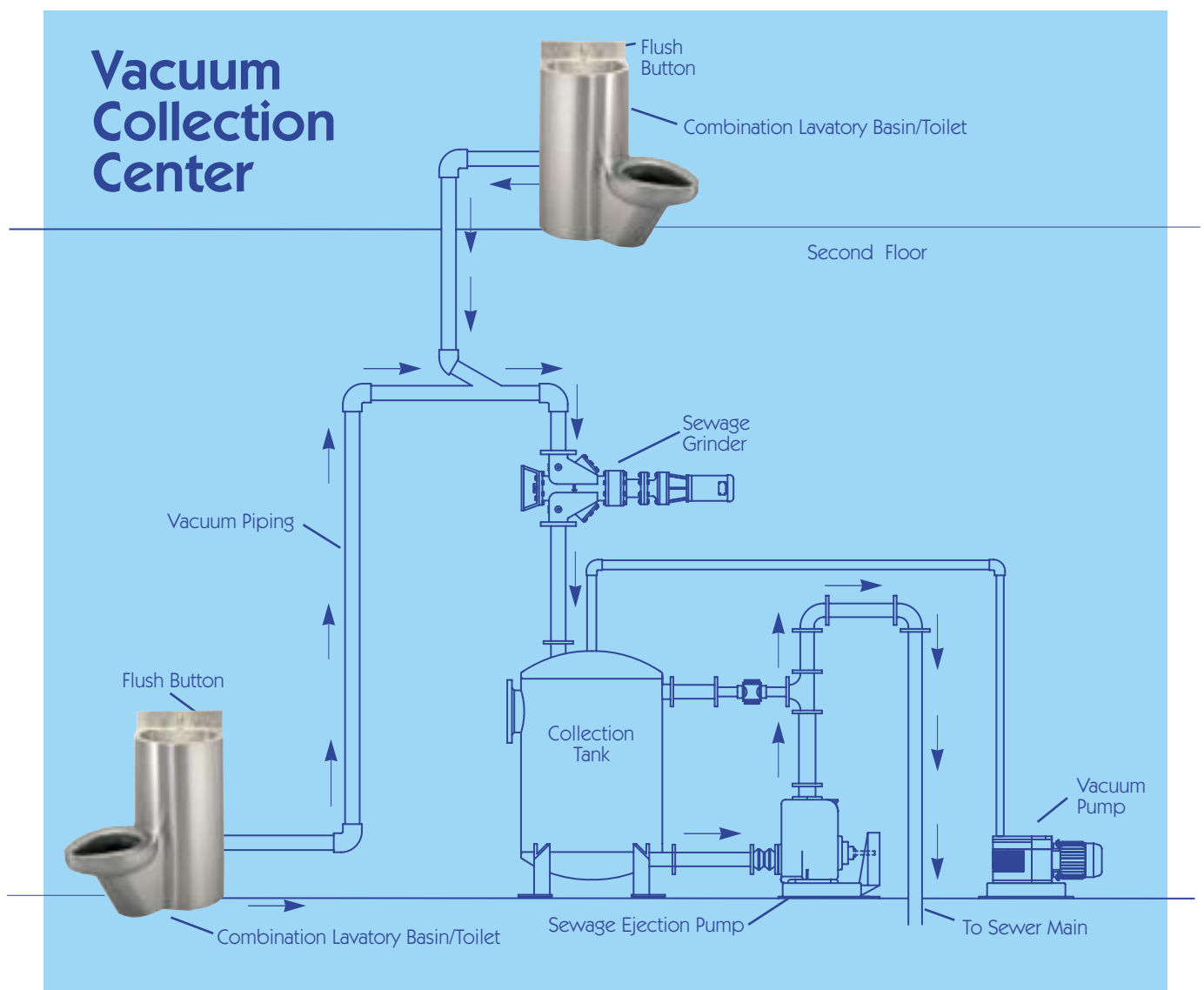
How Does it Work?

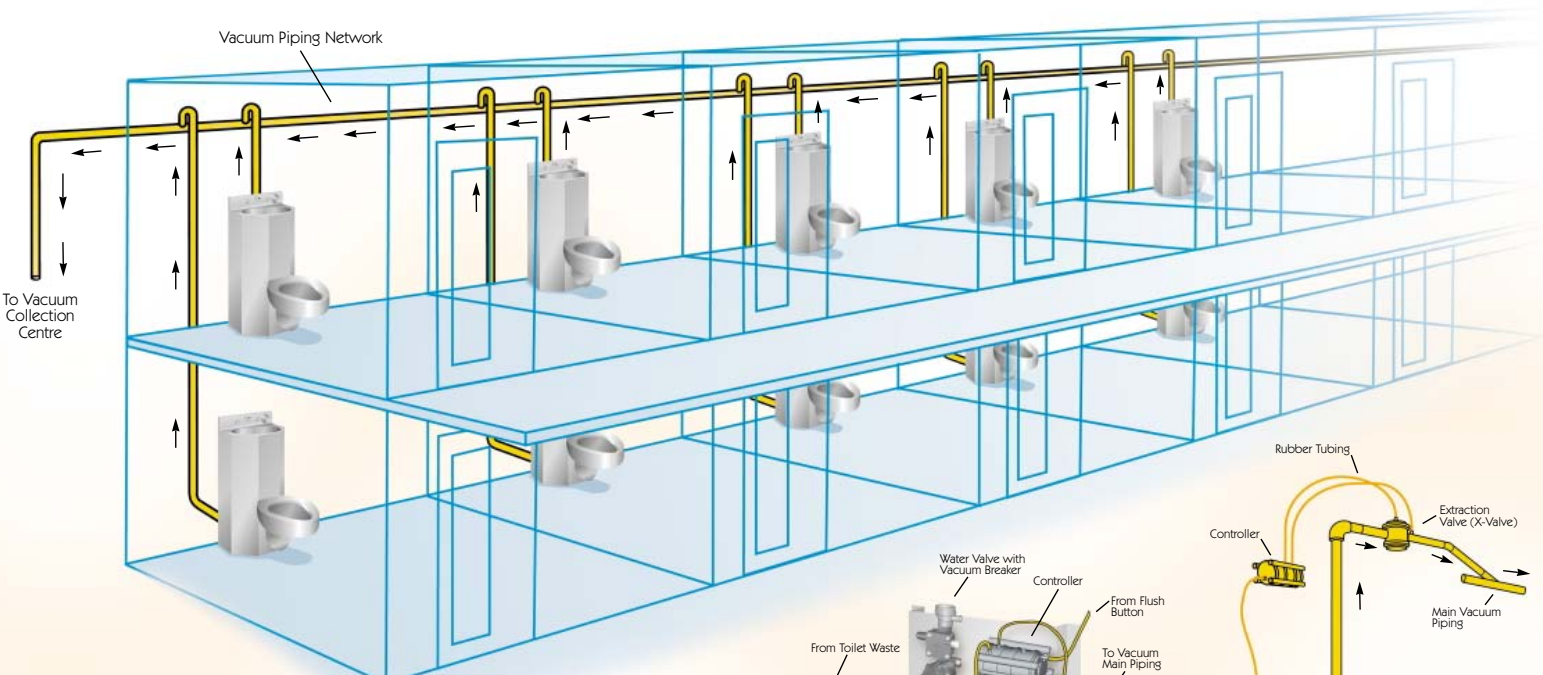
Toilet - When the flush button is activated, the Extraction Valve (X-Valve) opens allowing atmospheric pressure to push the sewage into the piping network and towards the Vacuum Collection Centre (Vac Centre). Simultaneously, a water valve opens and the toilet bowl is rinsed by incoming water and refills the bowl at the end of the flush cycle.

Sinks, Lavatory & Showers - Waste flows by gravity towards a pipe buffer where the level of wastewater triggers open the extraction valve (X-Valve). The wastewater is then forced into the vacuum piping network.

Vacuum Collection Center (Vac Centre) - The Vacuum Collection Centre features:

- Automatic control of the vacuum level is throughout the system, which helps transport the waste through the piping network to the Vacuum Collection Centre.
- Controls operation and coordination of the vacuum pumps, sewage grinders, and sewage ejector pumps. Once the sewage reaches a factory set level in the collection tanks, the sewage is then pumped out into the sewer main.





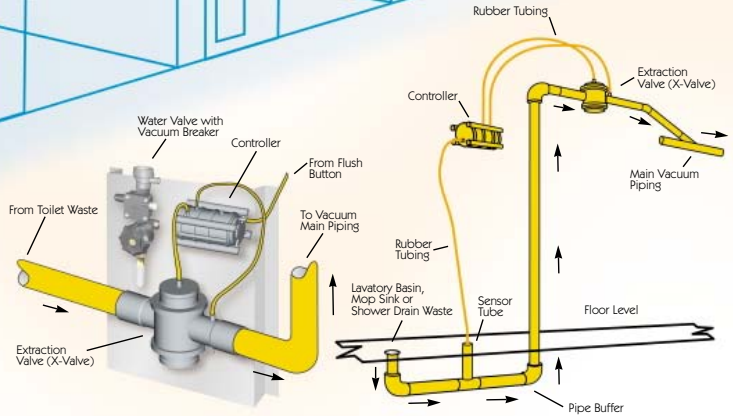
To Vacuum Collection Centre

Vacuum Piping Network

Shown above is a typical prison or jail cell block showing a vacuum piping network. This installation demonstrates the flexibility of a vacuum plumbing system for new construction and remodel projects.

Avac Master-Trol™ Electronic Valve System

The Avac Master-Trol Electronic Valve Control System (optional) can be used to further enhance the capability of the vacuum plumbing system. It can be used to enable or disable multiple water valves, and increase or decrease metering or lockout times of each valve. This kind of control helps improve security, reduce water usage, maintenance and operating costs.

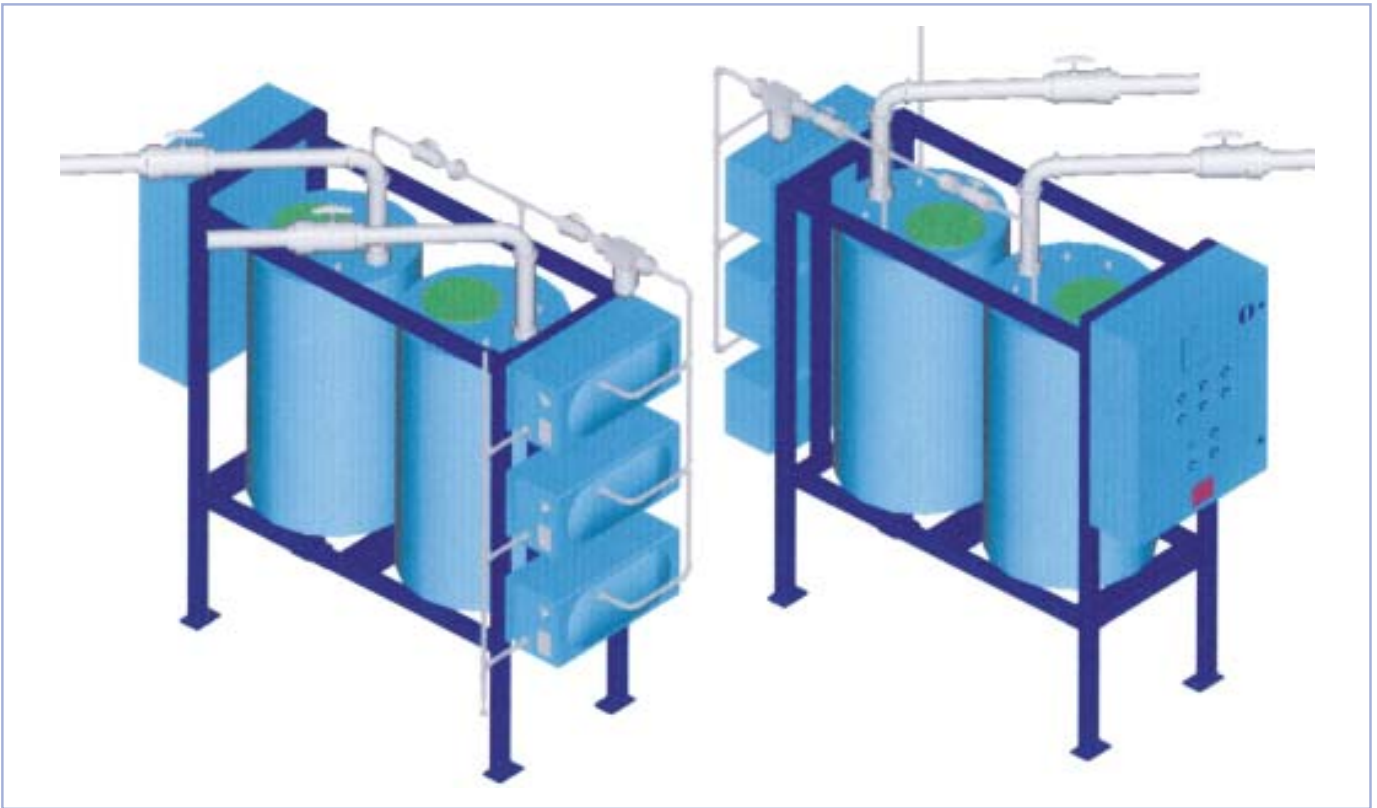


Flush Control Panel

The Extraction Valve (X-Valve) and Controller are mounted on a panel which is attached to a wall inside the plumbing chase. Control is increased because the Extraction Valve (X-Valve) also acts as a positive isolation valve which eliminates communication or passing of contraband between cells.

Pipe Buffer

Wastewater flows into a pipe buffer from a lavatory basin, shower or mop sink. When the pipe buffer fills, the controller, which is connected to a sensor tube, opens the Extraction Valve (X-Valve), where atmospheric pressure forces the wastewater into the main vacuum piping.



ADDITIONAL AVAC SERVICES:

- Installation Manual • Installation Training • Installation Supervision
- Design Manual • Design Assistance
 - System Commissioning
 - Local Product Support
 - Off-Site System Monitoring

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