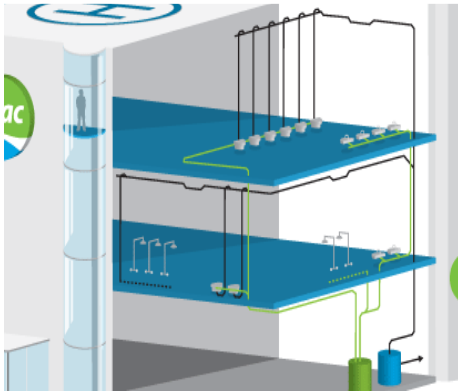


CASE STUDY: EVAC (VACUUM TOILETS) SYSTEM AT A HOTEL



Audit Year: 2010

Business Name: One Aldwych Hotel

Business Type: Hotel

Location: London

GTBS Award: GOLD

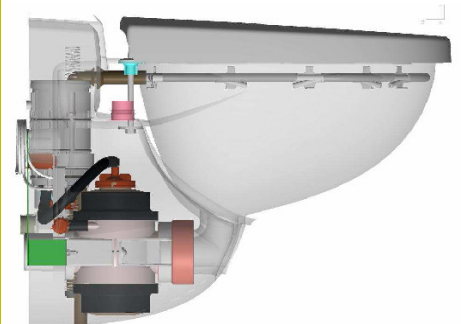
Website: www.onealdwych.com

One Aldwych Hotel in London is an excellent example of a hotel that does not compromise on quality but has environment issues at the forefront of any new development. The hotel has installed numerous measures since opening, reducing the carbon footprint per guest stay and reducing many costs in the business's operations. New technologies and innovative measures have been fully embraced earning the site a GOLD GTBS award amongst numerous other green industry honours. This study focused on the Evac system which is a Scandinavian vacuum operated drainage system minimising water wastage. Normally found on cruise ships or buildings with challenging and complex drainage the system has been adopted by more mainstream buildings with high washroom usage such as hospitals and hotels.

How It Works

The Evac toilet system works by maintaining a vacuum throughout the building's drainage system and connecting to each toilet, shower, sink and bath throughout the complex.

Pushing the flush button momentarily disengages a valve resulting in the air at atmospheric pressure in the bathroom forcing the waste into the vacuum system. 1-1.5 litres of water is simultaneously forced through to rinse the bowl during the process.



Savings

The hotel was forward thinking by installing the EVAC system for the opening in 1998. With 105 bedrooms, the average Evac toilet flush around 1–1.5 litres (as opposed to a standard flush of 6-7 litres) it is estimated that at least 7 million litres or 80% of water has been saved since operation. With water and sewage costs increasing year on year, considerable reductions on utility costs have also been minimised. The vacuum pumping system does use electricity, however over the 105 bedrooms it is estimated at only 5 watt per room per flush.

Pipework systems can be more flexible as the vacuum process reduces the need for standard vertical pipes found behind a toilet or bath. Risers between hotel bedrooms are not needed in the same way - less 'dead space' is created so there is more scope for valuable room space and revenue generation. An increased number of developments beneath the water table can be considered - particularly useful for basement developments in cities where space is a premium.

Other Environmental benefits

In the evacuation, up to 10 litres of air is extracted through the small diameter pipe, minimising smells and reducing risk of viruses and other organisms. The small amount of water and waste extracted at a time cuts demand on the public sewage treatment system.

Noise pollution is minimised as the system only takes around 3 seconds for a flush rather than several minutes for a standard system with a cistern to refill. Greywater (wastewater e.g. from showers and sinks) and blackwater (sewage) can be separated much easier with the vacuum system allowing potential projects such as greywater collection and reuse.

Web Links

European vacuum drainage system: www.evds.org.uk
EVAC main website: www.evac.com