

An aerial photograph of a modern city, likely Dubai, showing a wide highway with multiple lanes and several cars. Tall skyscrapers line the highway, and a mosque with a prominent minaret is visible on the left side of the road. The sky is clear and blue.

epVAC.VIS

the Indoor Vertically Integrated Vacuum
Sewage Collection & Transfer Systems

for
houses,
tower buildings,
hospitals,
schools,



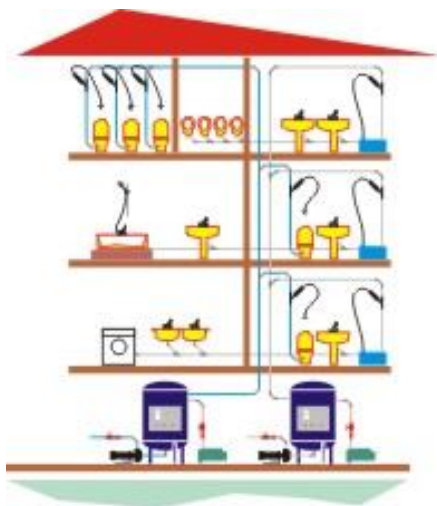
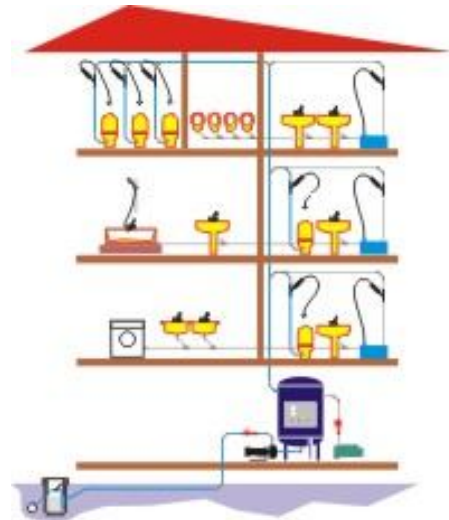
epVAC.VIS, the Technology

epVAC.VIS, the Vertically Integrated Vacuum Sewer collection & transfer systems from **EPECO** is designed and engineered for indoor applications.

How epVAC.VIS system works?

epVAC.VIS systems are available in two configurations:

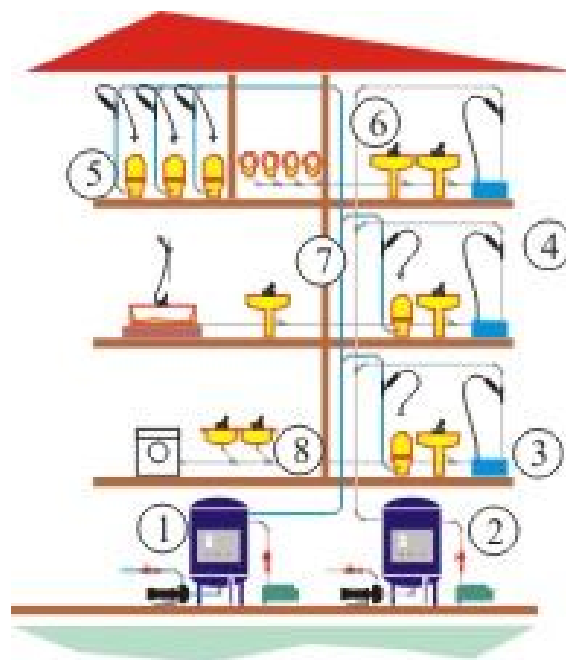
Combined black and gray water networks, where liquid flows by gravity from baths, sinks, bidets and floor drains to the valve package/Auxiliary Collection Basin **ACB**. Liquids & solids from toilets flow under vacuum directly to the Combined Vacuum Power Pack **CVPP**.



In the independent gray and black waters networks, black water is directly transferred under vacuum to the Blackwater Vacuum Power Pack **BVPP**. Graywater is collected under gravity in the Auxiliary Collection Basin **ACB**, thereafter transferred under vacuum in an independent network to the Graywater Vacuum Power Pack **GVPP** .

As the graywater level in the Auxiliary Collection Basin **ACB** rises, the air pressure increases against the pneumatic sensor. At a preset level, the sensor actuates the controller and the Interface Valve **IV** is opened. The graywater will either be transferred-separately-under vacuum, to the Graywater Vacuum Power Pack **GVPP** or alternatively through common network to the Combined Vacuum Power Pack **CVPP**.

Interface Valves **IV** of the vacuum toilets are manually operated. **IV** valves for urinators are either manually or automatically (infra red switch) operated. As soon as the **IV** opens, the liquid is transferred under vacuum, directly either to the Blackwater Vacuum Power Pack **BVPP** or to the Combined Vacuum Power Pack **CVPP**.



- 1 BVPP-Blackwater Vacuum Power Pack
- 2 GVPP-Graywater Vacuum Power Pack
- 3 ACB-Auxiliary Collection Basin
- 4 IV-Interface Vacuum Valve
- 5 Vacuum Toilet
- 6 Graywater Vacuum Transfer Network
- 7 Blackwater & Common Vacuum Transfer Network
- 8 Graywater Transfer Terminal

In large systems, the Vacuum Power Pack **VPP** can be factory assembled tested and delivered to site, ready for commissioning & start-up.



Vacuum Tank+Discharge Pumps



Vacuum Pumps

In small systems with combined gray & black water transfer networks, an integrated Vacuum Power Pack **IVPP** consisting of macerator, vacuum pump and vacuum tank, can be utilized (JETSTM or equal). This will replace the Auxiliary Collection Basin **ACB** and the Combined Vacuum Power Pack **CVPP**.



Vacuum Power Pack



Integrated Vacuum Power Pack **IVPP**
(JETS Standard As Company)

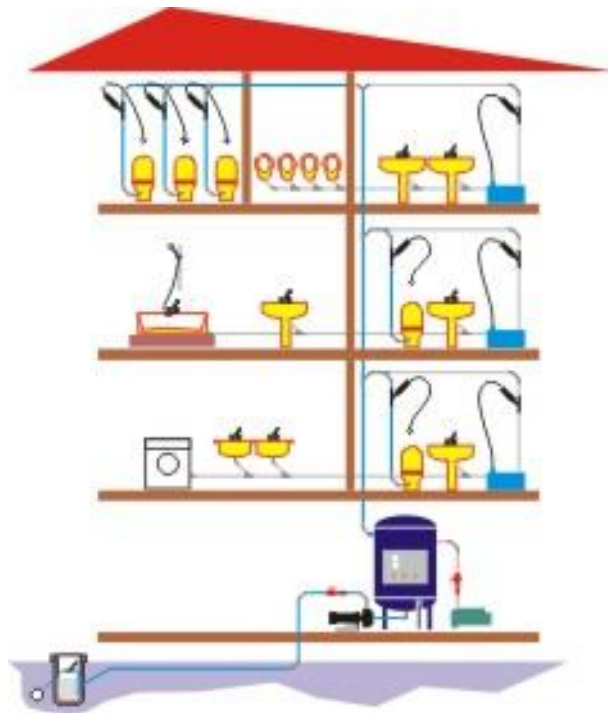


Interface Vacuum Valve

epVAC.VIS, the benefits

- **CONSERVING** the fresh water resources by reducing toilet flushing water to 1-2 liters per flush. The average daily fresh water consumption per capita is reduced 30-35%. Treatment & reuse of black & gray waters may save 65% of the conventional daily fresh water consumption.
- **Low CONSTRUCTION COST** of wastewater plumbing works due to utilizing small diameter Polyethylene uPVC pipes & pipe fittings (32-90 mm).
- **High RELIABILITY** of the wastewater plumbing network-no leakage, no blockage and no clogging.
- **ECO-FRIENDLY** process-aerobic wastewater collection and transfer-no smell and efficient pretreatment for the following wastewater treatment process.
- **VERSATILITY**- allowing for many plumbing configuration options: - combined or separate gray & black water collection & transfer. Several disposal options are also possible: discharge to municipal network or septic tank, treatment & reuse of mixed wastewater for irrigation, treatment and reuse of graywater for plumbing network flushing, floor cleaning, fire fighting, cooling,...etc. Many other combinations are also available.

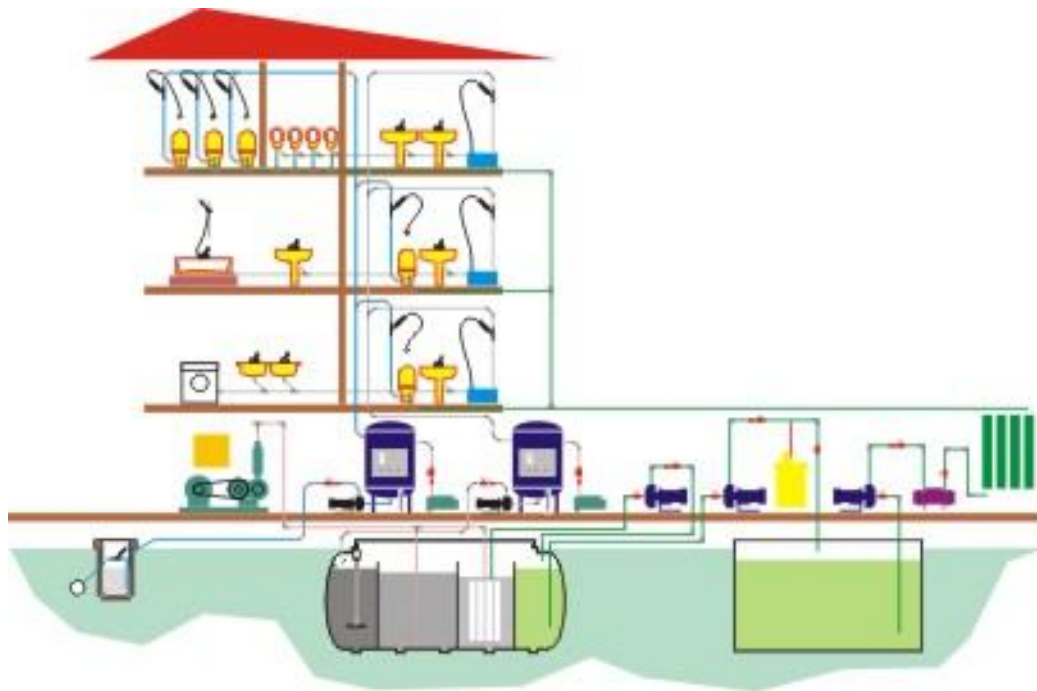
epVAC.VIS, the Applications



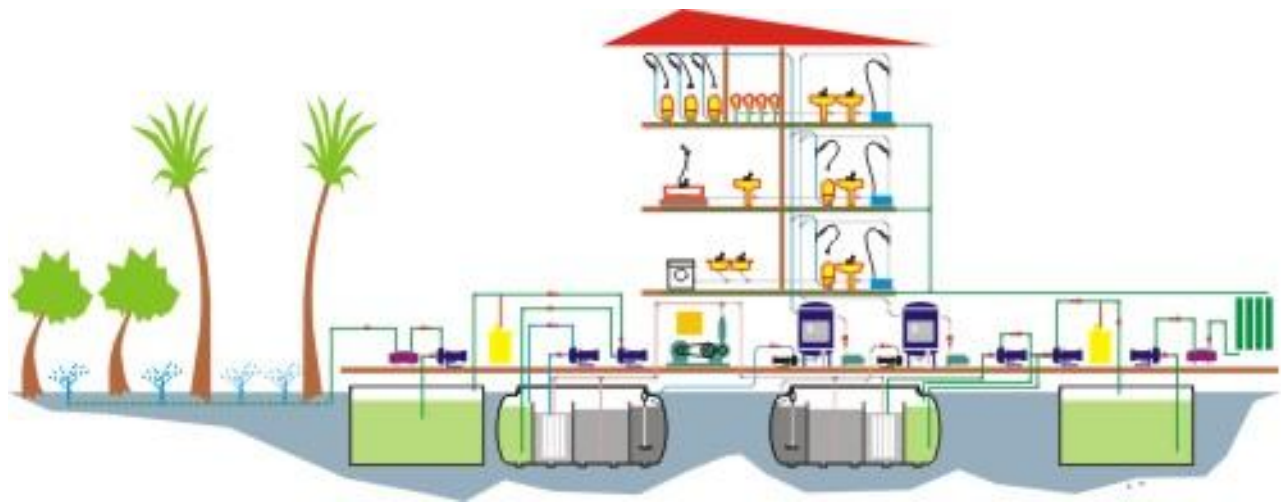
Mixed Gray & Black Waste Water & Disposal
to Municipal Sewer Line or Septic Tank,.....etc.



Mixed Gray & Black Waste Water Collection Networks
Treatment & Reuse of Treated Effluent for Irrigation



Separate Gray & Black Waste Water Collection Networks
Disposal of Blackwater to Municipal Sewer Line or Septic Tank,.....etc.
Treatment & Reuse of Graywater in Toilet &
Urinals Flushing, Floor Cleaning, ... etc.



Separate Gray & Black Waste Water Collection Networks
Disposal of Blackwater to Municipal Sewer Line or Septic Tank,.....etc.
Reuse of Treated Graywater in Toilet &
Urinals Flushing, Floor Cleaning, Irrigation... .. etc.



Separate Gray & Black Waste Water Collection Networks
Reuse of Treated Blackwater in Irrigation.
Reuse of Treated Graywater in Toilet &
Urinals Flushing, Floor Cleaning, Irrigation... etc.



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