

**CLEAN  
REPEATABLE**

**FUTURE READY**

Vacuum Plumbing Systems  
For Design Freedom and Flexible Building Use

**SPEED TO MARKET**

**NEAT TIDY**

**COST-SAVING**

**QUICK Universal**

**CONVERTIBLE**

**Adaptable**

**CONVERT  
ANY BUILDING**

**ELIMINATES  
CONSTRUCTION  
CONFLICTS**

**Future-Proof**

**MODULAR**

**FUTURE FLEXIBLE**

**LESS DISRUPTION**

**Scalable**

**FUTURE READY Convenient**



**MORRIS GROUP**  
INTERNATIONAL



# With Vacuum Plumbing You CAN!



"I would say go towards vacuum rather than gravity...you will get the service needed by AcornVac to help you isolate the problem and you can move forward with your business with little interruptions. The customer service is just phenomenal."

**-Gabriel Montoya,**

*Target Executive Team Leader Remodel*

"Working in detention facilities and mental health treatment facilities, it's very common to have flooding...the residents there will intentionally plug up commodes and as a result an unfortunate occurrence will be massive flooding throughout. With a vacuum plumbing system, we did not experience any of that."

**-Stephan Selbert**

*Maintenance Superintendent, East County Detention Facility,  
County of Riverside, CA*

**AcornVac® vacuum plumbing systems address many challenges associated with gravity plumbing systems, offering benefits in a variety of areas.**



## WITH ACORNVAC PLUMBING YOU CAN:

- Eliminate floor cutting and the need to x-ray the slab to find a suitable place for waste piping.
- Route waste piping overhead and around obstacles.
- Eliminate the need for continuous slope on waste piping.
- Reduce labor and material costs.
- Reduce water usage for toilets by up to 68%.
- Reduce or eliminate main waste line blockages.
- Install drainage piping without disrupting floors above or below.
- Enjoy the ability to repurpose space and move plumbing fixtures quickly and easily.
- Eliminate concerns with waste piping leaks. With vacuum plumbing, air is drawn into the system, and wastewater does not leak out.
- Know that you are getting a plumbing system with a proven track record and hundreds of installations, small and large, worldwide.

"I've looked at hundreds of buildings trying to figure out how to fit medical into them and one of the first things you look at is the plumbing system and you can cross it off and move on. With vacuum plumbing it doesn't matter what the building is, you will be successful."

**-Randal Brand, MBA, RA**

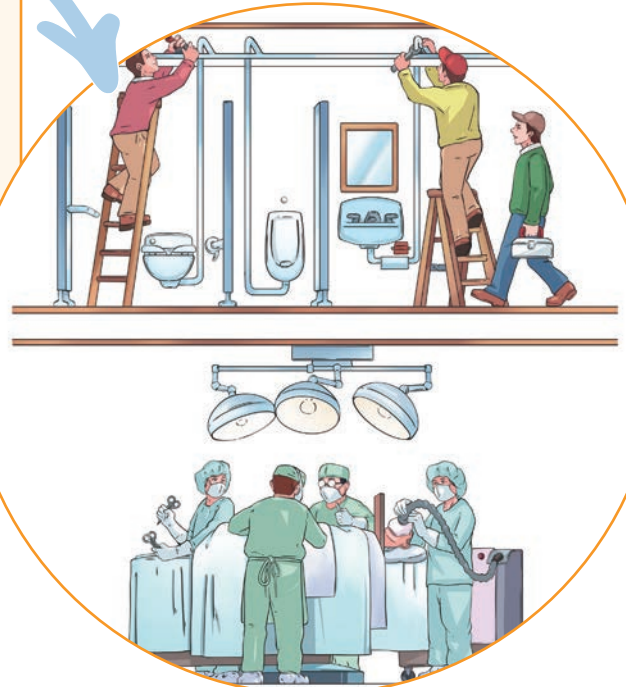
*Healthcare Facilities  
Strategy Consultant*



"[Vacuum Plumbing] opened the possibilities for design because vacuum is vertically lifted as opposed to gravity sewage, so it really changed how that system could be installed -- you can put a toilet in virtually any location because it's going into the ceiling."

**-Stephan Selbert**

*Maintenance Superintendent,  
East County Detention Facility,  
County of Riverside, CA*





## Vacuum Plumbing:

# How it Works

The AcornVac® system uses differential air pressure to transport waste from plumbing fixtures, such as toilets, urinals, sinks, and showers, through a piping network to a central point from which waste is discharged into the facility's sewer or waste treatment plant.

## Vacuum Center

The vacuum center is the heart of the system. It controls the vacuum pumps to create vacuum pressure in the waste piping, allows incoming air to assist in drainage from the toilet when it is flushed, and empties accumulator tanks that collect wastewater from other sources.



# AcornVac

Inc.

OVERHEAD PIPING NETWORK



1. BestCare® Suite
2. The Dignity Suite®
3. Bariatric Suite
4. Surgical Suite
5. Rehabilitation Environment
6. ADA Suite
7. ConTrols® BASyC® system
8. AcornVac vacuum plumbing systems
9. Cafeteria



# VACUUM PLUMBING EXPLAINED

Waste piping can be routed anywhere - through walls, above the ceiling, and around any obstruction.



**MORRIS GROUP**  
INTERNATIONAL

PIPING IS SEPARATED  
FROM ADJACENT FLOORS.



**WHEN THE TOILET IS FLUSHED, THE VACUUM VALVE OPENS AND POSITIVE AIR PRESSURE MOVES INTO THE BOWL, CARRYING WASTEWATER VERTICALLY INTO OVERHEAD WASTE PIPING, WHICH LEADS TO THE VACUUM CENTER.**

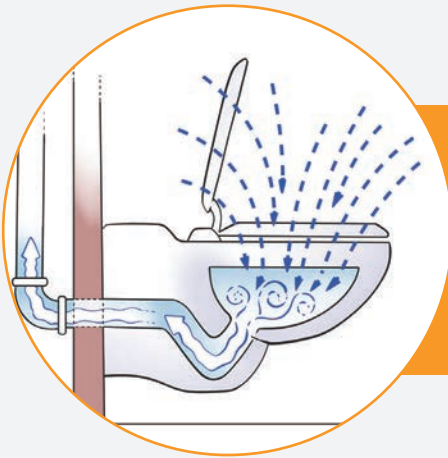


The Vacuum Center is at the heart of the system. Vacuum pumps create negative pressure in the waste line, drawing waste into the collection tanks, which are discharged to sanitary sewer lines.



# BENEFITS OF VACUUM PLUMBING

Toilets use as little as **0.26 gallons** per flush, saving up to **68%** over standard gravity toilets.

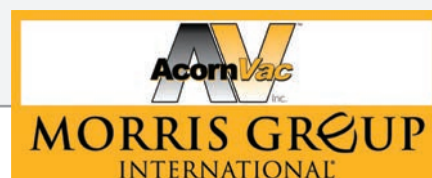


Vacuum plumbing draws air in and flushing produces no overspray, which leads to a healthier and safer environment.

VACUUM TOILETS ARE DESIGNED TO PROVIDE AN EFFECTIVE AND ENVIRONMENTALLY FRIENDLY FLUSH REQUIRING LESS THAN 0.35 GALLONS PER FLUSH.

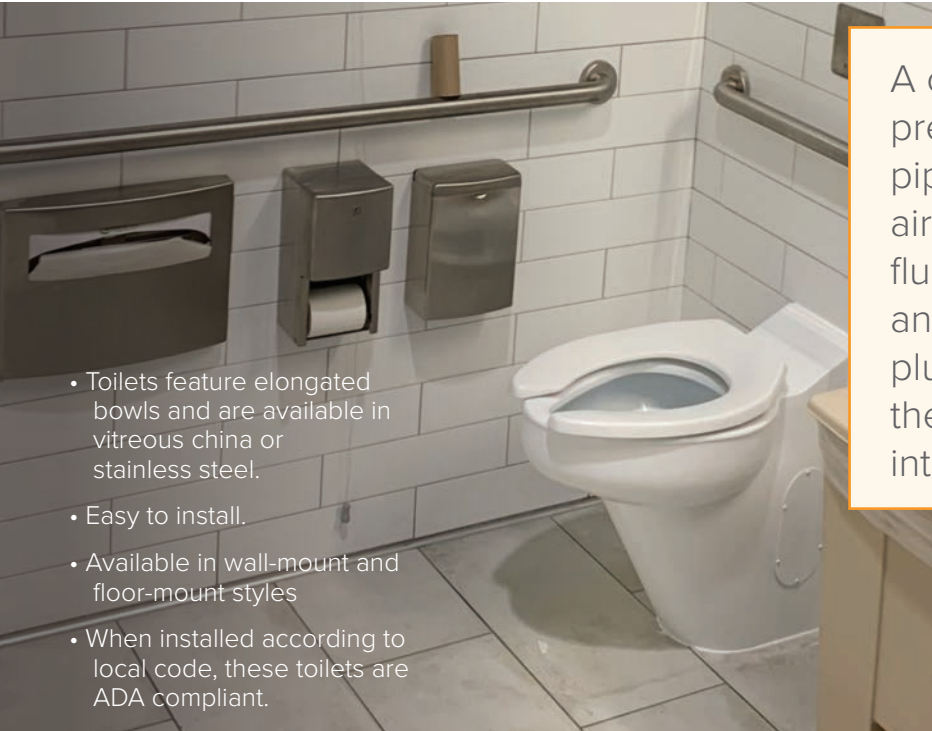


The differential between atmospheric and vacuum pressure moves waste through the system and assists with reducing costs associated with clearing main waste line blockages.



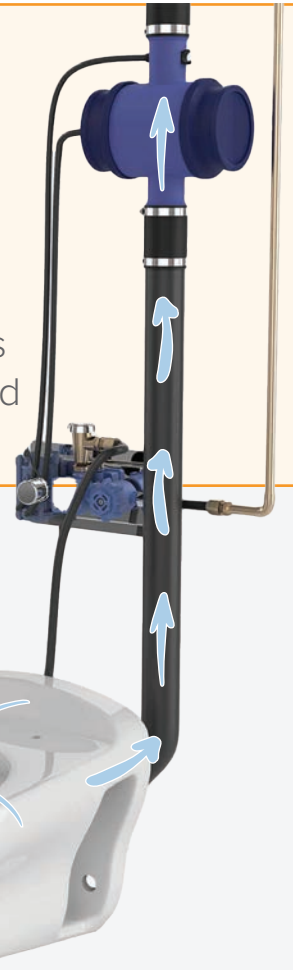


# VACUUM TOILETS



- Toilets feature elongated bowls and are available in vitreous china or stainless steel.
- Easy to install.
- Available in wall-mount and floor-mount styles
- When installed according to local code, these toilets are ADA compliant.

A constant vacuum pressure in the waste piping system draws air into the toilet when flushed; this eliminates any splash or flush plume from the bowl as the wastewater is pulled into the piping system.



**EACH VACUUM TOILET FEATURES  
A WALL WASTE OUTLET FOR VACUUM.**



**MODEL NO. 2109-W-1**

OFF-FLOOR,  
WALL WASTE TOILET



**MODEL NO. 2109-ADA-W-2**

ON-FLOOR, ADA HEIGHT,  
WALL WASTE TOILET



**MODEL NO. 2140**

REAR/FRONT MOUNT, ON/OFF  
FLOOR, WALL WASTE, BLOWOUT JET,  
COMMERCIAL STAINLESS STEEL TOILET

## **INFECTION CONTROL**

A vacuum flush toilet eliminates the "flush plume" thus reducing the spread of germs.

*NSF® test confirmed no detectable overspray.*

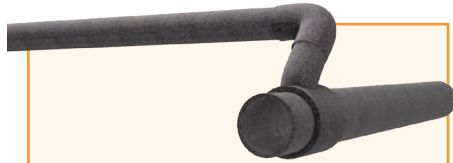
## **ADAPTIVE DESIGN**

Eliminating the need for under slab or under floor piping means greater flexibility in plumbing layout and adaptive reuse of space.

# SINKS, SHOWERS, AND OTHER FIXTURES

WITH VACUUM PLUMBING SYSTEMS

## WASTE PIPING



When the waste valve opens, air is pulled into the accumulator and vertical piping, pulling accumulated waste out. The incoming air vertically carries the wastewater into the overhead piping and then into the vacuum center waste collection tank for discharge by gravity to the sewer system.

## EXTRACTION VALVE



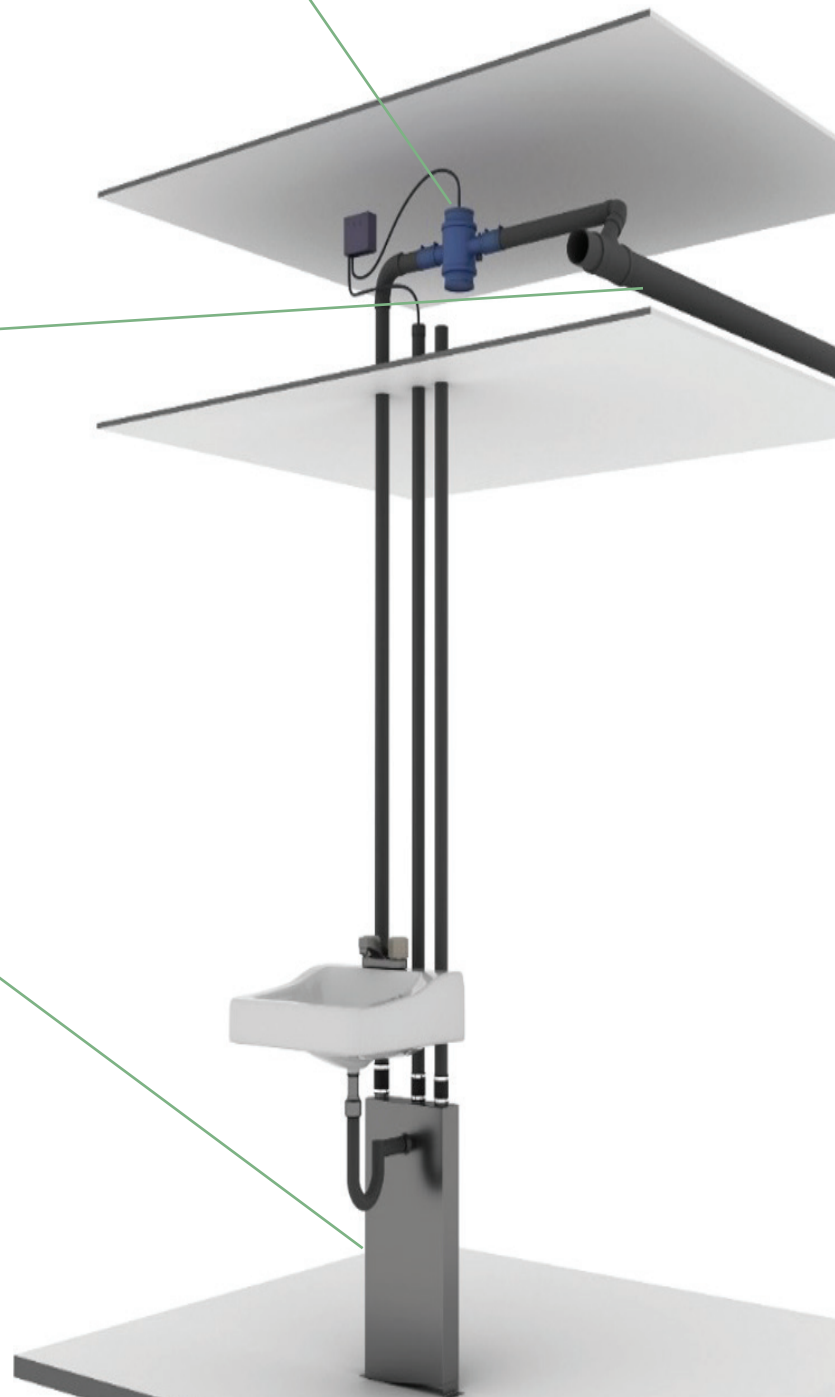
As waste fills the accumulator, it sends a signal to the controller to open the extraction valve.

## ACCUMULATOR



As waste drains from the fixture, it is temporarily collected at the accumulator.

This accumulator can be designed inside of a standard 4" wall with 16" stud spacing or inside a fixture or fixture cabinet.





# SUPERMARKETS AND RETAIL WAREHOUSING

WITH VACUUM PLUMBING SYSTEMS

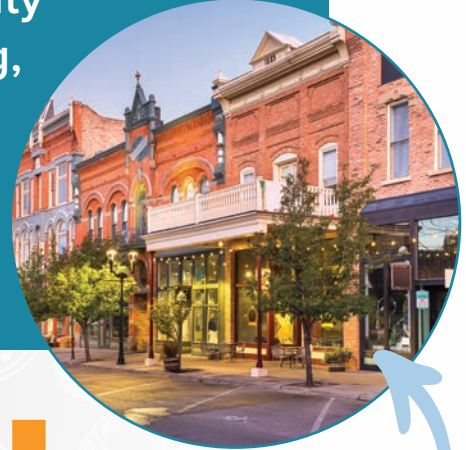
EXTRACTION VALVE

WASTE PIPING

ACCUMULATOR

All piping is shown behind walls.

Vacuum plumbing can be used in many places that it would be very difficult or impossible to use gravity plumbing, opening up real estate options.



Vacuum plumbing can reduce remodeling costs and speed up time to completion



**NO LEAKS—**  
AIR IS DRAWN INTO THE PIPE INSTEAD OF LETTING WATER OUT.

# DESIGN FOR FUTURE SPACE FLEXIBILITY

**PLUMBING FIXTURES CAN BE PLACED AND RELOCATED IN A FRACTION OF THE TIME AND COST WITH VACUUM PLUMBING.**

Vacuum plumbing runs waste up and over rather than down and under your finished floor. This gives you unlimited freedom in space layout and design, reducing construction time and costs.



**CLINICS**

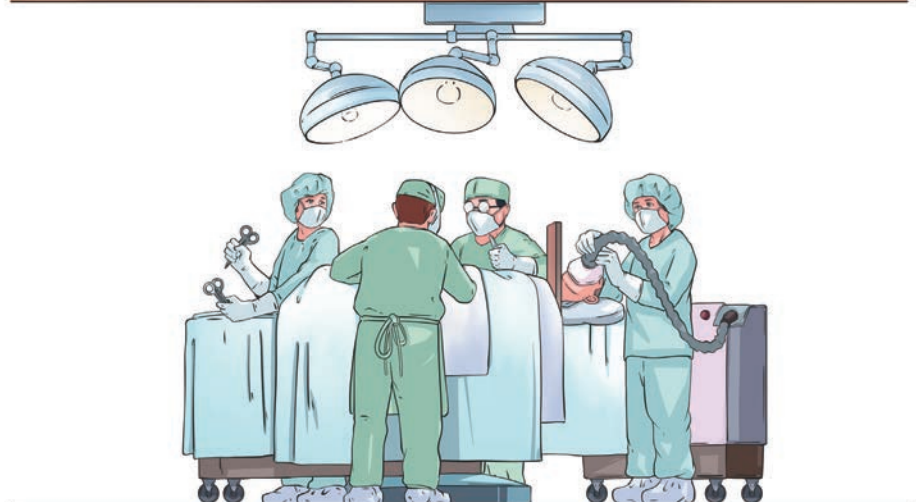
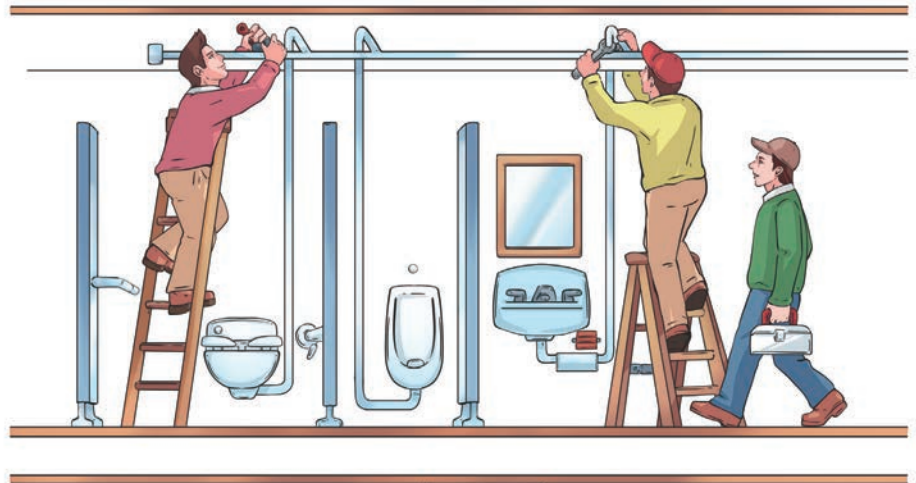


**MEDICAL**

CHANGE A **MALL** INTO A **DISTRIBUTION CENTER**.

CHANGE AN **OFFICE** INTO A **BATHROOM** OR **PATIENT ROOM**.

**Vacuum plumbing allows work to continue without interruption.**



WATCH THIS VIDEO TO SEE A **SPACE CHANGE**



WATCH THIS VIDEO TO SEE A **FACILITY CHANGE**





# VACUUM PLUMBING DESIGN AND CONSTRUCTION



## NO SLOPE

Waste piping does not require a continuous slope and can be routed around obstacles.

## AVOID OBSTACLES

Keep all drainage piping in the same level of the building by routing drainage overhead. No more core drilling or saw cutting.

## SMALLER PIPE

Water supply and waste pipe size is reduced and vent stacks are eliminated.

## REDUCED SPACE

Run long waste pipe runs in a shallow space with no pumps.

# VACUUM PLUMBING DESIGN AND CONSTRUCTION



## GO MODULAR

Simplify the construction process. The piping can be installed inside modular walls inexpensively.

Vacuum plumbing systems readily adapt to a variety of wall types and spaces, including prefabricated walls.

## FUTURE-READY

Refit your building or a new space based on services, not plumbing.

# DESIGN FOR SECURITY AND WATER SAVINGS

Gravity toilets are often used for communication between inmates, and to pass contraband. Inmate activity also contributes to waste line blockages. Vacuum plumbing systems prevent cell-to-cell communication or the passing of contraband. Vacuum plumbing also reduces labor costs associated with waste line blockage.



## GRAVITY PLUMBING



I'M SO GLAD  
WE DON'T HAVE  
ACORNVAC



CONNECTED PIPING MAKES COMMUNICATION POSSIBLE

## VACUUM PLUMBING



SEPARATE STACKS CLOSE  
OFF COMMUNICATION





# CUT THE COST AND NOT THE CONCRETE

*SPEED UP YOUR CONSTRUCTION CYCLE*



## Manufacturing Divisions

### WATER CONTROLS



### DRAINAGE



### PLUMBING FIXTURES & ACCESS



### FIRE PROTECTION



### MANUFACTURING SUPPORT



## Sales & Distribution

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