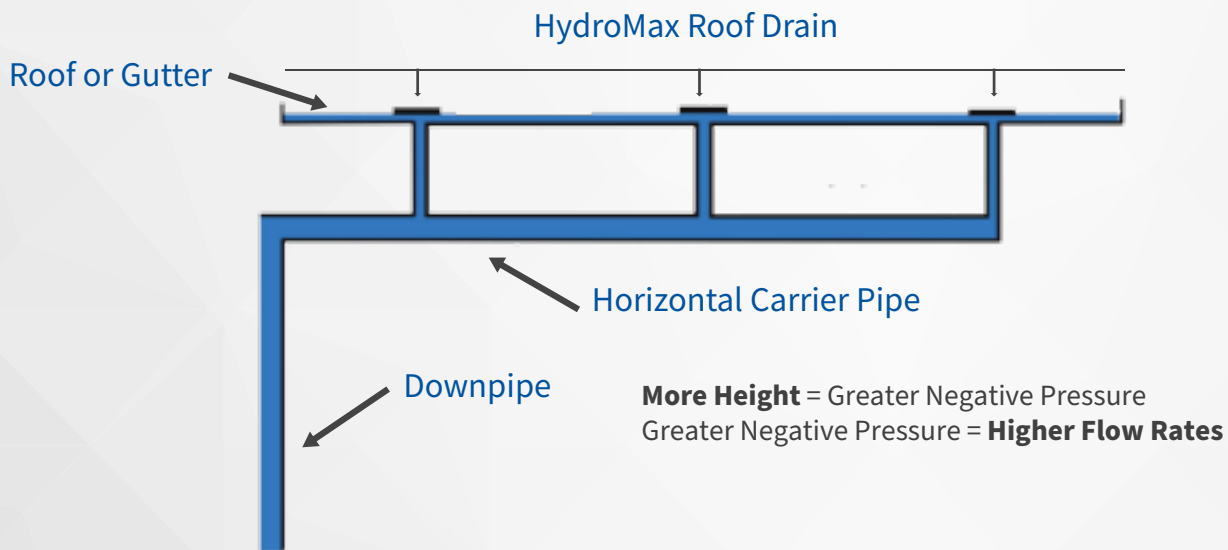


What is Siphonic Drainage?

Siphonic storm drainage is an alternative to traditional Gravity storm drainage. Siphonic drainage offers technical benefits, design benefits, and most importantly numerous cost savings benefits.

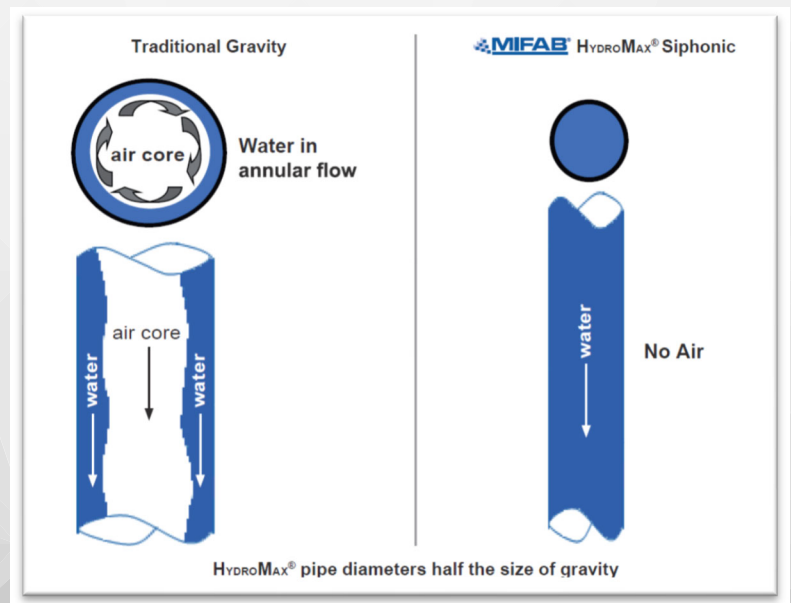
Siphonic drainage uses the natural height of the building to generate a negative pressure which makes a siphon effect on the roof having the drain act as a “shop vac”. Siphonic drainage is the same concept as taking gas out of your dad’s car. “Put the hose in and start sucking, once the fluid starts coming through it continues pulling the gas from the tank,” that is exactly what is happening on the roof.



Cost Savings Benefits?

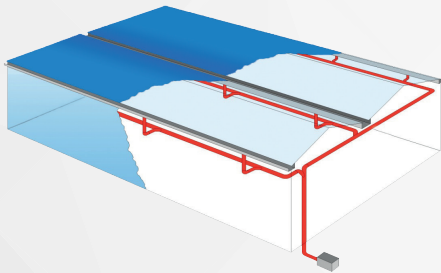
Siphonic drains utilize a baffle plate to eliminate air from entering the system; whereas gravity drains require 2/3rd's air mixing with 1/3rd's water to function.

Because of this, Siphonic drainage can size piping half the diameter that traditional gravity drains use because the entire pipework is full of water (not needing room for the air)- this the first major cost savings advantage of using Siphonic drainage. In addition to using half the diameter pipes, cost savings is achieved from smaller fittings, couplings, hangers and insulation.



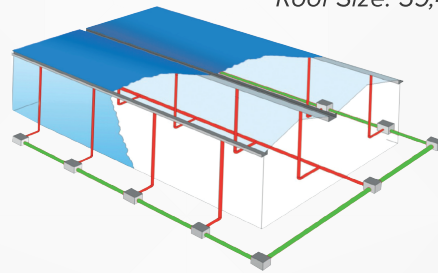
Design benefits?

Gravity drainage requires a slope to function. The issue with slope is that the pipe can only travel so far before getting into livable space; the Gravity drainage then requires a vertical drop to ground level where the floor needs to be excavated for the piping to connect into the civils (still requiring further slope). Siphonic drainage has the piping run completely flat- a huge difference. By eliminating pitch, the pipe can stay up in the ceiling and run to an exterior wall before dropping in the vertical- this saves an enormous amount of cost by not having to excavate inside the building.



Siphonic Layout

- ✓ 1,000 ft. of pipework
- ✓ 3" to 8" diameter



*Roof Size: 59,400 sq ft.

Gravity Layout

- ✗ 1,600 ft. of pipework
- ✗ 6" to 18" diameter

Equally important, gravity dictates where the discharge point must be in traditional Gravity storm drainage; a design using Siphonic drainage allows the freedom to decide where that discharge point should be. This allows the elimination of numerous down pipes, collection of more drains together eliminating unneeded runs, both of which reduce material cost and labor.

Technical Benefits?

Siphonic drainage is overwhelmingly more efficient than Gravity drainage. At 2" of ponding a 6" gravity drain can discharge 75gpm; given the same 2" of ponding a 6" Siphonic drain discharges 400 gpm (and up to 1820gpm at maximum capacity). This allows the roof to discharge at a much higher rate leading to reduced ponding which creates a safer overall building. Less roof drains are needed to cover the same roof area which means less roof penetrations. A reduced number of roof drains contribute to cost savings for less material costs, less labor installing the roof drains- cutting holes in the roof/attaching the membrane, and less piping overall to connect the system.

3" Drain			4" Drain			5" Drain			6" Drain		
Depth	Gravity	HydroMax®	Depth	Gravity	HydroMax®	Depth	Gravity	HydroMax®	Depth	Gravity	HydroMax®
1"	25 GPM	75 GPM	1"	25 GPM	93 GPM	1"	27 GPM	115 GPM	1"	15 GPM	140 GPM
2"	87 GPM	310 GPM	2"	90 GPM	350 GPM	2"	100 GPM	350 GPM	2"	75 GPM	400 GPM
3"	214 GPM		3"	215 GPM	785 GPM	3"	230 GPM	890 GPM	3"	210 GPM	990 GPM
4"	225 GPM		4"	232 GPM		4"	295 GPM		4"	250 GPM	1580 GPM
5"	231 GPM		5"	240 GPM		5"	440 GPM		5"	490 GPM	
6"	247 GPM		6"	252 GPM		6"	720 GPM		6"	715 GPM	