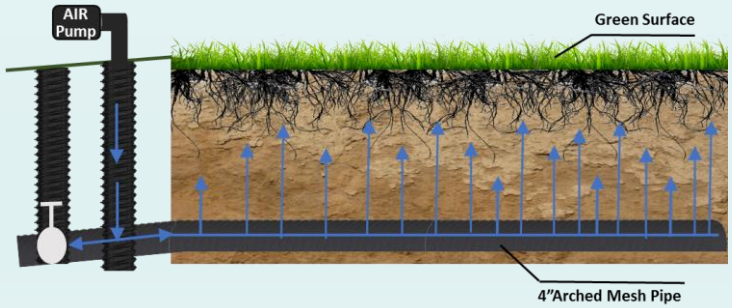
ECO-MESH
Water Solution

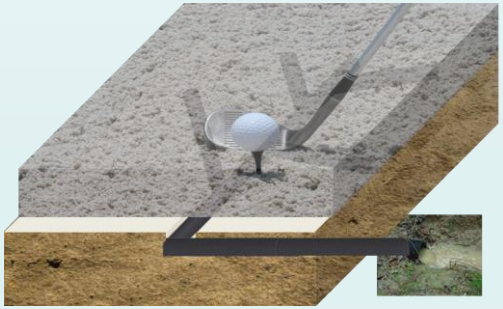
Underground Water saving irrigation & drainage facility

AMPS-Arched Mesh Pipe System

Golf Course Applications



Green ventilated irrigation & drainage



Bunker drainage

Fairway irrigation & drainage

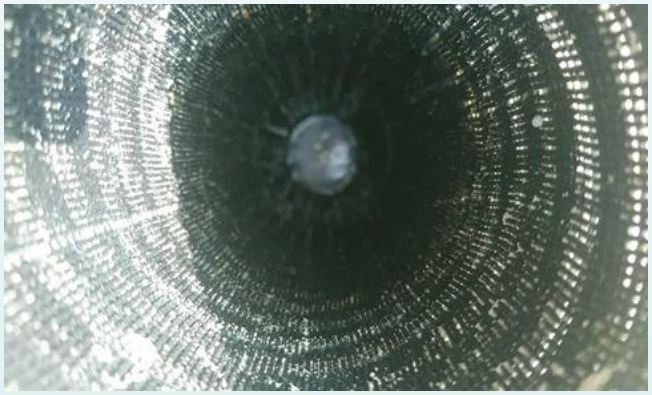
Arched Mesh Pipe System-Materials Unique Characteristics

Arched Mesh Pipe

Arched Mesh Pipe–Unique Characteristics

"Arched Mesh Pipe System" Irrigation water through Arched Mesh Pipe into the soil, using soil capillary action, supply to the root cluster area. Save 50% irrigation water, fertilizer effect increase 40 %, reduction in irrigation manpower 60%. Arched Mesh Pipe is a new type of drainage pipe that remains clog-free without additional filter material required.

Drainage Mesh Well
Anti-Clog Model experiment



Drainage Mesh Well
Anti-Clog Field experiment

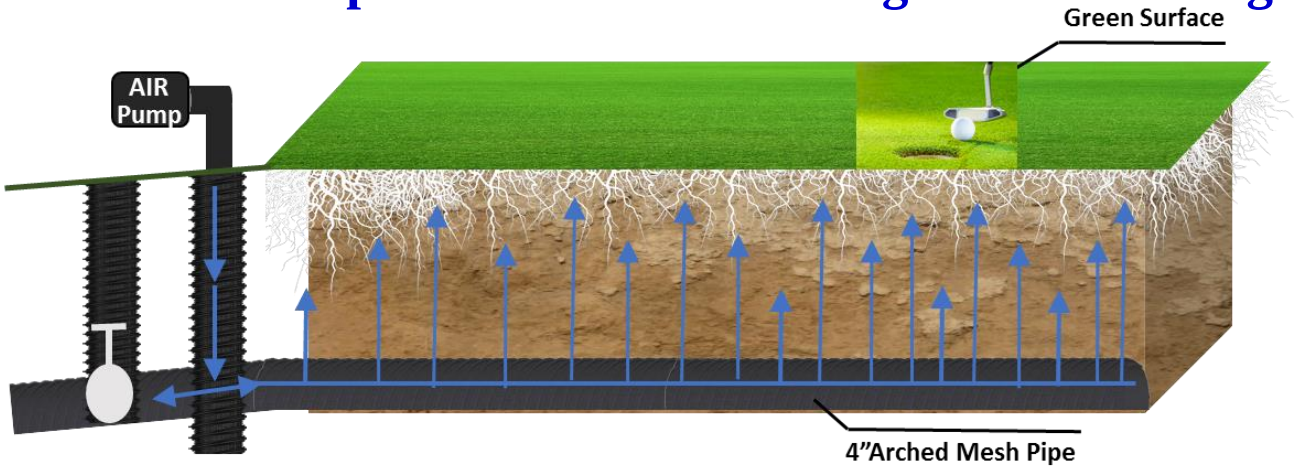
Drainage Mesh Wells–Unique Characteristics

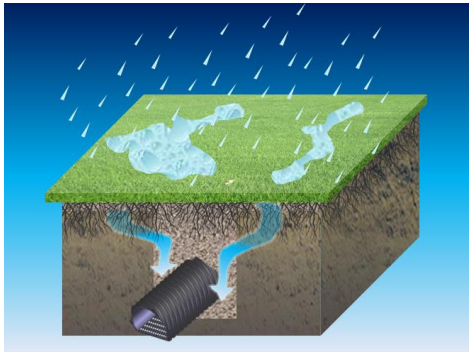
The sidewall openings are high-density mesh design.

The sidewall has T-type thread design and high compressive resistance.

Drainage Mesh Pipe sidewall is Anti-Clog and minimizes soil entry without extra filter material, such as non-woven fabric.

Arched Mesh Pipe Green ventilated irrigation & drainage





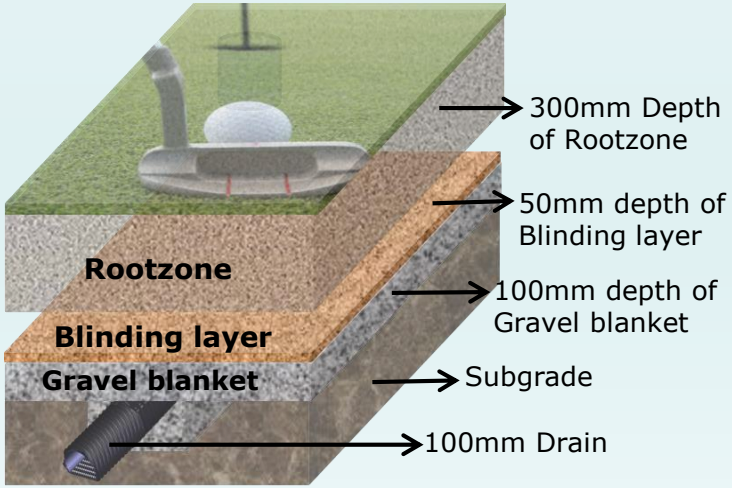
All greens have drains below the surface to help remove excess water from the greens quickly. This drainage system allows our greens to stabilize quickly after heavy rains. Some of these drains lead directly to the body of water. Unfortunately, new research suggests that these immersed drains can cause serious problems. Water can be retained in the pipeline, trapping gases such as hydrogen sulfide, methane and nitrogen from the decomposition materials in the pipeline. (Remember: plants need oxygen to complete the breathing process.) When organic matter breaks down, they can consume a small amount of oxygen that may be present in these drains, after which the process continues to anaerobic. In the past few weeks, crew members have been installing components that can solve these problems. Valves and vents are placed on pipes near the body of water, allowing these gases to escape from the pipe before entering the soil below the green. From this installation, we can also close the newly installed gate valve and blow fresh air (using a backpack blower) into the drain to allow oxygen-enriched air to pass through the pipe. This process also helps to reduce soil temperature during hot summer days.

Arched Mesh Pipe Green ventilated irrigation 、drainage、 Ventilation

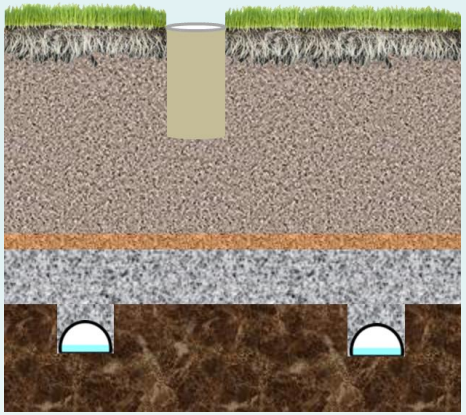
The main key to maintaining healthy greens is irrigation, drainage, ventilation, and fertilization. Most of the current irrigation uses high-pressure sprinkler systems, draining pipes, and fertilizing the ground.

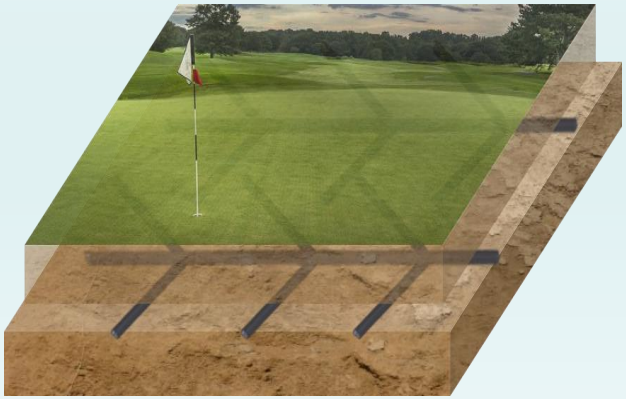
Green underground irrigation:

- They are water-efficient ,use between 40 ~ 50% less water than a conventional garden bed.
- Watering from the bottom up prevents the evaporation of surface water.
- Harder for weeds to establish as the soil on the surface is drier.
- Very labor-efficient, they are self-watering , so it is possible to go away for two or three weeks at a time without your garden bed drying out.
- They can be watered by a low pressure water system. It can be directly connected to a water tank without the use of a pressure pump.
- They provide a lot of drainage when there is a heavy downpour.
- Large reservoir of water reduces the need for frequent watering.
- Evaporation is reduced to a minimum with thick mulching.
- Harder for weeds to establish as the mulch covered surface is drier.
- Soil life is improved. Nutrients are not flown away to the subsoil when the garden bed is watered.
- No salting and evaporation; no mineral is left in the soil.
- No permanent stale water; there is no mosquito larvae or anaerobic conditions.



The USGA Golf Putting Green Specification

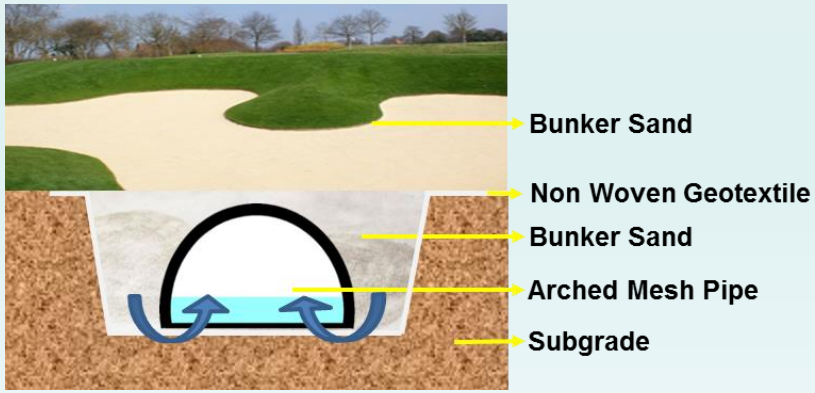




Arched Mesh Pipe System – Bunker Drainage

Arched Mesh Pipe using water infiltration and soil gravity separation principle, such as non-woven filter without clogging is not easy to produce, ecological engineering construction, long life, is to solve the problem of clogging the underground drainage pipe through the best set of drainage materials.
The Arched Mesh Pipe is directly buried, the pipe is not blocked, the construction cost and the filter material cost are saved, and the sand is not lost due to rain, and is the best material for the sand pit.

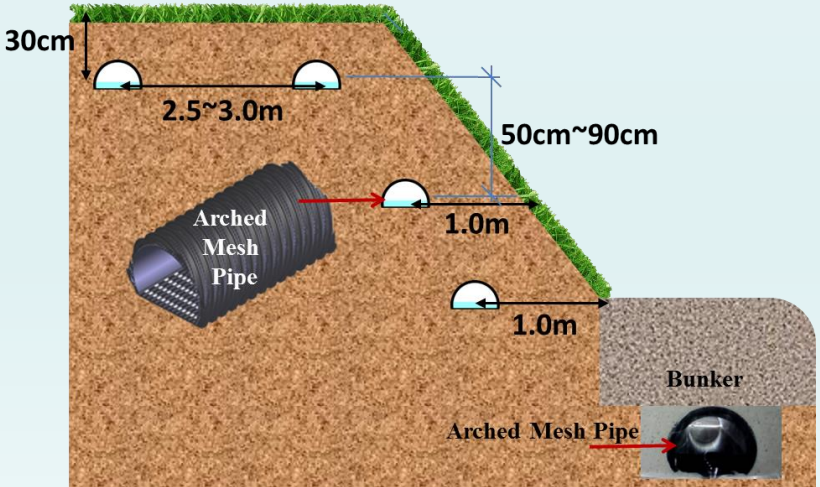
Arched Mesh Pipe Bunker Drainage
Experimental film



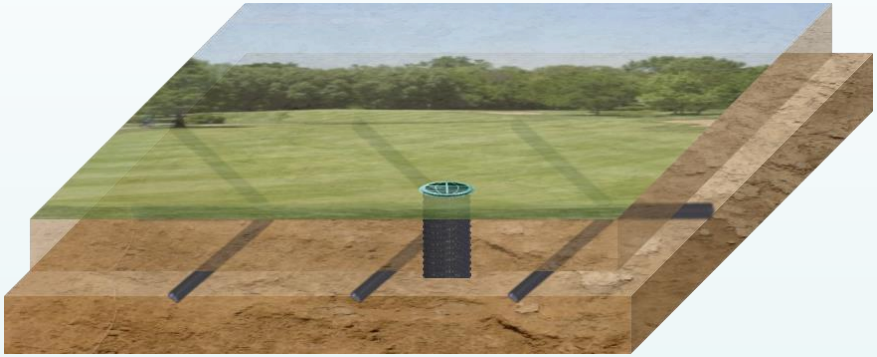
Arched Mesh Pipe System –Slope Irrigation Applications

The slope of the tee or the slope of the bunker is sprinkled with water spray. The water is lost with the slope, and it is difficult to reach the root. The turf of the slope is withered and the slope is easily washed by the rain, resulting in soil landslide.

The underground irrigation and drainage system of the Arched Mesh pipe allows the irrigation water to infiltrate into the soil through the infiltration pipe, and utilizes the capillary action of the soil to replenish the water to the root group.



Arched Mesh Pipe System – Fairway, Teeing area applications

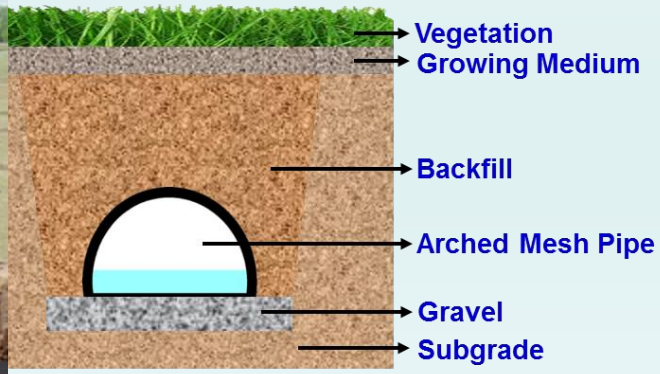


Arched Mesh pipe underground irrigation drainage system (AMPS) water non-pressurization and gravity-driven management system, irrigation water infiltrated into the soil through the infiltration network pipe, the use of soil capillary action, replenish water to the root group area. It can save 50% of irrigation water, increase fertilizer efficiency by 40%, and reduce irrigation manpower by 60%.

Arched Mesh pipe does not require filter materials such as gravel and non-woven fabric, and the pipe does not block.

Golf course fairways and teeing areas generally use permeable drain drainage, plus high-pressure spray watering system, use Arched Mesh pipe underground irrigation drainage system to reduce investment costs, water saving, energy saving, fertilizer saving, no irrigation time limit, easy management and maintenance .

The underground irrigation drainage system uses capillary action to irrigate from the ground up, the ground is moist, the surface of the earth is dry, so its weeds are not easy to grow, and because the surface is dry, the air environment is also very dry, so compare There is no problem with pests and diseases.



Advantages of Arched Mesh Pipe Underground Irrigation and Drainage

AMPS- main functions:

Irrigation: Irrigation water through Arched Mesh Pipe into the soil, using soil capillary action, supply to the root cluster area.

Drainage: Arched Mesh Pipe penetration exclude supersaturated soil water and high water table.

Retention: let rainwater penetration temporarily stored in the network, and then slowly infiltrate natural way to penetrate the soil.

Saving energy: Save 50~80% irrigation water, fertilizer effect increase 40 %, reduction in irrigation manpower 60%.

Reduce the heat island effect: Arched Mesh Pipe provides underground space to allow air convection, reduce surface temperature, reducing heat island effect.

Mitigation subsidence: Arched Mesh Pipe to promote rainwater infiltration, groundwater recharge, slow subsidence.

Dengue prevention: Subsurface irrigation, surface is dry, it will not produce mosquito breeding problem.

Create a comfortable environment for the growth of plants: Arched Mesh Pipe underground space in soil moisture management, drainage, irrigation, fertilization, ventilation, temperature control, sterilization, ranked salt and other functions to create a comfortable environment for the growth of plants.