

ORGANIZZAZIONE
ORLANDELLI

Irrigation Systems **IN THE GARDEN CENTERS**

Irrigation of plants and flowers in GARDEN CENTRE

Premise	Page 3
Before to Start: Water Analysis	Page 4
Watering Management: Automatic, Manual/Semi-Automatic	Page 5
PST Water Tray	Page 9
Water Waste	Page 11
Fertigation	Page 12

PREMISE

The logic that binds the watering process in a store is very simple: sell healthy plants. The waters are vital to keep the plants in a perfect state of sale. The Irrigation is one of the most important step in a retail location and the persons responsible for this task must be educated appropriately. It's suggested to assign the task to selected persons in order to manage the entire selling point, indoor and outdoor. Identifying singles employees guarantees a correct and constant monitoring of the State of health of the plants.



Above: irrigation system in a Garden Center

KEY NOTE

If the strength of a Garden Centre is the wide variety of plants and flowers it can become a point of weakness for irrigation management. In a retail location, you should irrigate enough to keep the plant in the best possible state. This means, for example, if you over irrigate, you will induce the blooming, a stage of advanced flowering; the customer's perception, in this case, is that the plant will not last. Garden plants, for instance, will grow very quickly and will appear thin and too tall. Opposite, a pour irrigation is synonymous of dehydration and the plants will not transmit the brightness necessary to induce the customer to buy. Irrigation is therefore an activity that shall be adjusted with the utmost professionalism in order to always have healthy plants and minimize waste.



The first thing to do is to analyse the quality of water that we have. Moreover, it is important to know if the water comes from a well recycling basin or from the aqueduct.

Some basic indications that we will value together with the analysis:

- PH 6 - 6,5
- Low saltiness
- Limestone and iron filter
- hardness 4/5 °f (French degrees)
- Temperature 10° degrees approximately

For what concerns the engine power to install, we should think about it carefully, because normally, in a garden centre we can hypothesize to require:

- A 3 horse power submerged pump with inverter
- At the most distant water point, water should come out at 2 - 2,5 Atmospheres

It is a good idea to consider a second emergency pump, as we know; water is the most important aspect for plants maintenance in a garden centre. Just in case a water pump breaks, we cannot go on for more than 24 hours. Summer, with its high temperatures, increases remarkably water demand of plastic pot plants with little compost and that is the reason why very frequent irrigation is necessary.

We have to take for granted that water, being in a public place, has to be potable.

WATERING MANAGEMENT: AUTOMATIC, MANUAL/SEMI-AUTOMATIC



The seasons, the weather, the sales area (Structure) and the size of the point of sale, the type of soil used, the wide varieties displayed and the expected turnover - are some of the factors that determine the choice on which irrigation system to adapt in the store.

AUTOMATIC

The ideal area where to use the automatic irrigation is outdoor and, in particular, with focus on medium large plants. One of the technique to use is the "drip system" that allows you to irrigate plants consistently reducing labor costs. The automatic irrigation indoor is a bit more sensible issue that would need particular attentions. Imagine a bench display with plants that have been irrigated once for the day and, after a short time, a part of the products are sold. Restoring the stock on the bench means to place new plants that are not hydrated. Therefore is important to find the right hydration balance to avoid the increase of over spread fungal diseases, which, by the way, persist and attack other plants in the sales area.

MANUAL / SEMI-AUTOMATIC

Manual or semiautomatic watering is the most suitable solution for Garden Centre of any size. In case of hybrid environments, for instance carrying seasonal plants, you can adjust the automatic system to fill the tub with to a minimum, almost to touch the point of support between the pots and tub. It is important to avoid the stagnation of water that should drain out after one or two hours, depending on the type and size of the plant. The drainage can also be done by normal absorption. The technique to do the manual hose watering is even more simple and supported by the features of the benches, that is the drain channels, filter, inlet tap and so on.

The mix of the automatism allows the operators to get a great result, which, although it may seem "onerous", will bring many benefits in the long run. The most important factor is the experience of the operator who, in addition to monitoring the status of waters, may determine the health status of plants. In

order to maintain order and cleanliness in our Garden Centre, you should always opt for subsurface irrigation, thus maintaining the plants always clean and dry in the surface.

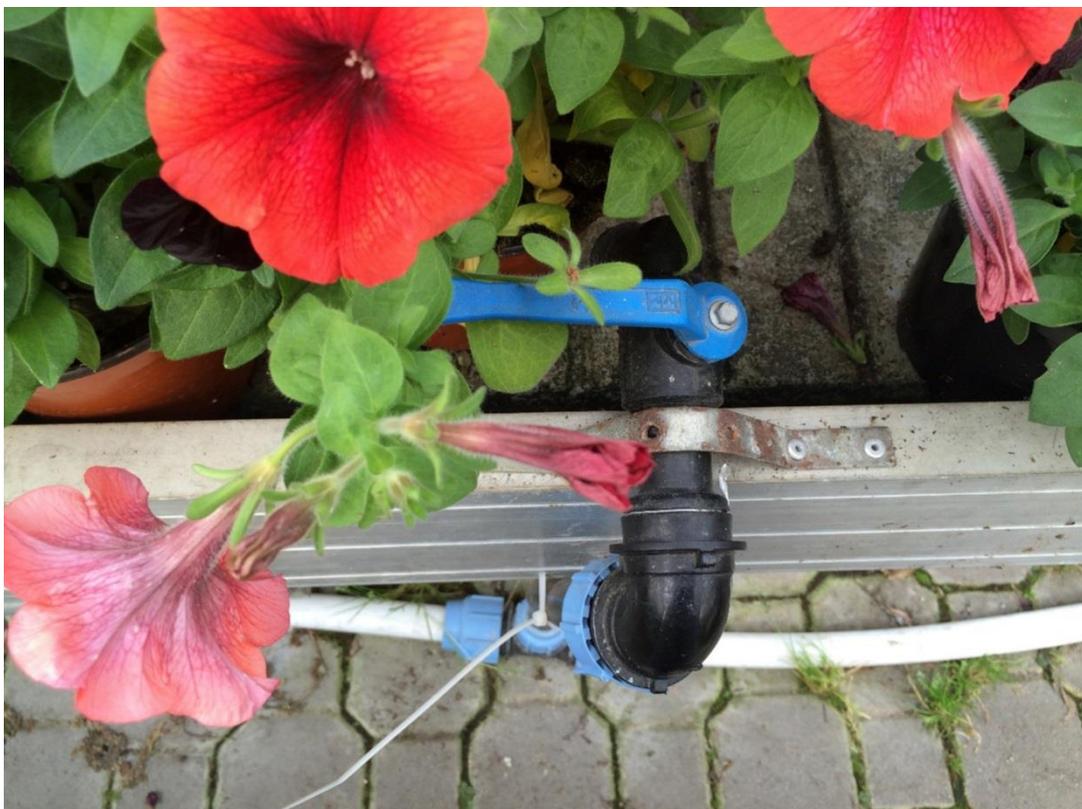
The Basins/benches must be 100% leveled. This is an easy task due the adjustable feet and legs. If the benches are longer than 3 meters, you should apply the valves on both ends in order to obtain a more homogeneous irrigation.



Above: Aerial Irrigation



Above: Irrigation system under the tables



Above: Irrigation system on the tables



PST WATER TRAY

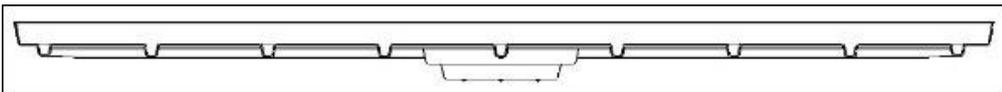
Suitable for irrigation system 'ebb and flow', thanks to its technical features and appearance, it is the better replacement of the aluminium shelves, inadequate because of the summer overheating and the unsightly incrustation due to the use of water and fertilizers.

The polystyrene shelf is non-glare, high resistant to UV radiations with an height to the border of 60 mm and it is has filter and drain-cock. Its fretted forms avoid water stagnation and it becomes ideal for ebb and flow system irrigations. The sleepers' array guarantee a maximum loading capacity of 70 kg/m².



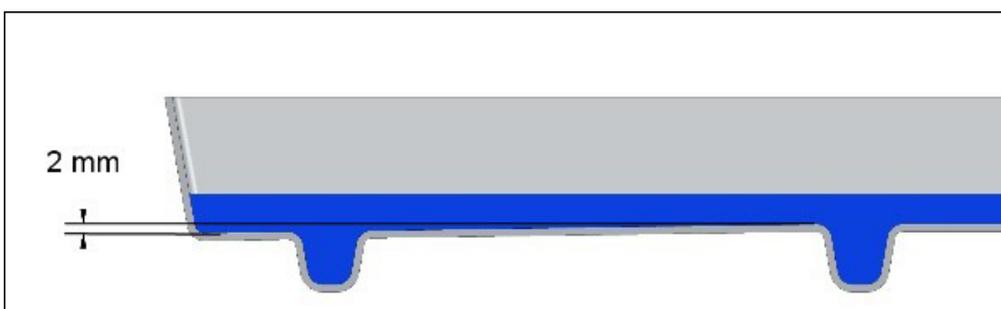
TRAY FEATURES

The tray is with only alongside running channels.



CROSS SECTION

The drainage channels only are placed alongside the tray. The channels are small, but the amount has been increased and ensures a good quality of water distribution and draining. It is also suitable for cultivation in small pots. Furthermore it makes the cleaning easier, as the omission of the cross channels makes it easier to sweep and wash the dirt off the bench trays.



ACCESSORIES

Filters



The plastic filter prevents blockage of valves caused by dirt.

The filter is designed so that the top rim is levelled with the bench tray top. This way pots can be placed directly on top of the filter, and this way the whole area for the tray top is utilized.

Drain-cock



Minivalve threaded/barded 16x3/4" and tank adaptor with male threaded end G1 with clamping collar and EPDM flat gasket.

Humidifying membrane



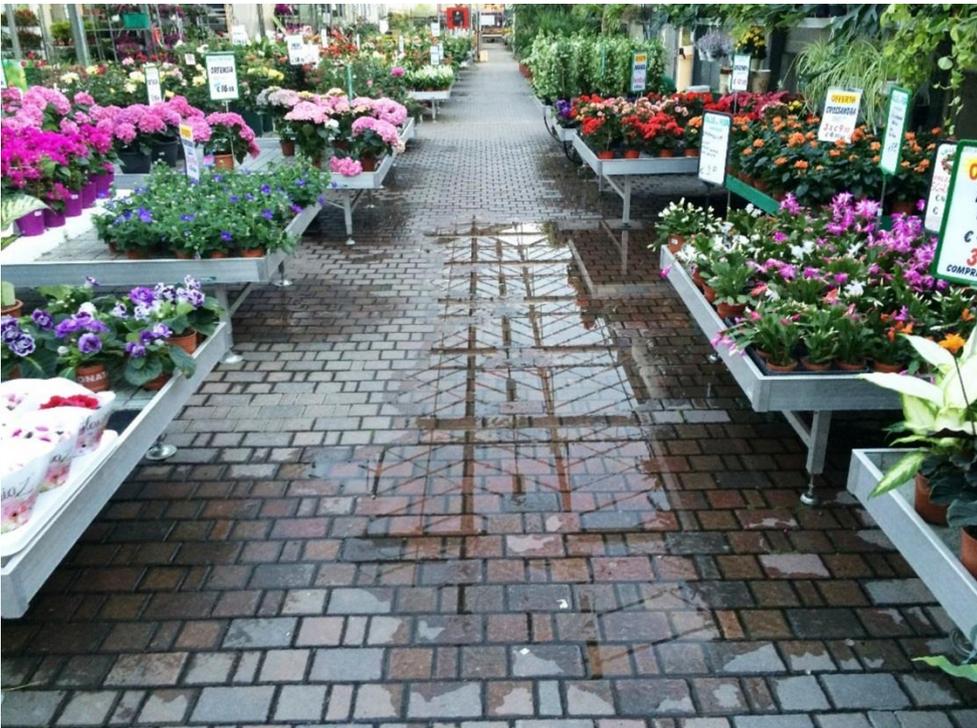
The humidifying membrane is a necessary accessory for a proper plant care. Made of multicolor 300 gr/mq polypropylene needlepunch and hot-set nonwoven geotextile, that is a specific product to be used with water and soil. Thanks to its high absorbency, it can keep plants damp for long time.

WATER-WASTE

The water that runoff is channeled to prevent the block the channels, making them dirty or slippery. For this reason, it is advisable to apply to the drain a flexible hose in order to direct the water. Through the use of dedicated systems, it is possible to recycle the water (reverse osmosis, for instance). Despite the outflow being channeled, in the sales point is always advisable to design efficient water drain lines. Regular wells do not guarantee a good outflow.



On the left: a "cleaned"
Garden Center



On the left: a wet floor
in a Garden Center

FERTIGATION

Is advisable to connect a fertilizer to nourish plants and flowers. The result you will get is stunning. The positive effect of having always beautiful and healthy plants is reflected in the positive image that the company sends to its visitors.



On the left: Dosatron system

EBB / FLOW SYSTEMS

The Ebb/flow systems are the most frequent used cultivating system for plant production in a modern greenhouse. In Europe, who is the pioneer continent in this branch of business, the ebb/flow system is widely used. Other continents, where a lot less- or no environmental requirements exist, the systems are used considerable less. But the spreading in these areas is moving rapidly as the environmental demands get more strict, and also at a time that more modern technology is introduced, which makes optimal use of the ebb/flow systems.

An ebb/flow system is a closed system, where the often fertilize dispensing watering is pumped out on the trays, by which the cultivation starts soaking up the water and the added fertilizer. After a certain time the trays are emptied again, and the remaining water runs back into a central tank. It can then as needed be

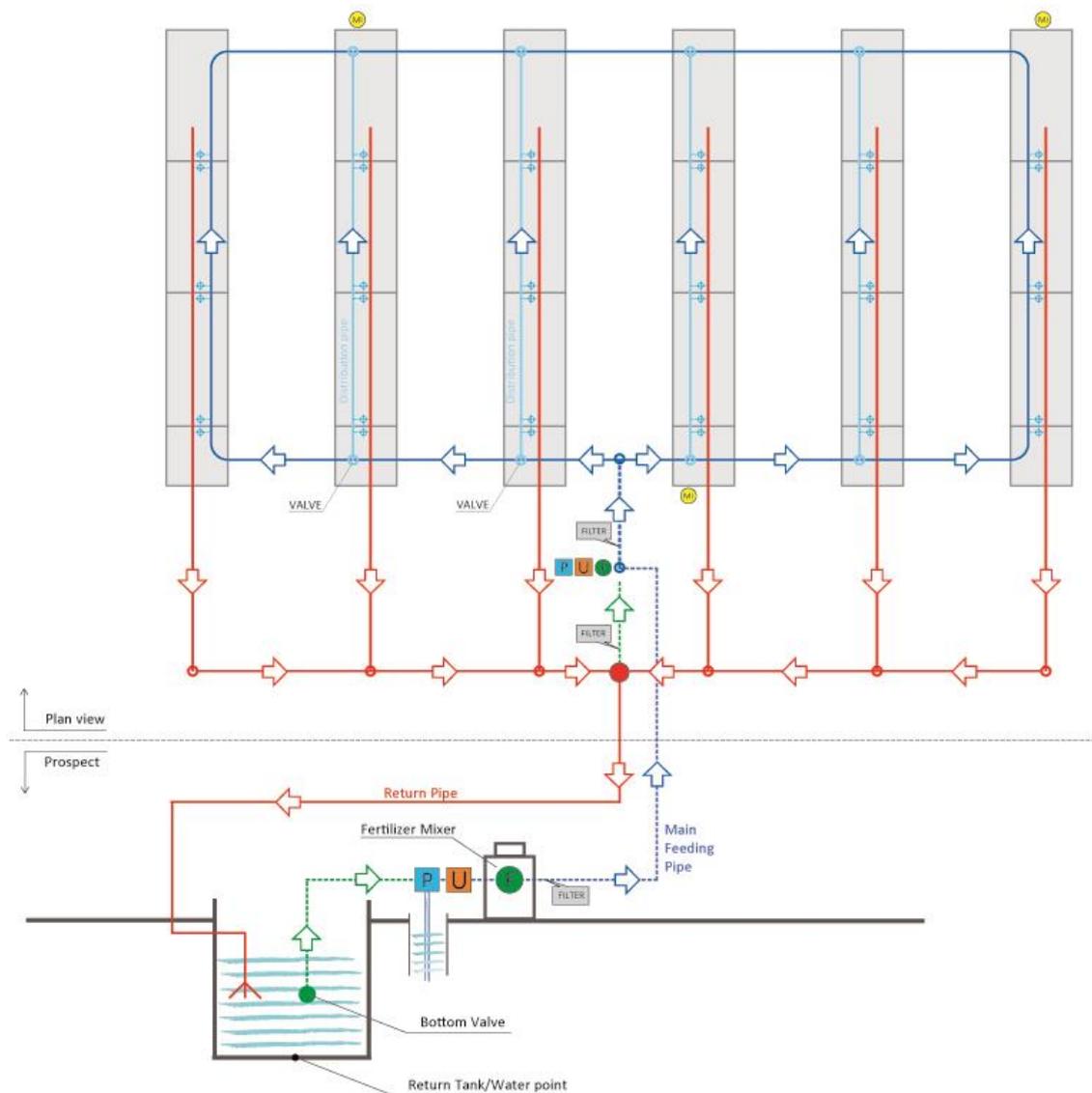
added more clean water and fertilizer till the mixture again has the desired composition before the next watering is done. See the example of a typical installation with ebb/flow tables, see above.

Ebb/flow systems holds a number of advantages, i.e.:

- No water or fertilizer is wasted.
- Under watering principle.
- Possibility of a possible automatic composition of the fertilizer in the water.
- Possibility of a very precise management of watering times.

SKETCH OF IRRIGATION SYSTEM

Plan for fertigation system





ORGANIZZAZIONE ORLANDELLI s.r.l.
via Montegrappa, 7 - CANICOSSA (MN) - Italy
Tel +39.0376.960311 - Fax +39.0376.960303
web: www.orlandelli.it