



REQUIRED WATER

- park watering requirement
- monthly average precipitation in Mannheim in spring to autumn watering period
- 25mm/week
- 63mm/month =63/4.34(average weeks/month)
- = 14.51mm/week gained from precipitation

10.48 mm/week to be supplemented by drip irrigation

DRIP IRRIGATION

- water tank volume
- area covered with daily drip
- irrigation in the morning
- drip irrigation optimal pressure
- water pressure from tank
- ---- 42 m^3
- --- (42 m³/10.48mm) x 7 = 4,007m² x 7 = 2.8 ha
- 1.37 2.75 bar
- ---- 1+0.42 bar(4.2m median water height in tank) = 1.42 bar
 - energy required only to refill water tank once a day

ENERGY REQUIRED FOR THE IRRIGATION SYSTEM

while the exact depth of the groundwater well and suitable pump is to be determined, submersible pumps for a 10m well depth with adequate flow to fill the water tank range between 1000W and 1500W, sufficiently covered by the en-ergy generated from the canopy

ENERGY GENERATED BY THE CANOPY

- OPV film output

- daily average capacity
- canopy surface —— 907 m²
- —— 50 W/m² —— 40 MWh (calculated using specialised soft- annual capacity ware for Mannheim weather conditions) 34.32 - 226.77 kWh

in majority surplus energy generated to be distributed in the grid