

From desert...

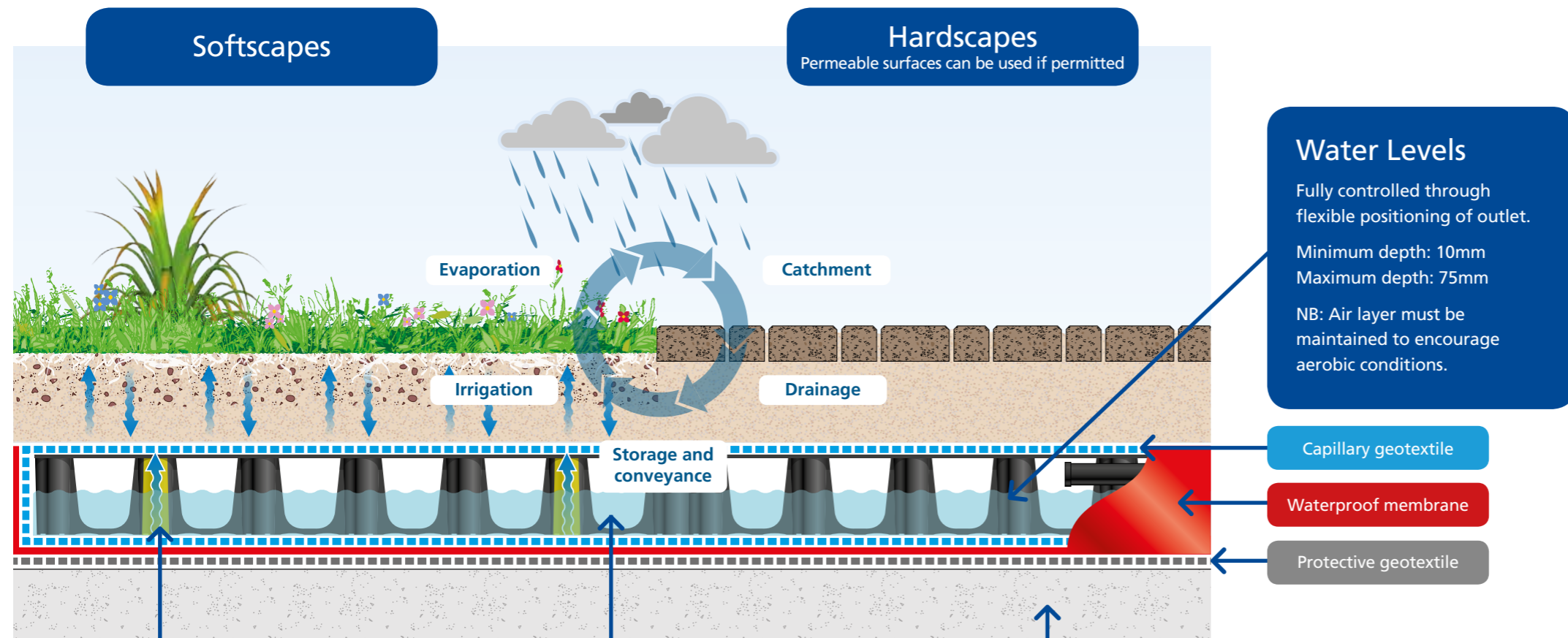
...to sustainable city,
by means of cyclic water management.



- 1 **Better Green Space** – thanks to water conservation
- 2 **Stormwater** – from a nuisance to a gift
- 3 **Reduction of load on drainage networks** – saving energy and time

Permavoid Drainage, Conveyance and Capillary Irrigation System

Podium Deck / Green Roof / Blue Roof / Landscaping



Sustainable City Benefits

- Better green space using less water
- Healthier, stronger plants & vegetation
- Reduced sewer/network loads (reduced water & energy consumption)
- Stormwater run-off management
- Water is seen as a gift instead of a nuisance
- Reduction of the urban heat island effect: plants reflect incoming sunlight back into the atmosphere and provide active evaporative cooling
- Change roofs into beautiful natural areas, increasing biodiversity and positively effecting people's health
- Region moves from a desert to a sustainable, liveable city through means of cyclic water management

Construction Benefits

- Provides load bearing, shallow solution
- Reduced building heat influx
- No slab penetrations or underslung pipework
- No pipework falls required
- Flexible inlet/outlet positioning
- Can be used with permeable surfaces
- Fully controlled discharge
- Possibility to cascade water across varying roof levels to ground level
- Requires no space for in-building or in-ground water storage tanks or technical installations such as pumps
- Easy to construct without installation of conventional irrigation lines, drip lines, valves and bubblers or sprinklers

Challenging Tradition

- Permavoid saves on construction costs, maintenance, labour, water & energy consumption and replanting, compared to traditional installation methods

Capillary Action

"Also known as 'wicking', capillary action is the ability of water to naturally flow through narrow spaces without the assistance of external forces".

Through combining the use of capillary fibre cylinders, Permatex capillary geotextile and a soil depth between 10 and 100cm, soil moisture levels are determined by the capillary rise relative to the particle size distribution and organic matter content of the soil (more organic content = higher capillary rise). Capillary irrigation activates only when the plants are evaporating water and is a 100% 'on-demand' natural irrigation system, requiring no energy for pumping or conveyance and eliminates water losses due to surface evaporation.

Sources of Water

- Stormwater from higher roof areas
- Treated Sewerage Effluent (TSE)
- Air conditioning condensate
- Treated grey water
- Surface water run-off
- Wash down
- Tap water (as a last resort), if required

Overflow

- To determine water storage level (preferably cascade to green area on lower levels)
- Flexible outlet positioning (side or under-side discharge)
- Careful planning can achieve zero discharge

Permavoid

A lightweight and durable polypropylene interlocking modular storage system with an exceptionally high compressive strength.

