

W4.4 PLANNING AND DESIGNING

Maintain cleanliness and remove pollutants, minimize water use

Some inspiring solutions:



BALEEN WHALE MOUTH

The baleen whale has specialized structures that enable it to efficiently consume small organisms, especially tiny shrimp-like crustaceans called krill. Krill swarm in huge clouds in the ocean, where baleen whales scoop them up, water and all, and send them through a baleen filter-feeding system.

<https://asknature.org/strategy/baleen-plates-filter-food/>

Baleen Filters water filters were developed based on the idea above. It is a highly efficient, non-pressurized, self-cleaning separation technology that offers reliable, trouble-free filtration to 25 microns without chemical assistance.

<https://asknature.org/idea/baleen-filters-water-filters/>



EARTHWORM

Earthworms can help in remove contaminants from wastewater. There are water cleaning systems using earthworms and beetles.



DESERT RHUBARB (*Rheum palaestinum*)

Leaves and root maximize water collection. The desert rhubarb sets itself apart by having a sophisticated water collection system that transports and absorbs water deep in the ground. First, rain water collects on the surface of the rhubarb's leaves. The rhubarb has one to four meter long leaves with a series of successively wider, hydrophobic (water-repelling) grooves embedded into its sides. The grooves funnel rain water down the leaf similar to a system of rivers and creeks down a mountain.

<https://asknature.org/strategy/leaves-and-root-maximize-water-collection/>

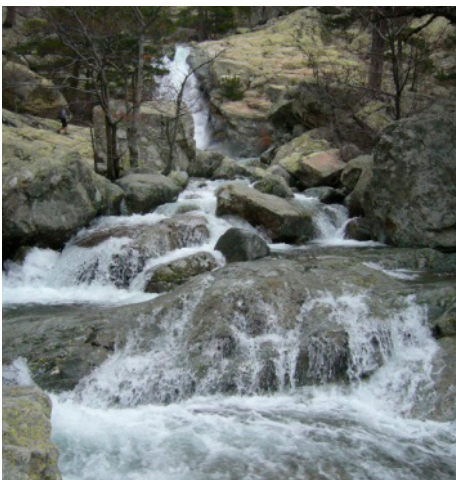
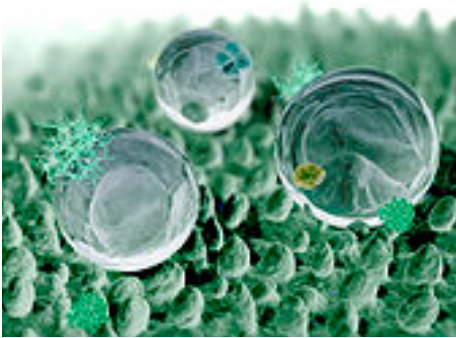


LOTUS LEAVES

Lotus leaves stay clean without detergents. The plants cuticle is extremely water repellent. This is accomplished through microscopic bumps on their leaf surface. This reduces the stickiness of water droplets to the surface so they run off easily and take dirt away at the same time.

<https://asknature.org/strategy/surface-allows-self-cleaning/>

This is being mimicked in self-cleaning paintings. (See also “Water, water everywhere...” module.)



CREEKS

Springs and *creeks* are very important in forest life – they provide water for plants and animals, and also modify the microclimate of the forest.

The unique buildings in Arabic countries or *Alhambra* in Spain mimic creeks; water flows almost everywhere in the garden and in the buildings, with watering and cooling functions.



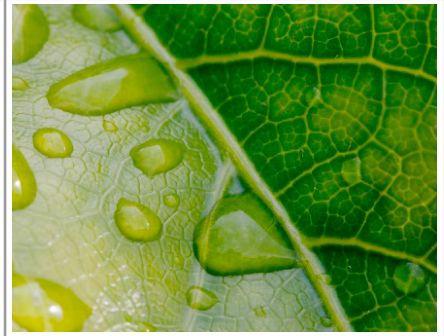
Some further inspiring ideas:



Sempervivum – water storage



Teasel – water retention



Leaf – water net



Rotting apple – all natural 'products' are biodegradable



Droppings – all natural 'products' are biodegradable



Seedlings on decaying wood show upcycling in nature