

PLANTS & WATER

IN THE GARDEN ENVIRONMENT

GARDENS

In England, ~25% of all front gardens are paved over, with 33% containing no plants. Below are some ways in which we can increase the potential of gardens to protect against flooding (1).



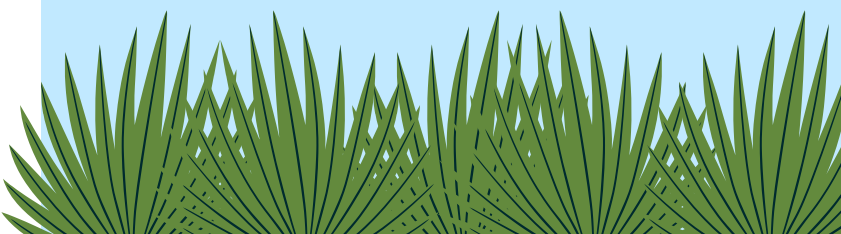
PERMEABLE GARDENS

Gardens should be designed so that rainwater is able to permeate into the soil. This means reducing the amount of concrete and artificial grass so that no less than 66% of a garden is permeable to water (2).



GROUND-COVER PLANTS

Plants that grow across the ground, such as *Festuca glauca*, can increase water capture by up to 3x and water evapo-transpiring by up to 4x. This can help reduce the chances of flooding and quickly dry out an area before further rainfall (3).



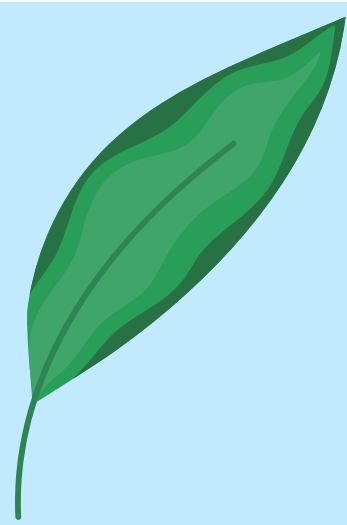
URBAN HEDGES

Hedges have high potential for rainwater capture and flood mitigation. They can intercept up to 50% of rainfall in their canopy and reduce water run-off by up to 24%. Hedges work to slow the movement of water (1).



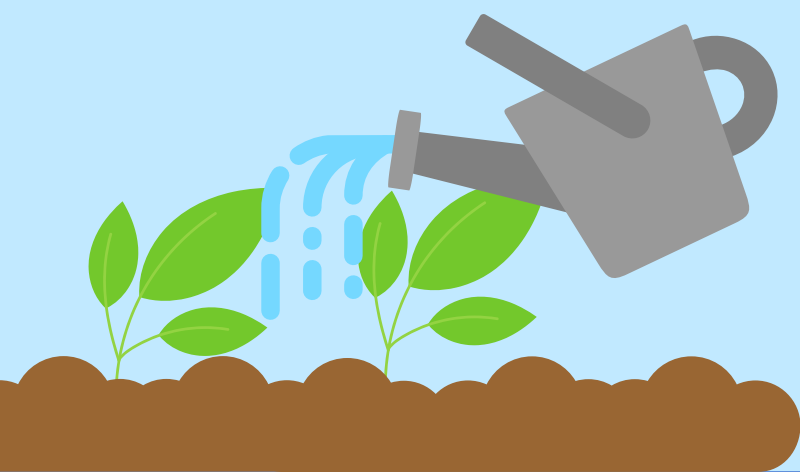
LEAF SHAPE

To capture water, it is not large wide leaves that work best, but thin and narrow leaves which are upright. These leaves direct water towards the base of the plant and its roots, allowing for water uptake (3).



EXCESSIVE WATERING

The overwatering of highly managed gardens has led to up to 25% of the potable water supply being used for irrigation. Higher water use efficiency and drought tolerant plants can help to reduce this demand (2).



(1) [Blanusa, T., Garratt, M., Cathcart-James, M., Hunt, L. and Cameron, R.W., 2019. Urban hedges: A review of plant species and cultivars for ecosystem service delivery in north-west Europe. Urban Forestry & Urban Greening, 44, p.126391.](#)

(2) [Cameron, R., 2023. "Do we need to see gardens in a new light?" Recommendations for policy and practice to improve the ecosystem services derived from domestic gardens. Urban Forestry & Urban Greening, 80, p.127820.](#)

(3) [Nur Hannah Ismail, S., Stovin, V., Cameron, R.W.F., 2023. Functional urban ground-cover plants: identifying traits that promote rainwater retention and dissipation. Urban Ecosyst. 1-16.](#)