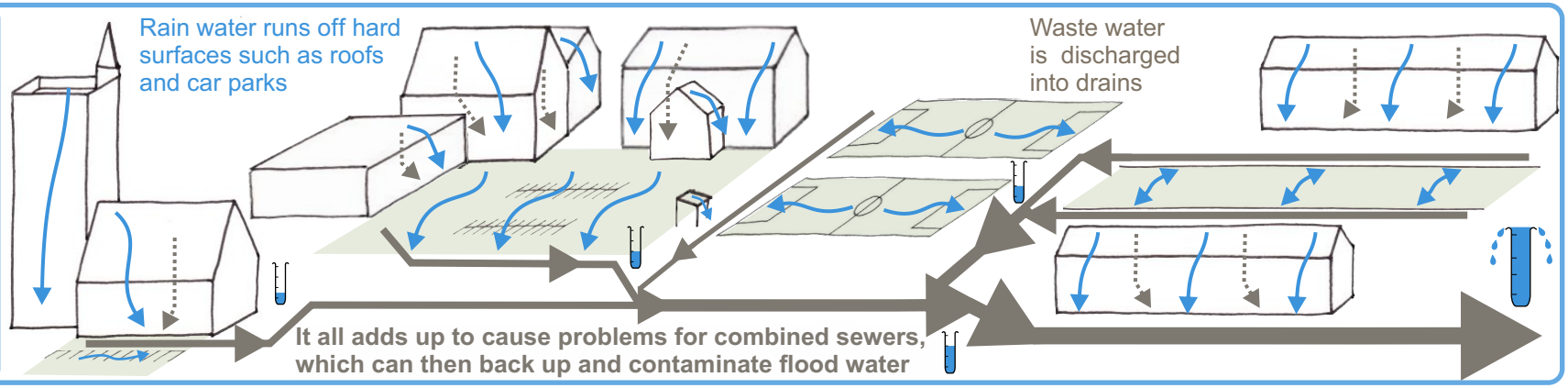
Slow The Flow: Public Spaces - reduce flooding using our common ground

Due to human **Development**

replacing plants and soils with **hard surfaces** such as roofs, roads, patios and car parking, **rainfall runs off much more quickly**, causing surface water and combined sewer flooding, and higher river levels.



Using **SuDS** (**Su**stainable **D**rainage **S**ystems) to

Slow The Flow

in our urban areas, as well as upstream, we can mimic natural water management. **Many small changes can have a big combined effect** on reducing flood water quantity and quality.

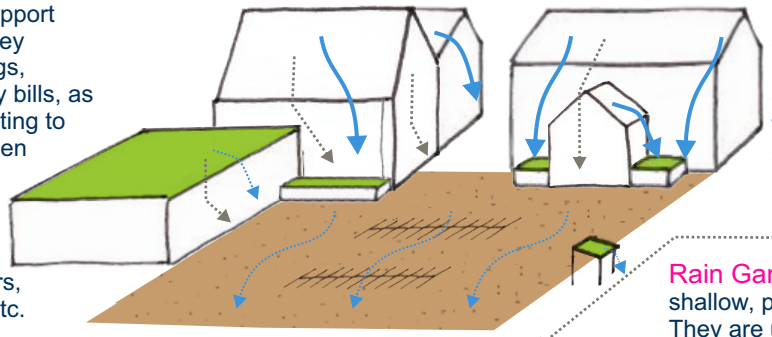
SuDS also have multiple Green Infrastructure benefits for health, economy, recreation, wellbeing, biodiversity, air quality, etc...

We hope you are able to be proactive and start right away!

However, you may not have resources to do anything right now. If so, next time you repair or refurbish property, please consider SuDS.

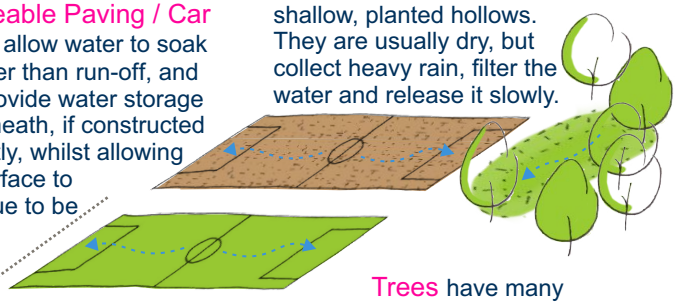
Green Roofs can be retro-fitted if the structure will support their weight. They insulate buildings, reducing energy bills, as well as contributing to biodiversity.Green roofs can be added to structures like bus stops, smoking shelters, bicycle stores etc.

Raised Planter Rain Gardens are good if space is tight, or ground conditions don't allow water to soak away.



Permeable Paving / Car Parks allow water to soak in rather than run-off, and can provide water storage underneath, if constructed correctly, whilst allowing the surface to continue to be used.

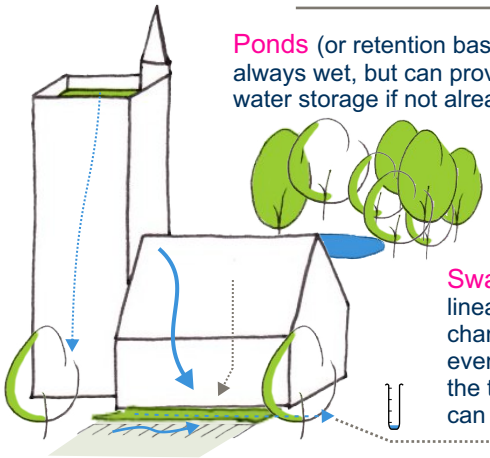
Detention Basins are shallow, planted hollows. They are usually dry, but collect heavy rain, filter the water and release it slowly.



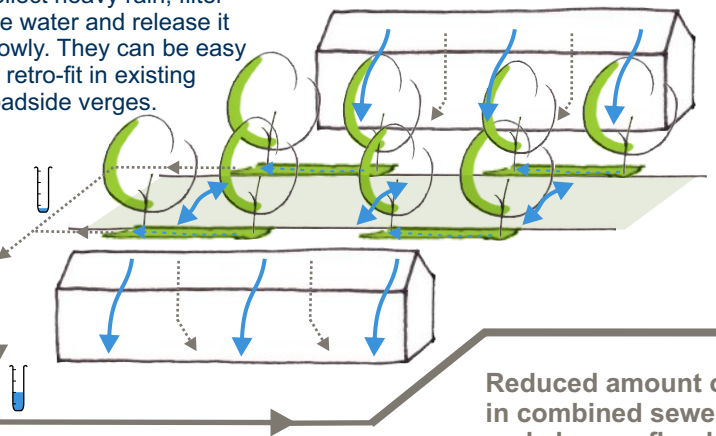
Trees have many benefits, including stopping up to 12% of rainfall hitting the ground, even in winter.

Rain Gardens are shallow, planted hollows. They are usually dry, but collect heavy rain, filter the water and release it slowly. They can be easy to retro-fit in existing roadside verges.

Ponds (or retention basins) are always wet, but can provide additional water storage if not already full.



Swales are shallow, planted linear basins. They collect and channel water slowly in a storm event. As they are dry most of the time, many everyday plants can cope with the conditions.



Reduced amount of water in combined sewers = less, and cleaner, flood water

For more detail on how to Slow The Flow: Generally / At Home / At Work / At School, go to: ***www.slowtheflow.net/you-can-slow-the-flow***

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Swales

can just be a dip in a grassed area, or can be planted with meadow seed and plug plants, to provide a biodiversity corner that needs mowing less often. They are usually dry most of the time, but can be designed to hold water for amenity. Swales can direct water to a pond, or just allow it to soak away.

Rain Gardens

are planting areas that are deliberately located where they collect run-off and store it temporarily - they become boggy in downpours. As they are dry most of the time, many everyday plants can cope with the conditions. A layer of gravel below the topsoil helps increase storage capacity.

Rain gardens can collect run-off from paved areas, or take water from roofs via diverted drainpipes.

They can be as simple as introducing a dipped grass verge with a layer of gravel, or lowering existing verges to create attractively planted sunken basins with more capacity. So long as there is a plan for any overflow, they can be built over existing surfaces. Excess water can continue into the existing system, as before.

Roadside verge rain gardens are a good way to harness community energy, and can be designed for biodiversity / teamed with Incredible Edible or tree planting.

Smaller Spaces

Take a look at our *'At Home'* information as well, for ideas that might apply to smaller-scale spaces

Larger Projects

Interventions for larger premises or plots are more likely to need professional advice - particularly if you intend to:

- increase the volume at any outfall point
- work very close to a permanent river or stream (within about 10m)
- make changes to a listed building or in a conservation area
- create a green roof
- re-use grey water in buildings
- create reed beds to treat waste water
- do anything that could affect neighbours

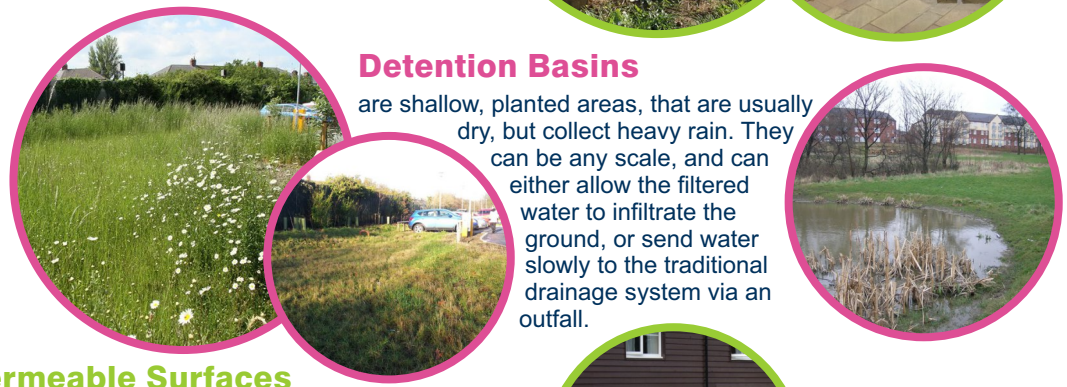
Green Roofs

and blue roofs (without vegetation) can be put on all flat/gently sloping roofs, from large public buildings to bus shelters. Professional advice should be sought, to ensure loading and waterproofing are appropriately handled.

Sedum roofs and blue roofs can be lighter than biodiverse planting schemes, which need deeper soil. All can be designed to need very little maintenance, and green roofs look attractive!

Detention Basins

are shallow, planted areas, that are usually dry, but collect heavy rain. They can be any scale, and can either allow the filtered water to infiltrate the ground, or send water slowly to the traditional drainage system via an outfall.



Trees

have multiple benefits for biodiversity, air quality, aesthetics, health and wellbeing. They also improve the rate at which water infiltrates the soil, and reduce erosion (preventing sediment from blocking water courses). Tree pits in paving can be designed to store and slowly release water.

Permeable Surfaces

can replace car parks and paving with materials that don't shed water, such as:

- gravel
- reinforced grass
- porous surfaces
- permeable paving
- slabs/setts on gravel and without mortar

If constructed correctly, extra water can be stored underneath, using a layer of stone, or in special crates, whilst allowing the surface to continue to be used.

NB. Remember we have a varied geology, i.e. water runs through sand, but if you are working with clay, it may puddle rather than soak in.

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