Davide di Martino
unagru
architecture urbanism landscape

SUDS

Small projects for a small planet

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- What is the problem: the combination of widespread ur-banisationa and climate change put pressure on both the environment and the traditional water management systems. These in turn put even more pressure on the environment.
- SOLUTIONS
- There are two types of solutions, which are both valid in certain circumstances.:
- Hard Engineering
- Soft Engineering
- We will argue, broadly, in favour of the soft engineering solutions
- SOFT ENGINEERING AT DIFFERENT SCALES
- Our scale: the single garden. A case study.

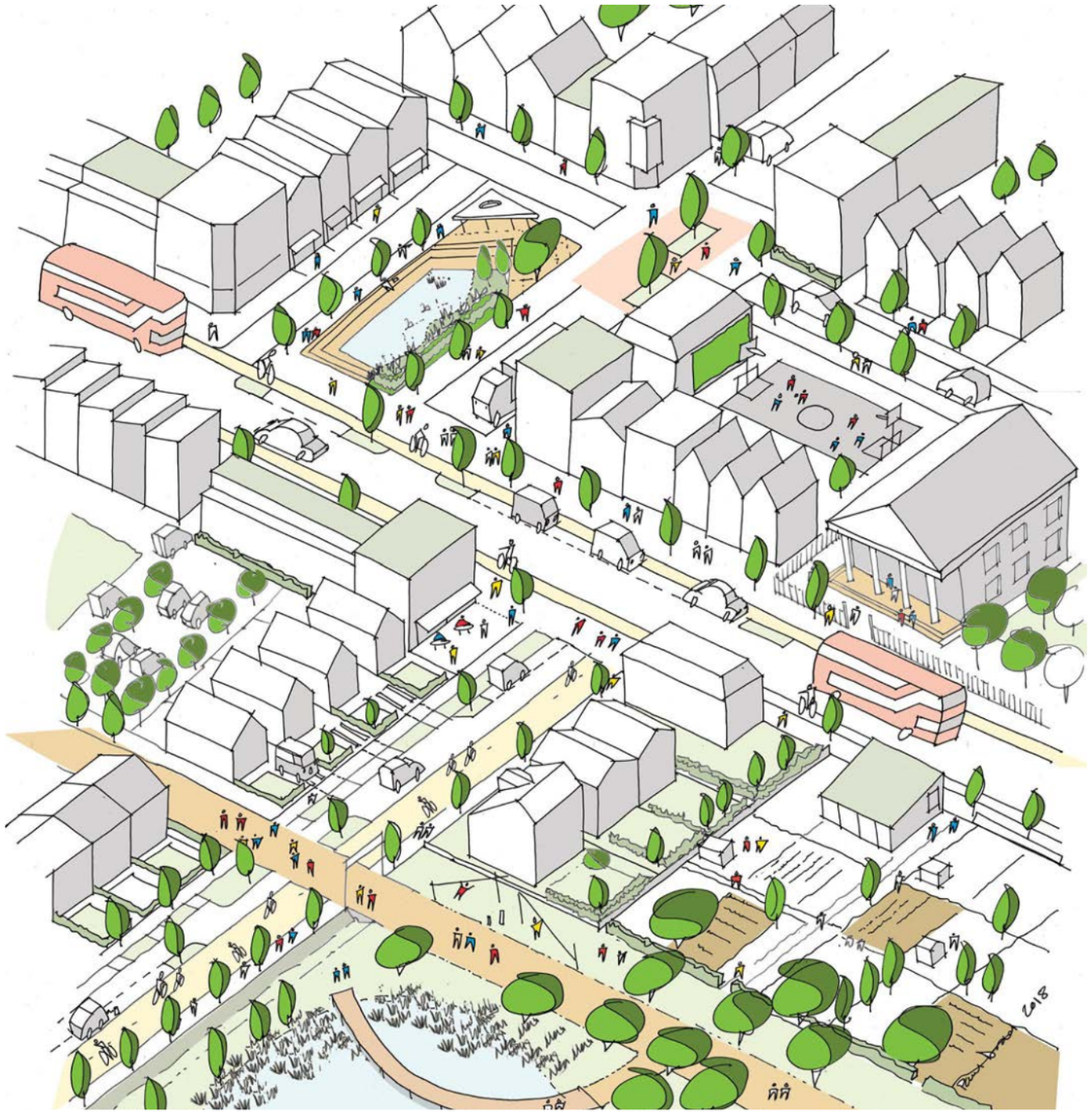
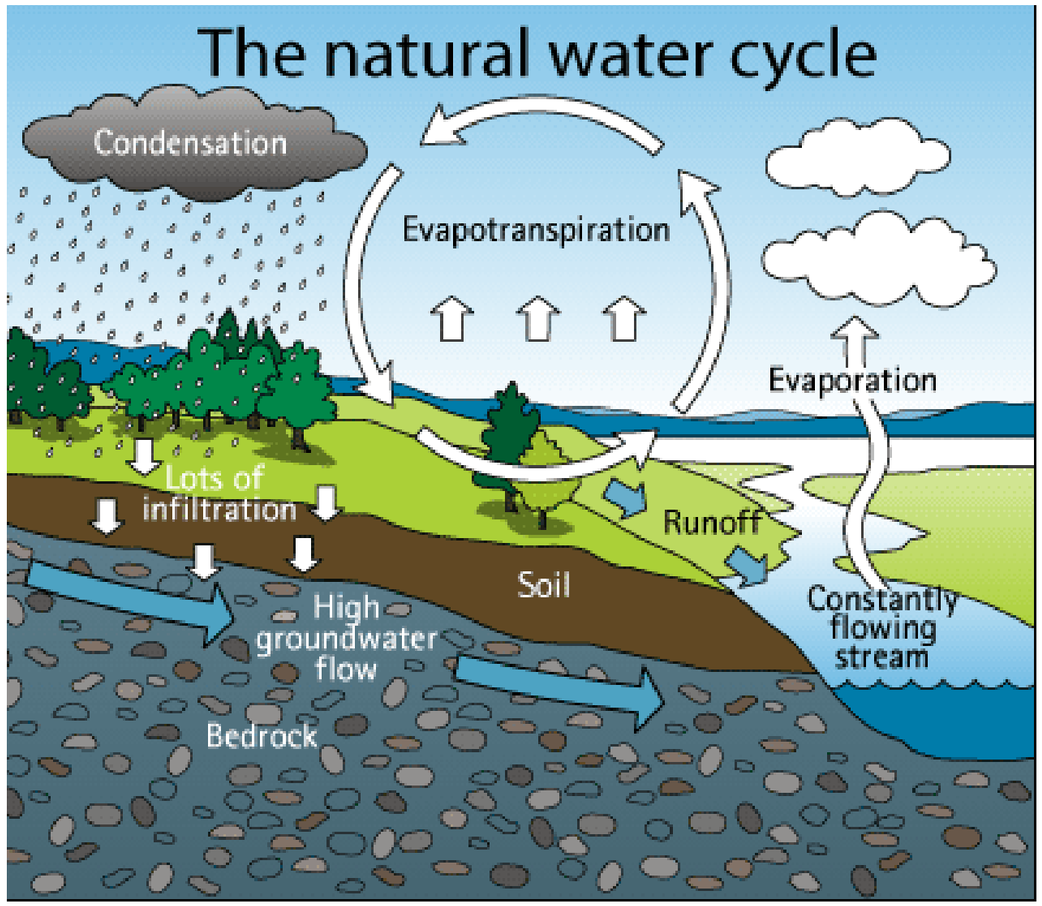
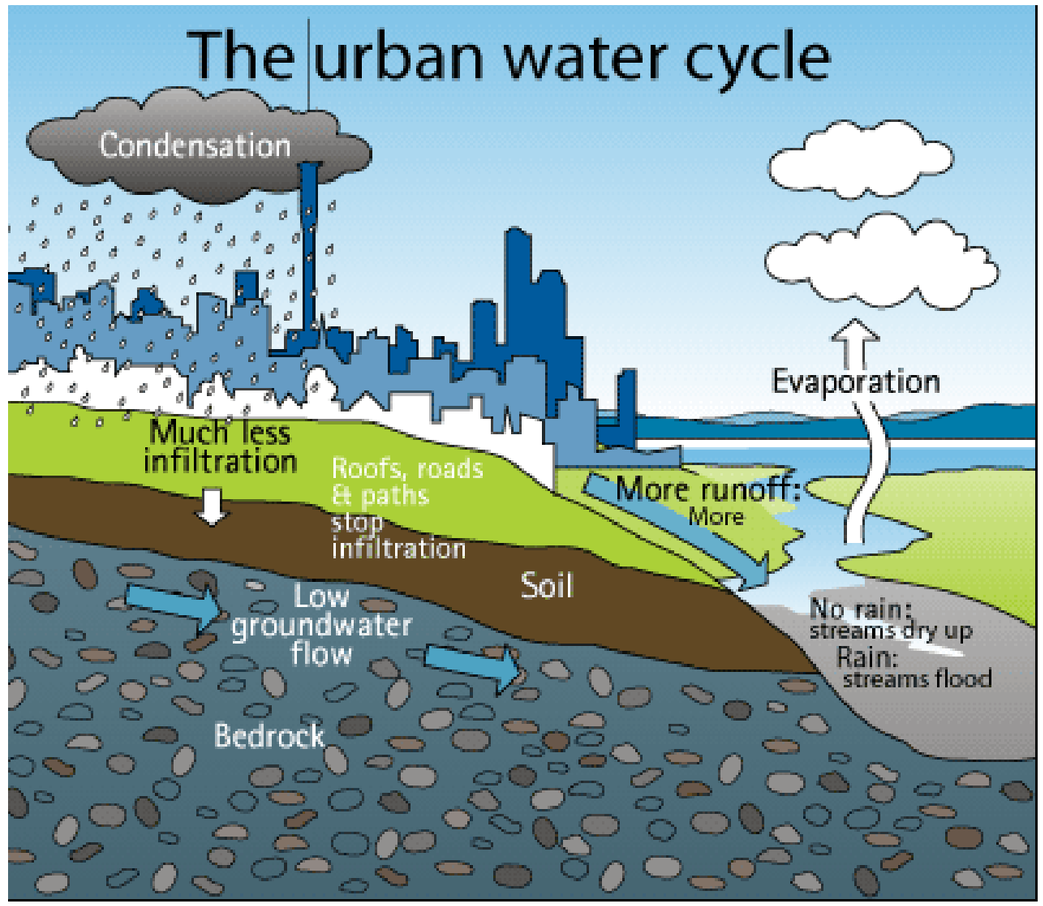


Image credits: Urban Design London

Natural vs urban water cycles





Natural vs urban water cycles

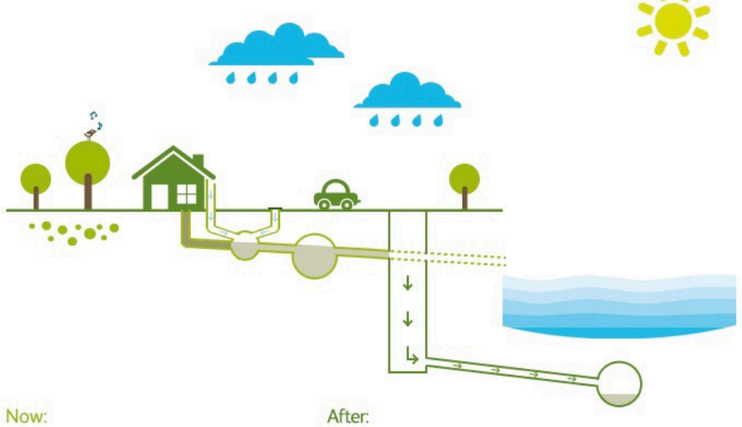


Risks for people and the environment





Hard engineering:
Combined Sewer Overflow
Thames Tideway Scheme



Now:
The low level interceptor sewers fill up and overflow into the River Thames.

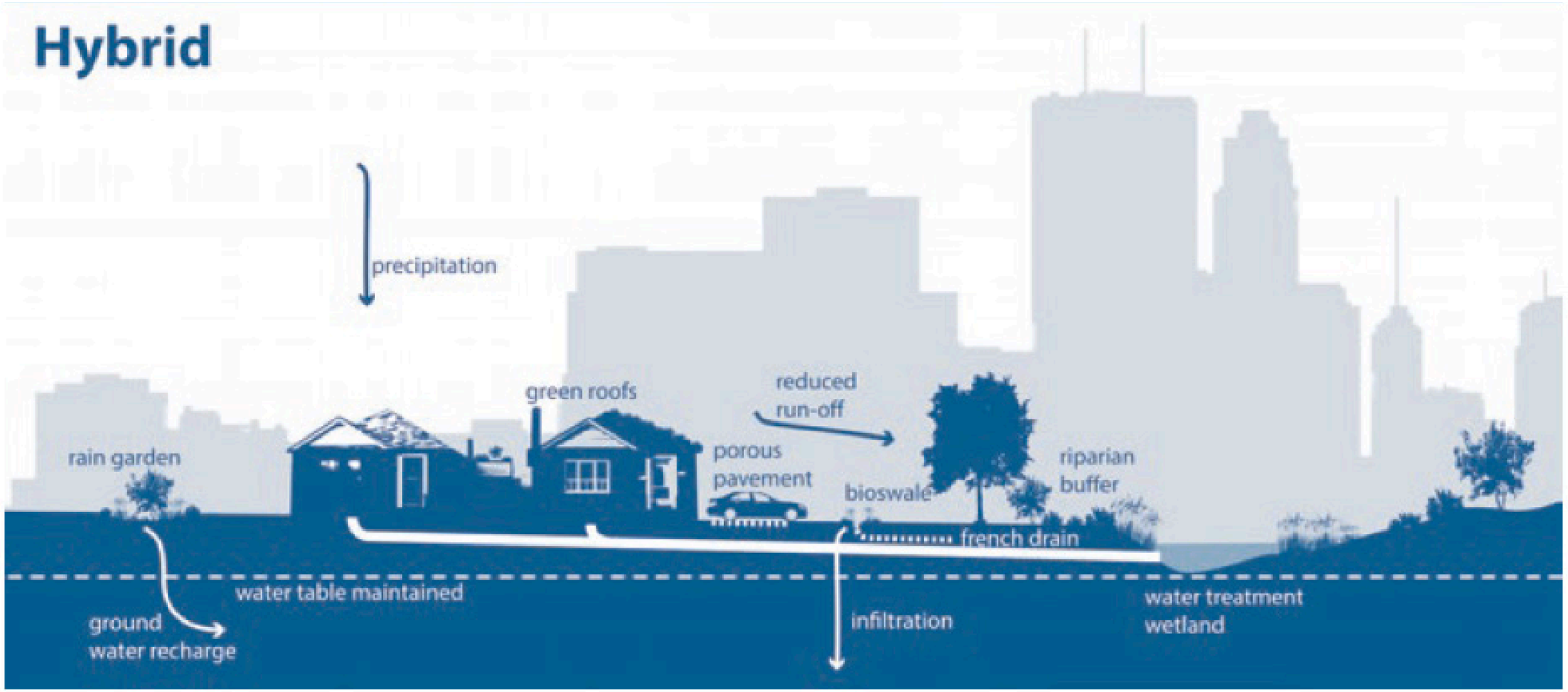
After:
The overflow will be diverted into the tunnel instead of going into the river.



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At every scale, water can be incorporated in the design of the city to improve the quality of the water cycle and the environmental services, but also to create more rich and beautiful spaces.

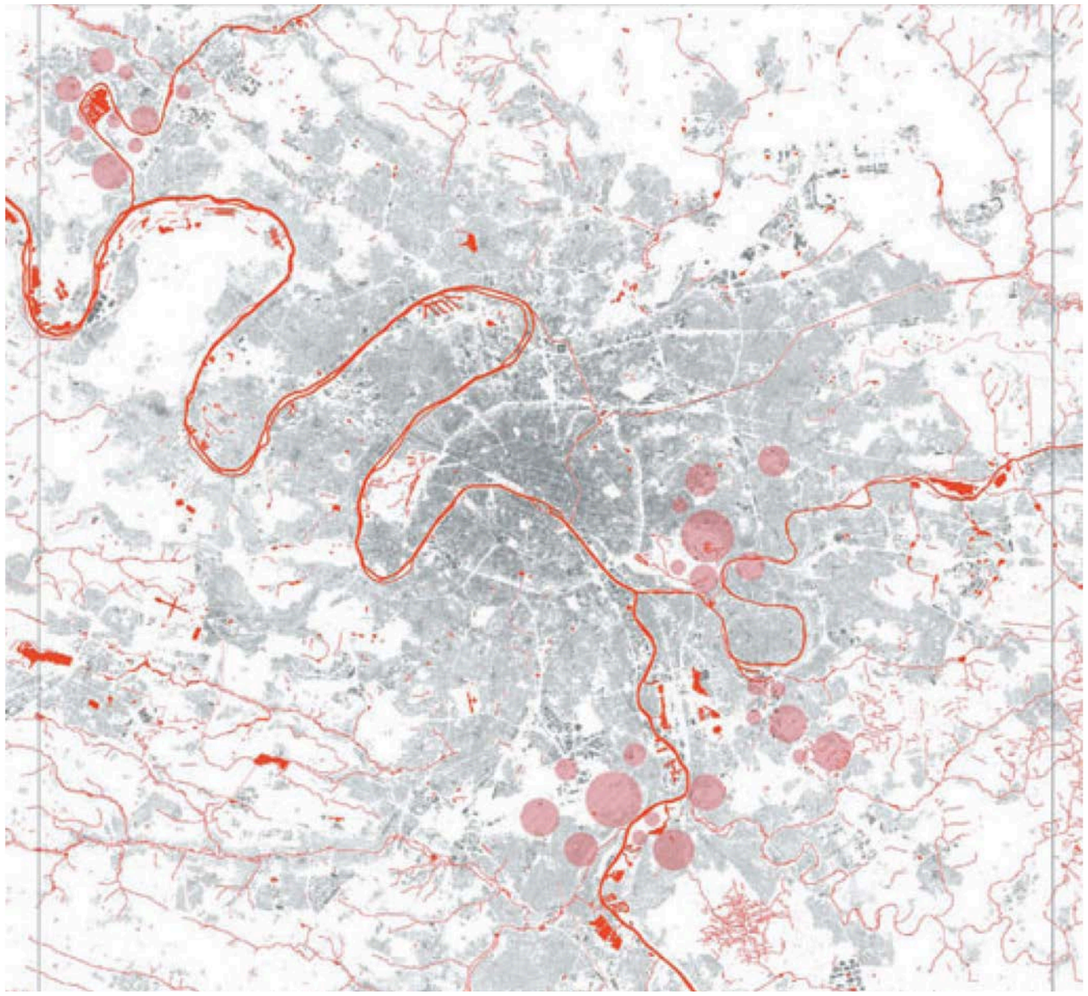
Hybrid


precipitation
green roofs
reduced
run-off
rain garden
porous
pavement
bioswale
riparian
buffer
french drain
water table maintained
ground
water recharge
infiltration
water treatment
wetland

SUDS Sustainable Urban Drainage Systems

Regional scale: Management and Mitigation





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Local scale: public open spaces and combined private spaces





SUDS Sustainable Urban Drainage Systems

Local scale: public open spaces and combined private spaces





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What can we do in our own gardens? Slow down the flow, increase biodiversity, more beautiful gardens.
1. Permeable paving





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Private scale: rain gardens, green roofs.
1. disconnect the front rain water pipe

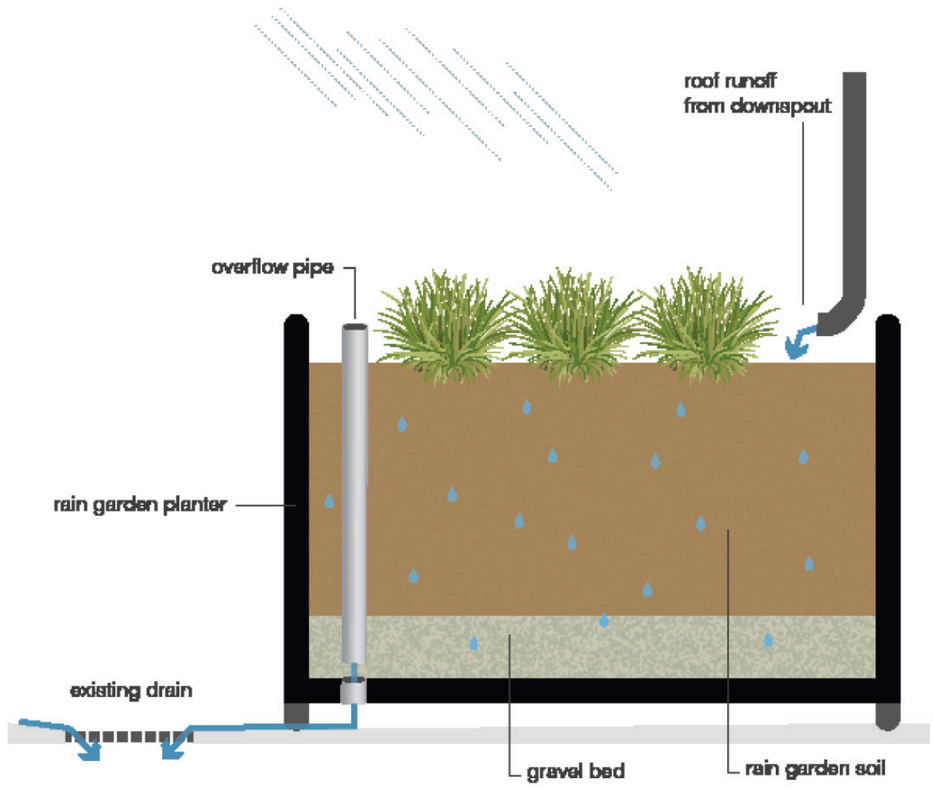




Image credits: Heron Court Rain Garden
Source: Susdrain

Case Study:
Bromley private rain garden

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Private scale: rain gardens, green roofs.
There is immense potential in rear gardens.



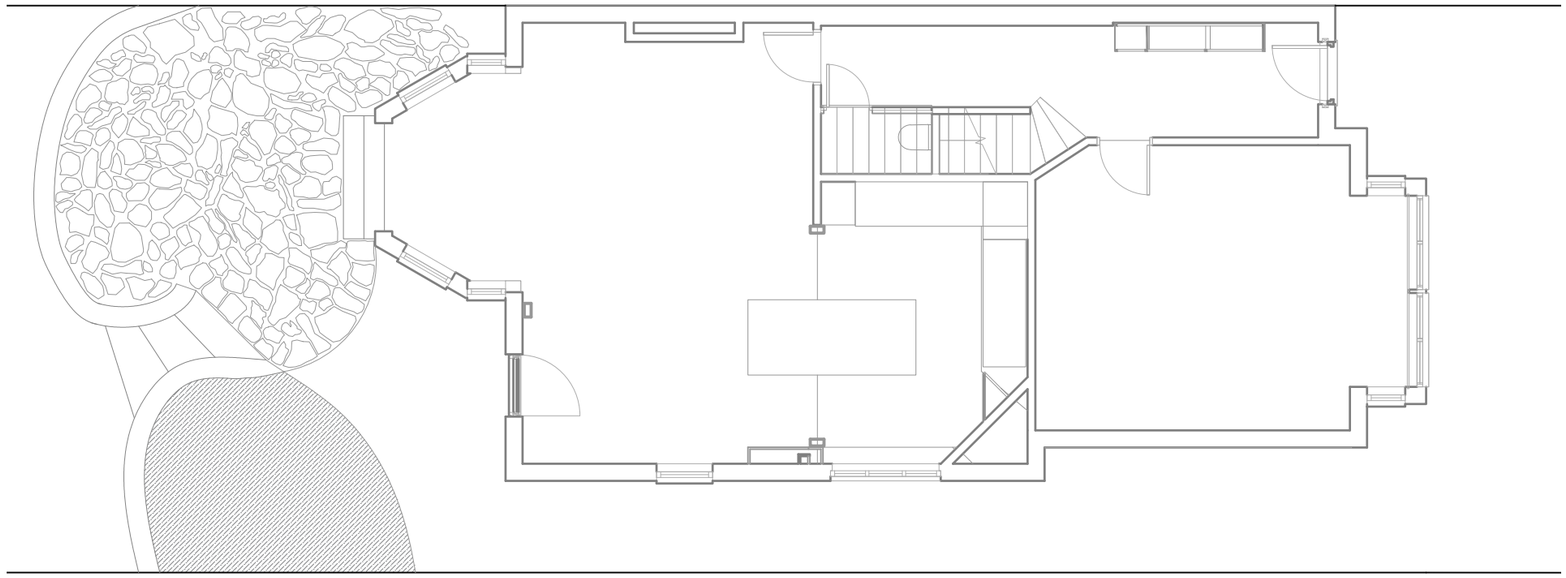
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What can we do in our own gardens?
Private rain gardens



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What can we all do?
A rain garden



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What can we do in our own gardens?
Private rain gardens



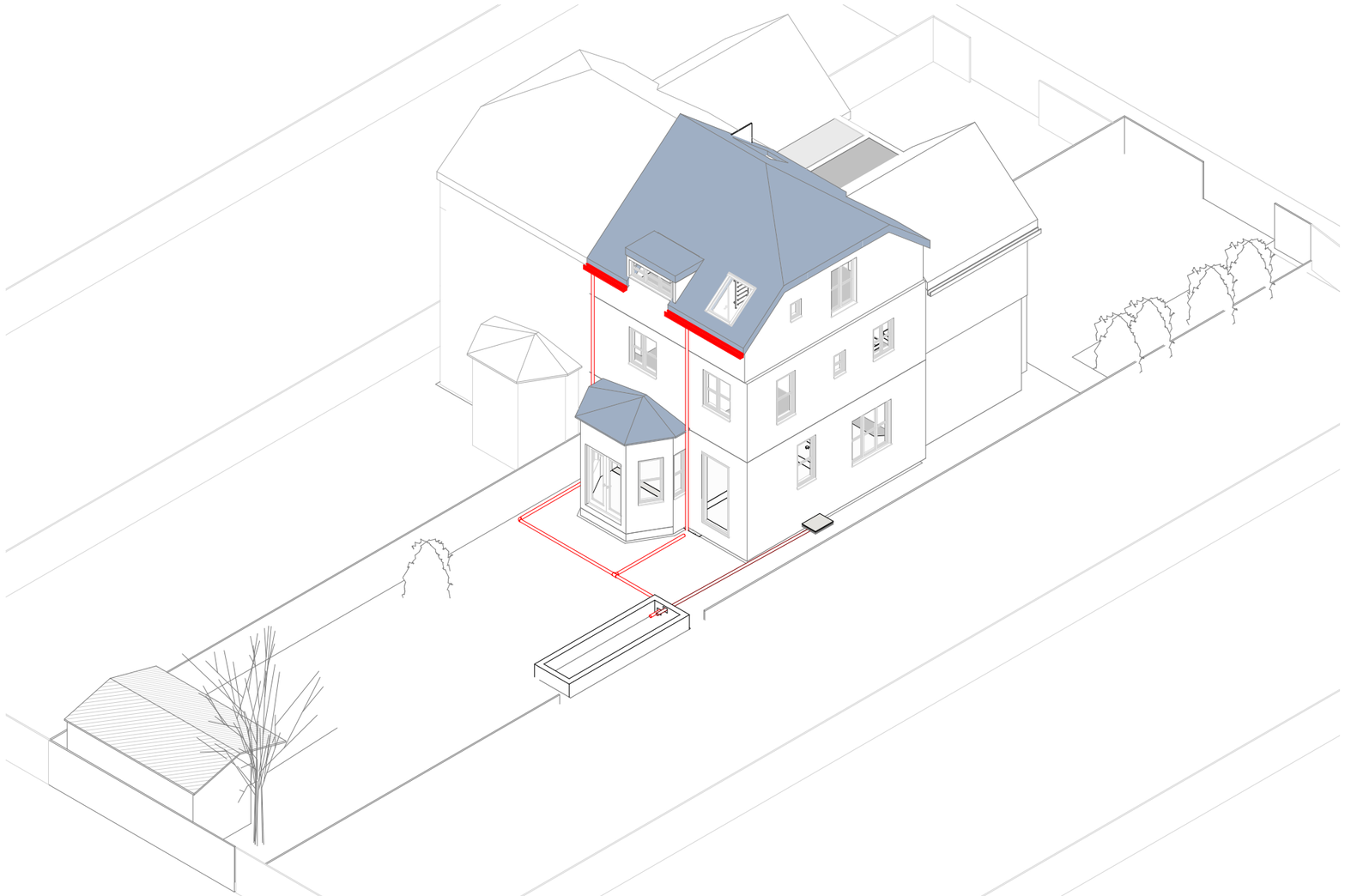
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What can we do in our own gardens?
Disconnect the rainwater pipes from the sewer



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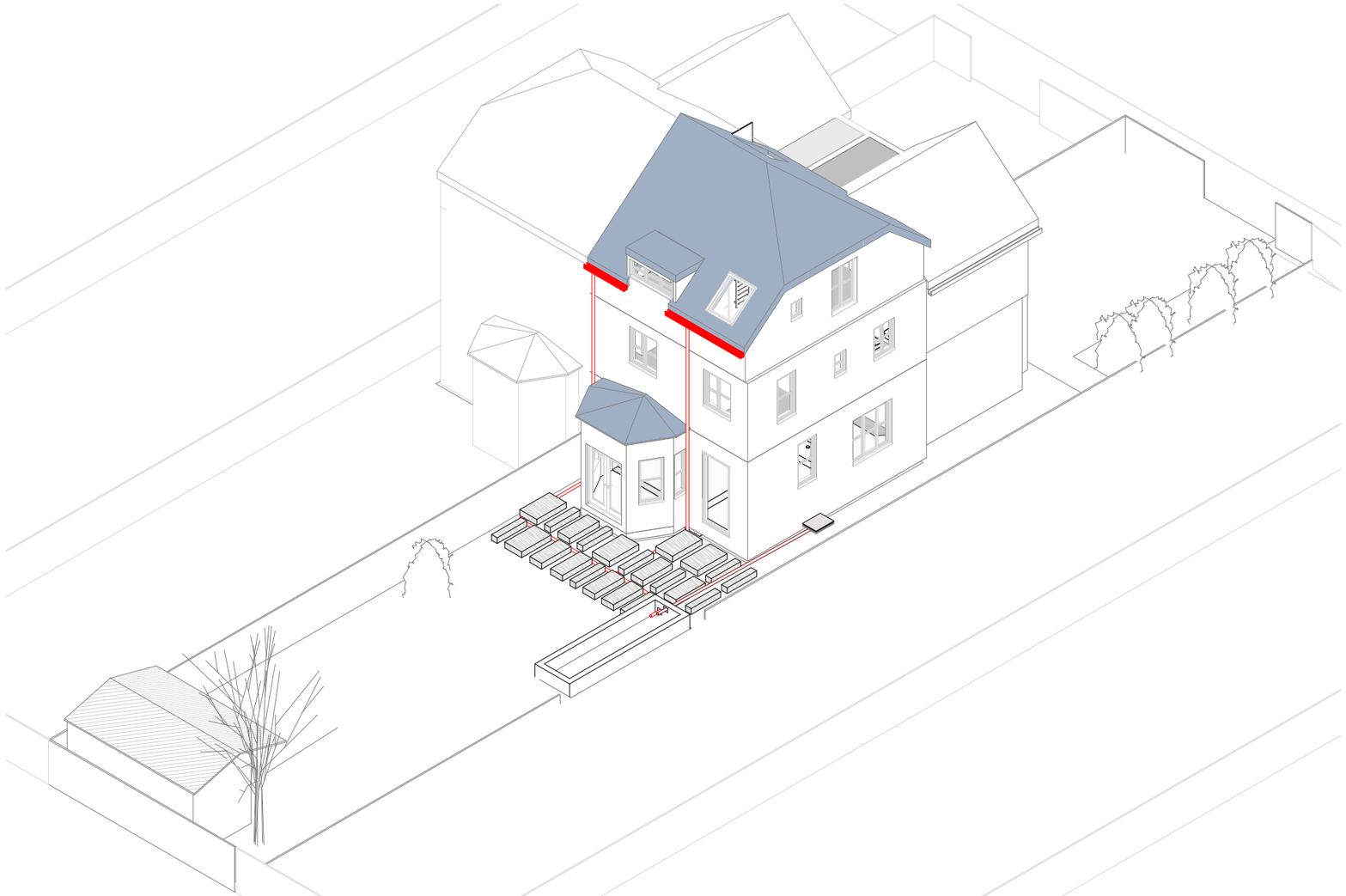
What can we do in our own gardens?
Collect the rainwater in a raingarden



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What can we do in our own gardens?
Recycle existing paving materials

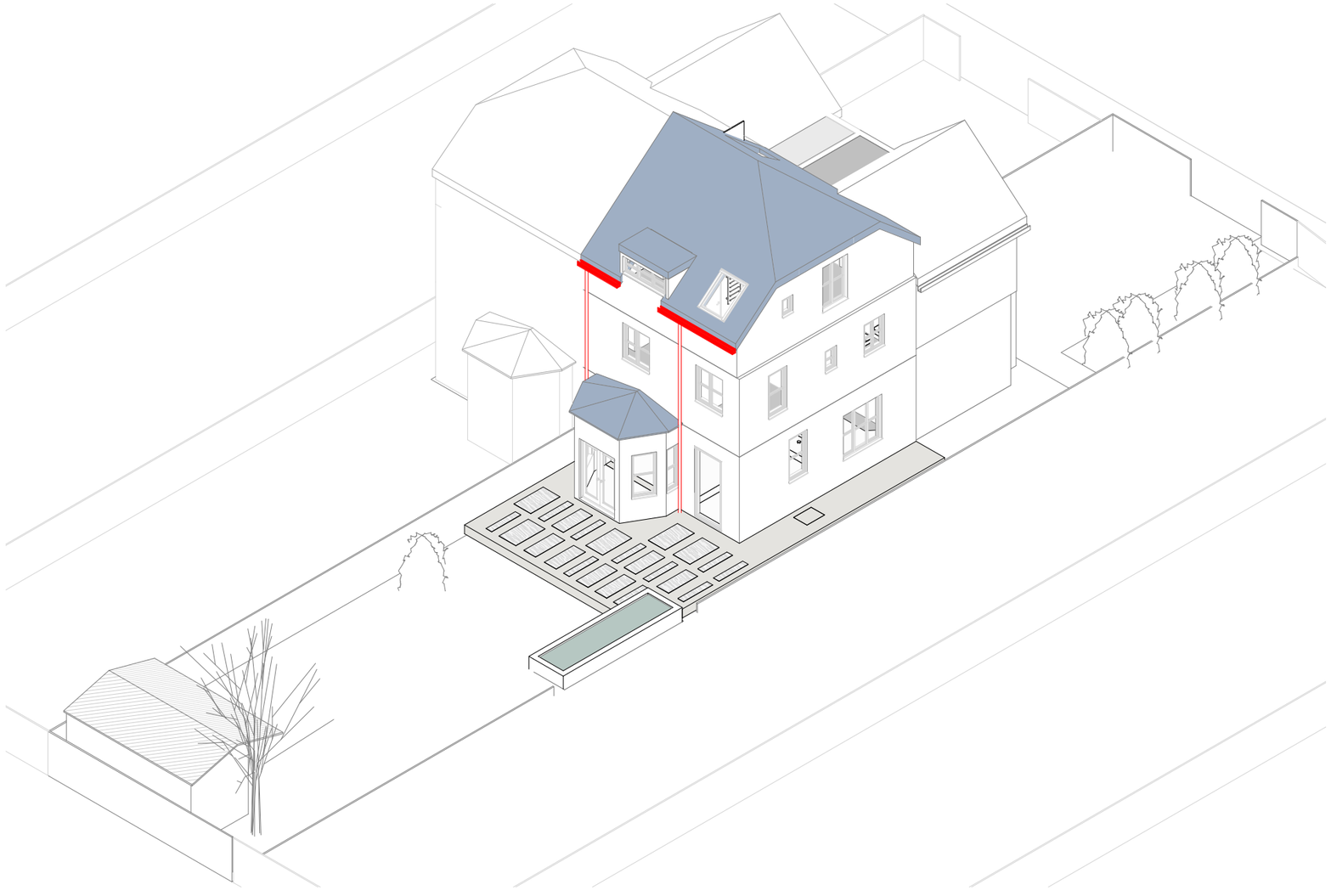




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What can we do in our own gardens?
Recycled sleepers

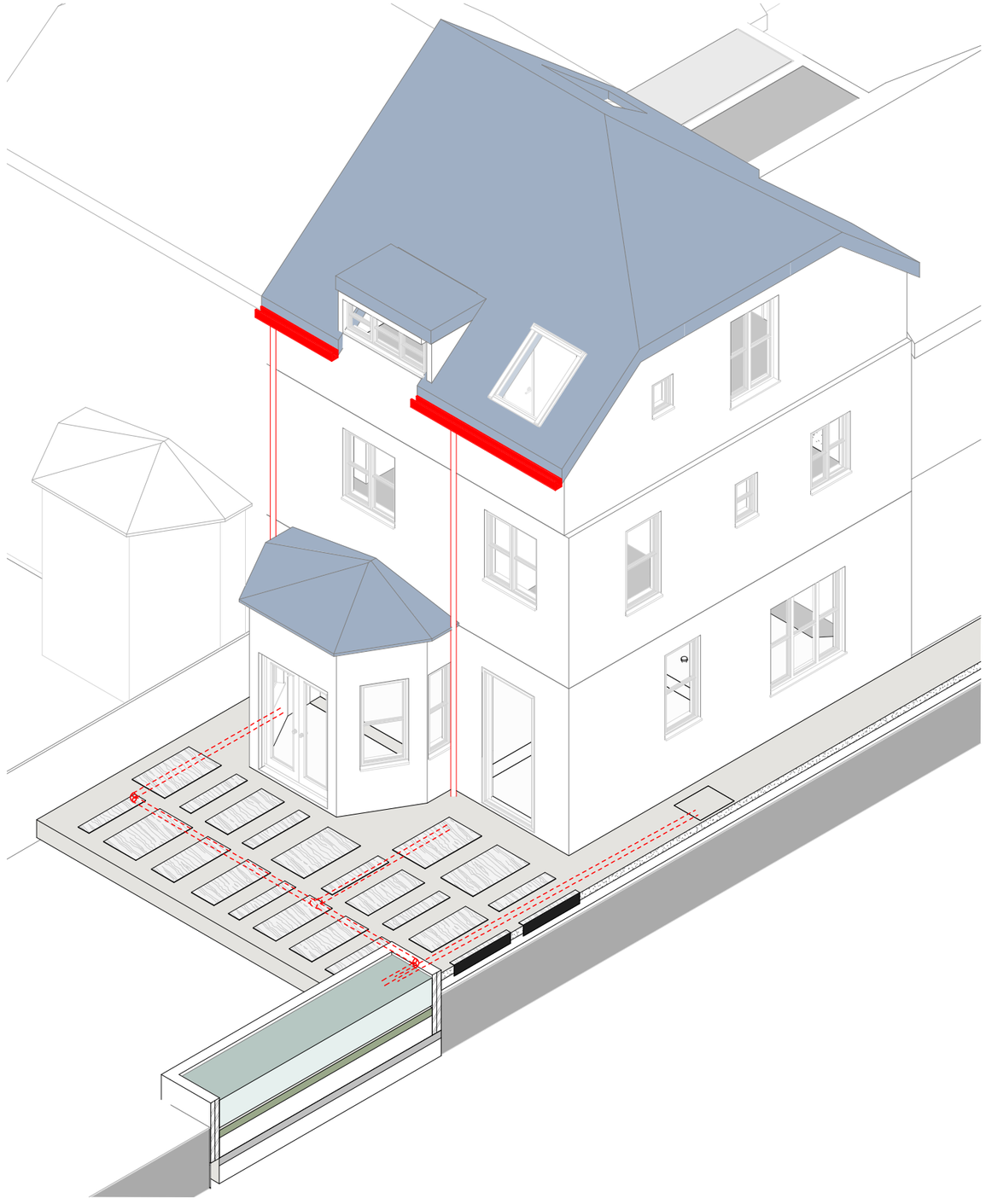




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What can we do in our own gardens?
Integrated design with water management.





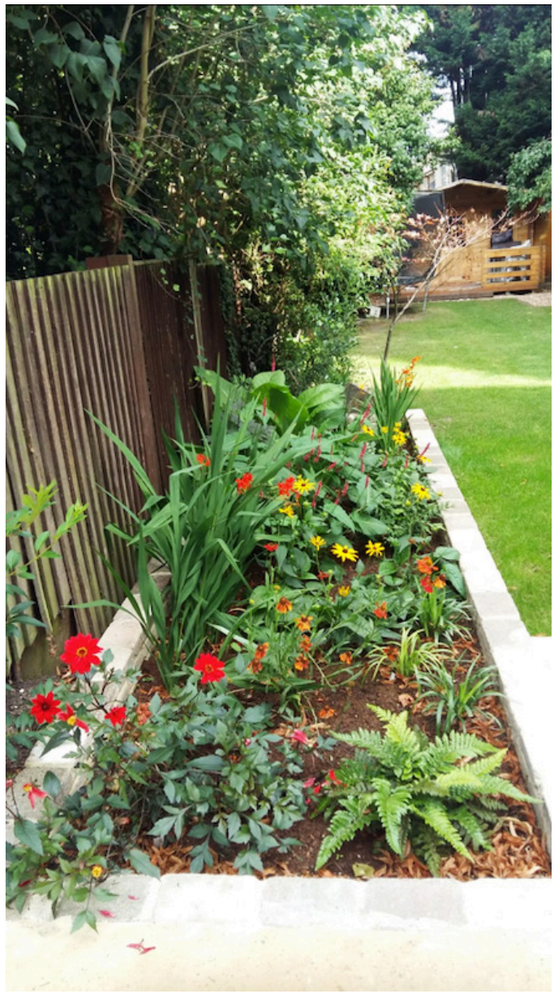
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Integrated design with water management.



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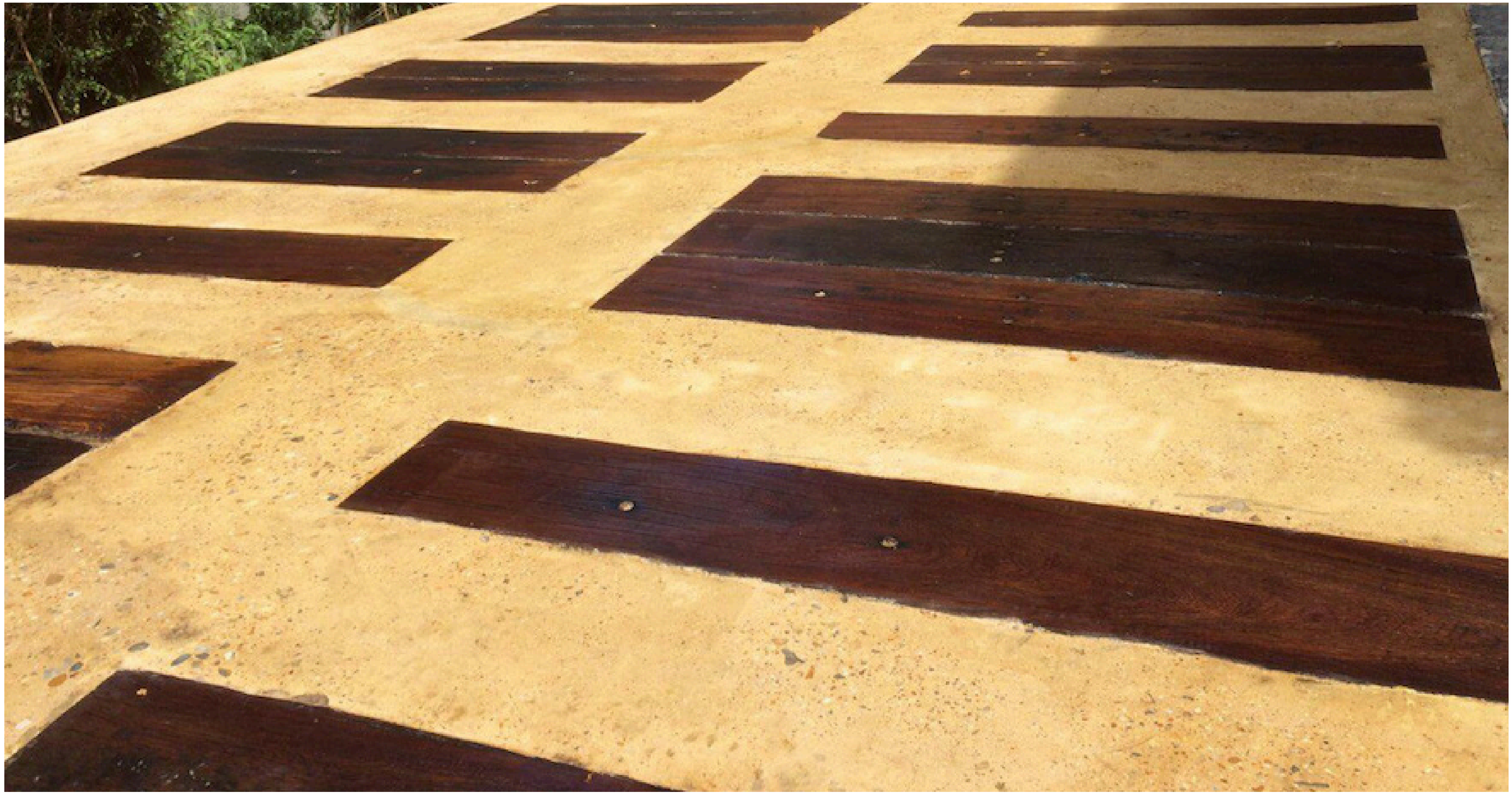
What can we do in our own gardens?
Private rain gardens





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What can we do in our own gardens?
Private rain gardens



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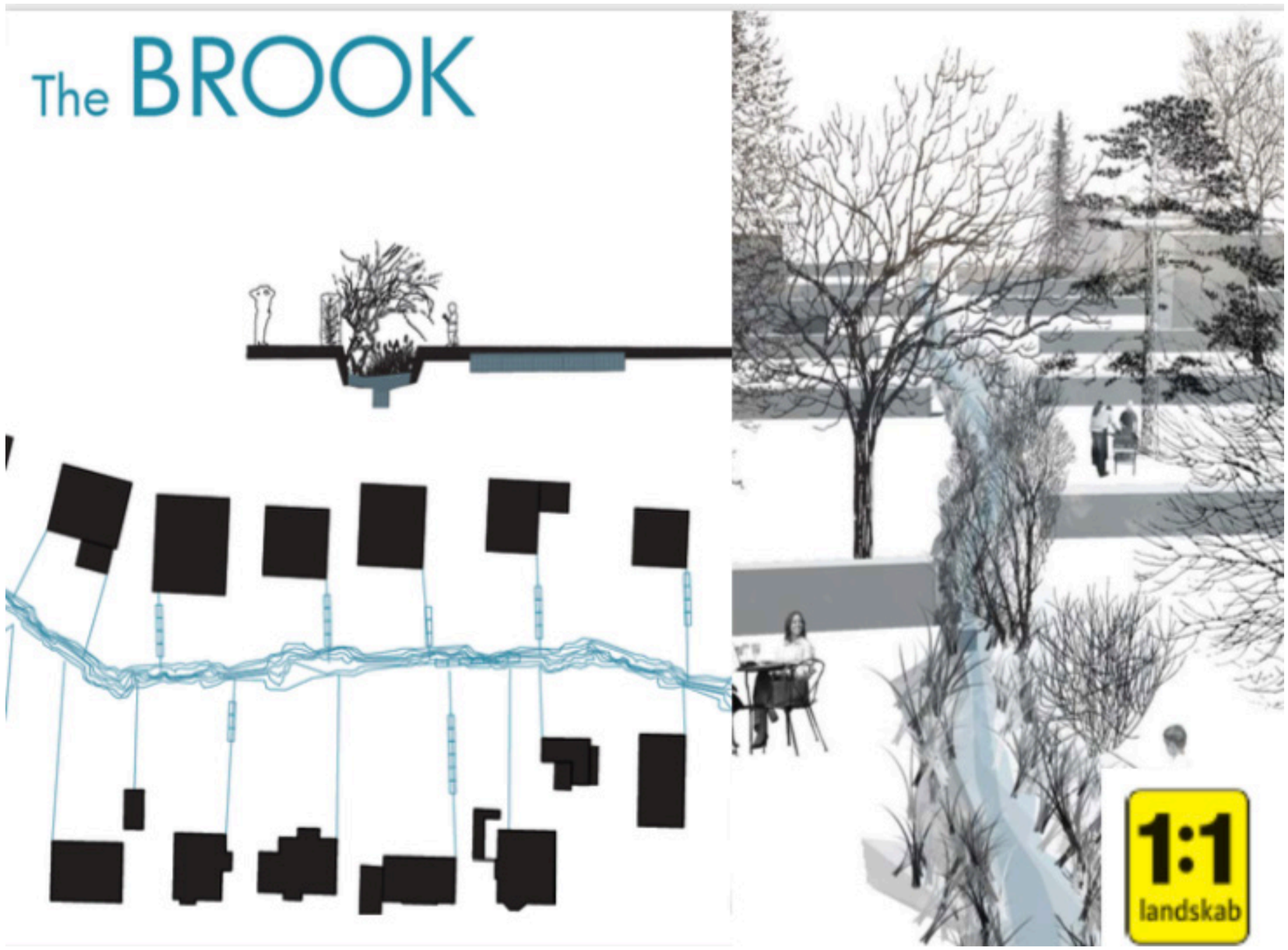


One garden at a time...

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Local scale: public open spaces and combined private spaces





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Architecture Urbanism Landscape

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Client: **Maintenant Sustaining Now**