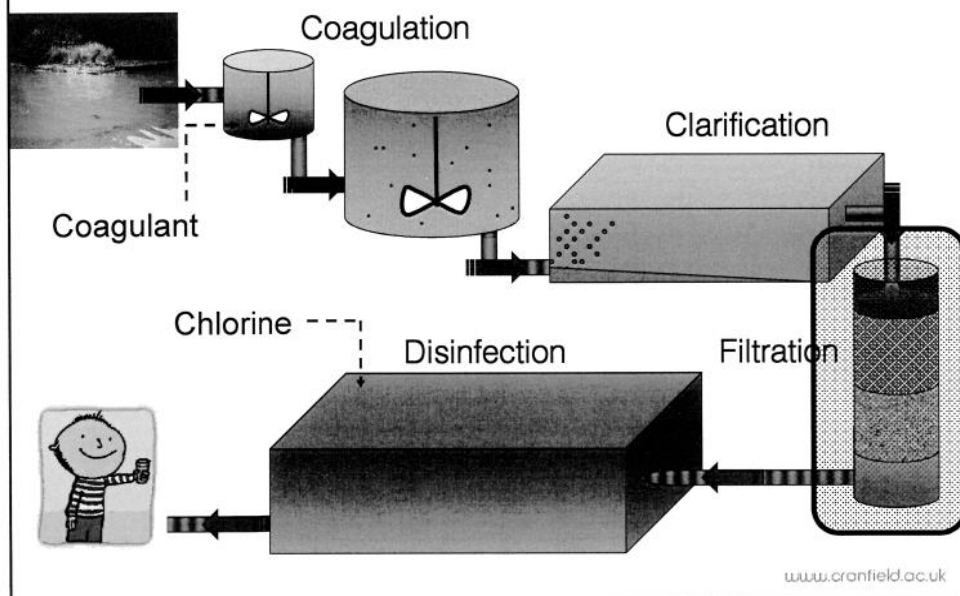


Filtration processes



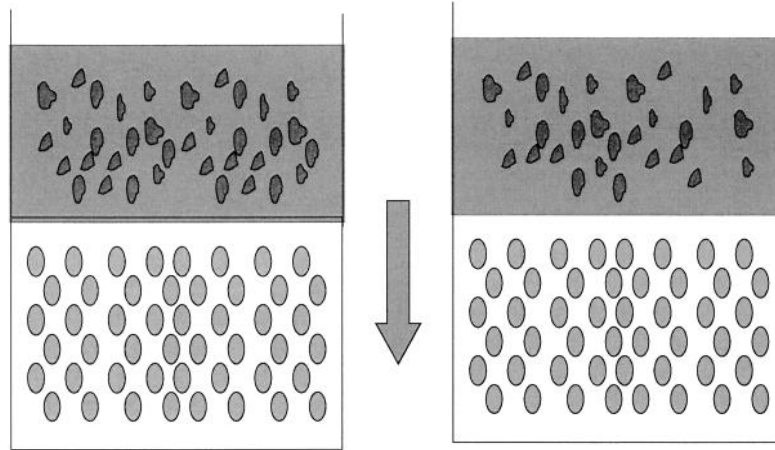
<http://www.cranfield.ac.uk>

Where are filters in the flow sheet



www.cranfield.ac.uk

Basic principle is to filter



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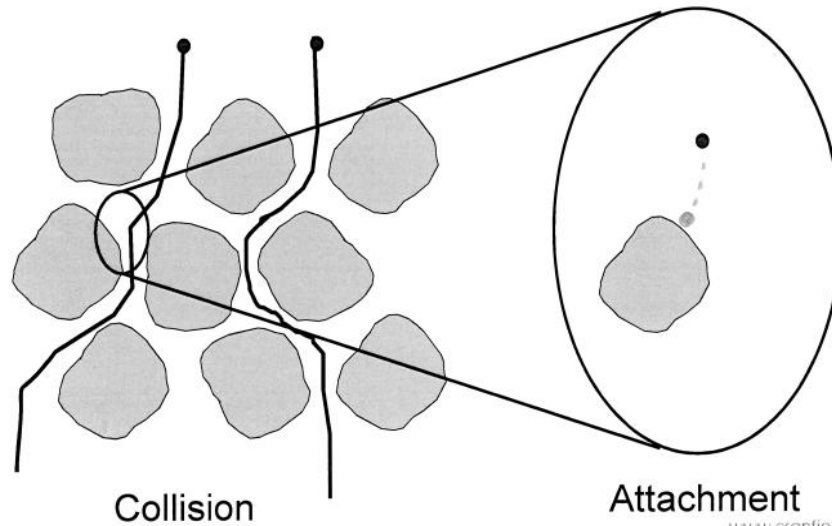
Know your type of filtration

Depth	Surface
Particles retained in bed	Particles retained on surface
$d_p < d_{pore}$	$d_p > d_{pore}$
Initial pressure high	Initial pressure low
Slower ΔP increase	Faster ΔP increase

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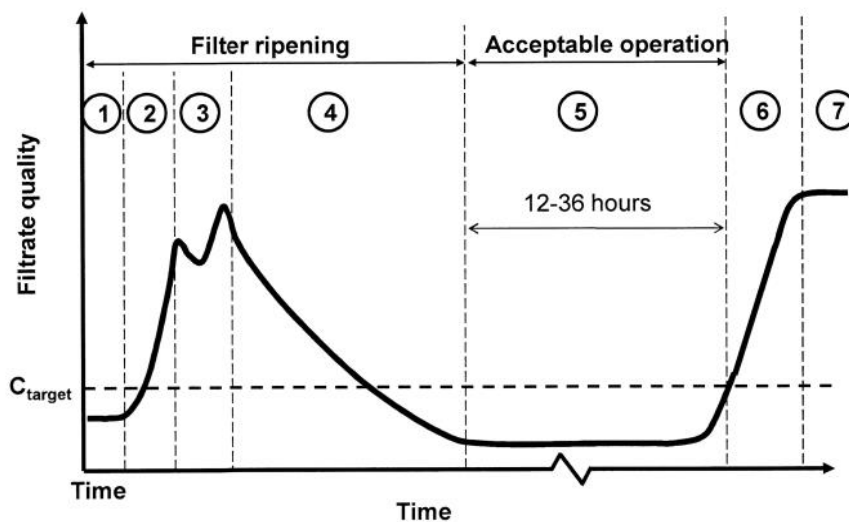
The process works by a combination of collision and attachment and is akin to DAF

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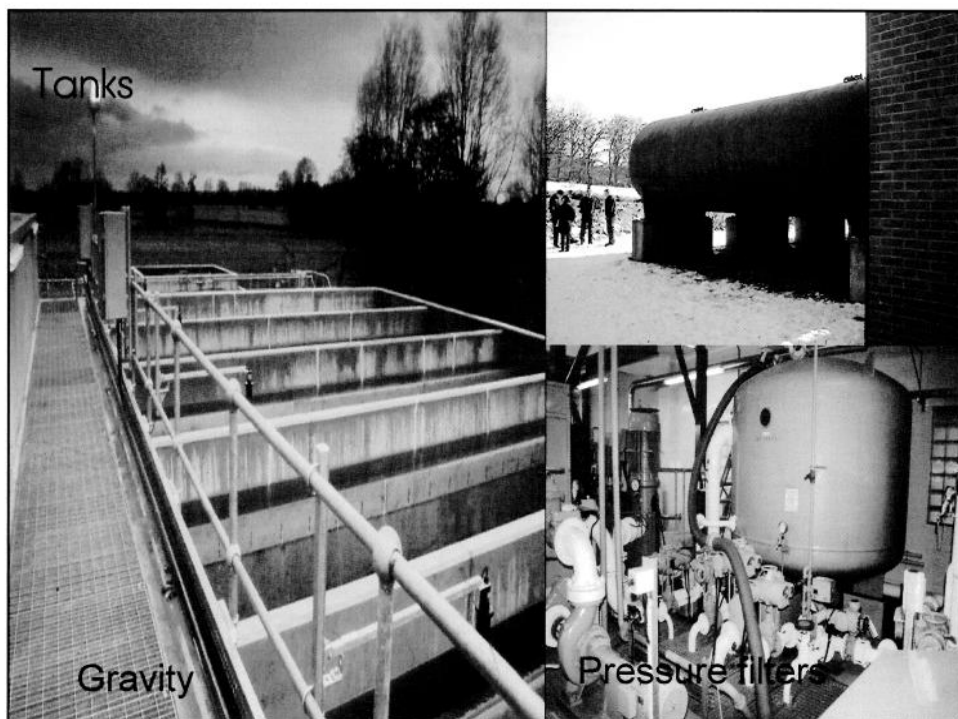
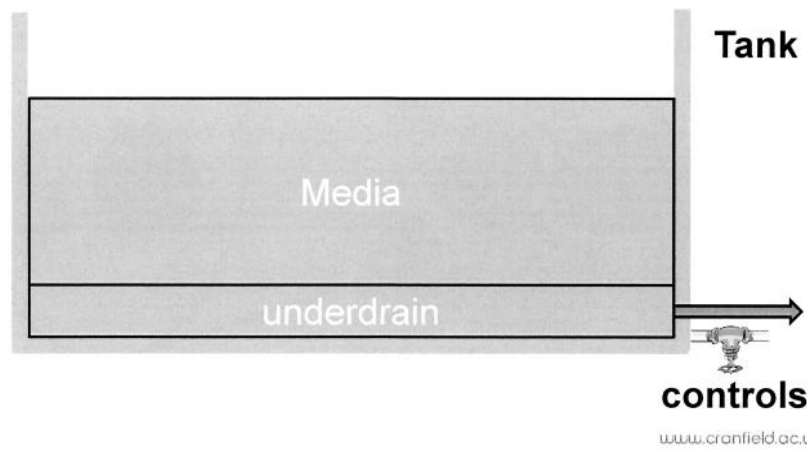


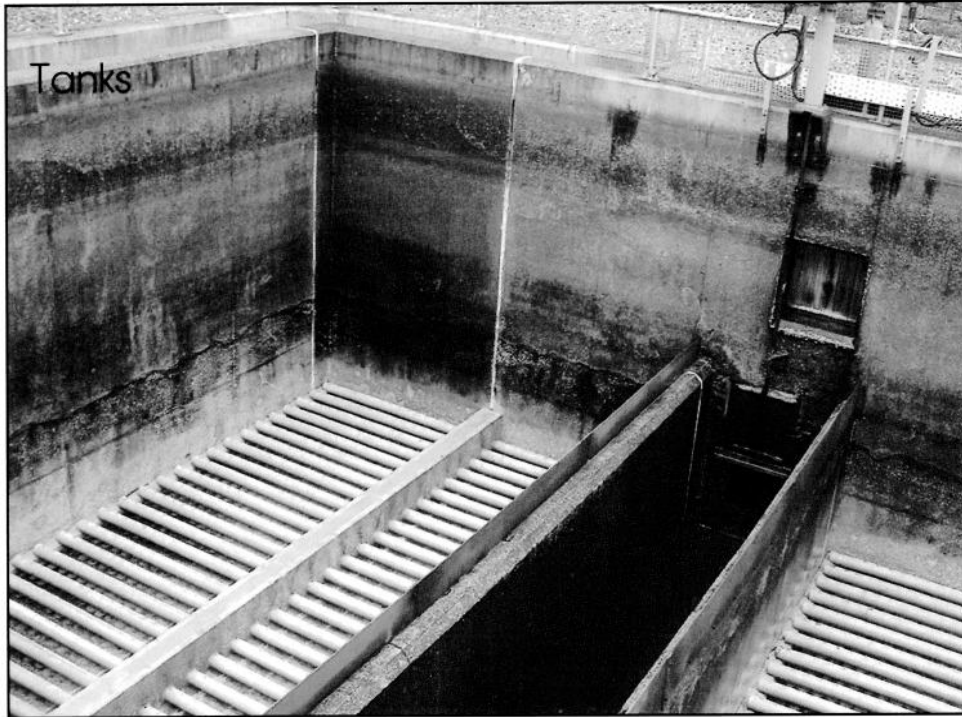
A batch cycle

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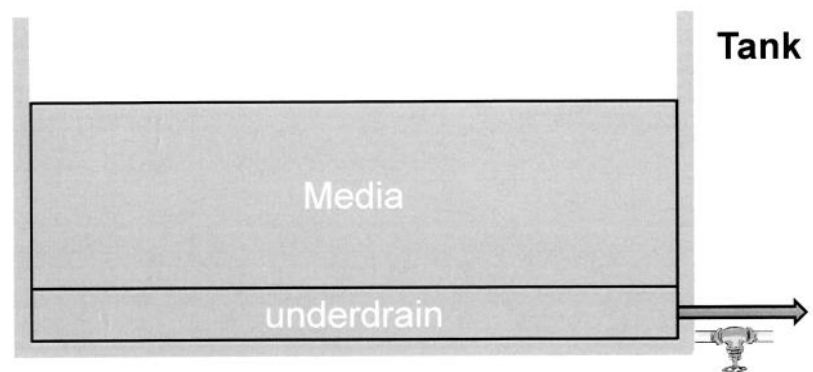
There are four main components





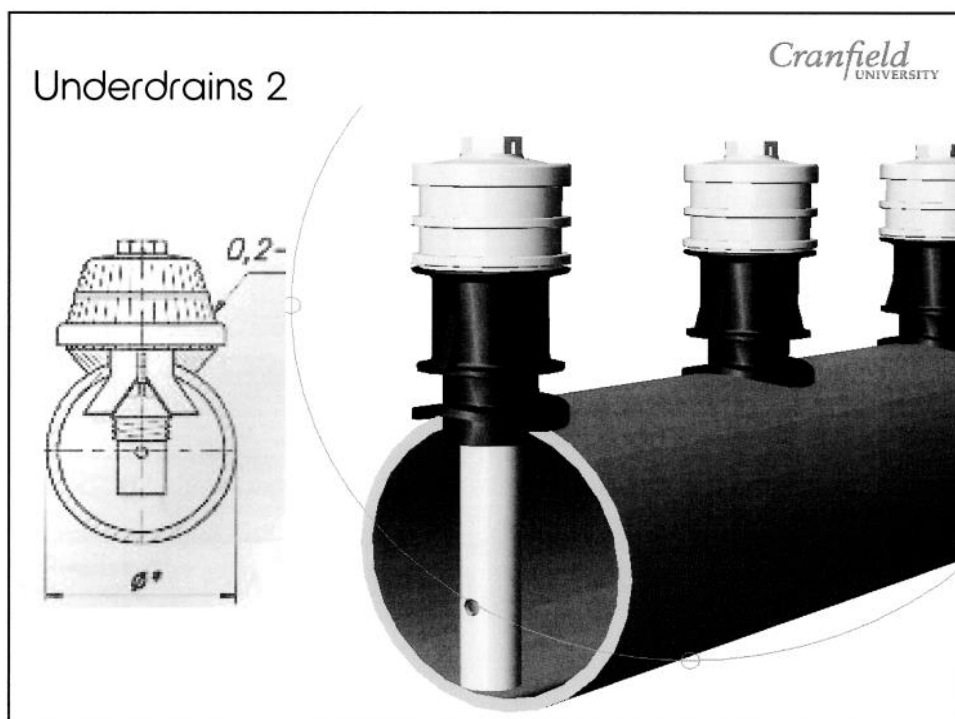
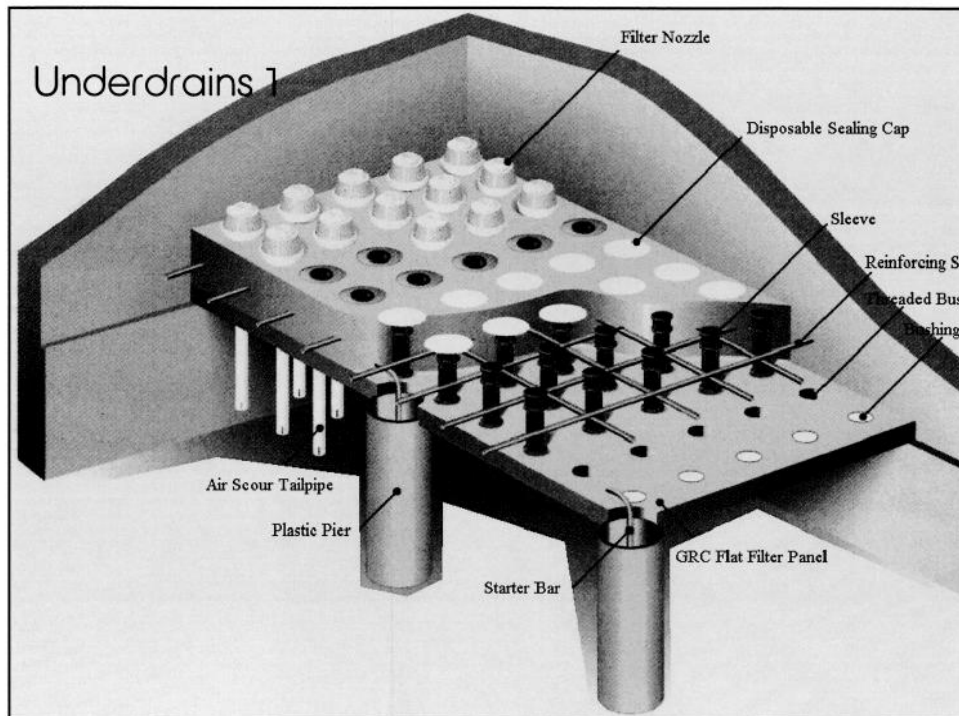
There are four main components

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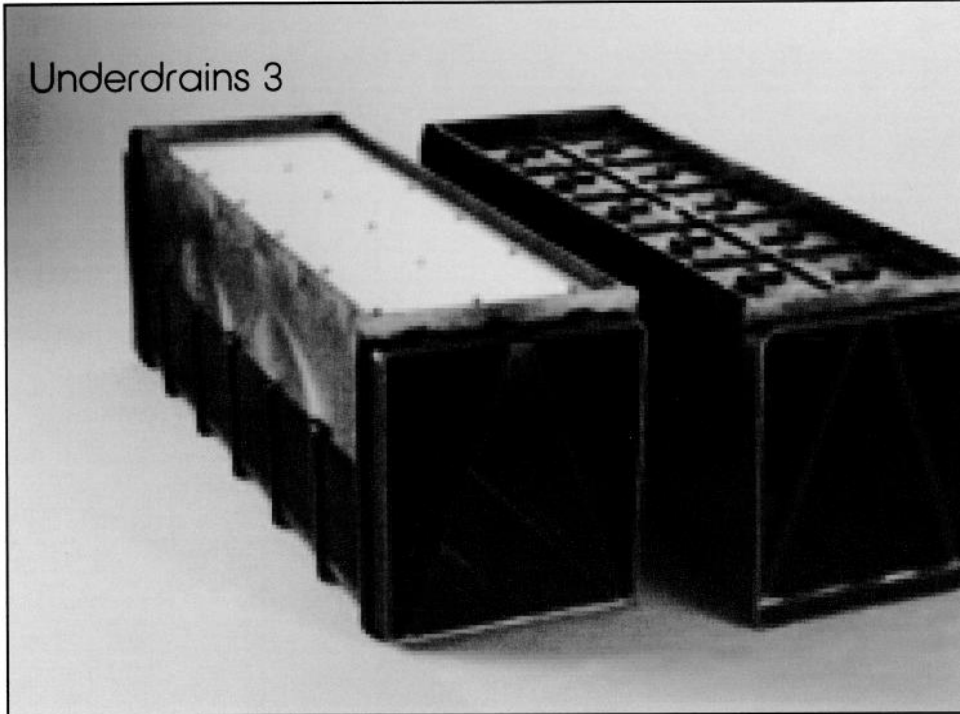


controls

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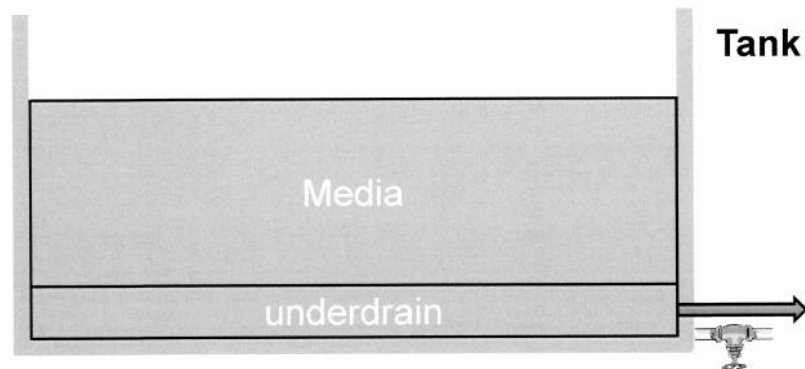


Underdrains 3



There are four main components

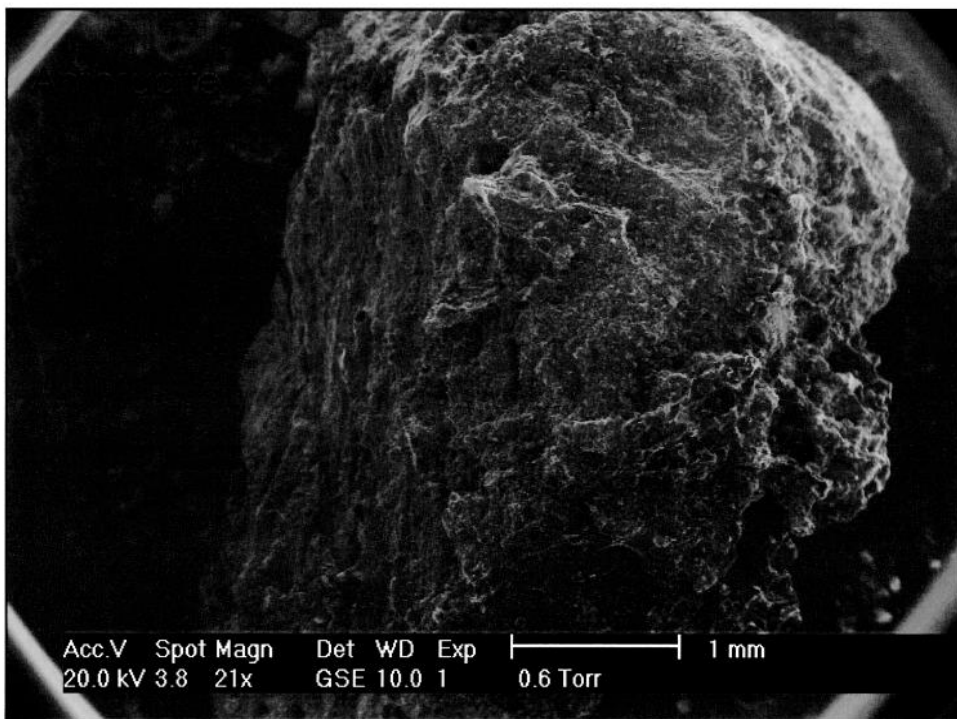
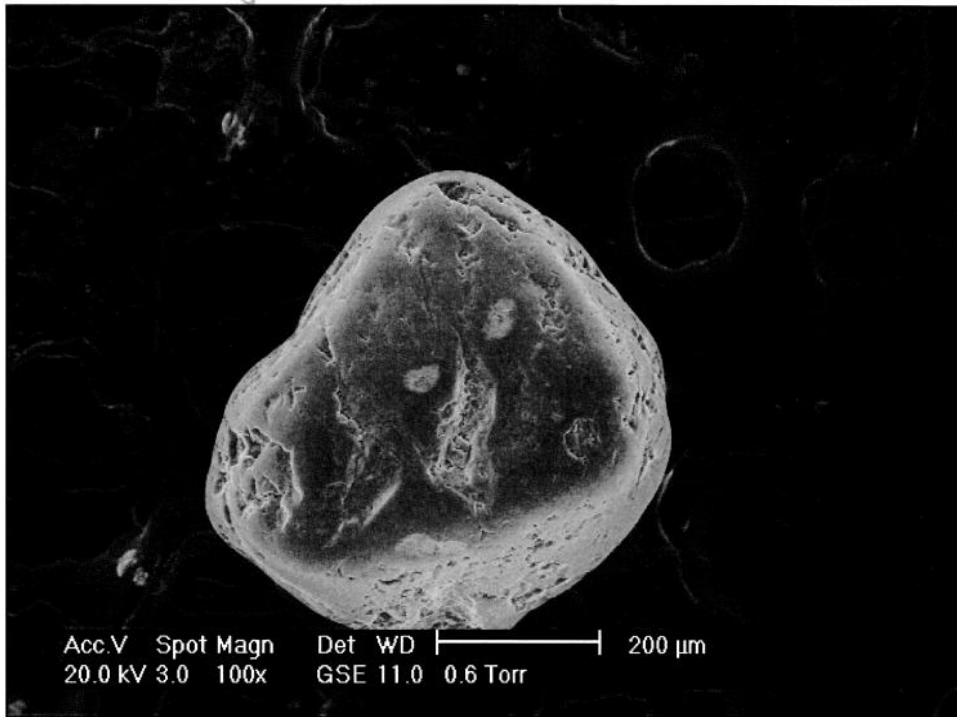
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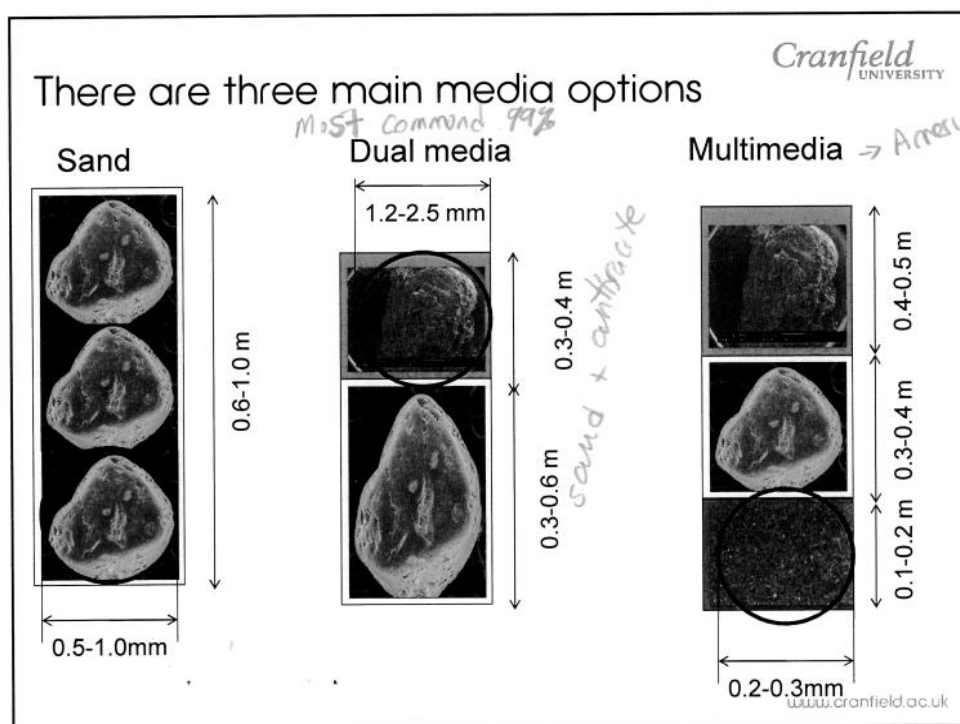
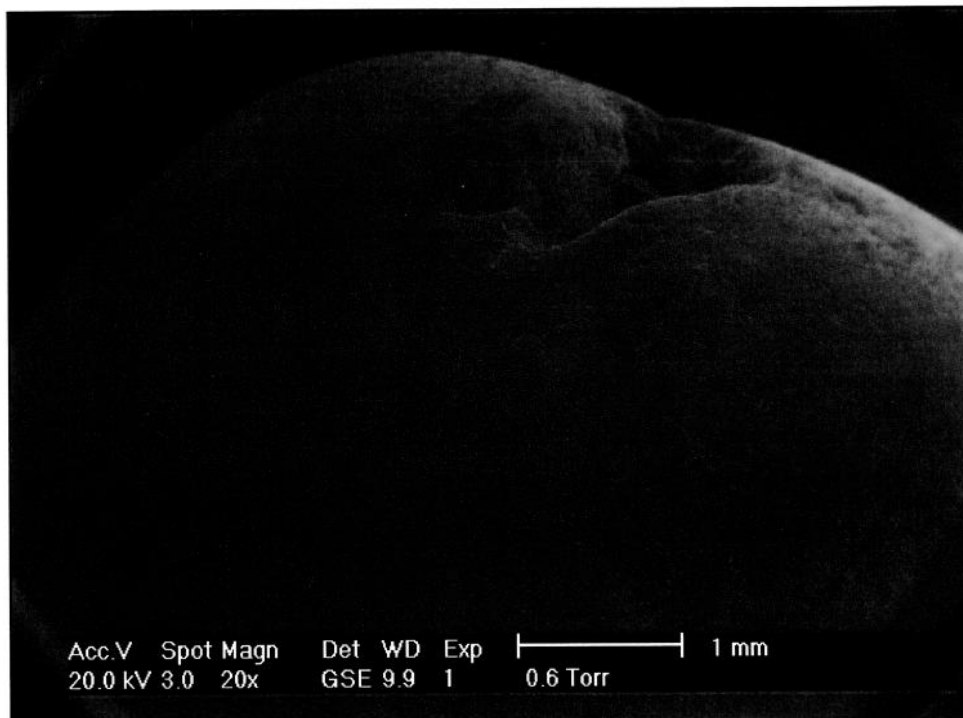


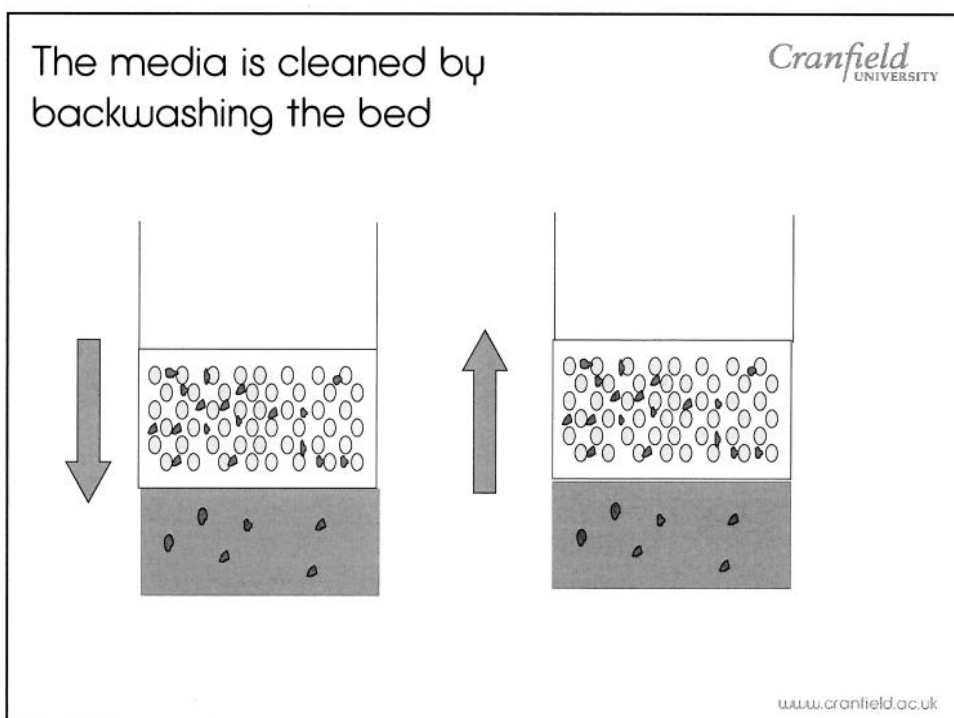
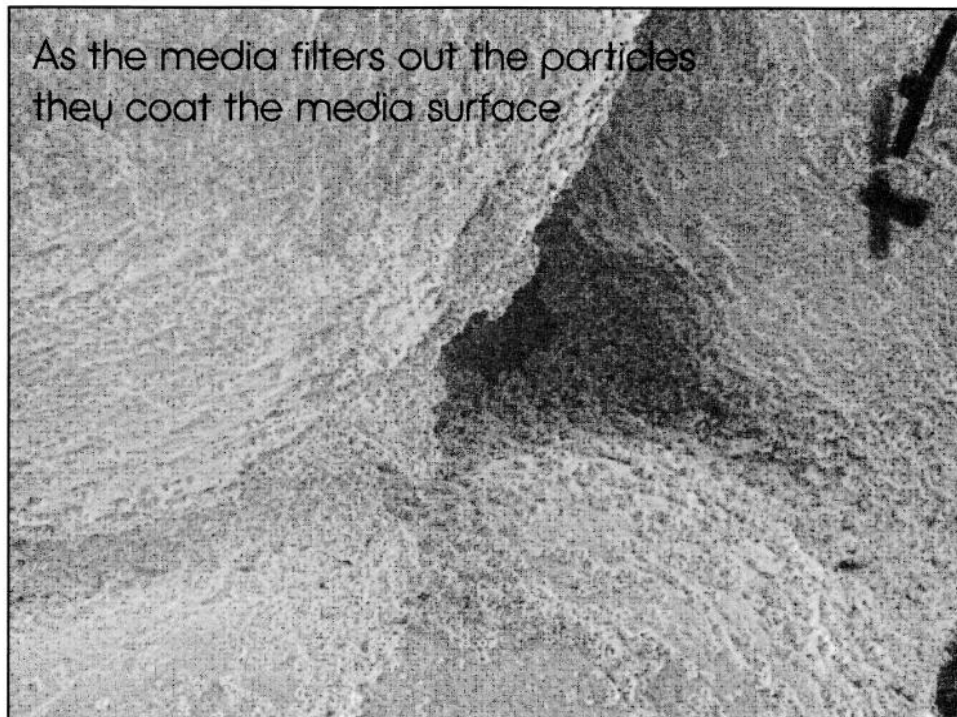
controls

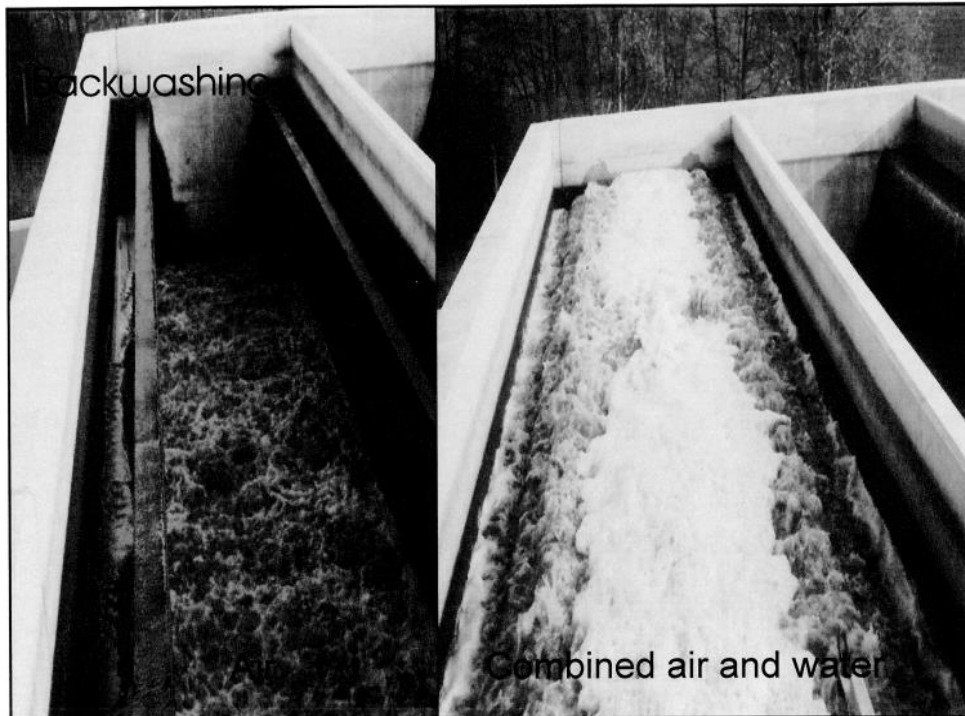
www.cranfield.ac.uk

SAND : rough surface

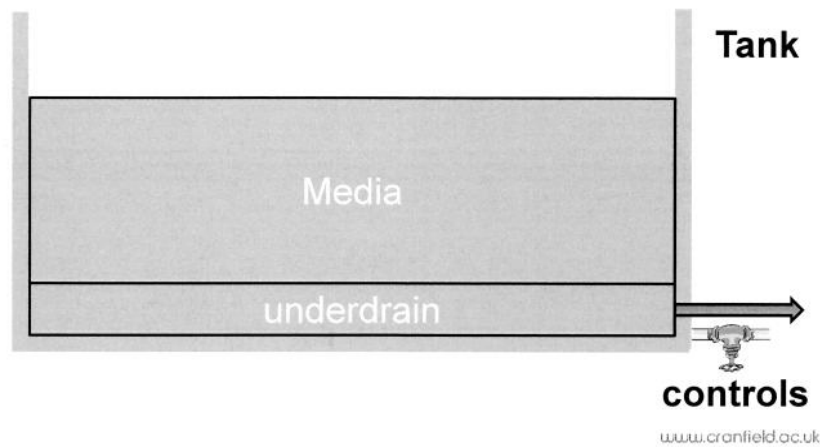




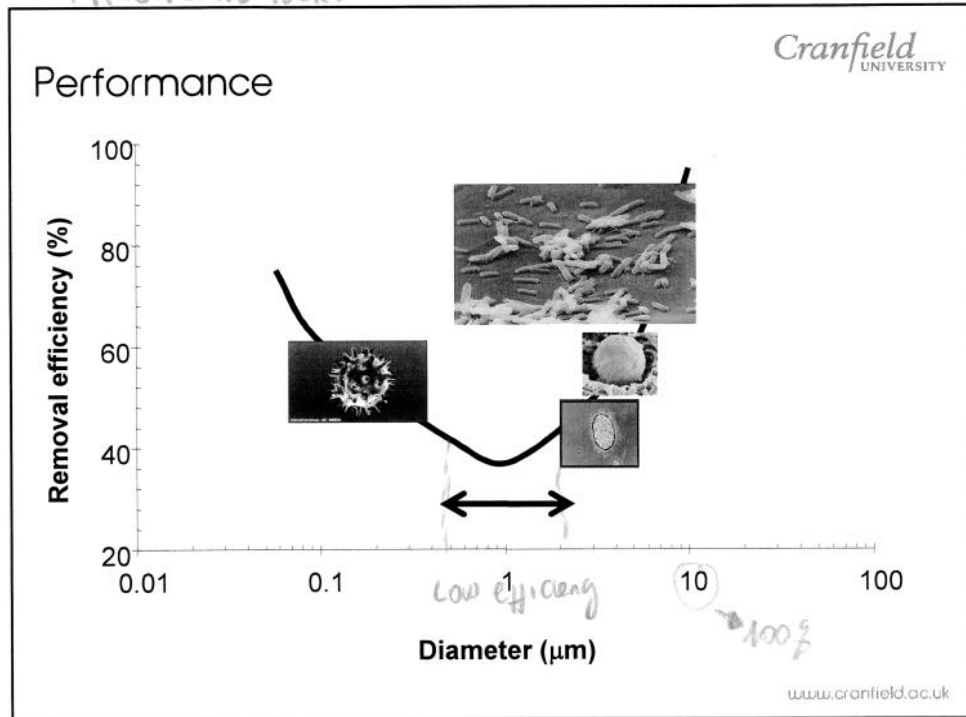




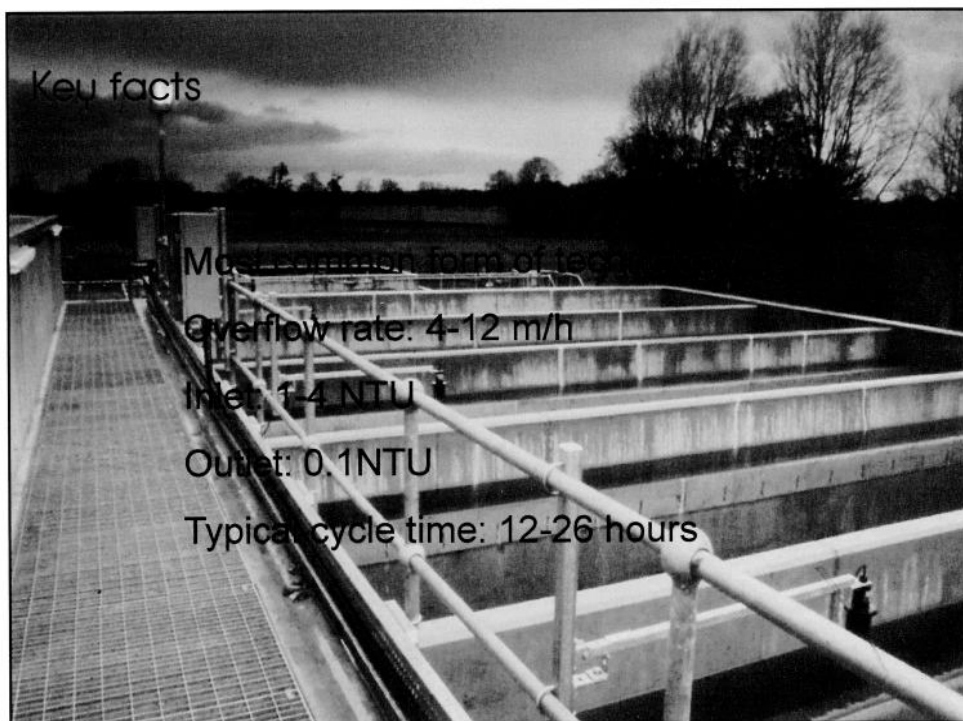
There are four main components

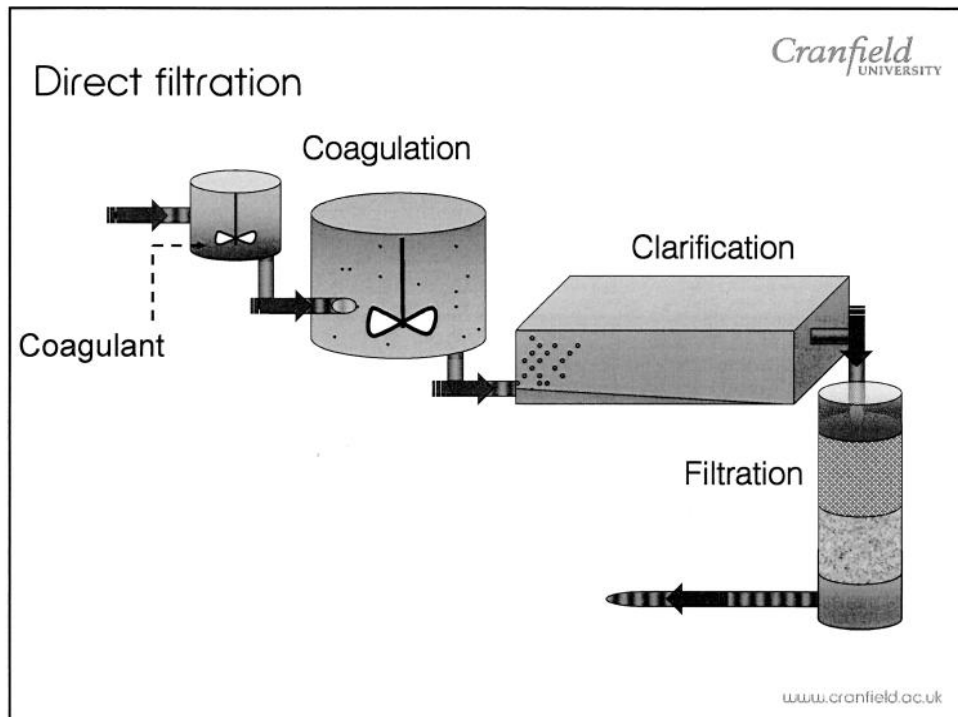


TRADITIONAL TECHN

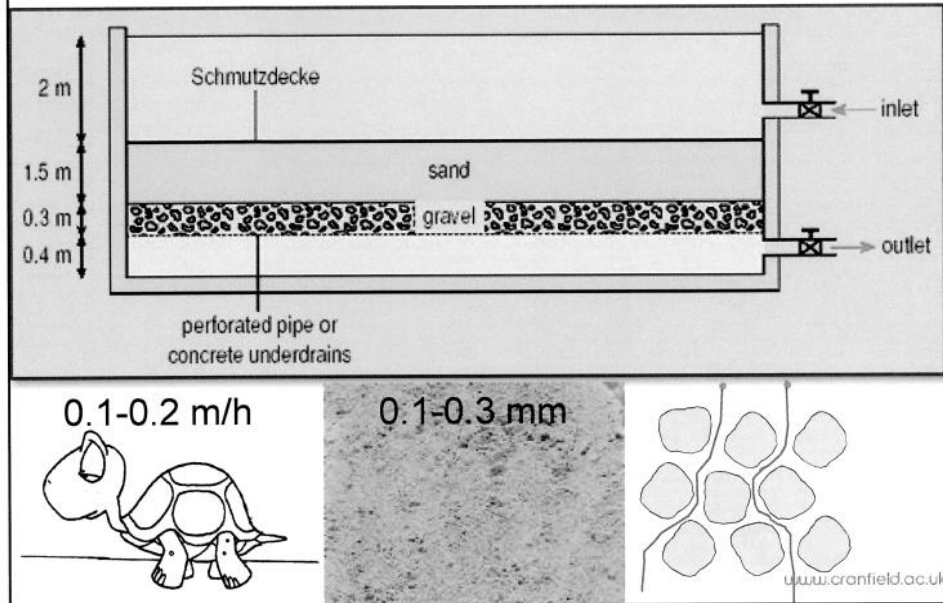


Key facts





Slow sand filters



As the bed matures a biofilm develops



