



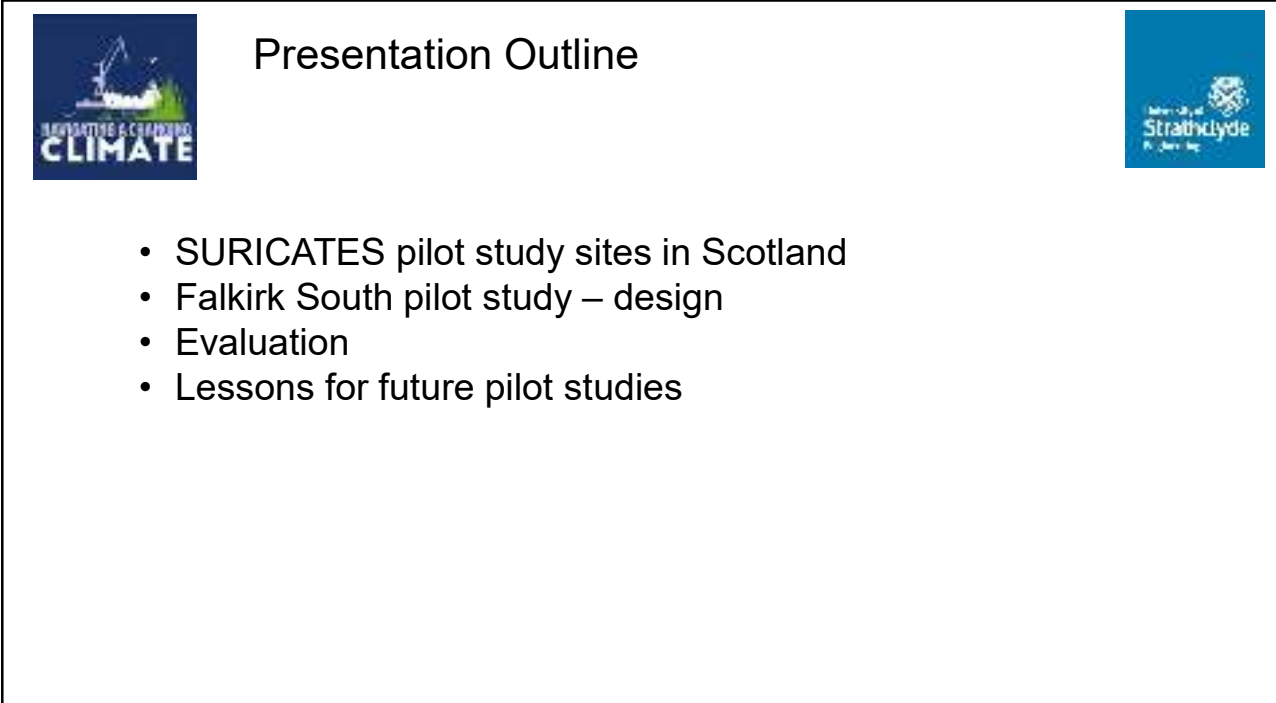
**A Pilot Study for the Nature-based Conditioning of Dredged Urban Canal Sediments and their Beneficial Reuse**

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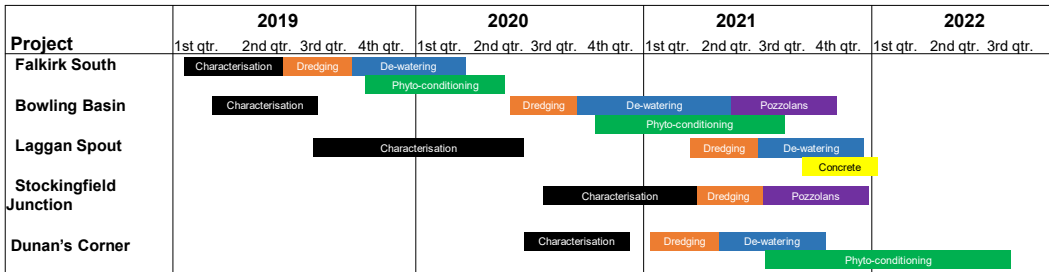
## Presentation Outline

- SURICATES pilot study sites in Scotland
- Falkirk South pilot study – design
- Evaluation
- Lessons for future pilot studies

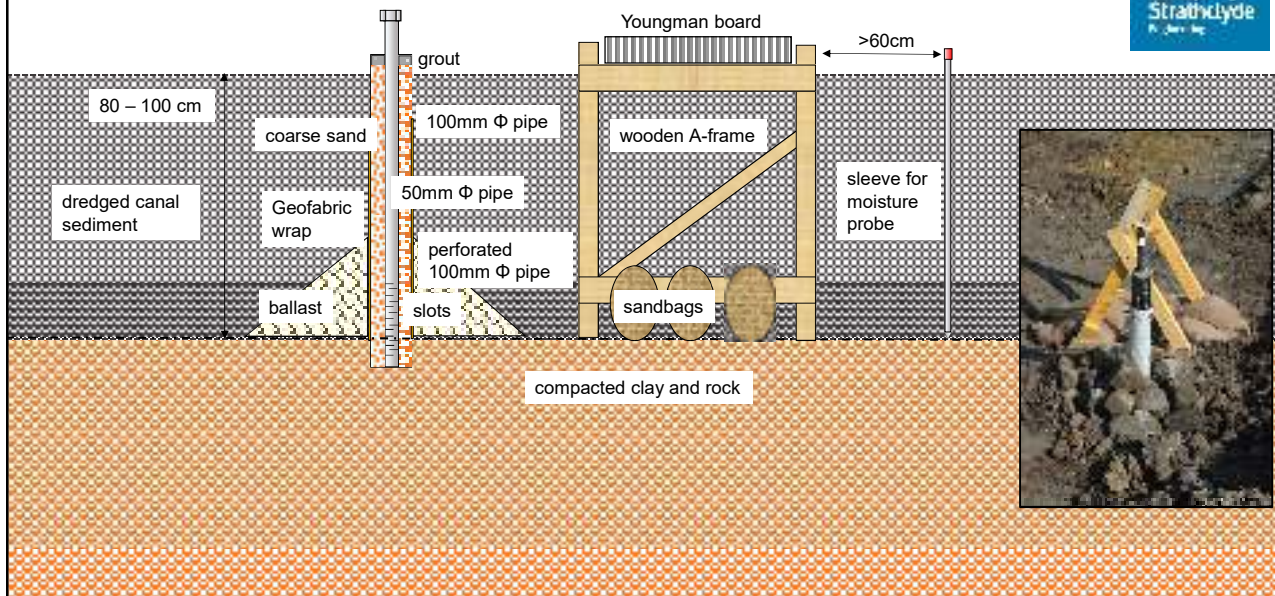
# SURICATES pilot study sites - Scotland



		Volume dredged	Sediment de-watering	Phyto-conditioning	Concrete trials	Pozzolan trials
Falkirk South	Union Canal	1,000m <sup>3</sup>	●	●		
Bowling Basin	Forth & Clyde Canal	600m <sup>3</sup>	●	●	●	●
Laggan Spout	Caledonian Canal	9,000m <sup>3</sup>	●		●	
Stockingfield Junction	Forth & Clyde Canal	10,000m <sup>3</sup>	●			●
Dunan's Corner	Crinan Canal	20,000m <sup>3</sup>	●	●		



## Falkirk South - cell cross section

















Depth	Moisture
100mm	28.3%
200mm	27.8%
300mm	33.4%
400mm	33.9%

25<sup>th</sup> June 2020

Depth	Moisture
100mm	23.7%
200mm	30.5%
300mm	35.8%
400mm	30.1%

20<sup>th</sup> Aug 2020

# BROADSEAT v1.0 Scoring



Category	Criterion	Weight	Score	Max Score	Weighted Score
Energy efficiency	Energy efficiency (kWh/m²/year)	10	4	10	40
	Energy efficiency (kWh/m²/year) - 2019	10	4	10	40
	Energy efficiency (kWh/m²/year) - 2020	10	4	10	40
	Energy efficiency (kWh/m²/year) - 2021	10	4	10	40
Water efficiency	Water efficiency (litres/m²/year)	10	4	10	40
	Water efficiency (litres/m²/year) - 2019	10	4	10	40
	Water efficiency (litres/m²/year) - 2020	10	4	10	40
	Water efficiency (litres/m²/year) - 2021	10	4	10	40
Air quality	Air quality (PM10/PM2.5)	10	4	10	40
	Air quality (PM10/PM2.5) - 2019	10	4	10	40
	Air quality (PM10/PM2.5) - 2020	10	4	10	40
	Air quality (PM10/PM2.5) - 2021	10	4	10	40
Noise	Noise (dB(A))	10	4	10	40
	Noise (dB(A)) - 2019	10	4	10	40
	Noise (dB(A)) - 2020	10	4	10	40
	Noise (dB(A)) - 2021	10	4	10	40

## South Falkirk output scores

Category	Score	Max Score	Weighted Score
Energy efficiency	100	100	400
Water efficiency	100	100	400
Air quality	100	100	400
Noise	100	100	400
<b>Total</b>	<b>400</b>	<b>400</b>	<b>1600</b>

Thanks to:



**The two biggest climate-change related challenges:**

- Increased flooding of riverside communities.
- Erosion related to more frequent higher intensity rainfall events.

**The two biggest opportunities for sediment management:**

- Use of sediment for flood defences.
- Greater acceptance of dredging to improve coastal defences.

Failure of the Forth & Clyde Canal embankment at Muiravonside, Scotland, due to a severe summer storm, July 2020.

# Questions?

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Photo credit: Scottish Canals

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