



The British Dam Society

EVENING MEETING

Monday 7th July 2025 at 6:00pm

One Great George Street, London (Nearest tube: Westminster)

Toddbrook Reservoir

David Prisk, Martin Hewitt, Ryan Braund, Henry Foster-Roberts



**For synopsis and brief presenter biography see overleaf | Admission free |
Teas available from 5.30pm | Social in the Westminster Arms after the event**

This meeting will be live at the ICE in the **Rennie Room** and available on the internet. For more details, including enjoying the live stream as part of a group at one of our Regional Hubs around the UK, please visit the meetings page on the BDS website: www.britishdams.org

For more information, please contact the ICE on 020 7665 2147 or email: bds@ice.org.uk



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Synopsis

Restoring Toddbrook Reservoir

Following damage to the auxiliary spillway at Toddbrook Reservoir the Canal & River Trust have invested in significant restoration works designed by Arup and in construction with Kier. The works involve removal of the auxiliary spillway, restoring the eroded section of the embankment and construction of an enlarged spillway along with providing draw off upstream control, remote instrumentation monitoring and increased drawdown provision. The evening meeting will cover the complexities of the design, innovation and flood management required during the construction and the extensive mitigation works and remote monitoring to assure reservoir safety. The failure mechanism has been covered extensively in previous events.

The Toddbrook auxiliary spillway failed during a storm event in 2019. The failure mode was investigated and determined to be a defect in the design of the auxiliary spillway built in 1971. Following intense heavy rainfall at the end of July 2019, several concrete panels on the auxiliary spillway collapsed. Around 1,500 residents of Whaley Bridge were evacuated from their homes for up to six nights as a safety precaution. Trust staff, volunteers and our contractors worked around the clock with the local emergency services, including Derbyshire Fire & Rescue, Derbyshire Police and the Environment Agency supported by the armed services, to stabilise the embankment and empty the reservoir.

Toddbrook Reservoir was constructed in the 1830's and opened in 1840 to feed the Peak Forest and Macclesfield canals and remains one of England's most important canal supply reservoirs. The dam is 23.8m high and stores 1,238,200m³. The reservoir is essential to keep these canals open and alive for the benefit of the communities who live along the canals, the many visitors who enjoy them and the ecological and environmental benefits they provide. The Canal & River Trust is a charity looking after 2,000 miles of canals and rivers, with 74 statutory reservoirs, across England and Wales.

The new spillway has been designed to carry the probable maximum flood, removing the need for the over-dam spillway. The design utilized a tumble bay feeding into a stepped chute with final energy dissipation using 6m high "turrets"

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to form a flume, preventing the need for a deep chamber in the final stilling basin. Construction has involved excavated more than 15,000 tonnes of soil, installed over 500 concrete piles and 1,000 sheet piles to support the new spillway structure resist both flotation and seismic loading. The ramp is now in place and works commenced to repair the face of the embankment. When the spillway is complete, and prior to re-fill, an array of instruments will remotely monitor both thermal change and the phreatic surface within the embankment, supporting reservoir safety management of the restored reservoir. After a staged refill Toddbrook will then commence supply to the canal network for summer 2026.

Presenter's Biographies

David Prisk | David is the Reservoir Asset Manager for the Canal and River Trust and a Supervising Engineer under the Reservoirs Act 1975. David manages the Trust's extensive investment in reservoir safety improvements. Before joining the Trust, David supervised 28 reservoirs of water supply, hydro power, heritage and amenity use, designed new spillways for Welsh Water, and managed design teams across the water industry.

Martin Hewitt | Martin is an All Reservoir Panel Engineer and Technical Director for Dams and Hydro at Mott MacDonald. Martin completed the Section 10 inspection after the Toddbrook incident, set out the statutory measures in the interest of safety that must be implemented before the reservoir can be brought back into use and has been appointed as Qualified Civil Engineer, the independent engineer to certify completion of the safety works.

Ryan Braund | Ryan is a design manager at Kier managing change and design issues on the Toddbrook Reservoir project. Ryan has a background in temporary works design having worked for Kier's in house design team for 8 years prior to joining the project having worked on many of the temporary works designs for this scheme.

Henry Foster-Roberts | Henry is a civil engineer with 7 years experience in water engineering projects. He is the Arup Project Engineer on the Toddbrook scheme and his current part time site role is helping him to work towards gaining Chartered Status and being appointed to the Supervising Engineer Panel.



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REGIONAL HUBS

BRISTOL | WARRINGTON | LEEDS | GLASGOW

The Regional Hubs allow the live stream of BDS evening meetings in London to be enjoyed as part of a group elsewhere in the UK.

Refreshments are provided from 17:30 in conjunction with watching the live streaming of the evening meeting - anyone is welcome to attend!

We would be grateful if you could register your intention to attend with the relevant Regional Hub host - details below.

BRISTOL HUB | Liz Rivers | liz.rivers@jacobs.com | 07817 166204
Jacobs, The West Wing, 1 Glass Wharf, Bristol BS2 0EL

WARRINGTON HUB | Nathan Freeman | nathan.freeman@uuplc.co.uk |
United Utilities, Lingley Mere, Lingley Mere Business Park, Lingley Green Avenue, Great Sankey,
Warrington, WA5 3LP

LEEDS HUB | Victoria Walker | victoria.walker@mottmac.com | 01135 249250
Mott Macdonald, 26 Whitehall Road, Leeds, LS12 1BE

GLASGOW HUB | Chukwuemeka Agbo | Michael.agbo@mottmac.com | 01412223770
Mott Macdonald, 319 St Vincent St, Glasgow, G2 5LD

For general queries regarding the Regional Hubs please contact:
Stephen Cavanagh | cavanaghsp@binnies.com | 01244 304 125