

Osney Lock Hydro

Harnessing the power of our river



Osney Lock Hydro is the first community-owned hydro scheme to be built on the Thames.

The hydro uses a reverse Archimedean screw to harness the power of the river to generate electricity. River flows are typically faster during autumn and winter, so the turbine generates primarily during these periods, making hydro a good complementary technology to solar, whose peak generation is summer-time.

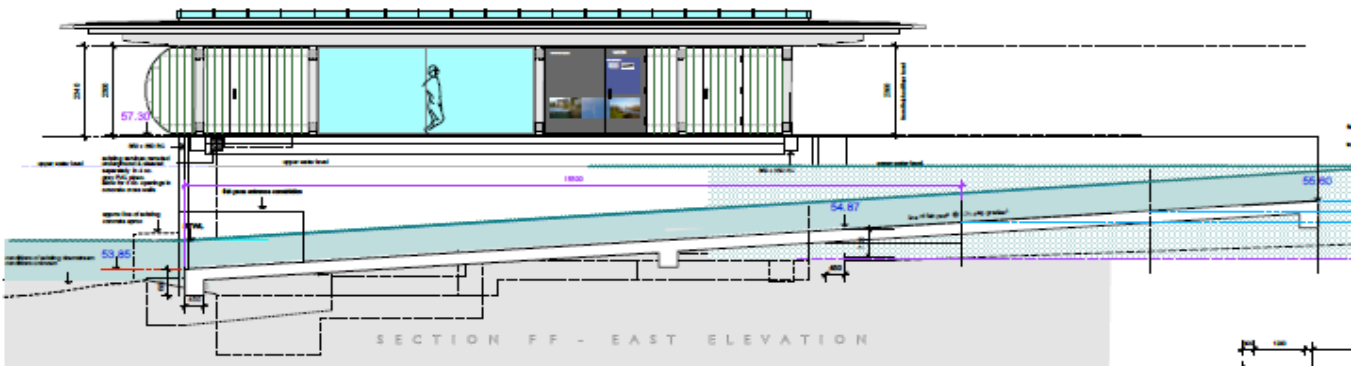
We have an automated system that monitors the flow rates at the local weirs and the privately-owned hydro at Osney Mill just downstream, so our hydro automatically starts generating when the flow conditions are right. The powerhouse roof incorporates solar panels, enabling us to generate electricity all year round, even if the turbine isn't turning.

When planning the project, we used years of historical flow data to predict that the hydro would generate around 179,000kWh of green electricity a year. The solar panels increase the generation capacity of the site to about 185,000kWh. Electricity is first sold to the Environment Agency to power their Osney depot, with the remainder then going into the grid.

As well as generating clean, green electricity, OLH will use profits from the sale of the electricity to support further local environmental projects. We hope to raise over £2 million over the 40-year lifetime of the project.

Technical data

- Max power output 47.8kW
- Target annual output 179MWh
- Annual CO₂ saved 77 tonnes
- 4-bladed screw
- Blade width 3m, length 4.35m
- Head height 1.7m
- Capacity 4000l/s
- Angle 22 degrees
- Variable rotation (Max 23rpm)
- Screw weight 11 tonnes



<http://osneylockhydro.org.uk>
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About us

Osney Lock Hydro was set up by a group of local residents to enable the development of a community-owned hydro scheme in the heart of Oxford. It is owned by its 200 members, almost half of whom live within a mile of the site. Between them, our Members have invested £776,000 to enable us to build the hydro, install railings and start to work on the community space. Our volunteer board brings together a wealth of skills and experience in the sectors of social enterprise, energy, engineering, business and fundraising. We share a commitment to creating a project that delivers long-term social, environmental and financial benefits to the community. Our Chair, Dr. Barbara Hammond, was awarded an MBE for Services to Community Energy Development.

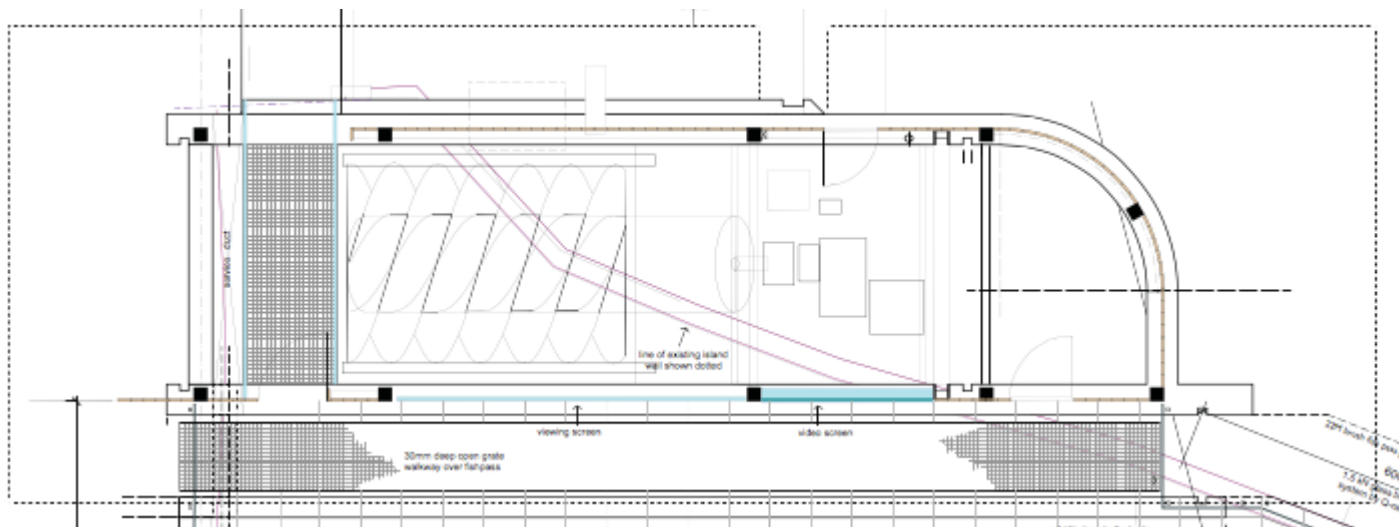
Plans for the future

As well as generating green electricity, the hydro will create a long-term income stream to support further local environmental projects. This income will enable us to maintain the site as well as support the work of local environmental charities.

We would also like the hydro to become a space for people to enjoy and where they can discover the story of our river. We are talking to a wide range of local stakeholders including local schools, universities and local groups to put together a grant application to the Heritage Lottery Fund to help with the development of interpretation materials such as teaching resources, self-guided tours and a volunteer guiding programme.

A centuries-old tradition

The hydro is the latest manifestation of a centuries-old tradition of harnessing the river to provide power to our community. Situated on a small island next to Osney Lock, just to the west of Oxford city centre, the site is a short distance downstream from Oxford's first Electricity Power Station and on a stretch of the Thames that housed a dozen watermills in mediaeval times.



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