

Preserve and improve water's edge and bankside habitats

Project Summary

Title: Wandsworth Riverside Quarter – Intertidal terraces

Location: London Borough of Wandsworth, England

Technique: Construction of intertidal terraces

Cost of technique: £££

Overall cost of scheme: £££££

Benefits: ££

Dates: 2009

Mitigation Measure(s)

Preserve and improve water's edge and bank side habitats

Retain and improve existing water's edge and bankside habitats in modified watercourses

Realign flood defences to increase coastal and intertidal habitat

Restore aquatic habitats in modified watercourses

Use green engineering techniques instead of hard bank protection

How it was delivered

Delivered by: Frasers Property

Partners: London Borough of Wandsworth, Environment Agency, J.T Mackley & Co Ltd, Salix Wetland, Beckett Rankine, Capita Lovejoy, Biodiversity By Design.

Tidal terraces after completion of works

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Artist's impression of the completed intertidal terraces © Capita Lovejoy copyright and database rights 2013

Background / Issues

The area of the London Borough Wandsworth on the west bank of the confluence of the River Wandle and the tidal River Thames was previously a 4 hectare Shell Oil terminal, and subsequently a brownfield industrial site. The area had been protected over time from tidal flooding through a combination of concrete quays and timber and metal tidal defences. The history of the site led to issues of contaminated land and a disconnection of the area from the rivers it borders.

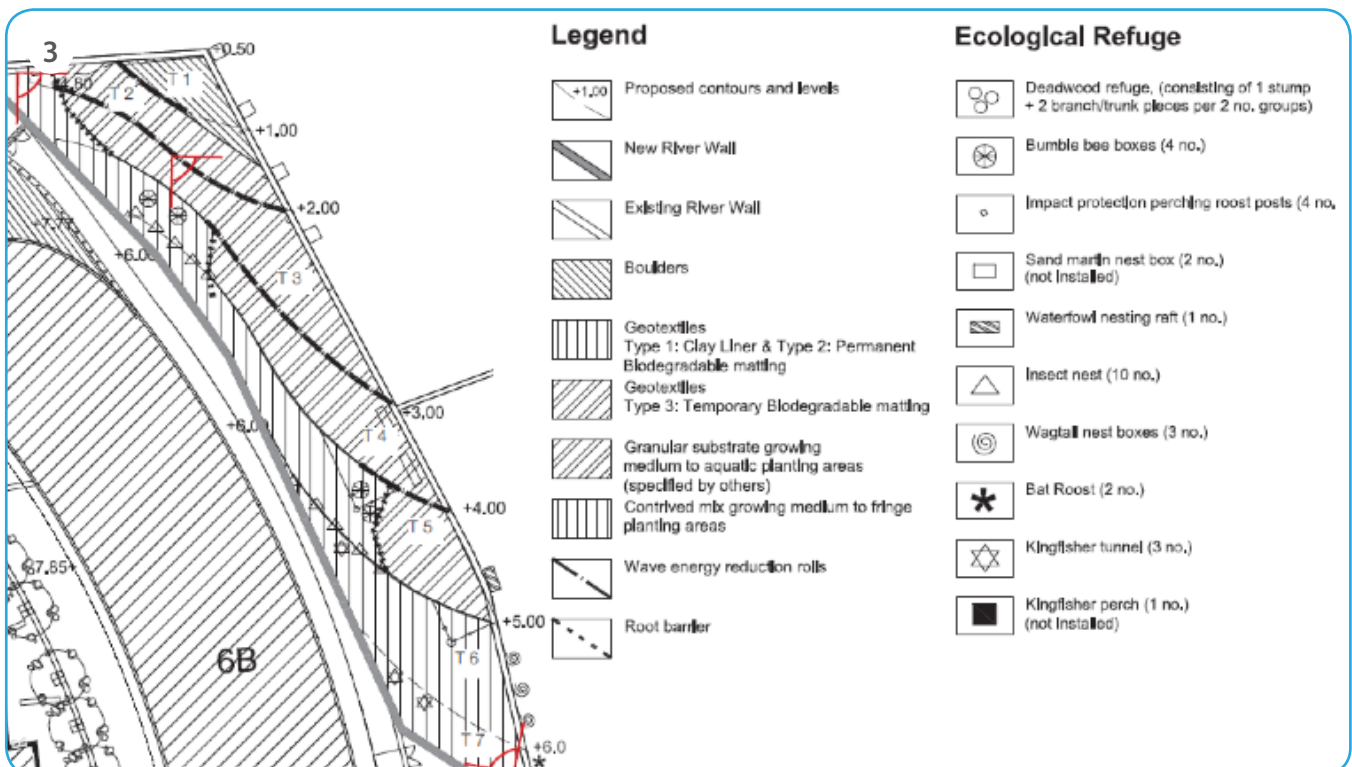
The former industrial site was redeveloped through a number of phased developments, which together

comprised a complex of residential and commercial properties on the Thames waterfront under the name 'Wandsworth Riverside Quarter'.

The redevelopment was identified by the Environment Agency as having the potential to provide an improved riverside environment, and an opportunity to reconnect the rivers with the people now using the previously-derelict site. The suggested solution was to replace the existing tidal defences with a series of tidal terraces, creating a new intertidal zone and facilitating a range of associated transitional habitats.



(1) Tidal defences prior to works © Unicomarine copyright and database rights 2013;
 (2) Tidal defences prior to works © Unicomarine copyright and database rights 2013;
 (3) Artists impression of the completed tidal terraces © Capita Lovejoy copyright and database rights 2013



Step-by-step

Formation works (January 2009)

- Preparation of site (coffer dams, excavation and soil removal, bank re-profiling, and set up site compound).

Hard landscape works (February 2009):

- Laying contamination textile to reduce risk of contaminated soils entering the Thames during the works.
- Constructing timber terraces.
- Placing backfill materials.
- Laying root barrier.
- Laying silt accretion geotextiles to encourage silt to accumulate between the terraces.
- Fixing coir rolls at channel margins.
- Installing dead wood habitat staked at the margins between the slope and the channel to encourage more diverse plant establishment and flow conditions.

Monitoring period (March-May 2009)

- After installation silt was allowed to naturally accrete in the lower terraces to allow for the growth of tidal flora. Silt accumulation was monitored during this period and a significant increase in sediment accretion between the terraces was recorded.

Rock roll installation (May 2009)

- Rock rolls (wave energy reduction structures installed by long reach plant) installed along with coir matting to encourage plant growth.

Planting (June 2009)

- Intertidal vegetation was planted and dead wood installed along the terraces.



- (1) Construction of timber terraces;
- (2) Backfilling behind upper terraces;
- (3) Installation of rock rolls and coir matting;
- (4) Placement of gravels and planting

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Benefits

- Creation of a range of intertidal habitats in an otherwise biodiversity-poor area of the constrained Rivers Wandle and Thames.
- Improved access to the River Thames and River Wandle, bringing residents and members of the public closer to the watercourse.
- Provides access to the watercourse for local wildlife.
- The site links in with green roofs and other green infrastructure designed as part of the redevelopment master plan creating an extended green network.
- The site acts as a showcase to demonstrate what can be achieved on tidal rivers.



Tidal terraces after completion of works
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Lessons Learnt

- Proactive discussion between the Environment Agency and the developers led to beneficial outcomes for both parties, and the creation of a multifunctional, more natural riverside environment.
- Use of coir rolls to stabilise the sediment accretion and bank reprofiling was insufficient and required rock roll installation.
- Success of sediment accretion between the terraces demonstrates good geomorphological understanding of processes and modelling.

Project contact: Fisheries and Biodiversity team, South Thames Area, Environment Agency