



MANAGEMENT & MAINTENANCE PLAN

LIVING WANDLE MIGRATORY FISH PROJECT

Introduction

European eels (*Anguilla anguilla*) once thrived in London's rivers but the number of young (elvers) joining the adult populations have dropped by over 95% since the 1980s and the species has been classified as 'Critically Endangered' by the [IUCN Red List of Threatened Species](#) since 2008.

One of the major threats to eels in freshwater are barriers to upstream migration such as weirs and sluice gates that reduce the amount of habitat available for eels to grow and mature.

Through the [Living Wandle Landscape Partnership Scheme](#) (LWLPS), the Wandle Trust delivered the Migratory Fish project, in partnership with the Environment Agency and Zoological Society London (ZSL). This project aimed to improve eel access to the Wandle by completing six eel pass projects (Figure 1), increasing elver migration into the Wandle.



LOTTERY FUNDED



Figure 1: Map showing eel pass improvement projects

The Eel Passage Improvements

Please refer to the Appendix for more information on the design of these passes.

1. Morden Hall Park
TQ 26158 68590

In June 2017, the first eel pass project was the repair and extension of an existing pass at Morden Hall Park with the addition of a monitoring trap to enable local volunteers to monitor elver migration into the Wandle with ZSL and the National Trust.



2. Topps Tiles
TQ 25763 74070

Topps Tiles was delivered in December 2017 (in the snow), which included a row of lift out eel tiles with upstream deflector, and a section of low profile bed tiles on an adjacent channel. This site was testing the improved steel brackets that were fabricated by a local contractor/volunteer. These installations were designed as 'easements' to allow eels to navigate the fast flowing sections of the heavily modified concrete channels. Two old, defunct eel passes were disassembled and removed from site.



3. Trewint Street
TQ 25946 72687

The Trewint Street easement was installed in December 2017, and consisted of a 30 m section of the new 'low profile' bed tiles that were commissioned for this project, with a short section of flexible bristles to navigate over a 300 mm wooden baulk at the upstream end. This has provided an additional route up the left hand channel which offers a less turbulent route than the fish pass which is present on the right hand channel.



4. EDF Weir
TQ 25551 75145

The 'easement' at EDF was installed during Dec 2017/Jan 2018 with a 15 m section of 'low profile' bed tiles. As some high tides overtop the weir, these works were designed to increase the range of time/tides that this structure would be passable to eelers.



5. Watermeads Weir
TQ 27378 67783

These improvements were installed in March 2018. An extension piece was added at the upstream end to prevent debris blockages. At the downstream end, a deflector plate was added to reduce turbulence, and four standard bed tiles were installed to direct eels towards the pass entrance.



6. Papermill Cut
TQ 27314 67749

This gravity fed eel pass was installed on a small side channel in March 2018. This was a cheaper and more secure alternative to a pass that had previously been stolen.



Management and Maintenance

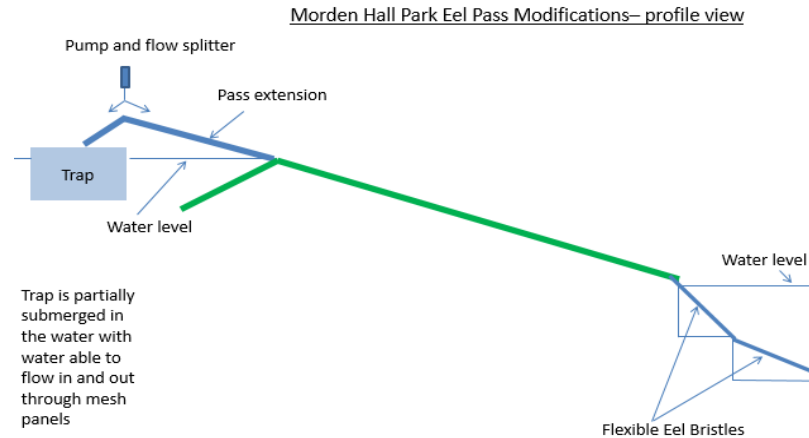
Works commenced in 2017 and to ensure the sustainability of the LWLP funded project, a 10-year management and maintenance contribution of £3000 has been pledged between 2019-2029, although the maintenance of these sites will remain important to the Trust beyond this timeframe.

The table below outlines the management and maintenance actions required and how these will be delivered. The maintenance of this project and the estimated costings have been based on the approach the Environment Agency take to maintaining their own structures on the Wandle to ensure they are functional for fish passage.

What needs to be maintained/ managed?	What work is involved?	Who will do this?	When and how often?	What resources are required?	££ Justification	££	Proof of value and agreement from delivery partner
Installed eel passage improvements	Check eel passes for debris and blockages Ensure all passes are functional ahead of elver migration season	Wandle Trust staff & volunteers	Annually from 2019, March	PPE	1 staff day £250 8 vol hours, unskilled £57 =£307/yr	£3071	Future sign in sheet of event
Monitoring of Morden Hall Park eel pass See MHP Partnership Letter	Reinstate eel trap ahead of elver migration Set up volunteer rotation for monitoring	National Trust Staff and skilled volunteers	Annually from 2019, April - September	Monitoring equipment (NT)			Future monitoring records submitted to ZSL

1. Morden Hall Park - TQ 26158 68590

In June 2017, the first eel pass project was the repair and extension of an existing pass at Morden Hall Park with the addition of a monitoring trap to enable local volunteers to monitor elver migration into the Wandle with ZSL and the National Trust.



Description of Works	Materials	Supplier
<ul style="list-style-type: none"> - The downstream end of the existing pass was extended down to meet the river bed using 2 x flexible eel brushes. - Replacement of the original eel pass boards that were not of correct size. - The upstream end was extended to discharge into a bespoke eel trap for volunteer monitoring programme. - Installation of water pump and Electricity supply to keep water in pass. 	<ul style="list-style-type: none"> ▪ Flexible eel brush (Width 100 mm, 30 mm spacings). STB00747 ▪ Eel Pass Board (1000 mm X 150 mm X 1 2m), 20 mm & 30 mm Spacings. STB01058 ▪ Rcd socket/Clipped pump cable in flexible plastic conduit. ▪ Bespoke Eel trap ▪ Hozelock 3344 Cascade Waterfall and Fountain Pump 4000 LPH ▪ Double Wire Hose Clips to fit 25 mm (1 in) Pipe ▪ 10 m Black Corrugated Hose 25 mm 	<ul style="list-style-type: none"> ▪ Cottam Brushware Supplies ▪ Cottam Brushware Supplies ▪ NIC EIC (Electric) ▪ Wandle Trust ▪ Amazon EU S.a.r.L ▪ Bestoffer ▪ Aquatix2u Ltd

2. Topps Tiles – TQ 25763 74070

Topps Tiles was delivered in December 2017, which included a row of lift out eel tiles with upstream deflector, and a section of low profile bed tiles on an adjacent channel. This site was testing the improved steel brackets which were fabricated by a local contractor/volunteer. These installations were designed as 'easements' to allow eels to navigate the fast flowing sections of the heavily modified concrete channels. Two old, defunct eel passes were disassembled and removed from site.



Description of Works	Materials	Supplier
<ul style="list-style-type: none">- 7m row of lift out eel tiles and brackets with upstream deflector.- 7m section of low profile bed tiles on an adjacent channel.	<ul style="list-style-type: none">▪ Standard Eel tile Product ID: 5408 (505 mm x 505 mm x 75 mm)▪ Low profile Eel Tile▪ Modified eel tile brackets▪ 70 mm pan pozi stainless steel screws▪ M6 penny washer	<ul style="list-style-type: none">▪ Berry & Escott Engineering Ltd▪ Berry & Escott Engineering Ltd▪ Wandle Trust▪ Orbital Fastners▪ Orbital Fastners

3. Trewint Street – TQ 25946 72687

The Trewint Street easement was installed in December 2017, and consisted of a 30 m section of the new 'low profile' bed tiles that were commissioned for this project, with a short section of flexible bristles to navigate over a 300 mm wooden baulk at the upstream end. This has provided an additional route up the left hand channel which offers a less turbulent route than the fish pass which is present on the right hand channel.



Description of Works

- 30 m row of low profile bed tiles
- 3 x Flexi eel bristles to navigate over 300 mm wooden baulk.

Materials

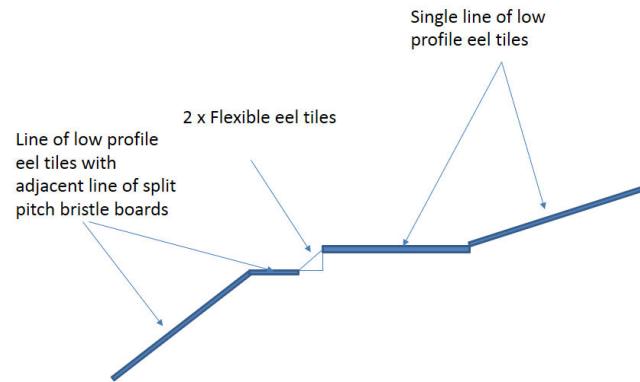
- Low profile Eel Tile
- S10 raw plug
- 70 mm pan pozi stainless steel screws
- M6 penny washer
- Flexible eel brush (Width 100 mm, 30 mm spacings). STB00747

Supplier

- Berry & Escott Engineering Ltd
- Orbital Fastners
- Orbital Fastners
- Orbital Fastners
- Cottam Brushware Supplies

4. EDF weir – TQ 25551 75145

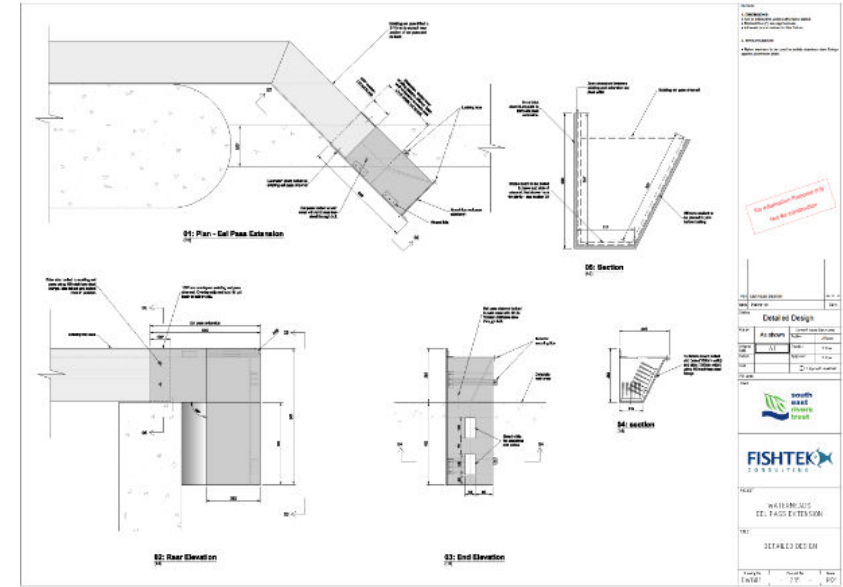
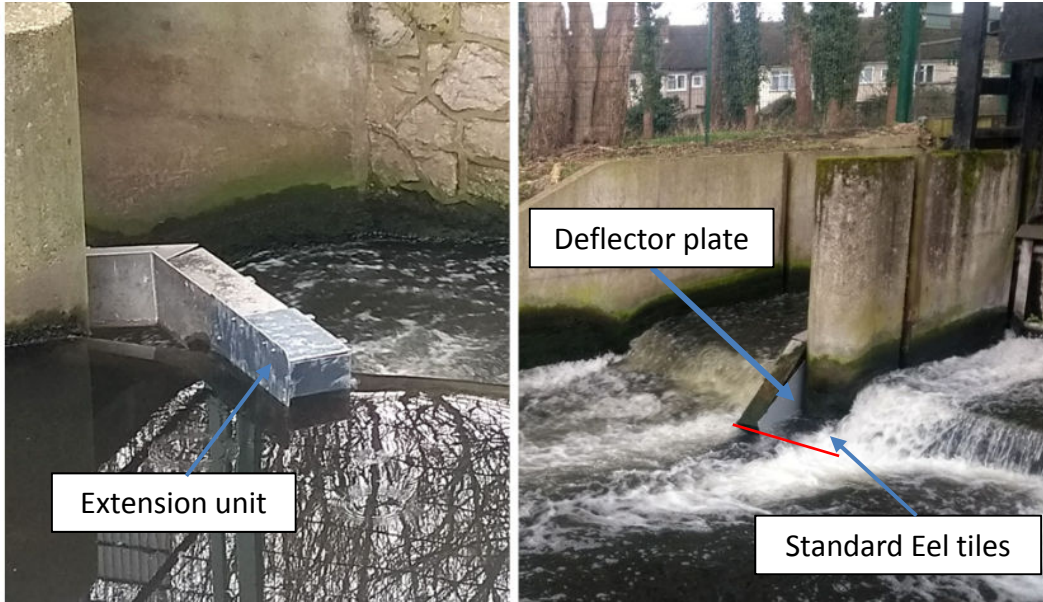
The 'easement' at EDF was installed during Dec 2017/Jan 2018 with a 15 m section of 'low profile' bed tiles. As some high tides overtop the weir, these works were designed to increase the range of time/tides that this structure would be passable to eelers.



Description of Works	Materials	Supplier
- 15 m section of low profile eel tiles.	<ul style="list-style-type: none"> Low profile Eel Tile Eel Pass Board (1000 mm X 150 mm X 12 m), 20 mm & 30 mm Spacings. STB01058 	<ul style="list-style-type: none"> Berry & Escott Engineering Ltd Cottam Brushware Supplies
- 4 m section of adjacent split pitch eel boards.	<ul style="list-style-type: none"> S10 raw plug 70 mm pan pozi stainless steel screws 	<ul style="list-style-type: none"> Orbital Fastners Orbital Fastners
- 3 x Flexible eel brushes to navigate middle step.	<ul style="list-style-type: none"> M6 penny washer Flexible eel brush (Width 100 mm, 30 mm spacings). STB00747 	<ul style="list-style-type: none"> Orbital Fastners Cottam Brushware Supplies

5. Watermeads Weir– TQ 27378 67783

These improvements were installed in March 2018. An extension piece was added at the upstream end to prevent debris blockages. At the downstream end, a deflector plate was added to reduce turbulence, and four standard bed tiles were installed to direct eels towards the pass entrance.



Description of Works

- Installation of extension unit to prevent debris blockages.
- Installation of deflector plate to reduce turbulence and entrance.
- 4 x standard bed tiles to improve access to entrance.

Materials

- Bespoke Eel pass extension unit
- Deflector plate
- Standard Eel tile Product ID: 5408 (505 mm x 505 mm x 75 mm)
- S10 raw plug
- 70 mm pan pozi stainless steel screws
- M6 penny washer

Supplier

- Fisktek
- Wandle Trust
- Berry & Escott Engineering Ltd
- Orbital Fastners
- Orbital Fastners
- Orbital Fastners

6. Papermill Cut – TQ 27314 67749

This gravity fed eel pass was installed on a small side channel in March 2018. This was a cheaper and more secure alternative to a pass that had previously been stolen.



Description of Works

- 8 m gravity fed bristle board eel pass.
- Upstream deflector plate.

Materials

- Galv Trunking 3 m Long TAMLEX GRE64 150 x 100 mm
- Eel Pass Board (1000 mm X 150 mm X 12 m), 20 mm & 30 mm Spacings. STB01058
- M10 self tapping bolts and raw plugs
- Bespoke Deflector plate
- Bespoke Wall brackets

Supplier

- C.E.F (Cheam)
- Cottam Brushware Supplies
- Crow tools and Fixings Ltd
- Wandle Trust
- Wandle Trust