Greening the Grey: The Creation of a Kiosk Gabion Façade Habitat
Barns Elm, Richmond Upon Thames, London
Thames Tideway

BIG Biodiversity Challenge Award Category: *5 – Habitat Creation (Small)*

Project Overview

The construction of an upscaled Bug Hotel-type habitat at the Thames Tideway site at Barn Elms. It serves as an external layer on top of a newly constructed kiosk, which houses the essential mechanical and electrical components responsible for intercepting the West Putney storm relief combined sewer overflow.

What were the biodiversity conditions on site, prior to the enhancement?

The site was mainly undeveloped and primarily used as a sports playing field, with the Thames path running along its boundary on the flood defence bank. While people did frequent the area, the biodiversity was lacking, with few habitats available to wildlife, limited potential for pollinators and no biophilia opportunities for public enjoyment.
To address this, a Preliminary Ecological Appraisal (PEA) was conducted to assess potential changes in the habitat since the original surveys were carried out as part of the Environmental Impact Assessment. The results indicated that no further requirements were needed, and the project proceeded as planned.

What were the reasons behind this project?

The requirements of the scheme stated the 'second cladding layer is to create an interstitial zone to promote invertebrate colonisation'. The team went above and beyond by incorporating waste / natural materials creating a habitat house to attract a wide range of wildlife.
To further enhance its aesthetic, Tideway commissioned British artist, Adam Chodzko, to create an integrated artwork for the façade of the kiosk. This unique collaboration of art and nature has transformed the space into a green haven that could have otherwise remained grey and uninviting, creating a sustainable legacy for humans and wildlife for generations to come.

The Kiosk compromising of mixed materials to form various habitats for wildlife

Credit: Thames Tideway

Commissioned art by Adam Chodzko titled 'A Way From Heaven'

Credit: Thames Tideway

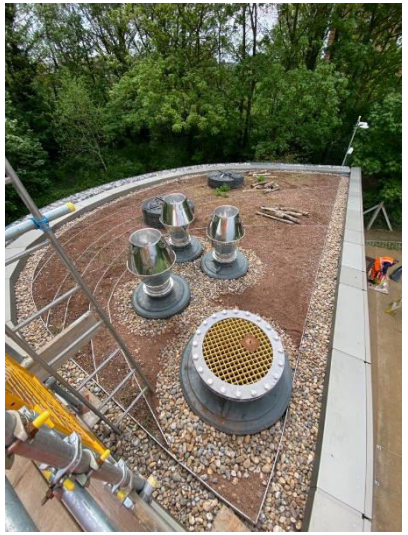
https://www.tideway.london/benefits/art-on-the-tideway/permanent-commissions/adam-chodzko/

What were the biodiversity measures taken?

The project incorporates many measures demonstrating our commitment to environmental sustainability:

- Local sourcing of materials, including trees for the habitat construction and natural materials for gabion sections fosters a sustainable approach and provides a suitable surface for perennial plants to thrive on. Additionally, strategically placed log piles contribute to habitat diversity.
- Careful consideration has been given to minimizing disruption to wildlife within the structure. The limited access required to the kiosk, only a few times a year, ensures minimal disturbance to the wildlife that has made the site their home.
- Access to the gabion sections remains open for monitoring, replenishment and potential reconstruction, ensuring efficient long-term management and enjoyment for years to come.
- A biodiverse roof has been installed fostering the colonization of windblown and bird-carried seeds, thus promoting further biodiversity.
- Log piles surrounding the kiosk encourage the colonization of diverse species, allowing them to establish their homes and enhance biodiversity.
- A captivating wildflower garden has been created in the area elevating biophilia and providing an aesthetically pleasing space for the public to enjoy.
- This project serves as an exemplary example of "greening the grey" in future construction schemes, showcasing replicable practices that enhance biodiversity.
- To complement the project, bat and bird boxes have been thoughtfully installed in close proximity to the local wetlands, located just a few hundred meters away, supporting the conservation of these species.

The external wall during construction – showcasing the gabion sections
Credit: Thames Tideway



Installation of biodiverse roof
Credit: Thames Tideway

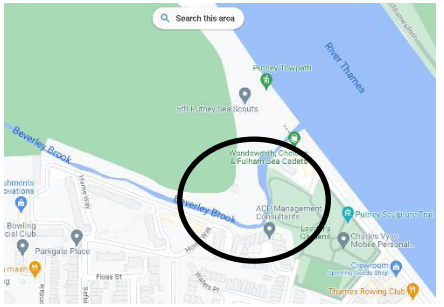
- The orientation of the design has been thoughtfully planned, with doors facing the site and habitats positioned toward the natural environment, seamlessly blending into the surrounding landscape.
- The shape of the kiosk has been designed to mimic the natural curve in the course of Beverly Brook at this location. Between the kiosk and Beverley Brook is a frequently used footpath where members of the public can view the unfolding habitat elevation.

Further information

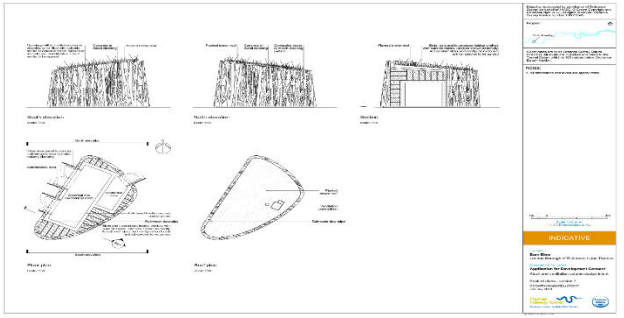
The scheme has exciting plans in place for a full opening ceremony to reveal the transformed kiosk, showcasing the innovative design and functionality that has gone into its construction. To add to the event's STEM focus, volunteers from the nearby London Wetland Centre will participate in engaging activities.

The kiosk will serve as an excellent example of STEM integration in civil and biodiversity projects, sparking conversations between experts in both fields. Furthermore, its lasting impression will inspire future generations to prioritize innovative and sustainable designs like this, eventually making them commonplace in future schemes.

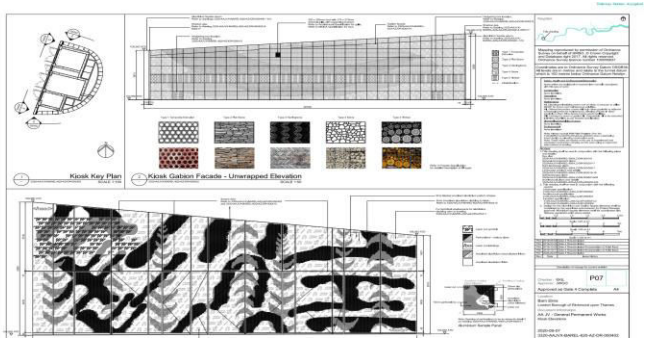
The Thames Tideway Tunnel project aims to address the issue of sewage pollution in the river, ensuring that sewage is collected and treated before it is released into the Thames. This significant initiative will positively impact the river's cleanliness and will benefit future generations of Londoners. By effectively cleaning up the river, the project will contribute to the prevention of fish kills and support the growth of a diverse range of wildlife, ultimately restoring the river's ecological balance.



Google map image of the area demonstrating the mimic of the area's natural curve adopted by the Kiosk.



Original drawings of the expected requirements from the project, a simple external layer to blend in with the surroundings.



Drawings of what was built – an external layer with biodiversity at the core whilst also remaining aesthetically pleasing for local residents.

Within the larger scope of the project, the kiosk plays a crucial role in enhancing biodiversity at the Barn Elms Site. As an integral part of the puzzle, it will serve as a hub for promoting and supporting the thriving ecosystem in the area, creating a habitat for various species of plants and animals and contributing to the overall ecological well-being of the Barn Elms Site, ensuring that it becomes a flourishing environment for wildlife and residents alike.

Project Team

- BMB JV – BAM, Morgan Sindall and Balfour Beatty
- Tideway (Bazalgette Tunnel Limited) is the company financing, building, maintaining and operating the Thames Tideway Tunnel.
- AAJV
- ARUP
- ATKINS
- Thames21 (Volunteering)

The kiosk walls comprising of biodiversity-boosting habitats and the contemporary artwork commissioned by Tideway

Credit:

What was the motivation for carrying out the enhancement?

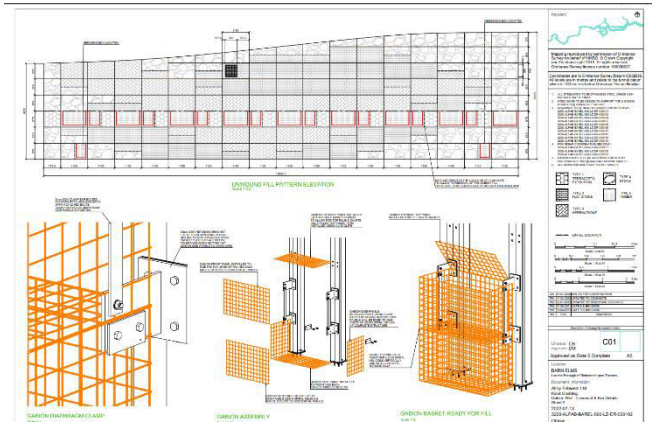
Promoting biodiversity is critical to our work, striving to implement ideas that go beyond the initial requirements, achieving positive changes for the area. Rather than settling for basic habitats, we incorporated intelligent design and a passion for biodiversity net gain to create new ecosystems and beautiful areas for local residents to enjoy.

The contemporary yet sustainable structure is a testament to this approach, and we're proud to have achieved a balance between form and function. Through our efforts, we've successfully created a lasting legacy that can be enjoyed by future generations while fostering the growth of diverse and thriving ecosystems.

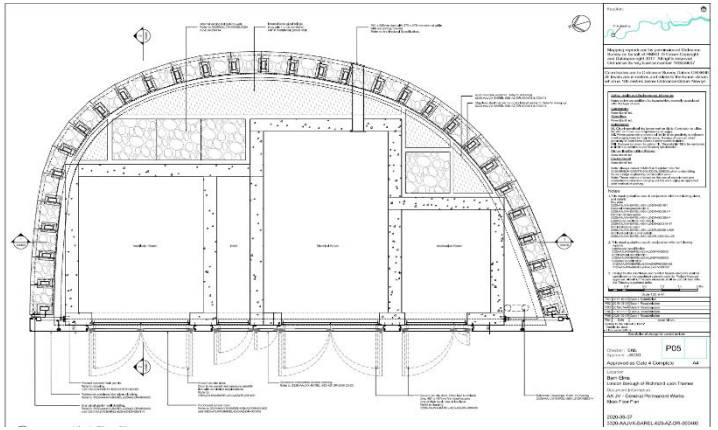
The external wall before the team began creating the gabion sections.

Credit:

The access doors to the kiosk subtly integrated into the art installation.
Credit: Thames Tideway



Designs of the gabion sections to create individual habitats for various materials.



Overhead plans of the kiosk

The final stages of the kiosk being built, positioned close to trees for easy migration of wildlife to create new habitats

Credit: Thames Tideway