



# How Balfour Beatty protected local wildlife during construction activity

Using innovative and sustainability-focused rental equipment, Balfour Beatty were able to protect and uphold local bat and otter colonies from the effects of extensive construction activities.



Providing zero-emission power, saving 84kg of CO<sup>2</sup> per unit, per week



Safeguarding local wildlife havens from noise and emission pollution



Delivering live water monitoring data across 6 different parameters



Reducing carry weights from 38kg to 20kg - increasing safety and productivity

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Leading UK infrastructure group Balfour Beatty are acting on behalf of Barnsley Metropolitan Borough Council, under the SCAPE Civil Engineering Framework, to create additional lanes for a bridge over the River Dearne so that traffic can flow freely.

During the council's environmental survey, it was uncovered that the area is a hotspot for bats and otters, amongst other wildlife. This meant that construction activity in the area could bear potential risks to animal welfare, so environmental protection measures needed to be implemented by Balfour Beatty ahead of the project commencing in March 2024.

## Challenges

To achieve environmental regulation compliance, a number of parameters were outlined by the council.

Firstly, it was decided that the water quality of the river needed to be measured in-line with activity on-site. However, considering that traditional water measuring requires samples to be collected and sent to an external lab for testing, the associated timescales posed challenges to Balfour Beatty's project timeline.

Moreover, the council detailed that an alternative and environmentally friendly method of power generation was needed to support tools like breakers, saws and drills on-site. Typically, small generators would be used, however they can produce high pollutive emission rates and associated fuel spill risks, which could have an adverse effect on the local environment.

Building on our long-standing relationship with Balfour Beatty, our Test and Monitoring experts were entrusted to deliver sustainability-focused solutions that would meet the stringent requirements.



## Our equipment at a glance:

- WATR Bankside
- Instagrid G036LV Portable Power Station (110v)
- Instagrid One Max Portable Power Station (230v)

## Solution

Working closely with site, from June 2024 to-date, we deployed the WATR Bankside – a water monitoring system that records across a number of different parameters; pH, conductivity, temperature, turbidity, depth and dissolved oxygen. These aspects all contribute to the living conditions of aquatic life, including the otter community that resides in the river.

To comprehensively measure the effects of construction activities, it was decided that one WATR Bankside unit would be installed upstream of the construction area, and a second unit be installed further downstream. This would enable parameter readings to be taken at different points in the river flow, and compared accordingly so that Balfour Beatty could validate their on-site environmental protection measures.

As a solar-powered, self-sufficient unit, the product runs 24/7/365, meaning that it could monitor on a continuous basis. The unit also provides live data readings, all of which are accessible through an online cloud portal, meaning site can attribute any possible changes in the water quality to specific activities undertaken at that time. This means that if an unsafe spike in any parameter was to occur, activity could be halted immediately in a bid to minimise any further damage to the local ecosystem.

Our team also recommended the Instagrid portable batteries, both the 230v and 110v variations, to support different activities with different voltage requirements. These portable batteries deliver instantaneous, sustained power whilst outputting zero emissions, acting as a greener alternative to traditional small generators. Considering that the Instagrid units provide battery-based power, this means that they have no fuel requirement and therefore no associated fuel spill risk, further adding to their suitability for an environmentally conscious site.

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## Result

Although the project is still ongoing, both the WATR Bankside and Instagrid products have shown excellent results for the Balfour Beatty team.

The WATR Bankside has enabled them to leverage live data readings and feedback results to environmental agencies easily and conveniently through downloadable cloud-hosted reports. This has validated and continues to validate the effectiveness of the environmental protection measures that Balfour Beatty put in place ahead of time and instils confidence in the continuation of their construction activities on-site.

To the same tune, by utilising the Instagrid batteries Balfour Beatty have been able to enjoy instant, silent, emission-free power, which if compared with a 3.4kVA petrol generator would produce anywhere up to 84kg of CO<sup>2</sup> per unit, per week, producing high noise outputs while doing so. Additionally, workers on site have benefitted significantly from the Instagrid's portability at 20kg rather than a generators typical weigh of ~38kg – this has proven particularly useful in harder to access areas of the site.

These solutions together have played a key role in protecting the environment in this wildlife-rich area, allowing Balfour Beatty to stay on track with their construction schedule.

“ Measuring parameters in the River Dearne was a difficult challenge to overcome, especially considering the significant rises and recessions of water levels. However, the WATR Bankside proved versatile and extremely competent in delivering live results to those on-site and external environmental bodies.

To the same tune, the Instagrid batteries have demonstrated amazing capabilities when it comes to effective, zero-emission power, not to mention the elimination of possible fuel spill risks and the environmental effects this could have on the surrounding green spaces.

Working with the team on-site has been a true pleasure, and we look forward to seeing their continued project success.

**Patrick Hughes**

Product Manager - Environmental, Sunbelt Rentals

“ The major benefit of the environmental package is that it has enabled us to achieve compliance with the environmental constraints we have on the job, especially considering the fact that we have a bat and otter licence in place. The positive effects are reflected in the fact that a recent bat survey revealed that the bats have given birth to pups since we started construction activity, validating the minimal impact we have had on our green surroundings.

**Darren Brelsford**

Works Manager, Balfour Beatty

