

**MANNINGTON NGIPW  
MANNINGTON, WIMBORNE  
KIER INFRASTRUCTURE/NATIONAL GRID**

## **BIG Biodiversity Challenge Award Category: Innovation**

### **Project overview**

National Grid was instructed by the Department for Business, Energy and Industrial Strategy (BEIS), to carry out the works required to increase the physical security of some substations in order to meet the protection requirements defined by the Centre for Protection of National Infrastructure (CPNI).

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

The value of site for biodiversity was relatively unknown. An ecological constraint walkover had been completed by the Kier environmental team in March 2018 which identified the necessary ecological surveys for site. These included great crested newt, badger, nesting birds, roosting bats, phase 2 vegetation classification, reptiles and dormice surveys. Most of the ecological surveys required have been completed by an external ecological consultancy however, the dormouse surveys were kept in house to trial the use of new materials for nest tube surveying.

### **What were the reasons behind this project ?**

It has always been Kier's vision to aim for waste reduction on projects. It is very difficult to reduce the impact of a waste once it has been created and will result in higher costs and increase the requirement for treatment or landfill. It is very important from an ecological stance, that the site does not produce waste because of wildlife surveys. We have identified black plastic cable ties around dormouse nest tubes as, although designed to be multi use, is not often possible and they end up becoming a waste product to manage.



*Mannington substation security fencing for upgrade*



*Non reusable cable ties that have to be cut off branches at the end of the survey*

### What were the biodiversity measures taken?

The standard for dormouse surveying (in accordance with the Dormouse Conservation Handbook 2006) states a minimum of 50 nest tubes should be erected to assess a site for dormice effectively. A nest tube requires two cable ties (as recommended by nest tube manufacturers) to be adequately attached to a branch which is approximately 9g per cable tie, 18g per nest tube and 450g per site if 50 tubes are enough to cover the site every 20m. Many ecologists also tend to use high visibility tape on a nearby tree or branch to indicate where the tube is as they soon become hidden by vegetation – this is usually made from plastic too. This may seem a small quantity of plastic to worry about but it accumulates on a large scale when it is considered how many ecologists use nest tubes each year to undertake dormouse surveys across the UK – this being from an activity not associated with producing waste.

Instead of black plastic cable ties, the Kier environmental team replaced them with heavy duty Velcro strips. The Velcro strips were bright blue which eliminated the need for plastic tape as the tube was easy to find and dormice are not worried or disturbed by bright colours in and around the nest tube. The Velcro wraps around the tube in the same way a cable tie would and secures on to the branch, observably keeping it even tighter to the branch than cable ties did. At the end of the project the Velcro will simply be unwrapped, washed and reused again and again for future dormouse surveys. This has completely removed the waste production for this activity and can be replicated by all ecologists easily.



*Dormouse nest tube at Mannington substation*



*Hazel Dormouse in torpor*

### Further information

The method employed to erect the dormouse nest tubes has not been altered and the function of the nest tube remains the same. The results from the current trial surveys show that species of wildlife have continued to use the tubes with the Velcro substitute. It is Kiers intention now to continue using and recommend that all dormouse surveys completed on behalf of Kier or a Kier client use Velcro instead of black plastic cable ties. Although there has not been an increase in biodiversity from this project, the waste reduction during the wildlife surveying process has been eliminated and the impact of less waste needing treatment or space in landfill has been avoided, ultimately helping all of the environment. This project has identified, challenged and succeeded in reducing waste production in a sector that is not necessarily considered to produce waste by changing one material – something that can be easily replicated by the entire ecological community

### Project Team

- Kier Infrastructure, National Grid
- Kier Utilities Environmental advisor (Grace Burdge)

### What was the motivation for carrying out the enhancement?

The motivation behind developing this innovation was to reduce waste production, costs to site and the ultimate negative effect that plastic has on the environment. The Velcro is more expensive than cable ties but the reuse from them equates to a much higher saving. It is the responsibility of the environment team to find these opportunities wherever possible and that doesn't always mean focussing on construction waste.



*Dormouse nest tube erected using Velcro straps*



*Beginnings of a nest, possibly woodmouse or dormouse*