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Heritage Impact Study and Summary of Works for the Installation of LED Lights on the Crinan Canal, Ardrishaig to Oakfield Bridge (Scheduled Monument Index Number 6500)

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1.0 INTRODUCTION

This assessment has been prepared as supporting documentation for an application for Scheduled Monument Consent (SMC) for the installation of LED lighting on the Crinan Canal (See Fig 1 issued separately). The LED lights will be installed from Canal Basin to Oakfield Bridge, excluding the section of public footpath from Lock 2 to Lock 3. The lights will be installed at seven meter intervals and on both sides of the towpath and within the modern surface of the towpath. LED lights will only be installed within the modern towpath and not on historic structures.

Scheduled Monument Consent for LED lights have previously been granted in 2011 for the Union Canal towpath in Edinburgh; in 2014 for Ratho on the Union Canal, restricted to a section of towpath in an urban context; and in 2015 for the installation of LED lights on the towpath of the Forth & Clyde Canal in Glasgow, and in 2015 from the Falkirk Wheel to the Helix Park, Forth & Clyde Canal.

Historically there has been no coherent and planned lighting scheme on the Crinan Canal. Any light on the canal has been derived from canal side buildings and nearby street lighting. However, the introduction of towpath lighting has had a positive impact amongst our towpath users on other canals and we wish to extend the scheme to the Ardrishaig to Oakfield section of the Crinan Canal.

See our suppliers (Clear-view) case study for the Union canal which lists key benefits of these LED's. (http://www.clearview-intelligence.com/case-studies/edinburgh-towpath-delineation).

The benefits of the towpath LED'S are;

1. The lights will enhance the existing physical connectivity between Lock 1 and Oakfield Bridge, particularly at night, in the dark.
2. They will create a visual guide along the towpath as well as defining the edge of the towpath, thus reducing the risk of users falling into the canal.
3. They will light previously dark sections of the towpath and encourage people to use this amenity where currently they may be deterred.
4. Lightning will generally improve the canal as an amenity for the local community, and promote health and welfare opportunities along this non-vehicular route, by further encouraging their safe use.

The installation of the LED's will have a negligible impact on the historic fabric of the canal as they are installed within the modern towpath surface, and although the LED's will affect the setting of the canal by introducing lighting where previously there has been none, this change is seen as minimal and acceptable in part because of the nature of LED's low light emitting properties, and in part because of the general semi-urban context of Ardrishaig (See Section 3.0 Setting).

2.0 METHODOLOGY

The LED's have a diameter of 110mm and are 48mm deep and will be excavated within the upgraded sections of towpath to a depth of between circa 150-200mm. Therefore, the excavation for the LED's will not impinge upon the original underlying fabric of the towpath. LED's will not be installed in historic surfaces or structures. Therefore, the physical impact on the historic fabric of the canal is negligible. The LED's will be spaced at 7m, on both sides of the towpath and parallel with each other. The lights will be white. Fig. 2 shows the three stage installation process of cutting the hole, filling with bitumen and insertion of LED, and view of finished installation.

Fig. 2. Installation of LED's.

3.0 Setting

The majority of the canal from Ardrishaig to Oakfield Bridge can be characterised as semi-urban which includes residential, commercial and light industrial buildings (forming the core of Ardrishaig), and which are adjacent to and on both sides of the canal. Moving North the buildings begin to thin out and are restricted to the towpath side of the canal The most northerly section up to Oakfield Bridge is bounded by open fields. These three sections can be summarised thus;

Section 1. NGR: 185317, 685267 to 185254, 686566. Residential, commercial and light industrial buildings on both sides of the canal. Canal receives light from adjacent buildings and streets. Historic structures include Canal Basin and Locks 1-4, the line of the towpath and canal embankments.

Section 2. NGR: 185254, 686566 to 185585, 687404. Buildings resticted to towpath side of canal. Canal receives light from adjacent buildings and street. Historic structures include Automated Water Waster, the line of the towpath and canal embankments.

Section 3. NGR: 185585, 687404 to 185628, 687956. No housing on either side of the canal. Canal does not receive light from nearby buildings with the exception of the few buildings at Oakfield Bridge. Historic structures include Oakfield Bridge, the line of the towpath and canal embankments.

Impact on Setting

The majority of this study area, Ardrishaig (Sections 1 and 2) will receive incidental lighting from the residential houses that run parrell with the canal, as well as street lighting from the roadside. The introduction of the low light emmiting LED's will not significantly increase the amount of light on the canal and thus not significantly alter the *light* setting of the canal. However the desired impact of delimiting the towpath will be achieved *See Figs 2 and 3 for examples on the Union and Forth & Clyde Canals).

Under this proposal Section 3 will be lit. However the level of lighting would be very low, see Fig 2, LED lights at night at Pinkston Basin Forth & Clyde Canal Glasgow.

Further the light emmitted can only been seen at night and in the dark. Their light cannot be seen during the hours of daylight.

The introduction of lighting will not hinder a viewers *reading* of the canal as an historic monument, as the features that currently define its historic nature, such as the locks, Oakfield Bridge and the body of canal water will not be masked or interrupted by the addition of LED's in the towpath.

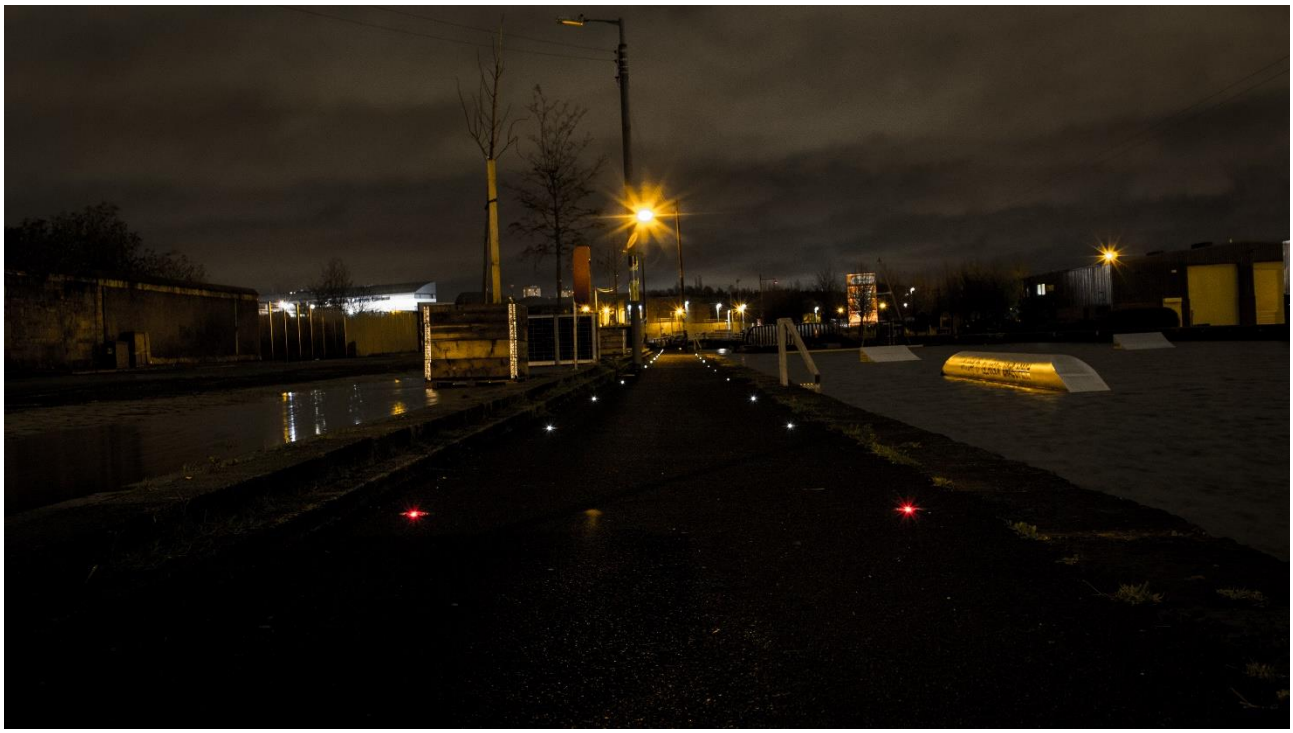

Fig 2. Pinkston Basin at Night, showing the degree of light emmittance from the LED's.

Fig. 3. LED's, Union Canal Edinburgh, looking from Viewforth Bridge towards Harrison Park.

6.0 Conclusion

The LED lights will slightly alter the setting of the canal as it stands today. However, consideration has been given to the type, size, colour and light emitting properties of the LED's in order to mitigate the degree of visual impact, whilst retaining the objective of providing an illuminated guide along the towpath.

The LED's are solar powered and as they do not have a power supply there is no need for excavations for electricity cables. The LED's are small and compact, which will also limit the impact of their presence. The installation of the lights will not significantly impact upon the historical fabric of the canal. A single white colour of LED will be used in order to keep this lighted guide visually simple. The LED's have been chosen because they emit a pinpoint of light, they do not illuminate the surrounding area, thus producing very little light pollution.

This summary concludes that the potential impacts on the physical fabric of the canal are negligible. The potential impacts on the setting of the canal are minor and are outweighed by the perceived benefits of having lights that act as a visual guide that encourages people to use the towpath in a safe manner.