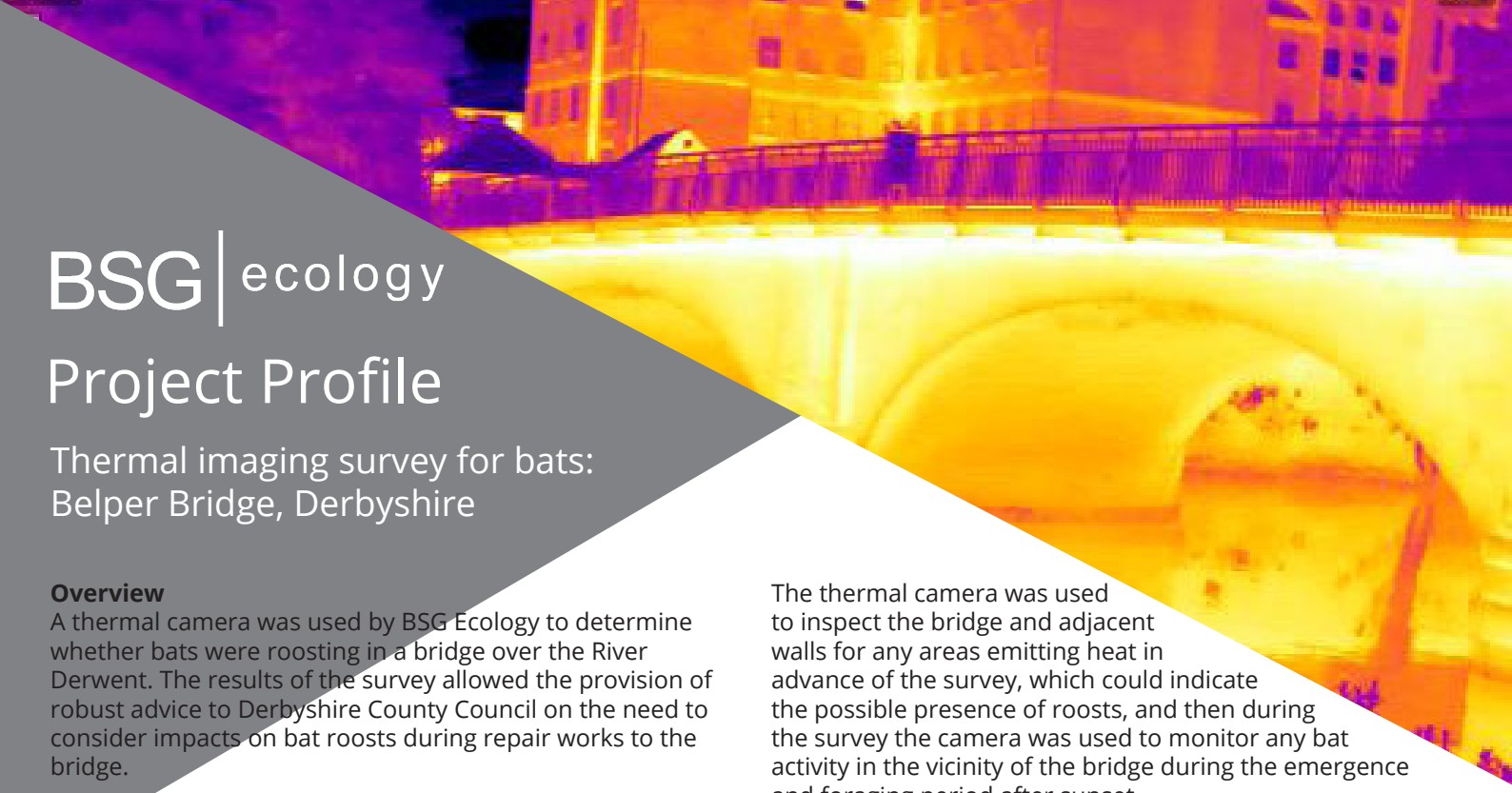

BSG | ecology

Project Profile

Thermal imaging survey for bats: Belper Bridge, Derbyshire

Overview
A thermal camera was used by BSG Ecology to determine whether bats were roosting in a bridge over the River Derwent. The results of the survey allowed the provision of robust advice to Derbyshire County Council on the need to consider impacts on bat roosts during repair works to the bridge.

Challenge
Derbyshire County Council needed to carry out repair work to a historic road bridge in Belper, including repointing work to the masonry arch face and soffit. The bridge is situated just below a series of weirs, retaining walls and sluices on the River Derwent; these were built to power West Mill[1] and date from 1796-97. The river, which is flanked by trees, provides excellent foraging habitat for bats.

Where suitable cavities are present, bridges above rivers are often used by roosting bats, and can offer a favoured roost site for Daubenton's bat. Given the legal protection afforded to bats it was important to determine whether any bat roosts could be affected by the work. The river channel and the river banks below the bridge are inaccessible and it was challenging to view the undersides of bridge arches: a different approach was required to assess the bridge.

Solution
Following an initial inspection the bridge was subject to two evening surveys using a thermal imaging camera to visually record bat activity in dark conditions, and hand-held bat detectors, which were used to record and identify calls.

The thermal camera was used to inspect the bridge and adjacent walls for any areas emitting heat in advance of the survey, which could indicate the possible presence of roosts, and then during the survey the camera was used to monitor any bat activity in the vicinity of the bridge during the emergence and foraging period after sunset.

Outcome
High levels of bat activity were recorded. Using the thermal camera to view and record flight behaviour, and through viewing sonograms (visual representations of bat calls), all bats were identified as common and soprano pipistrelle bats; no other species bats were recorded.

With the help of the camera we were able to conclude that no bats emerged from roosts within the bridge. The thermal imaging data indicated that the numerous bats recorded foraging around the bridge arches arrived from roosts in other locations. This assessment has allowed BSG Ecology to provide robust advice to engineers at Derbyshire County Council, who were then able to confidently plan the repair works to the bridge.

Client Feedback
"BSG Ecology's team showed profession alism throughout and provided a good service for us."
Lalith Jayawardhana
(Senior Project Engineer, Derbyshire County Council)

[1] A water-powered cotton mill that is no longer standing.