Introduction

In order to achieve sustainability it is necessary to balance the interactions between the built and natural environment. Biodiversity plays an important part towards sustainability within the built environment, and through legal pressures, the construction industry is becoming more aware of ecological concerns.

Bats constitute an important component of urban biodiversity and several species are now highly dependent on buildings. Many buildings suitable for use as bat roosts often require re-roofing and traditional bituminous roofing felts are frequently being replaced with breathable roofing membranes (BRMs).

Reports of problems

Whilst the current position of bats is better in many respects than 30 years ago, new building regulations and modern materials, may substantially reduce the viability of existing roosts. Reports of bats becoming entangled and changes to environmental conditions are of great concern. At the same time building regulations require that materials be fit for purpose. Anecdotal evidence suggests that both bats and BRMs may experience problems when the two interact, therefore it is important to know which roost characteristics are essential for house dwelling bats and how these and BRMs may be affected.

Key areas of research

In order to determine what happens when BRMs are used in bat roosts, four key areas must be investigated.

Entanglement

Fibers pulled loose can lead to an entanglement threat (Fig.1 & 2). How prevalent is this problem?

Microclimate

Different material properties can alter the microclimate within a roof void. Could this affect bats?

Membrane longevity

Interactions with bats can alter the structural properties of membranes (Fig.3 & 4). Can this affect their functionality?

Membrane colour

Bats prefer roosting in dark areas, could brightly coloured membranes alter roost suitability?

References


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