What is the right course of action when planning building insulation?

A bat expert should be contacted at the start of the preparation of the construction plan. By carrying out a survey, the presence of bats and the position of their roosts can be detected.

Based on the survey, the bat expert can propose suitable measures and specific technical solutions providing for the protection of bats and their roosts. The measures may vary depending on the given situation and should be included as a part of the construction plan.

In all cases, proper timing of construction works is essential. Bats may occupy the roosts at different times of the year. No construction works should be carried out during the presence of a nursery colony with non-volant juveniles (approx. from mid May till mid August) or hibernating bats (approx. from early November till late March).

In cases when the construction works cannot be timed properly for unavoidable reasons (e.g. to meet a subsidy deadline) and need to be carried out in some of the above mentioned critical periods, the situation can be solved by using one-way closure of the roost entrance.

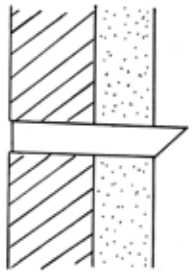
The primary effort is to preserve the existing roosts as completely as possible, so that they can continue to be used by the bats after the building renovation. If this is not feasible, substitute roosts should be provided.

Altogether six bat species have been recorded in prefab houses in the Czech Republic. Most often, this type of roosts is used by the Common Noctule, Common Pipistrelle, Serotine Bat and Particoloured Bat.

How to preserve the existing bat roosts?

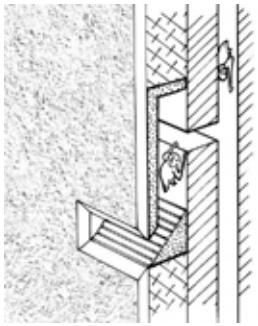
Roosts in under-roof spaces can be preserved simply by allowing bats access through the air vents, which need to be protected from rain water intrusion – by installing a modified plastic grille or an obliquely cut-off plastic pipe.

Modified standard plastic grille with removed lower slats. The opening should be at least 60 mm high to enable safe access for Common Swifts which also often nest in roof voids. The inner surface needs to be coarsened.



Opening fitted with an obliquely cut-off plastic pipe. The inner surface of the pipe needs to be coarsened and its lower margin needs to be flush with the facade. Inside the roof, the pipe must not protrude beyond the panel and needs to have a proper gradient.

Roosts in fissures can also be preserved in many cases, using a bat access panel. These bat boxes with an open back (or a hole in it) can be installed on the interstice before insulation works and they consequently serve as a passable tunnel to the original roost.



Example of installation of the bat access panel – the drawing shows a cross-section of the wall and the photo shows the installation of the panel prior to surface finish.

One-way closure – a careful way to exclude bats

In situations where the fissure or opening has to be closed (e.g. if the regime of roof ventilation is to be changed), bats can be carefully evicted using one-way closure. It ensures that the bats leave the roost but cannot return. The closure can also serve as a preventive measure in cases when it is uncertain whether bats are currently present in the roost or not.

The closure cannot be used in the period of occurrence of nursery colonies with non-volant juveniles (15 May – 15 August) and during hibernation (1 November – 31 March). After installation, the closure has to be left in place at least for a week. After this the roost can be closed permanently.

One-way closure using a curtain made of a light wire or plastic mesh, fixed only above the opening or fissure. It must not be loose and should overlap the opening sufficiently at all sides.

One-way closure using a sloping smooth metal or plastic pipe. The pipe should be slanted downward and protrude from the wall by at least 10 cm.

How to create substitute or new roosts?

Bat boxes are most often used to provide substitute or new roosts. Numerous types of woodcrete or polystyrene bat boxes are available, imitating spacious hollows or narrow crevices. Some of them have special dimensions so that they can be incorporated completely in the insulation layer, others are installed on the facade surface. They are long-life boxes with high thermal insulation qualities and can be covered by the same coating or plaster as the surrounding walls of the building.

The summer & winter woodcrete bat box by the German company Schwegler, installed on facade surface, may be used as an interesting architectural feature.

After surface finishing of the facade, polystyrene or woodcrete bat boxes incorporated in the insulation layer are quite inconspicuous, only the slot entrances being visible (the pictures show boxes made by the Slovak company BAT-MAN and the Czech company JIZECO CS).

Guidance on bat box positioning

- Bat boxes should be installed at the place of the original roost or as close as possible, but preferably away from apartment windows.
- An open flight space should be available in front of the box entrance (at an angle of 15 – 60 degrees obliquely downward, as bats approach from below).
- Bat boxes should be located at least 3 m above the ground; some species prefer higher positioned boxes (5 – 6 m high).
- South-east, south or south-west orientation of the box is suitable, ensuring warm roost temperatures.
- Ideally, a larger number of bat boxes should be installed on the wall so that the bats can choose from several roosts with different characteristics (e.g. microclimatic conditions).

Bats are protected by law

Bats are a group of endangered animals, which are protected in all European countries under the relevant national legislation.

In EU member states, the national legislation also reflects provisions of the Habitats Directive (Council Directive 92/43/EEC).

Moreover, bats are protected by international conventions, the most important of them being the Agreement on the Conservation of Populations of European Bats (EUROBATS).

For more information and advice, please contact:

EUROBATS Secretariat
e-mail: eurobats@eurobats.org
www.eurobats.org

The web page includes contact details of bat conservation organisations active in the particular European countries.

Česká společnost pro ochranu netopýrů
(Czech Bat Conservation Society)
e-mail: netopyr@ceson.org
www.ceson.org
www.sousednetopyr.cz

Issued by the Czech Bat Conservation Society under financial support of the Ministry of the Environment of the Czech Republic.

ČESON

Ministry of the Environment of the Czech Republic

EUROBATS

Text: Petra Schnitzerová and Eva Cepáková
Photos: Petra Schnitzerová, Martin Ceľuch, Vlastislav Káňa, Lukáš Viktora, Jaroslav Červený, Zdena Hybnerová, Radek Lučan, Zdena Němcová, Schwegler company
Drawings: Schwegler company, Petra Schnitzerová, Printed by Tiskárna TRIA s.r.o., 2021

Bats and building insulation

The installation of thermal insulation brings indisputable benefits to the occupants of buildings and helps to save heating energy.

Unfortunately, such construction works often cause the loss of roosts of threatened bat species, and sometimes even mass mortality of bats.

However, building renovation and bat conservation do not need to be in conflict!

Methods and technical solutions of how to reconcile the two interests are known, relatively simple and inexpensive.