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ENGLISH
NATURE



PEREGRINE FALCONS

provision of artificial nest sites on built structures



Advice note for conservation organisations,
local authorities and developers

Nick Dixon and Colin Shawyer

Peregrine falcons on built structures

The current success and spread of peregrines means they are present in many towns and cities. In London, for example, peregrines breed in Battersea, Croydon, Westminster, Docklands and Barking and the imposing structure of the Tate Modern art gallery has become a well-known and much-watched peregrine roost.

Their presence in London and other large cities has caught the public imagination and many owners and managers of landmark buildings and other structures adopted by peregrines consider creating or erecting nest sites to encourage the birds to breed.

This booklet helps people to make informed decisions about if, when and how artificial nest sites should be provided.

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Peregrines came close to extinction in the UK in the 1960s but have since made a remarkable recovery



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Artificial nests on buildings aim to replicate the conditions at natural cliff ledge sites



What types of artificial nest can be installed?

Three basic types of artificial nest can be used on buildings or incorporated into new structures



Key considerations for the installation of artificial nests

Several issues, from legal matters to the views of near neighbours, need to be taken into account



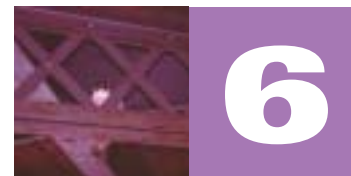
Additional considerations

Peregrines may make a mess or leave uneaten bits of their prey and can be noisy around the nest



References

Useful published papers and books about peregrines and urban situations





Foreword

Peregrines are territorial, which has a limiting effect on the density of breeding pairs in their traditional range – along the coastlines of the south and west of England, Wales and Scotland and the uplands of northern England, Wales and Scotland – where crags and cliffs provide suitable nest sites.

Peregrines came close to extinction in the UK in the 1950s and 1960s, when the population suffered a catastrophic decline resulting from the effects of pesticide contamination in their food chain. Following bans on certain pesticides and increased legal protection for the birds, the recovery of the peregrine has become a conservation success story, with an estimated population of more than 1,400 breeding pairs by 2002 (Crick *et al* 2003).

As the population approached capacity in many traditional areas during the late 1970s, peregrines moved inland and began to nest in old and even working quarries. In 1979, there were at least 25 known quarry sites; by 1991, this figure had increased to 161.

A more recent trend, since the late 1980s, has been the increasing number of peregrines holding territories on artificial structures and in urban environments. The British Trust for Ornithology (BTO) Peregrine Survey of 1991 revealed seven successful nests on buildings and other built structures.

By 1993, this figure had risen to 12 and sites included buildings, bridges, railway viaducts, pylons, industrial towers and chimney stacks. The most recent BTO survey, in 2002, revealed that of 1,402 pairs, 62 were on artificial structures.

Peregrines now breed in many towns and cities using buildings, such as churches, warehouses, tall chimneys, and tower blocks; on industrial plants such as power stations, chemical processing plants and cooling towers; and in open country on pylons, radio masts, viaducts and bridges.

The increase in peregrines using built structures and urban environments is likely to result in a significant increase in population size and a change in geographical distribution, in much the same way as the adaptation to inland quarry nesting which occurred in the 1970s.

The authors have studied this phenomenon since 1995 and undertook a research project, on behalf of The Hawk and Owl Trust, between 2001 and 2004. The research generated many requests for information on the best practice for attracting breeding peregrines onto built structures, especially in urban environments. This booklet addresses many practical considerations to be taken into account when attempting to do this.

Nick Dixon



When is it appropriate to provide an artificial nest?

Peregrines lay eggs in a shallow 'scrape' in soil or other substrate on a ledge or within a cavity, usually on a high and sheer cliff face where ground predators have limited access.

Artificial nests on buildings aim to replicate this by providing an open-fronted and sheltered cavity, containing a substrate (a mix of gravel or pea shingle and compost or woodchips) and enough space to allow the young to exercise in safety as they develop. A raised edge on the artificial nest will help retain the substrate and the juveniles as they become more active (Dewar and Shawyer 2001).

The most appropriate use of artificial nests is when peregrines have previously attempted to breed but failed due to a particular constraint of the structure selected. Reasons for failure can include attempting to nest on ledges that are too narrow or liable to flood, nesting in locations where there is extreme exposure to the elements or nesting where there is too much unintentional disturbance. Artificial nests can also be put up on structures where birds are holding territory, but where there is no suitable nest site.

The majority of artificial nest sites are installed in response to year-round or seasonal occupation by peregrines on existing structures, but provision can also be considered on new developments, if peregrines are regularly present in the locality but are not known to be nesting.

Peregrines can sometimes take to an artificial nest site very rapidly. Often, however, such sites may be completely ignored.



Mike Read (rspb-images.com)

What types of artificial nest can be installed?

There are three types of artificial nesting site in use on existing buildings. All of these can be incorporated into a new structure. They provide the basic requirements but some may be more appropriate than others, depending on the type of building or structure selected.

Large open fronted nestboxes

These are made of wood or metal and can be secured on to the outside of a structure, or on the top of a building on an elevated tower or frame. They are relatively cheap and simple to buy or build, but can often be expensive to install due to their size and weight. Often this will involve the use of scaffolding and hoists.

Open trays

These offer a simpler and cheaper option. A shallow tray with raised edges, containing substrate, is secured to a sheltered ledge on or within the structure. Trays are much easier to make and install than boxes, and are much less visible.

Modification to an existing cavity

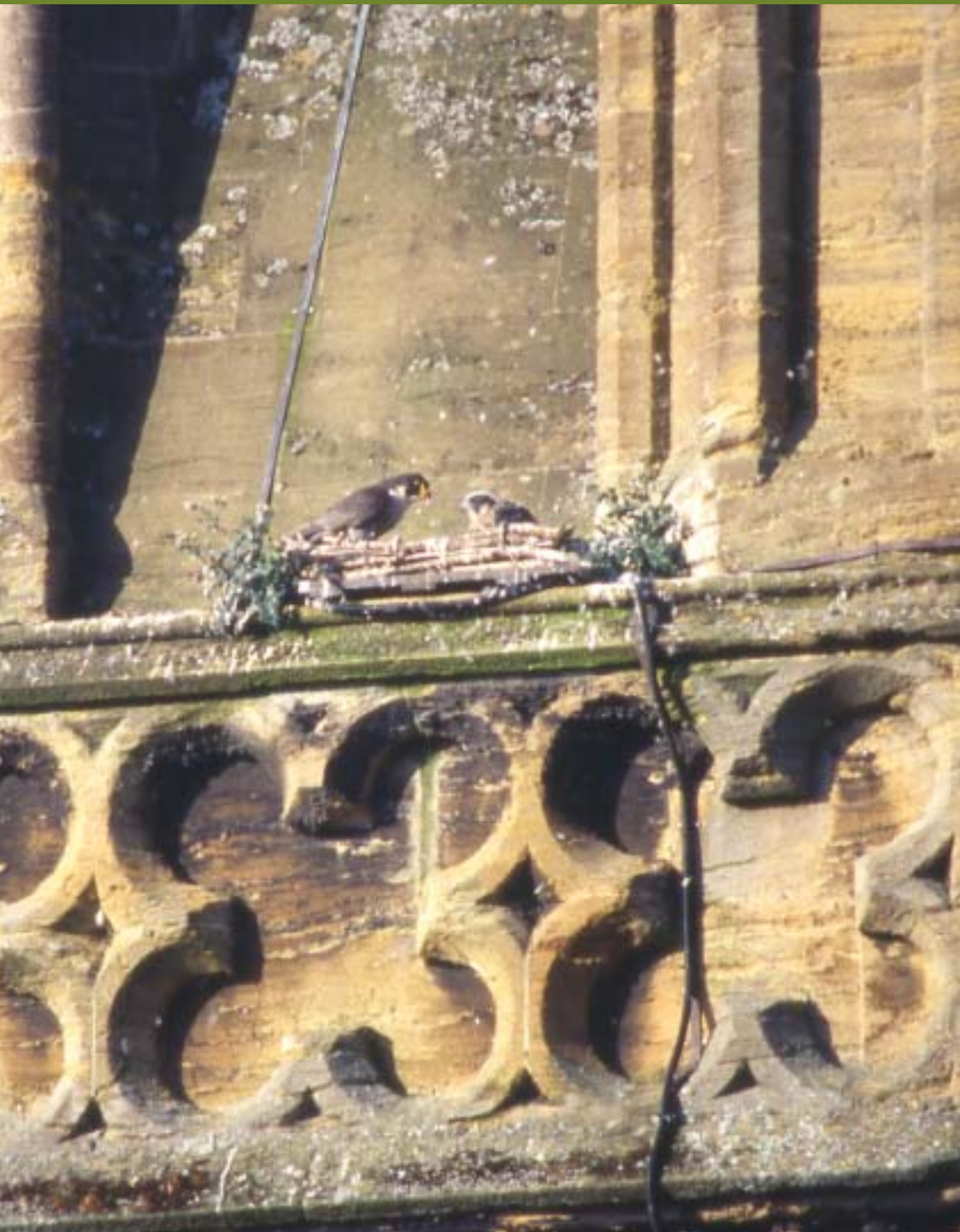
This is the adaptation of an existing natural cavity, feature or recess on the structure (such as a disused ventilation inlet or window ledge), by creating a lip or edge within which the substrate can be retained.

Details, illustrations and photographs of a variety of boxes, trays and ledges can be found on a number of American, Australian, Canadian and British websites including:

www.raptorresource.org/build.htm

www.ecowatch.com

raptorsinthecity.homestead.com/files/2005/Mar3courtship.html



Key considerations for the installation of artificial nests

A number of issues need to be taken into account by building owners before the installation of an artificial nest site is contemplated.

If peregrines are disturbed from the nest, their eggs or chicks can become chilled or be preyed upon by crows or gulls, especially if the nest is abandoned for a prolonged period.

Legal status of peregrines

Intentional and reckless disturbance of peregrines when they are nesting or when they have dependant young is illegal under the Wildlife and Countryside Act 1981 (as amended).

Consequently, artificial nests should be placed away from those parts of the building where prolonged human activity is likely to occur during the peregrine breeding season, from early February (when courtship around the nest site has usually begun) to the end of July (when the young have fledged).

Although disturbance is illegal, there would be no prosecution if disturbance was clearly unintentional or it could be demonstrated that the disturbance was the result of necessary actions undertaken in an emergency, such as for an urgent reason relating to public health and safety. Non-urgent activity that might cause disturbance could be undertaken in proximity to a peregrine nest, but only if it can be demonstrated that the work is essential and cannot be delayed. The work would have to be undertaken under licence – check the Defra website for details (www.defra.gov.uk).

Site survey

Peregrines often indicate their preference for a particular building or structure by regular perching, feeding by day and roosting at night. Furthermore, the presence of peregrines on a building and the most suitable locations for an artificial nest site can be determined by an experienced peregrine worker, as there are many visual signs of occupation, such as prey remains, droppings, food caches and attempts at creating nest-scrapes.

Ideally, a site visit would include a survey of the building from ground level, a search of the roof, upper elevations and the surrounds. This should be coupled with discussions with local conservation bodies and the local/county bird recorder, as **it is important to ascertain the current status of peregrines in the locality and proximity of the nearest breeding pair** to the site in question.

It is also necessary to meet the building owners and maintenance contractors, to make them aware of some of the issues that can arise if peregrines breed and to look at ways to overcome these at an early stage of planning.



Artificial nesting opportunities for peregrines can also be considered at the design stage of new building projects. In situations such as this, early consultation is important to determine how appropriate the building and location will be for peregrines and the best way for artificial nesting sites to be incorporated with minimum cost, while providing maximum security and safety for potential nesting falcons.

Positioning of artificial nests

The installation of an artificial nest site will not guarantee successful breeding by falcons, but careful siting and design can increase the chances of occupation.

Many successful peregrine nests at natural sites face north-east or east, which is believed to prevent possible overheating of the eggs and newly hatched young (Ratcliffe 1995).

It is therefore recommended that, where possible, artificial nest sites should not be placed in locations facing full sun throughout the day.

The positioning of artificial nests in regard to height above ground level is linked with the type of structure selected. In the majority of successful breeding sites across the UK, peregrines have been recorded on built structures from 20 metres to 200 metres above ground level.

Human disturbance

Peregrines will often hold year-round territory on a favoured building, provided they remain undisturbed by human activities. They will then be far more likely to breed if a suitable nest site is available. Peregrines show considerable tolerance to human activity, noise, light and vibration, **but will not tolerate human disturbance near the nest or from above.** All built structures will, however, be subject to routine maintenance and many tall buildings are increasingly used to mount radio and telecommunications equipment, which may require more regular maintenance. Lack of disturbance is a vital consideration when planning the design and siting of an artificial nest for peregrines. **It is important that contractors and maintenance staff are aware of the bird's legal protection, to avoid unintentional disturbance.**

Safety of young birds

Nestlings are fed by their parents in the area of the nest. As they become more active, the raised edge around the artificial site will help retain them as they gain independence.

Once the juveniles are able to feed themselves, they are likely to take prey items away from their siblings to feed in seclusion. Adequate space should be provided for this and exercising (wing-flapping) prior to fledging.



A considerable difference between natural cliff sites and artificial nest sites is that cliff sites will usually offer opportunities for the young to scabble around on adjoining ledges while exercising, whereas an artificial nest on the flat face of a building may restrict such movement.

Their first flight is often the result of wing flapping on a perch and then unexpectedly being lifted by an up draught. A brief flight will then take place before they attempt to land close to the nest ledge. At traditional nest sites, young birds will combine wing beating with scrabbling up the slope to return to the nest. The sheer face of a building may not enable young birds to return to the nest site, but if there are accessible ledges nearby, no harm should come to the young and the adults will still feed them, before they attempt to return to the nest. **Consequently, it is inadvisable to locate artificial nests on buildings with smooth, vertical facades without ledges or other niches which young birds can reach if they fail to return to the nest site.**

Occasionally, juveniles prior to fledging will come down to ground level, where the adults are unlikely to feed them, especially if the area is busy with human activity. In these circumstances, the young may have to be caught for their own safety and returned to a safe height on the building.

It is advisable to have details of a local vet with experience of raptors in the event of any of the young being injured during this critical stage in their development.

Nest site monitoring and maintenance

Ideally, artificial nest sites should be positioned to provide access to the nest by an experienced and licensed peregrine worker. Restricted and brief visits will determine productivity and allow juveniles to be leg-ringed (the fixing of a numbered metal band to the lower part of the leg). Boxes can have a 'spy hole' inserted in the back if set into the building, to enable a visual check to take place without disturbing incubating birds. At many nest sites, web-cams have been installed both to monitor the nest site and provide images, which can be a fantastic education and public relations opportunity.

Maintenance of artificial nest sites should be undertaken during the winter, when the peregrines are not breeding. It should include ensuring boxes or trays are still securely fixed, clearing out debris and replacing substrate lost during the breeding season.



Additional considerations

Mess

Peregrines feed solely on birds, all of which are caught in flight but consumed in safety on a regular perch. The majority of prey is brought back to the building where they are holding territory or breeding.

Prey items are plucked before eating or stored in small cavities. Occasionally prey items are dropped by mistake, either whole or part eaten. Discarded carcasses, bones, wings, legs and feathers will fall or are blown from ledges and perches. Like any other detritus or litter, prey remains could cause problems by falling into and blocking gutters etc.

The ground level surroundings of buildings with breeding peregrines can be littered with feathers, bones and occasionally carcasses. Peregrines often swallow bones and feathers along with flesh and the non-digestible components are later regurgitated in the form of pellets. The presence of this detritus can cause annoyance to residents or occupiers of residential or commercial buildings. Furthermore, regular perches will show signs of 'whitewash' (excreta) around and below them, which may prove undesirable if viewed from inside domestic or office apartments.

Noise

Peregrines are very vocal during the breeding season, especially so when juveniles in the nest see adults returning with food. Their call is a high-pitched raucous wail and the young will still beg for food from the adults even when they are able to catch prey for themselves.

Safety of staff and contractors

Peregrines will sometimes defend their eggs and young aggressively. They are large, powerful birds and can cause injury with their beaks and claws. Perhaps of greater concern is the possibility of a peregrine attacking or startling a member of staff or contractor in a potentially hazardous location, for example when working at a height. Although such occurrences are likely to be rare due to the laws regarding disturbance to breeding birds, staff and contractors should be briefed prior to undertaking any emergency works (or essential works permitted under licence) in the vicinity of a peregrine nest site.



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Further information and advice

The RSPB

www.rspb.org.uk
Tel: 01767 680551

English Nature

www.english-nature.org.uk

BTO

www.bto.org

London Biodiversity Partnership

www.lbp.org.uk

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