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Our Ref: 856531 Pembroke Dock Marine – Interim Phase 2 Bat Survey report – Rev0

Dear Adrian,

INTERIM NOCTURNAL BAT SURVEY REPORT

This document presents the initial findings of nocturnal building surveys and tree inspections undertaken in connection with the proposed redevelopment of Pembroke Port, Pembroke Dock, Pembrokeshire (centred on Grid Reference SM959 037). The buildings and trees were identified as having potential for roosting bats during a preliminary roost assessment undertaken by RSK in 2017[1]. Under the current guidelines (Collins et al 2016)[2], these buildings and trees required further surveys to determine the presence or likely-absence of roosting bats, and - where there were bat droppings – to describe the roost.

It was agreed with the Port of Milford Haven that the surveys would be undertaken during August and September 2017 and completed in May 2018. This interim report includes a summary of the results of the surveys undertaken during August and September 2017 and discusses ecological implications for the proposed works. An updated report will be issued following the completion of the surveys in May 2018.

RSK understand that the current proposed works (Pembroke Port Development Plan; Option 5 Layout and Demolition/Intervention Plan) include the demolition of some buildings, construction of new buildings, and the provision of a designated vessel transition area, a high bay ship repair and fabrication facility and a crushed rock export operation. Several transport corridors15 m to 30 m wide and oriented east-west

[1] RSK (2017) Pembroke Port, Pembroke Dock, Preliminary Bat Roost Assessment.

[2] Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn). The Bat Conservation Trust, London.

and north-south across the site will be created and the Graving and Dry Dock will be filled in, Meanwhile, vegetation removal is likely to be required and there may be changes to the way the site is lit.

Ecological Context

Pembroke Port is an active industrial port and dockyard with frequent movements of machinery, heavy goods vehicles, and ferries. It is occupied by hard-standing, bare ground and industrial, commercial and office buildings associated with the port operations. There is a sand-storage depot in the east of the site. Vegetated areas are principally located in the southern part of the site, and include a small area of immature secondary broad-leaved woodland, scattered trees, ruderal open grassland, a small area of unimproved grassland and scrub. Elsewhere, vegetation is scattered across the site and includes ephemeral species, amenity grassland and introduced shrubs.

The waters of Milford Haven form the northern boundary of Pembroke Port and together with an industrial area forms the western site boundary. To the south the site is bounded by residential properties, the South Pembrokeshire Hospital, a golf course and farmland. The town of Pembroke Dock lies to the east of the site and is dominated by residential and commercial buildings and transport infrastructure.

Methods

Nocturnal Roost Surveys of Buildings

Two surveys of buildings with high potential, or with confirmed bat roosts, were undertaken in August 2017 and September 2017. Current guidelines recommend that these buildings undergo at least three nocturnal roost surveys (comprising dusk emergence and dawn re-entry surveys)3 and a third survey will be completed in May 2018. The buildings surveyed were as follows:

- High potential; B30, B48 and B52 together with confirmed bat roosts in B10, B17, B38 and B50.

One survey of each building/structure with moderate potential was undertaken in September 2017. Current guidelines recommend that these buildings undergo at least two nocturnal roost surveys (comprising dusk emergence and dawn re-entry surveys) and a second survey will be completed in May 2018. The buildings/structures surveyed were as follows:

- B2, B6, B31, B34, B39, B41 and a gateway.

A single survey of buildings with low potential was undertaken in August 2017, as per current guidelines and the buildings surveyed were as follows:

- B18, B20, B21, B26, B28, B32, B36, B42, B44, B45 and B46.

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[3] Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn). The Bat Conservation Trust, London.

The surveys were undertaken during suitable weather conditions (air temperature above 10°C, little or no wind and no precipitation) by a team of up to seven ecologists, who watched and listened for bats emerging from or returning to the buildings from selected vantage points. Dusk emergence surveys commenced *c.*15 minutes before sunset and continued for up to 2 hours after. Dawn re-entry surveys commenced 1.5 hours before sunrise and continued until 15 minutes after. Electronic bat- detectors, recording equipment and sound analysis software were used to identify bats by their echolocation calls.

Aerial Tree Inspections

Aerial tree inspections were undertaken during the daytime by two ecologists trained in tree climbing and aerial rescue using ropes and harnesses. The surveys recorded any evidence of roosting bats, e.g. droppings, feeding remains, polished surfaces or roosting bats in-situ), which could be used to determine the presence or likely absence of roosting bats for trees of moderate or high suitability.

Two surveys of trees with high potential were undertaken in August 2017 and September 2017. Current guidelines (Collins 2016) recommend that these trees undergo at least three surveys and a third survey will be completed in May 2018. One survey of trees with moderate potential was undertaken in September 2017 and current guidelines recommend that these trees undergo at least two surveys and a second survey will be completed in May 2018.

Results

During the nocturnal surveys bats were only observed emerging from or entering buildings which previous surveys had shown to support roosts. The survey results for these buildings are listed in *Table 1*. No bats were observed emerging or entering buildings not included in *Table 1*.

Table 1: Survey Results for Confirmed Bat Roosts

Building	Survey 1	Survey 2
Building B10 The Coach House to the Master Shipwright's House (plus the attached building on the western elevation as per A Rowlands request)). Initial bat roost assessment confirmed it was a Greater Horseshoe bat roost via the presence of droppings.	17/08/2017 Dusk One Brown Long-eared Bat emerging from the attached building on the western elevation. Non emergent/re-entering species recorded foraging or commuting during the survey; Common Pipistrelle, Soprano Pipistrelle, Greater Horseshoe Bat.	19/09/2017 Dusk One Common Pipistrelle observed emerging from beneath the corrugated roof of the southern elevation of The Coach House. Greater Horseshoe Bat observed to twice enter and leave the open parking area on the ground floor of the attached building on the western elevation. Non emergent/re-entering species recorded foraging or

Building	Survey 1	Survey 2
		commuting during the survey; Common and Soprano Pipistrelle, Greater Horseshoe Bat and Noctule.
Building B17 The Commodore Hotel. Previous surveys found it to be a Greater Horseshoe Bat roost.	23/08/2017 Dusk One unidentified bat (silent) observed emerging from the north-western elevation. One unidentified Pipistrelle (social call only) observed emerging from the south-eastern elevation of the four-storey part of the building. High probability that a Common Pipistrelle and an unidentified (silent) bat emerged from beneath roof ridge tiles towards the northern end of the north-south roof ridge and a Common Pipistrelle from the south-eastern elevation of four-storey part of building. The location of these potential roosting locations at height is responsible for the degree of uncertainty. Non emergent/re-entering species recorded foraging or commuting during the survey; Common and Soprano Pipistrelle and Brown Long-eared Bat.	19/09/2017 Dawn Two Common Pipistrelles entered the three-storey part of the hotel; the first at the south-western corner where the roof and wall meet. The second near the chimney. An unidentified (silent) bat entered a window on the western elevation of the four storey part of the hotel. Possibly a Lesser Horseshoe bat based on ground hugging flight behaviour. High probability that a Soprano Pipistrelle entered the building on the southern elevation of the four-storey part of the hotel. The location of this potential roosting location at height is responsible for the degree of uncertainty. Non emergent/re-entering species recorded foraging or commuting during the survey; Common and Soprano Pipistrelle and Greater Horseshoe Bat.
Building B38 Initial bat roost assessment confirmed it was a Common Pipistrelle roost via the presence of droppings.	16/08/2017 Dawn One Common Pipistrelle observed entering the apex of the southern gable end. One Common Pipistrelle bat observed entering the northern gable end. One	18/09/2017 Dusk Two Common Pipistrelles seen to emerge from beneath the barge board near the apex of the northern gable end. One Common Pipistrelle re-entered the building at the same location.

Building	Survey 1	Survey 2
	Common or Soprano Pipistrelle (calls straddled both species range) observed to emerge from the apex of the northern gable end. Non emergent/re-entering species recorded foraging or commuting during the survey; Common Pipistrelle.	Non emergent/re-entering species recorded foraging or commuting during the survey; Common Pipistrelle and Soprano Pipistrelle.
Building B50 Initial bat roost assessment confirmed it was a Brown Long-eared Bat roost via the presence of droppings.	17/08/2017 Dusk No emergent bats observed. Non emergent/re-entering species recorded foraging or commuting during the survey; Common Pipistrelle and Soprano Pipistrelle.	19/09/2017 Dusk No emergent bats observed. Non emergent/re-entering species recorded foraging or commuting during the survey; Common Pipistrelle and Soprano Pipistrelle.

Other bats seen or recorded during the nocturnal surveys were foraging or commuting.

No evidence of roosting bats was identified during the tree surveys completed in August and September 2017.

Evaluation and Conclusions

Roosting bats were observed using buildings B10, B17 and B38 during the nocturnal surveys.

Building B10 was confirmed to be a roost for Common Pipistrelles and has previously been confirmed as a Greater Horseshoe Bat roost. The building attached to the western elevation of B10 was confirmed to be a roost for Brown Long-eared Bat and a Greater Horseshoe Bat also flew into and left the building twice before flying off. B17 was confirmed to be a roost for Common Pipistrelles, unidentified bats (possibly including Lesser Horseshoe Bat), and an unidentified Pipistrelle species - it is highly probable that the building is a Soprano Pipistrelle roost. Furthermore, the building was previously confirmed as a Greater Horseshoe Bat roost. B38 was previously known to be a Common Pipistrelle roost and nocturnal surveys confirmed this. B50 was previously confirmed as a Brown Long-eared Bat roost although none emerged from or entered the building during the nocturnal surveys.

If these buildings are to be affected by the works, then a European Protected Species licence would be required from Natural Resources Wales before works could commence. In the case of Common Pipistrelles, examples of potential mitigation could involve the provision of replacement roosts in the form of bat boxes. However, the bat roosts have not been fully characterised and proposed mitigation

measures will be determined upon completion of the full set of surveys in 2018. Greater and Lesser Horseshoe Bats will not use bat boxes and require a dedicated roosting area, such as an integrated roost in the loft of the current building or the provision of a dedicated bat barn building.

Possible bat droppings were identified in B30/B48 during the initial building inspection for roosting bats. No bats have been seen to emerge or enter these buildings during the completion of two of the three planned nocturnal surveys of these buildings.

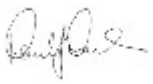
No bats were seen to emerge or enter the moderate potential buildings, which were surveyed once during September 2017. These buildings will undergo a further survey in 2018, as required by the current guidelines (Collins 2016).

No bats were seen to emerge from or enter the low potential buildings which were surveyed only once (during August 2017) as required by the current guidelines (Collins 2016). No further surveys of these buildings are recommended and no mitigation will be required if these buildings are affected by the works.

No evidence of roosting bats was identified during the tree surveys. Trees will undergo a further survey in 2018, following the current guidelines (Collins 2016).

If you have any questions please contact us on 0117 300 4288 or at pparker@rsk.co.uk.

Yours sincerely



Paul Parker

Ecological Consultant

Reviewed by

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