Ocean Square Saundersfoot Harbour
The Harbour Saundersfoot SA69 9HE

A Preliminary Ecological Appraisal By:

Just MAMMALS Consultancy
Limited Liability Partnership

On Behalf Of:

Saundersfoot Harbour

December 2017

Client	**Saundersfoot Harbour Commissioners**
Project Name	**Ocean Square, Saundersfoot Harbour, The Harbour, Saundersfoot SA69 9HE**
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1 Executive Summary

1.1 It is proposed to create a new heritage and historical interpretation centre, using the former Coal Office at Saundersfoot Harbour. The proposals are quite extensive, but will allow use of a currently redundant structure to benefit tourism in Saundersfoot.

1.2 As the proposal requires planning consent, a preliminary ecological appraisal was undertaken on the site, in compliance with local authority requirements and BREEAM criteria. Survey was therefore undertaken in early December 2017 by two experienced ecologists, and this report details the findings of the assessment.

1.3 The appraisal found that the former Coal Office is a bat roost, with pipistrelle type bat droppings being found in the main loft space. One bat dropping was also found which could indicate the presence of a second bat species. However, it is not possible to confirm the species with certainty, or the type of bat roost which might be present without additional survey effort. Recommendations are therefore made for additional survey observations in the summer months, which would also seek to identify the access points being used by the bats.

1.4 In terms of the other interest of the site, the survey revealed the presence of 43 common and widespread plants, including many garden cultivars. Several semi-mature trees are also present, which result in the side being of moderate ecological value.

1.5 Whilst the presence of species such as badger, dormouse and reptiles and amphibians is considered to be very unlikely, birds are present, and it is likely that house sparrows, a red list species, are using the original Coal Office as a nesting site in summer. The additional survey effort which is proposed with respect to bats, is likely to determine if bird nest sites are also present within the building.

1.6 Some recommendations are made within this report, which are relevant to the final development scheme. However, other recommendations will have to await the outcomes of the additional survey effort proposed.

2 Introduction

2.1 Saundersfoot Harbour Commissioners are proposing to redevelop the former Coal Office and adjacent garden to create a new focus for Saundersfoot, including a visitor facility, and heritage and historical interpretation centre. The Coal Office, which is located at National Grid Reference (NGR) SN 13650 04835, at some 8m Above Ordnance Datum, has been left largely unused for some time. Although the attached building, a flat roofed single storey structure accessed off Cambrian Place, is used by a number of small commercial businesses, the property is in a prime location close to the sea, and overlooking Carmarthen Bay.

2.2 The development, known as Ocean Square, will allow visitors to understand the importance of Saundersfoot historically, and its links to the coal trade. The proposals will require extensive refurbishment of the Coal Office, demolition of the flat roofed single storey shops, and repurposing of the adjacent garden area (at the southern end of the Coal Office), to create the new centre.

2.3 As part of the process of informing the planning and development process, the Just Mammals Consultancy LLP was engaged to carry out a preliminary ecological appraisal, also known as a Phase 1 habitat assessment of the site. The survey to be carried out to Building Research Establishment Environmental Appraisal Methodology (BREEAM), criteria.

2.4 Survey was carried out in early December 2017, and involved assessing the different types of habitat present, as well as seeking to identify the potential presence of protected species, such as bats, hazel dormice (*Muscardinus avellanarius*), badgers (*Meles meles*), reptiles and amphibians, as well as nesting birds. This report details the findings of the site assessment. Additionally, it makes recommendations concerning the ecological value of the site as well as the need for further survey work as appropriate.

3 Survey Team Experience

3.1 Lead surveyor, and co-author of this report, was Phil Morgan. Phil has over 35 years' experience of undertaking building, tree and cave surveys for all bat species. In addition he has undertaken foraging and flight line surveys using heterodyne and other echo-location equipment, and in 1991 made a significant contribution to a Bristol University run project, which established the

methodology used in the National Bat Monitoring Programme. Phil has also undertaken numerous radio tracking exercises on both lesser horseshoe, Daubenton's and Natterer's bats. Phil is a Chartered Environmentalist (CEnv), Registered with the Society for the Environment, and a full Member of the Chartered Institute of Ecology and Environmental Management (MCIEEM). He is a Principal Ecologist with the Just Mammals Consultancy LLP.

3.2 Assisting with the survey, and co-author of the report is Diane Morgan. Diane is a licenced bat ecologist of over 20 years' experience, who also undertakes survey for otters, dormice, water voles, reptiles, amphibians, fungi, crayfish, as well as general habitat assessment and botanical surveys. Diane is a Senior Ecologist with the Just Mammals Consultancy LLP, and an Associate Member of the Chartered Institute for Ecology and Environmental Management (ACIEEM).

4 Survey Methodology

4.1 A day time visual assessment of the Coal Office building was carried out on Monday the 11th of December 2017, which involved an inspection of the lofts and upper floor areas of the structure. The internal survey searched for the presence of bats or the remains of dead bats (including dead juveniles and babies, which might indicate the presence of a maternity site), and signs of bats including bat faeces (droppings) on floors, stored items, and other surfaces. Staining on timbers caused by oil from bat fur was also searched for, as well as discarded fragments of insects such as moth wings. The ridge areas, which are favoured roost location, were checked for live bats. Beneath this line, a careful search for droppings and insect parts was conducted. At the same time as the structure was examined for the presence of bats, other protected species and breeding birds were considered.

4.2 The external survey involved examining outer surfaces from the ground and looking for signs of bat presence, including bat faeces (droppings) on walls, ledges, doors and sills. A high-powered lamp was used to examine potential access and roosting areas. Any gaps or crevices in the structure were inspected as closely as possible. The context of the building within the surrounding landscape was also assessed at this time.

4.3 Survey of the surrounding land involved a walkover assessment of the site, using the Phase 1 Habitat Survey methodology. This is a standardised technique for classifying and mapping British habitats. All areas within the site were inspected and assessed for indicators of ecological value, including the presence, and/or field signs of any protected or rare habitats and species. The site was walked over, recording plant species, and features on a custom-made recording sheet. Habitats and notes were drawn onto a map of the survey site and photographs were taken. A coloured Phase 1 habitat map was produced which can be found in Appendix IV.

4.4 Assessment for the presence or potential presence of other protected species, including hazel dormouse, badger, reptiles and amphibians, was also undertaken by considering the features of the site. The potential suitability of the site for nesting birds was also considered. Details of the survey activities, and weather conditions, are provided in Table 1.

5 Site Description

5.1 The survey site occupies a prominent position in the town centre, close to the quayside and the historic harbour. The front elevation of the former Coal Office building faces east, directly overlooking the quayside car park. The rear of the building faces onto Cambrian Place. At the north end of the building is an area of hard standing, and beyond this is a small sensory garden. This sensory garden is outside the ownership of the Harbour Authority and not included within the survey area. At the south end of the Coal Office building is an open garden area contained within a low stone perimeter wall with public access.

5.2 An amenity grassland, which is managed by mowing, is the main feature of the garden on the southern side of the Coal Office. The grassland contains a central flower border, with borders of introduced cultivated shrubs, paths and paving around the edges and against the perimeter wall. Other features are a fast food kiosk at the south-east corner, several timber picnic tables, and a small number of semi-mature trees which stand close to the boundary wall along the southern and eastern sides. The trees have been planted as a memorial to local people who died in the conflicts in Europe and the far-east and for the purposes of this report, is referred to hereafter as the Memorial Garden.

5.3 The original Coal Office appears to have been a relatively simple rectangular structure extending to three storeys, and with a timber-framed pitched roof. This layout is shown on the Ordnance Survey map for the area dating back to 1855. The building is constructed in stone, on a roughly north-east/south-west alignment, but is referred to hereafter as north/south orientation for reporting purposes. The third floor of the building comprised attic rooms, with a small loft area above. The building appears to have been extended shortly after initial construction (although possibly part of the original construction), with two wings, extending west towards Cambrian Place, and also extending two three storeys, with pitched roof, attic and loft spaces etc. The internal room arrangement is complex on all floors, and where appropriate, more detail is given in the following sections.

5.4 A further addition to the building (which again may be part of the original construction) is a two storey entrance lobby/porch, which projects east towards the former coal yard (present car park). This feature is centrally positioned on the eastern aspect of the Coal Office, and the pitched roof ties into the roof of the main or original building. All roof areas of the Coal Office are covered with slate, topped with clay ridges. There is no lining membrane on the roof beneath the slate covering. Fibreglass insulation is present on the floor of the loft space. Four chimney stacks project beyond the roof tops and these are constructed from brick, with lead flashing at the junctions with the slates. Barge boards, soffits, door and window frames are a mixture of timber and uPVC, with the exterior stonework having been whitewashed. Rainwater goods appear to be a mixture of cast iron and/or plastic, and at the time of survey, there were festive light around the exterior of the structure.

5.5 At some point, probably the 1950's, a flat roofed rectangular extension was made to the building to the west, onto Cambrian Place. This structure is singly storey with cement rendered walls with crenellations along the tops of all walls. The materials used to build this part of the structure could not be determined, but it is likely to be brick or cement block. The flat roof of this element is covered with a concrete roof, edged with lead flashing, and covered with a bitumen paint finish. This element is separated into a number of shop/café/restaurant units, with their respective frontages onto Cambrian Place.

6 Desktop Study

6.1 A desktop study was undertaken, which involved a standard search area covering a 2km radius from the site (using a central grid reference), using the MAGIC website. Details of statutory sites designated for nature conservation were obtained.

6.2 The search returned details of five designated sites. These included Waterwynch Bay to Saundersfoot Harbour Site of Special Scientific Interest (SSSI), some 103m to the south of the Coal Office; Saundersfoot to Telpyn Coast SSSI, 84m to the north-east; Carmarthen Bay Special Area of Conservation (SAC), also 84m north-east of the Coal Office; Carmarthen Bay Special Protection Area (SPA), some 430m to the east. The Bristol Channel Approaches, candidate SAC (cSAC), also lies within the 2km search radius. There are no National Nature Reserves (NNR) or Local Nature Reserves (LNR) within the search radius.

6.3 A record search centred on the same grid reference was commissioned from the West Wales Biodiversity Information Centre (WWBIC), the local records centre. A search for protected and other notable species within a radius of 2km was conducted. The search returned a total of 2111 records, with no records relating to the application site itself.

6.4 Records for bats; specifically, common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*) and noctule (*Nyctalus noctula*) were returned within 500m. Other species recorded to be present within 500m were slow worm (*Anguis fragilis*), grass snake (*Natrix natrix*), adder (*Vipera berus*), badger (*Meles meles*) and hedgehog (*Erinaceus europaeus*). Additional records returned from further afield, up to and including 2km comprise lesser horseshoe bat (*Rhinolophus hipposideros*), greater horseshoe bat (*Rhinolophus ferrumequinum*), brown long-eared bat (*Plecotus auritus*), Daubenton's bat (*Myotis daubentonii*) and Natterer's bat (*Myotis nattereri*). Many records of birds within 2km were also returned, including kestrel (*Falco tinnunculus*), herring gull (*Larus argentatus*), lesser black-backed gull (*Larus fuscus*), peregrine falcon (*Falco peregrinus*), swift (*Apus apus*), swallow (*Hirundo rustica*), and house martin (*Delichon urbicum*).

7 Survey Constraints

7.1 The principal constraint was the time of year when survey was conducted. Although the site is adjacent to the sea, and therefore in a relatively mild climate zone, many plants have died back by December, so making positive identification can be difficult. At any given time of year, it will not be possible to identify all plant species by conducting a single visit. Short sward height, and the weather conditions of late autumn/winter can hinder identification of specimens. This being said, it is possible to classify habitats and identify some species outside the main survey period. The whole of the site was accessible for survey and access to the site was possible at all times.

7.2 It was not possible to access the small loft area above the entrance lobby/porch element at the front of the Coal House. Consequently, it is not possible to state if bats are present in this loft area or if there is potential for bats to use this part of the structure.

8 Survey Results

8.1 The development site was visited on Monday the 11th of December 2017, by two experienced ecologists. Details of the survey and conditions under which it was undertaken are given in Table 1 below. Wind speeds given employ the Beaufort scale.

Table 1: Summary of Survey Activity and Weather Conditions

Date	Survey Type	Timing	Conditions
11/12/2017	Preliminary Ecological Appraisal	12.00 – 13.40 hours Greenwich Mean Time	Air temperature: 5°C Cloud cover: 0/8 oktas Conditions: Dry Wind speed: F0, calm
Surveyors	Diane Morgan, Phillip Morgan		

8.2 As noted, above, the surveyors walked over the site making notes of the plant species observed on a custom-made recording sheet. Digital photographs were also taken to illustrate this report. To comply with the requirements of the BREEAM assessment process, the site is divided into four habitat types: hard surfaces including paving: amenity grassland and a central flower border: fringe habitat containing introduced shrubs and the semi-mature trees against the perimeter wall: and finally the building of the former Coal Office. Key features of these are noted below in Table 2.

Table 2: Summary of Phase 1 Habitat Notes

Habitat	Phase 1 Classification	Description of Area and Typical Species
Type 1	J5 Other habitat: Hard-standing and paving	Paved and hard surfaced areas to either side (north and south) and the front (east side) of the former Coal Office building containing grass species and groundsel (*Senecio vulgaris*) and shepherd's purse (*Capsella bursa-pastoris)*
Type 2	J1.2 Amenity grassland J1.1 Arable (flower bed)	The amenity grassland contains annual meadow grass (Poa annual) and also evident is daisy (*Bellis perennis*) and dandelion (*Taraxacum agg.*). A central flower bed was planted up with marigold (*Calendula sp.*) and *alyssum* around a small conifer tree.
Type 3	J1.4 Introduced shrub J2.5 Wall	Fringe habitat of introduced garden shrubs around the edge of the grassland and along the inside of the perimeter wall. Dominant species are *fuchsia*, castor oil plant (*fatsia japonica*), and variegated laurel (*Aucuba japonica)*. This habitat includes a small number of semi-mature trees - cherry (x4) (*Prunus sp.*), and hornbeam (x5) (*Carpinus betulus*). A low level stone wall with a small number of species including ivy (*Hedera helix*), ivy leafed toadflax (*Cymbalaria muralis*) and maidenhair spleenwort (*Asplenium trichomanes*).
Type 4	J3.6 Building	The former Coal Office building has a series of pitched roofs and an area of flat roof to the rear (west) elevation where a small patch of grass (*Poa sp.*) has established itself on the roof covering.

8.3 A coloured Phase 1 habitat map was produced (see Appendix IV). Species present on site are common and wide-spread and a list of 43 plant species in shown in Table 5 (see Appendix V), which includes cultivated flowering plants. The site as a whole is considered to be of moderate ecological interest due to the presence of trees suitable to support nesting birds. The grassland is of low ecological value and the area of introduced shrub contains cultivated shrubs and flowering plants also of low ecological value.

8.4 A low number of bird species were recorded on the survey site: house sparrow (*Passer domesticus*), wren (*Troglodytes troglodytes*) and pigeon (*Columba livia*). House sparrows were seen flying in and out from behind the fascias of the building on the west facing elevation, in the roof valley area.

8.5 The presence of protected species such as reptiles, badger and dormouse was assessed. The site is unsuitable to support any of these species due to a lack of suitable habitat and its location in the centre of the town where it is isolated from linking natural habitat. It is a small site with constant human access and it is managed to provide an attractive garden feature with regular planting, mowing and maintenance work going on.

8.6 Inspection of the Coal Office commenced with the interior, and in particular the attic and loft areas. The surveyors noted discarded butterfly wings, mainly small tortoiseshell butterfly (*Aglais urticae*) in the main corridor area of the attic. These were found in several places against an internal wall, but did not correspond to any other evidence of species such as bats or spiders. However, only wings were present, the bodies having apparently been consumed. There is access to this area for bats, through a number of holes in the ceilings.

8.7 Inspection of the main loft revealed the presence of approximately 30 bat droppings scattered around the area of the northern gable end wall. Most of these droppings were consistent with the presence of one of the pipistrelle bat species (*Pipistrellus sp.*). Samples were taken for DNA analysis if required. One of the bat droppings found was larger than the others, and similar to the type of droppings produced by one of the long-eared bat species (*Plecotus sp.*). No bats were seen within the lofts which could be inspected, and no other evidence of use (e.g. fur oil staining) was noted. Day light could be seen at the eaves around the loft areas in several locations, and it was apparent that there was considerable potential for bats to access the tops of the walls and lofts, all around the structure.

8.8 Following normal practice, the building was assessed for its potential to be used during winter for hibernation purposes. Such use was assessed to be negligible, with no obvious access points to the lower walls. The maritime location, with highly variable temperature changes, would also make it an unlikely location for hibernation to be successfully achieved.

9 Discussion and Conclusions

9.1 Quite extensive works will be required in order to re-purpose the Coal Office, and the roof spaces of the original building are likely to be implicated in the changes needed. The preliminary ecological appraisal has demonstrated that the building is a bat roost. The species concerned has not been confirmed, but one of the pipistrelle species is likely to be involved. From the bat droppings found at the northern end of the main roof, it is likely that a second species is also present, possibly one of the long-eared species.

9.2 The Coal Office is therefore identified as a bat roost. However, although DNA sampling can be used to confirm the species, the nature of the use being made of the building cannot be confirmed by such methods, and neither can the exit/entry points that bats are using.

9.3 All bats species and their places of rest are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), and the Conservation of Habitats and Species Regulations 2017. The legal protection for bats concerns impacts from disturbance, loss of roost locations, modifications to roosts and loss of access or obstruction to roost locations. It will therefore be necessary to provide a scheme of mitigation to retain bat roosting opportunities, which are suitable and appropriate for the bat usage at the site. In this instance the work to the Coal Office will require that suitable mitigation is provided. It is also likely that a European Protected Species (EPS) licence will be required from Natural Resources Wales (NRW) before any work is done which affects roosts and the bat exit entry points. Further information concerning the EPS licence and other recommendations are therefore made below.

9.4 For the development proposals to proceed, a robust scheme of mitigation is required to ensure that the favourable conservation status of the bat species is not adversely affected. The following broad principles must be followed within any scheme of mitigation of compensation at the site and will need to be delivered under the auspices of an EPS licence:

- bats must not be left without a place to roost;
- major works must be timed to avoid periods of the year when bats are likely to be present;

- any new roost structures provided as part of mitigation and compensation proposals must be suitable for the species of bat and type of roost affected by the development;
- any scheme must ensure that the 'action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range', and;
- post-development monitoring will be necessary to comply with the EPS licence, and is recommended to form part of the scheme of mitigation for the local authority planning procedures.

9.5 The Memorial garden at the southern end of the Coal Office is relatively species rich in terms of numbers of plants, and is notable for the trees planted as a memorial to lives lost in past armed conflicts. However, many of the plants in this area are garden cultivars, and are of low ecological value. The trees have more value that the rest of this area, and overall the garden is judged to be of moderate ecological value.

9.6 Breeding birds must also be taken into account. No active nests were noted during the internal and external survey, but house sparrows were seen to enter the Coal Office building, and it is likely that they will nest there, probably on top of the wall plate, during the nesting season. The house sparrow is listed on the red list of the British Trust for Ornithology listing of Birds of Conservation Concern. All breeding birds are legally protected, and once a nest is established it is an offence to disturb or destroy the nest. General advice for the legally protected status of breeding birds is given below.

9.7 With respect to other protected species, the site is not regarded as being suitable to support species such as badger, dormice, reptiles and amphibians. Consequently no additional actions are required with respect to these animals.

10 Recommendations

10.1 The presence of bats using the former Coal Office results in the need for further information. It will be necessary to identify the species, how such bats are using the structure (e.g. day roost, maternity roost), and the emergence/entry points used by the bats.

10.2 In order to gather this information, it will be necessary to carry out a minimum of two dusk emergence/activity observations at the site between the months of May and September. At least one of these observations would ideally take place in June or July. At least four observers will be needed to watch all aspects of the building in order to be sure that any bat emergence activity is detected.

10.3 It would also be appropriate to have the droppings already collected sent for DNA analysis. This will add useful information in order to apply for a European Protected Species (EPS) licence in due course.

10.4 An EPS licence application for the development of the Coal Office must be made to NRW. Under the Conservation of Habitats and Species Regulations 2017 an EPS licence can only be issued if NRW are satisfied that:

- there are imperative reasons of overriding public interest including those of a social or economic nature;
- there is no satisfactory alternative, and;
- the action authorised will not be detrimental to the maintenance of the population of the species at a favourable conservation status in their natural range.

10.5 Development of an area gives the opportunity to carry out enhancements to benefit wildlife, especially during the landscaping process. Where possible, species used must be native. Table 3 below includes a list of suitable native tree and hedgerow species, which it may be possible to include within any landscaping proposals. These plants have characteristics that are beneficial to biodiversity. It is essential that such plants are sourced locally in order to reduce likelihood of importing diseases.

Table 3: Recommended Native Tree and Shrub Species

Common Name	Scientific Name
Alder	*Alnus glutinosa*
Crab apple	*Malus sylvestris*
Dogwood	*Cornus sanguinea*
Elder	*Sambucus nigra*
Field maple	*Acer campestre*
Hawthorn	*Crataegus monogyna*
Hazel	*Corylus avellana*
Holly	*Ilex aquifolium*
Rowan	*Sorbus aucuparia*
Silver birch	*Betula pendula*
Yew	*Taxus baccata*

10.6 Additional species which can be planted, which although not exclusively native species, will bring benefits for wildlife, are included in Table 4 below. Again, only plants from local stockists must be used.

Table 4: Recommended Garden Shrubs

Common Name	Scientific Name
Barberry	*Berberis vulgaris*
Clematis	*Clematis montana* or *Clematis vitalba*
Common broom	*Cytisus scoparius*
Dog rose	*Rosa canina*
Guelder rose	*Viburnum opulus*
Hebe	*Hebe albicans*
Honeysuckle	*Lonicera periclymenum*
Lavender	*Lavandula spp.*
Oregon grape	*Mahonia aquifolium*
Tree cotoneaster	*Cotoneaster 'Coral Beauty'*
Tree cotoneaster	*Cotoneaster Hybridus Pendulus*
Viburnum	*Viburnum davidii*

10.7 It is acceptable for other plant species to be provided on site, as recommended by the landscape architect. However, any planting proposals must include a minimum 70% proportion of the species listed in Tables 3 and 4.

10.8 Most developments include areas of grassland, and whilst some of these will require an amenity grassland seed mix, there are opportunities to sow wildflower grassland areas on parts of the site. To meet these needs it is recommended that the following seed mixes are used. British Seed Houses Mix A24 is a wear and tear mixture suitable for lawns and hard-working areas near to pathways. It contains five species of plant which are suitable for this location. For the wildflower areas the Emorsgate EM3 wildflower seed mix is recommended, with some twenty-five wild plant and grass species.

10.9 In order to benefit insects in particular, it is further recommended that additional seeding in the wildflower areas to encourage and benefit nectar feeding invertebrates, is carried out. An appropriate seed mix is available from Emorsgate – EN1. This mixture includes 23 plant species which can be added to the EM3 mix noted above.

10.10 Furthermore, it is important to implement good horticultural practice in any landscaping scheme, including the use of peat-free composts, mulches and soil conditioners. The use of pesticides (i.e. herbicides, insecticides, fungicides and slug pellets etc) must be discouraged to prevent cumulative fatal effects to animals via the food chain, particularly invertebrates, birds and/or mammals. Any pesticides used must be non-residual.

11 References

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Appendix I: Site Location Plan

Figure 1: Site location plan

Aerial view of the site

Legend
Site location
Site boundary
Project reference: GEN3917
Site name: Ocean Square, Saundersfoot
Prepared by: GD / Checked by: PM
Map scale: 1:25000 & 1:2500
Source: © Google Satellite Imaging (2017) © Crown copyright and database rights (2017) Ordnance Survey (100055034)

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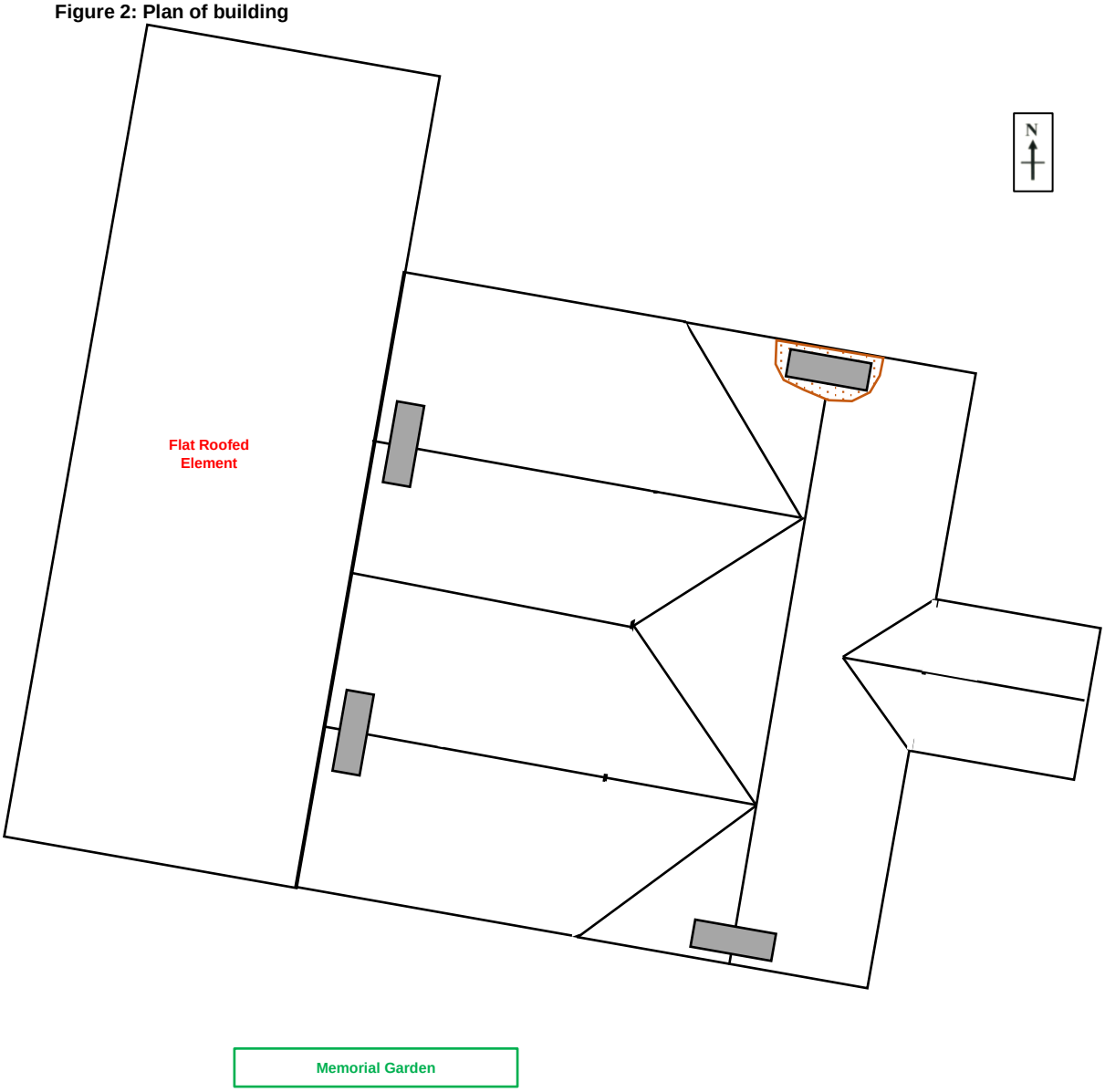
Appendix II: Building Plan

Figure 2: Plan of building



Not to Scale

Key:

Bat droppings

Chimneys

Appendix III: Site Photographs

Plate 1: Coal Office front or eastern aspect

Plate 2: Coal Office northern elevation

Plate 3: Coal Office southern elevation

Plate 4: Coal Office and Shops viewed from Cambrian Place

Plate 5: Coal Office and adjacent Memorial Garden

Plate 6: Flat roof above shops

Plate 7: Discarded butterfly wings in attic area

Plate 8: Main loft space

Plate 9: Bat droppings on loft floor

Plate 10: Gaps at eaves of roof

Plate 11: Gaps in attic ceilings

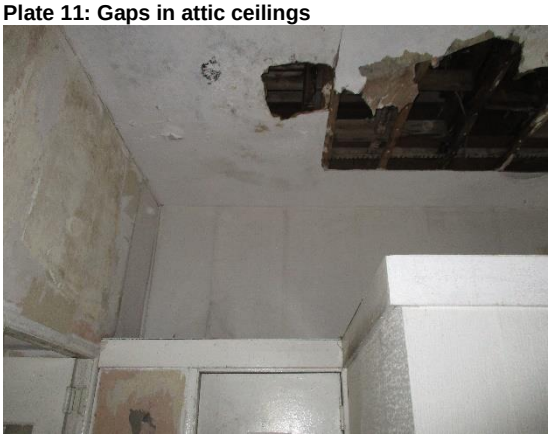
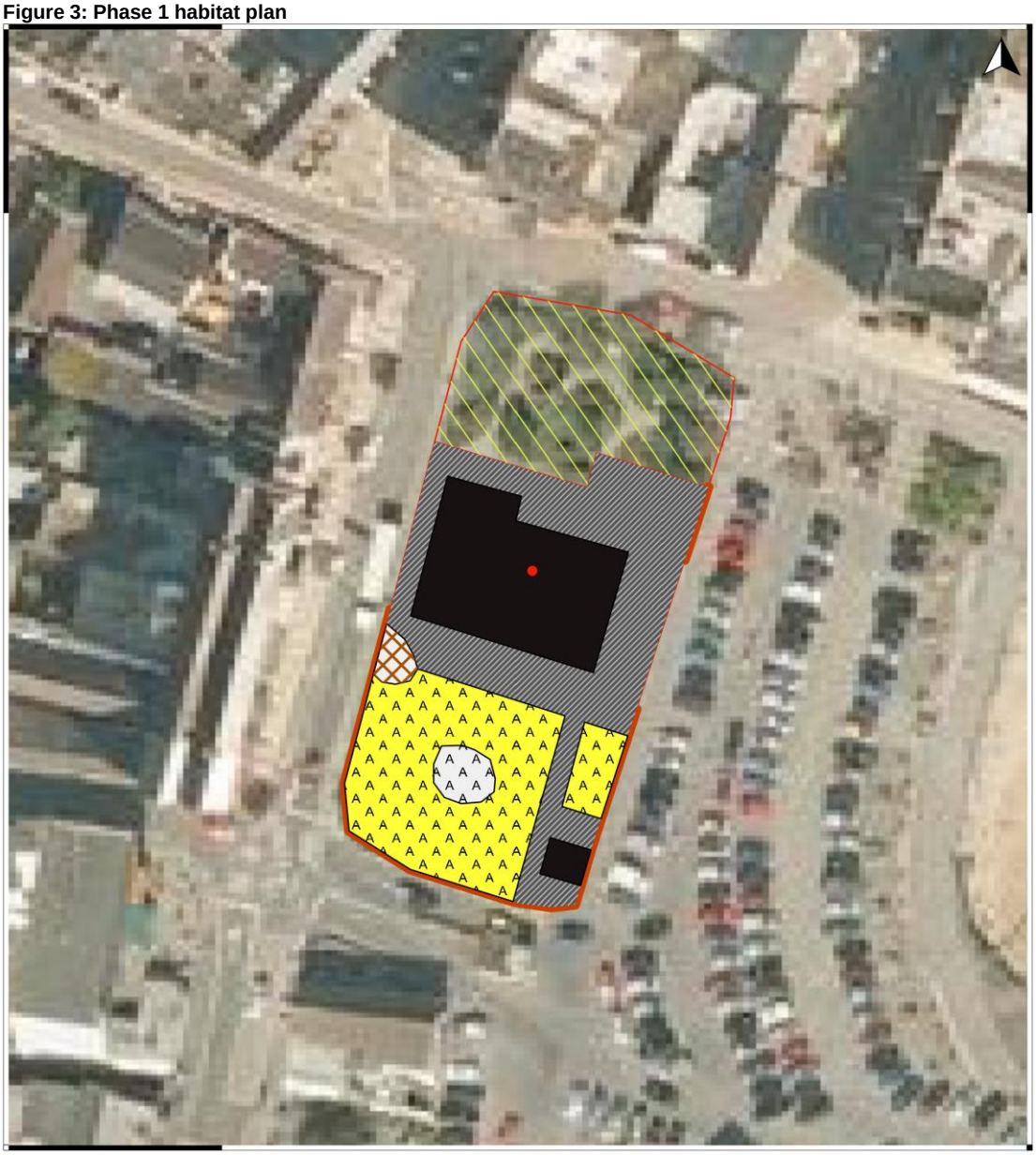


Plate 12: Memorial garden area

Appendix IV: Phase 1 Habitat Plan

Figure 3: Phase 1 habitat plan



Phase 1 Habitat Survey Map

Legend

- Site boundary
- Sensory garden - not included in survey
- J1.1 - Cultivated/arable land
- J1.2 - Amenity grassland
- J1.4 - Introduced shrub
- J2.5 - Wall
- J3.6 - Building
- J5 - Hard standing

Site name: Ocean Square, Saundersfoot	
Project reference: GEN3917	
Map scale: 1: 1000	
Source: © Google Satellite Imaging (2017)	

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Appendix V: Species List

Table 5: Species List

Common Name	Scientific Name	1	2	3	4
Alyssum	*Alyssum sp.*		✓		
Ash	*Fraxinus excelsior*			✓	
Barberry	*Berberis*			✓	
Buttercup, Creeping	*Ranunculus repens*		✓		
Butterfly bush	*Buddleja davidii*	✓		✓	
Celandine Lesser	*Ranunculus ficaria*	✓			
Cherry, A	*Prunus sp.*			✓	
Clover A	*Trifolium sp.*		✓		
Columbine	*Aquilegia vulgaris*			✓	
Conifer, A	*Coniferophyta spp.*		✓		
Cranesbill	*Geranium sp.*		✓		
Daisy	*Bellis perennis*		✓		
Dandelion	*Taraxacum agg.*		✓		
Dogwood	*Cornus sanguinea*			✓	
Fatsia	*Fatsia japonica*			✓	
Fuchsia	*Fuchsia sp.*			✓	
Groundsel	*Senecio vulgaris*	✓			
Heather	*Erica sp.*			✓	
Herb-Robert	*Geranium robertianum*			✓	
Himalayan honeysuckle	*Leycesteria formosa*			✓	
Holly	*Ilex aquifolium*			✓	
Hornbeam	*Carpinus betulus*			✓	
Ivy	*Hedera helix*			✓	
Ivy (variegated cultivar)	*Hedera sp.*			✓	
Laurel (spotted cultivar)	*Aucuba japonica*			✓	
Mahonia	*Mahonia*			✓	
Maidenhair spleenwort	*Asplenium trichomanes*			✓	
Marigold	*Calendula sp.*		✓		
Meadow-grass, Annual	*Poa annua*	✓			✓
Photinia	*Photinia sp*			✓	
Plantain, Greater	*Plantago major*	✓	✓		
Plantain, Ribwort	*Plantago lanceolata*		✓		
Poppy	*Papaver sp.*		✓		
Rose, A	*Rose sp.*			✓	
Rye-grass, Perennial	*Lolium perenne*		✓		
Shepherd's-purse	*Capsella bursa-pastoris*	✓			
Sorrel, A	*Rumex sp.*	✓			
Thistle creeping	*Cirsium arvense*			✓	
Thistle smooth sow	*Sonchus oleraceus*			✓	
Toadflax ivy leaved	*Cymbalaria muralis*			✓	
Veronica (four varieties)	*Hebe sp*			✓	
Willowherb rosebay	*Chamerion angustifolium*	✓			
Yucca	*Yucca sp.*			✓	
Fauna					
House sparrow	*Passer domesticus*				
Wren	*Troglodytes troglodytes*				
Feral pigeon	*Columba livia*				

Appendix VI: Ecology of British Bats

There are at least 18 species of bats breeding in Britain. Most of them are regarded as threatened due to a variety of factors including habitat loss, intolerance and disturbance/damage or loss of roosts. Of these species a number regularly use buildings at certain times of year in order to find safe secure roost sites. Often several different species can use a building over the course of the year, and not all species are present at the same time, making assessment of their presence complex.

Bats are highly mobile flying mammals, which in Britain, feed entirely on insects. They have evolved over seventy million years and have developed sophisticated mechanisms to allow them to effectively 'see' in the dark by using sound waves. This system is called echo-location which enables them to track and hunt down small moving insects whilst in flight, rather like radar does in a modern military fighter aircraft. It is possible to record this sound, and because each species of bat echo-locates in a different way, determine what the species is without actually handling the animal which made the call.

In winter, when their prey is scarce, British bats hibernate or enter torpor, in cool parts of caves, buildings (cavity walls), and tree cavities. They may wake occasionally and will feed if evening temperatures are greater than 7°C, when flying insects can be active. Generally however, activity during cold winters is very limited and bats only become fully active in spring, with late March and early April being a critical time for animals desperately trying to save energy whilst gaining weight. Disturbance during these months can therefore be more devastating to bats than at other times of year.

By late spring female bats will gather together in maternity roosts in order to give birth and rear their single baby in June. Such maternity roosts are often near to important foraging areas in order to save energy as flight requires vast energy resources. Flight routes to and from such roosts can therefore also be important and some bats are extremely light averse preferring dark locations without street or security lamps which can force them to take complex routes to reach foraging areas. Such lighting can also badly degrade foraging areas where they occur close to buildings and hedgerows and tree lines can be particularly important areas for bat foraging to take place particularly when close to the roost building.

Whilst females form maternity colonies, usually in warmer roofs or trees, male bats tend to seek out cooler sites which may not be so close to the foraging areas. Males are often solitary and do not exhibit the social behaviour that marks out females during the birthing period. Non-breeding females will also roost in this way, when they have no need to spend energy on raising a single baby.

Several British bat species are known to rely heavily on buildings to roost. Of these species, the most likely are the soprano pipistrelle bat and the common pipistrelle. Other bat species regularly found in buildings are the brown long-eared bat; Natterer's bat; Brandt's bats and whiskered bat. Pipistrelle species and the small myotid or mouse-eared species (Brandt's, whiskered etc) often favour locations at the ridge or around the exterior shell of the structure. Brown long-eared and Natterer's tend to prefer living within the roof area of a building – large lofts being popular.

Other species that are known to use the internal areas of built structures such as barns include the two horseshoe species, the greater horseshoe bat (*Rhinolophus ferrumequinum*), and lesser horseshoe bat, as well as Western barbastelle bats (*Barbastella barbastellus*).

Appendix VII: Relevant Legislation

All species of bat in Britain, and their places of rest are protected under the provisions of the Wildlife and Countryside Act 1981 (WCA), Section 9(1), 9(4)(a) and 9(4)(b) as amended by Schedule 12 of the Countryside and Rights of Way Act 2000. Further protection is afforded by the Conservation of Habitats and Species Regulations 2017. In relation to structures used by bats for shelter or protection (i.e. roosts), this legislation makes it an offence to either intentionally or recklessly damage, destroy or obstruct access to any site used by bats, whether bats are present at the time or not, or to intentionally or recklessly disturb bats within a roost.

Infringements under this legislation include building demolition, removal of hollow trees, blocking, filling or installing grills over old mines or tunnels, building alteration or maintenance work, re-pointing of stone walls, getting rid of unwanted bat colonies, re-roofing, remedial timber treatment, re-wiring or plumbing in roofs, treatment of wasps, bees or cluster flies (Mitchell-Jones, 1992; Childs, 2001). Greater horseshoe bat, lesser horseshoe bat, Bechstein's bat, greater mouse eared bat and barbastelle are included in Annex II of the Conservation of Habitats and Species Regulations 2017 and hence require special protection.

Maximum penalties for committing offences relating to bats or their roosts can amount to imprisonment for a term not exceeding six months or to fines of up to Level 5 on the standard scale under the Criminal Justice Act 1982/1991 (i.e. £5000 in April 2001) per roost or bat disturbed or killed, or to both. Bodies corporate and their directors/secretaries are liable for offences under the 2017 Regulations and the WCA.

It is sensible to assess as soon as possible if bats are present at potential sites for development – preferable before the land is acquired. In some cases the period required for adequate survey work may span more than one calendar year. If a development, including demolition or change of use, is likely to impact on bats and their roosts then a licence will usually be required. Adequate survey results are a necessary input to any licence application. If bats are not found until late in the development stage this may result in delays while a licence is sought and even in offences being committed.

The law with respect to dwelling dwellings and other structures is applied equally. Where disturbance is deemed likely to have a significant effect on bats to survive, breed and rear their young or will affect the local distribution and abundance of the species, a European Protected Species licence issued by Natural Resources Wales. A licence application must demonstrate that the development will not be detrimental to the maintenance and conservation status of the species concerned.

This explanation must be regarded only as a guide to the law. For further details, reference must be made to the Wildlife and Countryside Act 1981 (as amended), the Conservation of Habitats and Species Regulations 2017 and the Countryside and Rights of Way Act 2000.

Appendix VIII: European Protected Species Licences

Under the Conservation of Habitats and Species Regulations 2017 a licence can only be issued if Natural Resources Wales are satisfied that:

- there are imperative reasons of overriding public interest including those of a social or economic nature;
- there is no satisfactory alternative, and;
- the action authorised will not be detrimental to the maintenance of the population of the species at a favourable conservation status in their natural range.

Natural Resources Wales will require a copy of the full planning consent, as well as an explanation of why there is a need to carry out the proposed work and what alternative solutions have been considered (e.g. other sites) and why they have been discounted. The alternative of retaining the roost within the development must be considered. The last point will depend on the possibility of implementing appropriate mitigation and on assurances that it can be and will be carried out and maintained and the results monitored. Natural Resources Wales aim to process applications within 30 working days, but in practice licences often take longer depending on the number of applications being processed at any one time.

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This preliminary ecological appraisal is valid for a period of two years from December 2017.

Just Mammals Consultancy is an ecological consultancy based in Mid-Wales. Specialising in legally protected mammal, reptile and amphibian species, but providing a wide range of ecological services, it provides appropriate expertise on behalf of a range of clients.

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