

Shadow Habitat Regulations Assessment

Site: Elms Farm, Westwood, Bradford on Avon, BA15 2AL

Client: Mr and Mrs Bend

Planning Reference: PL/2024/02742



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QUALITY CONTROL

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The information in this report has been prepared in accordance with the Chartered Institute of Ecology and Environmental Management's (CIEEM) Code of Professional Conduct. The conclusions and recommendations expressed are reasoned judgements based on the evidence.

Every reasonable attempt has been made to comply with BS42020:2013 *Biodiversity – Code of practice for planning and development*, *CIEEM Guidelines for Ecological Report Writing* (CIEEM, 2017) and Bat Conservation Trust's *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (4th edition, Collins, 2023). If there has been deviation from recognised practice, justification/explanation has been given.

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SUMMARY

At Elms Farm in Westwood near Bradford on Avon in Wiltshire, Class Q Permitted Development has been granted for the conversion of an agricultural building into a dwelling house. A shadow Habitats Regulations Assessment (sHRA) has been carried out to assess the potential impacts of the conversion on Bath & Bradford on Avon Bats Special Area of Conservation (SAC).

The SAC comprises a network of significant underground sites, including four nationally important Sites of Special Scientific Interest (SSSIs), namely Box Mine, Winsley Mines, Combe Down and Bathampton Down Mines, and Brown's Folly.

Bat species using these sites include the rare Bechstein's Bat *Myotis bechsteinii*, Greater Horseshoe Bat *Rhinolophus ferrumequinum*, and Lesser Horseshoe Bat *R. hipposideros*.

The closest part of the SAC, which comprises a small woodland at Murhill in Winsley, lies approximately 2.7 km to the northwest of the application site. The next nearest is at Monkton Combe 5.6 km to the northwest, and Bathford Hill 6.5 km to the northwest, with the rest of the SAC woodlands beyond 10 km.

However, it is also noted that there are significant roosts at sites 6.3 km southeast that are not covered by any statutory designation, in particular the breeding colonies of Bechstein's Bats at Biss Wood and Green Lane Wood, a pair of ancient woodlands to the east of Trowbridge. This colony is known to hibernate at Box Mine SSSI and uses the intervening landscape to commute between these sites.

The Habitats Directive protects habitats and non-avian species of European importance and applies to Special Areas of Conservation (SACs) and the European Directive (79/409/EEC) on the Conservation of Wild Birds (Birds Directive), protects bird species of European importance and applies to Special Protection Areas (SPAs).

These are known as the network of Natura 2000 Sites or "European Sites". The UK Government Guidance on HRA from the Department of Communities and Local Government (DCLG), August 2006 states that areas designated as globally important wetlands under the Ramsar Convention (1971) should also be given the same level of protection as SAC and SPA designations in the HRA process.

In producing this report, the necessary information has been provided to enable the competent authority, Wiltshire Council, to determine whether an Appropriate Assessment should be completed in respect of the conversion of the building at Elms Farm.

In concluding its determinations, it is anticipated that the Council will consult with Natural England.

The HRA has been made following relevant guidance from the UK Government, including:

- ❑ A test in respect of the likely impacts upon a Natura 2000 site of a project or plan, either alone or in combination with other projects or plans, and consideration of whether these impacts are likely to be significant;
- ❑ An assessment of the impacts of a plan or project against the conservation objectives of a European Site, in order to identify whether there are likely to be any adverse effects on site integrity and site features;
- ❑ When significant negative effects are identified, an assessment of alternative solutions to avoid any potential damaging effects to the integrity of the Natura 2000 site; and
- ❑ Where adverse impacts remain, an assessment of compensatory measures if it is deemed that the project or plan should proceed.

The HRA has considered a range of potential impacts, and in each case has determined that there is unlikely to be any effect, or that an impact will not be material. In no circumstances will any of the impacts have a significant effect on the integrity of the SAC, or the non-statutory sites at Biss Wood and Green Lane Wood.

Given this conclusion, Wiltshire Council should proceed on the basis that there will be no requirement for a separate Appropriate Assessment of the proposed development.

1. INTRODUCTION

1.1 Background

The UK is bound by the terms of the EC Habitats Directive (and EC Birds Directive and the Ramsar Convention).

The aim of the Habitats Directive is to conserve natural habitats and wild species across Europe by establishing a network of sites known as Natura 2000 sites (for the purpose of this report, and as defined under the 2010 Habitats Regulations, these are referred to as European site(s)).

Under Article 6(3) of the Habitats Directive, an Appropriate Assessment is required where a plan or project is likely to have a significant effect upon a European site, either individually or in combination with other projects.

“Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to Appropriate Assessment of its implications for the site in view of the site’s conservation objectives” Article 6(3).

This Article has been interpreted as meaning that any project is to be subject to an Appropriate Assessment if it cannot be proven, beyond reasonable scientific doubt, that there is no significant effect on that site (a precautionary approach), either alone or in combination with other plans or projects.

Further to this, Article 6(4) states that where an Appropriate Assessment has been carried out and results in a negative assessment, (in other words, any proposed avoidance or mitigation measures anticipated are unable to reduce the potential impact so it is no longer significant), or if uncertainty remains over the significant effect, consent will only be granted if there are no alternative solutions, and there are imperative reasons of over-riding public interest (IROPI), for the development and compensatory measures have been secured.

If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted Article 6(4).

A Habitats Regulations Assessment (HRA) is a recognised step by step process which helps determine likely significant effect and (where appropriate) assess adverse impacts on the integrity of a European site. The HRA also examines alternative solutions, and provides justification for IROPI.

European guidance describes a four stage process to HRA which is summarised in Table 1 below.

Stage 1	Screening	The process to identify the likely impacts of a project upon a European site, either alone or in combination with other plans and projects, and consider whether the impacts are likely to be significant.
Stage 2	Appropriate assessment	The consideration of the impacts on the integrity of the European site, either alone or in combination with other plans and projects, with regard to the site's structure and function and its conservation objectives. Where there are adverse impacts, an assessment of mitigation options is carried out to determine adverse effect on the integrity of the site. If these mitigation options cannot avoid adverse effects then development consent can only be given if stages 3 and 4 are followed.
Stage 3	Assessment of alternative solutions	Examining alternative ways of achieving the objectives of the project to establish whether there are solutions that would avoid or have a lesser effect on European sites.
Stage 4	IROPI	This is the assessment where no alternative solution exists and where adverse impacts remain. The process to assess whether the development is necessary for IROPI and, if so, the potential compensatory measures needed to maintain the overall coherence of the site or integrity of the European site network.

Table 1: Four stage process to the HRA

1.2 Site Description and Project Proposal

The application site comprises a modern, steel framed barn with a corrugated fibre cement roof. The barn is located on an area of hardstanding. Around the barn was becoming established with by Common Nettle *Urtica dioica*, Cow Parsley *Anthriscus sylvestris*, Broadleaved Dock *Rumex obtusifolius*, Creeping Thistle *Cirsium pratense* and Spear Thistle *C. vulgare*. Grasses present included Cocksfoot *Dactylis glomerata*, False Oatgrass *Arrhenatherum elatius*, meadow-grasses *Poa spp*, Perennial Ryegrass *Lolium perenne* and Creeping Fescue *Festuca rubra*.

Hedgerows ran along the south and west elevations. These contain Hazel *Corylus avellana*, Elder *Sambucus nigra*, Ash *Fraxinus excelsior*, Hawthorn *Crataegus monogyna*, Field Maple *Acer campestre*, Lime *Tilia x europaea*, Horse Chestnut *Aesculus hippocastanum*, Blackthorn *Prunus spinosa* and Bramble *Rubus fruticosus*.

Beyond this was a road to the south and west, with hardstanding to the east, and heavily grazed horse paddocks to the north.

There is no public access to the development site, with no rights of way. However, there is a public footpath within the wider land parcel, 235 metres to the north.

The Ordnance Survey Grid Reference is ST 81695 59061, centred on the middle of the site.

The proposed works are for the change of use of the agricultural building into a dwellinghouse. There are no landscaping plans, with only maintenance and enhancement proposed.

2. CITATION FEATURES AND CONSERVATION OBJECTIVES

2.1 Bath and Bradford-on-Avon SAC

The internationally important designation of Bath and Bradford-on-Avon Bats SAC is comprised of a network of significant underground sites, including four nationally important Sites of Special Scientific Interest (SSSIs), namely Winsley Mines, Combe Down and Bathampton Down Mines, Box Mine, and Brown's Folly.

These component sites comprise extensive networks of caves, mines and man-made tunnels which are used by bats for hibernation, breeding, mating and as a staging post prior to dispersal.

The grassland, watercourses, scrub and woodland surrounding them are used by bats for feeding and commuting. Although these habitats are not included in the SAC designation, they are vital to support the bats which are features of the SAC.

Bat species using these sites include the rare Bechstein's Bat *Myotis bechsteinii*, Greater Horseshoe Bat *Rhinolophus ferrumequinum*, and Lesser Horseshoe Bat *R. hipposideros*.

All three are Annex II species and are highly mobile throughout the year, using a network of other important roost sites in the surrounding landscape including Iford Manor SSSI, which is the fourth largest breeding colony of Greater Horseshoe Bats in England and one of only 15 breeding roosts in the country.

Bats which use the above hibernation sites are known to breed at Iford Manor each year.

The network of significant roosts includes sites that are not covered by any statutory designation, such as the breeding colonies of Bechstein's Bats at Biss Wood and Green Lane Wood, a pair of ancient woodlands to the east of Trowbridge. This colony is known to hibernate at Box Mine SSSI and uses the intervening landscape to commute between these sites.

The edge of Green Lane Wood is 6.3 km from the application site, with Biss Wood 6.2 km away. Both lie to the southeast of Trowbridge, beyond extensive residential areas.

Figure 2 overleaf shows the SAC areas, key County Wildlife Sites (including the two woodlands listed above), and a series of buffers for the key species.

It can be seen that the application site lies between the key sites and SAC, although it does lie within a 2000m buffer zone for Lesser Horseshoe Bats and a 4000m buffer zone for Greater Horseshoe Bats.

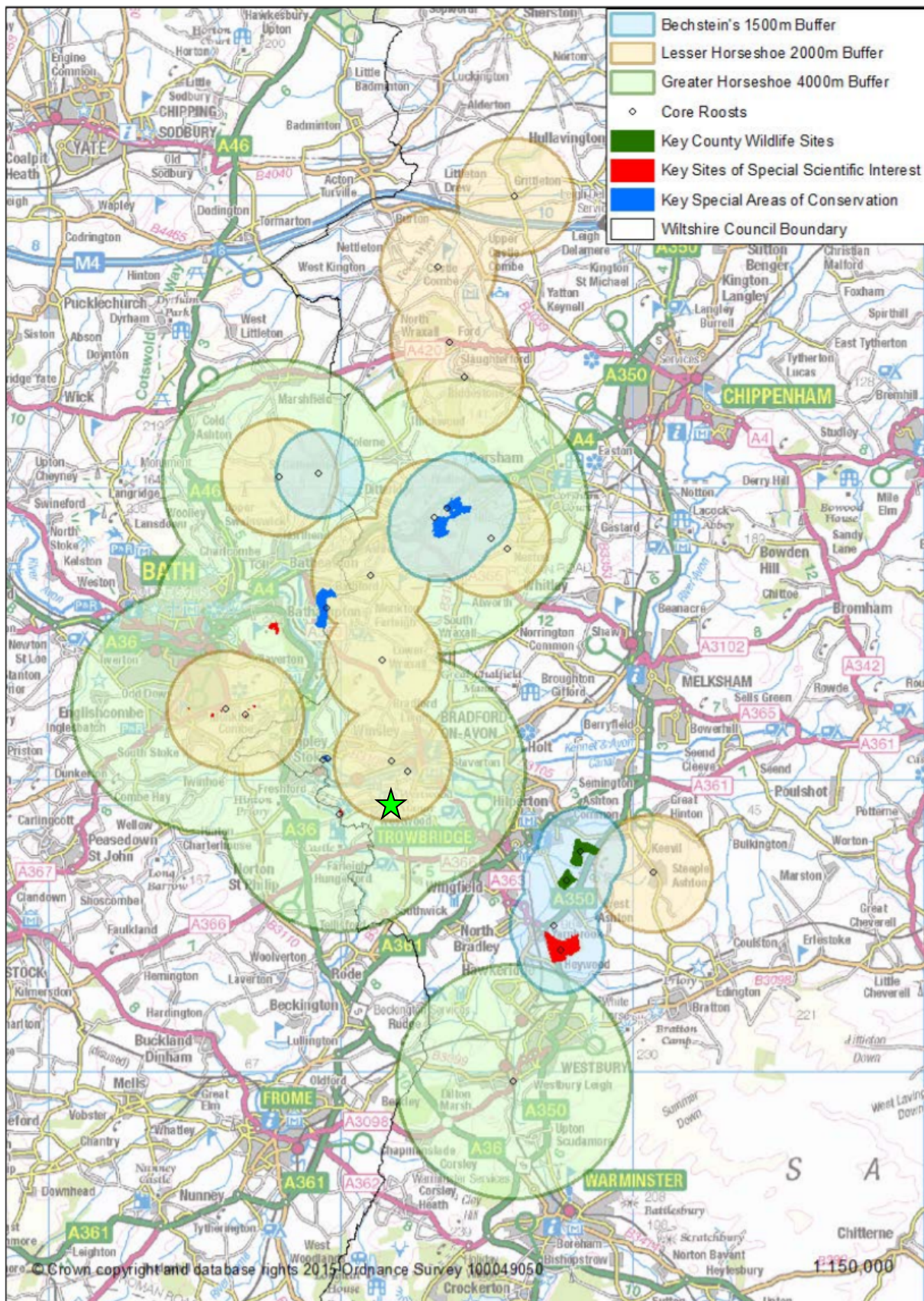


Fig. 2 Bath & Bradford-on-Avon SAC in relation to application site 

Conservation objectives

The conservation objectives are to ensure that the integrity of the SAC is maintained or restored as appropriate, and to ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- ❑ The extent and distribution of the habitats of qualifying species;
- ❑ The structure and function of the habitats of qualifying species;
- ❑ The supporting processes on which the habitats of qualifying species rely;
- ❑ The populations of qualifying species, and,
- ❑ The distribution of qualifying species within the site.

Qualifying species:

S1303. *Rhinolophus hipposideros*; Lesser Horseshoe Bat

S1304. *Rhinolophus ferrumequinum*; Greater Horseshoe Bat

S1323. *Myotis bechsteinii*; Bechstein's Bat

3. POTENTIAL IMPACTS

Referring to Wiltshire Council's Planning Guidance on Bat Special Areas of Conservation (2015), the potential impacts (including cumulative where relevant) of the proposed conversion of the barn at Elms Farm has been considered in relation to the SAC and key wildlife sites. These include:

- ❑ Physical changes – alteration/demolition/removal of a potential roost feature including environmental conditions (temperature, humidity, internal light levels etc), loss, damage or change of management of potential foraging habitat, removal/fragmentation/modification of habitats in a potential commuting corridor;
- ❑ Lighting – artificial lighting close to potential roosting, foraging and commuting features;
- ❑ Noise and vibration – construction/demolition activities close to potential roost features;
- ❑ Recreational disturbance – increasing the risk of recreational visits both organised and informal, and assessing the cumulative impacts of other housing schemes;
- ❑ Pollution – dust and fumes close to potential roost features; and,
- ❑ Mortality – predation by domestic cats at roost entrances, collision risk from wind turbines.

3.1 *Physical changes*

Bat licences in the search area included Soprano Pipistrelle Bat *Pipistrellus* 1.5 km to the northwest in 2016, Brown Long-eared Bat *Plecotus auritus*, Common Pipistrelle *Pipistrellus pipistrellus*, Soprano Pipistrelle, Daubenton's *Myotis daubentonii*, Greater Horseshoe, Lesser Horseshoe and Serotine *Eptesicus serotinus* 1.7 km to the west in 2018, with further licences issued for the same species within Bradford-on-Avon and beyond.

Despite these records, there is no direct or indirect connectivity between the SAC/key wildlife sites and application site, and they are separated by intervening land use, which includes residential areas, main and local roads, a mainline railway, and arable farmland under continuous, intensive cultivation.

The proposed development does not include any infrastructure which will cause physical damage to the SAC, whilst there will also be no tree or hedgerow removal.

Taking all of the above into account, there will be no direct or significant effect upon the integrity of the SAC arising from the proposed barn conversion.

3.2 *Lighting*

The distance between the application site and SAC/key wildlife sites means that artificial lighting will have little or no effect, especially as the site is situated between Bradford-on-Avon, Westwood and Trowbridge, all of which are already well-illuminated at night.

Nevertheless, in order to comply with paragraph 125 of the National Planning Policy Framework, the development will aim to limit the impact of light pollution on bats by maintaining dark routes for commuting and foraging where possible. In particular, this should be implemented along the south and western boundary hedgerows. As such any lighting installed will follow the guidance provided by the Bat Conservation Trust and the Institute of Lighting Engineers.

Appropriate lighting specifications are provided below:

- ❑ All lights should lack UV elements when manufactured;
- ❑ Metal Halide, mercury light and fluorescent sources should **not** be used;
- ❑ LED lights should be used;
- ❑ Warm white spectrum lights should be used < 2,700 Kelvin to reduce blue light component;
- ❑ Avoid blue-white short wavelength lights;
- ❑ Lights with peak wavelengths higher than 550nm should be used;
- ❑ Only luminaires with an upward light ratio of 0% and with good optical control should be used to reduce light-spill;
- ❑ Accessories such as glare-shields and louvres may be used to control light and reduce spill;
- ❑ Light should intentionally fall onto working planes, resulting in lower ambient light levels;
- ❑ Avoid grid lighting layouts where possible;
- ❑ Automatic lighting controls can conveniently turn off a light fixture when it is no longer required to reduce glare;
- ❑ It is advisable for external lighting to be programmed to switch off, or dim down, shortly after use to reduce the overall light levels wildlife may be exposed to (a 1-2 minute period is recommended (ILP 2023));
- ❑ Dimming is suggested for interior applications;
- ❑ Light fittings should be positioned away from glazing (fixed lights are preferable over adjustable);
- ❑ Pendants should be carefully considered in comparison to recessed downlights, due to the fact they may provide upward light (close to apertures);
- ❑ External light fixtures should be positioned at a low level to the ground, to reduce light spill.

A lighting assessment for bats was previously carried out on the wider site in 2021, by Johns associates. The assessment concluded that foraging suitability was limited to the southern boundary hedgerow, and that following lighting recommendations would have no significant effect to foraging or commuting bats which may use the site.

3.3 Noise and vibration

As stated above, the distance between the application site and SAC/key wildlife sites and the small size and nature of the works means that there will be no impact arising from noise or vibration.

3.4 *Recreational disturbance*

Given the small scale and nature of the proposed works (single barn conversion), there will be no significant recreational disturbance caused as a result. It is considered unlikely that new residents will chose to walk to locations such as Green Lane Wood or Biss Wood, i.e. key wildlife sites, as this is over 6.0 km from the site, with many footpaths and walking opportunities closer by.

3.5 *Increased air pollution*

An increase in the volume of traffic will be very minor and will not result in a localised increase in air pollution from vehicle emissions. Exhaust gases include nitrogen dioxide (NO₂) and particulate matter (PM₁₀).

Once in the atmosphere, the gases react with rainwater to create a dilute acidic solution. In sufficient concentration, the acid can adversely affect sensitive plants, in particular fragile communities such as those associated with fen, mere and bog.

The dwelling will not be connected to the existing sewer network but will have to be connected to a sewage treatment plant.

Atmospheric gases will therefore largely be restricted to vehicle emissions. However, the strongest effects on plant communities are only observed in the first 50-100 m away from roads, and this is consistent with the nitrogen dioxide pollution profile, which decreases to background levels at a distance of 100-125 m (Bignal *et al*, 2008). Thus only those habitats within 125 m of a major road are considered to be at risk from increased air pollution at sufficient levels, to alter the composition of vulnerable plant communities.

Given that the application site is surrounded by roads and horse paddocks, it is considered that the potential impacts of increased air pollution from a very minor increase in traffic associated with the single dwelling will have a negligible effect on the integrity of the Natura 2000 site habitat.

There are no wind turbines associated with the proposed development, so this aspect is not an issue.

3.6 *Mortality*

Given the distance to the nearest bat roosting or hibernation sites, there will be no impact from cats or dogs, even if they wander freely around.

Indeed, it is unlikely that cats from the new dwelling would be encountered so far from home, and they would have to negotiate some busy roads and extensive residential areas first. Indeed, given the small scale of the proposed works, the numbers of animals associated with the new dwelling will be negligible.

Dogs are usually walked by their owners, and with the adjacent fields being so accessible, it is anticipated that this will be the focus of dog exercising.

As such, there will be little or no impact of pets on the SAC or key wildlife sites.

4. CONCLUSIONS AND RECOMMENDATIONS

This report details the results of a Habitat Regulations Assessment, of the potential impacts on the Bath and Bradford-on-Avon Special Area of Conservation, arising from a barn conversion at Elms Farm in Westwood, Wiltshire.

A range of impacts have been identified, none of which are considered to have more than a negligible effect on the integrity of the protected sites.

Given this conclusion, Wiltshire Council should proceed on the basis that there will be no requirement for a separate Appropriate Assessment of the proposed development.

5. REFERENCES

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