Planning Appeal Reference APP/A1910/W/24/3345435
Land West Of Leighton Buzzard Road And North Of Galley Hill Leighton Buzzard Road Hemel Hempstead Hertfordshire
Construction of up to 390 dwellings (C3 Use), including up to 40% affordable housing and 5% self build, a residential care home for up to 70-beds (C2 use), along with associated landscaping and open space with access from Leighton Buzzard Road

Rule 6 Party Proof of Evidence: Impacts on ecology

I am Elizabeth Hamilton. I have a degree in Geography from Newnham College, Cambridge (BA, now MA) and an MSc in Landscape Ecology, Design and Maintenance from Wye College, London University. I worked as an ecologist for 17 years, primarily in woodland conservation and habitat creation. I have been a volunteer for CPRE Hertfordshire for 20 years, working on a wide range of issues including planning applications and local plans, and I lead on biodiversity. In 2023 I presented ecology evidence to three public inquiries. I was born and brought up in Hertfordshire, moving to Berkhamsted at the age of 10, and returned to live in Nettleden in 1996. My house is approximately 2 miles from the appeal site and I am very familiar with the surrounding area.

Summary

My proof presents an analysis of the ecological features of the site as presented in the appellant's documents. This is carried out with particular reference to the paragraphs of the NPPF which require the protection of priority species and habitats, and of irreplaceable habitats. A number of omissions are identified. The application of the mitigation strategy where harm to biodiversity is identified is also subjected to analysis.

Local wildlife-rich habitats and wider ecological networks are required to be safeguarded by the NPPF. My proof presents an analysis of the appellant's assessment of the likely harm to these and the application of the mitigation strategy, concluding that the residual harm to some sites will be greater than that assessed by the appellant. The designated status of the nearby river Gade as a chalk stream and habitat of principal importance was overlooked by the appellant and no assessment of this habitat was carried out.

My proof provides an analysis of the proposed biodiversity enhancements, the future management of the retained, newly created and enhanced habitats, and the proposed biodiversity net gain.

The appeal site

1. The site of 26.5 ha sits close to the river Gade, a chalk stream and as such a habitat of principal importance (s 41 habitat), and lies partly in the floodplain. The site comprises a number of relatively small pasture fields, not intensively managed, with mature hedgerows, some scrub and several deciduous woodland blocks. From the edge of the floodplain the site rises, in some places steeply, to the higher land to the west. Adjoining the western boundary are two Local Wildlife Sites (LWSs), Warnersend Wood which is ancient woodland and Halsey Field. Within a 2 kilometre radius of the site there are more LWS sites, most with public rights of way (PRoWs) adjacent, crossing or nearby, or adjoining a public highway.

2. The site thus occupies a central position within this complex of sites of nature conservation interest. The proposed development would occupy approximately 46 % of the site. The appellant claims that the hedgerows and woodland blocks which provide important connectivity will not be greatly impacted. However, some immediate hedgerow loss is proposed and over time connectivity could be further compromised. Many of the 1,000 or so new residents could be expected to use the nearby PRoWs and access the local network of LWSs, impacting on these features.

3. The Hertfordshire Ecology consultation response (CD2.42) states: 'a suite of Local Wildlife Sites (LWS), Ashridge Commons and Woods SSSI (part of the Chilterns Beechwoods SAC) and the Gade Valley provide evidence that this (site) lies within a wider landscape of ecological significance'.

4. The Ecological Impact Assessment REV06 (EcIA) (CD1.47) in Section 6 Impact Assessment sets out the activities that would occur during the proposed construction and operational phases that could give rise to significant ecological impacts. These will be referred to below in relation to specific impacts on species and habitats recorded on the site, and on nearby habitats.

Impacts on species on the site

5. The EcIA amalgamates and updates earlier ecological surveys and impact assessments. These are reasonably comprehensive with the exception that no surveys of invertebrates were carried out, apart from those for Roman snails, an introduced species protected under the Wildlife and Countryside Act (1981) as amended. When the botanical assessment was carried out in 2019 the fields were described as tightly mown following a hay cut. The National Planning Policy Framework December 2023 edition (NPPF) (CD10.2) at paragraph 185b requires the protection and recovery of priority species (s41 species or species of principal importance, as specified by the Natural Environment and Rural Communities Act 2006), sitting alongside the protections for species identified in the EcIA provided by the Wildlife and Countryside Act, the Habitats Regulations and the Protection of Badgers Act 1992 (all referenced in the EcIA). Relevant species found on the site include badgers, various bat species, breeding birds and Roman snails.

6. Paragraph 186a of the NPPF sets out the mitigation hierarchy which should be applied where significant harm to biodiversity resulting from a development is predicted. If harm cannot be avoided, adequately mitigated or compensated for, then planning permission should be refused.

7. **Eight badger setts** were identified on the site. The EcIA assesses the site's importance to badgers at the local level only. It notes: 'Badger populations have been rising for several decades and they are now a common and widespread species across most of the UK countryside. Badgers are therefore not currently considered to be of great conservation concern within the UK'. In the light of this the mitigation measures proposed appear reasonable and achievable.

8. **Bat activity and potential roost sites** were identified on the site. Table 17 in Appendix 3 of the EcIA summarises the assessment of the potential tree bat roosts, while Table 20 summarises the bats identified by static detectors. Some bat roosts were identified in the farm buildings on the site. Figure 16 on page 32 of the EcIA shows the location of trees supporting potential bat roost habitats.

9. The EcIA states that 'the activity surveys have demonstrated that the habitats contained within the development site support a good assemblage of foraging and commuting bats, comprising common and widespread species that is typical for the range of habitats on the site'. In addition barbastelle bats were recorded, notably on all the loggers in 2023. This species is regarded as rare, with an estimated 5,000 individuals in the UK. Based on the species composition and the number of bats recorded, the habitats contained within the site are considered by the EcIA to be important for commuting and foraging bats at a county level.

10. All bats are protected under the Habitats Regulations and barbastelle additionally is an Annex II species under the Habitats Regulations. Of the bats recorded on the site, noctule, soprano pipistrelle, brown long-eared and barbastelle are also s41 species.

11. The EcIA notes that all buildings will be demolished, while all mature trees and the woodland will be retained. There will also be a loss of habitat used by foraging bats, although commuting connectivity will be retained around the boundaries of the site, except for the severance through the eastern boundary to create

access onto the site. The EcIA notes the potential for indirect effects on bats through increased artificial lighting which can result in significant disturbance in the absence of a sensitive lighting scheme and 'dark corridors'.

12. To mitigate the certain negative impacts on bats the following mitigations are proposed:
    - Bats found in buildings due for demolition will be relocated to bat boxes secured to trees on site.
    - New building design will incorporate bat roost features.
    - Bat boxes will be provided around the site.
    - Use of an ecologically sensitive lighting scheme across the site to include dark corridors and zones.

13. The EcIA concludes that the development is expected to result in the net loss of foraging habitats for bats, likely to be adverse at site level. Compensation will be provided by the habitats proposed to be created and enhanced.

14. In my opinion the mitigation and compensation measures proposed do not have a certain outcome: bats may not survive translocation or occupy the new-build roosts or the bat boxes. Householders might block bat roosts, remove boxes and install exterior security lighting impacting on dark corridors and zones. The long row of houses alongside the hedge bordering the northern side of Field 2 is a particular problem. Cats are known to predate on bats. The successful creation and enhancement or otherwise of habitats is dependent on a number of factors, including management expertise, resources, and the potential for damaging influences such as deer browsing, grey squirrel damage, recreational pressure and deliberate damage.

15. Loss of mature trees over time resulting in lost bat roosts is a particular issue on new housing developments, where aging trees become unsafe and require pruning or felling. Trees cause shade to dwellings and gardens, leading to pressure for felling or severe pruning.

16. Under the Habitats Regulations it is an offence to affect significantly the local distribution or abundance of bat species, or to cause any disturbance which affects a bat's ability to survive, breed, rear young, hibernate or migrate, in turn dependent on reaching and feeding at foraging areas with adequate food supplies.

17. Hertfordshire Ecology in its consultation response states with respect to bats: 'All areas will be affected by ambient light compared to the existing position, so no weight should be attached to 'no light' areas. I do not accept that impact on bats is positive at the site level'.

18. **Breeding bird surveys** were carried out in 2016, 2019 and 2023. The combined results are shown in Table 23 in Appendix 3 of the EcIA (not table 7 as stated). These followed standard procedures but omit to record the full extent of the bird species expected on the site, notably wintering birds and winter visitors.

19. Of the 49 species of birds recorded in the surveys, eight (cuckoo, dunnock, grey partridge, herring gull, marsh tit, song thrush, starling and yellowhammer) are s41 species (and not as stated in the EcIA, which lists the s41 species as cuckoo, grey partridge, starling, dunnock and song thrush). Of these only two were held to be breeding on the site, namely marsh tit and song thrush.

20. While not a statutory protection, Birds of Conservation Concern (BoCC) (CD13.2) is a list of UK species showing significant population declines. Those which are red-listed are now generally considered in assessments of the impacts of planning proposals. An updated BoCC list was published in December 2021, when swift was added (shown in Table 23 as an amber species), bringing the number of red-listed birds recorded on the site to nine. Song thrush, listed in Table 23 as red, is currently amber.

21. Birds recorded on the site will be using the site for foraging and shelter even if not breeding there. Birds generally are strongly territorial, especially in the breeding season, tending to frequent the same area of land and are often aggressively kept out from other territories held by the same species.

22. The EcIA suggests that the only impact on the bird species using the site will be the loss of some hedgerows. Figures 34 to 41 in Appendix 3 showing the location of the birds recorded in the surveys indicate that the birds are not confined to the boundary habitats, scrub and woodland but are present on and over the fields as well. The EcIA confirms that grey partridge and yellowhammer (both s41 and red-listed species) use open fields, as does kestrel.

23. Nearly 50% of the site area will be developed. During the construction phase it is likely that birds which habitually forage in or hunt over the areas due to be developed will be substantially disturbed and displaced. In the remaining areas there will also be disturbance due to their proximity to the development works, and resulting from the habitat improvements and associated works including the construction of pedestrian and cycle routes. Subsequently once dwellings are occupied there may be some return of species to gardens and landscaped areas. This would be heavily dependent on how individual gardens are managed and would be unlikely to include farmland specialists and species sensitive to disturbance.

24. The potential loss of mature trees from the site is already noted with reference to bats. Although vegetation clearance would be timed to avoid disturbing nests and young, this still results in the loss of that habitat.

25. The EcIA notes residual impacts on birds, which include: increased recreational pressure which has the potential to disturb nesting birds, increased risk of predation from cats and the permanent unavoidable loss of hedgerow habitat. Together these are considered to have a significant negative impact at site level. The compensation measures specified for birds make no reference to specific species requirements. Nestboxes will need to be maintained, and replaced as required, and are only suitable for a small number of those species recorded on the site which are hole- or cavity-nesters.

26. The consequence of the proposed development will be a loss of bird species from the site which are unable to adapt to the changes or continue to find territory space there. Individual birds displaced may not succeed in surviving elsewhere, as nearby territories can be expected to be full. Those most affected are likely to include s41 species which would not be compliant with paragraph 185b of the NPPF.

27. **Protected Invertebrates** are referred to in Section 4.9 of the EcIA but only Roman snails were recorded on the site. These were assessed as being vulnerable to harm arising during the construction phase and afterwards, when they could be taken by residents. Translocation within the site into suitable retained habitat is considered suitable mitigation, carried out under licence from Natural England.

28. Failure to carry out surveys of any other invertebrates is a significant omission from the ecological surveys and subsequent assessments in the EcIA. There is reference in the Preliminary Ecological Appraisal, Phase 1 Habitat Assessment (CD1.31) to the likelihood of encountering protected invertebrates, and the presence of dead wood on the site with potential to support invertebrates. No further reference is made to any other invertebrate species. It is noted that this assessment was carried out on 2nd March 2016, when few adult invertebrates would be likely to be conspicuous.

29. The deciduous woodland, scrub, grassland, field margins and individual trees on site have the potential to support invertebrates including s41 species. Surveys to identify such species would inform the design of the development and the management of retained habitat features, as well as the mitigation hierarchy where required.

Impacts on habitats on the site

30. The EcIA notes the presence on the site of one habitat classified as a priority habitat (otherwise s41 habitat or habitat of principal importance). Paragraph 185b of the NPPF requires the conservation, restoration and enhancement of such habitats.

31. **The deciduous woodland at the centre of the site** is noted by the EcIA as a priority habitat. The likely impacts assessed include disturbance from construction including waterborne pollution, hydrological changes, airborne pollution and dust deposition. The mitigations proposed include fencing and a 20 metre buffer around the boundary, restrictions on construction activity in certain weather conditions and measures to avoid noise and localised pollution. These will require a high level of site supervision and monitoring and the efficacy of these is uncertain.

32. The EcIA concludes that once the dwellings are occupied public access could potentially lead to severe degradation of this woodland through impacts of public access and dumping of garden waste. The proposed mitigation is to fence off the woodland (and other woodland on the site) to prevent public access. This is unlikely to be successful without high input site wardening. This also conflicts with the Masterplan dated October 2023 (CD1.54) which shows paths though the woodland, although it is understood that the Masterplan is indicative.

33. The Preliminary Ecological Appraisal, Phase 1 Habitat Assessment on page 31 refers to Hertfordshire Ecological Network Mapping which shows two further areas of s41 woodland within the site. These are described in the Table on page 13 of this document. Hertfordshire Ecology in its consultation response refers to these areas as ancient woodland. It is not clear why the impact assessment for priority habitats omits these areas.

34. **Hedgerows** on site are not assessed as priority habitats. Habitat descriptions of UK BAP priority habitats are now used in respect of priority habitats. Hedgerows (CD13.4) are defined as:
*any boundary line of trees or shrubs over 20m long and less than 5m wide, and where any gaps between the trees or shrub species are less that 20m wide. All hedgerows consisting predominantly (i.e. 80% or more cover) of at least one woody UK native species are covered by this priority habitat***.**
This suggests that most if not all the hedgerows on the site are priority habitats (also confirmed by the Herts & Middlesex Wildlife Trust (HMWT) in its consultation response dated 31st December 2021) (CD2.40). No mitigations are specifically proposed linked to the loss of some of these, although new hedgerow planting is proposed.

35. **The other neutral grassland** is described by the EcIA as the habitat of most value on the site. The EcIA states: 'This is to be retained and enhanced to further increase botanical diversity. However, residents will have access to this as open greenspace, carrying the risk that the delicate flora will be vulnerable to trampling and soil compaction, as well as increased dog fouling, which will over time degrade the habitat through physical damage and increased nutrients within the soil, altering the balance of the low nutrient composition necessary for delicate wildflowers to thrive'. Mitigations for impacts to this area from recreational pressure refer to signage, fencing to create protected areas, mowing of paths and dog waste bins, but the efficacy of these is uncertain.

36. **Veteran trees** are irreplaceable habitats as defined in paragraph 186c of the NPPF. The Arboricultural and Planning Integration Report (CD1.52) identifies two English Oak trees as veteran, numbered 138 and 139. These lie very close to the proposed access to the site, where hedgerow removal is required to provide sight lines and road widening will accommodate the roundabout. These works might be expected to precipitate damage to or even loss of these trees, which should not be permitted without wholly exceptional reasons. These trees were also assessed in the EcIA on page 53 as supporting the most valuable potential bat roost

features. Two further English Oaks, numbered 5 and 6, lie close to the preferred site compound location shown in Figure 3.1 of the Construction Environmental Management Plan (CEMP)(CD1.15) Tree 5 is described as having potential to become a veteran. Tree 6 is described as arguably a veteran.

Impacts on off-site habitats sites designated for their wildlife value

37. These were assessed by the EcIA as paragraph 185a of the NPPF requires the safeguarding of components of local wildlife-rich habitats and wider ecological networks. Additionally, paragraph 186c defines ancient woodland as an irreplaceable habitat, and like veteran trees referred to above, development resulting in the loss or deterioration of irreplaceable habitats should be refused unless there are wholly exceptional reasons and a suitable compensation strategy exists.

38. Table 3 of the EcIA lists three designated statutory sites within 5km of the site and 11 non-statutory LWSs within 2km (excluding sites unlikely to be impacted by recreational and direct impacts). LWS sites are shown in Figure 12. These were assessed for potential impacts from the proposed development. Direct impacts were assessed as those arising from the construction of the site and are the same as those identified as likely to impact on-site habitat, namely waterborne pollution, hydrological changes, airborne pollution and dust deposition. These were assessed as having potential to impact the two LWSs adjoining the site, Warnersend Wood and Halsey Field, together with the The Meadow by River Gade LWS almost immediately to the north.

39. Indirect impacts were deemed to be increased footfall on designated sites due to the 390 new dwellings on the site (an estimated population of around 1,000, with residents of the 70-bed care home excluded). To increased footfall should be added the associated impacts also identified as having potential to impact on the other neutral grassland on the site.

Chilterns Beechwoods Special Area of Conservation (SAC)

40. In respect of the Chilterns Beechwoods SAC (specifically the Ashridge Commons and Woods Site of Special Scientific Interest) located 4.5km from the site, the EcIA notes that emerging evidence has identified significant recreational pressure on the SAC and references the need for a mitigation strategy. There is no specific reference to the Chilterns Beechwoods Special Area of Conservation Mitigation Strategy for Ashridge Commons and Woods Site of Special Scientific Interest which was published by Dacorum Borough Council, the Competent Authority, on 15th November 2022 (CD13.6).

41. The EcIA states that Suitable Alternative Natural Greenspace (SANG) would be required to mitigate impacts on the SAC arising from the proposed development. It also states: 'A suitable SANG site has now been identified by the applicant that conforms to guidance as set out in the guidance letter by Natural England and the Chilterns Beechwoods Special Area of Conservation Mitigation Strategy. The specific details of this agreement are not considered here, however for the purposes of the impact assessment, it is considered appropriate to assume that adequate mitigation has been achieved'.

42. In the absence of any information concerning the identified SANG site, including its size, location and characteristics, it is not possible to assess whether it meets the requirements for SANG set out in the November 2022 Mitigation Strategy, whether establishment and management proposals are appropriate, and whether the location is a suitable one for deflecting residents of the proposed development away from the SAC.

43. Hertfordshire Ecology in its consultation response dated 24th November 2023 (presumably included in CD2.42 as it is not listed separately) states: 'No details of any such agreement are provided in the EcIA, which then states it is appropriate to assume that adequate mitigation has been achieved and that the effects of the development upon this site [the SAC] are considered to be 'likely negligible'. This assumption is

wholly unacceptable'. Hertfordshire Ecology further states: 'However, an updated Habitat Regulations Screening Statement and Appropriate Assessment (AA) dated 6 Oct 2023 (CD1.46), has been submitted. Whilst the former contains factual inaccuracies, the AA provides no evidence or further details regarding the agreed mitigation as outlined above, or any other information sufficient to demonstrate that DBC can undertake an appropriate HRA. Consequently, I am not in a position to advise the HRA can be adequately addressed. This is an essential requirement for determination in order to comply with the Habitats Regulations 2017 (as amended), and so currently, this application should not be approved'.

Assessment of other designated sites

44. Woodland with no formal public access, including Howe Grove Wood Local Nature Reserve (LNR) was assessed in the EcIA as unlikely to be impacted. In my opinion informal access by residents of the development site may however occur. The EcIA also concluded that there is unlikely to be increased footfall at Dell Wood LWS and Thrift Wood LWS, as these cannot be accessed via public footpaths or informal paths. This overlooks the position of Dell Wood adjoining Halsey Field where informal public access may also occur. This wood is partly ancient woodland with bluebell in the ground flora, a species very sensitive to trampling. Public footpath Great Gaddesden 038 runs along the edge of Thrift Wood.

45. Shrubhill Common LNR was considered too far away (3km) to be impacted by the development proposals. This is a fair assessment given the urban nature of the walk there and the surroundings, and with potentially more attractive destinations closer to the development site.

Halsey Field LWS

46. Impacts on Halsey Field LWS , which Hertfordshire Ecology describes in its consultation response dated 24th November 2023 as 'a rather fragile site', are expected to be substantial because it lies to the west of and immediately adjoins the development site. The EcIA on page 60 refers to plans to link Halsey Field to the shared greenspace in the western section of the development site. This would be in addition to the public footpath (Hemel Hempstead 013) which crosses the centre of the site and runs between Warnersend Wood and Halsey Field. The EcIA says: 'This increased footfall can increase recreational pressures on these sites such as littering, pollution and fires. Most importantly, these sites have been designated for their diverse woodland and grassland flora, which will be vulnerable to trampling and soil compaction, as well as increased dog fouling, which will over time degrade the inherent value of these sites through physical damage and increased nutrients within the soil, altering the balance of the low nutrient composition necessary for delicate wildflowers to thrive.'

47. Details of the origins, management and biodiversity of Halsey Field are contained within the Proof of Evidence of Mike Ridley on behalf of the Friends of Halsey Field (FoHF). The site's biodiversity has been studied by a number of organisations and volunteers. From the information available some specific species groups have been assessed as to whether protected species have been recorded on the site. Two s41 species of butterfly, small blue and small heath, have been recorded, as shown on the butterfly species list for 2023 in Appendix 1. The birds identified on the BoCC red list shown in bold in Appendix 2 include house sparrow, linnet, starling and yellowhammer which are s41 species. Bullfinch, recorded on the site but not a red list species, is also a s41species.

48. The biodiversity of Halsey Field can be expected to increase over time as the management plan for the site is implemented. Wildlife cannot thrive unless habitats are connected to other sites and joined by wildlife corridors. The playing field area to the west of Halsey Field presents opportunities for habitat enhancements in the future, including providing suitable habitat corridors to link together the various woodland areas in the vicinity, specifically Dell Wood LWS to the west. At present there are proposals for the site to be the subject of a Greenspace Action Plan (GAP) by Hertfordshire County Council, which includes Halsey Field and woodland which adjoins the development site. These would together comprise a larger and more varied biodiversity resource.

49. The Halsey Field trustees manage the site 'for the benefit of the public', but the increased popularity of the site with consequent increases in unacceptable behaviour is a cause for concern. Currently, the FoHF are confident that they can manage this situation. However, more visitors would be deleterious to the viability of the site as a wildlife habitat due to increased footfall, dog fouling, vandalism and littering predicted from the close proximity of the development site. Detail of this damage is set out in the Proof of Evidence of Mike Ridley.

50. The EcIA concludes that Halsey Field will experience certain negative effects due to the development proposals, not significant beyond the local level. Taken in the context of the proposed GAP however, in my opinion the significance shoul be elevated to district level.

Other designated sites

51. Warnersend Wood is partly ancient woodland, owned by Dacorum Borough Council and open to public access. The EcIA however states that it is privately owned and therefore should not be accessible to residents, although is at risk from dumping of garden (and presumably other) waste. With ground flora including bluebell, and wild garlic (ramsons) much sought after by foragers, it is likely to be subjected to similar increases in recreation pressures as Halsey Field as a result of the development.

52. The Meadow by the River Gade South of Grist House Farm LWS lies very close to the development side, as close as 40 metres at its southern end. It lies between the Gade and the Leighton Buzzard Road (B440). Although there is no official public access it could be accessed from the road and also from the byway open to all traffic Great Gaddesden 058 which runs alongside the north-western end of the site. It would also be possible to reach this site by crossing the Gade, from the public footpath Hemel Hempstead 012/Great Gaddesden 057, which runs north west from the development site close to the western bank of the Gade.

53. The construction phase direct impacts and mitigations assessed by the EcIA for Warnersend Wood, Halsey Field and The Meadow by the River Gade LWSs are the same as those for the deciduous woodland at the centre of the site. For these LWSs the EcIA assesses that there would be certain negative effects at the local level if left unmitigated. The EcIA states that there will be no direct residual effects on designated sites. In my opinion this is highly dependent on successful implementation of the mitigation measures.

54. Indirect effects on The Meadow by the River Gade can be expected to include the range of recreation pressure identified for other sites. Many of these, especially the impacts of trampling causing damage to the river banks and riparian habitats and the polluting impacts from dogs, can also be expected to impact on the river Gade as well. In addition, canine flea treatments passed into river waters by dogs is an increasing concern in respect of chalk streams and other rivers, leading to declines in river invertebrates which are an important part of the foodchain.

55. A further six LWSs were assessed by the EcIA for the likelihood that they would experience increased footfall as a result of the proposed development, accessible via PRoWs or by car. The EcIA concludes that these are either too far away or that parking near to the sites is limited. However, visitor survey evidence presented in Section 2 of Chilterns Beechwoods Special Area of Conservation Mitigation Strategy for Ashridge Commons and Woods Site of Special Scientific Interest which was published by Dacorum Borough Council on 15th November 2022 (CD13.6) suggests that visitors to the Ashridge Commons and Woods SSSI typically spent around 1.5 hours on site, with some variation between survey locations and time of year. Routes walked on site were typically (median) around 3.0 km. This is the median distance so some walkers will have been going further. Dog walking accounted for almost half of all interviewees.

56. This is reflected in the paper by Weitowitz et al *The effect of urban development on visitor numbers to nearby protected nature conservation sites,* published in the Journal of Urban Ecology in 2019 (CD13.5). The authors were also from Footprint Ecology. A key finding was that any housing development within a 1.5 km

zone surrounding protected sites is likely to increase on-foot recreation pressure on those sites, and should be assessed very carefully for recreation impacts prior to being given planning consent. A number of the LWS sites deemed too far away for any increased impacts lie within 1.5 km of the development site, including Water End Moor, Water End Meadows (Great Gaddesden) and Heizdins Wood. Highpark Wood is slightly further away but has extensive bluebells in the ground flora and would be expected to attract visitors walking more than the median distance expected. Both of the woods are ancient. Water End Meadows (Great Gaddesden) lying alongside the river Gade could be expected to experience similar impacts as The Meadow by the River Gade.

57. The EcIA concludes that even with the provision of attractive green space within the development and measures to alert residents to the importance of surrounding designated sites, there remains a risk of indirect impacts on these sites. As such, without compensation, there will be a residual likely negative effect through increased recreational pressure on The Meadow by River Gade, Halsey Field and Shrubhill Common at the local level. This list should also include Warnersend Wood as the EcIA erroneously assumed there is no permitted public access.

58. The EcIA also concludes that, given the distance and limited accessibility to Water End Moor, Water End Meadows (Great Gaddesden), Heizdins Wood, Disused Railway Line - Hemel Hempstead, Highpark Wood and Brown's Spring & Hollybush Wood, with the provision of public open green space on the development, no residual impacts on these particular LWS are projected. I have set out above evidence that this is not proven. The one exception might be the Disused Railway Line (the Nicky Line) as accessing this site involves a walk along busy roads and through urban areas, not attractive to dog walkers in particular.

59. The EcIA states that large areas of public open green space have been incorporated into the proposed scheme which will provide attractive areas for recreation purposes as an alternative to the woodland habitats contained within and adjacent to the development site. In my opinion these areas will take time to create and mature so that residents may establish patterns of visiting outside the site in the interim, and thereafter to seek variety and greater solitude.

60. The EcIA states that: ‘the residual impacts on these sites, whilst likely to be localised and small in scale, are challenging to mitigate for. Therefore, this must be remedied by the developer, such as through consultation with Dacorum Borough Council and local parties who manage the sites.

61. The potential for residual impacts on ancient woodland and deciduous woodland are considered by the EcIA to be negligible and given that no residual impacts on these habitats are predicted compensation measures are not considered necessary. In my opinion this is not proven, especially in respect of Warnersend Wood which is not as stated closed to public access.

62. The northern field public open space area, which includes existing calcareous grassland, is proposed to be enhanced through selective wildflower seeding and improved management to produce a botanically rich sward, encourage invertebrate biodiversity and everything that feeds on them. The EcIA states that: ‘This will compensate for a portion of the impacts of recreational pressure and provide a local resource for residents to engage with natural history, raising awareness and benefitting both biodiversity conservation and the local community’. Further, ‘management of this field will need to be secured in perpetuity for the development, either through an appropriate management company, or a wildlife group, with funding secured through an appropriate S.106 agreement’. It is evident that such an agreement is not yet in place and will require a substantial financial endowment.

63. Residual impacts in respect of the northern field are deemed by the EcIA to be a likely positive impact. This is challenged by consultation responses from Hertfordshire Ecology and the Herts & Middlesex Wildlife Trust.

Impact on the River Gade

64. The river Gade is a chalk stream and therefore a priority habitat/habitat of principal importance. As chalk streams in England comprise a significant percentage of this habitat globally, they are rare and of national or arguably international importance. The watercourse of the Gade lies within 50 metres of the north-eastern boundary of the site, before flowing under the Leighton Buzzard Road and thereafter alongside and in close proximity to the eastern side of the road. The Gade is acknowledged to be heavily over-abstracted in its upper reaches, a situation which is due to be rectified at least in part by reductions in abstractions at the Piccotts End pumping station located immediately to the north of the site. This is referred to in Affinity Water's consultation response (CD2.13). One impact of these reductions will be an anticipated alteration in groundwater movements and levels.

65. The EcIA makes no reference to the Gade's status as a priority habitat, its importance, or its vulnerability especially due to its proximity to the proposed development site. Chalk streams are characterised by their clear nutrient-rich waters which support a unique assemblage of species. As such they are vulnerable to pollution and contamination for example by soil debris.

66. The Drainage Technical Note (DTN) (dated 27th June 2024, an earlier date than CD1.58) sets out the proposed strategy for dealing with the two surface water flood flow routes which cross the site and discharge into the Gade. For the southern route the SuDS treatment train culminates in two attenuation/treatment basins located close to the eastern boundary of the site, as shown in Figure 9 of the DTN. The DTN does not estimate how much residual contamination might reach the Gade via the infiltration basins and subsequent discharge into the aquifer. The basins both sit above the Source Protection Zone around the Piccotts End pumping station so it can only be presumed that the discharges will impact neither the aquifer nor the river and will be monitored on a regular and frequent basis.

67. This arrangement appears to ignore the northern flow route which is expected to be largely confined to the existing drainage ditch which flows into the Gade in the vicinity of the pumping station to the north east of the site. The contour map in Appendix A of the DTN (most of the details including page and figure numbers are redacted) shows that Field 2 (shown in Figure 14 of the EcIA) occupies a steep slope facing north and bordering the northern ditch. The ditch would be modified so as to contain the predicted flow without any flooding of properties.

68. As noted on page 21 of the Flood Risk Assessment, Surface Water and Foul Drainage Strategy dated November 2021 (CD1.13), surface water flooding occurs when intense, often short duration, precipitation events are unable to enter a drainage system due to blockages, breakages in water pipes or where the drainage capacity has been exceeded. This type of flooding is usually short-lived, associated with heavy precipitation events and highly localised. Surface run-off will tend to flow towards low spots where it collects. The effects of climate change are predicted to increase the frequency of heavy downpours, therefore increasing the number of events that exceed the capacity of the sewer system.

69. Field 2 is shown in the Illustrative Masterplan (CD1.54) as being almost entirely developed, and with some of the internal roads aligned straight downhill. In storm events described above surface run-off might be expected to exceed the capacity of the road drainage system and discharge straight into the northern ditch and thence into the Gade. This is unacceptable given the status of the river.

70. This risk could be even higher during the construction phase when bare ground is exposed and no drainage system is in place. The Environment Agency (EA) has withdrawn its objection to the proposals on the basis that the proposed SuDS scheme is satisfactory. This would appear not to be the case with regard to the northern part of the site. However, in its consultation response dated 8th August 2022 (CD2.33) the EA stated: 'An ecological risk assessment is required to assess how the proposal will affect species, habitats

and hydrogeomorphology associated with the River Gade and its riparian habitats. This assessment will need to demonstrate how the risk will be controlled. Where possible, it should identify opportunities for environmental improvements'. It is not clear whether this risk assessment is still required.

Biodiversity Enhancements

71. These are described in Section 8 of the EcIA and fully detailed in the Habitat Creation and Management Plan (HCMP) (CD1.26). The EcIA states: 'The enhancements outlined below utilising existing site habitats and the creation of new ones across the site will not only increase the ecological value of the site itself but will create a better mosaic of habitats across the wider landscape'. It is not clear what is meant by the 'mosaic of habitats across the wider landscape' as this area is outside the appellant's control. The increase in ecological value as measured by the Biodiversity Net Gain (BNG) calculation is marginal at best, and negative according to the HMWT consultation response (referred to in the BNG section below).

72. The EcIA claims that 'wildlife corridors on the site will allow the protected species present on or adjacent to the site to commute safely across the site and into the wider landscape, whilst also providing corridors for pollinators'. In my opinion this effect depends on the corridors and wider landscape being suitable habitat with territory and forage capacity to compensate for the on site areas lost to development.

73. The proposed pond is located at the highest part of the site, with the land adjoining the pond sloping downhill, and is therefore unlikely to receive water from lower parts of the site without pumping. Clay liners have the potential to crack in periods of dry weather. Log piles will be liable to disturbance and eventually rot.

74. Table 13 of the EcIA shows that there will be residual impacts to biodiversity on the site. In my opinion the quantums claimed are debatable because many of the impacts have been downplayed and the mitigation measures are in many cases unrealistic or their effects are overstated. In particular impacts on the ancient woodland in Warnersend Wood and the putative ancient woodland on site has not been properly assessed. Hedgerows have not been recognised as priority habitats and there has been no impact assessment for them. The ability to mitigate recreation pressure on the calcareous grassland may be highly optimistic. Impacts on the river Gade have not been assessed and the national importance of this chalk stream and priority habitat overlooked.

75. There is no indication in the HCMP as to what arrangements are to be made for the ownership and management of the retained, new and enhanced habitats, or for other site management operations including litter clearance and dog bin emptying. While there is an opportunity to explore community involvement, this will require leadership expertise. Some operations, especially management of unsafe trees, should be carried out by appropriately trained people and require specialist equipment.

76. Paragraph 2.1 of the HCMP states that hedgerow loss will be low, but many are adjoining what will become private gardens and in my opinion the management and even retention of these will be uncertain. A 1.5 metre buffer has been proposed either side of all existing hedgerows to ensure that construction activity cannot damage tree roots and that wildlife within the hedge will be protected from direct disturbance. This has been criticised by the HMWT consultation response as not proving sufficient functional width. HMWT suggests a minimum buffer of complimentary habitat of 10 metres to protect and enhance this priority habitat. This could impact on the location of individual plots.

77. The presence of bee orchids in Field 1 is not noted in paragraph 2.2.1 of the HCMP. This species was listed in the REV05 version of the EcIA (CD1.30).

78. The seed source proposed for the floristic enrichment of Field 1 is criticised as being too far away by Hertfordshire Ecology: a local source would be preferable such as Shrubhill Common, as suggested by Hertfordshire Ecology.

79. The three measures for reducing soil nutrient levels where wildflower meadow creation is proposed are all potentially damaging to the areas involved, impacting the soil and its fauna and retained plant species. This opinion is shared by Hertfordshire Ecology. It also risks soil erosion during storm events before vegetation cover is re-established which potentially threatens the Gade. It is not uncommon for plant species including orchids to appear when a grassland management regime is changed to allow them to flower. A less intrusive approach would be to mow the existing grass on a regular basis at appropriate times and remove all the cut material: over time this will reduce nutrient levels. Subsequently if needed hay from species-rich meadows or plug plants could be introduced. Cutting regimes need to be carefully timed and specific to the species present in different areas. Grazing is suggested as an alternative method to reduce coarse grasses but would be entirely incompatible where the public and their dogs will have access.

80. The list of species in paragraph 2.2.3 suggested for planting to create wood pasture/parkland includes many not suitable for this type of tree landscape, being multi-stemmed shrubs which tend set seed prolifically and/or sucker.

81. The ancient woodland buffers are specified as 20 metres wide in the EcIA but 15 metres in the HCMP. It is unlikely that the thorny scrub planting described will not prevent the development of desire lines across these areas allowing public access.

82. It is noted that newly-planted hedges may suffer rabbit and deer damage, but with fallow deer present locally guards would be inadequate against this species. Tall fencing is likely to be needed.

83. Non-intervention and exclusion of the public is described as the best management for broadleaved woodland. This is debatable. It may be so in larger sites in more remote locations but not for small woods in the immediate vicinity of a large area of housing. The woodlands on the site visible from the PRoWs appear to contain large mature trees, many with ivy in the crowns which reduces their stability in high winds. While oaks may gradually decay and retain dead branches, other species become unstable with age. Beech is prone to summer branch drop and wild cherry can deteriorate quickly and blow over. Ash dieback will be expected to leave many dead trees which will be potentially dangerous, especially close to boundaries.

84. Many woods benefit from thinning, to remove some trees allowing others to mature. Otherwise trees become spindly and unstable with time. As stated unmanaged woods may become dominated by species which create heavy shade, such as sycamore, and become ecologically impoverished. Woods with hazel in the understorey may benefit from small-scale coppicing, letting in light which benefits the ground flora.

85. The planting proposed to diversify the woodland edges and replace felled Douglas Fir will be vulnerable to deer damage if the fencing proposed is not high enough to exclude deer and maintained in good condition.

86. Where woods are retained within new housing, public safety is an important consideration. Trees close to the boundaries should be regularly inspected and if need be made safe by felling or pruning. Whether or not the public are meant to be excluded from the woods themselves and the surrounding buffer areas, retaining this state of exclusion requires a high input of site management. Otherwise and over time the public including children will gain access to walk and play, but may also cause damage, light fires, cut trees for firewood and dump rubbish. The owner or occupier of any land owes a duty of care to the public, whether or not access is permitted. It is not clear who is to responsible for the on-site woodland areas, but putting a fence around them and walking away is not an option.

Biodiversity Net Gain (BNG)

87. None of the enhancement proposals appear to take into account the impact of public use, including dog walking and associated eutrophication of the habitats, nor the impact of the proximity of development to some of the habitats, which may lead to demands for tree felling and hedge reduction due to safety concerns and shading. This is also the view of Hertfordshire Ecology in its consultation response dated 24th November 2023.

88. The Biodiversity Impact Calculation (CD1.45) concludes that: 'The proposal does not meet the trading rules, due to a deficit of Low Distinctiveness habitat units, despite the achievement of more than 10% biodiversity net gain overall. Subject to the discretion of the planning authority, with the requirements of the Environment Act not yet mandatory, an offsetting payment may be required to address this trading deficit of low distinctiveness units'. Meeting the trading rules is a mandatory requirement of the Biodiversity Metric.

89. Hertfordshire Ecology in its consultation response says of the BNG: 'Improvements to the woodland are proposed which achieve an increased BU (biodiversity units) score, but given only minimum intervention is proposed, I do not accept this will achieve any genuine form of ecological enhancement and so this should not contribute towards any BNG'. In respect of hedgerows it states: 'Management of the garden hedgerows is likely not to be undertaken by anyone other than the householder and so cannot be included within the expectations of this plan which does not relate to new householders. This also has BNG implications'.

90. The HMWT in its consultation response states that all of the grassland is 'other neutral grassland' and there is no 'modified grassland'. It concludes: 'When the biodiversity metric is repopulated to reflect the habitats described in the report, the metric generates a net loss of 20.24 habitat units or a net loss of -14.97%'. Since this response the field habitats have been reassessed to create a different baseline for the BNG calculation. However, the point made by the HMWT regarding the classification of the grassland is still valid.

91. The gain shown for habitat units of 10.48% in the BNG metric is extremely sensitive to any changes at all to any of the figures. Possible changes arise for a number of reasons. These are set out below:

		Baseline units	**Post-intervention**	**Net change**	**Net change %**
	As presented	125.24	138.37	13.12	10.48%
a	Dividing Field 1 into two different designations: Other Neutral Grassland and Modified Grassland	115.64	125.41	9.76	8.44%
b	Woodland enhanced to 'Fairly Good' not 'Good'	125.24	136.26	11.01	8.79%
	Combining a) and b)	**115.64**	**123.30**	**7.65**	**6.62%**
c	Redesignating Fields 2 to 7 as Other Neutral Grassland (poor condition)	147.00	138.37	-8.64	-5.88%
d	Combining Fields 4-7 (all moderate condition)	141.52	138.37	-3.16	-2.23%

a. The BNG calculation is inconsistent with the EcIA as regards Field 1 (see Table 16 of Appendix 3,). Part of the area of 'modified grassland' shown in the table has been upgraded to 'other neutral grassland' in the calculation.

b. The BNG calculation is inconsistent with the description of woodland condition in paragraph of 3.4 (Habitat Enhancement) of the Biodiversity Impact Calculation ('fairly good' has been changed to 'good').

c. Designation of Fields 2 – 7 as 'modified grassland', as challenged by the HMWT, which contends that these fields should all be 'other neutral grassland'.

d. All fields meet sufficient criteria to qualify as 'moderate' or 'good' condition. However there is threshold of 6.0 for species density for this to apply. Fields 4 and 7 fall slightly short of this, downgrading them to 'poor' (there is a wide range of densities in each field). Combining Fields 4 and 5, and combining Fields 6 and 7 raises the overall species density above 6.0. in each case. This would give "moderate" condition overall instead of poor and good for the different fields. (NB the initial assessment used just 3 areas, A, B and C).

The impact of each of these changes, taken individually, is shown above. If the BNG calculations were consistent with the written comments, the net change falls to 6.62%, well below the target of 10%.

I confirm that the facts stated in this proof of evidence are true to the best of my knowledge and belief. I confirm that the opinions expressed herein are my true and professional opinions.

Name: Elizabeth Hamilton

Date: 17th September 2024

Appendix 1

List of butterflies recorded at Halsey Field LWS in 2023

Recorded by Christine Ridley of the Friends of Halsey Field. * denotes s41 species/priority species

Small Skipper	Thymelicus sylvestris
Essex Skipper	Thymelicus lineola
Small/Essex Skipper	Small/Essex Skipper
Large Skipper	Ochlodes sylvanus
Brimstone	Gonepteryx rhamni
Large White	Pieris brassicae
Small White	Pieris rapae
Green-veined White	Pieris napi
Orange Tip	Anthocharis cardamines
Purple Hairstreak	Neozephrus (Quercusia) quercus
Small Copper	Lycaena phlaeas
Small Blue*	Cupido minimus
Brown Argus	Aricia agestis
Common Blue	Polyommatus icarus
Holly Blue	Celastrina argiolus
Red Admiral	Vanessa atalanta
Small Tortoiseshell	Aglais urticae
Peacock	Inachis io
Comma	Polygonia c-album
Speckled Wood	Pararge aegeria
Marbled White	Melanargia galathea
Gatekeeper / Hedge Brown	Pyronia tithonus
Meadow Brown	Maniola jurtina
Ringlet	Aphantopus hyperantus
Small Heath*	Coenonympha pamphilus

Appendix 2

Notes on bird species recorded at Halsey Field by the Friends of Halsey Field. Updated 22/02/2024

Birds of Conservation Concern Red List

Birds must be:

- Globally threatened, *or*
- Historical population decline in the UK between 1800 and 1995, *or*
- At least a 50% decline in the UK breeding population over the last 25 years, *or*
- At least 50% contraction of UK breeding range over the last 25 years.

Those seen on or above Halsey Fields are shown in **Bold**. ie 9/70 species or more than 12% of all the species on the UK red list.

Arctic skua	Kittiwake	Savi's warbler
Balearic shearwater	Lapwing	Scaup
Bewick's swan	Leach's storm-petrel	Shag
Black grouse	Lesser spotted woodpecker	Skylark
Black-tailed godwit	**Linnet**	Slavonian grebe
Capercaillie	Long-tailed duck	Smew
Cirl bunting	Marsh tit	Spotted flycatcher
Common scoter	Marsh warbler	**Starling**
Corn bunting	Merlin	**Swift**
Corncrake	**Mistle thrush**	Tree pipit
Cuckoo	Montagu's harrier	Tree sparrow
Curlew	Nightingale	Turtle dove
Dotterel	Pochard	Twite
Dunlin	Ptarmigan	Velvet scoter
Fieldfare	Puffin	Whimbrel
Goldeneye	Purple sandpiper	Whinchat
Grasshopper warbler	Red-backed shrike	White-fronted goose
Greenfinch	Red-necked grebe	Willow tit
Grey partridge	Red-necked phalarope	Wood warbler
Hawfinch	Redpoll	**Woodcock**
Hen harrier	Ring ouzel	Yellow wagtail
Herring gull	Ringed plover	**Yellowhammer**
House martin	Roseate tern	
House sparrow	Ruff	

There are also Buzzard, Kestrel, Bullfinch, and Common Whitethroat which are not on the red list, but are not otherwise common birds. Section 41 species on the Halsey Field bird list include bullfinch, house sparrow, linnet, starling and yellowhammer.