

PROOF OF EVIDENCE (ECOLOGY) ON BEHALF OF READING BOROUGH COUNCIL: 55 VASTERN ROAD, READING



Planning inspectorate case ref: APP/E0345/W/21/3276463

Reading Borough Council Ref: 200188

Report Date: 29 September 2021

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1 Author's details

- 1.1.1 My name is Giles Sutton. I am a member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and a Chartered Environmentalist. I hold a Bachelor of Science (Hons) in Agriculture and Environmental Science from the University of Newcastle upon Tyne and a Master of Science in Ecological Management from Imperial College London.
- 1.1.2 I am the owner and director of GS Ecology Ltd. I advise planning authorities, developers, and others on the ecological implications of planning applications and land use change.
- 1.1.3 I have more than 20 years' experience working as a professional ecologist. I hold and have held numerous Natural England protected species survey, mitigation, and conservation licences.
- 1.1.4 I have advised Reading Borough Council on ecology related matters since 2008 and have extensive experience and knowledge of dealing with biodiversity and planning issues. I wrote Reading Council's Biodiversity Action Plan and I live and work in the Borough.
- 1.1.5 I know the appeal site and have viewed it from public footpaths and roads. I know Christchurch Meadow well.
- 1.1.6 I confirm that the evidence that I have prepared and provided for this appeal is true to the best of my knowledge and belief. I confirm that the opinions expressed are my true and professional opinions.

2 **Background**

2.1.1 A planning application for the:

“Demolition of existing structures and erection of a series of buildings ranging in height from 1 to 11 storeys, including residential dwellings (C3 use class) and retail floorspace (A3 use class), together with a new north-south pedestrian link, connecting Christchurch Bridge to Vastern Road.”

at 55 Vastern Road was refused by Reading Borough Council on 9 April 2021. Reading Borough Council’s Planning Application reference is 200188.

2.1.2 There were 7 reasons for refusal (RFR), one of which, RFR 3, is directly related to ecology. This reads:

“3. By virtue of its height, massing and proximity to the river, the development will shade the River Thames and impact on its marginal habitats with a lack of appropriate mitigation being demonstrated. There would also not be sufficient space within the riverside buffer for a sustainable long-term relationship between the riverside buildings and the required large canopy trees. The proposed development is therefore contrary to Policy EN11 in particular, and also Policies EN12, EN13, EN14, CC7, CR2, CR3, CR4 and CR11 of the Reading Borough Local Plan (2019), paragraph 175 of the National Planning Policy Framework (2019) and objectives of the adopted Reading Borough Council Tree Strategy (2021) and Reading Biodiversity Action Plan (2021).”

2.1.3 This Proof of Evidence (PoE) will focus on the element in bold above relating primarily to the River Thames and marginal habitats. The remaining element of the reason for refusal is separately discussed within evidence provided by Sarah Hanson, the council’s Natural Environment Officer.

2.1.4 The appellant has submitted an ecology statement of case (Iain Corbyn dated 20/5/21). I have read this and used it to inform my comments.

2.1.5 I have avoided repetition of items set out in my SoC dated 12 August 2021, but the council’s case is as follows:

- 1) The ecological value of the marginal habitat (that will be affected by the development) is greater than the appellant states.
- 2) The proposals will harm the river Thames and its marginal vegetation
- 3) There is a scheme that will have less harm
- 4) That the appellant’s offsite compensation (even if it were to be otherwise acceptable) is very unlikely to be sustained in the long term.

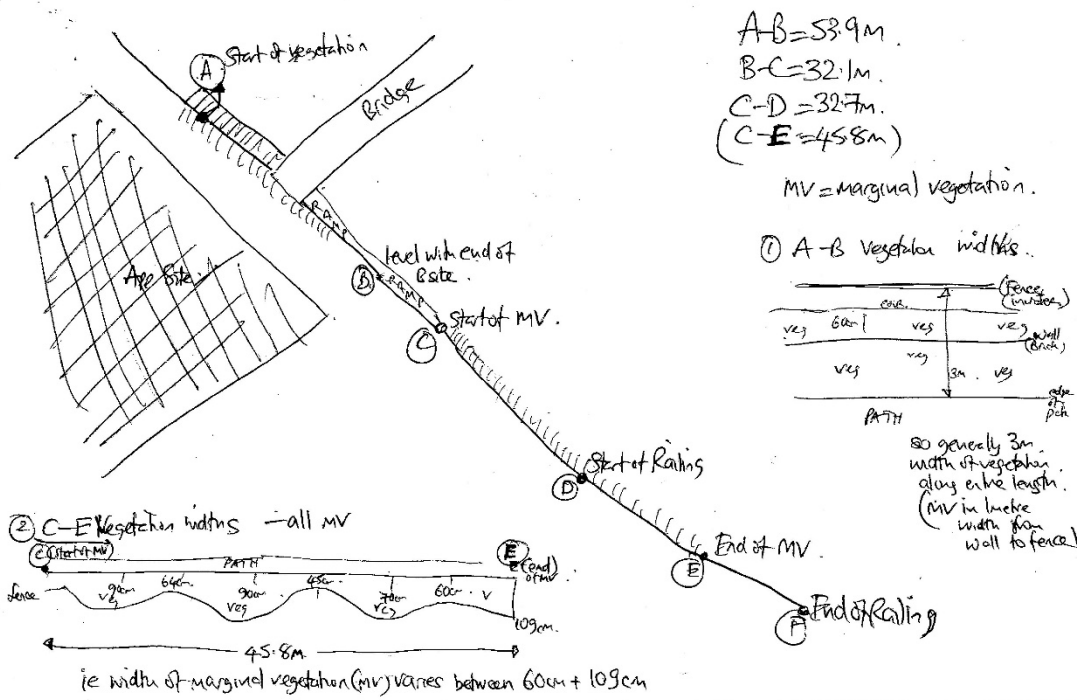
3 Planning policy

3.1.1 Please refer to section 3 of my SoC for a summary pertinent planning policy and council documents including the BAP and the Tree Strategy.

4 The ecological value of the marginal habitat (that will be affected by the development) is greater than the appellant states.

- 4.1.1 The River Thames, including its marginal habitats is a “priority Habitat” as defined in the NPPF (i.e., it is a Habitat of Principal Importance included in the England Biodiversity List published by the Secretary of State under section 41 of the Natural Environment and Rural Communities Act 2006). It is Reading’s most important wildlife corridor and is designated as a green link on Reading’s proposals map. It is a fundamental component of Reading’s green network as defined in policy EN12.
- 4.1.2 The appeal site is directly adjacent to the river. At this location there is a long strip of marginal vegetation (marginal vegetation refers to plants growing along the base of the bank with roots in the water and provides valuable habitat for wildlife) that was planted in the river when the new footbridge was built (application ref: 131234 – see Appendix 1 for the approved and implemented landscape plan).
- 4.1.3 It was planted using coir rolls. There is galvanised wire mesh to protect it on the northern side. It has established very well and is now the longest length of marginal vegetation on the banks of the river Thames at Christchurch Meadows and at Thames Promenade stretching 100m along the southern bank of the River Thames. Beyond the marginal vegetation to the south (at the appeal site) there is a narrow path and then some self-set young trees and scrub. This creates a corridor of semi natural vegetation adjacent to the River Thames.
- 4.1.4 There has been some debate about the length and the width of the marginal vegetation adjacent to the appeal site – I referred to a total length of marginal vegetation of 105m in my SoC (measured using GPS coordinates), the appellant refers to “45m of planted coir rolls located to the east of the eastern ramp” (appellant’s ecology SoC paragraph 3.27) and “the length of 30m of planted coir roll located between the ramps” [adjacent to the site] (appellant’s ecology SoC paragraph 3.23) i.e. 75m in total . I sent some of my staff members to measure it. The measurements, using a tape measure, show that the marginal vegetation directly adjacent to the appeal site is 53.9m in length (overshadowed by the proposals see Figure 3) whilst that to the southeast measures 45.8m (not shaded by the proposals).
- 4.1.5 The width of the vegetation, i.e., between the concrete bank of the river and the wire mesh that contains the vegetation is 60cm adjacent to the development site (section A to B below) and between 45 and 109cm to the southeast (section 3.39 of appellants ecology SoC refers to a width of 0.5m).
- 4.1.6 The field notes from the surveyors who measured the vegetation is given in Figure 1 below.

Figure 1 – Field notes showing measurements of marginal vegetation.



4.1.7 Other than a short section on the northern bank (adjacent to the bridge) and a short section on the southern bank (west of Thames Avenue) there are no other areas of this marginal habitat along either bank (i.e., both sides) of the River Thames at Christchurch Meadow or the Thames Promenade. The closest such habitat is on View Island approximately 500m to the east (although the quantity of marginal vegetation on the island is limited in extent) and beyond Thames Side Promenade 2km to the west. Figure 2 below shows the areas of marginal vegetation along the River Thames in Reading.

Figure 2 – Marginal riverside vegetation on the River Thames in Reading



- 4.1.8 The appellant’s ecological consultant asserts that the marginal habitat is of “neighbourhood significance at most” (3.29 of the appellant’s ecologist’s SoC). This is incorrect.
- 4.1.9 CIEEM’s 2018 Guidelines on Ecological Impact Assessment (the EclA Guidelines – provided at appendix 2 of this SoC) refers to the importance of valuing ecological features in Section 4. Paragraph 4.1 of the EclA guidelines reads:
- “One of the key challenges in EclA is to decide which ecological features (habitats, species, ecosystem and their functions/processes) are important and should be subject to detailed assessment. Such ecological features will be those that are considered to be important and potentially affected by the project”*
- 4.1.10 Box 14 “Key sites, habitats and species for biodiversity and nature conservation in the UK and Ireland” on page 22 refers to “Habitats and species of principal importance for the conservation of biodiversity” and “UK BAP Priority Habitats”.
- 4.1.11 Section 4.4 and 4.5 provides further guidance:
- “4.4 Ecologists may identify ecological features that are not included in lists of important sites or features, but considered important on the basis of expert judgment e.g., because of their local rarity or because they enable effective conservation of other important features. For example, an area of low-quality grassland neighbouring a designated saltmarsh could be considered important to allow the saltmarsh to migrate landward as a consequence of sea level rise.*

4.5 Ecological features might also be important because they play a key functional role in the landscape as 'stepping stones' for migratory species to move during their annual migration cycle, as well as for species to move between sites, to disperse populations to new locations, to forage, or move in response to climate change. Ecosystem processes are very important e.g., fronts and upwellings that lead to important aggregations of marine wildlife; groundwater dependent ecosystems."

4.1.12 Section 4.7 then refers to geographical context and recommends a framework for assessing importance:

"4.7 The importance of an ecological feature should be considered within a defined geographical context. It is recommended that the following frame of reference be used, or adapted to suit local circumstances:

- *International and European*
- *National*
- *Regional*
- *Metropolitan, County, vice-county or other local authority-wide area*
- *River Basin District*
- *Estuarine system/Coastal cell*
- *Local.*"

4.1.13 The appellant's ecologist has used their own framework for assessing ecological importance as follows (section 3.28 of their SoC):

- *international*
- *national*
- *regional*
- *county*
- *borough*
- *neighbourhood*
- *site*

4.1.14 They have then chosen to give the marginal vegetation a significance of "neighbourhood" "at most" (3.29 of the appellant's ecologist's SoC).

4.1.15 My opinion is that:

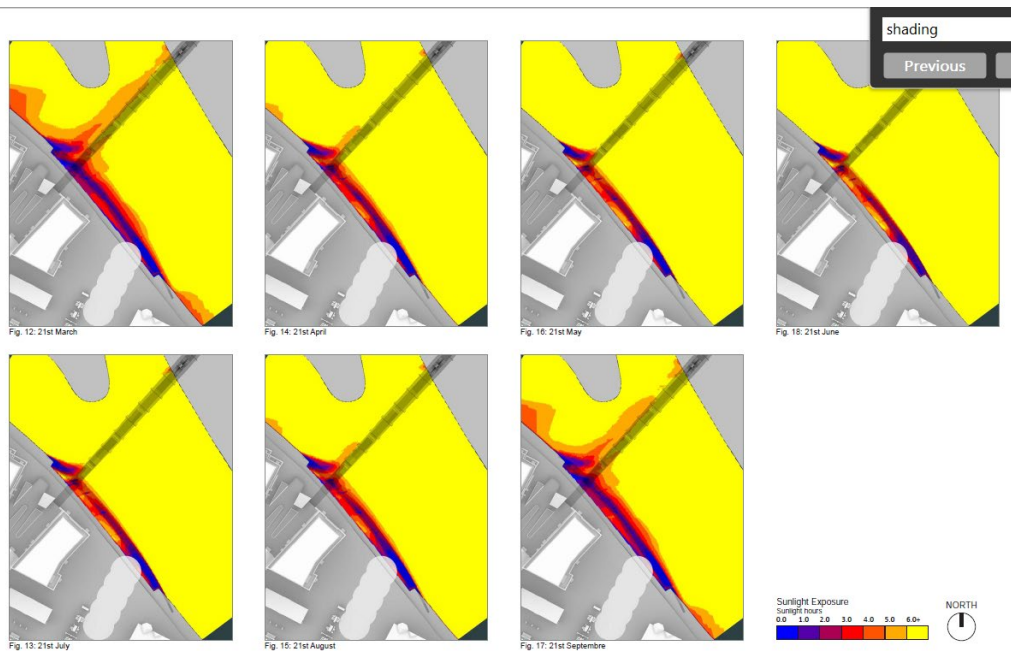
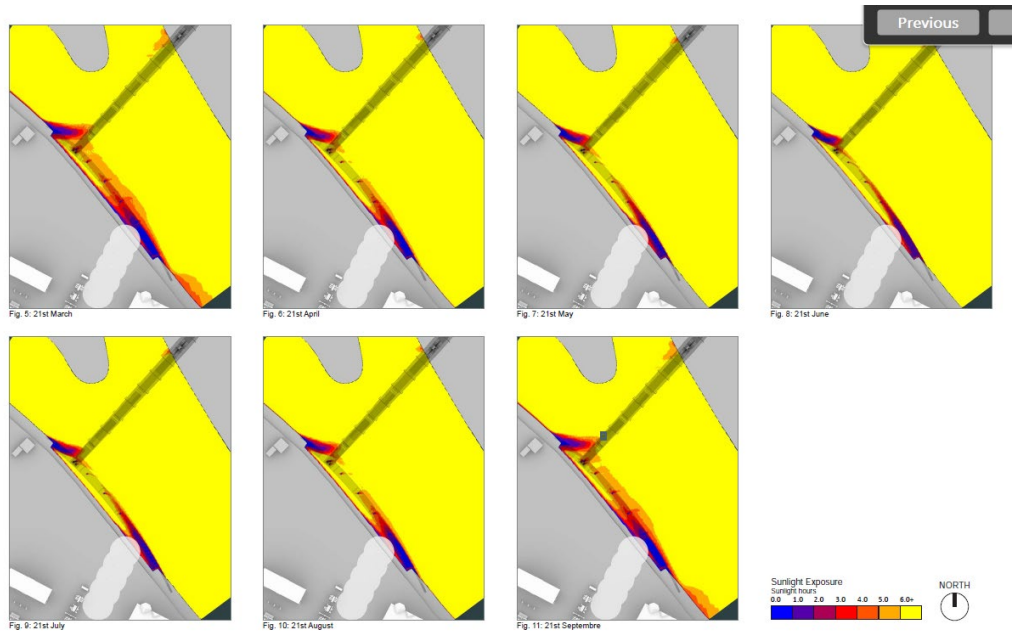
- 1) The River Thames is a "Habitats of principal importance for the conservation of biodiversity" and a "UK BAP Priority Habitat" i.e., of national significance
- 2) There is very little marginal vegetation on the Thames in Reading and the section next to the appeal site is the longest section for at least 2km
- 3) It is therefore an important stepping stone for wildlife using the River Thames

- 4) That the marginal vegetation should therefore be assigned a significance of “borough” and not “neighbourhood” as the appellant contends.
- 5) The proposals will result in harm to the marginal vegetation (see below), the harm is “significant” and the mitigation hierarchy (see section 7 of my SoC) needs to be considered.

5 The proposals will harm the river Thames and its marginal vegetation

- 5.1.1 The appellant's SoC includes a diagram in Appendix C showing the sunlight exposure adjacent to the River Thames between the months of March and September. This shows that most of the marginal vegetation directly adjacent to the appeal site currently receives 6+ hours of sunlight exposure between March and September. However, because the model only shows sunlight exposure of more than 6 hours (i.e. 6+ hours) this could be up to 16.5 hours of sunlight on the longest day.
- 5.1.2 Post development the majority of the 54m length of vegetation will receive between 2 and 4 hours of sunlight exposure which is a significant reduction and will reduce the growth rates of the marginal vegetation.
- 5.1.3 According to the model the 46m stretch of marginal vegetation appears (to the south east of the appeal site) will not see a decrease in sunlight exposure.
- 5.1.4 Figure 3 shows the model from the appellant's SoC.

Figure 3 - Appendix C of the appellant's ecology SoC showing the sunlight exposure adjacent to the River Thames between the months of March and September



5.1.5 Appendix 3 [Dawson, F.,H., & Haslam S., M (1983). *The management of river vegetation with particular reference to shading effects of marginal vegetation - Landscape Planning 10 (2) PP 147-169*] states that:

“Studies on the biomass of aquatic plants in the shade from natural marginal deciduous terrestrial vegetation and also in artificial shade have shown that the reduction of light is a very effective form of control for plant growth (Fig. 1; Dawson, 1976a, 1978b; Haslam, 1978; Dawson and Kern-Hansen, 1979). The decrease in the seasonal maximum aquatic plant biomass is proportional to the reduction in light

for a particular situation with respect to the biomass in adjacent unshaded sections of stream. Thus, although it is easy to suggest that full shade may answer the plant-management problem (Lohmeyer and Krause, 1975), the absence of aquatic plants would result in an impoverished eco-system.”

- 5.1.6 Figure 1 from the Dawson & Haslam paper (pasted below for ease of reference) shows that there would be a significant reduction in biomass production (i.e., plant growth) of more 50% if one assumes that there is a 50% reduction in shading. However, for the reasons set out in 5.12 above it will be much more than this (i.e. sunlight exposure of between 6 and 16.5 hours pre-development and sunlight exposure of between 2 and 4 hours post development)

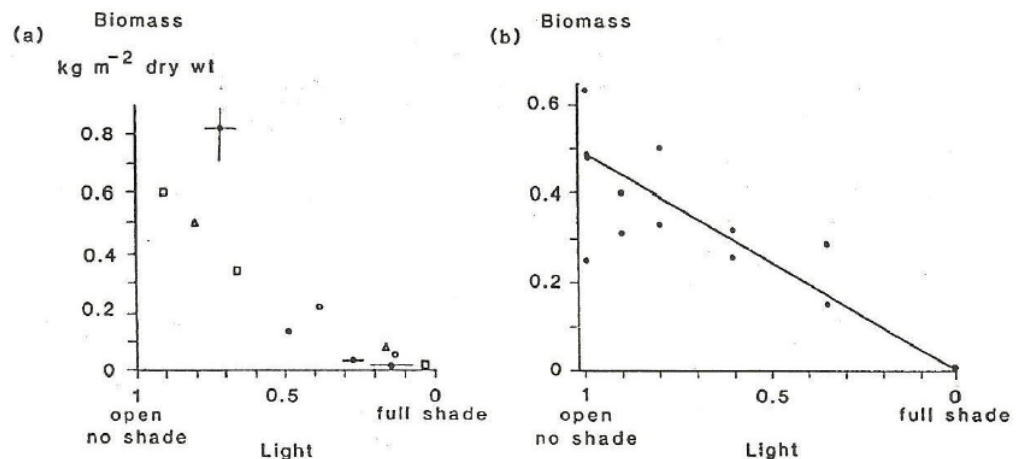


Fig. 1. The relationship between the light at the stream surface in (a) natural and (b) artificial shade and the maximum biomass of a variety of submerged aquatic plants in a variety of streams (from Dawson and Kern-Hansen, 1978). The light is expressed as a proportion of that in adjacent unshaded open sections of stream. ● = Esrum stream, Denmark; ○ = Granslev stream, Denmark; □ = Gjern stream, Denmark; △ = Bere stream, England.

- 5.1.7 Thus, the development will lead to a significant decline in the vigour (and extent) of the marginal vegetation which is a significant and adverse effect.
- 5.1.8 The appellant’s ecologist writes in their SoC that there is a “lack of clear evidence that any significant impacts will occur”. This is not the case.
- 5.1.9 Furthermore, even if the appellant’s ecological consultant were to be correct, i.e., that there was a ““lack of clear evidence that any significant impacts will occur”” the appellant’s assessment does not adhere to the Precautionary Principle as set out in the EclA guidelines (section 5.35):

“Precautionary Principle:

5.35 The evaluation of significant effects should always be based on the best available scientific evidence. If sufficient information is not available further survey or additional research may be required. In cases of reasonable doubt, where it is not possible to robustly justify a conclusion of no significant effect, a significant effect should be assumed. Where uncertainty exists, it must be acknowledged in the EclA.”

- 5.2 Possible positive impacts of shading from the new buildings on the River Thames
- 5.2.1 Between 3.32 and 3.37 of the appellant's ecology SoC the appellant's ecologist appears to be arguing that a new building next to the river will be beneficial for wildlife. This is because it will cool the river and reduce de-oxygenation of water during hot periods.
- 5.2.2 Whilst there is clearly a benefit from having trees adjacent to a river (which is why planning policy required large canopy trees to be provided – see Sarah Hanson's evidence) there is no evidence that buildings will achieve the same reduction in temperature. Indeed, the buildings are likely to emit a significant amount of heat (as the sun warms them during the day) which would cancel out any reduction in heat due to shading.
- 5.2.3 Furthermore, because the vigour of the adjacent marginal vegetation will be significantly reduced - and for the reasons set out in Sarah Hanson's evidence there will be insufficient space for large canopy trees (the cooling that trees provide is not only due to shading) the proposals are likely to result in a decrease in dissolved oxygen in the river Thames on hot days. This is contrary to what the appellant's ecologist contends.
- 5.2.4 Indeed, if one were to follow the argument that buildings next to rivers were a good thing because of temperature reductions planning and environmental policy would advocate the building of tall buildings next to rivers which it does not.

6 There is a scheme that will have less harm

6.1.1 The council's position is that there is a scheme that could be devised (with buildings set further back from the river) that would result in less shading and less harm to the River Thames and its marginal habitats.

6.1.2 The appellant's case is that there is not (3.20 of their ecology SoC):

“The evidence submitted by Berkeley Homes establishes that any impacts cannot be avoided by way of either lowering the height of the buildings and/or setting them further back from the river.”

And 3.148 of their main statement of case:

“On that basis, it can be concluded that there is no suitable alternative to developing the appeal site as proposed.”

6.1.3 Whilst the design of the scheme, housing allocations etc., is beyond the remit of my PoE the proposed development appears to be an overdevelopment of this site and hence the Mitigation Hierarchy comes into play (see section 6 of my SoC).

7 That offsite compensation (even if it were to be otherwise acceptable) is very unlikely to be sustained in the long term.

- 7.1.1 For the reasons set out in section 7 of my SoC had the mitigation hierarchy been followed the proposed mitigation is inadequate and in my opinion very unlikely to successfully establish.
- 7.1.2 Agreement has not been reached about the quantity of marginal vegetation that will be affected by the proposed development. However, we have now measured the length and width of vegetation (see Figure 1 above). This shows that there is 53.9m of marginal vegetation next to the appeal site (that would be shaded by the new development) with a further 45.8 to the southeast (that would not be shaded by the new development).
- 7.1.3 The vegetation is 60cm wide (adjacent to the appeals site) and there is then 40cm of clear water from the edge of the vegetation to the chicken wire fence within the river. The marginal vegetation will grow into this area over the coming years (if the development in its current form does not go ahead). There is long grass between the tarmac path and the riverbank which is approximately 2m wide. Some of the semi aquatic vegetation has colonised this area so it is a bit of false distinction to separate these habitats.
- 7.1.4 This is quite different to the 30m (15m²) of marginal vegetation referred to by the appellant in their ecology SoC. The actual quantity of marginal vegetation (as of 2021 but it is likely to spread further into the river in future years) is 53.9.m or (32.38 m² [53.9 x 0.6]) i.e., more than twice the area that the appellant's ecologist refers to. [This assumes that (which is in the appellant's favour) the long grassland on the riverbank and the marginal vegetation should be divided into separate habitats which one could reasonably argue that they should not be. If they were not to be then the figure to be impacted would be 140.14 m² which is significantly more than the appellant states.]
- 7.1.5 Using the DEFRA 2 Metric (which is the one that the appellant's ecologist has used although the DEFRA 3 Metric is now available) the baseline number of biodiversity units pre-development is 0.07 hectares. This is much more than the 0.02 units that the appellant's ecologist (section 3.39 of their ecology Soc). If one assumes that the marginal vegetation will go from good to poor habitat condition then this equates to 0.02 biodiversity units post development which is a reduction in habitat units of 0.05 using the DEFRA 2 metric.
- 7.1.6 Using the DEFRA 3 Metric to compensate for the loss of habitat units one would need to create 0.14 hectares of reedbed if one were to assume that it would reach moderate condition within 10 years (although as detailed below this is unlikely to happen as the coir rolls previously installed on the northern bank have eroded). This equates to 280m not the 40m referred to by the appellant.
- 7.1.7 I have included a DEFRA 2 Metric spreadsheet showing the habitat baseline pre-development as appendix 9 and the DEFRA 3 Metric calculating the units post development as Appendix 10.

7.1.8 For the reasons set out in my SoC there is no space for replacement planting on land owned by the council. The areas that the appellant proposed for replacement planting (even if the council's parks department were to agree to them) very unlikely to be sustained in the long term as which were previously planted with coir rolls have since disappeared (see section 7.17 of my SoC).

7.1.9 The result of the development would therefore be that the more than half the area of marginal planting on the southern bank will be lost and that whilst some new coir rolls will be installed. However over time these will over time almost certainly disappear as the ones that were previously installed on the northern bank have done .

7.2 The grassland strip

7.2.1 In relation to the loss of the strip of longer grass (it will be lost as it seems very unlikely that it will withstand the increase in shading and recreational pressure) the appellant's ecology SoC reads:

"In relation to the short narrow length of wildflower grassland between the towpath and marginal vegetation, the Reading BAP states in the 3rd paragraph of page 25: 'As with road verges, there may be parts of Reading's parkland and urban greenspaces that can be managed as less frequently cut grass. The Council is in the process of identifying suitable areas for a trial in 2021 with the aim of extending this to other areas.' The impact to this wildflower grassland can be compensated by creating a similar sized area of wildflower grassland within one of the areas to be identified by the Council referred to in the Reading BAP."

7.2.2 This is an unacceptable approach as the council has already identified the resources to manage these areas of longer grass and the approach advocated would not deliver any additional benefits (see section 7.32 below on the principle of Additionality) .

7.3 The DEFRA 3 Metric

7.3.1 The DEFRA 3 Biodiversity Offsetting Metric and associated guidance was published on 7 July 2021. This replaces the DEFRA 2 Metric that was used by the appellant to calculate biodiversity loss and includes more detailed guidance on biodiversity offsetting.

7.3.2 The proposals do not comply with many of the principles and rules set out in the guidance – including:

- *Principle 2: Biodiversity metric calculations can inform decision-making where application of the mitigation hierarchy and good practice principles conclude that compensation for habitat losses is justified.*

[The mitigation hierarchy has not been followed]

- *Rule 2: Compensation for habitat losses can be provided by creating new habitats, or by restoring or enhancing existing habitats.*

Measures to enhance existing habitats must provide a significant and demonstrable uplift in distinctiveness and/or condition to record additional biodiversity units.

[For the reasons set out above the proposals would not result in a “significant and demonstrable uplift”]

- *Additionality: The need for a compensation measure to provide a new contribution to conservation, additional to any existing values, i.e., the conservation outcomes it delivers would not have occurred without it. Source: McKenney & Kiesecker (2010).*

[The proposals, in particular the recreation of grassland, would not provide additional benefits]

7.3.3 The new Metric spreadsheet and the associated guidance is given in Appendices 4 to 8].

7.3.4 Using this new Metric a loss of 0.44 Habitat Units is shown which equates to 0.14 hectares of new reedbed being created – Appendix 10 provides the spreadsheet showing this

8 **Summary**

- 8.1.1 In conclusion therefore the proposals will result in the loss and deterioration of a significant (at a Borough level) length of marginal vegetation along the river Thames which is Reading's most valuable wildlife corridor and a habitat of principle importance for the conservation of biodiversity.
- 8.1.2 There is a reduced scheme which could be devised which would lessen this impact and the Mitigation Hierarchy has not been adhered to.
- 8.1.3 Even if it were to be concluded that the scheme was otherwise acceptable, and that the harm to the river Thames was unavoidable then the appellant has not come up with a scheme to compensate for that harm and there is nowhere where such a scheme could be delivered on council managed land.
- 8.1.4 The proposals are therefore contrary to planning policy in particular paragraphs 8, 174, 179, 180 of the NPPF, EN11, 12, EN13, CR4, CC7, CR2, CR3, The Reading BAP and the Reading Tree Strategy.

9 **List of appendices**

[Appendix 1 – CIEEM EcIA Guidelines](#)

[Appendix 2 - Landscape Plan for application 131234](#)

[Appendix 3 - The management of river vegetation with particular reference to shading effects of marginal vegetation - Landscape Planning 10 \(2\) PP 147-169](#)

[Appendix 4 - Biodiversity Metric 3.0 Auditing and accounting for biodiversity Calculation tool \[macro free spreadsheet\]](#)

[Appendix 5 - Biodiversity Metric 3.0 Auditing and accounting for biodiversity Calculation tool short user guide](#)

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