Ecology

Comment by Aspect Ecology	Response by Applicant	Further Response by Aspect Ecology	Further Response by Applicant
29. There will be a net biodiversity loss of 5% rather than BNG: The green roof has been incorrectly measured - the area of the proposed green roof not in shadow of the solar panels is measured by Andraos Associates at 187sqm at best, versus the applicant's claim of 357sqm. The target conditions for the proposed new habitats are over ambitious given the school setting.	The roof area is correctly measured, a Bauder BioSOLAR system (or similar) allows for full coverage with PV's above. Current proposals reflect this. Therefore the BNG calculations submitted are correct.	The applicant's response mis-understands our point and therefore does not address the comment raised. Our point is that what is in error is the area that will be covered by a green roof and of this what is ecologically functional i.e. that area of the roof not occupied or shaded by plant and PVs. Andraos Associates has confirmed their measurement of the green roof from the applicant's submitted drawing 'Proposed -Roof Plan (KHS-DMA-XX-RF-DR-A-03205).' The shaded area (i.e. non-functional green roof) below the closely spaced PV panels measures 83m2 while the area of unshaded (i.e. functional) green roof measures 187m2. Even when taking he two measurements together (83+187 = 270m2, rising to 291m2 when the 21m2 green wall is included), this remains significantly below the green roof area of 336m2 proposed in the application (alongside a green wall of 21m2 = total357m2). In other words the green roof and wall area is some 66m2 smaller (18.5%) than that erroneously presented in the application materials. Given the green roof represents some 43% of the BNG score, when the BNG is adjusted, and more reasonable assumptions used for post development habitat condition, a 5% net loss of biodiversity is recorded.	Our position remains as previously stated. The Bauder BioSOLAR system allows for the projected BNG. The figures below illustrate the areas of green roof: Sports Hall: 219.550 sqm Music Block: 61.395 sqm Hall Store: 25.732 sqm Circulation: 19.569 sqm Pump Room: 10.675 sqm Green Wall: 20.419 sqm Total: 357.340 sqm This is the figure that has been used in the calculations to achieve 12.5% BNG.
30. The PEA states in 4.26 "*It is important that the specification is sufficiently detailed so that it combines how the solar panel supports interface with the biodiverse roof*". No specification for the green roof has been submitted with the application, and it appears no advice has been sought from a professional green roof consultancy to determine whether the above design aspirations are actually deliverable and can be incorporated into the building architecture.	A Bauder BioSOLAR system (or similar) allows for full coverage with PV's above. Current proposals reflect this.	The applicant's response does not address the comment raised. Our concern is that no specification for the green roof has been submitted with the application, and it appears no advice has been sought from a professional green roof consultancy to determine whether the above design aspirations are actually deliverable and can be incorporated into the building architecture (e.g. roof loading on the structure). For example the exact system weight will vary depending on ballast requirements and system specification with the average BioSolar solution will weigh approximately 175kg/m2. It is unclear if this weight can be supported	The existing sports hall roof is being replaced with a new roof, where the new structure consisting of steel trusses and purlins has the capacity to support the loadings as required by the scheme, i.e. the BioSolar system, green roof and PVs, in additional to the normal dead loads and structure selfweight. At no point are structures designed to the absolute limit of their capacity (i.e. breaking point) during this stage of the design, and the nominal load variation of this roof system over other roofing

			systems is well within the capacity of the structure. The 175kg/m² is an approximate average including waterproofing membranes, insulation, green roof system and solar modules. Sports hall roof designed with a 1kN/m² (102kg) dead load (excluding structure self-weight) and a 1kN/m² (102kg) live load for PVs. Therefore, total load accounted for in current build-up = 2kN/m² (204kg).
31. The proposed lighting scheme has not been assessed in the submitted ecological documentation - therefore the is no evidence to support the conclusion that the proposals will not adversely affect nocturnal fauna such as bats and Badgers.	Lighting during construction and operational phases of works will be limited to working hours, to avoid impact on nocturnal species. The new shrub and tree planting along both the southern and eastern boundaries will not be directly illuminated. This will ensure the commuting habitat is not impacted. After reviewing the lighting strategy, the Ecology Consultancy recommend that external lighting for the plant rooms located to the rear of the classroom block and on the eastern edge of the arts block should be limited to <3lux reaching the canopy of the neighbouring Holm Oaks. The lighting consultant has recommended a number of measures that could be taken to reduce light spill in this area including: 1. Remove these lights from the time clock control and include local PIR sensors so that these are only energised when presence is detected. 2. Look to lower the height of these from 3m#AFFL to ~2m#AFFL which will further minimise the upward light spill onto the Holm Oak trees. 3. Look to reduce the number of luminaires to one, positioned centrally between the two plant room doors.	The acknowledgement of a need to address site lighting to safeguard bats and badgers is welcomed. However, it is noted that no updated technical lighting assessment has been submitted. The Ecology's Consultancy's recommendations and lighting consultant's suggestions are helpful, but in the absence of an updated lighting strategy it is unclear if these are deliverable. It is therefore essential that an updated technical lighting assessment is provided. It is also highlighted that the Ecology Consultancy's recommendation of lighting reaching the canopy of the Holm Oaks to be limited to <3 lux should be properly understood, with the required standard of lighting to safeguard bats set out in the Institute of Lighting Professionals Guidance Note 08/18 'Bats and artificial lighting in the UK' 2018 (https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/). This states "Consequently, where 'complete darkness' on a feature or buffer is required, it may be appropriate to consider this to be where illuminance is below 0.2 lux on the horizontal plane and below 0.4 lux on the vertical plane". The test which should be applied to the lighting strategy is therefore if the features of sensitivity to bats and badgers on the site can be maintained at this level of darkness (which is significantly below the 3 lux figure currently indicated).	Our position remains as previously stated. Lighting will be limited to working hours and new shrub and tree planting along the southern boundary will not be directly illuminated. The only area of concern related to the rear of the classroom block at the proposed plant room. As stated, lighting here will be limited to recommended levels and the School will be happy to accept a condition regarding this. It is not considered necessary to provide an updated lighting assessment, but the School would be happy for this to be conditioned and to provide this prior to any works beginning.

	4. Look to replace the luminaire with one that has a BUG rating of U0 whereby there is no upward lighting form the luminaire. The School would be happy to accept a condition limiting lighting in this area. Furthermore, in line with recommendations from the Ecology Consultancy lighting on site will only be used when needed and the School would be happy to agree to a condition which limits the use of artificial lighting on site to between certain hours (e.g. between 07:30 and 22:00 when the site is in use and between 08:00 and 21:00 when the site is not in active use.)		
32. The site lies in proximity to Richmond Park SAC and the PEA is contradictory on the suitability of the site for Stag Beetle, which is the qualifying species of the SAC. The submitted information is therefore inadequate for the Council (as the competent authority) to carry out a Habitats Regulations Assessment (HRA).	The development site lies more than 800m from Richmond Park SAC. No large decaying trees were present on site. Mature trees on site will be retained which may offer future habitat for stag beetles. The site lies 800m from the edge of the SAC separated by a number of roads including Denbigh Gardens and Queens Road (B353) and the lighting levels on the development site will not increase significantly above current levels, therefore the SAC will not be impacted by an increase in light levels. There is unlikely to be a significant impact on stag beetle populations by the removal of a number of small trees and shrubs to facilitate the development and no fragmentation as tree lines along the site boundaries will be restored post development. As no large decaying trees were recorded on site stag beetles were considered likely absent from the site and due to the proximity of the site from the SAC and small scale of works, it has been considered that there would not be a significant impact the qualifying species (Stag beetle) on Richmond Park SAC.	The PEA 2021 paragraph 4.12 states “There was limited amount of dead wood on site, however the mature trees on site offered some value to stag beetles and 222 records for stag beetle were returned from the desk study”. Therefore the statement in the applicant’s response that “stag beetles were likely absent from the site” does not appear accurate.	The development site lies more than 800m from Richmond Park SAC. No large decaying trees or buried deadwood were present on site. The habitats on site with potential to support stag beetle were limited to the mature trees and brush within the scrub. The mature trees on site will be retained which may offer future habitat for stag beetles. Recommendations to enhance the site for stag beetle post development will be incorporated into the landscape plans. The site lies 800m from the edge of the SAC separated by a number of roads including Denbigh Gardens and Queens Road (B353) and the lighting levels on the development site will not increase significantly above current levels, therefore the SAC will not be impacted by an increase in light levels. There is unlikely to be a significant impact on stag beetle populations by the removal of a number of small trees and shrubs to facilitate the development and no fragmentation as tree lines along the site boundaries will be restored post development. The habitats on site had low potential to support a small number of stag beetle, however, as the suitable habitats will be retained by the development and

			enhancements will be included post development, and due to the distance of the site from the SAC, it has been considered that there would not be a significant impact the qualifying species (Stag beetle) on Richmond Park SAC. The Local Planning Authority will however consult Natural England for advice on how impacts might be avoided or mitigated.
33. Bat surveys were undertaken of the buildings to be affected by the proposals in 2019. These surveys are now out of date and the submitted Preliminary Roost Assessment recommends update surveys are undertaken. These should be carried out prior to determination in order for the Council to fulfil their legal obligations as bats are a material planning consideration.	Bat emergence / re-entry surveys were carried out in June 2019. No bats were recorded entering or emerging from any of the buildings due to be impacted by the proposed works on site. The updated PRA undertaken in December 2020 again recorded some sections of the buildings on site as having moderate potential to support summer roosting bats and recommended that 'updated bat surveys will be required in May to August of 2021 prior to works commencing on buildings on site'. This document was written in January 2021, out of survey season, and when there was the potential for works to start on site this summer - hence the deadline for the surveys. Now that works will not begin before summer 2022, it is considered that for the purposes of determination of the application the results from the surveys of 2019 can be used, and further emergence surveys will take place for the necessary buildings prior to any works on site taking place. CIEEM (2019) Advice Note: On the Lifespan of Ecological Reports and Surveys, notes that ecological surveys can generally be considered as up to date for 1 to 3 years dependent on the nature of the Site, ecological baseline, development proposals and likely impact.	The applicant's response states, "it is considered that for the purposes of determination of the application the results from the surveys of 2019 can be used" and refers CIEEM Advice note 'On the lifespan of ecological reports & surveys' April 2019 (https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf). This note provides guidance on the validity of surveys. These are placed into brackets with the first being surveys valid for 12 – 18 months which advises that "Likely to be valid in most cases with the following exceptions: • Where a site may offer existing or new features which could be utilised by a mobile species within a short timeframe (see scenario 1 example); • Where a mobile species is present on site or in the wider area, and can create new features of relevance to the assessment (see scenario 2 example)". In this case the site supports bats which are a highly mobile species group. Therefore, the surveys should be updated in line with the Ecology Consultancy recommendation which sets out these should be undertaken between May – August 2021. This is also necessary to comply with the requirements of the NPPF paragraph 179a footnote 61 - Circular 06/2005 paragraph 99 which sets out that "It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision" (our emphasis).	Our position remains as previously stated. Further emergence surveys will be undertaken prior to any works starting on site. The School is happy to accept a condition to this effect.

34. Badger have been identified on the site but no information has been submitted to show how they will be protected.	The confidential badger report has been submitted to the Council.	The applicant has requested a copy of this report so this can be reviewed. Further comments may be provided following the receipt and review of this report.	For the Council to forward on if considered appropriate.