Responses to Examining Authority's Second Written Questions and Requests for Information on behalf of the Consortium of Archaeologists and the Blick Mead Project Team

Introduction

1. The following responses are made to selected questions asked by the Examining Authority as published on 5 July 2019. The Consortium of Archaeologists and Blick Mead Project Team ('the Consortium') maintain their evidence/case as already put to the Examination, therefore these responses are made in addition to evidence previously given and this document seeks to avoid repetition. The questions addressed in this response are:

   Cultural Heritage

   - CH2.1
   - CH2.7
   - CH2.8
   - CH2.9

   Flood risk, groundwater protection, geology and land contamination

   - FG2.42
   - FG2.44

   Landscape and visual

   - LV2.1

Cultural Heritage

CH2.1

2. The Consortium agrees that Highways England should not have the final say on the form and content of the DAMS, and that final say should remain with independent statutory bodies.

3. Detailed comments on the DAMS are provided in a separate submission by Paul Garwood - the main points are as follows:

1. The DAMS is based on a weak research strategy that displays limited consideration of current national and regional research frameworks in British prehistoric archaeology, both in general terms and with respect to period-specific and Stonehenge landscape-specific research agendas.

2. The use of research framework agendas and strategies (in the form of 'research questions') in the DAMS is partial and selective. A wide range of research themes of special importance in the Stonehenge landscape are considered cursorily or not addressed at all.

3. The DAMS demonstrates a lack of engagement with the WHS as an entity (i.e. in areal, landscape terms), and ignores fundamental spatial and visual aspects of the landscape, monuments and sites within it. In effect, this fails to take account of – and indeed risks compromising – many of the OUV attributes that define the Stonehenge WHS area.

4. Methodologically, the DAMS is profoundly flawed both in principle and in terms of proposed 'mitigation' methods. There are several reasons for this, including: (i) its many failings in research strategy terms (and thus major gaps and weak rationales in the proposed strategy); (ii) the lack of a coherent, transparent process for judging significance and prioritization; (iii) reliance on commercial rather than research archaeology baselines (as imposed on research projects within the WHS by the curatorial bodies that constitute HMAG) for assessing both research value and appropriate method; (iv) flawed 'sampling' rationales that are inappropriate in circumstances where the proposed road works will result in total destruction of all features and deposits left uninvestigated (including most of the highly important ploughzone).

5. The DAMS demonstrates minimal engagement with any of the serious matters raised by a wide range of experts, including the Consortium of 22 Archaeologists that represents most of field research projects conducted in the Stonehenge landscape in the last 20 years.

CH2.7 – Evidence from Professor Parker Pearson

4. Professor Parker Pearson states that the western approach produced 2 burials from a 2% sample, the probability is for 100 burials for the entire area if 100% were excavated. Since the road corridor is about half the size of the western approach, that reduces the probability to 50 burials.

CH2.8

5. The Consortium agrees with the comments of the ExA. The heritage impact must be taken into account as part of the HIA in relation to impact on Blick Mead, Vespasian's Camp, Amesbury Park RPG and the WHS.

CH2.9i – Evidence from Professor Parker Pearson

6. Professor Parker Pearson highlights three lines of evidence that point to a geographical division between a western funerary landscape and an eastern settlement landscape during the Early Neolithic era:

    a. the exceptional concentration of long barrows in the western zone of the WHS (this density of 9 long barrows in c.4sq km is unmatched in Britain);

    b. the discovery of Early Neolithic pottery sherds in the eastern area but not in the western zone, by field-walking during the Stonehenge Environs Project (published in 1990)

    c. the observation by Dr Ben Chan for the Stonehenge Riverside Project (report in draft, ready for publication in 2020) that excavated Early Neolithic flint assemblages from the western zone contain few tools whereas those from the eastern zones have diverse toolkits indicative of settlement activity.

CH2.9.viii and ix - Evidence from Paul Garwood

7. Ploughzone sampling (DAMS p.80-81)

    The rationales for low-level ploughzone sampling identified in the DAMS are misguided and unjustifiable, apparently founded on commercial-sector estimations of appropriate levels of sampling intensity concerned with the identification of 'sites', rather than the kinds of research questions fitting for the WHS. It is also deeply worrying that the kinds of sampling levels required of research investigations in the Stonehenge landscape – e.g. as specified by the National Trust and WCAS - should be suspended by the same bodies for the purposes of Highways England's proposed fieldwork programme.

    The ploughzone sampling strategy outlined in the DAMS is intrinsically flawed in three respects:

    (i). The proposed standard 1% to 4% sample level is insufficient for mapping ploughzone distributions of artefactual material in a fine-grained manner (essential for nuanced, detailed interpretation of settlement and social practices across the landscape).

(ii). The very low proportion of dateable lithic artefacts, which are critical for establishing chronological frames of references for interpreting lithic scatters (which make up most ploughzone artefactual material), means that these are far more likely to be missed as sampling level decreases, seriously reducing the research value of ploughzone assemblages.

(iii). The 'scalable test pitting strategy' proposed in the DAMS, to be applied in areas 'found to contain assemblages considered, in consultation with HMAG/WCAS, to be of interest', misses the fundamental need for intensive ploughzone recovery using consistent sampling levels in order to map presence/absence and different kinds and scales of activity areas comprehensively. The approach proposed would be relative and value-laden, with no objective mechanisms for judging what is and is not 'of interest', and equally likely to introduce high levels of sample bias.

8. Excavation sampling: tree throws (DAMS p.86)

   The proposed methodology for dealing with tree throws (DAMS sections 6.3.42-43) is a good example of the fundamentally flawed character of the DAMS with respect to excavation sampling strategies. The decision-making process concerning whether or not to sample-excavate is specious. The idea that a 'representative sample of tree throws' can be identified for investigation based on 'proximity and location' in relation to lithic scatters, monuments, 'landform', and known archaeological remains (such as tree throws near pits) is unfounded. There is no rationale that privileges these attributes over others, while the criteria defined seem to pre-judge that cultural settings will make tree throws more or less potentially research-valuable. This misses the fundamental importance of gaining a full landscape-scale understanding of these features irrespective of whether they contain cultural material or not. As with all sub-surface features that may be destroyed by the road scheme, the primary aim should be 100% excavation.

9. Further details comments on question 2.9 and the DAMS more generally will be contained within the submission from Paul Garwood.

<u>Flood risk, groundwater protection, geology and land contamination</u>

FG2.42 – Evidence from Professor David Jacques

10. General monitoring of Blick Mead's water table will not adequately take account of the effect on the archaeological remains there, which date 7960-3381 Cal BC (95%

probability), or site 2, which has shown high potential for at least Late Neolithic/Early Bronze Age organic remains to be preserved (see Jacques et al 2018 pp58-60) and below) . Any monitoring of Blick Mead and Site 2 must be based on a local model as the water table and its fluctuations are not presently well understood.

11. Reading University's survey of the environmental setting at Blick Mead undertaken 2013-14 was an important, though limited, first step to understand the geology and hydrogeology of the site. It revealed the presence of two gravel surfaces, with only the upper gravel surface associated with sedimentary deposits containing the Mesolithic flintwork and faunal remains (see Jacques et al 2018, pp35-67). However the lower gravel surface did reveal data from peat bands (BH25 and SEHA) which provided useful information - see P51 that the examination of post Mesolithic (late Neolithic and Bronze Age) organic sediment sequences on the floodplain has provided insights into the environmental conditions during the period represented..".

12. The Reading report was deduced upon (a) the stratigraphic data from only 11 of the sample bore-holes samples and two trenches (19 and 22 - the latter having disturbed stratigraphy), and (b) the aquatic insects sampled in Trench 19. Nonetheless, it points to some significant conclusions –

    a. The Blick Mead site was at the edge of the floodplain - indicated by the presence of thick alluvial deposits (Unit H3 in report)
    b. Alluvial sediments (Unit 3) had gradually accumulated at the site from the Mesolithic onwards and comprise a mixture of fine-grained alluvial sediment introduced by floodwater of the Avon and colluvial material derived by downslope movement from the adjacent valley side.
    c. The site was infrequently flooded - suggested by distance from the main channel of the Avon, thinness of the silty layer (Subunit H3a) associated with the Mesolithic flintwork and fauna and long period of time over which datable material has been discovered
    d. The water had been stagnant or slow-moving water - insufficient to remove the Mesolithic flintwork and bones, the latter of which must have been in permanently deoxygenated conditions until the present for them to have survived.

e. Site interpreted from small amount of insect remains from Mesolithic layer in Trench 19 as indicating the presence of a small, vegetation-choked pond or bog with moss or grass tussocks on the margins, situated in a landscape that includes nearby herbaceous meadows". .

f. Environmental conditions at the site during the Mesolithic (ca 4000 years) were considered very stable - based on stratigraphic evidence. This points to permeant and slow moving water, such as a spring provides.

g. The highest densities of Mesolithic flintwork at the site were where the underlying gravel surface and mantle of sand rises slightly towards the edge of the alluvial floodplain.

h. The thin layer of unstratified sediment (including Subunit H3a) associated with flintwork and fauna was laid down over a sand/gravel surface and, importantly in terms of understanding the underlying water table and topography, formed a number of depressions (pools) and channels.

13. One of the most reliable indicators of the presence of springs is the presence of travertine or tufa and the report mentions 'possible tufa debris" in the lower alluvium in bore-hole samples at Site 2 and two others (BG17, BH19) close to the Avon. Tufa or travertine is not normally formed where spring arise but becomes deposited some distance downstream depending on the chemical nature of the spring water.

14. The insect analyses from Trench 19 also provides evidence for the presence of standing water at Blick Mead. The Reading report mentions two samples collected from Trench 19, 'Taken together, this fauna indicates the presence of a small, vegetation-choked pond or bog with moss or grass tussocks on the margins, situated in a landscape that includes nearby herbaceous meadows'. As mentioned, analysis of the limited bore-hole data shows the surface of the gravel and the mantle of sand to be uneven, so there were within and close to Blick Mead site what were probably water-filled depressions and channels during the Mesolithic.

15. All the evidence supports the report's conclusion (p. 63-64) that 'the archaeological site has been protected from river activity for most of its history by its elevation above the more active parts of the floodplain. Hence the thin accumulation of alluvial

material in which the Mesolithic remains occur, and the limited thickness and partly colluvial origin of the sediments that overlie the Mesolithic layer.'

16. It is possible that the pools and channels at the site in the Mesolithic and Neolithic were spring-fed and flowed into the nearby Avon, especially in summer during periods of low river level. The site may have been inundated in the Mesolithic when the Avon flooded (a conclusion of the report) and impacted by surface water run-off from the slopes of the 'dry' valley above and the present A303.

17. All of these hydrological effects are poorly understood at present, thus the urgent need for localised monitoring, measuring and analysis of the water table. Future work should include:
    a. Further bore holes and trenches within the Blick Mead site and its environs, adopting a grid pattern so as to more accurately map the contours of the sand/gravel boundary.
    b. More detailed analysis is required of any 'peat' bands discovered at the Blick Mead site, with a view to carrying out in-depth analyses of pollen, seeds and any faunal remains.
    c. More detailed analysis the sediment horizontal (Unit 3a in Report) associated with the main concentration of Mesolithic flintwork and bones might be revealing since it is different to the alluvial deposits above.
    d. Explore the possibility of carrying out a geophysical survey of the area to accurately map the contours of the gravel/sand beds.
    e. Model the course of the river in pre-historic times and the extent of the floodplain.

FG2.43 – Evidence from Professor Tony Brown

18. The Consortium maintains its position that no adequate or appropriate monitoring has occurred at Blick Mead. There have been no shallow groundwater observations and no results have been presented. Quite apart from this, determining the absolute highs and lows in groundwater levels over a year are insufficient as the duration of extreme high and low events (and their timing) are also important.

FG2.44 – Evidence of Professor David Jacques

19. Further bore hole surveys are required in order to detail the many questions about the site's water table thrown up by the Reading report in Jacques 2018 and to gauge the extent of the Mesolithic site(s). It is envisaged that it continues north of the present A303 at least along the area which shares the same river terrace as Blick Mead, where Mesolithic artefacts and possible evidence for animal trampling have been discovered (leivers and Moore, 2008). Coring is also required to pick up on the underlying typography and any indicators of settlement activity on the terrace site at Blick Mead. The extent of the animal prints underlying the platform surface revealed in trench 24 C is required, as is the opportunity for DNA and seDNA analysis from the wet areas proposed by Southampton University under the leadership of Professor Tony Brown. 'Site 2', close to Countess Roundabout, was found to have good preservation by Reading University and yielded a Late Neolithic/Early Bronze Age date from pine (remarkably) - 2455-2205 Cal BC (95%). Blick Mead in not just about the Mesolithic and has provided artefacts from that time into the Anglo Saxon period from wetland areas. All its various phases need more detailed examination and to be preserved.

20. Re the above, Darvill's archaeological research framework for Stonehenge provides an excellent strategic platform for the work at Blick Mead and underscores the intellectual value of it (Darvill 2005). The most relevant elements of it here being:

    a. Investigating the importance and distinctiveness of the Stonehenge landscape past and present

    b. Modelling environment and landscape change

    c. Understanding occupation in the landscape around Stonehenge

    d. Filling gaps in our data

21. The work already undertaken indicates that the current research at Blick Mead will make a major contribution to any existing (or emerging) Research Strategies for the Stonehenge World Heritage Site. The range, scale and intensity of material already recovered from the site identify it as one of very high potential and international significance in terms of understanding how the Stonehenge landscape developed. Very few sites of Mesolithic date are known in the WHS (and, indeed, from Salisbury Plain

generally). Darvill lists 30 or so findspots in the WHS but this includes the 'totem poles' just to the west of the henge, as well as one or two other pits (Darvill 2005, 39). To find such a density of early finds, some with a date match to these posts, and some with potential overlap with the beginning of the Neolithic in the area, is of great significance for a new understanding of how the landscape evolved and developed.

22. The location of springs and wet areas in this landscape immediately flags this as a place of real importance on a number of levels. Work from elsewhere in the country underscores the importance of these sorts of locales for communities over a very long time frame. These are places that people stayed close to or revisited repeatedly and they must have become significant places in the social landscape too. It is essential to think of them as being more than simple places to camp or hunt: they are also repositories of specific depositional practices that underscored the special value that was attached to sources of flowing, fresh, water.

23. Further work in the Blick Mead environs will add valuable data and create new narratives of understanding in a landscape of international significance. This work will be high profile, and it is essential that any future work is properly resourced and meshes with existing and future research strategies in the region. All trenches and finds need to be recorded 3D: the analysis costs will be high because the area is rich in terms of material culture and ecofacts (from wet and waterlogged environment) and this should include, as a minimum, specialist assessment of:-

- bone
- lithics
- soils
- pollen
- macros, etc
- molluscs
- deposit modelling

LV2.1

24. The Consortium reminds the ExA of the evidence already given by Professor Parker-Pearson and Paul Garwood on this issue.

25. It adds that as the scheme has not measured shallow groundwater levels at Blick Mead, it has not demonstrated that there will be no serious adverse impacts on the remains at that site. As such, it cannot be said that the scheme has been developed to avoid impacts on the known concentrations of internationally significant Mesolithic remains at Blick Mead.