

From: William J Hill/HP/NorthLincs
To: Planning/PL/NorthLincs@NorthLincs

Date: 15 February, 2010 08:52AM
Subject: Fw: Re: PA / 2009 / 0600 Able UK

15 FEB 2010

-----Forwarded by William J Hill/HP/NorthLincs on 15/02/2010 08:46AM -----

To: William J Hill/HP/NorthLincs@NorthLincs
 From: Alison Williams/LE/NorthLincs
 Date: 12/02/2010 04:53PM
 cc: Ian Goldthorpe/PL/NorthLincs@NorthLincs, Keith.Miller@english-heritage.org.uk, nancy.stedman@naturalengland.org.uk, Mike Welton/PL/NorthLincs@NorthLincs
 Subject: Re: PA / 2009 / 0600 Able UK

Bill

As you are aware, discussion re the archaeological assessment and mitigation strategy has continued since my previous memo dated 8 July 2009 with the applicant and their archaeological consultant.

Geophysical survey has been undertaken across much of Phases 1 and 2 of the application area. The first stage of trial trenching targeting archaeological anomalies identified by geophysics took place over Christmas and an interim report received. The results to date confirm the presence of a late Iron Age to early Roman enclosure complex in the area of the proposed warehouses, and another enclosure of similar date within the area of water body C, as well as the further extent of the Chase Hill Roman settlement. The full report of the work is awaited.

Further surveys required to assess impact prior to a planning determination and yet to take place include fieldwalking and topographic surveys; I was informed today that plans to progress these are in preparation, and method statements are awaited.

Further information apparently now available relating to the works to the Floodbank is also required to assess impact on the foreshore and in the East Halton Skitter (ref letter dated 27 January Andrew Taylor to Gary Doubleday).

The archaeological consultant has prepared a Framework document proposing a programme of further archaeological evaluation, and outlining mitigation strategies. I provided detailed comment on the Framework, sent 22 December (see attached), and as you know I am awaiting the promised revisions. These are being finalised but have yet to materialise, and as I am on leave next week and you require an urgent response my comments are based solely on the available information.

The main requirements for inclusion to the Framework document were as follows:

- To clearly separate the stages of archaeological assessment from mitigation proposals
- To include secondary surveys comprising trial trenching of potential archaeological sites including those indicated by geophysics or other preliminary surveys, or where survey has not been undertaken, and where underlying features may be masked by alluvium
- To undertake impact assessment
- To provide detailed project designs for mitigation proposals for sites within Phases 1 & 2

Detailed mitigation proposals for the Cote Hill Roman settlement site off Station Road, evaluated for a previous proposed development, also need to be drawn up and submitted prior to a planning decision as the proposed development will destroy this site, which could otherwise have been preserved in situ within an undeveloped intact IN6 buffer zone. Similarly, mitigation proposals for the ridge and furrow at Site19, also within the IN6 buffer zone are required following assessment. The mitigation strategy must also take account of the impact of the landscaping proposals for the proposed buffer zone and bund throughout the development, as well as the Conservation Management Plan and any other developing landscaping

strategy (cf comments of Ian Goldthorpe and Natural England).

Adequate assessment and submission of sufficiently detailed mitigation strategies is in accordance with national guidance and local plan policy HE9.

Until this information is made available, an informed planning decision based on a robust assessment of the impact of the development on the known and potential archaeological sites, and the appropriateness of any proposed mitigation strategy cannot be assessed. Accordingly, I can only reiterate my previous recommendation of a **holding objection** to the application. Once adequate information is available and mitigation proposals are agreed, suitable conditions securing the archaeological mitigation and landscaping strategies could be added to any permission that may be granted.

If the planning authority is required to determine the application in its present form, the application should be **refused**, as it would be contrary to local plan policy HE9; inadequate information has been provided to allow the Local Planning Authority to assess the archaeological significance of the site and approve an appropriate mitigation strategy.

As soon as I receive further information, I will update you and review this advice. In the meantime, I trust these comments are of assistance.

Regards,
Alison

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-----William J Hill/HP/NorthLincs wrote: -----

To: Ian Goldthorpe/PL/NorthLincs@NorthLincs, Keith.Miller@english-heritage.org.uk,
nancy.stedman@naturalengland.org.uk
From: William J Hill/HP/NorthLincs
Date: 10/02/2010 04:14PM
cc: Mike Welton/PL/NorthLincs@NorthLincs, Alison Williams/LE/NorthLincs@NorthLincs
Subject: PA / 2009 / 0600 Able UK

ALL.

Goodafternoon.

Can I please request a response from you, as promised, following our site visit in January.

It is becoming urgent.

many thanks.

Bill.

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Attachments:

09.0600 8 July 2009.doc

09.0600 Framework WSI AC rev Nov09 comments Dec09.doc

Memorandum

DATE: 8 July 2009

FROM: Alison Williams, Sites and Monuments Record, North Lincolnshire Museum, Asset Management and Culture (297055 Ext: 105)

TO: William Hill, Development Control Team, Highways and Planning

REF: PA/2009/0600

SUBJECT: Planning permission to erect buildings and use land for purposes within Use Classes A3, C1, B1, B2 and B8 for port related storage and associated service facilities together with amenity landscaping and habitat creation, including flood defences, new railway siding, estate roads, sewage and drainage facilities, floodlighting, waste processing facility, hydrogen pipeline spur and two 20m telecom masts. Land off Skitter Road, East Halton

Thank you for consulting the Sites and Monuments Record. My comments will address the various key issues relating to the cultural heritage and historic environment of the proposed development site, in particular, the archaeological resource, including designated sites, historic landscape features and the historic landscape character. The impact of the landscaping strategy and LC20 buffer zone, and the hydrogen pipeline diversion are also considered.

As this is such a large and complex application, and the documentation submitted very lengthy, please treat these comments as a preliminary initial response. As Andrew Taylor has already said, issues such as landscaping need to take account of a number of different environmental interests, and an internal coordinated approach is needed. I am also in discussion with the applicant and their archaeological consultant, and will therefore provide updates of discussions and further information as soon as I can.

Archaeology

There are two main issues with regard to the archaeology of the site and local plan policy HE9, and PPG16:

- 1) Whether adequate information has been submitted with the application to be able to assess the impact of the development as a whole, and
- 2) Whether satisfactory measures are in place to mitigate any adverse impact on the archaeological and cultural heritage resource

Assessment

With regard to the first, the application includes a desk-based assessment produced in 2007, and a report of a geophysical survey of a small area of the development site commissioned by the applicant in 2007, which inform Chapter 9 of the Environmental Statement. The desk based assessment does not include additional data from the evaluation undertaken in 2008 for the Glass Wool Facility planning application. This identified an important new site, as well as

providing much additional information about the Chase Hill Roman site (Site A24, Table 9.1, fig 9.2); both sites fall within Phase 1 of the proposed development. This data is available in the Sites and Monuments Record and should be incorporated into the cultural heritage assessment.

A proposal from the applicant for further geophysical survey within the development site is currently under consideration, but has not yet taken place. The SMR database and GIS has recently been enhanced for the development site, and areas of potential have been identified within the development site that will require evaluation and assessment.

The scale and nature of the proposed development has the potential to adversely affect any archaeology within the site and on the foreshore, both currently known sites as well as yet unidentified sites that will undoubtedly be found during evaluation.

The SMR's scoping response required a staged approach to the evaluation of the site, with results to be presented in the ES, together with a detailed mitigation strategy. Given the large area of the site, the applicant proposed a rolling programme of evaluation. This was discussed with them in 2007, and it was considered reasonable to ask for the full evaluation of Phase 1 to be completed and the results submitted with the planning application. This would have enabled the applicant to provide a detailed impact assessment of the construction proposals in Phase 1 area, together with a detailed mitigation strategy of the measures to be taken to ensure the preservation of the archaeological remains. This document would provide a framework for the mitigation approach in subsequent phases. Evaluation of Phase 1 has yet to commence and will need to comprise the following:

- Field surveys including fieldwalking and geophysical surveys to test for the presence of buried archaeological deposits throughout this area.
- The results of the surveys will inform a programme of sample trial trenching, to confirm the presence/absence of, and determine the nature, extent and importance of, any archaeological deposits throughout this area.
- Evaluation by trial trench is required for the known sites, including sites A23, A24, A28 (fig 9.2) and the sites identified during the Glass Wool Factory evaluation that fall within the current application area.
- Topographic survey of upstanding earthworks including ridge and furrow.

It would be sensible to include the smaller area of the Phase 2 office development within this evaluation. Any other impacts that will occur early in the construction process across the other phases will also need to be assessed at this stage.

The results of the fieldwork evaluation would then enable the level of importance of individual heritage features to be properly assessed (ES 9.2.3), as this cannot be defined on the basis of present knowledge for the majority of the sites listed in table 9.1. It would also enable the impact of all elements of the development proposals in Phases 1 & 2 to be fully assessed, including the landscaping proposals and the route of the diverted hydrogen pipeline, which runs alongside and through both phases but is not referred to in the cultural heritage chapter.

Impact

The summary section on impact assessment (ES 9.4.8) provides little detailed information, in particular of Phase 1 of the development, where the most immediate impact on the heritage assets will be the construction of the access road and bunding, the initial topsoil strip and cut operation, followed by the excavation of the reservoir etc. There is no mention of the archaeology within Phase 1 in Section 4 of the ES, the Description of the Development.

The impact assessment needs to include the impact of the proposed works to the flood defences, and the outfall channel, which have the potential to expose maritime archaeological remains such as fishtraps or wrecks (eg sites A38, A47-51, ES table 9.1, fig 9.2).

The impact of the proposed drainage scheme, including the pumping station will also need careful assessment following evaluation.

In this section of the ES it is assumed that archaeological resources within the 'fill' areas can be satisfactorily preserved in situ and not require further mitigation, whereas there will still be potential impact after the fill operation from deep works such as the drainage channels, reservoir and pumping station, lighting columns etc, as well as around the interface between the cut and fill operations.

The construction of the proposed bridge over the railway could impact on any remains on either side of the cutting, including Site 21b (fig 9.2), which has not yet been fully evaluated.

The impact assessment will need to consider the impact on potential palaeoenvironmental deposits, particularly within the former inlet north of the railway line.

The impact of the diverted route of the hydrogen pipeline will also need assessment.

The impact of the detailed landscaping scheme needs assessment.

The impact of pre-construction geotechnical site investigations (ES 7.7.2), and constraints imposed by ecological or other nature conservation issues (ES 10.5.73).

An impact assessment for each phase of the development as set out in Section 4 of the ES should be undertaken to allow for the mitigation strategy and a coordinated programme of archaeological work to be developed. This impact assessment will need to be kept under review as the development progresses; provision for periodic review must be written into the mitigation strategy.

Mitigation

Mitigation proposals are summarised in sections 9.4.9 -11 & table 9.3 of the ES. These sections and table conflate the requirements for evaluation fieldwork, which by definition is assessment not mitigation, and the mitigation proposals for the preservation of heritage assets. The results of evaluation are needed before mitigation can be meaningfully applied. It would be useful therefore if table 9.3 provided separate columns, one for proposed evaluation (specifying techniques), and a second for preliminary proposed mitigation (or proposed mitigation for areas where evaluation and impact assessment has already been completed).

With regard to the phased evaluation strategy (ES 9.4.9 & 9.5.3), as noted above, the SMR requested the evaluation of Phase 1 of the development as a minimum for the submission with the planning application in 2007. This was considered reasonable in relation to the total size of the application, and the timescale of the phased construction work. In the meantime, a substantial area of Phase 1 has been partially evaluated in connection with the Glass Wool Factory application.

The mitigation proposals are rather vague and open-ended, for example the planning authority will need to have the final approval of what is of archaeological importance, what is affected and what the extent of the affected area is, and ultimately what mitigation is achievable. The decision making process will need to be clearly stated in the mitigation strategy.

A much more detailed mitigation strategy is required, building on these proposals, and incorporating all aspects relating to the archaeology and historic environment of the development, and taking into account other issues raised in this memo. It should provide details of what further surveys are proposed and where; what the level and extent of archaeological preservation in situ and preservation by record is proposed, and should include the following:

- Measures to ensure the preservation in situ, or the preservation by record, of archaeological features of identified importance.
- Monitoring of preservation in situ measures throughout the operation of the development, and during decommissioning
- Methodologies for the survey, recording and recovery of archaeological remains including artefacts and ecofacts.

- Post-fieldwork methodologies for assessment and analyses.
- Report content and arrangements for dissemination, and publication proposals including timescales.
- Archive preparation and deposition with recognised repositories.
- A timetable of works in relation to the phasing of the development, including sufficient notification and allowance of time to ensure that the site work is undertaken and completed in accordance with the strategy.
- Decision-making processes and monitoring arrangements, including the notification in writing to the North Lincolnshire Sites and Monuments Record Office of the commencement of all archaeological works and the opportunity to monitor such works.
- Provision for periodic review and updating of the strategy
- A list of all staff involved in the implementation of the strategy, including sub-contractors and specialists, their responsibilities and qualifications.

A draft mitigation strategy from the applicant's archaeologist is currently being considered.

There are additional mitigation measures that could be included here, such as proposals for site interpretation boards, leaflets or booklets; incorporating the historic environment into woodland and wildlife trails, and providing educational resources etc. Such benefits for the natural environment are mentioned in the Design & Access Statement (para 4.3.2). This would provide clear benefits from the data gained from the archaeological investigations undertaken as part of the development, and provide a sense of time and place for the local and wider community. The economic and health benefits of the historic environment for green tourism are now widely acknowledged and incorporated into such schemes.

Summary

At the present time, there is insufficient information presented with the planning application to make an informed planning decision in accordance with local plan policy HE9 and PPG16. Completion of evaluation across Phase 1 (&2) is required to provide an adequate assessment of the impact of the development and to provide a framework for the continuing evaluation of the subsequent phases. A detailed mitigation strategy is required.

Designated Heritage Sites and Setting Issues

There are three Scheduled Monuments close to the west side of the development site, the moated sites at Manor Farm, Baysgarth Farm and North Garth. The ES notes that there are a number of ridge and furrow field patterns in and around the village of East Halton, some directly linked to the Scheduled Ancient Monuments (ES 11.12.3), and that the associated earthwork remains of ridge and furrow cultivation running into the proposed development area might also be considered to provide a setting for the scheduled sites (ES 9.2.22).

The ES lacks a detailed visual impact assessment on the designated heritage assets. Little or no evidence is included, only conclusions. No wireframes or diagrams of the proposed development are provided. The assessment appears to have only considered the view of the existing site, rather than the altered landform, height of buildings, lighting, noise etc. Of the Scheduled Monuments only Thornton Abbey and Manor Farm are considered to be key visual receptors listed in table 11.6. The other scheduled monuments and designated sites such as St Peters Church and the listed brickyard chimney have not been adequately assessed.

The proposed mitigation of the adverse visual impact on these Scheduled Monuments consists of enclosing the monuments at Manor Farm and Baysgarth Farm within substantial hedgerows to prevent views beyond (ES 11.17.5). As stated above, the setting is considered to go beyond the immediate envelope of the site. The objective should therefore not be to enclose the monument at Manor Farm and cut it off from the surrounding landscape, but to protect the setting in the wider landscape. Further advice on the issue of setting should be sought from English Heritage.

Local plan policy HE8 protects scheduled monuments and their settings from adverse development.

Historic Landscape and Hedgerows

An assessment of the historic landscape character is included with the cultural heritage chapter (ES 9.2.43-45, 9.4.5, fig 9.3), but this has not been used in combination with the main Landscape assessment.

The Lincolnshire HLC project is currently underway, and characterisation of this area will be completed by September 2009. The parishes of North and South Killingholme, immediately south of the development site, have already been characterised during the pilot project and a report is now available.

The report notes that the mapped data indicates that whereas to the west of the villages the modern fields exhibit significant boundary loss, on the eastern side the fields patterns created by the 18th century parliamentary enclosures are better preserved, in particular those fields immediately adjacent to the Humber shoreline. The report suggests that these fields have retained their character because their boundaries are largely made up of deep wide drains, which cannot be easily removed or diverted.

To the south of the railway line the surviving field patterns flanking the villages comprise smaller fields reflecting piecemeal enclosure of an earlier date than the parliamentary enclosures. Some of these fields contain well-preserved ridge and furrow associated with the medieval settlement and the scheduled monuments. The development, and in particular Phase 2 on the west side of the proposed access road, will impinge on this field pattern.

To the north of the railway line the piecemeal fields around Red House Farm contain well preserved ridge and furrow, extending into the development site (Site A19, table 9.1), which merits preservation within the proposed landscaped area.

All the hedgerows within the development are considered Important for their historic associations under the Hedgerow Regulations 1997; the Meergate hedgerow running along the historic parish boundary between East Halton and North Killingholme is of particular Importance (ES 9.2.40). This assessment outweighs other sections of the ES, which state that the hedgerows are not important under nature conservation criteria (cf ES 10.5.64). Measures should be put in place to retain and protect the parish boundary hedgerow as part of the development.

The North Lincolnshire landscape strategy seeks the 'continued protection and strengthening of hedgerows' and 'a restoration of landscape structure', with measures 'aimed at conservation of historic character'. The footpaths and public rights of way within the development site currently trace the historic grain of the landscape.

Contrary to ES 11.15.1, the proposed development will result in major, irreversible changes to the landscape character and its historic context, including the loss of all the hedgerows. The historic character of the landscape does not appear to have influenced the layout of the development; the proposed layout will alter and destroy the current pattern of fields and boundaries, footpaths will be diverted along new routes and alignments, hedgerows will be lost and a new drainage and boundary pattern imposed on the landscape. This will effectively render the former character of the landscape illegible, resulting in a loss of this character to the locality. The dislocation of the local landscape character including the historic associations needs to be considered further.

Landscaping Proposals

The Landscaping Strategy for the development will have potentially adverse implications for the historic environment, in particular the planting of broadleaved and other woodland and shrubberies where there are known or potential archaeological remains and/or historic landscape features such as ridge and furrow. The proposed landscape zone along Skitter Road currently coincides with several known sites including the important Cote Hill Roman settlement (Site A3, table 9.1, fig 9.2), the medieval ridge and furrow opposite Red House Farm (Site A19) other potentially important archaeological features (Sites A13, 14, 20, 21). Andrew Taylor has already pointed out this issue, underpinned by local plan policy LC20, and I would reiterate his suggestion that the landscaping will need to be planned carefully to manage both the archaeological and ecological issues. The potential for preservation in situ of important archaeological remains needs to be a major factor in the landscaping and

archaeological mitigation strategies. The cultural heritage assessment (ES 9.4.3) has not sufficiently taken account of this potential adverse impact.

At present, there is no detailed landscaping plan with the planning application with which to adequately assess the impact on the historic environment. Detailed assessment and mitigation measures for the landscaping strategy will also require the results of archaeological evaluations of the affected areas.

There does not appear to be any consideration of the (?future) impact of the hydrogen pipeline corridor that will run through the landscaped areas along the western edge of the development site and beside the railway corridor?

Buffer Zone LC20 & IN6

Policy LC20 is linked with policy IN6 which specifically states that no development will be allowed within the defined amenity buffer area. The proposal to allow a much narrower buffer zone, down to just 90m wide alongside Skitter Road and the former railway, and the development of Phases 1 & 2 within the buffer will impact on important known and potential archaeological sites (see above) and historic landscape features that could otherwise have been preserved in situ within the full width of the buffer. This is a particular issue when considering the impact of the development on the Scheduled Monuments at Manor Farm and Baysgarth Farm where the buffer zone is considered to protect the setting of the monuments.

The impact of the narrowing the buffer zone has been considered in relation to the impact on ecological issues and potential mitigation. The historic environment issues need to be considered alongside and in combination with these other key factors, so that the cumulative impacts can be adequately assessed and appropriate mitigation strategies developed.

Hydrogen Gas Pipeline Diversion of Route

There is a lack of detail including the omission of any detailed plans of the pipeline route and diversion, details of the construction methodologies, access, working width etc and how this may impact the known and potential archaeological remains and historic landscape features along the route. Nor is it clear when the pipeline will be built and how this will affect the proposed landscaping zone and maturing woodland, which will be put in place to mitigate other impacts, including those on the historic environment.

Further detailed assessment and mitigation strategies are required for the pipeline. As with the detailed landscaping strategy, this will require the results of archaeological evaluations in the affected areas.

The pipeline must be considered in combination with all other impacts of the development.

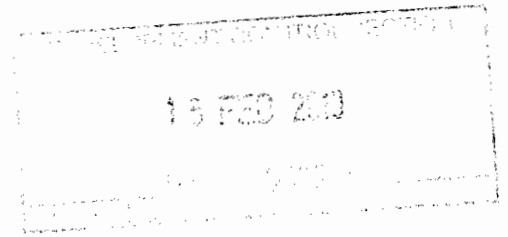
Recommendation

It is important that the various archaeological and historic environment issues relating to this application are clarified before any planning permission is granted. Any decision on the application should therefore be deferred until the information requested above is made available. I am therefore making a **holding objection** to the application. Once adequate information is available, suitable conditions securing the archaeological mitigation and landscaping strategies could then be added to any planning permission that may be granted.

If the planning authority is required to determine the application in its present form, the application should be **refused** as it would be contrary to local plan policies HE8; development would adversely affect the setting of Scheduled Ancient Monuments, and HE9; inadequate information has been provided to allow the Local Planning Authority to assess the archaeological significance of the site and approve an appropriate mitigation strategy.

I trust these comments and advice are of assistance. Please do not hesitate to contact me if you wish to discuss my recommendations further. I will provide further updates as soon as possible.

Comments on Framework Proposals for Archaeological Evaluation and Mitigation – AC Archaeology Revised November 2009



1. INTRODUCTION

1.2 – Restore 2nd bullet point omitted from original draft

1.4 – Add (bold)

- geophysical survey - targets to include areas incorporating cropmark sites A16, A23, A36 (extend survey area), A20 & A28 and A11/A12 areas. SMR Lidar data to be assessed by AC archaeology for additional targets including out on alluvium where salterns may have been located around palaeo-creeks. Further survey will be required across **the development area**;
- topographic condition survey of earthworks in phase 1 **and phase 2, Site A19**, and the relict sea bank;

1.5 – Final sentence a misunderstanding? 'Additional Lidar data has become available (summer 2009) and has been considered' Delete.

Add sentence ' New Lidar data will be inspected as available and relevant features incorporated into the ongoing archaeological programme of work'.

1.7 – and sentence to end of paragraph as follows:

'The results from each piece of archaeological work will also be used to update and inform the Framework document which will be kept under review together with Appendices 3 & 4 at quarterly review meetings (see 3.XXXX). Any significant variations to the strategy and timings set out in the Framework will be submitted for the written approval of the NLAO and local planning authority.'

2. ARCHAEOLOGICAL BACKGROUND

2.3 - In absence of baseline Lidar assessment in DBA/Environmental Assessment a short description to be included in Archaeological Background sections of subsequent project designs – (NB not in APS PD for phase 1 &2)

Final sentence Fig 2a should be 2b.

Fig 2b – Make it clear that info on palaeochannels obtained from Lidar data dated 1999 - 2006 inspected at NLSMR.

3. GENERAL STANDARDS

3.1 Minimum period of one week's notice is insufficient; change to minimum 10 working days.

Appendices 3 & 4 should include flag for quarterly review meetings

3.2 Add to final sentence '...at least 10 working days in advance of commencement of work'.

Andy Hammon commented 'the IFA is now the IfA / Institute for Archaeologists.'

3.3 2nd paragraph refer to an additional figure showing extent of cut/fill (drawing received 13/11/09)

Andy Hammon commented 'it would be useful to have an explanation / definition of 'strip, map and sample' because I know it means slightly different things to different people.'

4. OUTLINE OF ARCHAEOLOGICAL POTENTIAL AND SURVEY PROPOSALS FOR EACH DEVELOPMENT PHASE

4.2 Re first paragraph, for clarity I'd like to see the relevant prefix characters added to this table – I've inserted them into table below for your convenience.

Add sentence to this paragraph to effect that 'This table will be reviewed and updated with results from all stages of archaeological survey and evaluation. Updates will be presented at the quarterly review meetings.'

I'd also like to see Tables 9.1 and Figure 9.2 from the ES (includes one extra site A53 to Table 2 in DBA) appended to the Framework document. SMR numbers should be added to Table 9.1 as follows:

- A42 – MLS21157
- A43 – MLS21159
- A44 – MLS21162
- A45 – MLS8770
- A46 – MLS21163
- A47 – MLS21164
- A48 – MLS21165
- A49 – MLS21166
- A50 – MLS21167
- A51 – MLS21168
- A52 – MLS8195
- A53 - MLS21150

Table 4.2 should separate out Secondary Surveys (ie evaluation) from Mitigation. Mitigation proposals should go into a separate table in Section 7 which can also be kept under review & updated.

Should there be an additional Zone for the Hydrogen Pipeline now that planning permission lapsed? I confess to still being confused about whether it is intended that this should ever be built.....

Zone	Principal Archaeological Context	Preliminary Evaluation Survey Proposals	Secondary surveys/mitigation
Foreshore repair work	Potential for near-surface palaeo-environmental deposits. Moderate number of archaeological finds and wrecks from around Skitter Mouth: A38 – A41(MLS8774, MLS1589, MLS1596, MLS18476); A42 – A46 (no	None proposed. Previous monitoring by HFA in 2006 revealed limited results.	Watching brief proposed Move to separate mitigation table 7.1 Proposal is acceptable on basis that

	SMR/NMR ref); A47 – A51 (NMR 978164, 1303519, 908347, 908346, 908345). Add SMR UID numbers as listed above	Decision on whether evaluation is required will be dependent on details of construction not yet finalised. If similar to EA proposed construction on southern stretch, evaluation will not be necessary.	construction is similar to that proposed by EA. A full project design is required.
Areas of infilling (Phases 3, 4, 6, 7)	Potential for buried palaeo-channels or land surfaces with associated palaeo-environmental potential; potential for prehistoric or Romano-British occupation of former foreshore with high potential for associated surviving organic remains. Previous auger survey south of Skitter has revealed some potential for peat deposits: E1, A3a (ELS1786, MLS21153). Geophysical survey and Lidar have revealed evidence for former inlets/palaeo-channels (See Fig. 2b).	Auger survey transects and geophysical survey (Phase 3, 6, 7 and phase 4) to provide deposit model. Project Design to be developed in conjunction with RSA. Project design required	Possible trial trenching, augering for sampling and analysis is part of evaluation, to inform not as part of mitigation proposals, Move to mitigation table to be set out in Preservation in Situ project design.
Phase 1 Development	Late prehistoric and Romano-British deposits known from Ursa site/Chase Hill Farm A24 (MLS1496); Undated cropmark enclosure A23 (MLS17461); undated enclosure A28 (MLS20079); ridge and furrow earthworks (MLS10746). Update with results of geophysical survey and 1st stage trial trenching.	Geophysical survey, Completed earthwork survey of D Fig 2b. Fieldwalking is possible – carry out asap Jan/Feb 2010	2nd stage Trial trenching of potential sites indicated by geophysics: Area 1 - TT – zones of uncertain origin at northern end (1). Strong R&F on geophysics could mask underlying features - Sample TT to test for underlying features - area of MLS 21160 and SW section Area 3 – TT Pit-like anomalies (5) in vicinity of MLS20700, Ursa enclosure. Overlap with Area 1 of Ursa geophysics which identified a few outlying

		<p>anomalies to north of D-shape enclosure - TT</p> <p>Strong R&F on geophysics could mask underlying features - Sample TT</p> <p>Area 4 - MLS 20079 (A28) - Square cropmark enclosure, east of East Halton – not identified in geo – area of anomaly 7 – TT – also anomalies 8 & 9</p> <p>Area 5 - Magnetic anomaly & poss pit at northern end could relate to D shape enclosure - TT</p> <p>R&F in southern half could be masking underlying features – sample TT</p> <p><u>Area 6</u> - MLS20711 an undated ditch was recorded during Ursa evaluation 2008 Northern end of survey coincides with Area 7 of Ursa geo Contained R& F until recently could easily be masking underlying features – sample TT</p> <p>Area 9 – pit-like anomaly on west side coincides with similar anomalies on pipeline geo – TT</p> <p>URSA geo – Area of anomalies I – TT Magnetic disturbance & continuation of anomaly F to southeast of D-shape enclosure - TT</p> <p>Strong R&F could be masking underlying features – sample TT</p>
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			<p>Several gaps in geophysics – sample TT</p> <p>2nd stage Trial trenching of potential sites indicated by fieldwalking</p> <p>Mitigation proposals in separate table to be formulated where there is sufficient information available from results of preliminary surveys and up to date construction details (cut/fill & conservation management plan)</p>
Phase 2 Development	Ridge and furrow earthworks (MLS 10746). Update with results of geophysical survey.	<p>Geophysical survey, completed</p> <p>Earthwork survey of C Fig 2b.</p>	<p>To be determined</p> <p>Strong R&F on geophysics could mask underlying features. Survey identified isolated pits (anomaly 2) of uncertain origin, trial trenching to investigate and sample rest of Phase 2.</p> <p>Mitigation proposals in separate table to be formulated from results of preliminary surveys</p>
Phase 3 Development	Previous geophysical surveys and limited evaluation has identified anomalies presumed to be of prehistoric or Romano-British date; Sites A13 (ELS2516, MLS20425, MLS20426), A14 (MLS20427, MLS20428) A15 (ELS1900, MLS19815), A18 (ELS1783, MLS20099, MLS20100), A20 (MLS20429), A21a (ELS1784, MLS20101,) A36 (MLS21151, MLS21158 and : undated cropmarks, A16 (MLS20082, MLS21156), A17 (MLS17472, MLS10746), A42 (MLS21157). One area of ridge	<p>Geophysical survey, Too large a gap at northern end above 5m contour. Consider infilling (?reduce sample to 25% coverage below 5m contour in Phase 7(&3) check with RSA)</p>	<p>Trial trenching.</p> <p>Move to mitigation table - Potential for preservation in situ towards estuary</p>

	and furrow preserved in pasture – A19 (MLS10746). WW2 features MLS21232, MLS 21233, A53 (MLS21150)	Fieldwalking, earthwork survey Site B should also include area to east (R&F visible on Google). Auger survey (T1, T2 & T3)	
Phase 4 Development	Limited previous data. Course of ?former sea bank A17 (MLS17472, MLS10746) runs into area. A21b (ELS1784, MLS20102), A36 (MLS21151, MLS21158)	Geophysical survey, Fieldwalking. Auger survey (T1)	Trial trenching. Move to mitigation table - Potential for preservation in situ
Phase 5 Development	Previous fieldwalking geophysical survey and trial trenching has revealed extensive prehistoric and Romano-British site at Cote Hill farm; A3 – A6 (ELS1781, MLS20085, MLS20086, ELS1682, MLS19795, ELS1676, ELS1678, MLS19725, ELS1676, MLS19792, MLS21153, MLS21154); A10 (MLS20080), A11 (ELS1677, MLS19794), A12 (ELS1677, MLS19793) Phase 6? some post-Medieval activity around Skitter A2 (), A46 (MLS21163), A47 (NMR978164), A48 (NMR1303519)	Geophysical survey.	Trial trenching. Move to mitigation table - Very limited potential for preservation in situ
Phase 6 Development	See 'Infilling areas' Former sea wall survives as earthwork A46 (MLS21163) some ?medieval/post-Medieval activity around Skitter A1/A2 (MLS1056, MLS20566), A47 (NMR978164, MLS21164), A48 (NMR1303519, MLS21165), MLS1596, MLS21155	Geophysical survey, auger survey (T3) , earthwork survey (A46) .	Possible trial trenching, augering for sampling and analysis is part of evaluation, to inform not as part of mitigation proposals, Move to mitigation table to be set out in Preservation in Situ project design.
Phase 7 Development	See 'Infilling Areas'	Geophysical survey, auger survey (T2) .	Possible trial trenching,., augering for sampling and analysis is part of evaluation, to inform

			<p>not as part of mitigation proposals,</p> <p>Move to mitigation table to be set out in Preservation in Situ project design.</p>
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5. PRELIMINARY SURVEY METHODOLOGIES

5.1 Geophysical Survey

Fig 2a to be amended with revised proposal for Phase 3 development see table above.

NB Appendix 5 refers to Scanning, resistance & GPR – needs amending. This is GSB's method statement (eg OS licence no), not a WSI/project design that can be used by other geophysical surveyors in subsequent phases.

5.2 Earthwork survey

Add earthwork survey of A19 to Appendix 3 Outline Programme as Pre-determination Activity with Undertake Phase 1 & 2 earthwork survey

Survey area B to be extended to east as table above and undertaken at same time as C & D. Survey of area C should include the whole rectangular field, not just the area within the boundary of application which cuts diagonally across the area. R&F in area D appears to extend east across this whole field (google), survey whatever is there.

Add 'A detailed project design will be submitted in advance of predetermination surveys at least 10 working days prior to commencement of survey.'

Add survey to be undertaken in accordance with EH/RCHM standards 2008 (web link supplied)

5.3 Fieldwalking survey

Amend to include Phase 1 in winter/spring 2010.

Add fieldwalking of available land in Phase 1 to Appendix 3 Outline Programme as Pre-determination Activity

Add 'A detailed project design will be submitted in advance of predetermination surveys at least 10 working days prior to commencement of survey.'

5.4 Auger survey

Add 'A detailed project design to be submitted to NLAO & RSA at least 10 working days prior to commencement of survey.'

Andy Hammon commented 'it would be useful if the approximate number of boreholes for each transect could be quoted. There should also be the provision for a contingency of additional boreholes at smaller intervals if

required. The EH geoarchaeology guidelines should probably also be quoted in this section.'

6. SECONDARY SURVEY METHODOLOGIES

6.1 - Add sub-heading Stage 2 Survey – Sampling and Assessment

Insert '*All surveys will be undertaken in accordance with the standard set out in English Heritage 2002 and 2007 and following consultation with the RSA and NLAO*'

Add 'A detailed project design to be submitted to NLAO & RSA at least 10 working days prior to commencement of survey.'

6.2 Trial Trenching

There should be a commitment that sample trial trenching will also be undertaken to ascertain presence/absence of archaeology where geophysical survey and/or other preliminary surveys have not been undertaken, or where underlying features may not be identified beneath superficial deposits such as alluvium or topographic features such as ridge and furrow. And particular attention to be paid to the zone where dry land met the former salt marsh (see table 4.2).

Insert '*Following each phase of geophysical survey a trenching proposal will be provided to the NLAO for **their written approval within 10 working days of submission**. Once approved, the trench plan will then form the basis of a project design **to be submitted to the NLAO & RSA at least 10 working days prior to the commencement of work.***'

Insert '*Monitoring arrangements by the NLAO & RSA will be set out in the project design*'

7 MITIGATION PROPOSALS

There should be a general introduction to this section summarising the construction impacts affecting each phase of development (perhaps in table, see below), and then setting out the process of impact assessment, mitigation proposal and approval of strategy, along following lines:

'Once results of phase by phase surveys are known, the Company will develop detailed mitigation proposals to preserve archaeological remains and/or palaeoenvironmental deposits, within the context of the proposed development. Mitigation proposals will be submitted to the NLAO & RSA at least 10 working days prior to discussion at the quarterly review meetings. Final decisions on the acceptability of preservation proposals and the extent of any areas for proposed mitigation will rest with the NLAO, where appropriate as advised by the RSA.

Detailed project designs for the agreed mitigation measures will be submitted for the written approval of the NLAO & RSA at least 10 working days prior to the commencement of any archaeological mitigation works.

Detailed mitigation proposals for Phase 1 & 2 development will be submitted pre-determination.

Mitigation proposals will include the following: 7.1 – 7.3

Another table would be useful here (based on 4.2) with Zone, Summary Archaeological Context, Summary Impacts and Mitigation columns. This table will then be kept updated for consideration at quarterly review meetings.

7.1 Avoidance of Impact/Preservation in Situ

Consideration should be given to registering sites preserved in situ as a Local Land Charge to ensure long-term preservation.

7.2 Archaeological excavation

See Andy Hammon's comment 'it would be useful to have an explanation / definition of 'strip, map and sample' because I know it means slightly different things to different people.'

Add 'A detailed project design for preservation by record excavation within Phase 1/2 will be submitted predetermination, based on 1st stage TT results.'

7.3 Archaeological Observation and recording

Add 'A detailed project design for Observation & Recording within Phase 1/2 to be submitted predetermination, based on 1st stage TT results.'

Insert 'By agreement with the NLAO, in areas of lower potential the attendance may be reduced to *intermittent - viewing at intervals during and after machining*'.

7.4 Archive

Change North Lincs Museum to North Lincolnshire Museum Service

Change 'Discard arrangements' to 'Discard proposals will be set out in the Assessment Reports.' Add sentence 'The final decision on retention and discard set out in these proposals will rest with NLM curator'.

Deposition of digital data must be discussed with NLM curator and provision made for appropriate deposition of digital archive. This to be included in Framework. Over life of development, deposition of digital data will become the norm, with repositories such as ADS.

7.5 Assessment and reporting

Change title to Assessment, Reporting and Publication

Add sentence after 'and an updated Project Design for further analysis and publication in accordance with Appendix 5 MAP2 (EH 1991).' As follows 'The updated project design will be submitted to the NLAO & RSA at least 10 working

days prior to discussion at the quarterly review meetings. Final decisions on the recommendations will rest with the NLAO, where appropriate as advised by the RSA and the NLM curator.'

Given the size of the development area, the number and range of sites that are known or likely to be affected, and the large body of archaeological data that will be generated over the life of the development, there should be a commitment to the production and appropriate publication of a final report synthesising the results in the Framework.

7.6 Publicity and outreach

This new section is a welcome addition to the Framework

Figures

Fig 1 – show areas currently ploughed or under crop that can be walked either winter/spring 2010 before crop too high (Phase 1), or following harvest 2010.

Add cut/fill figure and this line to be added to figs 2a & 2b

Fig 2a to be amended with revised geophysical proposal for Phase 3 development see table 4.2 & 5.1(above).

Fig 2b – see 2.3 above (Lidar) & amend areas for earthwork survey (5.2 above)

Add Figure 9.2 from the ES (see 4.2)

Appendices

Appendix 1 – is it up to date? Conservation Management Plan dated Aug 09 shows slightly different water bodies (drawing no. K1 – 008023 D)

Appendix 3 - Move activity Prepare & agree Phase 1 & 2 mitigation proposals into Pre-determination section after Undertake earthwork survey.
Change Agree mitigation to Agree Framework

Consider adding advance geophysical surveys in phases 4, 6 & 7 with geo survey of phase 3 to combine with results of 1st stage palaeo survey to provide sufficient information for assessment of impact and development of preservation in situ mitigation for infill areas.

Appendix 4 – add flag for quarterly review meetings

Appendix 5 – see 5.1 above

Appendix 6 – include detailed project design for Phase 1 mitigation for Archaeological excavation and Archaeological observation and recording

Add Table 9.1 from the ES (see 4.2)