

HS2

Phase One Heritage Sub-group

London

14th March 2019

Agenda

1. Welcome and Introductions
2. Safety moment
3. Archive strategy consultation
4. Phase One update
5. Noise insulation briefing
6. HERDS update
7. Historic environment data management
8. AOB



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Phase One Historic Environment Archive Strategy: consultation event

13th February 2019



Summary of consultation

**Route
summary**

**HS2 policy,
strategies,
commitments**

**Preferred
approach**

Work to date

**Deposition
options for
consultation
event
discussion**

Deposition options

Local deposition

- Each line of route museum collects in line with existing policies

Shared deposition

- One or more line of route museums share the archive between them

Single site deposition

- Most or all of the archive is deposited in a single location, not necessarily a line of route museum

Agenda

First part of the morning

- Presentations - Helen Wass, Katie Rees-Gill & Katie Green
- Brief exercise (quick coffee break)

Middle of the day

- SWOT
- Lunch (about 12:30-13:30)
- SWOT

Afternoon

- Final SWOT (afternoon tea break)
- Summary and conclusions



The answer?



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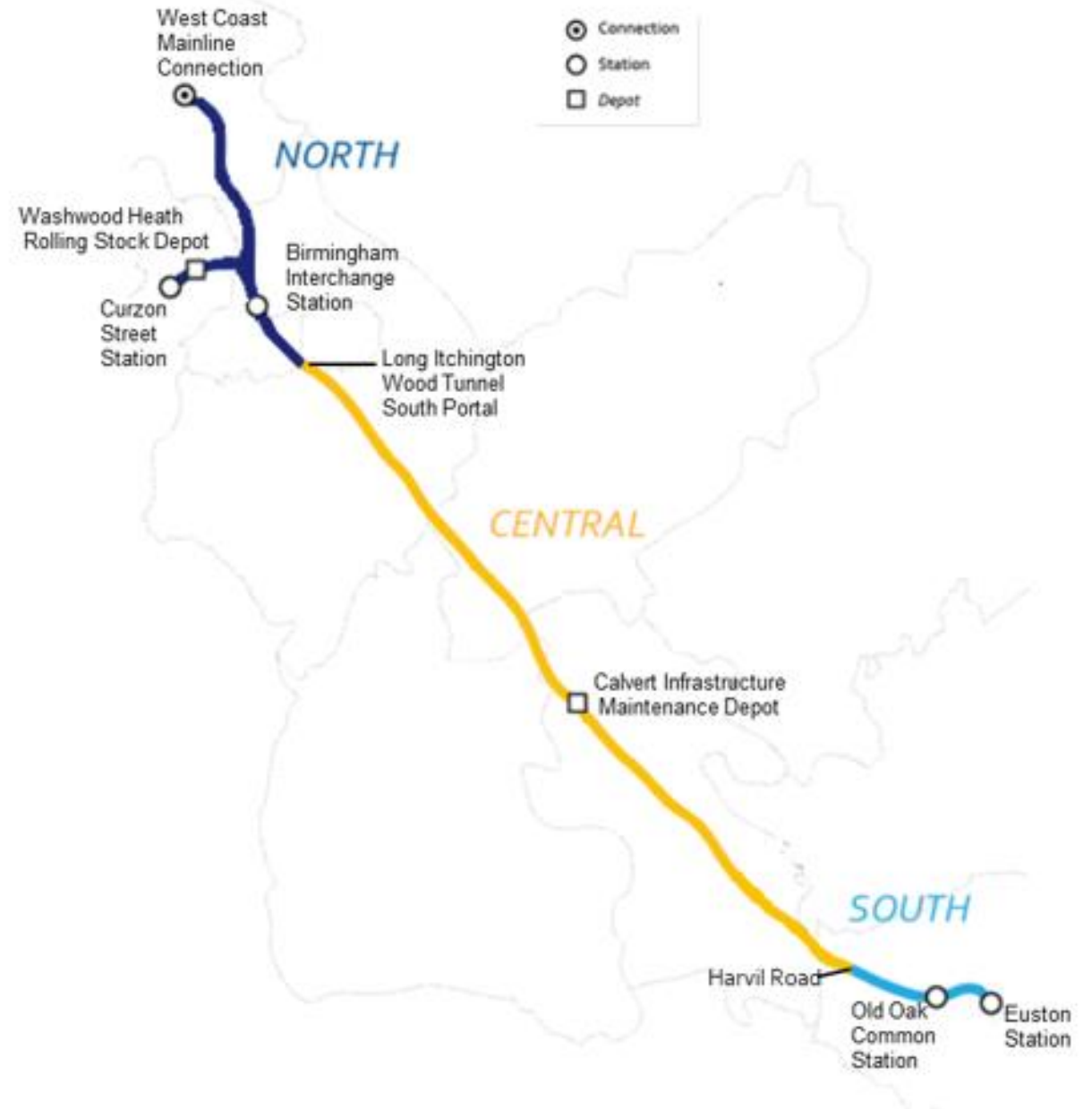


Phase One update

HS2 Phase One Historic Environment Lead

March 2019

Phase One historic environment team update



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Noise insulation for listed buildings

The need for noise insulation

Where there are properties alongside the construction works for the railway they may be eligible for noise insulation.

A number of British Standards (not least BS 8233 -2014- and BS 5228 -2008, updated 2014) set out guidance on noise reduction relating to construction sites and relating to buildings.

Our approach to noise insulation is set out in Information Paper E23 Control of Construction Noise and Vibration. Where levels exceed significant observed levels, noise insulation will be offered to owners/occupiers.

Table 1: Construction noise effect levels for permanent residential buildings (outdoor at the façade)⁶

Day	Time (hours)	Averaging Period T	Lowest Observed Adverse Effect Level $L_{pAeq,T}$ (dB)	Significant Observed Adverse Effect Level $L_{pAeq,T}$ (dB)
Mondays to Fridays	0700 - 0800	1 hour	60	70
	0800 - 1800	10 hours	65	75
	1800 - 1900	1 hour	60	70
	1900 - 2200	1 hour	55	65
Saturdays	0700 - 0800	1 hour	60	70
	0800 - 1300	5 hours	65	75
	1300 - 1400	1 hour	60	70
	1400 - 2200	1 hour	55	65
Sundays & Public Holidays	0700 - 2200	1 hour	55	65
Any night	2200 - 0700	1 hour	45	55

Table 3 - Ground-borne noise and vibration⁷ effect levels for permanent residential buildings (indoors near but not at the centre of any habitable room)

Ground-borne noise	Lowest Observed Adverse Effect Level	L_{pA5max} [dB]	35
	Significant Observed Adverse Effect Level	L_{pA5max} [dB]	45
Vibration	Lowest Observed Adverse Effect Level	$VDV_{day}[m/s^{1.75}]$	0.2
		$VDV_{night}[m/s^{1.75}]$	0.1
	Significant Observed Adverse Effect Level	$VDV_{day}[m/s^{1.75}]$	0.8
		$VDV_{night}[m/s^{1.75}]$	0.4

Mechanism for NI installations to listed buildings

Noise Insulation is temporary.

NI to Listed Buildings is therefore excluded from Schedule 18 Table 1 of The Act, which covers specific LBs to be demolished, altered, and is not therefore subject to Heritage Agreements.

Excluded from Schedule 18 Table 2, the submissions, which covers monitoring equipment to protect buildings from settlement and vibration.

NI is to protect the occupants of building, rather than the buildings and is therefore subject to LBC and the normal Planning process outside the Act.

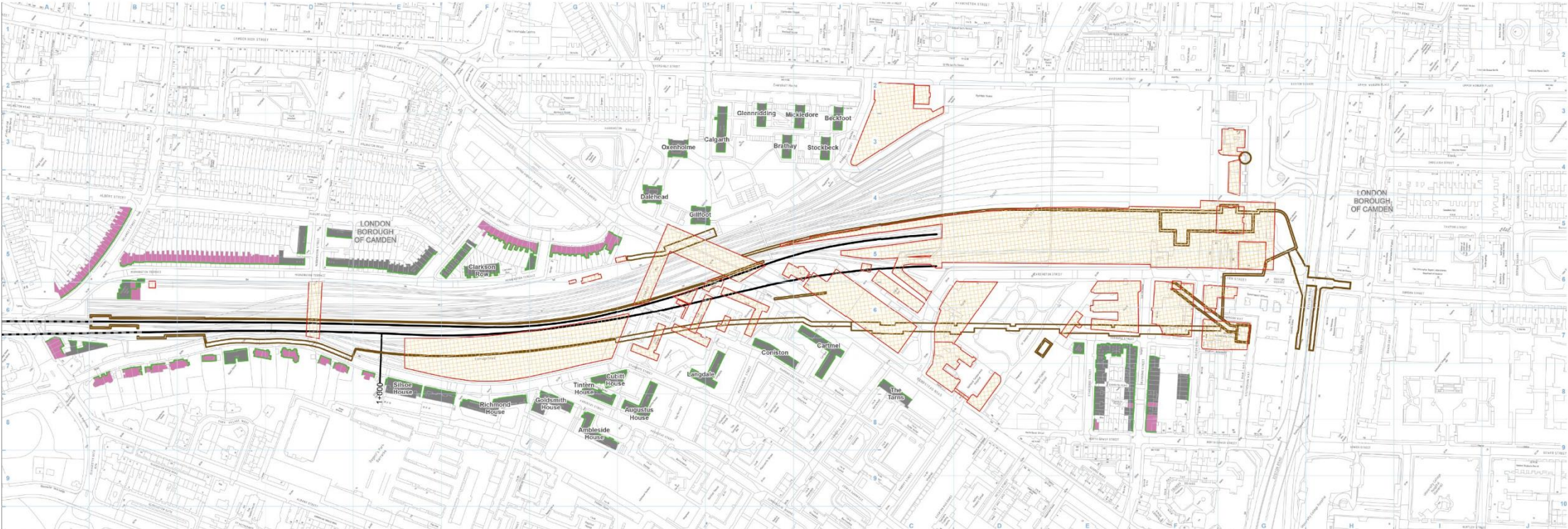
During the passage of the Bill LB Camden secured an Assurance that those identified during the AP3 ES assessment as being eligible for NI would be offered it.

Outside Camden our contractors undertake an appraisal six months before works start of the noise implications of the works. If this identifies that NI is appropriate we offer it to residents.

The work in Camden has enabled us to refine our design and submissions. A process that is ongoing but largely set.



Relevant listed buildings in Camden



Legend

- Route in tunnel
- Route on surface
- Demolitions
- Foundations/engineering substructures
- Residential buildings potentially eligible for noise insulation
- Listed buildings potentially eligible for noise insulation
- Building façade eligible for noise insulation

Residential buildings potentially eligible for noise insulation without further on-site mitigation expected from contractors through Section 61 process. Based on the AP2, AP3 and AP4 amendments, and SES, SES2 and SES3 as relevant.

Map Number	SV-07-001
Map Name	Residential Buildings Noise Insulation
Community Forum Area CFA1: Euston - Station and Approach	

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Scale at A3: 1:2,500

Doc Number: C251-ETM-EV-MAP-01A-000215-P09 Date: 15/11/16

Types of noise insulation

NI to listed buildings essentially means secondary glazing to eligible rooms.

Some owners like the idea of external secondary glazing. We have explored this and concluded that this does maximum harm in terms of preserving heritage significance and we therefore offer internal secondary glazing, unless this is not feasible.

Secondary Glazing needs to be combined with ventilation.

The least visually intrusive ventilation is the use of trickle vents, essentially slots in the secondary frame.

An alternative, which potentially has a greater impact on significance, is mechanical ventilation-essentially hole in the wall with an internal unit and fan.

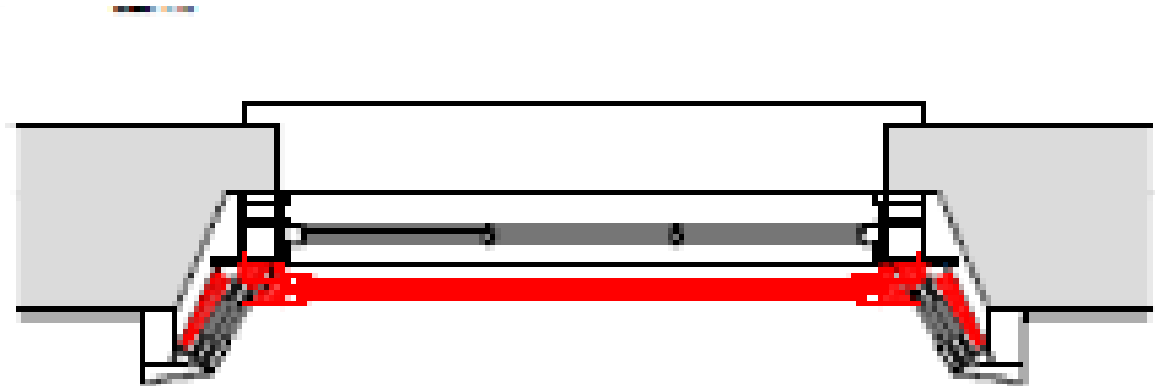
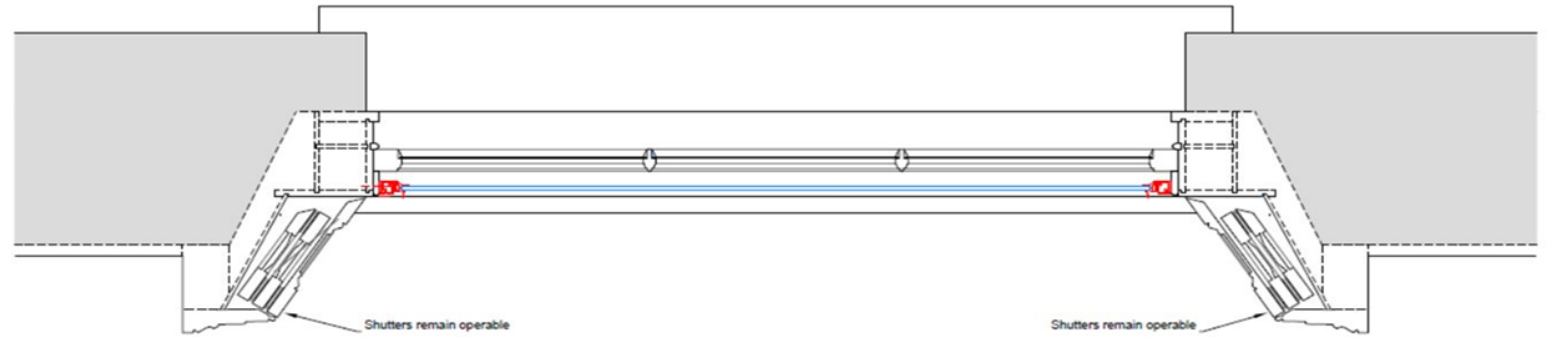


Types of secondary glazing

There are two main types of internal glazing.

The least intrusive clips into the beads existing frame's staff beads

Another that is more intrusive, with better noise insulation properties, involves nailing the shutters in place and inserting an internal frame set back from the sashes, with the frame attached to the back of the existing frame or even to the wall or shutter box



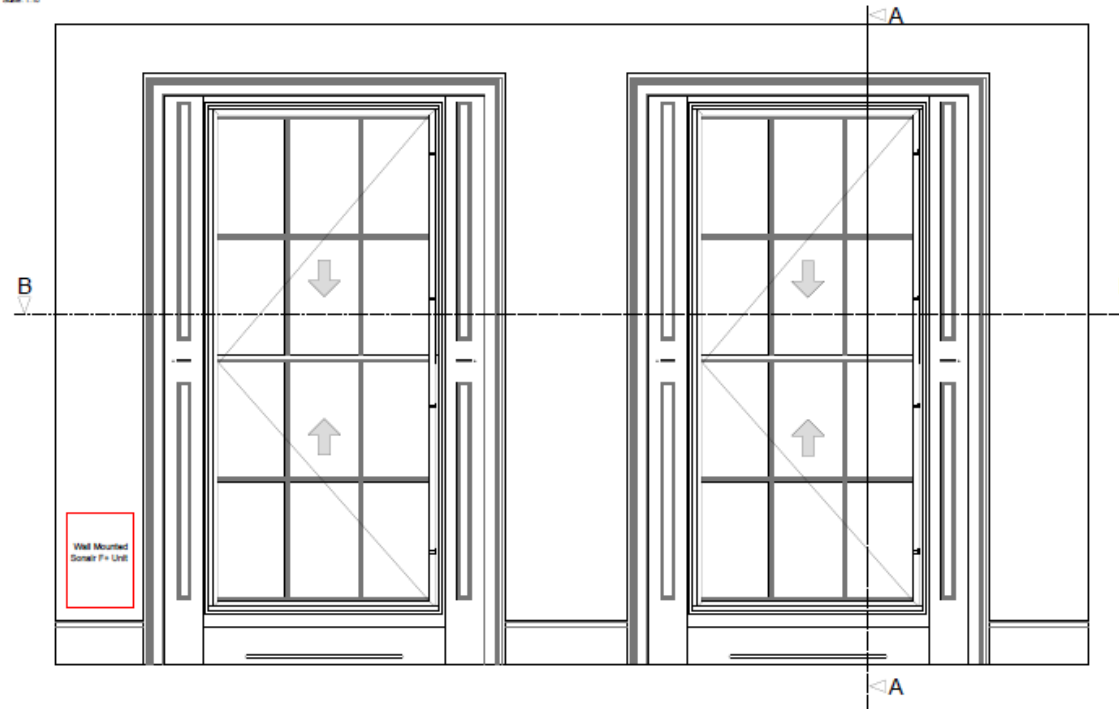
Ventilation

Tickle vents are the least intrusive and allow gradual heat exchange in hot weather

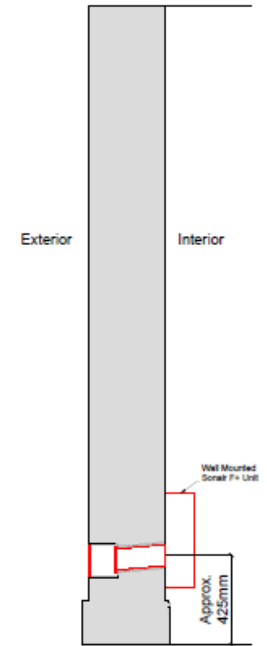
Some occupants have specifically requested mechanical ventilation, such as a Sonair system. This involves:

- a hole in the wall
- an internal unit
- an external grille
- harder to reinstate externally, as necessitates cutting bricks and matching new ones- depends on closers

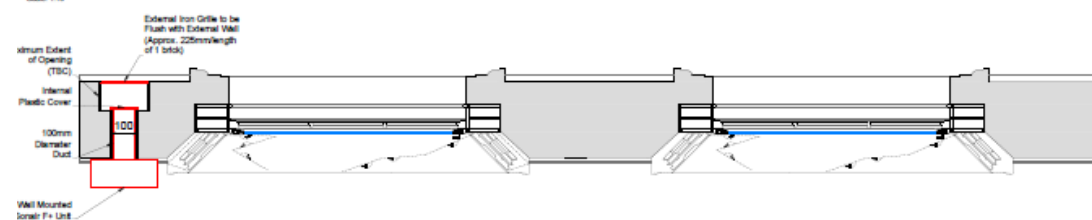
Internal Room Elevation with Sonair Unit Installed
Scale: 1:10



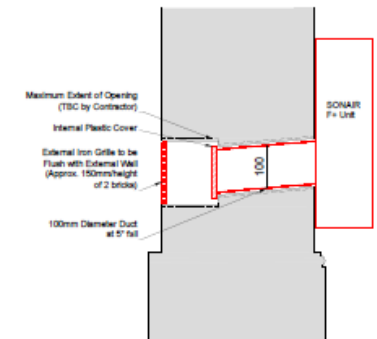
Section A-A through External Wall with Sonair Unit Installed
Scale: 1:10



Plan Section B-B with Sonair Unit Installed
Scale: 1:10



Detail of Sonair Unit
Scale: 1:5



Problems with mechanical ventilation and mitigation

Problems:

Similar problems as with external secondary glazing-grilles located irregularly on listed terrace facades can impact special interest as well as potentially cumulatively affecting the character of conservation areas

Additional internal unit can impact on room internally-much depends on the configuration of skirting boards, dado rails and the level, complexity and significance of interior decorative finishes

Mitigation:

May be able to use the features of the building to hide grilles or position them least prominently



Progress and conclusions

To date we have submitted 21 LBC applications covering 30 properties. We have recently submitted the first application for mechanical ventilation.

The solution that preserves significance most is the slimline units that clip into the existing sashes, and avoid mechanical ventilation. We prefer this solution, but in some cases owners require better noise insulation, through deeper secondary glazing.

The proposals are generally reversible and intended to minimise permanent significant impacts. The most minimal installations can be argued not to affect significance at all.

Applications have initially been piecemeal while we have refined the process and responded to owners' emerging preferences. It is likely to be possible to save both HS2 and the local determining authorities time and money by streamlining applications, by grouping similar buildings in a particular locality, with standardised noise insulation proposals together. There would be individual application forms for individual listed buildings, but there would be single baseline, impact and proposals documents covering groups of buildings. Photos of elevations showing locations of grilles also save time producing elevation drawings where minimal change is proposed

Thank you



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HERDS update

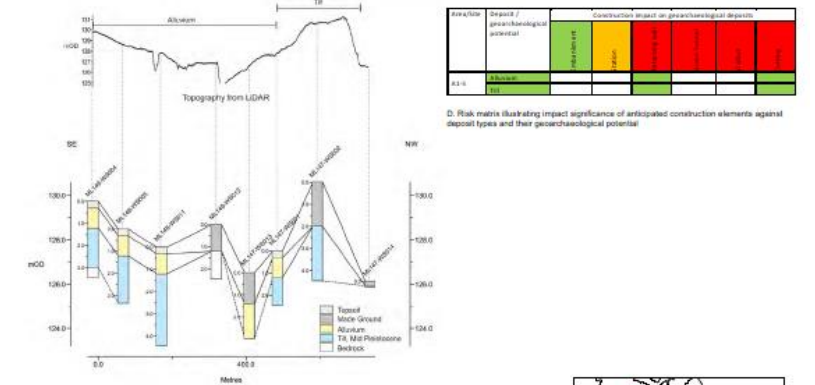
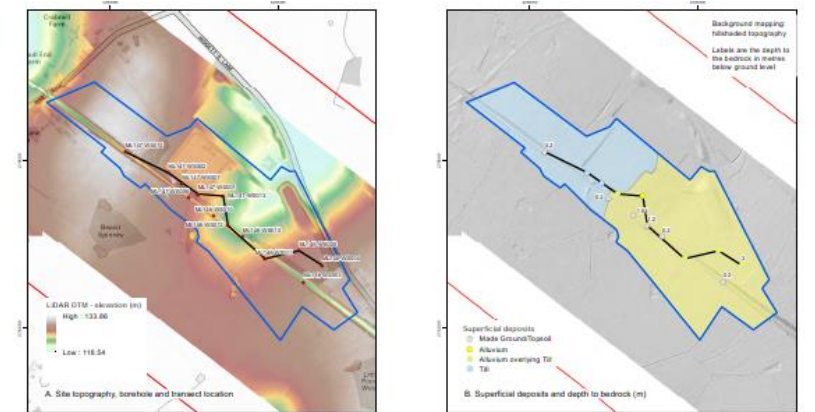
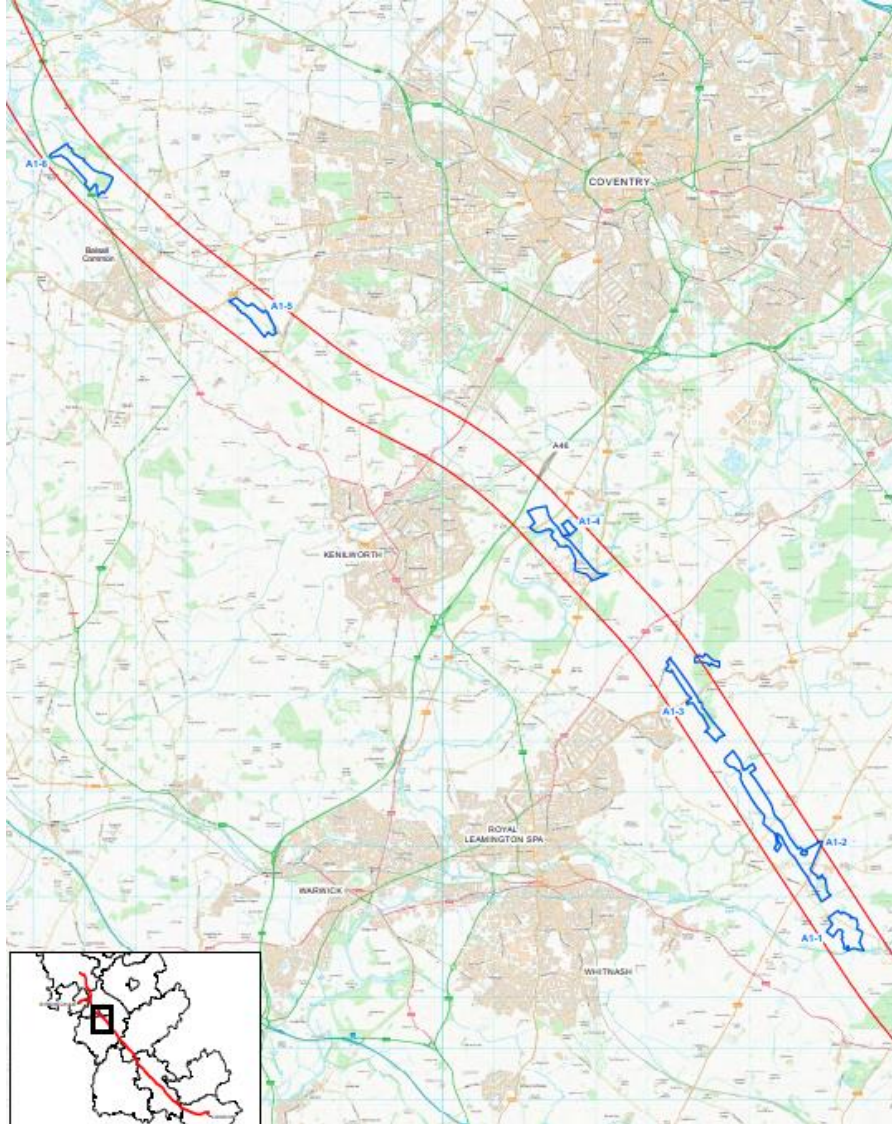
March 2019

Geoarchaeology Update: Area North

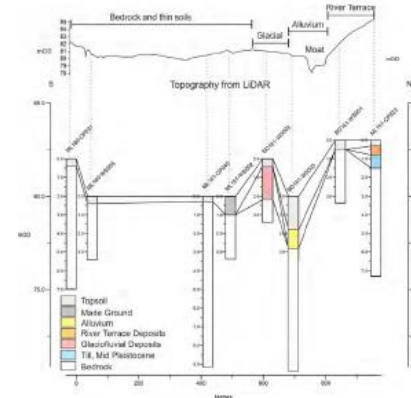
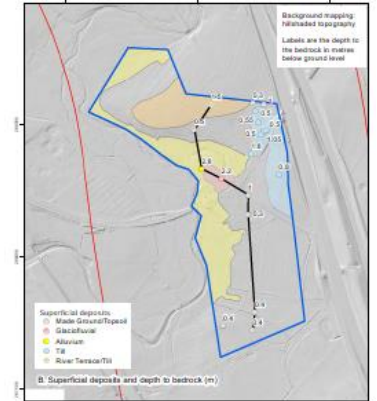
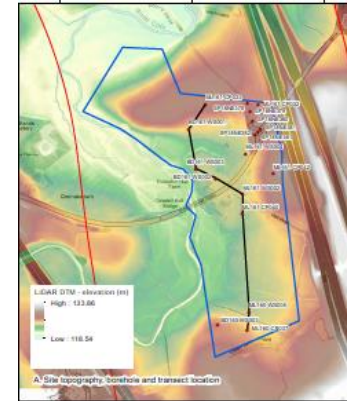
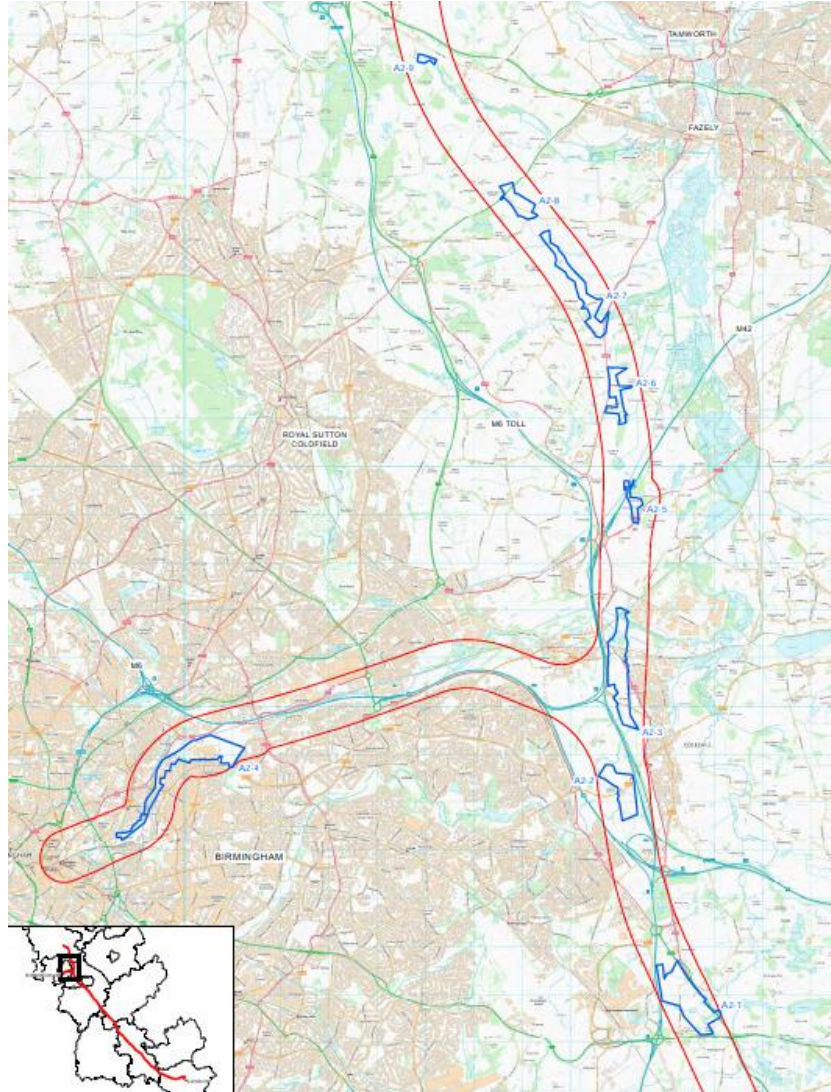
- Review of LiDAR, Aerial Photographs and Historic Maps
- To look for landform features of potential (palaeochannels, palaeolakes, kettle holes)
- GI data for updated deposit model of 3 areas.
- Within each area are a series of 'sites'
- Risk matrix for design elements:
 - Area 1: 6 sites**
 - Area 2: 9 sites**
 - Area 3: 8 sites**



Area 1: Leam-Avon-'Bytham'-Blythe

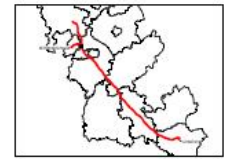


Area North Geoarchaeology Area 2: Cole-Tame-Rea



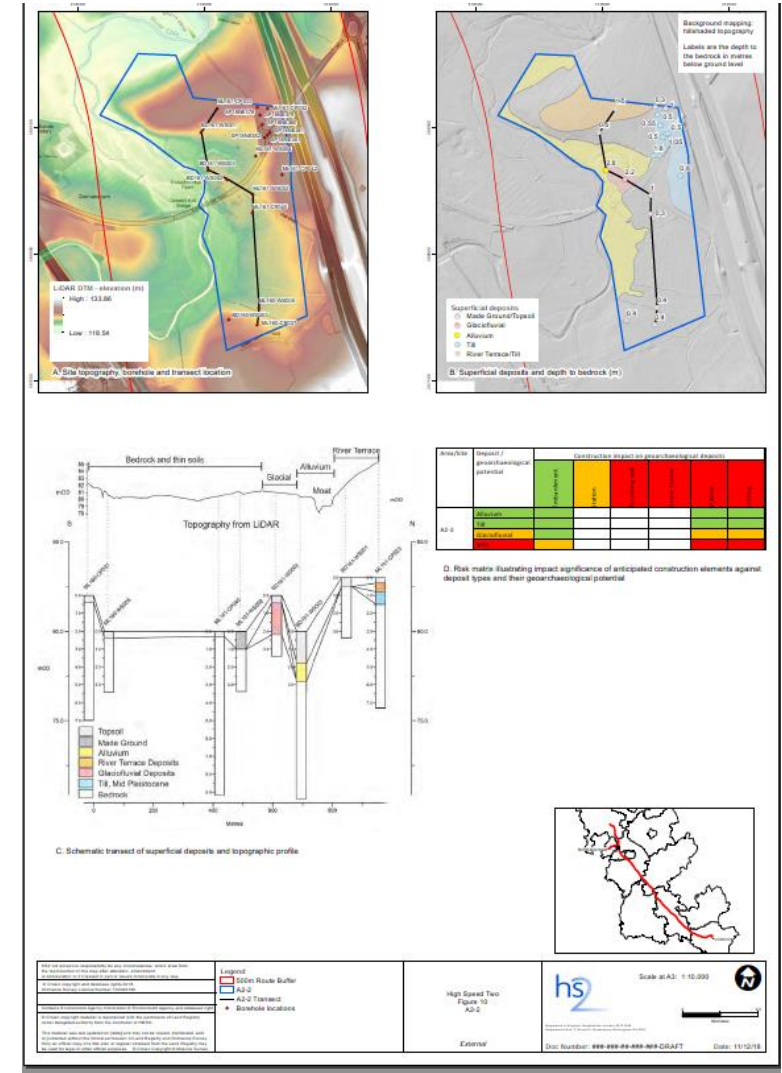
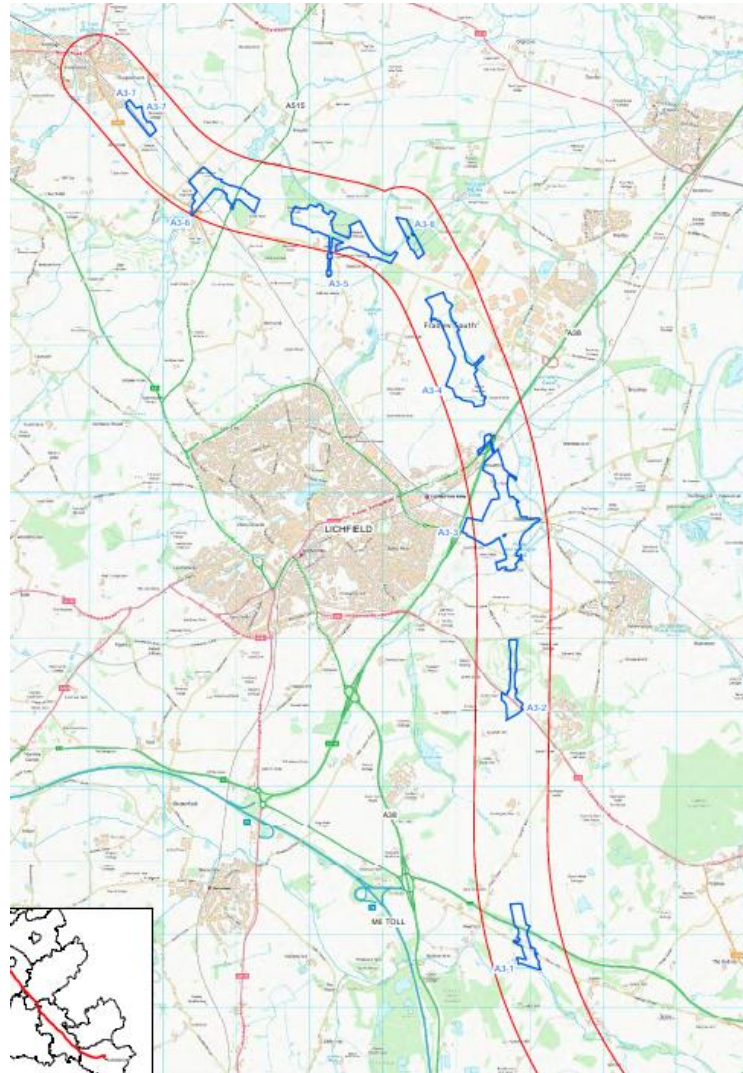
Area/No	Deposit / geoarchaeological potential	Construction element or geoarchaeological deposit				
A2-2	Alluvium	Green	Yellow	Red	Red	Red
	T4	Green	Yellow	Red	Red	Red
A2-3	Glacial/Fluvial	Green	Yellow	Red	Red	Red
	Glacial/Fluvial	Green	Yellow	Red	Red	Red

D. Risk matrix illustrating impact significance of anticipated construction elements against deposit types and their geoarchaeological potential



<p>High Speed Two Figure 10 A2-2</p> <p>External</p>	<p>Scale at A2: 1:10,000</p> <p>hs</p> <p>Geo Number: 999-999-99-999-02AAT Date: 11/12/14</p>
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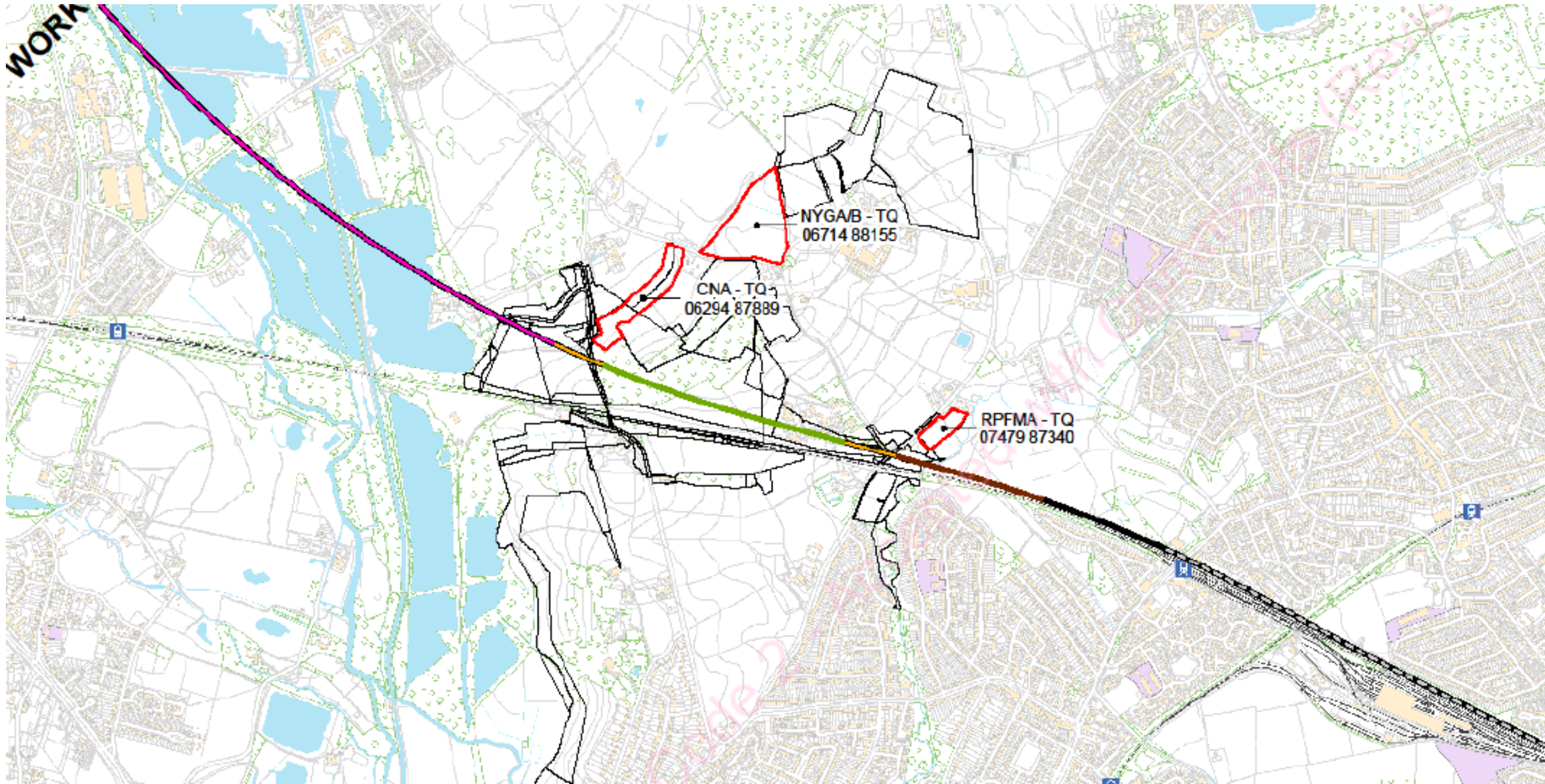
Area North Geoarchaeology Area 3: Bourne-Fisherwick-Curborough



Geoarchaeology Update: Area South

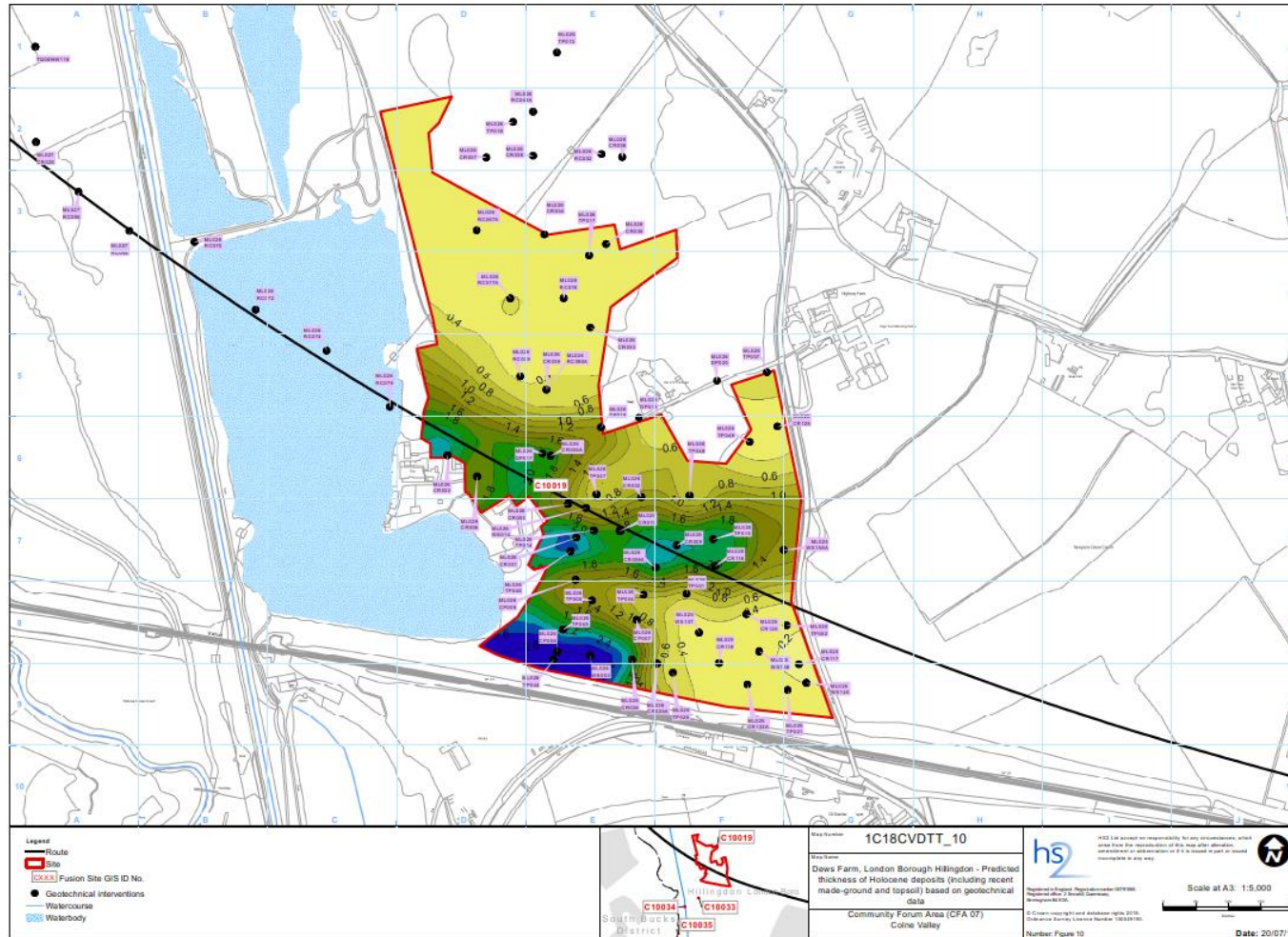
- Targeted Approach
- Two tributaries of the River Colne (River Pinn and the New Years Green Bourne)
- Geoarchaeological potential
- Potential for Late Upper Palaeolithic and Mesolithic occupation





- BGS Data
- GI data
- LiDAR
- Aerial Photography
- Historic mapping
- Predictive Modelling
- Geophysics (ERT)
- Targeted auger survey

Area Central geoarchaeology update



- Existing BGS Data
- GI data
- 12 locations of high geoarchaeological potential based on geoarchaeological zones of potential

Mesolithic, Neolithic and Earlier Bronze Age

- Flintwork from Test Pitting (16 locations to date)
- Possible alluvial locations. Deposit modelling will inform
- Residual finds
- No confirmed evidence for monuments from trenching to date (poss at Chipping Warden)
- The evidence currently echoes existing resource assessment
- Data will usefully feed into the Specific Objective



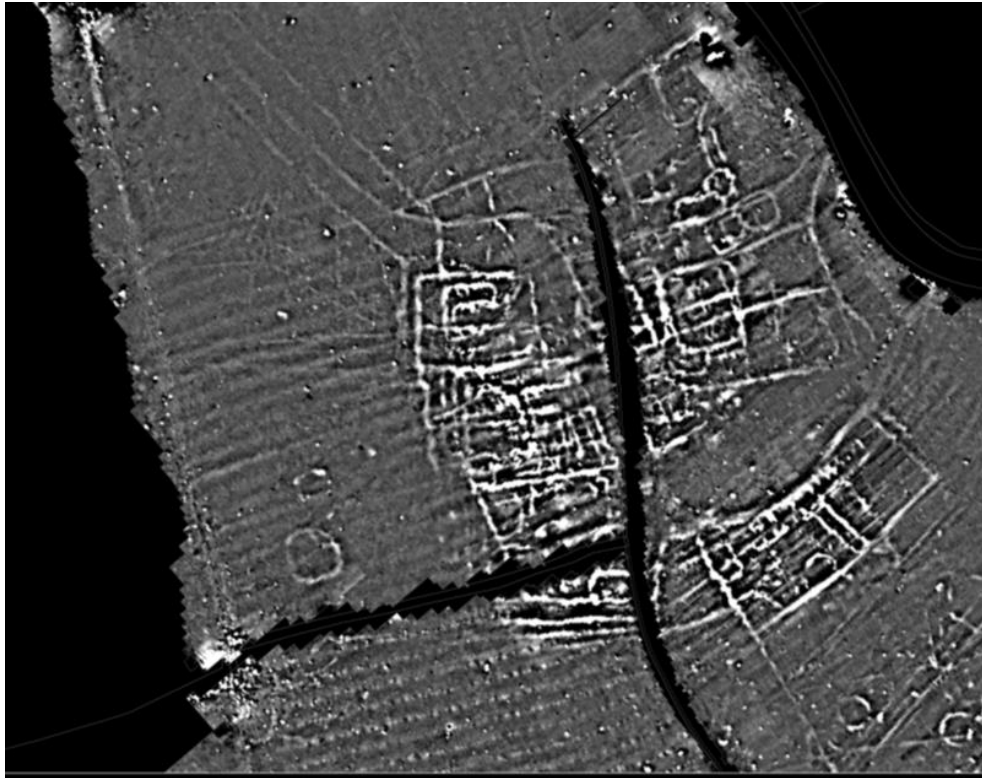
Later Bronze Age and Iron Age

- Geophysical surveys: suggesting potential for Iron Age settlement in the central section
- Iron Age identified in Area North around Offchurch and at Handsacre
- Generally good potential for exploring continuity between Iron Age and Roman settlement/ regional distinctions
- Nothing distinctively Late Bronze Age as yet: there is scope to identify this from geophysical sites identified



Romano-British

Lots of evidence indicated through geophysical surveys and evaluation for settlement



St Mary's, Stoke Mandeville



Parish boundaries and historic landscape division



Special Operations Transmitter Station



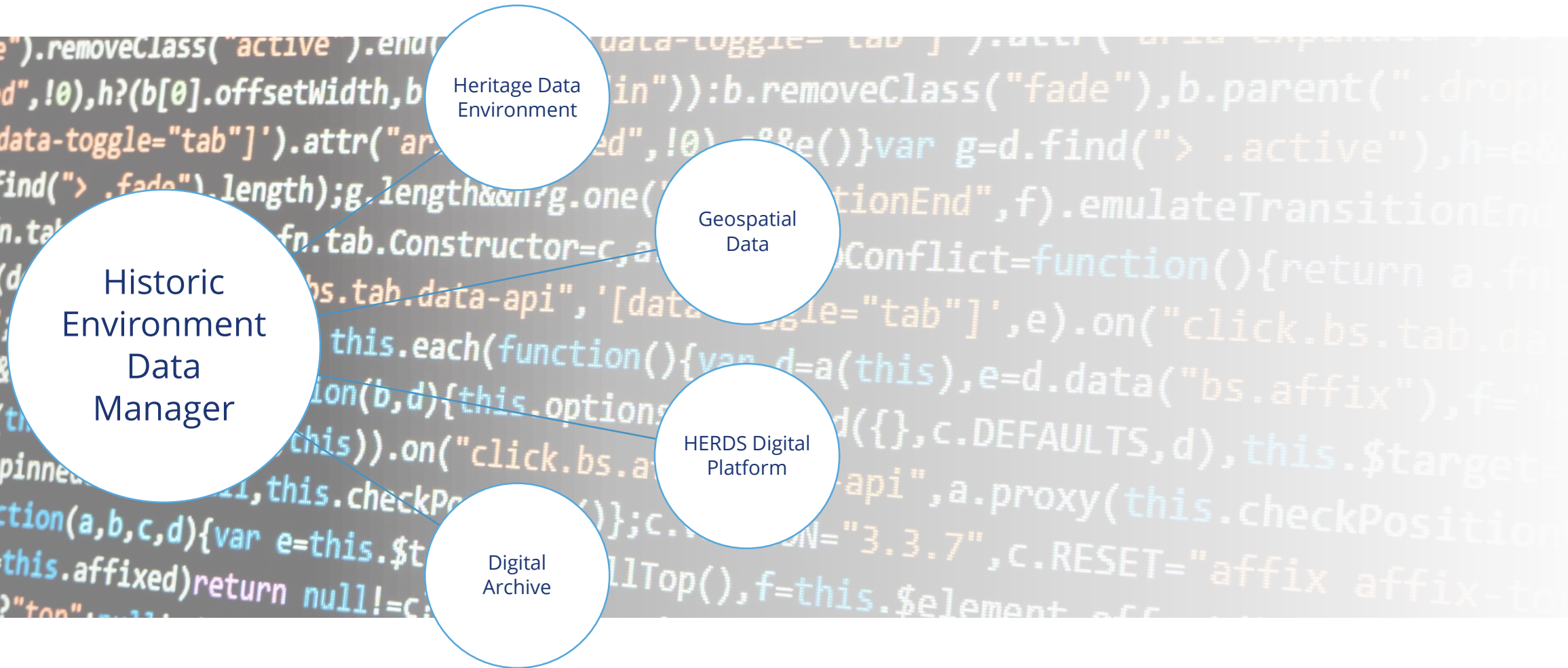
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Historic Environment Data

14 March 2019

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Historic Environment Data Manager



ROLE AND RESPONSIBILITIES

Project Aim

“Scope the breadth and complexity of the digital component of the archaeological archive resulting from the Phase One Historic Environment Works”

Objectives

- Assess the extent of the digital data to be produced during the historic environment works for HS2 Ltd Phase One.
- Assess the extent of the pre-royal assent historic environment works digital data and propose a solution for the long-term digital preservation and dissemination of this data.
- Investigate and propose a number of options for the online interface to the HS2 Phase One historic environment works digital archaeological archive.
- Review and update the HS2 Ltd *Historic Environment Digital Data Management and Archiving Procedures* .
- Establish a suitable workflow for both ADS and HS2 Ltd, facilitate the preparation of ADS systems and update HS2 Ltd historic environment contractor procedures.
- Outline the extent and conditions of the SLA between HS2 Ltd and the ADS for the preservation and dissemination of the historic environment works digital data.



STAGE 1: Data Scoping Study and Requirements Analysis (concludes with PR1)

- Information gathering exercise, undertaken by an experienced ADS Digital Archivist in conjunction with HS2 Historic Environment Data Manager
- Includes an extensive review of the existing digital data created during pre-royal assent historic environment works to determine data formats, file size and metadata coverage
- Includes the systematic audit of each HS2 Ltd Historic Environment Contractor
- Includes liaison with physical repository representatives

STAGE 2: Digital Archive Dissemination Plan

- ADS Staff (Digital Archivist + Systems Developer) to undertake investigation determining appropriate and feasible dissemination frameworks within existing ADS systems
- Of the options arising from the investigation, ADS staff will short-list 2-3 from which the final selection will be made by HS2 staff
- Completion of Stage 2 will result in a specification document detailing the implementation of the preferred dissemination option and a briefing document outlining the solution for the long-term digital preservation and dissemination of the pre-royal assent historic environment works data.



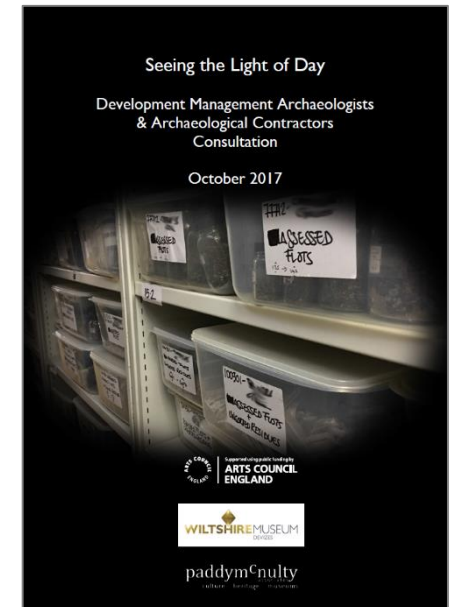
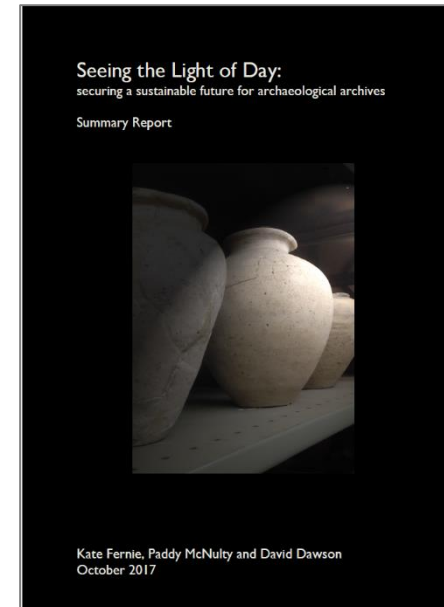
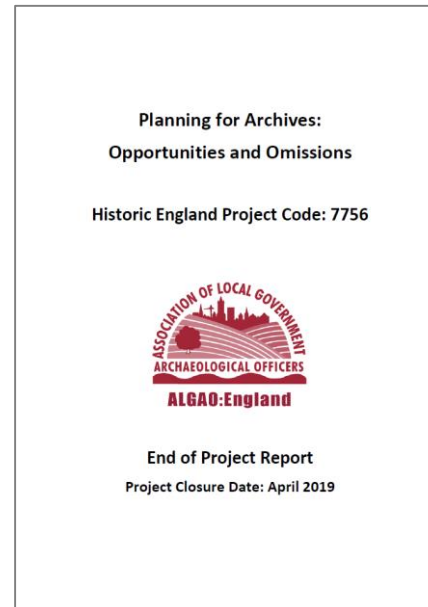
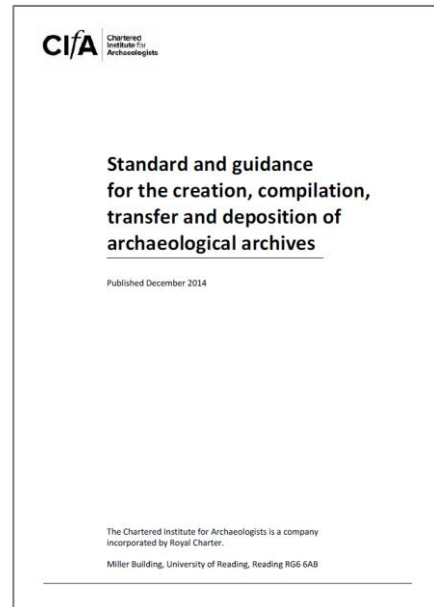
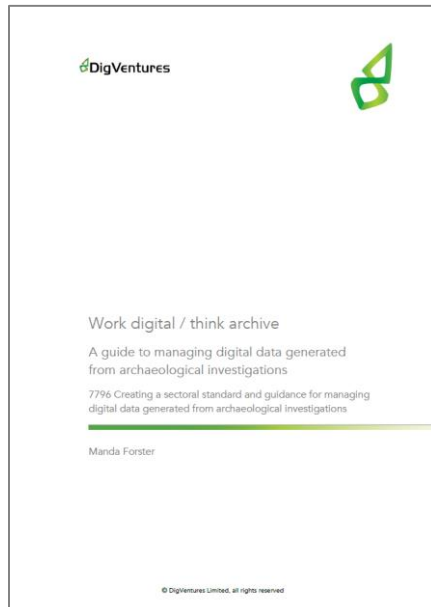
STAGE 3: Procedures and Workflows (concludes with PR3)

- Following completion of stages 1 and 2, ADS staff will update the *HS2 Historic Environment Digital Data Management and Archiving Procedures*
- Essential for ensuring that the HS2 Historic Environment workflows are aligned with those of the redeveloped OASIS system

STAGE 4: Definition of SLA

- Review of information gathered during the scoping project, will guide development of a costed outline for a SLA between HS2 Ltd and the ADS
- Outline will include provisional estimates for the essential services such as staffing levels, storage requirements, and systems support required to facilitate the long-term preservation and dissemination of the HS2 Digital Archive
- Outline will include specific conditions for data submission to ADS these will be incorporated into existing HS2 standards and guidance to ensure contractors are preparing the digital component of the archives in-line with ADS guidance





Key Themes

Contractor interaction with HER data and OASIS records

Concerns raised as to whether HS2 Contractors are utilising HER data to its fullest extent

- HS2 staff have responded by reviewing our own data holdings to ensure all relevant and appropriate datasets are available to our contractors
- HS2 Historic Environment Data Manager has undertaken a review of existing guidance in relation to Heritage-based geospatial data held by HS2 Ltd
- HS2 Historic Environment Data Manager to undertake audit and process mapping

Concerns over the creation and management of OASIS records by contractors

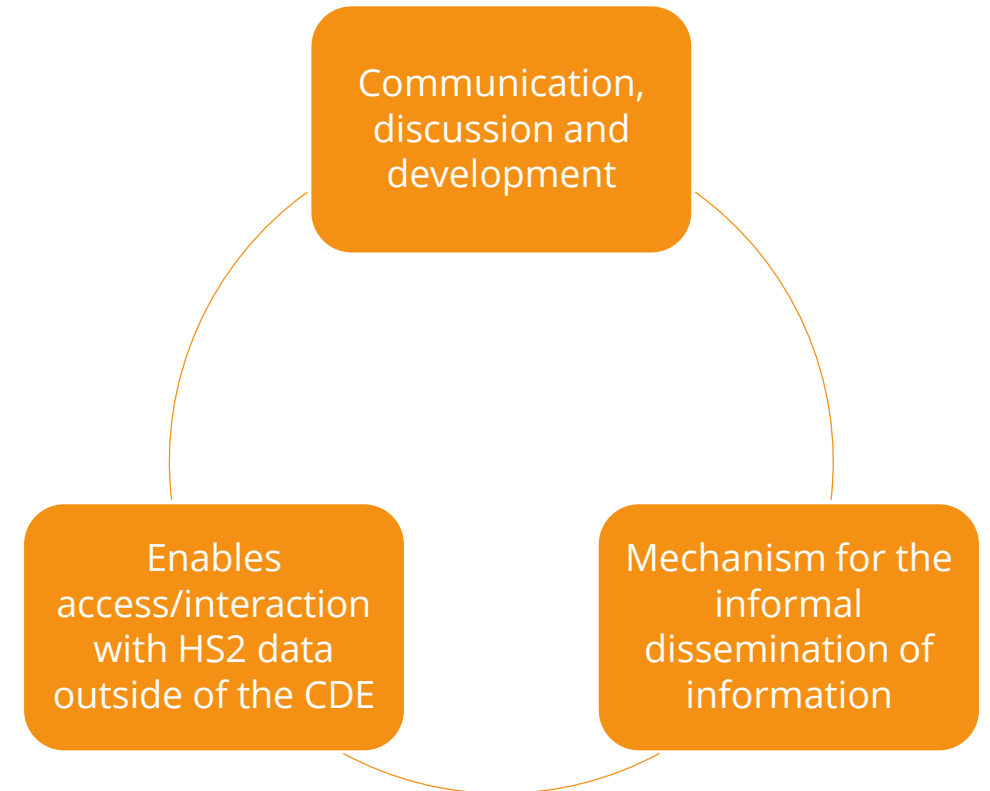
- Issue specifically addressed in project-wide instruction to Contractors in April 2018
- Issue addressed in HS2 Technical Standard – Historic environment digital data management and archiving procedure (HS2-HS2-EV-STD-000-000040)

BOTH ISSUES TO BE SPECIFICALLY ADDRESSED DURING CONTRACTOR GIS ROUNDTABLE/WORKSHOP AND DURING ADS CONTRACTOR VISITS

Key Themes

Release of HERDS Digital Platform

- BETA version of HERDS Digital Platform is now available to Stakeholders and Contractors
- BETA version includes a WIP instance of G-Viewer (HS2's GeoPortal)
- BETA version is dynamic, as such format/content will continue to develop
- Guidance is currently being reviewed and will be released to the site shortly



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STAKEHOLDER INTERFACE

HER Stakeholders

Key Themes

Release of HERDS Digital Platform

- **G-Viewer currently holds over 70 LAYERS** containing information related to the **Historic Environment**. Sources are diverse:

HER DATA

RISK MANAGEMENT

BGS GEOLOGICAL

LiDAR DATA
DSM/DTM 200mm

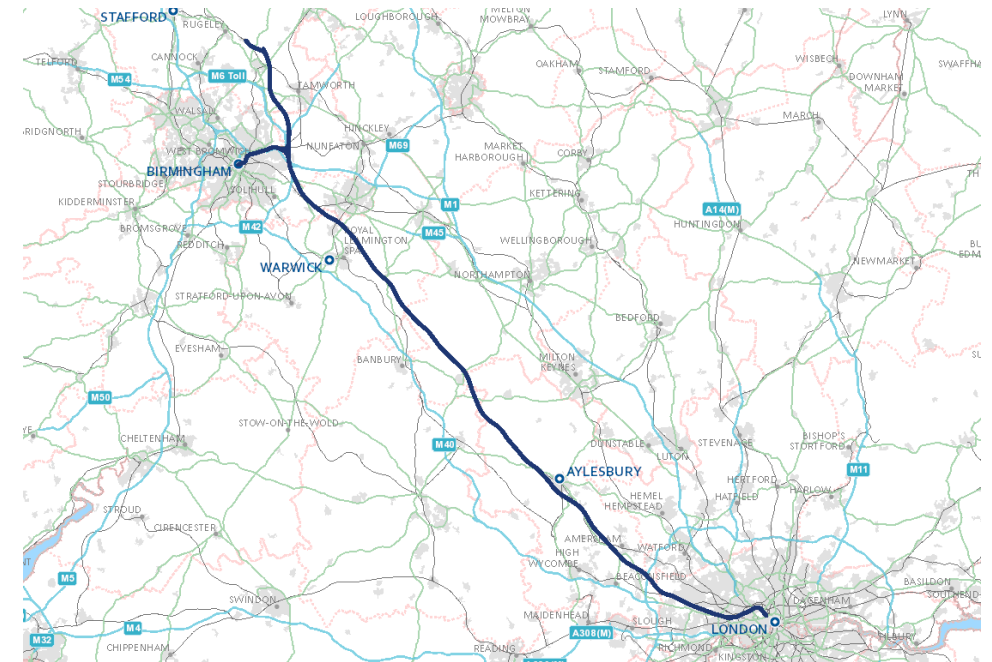
AERIAL IMAGERY
150-200mm

HE DATA

LOGISTICS

GEOPHYS SURVEY
PLOT/INTERP

HLC DATA



Key Themes

Data / Reporting Workflows: HER > HS2/HS2 > HER

Historic Environment Records

- Both Stakeholders (HER) and HS2 have data accessioning commitments to one another
- HS2 receives HER data on a 6 month delivery schedule, each HER delivers a variety of information as separate thematic datasets primarily centred around Heritage Assets (Monuments) and Events
- Heritage data is stored within the HS2 Ltd GIS CDE and uploaded to G-Viewer

HS2 Ltd.

- HS2 collects a wide variety of Geospatial data with extensive metadata attributes, metadata is collected in-line with existing guidelines in terms of Heritage (MIDAS), ontology (FISH/GEMINI), and geospatial data standards (INSPIRE).
- Data required by HER's is provisioned for under the HS2 Cultural Heritage (HERDS) GIS Specification P04
- Associated reporting and/or documentation is currently stored within controlled environment (EB)

HISTORIC ENVIRONMENT RECORDS (HER)

DELIVERABLES:

- HERITAGE ASSET INFORMATION
- EVENT INFORMATION
- ANCILLIARY DATASETS

REQUIREMENTS:

- HERITAGE ASSET INFORMATION
- EVENT INFORMATION
- INTERVENTION INFORMATION

Key Themes

Data / Reporting Workflows:

HER > HS2/HS2 > HER

HS2 DELIVERY REQUIREMENTS

DELIVERABLES:

- HERITAGE ASSET INFORMATION
- EVENT INFORMATION
- INTERVENTION INFORMATION

HS2 DATA COLLECTION:

EVENT + INTERVENTION: REDLINE BOUNDARY DATA:
(provided for in HS2 Cultural Heritage (HERDS) GIS Specification):

Relevant GIS Feature Layers:

- HIS_ORI_CXXXX_CH_HERDS_LSWSI_Ply,
- HIS_ORI_CXXXX_CH_HERDS_ProjectPlan_Ply
- HIS_ORI_CXXXX_CH_HERDS_WSIntervention_Ply

ASSET:

Requires further discussion with HER stakeholder group. HS2 Ltd collects feature information at a variety of levels how these are collated/transferred into definitive HER assets needs to be discussed further.

POSSIBLE AUTOMATION OF PROCESS

Data derived prior to beginning of fieldwork – Will be made available to Stakeholders and Contractors via G-Viewer

EXTERNAL LINKS

- Linked to HS2 internal asset register
- Linked to OASIS ID

Finalised dataset derived following the completion of the post-excavation assessment and reporting phase

Provisional

6 month delivery schedule

AOB

Next meeting:

Birmingham

Provisionally Thursday 13th June, 2-5pm

