Phase One Heritage Sub-group

London
17th September 2019

www.hs2.org.uk
Agenda

1. Welcome and Introductions
2. Landscape design, setting and design integration
3. Contractor reporting to LPAs
4. ADS Scoping Work
5. Investigating archaeological incidents
6. Archive Strategy update
7. Recent discoveries
8. AOB:
Landscape design, setting and design integration

Heritage Sub-group 17.09.2019
Agenda

• Approach - Landscape led design
• Rural Landscape
• Designed Landscapes
• Urban Landscape
• Green Corridor
HS2 Design Vision

People
Design for everyone to benefit and enjoy

Place
Design for a sense of place

Time
Design to stand the test of time

Design that promotes quality of life
Understanding Context

Knowledge of the landscape in its widest context, including the natural, social, historic and aesthetic qualities, shall guide and inform what is designed and planted where.

HS2’s ambition is to create a landscape that is:

- Supporting quality of life (people)
- Driven by local context (place)
- Resilient, robust and adaptable to environmental change (time)
• **Design approach** documents are a useful tool to set out design principles. Engage with the contractors to ensure they are understood.

• At the Hybrid Bill stage, consider the landscape context and design in concept opportunities.

• Encourage a **positive design** approach.

• Acknowledge **flexibility** in future design stages.

• Consider mandating use of a landscape designer in the **procurement** documentation.
Design

Not Knowing → Analysis → Generation → Simulation → Knowing

Not Knowing → Analysis → Generation → Simulation → Optimization → Knowing
Approach - Landscape led design

• Lack of clarity on data exchange and sharing design ideas between Contracts can lead to mismatched designs and duplication of effort.

Consider:
• Clarifying collaboration processes
• A common data environment
• Single client-side design lead with overall multi-disciplinary view and a lead contractor designer for coordination.

• Baseline environmental surveys completed too late to inform the emerging assessment / design. Result in missed opportunities to reduce environmental impact.

Recommend:
• Surveys undertaken during the Hybrid Bill stage to inform the ES
• Early works package instructed to inform EW scope discussions with the EWC
Rural landscape - Landscape Design Approach

Conserve

A sensitive high value landscape is likely to require a landscape design approach that creates significant screening and integration of HS2, but also develops measures that will conserve and enhance the overall landscape character.

Enhance

A landscape in which HS2 may be potentially highly visible is likely to require a bold landscape design approach to create effective screening and integration, but also gives the opportunity for enhancement of local landscape character.

Restore

HS2 may traverse a landscape that has lost or is losing original features and qualities that provided its intrinsic landscape character. The opportunity is to restore and significantly improve existing landscape character.

Transform

Some areas through which HS2 is planned may be in very poor landscape condition. The opportunity for HS2 bringing transformation and wide reaching positive landscape change may occur both in rural and urban locations.
Rural landscape - Landscape Design Approach

- Support local economies: Woodland planting to integrate railway could also be locally managed as coppice woodland, which respects historic landscape character and traditional woodland management.

- Positive use of excavated materials: Excavated material carefully designed to screen views of HS2 from local receptors, and returned to agriculture. Contouring to be natural and reflect the character of local topography.

- Community and visitor features: Earthwork and planting features that can provide landscape enhancement and HS2 observation areas for the community and visitors.

- Promote local walking & cycling network: Provide opportunities for enhancing health and wellbeing in publicly accessible areas. Look to recreate local landscape features.

- Conserve or enhance local landscape character: Hedgerows with tree species reinstated and enhanced to reflect landscape character and reconnect locally fragmented planting areas.

- Access: Severed routes will be reconnected and integrated into wider access networks.

- Planting character: Planting area to be shaped to respond to the scale and character of local planting and earthwork patterns.

- Positive integration of structures: Earthworks and large scale planting used to integrate realigned bridge structure with the local landscape.
Rural landscape – Follow historical precedent

- Where practicable, the scheme design has looked at historical precedent (OS maps) for accommodating mitigation planting
- Better integration with Landscape character
- Avoid incongruous planting in the landscape
- Ensure that planting design doesn't inhibit the activities of farmers and landowners
A wide variety of woodlands, trees and hedgerows are to be surveyed to understand how they are affected by proposed works.

HS2 has designed a bespoke survey standard to efficiently record existing vegetation.

- All trees over 75mm girth including Veteran Trees
- Tree Groups
- Hedgerows
- Woodlands
Rural Landscape - Planting and Maintenance

- On HS1, sheep have been used for grazing / cutting of grass in some steep areas,
- Part of HS1 management of rabbits has been to use licensed ferreterers in maintenance plans
- Trains from France have been spreading schedule 9 weeds on the trace (e.g. Buddleia)
- Weed spraying of track bed walking route (cess) may be required. HS1 used Kawasaki ATVs but issues with line side infrastructure creating obstructions to vehicle movements. Minimise knapsack spraying
- If providing formal hedging, ensure access for side-arm flail or similar
- Tubex guards were not used for aesthetic/visual reasons – instead used thousands of mesh/spiral guards and miles of rabbit mesh. If use Tubex, ensure budget allocation in future years for removal
Rural Landscape – HS1 Mersham Green Bridge (East of Ashford)

2002 at completion of construction works before establishment of planting - footpath follows tracks

C13th Church of John the Baptist – Grade 1
N Downs Tunnel: construction + reinstatement

Construction impact to chalk Downs

North Downs context and reinstated site
N Downs Tunnel: ‘Country Portal’ Blue Bell Hill

Photo taken Summer 2003

Numerous fencing runs around portal; some requested by Structures Examiners following their annual inspection
Designed landscapes – Hartwell House RPG

Hartwell House landscape design

- Views from public access points
- Landscape marking medieval routes to be retained
- Historical landscape boundaries to be restored with additional tree and hedge planting
- Existing historical landscape boundary to be strengthened with additional hedge planting
- Tree clusters formed around existing mature trees or to be planted in historical cluster locations

Historical Landscape Information

- DCLA sketch
- Field boundaries and trees shown on first edition O.S. 1877

O.S. 1877
(Supplied by DCLA)
Designed landscapes – Hartwell House RPG

Tree Avenue

PROW, Rifle Spinney

Boundary Wall, Tree Belt

View retained to St Mary’s Church
Urban Landscapes

Curzon Street Station site, Birmingham
Urban landscape - integration

Birmingham Curzon Street Urban Regeneration

This display shows examples and precedents of opportunities for regeneration around the new Birmingham Curzon Street Station.

These are not all in HS2 scope, but we will be facilitating Birmingham City Council’s aspirations.
Urban landscape - Curzon Street viaduct vision
Viaduct Vision

Four Potential Threads:

- Creating a **Leisure Destination** serving the local community including students (Cafes, Bars, Restaurants, Clubs, Markets, Pop-ups)

- Establishing a C21st **Maker Community** (Digital Fabrication Laboratories, Business Incubators, Co-working spaces)

- Establishing a new **Music and Arts Hub**

- Providing community **Sports Facilities**
Lessons identified by the Design Panel

Project Observations
- Design ambition / place-based approach
- Holistic Landscape approach
- Procurement
- Urban integration / beyond the red line
- Community engagement / education
- Communication / specimen designs
- View from the train
- Design champion

Using the Design Panel Effectively
- Engage early enough so design can still be influenced
- Formal design reviews supported by informal mentoring sessions
- The red phone
Green Corridor

A. Mitigation
Hybrid Bill/Act

B. Strategic Mitigation Agreement

C. Enhancement
CEF/BLEF and Woodland Fund

D. Wider Enhancement through Partnership

Compensation

C. Enhancement
CEF/BLEF and Woodland Fund

D. Wider Enhancement through Partnership
## Green Corridor HS2 Phase Opportunities

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<th>Phase 2a</th>
<th>Phase 2b</th>
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<td>Compulsory Acquisition&lt;br&gt;Land returned with covenant</td>
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Green Corridor

1: Urban green infrastructure:
   • Greens, pocket parks
   • Urban wildlife sites, spaces for nature

2: Heritage enhancement:
   • Enhancement/restoration of parks and gardens
   • Improved setting of historic sites & monuments

3: Water enhancement:
   • Improvement to watercourses, water quality
   • Flood attenuation
   • SuDS schemes

4: Ecological enhancement:
   • Improvement to existing wildlife sites
   • Woodland creation
   • Habitat creation/enhancement
HS2

Archaeological Data Service
The HSG has previously queried provision of HS2 reports to OASIS.

Contractors are instructed to upload OASIS reports, for validation by the HER/HE. This has not always been happening.

HS2 and ADS have written guidance to coach contractors to ensure HS2 fieldwork reports are clearly identifiable, and OASIS entries are consistent.

HS2 sites will be prefixed by ‘HS2’ included in the site name.

Several OASIS fields (including ‘project funder’) will be defined as ‘HS2’ to further support identification.
Digital Archiving

• HS2 only requires a part of the data produced by our contractors

• We are working in partnership with the ADS to define what of the remaining data should be discarded, and what should be archived.

• The ADS has met with our contractors to assess the scale of the digital data and are drawing up the terms of an agreement for archiving.

• There will be a dedicated space on ADS for HS2
Digital Archiving Procedure

• In order to align the ADS work with our contractors work, the ADS will be reviewing and re-issuing our Digital Archiving Procedure

• This is the technical standard that defines the process of transferring archives to the ADS, and the metadata, formats and other fields that structure the archive

• To be delivered early 2020
HS2

Investigating archaeological incidents

Heritage sub-group SEPTEMBER 2019
Executive Summary I

• Following the incident that was raised on HORACE as a level 4 incident in 28-Feb-19 which has been escalated on the 31-Jul-19 to a level 2 event.

• There has been partial damage of archaeology remains of regional significance during excavation of the top / sub soil layer to enable the construction of the DC3FGH Chipping Warden Road Relief Scheme. These remains had been identified as requiring further recording prior to construction. This is a non-compliance with the project EMR's and Code of Construction Practice.

• The conclusion of the investigation is that damage of the archaeology was directly caused by non-application of the procedures in place, which are deemed fit for purpose, but were unintentionally partially omitted. The main root causes contributing to non-application of the procedures are lack of understanding of the HERDS Process by the delivery team, poor integration of HERDS in the safe systems of works and lack of communication at all levels.

• According to the above the main areas of improvement proposed are reinforcing HERDS requirements through exiting systems of work and processes, improve Fusion internal communication and coordination, increase awareness on HERDS and streamline the HERDS process which may be too complex for non-specialist staff.
Executive Summary II - Direct implications

Total area targeted for mitigation: reduction from originally 7500m² (red boundary) to 3055m². The de-scoped area was confirmed not to be impacted by subsequent construction works.

Area damaged – circa 1863m²

Depth of the damaged area approximately 600mm.

Archaeological features of regional significance have been damaged between Trenches 20-22. Although this area had been heavily impacted upon by the WWII impacts (blue area), Dawnus caused further impact on the archaeology remains leading to a 100% loss (red and green area). Fusion were not aware of the WWII impacts prior to the mitigation works.
Safe System of Works - Procedure

Package Level
- CDM Control Points
- Package Management Plans
- Programme

Site Specific Level
- Method Statement
- Risk Assessment
- ITP

Activity Level
- Permits to Work e.g. Permit to Dig, Permit to Clear...
- Consents e.g. S61, Sch4, Sch33

Environmental and / or Archaeological Management Plan
- Archaeology risk and investigation status
- Herds Processes to be followed
- Key Points of Contact

Project Plan, LSWSIs and Fieldwork Reports
- Site specific scheme
- Methodology
- Results of the investigation

Decision Record Notice (DRN)
- Exclusion zones
- Confirmation of area cleared
- Further works required
- Watching Brief required

IMMEDIATE CAUSE OF ACCIDENT – PARTIAL OMISSION OF THE HERDS PROCESS WITHIN THE SAFE SYSTEMS OF WORK

Risk identified
Management of the risk not included in the RAMS
DRN not considered part of the required Permits to Work
**ROOT CAUSE ANALYSIS**

**Knowledge Transfer (JF-2)**
- 4 - POOR INDUCTION DELIVERY
  Herds was not incorporated into inductions.

**Risk Management (JF-1)**
- 5 - NO IDENTIFICATION OF CONTROLS
  RAMS does not cover the HERDS risk as per the EMP, DRN not part of the PPM.
  No reference in the ITP.
- 11 - INADEQUATE MANAGEMENT OF CHANGE
  RAMS was not updated to address the Herds risk after the first near miss in October when the compound set-up was not clear.

**Communication (JF-6)**
- 1 - INADEQUATE COMMUNICATION IN WORKTEAM, BETWEEN WORK TEAM, SUPERVISOR – WORK TEAM.
- 3 & 4 - INABILITY TO IDENTIFY SAFE BEHAVIOUR and POOR REINFORCEMENT
  General unfamiliarity with the Herds Process and control measures.

**Unsafe Behaviour (PF-1)**
- 2 - FAILURE TO ACT ON THAT INFORMATION
- 3 - FAILURE TO MONITOR THE LEARNING HAS TAKEN PLACE
  Once the incident was reported in February, the agreed investigation process wasn’t followed.

**Learning from experience (JF-5)**

**Safety of Leadership (JF-3)**
- 1 - POOR DEFINITION OF ACCOUNTABILITY
- 2 - INADEQUATE DEFINITION OF REPORTING LINE
  Changes in the Fusion Organizational Chart, no clear communication channels established, no clear DC3 Org Chart.

**Design (JF-7)**
- 2 - POOR DRAWINGS, SPECIFICATIONS OR METHODOLOGY
  First DRN did not clearly specify further mitigation requirements.

**Contractor Engagement (JF-4)**
- 4 - NO POSITIVE ENGAGEMENT OF SUBCONTRACTORS
- 11 - INADEQUATE USE OF COMPETENCY
  The Herds Technical manager made decisions to proceed and impact assessments without minimum relevant information available.

**Other Points**
- 8 - LACK OF UNDERSTANDING
  Complexity of Archaeology terms and unclear DRNs to be understood by the Delivery Team. Herds Technical Manager not familiar with the Civil Technical Language.
- 10 - PROGRAMME PRESSURE
  Fusion Delivery Team were under programme pressures due to previous delays and site visits by stakeholders and media.
IMPROVEMENT AREAS - Recommendations

**IMMEDIATE 06/09/2019**
- HERDS Compliance Check before works resume at Chipping Warden DC3
- Review of DRNs and RAMS
- Org Chart update
- Briefing on HERDS

**INTERIM 04/10/2019**
- Reinforce HERDS requirements through existing systems of work and processes
- CP5 and CP6 Hold Points
- Archaeology Management Plan
- RAMS
- DRN as a PTW
- ITP
- Incorporate HERDS into handover forms to other contractors
- Brief latest Fusion Org Chart
- Establish reporting lines

**LONG TERM 18/10/2019**
- Improve internal communication and coordination
- Increase awareness on HERDS
- Incorporate HERDS into Environmental Induction
- Tool Box Talk on HERDS Process
- Increase Team engagement by sharing the history of our sites
- Lessons Learned distribution

**LONG TERM 29/11/2019**
- HERDS Process Complexity
- Possibilities to make it more simple and flexible
- Review the format of the DRNs
Sub-group sharepoint

- Code 1 (HS2 signed-off) project plans, LS-WSIs, DDBAs and fieldwork reports
  - Contact HS2 historic environment team if a document is missing

- Login-in using the details provided. If in doubt contact HS2 historic environment team

- Lengthy periods without access result in an account being disabled
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Construction phase, Buckinghamshire

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HER update

• New heritage data manager being recruited

• Accepting correct spatial information from contractor
  • Then uploaded onto our internal GIS system and therefore visible on the HERDS digital platform to our stakeholders

• Discussion with HERs via Heritage Sub-group HER contact, to understand what information HERs need

• HER data packages can then start being delivered to the local authorities