

# Landscape Design Approach

## A brief summary

Chilterns AONB Review Group

22/04/16

Tiago Dias | Landscape Design Adviser

# HS2 Design Vision – making HS2 a catalyst for growth

*"HS2's principal objective is to deliver an inspired design, the best in worldwide design. The system will be delivered through all the designed elements coming together. Every design task is critical."*

Simon Kirby - CEO, High Speed Two (HS2) Ltd



## People

Design for everyone to benefit and enjoy

- 1 Design for the needs of our diverse audiences
- 2 Engage with communities over the life of a project
- 3 Inspire excellence through creative talent



## Place

Design for a sense of place

- 4 Design places and spaces that support quality of life
- 5 Celebrate the local within a coherent national narrative
- 6 Demonstrate commitment to the natural world



## Time

Design to stand the test of time

- 7 Design to adapt for future generations
- 8 Place a premium on the personal time of the customers
- 9 Make the most of the time to design

# HS2 Landscape Design Approach

The LDA embraces the wider HS2 vision, and is based on principles set out within the HS2 Design Vision, reflecting the project's commitment to the role that good landscape design will play in making High Speed Two 'a catalyst for growth' across Britain.

It presents the design aspirations for HS2 to ensure the project can achieve its full potential.

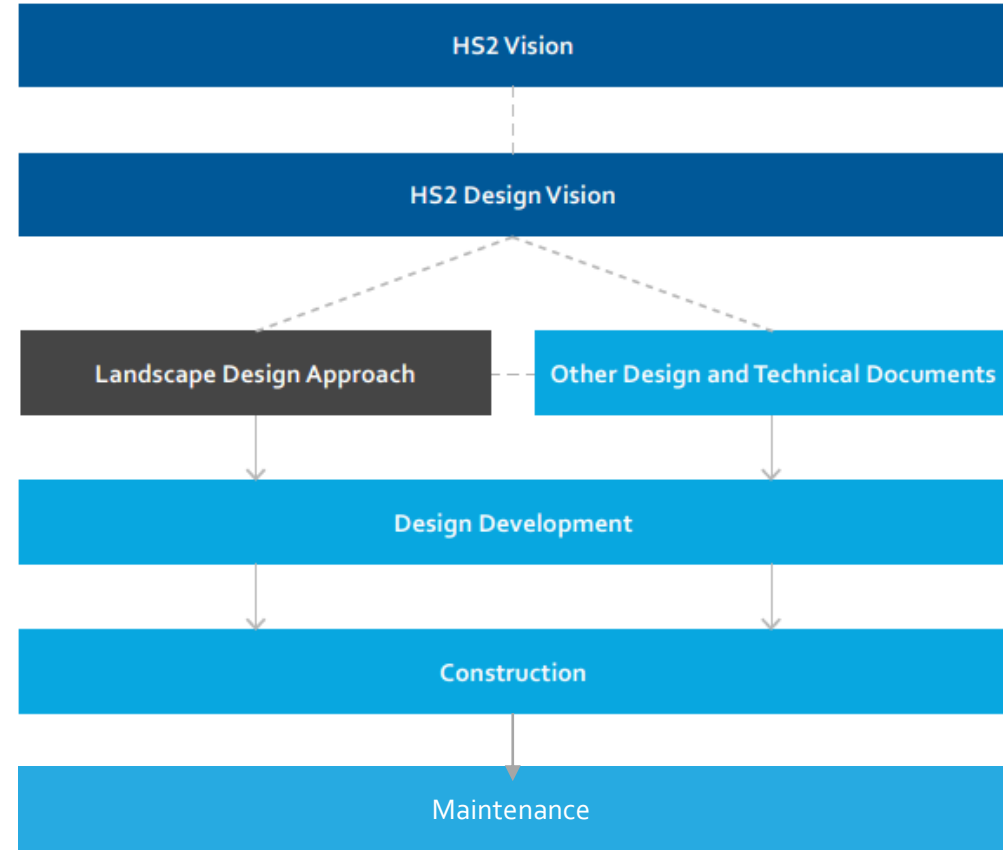


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# HS2 Landscape Design Approach

*'It's not just about the architecture of stations, but the land in between. We must think about everything we do in terms of design and quality, because we will be leaving it for others to inherit'.*

(David Higgins, HS2 Chairman)



# What is Landscape Design? – *it's all encompassing*

*'Landscape is an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors'.*

(\*European Landscape Convention, 2000)



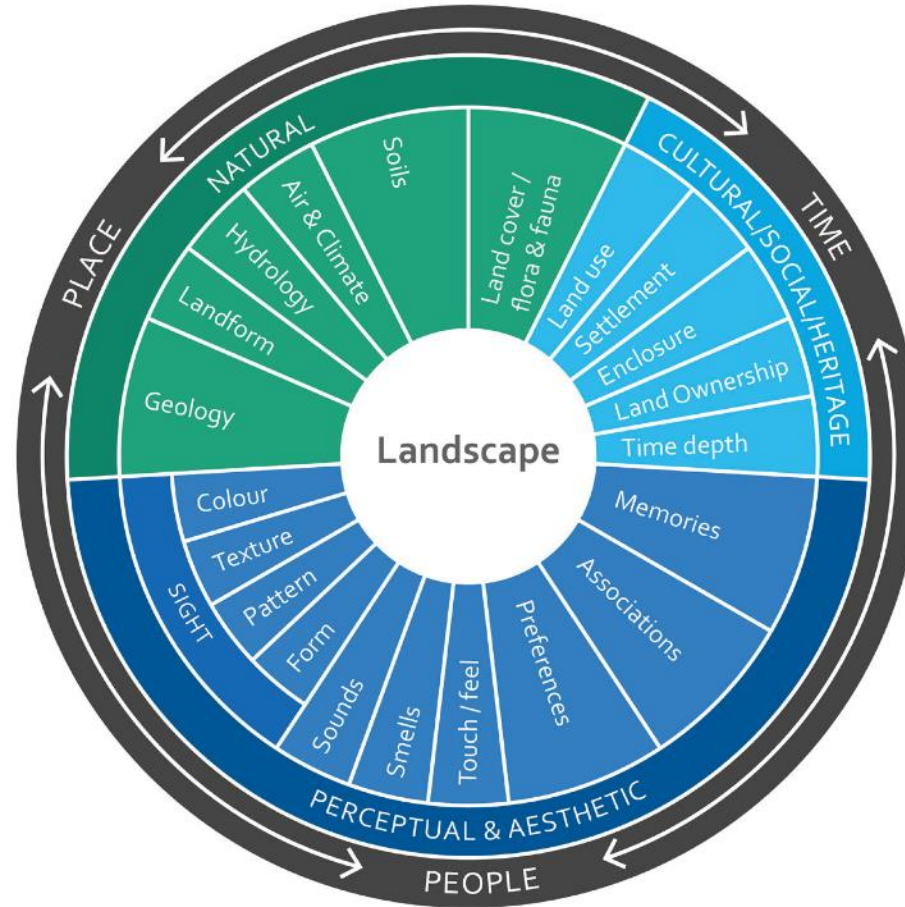
# The role of Landscape Design



Infrastructure



Interfaces



Rural



Urban

# Understanding & responding to local context

## 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.

# What the HS2 Design Vision means for Landscape



PEOPLE

Landscape designers will continue to work with communities and stakeholders to understand their needs and aspirations, the local landscape context and the opportunities for social, economic and environmental benefits.



PLACE

The objective is to deliver a coherent scheme for HS2, but one driven by local context along the line of route, supporting quality of life and demonstrating environmentally sensitive design.

In many places, this may be about the sensitive integration of HS2 into the local landscape through a conservation, restoration or enhancement design approach. In other places, local context may require the creation of bold new landscapes and places that will contribute to the regeneration of areas and communities, and boost economic growth.



TIME

The landscape designers have to be committed to ensuring that wherever possible the materials are designed to last, and will enhance with age over time.

The HS2 landscape is designed to be adaptable to environmental change and wherever possible to add beauty to the landscape. Management measures will be developed to ensure that the design will enrich and develop thus providing a continual enhancement of the landscape over time.



# Developing opportunities

The landscape design has the opportunity to act as a driving force for the project, by influencing the surrounding environments in a positive way, and by providing opportunities to achieve wider benefits.



Add landscape beauty



Green buildings



Create urban forests



Improve urban microclimates



Healthy networks



Local community collaboration



Celebrate views



Enhance agriculture



Support local economies



Habitat creation



Celebrate heritage



Create resilience and legacy



Sustainability



New landforms



Understand and respond to local landscape character



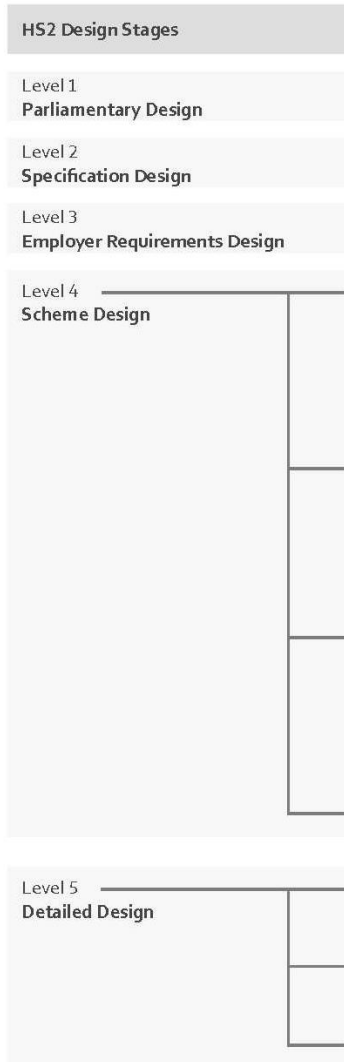
Creative management



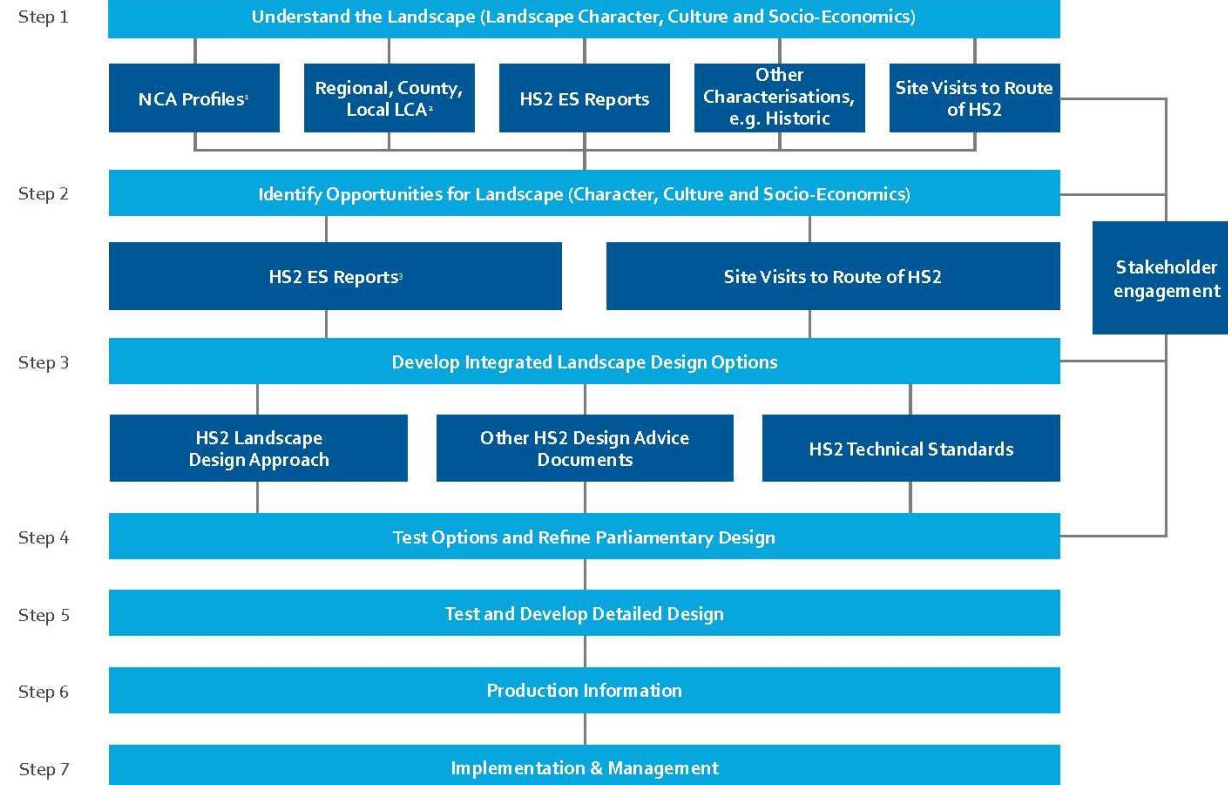
Positive use of excavated materials

Images: ©Shutterstock | Arup | Flickr CC | Wikimedia CC | The Rubens Hotel | Paul Carstairs | LDA Design | Trudi Entwistle | Yves Adams

# HS2 Landscape Design Methodology



**Design Method**



Chilterns AONB Review Group input

# The Landscape scale – *from macro to micro*

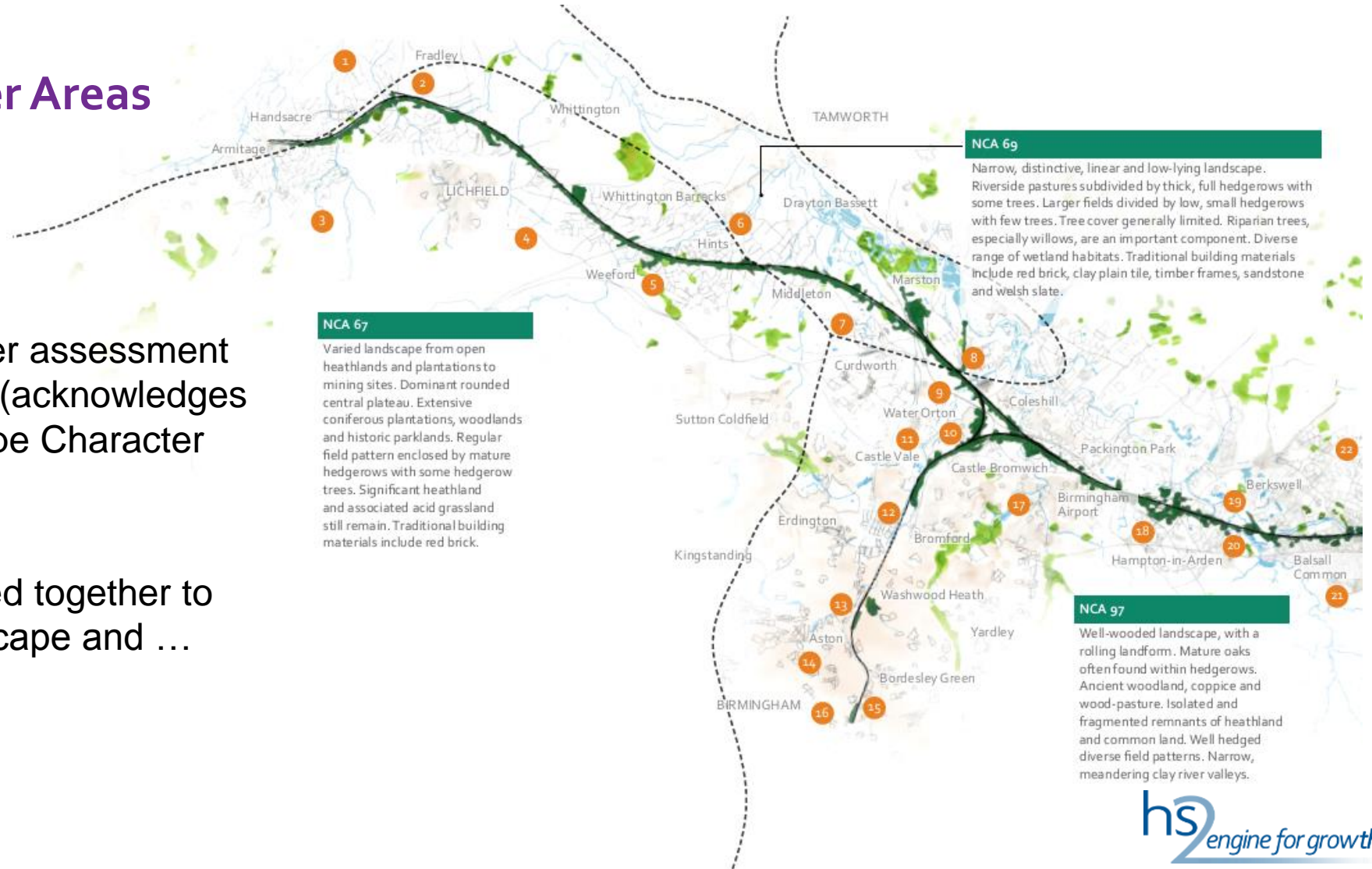
## Landscape Character Areas

People, Place and Time

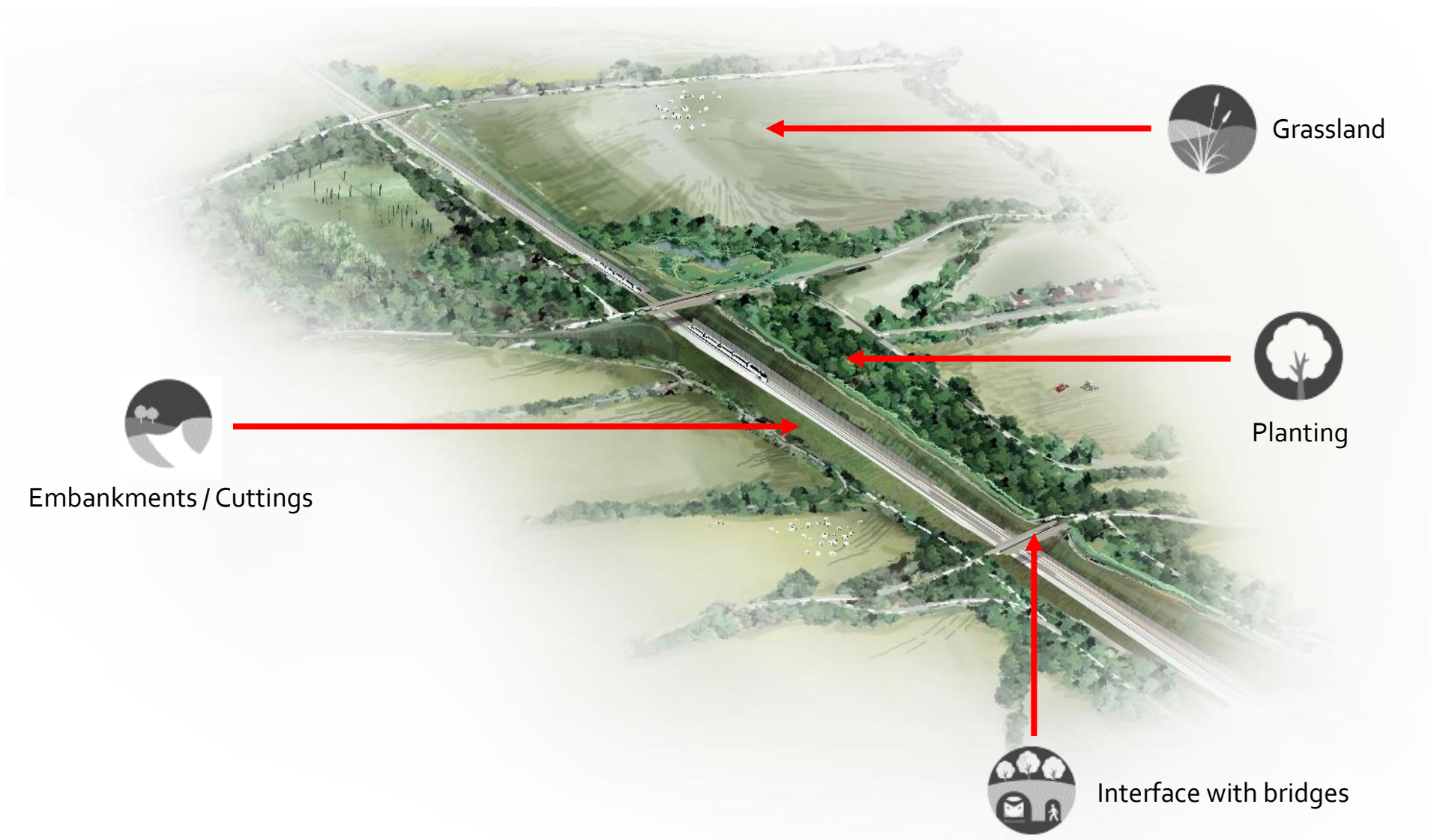
HS2's landscape character assessment uses local characteristics (acknowledges the District level Landscape Character Assessments)

Localised responses joined together to create a route wide landscape and ...

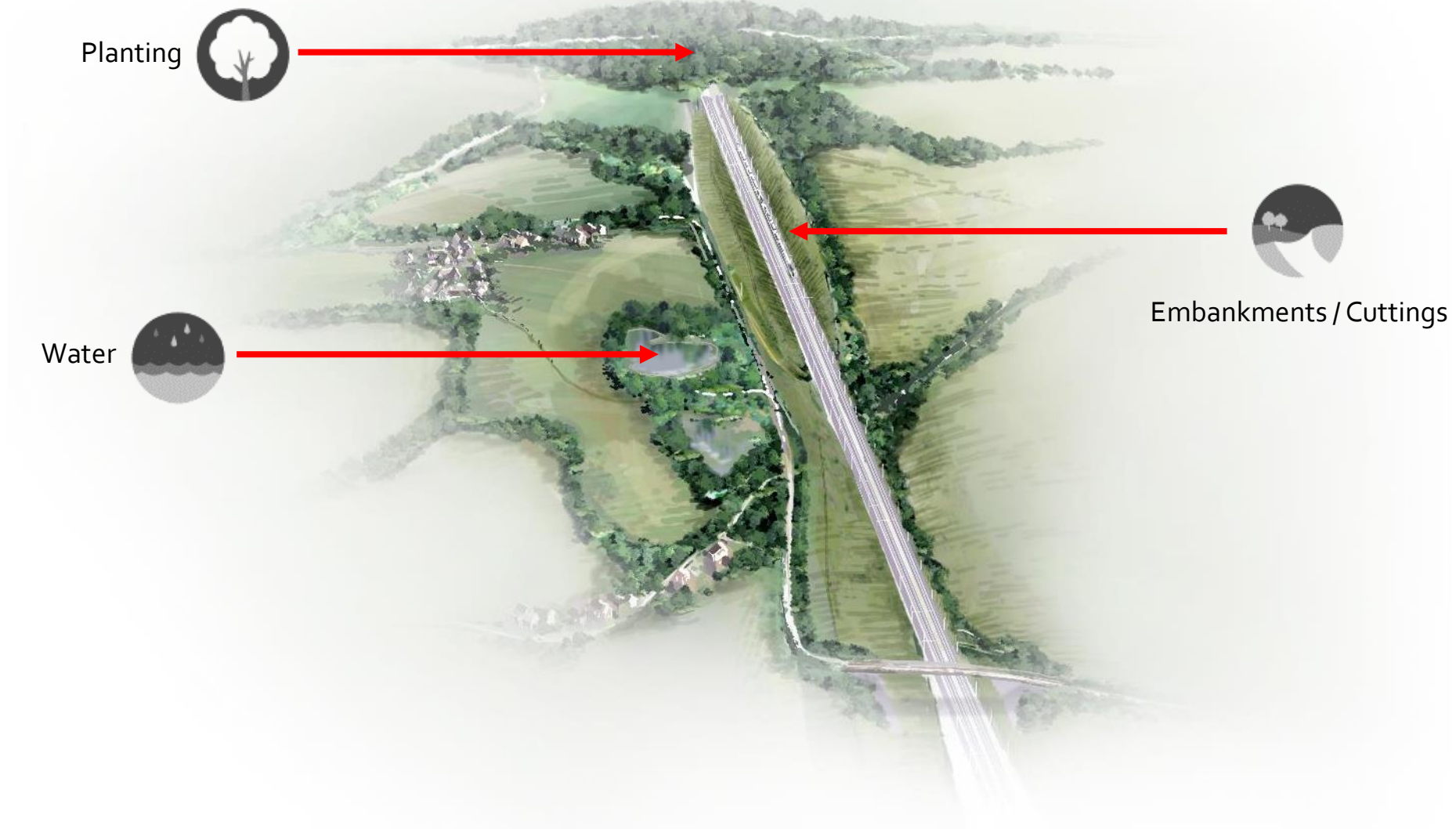
... An Hs2 experience.



# High value landscape setting



# Tunnel portal (Rural setting)



# Landscape design library



Temporary



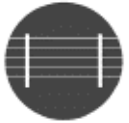
Highways



Earth works



Ecology



Fencing



Interface with buildings & structures



Heritage & Culture



Grassland



Access



Retaining walls



Water



Soil



Public realm



Public Open Space, Recreation & Play



Planting



Environmental barriers



Management

## Earthworks



### Design approach

The landscape earthworks form a major design element for the project. The earthworks will recycle the excess materials that will be excavated to create the route of HS2 in a positive way. So, typically the landscape earthworks will be designed to create slopes and earth mounding to immediately screen or reduce views of the railway, or gentle slopes and grading will be designed to help the route fit more comfortably within the existing character of the rural and urban landscapes through which the railway is planned. The earthworks will also incorporate agricultural land restoration, enhancements for ecological compensation or be shaped to enhance the settings for heritage features and buildings.

### Design considerations

- Transform the basic 'engineering earthworks design' into integrated earthworks that respond to local landscape character and design requirements.
- Design earthworks to provide a wide variety of functions to include: visual screening, landscape integration, noise protection (in lieu of noise barriers where space permits), agricultural restoration and improvement, new community features, e.g. for recreation, leisure, play, land art, local vantage and viewing points.
- Seek to reduce steep 'engineering' slope gradients to create usable agricultural land up to the railway boundary and minimise the rail operating corridor.
- Look to create false cuttings to aid visual screening and integration where the railway is on an embankment at grade or where cuttings will not be of sufficient depth to provide a visual screen.
- Where appropriate, recreate and/ or replace local landscape features to enhance local landscape character and heritage/ cultural features, e.g. sunken lanes, or the setting and view framing for historic buildings and landscapes.
- Avoid the creation of fragmented and redundant land areas between HS2 and the existing landscape or adjacent infrastructure, e.g. roads.
- Look to design slopes that provide optimal conditions for effective planting.
- The consideration of landscape earthworks design will also take into account the need in places, to allow views out from the rail corridor for rail passengers.
- Look for opportunities to allow cuttings and embankments in chalk or rock to colonise naturally.



The High Speed One North Downs Eastern (country) tunnel portal features extensive earthworks to integrate it within the local landscape ©Arup



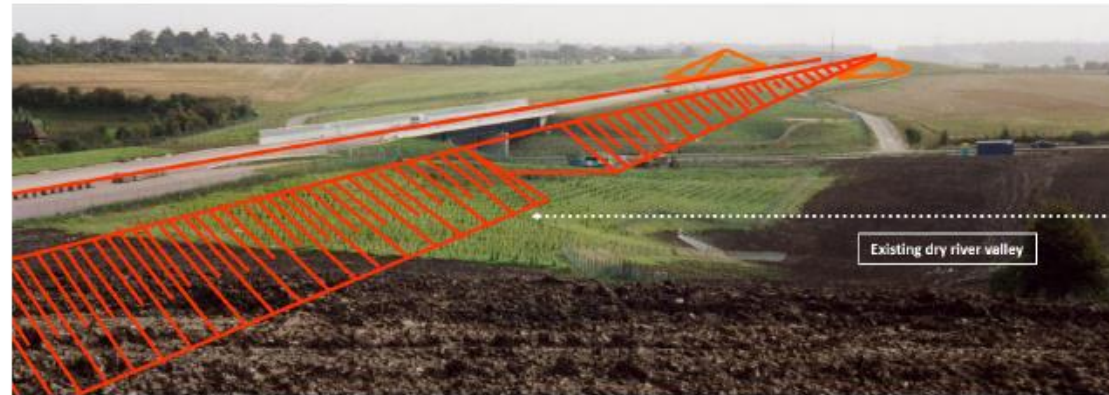
# Landscape design library

## Examples

The diagram to the right shows a basic engineering approach to earthworks in red.

An existing dry river valley is indicated that will be terminated by the railway.

The orange lines indicate engineering earthworks associated with a bridge crossing of the railway, which create features across the skyline.



An example of a railway crossing with mark up of how heavily engineered earthworks may result ©Arup

The lower diagram indicates the 'landscape earthworks', i.e. the modifications required to the engineering earthworks that utilise excavated materials in a sustainable way to integrate the railway within the landscape.

Land in the foreground can be returned to agriculture up to the boundary of the railway. The earthworks design creates a subtle 'end' to the dry valley. The slopes in yellow have been graded back to create healthier planting conditions for mass woodland planting. These earthworks also smooth out the contours on the skyline to create a more successful railway bridge crossing on the skyline.



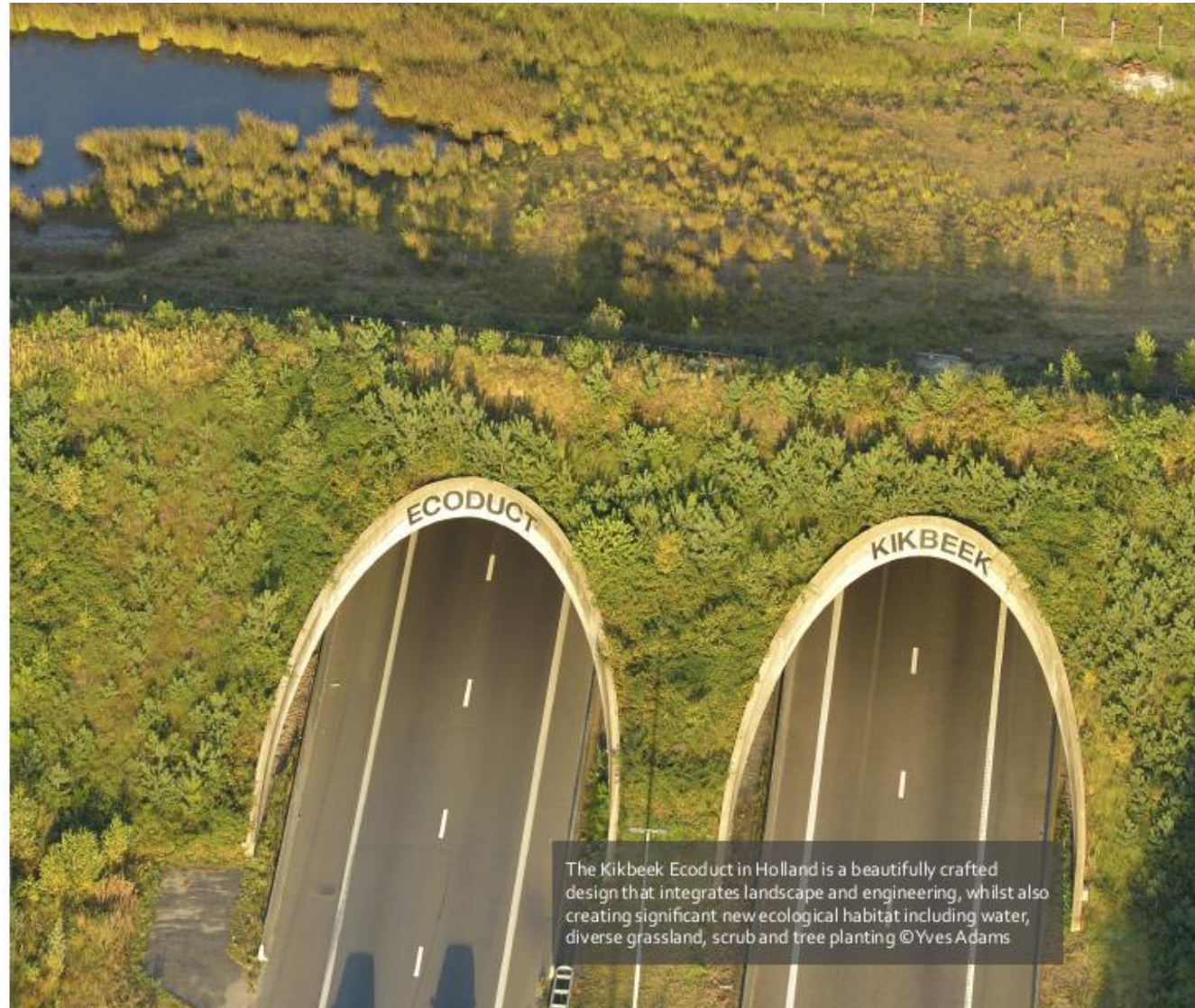
An HS1 railway crossing with arrows highlighting landscape earthworks ©Arup

# Landscape design library

## FURTHER INFORMATION

### Earthworks

- ▶ Information Paper E3: Excavated Material and Waste Management
- ▶ Information Paper E19: Sustainable On-Site Placement of Surplus Excavated Materials
- ▶ Information Paper D1: Design Policy
- ▶ Environmental Statement Vol.1 – London to West Midlands
- ▶ Environmental Statement Volume 2 Map Books: CT-05 – Construction Phase and CT-06 – Proposed Scheme



The Kikbeek Ecoduct in Holland is a beautifully crafted design that integrates landscape and engineering, whilst also creating significant new ecological habitat including water, diverse grassland, scrub and tree planting ©Yves Adams