Introduction

Welcome to the EKFB and HS2 feedback event showing the design of the Lower Thorpe and Edgcote Viaducts.

In October and November 2020, we held a virtual event to show our developing design for the viaducts. We asked the public to complete a questionnaire and provide us feedback about the design. This event will display the feedback we have received and show how we have developed the design of the viaducts to reflect the feedback.

HS2 Project Overview

HS2 is a new high speed railway that will form the backbone of Britain's transport network.

It will connect towns and cities in the South, Midlands and North with faster, easier and more reliable travel that will put more opportunities within reach for millions of people for work, business and leisure.

By increasing rail capacity, HS2 will free up space on existing lines for more commuter, regional and freight services. This will relieve overcrowding and improve reliability for millions of people using Britain's railways.

Summary of the engagement event supporting the viaducts

We hosted a one month virtual exhibition live from 19 October to 15 November 2020

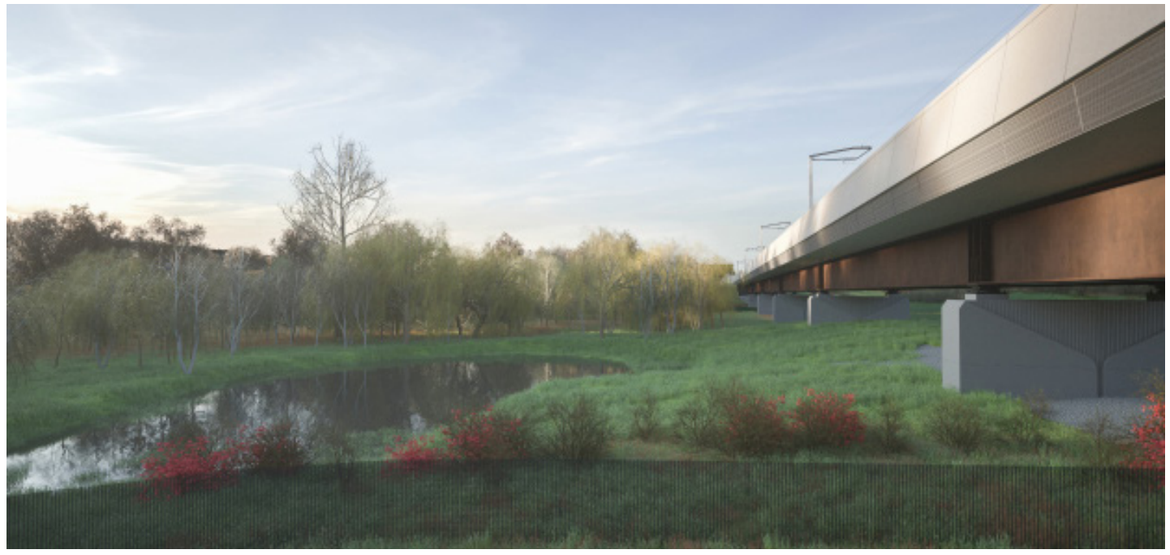
900 invitations to the event were posted out to local communities

We delivered three 90 minute webinars about design, landscaping and construction attended by 49 people

We received 31 feedback surveys

1472 people visited the online exhibition

An artist's impression of the Edgcote Viaduct in 10 years time post construction



An artist's impression of the Lower Thorpe Viaduct in 10 years time post construction

EKFB Working in partnership with HS2

Your feedback

Public feedback

During last year's events, we invited you to complete a questionnaire. The questionnaire covered seven topics and we asked you to rank our objectives in order of priority and provide comments.

These are the results of your feedback.

We understand that all objectives matter, please be assured that we are working in accordance with the Environmental Statement (ES) and the Code of Construction Practice (CoCP) to mitigate impacts on your community.

The event covers seven areas of input shown in the table opposite. The following boards detail further comments received on each of the topics.

Edgcote Viaduct design

1. Respect the landscape setting and design the viaduct to fit the existing terrain
2. Minimise the depth of the viaduct to increase open space beneath the deck
3. Allow for the meander of the River Cherwell beneath the structure
4. Design the viaduct simply and have consistent span lengths
5. Create a neat and uncluttered connection with the approach embankments

Edgcote Viaduct landscape design

1. Retain as much of the existing habitat as possible, and provide habitat connectivity
2. Screen the local community and heritage sites from visual impacts
3. Increase planted areas using species that are consistent with existing vegetation in the local area
4. Enhance biodiversity of the landscape
5. Preserve existing field patterns, hedgerows and fence lines

Lower Thorpe Viaduct design

1. Respect the landscape setting and design the viaduct to fit the existing terrain
2. Protect the local community from train noise
3. Maximise span lengths to increase open views of the landscape
4. Design the viaduct simply and have consistent span lengths
5. Create a neat and uncluttered connection with the approach embankments

Lower Thorpe Viaduct landscape design

1. Screen the local community from visual impacts
2. Retain as much of the existing habitat as possible, and provide habitat connectivity
3. Increase planted areas using species that are consistent with existing vegetation in the local area
4. Enhance biodiversity of the landscape
5. Preserve existing field patterns, hedgerows and fence lines

Construction

1. Minimise disruption to traffic on roads
2. Minimise noise generated by construction activity
3. Maintain access to local properties
4. Be kept informed about the work in advance of it being carried out
5. Reduce the duration of works where possible
6. Minimise dust generated by construction activity

Operational Noise

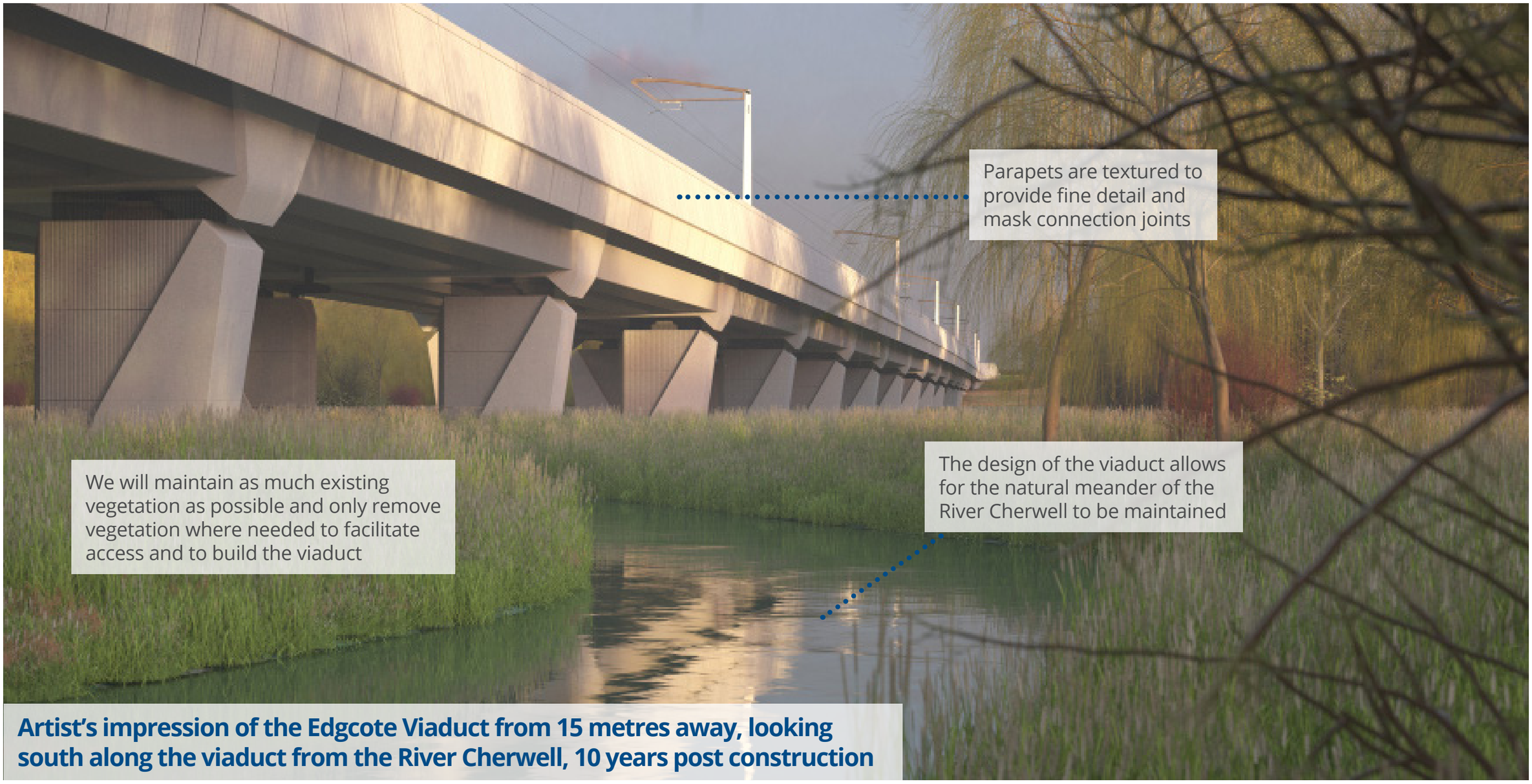
1. Protect the local community from train noise
2. Protect local wildlife from train noise
3. Develop the barriers to be consistent with viaduct design

Social Benefit, Employment and Training

1. Work with local companies to support construction work activities
2. Provide training, employment opportunities and apprenticeships
3. Provide opportunities for unemployed, disadvantaged and under-represented groups
4. Work with local schools and colleges
5. Provide long term job opportunities for the operational phase of HS2
6. Develop relationships with Local Authorities and Local Enterprise Partnerships

EKFB Working in partnership with HS2

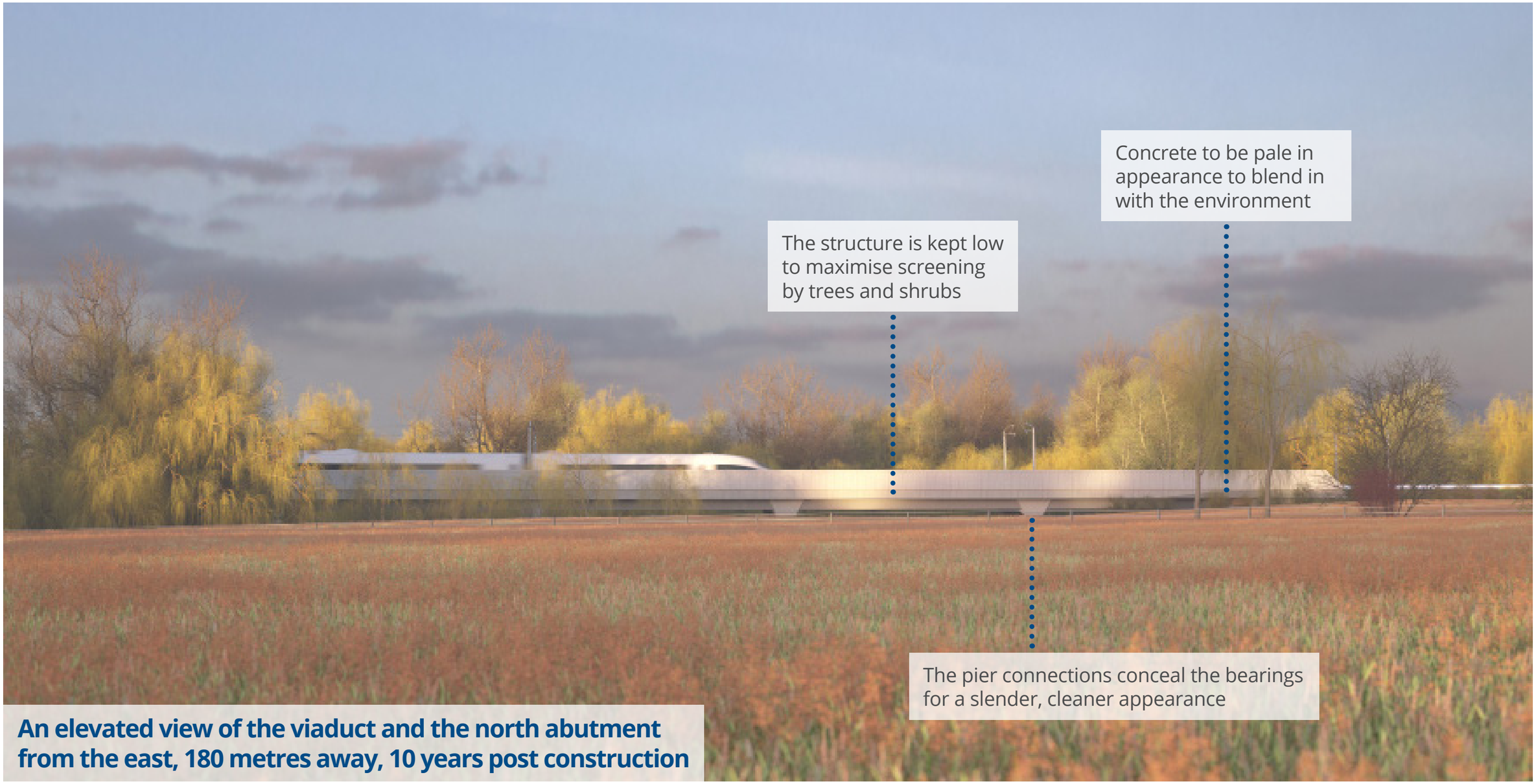
Edgcote Viaduct design feedback



Artist's impression of the Edgcote Viaduct from 15 metres away, looking south along the viaduct from the River Cherwell, 10 years post construction

EKFB Working in partnership with HS2

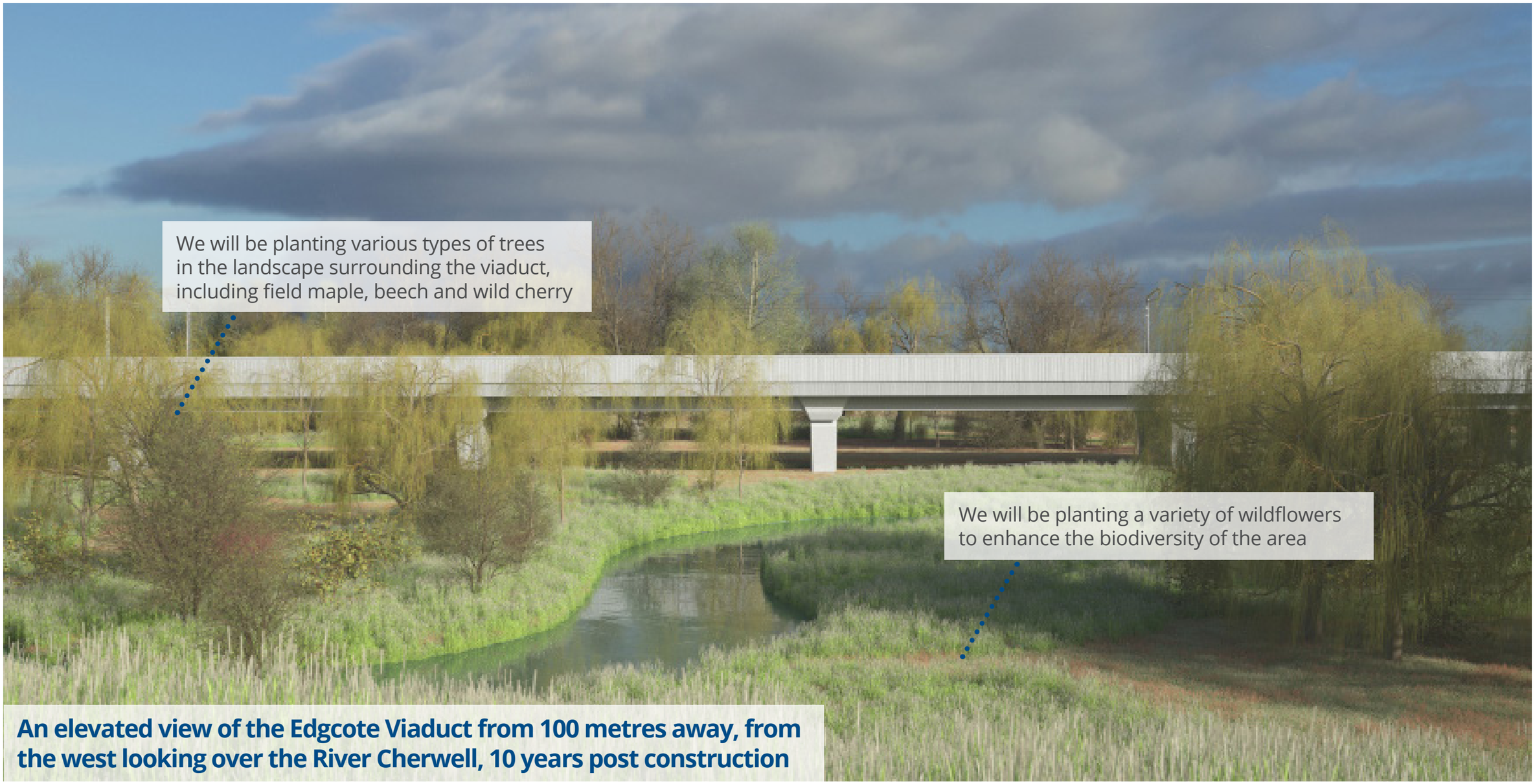
Edgcote Viaduct design feedback



An elevated view of the viaduct and the north abutment from the east, 180 metres away, 10 years post construction

EKFB Working in partnership with HS2

Edgcote Viaduct landscape feedback



An elevated view of the Edgcote Viaduct from 100 metres away, from the west looking over the River Cherwell, 10 years post construction

EKFB Working in partnership with HS2

Edgcote Viaduct landscape feedback

Aerial view of the Edgcote Viaduct and the River Cherwell, 10 years post construction

EKFB Working in partnership with HS2

2023 Edgcote viaduct design update

These images show the earlier design against the latest developed design.

The latest design has a slightly different arrangement underneath the viaduct. It has two beams and provides a more open arrangement. The sides and parapets remain very similar with a textured finish.

Latest design

The refinements made in this latest design have cut the carbon footprint by more than 13% in comparison to the previous design.

Earlier design

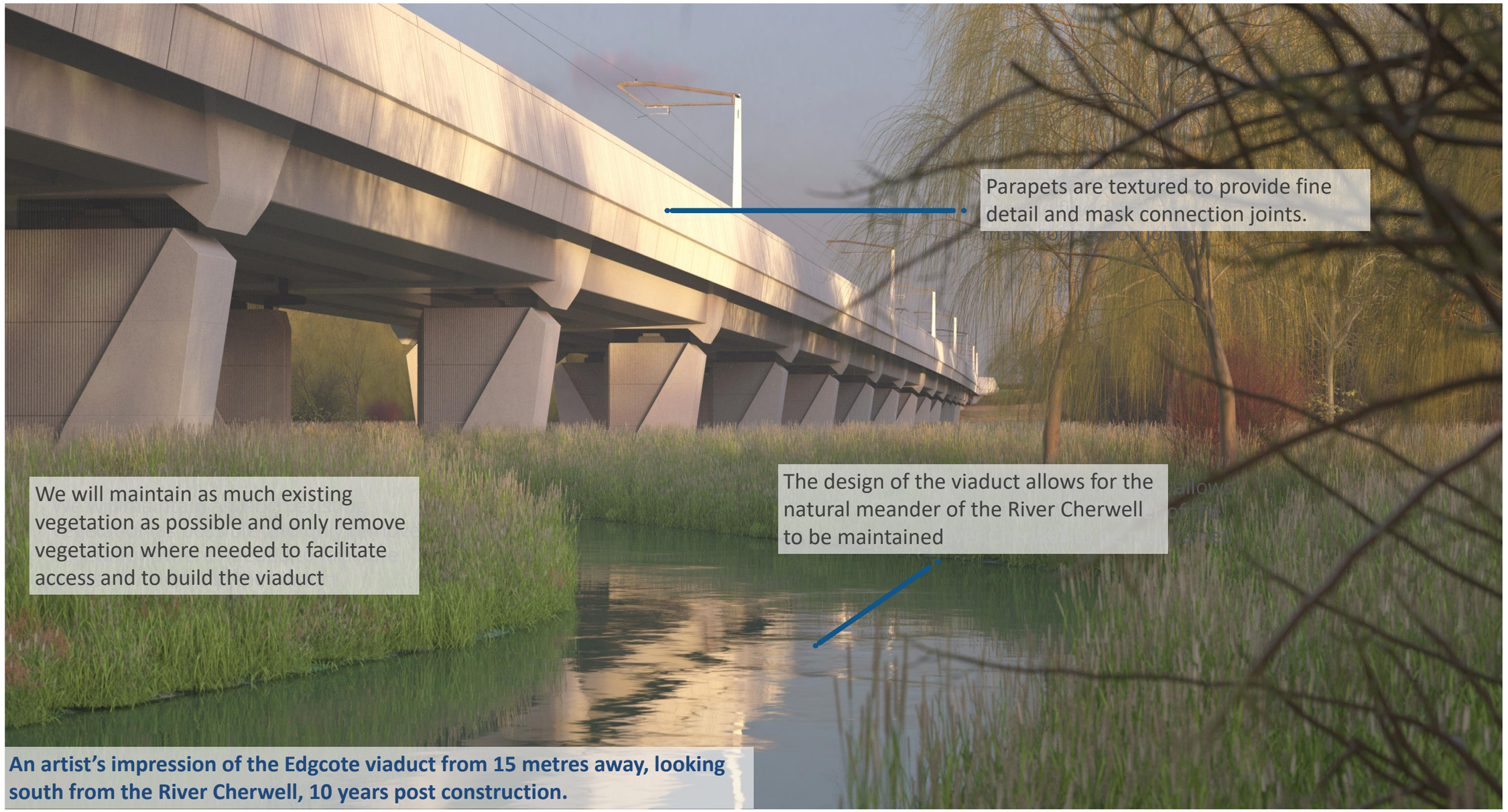
EKFB Working in partnership with HS2

Edgcote viaduct latest design

An artist's impression of the Edgcote viaduct from 10 metres away, looking south from the River Cherwell, 10 years post construction.

EKFB Working in partnership with HS2

Edgcote viaduct earlier design



An artist's impression of the Edgcote viaduct from 15 metres away, looking south from the River Cherwell, 10 years post construction.

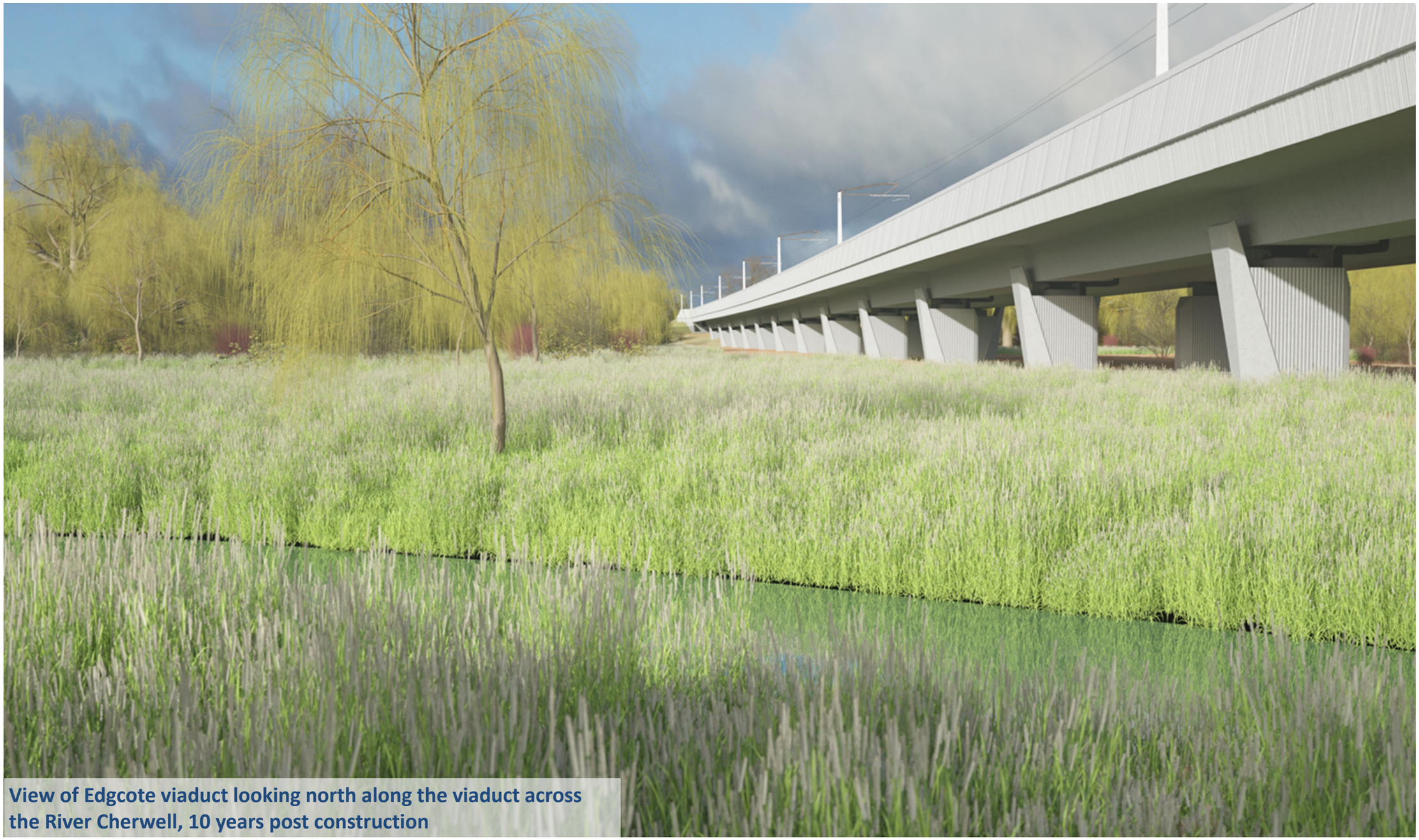
EKFB Working in partnership with HS2

Edgcote viaduct latest design

View of a typical span of the Edgcote viaduct from 15 metres away, 10 years post construction.

EKFB Working in partnership with HS2

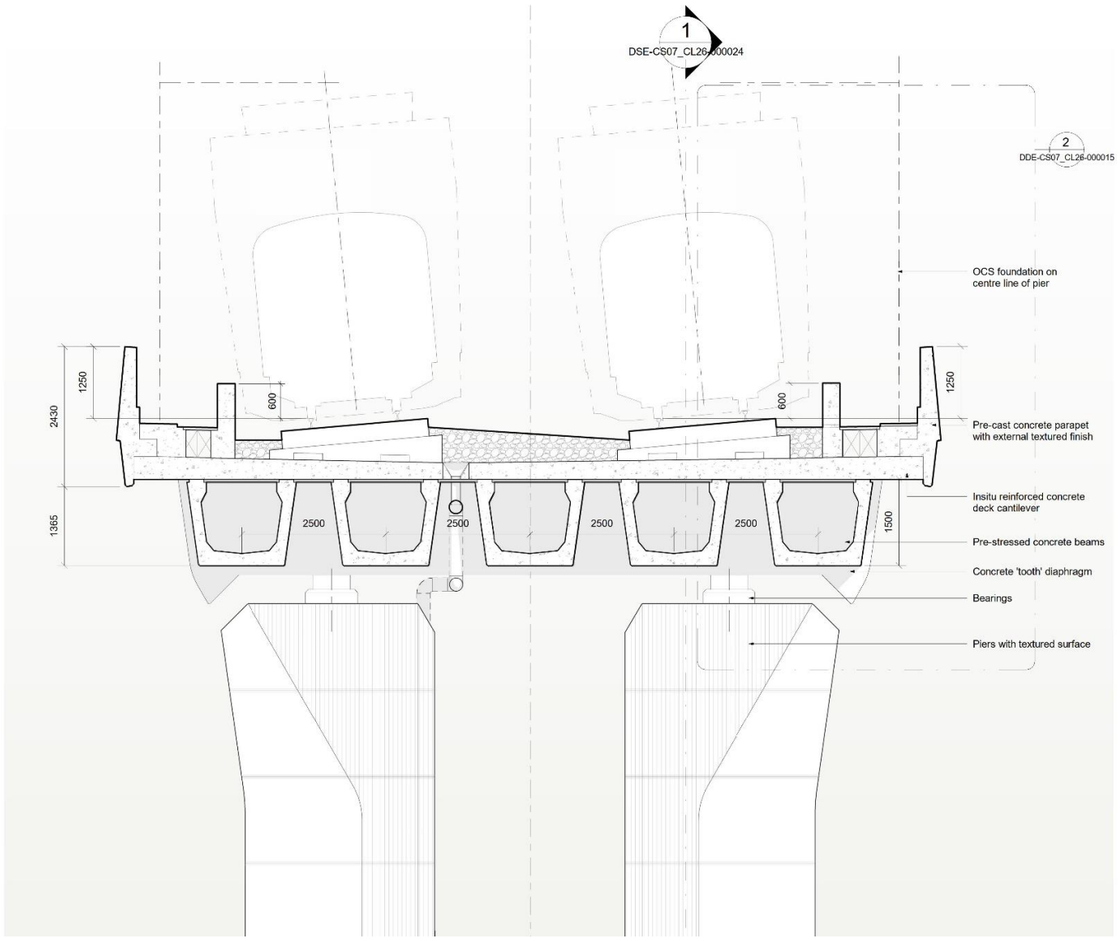
Edgcote viaduct latest design



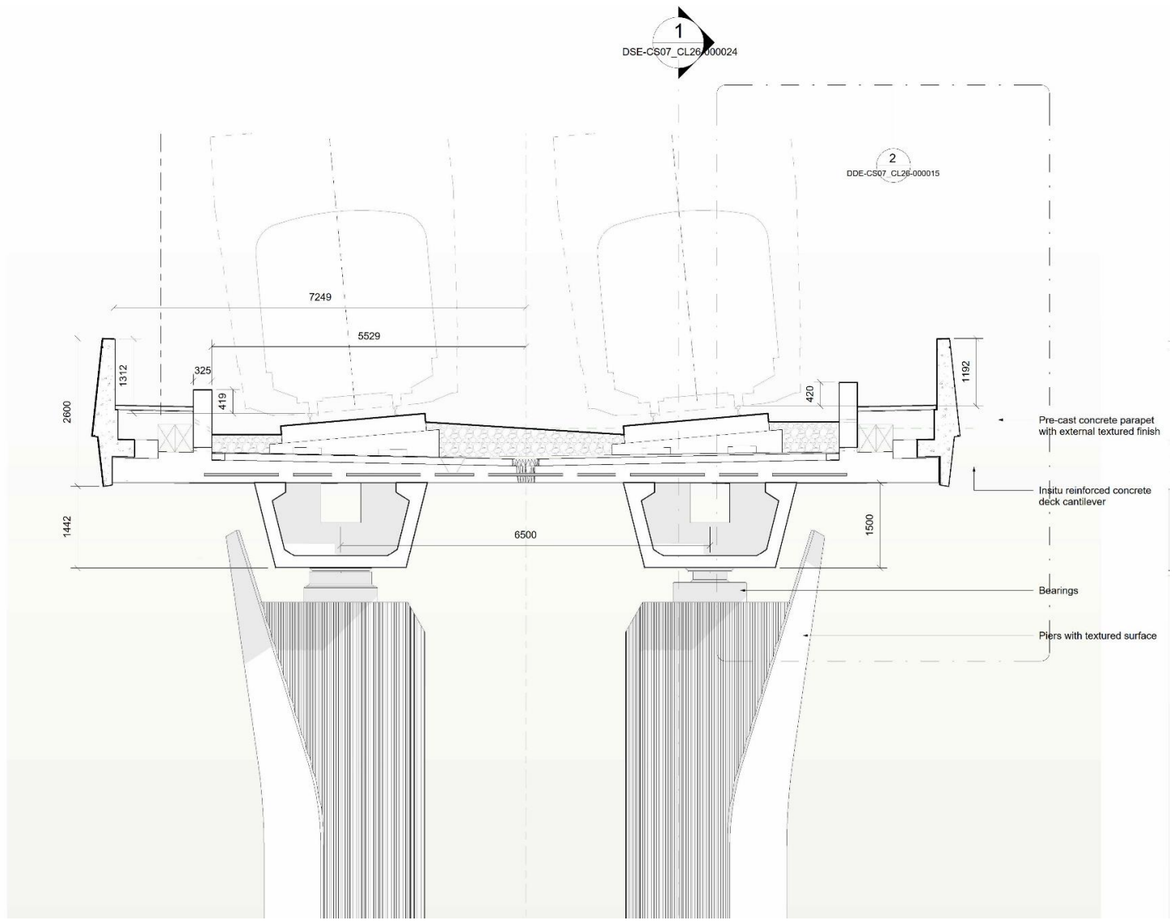
View of Edgcote viaduct looking north along the viaduct across the River Cherwell, 10 years post construction

EKFB Working in partnership with HS2

Edgcote viaduct design comparison



Earlier design



Latest design

EKFB Working in partnership with HS2

Edgcote Viaduct design feedback summary

You asked the following questions around the design of the viaduct. Here are our answers below:

	You said	We did
1	*"How will the landscape setting and design of the viaduct fit the existing terrain?"*	Most of the viaduct structure will be below track level to keep the visual impact on the skyline low.
2	*"Can you minimise the depth of the viaduct and to increase the open space beneath the viaduct deck?"*	The Edgcote Viaduct features 21 spans that are 25 metres long with 19 pairs of piers. We have carefully balanced the length of the viaduct spans and the number of piers to create a slender structure. This enables us to keep as much space beneath the viaduct deck as possible.
3	*"Will you allow for the meander of the River Cherwell beneath the structure?"*	We have arranged the spans of the Edgcote Viaduct to straddle the River Cherwell, and ensure that no piers are placed in the river. This allows the meander of the river to continue and minimise the impact.
4	*"Can the viaduct be built in the way that the Victorians built their viaducts, does concrete have to be the main structural element and if so can it be coloured to blend in with the environment?"*	Modern high speed trains travel at around four times the speed of Victorian trains requiring a flatter straighter track. In order to provide the necessary strength and to easily maintain the viaduct, the only suitable material is concrete. The concrete will include a special ingredient called 'ground granulated blast-furnaced slag' (GGBS) which will give it a paler colour and provide a reduction in carbon.
5	*"Will the design ensure that the existing Public Rights of Way are maintained?"*	The viaduct design has included provision for a local Public Right of Way (PRoW), AE5, which will pass under the viaduct structure.

EKFB Working in partnership with HS2

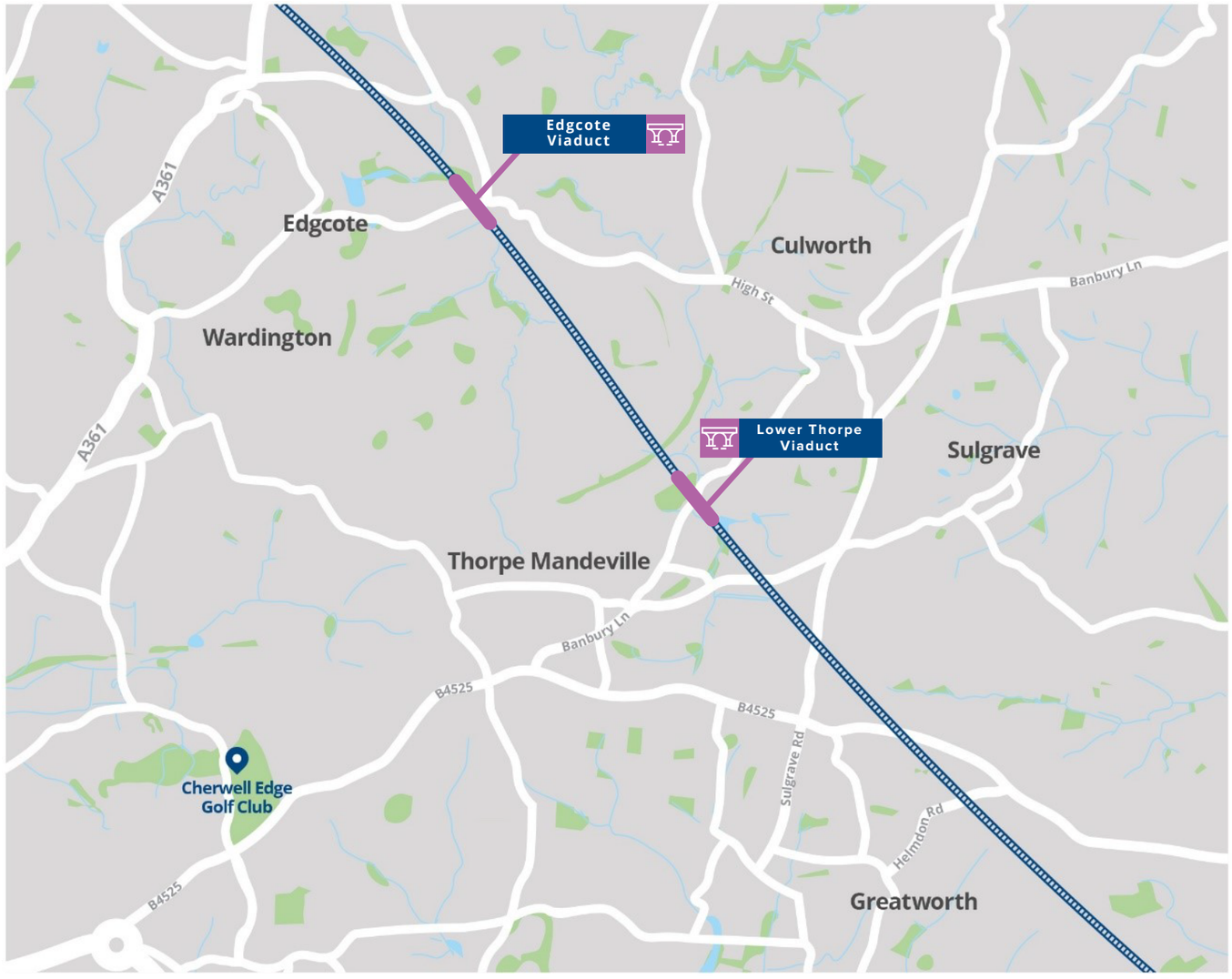
Edgcote Viaduct landscape feedback summary

You asked the following questions around the landscape design of the viaduct. Here are our answers below:

	You said	We did
1	*"Will you increase planted areas using species that are consistent with existing vegetation in the local area and enhance habitat connectivity?"*	In addition to the existing landscape, as part of the scheme, we will be planting: • 1 hectare of fen / grassland • 4.5 hectares of wetland woodland and woodland • 2.3 hectares of wetland habitat to tie in with and extend existing habitats found in the area This is part of the HS2 Green Corridor calculation and will contribute to the No Net Loss calculations that are evolving as the scheme develops through the design and construction process. Existing habitat will be retained at Osierbed Spinney, connecting to Danesmoor Spinney along the existing River Cherwell tributary. Further habitat connectivity is provided by reintroducing the above.
2	*"How will you screen the local community and heritage sites from visual impacts?"*	Screening is provided to the heritage sites and the local PRoW AE5. The design of the landscape screen planting is evolving in tandem with recently discovered archaeological sites. Features such as the 'ridge and furrow' towards the River Cherwell have been maintained. The planting design allows views to be maintained from the battlefield site east towards Trafford Bridge which would have been visible in 1496. We are also introducing a viewpoint that overlooks the battlefield site to the west.
3	*"How can you enhance biodiversity of the landscape?"*	One of the many benefits of reintroducing native plant species is an increased range of flowering time for a wider range of plants. This will support pollinators (such as bees) more effectively. A wider range of plants will also play a key role in ecosystem stability.

EKFB Working in partnership with HS2

Map showing the location of the viaducts

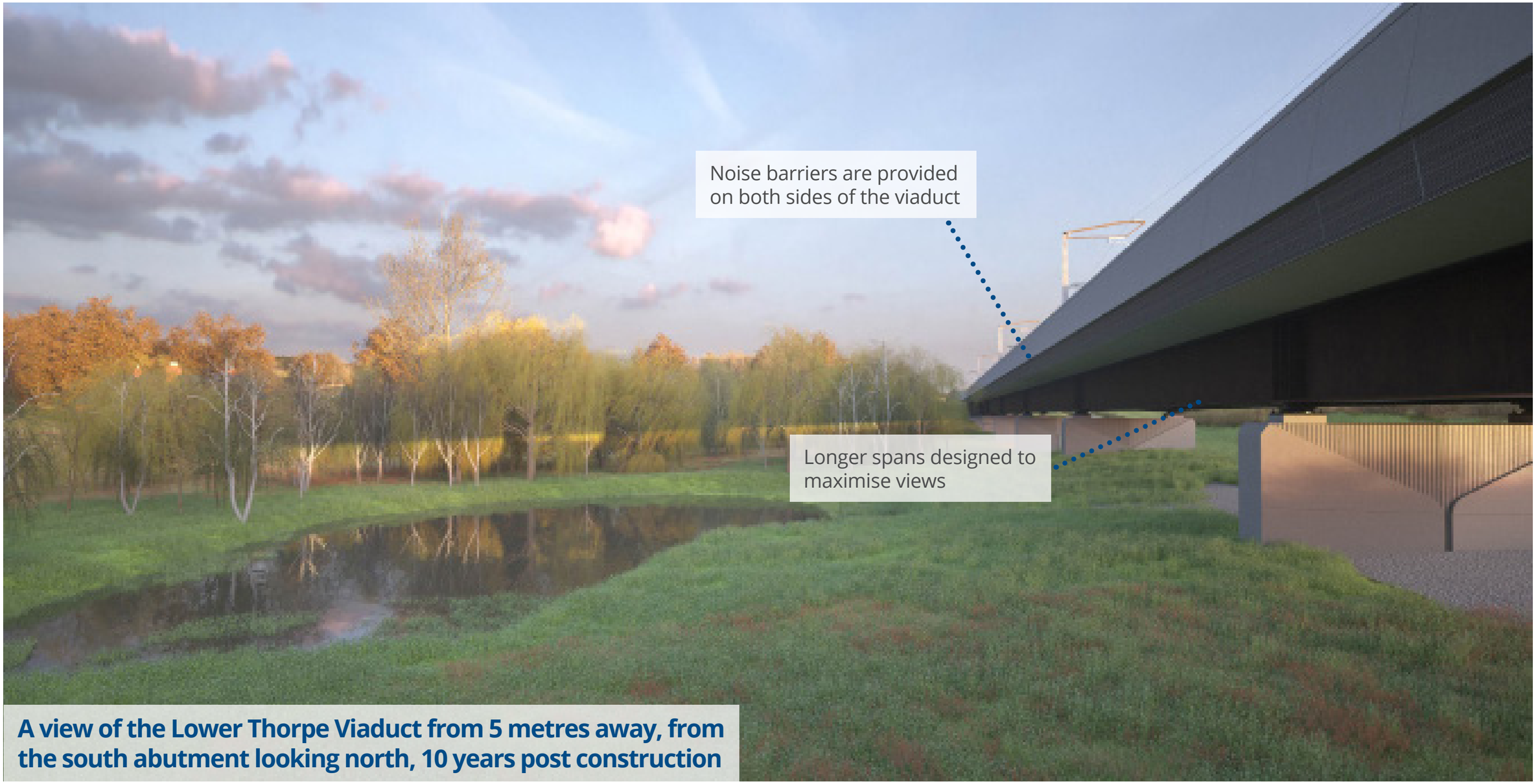


Key

Parkland Water/river HS2 route Phase One overground

EKFB Working in partnership with HS2

Lower Thorpe Viaduct design feedback



A view of the Lower Thorpe Viaduct from 5 metres away, from the south abutment looking north, 10 years post construction

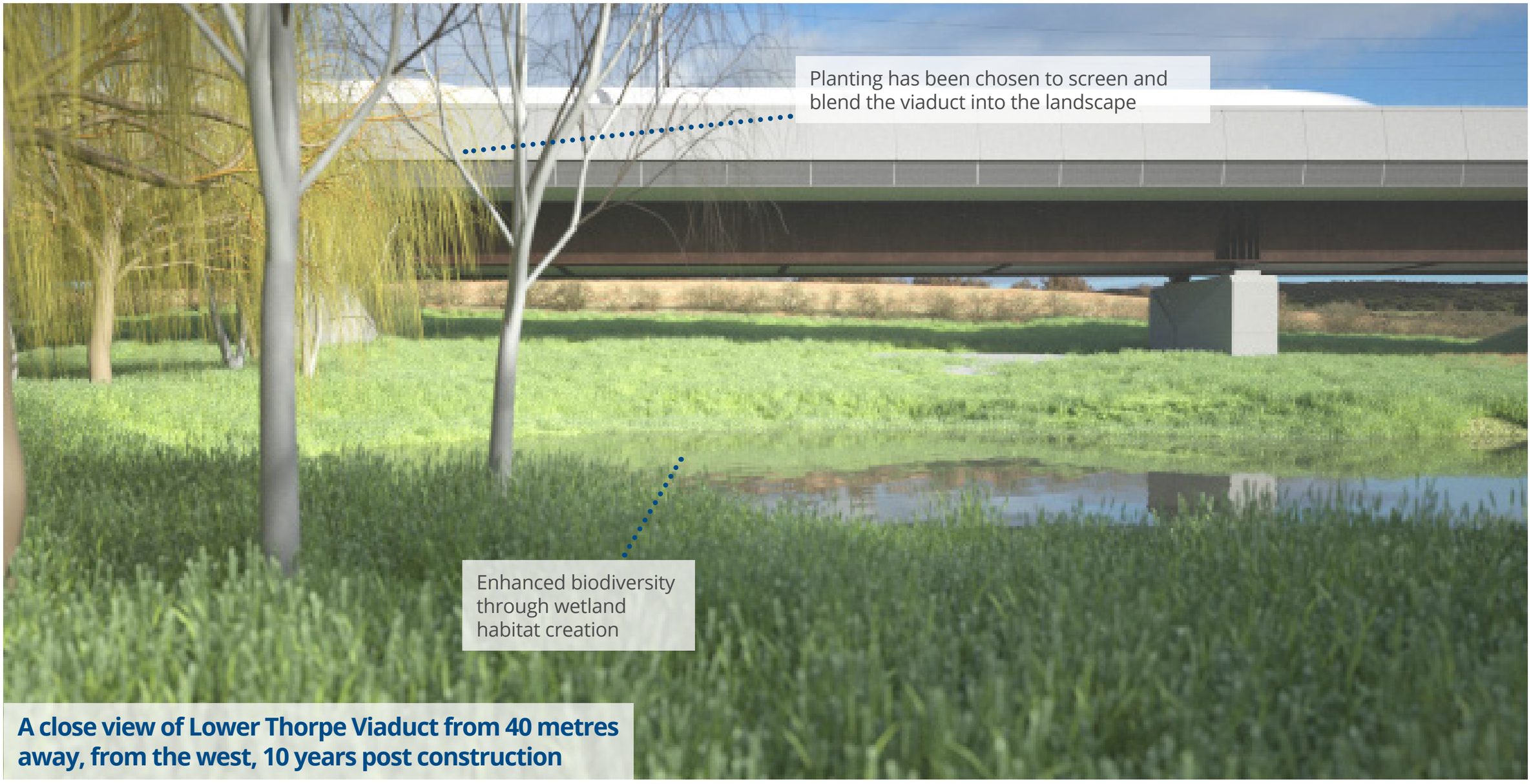
EKFB Working in partnership with HS2

Lower Thorpe Viaduct design feedback

Close view from 30 metres away, looking along Banbury Lane from the west, 10 years post construction

EKFB Working in partnership with HS2

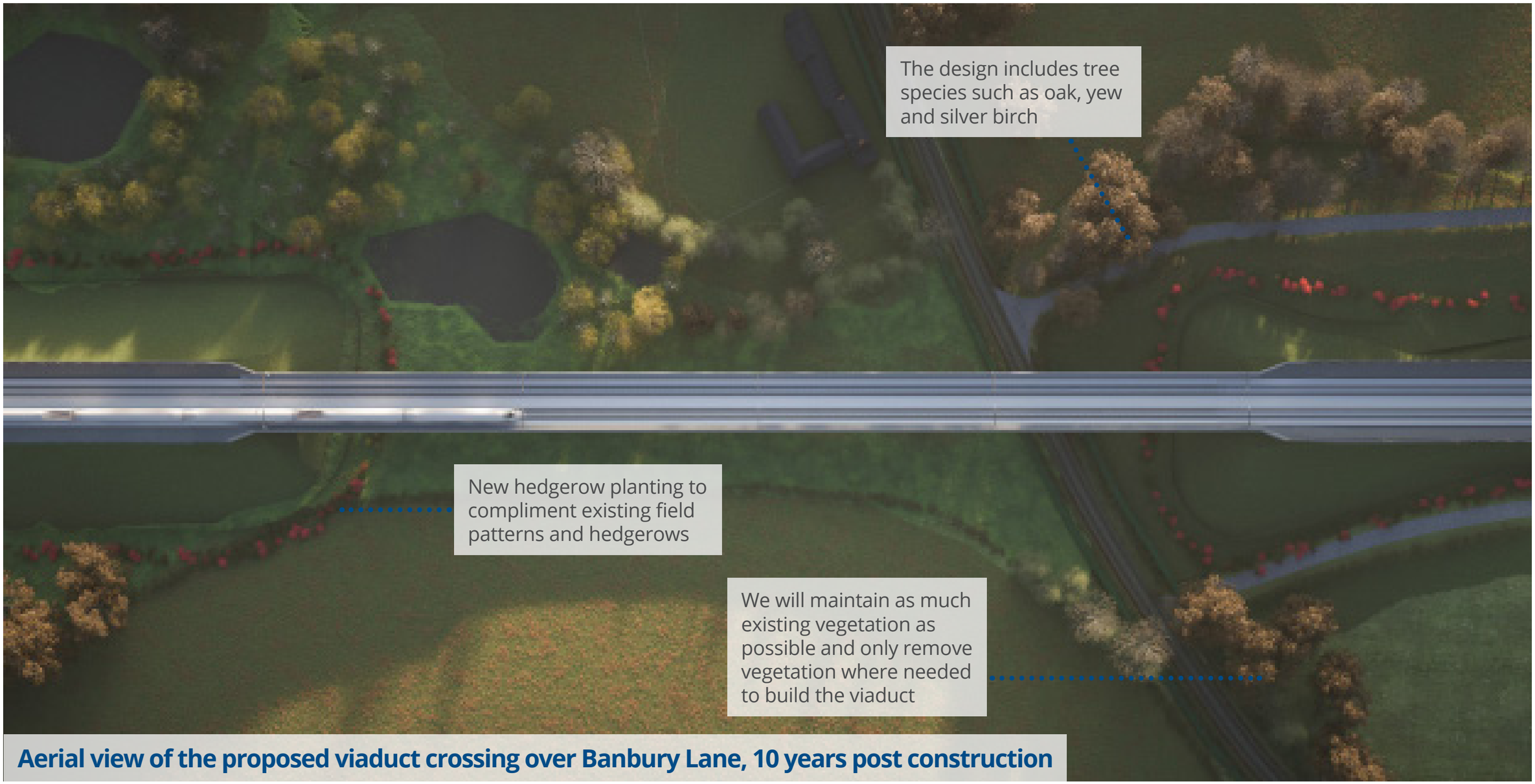
Lower Thorpe Viaduct landscape feedback



A close view of Lower Thorpe Viaduct from 40 metres away, from the west, 10 years post construction

EKFB Working in partnership with HS2

Lower Thorpe Viaduct landscape feedback



Aerial view of the proposed viaduct crossing over Banbury Lane, 10 years post construction

EKFB Working in partnership with HS2

Lower Thorpe Viaduct design feedback

You asked the following questions around the design of the viaduct. Here are our answers below:

	You said	We did
1	*"How will the landscape setting and design of the viaduct fit the existing terrain?"*	We have designed the viaduct with a low depth level. This, combined with the subtle variation in the landform where the viaduct passes, will allow the viaduct to be masked in distant views.
2	*"How will you protect the local community from operational train noise?"*	Noise reduction has been included in the design of the rolling stock and the viaduct, from the material it is made from, to the design of noise barriers. The viaduct is designed to minimise vibration and therefore the amount of noise generated as the trains run across it. The design also includes parapet noise barriers on both sides of the structure that help to minimise noise transmitted from the train and the track.
3	*"Can you maximise span lengths to increase open views of the landscape?"*	This viaduct has a steel 'double composite' deck which involves two steel girders sandwiched between two layers of concrete to create a super strong but lightweight span. As well as cutting the amount of concrete and steel, the slender design also reduces the silhouette of the structure and provides a longer span to maximise views of the landscape through the piers.
4	*"One of the concrete piers is very close to the road, what steps are you taking to avoid graffiti?"*	The design of security fencing is being considered carefully to protect the structure while reducing visual impact. HS2 will operate a zero-tolerance approach to graffiti, cleaning or covering over when reported.

EKFB Working in partnership with HS2

Lower Thorpe Viaduct landscape feedback summary

You asked the following questions around the landscape design of the viaduct. Here are our answers below:

	You said	We did
1	*"How will you screen the local community from visual impacts?"*	We have developed the landscape design to tie into the existing grassland habitat, as well as acting as screening for the viaduct. We will be enhancing the existing habitat with: • ponds, hibernacula (underground nesting chambers), habitats, and bat boxes; • deciduous woodland and wetland spaces and glades area; • hedgerow and wildflower grassed area; and • fishing ponds.
2	*"What are we doing to retain as much of the existing habitat as possible, and provide habitat connectivity?"*	We surveyed the area and a minimal amount of vegetation needed to be removed to construct the viaduct. The landscape and planting plans are retained as much as possible in order to help maintain environmental connectivity. The meander of the River Cherwell beneath the viaduct is maintained in the current alignment. We have designed the Culworth Brook watercourse diversion to reflect a natural meander.
3	*"Will you increase planted areas using species that are consistent with existing vegetation in the local area?"*	We will be increasing planted areas alongside existing vegetation and planting mixes to fit the landscape context. The landscape design will generate: • fen / grassland; • wetland woodland and habitat; and • woodland and woodland edge.
4	*"How do you plan on enhancing the biodiversity of the landscape?"*	One of the many ways we will be enhancing the biodiversity is by reintroducing native plant species. This species mix will increase the range of flowering times for a wider range of plants. This will support pollinators (such as bees) more effectively. A wider range of plants will also play a key role in ecosystem stability.
5	*"Are you looking to preserve existing field patterns, hedgerows and fence lines?"*	The design has developed to include management and maintenance of features like the medieval fish pond to the east of the HS2 line of route. The planting design allows connectivity of riparian (riverside) habitats through the reintroduction of wetland woodland and wetland grassland planting which will connect to the wider landscape via existing hedgerows and woodland copses.

EKFB Working in partnership with HS2

Construction feedback for the viaducts

You asked the following questions around the construction of the viaducts. Here are our answers below:

	You said	We did
1	*"How will you minimise disruption on the local roads?"*	We are planning the construction work in a way that minimises the impact on the road network by creating a site access road for internal access and delivering materials by rail where possible. We have set up main compounds at Chipping Warden and Greatworth and are also setting up concrete batching plants which will further reduce deliveries on the local road network.
2	*"Do you plan to screen the local community and heritage sites from visual impacts?"*	During construction we have to adhere to standards that are set out in the CoCP and Environmental Minimum Requirements (EMRs), these include standards for site lighting, fencing and screening. We will work to this guidance to minimise the impact on the local community as much as possible.
3	*How are you maintaining access to local properties?"*	We will take care to provide access to local properties wherever possible. In some instances where it is necessary to alter or remove access roads or tracks, we will provide temporary alternatives. If this is necessary, we will engage with communities and speak with affected landowners, keeping everyone informed through Advance Work Notices (AWNs) and newsletters. You can keep up to date with our works at https://www.hs2.org.uk/in-your-area/
4	*"Can you reduce construction duration?"*	We aim to complete the works safely, efficiently and with the least possible impact on local communities. We intend to reduce construction duration wherever possible, and will keep communities informed. The construction sequence is informed by our experience and knowledge in high speed rail and viaduct construction across Europe and our programme has been developed with this in mind.

EKFB Working in partnership with HS2

Construction feedback for the viaducts

You asked the following questions around the construction of the viaducts. Here are our answers below:

	You said	We did
5	*"What will you do to minimise dust generated by construction activity?"*	Site access roads and wheel washing methods will minimise dust generation. When aggregate is delivered to site, it will be sheeted. In areas where dust is generated, mitigation methods e.g. spraying, will be used to control this. The CoCP contains control measures and standards that we have to adhere to on all work sites. We have air quality monitors in place across the scheme and in instances where dust is created, we will employ water bowsers and dampening techniques where necessary. When work sites are established, this information is reported on a monthly basis at https://www.gov.uk/government/collections/monitoring-the-environmental-effects-of-hs2.
6	*"Can you minimise lighting at night?"*	Works are planned in a way to minimise the generation of light at night in line with the CoCP. There are controls on lighting and lumination to minimise the visual impact on the community and ecology.
7	*"Will you aim to keep footpaths and bridleways open as much as possible?"*	We will maintain connectivity of the local footpaths for as long as possible during the early phases of construction. As we progress through the construction phase, there may be instances where it is not safe to allow public access near our worksites. If this is the case, we will engage with communities, keeping everyone informed through AWNs, newsletters and local community engagement.

EKFB Working in partnership with HS2

Operational noise feedback

You asked the following questions around operational noise. Here are our answers below:

	You said	We did
1	*"How will you protect local communities and wildlife from train noise?"*	Consideration has been given to the impact of noise on the local community and our design has been developed to minimise this as much as possible. The new trains will be designed in a way that reduces operational noise and our design of the parapet and noise barriers on both sides of the structure will minimise noise impacts on the community.
2	*"Will you develop the noise barriers to be consistent with viaduct design?"*	Noise reduction has been included in every aspect of the design of the viaduct, from the material it is made from, to the design of noise barriers. The viaduct is designed to minimise vibration and therefore the amount of noise generated as the trains run across it. Where noise barriers are needed, they will be formed by integrating them into the design of the viaduct parapet so that they blend with the viaduct design.
3	*"Can you avoid large visible noise barriers, use earth bunds as much as possible?"*	We have assessed the noise modelling for the area and always consider the most suitable solution, based on the landscape and communities from the data gathered. While earth bunds are used where possible, in the case of the viaducts, noise barriers as part of the parapet are the most appropriate solutions. These have been designed to be in keeping with the existing landscape.

EKFB Working in partnership with HS2

Social Benefit, Employment and Training

You asked the following questions around Social Benefit, Employment and Training. Here are our answers below:

	You said	We did
1	*"How will you work with local companies to support construction work activities?"*	We engaged with local businesses to keep them informed of upcoming construction works and work with them to minimise impacts as much as possible. We also encourage local businesses to get involved in the project through local supply chain opportunities and support them where necessary through the procurement process. More information on the EKFB procurement processes can be found at https://www.competefor.com/ekfb/.
2	*"Do you provide training, employment opportunities and apprenticeships?"*	Our aim, working alongside our supply chain, is to create employment and provide training opportunities to local people and those from under-represented groups. During the peak of our construction activity we will need a wide range of skill sets in large numbers, from operational support to technical specialists, including apprentices. Please visit our careers page for the latest vacancies: https://careers.ekfb.com/
3	*"Will you provide opportunities for unemployed, disadvantaged and under-represented groups?"*	Through our CITB funded training hub in Southam, Warwickshire, EKFB has trained over 500 people new to the construction industry and invested over £300,000 in local training and supporting local businesses. In addition to this, EKFB is accredited as Disability Confident Leaders. We also work with Buildforce, an initiative that aims to find jobs for ex-veterans in the construction industry, and with local job centres and training providers to tap into under-represented talent pools.
4	*"Can you work with local schools and colleges?"*	In partnership with Speakers for Schools, we are developing a virtual work experience programme aimed at SEND (Special Educational Needs and Disabilities) secondary schools. The aim of the programme is to introduce students to the world of construction and civil engineering and give some insight into the HS2 project, with a focus on protecting the environment. We are currently planning a 'Safety Day' at Chipping Warden Primary School, to help educate young people and we will continue to seek out local opportunities and engage with schools and colleges along the line of route.

EKFB Working in partnership with HS2