Introduction

EIFFAGE KIER Working on behalf of HS2

Welcome to the Eiffage Kier and HS2 engagement event showing the design for the Thame Valley Viaduct.

At today's event you will have the opportunity to give us your feedback about the design. As well as the chance to speak with representatives from HS2, contractors and specialists about the Thame Valley Viaduct and other HS2 activity in your area.

We have specialists in:

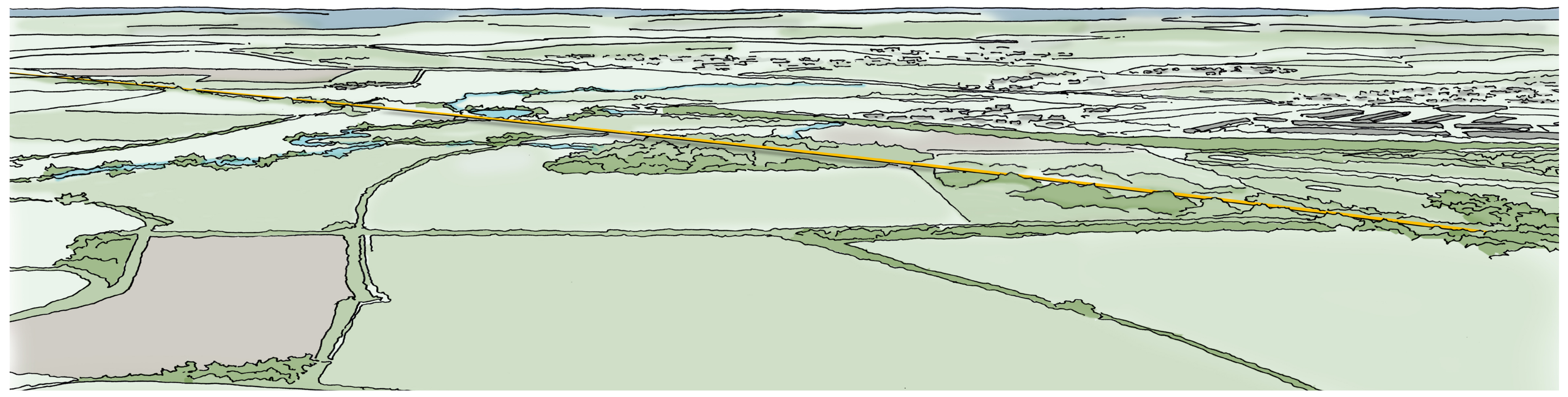
- architecture;
- landscape design;
- transport; and
- the environment.

Our team is here today to answer any questions you may have.

HS2 Project Overview

HS2 is a new high speed railway that will form the backbone of Britain's transport network. It will connect eight of Britain's ten largest cities and their regions. Faster, easier and more reliable travel 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.



Existing Context

The Thame Valley Viaduct is located in the low lying Northern Vale to the north-west of Aylesbury. It travels across the River Thame within a broad, shallow floodplain, which cannot be accessed by the public. The floodplain is typically made up of grazing farmland, indicated by ditches and gappy field hedgerows with occasional trees.

Although the location is not accessible, it is visible in mid-distance views from Public Rights of Way networks to the south-west of the structure, including several publicised regional trails such as the Thame Valley Walk and Midshires Way. In many of these views the River Thame is set within higher ground to the north, with the tree-capped Whaddon Hill being a local landmark, and to the east by tree lines and structures at the Aylesbury urban edge.

Design Vision

The Thame Valley Viaduct has been conceived as a minimalist elevated causeway passing over the River Thame floodplain - minimising impact on farmland and the adjoining wetland meadow landscape.

We have taken care to simplify the profile of the deck spans as much as possible while joining the deck and pier connection. This breaks up the length of the viaduct into subtle and identifiable individual spans.

Our approach to the architectural design of the viaduct falls into two categories: the appearance of the viaduct in elevation when it is viewed against the largely flat immediate geography and the impression made by the support piers when viewing the viaduct through breaks in the trees from a slanted view point such as from the Public Right of Way to the south-west.

Thame Valley Viaduct

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View of the viaduct in winter from the south-west

The viaduct will be partially masked by the landscape and existing geography. We have also proposed areas of additional planting to mitigate the visual impact.

Thame Valley Viaduct

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Close-up view of the viaduct crossing the floodplain of the Thame River

The viaduct takes the form of a low 'causeway' to minimise the impact on distant views

Thame Valley Viaduct

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Close-up view in autumn from north-east of the structure

The individual spans of the viaduct are visible even when the support piers are obscured by planting

Thame Valley Viaduct

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View from south-west

The viaduct will be visible between gaps in the planting and landscape

Detailed view of pier and deck connection

Thame Valley Viaduct

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View of the viaduct passing through areas of new wetland planting

View of the viaduct along the River Thame

Thame Valley Viaduct

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The landscape design creates opportunities for habitat connectivity beneath the viaduct

Thame Valley Viaduct

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Elevated view of the viaduct

Thame Valley Viaduct

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View of the viaduct from the surrounding landscape in winter

Thame Valley Viaduct

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Close up view of the viaduct from the south-west

There are pier connections to help break up the overall length of the structure into a series of short spans

Operational Noise

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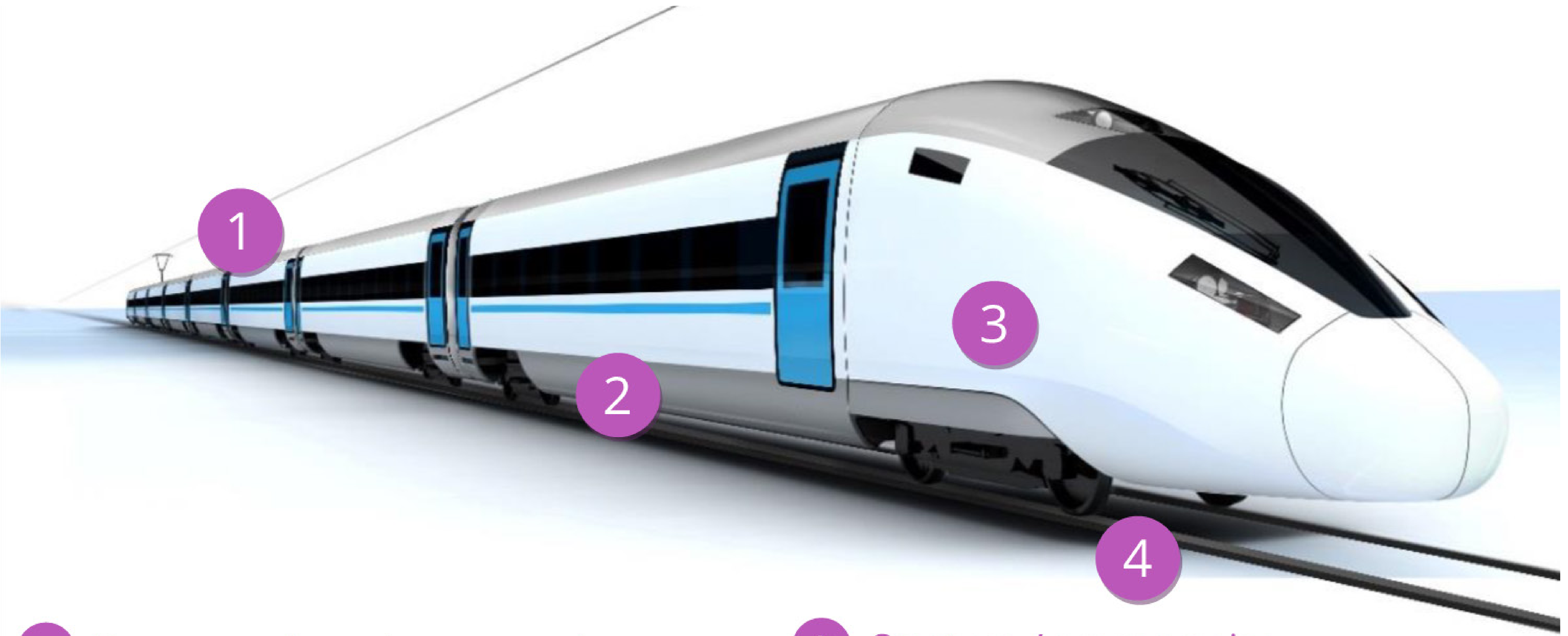
We must comply with the Environmental Minimum Requirements which sets the parameters within how the project must be designed, constructed and operated. We cannot exceed the effects identified in the Environmental Statement. Noise mitigation will be informed by specific noise modelling throughout the design process. We must reduce the noise as far as is reasonably possible.

Noise souce - where will the noise come from?



1. Pantograph and recess noise
2. Start-up / power noise
3. Body aerodynamic noise
4. Rolling noise

Receptors

A number of receptors were identified at the Environmental Statement stage. These included residential properties, schools, hospitals, places of worship, and also commercial properties such as offices and hotels. The impact of the noise on these receptors was assessed at the Environmental Statement stage, which cannot be exceeded.

Target levels for noise reduction

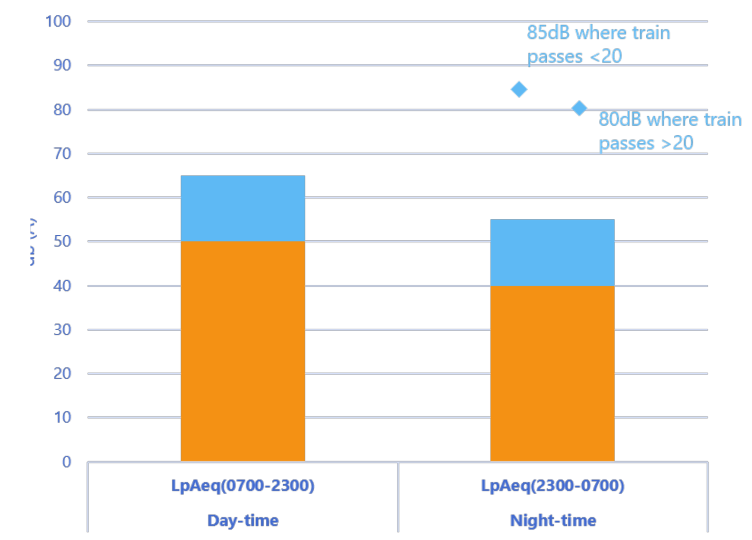
The target levels for noise reduction are based on the World Health Organisation (WHO) levels. They are:

LOAEL – Lowest Observed Adverse Effect Level as the level at which adverse effects on health and quality of life can be detected

SOAEL - Significant Observed Adverse Effect Level as the level at which significant adverse effects on health and quality of life occur

How these are measured

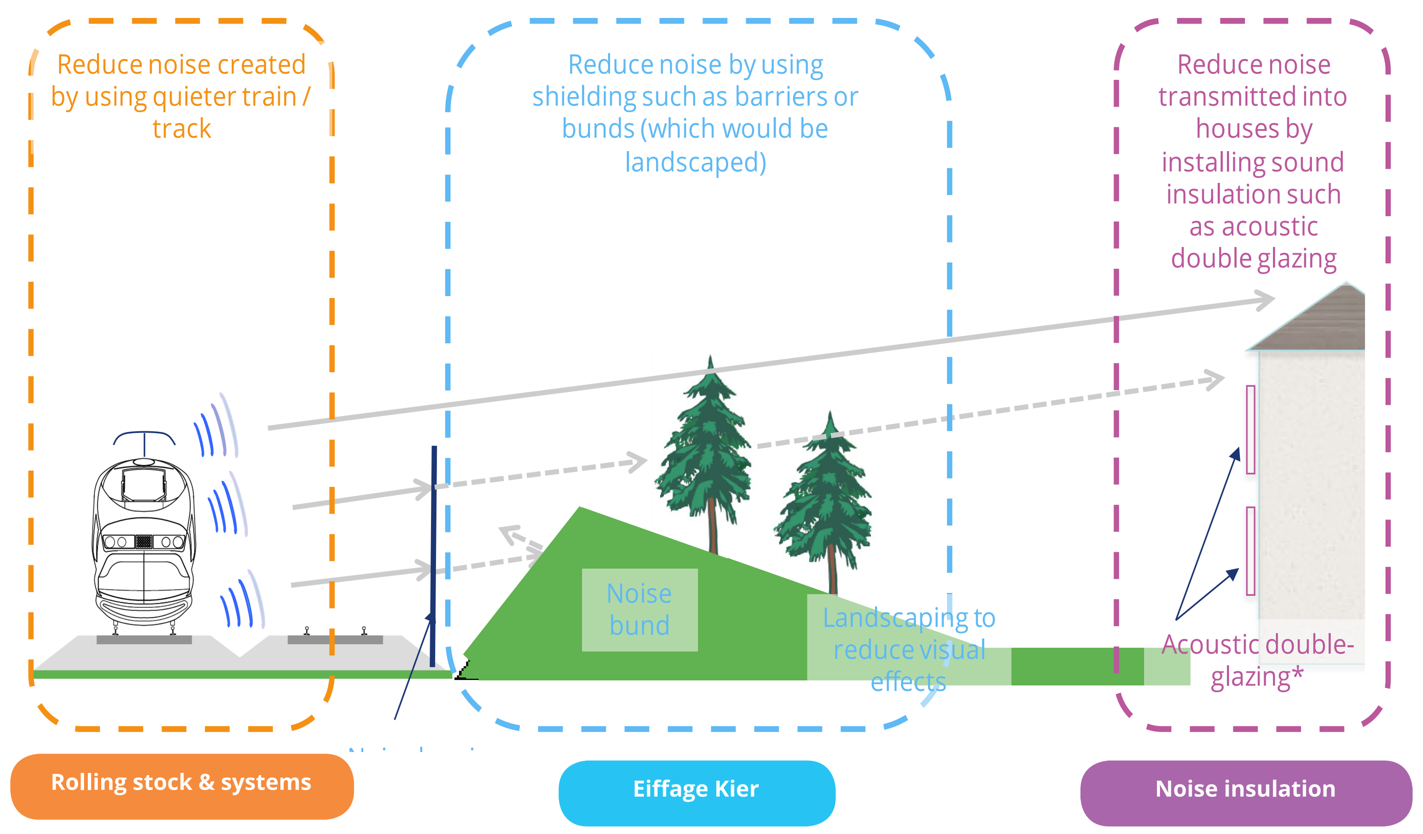
These are measured based on the equivalent continuous sound pressure level over the daytime and night time periods. We also measure the peak noise at night.

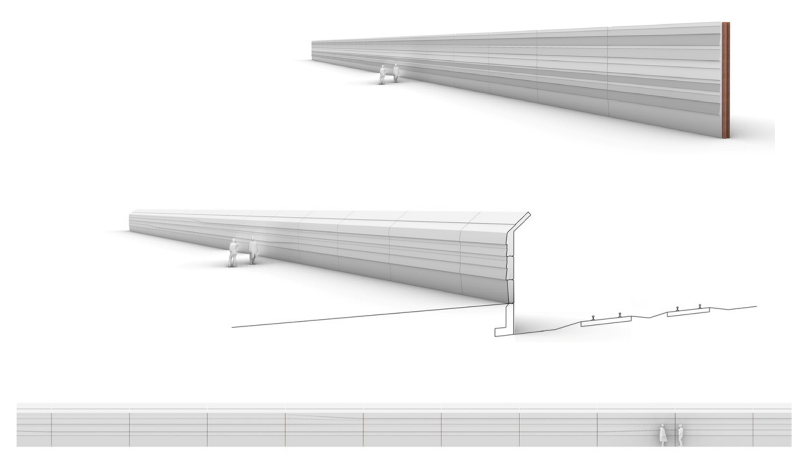


Noise modelling - what noise modelling has been done so far?

At the Environmental Statement stage the modelling was based on a set of assumptions relating to the train type, alignment and train movements. These have since been updated and we have remodelled accordingly.

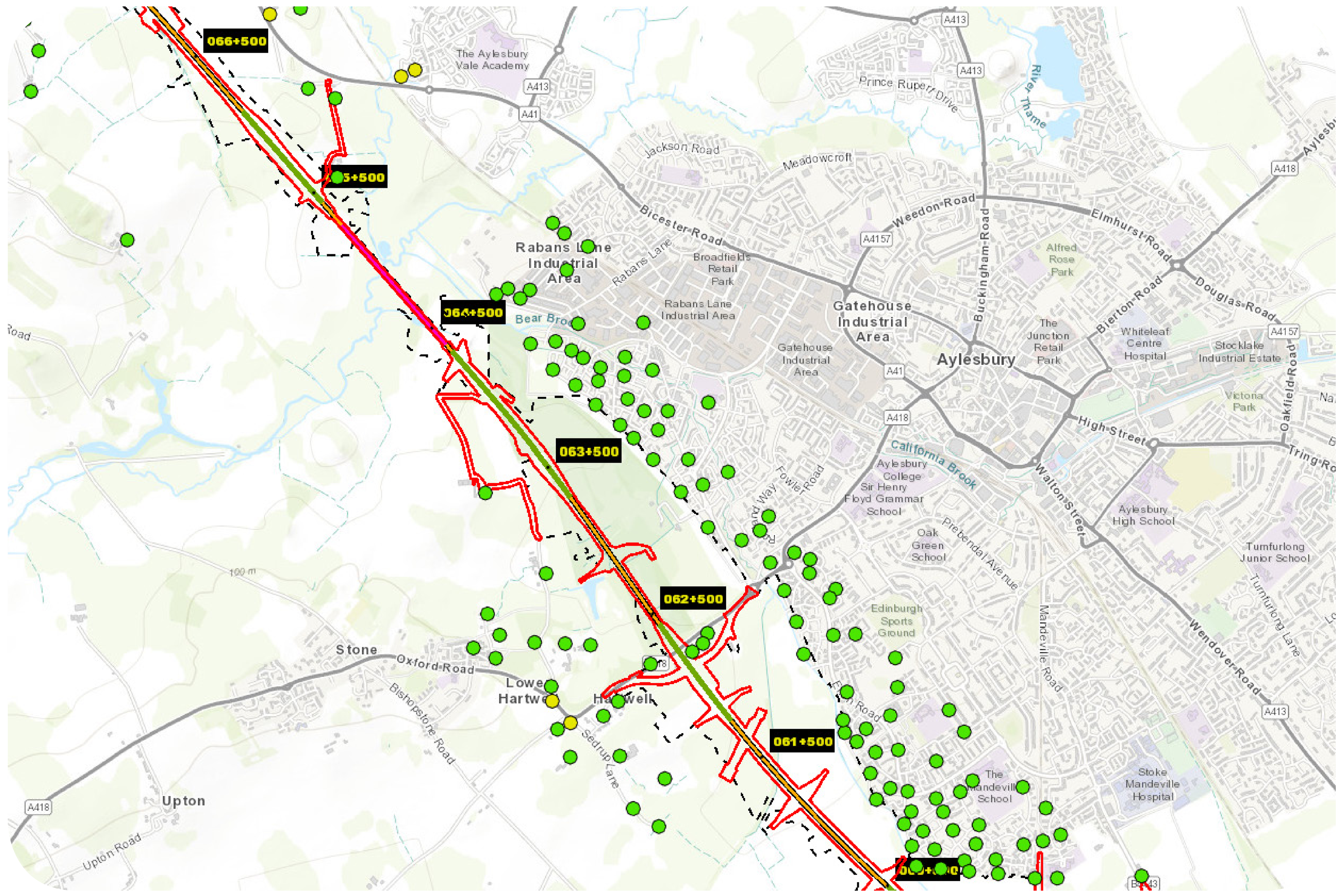
Mitigation - how will we design and build the barriers and bunds?





Noise barriers

- 120 year design life
- Absorptive layer on inside face
- Designed to suit modular construction
- Allow for response to local settings



Noise receptors in the area