

HS2 reveals Chilterns ‘barn design’ vent shaft for Chalfont St Giles

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HS2 has revealed the final design for the latest of its ‘barn design’ headhouses that will provide ventilation and emergency access to the ten-mile long Chiltern tunnel.

Set into a fold in the Chiltern hills near Chalfont St Giles, the headhouse is designed to fit into the surrounding landscape and takes its inspiration from the style of nearby barns and other agricultural buildings.

Like the nearby headhouse at Chalfont St Peter – which gained planning permission last month – the single-story building will be wrapped in a simple grey zinc roof with doors and vent openings picked out in a dark bronze colour to provide contrast. The pre-weathered grey zinc roof will age naturally over time, without loss of robustness or quality, while the whole structure will sit on a simple dark blue brick base.

Below ground level, a 43 metre ventilation shaft will reach down to the twin tunnels below, with fans and other equipment designed to regulate air quality and temperature, remove smoke in the event of a fire and provide access for the emergency services.

HS2 engaged with the Chilterns AONB Review Group and Buckinghamshire Council during the development of the designs and held a series of public engagement events to gather views from the local community.

Mature trees along the existing boundary will be retained as far as possible and once construction is complete the whole site will be landscaped with new trees and hedgerows planted to help screen the site from neighbouring properties.

Within the site boundaries, species-rich grassland habitats will be created, designed to further blend the site into the surrounding Chiltern hills. Material excavated from the shaft will be used to create much of the landscaping and avoid putting extra lorries onto local roads.

The plans were drawn up by HS2 Ltd's main works contractor Align JV – a team made up of Bouygues Travaux Publics, Sir Robert McAlpine, and VolkerFitzpatrick – working with its design partners Jacobs and Ingerop-Rendel, and the architect Grimshaw and landscape designers, LDA.

Rohan Perin, HS2 Ltd's Project Client Director said: "Throughout the design process we have been very aware of the unique setting of the rural headhouse structures and the importance of creating something that fits into the landscape. We remain committed to listening to feedback from the local community as we begin the build phase and will work to reduce disruption as far as possible."

Daniel Altier, Align Project Director said: "The Align team has worked to significantly reduce the scale and visual impact of the structure. Our designers engaged with local stakeholders to design the headhouse that provides operational functionality within the smallest possible footprint and which will keep the construction and environmental impact during the build to a minimum."

A new temporary marshalled lorry holding area has also been established on the A413 near Gerrards Cross. HGVs can be held in this newly surfaced layby until their approach to the vent shaft site is clear – helping to reduce congestion and eliminate queueing at the site entrance.

The two tunnel boring machines that will excavate the Chiltern tunnels are set to launch from a site near the M25 later this year.

Photo credit: HS2 Ltd/ Grimshaw Align JV