

High Speed Rail 2 C1 Project High Speed Two (HS2) Limited

Location: Chilterns, United Kingdom

Date: 2017 - Present

Structure: The Chiltern Tunnel comprises twin bored tunnels five ventilation and intervention shafts and 38 SCL / SEM Cross Passages

Length: 16km (10mi) twin-bored tunnels with Cross Passages spaced every 500m (1,640ft)

Cross-Section: TBM Tunnel I.D. 9.1m (30ft) / Cross Passage I.D. 3.5m (11.5ft)

Geology: Tunnel and Cross Passages excavation will primarily be through the Cretaceous White and Grey Chalk Subgroups that constitute the Chiltern Hills. The Chalk shows varying degrees of weathering with numerous dissolution features and fracturing along fault lines. The groundwater level is maximum 30m above the tunnels' roof.

Cost: US \$2 Billion (£1.6 Billion)

Client: ALIGN D / ALIGN

Owner: High Speed Two (HS2) Limited

geotechnical baseline report, together with the Durability Report and Tunnel Obstructions Assessment and Settlement and Potential Damage Assessment.



Figure 1. Rendering of HS2 High Speed Train.

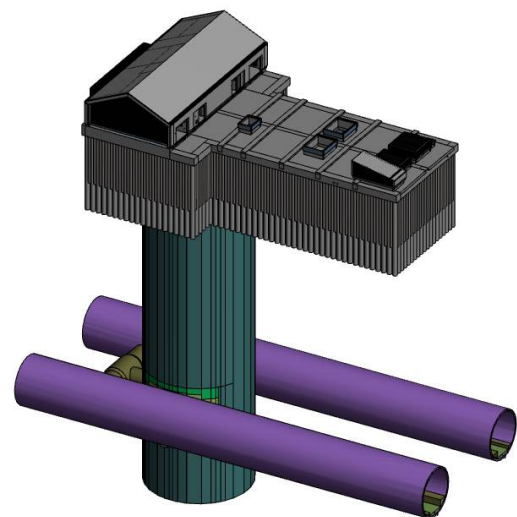


Figure 2. Initial Rendering of Ventilation and Emergency Intervention Shaft Arrangement (Courtesy of ALIGN D / ALIGN).

Design Team Services:

HS2 is a new high-speed rail line that will be the backbone of the UK's rail network. Phase One of this project will connect London to Birmingham by between 2029-2033. In July 2017 the Align joint venture was awarded the C1 package of HS2. Align is a joint venture of three international infrastructure companies; Bouygues Travaux Publics, Sir Robert McAlpine, and VolkerFitzpatrick. C1 consists of 21.6km (13.5mi) of high speed rail infrastructure that includes a 3.5km (2.2mi) viaduct, 16km (10mi) twin-bored tunnel and five vent shafts accommodating both intervention and tunnel ventilation facilities.

Gall Zeidler Consultants (GZ) is working on tunnel design and serving as a geotechnical specialist supporting Align's design partner Align D. GZ's main scope of works for the tunnels includes the design of the 38 Cross Passages, the development of the