

CTRL



Project:	Channel Tunnel Rail Link (CTRL)
Sector (delete as appropriate)	Special Products
Client:	Rail Link Engineering (RLE) Union Rail
Contractor:	Emcor Rail
Value (approx.):	£3.8 Million
Completion Date:	2006
Description of Works:	<p>Manufacture and installation of ventilation systems in service shafts. Manufacture and installation of ventilation systems in portal buildings Manufacture and installation of ventilation ductwork systems in service shaft head buildings. Installation of Jet Fans</p> <p>5 number Service shafts:- Consisted of upline and downline shafts each with a pattern of 5 number 6M x 6M control dampers horizontally and vertically connecting and isolating the two rail tunnel bores to give full flexibility of air movement to react to various emergency situations. The air is moved by a 2M diameter axial flow fan installed in each of the shafts with attenuators both on the tunnel side and the atmosphere side. These attenuators are approximately 6M x 6M and are connected to the fan using 3M long square to round transition sections.</p> <p>All the installation was completed using a crane with access down the shaft and included manufacture and installation of steel access and support floors and interconnecting cat ladders.</p>

	<p>2 number Portal Buildings These portal buildings were located along the river Thames where the rail line crosses under the river. The use of ventilation shafts was impractical so close to the river so a system of Saccardo nozzles were designed to give emergency coverage to the tunnel. A Saccardo nozzle is a forced draught ventilation system which induces a flow in a tunnel over long distances.</p> <p>The mechanics are as follows for each bore of each portal 4 off 1600mm diameter fans introduce the air into the tunnel roof via a very long tapering duct (Saccardo Nozzle) this allows the fans to be outside the tunnel giving easier maintenance.</p> <p>Hargreaves involvement was the manufacture and installation of the fans along with their supporting structure, The manufacture and installation of the Saccardo nozzles.</p> <p>Shaft Head Buildings At nine positions along the rail route at shafts and portals service buildings were built. These buildings as well as providing emergency access to the tunnels housed the electrical switchrooms that were required to run the system. The contract included the manufacture and installation of ductwork to ventilate these buildings.</p> <p>Jet Fans A number of Jet fans were installed by Hargreaves at set locations along the rail tunnel wall.</p>
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