

# £20m project to combat bridge cable rust will take two years

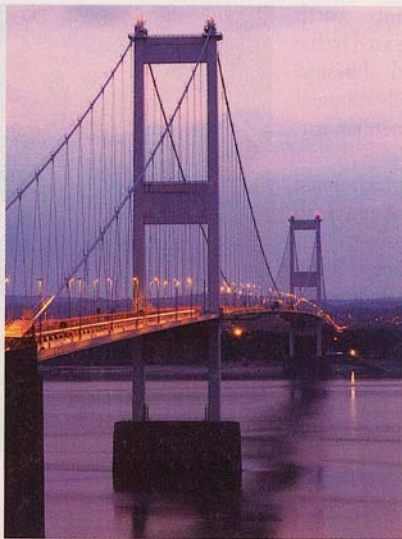
Remedial work includes wire replacement and injection system to dry out corroded lines

REMEDIAL work on rusty cabling that is threatening the stability of the original Severn Bridge will cost £20 million and take up to two years to complete.

To combat the corrosion the Highways Agency is installing a dehumidifying injection system to dry out the cables and buy time while engineers devise a long-term solution. Movement of HGVs over the bridge has been cut to one lane to minimise deterioration.

Principal bridge engineer for the Highways Agency, Martin Lynch, said: "We expected some corrosion when we conducted the first tests last summer but we were surprised that it was this advanced. The good news is that most of the damage is in the middle section, where stresses are low."

Tests last summer revealed that 50% of the two main cables that support the 5,000-



**Bridge of sighs: The extent of corrosion in the cables has surprised engineers with the Highways Agency**

metre suspension bridge were corroded. The cables are made of 8,322 high-tensile steel wires each 5mm in diameter. The cables are galvanised, painted with anticorrosion paint and protected with transverse wrapping.

Despite these measures,

160 wires were found to have snapped. Surface and pitting corrosion was found mostly in the middle section, where the cables are closest to water, but it was also found near the top of the structure, where most of the load-bearing stress is. The 40-year-old suspension bridge

has a designed lifespan of 120 years.

"Dehumidifying involves wrapping the cable with an impermeable wrapping, a little like shrinkwrap. Once that's sealed, the tubing and plant is installed on the steel battle deck and the atmosphere inside the wrapping is dehumidified to dry them out," said Lynch.

"A lot more testing, such as tensile and fatigue testing and also metallography, is also planned to see why we are getting cracking in some wires."

The tubing and plant is domestic sized and the most costly and difficult part of the operation is wrapping and sealing the cables, which can only be done during summer.

At least six recently constructed bridges in Japan have had dehumidifying equipment incorporated into their designs to keep the cables dry.