

ANCHORBOND

Preserving
our buildings
Supporting
our heritage



**PETER
COX**

raising standards in property preservation

The Peter Cox Pedigree

The business was originally founded in 1951 as Peter Cox and Partners, specialising in stone cleaning in post war London. Today Peter Cox technicians are approved installers of the world renowned Cintec systems and our branded Anchorbond Vtek masonry anchors are used in modern and heritage buildings across the UK and Ireland.

Founder Peter Norman Cox was a pioneer in the development of chemical damp proof courses and in the 1960s he developed his Transfusion DPC system which carried an Agreement certificate from 1975 to 2004 which has only recently been superseded by a new silane diffusion technique. In the 1970s Peter Cox diversified into woodworm and dry rot control and then remedial wall ties, reaching market leadership in 1989.

Today Peter Cox Ltd is the UK market leader in damp proofing, waterproofing, timber preservation and wall stabilisation with a network of regional service branches across the country.

The company has wide ranging experience in the repair of housing both privately owned and public sector, as well as commercial and public buildings, churches and many listed properties. This has included work on numerous national and regional historic buildings throughout the UK, such as the Houses of Parliament, York Minster, Selby Abbey, the Royal Courts of Justice, Cardiff Castle and Edinburgh's Balmoral Hotel.



VTEK
ANCHORBOND

Our system is approved by English Heritage, Historic Scotland, The National Trust, Manx Heritage and Cadw



ENGLISH
HERITAGE



HISTORIC SCOTLAND
ALBA AOSMHOR



Manx National Heritage
Eiraght Ashoonagh Vannin





raising standards in property preservation



We also have considerable experience strengthening bridges large and small across the UK. The electrification of the railways will continue to see our skills in great demand and we have extensive knowledge of major project work which many smaller contractors do not. We are also part of the Achilles Link-up system and work with major players in the rail industry.



Balfour Beatty
Rail



Stobart
Group

Wall Stabilisation with Anchorbond Vtek

Anchorbond Vtek masonry anchors use the Cintec system to provide an effective and cost effective method of structural reinforcement which can be tailored to meet specific building strengthening and repair requirements. In addition to structural repair solutions, Anchorbond Vtek can be used to create secure fixings on masonry facades.

The anchor is comprised of a stainless steel bar surrounded by a woven polyester fabric mesh sleeve into which a specially formulated cementitious grout is injected under pressure. The flexible sleeve expands and moulds itself into the spaces within the wall, providing a strong mechanical and chemical bond when cured. Various attachments can be welded to the anchor head.

Benefits:

- > Purpose designed for each application
- > Versatile in use
- > Works well in weak substrates
- > Effective in poor quality materials and for bridging cavities
- > Invisible when installed
- > Fire resistant
- > Cementitious based and therefore sympathetic to the original structure
- > Approved by heritage authorities

Typical applications:

- > Stabilising masonry - solid, cavity, hollow pot and rubble filled
- > Lateral restraints
- > Replacement and supplementary wall ties
- > Crack stitching
- > Stitching anchors e.g. for arch consolidation
- > Stud anchors
- > Parapet wall strengthening
- > Retaining wall anchoring



Installation



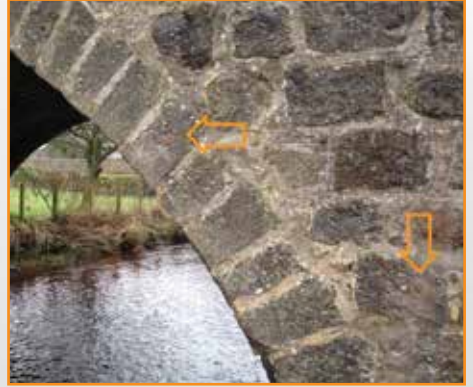
Drilling

Installation holes are created in the masonry using a wet diamond drilling process with extension drill bits added to achieve the required hole depth. The waste is removed in the form of cores.



Injecting Grout

The cementitious grout is site mixed and then sieved before pouring into a pressure pot which operates at between 3 and 4.5 bar. The grout is forced into the sock around the anchor. This expands to fill the cavity, starting to harden after approximately one minute.



Surface Repair

Drilling holes are made good so that the repair will be almost invisible – this is particularly important in the case of historic property.



Inserting Anchor

For stabilisation work, anchor lengths are typically 1m to 11m in length. Care needs to be taken not to puncture the polyester sock.



Anchor Sections

The grout is injected through the rod in the case of hollow section anchors but if solid single or multi bar sections are used, a separate injecting tube is inserted in the fabric sock. As illustrated here, threaded rods can be used to facilitate fixing attachments to the anchor head - for instance for tie bar extensions and support brackets.

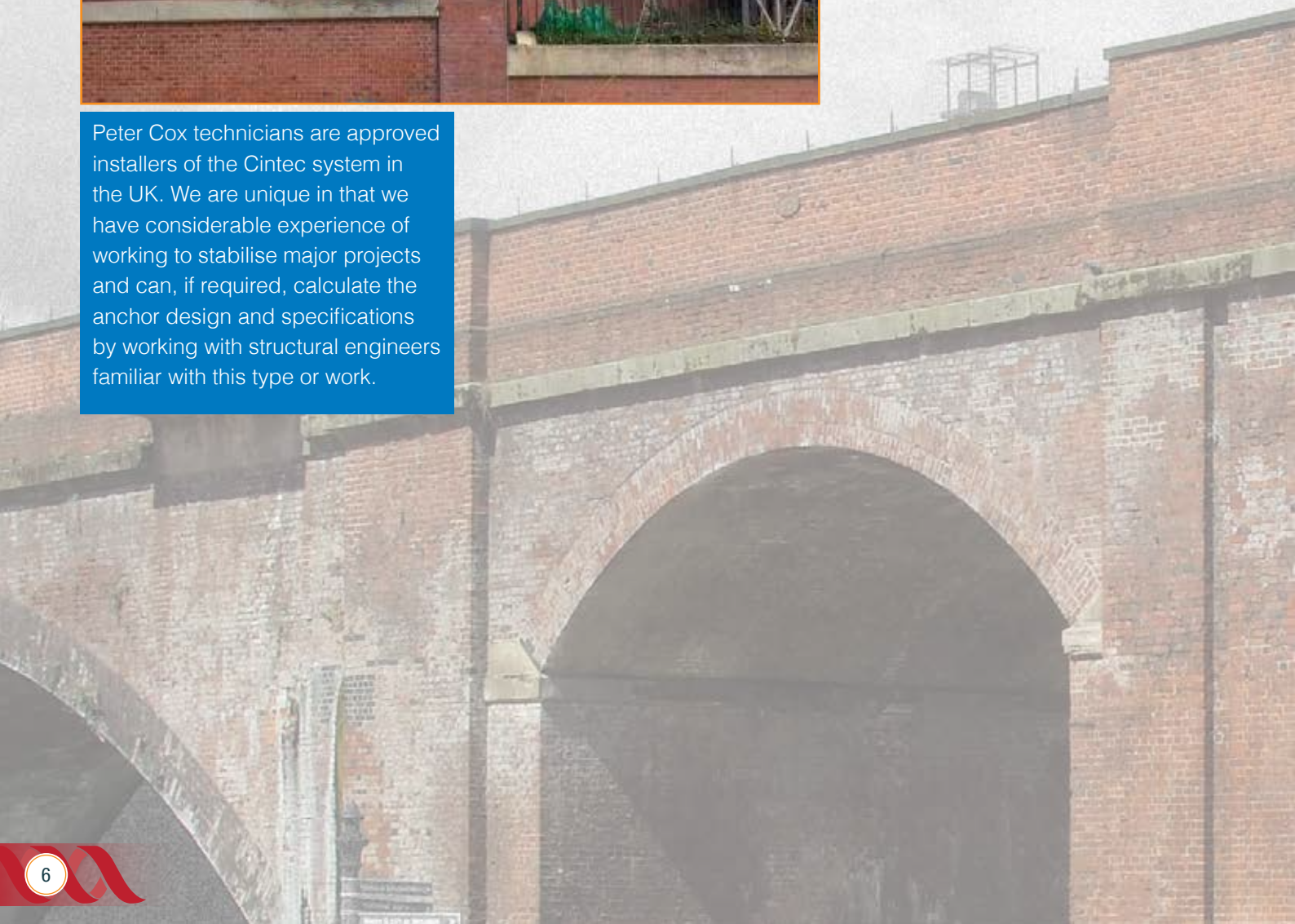


Typical Applications

The Peter Cox Anchorbond Vtek masonry anchor uses the world renowned Cintec system. It can be used across a variety of materials including stone, concrete, terracotta, clay and wood - and is even effective under water. The application will not compromise the original material or the appearance of the structure, making it extremely versatile.



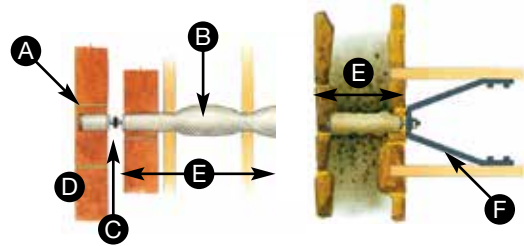
Peter Cox technicians are approved installers of the Cintec system in the UK. We are unique in that we have considerable experience of working to stabilise major projects and can, if required, calculate the anchor design and specifications by working with structural engineers familiar with this type of work.





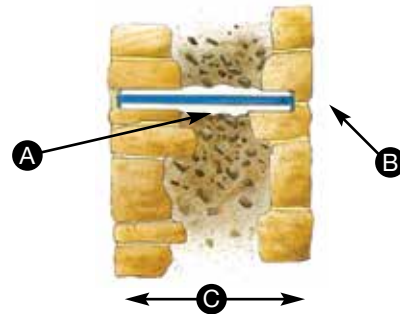
Lateral Restraint - Wall to Floor Joists (not relevant on bridges)

- A 20 or 30mm hole - to suit anchor length
- B Anchor expands to provide rigid support
- C Neoprene drip
- D Cavity wall
- E Length to suit
- F 'Armlock' fixed with stud anchor to joists at 90° to wall



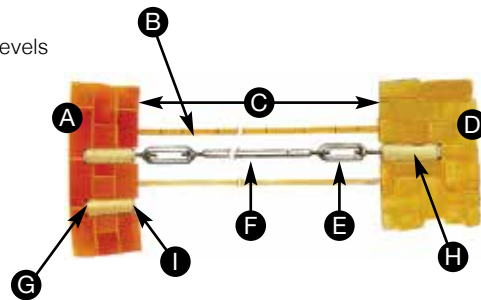
Stitching Anchor for Rubble Filled Wall

- A Sock expansion into the soft friable core
- B Anchor body design to suit load - std 15 x 15, 20 x 20 or 30 x 30mm square hollow section
- C Length to suit



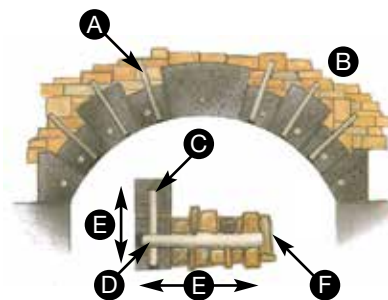
External Wall Anchored to Internal Wall

- A External wall
- B Anchor positioned at floor levels
- C Length to suit
- D Internal wall
- E Bottle screw
- F Solid bar
- G 30mm
- H 60mm
- I Delaminated brickwork stitched together



Arch Consolidation

- A 30mm drilled holes
- B Anchors positioned to suit individual constructions
- C Stitching anchor at 90° to the normal
- D 60mm drilled holes
- E Length to suit
- F 30 x 30mm anchor to carry main load



Structural Anchors in action

Heritage Case Studies



Raby Castle

One of the finest medieval castles in England, Raby is set in the heart of the Durham Dales in Co Durham with a history rolling back almost a thousand years. The Nevill family built the 14th century castle which stands today and our technicians installed a series of especially designed. Our team then installed these bespoke anchors into the Nevill tower which had been falling apart. During the process we worked closely with English Heritage to ensure we met their exacting standards.



Abbotsford

Abbotsford is the home of Sir Walter Scott. Created almost 200 years ago on the banks of the River Tweed in the Scottish Borders, Abbotsford was the culmination of Scott's creative ambitions as a writer and the fount of his inspiration. Our technicians stabilised part of the rear wall during a major refurbishment project. The wall, part of the original house was bowing and moving outwards and the anchors we installed ensured the wall was made safe and secure. During the process, we had to meet the exacting standards of Historic Scotland.



HISTORIC SCOTLAND
ALBA AOSMHOR



Dysart Toll Booth

This medieval Tollbooth in Fife was comprehensively repaired in 2009, following centuries of neglect. The building's fascinating history includes surviving a gunpowder explosion that blew off the top of the building in 1746. Major cracks were still evident from this and we repaired them with six meter stainless steel rods drilled through the building in hidden locations.



Nether Alderley Mill

The machinery at the mill is over 100 years old, with some parts dated to 1871. The millstones weigh over a ton and our technicians secured the old mill stone to the floor using 4 x 1m anchors to ensure it was safe when the public visited.



Greeba Castle

This is one of two Victorian castellated residences built in 1849 on the Isle of Man. Built in an elevated position, a false side turret was added to the building at the turn of the century. However, it was not bonded in correctly and was actually coming away from the main building and so we anchored it securely back in place.



Manx National Heritage
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Harbourmaster's House

Built in the 17th Century, The Harbourmaster's House overlooks the historic harbour of Dysart. In 2006, the building was renovated and refurbished as part of a £1 million project and our experts installed ties to keep the gable wall attached to the rest of the building.

Structural Anchors in action

Heritage Case Studies



Greenhead Park

Greenhead Park opened in September 1884 and as it's only half a mile from the centre of Huddersfield it has proved to be popular with locals, providing an oasis of calm from the hustle and bustle of urban life. In 2010, a major project to restore the park to its Victorians splendour included new drainage put in to reduce problems with waterlogging, a new lake to replace one removed in the 1950s and the restoration of the Italian fountain. Our job was to help with the revamp of the Lakeside Arbor, originally designed to overlook the lake. The arches and roof were falling in and so our anchor systems were installed to make it secure.



Haigh Hall

Now part of a golf course and country park, the present building was built in 1825, an impressive square block design built around an internal courtyard. Our technicians worked to enhance the main access bridge to this grade II listed building. The bridge was cracking and the anchors ensure the bridge was secure from further deterioration.

Cartmel Cottage

Cartmel is an unspoilt village is situated in a quiet valley in one of England's most outstanding areas of natural beauty. Offering stunning views of the South Lake District fells and countryside, Cartmel has grown up around its famous 12th Century medieval Priory Church. It is a special place where ancient history and tradition mingle effortlessly with the present day. Our technicians were called into stabilise the front wall of a cottage standing next to the Priory. The type of stabilisation means the cottage owner saved time and money as he did not have to rebuild the wall to make it secure.



Ruchill Hospital

The hospital was opened in 1891 and only the hospital's A-listed red-brick water tower remains, a much loved local landmark in Glasgow. Water had got into the sandstone structure and caused cracking. Our technicians installed eight, six metre long anchors right at the very top of this 130 ft structure in atrocious weather conditions.

St John's Beacon

Radio City Tower (also known as St. John's Beacon) Liverpool is a radio and observation tower built in 1969. It is 138 metres (452 ft) tall, and is the second tallest free-standing structure in Liverpool and the 32nd tallest in the United Kingdom. Our technicians actually worked higher than this to install anchors into the top section to allow a radio mast to be bolted onto a 10m long antenna.



The Theatre Royal

This is the oldest theatre in Glasgow and is the home of Scottish Opera and of Scottish Ballet. When the owners wanted to replace the old canopy fronting the building with a new one, they used our anchor system to hold the new cantilever glass canopy firmly in place.

Structural Anchors in action

Church Case Studies



Peel Castle

Peel Castle was originally a place of worship before becoming the fort of Magnus Barefoot, 11th century Viking King of Mann. The structure has no roof and the two side walls were leaning out and so our technicians used Anchorbond Vtek to secure them to each other via tie beams. These stainless steel beams prevent movement in the walls of this ruined chapel and stop them from collapsing.



Manx National Heritage
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Rushen Abbey

Today on the remains of this ancient monastery remain sitting in the peace of the Abbey Gardens. Our team was asked to install anchors into the pigeon tower which was cracking and so needed to be secured and held together. Ironically, although the tower was built to attract pigeons, our Peter Cox bird prevention team were then asked to install bird deterrents to stop birds entering this historic structure!



St John the Baptist

The church was built in two phases, the first in 1878 and the second in 1896. In 1991 the east end of the church was badly damaged by fire which caused damage to the arches above the windows. Our technicians installed anchors to strengthen the arches above the first floor windows to ensure they were safe during rebuilding of the roof.



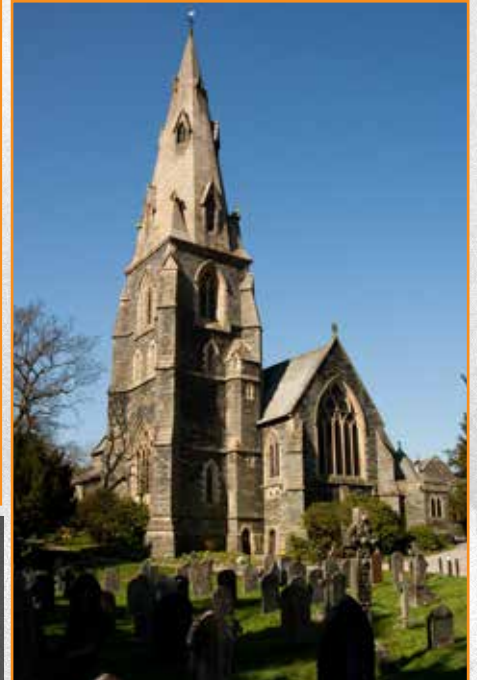
St Andrew's

This grade II listed building was built in 1823 and closed in 1975. The building was seriously damaged by fire in 1983 and Liverpool City Council acquired the site in 2008. It has recently been developed into student accommodation which included the rebuilding of a turret and a remodelling of the exterior. Our team was part of the project and used wall ties to stabilise the stone the cornices together.



Peel Methodist Chapel

Only the façade remains of the original chapel which was built in 1878. The building has now been converted into apartments and our technicians used lateral restraint anchors to tie the walls back to the floor structures.



St Mary's Church

Built in 1850 this Ambleside church has an impressive tower. However, throughout the church's history the combined weight of stonework and bells has been too much for the foundations and caused cracking and so we installed a series of anchors across the beams to stabilise the tower. This is a fairly common problem and something we have rectified across several church sites.



HM Prison Pentonville (informally "The Ville")

Working in this category B/C men's prison environment presented numerous challenges including thorough personal security checks and the booking in and out of every single tool. Our team worked on the chapel, to strengthen failed arches.



St Michael's Church

Situated in Kirkmichael on the Isle of Man our team were asked to strengthen the turret. The church was needed to site a radio mast and so we strengthened the turret which then allowed a flagpole to be bolted to it and the radio mast was hidden inside the flag pole.

Structural Anchors in action

Railway Case Studies



Downhill Beach Bridge

This concrete bridge on stone piers carries the Belfast – Londonderry railway across a stream. Our technicians installed a series of anchors to Northern Ireland Railway's specifications which would stabilise the rail bridge which went over the pedestrian access to the beach.

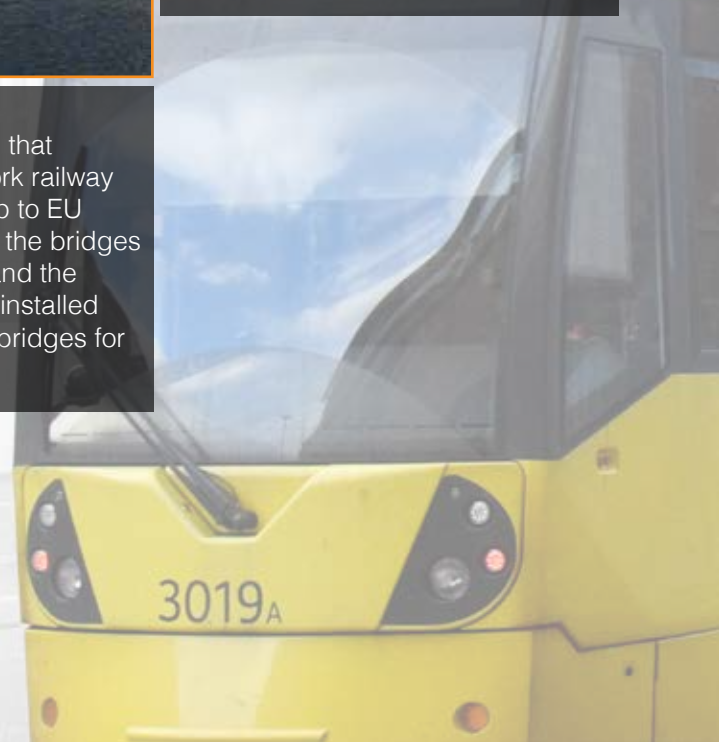


Glouthane

A series of three bridges that spanned the disused Cork railway line had to be brought up to EU regulations which meant the bridges had to be able to withstand the impact of small car. We installed anchors to upgrade the bridges for legislative purposes.

Manchester Tramway

Manchester's light railway system, Metrolink, was first opened in 1992 and continues to undergo massive expansion. Our technicians have installed high load fixings into existing buildings which take the straining wires where the overhead cables are fixed.





London Bridge

London Bridge station was opened as the London station on 14 December 1836 south of the river Thames in Tooley Street, making it the first and oldest of the current London railway termini. In order to accommodate modern, faster trains new platforms needed to be installed which was a major £2.5 billion project. Our technicians worked as part of the team to install a series of anchors which were designed to take the loads necessary for the new platforms.

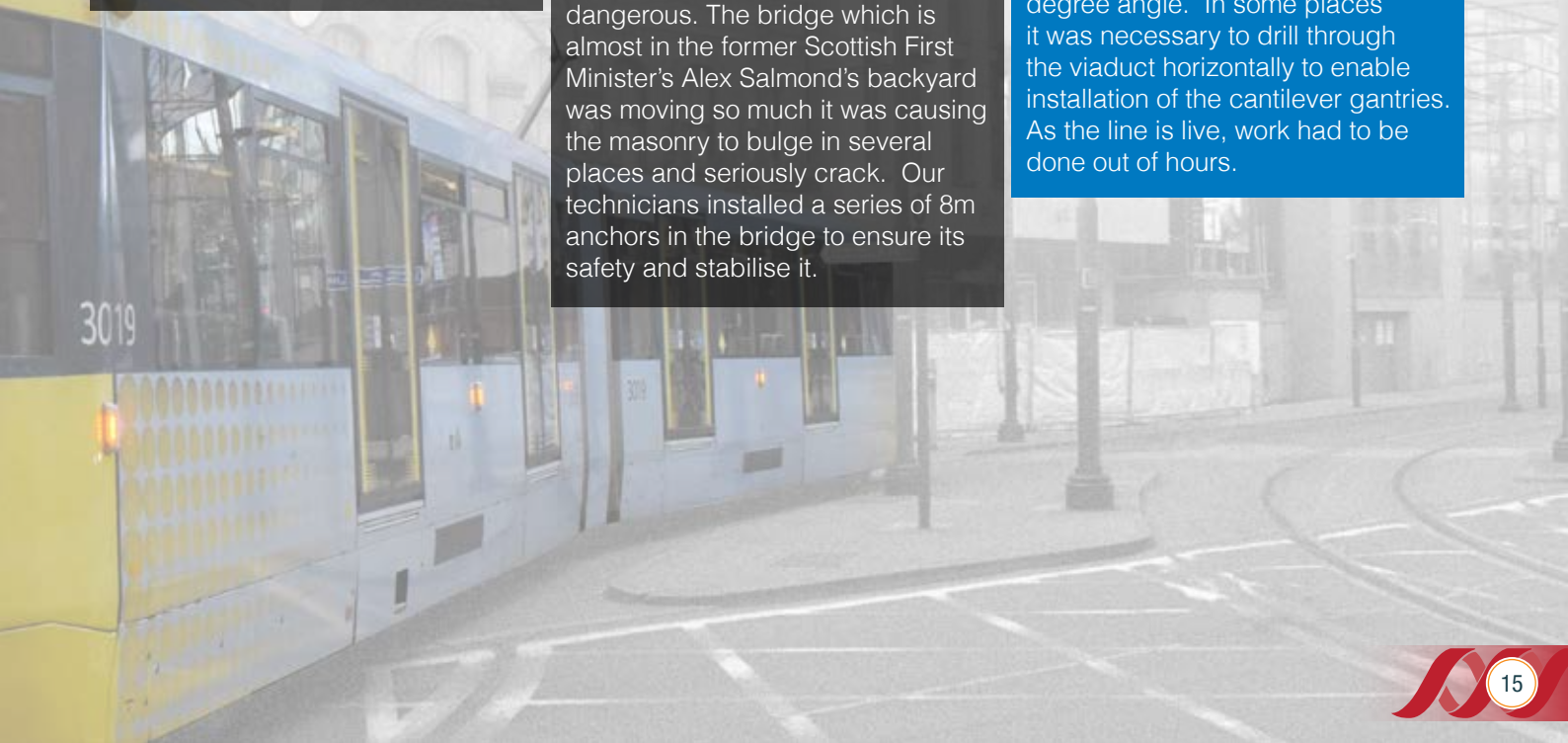


Middleton Viaduct

The electrification of the railway will mean faster, greener and quieter journeys. At Middleton Railway viaduct, Manchester, Balfour Beatty Rail Projects Ltd is charged with electrifying the line. They are installing steelworks to carry the new gantries which will hold the electric cables. These huge loads of up to 200 kn mean the viaduct walls must be strengthened. The anchors for the gantries were installed over a distance of two miles and are around 6m long, going in at a 45 degree angle. In some places it was necessary to drill through the viaduct horizontally to enable installation of the cantilever gantries. As the line is live, work had to be done out of hours.

Strichen Bridge

The bridge dates back to the mid-19th century and had become dangerous. The bridge which is almost in the former Scottish First Minister's Alex Salmond's backyard was moving so much it was causing the masonry to bulge in several places and seriously crack. Our technicians installed a series of 8m anchors in the bridge to ensure its safety and stabilise it.



ANCHORBOND

VTEK



A Nationwide Team of Experts

- | | | | |
|-------------|-------------|--------------|--------------|
| > dundee | > teeside | > manchester | > birmingham |
| > glasgow | > preston | > chester | > bristol |
| > edinburgh | > leeds | > lincoln | > uxbridge |
| > newcastle | > liverpool | > derby | |



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