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Railway Paths Ltd / Sustrans Ltd
Re-Opening Viaducts

- RPL/Sustrans hold ex-railway land & approx. 1200 structures
- 80s & 90s Sustrans acquired land & approx. 400 structures
- 1998 RPL created to hold land & approx. 800 structures
- Sustrans – approx. 500 staff
- RPL – 6 staff (3 surveyors, 2 admin, 1 engineer)
- RPL advises Sustrans on bridge matters

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Viaducts

- Total number of viaducts = 67 ex railway viaducts
- Responsibility ranges from freehold – licence
- 53 brick / masonry arch viaducts
- 2 concrete arch viaducts
- 12 metallic beam viaducts
- Vary from 5 to 33 spans

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28/05/2009 12:33


09/11/2009 10:50

09/11/2009 14:33


31. 5. 1999


16/07/2011 12:51







Viaducts stats

- Total = 67 viaducts
- Listed = 27 no.
- Re-opened to public = 52 no.
- No cycle path (yet) = 15 no.
- Path built, liability transferred since 2009 = 6 no.

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Arch viaducts

- Simple approach – drain deck, scour
- They all carried trains (x2) now they don’t
- Scrape deck, graded stone, bitmac surface
- Surface drainage to soakaway
- Poss scour protection, vegetation, repair, re-pointing

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Beam Viaducts

- More difficult to assess strength losses
- All have had large strength reserves (for intended re-use)
- Bespoke design
- Generally add concrete or timber deck, re-furb original drainage system and patch paint
- Rarely have funds for full re-paint nor add strength

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03 04 2006


15:39 10/MAY/2012


15:39 3/OCT/2013


15:20 3/OCT/2013




27/07/2009 17:25

Case Study – Torksey Viaduct



- John Fowler; opened 1949
- Spans River Trent (4 + 18 spans); length = 280m
- Very early example of box girders; Grade II* listed
- River spans – main girders strong, transverse beams corroded, no deck
- Trestle over flood plain – poor drainage, deck “gaps”

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16:24 13/JUN/2014




10/02/2014 19:22 14℃
10/02/2014 19:30 15℃
10/03/2014 02:02 09℃






01.10.2014 09:45




11:26 8/APR/2015


2015/10/09











Sir John Fowler, Bt



Born	15 July 1817 Wadsley, Sheffield, South Yorkshire, England
Died	20 November 1898 (aged 81) Bournemouth, Dorset, England
Engineering career	
Discipline	Civil engineer
Institutions	Institution of Civil Engineers (president) Institution of Mechanical Engineers
Projects	Metropolitan Railway Millwall Dock Forth Railway Bridge (A) Manchester Central (II*) Wicker Arches (II*) Torksey Viaduct (II*)

Torksey Viaduct summary

- Re-furb? Painted < 10%; timber / concrete deck
- Ramps, steps, highway modification, fencing, vegetation
- Consents & work took 3 years; ecology delays
- Re-open April 2016 & very popular, saves 12 miles by road
- Total cost = £380,000 (£320,000 on bridge)
- Funder – Railway Heritage Trust

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Case Study – Lumb Viaduct



- Grade II listed
- Conventional masonry arch
- Spans River Irwell; 9 spans; length = 148m
- Masonry parapets removed, heavily vegetated cracks to piers and spalling to arch barrel
- 1930s concrete scour protection failing

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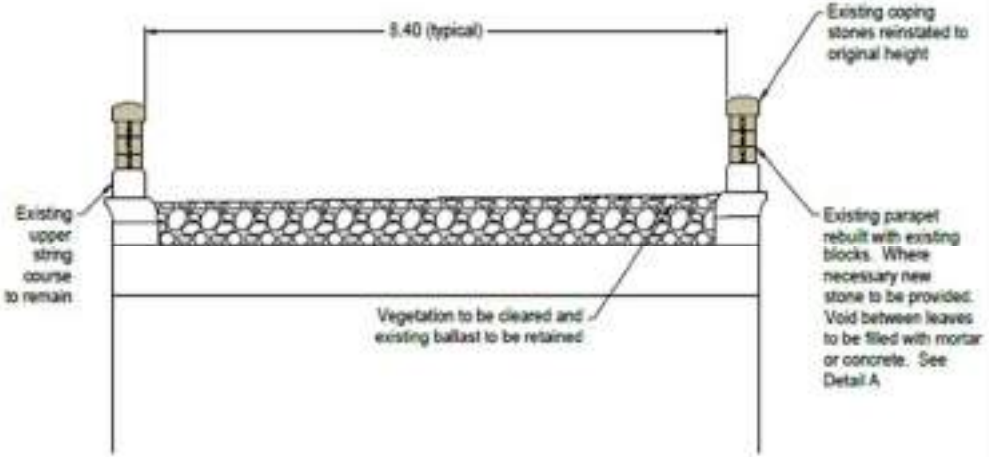
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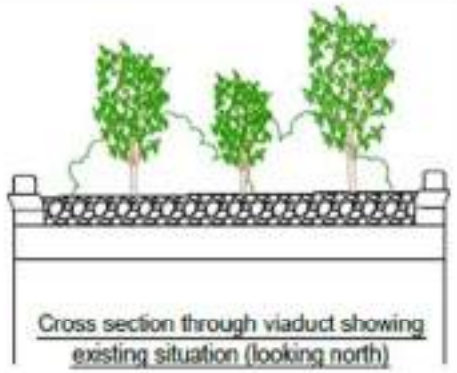




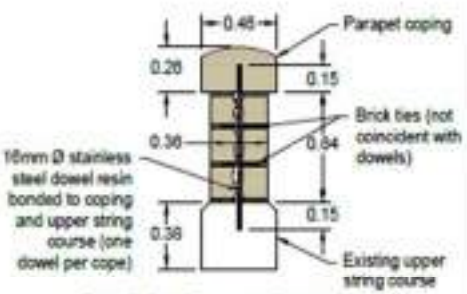
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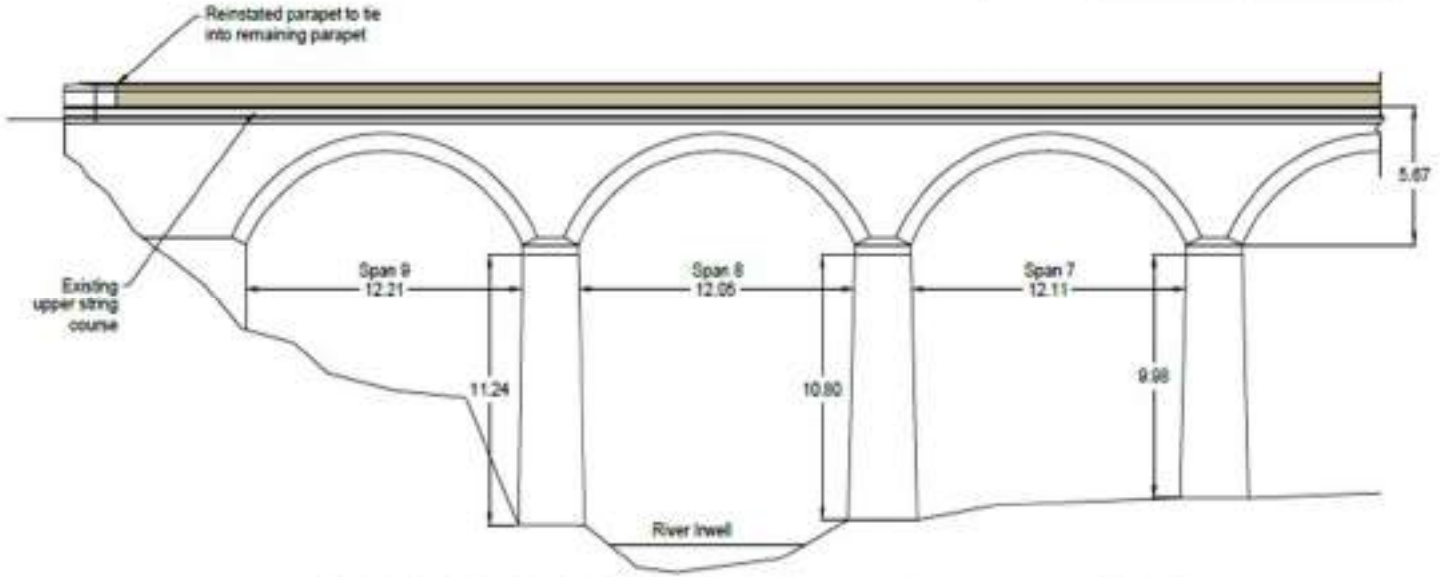
Cross section through viaduct showing reinstated parapets (looking north)



Cross section through viaduct showing existing situation (looking north)



Detail A - Parapet dimensions



Partial elevation of viaduct showing reinstated parapets (south east corner of viaduct)

Notes:

1. All dimensions in metres.
2. The proposals shown on this drawing are for the purposes of initial consultation.
3. Existing viaduct span and arch height dimensions are shown illustratively.
4. Existing mortar samples will be analysed and closest modern match found for new mortar.

Rev	Description	Drawn	Date
0	First Draft For Comment	BR	08/12/2013

Railway Paths Ltd.

Railway Paths Ltd.
5th Floor, Hanover House
30-32 Charlotte St
Manchester M1 4FD
Tel: 0161 923 6650
Fax: 0161 923 6655
www.railwaypaths.org.uk

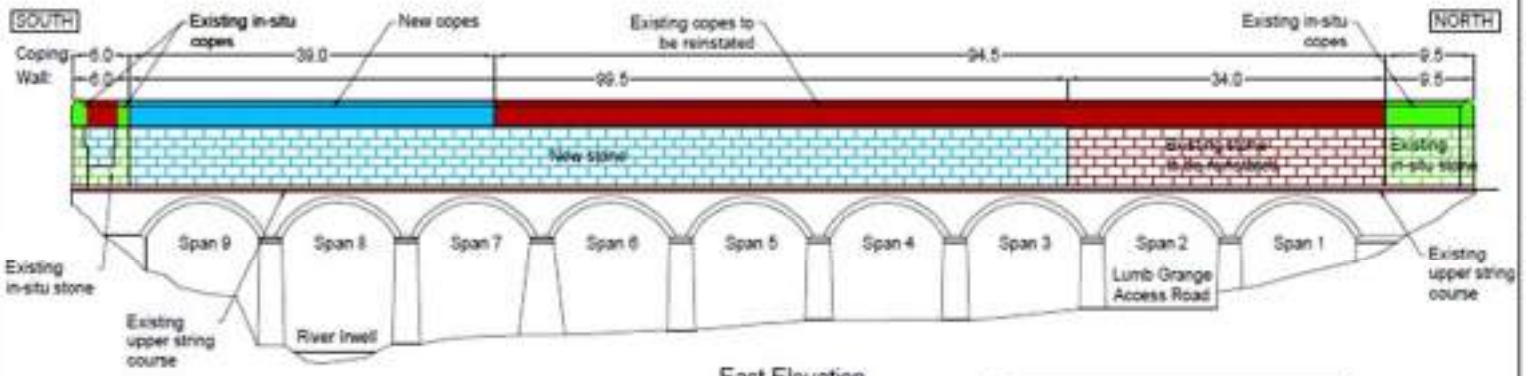
Project	NW17 B58 Lumb Viaduct
Title	Parapet Reinstatement
Drawn: BR	Date: 08/12/2013
Checked: PT	Scale @ A3: Not to scale
Status	FOR COMMENT
Drawing No: NW17-B58-DR-03	Revision: 0


3/SEP/2014





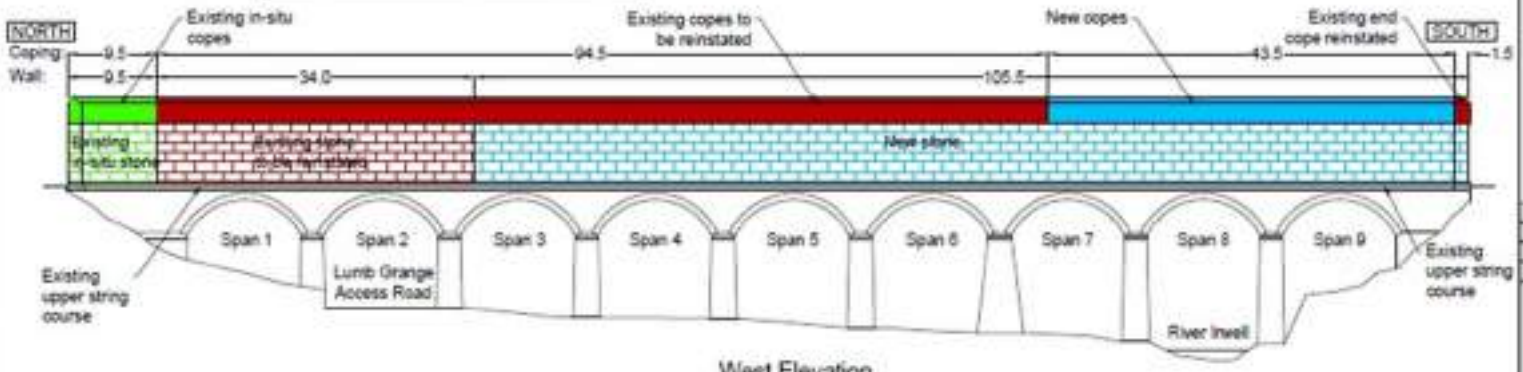

HWAY
ENANCE



East Elevation

Exact lengths of reinstated existing stone and copes will be dependant on actual quantities of existing stone

Vertical scale of parapet walls has been exaggerated by a factor of 10 for illustrative purposes



West Elevation

West Elevation			East Elevation		
Distance from North end (m)	Cope	Wall	Distance from North end (m)	Wall	Cope
0.0	In-situ stone	In-situ stone	0.0	In-situ stone	In-situ stone
9.5	In-situ stone	In-situ stone	9.5	In-situ stone	In-situ stone
43.5	Existing	Existing	43.5	Existing	Existing
104.0	Existing	New stone	104.0	Existing	New stone
147.5	New stone	New stone	143.0	New stone	New stone
149.0	Existing	New stone	149.0	Existing	Existing

Table showing lengths of type of Parapet Wall Reinstatement

Key to Parapet Wall Reinstatement

Coping stones	Wall stone
Existing in-situ	Existing in-situ
Existing to be reinstated	Existing to be reinstated
New stone	New stone

Notes:

1. All dimensions in metres.
2. Dimensions shown are approximate.
3. The amount of existing stone that is to be reinstated will be maximised to minimise the quantity of new stone that is required.
4. This drawing should be read in conjunction with RPL Report 'NW17 B58 Lumb Viaduct Reinstatement of Parapet WallsDischarge of Planning & Listed Building Conditions'.

Rev	Description	Drawn	Date
2	For Planning Condition Discharge	WH	31/07/2014
1	For Planning Condition Discharge	WH	30/06/2014
0	For Planning Condition Discharge	WH	28/04/2014

Railway Paths Ltd.

Railway Paths Ltd.
5th Floor, Hanover House
30-32 Charlotte St
Manchester M1 4FD
Tel: 0161 923 6050
Fax: 0161 923 6055
www.railwaypaths.org.uk

Project: NW17 B58 Lumb Viaduct

Title: Parapet Wall Reinstatement Elevations

Drawn: WH | Date: 28/04/2014

Checked: PT | Scale at A3: Not to scale

Status: Planning Condition Discharge

Drawing No: NW17-B58-DR-05 | Revision: 2




10:09 5/MAY/2015


14:15 7/MAY/2015


10:10 5/MAY/2015




14/08/2015 14:35
14/08/2015 14:48

Lumb Viaduct summary

- Re-build both parapets using stone from original quarry
- Sealed tarmac deck and surface drainage channel
- Consents, access & work took 2 years
- Re-open September 2015
- Total cost = £230,000
- Funders – Railway Heritage Trust (£200k); RPL (£30k)

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Current Projects



- Martholme Viaduct
- Funding: Railway Heritage Trust £50k
- Minor masonry repair to parapets, 3m tarmac strip and fencing

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Current Projects



- River Calder, Castleford
- Total value: £180,000
- Funding: RHT & Wakefield Council
- Tarmac / concrete deck with surface drainage, string course repair, re-pointing, upgrade existing parapet railings

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Bennerley Viaduct



- Looking for £2M - £3M
- Secured:

HLF - £40k – Community work
RHT - £50k – Repairs to piers and pier bases
RPL - £50k – Heritage study

- Currently preparing a large bid to Heritage Lottery Fund
- Most ambitious project for many years

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