

A View from the Bridge

for the Friends of the Union Chain Bridge

Restoration Progress Supplement – No 3 – December 2020

The Restoration Works have now been suspended for the Christmas break – from 18th December to 4th January.

In the 14 weeks since The Spencer Group took possession of the site on the 1st September, a huge amount of preparatory work has been completed and all is now set for the first major dismantling work, with the removal of the wire ropes and the hangers supporting them, early in the New Year. Remember that the wire ropes were installed by the Tweed Bridges Trustees in 1902/03 on the advice of their surveyor, who had

become concerned about the Bridge's integrity. In fact, recent surveys have shown that the ropes have served little useful purpose during their 118 years as part of the Bridge structure, and in fact might well have been doing more harm than good, by preventing the natural movement of the Bridge. Indeed, there is a

theory that they were always intended only to serve as a "backstop" in the event of a catastrophic failure of the chains, when, through their own hangers, they would have supported the decking to prevent it collapsing into the river.

In any event, after their hangers have been removed, the two ropes will be hauled off using the Woodliner crane (above; remote control, left) and cut into metre lengths. They will not be replaced in any form, so that, when the Bridge itself is re-assembled in the second half of 2021, what we will see is the 1820 original, without the 1902/3 modifications.

The completion date remains for one year hence – 1st December 2021.



These are the achievements of the first phase, from Sept to Dec 2020:

- The construction of the contract hub - offices, workshops, classrooms, meeting rooms - at the Chain Bridge Honey Farm; and two satellite compounds on the Scottish and English sides of the Bridge – the English compound high above the English tower and the Scottish site adjacent to the Scottish tower.
- 24m long trial ground anchor drilled, installed, grouted and successfully tested.
- English upper anchor ledge with drilled and grouted anchors and concrete bank seat constructed for anchoring the aerial ropeway.
- Scottish anchor blocks comprising 6 ground anchors and 3 concrete foundations constructed behind the Scottish tower.
- The support tower for the aerial ropeway has been completed and the ropeway installed by specialist French engineers has been tested and commissioned; the Woodliner* up, tested and running.
- The supports and steel cable for the diversion of BT services have been erected and the diversion cable slung across the River.
- The English tower access platform has been constructed.
- The Bridge deck panels have been removed, revealing under-timber-sleepers in a better condition than had been anticipated.

*The Woodliner, made in Austria by Konrad Forsttechnik GmbH, is a self-propelled, diesel-engined, remote-controlled carriage, using two hydraulically-driven pulleys looped by the skyline. It was developed for uphill, downhill and, as in this case, largely horizontal operations. The intelligent hydraulic system allows lifting and lowering of load while driving on the cables. It will be used for hauling the dismantled components of the Bridge to the riverside compounds and then returning them for re-assembly.



Far left: BT diversion, Scottish side (Spencer photo)

Left: VLM (French sub-contractor) erecting the Scottish-side cable tower (Spencer photo)

Removal of decking plywood (Spencer)



English access tower foundations (Spencer)



Erection of Scottish cableway tower and removal of decking (foreground) Friends



Installation of Woodliner cable crane above the English tower Friends

The Woodliner cable crane, which has been installed by VLM, specialist cableway engineers, and will be maintained by them during the works, will become a familiar site, carrying dismantled components to the riverbanks, and later, assisting in their re-assembly. The Woodliner is used extensively in forestry operations.

(Left: installation in progress by VLM Friends

(Below: the Woodliner in its dock above the English tower) Friends



Left: The commissioning of the Woodliner (7 Dec) - about to take the strain of a test load of over 4 tonnes; and (right) off it goes on its own. Tests passed with flying colours!

Friends



Above left: The English-side access-tower superstructure completed, with the Woodliner in its dock (arrowed); and, above right, the Scottish tower, with the deck-level personnel cradles parked on the Bridge walkways (blue arrows) and the under-bridge working platform docked below the decking (orange arrow). December 18th (Friends)

Work resumes on January 4th 2021, when the first operations are expected to be the removal of the wire rope hangers and then the wire rope itself.

An interesting year in prospect!

