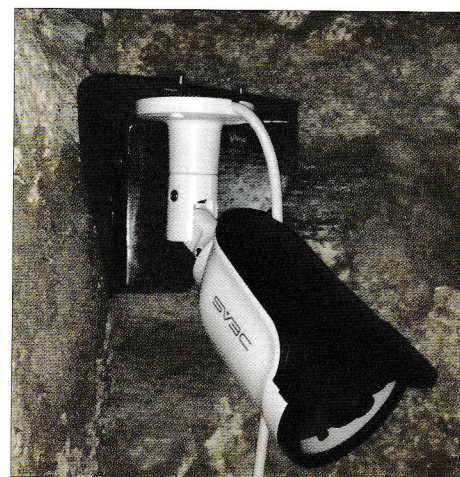
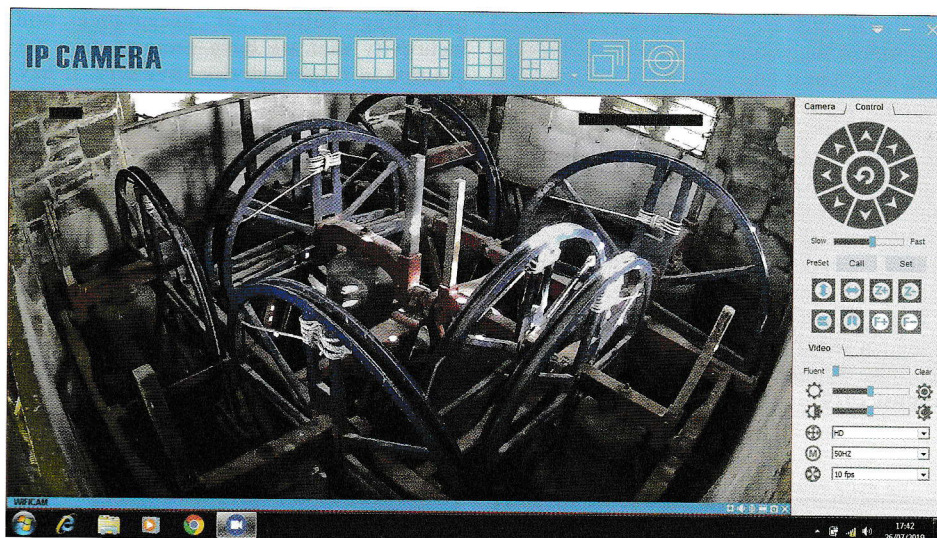


Installing a belfry webcam St Columb Major, Cornwall

by Phil Tremain



The result gives a reasonable picture quality. The image shown is a screenshot from a laptop (which was donated to us), with no appreciable lag (delay).

There are a number of good reasons for having a camera installed in the bell chamber transmitting an image down to the ringing room. It is a useful facility in the initial stages of teaching handling, when explaining to the pupil the relative movement of the bell and the rope. It is also a very effective publicity aid; in the past few months we have welcomed groups from the school, a local history group, and the youth club, and they have been able to see what is happening upstairs while we are demonstrating how we ring. I have even used it to check if the jackdaws have broken in!

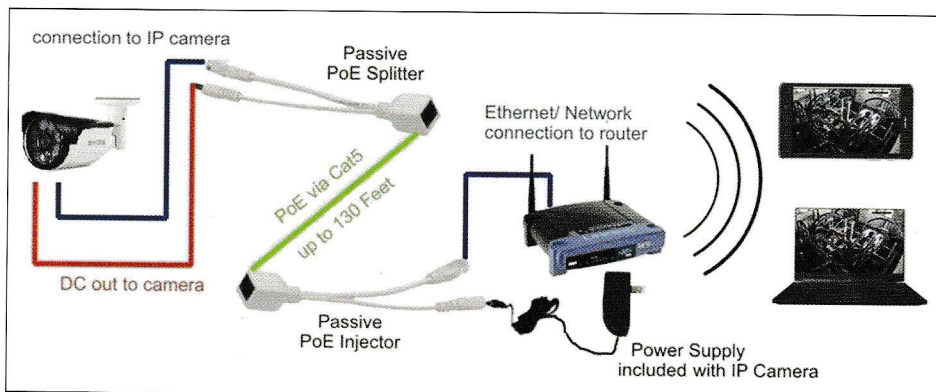
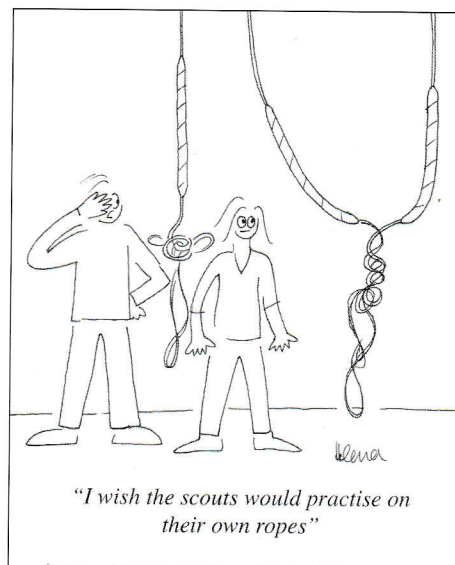
Whilst this facility could be achieved using analog CCTV, an IP (internet protocol) camera offers a more flexible solution, particularly in the variety of ways that the images can be viewed. The requirement was for a camera which could be switched on and off from downstairs. For this reason, and bearing in mind the potential problems that thick stone walls can pose for a wireless signal, I opted for a wired camera. Cat5e ethernet cable with PoE (power over ethernet) provides power for the camera using the same run of cable as the data signal. This is achieved using

'injector' and 'splitter' cables, as shown in the schematic diagram.

The camera itself is a waterproof 'bullet' model with night vision capability. Down in the ringing chamber the signal is fed into a wireless router, from which it can then be picked up by a PC, laptop, tablet or phone. The camera came with Monitor Client software for Windows, and the recommendation to download the P2PWIFICAM app for iPhone or Android devices, from the App Store or Google Play respectively.

All the materials were sourced from the internet: the camera at just under thirty pounds was the main expense, but excellent value if you don't mind a bit of a wait; delivery was 2-3 weeks with free shipping. Like many households I am sure, I had a spare wireless router from when we last changed internet service provider so there was no expense for this. The total cost was less than forty pounds:

Webcam	\$37.38
(£28.92 depending on exchange rate)	
PoE injector/splitter cable set	£2.18
Cat5e Ethernet cable (25m)	£5.99
Wireless router (recycled)	free



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or

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This online resource is based on the comprehensive glossary in John Harrison's *The Tower Handbook*, written for CC Publications in the 1990s, plus later additions.

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