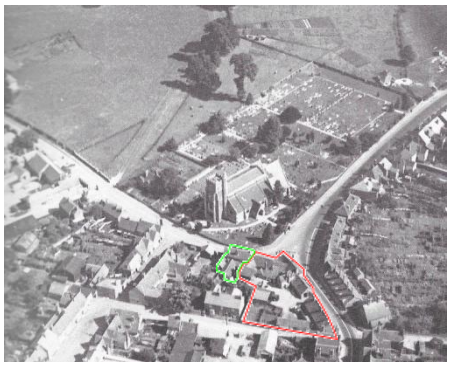
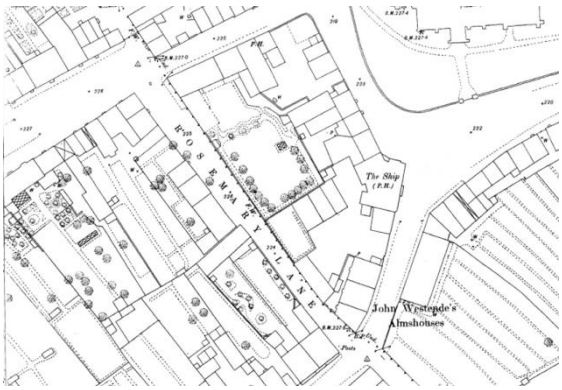
Restoring a hand pump

We live next door to a 16th Century pub, part of which is a black and white half timber frame structure, but the gable end of the building is a very modern addition. We had been curious about this and started to do a little research.



According to an 1872 town map, there were originally two cottages adjoining the pub, and although we have been unable to find any photographs of the front of them, they are visible from the rear in an aerial photograph from the 1930's and another that has been tentatively dated from the 1950's. The cottages are outlined in green, while the red border is the outline of the Ship Inn.

The town plan also shows a pump in the yard of the cottage closest to the pub, as a can be seen in the image below. When this is overlaid on an aerial photograph of the present site, it is obvious that the Ship Inn, and in particular the dog-legged garden wall between the pub and the cottage is unchanged from 1872.



Zooming in to the cottage shows the pump was located just a foot or so to the West of the Northern-most part of the garden wall to the pub (denoted by the '*P*' symbol). The eagle-eyed will also spot no fewer than 8 wells (marked '*W*') on the map along with another pump in the yard to the rear of the Ship Inn. At this point, we had pinpointed the location of the original pump that served the cottage where our property now stands to within perhaps a foot. Given that Wokingham started to move to mains water around 1890 (or possibly even earlier), the pump may have disappeared more than a century ago, and the borehole long since collapsed or filled in. We did, however, decide it would be nice to replace the pump, even if it was only as a decorative feature.

The pump

In July 2015, I found a pump for sale on an internet small ad, and bought it on the basis of a single photo. Having driven down to Romsey to collect it, the owner told me the pump had languished for some years in a metal finishers near Woking where she worked at the time. As no-one had ever claimed it, she had been given the pump over 20 years previously. She believed that at the time the pump was brough in to be shot blasted, the internal components had been removed and subsequently lost.

The original plan was simply to have the pump as a decorative feature, but having entered a local gardening competition, we were advised that we had been marked down for not recycling rain water. Unfortunately, the only place we could site a rain butt was in a location that was so awkward we could never have drawn water from it. At this point, it dawned on us that we could kill two birds with one stone, if only we could get the pump restored.

The starting point was to strip the pump down and see what we had. The bore was corroded, but not too badly, the operating rod was present and the rubber washers between the cap and body, and the body and spout were in reasonable condition, but the bottom valve and bucket were missing. I had expected the bolts to be imperial sizes, but oddly the flange bolts and the bolts holding the barrel to the base were 17mm AF, or M10. I suspect that someone had attempted a restoration at some time in the past, as the two bolts holding the spout to the barrel are a slightly smaller imperial size. Unfortunately, the two bolts holding the barrel to the base sheared, despite copious amounts of dismantling lubricant and plenty of heat. The remains of the bolts were cut off flush with a hacksaw before being drilled out and re-tapped, with the help of my son, Karl.

The pedestal was bolted down with spacers to allow the pipework to exit above ground and the base fitted with a new 1 $^{1}/_{8}$ " to 22mm adapter. The threads were quite badly corroded and had to be partially re-tapped.

I originally intended to use a piece of leather to fabricate the inlet valve, but a trip to a local cobbler saw me coming home with a piece of rubber shoe sole, as he believed it would be more durable and easier to work with. The rubber was about 1.5mm thick and could be cut with scissors, making it very easy to work with.

A blank disc was first cut out and test fitted, and then a hole punched through the centre, a 'C' shaped cut made with scissors and two large penny washers and an M10 bolt attached. An unintended, but fortunate, consequence of tightening the bolt was to make the whole assembly slightly dished which I hope will help it seal better to the base.


Having ordered a new bucket/valve from Robinson & Sons, it was obvious that the operating rod (also threaded to M10 x 1.5) was too long for the barrel, and we would have to fabricate a new linkage in any event. A yoke was made up from flat steel stripwith a hole at the top for the operating rod. The rod was measured up and shortened with a hacksaw, with the intention of simply re-threading the end with an M10 die. Again, there were problems; the rod was not 10mm, or anything close, and it was proving impossible to get the die started. Without access to a lathe to turn the rod down to the correct diameter, I first re-threaded it with an oversize imperial die, and then recut the threads to M10 before fitting the yoke with a Nyloc nut and connecting the bucket/valve. The barrel was cleaned with a 40 grit flap wheel sander, followed by an 80 grit one to remove the rust, and while not perfect, the resulting surface seemed smooth enough to be usable. The leather washer on the bucket had been soaked for 5 days to help soften it, but was still a very tight fit, and the whole assembly had to be driven into the barrel with a drift and a lump hammer, before the cap was attached and the operating rod reconnected to the handle.


My son Karl had spent some hours with an electric breaker channeling the concrete to take the 22mm feed pipe, and this was then laid in and soldered up, with a compression fitting under the pedestal for easy removal if needed. Two 100 litre rain butts were installed and connected to the downpipe, and flexible hoses run to a simple manifold connected to the 22mm feed pipe. The butts were partially filled, the pump primed, and on the third pump started pumping water. The final touch was to find a (not quite period) 90 year old enamelled bucket in a local antique shop.