

Bath Stone Mine - 1st December 2006

Leader: Adrian Boniface , Words & Photos: Dave Williams.

On 2nd Dec 2006, a very small band of members (including one from the SE Branch) assembled at Hartham Underground Quarry at Corsham, Wilts, to be led underground by the quarry manager, Adrian Boniface.

Hard hatted and lanterned, and briefed on safety including fire, we walked down a long flight of steps, into the dark, to reach the working level. But the experience was not claustrophobic, because the 'tunnels' were large (3-4m high & wide) and fairly dry. The rocks here are almost horizontal, and the Great Oolite bed is close to the surface. This means that as the mine moves outwards, galleries are created, ideal storage space available in huge amounts.

The stone is worked using the ancient coal-mining pillar & stall technique, where two series of parallel 'stalls' (tunnels) are driven at right angles to each other to extract the seam, in this case a bed of cream-coloured Bath Stone (Great Oolite), leaving pillars of rock to support the roof. In 18th century coal mines, up to 50% of the coal could be left in the mine by this method, leading to the temptation to go back into an old mine 'rob' the pillars (a delicate art which can lead to catastrophic roof collapse).

In some of the ancient Bath stone mines, limestone has spalled off old pillars, threatening collapse, especially where the old workings are so near the surface that some residents can get into old mines from the cellars of their houses immediately above! In this modern mine, substantial pillars have been left and an abundance of rock bolts are also used here to support the exposed roof between the pillars.

The method of extracting the stone is very simple: slots are cut into the rock face horizontally and vertically to create more or less cubic blocks of stone which then are separated from the face. The height of a block is determined by the distance between prominent bedding planes. The joint pattern is also important when deciding the size of a block, here the joints are well spaced. They are then trimmed to size, typically 3 x 2 x 1m, underground, and the trimmings used for backfill. This way only useful rock is hauled up to the surface on the inclined railway, one block at a time. (This incline is beside the flight of steps we used to descend into the quarry). Originally the stone was cut out by hand, with a series of shorter to longer saws, creating a slot about 5mm wide. Today's modified coal cutting machines cut slots up to about 5 cm wide 4m deep into the rock face.





The NOISE of these cutting machines, and the dumper trucks was horrendous, because of the enclosed space.

Experts (such as Elizabeth Devon, who led the Building Stones trip) can recognise the different stone from the various quarries of the area, by texture, or that some have more shell fragments etc. The stone from Hartham is an excellent freestone (can be cut in any direction), so they were

attempting to retrieve blocks as large as possible as these command the best price, especially if they are long enough to be sawn to make things like lintels and mantelpieces. We spent some time examining the large blocks in the stockpile at the entrance to the site, while Adrian sketched the history of the quarry, including periods when stone was less valued & many quarries closed. There is now a revival, both in stone for renovation of important public buildings, but also for private houses & conservation areas.

We spent a fascinating 2 hours underground, during which time we became completely disoriented from the frequent turns, and often being able to hear loud machinery close by, but not able to see it. At one point we arrived in a very large chamber, where we were told a manhole cover 20m above was in someone's back garden! Then we faced the long flight of steps back to the surface.

After the trip we went into a local pub, The Quarryman's Arms, where the walls were covered with maps of the various underground workings around Corsham, which clearly extend for many miles and include tunnels used by the Ministry of Defence, and others for growing mushrooms, or storing valuables. Altogether a fascinating trip, and many thanks to both Hanson PLC & Adrian for facilitating it.