



THE UNIVERSITY  
OF BIRMINGHAM

**An Archaeological  
Evaluation of the Former  
Royal Brierley Crystal  
Works:**

**A Supplementary Report on Recording of  
the Draught Flue Systems**

Birmingham University Field Archaeology Unit  
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**An Archaeological Evaluation of the Former Royal Brierley Crystal Works,  
Brierley Hill:**

**A Supplementary Report on Recording of the Draught Flue Systems**

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# **An Archaeological Evaluation of the Former Royal Brierley Crystal Works, Brierley Hill:**

## **A Supplementary Report on Recording of the Draught Flue Systems**

### **1.0 Introduction**

In November 2002 Birmingham University Field Archaeology Unit carried out archaeological building recording on a subterranean complex connected with the furnaces of the Royal Brierley Crystal Works, Brierley Hill, West Midlands. The work was commissioned by St Modwen Developments and was a sequel to an archaeological evaluation of the former glassworks undertaken by BUFAU in August 2002 (Hislop 2002), which identified the complex as requiring investigation. The following, then, is an addendum to the main report on the archaeological evaluation and is to be read in conjunction with it. Figure 1 can be related to the ground level buildings by comparison with Figure 8 in the main report (Hislop 2002).

The earliest phase of the subterranean structures that were the subject of the investigation, represent a northwest-southeast orientated draught-flue that had served the Frisby furnace of the glasshouse built in c1870 (Room F12, see Hislop 2002, Fig.8). Between 1884 and 1903 a new northeast-southwest orientated draught flue was built which extended beneath the new glasshouse erected at that time (Room F7, see Hislop 2002, Fig.8). *Circa* 1949 the complex was altered and extended when the factory underwent a major expansion. These later additions were excavated to a lower level than the two draught flues, and at the time of the survey were submerged by water to a depth of approximately 2m. Consequently they could not be investigated in detail.

### **2.0 The Draught Flue of 1870-84 (Figures 1)**

The original draught-flue comprises a brick-built vaulted tunnel approximately 24m long by 1.8m wide, with side walls up to 1.75m in height. The flue was constructed of red brick. The side walls were built of 9" x 4½" x 3" bricks laid in English bond, although some isolated variations were apparent, whereas the vault utilized 8½" x 4½" x 2½" bricks. Bonding was with an ashen grey cemented mortar which had perished slightly. The whole of the flue interior had been whitewashed.

At the northwest end of the tunnel, where the tunnel opens out onto the railway frontage, two phases of construction have been recognized. Set back 1.5m from the end of the tunnel is a former entrance faced with red 9" x 4" x 3" buinose bricks (Plate 1). Immediately northwest of this entrance there is a vertical joint in the brickwork of the side walls. The outer 1.5m of the tunnel is built of 9" x 4½" x 3" red brick, and occasional reused bricks, laid in English bond with ashen grey mortar, apparently containing a greater proportion of cement than the mortar of the main tunnel. This section is not vaulted but has a flat concrete ceiling. At the northwest end, which coincides with the northwest front of the glasshouse, the jambs of the current entrance are built of 9" x 4" x

3" blue bullnose bricks, which support a wooden lintel. The entrance is now blocked by permanent plant equipment on a concrete step.

The original entrance to the southeast end of the draught flue is similar to the former northwest entrance except that no bullnose bricks are employed in its construction (Plate 2). The height of the floor at this end of the flue appears to have been raised and the gradient of the slope reduced. Approximately 3m from the entrance an inserted flight of steps descends to the level of the former furnace room.

The vaulted passage opens out in the centre into a 4.4m long by 3m wide room, at the point at which the glasshouse furnace would have been fed. This room was rebuilt, probably in the 1940s, with 9"x 4½"x 3" bricks laid in stretcher bond with cement mortar; it is covered with a concrete ceiling and has a level floor. No trace of the original arrangement survives.

Approximately 1.2m either side of the furnace room there is a joint in the brickwork of the flue walls and vault (Plate 3). At this point the vault begins to slope towards the furnace room. This break in the brickwork has a somewhat ragged appearance, and may represent a rebuild of the flue immediately adjacent to the furnace.

### **3.0 The Draught Flue of 1884-1903 (Figure 1)**

Approximately 6m to the southeast of the southeast entrance there is a second vaulted draught flue at right angles to the first that extends for approximately 22m towards the northeast (Plate 4). This structure appears to have been associated with the second glasshouse that was built between 1884 and 1903. The central portion has been destroyed by the 1940s works but two stretches survive at either end. These are built of bricks laid in English bond with similar ashen grey mortar to the earlier flue. Towards the southwest end of the northeastern length the vault starts to dip as does the earlier flue as it approaches the position of the former furnace. This is the only surviving structural indication of the whereabouts of the 1884-1903 furnace.

### **4.0 The Additions of 1949 (Figure 1)**

In 1949, when major additions to the factory were made, these were accompanied by alterations and additions to the draught flue systems. The line of the 1870s draught flue was extended approximately 22m to the southeast. On the southwest side of this new passage a chamber, approximately 9m x 10m, was constructed to house the base of a furnace in Room F8 (Hislop 2002, Fig.8). On the southeast side of the furnace base is a flue to the southwesternmost of the two surviving tall chimneys (Plate 5). The draught flue of 1884-1903 was opened out into another furnace base chamber, approximately 11.6m x 9m. This furnace, which replaced the furnace of 1884-1903 in Room F7, was served by the second chimney stack. To the southeast of the 1884-1903 draught flue there is an inspection shaft, but as this was filled with water at the time of the survey it could not be investigated.

## **5.0 Discussion**

The sloping of the draught flue towards the furnace room is a characteristic that has also been recognized at the 19<sup>th</sup> Novelty Glassworks site at Stourbridge (Cherrington *et al* 2002), and it was no doubt a feature of the original building. The break in the brickwork at this point, however, does not seem to be a structural necessity, and it is possible that it represents a reconstruction of the furnace, c.1900. From this characteristic dip in the vault, it has been possible to determine the location of the furnace of 1884-1903, which, like its earlier counterpart appears to have been situated in the centre of the glasshouse.

## **6.0 Acknowledgements**

This project was managed by Steve Litherland who also edited this report. The recording and compilation of the report was carried out by Richard Cherrington and Malcolm Hislop. Nigel Dodds prepared the illustrations. Thanks are owed to Ray Hill and the staff of St Modwen Developments, and to Peter Boland of Dudley Metropolitan Borough Council.

## **7.0 References**

Cherrington, R. Hislop, M. Orton, D. and Rudge, A. *The Novelty Glassworks, 28 Gladstone Road, Wollaston, Stourbridge, West Midlands: An Archaeological Building Record and Watching Brief*. BUFAU Report No.873.

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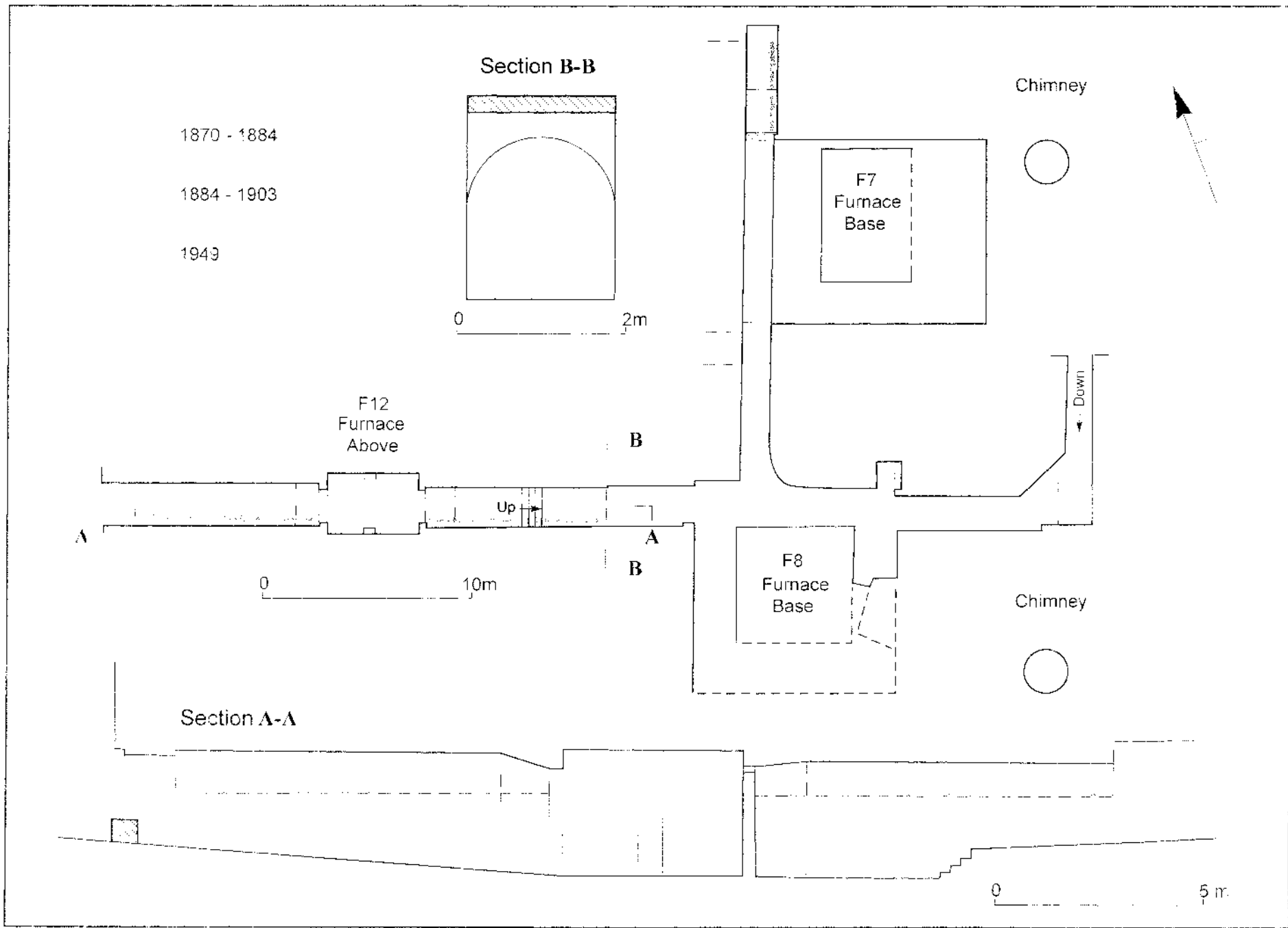




Plate 1



Plate 2



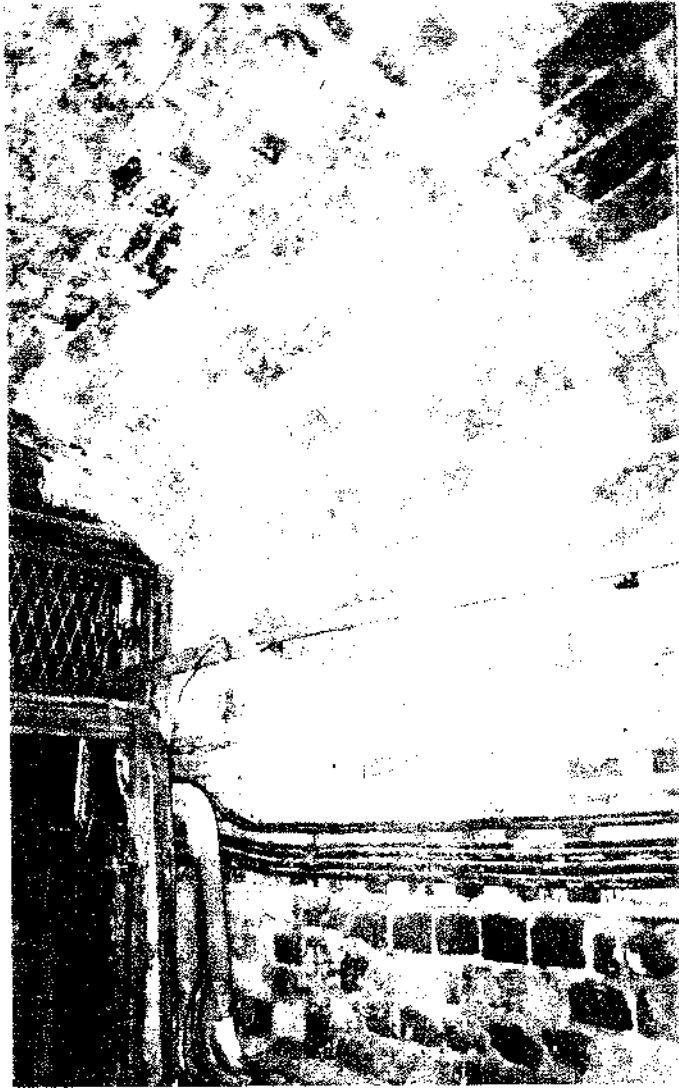


Plate 3

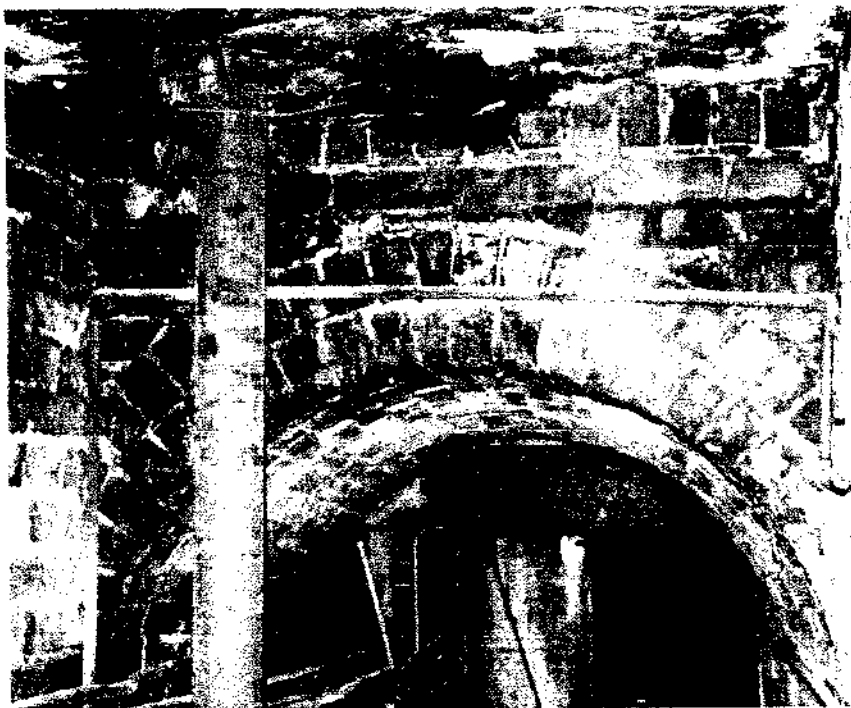


Plate 4

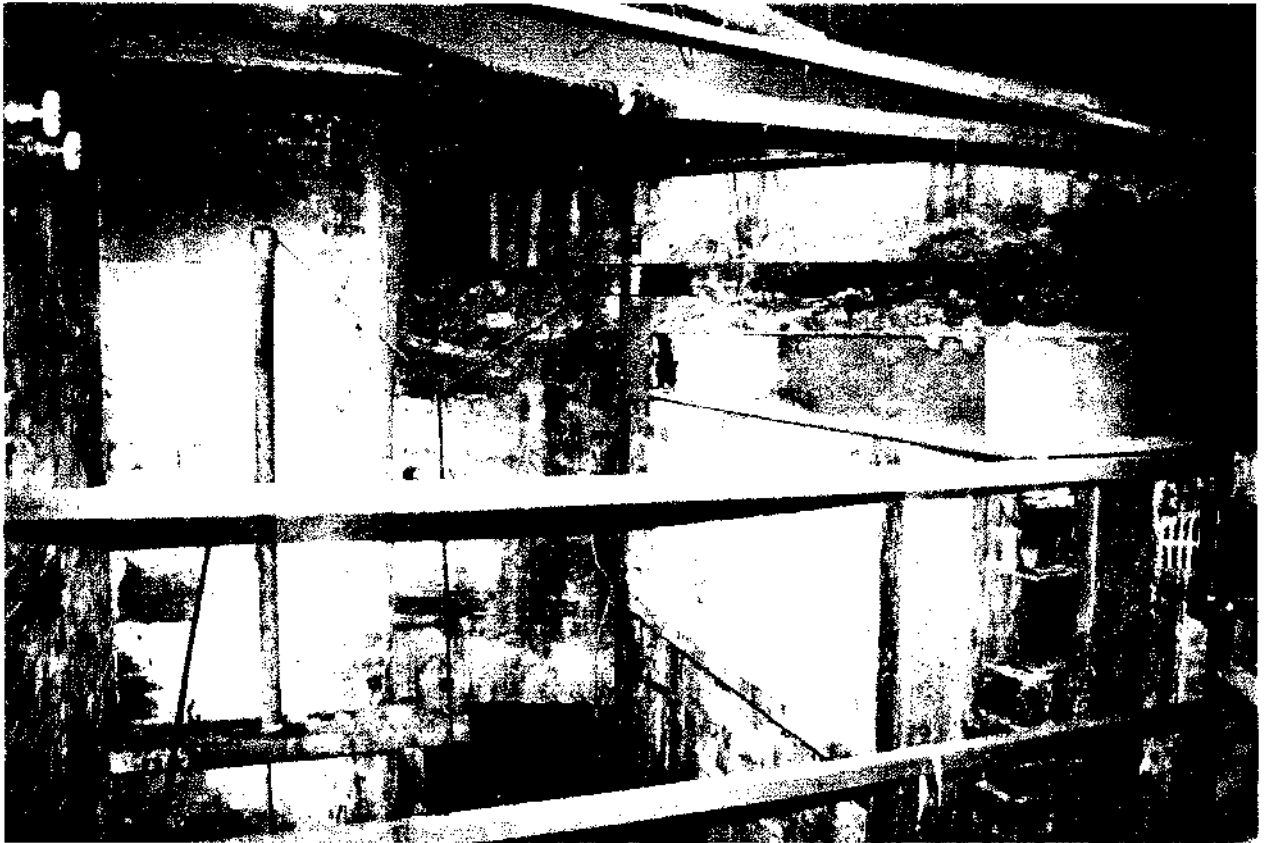


Plate 5