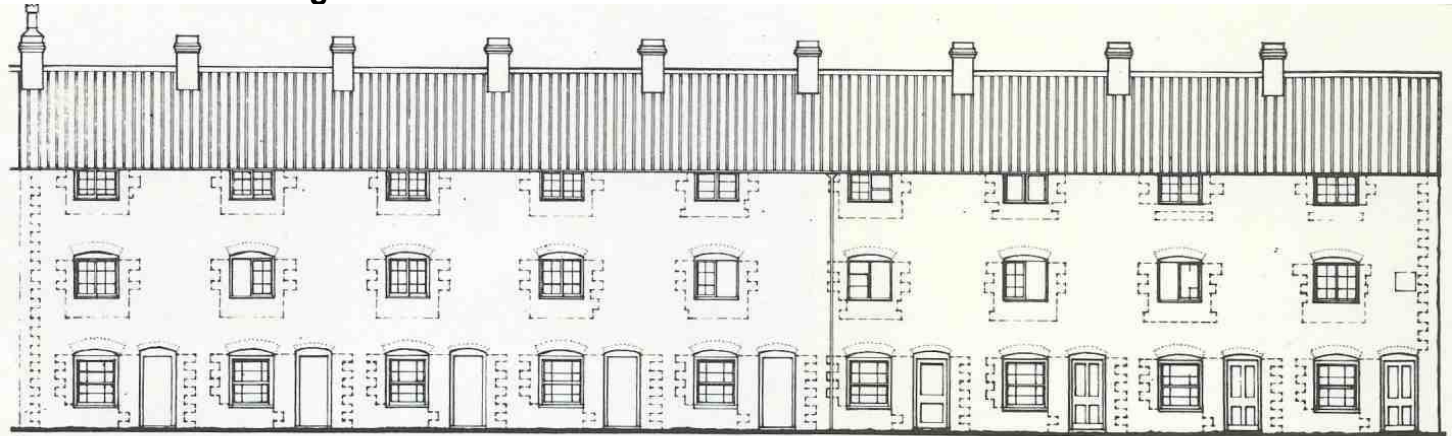


*Rear view of The Row, Warmley, 1966
Picture by Roy Day*



BLINDBACKS FOR BRASSWORKERS

Chris Powell and Roger Wilkes



WARMLEY. THE ROW. FIRST STAGE

William Champion claimed in the 1760s to provide occupations for as many as 2000 people. And he did so within about fifteen years of establishing his brass works at Warmley. Where did these people live? To be sure, they were not grouped in one place, for some were employed at works outside Warmley. Others were probably mine-workers and outworkers widely dispersed over the district. But the impressive rate and scale of Champion's industrial growth must have created some locally concentrated demand for housing. What follows is an attempt to consider some dwellings which were built to meet that demand. A note has already been published¹ about the houses, but their significance as extremely early examples of their type seems to justify further attention.

The history of Champion's brass works has already been ably recounted by Joan Day² to whom we are indebted for the following industrial background. The Warmley works was in production by 1748, and a series of expansions soon followed. By 1761 the premises included '25 houses and tenements' and Mrs Day records that they probably included The Row, described below. Shortly after 1761 new mills were established at Bitton, where there appeared houses like those at Warmley. Further expansion took place at Kelston where Champion leased land in 1763³ and built further premises. At Kelston, too, there appeared houses like those at Warmley, and it is this distinctive house form on the three separate sites with which we are concerned. Industrial growth stopped at Kelston so far as Champion was concerned, when he went bankrupt in 1769. In the consequent auction sale of that year there were 'convenient Houses' for Workmen' at Warmley, Bitton and Kelston. There the story of housebuilding for brassworkers appears to end. The Warmley works were never again used so extensively, and the Bitton Works changed to paper manufacture about 1825. Kelston works passed out of use altogether in the late 1840s, although the houses there survive to the present day.

The relationship of the houses in their respective works was fairly uniform. They were arranged in terraces of various lengths, quite close to their works. Orientation of the terraces varied widely and there is little evidence of any formal spatial relationship of street or square. The general arrange-

ment of individual houses was simple: three superimposed main rooms, and a smaller ground floor room in a projection at the back. The three main rooms were roughly square on plan and measured internally about four metres by four metres (13ft x 13ft): The back projection was half this size at about four metres by two metres (13ft x 6ft 6 ins) and had its own lean-to roof. Alterations to the back projections have obscured their original form but roof pitch and ceiling level were probably increased during the life of the buildings. Each of the main rooms had a single window on the front elevation where there was also an entrance door (probably the only one into the house) directly into the living room. The original rear elevations were probably blind, although an assortment of windows was inserted during the lives of the houses. Fireplaces were provided on every floor (perhaps two on the ground floor: one in each room?) positioned on the party wall furthest from the front door. At Bitton and Kelston at least, there were timber spiral staircases in the recess between chimney and back wall. First and second floors at Bitton and Kelston were supported on timber joists spanning from front to back. The houses had roofs supported by purlin beams which were visible externally on the gables. Ground floors at Bitton and Kelston were solid, probably stone flagged. All external walls were stone which varied in thickness at ground floor level from 470mm (18½ins) to 540mm (21¼ ins). The external wall faces at Kelston at least, were battered, that is inclined very slightly inwards off true vertical as the wall went up. Windows were timber framed under segmental arched heads (no arches on second floor) and there were no cills. The overall impression is of simple, well-built houses with a strongly distinctive cross-sectional shape.

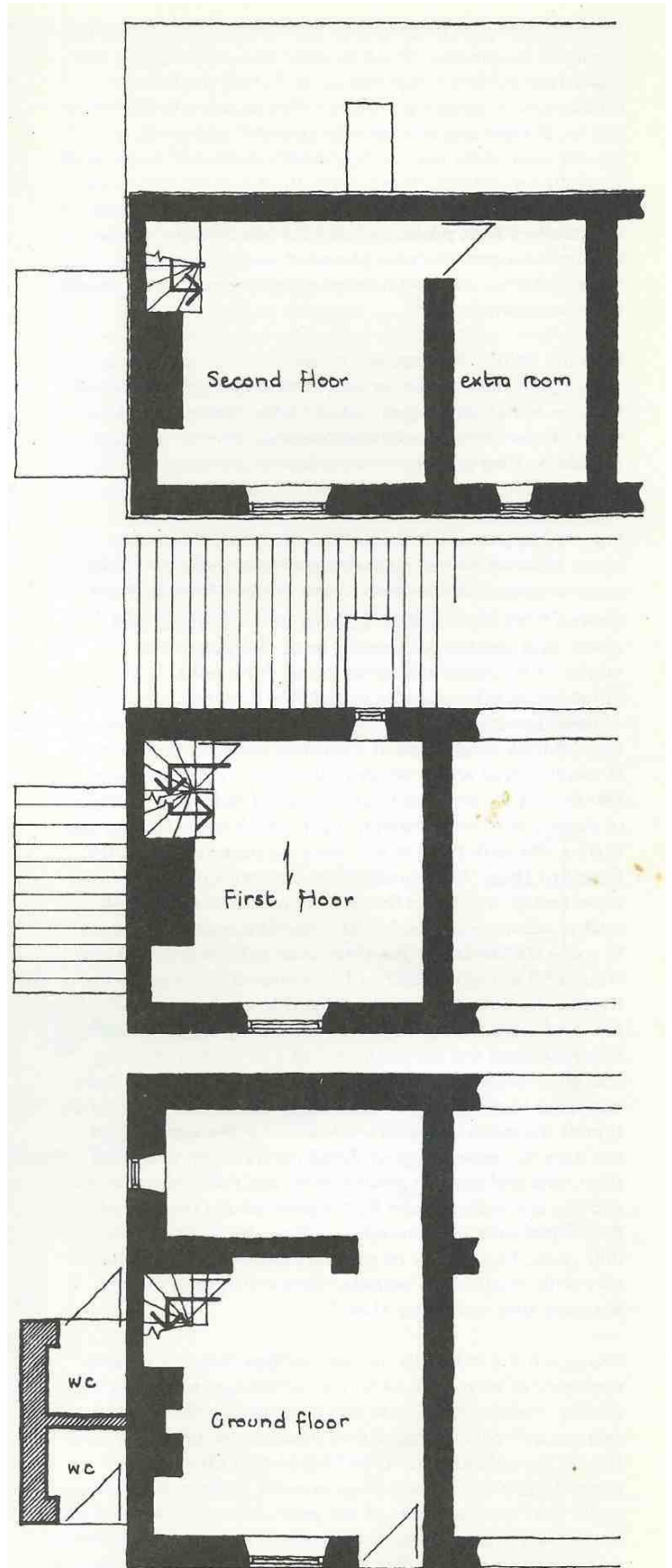
So far this description has dealt with generalities common to all the houses irrespective of site. The individual differences of each terrace will now be examined, starting with The Row, Warmley. This terrace was built in two stages, the first stage of nine houses and the second of four. This sequence is fully in accord with the expansion of the works referred to above. External plan dimensions at Warmley were 4190mm (13ft 9ins) frontage, 4970mm (16ft 3¾ins) depth of three storey portion, and 7400mm

(24ft 3¼ins) overall depth including back projection. The wall material was coursed rubble and there were two sorts of window and door arch. Most houses had brick arches but a few in the earliest stage of building had stone. Slag blocks were used for quoins and were also built in two wall courses below windows. This unusual feature was intended presumably as an alternative to window cills. The windows on the two upper floors appear to have been horizontally sliding, although larger vertical sliding sashes were at some time inserted at ground floor level. No record of the interiors has been traced but neither are there grounds for suspecting differences compared with Bitton and Kelston. The terrace was demolished in 1966.

About 400m (¼ mile) south-east of The Row was a smaller block of similar houses. It appears to have consisted of a pair of the same general form but with an important difference. This was the device of making one house the mirror image of its neighbour, uniting the two sets of fireplaces back to back. The external plan dimensions were 43800mm (14ft 4½ins) frontage and 4650mm (15ft 3ins) depth of three storey portion. One end of the block had a hipped gable roof and the other a non-standard extension with gothic style windows. The block survives in an extensively altered form.

At Bitton were eight houses in a terrace known as Mill Row Cottages. The external depth dimension of the three storey portion was 4750mm (15ft 7ins) and the overall depth including back projection was 7560mm (24ft 9¾ins). Exact frontage dimensions have not been traced but were of a similar order to those of the other houses. All windows appear to have been side hung casements. The terrace was demolished after flooding in 1968.

At Kelston six houses were built in a straight terrace and three in a separate 'L' shaped block. The latter were built against and later than a quite different two storey house not here considered. The group of buildings is still largely intact and is completed by the mills themselves and a pre-industrial farmhouse. The houses were built of coursed blue lias, a more easily worked and durable material than that used at Warmley. There was no use of brick or slag block, neither were precautions taken below the cill-less windows. This made the Kelston houses look more plain than the Warmley ones although the proportions were similar and the appearance still impressive. The opening movement of the window at Kelston followed the pattern found at Bitton. Leading dimensions taken of several Kelston houses showed fairly close, but not exact, correspondence between themselves and between the other two sites. For example, the external depths of the three storey portions were 4880mm (16ft 0¼ins) and 4940mm (16ft 2½ins). This was from 30mm (1¼ins) to 90mm (3½ins) smaller than Warmley. The overall depths including back projections were 7260mm (23ft 9¾ins) and 7400mm (24ft 3¼ ins). The Kelston external frontage of 4450mm (14ft 7¼ins) was 260mm (10¼ins) wider than Warmley. The ground floor area, measured externally, at Kelston was from 32.35 sq metres (348sq ft) to 32.95 sq metres (355sq ft) compared with only 29.60 sq metres (318sq ft) at Warmley. Assuming wall thicknesses at both sites were the same (thickness at Warmley is not known) the later, Kelston, houses were slightly larger. The eaves height at Kelston of 7100mm



KELSTON. L SHAPED BLOCK PLAN NUMBER 28

23ft 3½ins) was similar to that at Warmley. Two adjacent houses in the Kelston 'L' block were a larger variant of the standard plan. One house had an extra first floor room provided over its back projection. The adjacent house which was set at right angles on plan to the first, and an extra second floor room over its neighbour's extra first floor room. Thus the second floor was a party floor and the two houses interlocked. The two extra rooms corresponded in size to the standard back projection and the houses were normal in other respects. The plan of one of these interlocking houses, number 28, is illustrated complete with extra second floor bedroom.

How did William Champion's houses fit into a pattern of design evolution? So far, origins remain obscure but several features tentatively suggest urban rather than rural prototypes. Three storey height and relatively narrow frontage implies housing adapted to the intensive development of valuable land. Yet Champion built on comparatively unrestricted, open sites which did not demand compact, high building forms. It seems likely that he borrowed a house form which had evolved elsewhere to suit particular circumstances and used it in a new context. Was the form derived from his industrial experience in central Bristol where land was scarce? Leaving aside the question of origins of the blind back three storey form, what of its influence on subsequent housing? Was it part of the stream of development which led to the three storey, square room; back-to-back house type of the urban north and midlands? It was this type which became numerous in the later eighteenth century and which later acquired notoriety in respect of density and public health. Again, much more locally, was there a link with three storey working class housing in the Forest of Dean? Such possibilities are conjecture; what is more certain is that the house form provided quite good quality accommodation for its time. This applied in regard to space standards, for the total usable floor area was around 55 sq metres (592 sq ft) or more in the case of the Kelston variants. It applied in regard to compartmentalisation, for there were enough rooms to allow sleeping privacising for different sexes and generations - at a time when lodging and gross overcrowding were commonplace. Further, there was space heating even in second bedrooms, perhaps a reflection of the ready availability of coal near the works. Also, the floor-to-ceiling height of 2280mm (7ft 6ins) at second floor level and more at ground level, was relatively generous and not encroached upon by the pitch of the roof. Finally, the houses were built soundly, sufficiently so to last over 200 years. This quality of accommodation compared favourably with much urban housebuilding which took place at the same time or shortly after.⁴

Champion the industrial pioneer decided that the housing necessary to serve each of his new works was to be of a high quality. His aim in doing so was probably to attract and retain a well-paid, highly skilled minority of his workforce. Indeed, complaints have been noted⁵ that Champion enticed rivals' employees away to work at Warmley; housing could well have been one of the incentives which he offered. Other early entrepreneurs later made similar housing decisions to those of Champion. For example, more than ten years after him, Strutt provided good quality housing at Belper in order to meet the needs of his fast-growing early industrial community. Once Champion had satisfied his key workers,

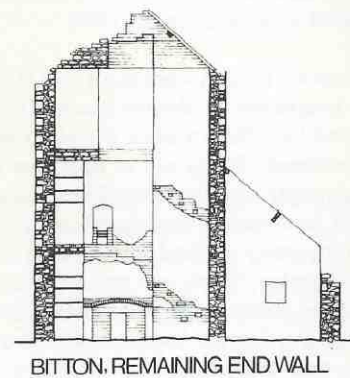
he seems to have been content to leave to the open market the task of meeting the needs and pockets of his poorer workers. Who provided the houses for them and what were, or are, they like?

ACKNOWLEDGEMENTS

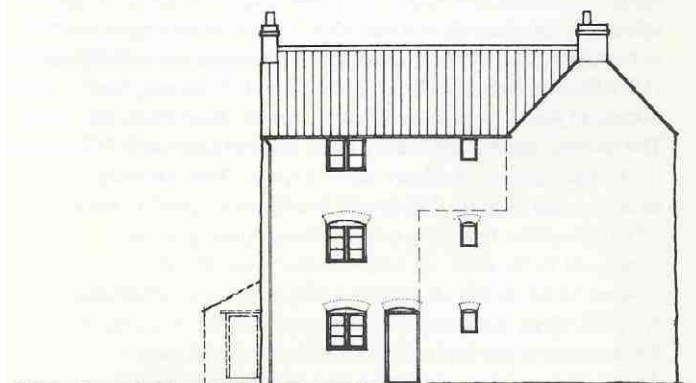
Our grateful thanks to Joan Day for drawing initial attention to surviving houses and for allowing us to use her history of Champion's works; to early BIAS members for their foresight in surveying The Row and to Roy Day for permission to use his drawings and photographs; to Chris Paine who permitted, and helped, measurement of his home; to R W Need for permission to examine his legal documents relating to Kelston; to G E Burrell for permission to measure remnants at Bitton and for copies of photographs in his possession; and to A G Briggs for permission to survey part of the Warmley site.

NOTES

- 1 **BIAS Journal**. Vol.7, 1974, p33.
- 2 Day J. **Bristol Brass: A History of the Industry**. David & Charles, 1973.
- 3 Lease in possession of R W Need.
- 4 See, for example, Chalklin C W. **The Provincial Towns of Georgian England. A Study of the Building Process 1740-1820**. Edward Arnold, 1974, and Gauldie E, **Cruel Habitations. A History of Working Class Housing 1780-1918**. Allen & Unwin, 1974.
- 5 Day J. op cit.



BITTON. REMAINING END WALL



KELSTON. L' SHAPED BLOCK ELEVATION NUMBER 28