

# East and West Terrace, Hopping Hill, Milford, Derbyshire

by

ANTHONY PEERS

*East and West Terrace is a terrace of back-to-back cottages built on the east side of the valley in Milford, Derbyshire. Constructed at a date between 1813 and 1820, the Terrace is one of the most interesting of the remarkable collection of 'Industrial Revolution' mill-workers' houses in the Derwent Valley. The Terrace's significance lies in the evident care taken in designing the cottages, their yards and gardens on a challengingly steep site. Arranged with three different types of layout and including overlapping plans, the cottage interiors demonstrate an ingenuity of design and provide an intriguing insight into how one of the key mill-owning families of the area housed its employees. Owned by the Strutt family until after the Second World War, the cottages are comparatively little altered. The main protagonists have been the subject of extensive study and the contribution of their Derwent Valley mills to the Industrial Revolution the subject of numerous books and theses. It is not the purpose of this article to look again at the history of the mills, their masters and their achievements, but to consider East and West Terrace in its historical, industrial and socio-economic context. The cottages are Grade II Listed and sited within the Belper and Milford Conservation Area. The site also falls within the boundaries of the Derwent Valley Mills World Heritage Site.*

## INTRODUCTION

The early industrial history of the Derwent Valley revolves around Richard Arkwright and the manner in which he harnessed water as a means of powering machines. The success of the factory system developed at Cromford gave rise to developments along the Derwent Valley, not least by Arkwright's one time fellow collaborator Jedediah Strutt. In Belper and Milford, the Strutts were to develop Arkwright's blueprint for factory production, advancing technologies and systems within the Mills and forwarding improved means by which to house and retain the large number of mill-workers required to man the water powered machines.

Although it would be fair to state that the industrial story of the Derwent Valley began at Derby in 1721,<sup>1</sup> the prototype Cotton Mill was developed at Cromford in the

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early 1770s. The development of the valley's other mills and their communities followed apace: construction work commenced in Belper in 1776–7, in Milford in 1781 and in Darley Abbey in 1782. The rapidity with which the competitor mill owners realised the potential of Arkwright's Cromford model factory system and developed their mills further down the valley was such that many of the building works at Cromford were undertaken coevally with comparative building projects in Lea Bridge, Belper, Milford and Darley Abbey. There can be little doubt that the competition amongst the mill owners would have extended to each making careful observation of his neighbour's provision of mill-workers' housing.<sup>2</sup>

The technological advances made in the Derwent Valley Mills in the last decades of the eighteenth century and first two decades of the nineteenth century were matched by developments in the provision of housing and other amenities for the workers. The approaches born and developed here were to prove influential internationally. Whilst the Derwent Valley mills and their colonies stand alongside mill working areas of South Wales and New Lanark in Scotland (as key places in the kindling of that which has popularly become known as the 'Industrial Revolution'), the quality and extent of surviving mill-workers' housing in New Lanark and South Wales does not compare with that found in the Derwent Valley.

The range of the house types and the extent of the community infrastructure, are the components of an archive of bricks and mortar of unparalleled importance. Nowhere outside the Derwent Valley does the physical evidence of the early factory community survive in such abundance.<sup>3</sup>

The Strutt factory communities in Belper and Milford have survived almost without loss. The houses, the farms and the public buildings, together with the documentary material which has been collected, represent a unique archive for the industrial and social historian. The survival of the Strutt housing has been underpinned by the quality of the buildings the Strutts commissioned.<sup>4</sup>



Fig. 1

Milford, Hopping Hill. Inter-war photograph showing the west elevation of the back-to-backs, above the church.

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To operate effectively, efficiently and profitably Arkwright's factory system was dependent on a sizeable workforce. In contrast to other labouring occupations, the workers in the mills were not required to be physically strong. In fact one of the benefits of the new manufacturing process was that the labour could be undertaken by secondary and tertiary breadwinners – women and children.<sup>5</sup> In 1833 Anthony Radford Strutt spelt out his family's commitment to making savings on labour costs: 'Infant labour being so much cheaper than adult, ones attention is always directed to make such improvements in machinery as to enable children to do with ease and exactness the work of adults'.<sup>6</sup> Employing women and in particular children, in Belper and Milford the Strutts needed to attract and retain their workforce by providing suitable accommodation for families.<sup>7</sup> Whilst the Arkwrights provided some of their mill-workers houses with spaces in which the husband/father/head of the household could work,<sup>8</sup> the Strutts' mill-workers' houses appear to have been designed for accommodation only. The Strutts employed the men of each household either on their farms or in 'built for the purpose' workshops or nail shops.<sup>9</sup>

Built in the second decade of the nineteenth century, half a generation after the deaths of Richard Arkwright (1732-92) and Jedediah Strutt (1726-97), East and West Terrace is an important survival from the second major phase of Strutt housing construction in Milford (Fig. 1). The study of this now Grade II Listed site should contribute to existing understanding of the Strutts and, in particular, their treatment of their labour force.

#### BACK-TO-BACKS

The earliest recorded example of a 'consciously designed' pair of back-to-backs was in Bermondsey, south London in 1706.<sup>10</sup> From the mid-eighteenth century this building type became increasingly commonplace, invariably constructed by speculative developers for housing factory workers in urban or industrial communities where space was at a premium and employees could only afford low rents. As Beresford sets out in his thesis on back-to-back housing in Leeds,<sup>11</sup> it was economic pressure which led to high density housing: 'if cottages were to be occupied by the working classes, then rents had to be low, and if rents were to be low, then capital costs per house had to be kept low'. Whilst in London and the south few back-to-backs were built, by the beginning of the nineteenth century, in many industrial towns in the Midlands, South Lancashire and the West Riding, the back-to-back had become the preferred housing type.

Back-to-backs were built in double rows with each dwelling having one wall facing the elements with its rear and side walls shared with neighbours. As such, back-to-backs had no rear doors and were entirely reliant on their front elevation for light and ventilation. The arrangement dictated the plan form of these 'urban cottages' which, on account of the challenge of naturally lighting inner rooms, were invariably only one room deep. In urban settings the back-to-backs were frequently formed around courts (such as that at the National Trust's back-to-backs in Birmingham) in which communal earth closets and water pumps were located.

The poor quality of many of these speculator built back-to-backs, the cramped nature of the accommodation and lack of a through draught proved cause for increasing concern to health reformers through the nineteenth century. In his 'Report on the Sanitary Condition of the Labouring Population of Great Britain', published in 1842,

### B. Chadwick broadcast his concern about back-to-back housing:

An immense number of small houses occupied by poorer classes in the suburbs of Manchester are of the most superficial character; they are built by the members of building clubs, and other individuals, and new cottages are erected with a rapidity that astonishes persons who are acquainted with their flimsy structure. They have certainly avoided the objectionable mode of forming underground dwellings, but have run into the opposite extreme, having neither cellar nor foundation. The walls are only half brick thick, or what the bricklayers call 'brick noggin', and the whole of the materials are slight and unfit for purpose... They are built back to back; without ventilation or drainage; and, like a honey comb, every particle of space is occupied. Double rows of these houses form courts, with, perhaps, a pump at one end and a privy at the other, common to the occupants of about twenty houses.

The concerns of the sanitary reformers, synthesised and disseminated by Chadwick, prompted a bye-law to be passed in 1844 banning the construction of any further back-to-backs in Manchester. In 1841 an attempt had been made to achieve such an objective nationally, through the introduction in the House of Commons of a 'Bill for Regulating Buildings in Large Towns'. However, this Bill had been dropped in 1842 on the grounds that it unduly limited the freedom of builders. Although interestingly no reference was made to back-to-backs in the Public Health Act of 1848, the concerns about the spread of diseases such as dysentery, typhus and cholera in overcrowded and poorly ventilated houses, did not abate. Even though Manchester's lead in banning the further construction of back-to-backs was followed by Bradford in 1860, Liverpool in 1861 and Nottingham in 1874, the national outlawing of the construction of back-to-backs did not come into force until the passing of the Housing and Town Planning Act in 1909.

Through the twentieth century the reputation of back-to-backs as poorly built, unsanitary 'slums', resulted in their widespread demolition. As a consequence only a very small percentage of the buildings, which once represented a significant percentage of the nation's urban building stock, survives.

#### THE HISTORY OF EAST AND WEST TERRACE

The enclosure of the open fields in Belper and Milford in 1791/2 presented Jedediah Strutt with opportunities aplenty to acquire land upon which to develop. Fortunately both the maps and awards associated with the 1787 Enclosure Act for Belper and Milford survive. By comparing the 1880 first edition Ordnance Survey (Fig. 2) with the 1787 Enclosure Award map (Fig. 3) it is possible to identify the location where the Strutts were later to develop the cottages of East and West Terrace and its gardens.

Whilst the Acts of Enclosure for Belper and Milford were passed in 1787, and the associated maps also date from this year, the deeds for the hand-over of the plots of land were for the most part not signed off until 1791/2. The 1787 Milford enclosure award

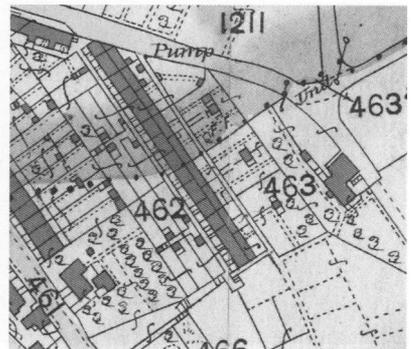


Fig. 2  
Detail from the first edition Ordnance Survey 25-inch map, 1880.  
*Derbyshire Record Office*

map charts the existence of both the extant Belper to Derby Road (Hopping Hill) and 'Shay' Lane (Shaw Lane). In (now very faint) red ink (not easily discernible, but see Figure 6) it also identifies the enclosed plots of land. Of these, plot no. 235, a parcel of land shaped in the form of a parallelogram between Shay Lane and the Derby to Belper Road, forms the southern part of the plot upon which East and West Terrace was later to be built.

The enclosure award describes the apportionment of plot 235 thus:

We do also allot set out and appoint unto and for the said Tristram Revell one piece plot or parcel of land number 235 in the said plan containing by survey one acre, one rood and 25 perches or thereabouts and situate lying and being on Hopping Hill bounded eastwardly by ancient inclosed lands and an ancient lane in the said liberty of Belper westwardly by the said Belper Road and the allotment herinafter made to the said Thomas Cock number 236 in the said plan northwardly by an allotment herein and after made to the said Tristram Revell.<sup>12</sup>

Whilst Thomas Cock and his beneficiaries held on to the large leg-of-lamb-shaped plot 236 (to the south of plot 235) for several decades, Tristram Revell lost little time in selling his recently enclosed land to Jedediah Strutt.

The records show that Revell, a married but childless colonel (still serving in his sixties), was selling parcels of land to his fellow sexagenarian Jedediah Strutt in the early spring of 1791. A book of Strutt title deeds held at Derbyshire Record Office<sup>13</sup> provides a record of Revell's sale of the plots of land to the north of Thomas Cock's field in the summer of 1791.

The title deed dated 7th July 1791 reads thus:

Allotment on Forge or Hopping Hill (except the part surrendered to William Blood) another piece of land at the bottom of Forge or Hopping Hill, another piece of land on Hopping Hill, another piece of land in a place called Shaw Lane, in Belper, – these five pieces of land were allotments made to Col. Revell on the enclosure of the waste land in Makeney etc.

ENFRD [enfranchised] 17th April 1792.

The reference in this record to one part of one of the five pieces having been 'surrendered to William Blood' is of interest in that this parcel of land occupied the south-west corner of the 'parallelogram' plot 235. As William Blood is believed<sup>14</sup> to have been related (through the Poundall family) to Tristram Revell, it is thought that this corner plot was a gift made in 1791 by one family member to another.

The 1805 Strutt estate map (see Fig. 4),<sup>15</sup> which is understood to be based on the enclosure award plans, provides handsome record of the (one rood and six perches) squared-off corner plot of parcel 235 allotted to 'Blood's house and garden'.<sup>16</sup> This map also shows in clearer detail than the 1787 enclosure map, the house<sup>17</sup> and garden (twenty-two perches) located to the east of the 'parallelogram' plot 235 (and immediately adjacent to what would one day be East Terrace's garden boundary).

Also evident on this map, which is understood to have been amended by the Strutts to record all changes made until 1818, are the houses which Jedediah Strutt evidently began building on the east side of the Derby to Belper road soon after his purchase (in July 1791) of the land from Tristram Revell. Now referred to as 'South Row', Hopping Hill, it is envisaged that the construction of the first of these terraced houses was, along with Blood's 'Pear Tree Cottage', commenced in 1791.

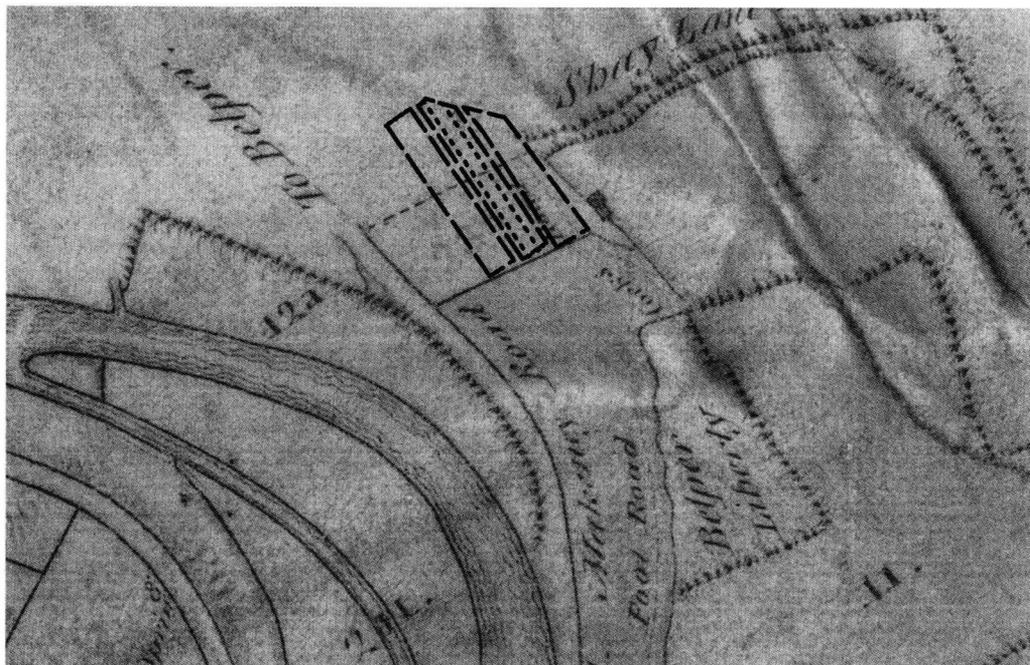


Fig. 3

Detail from the Enclosure Award map, 1787 (DRO ref. 1564/1), overlaid with the footprint of East and West Terrace (terrace in dotted outline and garden boundaries in dashed outline).

*Derbyshire Record Office*

The shadow of a rubbed or scraped-out line in the 1805 map survives as evidence of the removed northern boundary of the parallelogram parcel of land. In its place the ground between Blood's plot, 'South Row', Hopping Hill Terrace and Shaw Lane can be seen to have been divided into three parts. By continuing the eastern boundary line of Blood's garden northward to meet Shaw Lane, a lengthy rectangular plot was formed as 'gardens to (the) houses' on South Row. The ground to the east of this, described on the map as 'extra gardens', was divided in two by a boundary definition extending eastward from (and in alignment with) the northern edge of Blood's garden. Although the purpose and physical form of this dotted boundary is

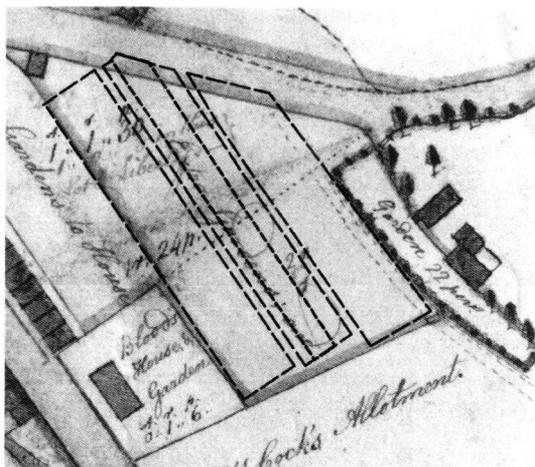


Fig. 4

Detail from the Strutt estate map, 1805-18 (DRO ref. 1564/3), overlaid with the footprint of East and West Terrace.

*Derbyshire Record Office*

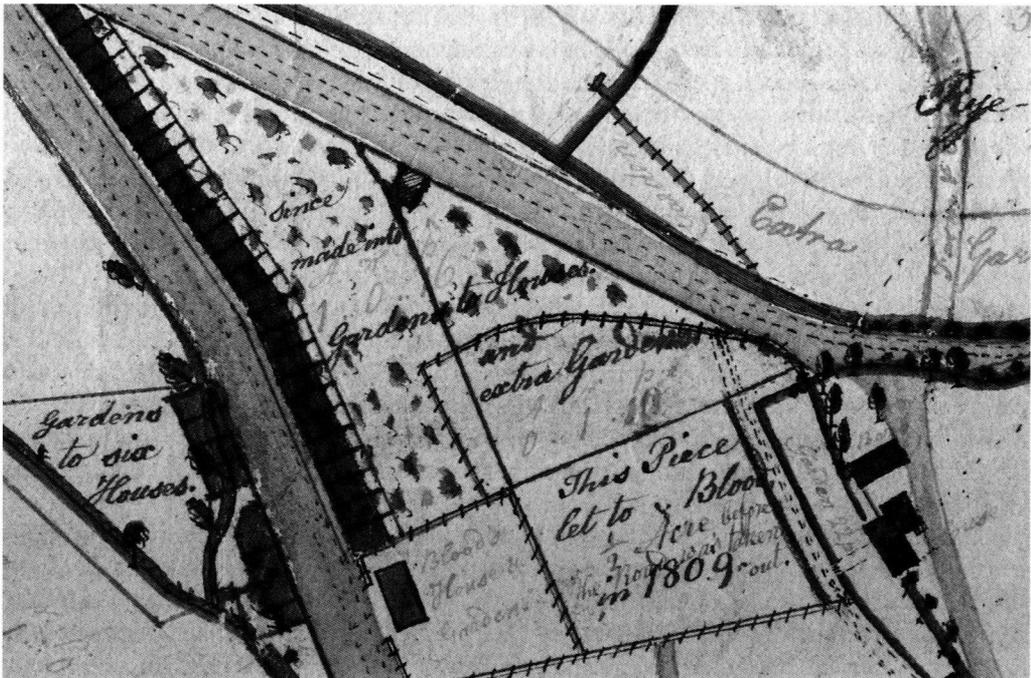


Fig. 5  
Detail of Hicking's Estate Map, 1792 (DRO ref. 1564/13).  
Derbyshire Record Office

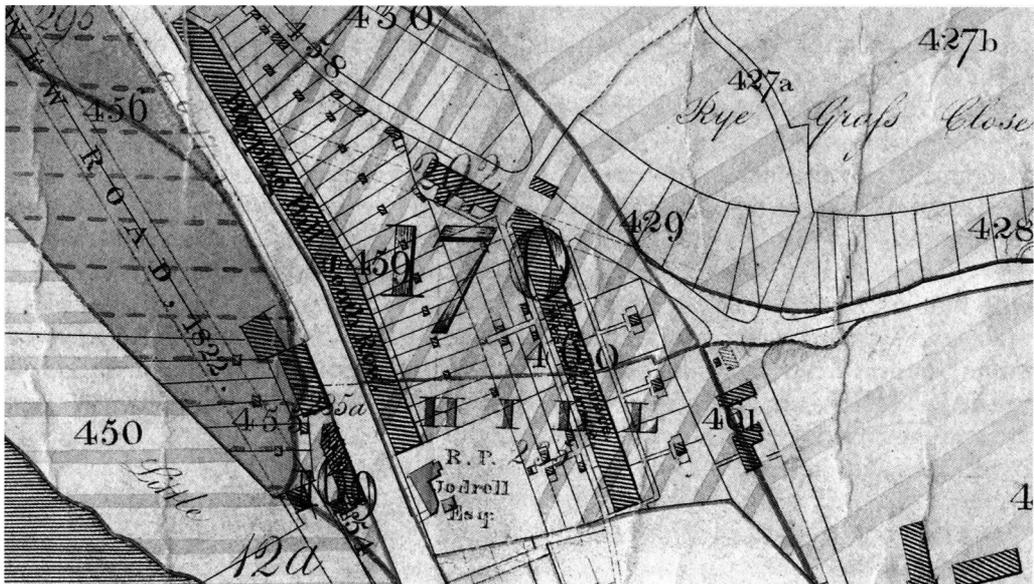


Fig. 6  
Detail from the Strutt Title Plan, 1820-9, for Belper and Milford (DRO ref. 1564/27).  
Derbyshire Record Office

not known, it is worth noting that it was sited on exactly the same alignment as the vertical constructional joint which can be seen between cottages Nos 6 and 7 on West Terrace.<sup>18</sup>

As was the case with the 1805 map, the first Strutt estate map<sup>19</sup> (Fig. 5), dated 1792, was clearly amended by the Strutts well into the nineteenth century. This '1792' map shows further sub-divisions to plots 235 and 292 which even appear to post date those recorded in the '1805' map. These include a triangular plot formed from a small part of South Row gardens and over half of the plot adjacent to Shaw Lane. The southern edge of this newly defined plot, shown dotted in the 1805 map (Fig. 4), is here shown as a full line, suggesting a more substantial physical boundary definition.

The annotation on the '1792' estate map is also informative in that it tells of the plot of ground to the east of Blood's house and garden having been 'let to Blood in 1809'. On the same plot of land, in red ink, is written 'half acre before the road was taken out'. Although it is not entirely clear to which road the annotation refers (for on this map, and this map alone, there appears to be a roadway of some form running through Cock's land to meet the middle of this plot), it seems that at some juncture the plot was fenced off from the foot road at its east end.<sup>20</sup> Whilst the '1805' map shows the plot, including the foot road, as being two roods (half an acre) the '1792' plan shows, in what looks like secondary shading, a boundary definition dividing the plot from the path.

The information set out in the Strutt Title Plan of 1820(-29)<sup>21</sup> (Fig. 6) helpfully summarises the evolution of the setting in which East and West Terrace was built. This map shows East and West Terrace, as built, sandwiched between its gardens and snugly fitted between Cock's Plot to the south, Blood's (or now Jodrell's) garden and the gardens of South Row to the west, Shaw Lane to the north and the garden of 'Linley' to the east. The commissioners of this map clearly had an interest in the history of the ground, for here are noted (in red) the Enclosure Plot numbers (235, 292, etc.).<sup>22</sup> Here also of particular interest is recorded, in the form of a pair of dashed lines, the pre-East and West Terrace alignment of Shaw Lane, cutting across the northern end of the Terrace.

Jedediah Strutt's purchase, in 1791, of land on Hopping Hill and elsewhere in Milford had prompted a spate of house building on North and South Row, Hopping Hill and across the valley at Chevin Alley, Well Lane and on Chevin Road (Bank Buildings). After this initial flurry of building, the Strutt Company's house-building programme in Milford slowed, with requirements being met by the conversion of recently-bought farms and the construction of terraced houses<sup>23</sup> constructed in line with fluctuating demand. The reason that the Strutts did not build on the site of East and West Terrace (ground they had owned since 1792) until the boom times for cotton manufacturers (1813-20) might be put down to the challenges of the site, being steeply banked and not located along a road, and the fact that until *c.*1813 the reduced demand for housing could be met by building new houses or converting existing ones on sites more easily developed.

#### THE TERRACE AND ITS GARDENS

The quest to discover the precise date(s) when East and West Terrace was constructed has proven inconclusive. Whilst the Land Tax Assessments held at the Derbyshire Record Office cover the period in which the Terrace must have been constructed, the record is too

generalised to be of value. Also the earliest of the surviving Strutt rent books post-dates the period of construction. All other avenues of research have proven similarly unproductive.

The Strutt Title Plan of 1820(-29) (Fig. 6) charts the existence of East and West Terrace. The way the Terrace and its gardens have been drawn suggests that the record was made as part of the 1820 survey rather than as an addition. Confirmation of the fact that the Terrace was built by 1820 is found in the survey of 1819-20<sup>24</sup> which makes record of the existence of 'East and West Terraces and houses adjoining, 26 dwellings with outbuildings, yards, gardens and causeway'.

It would be tempting to deduce, from the complete lack of any record of East and West Terrace in the 1805(-18) Strutt estate map (Fig. 5),<sup>25</sup> that the construction of the Terrace was not commenced until 1818. The nomination document for the World Heritage List dates East and West Terrace to '1818-1820'.

Strutt sources which might possibly provide evidence of East and West Terrace's construction have recently been moved from Manchester Record Office to the Derbyshire Record Office.<sup>26</sup> A perhaps potentially more informative document is the Strutt Day Book, which at present is lodged with Dr Christopher Charlton, President of the Arkwright Society. Unfortunately Dr Charlton was overseas and otherwise occupied during the period when this article was researched and compiled. It has thus not been possible to confirm whether key information pertaining to the Strutt building activities, noted by Heather Eaton at a lecture given by Dr Charlton, was, as she recalls him having reported, sourced from this Day Book. The notes made by Mrs Eaton at Dr Charlton's lecture detail Dukes Buildings on Derby Road, Milford (built 1819-22), to have cost £288 per pair (£144 each). Her recollection is that Dr Charlton also made reference to record of a terrace of buildings constructed at this period at a total cost of £3,000. Although it is tempting to imagine that this reference relates to East and West Terrace, Hopping Hill,<sup>27</sup> it would be foolhardy to make claims for as much without seeing the primary source.

Given the opportunity to study the Day Book and indeed the several sources previously at Manchester Record Office, it is likely that key facts about the East and West Terrace's construction could be determined. However, for the purposes of this document it might be concluded that the construction took place between 1813 and 1820, a boom period in the Cotton Mills when the Strutts urgently needed more employees and had a requirement to build cottages in which to house them.

In the works required to prepare the steeply banked ground of Hopping Hill for the construction of East and West Terrace, the labourers excavated and formed five level terraces. Measuring 7.6m and 8.5m in breadth respectively, the broadest of these were the terraces formed to receive the West and East Terrace cottages, their yards and access walkways. Whilst the level differences between the external terraces range from 1.2m to 1.8m in depth, the difference in the ground levels between the ground floor (or yard) of the East and that of the West Terrace, at 2.3m, is marked.<sup>28</sup>

The Terrace, its flanking yards and walkways were sited in an exactly central location on the plot. On either side were landscaped 15m broad plots as gardens for the cottage dwellers. It is possible that it was the slightly convex contour of the plot (see Fig. 7), which prompted the move to terrace the steeper western gardens, whilst leaving the east gardens unterraced.<sup>29</sup>



Fig. 7

East and West Terrace from the south-west, showing the steep site.

*Photograph Author*

Whilst the Strutts faced challenges in building East and West Terrace on a steep site, by building back-to-back they were able to create more cottages on the terraced ground than would have been possible through the construction of standard front to back housing. However, these dwellings were far from mean. Although challengingly steep, the site was not pinched and each cottage had its own yard and sizeable garden. Furthermore, its internal living space was considerably more commodious than the average urban back-to-back. Burnett<sup>30</sup> reports that the standard urban back-to-back, of the plan type seen on the West Terrace, had an average elevational frontage of just twelve to fourteen feet and had neither private yard nor garden. The elevational widths of the West and East Terrace Cottages are twenty feet and thirty-two feet three inches respectively.

For all but the two northernmost properties,<sup>31</sup> the dwellers of West Terrace were provided with a terraced garden. Arranged in three levels, these gardens were grouped, like the West Terrace cottages, in threes (Fig. 6), with an east west aligned walled walkway providing access via gateways to three gardens to the north and three to the south. The two walkways, via which access was gained to the twelve terraced gardens, were each themselves accessed via pairs of entrances and steps off the western walkway.



Fig. 8

The last of the lean-to outhouses, surviving in the garden belonging to No. 1 West Terrace.

*Photograph Author*

Although the pattern of ownership has in recent decades become increasingly haphazard, before the Strutts sold the cottages of East and West Terrace, each cottage had its own garden. The arrangement<sup>32</sup> was that those cottages which were sited furthest from the walkway access to the gardens should have the gardens on the uppermost terraces and those nearest to the access, the lowest of the terraces.

The Strutt Title Plan dated 1820(-29)<sup>33</sup> provides handsome evidence of the early plan form of the terraced gardens and the structures located off the access paths. The hatched (and thus roofed) structures shown flanking the steps up to the walkway are likely to have been earth closets. The last of one of these lean-to buildings which survives in the garden belonging to No. 1 West Terrace (Fig. 8) is of a form which suggests it originally housed a closet. The historic function of the long since lost structures on the lower terraces is less obvious. The fact that these structures, unlike those for instance in the gardens of South Row, had a small enclosure of unroofed walling beside them, prompts the view that these were sties and the walling, pens.

Whilst the siting of these small garden structures appears symmetrical in plan form, it is challenging to work out how such an arrangement might have served all of the householders equitably. In each six garden plot there appear to have been a total of five structures. It is quite probable that the 'beside the stair' lean-to earth closets each served three houses, whilst the three sties on the lower terraces were shared amongst the six households.

Although not terraced like the west gardens, the east gardens, like the west, were set out in conformity with the house groupings. The asymmetry of the plot permitted only six of the nine East Terrace cottages to have gardens of standard type,<sup>34</sup> for the ground to the east of the three northernmost cottages was cut across by Shaw Lane.

The occupants of each of the paired houses accessed their garden via an axial stepped pathway rising from the eastern walkway. Three quarters of the way up the garden this path met with a square-planned building which, judging by its scale and the extent of walling about it, housed both earth closets and a pair of sties.

The East Terrace gardens were larger than those of the West and there appears to have been accommodation sufficient for one pigsty per household and an earth closet per house, or at most between two. Provided with larger yards than those of the West Terrace, it is evident that the East Terrace houses were altogether more generous than those on the west (576 sq.ft of liveable space as compared with 451 sq.ft and 473 sq.ft of the two types of West Terrace dwellings). Any thought that the East Terrace cottages were designed for 'higher ranking' mill-workers is not substantiated by the census records: the inhabitants of East and West Terrace were evidently employed in the same type of jobs. The 1841 and 1851 Censuses record the fact that the East Terrace dwellings housed greater numbers than the West,<sup>35</sup> which prompts the view that the more generous internal and external spaces and provision of earth closets and sties reflects a design intention that the East Terrace cottages should house greater numbers than the cottages of the West Terrace.

With their hip-high walls and gated entrances, it might be imagined that the yards were designed to be used as open-air extensions to their cottages; a place in which to sit out, to dry clothes, etc. Over the decades the yards have evidently been changed many times to meet evolving requirements of the cottages' inhabitants. The extent of this change and the relatively recent trend of hard surfacing the yards, renders it a challenge to read their primary form. Furthermore, unfortunately, the photographic and archival record of these yards' historic form is slim.

Both on the east side and the west the yards were defined by walls topped with square-cornered coping stones (see Fig. 20).<sup>36</sup> Entrance from the walkway to the yard was via an opening<sup>37</sup> at a point in alignment with each cottage's door.<sup>38</sup>

In the least altered yard, that before cottage No. 4, there survives paving between the yard entrance and the cottage. Bearing in mind the parity in treatment observed from one cottage to the next, it might reasonably be assumed that each yard was furnished with such a 'between gate and door' paved path. Knowing that each cottage had a garden of its own elsewhere, it is thought likely that the remaining elements of the yard would also have been paved.<sup>39</sup> Although there is no documentary evidence for their having contained temporary lightweight structures, and the mapping would not have charted as much, it might be imagined that the yards housed bins for ashes, etc.

#### BUILDING DESIGN

The complexity of design and the quality of the finish of East and West Terrace prompt the thought that the building was constructed to the designs of an architect. In his and Professor Chambers' article in the *Proceedings of the Archaeological Journal* (1961), M. W. Barley set out his view (of East and West Terrace and other mill-workers' houses in Milford and Belper) that 'all these houses are clearly architect designed, and of high quality; they are planned in a fashion which is new in buildings with this standard of accommodation'.



Fig. 9

Belper: one of the 'Clusters' built in 1805 on a 'quartered' plan. These buildings provided four dwellings for Strutt employees. It is possible that James Hicking, the designer, also designed the East and West Terrace on Hopping Hill.

*Photograph Author*

Although the identity of East and West Terrace's designer is not known, an obvious candidate is James Hicking, Clerk and Surveyor to the Strutts.<sup>40</sup> The most illuminating evidence of Hicking's involvement in the design of the Strutts' mill-workers housing survives in the form of a plan<sup>41</sup> of the Belper cluster houses. Signed 'J. H.' and dated May 10th 1803, the plan sets out eight blocks of four houses.<sup>42</sup> Although only five of the blocks (which have since become known as clusters) were built (Fig. 9), the design of these relatively generously planned buildings tell of the Strutts' interest in developing housing specifically to meet the requirements of their future employees. Occupying the corner of the 'cluster', each cottage had a lean-to outshot and a relatively generous garden, complete with a privy and pigsty.<sup>43</sup> As at East and West Terrace, Milford, the arrangement is symmetrical, carefully thought through and features trademark walling and walkways.

The regularity of the layout of the clusters, and indeed the majority of the Strutts' mill-workers' houses in Belper, owes much to the gentle gradient on which the Strutts developed their housing in that town. However in Milford, the steepness of the valley sides permitted no such regularity. Here, houses were built along roads, following the contours, their layouts dictated by the lie of the land. All that is except for East and West Terrace where the terracing of the ground allowed for the provision by the Strutts, and their housing designer, to develop buildings of regular plan with yards and gardens set out with a degree of symmetry.

The design of the East and West Terrace was in large part determined by the gradient of the plot on which the Terrace was built. The steepness of the slope is such that it was evidently deemed impractical to build the Terrace down the length of the slope as the Strutts had done elsewhere, for instance in the 1790s on the less steep incline of Long Row, Belper or even South Row, Hopping Hill, Milford.

The particular distinctive quality of the East and West Terrace lies in the manner in which its designer responded to the challenge of the gradient, providing mill-workers homes of three different plan types under the pitch of a single roof (Fig. 10). With a central spine wall running in alignment with the ridge, the single-depth planned rooms of the back-to-back dwellings were built to the same (lateral) depth on the East as the West side. To accommodate the gradient, the eastern or uphill houses were built with two above ground floors whilst those on the west had three.<sup>44</sup> To ensure that the houses of the East and West sides were of comparable size, the houses of the East were built to occupy one and a half times the elevational width of the houses on the West Terrace. With no projecting wings, outshots or lean-to's on either elevation,<sup>45</sup> when built this lengthy, rectilinear, relatively unmodulated, flat-fronted building would have had an appearance of austere clarity.

The Terrace is formed of dwellings grouped in fives, with three cottages on the West Terrace backing onto two houses on the East.<sup>46</sup> The only visible evidence of the divisions of these five dwelling groupings are the more substantial chimney stacks which, along with more slender stacks, punctuate the roof line in an 'x-y-y-x-y-y-x' rhythm (Fig. 11).

The existence of a vertical construction joint between Nos 6 and 7 West Terrace prompts the thought that the Terrace might have been built in two phases. The case for this joint marking the end of a first phase of a two phase terrace building process is supported first by the fact that the stone courses that meet at this juncture do not align

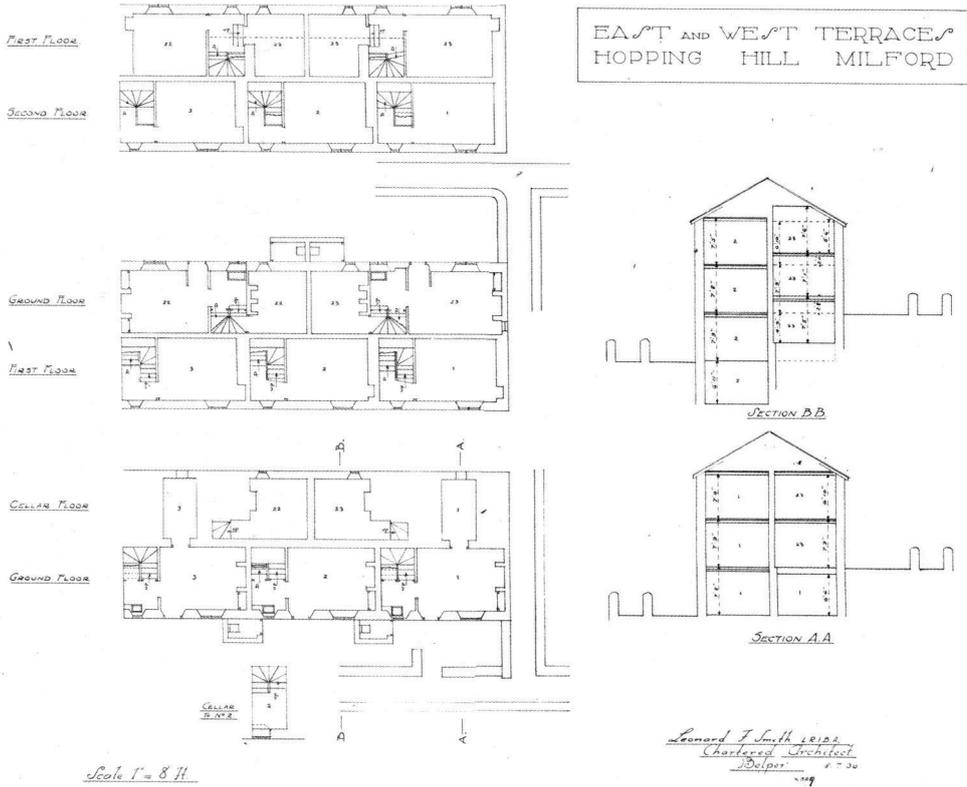


Fig. 10

Plans and sections by Leonard Smith, 1936, of Nos 1, 2 & 3 West Terrace and Nos 22 & 23 East Terrace, illustrating the variation in the plan form of each cottage type (DRO ref. D1564/69).  
Derbyshire Record Office

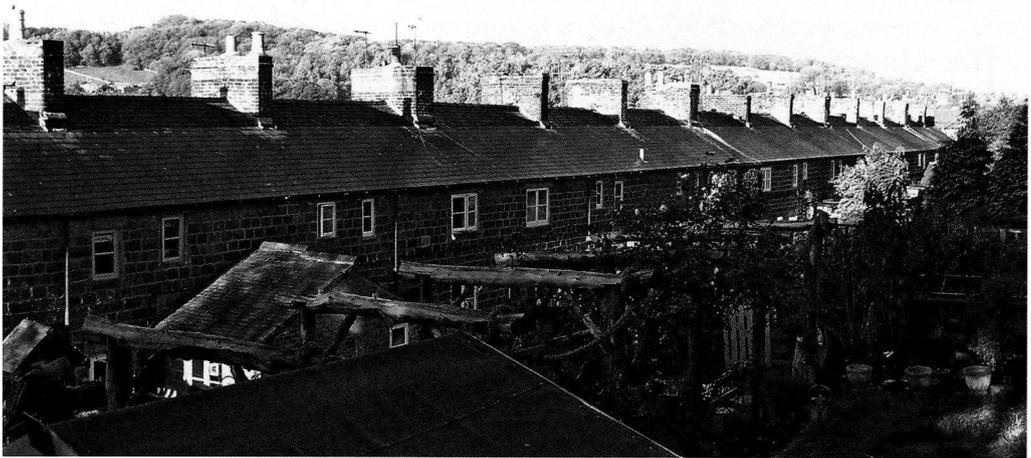


Fig. 11

East Terrace viewed from the southernmost gardens.  
Photograph Author

with one another and secondly on account of the joint appearing at the dividing point between one group of five buildings and the next.<sup>47</sup> Unfortunately no documentary evidence has been unearthed to give credence to theories of the Terrace having been built in two phases, let alone provide understanding as to which end of the Terrace might have been built first or the time lapse between the completion date of the first part and commencement of the second.<sup>48</sup>

Built in pairs, the cottages of the East Terrace were designed to share the same plan form, about the party wall. The off-centre front door, accessed via a dwarf-walled yard, gave access into a pinched 'hallway'. From this hallway, and at the same level as it, was the principal room which, housing the principal cooking hearth, might be understood to have served as kitchen, eating and living space.<sup>49</sup> The original intended function of the smaller ground floor room,<sup>50</sup> found on the other side of the entrance hall at a level four stair risers higher than the principal room, is not entirely clear.<sup>51</sup> The room was furnished with a small window and a fireplace. Judging by the number of people that the Census records show these houses to have accommodated (on the day of the 1841 Census there were fifteen members of the Hobson family resident at No. 20 East Terrace), it might be understood that most utilised this smaller ground-floor room as a bed chamber.<sup>52</sup>

The stairs of the hall also gave access to the cellar, a below ground space sharing a party wall with the house's pair. Although there is no documentary evidence to furnish understanding of the uses to which the cellars were originally put, the markedly unaltered cellar of No. 17 throws up many clues. In this cellar there survives, against the north wall, a stone thrall, presumably for the storage of victuals. Further (quite probably primary) storage is found in the form of shelving in the walling around which the stairs wrap. The (again probably primary) brick floor survives, and the walls retain their many coats of whitewash. Beneath the room's only window the walling is blackened. It might be supposed that the 'window' also served as a coal chute, and that this corner of the cellar was boxed out for the storage of coal.<sup>53</sup>

At first floor level the stair gave onto two rooms, one larger than the other, reflecting the difference in the sizes of the two rooms at ground floor level. Although first-floor fireplaces were not seen in the two East Terrace cottages into which access was gained, it is possible that all upper floor rooms of both the East and the West Terrace cottages had their own fireplaces.<sup>54</sup>

The 1931 photograph of the north end of the East Terrace (Fig. 12) provides evidence of the fact that all of the East Terrace's window openings were originally fenestrated with cast-iron frames. The principal room of the ground floor was lit by two windows, the smaller of the two (nearer the front door) had twenty-four panes, four of which were openable on a pair of side hinges.<sup>55</sup> A mullion in the larger of the principal room's windows divided the two equal-sized lights, one of which had four of its twelve panes openable on side hinges. The small 'ground floor' bed chamber and the smaller of the first floor bed chambers above it both had small side hinged, entirely openable, twelve-paned cast-iron casements. The upper stair landing had a twelve-paned window, four of the panes being within an opening light. Located above the larger window of the ground floor's principal room, the form of the large first-floor bed-chamber's window echoed that of the window beneath, having two lights separated by a mullion. With only twelve panes

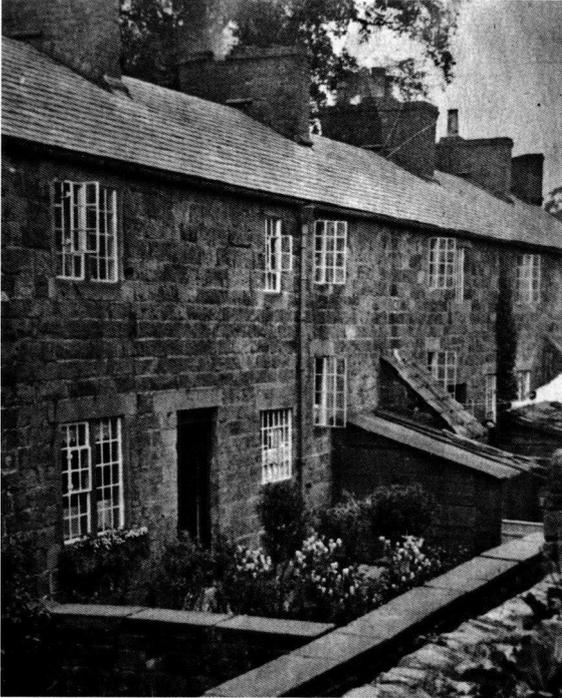


Fig. 12

East Terrace, No. 17 in c.1931, showing the terrace and the cottages to the north.  
*Reproduced by kind permission of John Allen*

Fig. 13

Milford, Makeney Terrace, No. 6. This terrace was built by the Strutts at much the same time as East and West Terrace. Retaining its primary door, a mullioned and cast-iron framed window, and having avoided being re-pointed, No. 6 is a remarkable survival. Study of the external arrangement and materials of this house helps to illuminate understanding of the primary form of East and West Terrace.

*Photograph Author*



each, these windows were smaller than those of the principal room of the ground floor. However, at six-panes, as opposed to four, the opening elements of these windows were larger than those found in the principal room's larger window.

Much can be learned of the primary form of East and West Terrace's doors and windows from observing No. 6 Makeney Terrace, a cottage which survives in remarkably unaltered form (Fig. 13). A Strutt back-to-back cottage built within a year or two of East and West Terrace, No. 6 retains a primary two-light 'mullioned' cast-iron window in its original setting, along with a primary door and door frame. Although there survives no primary front door on East and West Terrace (neither is there pictorial evidence of as much) the chances are that the front doors were built to the same design as that at No. 6 Makeney Terrace, for such doors survive elsewhere, for instance at No.7 Hopping Hill (c.1792), and the primary door frame surviving at No. 19 East Terrace appears to be of exactly the same design as that found at No. 6 Makeney Terrace.<sup>56</sup>

Designed in groups of three, each West Terrace cottage was built with two-thirds of the frontage width of an East Terrace cottage. The west side cottages had stairs at their northern ends which gave access to one bed chamber at first-floor level and a second on the floor above. The parity in the design of the West side dwellings diverged at ground-floor level where the steepness of the bank on which the Terrace was built provided opportunity for unusual and distinctive plan variations.

Such is the gradient, the floor of each of the east side cellars is at a level roughly three feet above ground-floor level of the west side cottages. The cellars of the paired east side cottages occupy the ground immediately to the east of the central of the three west side cottages, leaving the ground below the east side cottages' living rooms free for use by the outer of the three west side houses. By burrowing beneath the east side principal rooms, the outer west side dwellings were provided with a narrow, but nonetheless useful, brick vaulted room leading from the ground-floor principal room. The added advantage of this arrangement, where one property effectively overlapped another, was that the structural opening at the east end of this small vaulted space provided something not usually permitted to back-to-backs – a through draught. Although such healthy ventilation was not available to the central of the three west side houses (on account of the below ground space being occupied by the east side houses' cellars), these houses were provided with small cellars, occupying the space between the front wall and the foot of the stairs and accessed through a door at the back of the scullery.

Unlike the East Terrace cottages, where the front door entered into a (partially open) stair hall, on the West Terrace the front door gave access directly into the principal room. In this room at No. 13 West Terrace there survive historic liver-and-black quarried floor tiles.<sup>57</sup> The floors above were, and to a great extent remain, made of lime ash on reed.

The hearth dominating the south end of the principal room of each West Terrace cottage would have been used for cooking and heating. If these cottages were originally equipped with a copper it is presumed that such would have been located here, for there is no other location in these cottages where a copper could have been accommodated.<sup>58</sup> The first-floor fireplaces found in a number of the West Terrace cottages provide evidence sufficient to appreciate that the first-floor bed-chambers were 'heated'. The fact that no such fireplaces have been found at second-floor level prompts the thought that those sleeping

in its single bed chamber would have had to rely on convection for their heating.

Unfortunately the lack of an early photograph of the west elevation renders the task of identifying the primary form of the cast-iron windows more challenging than was the case on the east side. However, much of the picture can be pieced together through combining knowledge of the form of the windows on the east side with photographic evidence and fabric analysis. Photographs taken by Ann Claussen-Smith, when undertaking work on No. 5 West Terrace in the 1980s, show there to have been fixed twelve-paned cast-iron windows in the lights of the first- and second-floor landings (Fig. 14). It may reasonably be assumed that the window of the same opening size at ground-floor level was built to the same design.

Although no pictorial record survives of the primary form of the larger windows which respectively lit each terraced cottage's principal room and the first- and second-floor bed-chambers, the survival of small elements of upstanding stone on the cill and downstanding stone on the lintels of No. 5's windows provides evidence of the fact that these were all mullioned two-light windows.

In recent decades all but a very few of the West Terrace's larger windows have been broadened and made taller through the lowering of their cills. Observation of the relatively unaltered window openings at No. 4 makes it possible to appreciate that at all floor levels the windows of this cottage (and it might reasonably be assumed all of the West Terrace cottages) had mullions and jamb stones<sup>59</sup> and, at four courses tall, the two upper storey chamber room windows<sup>60</sup> were shorter than those five-course tall windows lighting the ground floor's principal room.

Measure the square footage of each of the Terrace's three dwelling types and it can be seen that the cottages of the East Terrace had a greater net floor area (680 sq.ft) than both the centre (with a cellar) houses of the West Terrace (604 sq.ft) and those either side of them (601 sq.ft). Remove the square footage taken up by circulation areas and the East Terrace cottages can also be seen to have had the most 'liveable space' (543 sq.ft), with the centre (with cellar) West Terrace cottages having the least (451 sq.ft), and those either side 473 sq.ft.



Fig. 14

West Terrace, No. 5, showing the unaltered primary stair and first floor window. Photograph taken in the 1980s.

*Reproduced by kind permission of Ann Claussen-Smith*

## EARLY INHABITANTS

Although there is little record of those who first inhabited the cottages of East and West Terrace, some aspects of their home life can be gleaned from study of the buildings, the site and the Strutt papers. From the last it is known<sup>61</sup> that the working day started at 6 a.m. and ended at 7 p.m. with an hour for lunch and shorter breaks for breakfast and tea.<sup>62</sup> The rent for the cottage was deducted from the wages of the head of the household.<sup>63</sup> The 1841 census return provides evidence of the East Terrace cottages having housed at that date an average of 8.2 persons whilst those on the West housed an average of 5.1.<sup>64</sup>

The records for all but No. 9 West Terrace can be found in the 1851 census. At this time there were 132 people living in East and West Terrace, all (of those of working age) employees of the Strutts. Over half of these inhabitants had been born in the parishes of Milford, Belper or Duffield. Their average age was twenty-five.<sup>65</sup> All those who were fit and able and above the age of ten were employed, working long hours with precious little income and hardly any spare time in which to relax.<sup>66</sup>

In the few houses to which the author gained access there were observed historic elements which provide evidence of the uses to which rooms were put when inhabited by mill-workers. For instance in the south wall of the principal (ground floor) room of No. 2, West Terrace survives an early range.<sup>67</sup> It should be assumed that this room was put to use as a kitchen, dining room and living room, with the rooms on the upper floors reserved for sleeping. At the top of the stairs in No. 12 and No. 5 can be seen a cupboard built into the stair structure. Bearing in mind the distance from the bed chambers to the external earth closet, the thought occurs that this cupboard might have been used to store chamber pots.

In terms of servicing the cottages, it might be imagined that the contents of the earth closets were periodically removed by a 'night man'. Coal to fire the ranges and the fires was delivered to the 'sluther bank' at the north end of the West Terrace whence inhabitants (of the West Terrace) collected their individual requirements.<sup>68</sup> At the north end of the East Terrace, affixed to the east wall of the walkway was a water pump, most probably of the type still surviving on the walkway above the garden centre in Makeney.<sup>69</sup> The East and West Terrace's pump was still in place in 1880 as it was marked on the first edition Ordnance Survey map.<sup>70</sup> The earliest note of water charges in the Strutt rental book, 'to water - 2d',<sup>71</sup> on 22 March 1897, provides evidence of the fact that water was piped to each cottage from spring 1897 onward.

## LATER ALTERATIONS

The Strutts were good record keepers and many of their records survive. However, as the Terrace is rarely cited as an entity in its own right, evidence pertaining to it invariably has to be extrapolated from general sources, not least cartography. As it has not been until the last three decades that such workers' cottages have been regarded as buildings of interest, there is a paucity of early photographic evidence to support archival research and fabric analysis. However, as the cottages of the Terrace were built to a repetitive design and each has been changed in different ways, careful observation and comparison of the fabric has enabled a reasonable understanding to be gained of the nature and extent of the subsequent alterations.<sup>72</sup>

The evidence gathered gives rise to the understanding that East and West Terrace survived virtually unaltered for more than a century. Key evidence in support of this hypothesis comes from the transcript of Joan Holloway's interview conducted in 1980 as part of a Workers Educational Association project. For many years resident at No. 30 Shaw Lane, Joan Holloway is recorded to have said that 'around 1930' East and West Terrace was 'condemned as unfit'. The transcript of the interview goes on to describe the extensive works undertaken by the Strutts in the 1930s to render their workers' cottages fit for use. The first of these improvements, undertaken in the spring/summer of 1931, was the removal of the East Terrace cottages' front door openings from their primary locations before the stairs in the 'hall,' to a location originally occupied by the smaller of the principal room's two windows<sup>73</sup> (Fig. 15) (seen from the outside, each cottage's front door would originally have aligned with the entrance gate to its yard). This alteration was undertaken to enable improvements to be made to the cottages' interiors. By moving the door opening from the 'hall' at the foot of stairs, to the old kitchen-cum-living room, the Strutts were able to convert the hall into a kitchen in its own right. In Joan Holloway's words: 'The living room/kitchens were divided into living area and a proper kitchen was made, with the exterior door being moved to one side, and an inner door leading from kitchen to living room'. Further external works and the internal alterations (to build the partition to divide the formerly dog-legged open plan kitchen-cum-living room into a separate living room and kitchen) were not completed until December of 1931 (Fig. 10).

The Strutt rent books which record extra charges made (to those inhabiting the East Terrace cottages) from December 1931, on account of the 'scullery', provide documentary evidence that by this date the 'hall' space, formerly given over



Fig. 15  
East Terrace, No. 17.  
*Photograph Author*

to circulation, had been put to its more useful purpose as a kitchen (scullery). The understanding that the 'before the stairs' space was put to use as the scullery is supported by evidence set out in Leonard F. Smith's 1936 floor plans which show the former halls of Nos 22 and 23 East Terrace each furnished with a 'below the window' sink.<sup>74</sup>

Also recorded in the rent books in December 1931 and January 1932 are extra charges levied by the Strutts for providing water closets to all houses on the East and West Terrace.

A key source of evidence for the historic form of the East Terrace is the both anonymous and undated photograph of No. 17 and its neighbours to the north (Fig. 12). Whilst being an invaluable record, not least in the fact that it shows the cottages complete with their original cast-iron windows, this photograph poses almost as many questions as it provides answers. It is suggested that the photograph was taken in late summer 1931,<sup>75</sup> for the works to relocate the front doors can be seen to have been completed<sup>76</sup> whilst the construction of brick-built WCs (No. 18 completed December 1931) has yet to be commenced. As the occupants of the cottages almost certainly would not have owned cameras and it is unlikely that anyone at this time would have wished to photograph such workers' housing, it is probable that the photograph was commissioned by the Strutts as a record of their property.<sup>77</sup>

The summer 1931 photograph provides evidence of the fact that in the process of moving the East Terrace cottages' front doors, the relocated primary window frames were carefully removed and reinstated instead of new windows being made. Although it seems curious that the Strutts would have taken the trouble in 1931 to remove and re-use the old windows only to replace them with wooden windows six years later, this course of events is borne out by the rent book records and the long memory of Mary Kirk.<sup>78</sup>

The Strutts' rent books<sup>79</sup> provide evidence of the fact that (starting with No. 1 and running through to No. 23) East and West Terrace's extant brick-built, flat-roofed WCs (Fig. 16) were constructed between October 1931 and January 1932. Recorded in Leonard F. Smith's drawings of 1936, the new conveniently sited WCs replaced the primary earth closets located beyond the walkways in the gardens. They were clearly introduced by the Strutts as a means of improving (not least hygienically) their rented properties<sup>80</sup>.

The elevational form of the East Terrace rendered it possible to construct the new rectangular-planned WCs back-to-back between the ground-floor bedroom (parlour) windows of adjacent properties. With less vacant walling against which to plant the new WCs, on the West Terrace it was possible to introduce only single WCs immediately to the north of each cottage's small stair landing window. Requiring the partial removal of the yard wall, the new WC of each West Terrace house projected northward into its neighbour's plot, terminating at the southern jamb of the neighbour's principal ground-floor window. Built of brick, visually at variance with the appeal of the Terrace and (on the west side) clearly impacting on internal light levels, these WCs wear the look of improvements made by a landlord seeking to comply with new recommended standards, on a budget.

From the mid-nineteenth century onward there prevailed a belief that sickness was air borne and that, having no means by which to permit the through passage of air, back-to-backs were particularly unhealthy. Public awareness of the issue was heightened

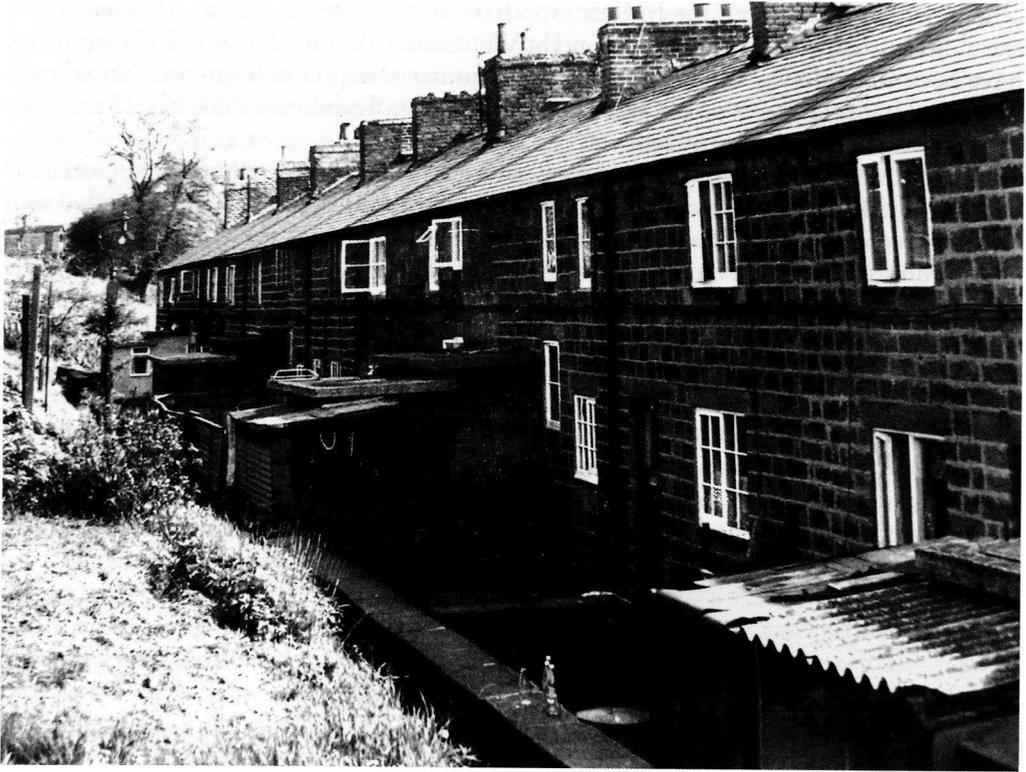


Fig. 16

East Terrace, No. 18, showing the cottages to the south. The wooden windows were introduced by the Strutts in the late 1930s.

*Photograph by I. S. Goodwin, 1977*

through the 1841 'Bill for Regulating Buildings in Large Towns', which sought to outlaw the construction of back-to-backs, and Chadwick's 1842 'Report on the Sanitary Condition of the Labouring Population of Great Britain'.

East and West Terrace was 'condemned' in 1930. The almost wholesale replacement in 1937 of the primary cast-iron windows for wood-framed windows, which gave more light to and improved the ventilation of the interiors, was one of the key pre-war works undertaken by the Strutts to improve the standard of accommodation.

Although over the course of the last three decades all but four of the Strutt-era wooden casements have been replaced, the appearance of a full suite of 1937 Strutt windows can be seen in the photograph of No. 18 East Terrace, taken in 1977 (Fig. 16). By comparing this suite of secondary wooden windows with the cast-iron windows seen in the 1931 photograph of No. 17 East Terrace (Fig. 12), the improvements in the East Terrace cottages, in terms of internal ventilation and light levels, can be appreciated.<sup>B1</sup> The large ground floor windows which survive to this day in Nos 4 and 12 on West Terrace and Nos 15 and 18 on East Terrace are all wooden casements of the same dimensions and design. Whilst those at Nos 4, 12 and 18 more than probably date from the 1937

scheme of re-fenestration, the historic wooden casement at No. 15 has a patina which sets it apart. Its furniture is also distinctly Victorian.<sup>82</sup> As the 1937 windows would all have been made in the Strutts' estate yard or joinery shop, it is suggested that when it came to designing the new windows for East and West Terrace in 1937, No. 15's *c.*1850s casement was used as the model.

Leonard F. Smith's drawing of East and West Terrace's southernmost cottages<sup>83</sup> provides evidence of the existence in 1936 of the 'Strutt Standard' brick walled and concrete roofed WCs built against the east and west elevations. What the plans do not show are the extra brick built and concrete roofed structures (Fig. 16) which, from the evidence of one of the Strutt rent books,<sup>84</sup> were constructed in spring 1938 against the WCs on all of the East Terrace cottages (bar No.15). The rent book also notes that just Nos 11 and 14 of the West Terrace were provided with these structures, which it describes as 'coal houses'.

The existence of Smith's drawing provides further evidence of the extent to which the Strutts gave consideration to the matter of improving East and West Terrace. Such planning was almost certainly undertaken to establish whether it would be possible to improve ventilation and living conditions generally so as to counter the Terrace's 'condemned' status, a designation almost certainly due to prejudiced claims (made from the mid-nineteenth century and until relatively recent times) that back-to-backs were unhealthy and unsuitable for 'modern' living. Although the planning clearly came to nought, this drawing, together with the earlier schemes to move the front doors, provide brick built WCs and further outhouses, serves as evidence that in the 1930s the Strutts put considerable thought into how they might improve the cottages of East and West Terrace.

The Strutts' works of improvement evidently re-commenced after the Second World War. Mary Kirk recalled<sup>85</sup> that during the 1950s the entire Terrace was re-roofed and that new 'tiled' fireplaces were introduced. However, before long the family's enthusiasm to retain such properties waned. Although the Strutts started disposing of much of their estate property in the 1950s,<sup>86</sup> several of the cottages in the Terrace remained in their ownership into the 1970s and 1980s. Also it appears that not all cottages were initially sold with their gardens. Letters in the Derbyshire Record Office<sup>87</sup> provide evidence that in 1972 the Strutts' agent was seeking to sell off the gardens to the relatively new owners at £5 a piece. The sale of the cottages to freehold owners was invariably shortly followed by major programmes of improvement. The majority of the cottages have since changed hands several times, and each new owner has, almost inevitably, wrought changes.

#### MILL-WORKERS' HOUSING IN THE LOCALITY

The mill-workers' houses of the Derwent Valley are now virtually all private residences. For reasons of access and privacy it has thus not been possible to spend time looking in detail either at the interiors of the houses on the East and West Terrace or elsewhere. In their study of other mill-workers' housing in Cromford, Lea Bridge, Belper, Milford and Darley Abbey, the researchers of the Derwent Valley Mills nomination document (for inscription on the World Heritage List) evidently gained access to some houses. Their overview has proven useful in gaining a better understanding of the architectural context in which East and West Terrace should be assessed.

Back-to-backs are something of a rarity in the Derwent Valley. As none appear to have been built on the contour of such an incline as that seen at Hopping Hill, none feature the East and West Terrace's distinctive crossover of floor plan from front to rear. However, in his planning of the East and West Terrace it is quite possible that the designer of the Terrace<sup>88</sup> was aware of, and influenced by, the plan form of the Barracks<sup>89</sup> (Sunny Hill Place), Milford; a contour aligned terrace built in two parts from 1792, with the lower (east facing) cottages built first and upper (west facing) cottages built up against them. Although it is not known whether these developer-built (not Strutt) cottages were designed as back-to-backs from the outset, what is known is that when built, some of the western cottages were constructed around the eastern cottages' rear extensions, leaving the eastern cottages with living space to the west of the party wall. As it is also known that Nos 11-15, the southernmost cottages of the Barracks' West Terrace, were completed by 1820, it is within the realms of possibility that the designer of East and West Terrace had the opportunity to observe the potential benefits of plan crossover.

Incidents of houses being interlocked are not confined to East and West Terrace. The Derwent Valley Mills nomination document notes that the Strutts' 1792-7 Long Row in Belper (Fig. 17) and their 1794-5 Crown Terrace, also in Belper, were both constructed



Fig. 17

Belper, Long Row. Terraced cottages built for the Strutts between 1792 and 1797. The manner of vertically aligning the windows was to be used later on Hopping Hill's West Terrace.

*Photograph Author*

in pairs on an interlocking plan formed around the staircases. Similarly it is understood that the top floor rooms of several of the houses in Evans' Brick Row in Darley Abbey (built in 1826) cross over the rooms of neighbouring dwellings.

With the West Terrace cottages built over three-four storeys along the lines of the standard (single room and stair) back-to-back plan, and the East Terrace cottages conforming to the more costly (and thus more rare) two over two arrangement with a 'central' entrance door, the East and West Terrace cottages have very different plan-form types. Although it has not been possible to gain access to either, observation of elevational form prompts the thought that the layouts of the West Terrace houses will be similar to those at No. 10 Chevin View, Belper (the least altered of a terrace of back-to-backs built by the Strutts in 1790) (Fig. 18), and the plan form of the East Terrace houses will be akin to the western cottages of the circa 1820 Strutt built back-to-backs at Nos 1-8 Makeney Terrace (Fig. 13).

In terms of their elevational form the differences of the two frontages of East and West Terrace reflect the differences in internal layout. As discussed in relation to the floor plans, the Strutt back-to-backs at Chevin View (Fig. 18), Belper, and Makeney Terrace (Fig. 13) serve as useful comparisons for those studying the elevations of West and East



Fig. 18

Belper, Chevin View, 1790, east elevation. Strutt built back-to-backs whose plan form may bear comparison with those of the West Terrace houses.

*Photograph author*



Fig. 19

Lea Bridge: cottages built c.1783 to house Peter Nightingale's mill-workers. This terrace provides early evidence of the materials and architectural language which were to become commonly used in the construction of Derwent Valley mill-workers' housing.

*Photograph Author*

Terrace respectively. A further much earlier example, which also bears comparison, not least in the manner in which it sets out the language of Derwent Valley mill-workers' housing, is the Peter Nightingale developed mill cottages at Lea Bridge (built circa 1783) (Fig. 19). Worthy of note on this terrace are the treatment of the roof and ridges, the form of the chimneys and the manner in which the windows and door openings are detailed.

Although the degree to which the Derwent Valley mill-workers' cottages have survived is notable and the extent to which the Strutts' housing survives is remarkable, the changes wrought upon these buildings by the Strutts, and since, does detract from appreciation of their primary form. Although East and West Terrace has been altered, particularly in the removal of its primary roof coverings and cast-iron windows, its designer's overall architectural message is still legible. Whilst no primary windows survive, and the majority of window openings have been enlarged in one way or another, rarely have these enlargements been so unduly sizeable as to detract from the reading of the original design. Furthermore, throughout the Terrace's length, no new window openings have been formed. Spared major alterations and additions, the primary form of East and West Terrace's two contrasting elevations can still be clearly read. As with other



Fig. 20  
West Terrace: yards and walkway from the south.  
*Photograph Author*

Strutt mill-workers' cottages the flat-fronted grey stone façades are hardly enlivened by shallow set windows and doors: the architectural language is subdued. By aligning the three tiers of large windows and three tiers of small windows above one another on the west elevation, the designer presented a rhythm of vertical punctuation which, along with the downpipes (see Fig. 1) and the chimney stacks above, tempered the lengthy Terrace's lateral emphasis. Whilst the stacking of three mullion windows had been seen before at Nightingale's Lea Bridge Mill Cottages (1783) (Fig. 19) and Strutt had adopted the arrangement on the back-to-backs at Nos 1-10 Chevin View, Belper (1790) (Fig. 18) at Long Row, Belper (1792-7) (Fig. 17) and Wyver Lane, Belper (1818), in no other Strutt, or for that matter Derwent Valley, mill-workers' housing can such treatment be seen in combination with vertically aligned narrow (circulation area lighting) windows. Whilst similar-style smaller windows had been used in previous Strutt developments such as at Long Row (Fig. 17), the Clusters (1805) (Fig. 9) and Wyver Lane, all in Belper, never before had small stair landing windows been stacked in the ordered fashion of the West Terrace (Fig. 20). It is likely that the visual rhythm generated by the tidy alignment of the fenestration, was less a conscious architectural expression than a quirky upshot of the requirement to light efficiently the rooms of an ordered internal plan. Such rhythm is not seen on the East Terrace's more squat elevation for although there was, and remains, order to the layout of doors and fenestration, the handing from one building to the next throws any sense of meter.

Much of the appeal of Hopping Hill, Milford and the mill towns of the Derwent Valley rests on the fact that the terraces of late-eighteenth- and early-nineteenth-century mill-workers' houses are generally built to a high standard and with materials which change little from one building to the next. Following the example, for instance, of the nearby late-eighteenth-century terraced housing at Hopping Hill, East and West Terrace was built of local materials, almost certainly using stone quarried in the forming of the site's terraces (and digging of the cellars),<sup>90</sup> supplemented by stone from the quarry at the west end of Shaw Lane. Its chimney stacks were built of red brick, quite probably sourced from the brick yard and kilns in the field 200 yards to the east of the site. Although the buildings of the brickworks (which can be seen in the 1820 Strutt Title Plan) have long since disappeared, a significant depression in the field to the north of Bridge View betrays the location from which the clay for the bricks was dug.

East and West Terrace's existing slates and ridge tiles do not look as if they date from the primary build.<sup>91</sup> It is more than probable that the original roof was covered with Welsh slates<sup>92</sup> laid in diminishing courses<sup>93</sup> with stone ridge 'tiles' such as can still be seen at the Strutts' 1792 terrace at Well Lane, Milford. Although it has yet to be confirmed where the terrace's cast-iron windows were made, it is more than likely that the windows, of relatively commonplace design, were sourced locally.<sup>94</sup>

## CONCLUSIONS

East and West Terrace and its gardens are unusual in the context of Milford in the symmetry of their plan form. The Terrace's carefully thought-out plan form and the designed arrangement of its yards, terraces and walkways, invites comparison with the Strutts' developments in Belper, not least the cluster houses, built in 1805 to the designs

of James Hicking. As suggested, Hicking also may well have been the designer of East and West Terrace. The marked differences in the design of the symmetrically planned Belper mill-workers' cottages and those at East and West Terrace tell us much of the way the Strutts worked: not building to a standardised layout or design, their housing was planned in accordance with the confines of the setting and to meet the requirements of the future occupants.<sup>95</sup>

These early examples of buildings designed to house industrial communities were planned with care and built to a high quality specification. They were not constructed as pre-planned model villages. Their design did not follow standard forms. The designers of the mill-workers' houses evolved new improved house types which were to become sources of inspiration for those designing housing for industrial communities in Britain and beyond.

From the late nineteenth century onward the demands of health campaigners to pull down back-to-backs and other workers' housing led to the loss of countless such buildings countrywide. It is testament to the careful planning of buildings such as East and West Terrace and the high standards adhered to in their construction that they, and the majority of the mill-workers' housing in the Derwent Valley, were spared the demolition workers' ball and chain and are now protected by listing.

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#### SOURCES

- Anon, 'British Industries: No CXXIII; Messrs W. G. and J. Strutt, Manufacturers of Knitting, Crochet and Hosiery Yarns, Sewing Cottons, etc., Belper, Derbyshire', *The British Trade Journal* (1 December 1882).
- Barley, M. W., & Chamber, J. D., 'Industrial Monuments at Milford and Belper', *Proceedings of the Archaeological Journal*, 118 (1961).
- Beresford, Maurice, *East End, West End: The Face of Leeds during Urbanisation 1684-1842* (Leeds, 1985/1986).
- Burnett, John, *A Social History of Housing 1815-1970* (1978).
- Caffyn, Lucy, *Workers' Housing in West Yorkshire, 1750-1920* (1976).
- Chadwick, E., *Report on the Sanitary Condition of the Labouring Population of Great Britain* (1842).
- Chalkiln, C. W., *The Provincial Towns of Georgian England. A Study of the Building Process, 1740-1820* (1974).
- Chapman, Stanley, ed., *The History of Working Class Housing*, Symposium, Newton Abbot (1971).
- Chapman, S. D., 'Workers Housing in the Cotton Factory Colonies 1770-1850', *Textile History*, 7 (1976).
- Charlton, C., ed., *The Derwent Valley Mills and their Communities* (2002).
- Charlton, C., ed., *Nomination of the Derwent Valley Mills for Inscription on the World Heritage List* (2002).
- City of Hereford Archaeology Unit, *Back to Back in Birmingham: 50-54 Inge Street, 55-63 Hurst Street and 1-3 Court 15, Birmingham* (1995).
- Dodd, A. M., *Workers Housing and the Textile Industry in Belper & Milford 1775-1850* (1995).
- Fitton, R. S., ed., *The Family Economy of the Working Classes in the Cotton Industry, 1784-1833* (1964).
- Fitton, R. S., & Wadsworth, Alfred P., *The Strutts and the Arkwrights* (1959).
- Gauldie, Enid, *Cruel Habitations, A History of Working Class Housing 1780-1918* (1974).
- Giles, G., *A History of Milford and Makeney* (n.d.).
- Goodwin, I. S., *A Study of Industrial Villages in Derbyshire* (Leicester Polytechnic thesis 1977).
- Muthesius, Stefan, *The English Terraced House* (1982).
- Upton, C., *Back to Backs, Birmingham: Court 15 Back to Backs and the History of Birmingham Working Class from 1800 to the Present Day* (2002).

#### NOTES

1. Lombe's silk mill in Derby, opened in 1721, is generally cited as being the first mill in Britain to have driven machines using water power.
2. Much of this 'observation' would have been made in the spirit of cooperation. The Strutts and Evans families intermarried and, as J. D. Chapman put it: 'shared something of their ideological interest in the labouring poor'.

3. Charlton, C., ed., *The Derwent Valley Mills and their Communities*.
4. Ibid.
5. Large families with female children were particularly sought after.
6. Derwent Valley Mills Nomination document.
7. In 1774 Jedediah Strutt told a committee of the House of Commons that whilst he employed children aged seven he preferred them to commence work at the age of ten. He was critical of those who put children to work 'as soon as they were able to crawl'. Furthermore the Strutts insisted that, prior to being offered a job in the mills, children should have attended a day school.
8. In North Street, Cromford, the well-lit top floors of the cottages were designed for utilisation by the men of the house to weave yarn into calico.
9. The area was noted for its nail making: in the middle of the eighteenth century the nail makers of Belper were reputed to have annually produced between 100 and 150 tons of hand made nails (S. D. Chapman, *Workers Housing in the Cotton Factory Colonies*).
10. Burnett, J. A., *Social History of Housing 1815-1970* (1998).
11. Beresford, M. W., 'The Back to Back House in Leeds 1787-1937' (a paper read at the History of Working Class Housing Symposium, Newton Abbot, 1971).
12. This last plot referred to, situated to the north of 235 (and the site at which the northern part of East and West Terrace was to be built), featured in the Belper Enclosure: plot 292, 1 acre, 12 perches, awarded to Tristram Revell.
13. D 3772/10/1-2 1765 – 1796 Linley is one of the few surviving houses in the area which pre-dates the Strutt developments.
14. By Heather Eaton.
15. D1564/3.
16. Although largely rebuilt in the late nineteenth century, the house, which is called Pear Tree Cottage, survives to this day.
17. Called 'Linley', this house can still be found on Bridge View.
18. The land to the south of this boundary division was let to William Blood in 1809. It is possible that the fourteen houses at the north end of the Terrace were built first (stopping at the north boundary of the land rented by Blood) and the ten houses at the south end of the terrace constructed (perhaps a year or so later) in a second phase.
19. Derbyshire Records Office reference 1564/13.
20. Referred to as 'an ancient lane' in the Enclosure Award and described in the accompanying map as 'Cocks Road', this foot road ran from Shaw Lane to Makeney.
21. DRO Ref. D1564/27.
22. Enclosure plot numbers continued to be used in conveyancing of land and property until the 1920s.
23. 1803-6 west side south end of Hopping Hill; 1806 Makeney Yard.
24. DRO Ref. D3772/16/1 This survey was made to accompany the Strutt Title Plan.
25. DRO Ref. D1564/3.
26. Mill Buildings and Houses, fifteen volumes, 1793-1865: Belper Tax Book including Milford, 1812-24: Building Ledger, 1812-3: Team Ledger, 1815-7: Order Book; Workmans Tools and Materials, 1814-9: Bought Book; Building and Maintenance, 1813-25.
27. Should the record be a reference to the construction of the twenty-three cottages of East and West Terrace, Hopping Hill, the unit cost would have been £130. However, this documentary evidence may equally relate to the construction of the eight houses of East and West Terrace, Makeney.
28. In actuality the existence of the excavated east cottages' cellars and the west cottages' burrowing galleys means that down its length, only small parts of the Terrace's spine wall are required to retain the full 2.3m of ground level difference. The spoil from excavating these 'underground' rooms, and indeed of the West Terrace's cellars, would have served to fill the western parts of the West Terrace.
29. Across its 15m breadth the west garden plot rises 3.3m at a gradient of 1:4.5, whilst the eastern garden plot rises 2.5m in its 14.7m breadth at a gradient of 1:6. The average gradient of the site as a whole is 1:4.
30. Burnett, J., *A Social History of Housing 1815-1970* (1998).
31. The symmetry of the west garden terracing accommodated twelve gardens, leaving the ground beneath cottages nos. 13 and 14 unterraced.

32. Set out in an annotated map accompanying title deeds.
33. DRO Ref. D1564/27
34. Whilst No. 17 was required to make do with the triangular plot at the east end of the gardens, Nos 16 and 15 had plots to the north of Shaw Lane.
35. See note 53.
36. It is not known why some of the walling at the south end of the East Terrace, particularly that which divides one yard from the next, is raised to a higher level.
37. The fixing holes in the stones, which form the sides of the opening, suggest that from the outset each yard had an entrance gate.
38. On the East Terrace in 1931 all of the cottages' front doors were relocated out of alignment with the front entrance gate.
39. For many years Vivian Harrison lived at No. 14 West Terrace. She recalls the yards having been paved with setts. Mary Kirk, inhabitant of East and West Terrace from the 1930s until late in the twentieth century, also remembers the yards having been laid to setts (2007). It is probable that the size of these setts and the manner in which they were laid will be comparable to those primary examples surviving on Hopping Hill (such as those still visible at No. 69).
40. Little has been found out about James Hicking other than that it would appear he had a son (also James) and that Hicking senior must have been in the employ of the Strutts between at least 1790 and 1829 (for these are the dates of the oldest and youngest drawings and maps delineated by Hicking Senior and now archived at the Derbyshire Record Office).
41. Derbyshire Record Office, Ref. D1564M/S21.
42. The first Derwent Valley cluster houses were built for Thomas Evans in Darley Abbey in 1792. William Strutt developed the concept of cottages clustered in groups of four, in Belper, as did Charles Bage in Shrewsbury.
43. With weekly rents of 4s 6d, as compared to rents say for the mill-workers' cottages at Mount Pleasant of 2s 6d and Short Row 1s 3d (Nomination Document), S. D. Chapman is of the view that the clusters would have been constructed for the overseers of the mills.
44. It is understood that in the steep valleys of the West Riding there survive four-storeyed back-to-backs built, like East and West Terrace, on terraces of different levels.
45. The 1880 First Edition Ordnance Survey, which provides the first wholly reliable record of the Terrace's form (see Fig. 2), shows all of the cottages, save for Nos 15 and 16, to have been wholly free of projecting structures. Evidence of the built form of the square planned buildings, which the First Edition Ordnance Surveys charts at the south-western corners of No. 15 and 16's yards, can be seen in the 1931 photograph of the northern end of the East Terrace (see Fig. 12). These were lean-to stone built sheds which projected to about half the yard's depth and were covered with steeply pitched slate roofs. The roofs rose to a level in alignment with the soffit of the ground floor chamber's window lintel. On the grounds that their roofs ran down to a low level, these buildings would have had to have been accessed through a side door. The purpose and constructional date of these two buildings, which would have been removed at the introduction of the WCs in winter 1931 is not entirely clear. However, it is more than likely that they were built (pre-1880) as coal houses. Bearing in mind the careful efforts made by the Strutts to remove the earth closets to a distance from the cottages, it is suggested that these lean-to buildings were not designed for such purpose. (All of the houses on the Terrace were provided from the outset with earth closets located in their nearby gardens. The fact that the 1820-29 Strutt Title Plan [DRO Ref. D1564/27] (see Fig. 6) charts a (potentially earth closet housing) structure across 'Shay Lane' in the gardens of Nos 15 & 16, prompts the understanding that between 1820 and 1931 the occupants of these cottages had to cross the road for their ablutions).
46. Houses on the Terrace which were built with the same layout:
 

West Side:	southern of five block group Nos 1, 4, 7, 10, 13; northern of five block group (as southern) Nos 3, 6, 9, 12; central of five block group Nos 2, 5, 8, 11; anomaly on account of street-side location 14.
East Side:	southern of five block group Nos 23, 21, 19, 17; northern of five block group (as southern but handed) Nos 22, 20, 18, 16; anomaly on account of street-side location 15.

47. Unfortunately the flourishing ivy between Nos 19 and 20 prevents inspection of the walling where it might be expected that the vertical joint would be visible on the East Terrace. However, the vertical joint in this location can be made out in a small photograph, taken before the days of the ivy, which featured in Richard Parkin & Co's 1990 sales particulars for No. 19 East Terrace (photograph archived at Matlock Local Studies Library).
48. Observation of the Strutt developed housing at large prompts the thought that there was only a very brief time lapse between the construction of the first 'half' of the Terrace and its completion.
49. The manner in which Joan Holloway explained (recorded interview 1980) the 1930s changes made to the East Terrace cottages' interiors prompts the thought that before the 1931 alterations there was no division between the principal room and the 'hallway'.
50. Vivian Hitchcock, long time inhabitant of No. 14 West Terrace, has memories of the pre-Second World War form of her grandmother's cottage (No. 23 East Terrace). Vivian recollects her grandmother having had eleven children and their having slept head to toe in beds in all three bedrooms. The ground-floor bedroom she referred to as 'the Parlour'. This name for the room may have been handed down from one generation to the next and thus provide evidence of the room's intended original use as a living room (interview 4 January 2007).
51. Leonard Smith's 1936 record (DRO Ref. D1564/69) (see Fig. 10) of the plan form of the East and West Terrace cottages shows the chimney-breast in this room to have had two recesses. This might indicate the historic (and probably primary) existence in this room of both a fireplace and a copper.
52. Although it has only been possible to identify about half of the households' returns for the 1841 Census, from the available data it is evident that the East-side cottages housed greater numbers of occupants than the West. In the eight cottages on the West Terrace for which the 1841 census records have been traced, there were a total of forty-one inhabitants (household average 5.1 persons). In the four traceable households on the East Terrace there were thirty-three inhabitants (household average 8.2 persons). Complete but for one household, the records of the 1851 Census bear out the less complete statistics of 1841: with the evidence of the fact that in 1851 the West Terrace households averaged 5.4 occupants and those on the East 7.7, it might be better appreciated that in the majority of the East Terrace houses the small ground floor room would have been needed to serve as a third chamber room.
53. The Strutt Rent Book covering spring 1938 (DRO Ref. D3772/E22/1-4) notes that, in addition to having a coalhouse built in their yards, in February and March each of cottage Nos 17-23 had works undertaken to their 'cellar window'. Whilst it is not specified what these works were, or what form they took, it is suggested that in 1938, at the building of the coal houses of the East Terrace cottages' yards, the cellar 'window' openings (which had formerly ventilated and lit the cellars, as well as serve as access hatch for the delivered coal) were adapted to serve just the roles of lighting and ventilation.
54. The location of the existing chimney pots suggest that in the 'x-y-y-x-y-y-x' arrangement, each x stack was designed to accommodate eight flues and the y's four. The broader 'eight-flue' stacks, located at the juncture of each group of five houses, would have had sufficient flues and chimney pots to accommodate a flue rising from a fireplace in the East Terrace cottage's large first floor bedroom. However, study the floor plans and it can be seen that there would not have been enough flues in the four flue stacks to permit an independent flue from fireplaces in all of the smaller bed-chambers. Although it is thought probable that only the East Terrace large bed-chambers and West Terrace first-floor bed-chambers were 'heated', it might have been possible to furnish every bed chamber in East and West Terrace with its own means of heating if at least two of the flues rising from fireplaces to the narrower 'four-potted' stacks were joined at a location beneath the stack.
55. In the summer 1931 photograph this cast iron frame can be seen beyond the door: this, and all of the equivalent windows in the East Terrace cottages, had been relocated in a scheme (undertaken in spring 1931) to move all of the East Terrace's front doors. All of these East Terrace windows were relocated to the place where the front door was originally sited.
56. It is not known whether the cast-iron angles found at the feet of the door frames of both No. 19 East Terrace and No. 6 Makeney Terrace are primary, or secondary means of protecting the frames from scuffing and decay.
57. It is not possible to clarify whether the tiled floor covering in No. 13 is primary or not. As stone was evidently in abundant supply locally, it is possible that the ground-floor spaces of each of the cottages was originally laid with stone floor slabs or setts. What can be observed from the rent books

(DRO Ref. D3772/E22/1-4) is that between 1922 and 1930 the Strutts undertook works to the floors (presumably laying new coverings) of at least ten of the cottages on East and West Terrace. Although No. 13 appears not to have been included amongst this number, it is quite possible that this cottage had its floor covering replaced at an earlier or later date.

58. The Strutt rent books make note of the fact that between 1925 and 1935 the cottages of East and West Terrace were fitted with gas coppers.
59. The jamb stones survive at No. 5's first-floor chamber window.
60. See No. 5's window opening.
61. Nomination Document.
62. Food for breaks had to be taken by family members from the cottage to the mill (H. Eaton).
63. Although no record of the early nineteenth century rental charges for East and West Terrace can be found, a letter from the Strutts' agent dated 18/9/1972, provides evidence that towards the end of the Strutts' tenure, those who rented their cottages on East and West Terrace were paying an annual rent for their gardens of 20p.
64. See footnote 52.
65. The relative youthfulness of the inhabitants of East and West Terrace in 1851 reflects the desire of the Strutts to provide housing for working families and the relatively short life expectancy of the working classes.
66. In the Parliamentary Papers Vol. XLV No. 254 are recorded the weekly wages of the children of the Warren family who in 1843 were in the employ of the Strutts at Milford: Augusta (aged 19) 6 shillings; Edith (16) 5s; Ephraim (15) 4s; Emily (12) 3s; Elizabeth (10) 2s; Eva (9) 1s 6d.
67. The range surviving in No. 2 has not been in its current location for long: it was moved by a former occupant from her residence on Hopping Hill. However, such cookers were installed by the Strutts in the cottages of the Terrace (on 7th July 1906 Charles Harrison of No. 26 East and West Terrace (one of the three cottages immediately to the north of East and West Terrace) was charged 2d additional rent for his Excelsior Range [DRO Ref. D3772/E22/1]). The Estate Rent Books (DRO Ref. D3772/E22/1-4) provide evidence of the fact that between 1906 and 1931 the Strutts installed further Excelsior ranges in at least fourteen of the Terrace's twenty-three cottages. As it was not until the 1830s that the first models of closed iron stoves were developed, it might be envisaged that the first occupants of the cottages cooked in their principal room over an open fire.
68. In 1990, Mrs Shaw, the occupant of No. 12 West Terrace, provided Heather Eaton with an explanation of the coal collection point's use, and referred to it as the 'Sluther Bank', 4 January 2007; Mary Kirk (inhabitant since the 1930s of East and West Terrace) recalled that coal was ordered separately by each householder and delivered (loose) to the coal collection point (the Sluther Bank).
69. The location and type of fixings seen on the wall of the East Terrace walkway correspond with those seen on the surviving Makeney pump.
70. It is possible that the sizeable semi-circular scoop in the walkway wall and coping before No. 19 once housed a second pump.
71. The Strutt rental book of 1891-1907 (DRO Ref. 3772/E22/1) notes a charge to occupants initially of 2d per week for water with the rate reduced by half after a few weeks.
72. A plan surviving in the Derbyshire Records Office provides evidence of the fact that the Derby to Manchester railway line was originally intended to be routed on the Hopping Hill side of the valley. The 1830s plan shows the railway running through a tunnel directly beneath the West Terrace gardens, and emerging into the open immediately to the north of Shaw Lane. The Strutts' objection to the line running in front of their seat (Makeney Hall) led to the route of the railway being changed to the other side of the valley. A tunnel was made through Chevin Hill and the line opened in 1839.
73. The physical evidence is clear to see, not least in the fact that the lintels over the East Terrace cottages' front doors and the larger ground floor windows match one another whilst the lintel over the smaller window is distinctly different, being taller with a tooled finish at variance from that of its neighbours (see Fig. 15). Observe the lintels of the west elevation's doors and windows (see Fig. 34), and indeed those at the coeval Strutt built back-to-backs at Makeney Terrace (see Fig. 13), and it can be observed that the Strutts furnished their windows with more slender stone lintels whilst doors had taller lintels finished with robust tooling.

74. Between 1925 and 1931 the Strutt Rent Books (DRO Ref. D3772/E22/1-4) record the installation of sinks or slopstones (sinks for washing clothes) in most of the Terrace's cottages. These sinks and slopstones are recorded (by Smith in his 1936 drawing) situated at ground level in the East Terrace cottages' 'hall' and in the small room before the West Terrace cottages' stair. As the West Terrace cottages had been furnished from the outset with 'independent' sculleries, the rent records show that it was these cottages which were furnished with slopstone sinks first. Charges made to the East Terrace cottagers for as much are first recorded in 1931 (i.e. upon completion of the foot of stairs scullery). Although it is not known what washing facilities the inter-war sinks and slopstones replaced, nor is it known where these were located, it might be imagined that moveable tubs, dollies and washboards, were used.
75. Note the advanced growth of the cabbages in the foreground.
76. Note the slightly lighter tone of the stonework on the left door jamb. Previously occupied by a window, the jamb stonework here would have needed to have been formed in the works and thus might be expected to be of a different hue to the adjacent (undisturbed) stone.
77. The key doubt about the date of this photograph revolves around the fact that soaring above the Terrace's ridge line can be seen a tree of gargantuan proportions. As photographs taken in the 1920s and 1930s (see Fig. 1) of this side of the valley show only small trees before and immediately to the north of the Terrace, it is thought probable that the tree (which to have reached such a height would have needed to have been growing since before the Strutts' arrival in Milford) was cleverly introduced by the professional photographer to enhance the appeal of the image.
78. Whilst Mary Kirk has a very early memory of all of the cast-iron windows being replaced with wooden ones (1937), she recalls nothing of the front door relocation works (1931). The rent books note extra charges made in August and September 1937 for the introduction of between one and four (wooden) casement windows into each of the cottages on the Terrace.
79. DRO Ref. D3772/E22/1-4.
80. Brick built and flat roofed (but free standing and built in 'clusters'), the WCs of the Strutt owned back-to-backs at Chevin View, Belper, bear close comparison with those at East and West Terrace (and indeed elsewhere on the Strutt Estate), clearly being constructed as part of the same phase of mill-workers' housing improvements.
81. Window Type 1 (large ground floor)
- c. 1820 – 1937: Cast-iron, two lights one with small 4 paned opening window (2 x 15 panes total).
  - 1937: Window opening enlarged through removal of stone jambs and mullion and wooden casement introduced, half now openable.
- Window Type 2 (smaller ground floor)
- c. 1820 – 1931: Cast-iron, with 4 paned opening window (24 panes total).
  - 1931: Cast-iron window moved to door's former location.
  - 1937: Wooden casement introduced, half now openable.
- Window Type 3 (small ground floor bedroom)
- c. 1820 – 1937: Cast-iron entirely openable window (12 panes total).
  - 1937: Window opening enlarged through removal of stone jambs. Entirely openable wood casement introduced.
- Window Type 4 (main first floor window):
- c. 1820 – 1937: Cast-iron, two lights, one of which had half of its square footage openable (2 x 12 panes total).
  - 1937: Window opening enlarged through removal of stone jambs and mullion. Wooden casement introduced: entirely openable.
- Window Type 5 (small first floor stair landing)
- c. 1820 – 1937: Cast-iron with small 4 paned opening light (12 panes). Wooden casement introduced, entirely openable.
- Window Type 6 (small first floor bed chamber)
- c. 1820 – 1937: Cast-iron, entirely openable window (12 panes total).
  - 1937: Window opening enlarged through removal of stone jambs. Wooden casement introduced, entirely openable.

The scars of the long since removed jambstones and mullions can still be observed on the soffits of many of the cottages' window lintels. At No.4 West Terrace survive the upstand elements of the cills which once met with the bases of the mullions. The existence of a small indent in the front face and soffit of many of the cottages' window lintels is thought likely to relate to the long since removed cast iron windows. However, it is not known whether these indents were associated with a fixing for stay arms, or created at the time of the cast-iron windows' removal.

82. The rent books record only two of No. 15's windows being replaced in 1937.
83. Archived with Derbyshire Record Office, Ref. D1564/69
84. DRO Ref. D3772/E22/1-4.
85. Interview with A. C. Peers & Heather Eaton 4 January 2007.
86. The last houses known to have been built by the Strutts to house their employees were constructed behind Makeney Terrace in 1919. The cottages on Derwent View and Shaw Lane were being sold off by the Strutts from the 1930s.
87. D1564/69.
88. It is quite probable that the designer was James Hicking, designer also of the Belper Cluster Houses (1805).
89. The Barracks were designed to house neither soldiers nor mill-working families, but unmarried mill-workers.
90. The soil layer in this part of Hopping Hill is not thought to be that deep.
91. Longtime inhabitant of East and West Terrace, Mary Kirk, recalls the entire Terrace having been re-roofed (whilst still in the Strutts' ownership) in the 1950s (interview 4 January 2007).
92. By the time that East and West Terrace was built, canal access to Wales had long been established. Providing waterborne transport between the Mersey and the Derwent Valley, the Trent and Mersey Canal had been completed by 1777. With the Erewash Canal completed by 1779 and Cromford Canal fully opened by 1794, opportunities for waterway transportation between the slate mines of north Wales and the Derwent Valley Mills were fully realised (the nearest point of the canal to Milford would have been at Ambergate).
93. The method of using tiles of all sizes (smallest at the top of the pitch and largest at the bottom) was the cheapest way of tiling in slate in that it ensured that all of the slate quarried could be put to use.
94. The windows would not have been made at the Strutts' Hopping Hill meadow foundry for this was not established until the mid 1820s.
95. Whereas Cromford and Darley Dale were both entirely owned by the mill owners, in Belper and Milford the Strutts had to compete in the housing market with independent developers. It may have been this competition which fostered their apparent desire to continually improve on the layout and designs of their mill-workers' housing.

