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Some Aspects
of the Building Industry
in Medieval
Stratford-upon-Avon

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SOME ASPECTS OF THE BUILDING INDUSTRY IN MEDIEVAL STRATFORD-UPON-AVON

It is almost impossible to exaggerate the importance of the part played by building in the material foundations of any society. The provision of shelter is one of the prime requisites of human existence. It stands next only to the establishment of the food-supply. Wherever man has lived, failing a natural refuge, he must needs have constructed his own shelter, no matter how rude it might be. Man has always been a builder. Here, if any be needed, lies the justification for a study of the history of building.

In the early years of a society the construction of the dwelling is primarily the concern of the family. Communal efforts may replace self-help, but there is little scope for the activities of a professional corps of builders. This state of affairs continues longest in an agricultural community. The periodic reconstruction of the dwelling is as pertinent to the work of the peasant and his family as the clearing of new land for tillage. One of the most valued of the common rights possessed by the medieval peasant was the right to take timber and sods from the waste for the repair of his house. In the early Middle Ages even the lords depended on the labour of their peasants to build their primitive castles and manor houses. As late as 1240 the customs of the villeins of Blackwell, a manor in the Stour Valley belonging to Worcester Priory, recite that they must build a manor house for the prior, themselves providing all the material except for the daub used on the walls.

The development of town life inevitably leads to a greater degree of specialization in all departments of human activity; and building is only one of the occupations to have become professionalized during this process. Without being able to apply precise dates, we may therefore tentatively trace the establishment of a professional building industry in England to the period of urbanization which had begun by the time of the Domesday Survey (1086). From the towns professional methods spread to the rural areas, though at varying tempo. The poorer peasants continued to build their own houses long after their richer fellows and the lords were relying upon professional builders.

That building was an industry in medieval England is a fact which is sometimes disregarded. This oversight may be due to its not being concentrated in particular areas, like the woollen and iron industries, and, unlike them, having an end product which, in appearance at any rate, was not a commodity entering into everyday commerce. Nor can the extent of the industry be measured on a statistical basis, as is in some degree made possible in the woollen industry by the existence of customs and aulnage accounts and other records. But the universality of the building industry is the measure of its importance. Not being confined to particular areas or regions it featured in the economic life of every part of the country. It is quite impossible to attempt any estimate of the numbers engaged in building, but it is likely that the industry employed as large a part of the total labour force as any occupation outside of agriculture. Not only did it provide employment for those directly engaged in it, masons, carpenters, thatchers, plumbers, but also for those who supplied the materials for the industry, the quarry-men, tile-makers, iron- and lead-founders, carters.

Despite its importance the subject is one which has suffered comparative neglect at the hands of historians. The explanation should probably be seen in the paucity of suitable evidence. The historian of the building industry has two sorts of material at his disposal: documentary evidence, and that offered by the buildings themselves, wherever they have survived. On both these counts he comes out best whose interest is in what we may perhaps term the monumental rather than the homely. Castles, cathedrals, and abbeys have withstood the ravages of time much better than have the dwellings of the lower and middle classes. The former type of building is also the more likely to have left documentary evidence of its construction. The detailed plans, contracts, and accounts drawn up at the time of building have survived in royal and ecclesiastical archives, whereas the flimsy scraps associated with poorer buildings have largely disappeared.

In view of this last factor the accounts of the Guild of the Holy Cross of Stratford-upon-Avon are an invaluable piece of historical evidence.¹ For amongst other things they contain a year by year record of the building and upkeep of property owned by the guild within the borough. Over the course of a century and a half, from the middle of

¹ Stratford-upon-Avon Corporation Records, Div. XII. 1-119, preserved at Shakespeare's Birthplace.

the fourteenth to the end of the fifteenth century, we are able to follow the progress of domestic building in Stratford. The types of building are just those about which we otherwise have least knowledge: the homes of the lower classes, from labourers and artisans to the smaller merchants. Such a record may perhaps be unique. The older cathedrals have kept a continuous record of the repair of their fabric, and poorer buildings have left isolated contracts and accounts. But it is the lack of continuity of these last which has hindered historians. It is therefore doubly fortunate that, in the first instance, the guild kept so complete a record of its building activity, and secondly, that the accounts have survived.

Before we go on to consider the building industry, which is the central theme of this paper, we should perhaps say a little about the documents themselves and about the property interests of the Stratford guild.¹

In 1403 the previously existing guilds were refounded as one guild, dedicated jointly to the Holy Cross, the Blessed Mary, and St. John the Baptist. The guild was possessed of property in Stratford with an annual rentable value of £21. 7s. 10d. By 1488 the rentable value of guild property had risen to £48. 9s. 9½d. The increase was partly accounted for by the higher rents demanded from the old properties, and partly by the acquisition of new properties. The new properties were acquired partly by purchase and partly by bequest. In most instances it is impossible to see how a particular property came into the hands of the guild, for although many deeds of transfer have survived, they are concerned only to record the change in legal ownership, and seldom mention the reasons for the transfer. After 1488 the rentable value of the property was completely static until the dissolution of the guild in 1547.² This seems to indicate a cessation of all the factors which had hitherto been responsible for the steady rise in rentable value, whether they were increases of existing rents, the investment of guild revenues in the purchase of new properties, or bequests of property arising from popular piety.

Since it is the work which was carried out on guild property which forms the evidence for this present study of the building industry, we must give some indication of the extent of the property at the height

¹ For a general account of the Guild of the Holy Cross see Levi Fox, *The Borough Town of Stratford-upon-Avon* (1953), pp. 87-95.

² 1 Ed. VI, c. 14.

of the guild's fortunes. The rental of 1488 lists the following properties owned by the guild: Church Street—6 tenements, 2 closes, 1 garden; Sheep Street with Dead Lane—10 tenements, 2 barns, 2 gardens; High Street—8 tenements, 1 cottage, 1 shop; Swine Street with Rother Street and Greenhill Street—15 tenements, 3 barns, 1 oil-mill, 2 gardens; Henley Street with Bridge Street and Windsor—17 tenements, 2 closes, 2 barns; Wood Street—7 tenements; Middle Row with Walker Street—5 tenements, 7 shops, 2 barns, 1 mill, 1 garden; there were 8 tenements recently bequeathed by Master Thomas Jolyffe, a few gardens on the outskirts of the town, and agricultural land at Shottery and Bridgetown. In all there were well over a hundred properties from which the guild drew rents, and for the upkeep of which it was responsible.

The evidence for the building activities of the guild is contained in the yearly accounts drawn up by the master and the proctors.¹ These are concerned with all aspects of the guild's income and expenditure, and building costs constitute only one item amongst many, albeit the most interesting. The first of the accounts covers the year 1353-4, the last the year 1503-4. There is not an unbroken succession for the intervening years, however. Indeed there are only a few accounts for the second half of the fourteenth century, the majority belonging to the fifteenth century. In all there are 119 account rolls. A few are so badly damaged as to be useless. Some, although in good condition, contain little or no information about building activity. The rest are invaluable evidence for the condition of the building industry in Stratford-upon-Avon during the later Middle Ages, and it is upon them that we have chiefly relied.

Although the scope of this present paper is largely confined to a view of the building industry in Stratford, it may fairly safely be asserted that, with regard to domestic building at least, the conditions prevailing in Stratford may be taken as representative of the industry in general. As we have already emphasized, the industry was a widespread not a localized one, and the state of affairs operating in such small market-towns should be taken as the norm. The organization of the industry in large towns may have been somewhat different, but these were relatively few in number.

¹ For a convenient summary see [W. J. Hardy] *Stratford-on-Avon Corporation Records: the Guild Accounts* (reprinted from the *Stratford-on-Avon Herald*) n.d.

It should first be made clear what sort of crafts were included in the building industry in Stratford. Those most frequently met with in the accounts are those associated with the construction of timber-framed buildings. Before the end of the fifteenth century there appears to have been no building in Stratford of any other material than timber, the sole exceptions being the church and the guild chapel. Timber building, indeed, continued to be the vogue until late into the seventeenth century.

Carpenters, as might be expected, are the most numerous of all the crafts mentioned in the accounts. Allied to them, but constituting a separate craft, were the sawyers. The sawyers were concerned with reducing large timber and whole trees into shapes and sizes approximate to those needed in the building. The carpenters fashioned the actual frame and assembled it. Often in the Middle Ages the joiners formed a third independent wood-working craft. There is no mention of joiners in the Stratford accounts, and the work which would normally have fallen to them, the making of doors and windows, was done by men classed as carpenters.

The wood-working crafts were followed, from the point of view of numbers, by thatchers, tilers, and slaters. Thatchers confined their activities to working with thatch, but slaters and tilers worked indiscriminately with either slates or tiles. Although thatch was certainly the most common roof covering, even at this date the use in Stratford of tiles and stone slates was by no means exceptional.

The making of walls, which consisted almost entirely of wattle and daub, fell to the lot of those whom we may conveniently call 'wallers'. There were various gradations within this craft, which were usually but not always observed by the workmen. We may detect those who worked only with mud, those who worked with mortar made of lime, and those who worked with plaster of Paris. This last was highly skilled work, and well paid. Sometimes the daubers also made the wattle-work, but often this was done by another workman.

Although there was very little building in stone, masons found a certain amount of employment in the town. Their services were engaged for the construction of stone ground-sills upon which the timber frame of the house rested, for the building of chimneys, and for the stonework involved in wells.

Apart from these, we find recorded in the accounts the services of

other craftsmen who added various refinements depending upon the importance of the building. The glazier and the paviour are mentioned comparatively infrequently, for glazed windows and tiled floors were reserved for the most important buildings. The services of the plumber were in rather more constant demand, for many, if not most, of the houses had some form of roof drainage, which was often quite elaborate.

The existence of these clearly defined crafts in Stratford indicates that building had become a specialized occupation. Normally workmen confined their activities to their own craft. There was a certain amount of overlapping, but this was mostly in the less-skilled departments of building, which were sometimes invaded by unskilled labourers. It seems likely that these professional builders were responsible for most of the building which was carried out in Stratford. The vast majority of the repairs carried out on guild property were effected by professional builders.

There is very little evidence of the pattern of employment within each craft. It is only indirectly that we discover anything about the relationship subsisting between the men of one craft. Therefore we can speak only generally on this topic. It seems, however, that the majority of builders whom we meet in the accounts were independent journeymen or labourers, who hired their services directly to the guild. Their labour was not permanently directed by a master craftsman. We are able to point out a few such master craftsmen, chiefly among the carpenters. They operated on a very small scale, however. It is unlikely that there was one who employed more than two or three journeymen or apprentices. On the other hand, although thatchers, tilers, and slaters are almost invariably found working with an assistant, who is described as the servant, it is difficult to establish the relationship between the two. It is very likely that here we have, not employer and employee, but rather two men working as a team, one of whom is more skilled than the other. Since names of workmen are only sporadically recorded in the accounts it is difficult to determine whether such partnerships, and those formed in other crafts, were permanent or only temporary.

The relative independence which we may detect among the builders of Stratford conforms with what is known about the building industry generally. It was an industry where independent journeymen predominated and master craftsmen operated only on a small scale.

Relationships between the two were often transient. The reasons for this state of affairs are not difficult to find. As we shall see later, building workers often had to travel about to find work, and permanent employment was by no means assured to them. These factors operated against the domination of the journeymen by master craftsmen and in favour of a breed of independent journeymen. In the manufacturing crafts journeymen often had to work for a master craftsman because they lacked the capital to establish a business of their own. These limitations did not operate in the building industry. The builder did not need to rent or buy a workshop in which to ply his craft, and the tools of his trade were comparatively inexpensive against the weaver's loom or the metal-worker's equipment. On the other hand there was little incentive for a master craftsman to take many journeymen into his service. Since employment was so uncertain and there was much travelling to be done it would have been very difficult to hold them together for any length of time.

This same looseness of organization is responsible for the dearth of craft guilds in the building industry. Permanent craft guilds were of necessity much less frequent among building workers than those engaged in the manufacturing crafts. This situation arose because the lot of the building worker was to a large extent an unsettled one. He had to travel to wherever work was available for him, for building, as we have seen, was not localized like manufacture. For peripatetic workers any form of permanent organization was difficult if not impossible. Members of the various crafts may well have formed temporary organizations on the scene of a large-scale building operation, but few details of these have survived.

In the metropolis and the larger towns employment was assured to a sufficient number of those engaged in some of the crafts to warrant the foundation of permanent craft guilds. This was the case in Norwich, where in 1375 the carpenters formed a guild dedicated to the Trinity.¹ Similarly the tilers of Lincoln founded their own guild in 1346.² They ruled that no one was to pursue the craft within the city unless he became a member of the guild. Moreover anyone seeking to enter the guild had to be acceptable to the whole of the fellowship. He had to swear to uphold all the ordinances of the guild, which included the proviso that no one must encroach on the work of his fellow craftsman.

¹ Toulmin Smith, *English Guilds*, p. 37 (1870).

² *Ibid.*, p. 185.

Stratford was by no means a large town and could not have provided permanent employment for any considerable number of builders. This was the principal, but not the sole, reason for the absence of craft guilds. The craft guild was composed of two complementary elements, the mystery and the fraternity. The mystery was the organization of the craftsmen for the control and regulation of their trade. Ideally the rules which they chose to make were binding on all men who wished to ply that particular craft. But the extent to which the craftsmen were successful in obtaining control over their trade depended largely on their numbers, wealth, and prestige. Some of the mercantile and industrial guilds of London, later to become the chartered Livery Companies, numbered very rich and powerful men in their ranks, and were able to gain very extensive powers for the regulation of their trade. They even had the right to present offenders against their rules for punishment in their own courts. At the other end of the scale, where the numbers engaged in any craft were few, it was often impossible even to organize a mystery, no matter how circumscribed its powers. This was the position in Stratford where the builders were few in number and lacking in social status.

The other element of the craft guild was the fraternity. The fraternity was the brotherhood of the craft, its functions being similar to those of the Friendly Societies of the nineteenth century. Often the fraternity had a common purse for the relief of distress among its members. Even if it did not rise to this, it was almost an invariable rule that the fraternity should have some sort of machinery for settling disputes which might arise between members. The spirit of amity was maintained by regular communal feasting and drinking. Sanction for the fraternity was obtained from the ecclesiastical authorities, and this was done by dedicating it to some saint, usually the patron saint of the craft. The brotherhood was thus further strengthened by the spiritual ties now formed. The brethren attended church together on the feast of their saint, and as a body came to the mass said for the soul of a departed brother.

In Stratford it is easy to see why the craft fraternity did not come into existence. From an early date the town was provided with two or more social-religious guilds. These performed precisely the same functions as the fraternity of the craft. The only difference was that membership was not restricted to those practising one particular craft. As

Stratford was a small town, which neither needed nor could afford to support many organizations doing similar work, there was no incentive for the foundation of craft fraternities. Moreover, it is quite likely that the Bishop of Worcester, who was lord of the town, would have been reluctant to sanction craft fraternities, which would have deprived of potential revenues those guilds of which he officially approved.

Stratford was by no means self-sufficient in the provision of building workers as were certain larger towns and cities. It could not provide sufficient work to engage the full-time activities of its own corps of builders. Rather must the town be regarded as only part of a much larger field of employment embracing the rural areas of south Warwickshire. This much can clearly be seen from the fact that many of the craftsmen whose names occur most frequently in the accounts were not Stratford men. John Bromefield of Rowington, carpenter; Thomas Parsons of Tanworth, carpenter; John Scatter of Alcester, tiler; Thomas Staffordshire of Lapworth, tiler; John Sondys of Brailes, plumber; Alfred Plumer of Warwick, plumber, are names which are entered repeatedly in the accounts. This is not to say, of course, that there were no building craftsmen resident in Stratford. But they were at least as likely to have found work outside the town as country craftsmen were to have come into town to work. Clearly for the purposes of employment town and country were interdependent.

This interdependence of Stratford and the surrounding countryside is a point which must be emphasized. We may perhaps be justified in assuming that, to some extent, the conditions of the building industry in Stratford are applicable to the rural and urban areas of south Warwickshire in general. Information about wages, for instance, which is found in the guild accounts can, strictly speaking, be taken only as evidence for conditions prevailing in Stratford. But if craftsmen circulated round the whole area, then there would be a tendency for wage-rates to be levelled out. The rates paid in Stratford would then be much the same as those being paid at other places within this region.

The earliest of the surviving guild accounts is that for the year 1353-4. This is, of course, a significant date, being within a very few years of the Black Death and the Statute of Labourers.¹ The pestilence had created such a shortage of labour as was not to be assuaged for

¹ 25 Ed. III, St. 2.

many a decade. If the situation had been left to resolve itself, it would have led to a natural increase in wages as the employers competed amongst themselves to attract the reduced supplies of labour. But the paradox that the reduction in their numbers left the labouring classes in a position of increased strength, and the landowners at a corresponding disadvantage, could not be allowed to stand unchallenged. As the landowners were firmly entrenched in parliament, parliamentary action seemed the natural way in which to defend their interests. Thus was initiated the policy of artificially freezing wages by statute. That in the long run it was unsuccessful is immediately apparent from the fact that in successive re-enactments of the statutes the maximum wage-rates had to be increased. The increase in the maximum wage-rates permitted by statute, however, does not adequately represent the true rise in the value of labour. By their very nature statutory rates lagged behind the current level of wages. That they were often unenforceable is admitted in the very statutes in which they are set out. Hence any serious attempt to follow the movement of real wages must be based on the figures of wages actually paid in particular instances. Herein lies the value of the Stratford accounts.

Although most of our evidence relates to the fifteenth century, the few fourteenth-century accounts which have survived are sufficient to confirm that Stratford was suffering from an acute labour shortage immediately after the Black Death. This can be seen from the fact that wages were considerably in excess of those permitted by the Statute of Labourers. In 1353-4 the wage of a carpenter was 4*d.* per day, while his servant received 3*d.* The statutory maximum rate was fixed at 3*d.* per day for a master carpenter and 2*d.* for a 'mesne' carpenter. These high wages are repeated in succeeding accounts, and most building craftsmen appear to have been receiving rates of payment in excess of those permitted them by statute.

This impression of a labour shortage in the area immediately around Stratford is further strengthened by an entry relating to the town which is found in the Close Rolls.¹ On 12 May 1352, a letter was issued to Ralph Stratford, Bishop of London, giving a guarantee of protection for ten carpenters, ten masons, and their assistants, whom he had engaged to build houses for the chaplains serving the chapel of St. Thomas the Martyr in Stratford. The guarantee also covered ten

¹ *Calendar of Close Rolls*, 1350-4, p. 262.

carters and their horses, carts, and equipment. This protection must have been intended to safeguard against the impressment or enticement of the workmen by any powerful lord who found himself in need of labour. The intention does not seem to have been to provide exemption from impressment by any of the king's sheriffs, for the workmen were commanded to hold themselves in constant readiness to carry out the king's work should they be summoned.

The wages paid throughout the second half of the fourteenth century were all higher than the statutory rates. The general level seems to have been the same for all crafts, *4d.* per day for a skilled craftsman. But though high, wages were stable. This seems to suggest that there was a sharp increase in wages immediately the consequences of the Black Death began to be felt, but that wages were then stabilized and the forward movement halted.

The first improvement of wages which can be observed in the accounts took place about the second or third decade of the fifteenth century. This increase is the most marked of all those evidenced by the accounts. That this is so is due in some measure to the fact that previously there was a uniformity of rates, so that the present increases stand out, while afterwards there were many fluctuations and variations in rates, which make it less easy to identify periods of increase. However, these reservations do not alter the fact that this period saw a general improvement in the wages of all the major building crafts.

It is impossible to give full particulars for each craft, but we may consider the carpenters to illustrate these wage movements. Prior to 1411 all payments to carpenters were made at the rate of *4d.* per day, the only exceptions being the average payment of *3.5d.* found in 1405-6, and *4.4d.* in 1406-8. In the account of 1411-17, however, we find many instances of *5d.* per day, though *4d.* was still the more usual figure. Thereafter we find *4.8d.* in 1412-13, *4.5d.* in 1421-2, and *5d.* in 1422-3, with no instances of *4d.* in any of these years. By 1427-8 it is obvious that *5d.* has become the normal rate, when it was paid over a period of $83\frac{1}{2}$ man-days. The rate of *6d.* is found over a period of $45\frac{1}{2}$ man-days, most of these accounted for by payments to the master carpenter. Carpenters' assistants were now receiving *4d.* per day.

Thereafter it is impossible similarly to delimit any period as being one characterized by a marked improvement in wages. Wages had

risen some more by the end of the century, but the increase was not so great and, as we have already remarked, it was accompanied by many fluctuations and set-backs. The year 1495-6 is particularly well documented, so we may regard the wages which were paid that year as being fairly representative of the wage level for the end of the fifteenth century. For a five and a half day week carpenters were being paid 1s. 10d. in cash and 9d. in victuals, an equivalent of 5.6d. per day. Thatchers and tilers were now slightly better paid, the normal rate being 6d. per day.

These observations apply to the wages of skilled craftsmen. The wages of semi-skilled and unskilled workmen need to be considered separately. These latter benefited from the consequences of the labour shortage in even greater proportion than did the skilled craftsmen. When all labour was at a premium the unskilled workman rose in status. This is reflected in falling differentials in the wages paid to men of differing degrees of skill. In 1351 the wage of a skilled craftsman was normally twice that of his assistant. The statute ruled that a master mason should take 4d., another mason 3d., and their assistant 1½d. Similarly tilers, thatchers, and plasterers were to take 3d. and their assistants 1½d. By 1495, however, the differentials were so reduced that craftsmen were in receipt of a wage only 50 per cent. above that of an unskilled labourer. The statute of that year gives the rate for skilled men over a wide range of building crafts as 6d. per day.¹ All labourers and artificers not named in these categories were to take 4d. per day. While the statutory rates for a skilled craftsman had doubled in the period between 1351 and 1497, the rate for an unskilled labourer had nearly trebled.

This situation is amply reflected in the Stratford accounts. We should, however, distinguish between the general labourer and those workmen who acted as servants and assistants to skilled craftsmen, many of whom should themselves be regarded as semi-skilled. The wages of all these semi-skilled ultimately rose in greater proportion than their principals. But for some of them the process was slow and marked by many fluctuations. Even at the beginning of the fifteenth century, the earliest date for which we have figures, the thatcher's assistant was still receiving only 1½d. or 2d. per day, and casual labour was often paid only 1d. per day. By the end of the century the normal

¹ 11 Henry VII, c. 22.

wage for the thatcher's assistant was 4*d.* per day, but we still find instances of considerably less being paid. On the other hand the assistants of some crafts were very well paid and had obtained the increase quite early. Already in 1427-8 the tiler's assistant was receiving 4*d.* per day, and in some years during the middle of the century 5*d.* per day. Plasterers' assistants were also well paid. In 1427-8 one received 5*d.* per day, while his principals were paid 6*d.* per day.

The general labourer stands in a somewhat anomalous position. The work he performed called for no skill, only strength. The majority of payments made to these men were for carrying earth. Yet in the early period labourers are found receiving a wage in excess of that paid to the semi-skilled servants of the craftsman and equal to that of the craftsman himself. In 1392-3 we find that 4 men engaged to dig earth were paid 4*d.* per day. While the wages of the craftsman and his servant continued to rise, however, those of the labourer were static. The great majority of payments to labourers during the fifteenth century were made at the rate of 4*d.* per day. The failure of the labourer's wage to show any sign of an increase may seem at first sight to contradict our former statement that it was the unskilled workmen who benefited most from the labour shortage. This is not so. It must be realized that 4*d.* a day was a very high wage for labourers at the end of the fourteenth century. The Statute of Labourers had set their maximum wage at only 1½*d.* It is clear then that the labourers of Stratford had early on been able to take advantage of the labour shortage to obtain a considerable increase in their wages. Later they were not able to improve on this forward movement, probably on account of the easing of the labour situation. But they were at least able to prevent any attempt to turn back the clock and reduce their wages. Even at the end of the fifteenth century they were receiving the full statutory rate, which had only then been fixed at 4*d.* per day. Why general labourers were able to improve their conditions in advance of the semi-skilled men assisting craftsmen is not clear. Possibly they were more independent than the latter, and therefore in a better position to bargain.

Although, as we have seen, the wages paid to building workers in Stratford were rising throughout the period under review, the rate of increase was not even. It was greater during the first half of the period than during the second. Between 1353 and 1497 carpenters' wages rose from 4*d.* to 5·6*d.*, an increase of 40 per cent. But between 1353

and 1420 the rise, from 4*d.* to 5*d.*, shows an increase of 25 per cent. The final figure of 5·6*d.* shows a further increase of 15 per cent. on the 1353 wage, but of only 10 per cent. on that of 1420. The rate of increase was thus 25 per cent. during the first seventy years, and only 10 per cent. during the next seventy.

This slowing down of the rate of increase, together with a comparison of the Stratford rates of pay with those laid down in the statutes, suggests that the labour situation was becoming much less acute. As we have already seen, the wages being paid in Stratford during the second half of the fourteenth century were considerably higher than the maximum permitted by the statutes. In time the statutory rates caught up with Stratford wages. By 1444¹ the statutes allowed 5½*d.* per day for a master carpenter and 4½*d.* for a mesne carpenter. These figures correspond very well with the wages then being paid in Stratford, although Stratford rates had been enhanced before the statutory ones. In 1497 the statutory rates, which then allowed 6*d.* per day for most skilled craftsmen, were slightly, but not greatly, in advance of Stratford wages. The fact that the guild no longer had to pay wages higher than those permitted by statute is a good indication of the easing of the labour market.

If, as we have suggested, there existed a rural area into which, for the purposes of employment, the town of Stratford merged, we may similarly outline a rural hinterland from which it drew its supplies of building materials. This second area was larger than the first, however. It took the form of a semicircle, lying to the north of the town, with a radius of about twenty miles. Practically no building materials were supplied by the areas to the south of the River Avon. The hinterland which we have outlined was able to supply all the requirements of the building industry in Stratford. Nothing seems to have been imported from outside this region. Although we cannot treat this question of building materials with the detail it deserves, we must consider briefly the price and place of origin of the principal items.

The principal building material used in Stratford during the period under review was timber. Unfortunately timber is the one material for which price evidence of a comparative nature is almost totally lacking. Entries recording the purchase of timber are more frequent than any others, but there is no way in which we can measure the

¹ 23 Henry VI, c. 12.

amounts involved. Prices of individual timbers are recorded, but not the size of them. As it is impossible to postulate a standard size for these timbers we cannot compare the cost of timber at different dates.

The most useful entry we have concerns timber still growing. In 1468-9, 40s. was paid to Thomas Bebys of Balsall for 154 oak trees. At an average of 3*d.* each, they may be compared with prices between 5*d.* and 6s. 8*d.* which Thorold Rogers finds being paid at various times and places during the fifteenth century.¹ Our oaks must have been quite small. Felling costs averaged only just over $\frac{1}{2}$ *d.* each. Salzman records that a century earlier oaks one foot square cost 3*d.* each to fell.²

The shortcomings of the accounts make it impossible to decide whether timber prices were rising in Stratford, and if they were, at what rate. Generally, however, it is held that the cost of timber was increasing throughout the later Middle Ages. These increases were probably consequent upon a growing shortage. During the thirteenth century the incentive to the clearing of woodland had been the opening up of more land for farming. At a later date landowners cut down their timber to offset the fall in rents, compensating for the reduction in income by depleting their capital resources. This led in time to a shortage of timber and an increase in prices.

It is difficult to judge how far shortage of timber may have affected prices paid in Stratford. It is likely that shortage was a less important factor than in some parts of the country. The forests of Arden and Feckenham still held considerable reserves of timber. But it is possible that supplies now had to be carried farther than had once been the case. All large quantities which are recorded in the accounts were bought at villages lying well into the forest, Tanworth, Ullenhall, Packwood, Rowington, Claverdon. The most distant place recorded is Astwood near Redditch. As we shall see later this entailed very heavy carriage costs. It is likely that little timber came from the area immediately around Stratford. This was predominantly corn-growing country. Leland, writing during the early part of the sixteenth century, notes 'Litle wood nere in sight about Streatford'.³ If the guild had to go farther afield for its timber, then the price must inevitably have risen.

¹ J. E. Thorold Rogers, *History of Agriculture and Prices*, vol. iv, p. 446.

² L. Salzman, *Building in England*, p. 237.

³ Leland, *Itinerary*, vol. v, p. 50 (ed. L. Toulmin Smith, 1908).

Apart from timber the most bulky of the building materials used by the guild was stone. For this there was a steady, though by no means great, demand. This could be met quite adequately from local quarries. Had demand exceeded supply stone could have been brought from the Cotswolds, which lie at no great distance from Stratford. But there is no evidence that this was ever done. The local quarries were at Drayton, Grafton, Rowington, Warwick, Guy's Cliffe, and Halford. Supplies were mostly brought from the first two, which were the nearest, while Halford and Guy's Cliffe are mentioned but once. Production must have been quite small, for the only time that supplies were taken from all the quarries simultaneously was in the middle years of the fifteenth century when the chancel of the guild chapel was being rebuilt, and even for that the demand cannot have been particularly great.

For the first half of the fifteenth century entries recording the purchase of stone are numerous enough for us to make a few observations about the cost. The quarries involved are mainly those at Drayton and Grafton. It appears that at this time the price of stone bought at these quarries was rising. In the early years of the fifteenth century the cost of stone at both quarries was 3*d.* per cartload, with 4*d.* for carriage to Stratford. By 1427-8 the price had risen to 4*d.* per cartload, with 5*d.* for carriage. This may well reflect increased labour costs at the quarries, for it will be remembered that this period was one marked by wage increases. The cost of labour constituted much the greater part of the cost involved in winning stone. By the middle of the century costs may again have risen slightly, but not significantly. Although much stone was bought in these years for the chapel, the payments are mostly entered in the accounts as lump sums, and it is impossible to work out the cost per cartload. During the second half of the century entries are too few and ill recorded to allow of any observation on price movements.

In general the stone used at Stratford was remarkably cheap. This is partly because Drayton and Grafton stone was mostly rough-stone, suitable only for making ground-sills, or to be used as rubble to fill the interiors of walls faced with ashlar. But this is not the entire explanation. The stone used for the chapel must have been at least average quality building stone, and indeed is clearly described as free-stone. Some of this was bought at Warwick. The cost was 7*d.* per cartload,

with 1s. paid for carriage to Stratford. With a carriage cost of $1\frac{1}{2}d.$ per mile, the cartload must have weighed at least half a ton. This puts the maximum price at 1s. 2d. per ton, which may be compared with prices ranging from 3s. 4d. to 5s. 4d. per ton, which were paid for freestone at Oxford at this time.¹ Best quality Caen stone cost anything up to 7s. per ton.

Rowington stone seems to have been rather more expensive than that bought at Warwick. We have no examples of prices paid per cartload at Rowington, but this much can be established from a comparison of carriage costs. The Rowington and Warwick quarries lie at an equal distance from Stratford, and the actual carriage costs were much the same. Yet in the case of Rowington stone carriage accounted for a much smaller proportion of the total cost than it did in the case of Warwick stone, 47 per cent. against 63 per cent. This can only be explained by the fact that weight for weight Rowington stone had the greater value. Drayton and Grafton produced the least valuable of the local stones.

Another product of the local quarries was stone slates, used extensively in the Middle Ages as a roof covering. They were made by splitting fissile limestone, and were manufactured in the quarries where the stone was dug. Only Grafton is named in the guild accounts as the source of supply of slates, and the majority seem to have come from there. It is possible that these quarries specialized in producing slates, as they supplied much less building stone than did those of Drayton. The Warwick and Rowington quarries, being sandstone, would not have been able to supply slates.

It is difficult to draw up a price index for slates, as during the first half of the fifteenth century all purchases were made by the thousand, and during the second half of the century all by the cartload. Calculations lead us to suppose that a cartload consisted of approximately 500 slates. If this was the case, then there was very little variation in the price of slates throughout the century. During the early period the price fluctuated between 4s. 4d. and 5s. per thousand, and later between 2s. 4d. and 2s. 6d. per cartload.

Another roof material bought in large numbers was tiles. Supplies were drawn from a very wide area. King's Norton, Solihull, Packwood, Baddesley Clinton, Balsall, and Warwick all provided their quota. It

¹ Thorold Rogers, *History of Agriculture and Prices*, vol. iv, p. 448.

is not apparent whether or not there was any manufacture of tiles in Stratford itself. Even if there was it can only have been on a small scale. All large purchases were made at one or other of the previously named centres. In 1468-9 for instance, 20,000 tiles were bought from Thomas Peny of Baddesley Clinton.

Tiles were a commodity which fell in price during the course of the fifteenth century. In 1406-8 tiles bought at Packwood cost 7*s.* 0½*d.* per thousand with 2*s.* 7½*d.* for carriage. In 1427-8 tiles could be bought at Warwick for 7*s.* 2*d.* and 7*s.* 4*d.* per thousand, including the cost of carriage. Thereafter until 1463-4 prices ranged between 6*s.* 8*d.* and 8*s.*, with the majority at 7*s.* or above. Only once were they cheaper. In 1453-4 1,000 were bought for 5*s.* 2*d.*

After 1463-4 prices appear to have been stabilized at 6*s.* 8*d.* per thousand. In 1468-9 the price was further reduced to 6*s.* per thousand, including carriage even from places as far away as Solihull, Baddesley Clinton, and Balsall. For the rest of the century there was little change, although sometimes the price fell below even 6*s.* In 1488-9 500 were bought for 2*s.* 2*d.* and another 500 for 2*s.* 6*d.*, in 1490-1 1,000 for 5*s.* 8*d.*, and in 1501-2 1,000 for 5*s.* 6*d.*

Lime was another building material which fell in price during the fifteenth century. At the beginning of the century the price was well above 1*s.* per quarter. In 1394-5 it stood at 1*s.* 2*d.*, in 1397-8 at 1*s.* 3*d.*, in 1412-13 at 1*s.* and 1*s.* 4*d.* The year 1427-8 was one of very heavy buying, all purchases being made at 1*s.* 2*d.* per quarter. From 1436-7 to the middle of the century the usual price was 1*s.* During the second half of the century the price fluctuated between 8*d.* and 11*d.*, the average being about 10*d.*

The majority of purchases of lime were made at Wootton Wawen and Balsall, with one mention of Littleton near Evesham. At a later date, the limestone quarries at Wilmecote were of some importance for the production of lime and cement, but there is no evidence that they were being exploited during our period. It is possible, however, that Wilmecote limestone was the raw material used to produce lime at Wootton Wawen. Abundant supplies of fuel were needed to burn lime, and as Wootton Wawen lay within the boundaries of Arden it would have been cheaper to carry limestone there than to carry timber to the quarries.

A building material referred to comparatively infrequently in the

accounts, but worthy of mention, is plaster of Paris. This was produced by burning gypsum, which occurs in shallow seams at various points in Warwickshire. The only centres of production mentioned in the accounts are Spernall and Welcombe. Prices ranged from 2*s.* 4*d.* to 6*s.* per cartload.

Lead was yet another common building material which seems to have fallen in price during the fifteenth century, though admittedly this conclusion is based on comparatively few figures. In 1393-4 lead cost 1*s.* 4*d.* per stone. In 1406-8 it was bought at 1*s.* 1*d.* per stone. During the second half of the century, when examples are rather more numerous, no purchase cost more than 10*d.* per stone, that indeed being the usual price.

These were the chief building materials used in Stratford during the fifteenth century. Lack of time has prevented us from mentioning the others, which do not lend themselves to general discussion and which would have to be treated in too much detail.

We are unable, after this examination of the evidence, to be as concise in our conclusions as we were after our review of the question of wages. Then we could assert without hesitation that wages had risen considerably during the period covered by the accounts. There is nothing to suggest a similar general rise in the cost of building materials. Indeed, as we have seen, the cost of some items actually fell, namely tiles, lime, and lead. Only one item clearly rose in price, that was building stone. Most other articles changed very little in price. It is unfortunate, however, that we should have so little evidence about the price of timber, which was by far the most important building material.

One general test which we might apply to check whether the costs of building materials as a whole were rising is to compare them with the total costs of building, i.e. to determine whether they constituted a greater or lesser proportion of the total cost.

However, before we do this we must consider briefly the third of the chief items of expense involved in medieval building. This was the cost of carriage. This was inevitably very high, and when heavy goods had to be brought any distance the carriage costs soon exceeded the price originally paid for the materials.

The guild was fortunate in that its demands could be satisfied by centres of production lying within the county or just over the border

in Worcestershire. There is no record of any building material being bought at more than 20 miles distance from Stratford. The guild had no building which called for best-quality stone brought from half-way across England or from beyond the sea. There is nothing to show that Stratford builders had ever heard of Baltic timber, which was then being imported in increasing quantities. Yet despite this carriage costs were by no means negligible.

The greatest costs were incurred by the carriage of heavy materials such as stone and timber. Drayton and Grafton lie only three miles and five miles respectively from Stratford. Despite this carriage costs exceeded the price paid for the stone at the quarries. As we have already seen, stone which cost only 4*d.* per cartload incurred carriage costs of 5*d.* Carriage thus accounted for 55 per cent. of the total cost of the stone. When it had to be brought greater distances the proportionate cost was even higher. In 1451-2 the cost of carrying stone from Warwick amounted to 1½*d.* per cartload per mile, and constituted 63 per cent. of the total cost of the stone. The cost of carrying one cartload of stone from Rowington that year was 1*s.* 2*d.*, or 1¾*d.* per mile.

It is not possible to work out precisely the proportionate cost involved in the carriage of timber, but it is clear that it must have been high. In 1469-70 the cost of bringing timber the eight miles from Ullenhall to Stratford worked out at 1¾*d.* per cartload per mile. A total of £1. 15*s.* 8*d.* was paid for the carriage of timber. In 1450-1 the carriage of a single piece of timber from Astwood near Redditch cost 1*s.* 9*d.*

In the case of manufactured and semi-manufactured articles, such as tiles, slates, and lime, which had weight for weight a much greater value than raw materials, such as stone and timber, the cost of carriage assumed a smaller proportion of the total cost. The carriage of slates rarely amounted to 33 per cent. of the total cost, while normally it was only about 25 per cent. of the total. Only once is the cost of carriage of tiles entered separately from the price paid for them. On this occasion carriage accounted for 27 per cent. of the total cost. But, although proportionately smaller, carriage costs still added considerably to the price of the materials. In 1406-8, when 10*s.* was paid for tiles at Packwood, 3*s.* 8*d.* had to be paid for carriage to Stratford.

After such a consideration of the evidence we should normally

expect to be able to pronounce on the question of whether total building costs were rising, and of whether there was any change in the proportionate part played by each of the component elements of expense. However, before we can safely decide on this question two conditions must be satisfied. Firstly we must be able to compare the accounts for the construction at different periods of complete buildings, that is new building as opposed to repair work. The accounts for repairs are not in themselves satisfactory, for one instance may call for a great deal of labour and comparatively little new material, while another may demand a complete replacement of the fabric, in which case the cost of labour will be proportionately much less. Secondly, we must be certain that the accounts for new building are complete, and that no items of expense are missing.

Unfortunately, these two conditions are rarely fulfilled in the Stratford accounts. The great majority of entries are concerned with the upkeep and repair of existing properties rather than with the building of new houses. Some new building was undoubtedly taking place, but we do not have a complete record of it. One difficulty is caused by the fact that building was then a much slower operation than it is today. The rebuilding of the 'Angel'¹ took at least six years. Consequently, the expenses were often spread over the accounts of several years, and if some of them have failed to survive then the record is incomplete. Moreover, even in those instances where it appears at first sight that we have a complete record of all the expenses involved in one particular building, closer examination will often reveal that one or more essential items of expense are missing. It may be, for instance, that the thatcher or tiler was paid wages for his work on the roof, but that the account makes no allowance for the tiles or the straw which he must have used.

However, glossing over these deficiencies, we must make some reference to our more complete accounts. Though even these are not fully comprehensive, they will give some idea of building costs.

In the account for 1411-17 we have the record of the building of a new grange in Dead Lane. The total cost is given as £7. 8s. 4d., of which £3. 10s. 5d. was spent on the purchase of materials, and £3. 17s. 11d. on the payment of wages. The same account records the building of three almshouses. The total cost was £5. 9s. 9½d., of which

¹ A tavern in Henley Street.

£3. 9s. 8½*d.* was accounted for by materials, and £2. 0s. 1*d.* by wages. The year 1427-8 was one of intensive building activity. The account for that year contains, amongst other things, a record of the building of a school-house, one of the better documented projects.¹ The total cost was £10. 5s. 6½*d.* Of this £6. 6s. 5*d.* was spent on materials and £3. 19s. 1½*d.* on wages. Finally in 1488-9 we find the building of a great barn of six bays on the Bancroft. The recorded cost is given as £22. 2s. 5*d.*, though this can by no means have been the total expense involved. The cost was divided as between £16. 9s. 11½*d.* on materials and £5. 12s. 5½*d.* on wages.

It will be observed that in these four examples the proportion of labour costs to costs of materials is 53:47, 37:63, 38:62, 26:74, in that order. This evidence seems to contradict the conclusion which might be drawn from our earlier study of wages and prices. These examples suggest that the proportion of the total cost assumed by the wages bill was lower in the later years than in the earlier ones. Previously, it will be remembered, we decided that although wages had risen considerably there was no evidence to suggest that the prices of building materials had risen in the same degree. The only way, however, in which we could reconcile the facts that labour costs were rising and that at the same time the proportion which they bore to total costs was falling, would be to assume that although wages were rising the prices of building materials were rising in even greater proportion. We are not justified in making this assumption. We have seen that wages rose by some 50 per cent. If prices had risen as much as this, or even more, the change would surely have been noticeable in the actual entries contained in the accounts.

However, we must not despair at this seeming paradox. We have only the evidence of these four examples to suggest that the costs of building materials were increasing at a greater rate than wages. We should need considerably more than four examples to be convinced of this. Moreover the relation of wages to costs of materials will vary from building to building. In a large building the proportionate part of the total cost accounted for by the materials will be greater than in a small one. If a large house demanded five or six times the materials incorporated in a mere cottage, the cost of the labour involved might

¹ See Levi Fox, 'Some New Sidelights on Stratford-upon-Avon's Medieval Guild Buildings' in *Transactions of the Birmingham Archaeological Society*, vol. lxx (1952), pp. 48-59.

be only three or four times as great. This fact explains to a certain extent the changing proportions observable in our four examples. The buildings in question grew progressively bigger and more expensive, and so are not ideally suited to be compared with one another.

Although mistrustful of the evidence presented by these four fairly complete accounts, it is only the changing proportions of labour costs and material costs which we challenge. We do not deny that the total cost of building was rising. Indeed it is very likely that this was so. Wages rose considerably and although, as we have seen, the prices of some materials fell, these were not the most important materials used in building. The saving would at best have offset possible rises in other directions, and might not even have done this. The building material most likely to have risen in price was timber, about which we have little evidence. Timber, however, was the most expensive single item involved in building. In the case of the barn built on the Bancroft, timber accounted for £8. 11s. of the total of £16. 9s. 11½d. spent on materials. If timber prices rose, then the reductions in other directions are unlikely to have been enough to offset them.

We are on fairly safe ground in asserting that actual building costs were rising steadily throughout the period under review. The incompleteness of the accounts, however, makes it impossible to work out the precise rate of increase. This is not to belittle the Stratford records. They remain a very valuable piece of evidence for the condition of the provincial building industry in the fifteenth century. The limited view that has had to be adopted for the purpose of this paper has not allowed us to do them justice.