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***THE PAY OF LABOURERS AND UNSKILLED
MEN ON LONDON BUILDING SITES, 1660
– 1770.***

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Abstract: *This paper presents evidence of pay to workers at the lower end of the building trades in long eighteenth century London. Traditionally, the pay of labourers has been recorded as a proxy for unskilled workers. In fact, the labourers whose charge-out rates have been recorded were mostly semi-skilled. There were many who earned far less than 'labourers' by day rate or by other means. Using the records of large London construction projects over the long term I propose a new taxonomy, and provide a new working wage series for both semi-skilled labourers and unskilled men for London for the eighteenth century.*

Introduction

The pay of unskilled workers is an important measure for economic historians. The 'unskilled' wage is used to calculate living standards, skill premiums, and trends in real wages, and has been since Henry Phelps Brown and Shelia Hopkins constructed the first long run series of building wages for 'craftsmen', or, qualified practicing bricklayers, carpenters, masons etc., and their presumed unskilled, 'labour'.¹ The sources for this and all subsequent urban labourers series in England have been based on a surprisingly small number of archival sources. As Boulton pointed out in 1996 the Phelps Brown Hopkins' labourers wage series in for the seventeenth century rests on three observations per annum.² There is, moreover, a remarkable homogeneity to the eighteenth century London sources; mostly they come from institutional accounts of large architect-designed, stone built, legacy projects, which utilized some of the most advanced firms and craftsmen of the day. The wage data come from bills for 'day work', which was just one type of construction contract.³

These are the sources for wages data that comprise urban wage series for the period 1600 – 1800 used by Allen, Clark, Broadberry et al, Van Zanden and others.⁴ The series

¹ E. H. Phelps Brown and Sheila V. Hopkins, "Seven Centuries of Building Wages," *Economica* 22, no. 87 (1955).

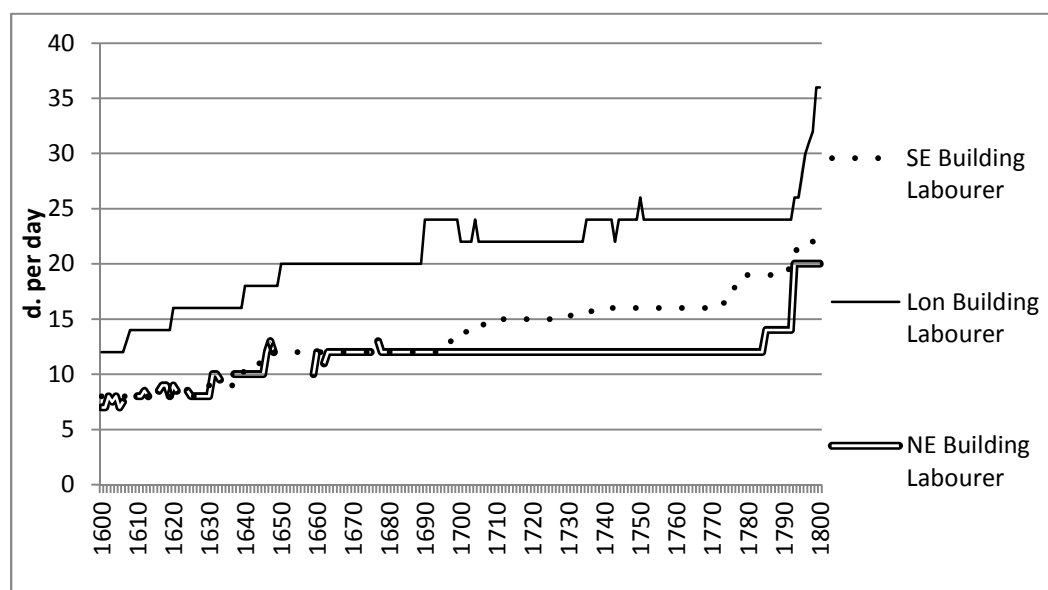
² Jeremy Boulton, "Wage Labour in Seventeenth-Century London," *Economic History Review* 49, no. 2 (1996).p.268. The data come from Westminster Abbey, Oxford and Cambridge Colleges, and Middle and Inner Temple, Middlesex and Kent Sessions papers. For the years before 1600 Rappaport used bricklayers, tilers and plasterers data from company records. Boulton used bricklayers and carpenters bills from Middle Temple, and major London Companies for the years to 1721. After 1721 the series relies on Greenwich Hospital and some Sessions records.

³ See James W.P. Campbell, "The Finances of the Carpenter in England 1660-1710: A Case Study on the Implications of the Change from Craft to Designer-Based Construction," in *L'edilizia Prima Della Rivoluzione Industriale. Secc.Xiii-Xviii*, ed. Simonetta Cavaciocchi (Prato: Istituto Internazionale di Storia Economica, 2005). pp.322 – 32, for a description of the role of day work, Douglas Knoop and G. Jones, *The London Mason in the Seventeenth Century ... , Issued in Advance of "Ars Quatuor Coronatorum," Vol. XLviii, Part I.* (Manchester University Press: London : Quatuor Coronati 1935).for the role of contractors. The sources for the series produced by Schwarz in 1985 which gave the rates found in bills of the Middlesex Sessions, presumably for maintenance work are the least known. This listed carpenters, bricklayers and their labourer's rates. The archive has been reordered since the mid 1980s and it is not possible to see what kinds of work the bills Schwarz used pertained to.³

⁴ Robert Allen, *The British Industrial Revolution in Global Perspective, New Approaches to Economic and Social History* (Cambridge ; New York: Cambridge University Press, 2009), R. C. Allen, "The Great Divergence in European Wages and Prices from the Middle Ages to the First World War," *Explorations in Economic History* 38, no. 4 (2001), R.C. Allen, "Prices and Wages in London & Southern England, 1259-1914," in *Consumer price indices, nominal/real wages and welfare ratios of building craftsmen and labourers, 1260-1913* (International Institute of Social History, 2013), Gregory Clark, "The Condition of the Working Class in England, 1209–2004," *Journal of Political Economy* 113, no. 6 (2005), G Clark, "'England, Prices and Wages since 13th Century", , " *Global Price and Income History Group, University of California, Davis, (2006)*, Stephen Broadberry et al., *British Economic Growth 1270 -1870* (Cambridge University Press, 2015), S. Broadberry and B. Gupta, "The

show increasing nominal wages for southern urban workers throughout the 1600s to about 1710, followed by a period of stagnation of rates until the 1740s, and a dramatic rise after 1790 (Figure 1). The story for building labourers in Northern England shows wage rises in the early 1600s that mirror those on London; from 6d. a day through 12d. but a stagnation in nominal pay at this rate from the 1640s until the late 1790s. The average, or median rate used in series by Allen for London is 12d. per day in 1600, rising steadily throughout the seventeenth century to 20d. by the 1670s, peaking at 24d. per day in the 1690s with a drop to 22d. through the early decades of the eighteenth century. After 1736 the rates rose to 2s. or 24d. per day again, and were largely sustained there, until dramatic rises in the price inflation at the end of the eighteenth century. However, from 1660 onwards the existing series are misleading in a two vital aspects. They all accept the skill of 'building labourers' as homogenous in the long run, interpreting labourers as 'unskilled'.⁵ Furthermore they all accept that the 'day rate' was equal to a day's income.⁶

Figure 1. Labourers pay in d. per day: Existing wage series



Early Modern Great Divergence: Wages, Prices and Economic Development in Europe and Asia, 1500-1800," *Economic History Review* 59, no. 1 (2006), Jan L. Van Zanden, "Wages and the Standard of Living in Europe, 1500-1800," *European Review of Economic History* 3, no. 02 (1999), Jan L. Van Zanden, "The Skill Premium and the Great Divergence," *European Review of Economic History* 13, no. 1 (2009).

⁵ Allen, *The British Industrial Revolution in Global Perspective*. pp.39-45, Van Zanden, "The Skill Premium and the Great Divergence." pp.122, 128

⁶ For a full explanation of a day rate see Campbell, "The Finances of the Carpenter in England 1660-1710: A Case Study on the Implications of the Change from Craft to Designer-Based Construction."

(Source, (Allen 2013) compiled from sources discussed in text.)⁷

Many discussions of skill levels and pay differentials are given in the texts of the sources referred to, none conclusive however, and not all sources utilize the same nomenclature, or criteria for judging skill. Rappaport was explicit that he had recorded a *semi-skilled* series for the sixteenth century. "It would be incorrect to infer that semi-skilled and unskilled workers were paid the same wage. Doubtless some of these men were labourers who carted bricks and performed other, strictly menial tasks, but most servants and assistants were probably journeymen".⁸ Craftsmen's labourers were, according to him, training for craft, or had considerable experience which assisted craft's productivity.⁹ Boulton also considered the skill issue, but referred to labourers in the building trades as *unskilled* whilst noting that some labourers described themselves as porters, craftsmen and others.¹⁰ However, his notes make plain that most of those his data were collected from those who would have been assisting craft, like Rappaport's men. By excluding work descriptions such as "boys, lads, and servants", and restricting his series to those assisting craft he probably excluded the truly unskilled.¹¹ Boulton presented his data plotted so the variation in rates recorded could be observed; yet, the series he presented was determined by the modal rate for each year, and it is these modal rates that went into Allen's series.¹² For instance, the range of rates from 1655 to 1690 for 'labourers' was 16d. to 36d. but the modal rate recorded was 20d. After 1690 the mode was 24d. where the range was 20d. to 36d. Given such a range of rates the question arises whether this range of pay applied to a group homogenous in skill, or whether our nomenclature of 'labourers' actually has resulted in a confusion of skill levels.

⁷ Brown and Hopkins, "Seven Centuries of Building Wages.", Boulton, "Wage Labour in Seventeenth-Century London.", Donald Woodward, *Men at Work : Labourers and Building Craftsmen in the Towns of Northern England, 1450-1750* (Cambridge University Press, 1995).

⁸ Steve Lee Rappaport, *Worlds within Worlds : The Structures of Life in Sixteenth-Century London, Cambridge Studies in Population, Economy, and Society in Past Time* (Cambridge: Cambridge University Press, 1988).pp.128-9

⁹ Ibid.

¹⁰ Boulton, "Wage Labour in Seventeenth-Century London."p.269

¹¹ Ibid.p.275 and n.11.

¹² Ibid. pp.277, 278 for charts showing spread of rates.

Generally the categorization of 'labourer' has not been questioned or investigated by those who use the wage data, but those who have used the data to create real wage series have assumed labourers to be *unskilled*. Allen used the London building labourers series of Boulton, Schwarz and Gilboy to argue that unskilled workers in London could afford a basket of goods providing a 'respectability' standard of living, and to refute the impression and accounts of previous historians of poor living standard and subsistence wages of early modern English workers.¹³ Jan Luiten Van Zanden has used the same data to construct a skill premium index for Europe, to show that institutions in London were more effective at encouraging human capital formation and skill acquisition, and that this contributed to the early development of modern economic growth.¹⁴ Van Zanden did acknowledge that the skill level of those assisting craft was indeterminate, and cautioned that those labelled labourers may have had some skill, but the model developed utilizing the data assumed them unskilled.¹⁵

Previous author's hesitancy to further define labourers' skill is understandable given the sources. Most building work was not managed directly by institutions themselves, but contracted to large firms. The types of contract were multifarious but can be broadly divided into three types. Task work contracts assigned specific tasks for a fixed price which the contractor billed after the event with no detail of labour costs. Measured work contracts set a price for units of specialist production, and built in a process for managing quality. Only in Day work would a contractor have to charge out men for day rates, which can subsequently be found in accounts, and day work tended to be a small part of general contracts.¹⁶ The men who were employed by such contractors for labouring or lesser skilled work were usually not listed in accounts.

For instance, at the large refurbishment of Westminster Abbey from 1712 'day work' contracts were only 12% of the total by value, and most of it for carpenters.¹⁷

Carpenters tended to have more day work than other contractors on large sites, since

¹³ Allen, *The British Industrial Revolution in Global Perspective*. pp.44 – 45. See also R. Allen and J. L Weisdorf, "Was There an Industrious Revolution before the Industrial Revolution? An Empirical Exercise for England, C. 1300-1830 " *Economic History Review* 64, no. no. 3 (2011).

¹⁴ Van Zanden, "The Skill Premium and the Great Divergence.", pp.122 -3

¹⁵ Ibid. pp.121, 122, 123, 125, 128, 129, p.128 for query regarding skill.

¹⁶ Campbell, "The Finances of the Carpenter in England 1660-1710: A Case Study on the Implications of the Change from Craft to Designer-Based Construction."

¹⁷ Analysis of bills at Westminster Abbey Muniments 34517

they provided centering and scaffolding other's safety depended on corners not being cut.¹⁸ The bills for the carter, for instance, contains no labour costs, but rather the amounts are specified by load and weight. The carter's labour costs were built into these rates. Similarly, Office of King's Works accounts for the 1660s list days worked for some trades but only piece rates for others. There are labourers listed assisting masons bricklayers and carpenters by the day, but the rates or pay given for those on task bills are not listed. "To Richard Hass carpenter for timber, boards and nails and workmanship at Robert Murrays Lodgings, £8, 2s, 11d." reads one bill with no details of days paid to men to do the work, nor does Mr. Hass's name appear in the day bills.¹⁹ Similarly "To Rich. Smith for 30 loads of sand and 2s a load and for his carriage of rubbish from Whitehall to St. James' Park £4", does not detail the labour costs of the men who hauled the sand off the carts, and the rubbish on and away, nor again does Mr. Smith's name appear in the day bills.²⁰

As responsibility for hiring and managing labour did not lie with the institutions but with the men and women they contracted with as suppliers, records of actual pay, rather than just the charged out day rates, will only be found in building contractors own records. Unskilled men were not likely to be charged out as specialists, their work was more likely to be part of the overhead or operating costs of a large project. By way of example, the records of Andrews Jelfe for 1734 – 5 show many piece rate payments to porters and casual labour in his bi-weekly cash accounts, but the copies and drafts of bills alongside only detail skilled men, and measured work.²¹ The work detailed in such piece or task bills would have involved the work of labouring men, but what they were paid cannot be known.

It is relevant to note that in the Northern England Woodward found that the market for labourers consisted of 'three main categories'; those who 'assisted craftsmen', porters or those 'doing a single task', and a 'majority, working in gangs', who did many types of

¹⁸ Centering refers to the timber frame that supported vaulting of arches for stone or brickwork during its' construction. Scaffolding was a wholly timber affair in the eighteenth century, in large new building the carpenters ability to scaffold the heights determined the span and height of arches and vaults.

¹⁹ TNA Work 5/ 1 p.179

²⁰ TNA Work 5/ 1 p.175 –bills such as this can be viewed from p.173 to end of book.

²¹ BL MS25787

work.²² In Hull most of it was from labourers and porters employed to handle and transport goods at the quayside.²³ The great majority of Woodward's text and data comes from labourers not employed in the building trades at all. Woodward's work suggests not only a hierarchy and range of skill, but a number of markets in which those skills were sold, markets which valued skill, or working knowledge, and strength, or biological capital, in multifarious ways. Woodward himself concluded that the market for general labourers was separate to that for building craftsmen, and that labour worked in mobile gangs to take up work in region as a whole.²⁴ He noted that differentials among pay for labourers were present, but that those assisting craftsmen earned much more than those not. Examples given showed a 20 - 100% premium for working alongside craft.²⁵

Trying to determine whether labourers were 'unskilled' or semi skilled, however, obscures a key determinant of their pay. Labourers provided strength, or biological capital. They hauled stuff around, moved dangerous loads, and dug hard foundations for long hours. There is plenty of evidence that this commanded some kind of premium. For instance, again at Whitehall in the 1660s, labourers were in the accounts at 16d. a day in day work to assist craftsmen, but mazerscowers, a job description not observed generally after 1700 were charged at 24d. per man for clearing a site, carrying large loads, digging channels for the plumbers, lifting lead, beating down of lofts and platforms, and carriage of joists and deals.²⁶ The mazerscowers rate is equivalent to carpenters and joiner's rates found alongside.²⁷ In accounts from the Civil List for 1712 mazerscowers premium had narrowed slightly. They were charged out at 20d to 24d. per day, and labourers alongside 20d.²⁸ In other accounts however there is a clear association of labourers with paviours who, similar to some of the mazerscowers dug

²² Woodward, *Men at Work : Labourers and Building Craftsmen in the Towns of Northern England, 1450-1750*.p.94

²³ Ibid.p.95

²⁴ Ibid.p.100

²⁵ Ibid.p.108

²⁶ TNA Work 5/ 1 p.171

²⁷ Ibid. Whitehall accounts.pp.145-175

²⁸ These amounts were paid to the Clerk of Works, so the day rates are charge out rates. William A Shaw, "'Declared Accounts: Civil List,' in Calendar of Treasury Books, Volume 26, 1712,," (London: Her Majesty's Stationery Office, 1954). 31 December 1711 to 31 December 1712.accessed online at <http://www.british-history.ac.uk/cal-treasury-books/vol26/ccvii-cclvii>

channels, hauled stones, and laid them.²⁹ In the 1660s pay for paviours in the Whitehall account ranged from one man at 28d. to another 7 men paid between 18d. and 24d. a day, between the charge out rates of mazerscowrers and labourers.

Burnette has dealt with the issue of biological capital or strength in the most depth recently. As she has pointed out strength, that of lifting objects, exerting force, in a sustained fashion was a 'scarce factor of production'.³⁰ It commanded a significant premium on early modern and pre industrial labour markets.³¹ Burnette gives an example of strength commanding threefold premium; as the examples given above here indicate this is probably not representative of the market as a whole.³² Nevertheless, Burnette shows that strength commanded a higher wage in manual labour because it yielded higher productivity – more loads moved, or a greater weight lifted in a given time. This makes sense for an era where the piece rate and the day rate were used side by side

Burnette's assertion is important because as she points out the higher rate for strength has been sometimes interpreted as an efficiency wage.³³ The most prominent analyses or theories of wage determinants in the early modern period have been based on factor prices, human capital theory, technological development or ideas of 'custom'.³⁴ Van Zanden speculated that the wage level of urban labourers was related to the agricultural unskilled wage and agricultural productivity, an assertion that has groundings in theoretical frameworks of Arthur Lewis.³⁵ These contrast with theories advanced by

²⁹ For instance, throughout the 1770s and 80s William Meredith submitted bills for labourers and paviours to the Office of King's Works. See TNA Work 5/66-87

³⁰ Joyce Burnette, *Gender, Work and Wages in Industrial Revolution Britain, Cambridge Studies in Economic History* (Cambridge ; New York: Cambridge University Press, 2008).p.106

³¹ *Ibid.* pp.110-111

³² *Ibid.* pp.112

³³ *Ibid.* p.113 quoting Robert C. Allen, *Enclosure and the Yeoman* (Oxford: Clarendon Press, 1992). p.300

³⁴ By way of examples, for factor prices Allen, "The Great Divergence in European Wages and Prices from the Middle Ages to the First World War.", for human capital theory Van Zanden, "The Skill Premium and the Great Divergence.", technological development in Claudia Goldin, "The Origins of Technology-Skill Complementarity" *Quarterly Journal of Economics* 113, no. 3 (1998). For a description view of custom within the debate see Leonard Schwarz, "Custom, Wages and Workload in England During Industrialization," *Past and Present* 197 (2007).

³⁵ Van Zanden, "The Skill Premium and the Great Divergence."p.143, W. Arthur Lewis, "Economic Development with Unlimited Supplies of Labour," *Manchester School* 22, no. 2 (1954).

other economists for the higher wages in the city.³⁶ Whilst ideas of custom are not currently advanced by many there is some new research that uses proxies for human capital or skill advancement to explore development through earnings.³⁷ Since we cannot fully determine the level of strength or the level of skill in the pay records and descriptions of early modern London building sites we can only speculate on whether skill and working knowledge, or biological capital determined the wage. What will be clear from the data presented in this paper however, is that the men who have previously been recorded as labourers, and their 'wages' or day rates, commanded a significant premium to others in the labour market. Some of this was probably for strength or biological capital. Labourers on London building provided a considerable amount of the energy and haulage used, and so those who were hired by the contractors would have been strong, nimble, able to carry large loads repeatedly at speed, and possibly at height, and reliable enough to trust with large quantities of expensive materials.

Using new data gathered from London building sites, this paper shows that the labourers recorded in institutional accounts, and thus existing series, were those assisting craftsmen, or carrying out the kind of work significant enough to command day rates, which was *semi-skilled*. The pay of *unskilled* men was significantly lower.³⁸ Thus, the London series presented by Allen and others is, as Rappaports', one of the pay of *semi skilled* men on London sites. The next sections will present new data from four large, important, and relatively representative construction sites in London to show the different types of labouring work that was common, and to inform a new categorization of labourers' skill in the building trades in London in the early modern period. The next sections present data from St Paul's Cathedral, London Bridge, and Westminster Bridge before compiling a series and with methodological appendix.

³⁶ Jeffrey G. Williamson, *Coping with City Growth During the British Industrial Revolution* (Cambridge: Cambridge : Cambridge University Press, 1990).

³⁷ Moshe Justman and Karine Beek, "Market Forces Shaping Human Capital in Eighteenth-Century London," *Economic History Review* 68, no. 4 (2015).

³⁸ Boulton, "Wage Labour in Seventeenth-Century London." Boulton himself highlighted the problem of identifying diversity of skill.p.274

Labourers at St. Paul's Cathedral, 1675 – 1711

The rebuilding of St. Paul's cathedral after the Great Fire of London was the largest and most prestigious project of the late seventeenth century, and there are voluminous records of contracts and payments. Workers on site were employed under various contractual arrangements, the two most predominant of concern to us here. Large specialized and general contractors who managed work on both day rate contracts, and measured or piece work brought both craftsmen and labourers on site.³⁹ The cathedral paid the contractors flat rates for 'day work' in the category of craftsman and labourer, and contractors actually paid their men at varying rates under this, allowing themselves margin for operating and profit. Payments for measured or task work also covered labour costs but these were not specified, rather they were built in to the piece rates.

St Paul's was also one of the last big city institutions to hire labourers directly. Their own labourers, hired and paid by the clerk of the works, were paid day rates throughout the period of rebuilding 1675 to 1711, during which time neither middle temple or Westminster Abbey hired men directly. So, labourers working at St. Paul's were in at least two groups; general building labourers paid by the cathedral, and those assisting craft, in specialist teams, hired and paid by large contractors. What was the difference in what they were doing?

The Cathedral's labourers were hired for both their experience of large building sites and their physical strength. Their role was demolition, hauling goods around the sites, carrying and digging. The Cathedral's account records that men assisting the demolition team in 1675 were paid 16d. per day, and 16d. per day was the predominant rate under the category of labourers in their account throughout. In October 1675 22 men were paid 16d. per day for making mortar, screening and sifting fine rubbish (for reuse), in wheeling drudging and carrying stones, pumping and carrying water, and tallying. 'keeping the dores'(sic). The foremen were paid the substantial rate of 30d. per day, indicating a management premium of 1:1.8785. There were more than twenty men managed by each foreman. This type of team is found in varying numbers throughout the entire accounts. For instance, in October 1708 138 men were paid 16d. per day each

³⁹ For an explanation of day work and measured work see Campbell, "The Finances of the Carpenter in England 1660-1710: A Case Study on the Implications of the Change from Craft to Designer-Based Construction."

and two foremen 24d. each 'digging the vaults under the steps'.⁴⁰ In November 1708, similarly there were 137 men and two foremen, and in December the two foremen were managing 135 men. For other work St. Paul's labourers were paid 18d. per day. Where names are recorded in the St. Paul's accounts (as they are until 1680) it is apparent from the lists that these men were regularly working at St. Paul's.

The rare day books of one of the mason contractors, William Kempster, show what he paid his labourers assisting craft.⁴¹ Kempster's work was of a highly specialist and skilled nature; he was building the south west tower and the geometric staircase. His books show numbers between eight sixty men on site 1700 to 1708. There are varying numbers of both masons and labourers in Kempster's team at different times. In October to December 1700 a team of approximately 25 men was made up of roughly half masons and half labourers.⁴² In February and March 1701 there were only three labourers and five masons. In later periods the team composition changed frequently. For instance in November 1706 there were fifty five men recorded as on site by Kempster, approximately half labourers, but August 1708 twenty three masons or craftsmen and only five labourers. A number of Kempster's labourers are observed in all years. Charles Thurland and James Parlour are observed in Kempster's day books in all years where there are records, at 18d. working more than 5 days a week habitually. One of the labourers, James Williams was paid 20d. per day, and he seems to have been some kind of foreman. There were instances of 16d. a day paid to men, but mostly Kempster's labourers were paid 18d. a day. The other crafts contractors also had their own labouring teams. In a dispute with the chief carpenter in 1710 the commissioners found that some of the carpenter's men, who were charged to the Cathedral at 18d. a day, were 'not worth 12d.'

Both groups at the Cathedral, those employed by Kempster and those directly employed, were carrying out work that required knowledge of building work, materials and sites, and various technological procedures, mixing mortar for instance and Kempster's men had the technical ability to carry out or assist complex masonry tasks

⁴⁰ Wren Society, Volume XV, p128.

⁴¹ TNA C106/145

⁴² TNA C106/145. The team composition varied day by day.

including engineered weight bearing structures of an experimental kind, and highly aesthetic carving. The church labourers on the other hand did not carry out the complex masonry tasks but had some sort of supervision or security responsibility, they kept tally of goods and materials and watched the doors.

There were also *non labourers*, or unskilled men paid low rates on site, and they give us an indication of the relative value of skill or biological capital of the general labourers, and those assisting craft. In 1722 the cathedral paid three 'disabled' men day rates for day work, at 9d. 8d. and 15d. where the rest in the team were paid 16d.⁴³ Watchmen at St. Paul's who had no such building knowledge or skills were paid 8d. to 12d. per night, (mostly 12d.) for twelve hours on site. Other unskilled 'men' listed as adjunct to labourers were paid 12d. per day.⁴⁴ Taking into accounts these pay rates the evidence at St. Pauls overall indicates that semi-skilled men, e.g. those assisting craftsmen, were paid 16 – 18d. per day, since so many were employed at both rate an average of 17d. per day is justified, and the unskilled were paid 12d.

The predominant rates for labourers and unskilled men paid directly by the Cathedral, and by the contractors is given in Table 1.

Table 1. St. Paul's day rates for Labourers and unskilled day work in d. 1675 - 1711

| | Foremen | Labourers | Unskilled men |
|--------------------------|-----------|-----------|---------------|
| Cathedral's labourers | 18 – 30d. | 16- 18d. | 8 -12d. |
| Craftsmen's Labourers | 20d. | 16- 18d. | not observed |

Source: Wren Society, Vol XV, Building Accounts and Vol XVI page xlvii-xlviii, TNA C106/145

⁴³ Wren Society, Building accounts June 1719 to December 1722, p.225

⁴⁴ Wren Society Vols., (Oxford: University Press, 1924 - 43).Vol XVI p.xlvii

Table 2 : Percentage difference between Boulton series (1996) and St. Paul's pay per day in d. for labourers.

| Year | Boulton Labour d. per day | St Paul's semi skilled Labour d. per day | % difference |
|---------|---------------------------|--|--------------|
| 1700 | 24 | 17 | -29.1 |
| 1701 | 24 | 17 | -29.1 |
| 1702 | 24 | 17 | -29.1 |
| 1705 | 25 | 17 | -32 |
| 1706 | 26 | 17 | -34.6 |
| 1707 | 26 | 17 | -34.6 |
| 1708 | 25 | 17 | -32 |
| Average | 25 | 17 | -32 |

Source: Boulton, 'Wage Labour', pp. 288-89. TNA C106/145

The St. Paul's records illustrate that there were two types of labourers at work on large building sites in the late seventeenth and early eighteenth century, general labourers who were hired as for their physical strength and knowledge of building processes, and labourers assisting craft, whose job it was to support and assist skilled craftsmen in particular trades. This second group has trade specific skills, and may have had specialist type knowledge. Their pay was comparable. Both these groups earned a premium of thirty to fifty per cent over unskilled men who earned approximately 12d. per day. This class of men earned less than semi-skilled labourers because they had neither the physical strength, nor the semi skill and experience of a trade. The class of men below that of labourers can be considered *unskilled*, and they earned thirty percent less than the semi-skilled men. In effect this is fifty per cent less than the rate that had previously been taken for "unskilled" for 1700 – 1720 until now.

Labourers at London Bridge 1660 – 1785

Until modification in mid-eighteenth century to remove the central piers and the housing on it, London Bridge was actually 'falling down', and accounts show that masons, carpenters and others were paid throughout the year to maintain and repair

the structure.⁴⁵ There are wage records for them, and for the labourers who assisted them, in the Bridge House estate archives.⁴⁶ They can be considered a long run series for maintenance work on an important City institution.

At Bridge House only a small number of people were contracted, paid or accounted for by the day. Those who were charged out on day rates were the contractors, their apprentices, and their foremen. Others were paid by combination of tides and days, and most workers were *only* paid by the tide.⁴⁷ Although the records at Bridge House have this confusing tide/ days aspect, which may be what has led to them being excluded from other studies, they also provide us with long run pay records for substantial numbers of people at many skill levels.

As at St. Paul's we find indications of lower skilled work in two sets of accounts. The Bridge retained two labourers directly employed throughout the period under review. In the accounts of the 1660s through to 1720 they were consistently paid 7s. a week for a 6-day week, implying a day rate of 14d.⁴⁸ Bricklayer's mates were charged at 20d. and 19d. a day in the same accounts in 1661, and this pattern continues through to the 1690s. Contractors bills do not always use the term 'labourers', even though there are lots of men charged for in bills as paid 18d. per day for day work, and less in other forms.

For those who were paid by the day, rates were stable in the long run.⁴⁹ A significant group of men however were never paid day rates; these were mostly members of the Tide Carpenter's team. The Tide Carpenter was responsible for work on the water, essentially maintaining the wooden starlings that protected the masonry piers of the thirteenth-century bridge. Tides were a natural unit of time and account at the Bridge. For instance, at low tide the starlings were accessible, at high tide the masonry above could be worked from the water. Tide work was limited by the season and the tidal

⁴⁵ For an account of the organisation of Bridge House see Mark Latham, "The London Bridge Improvement Act of 1756: A Study of Early Modern Urban Finance and Administration" (University of Leicester, unpublished Thesis, 2009).

⁴⁶ Held at London Metropolitan Archives.

⁴⁷ "Rates by the hour, complicated calculations of overtime and Sunday working are all found in such official records". Boulton, "Wage Labour in Seventeenth-Century London." p.274

⁴⁸ CLA/007/FN/03/019

⁴⁹ Day rates for senior carpenters were 32d. per day from the 1730s to the 1780s.

clock. The Port of London authority helpfully give tidal times and heights for the London Bridge area for days throughout the year.⁵⁰ Observing their tables it can be seen that it is virtually impossible to work two low or two high tides in one twelve hour working day. The maximum tides that could be worked within a working day of 6am to 6pm in one week is seven at one week per month, of course more tides could be managed if a possible eighteen hour day is considered with a break between. The maximum number of tides worked in any week observed in the Bridge House books is twelve. Tide rates are also found in the records of H.M. Dockyards. However at the yards they were a supplement to a day rate for shipwrights, an overtime rate utilized to avoid increasing day rates when there was high demand for workers, and labourers never received the same rates of overtime.⁵¹ At London Bridge a large number of men received them *instead* of a day rate. Indeed the record keepers of the 1760s and Bridge House frequently used the term 'day' and 'tide' interchangeably in the wage records.⁵²

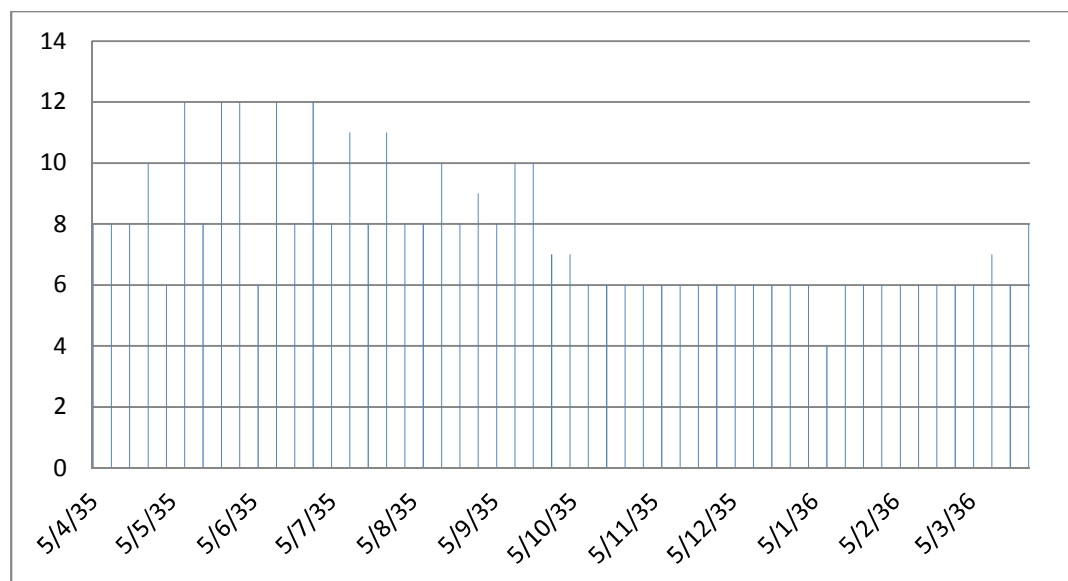
The Tide Carpenter, or contractor, in the early years of the eighteenth century was Jeremy Bowers. In 1722 his chief carpenter, Bartholomew Sparruck purchased the position for £322, and his family held it until 1757. Sparruck's weekly bills for labour are available for some of the 1720s, some of the 1730s and consistently from 1745. His team consisted of a senior carpenter, two apprentices, several tidesmen carpenters two or more labourers and two teams of ten 'gin men'.

The gin mens' work was to "wrought the 'gin", or maintain the water wheels. In the call books they are referred to as labourers. 'Gin men did not receive day rates but they were charged out at 9d. a tide until the late 1730s and 12d. a tide thereafter. The numbers of tides worked per week varied, from up to twelve in the summer weeks to as few as three or four in winter months. In the year from March 1735 to March 1736 the average number of tides worked was 7.6 (Figure 2). At 9d. per tide this gave gin men between 10s. 8d. per week on average, or 11d. and 12d. a day on average.

⁵⁰ <http://www.pla.co.uk/assets/towerg22015.pdf> give tables for London Bridge Pier for 2015.

⁵¹ H.E. Richardson, "Wages of Shipwrights in H.M. Dockyards, 1496-1788," *The Mariner's Mirror* 33, no. 4 (1947).

⁵² See LMA CLA /007/FN/04/005 Tide Carpenter's bills from 1760 by way of example.

Figure 2. Tides worked, Bridge House, 1735-6

Source : LMA CLA//007/FN/05/61

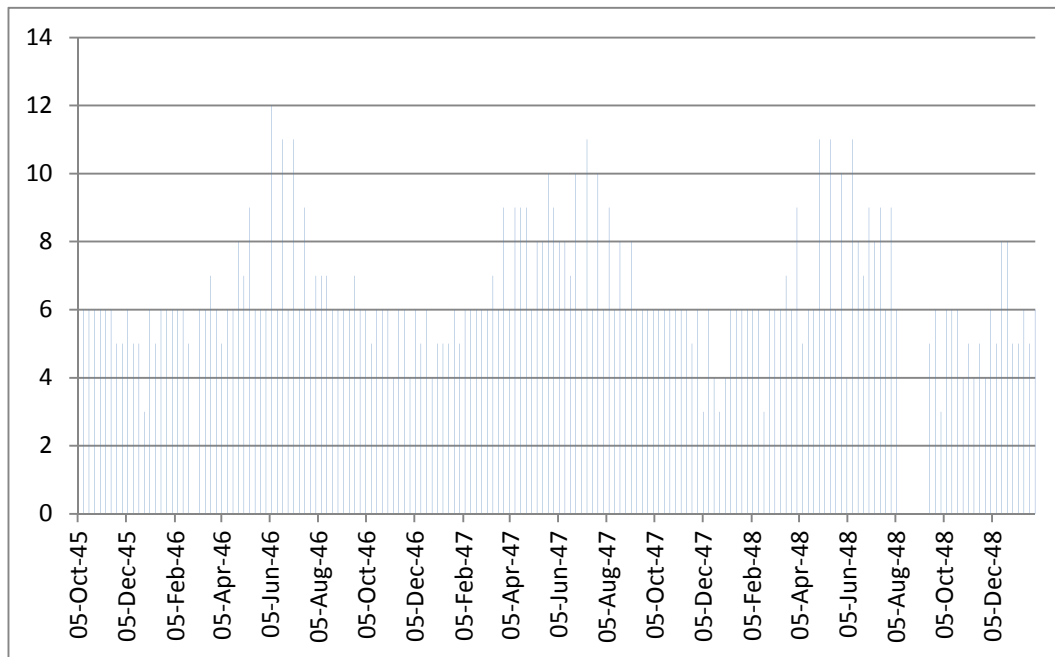
In the 1740s accounts are more detailed and there are twenty men named in the long run accounts, many of them for eight or ten years or more.⁵³ Their surnames: Cunditt, Higgs, Richards, Beasley, O'Neale, Wheatley, Matlow, Bridges, Peale, Williams, Tooey, Smart, Woodham, Birt, French, Beadl, Popjay, Cleaver, Cuthbert S, Tallis. Occasional men, numbering two or more are listed as 'labourers' alongside, unnamed, at the same rate, 1s. a tide. They were not paid or listed in the accounts for any other work other than their tides, so their pay was wholly dependent on the number of tides worked.

Figure 3 shows the total number of tides billed for the first 'gin men team per week for the years 1745 to 1748 as a means of showing the seasonality and level of their earnings. There were in fact two teams. The first team had an average of 6.49 tides per week in that period. The other team had only 5.9. Their tides are shown in Figure 4.

The pattern of tides shown here gave the 'ginmen an average weekly pay of 6s. 6d, or 5s. 2d. or, assuming 6 working days which was the constant norm at Bridge house until the 1780s, a day rate equivalent of 13d. and 10d. respectively.

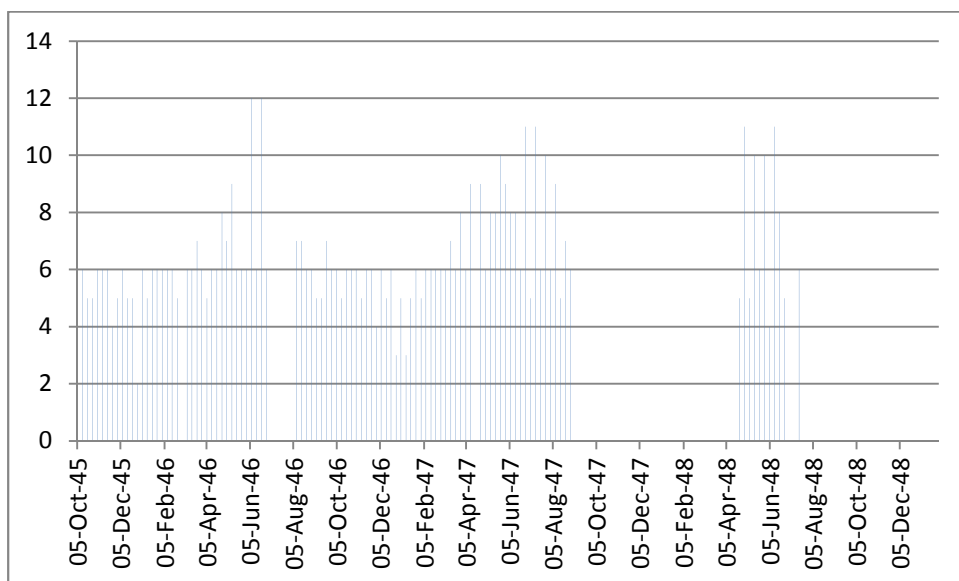
⁵³ LMA CLA/007/FN/04/01

Figure 3. No of tides worked, Bridge House, 'Gin men team 1, 1745 -1748.



Source: LMA CLA/07/FN/04/03

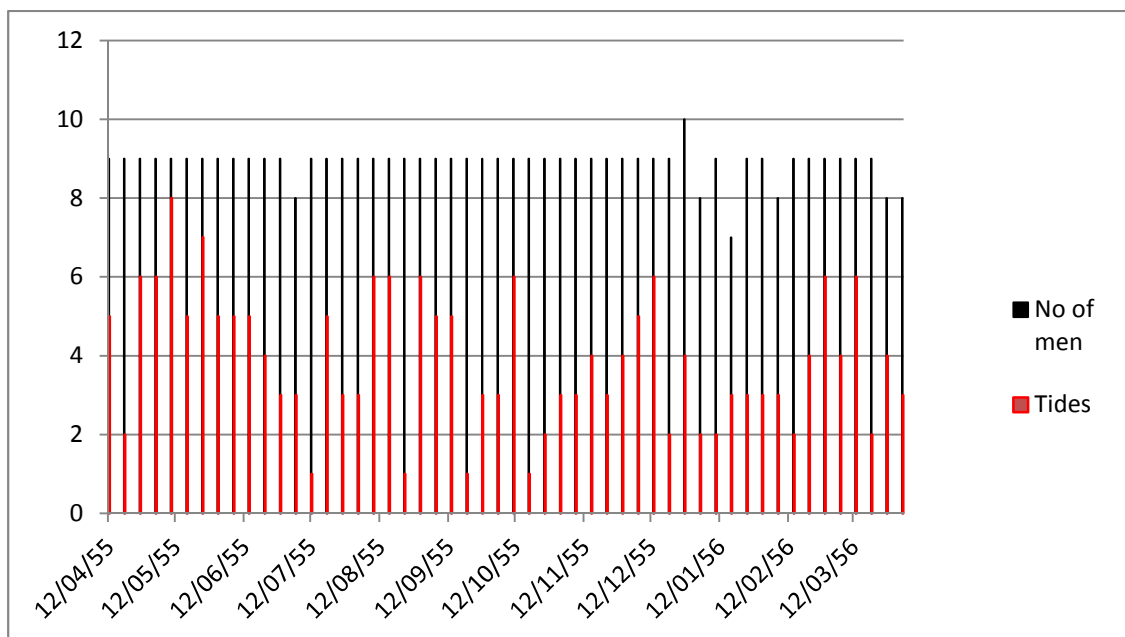
Figure 4. No of tides worked, Bridge House, 'Gin men team 2, 1745 -1748



Source: LMA CLA/07/FN/04/03

In the mid-1750s there were between nine and twenty four men employed, in four teams. The teams work was not evenly distributed among them, one team had much more work than the others, and it has to be presumed that the other teams had other sources of income and employment. Figure 5 shows the numbers of tides recorded for the first team only. There is far less seasonality of tides worked suggesting that the tide was being used as a unit of billing instead of an accurate number of hours worked. However the total number of tides for the year, for this the most active team was only 202, or an average of 3.88 per week, which would have given a weekly wage of less than 4s. This was the most employed team, the other 15 or more men got even fewer tides.

Figure 5. One gin men's team 1755-56, Bridge House



Source: LMA CLA/007/FN/04/04

By autumn 1760 there were only two gin men employed at the Bridge, and they remained so until early 1763 at the rate of 12d. a day or a tide, the term used interchangeably in the books.⁵⁴ In April 1763 a further five were taken on, then another five in June bringing the team to twelve in all. By November there were 14 men who were constantly on the books until 1767 still all at the uniform rate of 12d. per tide.

⁵⁴ LMA CLA /007/FN/04/005

The 'gin men were not the only ones with low pay at the Bridge. The Land Carpenters bills from 1730 show a man called Elice Hedges who was paid 9d. a tide and paid solely by the tide.⁵⁵ William Lesow's Mason's bills from the mid 1730s show a regularly employed man, Edward Clarke, paid between two and four shillings a week for tides only at 5d. a tide.⁵⁶

Bridge House gives evidence for the type of worker we have traditionally considered 'labourer', he assisting craftsmen, also. The mason contractor who succeeded Lesow was Joseph Kinleside who charged out those assisting masons at 24d. per day (the labourers would have received less than the charge out rates). The regular labourers also appear in the books at 9s. a week, the same pay as watchmen. As at St. Pauls there is clear evidence of two levels of skill and pay below that of craftsmen; those assisting craft, who by comparison to those paid by tide, enjoyed the security of day pay, and those unskilled, who were paid significantly less. Unlike St. Paul's, Bridge House shows long run evidence of regularly employed men, who were not paid by the day but by more seasonal and variable means, who earned, again, approximately half what we have traditionally calculated as 'labourers' pay for the period.

Westminster Bridge 1738-50

London Bridge highlights two features of construction pay in the eighteenth century not found in the established literature; the low nominal levels of pay, and the numbers of men who did not receive day rates. Whilst the Kempster books discussed in the section on St. Paul's indicate the low rates of pay were common practice, in order to find out whether the means of pay was just a quirk of some kind of moral economy at the Bridge, or representative of pay more generally in the industry we need to look further afield.

The construction of Westminster Bridge was the most ambitious project of its age; the first new bridge on the Thames since the thirteenth century.⁵⁷ The mason contractors for the vast piers and stonework were Andrews Jelfe and Samuel Tufnell, whose

⁵⁵ LMA CLA/007/FN/04/019

⁵⁶ LMA COL/CC/BHC/10/006

⁵⁷ A wooden Bridge at Putney was erected in 1729.

contracts were worth in excess of £150,000. The carpenter, responsible for the centering and the caissons was William Etheridge. Etheridge's men were charged out by the day, but most of Jelfe & Tuffnells' bills are for task work and so do not show labour costs. When labour costs are detailed however the men are accounted for by tide, not by day. Westminster Bridge, as many sites, does not give labour costs for most of the men employed on site, and as all labour was hired through contractors and there was none hired directly as at St. Paul's or at Bridge House there are only fragmentary bits of evidence to suggest the presence and pay of unskilled men.

There were many more men on site than "craft" and "labour," and many of those roles were lesser skilled. Among the bills in 1743 and 1744 'labourers' were charged out at 24d. per day, but diggers and watchmen were charged out at 18d. a day.⁵⁸ Sam Pries in 1744 "paid two men taking up one of the floats adrift and looking after it two days 2s 6d", implying a day rate of 6d. to 7d. per man for utterly unskilled work.⁵⁹ Day rates are not given for Richard Halliwell who was paid for between £28 and £33 per month through 1738 for a contract for "three horses and a man driving piles with harnesses". Any site required carriers, carter's men, porters, messengers, none of whom turn up in accounts of "day rates". Yet from the fragmentary evidence we can derive the following in Table 3.

**Table 3. Labourers and unskilled rates at Westminster Bridge 1738 – 50
1675 - 1711**

| | Charge out | Implied received rate |
|-------------------|---------------|-----------------------|
| Carpenters labour | 24d. per day | 19d. |
| Diggers | 18d. per tide | 14.5d. per tide |
| Mason's labour | 18d. per tide | 14.5d. per tide |
| | 24d. per day | 19d. per day. |
| Other unskilled | 7 - 18d. | 6 - 14.5d. |

Source: TNA WORK6 /46, throughout and pp.40 – 50 particularly.

⁵⁸ Full records at TNA WORK 6/46

⁵⁹ Work 6/46 page 39, 41

The calculation of the day and tide rates raise the question of how much work was available at the higher and lower rate. Given a tide rate was three quarters of a day rate it is implied that a day where a tide was worked would have been pretty much wholly taken up, to the exclusion of other work, but only three quarters of a day wage earned. The equivalent day rate might have been 19d. but only 14.5d. of it could have been earned. In a week where a man worked six 'tides' his take home pay would have been just 7s. 4d, approximately sixty percent of the wage existing series calculated for the 1740s. This implies a premium to the men at Bridge House, which may have been justified given the Bridge House employment was more regular (Westminster Bridge was a one-off project), or given the highly innovative building techniques at Westminster.

Since such a small proportion of the bills give day rates we cannot know how the majority of men were paid in practice, but Westminster Bridge shows that tide rates were not exclusively paid at London Bridge, and similar lower pay. Although the nature of the bills means that we cannot know how many men were on site, nor how they actually received their pay we do know that tide rates paid at Westminster Bridge were three quarters of the day rate, which implies that other work could not make up the time not worked.

Day rates, other rates, and pay

The evidence given in the cases here have given evidence from 1660 to 1770 of semi-skilled, or those assisting craftsmen, and unskilled men on London building sites. The cases highlight that the 'day rate' was not the predominant form of pay for the unskilled man on London building sites. In fact Bridge House records suggest that regular day rates were their own sort of premium, only paid to a sort of elite working craftsmen's teams, who had some sort of regular employment arrangement. The figures from all three sites detailed here show that a significant group worked for shifts that paid less, and with less predictability of regularity of work than day rates. Furthermore the evidence presented has indicated that there was a significant premium between unskilled and semi-skilled men's pay, a premium large enough to justify a whole new taxonomy of skill.

The men we have traditionally taken as unskilled, were actually, as Rappaport insisted, semi-skilled. They had trade specific knowledge and probably a great deal of biological capital and strength. They assisted craftsmen and they may have been regular employed by contractors and had some security of work, like the group working for William Kempster above over eight years.

Another group who earned approximately thirty percent less than this group's day rate were unskilled, without sufficient strength or knowledge to justify the premium. They were available for in the region of a shilling a day. The Bridge House data enables us to see that the best paid gin men in 1760 in London, whilst regularly employed, earned approximately half as much per day as existing series calculate, but they were not working by the day. If the men had worked an eleven hour day would they have been paid more? Does the tide rate understate day pay? On the basis of the evidence of their long run participation in tide work, it is more plausible to conclude that day work was not regularly available to them, and to measure their comparative pay, on annual pay received alone. If the 'gin men at London Bridge had worked a full 300 tides per annum they would have earned £15.⁶⁰ The calculation of annual income based on day rates multiplied by days worked produces a far higher figure than the *empirical records* of actual pay received by workers that Bridge House records provide. Further research will be presented in a separate paper about how much work unskilled and semi-skilled men could expect.

This paper has shown that the nomenclature of 'labourer' has been misleading for wage data and calculation of living standards and wage development for urban construction workers in London in the long eighteenth century. As Rappaport made clear, labourers assisting craft in the building trades were semi-skilled, and I have shown they commanded a significant pay premium over unskilled men. One aspect of the premium was the security of regular payment by the day in itself. The limited records available suggest that these semi-skilled workers were paid between twenty and thirty percent less than previously calculated. The significant group of unskilled workers in London

⁶⁰ Daily wage figures for a man outside London for a building labourer in 1759 given in Broadberry et al., *British Economic Growth 1270 -1870*.p.311 are 16d. and annual wage £13.33.

who supported the building trades were paid approximately half what we have previously used as the 'unskilled' wage. Moreover, as late as the 1760s there were men willing and on call for a casual shift for a shilling to the exclusion of other day work. The findings suggest we have misunderstood the price of 'labour' in London in the eighteenth-century.

Methodological appendix:

This appendix discusses the methodological approach to gathering the data and constructing the resultant series for the pay of unskilled workers on London construction sites.

Semi-Skilled men: Calculating contractor margin.

This paper and series assumes that existing series for the eighteenth century are accurate for charge out day rates. Gilboy's and Boulton's sources have been sampled and shown to be so. Without the contractors own wage and call books we cannot know accurately what any of the men listed in those records were actually paid however. Pay is likely to have been variable according to skill and productivity.⁶¹ In order to determine a likely received day rate from the charge out rates I discount them by the likely amount of margin that the contractor would have taken. In order to estimate this margin I have used the comparison of charge out and received rates from the only place where we have both to compare - St. Paul's Cathedral.

St. Paul's, however, has an added organizational complication. The Cathedral hired labouring men directly as well as paid contractors day rates or task rates for them. The Cathedral assumed contractors were paying them directly too, and not deducting margin, but for masons and carpenters, we have documentary evidence they were. A large enquiry into abuses at the Cathedral in 1711 established that Richard Jenings had

⁶¹ See "Real Contracts and Mistaken Wages" pp.25-29.

been paying carpenters as between 7s and 12s, a week (an average of 27% margin), and William Kempster's books show masons wages between 22. and 30d. a day (on average a 20% margin over the whole of his records).

Since activity at St Paul's is constant over 35 years, the numbers employed were large (hundreds per annum), the rates paid constant (the Cathedral paid 16d. and 18d. a day, the contractors likewise), the work of a highly skilled nature, and the correspondence and minutes do not discuss a labour crisis or shortage, I assume that the rates paid at St Paul's are market rates. If the men could have received a higher rate for the same work they had plenty of time to go and do so, yet names persist in the books in the long term. William Kempster's team shows named labourers who worked in excess of five days a week for him all year earning a rate of 18d. day over eight years. If St Paul's had got the price wrong the men would not have persisted.

The St. Paul's labourers day rates are substantially (30%) lower than the rest of the market data which Boulton gathered. (As is shown in Table 2 above). I use Boulton's Schwarz's and Gilboy's rates, which I know to be accurate to calculate the average mark up, which determines the average semi skilled day rate for my new semi skilled wage series. The new semi-skilled series therefore uses the St Paul's data for the years where that was operational. For the other years after 1711 it takes the existing series and discounts it by 30% until 1735, and twenty percent thereafter. The change in discount reflects two known facts. In 1735 – 7 labourers at Bridge House received a pay rise which was a change in their tide rate, and by the end of the eighteenth century the standard mark up on labour cost in the industry was twenty percent.⁶²

The data in column B, "semi-skilled wages" is as follows:

1660 – 1675: 16d. derived from Bridge House labourers (14d.) and Labourers at the Office of King's works sites Tower of London and Whitehall (16d.) reflecting that those working for skilled craftsmen contractors would have got a higher rate as shown by the St Paul's data.

⁶² C. G. Powell, *An Economic History of the British Building Industry 1815-1979* (London: London : The Architectural Press, 1980).p.33

1675 – 1722: St Paul’s labourers’ rates. The rate of 17d. per day in the average of the two rates found consistently throughout the accounts of 16d. and 18d.

1722 – 1790: Gilboy Schwarz series – 30% to 1735, and -20% to 1790. This is borne out by the Westminster Bridge day rate calculation in Table 3.

It should be highlighted that it is very unlikely many people ever got paid 19d. or 17d. for a day. Payment rates rising in tuppence intervals are seen throughout account books, reflecting the way a shilling divides across six days. The figure is to enable a mean or average rate to be utilized by those calculating real wage indices, and continues the practice of previous historians.

Previous series, by calculating modal or mean figures from a set of charge out rates for work of differing skill have given the impression that rates ‘moved’ – that the wage was a bargained for price that fluctuated according to supply and demand like the price of fish at Billingsgate. This research finds that rates were, as one of Gilboy’s key findings, incredibly stable.⁶³ The change in the tide rate from 9d. to 12. in the 1730s at Bridge House is marked, if only because it is not repeated.

Unskilled men: Day rate convertibility and comparison.

As discussed in text above the previous assumption that men were predominantly paid by the day should be reevaluated. Between 1720 and 1760 most men employed on London Bridge were paid by the tide, not by the day. In order to contextualize and properly evaluate their earnings we need to be able to convert their pay into a day rate for comparison.

One way to do this would be to calculate an hourly rate, however, we cannot know their exact hours of work. As they were working tides hours would have varied and involved some night work during the summer and full moons, and some down time during days. However since these men were regularly employed, and on site pretty much six days a week throughout the year it is fair to assume this was their main employment and income. Thus, to establish their average day rate I have gathered their weekly tides worked over the long run and derived an annual income. Since Bridge House was

⁶³ Elizabeth Gilboy, *Wages in Eighteenth Century England* (Cambridge: Harvard University Press, 1934).

operating 6 days a week most weeks (with only two or three weeks in most years with 5 or 4 days worked) I take the weekly income to be the annual income divided by 52, and the day rate to be this figure divided by 6.

It is important to consider that the tide was not a full day in terms of hours. For the contractors and records keepers of the 1760s the two seem to have been interchangeable. If the men could have worked days at a higher rates they might, but they persist in the records at the lower rate. My assumptions here are similar to those for St Paul's. The series is long run (40 years), the numbers employed substantial (twenty to forty men for long periods). They are named in the 1740s and their names persist in the books for up to a decade. Finding no other records of regular payments to them for any other kinds of work in any associated accounts or records I assume that the market offered them no better deal.

The data in Column C, Unskilled wages, is derived in this way. The day rate given is the equivalent of a weekly wage received by the Bridge House gin men for working week divided by 6. The data in Column A are the figure found in previous series as discussed in the text above.

Appendix Table: Wage data, in d. per day

| Year | A Boulton /Gilboy/Schwarz charge out day rate | B Semi Skilled | C Unskilled |
|------|--|-------------------|----------------|
| 1661 | | 20 | 16 |
| 1662 | | 20 | 16 |
| 1663 | | 20 | 16 |
| 1664 | | 20 | 16 |
| 1665 | | 20 | 16 |
| 1666 | | 20 | 16 |
| 1667 | | 20 | 16 |
| 1668 | | 18 | 16 |
| 1669 | | 20 | 16 |
| 1670 | | 20 | 16 |
| 1671 | | 20 | 16 |
| 1672 | | 20 | 16 |
| 1673 | | 20 | 16 |
| 1674 | | 18 | 16 |

| | | | |
|------|----|----|----|
| 1675 | 18 | 17 | 12 |
| 1676 | 20 | 17 | 12 |
| 1677 | 20 | 17 | 12 |
| 1678 | 20 | 17 | 12 |
| 1679 | 20 | 17 | 12 |
| 1680 | 20 | 17 | 12 |
| 1681 | 20 | 17 | 12 |
| 1682 | 20 | 17 | 12 |
| 1683 | 20 | 17 | 12 |
| 1684 | 20 | 17 | 12 |
| 1685 | 22 | 17 | 12 |
| 1686 | 18 | 17 | 12 |
| 1687 | 20 | 17 | 12 |
| 1688 | 22 | 17 | 12 |
| 1689 | 18 | 17 | 12 |
| 1690 | 22 | 17 | 12 |
| 1691 | 20 | 17 | 12 |
| 1692 | 20 | 17 | 12 |
| 1693 | 24 | 17 | 12 |
| 1694 | 24 | 17 | 12 |
| 1695 | 24 | 17 | 12 |
| 1696 | 22 | 17 | 12 |
| 1697 | 22 | 17 | 12 |
| 1698 | 22 | 17 | 12 |
| 1699 | 24 | 17 | 12 |
| 1700 | 24 | 17 | 12 |
| 1701 | 24 | 17 | 12 |
| 1702 | 24 | 17 | 12 |
| 1703 | 25 | 17 | 12 |
| 1704 | 25 | 17 | 12 |
| 1705 | 25 | 17 | 12 |
| 1706 | 26 | 17 | 12 |
| 1707 | 26 | 17 | 12 |
| 1708 | 25 | 17 | 12 |
| 1709 | 24 | 17 | 12 |
| 1710 | 24 | 17 | 12 |
| 1711 | 24 | 17 | 12 |
| 1712 | 24 | 17 | 12 |
| 1713 | 22 | 17 | 12 |
| 1714 | 23 | 17 | 12 |
| 1715 | 23 | 17 | 12 |
| 1716 | 23 | 17 | 12 |
| 1717 | 23 | 17 | 12 |
| 1718 | 24 | 17 | 12 |
| 1719 | 24 | 17 | 12 |
| 1720 | 24 | 17 | 12 |

| | | | |
|------|------|----|----|
| 1721 | 24 | 17 | 12 |
| 1722 | 24 | 17 | 12 |
| 1723 | | 17 | 12 |
| 1724 | | 17 | 12 |
| 1725 | | 17 | 12 |
| 1726 | 22.5 | 17 | 12 |
| 1727 | 22.5 | 17 | 12 |
| 1728 | 23 | 17 | 12 |
| 1729 | 22.5 | 17 | 12 |
| 1730 | 24 | 17 | 12 |
| 1731 | 23 | 17 | 12 |
| 1732 | 23 | 17 | 12 |
| 1733 | 23 | 17 | 12 |
| 1734 | 23 | 17 | 12 |
| 1735 | 24 | 19 | 12 |
| 1736 | 24 | 19 | 12 |
| 1737 | 24 | 19 | 14 |
| 1738 | 24 | 19 | 14 |
| 1739 | 24 | 19 | 14 |
| 1740 | 24 | 19 | 14 |
| 1741 | 24 | 19 | 14 |
| 1742 | 24 | 19 | 14 |
| 1743 | 23.5 | 19 | 14 |
| 1744 | 24 | 19 | 14 |
| 1745 | 24 | 19 | 14 |
| 1746 | 24 | 19 | 14 |
| 1747 | 24 | 19 | 14 |
| 1748 | 24 | 19 | 14 |
| 1749 | 24 | 19 | 14 |
| 1750 | 24 | 19 | 14 |
| 1751 | 24 | 19 | 14 |
| 1752 | 24 | 19 | 14 |
| 1753 | 24 | 19 | 14 |
| 1754 | 24 | 19 | 14 |
| 1755 | 24 | 19 | 14 |
| 1756 | 24 | 19 | 14 |
| 1757 | 24 | 19 | 14 |
| 1758 | 24 | 19 | 14 |
| 1759 | 24 | 19 | 14 |
| 1760 | 24 | 19 | 14 |
| 1761 | 24 | 19 | 14 |
| 1762 | 24 | 19 | 14 |
| 1763 | 24 | 19 | 14 |
| 1764 | 24 | 19 | 14 |
| 1765 | 24 | 19 | 14 |
| 1766 | 24 | 19 | 14 |

| | | | |
|------|----|----|----|
| 1767 | 24 | 19 | 14 |
| 1768 | 24 | 19 | 14 |
| 1769 | 24 | 19 | 14 |
| 1770 | 24 | 19 | 14 |

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