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John Wood's town plans and the evolving urban hierarchy of Cumbria

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John Wood, the 19th-century cartographer, produced plans of seven towns in what now is Cumbria[1]. They comprise Carlisle, Cockermouth, Kendal, Penrith, Ulverston, Whitehaven and Wigton. These large detailed plans are both an interesting insight into Wood's work as surveyor and cartographer as well as important sources of information on the towns themselves.

Wood was trained as a surveyor in North Yorkshire but subsequently married and lived in Edinburgh. He produced detailed surveyed plans of some 150 towns across Scotland, Wales and England (Robson, 2014a). He typically covered regional clusters of towns in a single season of field work between spring and early autumn – probably late March to September/October. He then normally returned home for the winter months to have his drafts engraved and published in Edinburgh, a city which at that date had an impressive array of engravers, lithographers and publishers. Each of Wood's seven Cumbrian plans record the engraver's name and indeed all of them were Edinburgh-based (Carlisle by Robert Walker; Penrith by William Forrester and William Nichol; and Cockermouth, Kendal, Ulverston, Whitehaven, and Wigton by William Murphy, who was responsible for engraving a large proportion of all of Wood's UK plans)[2].

With the exception of Carlisle (Figure 1), his Cumbrian towns were surveyed between 1832 and 1833. Carlisle was done a decade earlier, in 1821, at a time when Wood was working almost exclusively on producing plans of Scottish towns, most of which were completed between 1818 and 1826 (covering no fewer than 52 towns of his eventual Scottish total of 57). However, during this period he also hopped just south of the Scottish border to survey Durham and Berwick in the east, and Carlisle in the west. Three of the other Cumbrian plans are each dated 1832. Whitehaven has no date, but was almost certainly done along with the other West Cumbrian towns in his 1832 surveying season. Penrith has no date and Kendal is dated 1833, which suggests that it was done in the following surveying season. What seems most probable is that since Wood's other plans with an 1833 date cover towns in or near Wales – Chester, Oswestry, Holywell and Wrexham – he may in 1833 have travelled to Wales from his home in Edinburgh, but stopped off to survey Kendal (a much more accessible location than the towns of west Cumbria), and then on to survey Chester *en route* to Holywell and Wrexham in north Wales and then to Oswestry in Shropshire. Penrith could either have been surveyed in Wood's 1832 season, or – more likely – as part of his 1833 trip from Scotland to North Wales. So it seems probable that, leaving aside Carlisle, 4 of the other Cumbrian towns were surveyed in 1832[3] and 2 were probably surveyed in 1833.

His Cumbrian plans illustrate rather effectively the pattern of Wood's movements during his surveying seasons. In addition to his permanent home in Edinburgh he appears to have rented a succession of houses or other accommodation as medium-term bases for his various forays south of the Scottish border and also to have stayed in short-term lodgings in some of the towns that he surveyed. This is well exemplified by the Cumbrian plans. For Carlisle and Whitehaven, for example, he simply gave his Edinburgh address, but for Cockermouth and Wigton he specified 'Croft', and for both Kendal and Ulverston he specified 'Northallerton'. Both of these two English addresses, each in North Yorkshire, appear to have been examples of his medium-term bases. Croft-on-Tees lies just south of Darlington and it is possible that it was the Croft coaching inn that he used as one of his bases[4]. In addition he also used shorter-term accommodation in some of the towns that he surveyed. For example, in Carlisle Wood advertised in the *Carlisle Patriot* in September 1820 'to solicit the attention of the nobility and gentry and the public to his ground plan of Carlisle now making', and during his survey he stayed at Cooper's Lodgings at Botchergate which was the address at which he noted that potential employers could place commissions for him to undertake estate plans or for orders to be placed for his map. By September 1821, having left the city, he advertised that his 'plan of Carlisle was to be seen at the shop of B Scott and at other booksellers'.

Likewise, for Wigton, there is evidence of his short-term accommodation in the town itself. The local Wigton historian, Carrick, noted:

> '… in 1832 a surveyor, John Wood, of Croft, York, stayed in Wigton and made a map giving the names of the proprietors of land from part of the Print Works, or Stampery, to Highmoor. He also delineated on his map in intense black, 23 inns, etc, numbering these and naming them in a reference, numbered 1 to 29, but leaving number 11 blank. Murphy, of Edinburgh was the Lithographer. Wood stayed in Wigton at the King's Head, and, curiously enough, he omitted the house he boarded at altogether!' (Carrick, 1949, p.282).

His mapping of towns in a very wide set of regions across the UK cannot have been a trivial venture since most of it was done at a time – as with Cumbria – before the emergence of an effective railway network in the areas that he surveyed. Travel to and within any of the regions cannot have been easy since it relied on coaches that were slow and infrequent. In Cumbria for example:

> 'It was not until the year 1841 that the railway was extended to Wigton, and previous to this the coach "Royal Swan" ran daily between Carlisle and Whitehaven; a carriage ran on Tuesdays between Cockermouth and Carlisle; and 4 carriers plied their trade between Wigton, Carlisle, Cockermouth, Keswick, Penrith and Whitehaven' (Anon, 1894, p.48).

A contemporary local Cumbrian directory gives an indication of the times involved by drawing a sharp contrast between the time of overland travel by coach as against sea journeys by the packet steamers that were available from Whitehaven: for example, the journey to Liverpool took 2 days by coach as against overnight by steam navigation; and journeys to Dumfries and other nearby towns on the Scottish coast took one-and-a-half to two days by coach as against 3 to 5 hours by sea (Parson & White, 1829, p.275). Wood must necessarily have relied largely or wholly on overland travel both to move from town to town and to make his annual return visits to Edinburgh. Given this, mapping not merely one but a number of towns within a single year's surveying season has to be seen as a quite heroic achievement.

Yet copies of any of Wood's numerous plans are extremely rare, especially for towns in England and Wales. Even allowing for their probable loss through damage and usage over the years, this suggests that only limited numbers of copies were printed, which raises questions about the economics of Wood's work, the sources of his finance and the reasons why he undertook the challenging and arduous task of surveying so many towns, not only in Cumbria, but elsewhere across Britain (Robson, 2014b). Certainly, surviving copies of the Cumbrian town plans are hardly common. Of those in the public domain, some are known only as single copies, although no doubt others may be held in private collections or in the offices of law firms. Penrith, for example, is only known from a single copy in the Carlisle branch of the Cumbria Archive & Local Studies Centre; Whitehaven is accessible only in reproduced form from a copy owned by the local bookseller Michael Moon; and Ulverston is known only as a photocopy held in the Barrow branch of the Cumbria Archives[5]. Somewhat more copies of the other four towns do survive (as the Annexe shows) but even for them known copies are in single figures.

The happenstance of the survival of one of Wood's rare Wigton plans was usefully recorded by Carrick, who recounted the story of the origin of the lone copy that he was able to discover. It had been rescued when the solicitor's office in which it had been kept was closed down:

> 'What is, I am sure, one of the only copies in existence, belongs to Mr Daniel Easton. This copy was probably bought by Joseph Studholme, solicitor. Later Mr James McKeever had it in his office, and it was still hanging there on the wall when that office … was closed … Mr Easton was then a young clerk in Mr Gibson's office, and he has told me how, when the place was empty and ready for being locked up, he went back and took the map down from its nail in the back office, where it had hung for years, and took it home.' (Carrick, 1949, pp.282-3)

Carrick expressed his delight at this since access to the plan enabled him, in his chapter on 'Inns of Wigton', to identify the 23 inns shown and named on Wood's plan and to trace subsequent changes to the town's inns (Carrick, 1949).

Dedications

One significant aspect of the Cumbrian plans is that, unusually, no fewer than five of the seven include dedications in their titles: Cockermouth and Wigton to the Earl of Egremont; Penrith to the Duke of Devonshire; Ulverston to Colonel T. R. G. Braddyll; and Whitehaven to Viscount Lowther. This is a far higher percentage of dedications than for his plans in other regions of the United Kingdom: of all his 150 plans of towns in England, Scotland and Wales only 12 have dedications, so the five Cumbrian dedications represent almost half of the total. This may reflect the strategic role that some major land and property owners played in Cumbria, not least in a period when it was undergoing major economic changes with the discovery and exploitation of new mineral sources and the growth of industrial activity and trade, especially in west Cumberland and in Furness. Adding dedications to maps entailed seeking permission from the dedicatee and aimed to enhance the awareness and appeal that plans might have to potential buyers, and also in the hope of securing assured purchases or broader patronage from the named

families themselves. Certainly the list of dedicatees includes some of the most significant families with local Cumbrian interests. The Earl of Egremont owned extensive tracts of property in Cockermouth and the family still owns the now largely ruined medieval castle in the town[6]; the Lowthers were far and away the most influential landed family in Whitehaven, lived in the 'Castle' which they had had built for them on the south-east periphery of the town, and also owned land and property not only in Whitehaven but also in Penrith, Carlisle and elsewhere[7]; the Devonshires had land holdings in Penrith, extensive holdings in Carlisle, and property and land spread widely elsewhere in Derbyshire, Yorkshire and other counties across England; and Colonel Thomas Braddyll was a wealthy local patron of the arts and a generous benefactor of Ulverston, whose family had lived in nearby Conishead Priory since 1638 until, having spent huge sums to virtually rebuild the property and having suffered financial losses from his investments in Durham coal mines, Colonel Braddyll overreached himself financially and was forced to sell the Priory in 1848.

Wood's most intriguing link is the one with Cockermouth – intriguing because, in addition to his engraved plan of the whole town at 3 chains to the inch (1:2376), he also produced a detailed manuscript plan of part of the town lying to the north of the River Derwent, at the larger scale of 2 chains to the inch (1:1584) (Figure 2). This is one of only three manuscript plans that he is definitely known to have made, the other two being of areas in Scotland. This manuscript plan must clearly have been specifically commissioned, and the commission seems certain to have come, not from the Earl of Egremont, to whom Wood had dedicated the engraved plan of the whole town, but from Humphrey Senhouse, head of a local Cumbrian family. While there is no mention of a Senhouse link shown on the manuscript plan, it is contained amongst the Senhouse family papers held in the Whitehaven branch of the Cumbria Archive & Local Studies Centre, and it seems almost certain that it was Humphrey Senhouse who would have commissioned the survey in order to help plan the development of part of the family estate lying along the line of the mill race that served a number of textile mills. The Senhouses were a local affluent and influential family who built and lived in The Fitz, a handsome house lying on the west of Cockermouth (and marked on Wood's plan). Part of their large estate is covered by Wood's manuscript survey. His plan shows the outline of proposed housing developments and the potential expansion of one of the mills along the Goat Mill Race[8]. Only the latter development may have materialised. The more ambitious proposal was for a new street, shown on the plan to the west of Senhouse Street. This was presumably a proposal to develop housing on part of the site. The planned houses even appear on Wood's engraved plan of the whole town (Figure 3) marked as 'Derwent Place on sale'. In practice, as later Ordnance Survey maps suggest, nothing seems to have materialised from the housing proposal, and much of the site was occupied by the Cockermouth Cricket Club (initially established in 1823), which rented the site from the Senhouse family and still uses the ground for cricket.

The Senhouses used their wealth to develop parts of west Cumbria; for example the senior Humphrey Senhouse had earlier developed the village of Ellenfoot into a port, which he named Maryport after his wife. It was his grandson, the younger Humphrey, who would most probably have been the family member involved in making the commission for Wood's manuscript survey. Yet, despite this link, it seems that Wood did not succeed in winning longer-term patronage from Humphrey Senhouse since a plan of Maryport, dated 1834 only two years after Wood's commissioned survey, was 'most respectfully inscribed to Humphrey Senhouse Esquire', but it was surveyed not by Wood but by a local Cumbrian surveyor, William Mitchell, and engraved by Neale & Son in London[9]. Maryport was the 9th largest of the Cumbrian towns in 1831 and it would have been the next most obvious place for Wood to have included as one of his Cumbrian surveys. The fact that he did not may suggest that he was dissuaded from undertaking this if Mitchell was already in the process of surveying Maryport in 1832[10].

The cartographic coverage of Cumbrian towns

Wood's coverage of the Cumbrian towns throws up one odd anomaly; his not having included a survey of Workington as one of his plans. Apart from that omission his other plans included each of the largest, and presumably the most important, of the Cumbrian towns in the early 1830s. This reflects the fact that the Cumbrian surveys were done at a relatively early period in Wood's surveying career in England and Wales. The proportion of the largest towns that he surveyed in regions across England and Wales grew progressively less over time. For example, in his first English surveys in the late 1820s he surveyed all 6 of the largest towns in Durham; and 6 out of the 8 largest in Northumberland. In the early 1830s his Cumbrian plans include 7 of the region's 8 largest towns; but in the mid 1830s he surveyed only 7 of the 13 largest places in North Wales, 6 of the 11 in South Wales, and 7 of the 12 in Shropshire; and in the early 1840s he covered only 11 of the 20 largest

towns in Devon. So the Cumbrian coverage is especially impressive, although, unlike in Scotland and north-east England (Robson, 2014b), there was no suggestion that Wood ever had in mind the publication of an atlas of his set of Cumbrian towns. Instead, he must have relied on sales of the individual plans to recoup all or some of his expenses.

The absence of a plan of Workington remains puzzling. In 1831 it was the fourth largest town in Cumbria, yet not only did Wood eschew surveying the town but Workington also appears to have been consistently under-represented amongst Cumbrian town plans done by other surveyors. The absence of a Wood plan cannot therefore be explained by competition from some local surveyor; the only explanation that seems to make sense is that, if Wood and other private surveyors sought some form of local sponsorship or prior commitments to buy their plans, the town's key residents, such as the Curwen family or its local officials, proved unwilling to dig into their pockets[11].

Apart from this anomaly, Wood included each of the Cumbrian towns that were the largest places in the early 1830s. Subsequently, of course, there were major changes in the rank order of towns as industrial growth in the 19th century radically altered the hierarchy of towns in Cumbria, with new discoveries of the area's rich deposits of coal and iron ore providing the basis of a thriving mining industry, and stimulating a burgeoning trade in goods and raw materials, and the growth of shipbuilding and its associated industries. Changes in the populations of the towns provide a fairly sensitive indicator of some of the shifts created by these economic transformations during the 19th century. Table 1 shows the changing populations of those Cumbrian towns that, at some date in the period between 1801 and 1901, had 4,000 or more inhabitants. During the century the rank order of places kept shifting so that by the end of the period there were significant differences from that at the start (Table 2). Most of the traditional market towns – such as Penrith, Keswick, Kendal, Cockermouth and Wigton - fell lower in the rank order, and most of the new industrial and mining towns to the west rose up the ranks – Workington, Millom, Cleator Moor, and especially Barrow whose meteoric growth rapidly propelled it to the top rank in the final decades of the century.

It is interesting to see these changing urban fortunes through the eyes not only of Wood but also of the other surveyors and cartographers who mapped Cumbrian towns. We can do this through drawing on the monumental catalogue of town plans compiled by Kain and Oliver (2013) which, while inevitably it appears to have missed out some plans[12], is far and away the most comprehensive and valuable listing of the historic array of British town plans. Table 3 shows that for Cumbria there is an undue (but understandable) early emphasis on the mapping of the two county towns of Kendal and especially of Carlisle which by a big margin had the largest number of plans, with a sequence running consistently from Speed's plan in the early 17th century through to the end of the 19th century[13]. Predictably, Barrow appears late in the sequence, but its meteoric growth at the end of the century pushed it rapidly up the hierarchy

Table 1: Census populations (in '000s) of the principal Cumbrian towns, for selected dates in the 19th century.

	1801	1831	1861	1891	1901
Barrow			3.1	51.7	57.6
Carlisle	10.2	20.0	29.4	39.2	50.5
Cleator Moor	0.4	0.5	4.0	9.5	8.1
Cockermouth	2.9	4.5	5.4	5.5	5.4
Egremont	1.5	1.7	3.5	6.1	5.8
Frizington	0.4	0.5	1.6	5.6	5.3
Kendal	8.0	11.6	10.0	14.4	14.6
Keswick	1.4	2.2	2.6	3.9	4.5
Maryport	2.9	3.9	6.9	12.4	11.9
Millom				8.9	10.4
Penrith	3.8	6.1	7.9	9.0	9.2
Ulverston	2.9	4.9	7.4	10.0	10.1
Whitehaven	10.6	15.7	19.5	19.4	19.0
Wigton	2.5	4.9	4.4	4.0	3.7
Workington	5.7	6.4	6.5	23.7	26.1

Source: Robson (1973)

Table 2: Rank order of towns by size (arranged by ranks in 1801).

	1801	1831	1861	1891	1901
Whitehaven	1	2	2	4	4
Carlisle	2	1	1	2	2
Kendal	3	3	3	5	5
Workington	4	4	7	3	3
Penrith	5	5	4	9	9
Ulverston	6	7	5	7	8
Maryport	7	9	6	6	6
Cockermouth	8	8	8	13	12
Wigton	9	6	9	14	15
Egremont	10	11	11	11	11
Keswick	11	10	13	15	14
Cleator Moor	12	13	10	8	10
Frizington	13	14	14	12	13
Barrow			12	1	1
Millom				10	7

so that it appears in plans from the 1870s; the older towns of Penrith and Cockermouth may have slightly more plans than might have been expected; and Ulverston has rather fewer plans than would have been anticipated given its medieval significance. Nevertheless there is a quite close accordance between the size of a place and the timing and overall total of plans that were produced. The one consistently surprising under-representation is Workington with hardly any plans and a seemingly curious reluctance by any surveyor to map the town, despite it having been one of the largest Cumbrian towns throughout the 19th century. So while Wood's lack of a plan of the town is not unusual, it remains something of a mystery why the town was virtually ignored by surveyors[14]. This apart, Wood's seven plans accord closely to the rank order of towns in 1831.

Table 3: The sequence and number of plans of Cumbrian towns (arranged in order of their 1831 population).

	Carlisle	Whitehavem	Kendal	Workington	Penrith	Wigton	Ulverston	Cockermouth	Maryport	Barrow
1600-49	2		1							
1650-99	2	1								
1700-24	1									
1725-49	3									
1750-74	1	2	1					1		
1775-99	1	1	2	1	1					
1800-09	1									
1810-19	2	1								
1820-29	1									
1830-39	3	2	5		1	1	1	2	1	
1840-49	2	1		1	1			1	1	
1850-59	5		1		2		1	1		
1860-69										
1870-79										2
1880-89	2	1								2
1890-99	1									
TOTAL	**27**	**9**	**10**	**2**	**5**	**1**	**2**	**5**	**2**	**4**

Source: Numbers derived from Kain and Oliver (2013), plus three extra Wood plans (see footnote xii)

Wood's cartography as a guide to urban evolution

Wood's Cumbrian plans are characteristic of most of his cartographic work in other regions of the UK. They are highly detailed – with 5 at the very detailed scale of 3 chains to the inch (1:2376) and Carlisle and Kendal at the slightly smaller scale of 4 chains to the inch (1:3168); they are handsomely and clearly engraved; and they are typically packed with the names of land and property owners and residents, and extensive lists of references to inns, churches, industries, business premises and the like (the example of Kendal is shown in Figure 4). As sources for historical research they are invaluable documents, recording urban and industrial development at something of a pivotal date when most of the constraining medieval town defences had disappeared and the towns had been able to start to spread outwards, but before the impacts of the arrival of railways or the large-scale growth of industry.

Land-use plans such as Wood's can offer valuable indications of the existence of factory and industrial buildings, but they cannot directly identify home-based cottage industry which to some extent still survived in the early 19th century before the universal spread of large-scale industrialisation. John Higham, the Cumbrian local historian, has helpfully drawn my attention to the number of hand-loom weavers who lived in and around towns like Wigton and Cockermouth, and who brought their cloths into the weekly markets and sold them on to bigger operators. His sketch map of markets in Wigton (Figure 5) offers evidence of this. Derived from a manuscript plan of 1829 (close in date to Wood's plan of the town), it shows that, while the great bulk of market activity was clearly focused on foodstuffs and agricultural produce aimed at local consumption, part of King Street was a cloth market. Some of the 'backroom' industry, such as weaving or crafts such as clock-making, would have been undertaken in homes, shops, and other premises, so it could not have been identified on Wood's plans. Nevertheless, his plans do offer revealing portraits of the main economic underpinnings of the towns. They record a transitional state, with the long-established market towns and administrative centres still holding their own, but with the early evidence of the growth of industry beginning to appear in some of the towns.

Rather crudely, the seven towns might be categorised in terms of the concept of economic base theory developed by the American academic Robert Haig in the 1920s. This argues that economic activity can be disaggregated into two components. The first element, non-basic activity, caters essentially to local, internal demand and only serves a town itself and its immediate locality, and hence is not a strong driver of growth. Such non-basic functions would include inns, medical and banking establishments, local gas works, breweries (which in the 19th century focused on local consumption given the high cost of transporting bulky goods), corn mills, local produce markets, and possibly tanneries. In contrast the second element, basic activity, is geared to non-local demand and is the city-forming element since it generates additional income and resources from outside. Basic activities include export-related functions tied to the production of manufactured goods such as textiles

or heavy industry, the mining of raw materials such as coal and ores, and all the accoutrements of long-distance trading activities. The basic/non-basic dichotomy may partly be complicated by the presence of cottage industries, but it usefully identifies the emergence of large-scale formal industrial and business activity.

Since Wood's plans show much of the detail of land uses and the functions of individual buildings they give a good indication of the split between non-basic and basic activity in the seven towns. Using this dichotomy, an interpretation based on Wood's plans suggests that the seven towns in the 1830s can, very crudely, be split into three:

- Classic market towns dependent almost wholly on non-basic activities: Penrith and Cockermouth;
- Evolving towns, predominantly market towns but with evidence of the emergence of basic activities: Kendal, Ulverston and Wigton; and
- Transforming towns with a larger and more firmly established basic sector complementing the non-basic town-serving roles: Whitehaven and Carlisle.

Since there is a near-contemporary local Cumbrian directory (Parson & White, 1829) it is possible to cross-check the map-based interpretations with the detailed evidence of this directory source.

Market towns

Penrith appears as a classic market town with Wood's plan recording only non-basic activities, such as banks, breweries, and a gas works. The directory reinforces this in its comment that the 'numerously attended markets, &c are the principal support of the town, which has now lost all its former cotton trade' (Parson & White, 1829, p.499). **Cockermouth** was essentially similar, with Wood's plan showing its wide street-based market areas, corn mills and breweries. It did, however, show signs of some basic activity with flax mills, tanneries and a bleach house along the line of the Goat Mill Race; and indeed the directory notes 4 flax spinners, 2 linen, 5 cotton and 4 woollen manufacturers (*ibid*., p.191).

Evolving towns

Kendal, Ulverston and Wigton show somewhat more evolution beyond a dependence on town-serving activities. **Kendal** was still a long-established market town, with Wood's plan showing the large market place and a separate fish market, and his list of references includes 2 banks, churches and chapels, and a theatre. Most industrial activity was largely local town services – a gas works, tannery, a (corn?) mill. However, his plan also shows the named marble works of G. & F. Webster, a carpet factory, and warehouses at the end of the Lancaster Canal; all of which suggest the evolving development of basic activity and of wider trade. The directory confirms this, pointing to the town's long history of woollen manufacture, with 'Kendal cloths' having being exported to America. It also notes the extensive marble works of George and Francis Webster. It characterises the town as a combination of manufacturing and the centre of a rich agricultural district (*ibid*., p.639). **Ulverston** was not dissimilar; grouped round its triangular market place, and with brewery and tanneries, its local market functions clearly remained important, and Wood's list of references includes 19 inns and 2 banks. But again it showed evidence of some industrial development - at the end of the canal linking the town to Morecambe Bay extensive tracts of land are shown as being held by the canal company, with a complex series of leats and waterways which fed numerous mills (including a cotton mill). The directory reinforces this, noting both the textile activities, the powerful stimulus that the canal had given to the growth of the town's commerce, the scale of its exports of pig and bar iron and of iron ore, and the significance of its manufacture of edge tools which 'fetch a higher price than those made at Birmingham and Sheffield' (*ibid*., p.721). **Wigton** was also predominantly market-based with breweries, tannery and dye houses (Figure 6). As noted earlier, Wood's references list no fewer than 23 inns. But on the other hand there was clear evidence of basic activity, not least in the presence of the large and important calico print works of Hallilley McAlpin, which employed some 200 workers. To the north of the town, along the line of the Wiza Beck, the cotton manufactory of Isaac Pattinson & Sons is named. To the east, along the line of the Speet Gill, a series of (corn?) mills, a tannery and a dye house are marked; and there is evidence of textile working in the naming of 'Tenters Lane' and the adjacent 'tenters field'. Confirming this manufacturing activity, the directory lists four cotton manufacturers (including Pattinson & Sons, and Wm.Dodgson on Water Street, both of which are shown on Wood's plan), 3 flax dressers, 3 dyehouses, and 4 watch and clock makers. It notes that the town's population had almost doubled between 1801 and 1821 through the growth of its varied textile manufacturing (*ibid*., p.394).

Transforming towns

The most extensive basic activity can be seen in Wood's plans of Whitehaven and Carlisle. **Whitehaven** shows strong evidence of the importance of its external sea-borne trade, with the customs house, a steam packet office, and a 'sugar house'. Linked to the large harbour complex three large shipyards are shown and a bonded timber yard along

the eastern edge of the harbour, with a ropery behind and another ropery in the south of the town. Wood's plan shows two inclined planes leading down to the harbour and linked to coal mines on the western headland where the plan shows 'Kells pits' marked on his inset plan of the town's environs. Another mine, 'George's Pit', is also shown lying behind the eastern headland. The plan also includes a 'factory' and three potteries in the south. The directory reinforces this, claiming that Whitehaven held a 'distinguished rank amongst the commercial ports of Great Britain especially in the coal trade, in which it is inferior only to Newcastle and Sunderland' (*ibid*., p.240). It also notes its exports of iron ore to Wales and of lime to Scotland, as well as its extensive manufacture of textiles. Yet, it suggests that the town had then reached the summit of its prosperity (a verdict that was somewhat premature given the town's continuing population growth during the next two decades).

Carlisle is especially interesting. Inevitably it continued to show all the evidence of its long-standing market and administrative functions and the large extent of its cathedral-based land uses. However, Wood's plan shows that the low land along the line of the River Caldew had two mill races snaking north-south on both sides of the river and that both had a range of industrial activity: coal and lime vaults, numerous mills (some of which would probably have been corn mills, but they also include the named 'Long Island cotton mill' as well as the large cotton works of Cowan Heysham & Co.), a foundry, glassworks and hatteries. The directory illustrates the significance of Carlisle's textile manufacturing in its lists of 11 cotton mills, 10 gingham and check manufacturers and 2 calico printers, and the range of other activities such as 4 brass and iron factories. It notes that, despite the ship canal that opened a link to the Solway Firth in 1823, Carlisle lacked foreign trade which was 'now nearly all confined to the port of Whitehaven, where there are spacious bonded warehouses' (*ibid*., p.148).

Wood's plans therefore show the potential value of maps and plans in interpreting the historic functions of towns. For Cumbria they illustrate rather effectively the emerging transition from a pattern of local market-based towns to an evolving set of towns along the coastal seaboard with mining, industrial and export functions. Taken in conjunction with directory-based evidence, his plans throw helpful light on the urban evolution of Cumbria.

Conclusion

In some cases Wood's surveys appear to be the earliest plan of a town[15]. He also produced plans of more Cumbrian towns than any other single cartographer or surveyor. Indeed, very few British cartographers surveyed more than a small handful of towns and these were usually restricted to their own local region. This was true even of national mapping exercises such as the tithe surveys or the mapping of municipal boundaries. Wood's astounding coverage of some 150 towns across much of the United Kingdom makes him virtually unique as a peripatetic surveyor. Hence, his set of detailed plans, completed during the limited period 1818-47, offers an invaluable comparative view of the evolution of British towns at a period of accelerating economic and physical change. This is clearly the case for Cumbria where Wood's plans make it possible to compare the area's largest towns at more or less the same date, in a transitional period sitting between the pattern of stable market towns and the growth and fluctuation of an industrialising economy. His work is therefore especially valuable, not only to the burgeoning army of genealogists for the fact that they record the names of numerous owners and residents, but more especially to local historians and the new army of 'conservation archaeologists' since they throw accurate light on the evolving economy and the disposition of individual buildings in each of the towns.

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My searches for Wood's elusive plans were made possible by the generous and courteous help of numerous staff in the various branches of the Cumbria Archive & Local Studies Centre – especially Tom Robson, Richard Baxter, Susan Benson, Linda Sutherland and Francesca Halfacre. I am also very grateful to John Higham for his invaluable assistance in elaborating the history of Wigton; and to Michael Moon for his help and interest.

Footnotes

1. In the 19th century, present-day Cumbria comprised the counties of Cumberland and Westmorland and the Furness portion of Lancashire.
2. Details of the four Edinburgh engravers are given by Worms and Baynton-Williams (2011).
3. Two further Wood plans – of Skipton and Bradford – have dates of 1832. Skipton is especially relevant in a Cumbrian context: first, it notes Wood's address as 'Croft' in North Yorkshire (which suggests that, as well as the Cumbrian towns, he may have surveyed the two Yorkshire towns *en route* to or from Croft); and second it is dedicated to the Earl of Thanet (which suggests strong Cumbrian links since Henry Tufton, who succeeded to the title as 11th Earl of Thanet in 1832, had been MP for Appleby 1826-32 and became hereditary High Sherriff of Westmorland from 1832 to his death in 1849).
4. Croft is close to what then was the Great North Road linking London to Edinburgh, and hence reasonably accessible by coach from Wood's Edinburgh home.
5. The location of the original plan from which this copy derives appears not to be known.
6. The Earl of Egremont, to whom the map of Cockermouth was dedicated, was George O'Brien Wyndham, 3rd Earl of Egremont. The Earl, as Lord Leconfield, was Lord of the Manor of Wigton at the time of Wood's survey. The title died with his son in 1845, but later members of a branch of the Wyndham family were created Barons Leconfield in 1859, and it was the 6th Baron Leconfield (the present Lord Egremont's father) who was created Baron Egremont in 1963. So from the point of view of accuracy it may be more appropriate, although overly cumbersome, to refer to 'the Wyndham family, Earls of Egremont and Barons Leconfield'.
7. Shown on Wood's plans as land owned either in the name of Viscount Lowther or the Earl of Lonsdale, William Lowther having been created Earl of Lonsdale in 1807.
8. The area to the west of Senhouse Street, shown on the engraved plan, includes references to two family members, 'Miss Senhouse' living in Derwent Ville and 'Captain Senhouse' at the Fitz Mill (Figure 3).
9. William Mitchell, of Lowther Street Whitehaven, is recorded by Bendall (1997, ref M391.9) as a surveyor who produced estate, mineral, road and tithe maps. The fact that Mitchell was local reinforces the view that Wood may have found difficulty in attracting local commissions and sponsorship because, unlike almost all other of his contemporary surveyors, he worked not as a local surveyor within his home area but as a 'foreigner' across numerous regions in the UK (Robson, 2014b).
10. Most surveyors took much longer than Wood to progress from survey to 'publication' so it is perfectly feasible that Mitchell started his survey as early as 1832 even though the date of his plan is shown as 1834.
11. Robert Baxter, Senior Archivist at the Whitehaven branch of the Cumbria Archive & Local Studies Centre, has helpfully pointed out that a survey of Workington would have been unthinkable without the patronage of the Curwen family, who still owned much of the town in the 1830s. John Christian Curwen MP (1756-1828) had recently died when Wood was making his Cumbrian plans, and his heir Henry Curwen (1783-1860) may perhaps have been too preoccupied with managing the estates (which had been heavily mortgaged by his father) to sponsor a plan of Workington. Nevertheless, the lack of plans by cartographers at other dates still remains perplexing.
12. For example, of Wood's 7 Cumbrian plans, the catalogue does not include Cockermouth, Penrith or Whitehaven. However, these three plans have been added to the numbers shown for the 1830s in Table 3.
13. The decreasing number of plans in the second half of the 19th century simply reflects the rapid demise of private surveyors as the Ordnance Survey began to publish its large-scale maps from the 1840s.
14. Interestingly, the town plans produced in 1831-32 under the supervision of R. K. Dawson for the Great Reform Act included Workington only as a mere extension of the plan of Whitehaven. Moreover, unlike Whitehaven, the 1832 Act did not promote Workington to be one of the boroughs that could return members of parliament.
15. For example, his Wigton map appears to have been the only detailed plan of the town that was ever produced before the advent of large-scale mapping by the Ordnance Survey in the second half of the 19th century.

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ANNEXE: Outline details of Wood's plans of Cumbrian towns.

Town	Title	Date	Size WxH (cm)	Scale	Engraver	Wood's address	Copies	Kain & Oliver reference
Carlisle	Plan of the city of Carlisle from actual survey by John Wood 1821.	1821	60x67	1:3168	Walker	Edinburgh	POA; Carlisle RO and Public Library; NLS; TNA.	[18900]
Cockermouth	To the Right Honble. Earl of Egremont this plan of Cockermouth from actual survey is most respectfully inscribed by his Lordships most obedient humble servant John Wood 1832.	1832	59x42	1:2376	Murphy	Croft	Whitehaven RO; West Sussex RO.	_
Goat Mill Race, Cockermouth	A plan of the River Derwent, Goat Mill Race, Ec from actual survey, 1832.	1832	78x50	1:1584	_	Croft	Whitehaven RO	_
Kendal	Plan of Kendal made by John Wood 1833.	1833	41x61	1:3168	Murphy	Northallerton	Kendal RO and Library; reproduction by Kendal RO.	[19936]
Penrith	To His Grace the Duke of Devonshire this plan of Penrith is most respectfully inscribed, by His Grace's most obedient humble servant John Wood.	-	45x87	No scale (c. 1:2376)	Forrester & Nichol	_	Carlisle RO	_
Ulverston	To Colonel T.R.G.Braddyll this plan of Ulverston is most respectfully inscribed by his most obedient humble servant John Wood. 1832.	1832	54x33	1:2376	Murphy	Northallerton	Photocopies in Barrow, Kendal & Lancs ROs. Small copy in Barnes (1951).	[22375]
Whitehaven	To The Right Honble. Viscount Lowther This Plan of Whitehaven is most respectfully inscribed by his Lordship's most obedient, and most humble Servant, John Wood.	-	49x70 (from repro)	1:2376	Murphy	_	Reproduction (published by Michael Moon from an original owned by him). Copies are in Whitehaven and Carlisle ROs and elsewhere.	_
Wigton	To the Right Honble. The Earl of Egremont this plan of Wigton is most respectfully inscribed by his Lordship's most obedient humble servant John Wood 1832.	1832	45x64	1:2376	Murphy	Croft	Carlisle RO; Bodleian; small reproduction in Higham (1997).	[22215]

Abbreviations: RO – Record Office; POA – Post Office Archive, London; NLS – National Library of Scotland, Edinburgh; TNA – The National Archive, Kew.

References to Barrow, Carlisle, Kendal and Whitehaven ROs signify branches of the Cumbria Archive & Local Studies Centre.

Figure 1: Wood's plan of Carlisle. Reproduced by kind permission of Cumbria Archive & Local Studies Centre (Carlisle).

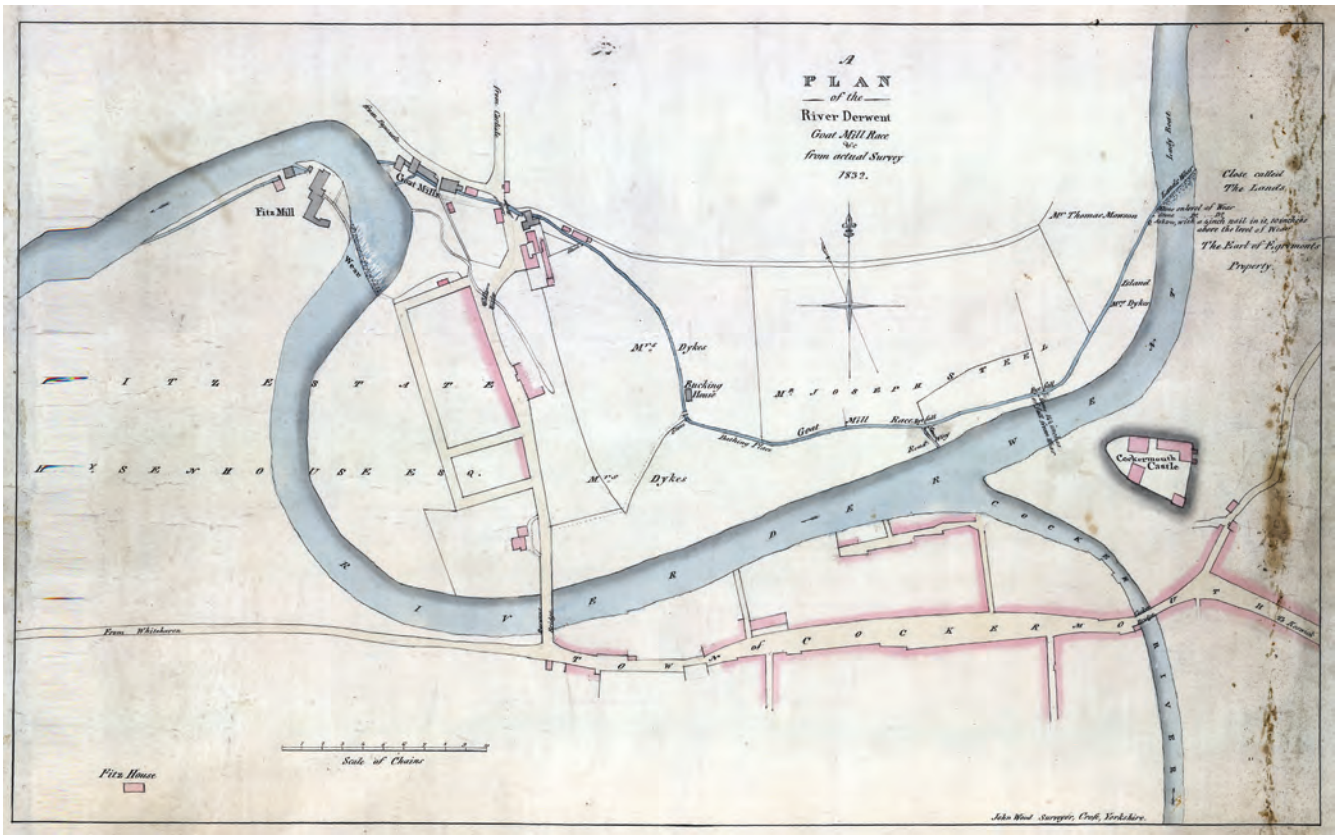


Figure 2: Wood's manuscript plan of part of Cockermouth and the Senhouse estate. Reproduced by kind permission of Cumbria Archive & Local Studies Centre (Whitehaven).

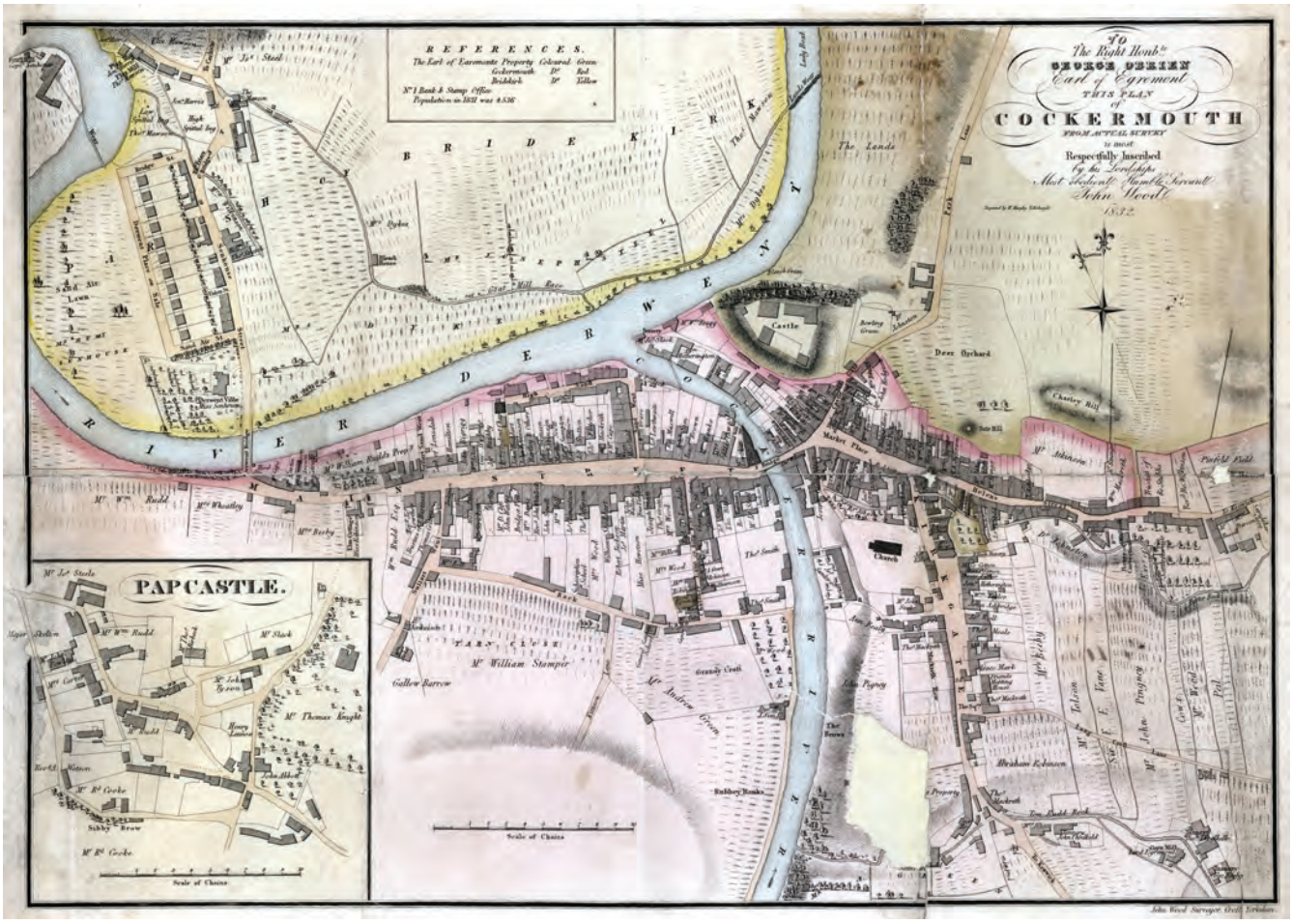
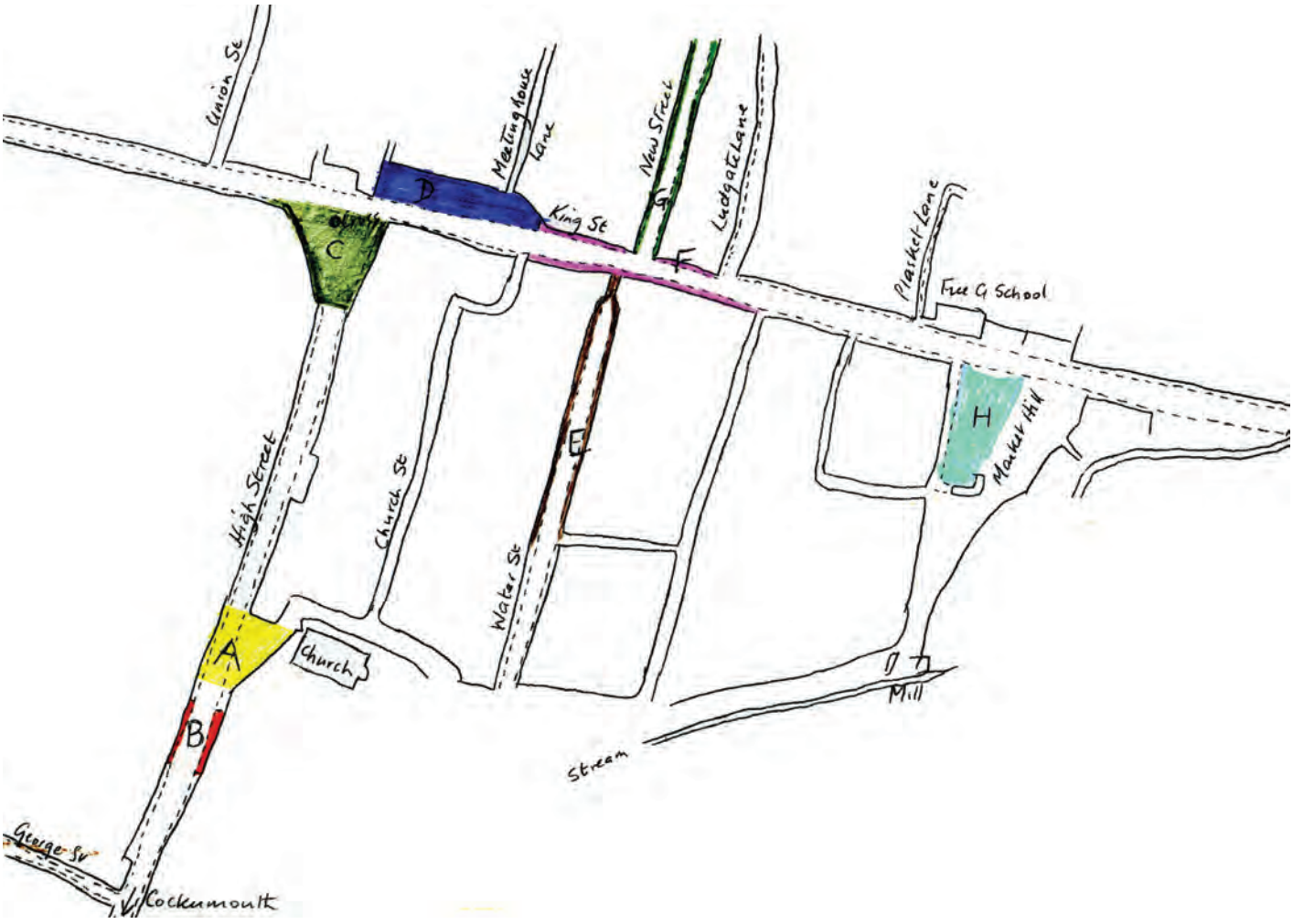


Figure 3: Wood's plan of Cockermouth. Reproduced by kind permission of Cumbria Archive & Local Studies Centre (Whitehaven).

Figure 4 (left): Detail from Wood's plan of Kendal. From a reproduction published by Cumbria Archive & Local Studies Centre (Kendal).

Figure 5 (below): Wigton markets in 1829. Higham's sketch, drawn from the original manuscript plan of 1829. Letters identify the following: 'A corn market; B pig market; C for butter, poultry, fish, vegetables and provisions; D butcher market; E potato market; F for hardware, cloth etc; G for pottery, glass etc; H horse and cattle market'. Reproduced by kind permission of John Higham.



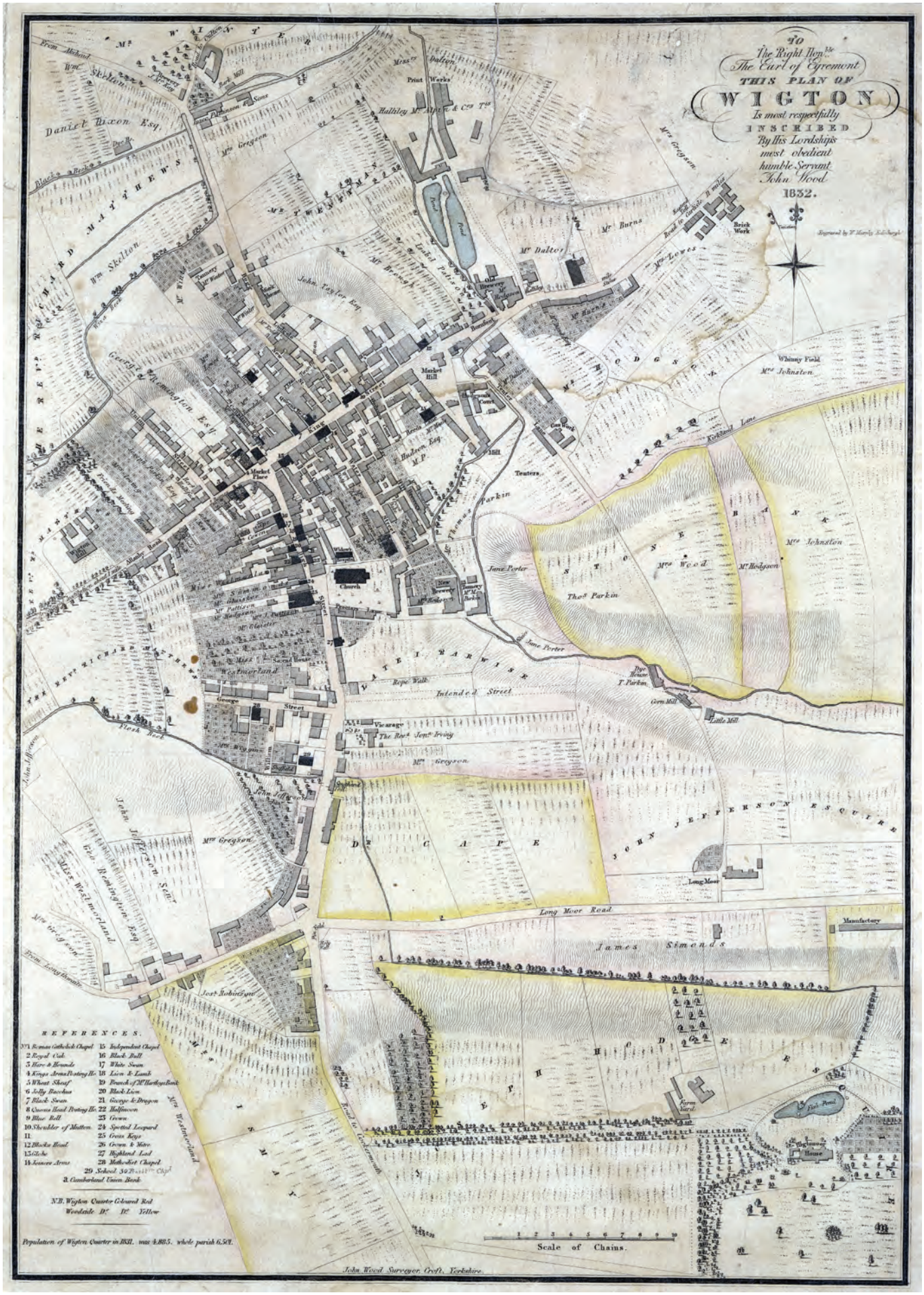


Figure 6: Wood's plan of Wigton. Reproduced by kind permission of Cumbria Archive & Local Studies Centre (Carlisle).