





PAPERMAKING AT HAYLE MILL

A brown cardboard box is centered in the frame. The top surface of the box is covered with a light-colored, textured material, possibly a different type of cardboard or a label. On this top surface, there is a rectangular white label. The label contains the text 'PAPERMAKING AT HAYLE MILL' in a blue, sans-serif font. The box is set against a background of a blue and white patterned fabric, featuring horizontal bands of small, repeating geometric motifs.

PAPERMAKING AT HAYLE MILL

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HAYLE MILL BOOK

LOOSE VALLEY MAP

MILL PHOTOGRAPHS

SAMPLE PAPERS

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HAYLE MILL BOOK

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SAMPLE PAPERS









MAUREEN GREEN

PAPERMAKING AT HAYLE MILL 1808-1987

THE JANUS PRESS NEWARK VERMONT 2008

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*I prayse the man that first did paper make,
the only thing that sets all vertues forth:
It shewes newe bookes, and keepes old workes awake,
much more of price, than all this world is worth:
It witnesse beares, of friendship, time and troth,
and is the tromp of vice and vertue both,
Without whose helpe, no hap nor wealth is won,
and by whose ayde, great workes and deedes are done.*

Thomas Churchyard 1520-1604



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*I prayse the man that first did paper make,
the only thing that sets all vertues forth:
It shoes newe bookes, and keepes old workes awake,
much more of price, than all this world is worth:
it witnesse beares, of friendship, time and troth,
and is the tromp of vice and vertue both,
Without whose helpe, no hap nor wealth is won,
and by whose ayde, great workes and deedes are done.*

Thomas Churchyard 1500-1504



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*I praise the man that first did paper make,
the only thing that sets all virtues forth;
It shows new books, and keeps old works awake,
much more of price, than all this world is worth;
It witnesseth hours, of friendship, time and truth,
and is the trump of vice and virtue both,
Without whose helpe, no hope nor wealth is won,
and by whose ayde, great works and deedes are done.*

Thomas Churchyard 1529-1604



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*I praise the man that first did paper make,
the only thing that sets all virtues forth:
It shows new books, and keeps old works awake,
much more of price, than all this world is worth:
It witnesseth loves, of friendship, time and truth,
and is the trump of vice and virtue both.
Without whose helpe, no hap nor wealth is won,
and by whose ayde, great works and deedes are done.*

Thomas Churchyard 1520-1604



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and is the trumpe of vice and vertue both.
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Thomas Charnyond 1598-1604



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PAPER IS NOT KNOWN TO HAVE BEEN MANUFACTURED IN BRITAIN until John Tate established his mill near Harford, on the River Lee in the county of Selk, in the latter part of the fifteenth century. Prior to this, all paper used in Britain was imported from the Continent. John Tate's mill made the first white paper of quality in Britain. Unfortunately, Tate's enterprise was short lived and, upon his death in 1507, he left explicit instructions in his will that his 'paper mill' with the appearance to be always accepted and to be sold.

It was not until 1520, when John Spelman built a large paper mill on the River Darent near Dartford in Kent, that a viable papermaking industry in Britain began to emerge. From this date onwards, Kent became an important centre in Britain for the production of fine quality white paper, as opposed to more utilitarian brown paper.

Well placed to accommodate the new industry, Kent had a number of available sites suitable for papermaking. Especially desirable were sites with existing fulling mills, traditionally used to cleanse and thicken woollen cloth, many of which had become redundant over periods of decline in the cloth industry. Both the general placement and configuration of these mills and the equipment they housed were similar to that required to make paper. Among this equipment was a series of trip hammers which alternately rose and fell, beating the newly produced cloth which was treated with a mixture of water and fullers' earth. These could be adapted, or converted, into stampers - devices used to break and reduce rags to pulp. Water-driven stampers were eventually replaced by a more efficient means of reducing rags with the invention of the rag engine, or Hollander beater. In the latter part of the seventeenth century, Kent's rivers and streams could be dammed to provide power to work equipment in the mills, and the county's waterways proved important for transporting goods as any existing roads were often impassable. Navigable rivers like the Medway, as well as a large expanse of coastline with many ports, meant the county was in a good position to provide valuable transportation links to access and deliver goods throughout Britain and beyond. Many areas in Kent were also well served by an abundance of pure, crystal-clear limestone springs, necessary to produce paper of the finest quality. Access to these springs was vital at a time when rivers and streams were badly polluted with domestic and other waste. John Harris, in his book *The History of Kent* (1715), writes of his visit to Turkey Mill:



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estate, providing Pine could raise sufficient funds for its purchase. By 1811, Pine had managed to find another financial backer, John Beeching, a local saddler, draper, and pawnbroker. Pine was fortunate to find another partner at this time. Labour unrest and falling markets signalled what was to become the worst three years in the history of the industry. Green was to become the worst partner in this partnership. No sooner had the two men signed this agreement and taken out a mortgage to purchase the land, than further disaster befall the enterprise with Beeching's untimely passing. Pine was now left in the difficult position of re-financing the mortgage and, due to further difficulties with the undertaking, forced to borrow a further £1,250 (£72,000) from the Beeching estate.² With Pine suffering from setbacks which were considerably strained his personal finances, and bearing in mind that he was also operating two other mills during a period of inflated costs for raw materials and falling markets, it is not surprising to find the following notice printed in *The Maidstone Journal and Kentish Advertiser*, dated 28 April 1811:

Two Yarn Paper Mills
A Two Yarn Paper Mill, newly erected,
and in every respect in complete order for making the
Finest Papers - Specimens of which may be seen, and further
Particulars known, by applying to Messrs Elie and Son,
Wholesale Stationers, Queen Walk, London.
By 23 June 1812, another advertisement appeared which read:
To Paper Manufacturers, and Others,
wishing to engage in the Paper Business
To be sold by Private Contract,
A singularly Valuable Freehold
Yarn Paper Mill together with excellent Cottage
and Five Acres of Land, situate in the County of
Kent, and amply supplied with water, from one of the most
regular streams in that County, with a Pen of nearly Two Acres.

² The value of one pound in 1811 is roughly equal to £10 by 1990 standards.

The later advertisement further states that the mill in question 'is a most complete Mill for manufacturing the finest Writing and Drawing Papers, on which it is now in full work'. Successive advertisements follow, but the Mill is neither rented nor sold until the papermaker John Green enters into an agreement with Pine to lease the Mill from him later in the year. Shortly thereafter paper began to be produced at Hayle Mill watermarked J Green.

John Green had learned the trade of paper-making while working for his father-in-law, William Turner, at Chafford Mill near Barbriidge Wells in Kent. Five years after leaving Hayle Mill from Pine, he managed to secure sufficient funds to purchase the freehold with financial and other assistance provided by his brother Samuel, who also acted as his guarantor. John Green then took over the existing mortgage of £10,000 (£640,000), payable at a rate of £1,250 (£72,000) per annum, as well as paying Pine £817 10s (£49,000) to finance the purchase. From 1812 onwards, John Green and his son John built a reputation for making paper of exceptional quality at Hayle Mill. When his son came of age, John Green altered the watermark to read J Green & Son and expanded the family business interests by leasing Otham Mill, Boxley, near Maidstone. The day-to-day management of Otham Mill

J GREEN
1817

J GREEN & SON

he delegated to his son. The *Victoria History of the Counties of England* records that 'in 1823 John Green & Co were making "superior" paper at the Otham Mills in Boxley'. John Green and his son held great ambitions for this new enterprise, investing in new equipment and infrastructure to accommodate the purchase of a new papermaking machine. Money was also invested to support a series of lengthy experiments to make paper using straw. These experiments were conducted by John Green junior, who was determined to find a commercially viable alternative to cotton and linen rags, traditionally the main constituent of paper. Rags of every description were increasingly difficult to procure, as demand outstripped supply. From the seventeenth century onwards, numerous efforts had been undertaken throughout Europe to find an acceptable and plentiful alternative to alleviate the papermakers' dependence on rags. Unfortunately,

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With Pine suffering from setbacks which must have considerably strained his personal finances, and bearing in mind that he was also operating two other mills during a period of inflated costs for raw materials and falling markets, it is not surprising to find the following notice printed in *The Maidstone Journal and Kentish Advertiser*, dated 20 April 1812:

Two Valt Paper Mills
To let for a term of Years, (and Possession given at Midsummer)
A Two Valt Paper Mill, newly erected,
and in every respect in complete order for making the
Finest Papers - Specimens of which may be seen, and further
Particulars known, by applying to Messrs Elie and Son,
Wholesale Stationers, Queen Street, London.

By 23 June 1812, another advertisement appeared which read:

To Paper Manufacturers, and Others,
wishing to engage in the Paper Business
To be sold by Private Contract,
A Singularly Valuable Freehold
Val Paper Mill together with excellent Cottage
and Five Acres of Land, situate in the County of
Kent, and amply supplied with water, from one of the most
regular streams in that County, with a Pen of nearly Two Acres.

² The value of one pound in 1810 is roughly equal to £64 by 2000 standards.

The latter advertisement further states that the mill in question 'is a most complete Mill for manufacturing the Finest Writing and Drawing Papers, on which it is now in full work! Successive advertisements follow, but the Mill is neither rented nor sold until the papermaker John Green enters into an agreement with Pine to lease the Mill from him later in the year. Shortly thereafter paper began to be produced at Hayle Mill watermarked *J Green*.

John Green had learned the trade of paper-making while working for his father-in-law, William Turner, at Chafford Mill near Tushbridge Wells in Kent. Five years after leaving Hayle Mill from Pine, he managed to secure sufficient funds to purchase the freehold with financial and other assistance provided by his brother Samuel, who also acted as his guarantor. John Green then took over the existing mortgage of £10,000 (£600,000), payable at a rate of £1,200 (£72,000) per annum, as well as paying Pine £107 10s (£6,920) to finalise the purchase. From 1812 onwards, John Green and his son John built a reputation for making paper of exceptional quality at Hayle Mill. When his son came of age, John Green allowed the watermark to read *J Green & Son* and expanded the family business interests by leasing Otham Mill, Basley, near Maidstone. The day-to-day management of Otham Mill

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In the case of the Greens, their continued programme of experimentation and optimistic expansion did not lead them in the direction intended. By August of 1838, the family was declared bankrupt. Not only did they face losing all of their investment in Otham Mill, they faced losing Hayle Mill as well. Aside from the sale of their equipment at Otham Mill on the grounds of 'distress for rent', Hayle Mill was advertised for auction on 31 October 1838. The auction details indicate that the Greens had not only invested in equipment for Otham Mill, but that considerable capital had been invested to upgrade and expand production at Hayle Mill, including the installation of a third vat. The family had also built six cottages on land at the far end of the millpond, which they leased mainly to individuals and families working at the Mill.

Although the sale particulars were made available to any interested party, the auction never took place. Samuel Green, John's older brother, managed to raise sufficient money to pay his brother's creditors and to rescue the business. In a journal dated 1851, Samuel wrote:

I found trouble and sorrow in the buying of the paper business. Mr. John Beeching was upon taking the business and then Mr. Guiding was to have been partners with me but both was held back by the kind and merciful hand of God and I was left in trouble I thought and did not see the blessing a kind and merciful Providence intended me in taking the business. I was obliged to borrow a large sum of Mr. Beeching's Bank and other places to the amount of about £2,400 (£14,000) I am thankful to the kind provider that has blessed the labour of my hands and I have paid of all I borrowed and no money wanting the business by what we can meet thanks be to God.

Samuel now owned Hayle Mill and maintained tight control over all aspects of the business's finances, employing his brother John as Mill Manager at a salary of £200 (£12,000) per annum plus free rent of the mill house. No provision was made to accommodate John Green's two sons, John and Charles, who sought work elsewhere after Otham Mill was leased by the Hollingworth brothers of Turkey Mill.

When he took over the ownership of Hayle Mill in 1838, Samuel Green was sixty-nine years of age. It is doubtful he would have entered into the trade had



SAMUEL GREEN (1768-1852) PORTRAIT PAINTED IN 1838

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Samuel now owned Hayle Mill and maintained tight control over all aspects of the business's finances, employing his brother John as Mill Manager at a salary of £200 (£22,000) per annum plus free rent of the mill house. No provision was made to accommodate John Green's two sons, John and Charles, who sought work elsewhere after Otham Mill was leased by the Hollingsworth brothers of Turkey Mill.

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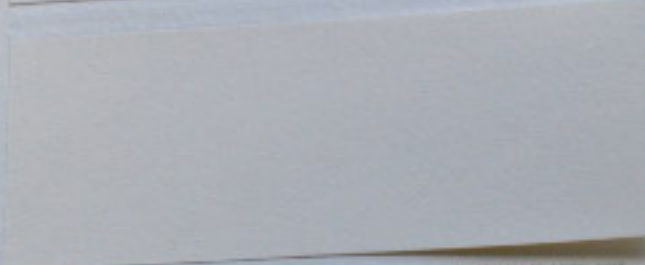
SAMUEL GREEN (1768-1838) PORTRAIT PAINTED IN 1838

sizes were also made to the same specification.⁴ Suchness could be Rough, HP, or HP. The Rough surface paper was air dried and reflected the character of the woven wet felts used to press the paper in the Vat House.⁵ While popular with watercolour artists, Rough was not a suitable surface for fine drawing, pen work, and fine printing. To achieve a finer surface, the damp paper was pressed again after the felts had been separated out. This was done several times in presses (also called cold presses), and the paper was then dried on a steam-heated cylinder. The resulting matte surface was ideal for drawing, for most types of printing, and for many other uses. For ledgers, certificates, calligraphy, lithography, and some other printing processes, however, an even smoother surface was required. At one time this was done by pressing the sheets between two (usually copper) plates after gelatine sizing and drying. Hot pressing was superseded by plate glazing in the nineteenth century. In this process, the dry sheets were intercalated between zinc plates used then passed between two heavy rollers, which turned at slightly different speeds. The friction between the rollers polished the surface of the paper. As the result was the same for both methods, no heat has been applied. Although the intermediate matte surface was often called (correctly) Cold Pressed in North America, the term used at Hayle Mill was NOT meaning 'not hot pressed'.

North was a well-established and highly regarded watercolourist and mentor to many aspiring watercolour artists at the time. The fact that he had no head for business and overextended the company's resources by continually changing and altering the range of papers and materials on offer, along with

⁴ After 1924, the paper was watermarked Hayle Mill Lion, and in 1925 the no logo was introduced along with the name Cotman. By 1927, the watermark changed to W. W. and Co. The furnish for the paper plus available sizes and weights altered over the same period - for a variety of reasons, mainly the Mill's ability to procure suitable amounts of rag material to make the paper.

⁵ Technically these are made like blenders, woven on a loom with the nap to be woven only raised with reeds. They become increasingly difficult to source in the UK due to innovations in the weaving industry. Along with the introduction of hand-weaving by thick sheets (which tend to give a mechanical look to the Rough surface), the actual construction of felts for use on paper machines has changed radically since the 1920s.

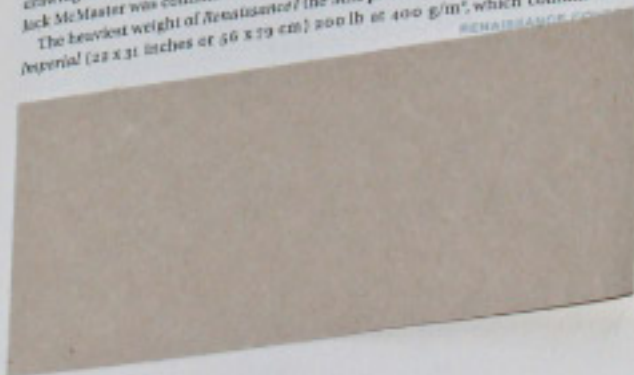




Linum usitatissimum

the bark and shive. The by-product of this, referred to in the trade as 'tow', was then sent to the tow-scatcher or cleaner. The resulting scutched fibre was the prime raw material used in most flax spinning mills' spinning line-yarns. The varying types of waste produced during the making of fine textile yarn were used for other industrial applications, especially those bi-products made from carding and combing the fibre. These shorter fibres, which cannot be adequately spun into linen, have traditionally been purchased by the papermaking industry, most notably for making currency or cigarette papers. In the case of preparing the fibre for use at Hayle Mill, the fibre was also chopped to 9 mm (3/32 inch) lengths, boiled in water at slight pressure with the inclusion of 10 percent sodium carbonate (soda ash) for about thirty minutes at 110 to 115°C (230 to 239°F), then rinsed with clean water at 90°C (194°F) to avoid precipitating residues. After this, the fibre was rinsed several more times to remove any further residue and dried. Once the fibre had been prepared, it was then packed and shipped to the Mill. The first shipment was delivered on 18 November 1983, and shortly after its arrival the paper was put into production. To celebrate the paper's launch, a Christmas card designed and illustrated with a pen-and-ink drawing of a flax plant (on the opposite page) by Canadian designer and artist Jack McMaster was commissioned.

The heaviest weight of Renaissance/ the Mill produced was Renaissance Cover Imperial (22 x 31 inches or 56 x 79 cm) 200 lb at 400 g/m², which contained a

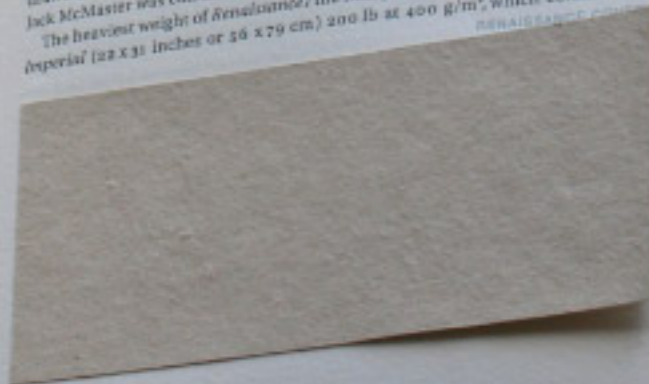




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the bark and shive. The by-product of this, referred to in the trade as 'tow', was given over to the rose-scorcher or cleaner. The resulting scotched fibre was the prime raw material used in most flax spinning mills' spinning line-yarns. The varying types of waste produced during the making of fine textile yarn were used for other industrial applications, especially those by-products made from carding and combing the fibre. These shorter fibres, which cannot be adequately spun into lines, have traditionally been purchased by the papermaking industry, most notably for making currency or cigarette papers. In the case of preparing the fibre for use at Hayle Mill, the fibre was also chopped to 9 mm (5/32 inch) lengths, boiled in water at slight pressure with the inclusion of 10 percent sodium carbonate (soda ash) for about thirty minutes at 110 to 115°C (230 to 239°F), then rinsed with clean water at 90°C (194°F) to avoid precipitation residues. After this, the fibre was rinsed several more times to remove any further residue and dried. Once the fibre had been prepared, it was then packed and shipped to the Mill. The first shipment was delivered on 18 November 1983, and shortly after its arrival the paper was put into production. To celebrate the paper's launch, a Christmas card designed and illustrated with a pen-and-ink drawing of a flax plant (on the opposite page) by Canadian designer and artist Jack McMaster was commissioned.

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(1326)



RICHARD DE BAS

disaster when Richard de Bas informed the Mill that they were reducing by half what had previously been the promise of a substantial order of papers, including a very coarse laid version of *Apta*, vital to the business at the time. Despite this rocky start, after three or four years his concern over the prospects for the business had abated, with Barcham Green & Company Limited becoming well established. Business had improved to the point that the Mill was able to start running a second vat - the first time this had occurred since the early 1960s. The running of a second vat had been possible both because of a general increase in orders, and because, during this time, the Mill had managed to train a new influx of young employees, passing on those skills which enabled them to make fine handmade paper.

As the orders came in, and circumstances appeared to be improving, what Simon Green had not factored into any long term business plan was the lasting effect and legacy of a disastrous election held in the spring of 1979. When the Conservative Party leader, Margaret Thatcher, became Prime Minister, her government became instrumental in creating one of the worst recessions experienced during the century. Facing an increase in business rates, interest rates, exchange rates, and the doubling of value added tax (VAT) on goods and services, the company became more and more reliant upon an ever increasing overdraft. The money borrowed not only helped the business through lean times, it also provided the funds to maintain and repair the Mill's large collection of Grade II*

as there was no possibility of conducting any further experiments or developing any alternative version of *Niform*.

When he took control of the business in 1974, Simon Green was well aware of the fact that continuing the family business at Hoyle Mill was never going to be an easy prospect. Over a period of decades, spanning two centuries, the Mill had weathered a number of major historic events and periods of severe economic hardship. When Barcham Green & Company Limited began, the first year of trading had nearly ended in

listed buildings. By 1988, after two years of slight improvement, the American version of Thatcherism, Reaganomics, meant there were massive cuts applied to arts funding throughout that country. As result of these cuts, which affected a large number of the Mill's customers, running a small, exclusive business like Barcham Green & Company Limited became even more difficult. One of the saving graces was the *Renaissance* range of papers, as these papers proved very popular, and tens of thousands of pounds worth of this very expensive paper helped the Mill weather some otherwise bleak years. Perhaps, if the Mill had been able to count on a large and consistent order to help sustain the production of some of the other papers, whose sales tended to fluctuate enormously, the Mill could have better survived a period of prolonged recession.



THE CLOSING OF THE MILL

What really precipitated the end of production at Hayle Mill was the sudden resignation of Terry Franks. With Terry Franks gone, the Mill was left without a production director, and one whose skill and expertise was second to none. After calling a crisis board meeting, the other directors, Graham Clarke along with the Mill's accountant, Peter Bosme, recognised that without the skills possessed by a good production director, and taking into consideration the present economic climate, carrying on with the business was out of the question. What remained to be done was to gently wind the business down, rather than simply and abruptly halting production. Bearing in mind that the Mill still had a lot of raw material in store, and taking into consideration that the employees were entitled to a decent period of notice, it was decided by the remaining directors to continue making paper for at least three months. The three months would give the Mill time to complete orders for stock, while at the same time allowing the Mill's younger employees sufficient time to seek some form of alternative employment. Many of the older employees were already well past retirement age and, althoughaverse to the idea of retiring, most of them accepted the reality of the situation gratefully. Unexpectedly, many of the younger employees found new positions rather quickly, including Mick Roberts, the Mill's leading vatman. His leaving meant that Simon Green had to telephone Norman Peters and see if he was willing to come out of retirement to make the remaining sheets on order. Norman Peters, by now well into his seventies, came back willingly. On the first day of his return, he made a thousand sheets of paper and, at the end of his shift, left the Mill with his shoes shining and his shirt as fresh as if he had just put it on five minutes previously.

When John Pine and his partner, Thomas Smith, decided to invest in a small two vat paper mill in 1806, the two men were unaware that their enterprise would end up being the last Industrial handmade mill of its kind in commercial operation in Britain. Hayle Mill was neither the largest handmade paper mill in the country, nor was it the oldest established mill in the country. Instead the Mill was a typical example of many of the smaller two to five vat paper mills which remained in operation while the rest of the trade was expanding, and technological changes heralded a new age of mass production with the inven-

tion and success of the papermaking machine. What made Hayle Mill unusual was the fact that, despite the influence of these technological advances and fierce competition from mills who embraced them, Hayle Mill continued to manufacture traditional handmade papers under the supervision of successive members of the same family. The determination of the Green family to continue operating their business in a traditional and often innovative manner meant that Hayle Mill had the distinction of being the last of its kind.

In July 1987, the last large make of paper was produced at Hayle Mill. The paper, called *Finale*, was basically a Royal 45 lb NOT surface version of Chatham made using 100 percent Lincell A flax pulp and Aquapel® sized. The watermark for the paper was designed by Claire Van Vliet and stitched to a pair of the Mill's moulds by Ron MacDonald. When, inevitably, the time came at last to form and couch the final sheet, in a magnanimous gesture Norman Peters stood aside, in favour of his young assistant and former apprentice, Andrew French. Watching from the sidelines, as Andrew French completed the last sheet, was Simon Barcham Green, a sixth generation papermaker -

the last member of his family to own and operate Hayle Mill.

Finale

THE CLOSING OF THE MILL

What really precipitated the end of production at Hayle Mill was the sudden resignation of Terry Franks. With Terry Franks gone, the Mill was left without a production director, and one whose skill and expertise was second to none. After calling a crisis board meeting, the other directors, Graham Clarke along with the Mill's accountant, Peter Bourne, recognised that without the skills possessed by a good production director, and taking into consideration the present economic climate, carrying on with the business was out of the question. What remained to be done was to gently wind the business down, rather than simply and abruptly halting production. Bearing in mind that the Mill still had a lot of raw material in store, and taking into consideration that the employees were entitled to a decent period of notice, it was decided by the remaining directors to continue making paper for at least three months. The three months would give the Mill time to complete orders for stock, while at the same time allowing the Mill's younger employees sufficient time to seek some form of alternative employment. Many of the older employees were already well past retirement age and, although averse to the idea of retiring, most of them accepted the reality of the situation gracefully. Unexpectedly, many of the younger employees found new positions rather quickly, including Mick Roberts, the Mill's leading vacuum. His leaving meant that Simon Green had to telephone Norman Peters and see if he was willing to come out of retirement to make the remaining sheets on order. Norman Peters, by now well into his seventies, came back willingly. On the first day of his return, he made a thousand sheets of paper and, at the end of his shift, left the Mill with his shoes shining and his shirt as fresh as if he had just put it on five minutes previously.

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In July 1987, the last large make of paper was produced at Hayle Mill. The paper, called *Finale*, was basically a Royal 65lb NOT surface version of Chatam made using 100 percent Lincoll A flax pulp and Aquapel® sized. The watermark for the paper was designed by Claire Van Vliet and stitched to a pair of the Mill's models by Ron MacDonald. When, inevitably, the time came at last to form and couch the final sheet, in a magnanimous gesture Norman Peters stood aside, in favour of his young assistant and former apprentice, Andrew French. Watching from the sidelines, as Andrew French completed the last sheet, was Simon Barcham Green, a sixth generation papermaker - the last member of his family to own and operate Hayle Mill.

Finale



LEDGER PAPER WATERMARK 1837

ACKNOWLEDGEMENTS

I would like to thank Warwick Gould, Simon Elliot and Roy Mosham, University of London, School of Advanced Study, Institute of English Studies as the original material on the Renaissance range formed part of a paper written for my MA; also Simon Fenwick, the Royal Watercolour Society Archives and Simon Barcham Green who provided valuable assistance. I am also indebted to generations of the Green family whose devotion to Hayle Mill and the craft of fine hand-made paper inspired me to write this book.

Maureen Green

COLOPHON

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This edition was printed on Finale, the last paper made at Hayle Mill. The text was set on an Apple computer in Robert Slimbach's Utopia in Adobe InDesign and Helvetica from the Haas Foundry metal. The portrait of Samuel Green was prepared and printed on Epson Archival paper by Ellen Dorn Levitt who also scanned the watermarks and maps preparing them, with Claire Van Vliet, for platemaking. Much of the letterpress printing used polymer plates from Boxcar Press in Syracuse, New York and was printed by Andrew Miller-Brown.

The long-stitch binding is through a vellum spine with a cover of Barcham Green Neferiti executed by Audrey Holden. The box was made with Japanese and Scholco cloth covering the stays, inside lining of Barcham Green Martian Badge and covers of linen by Mary Richardson and Audrey Holden. The folder of paper samples is Barcham Green India Office and that of the photographs is Barcham Green DeWint.

The photographs were scanned by Ellen Dorn Levitt from old prints in the Hayle Mill Archive and cleaned up in Photoshop. They were printed by Emily Corrow on a Xerox Docucolor 240 copier on Hammermill 100lb archival cover copy paper at Silver Mountain Graphics in St Johnsbury, Vermont.

This edition is limited to two hundred copies of which this is *for me* ♡
Claire

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LEDGER PAPER WATERMARK TEST

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Maureen Green

GOLDPHON

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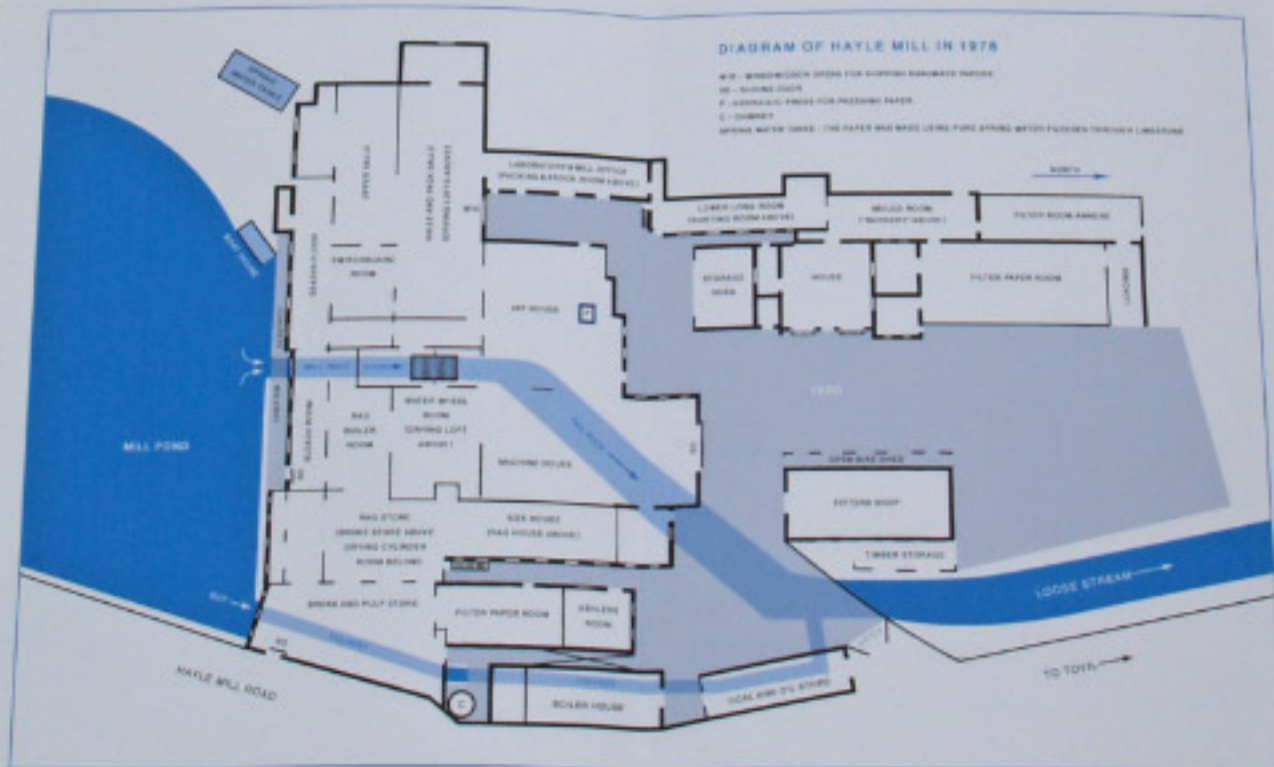
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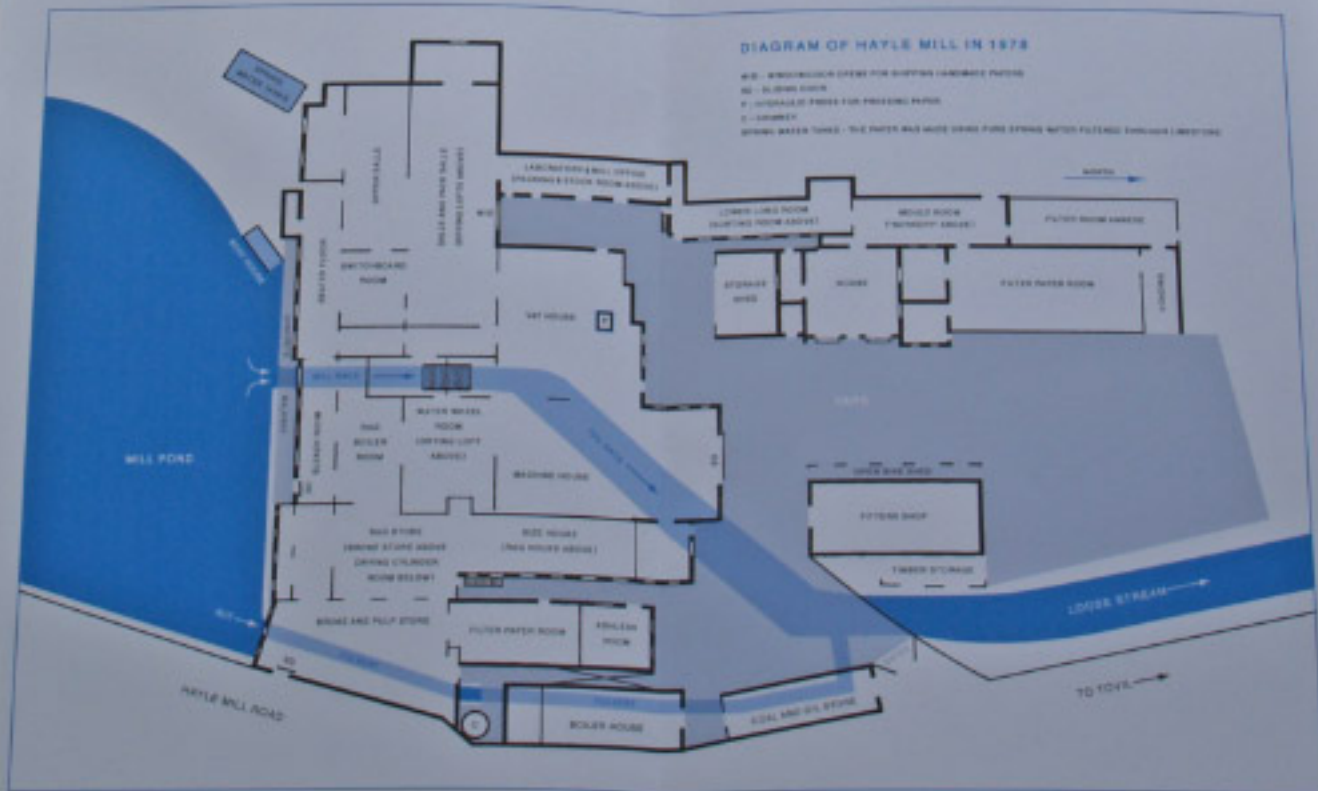
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1 BILL INTERVIEW 1997
2 BILL AND BILL FORD 1999
3 MAYLE BILL CIRCA 1980
4 MAG STONE

[illegible]

1. WELL ENTRANCE 1937
2. WELL W/ WY WELL POND 1989
3. HAYLO WELL CARCA 1988
4. FLAG HOUSE





1. MILL ENTRANCE 1921

HAYLE MILL DIAGRAM SHOWING WATER FLOW 1979

1. MILL ENTRANCE 1921
2. MILL AND MILL POND 1985
3. HAYLE MILL CIRCA 1890
4. RAG HOUSE
5. MRS YARD PREPARING RAGS ON THE RAG HURDLE 1947
6. BEATER FLOOR 1951
7. HAYLE MILL VAT CREW CIRCA 1870
8. WITMAN ARTHUR WHATMORE FORMING A SHEET 1922
9. RST HOUSE 1921
10. DENNIS AVERALL AT THE HYDRAULIC PAPER PRESS 1987
11. DRYING LOFT 1921
12. HANGING PAPER IN THE DRYING LOFT USING THE TRADITIONAL METHOD 1921
13. SIZE MACHINE 1921
14. DRYING SIZED PAPER ON HESSIAN THREBBLES 1921
15. SALLE 1921
16. SALLE SHOWING THE PLATE GLAZING MACHINE 1923
17. PICKING AND STOCK ROOM 1921
18. GEORGE MARTIN TAKING A LOAD OF PAPER FROM HAYLE MILL TO TOVIL RAILWAY SIDING 1923
19. NORMAN PETERS FORMING A SHEET 1977



1. MILL ENTRANCE 1921

HAYLE MILL DIAGRAM SHOWING WATER FLOW 1976

1. MILL ENTRANCE 1921
2. MILL AND MILL POND 1883
3. HAYLE MILL CIRCA 1883
4. RAG HOUSE
5. MRS VARD PREPARING BAGS ON THE RAG HURDLE 1947
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9. VAT HOUSE 1921
10. DENNIS AVERALL AT THE HYDRAULIC PAPER PRESS 1967
11. DRYING LOFT 1921
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15. SALLE 1921
16. SALLE SHOWING THE PLATE GLAZING MACHINE 1939
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18. GEORGE MARTIN TAKING A LOAD OF PAPER FROM HAYLE MILL TO TOVS. RAILWAY SIDINGS 1933
19. NORMAN PETERS FORMING A SHEET 1977

RENAISSANCE II-IMPERIAL-LAC-NOT-SOLD-1950MP

RENAISSANCE IX-IMPERIAL-NOT-SOLD-1950MP

RENAISSANCE IX-IMPERIAL-NOT-SOLD-1950MP

REPERTY-ROYAL-NOT-SOLD-1950MP

ROULEAU LIGHT TONED-SUPER ROYAL-NOT-SOLD-1950MP-1951

CHATHAM-PLAZER-ROYAL-NOT-SOLD-1950MP

APTA-IMPERIAL-LAC-ROUGH-SOLD-1950MP

DE WENT-IMPERIAL-NOT-SOLD-1950MP

CARD (EGYPTIAN II)-IMPERIAL-NOT-SOLD-1950MP-1951

EGYPTIAN WILLOW-ROYAL-1950MP

PWS-18 X 22 1/2-ROUGH-SOLD-1950MP-1951

EGYPTIAN PASTELESS BOARD-IMPERIAL-ROUGH-SOLD (UNGLAZED)

RENAISSANCE K-IMPERIAL-LAC-NOT-SOLD-1000MP

RENAISSANCE K-IMPERIAL-NOT-SOLD-1000MP

RENAISSANCE K-IMPERIAL-NOT-SOLD-1000MP

RENAISSANCE K-IMPERIAL-NOT-SOLD-1000MP

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RENAISSANCE K-IMPERIAL-NOT-SOLD-1000MP





LOOSE VALLEY 1856
MILLS ON LOOSE STREAM



MILL PHOTOGRAPHS

SAMPLE PAPERS



GOOSE VALLEY 1856
MILLS ON LOOSE STREAM



MILL PHOTOGRAPHS

SAMPLE PAPERS

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HAYLE MILL

THE LOOSE VALLEY 1856
WITH THE MILLS ON LOOSE STREAM



HAYLE MILL

THE LOOSE VALLEY 1856
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sizes were also made to the same specification.⁴ Surfaces could be Rough, Hot, or HP. The Rough surface paper was air dried and reflected the character of the woven wet felts used to press the paper in the Vat House.⁵ Whilst popular with watercolour artists, Rough was not a suitable surface for fine drawing, pen work, and fine printing. To achieve a finer surface, the damp paper was pressed again after the felts had been separated out. This was done several times in presses (also called cold presses), and the paper was then dried on a steam-heated (separated and restacked), and the paper was then dried on a steam-heated cylinder. The resulting matte surface was ideal for drawing, for most types of printing, and for many other uses. For ledgers, certificates, calligraphy, bookbinding, and some other printing processes, however, an even smoother surface was required. At one time this was done by pressing the sheets between hot (usually copper) plates after gelatine sizing and drying. Flat pressing was superseded by plate glazing in the nineteenth century. In this process, the dry sheets were interleaved between zinc plates and then passed between two heavy rollers, which turned at slightly different speeds. The friction between the rollers polished the surface of the paper. As the result was the same for both methods, no heat has been applied. Although the intermediate matte surface was then called (correctly) Cold Pressed in North America, the term used at Hayle till was NOT meaning 'not hot pressed'.

North was a well-established and highly regarded watercolourist and mentor to many aspiring watercolour artists at the time. The fact that he had no head for business and overextended the company's resources by continually changing and altering the range of papers and materials on offer, along with

⁴ After 1924, the paper was watermarked Hayle Mill Laken, and in 1925 the ac logo was introduced along with the name Cotman. By 1927, the watermark changed to ac, a m, and crown. The furnish for the paper plus available sizes and weights altered over the same period, for a variety of reasons, mainly the Mill's ability to procure suitable amounts of rag material to make the paper.

⁵ Technically these are made like blankets, woven on a loom with the nap subsequently raised with teasels. They became increasingly difficult to source in the UK due to increases in the wearing industry. Along with the introduction of hard-wearing synthetic fibres (which tend to give a mechanical look to the Rough surface), the actual construction of felts for use on paper machines has changed radically since the 1920s.

RWS ROUGH

CHATHAM FLAXEN HOT

RWS HP