

**THE ARCHITECTURE OF EDWARD BUCKTON LAMB
(1805-1869)**

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by**

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Volume 1

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ABSTRACT

Edward Buckton Lamb's churches are some of the most original and impressive buildings of the nineteenth Century. Yet they were both criticised for their unorthodox layout and praised, in the journals of the time, for their architectural inventiveness. Research of his twelve extant churches, from 1845 to 1866, shows Lamb to be a designer of originality and ingenuity in planning seating arrangements for congregations. Further study also indicates a distinct move towards a centralized preaching space and a transition of the main entrance nearer this space and towards the east. The development of this layout called for imaginative solutions to the practical necessities of architecture especially in the collection and disposal of surface water from the necessarily large roof areas. An analysis of the roof types Lamb used to span these wide spaces shows how he created variations on traditional roof construction to create entirely new forms. The make-up of the elements of the roofs, from the principal trusses to the timber boarding show a deep practical application of carpentry techniques balanced with modern materials and costs.

Since the architect and historian Goodhart-Rendel's lecture in 1949, Lamb has always been saddled with the classification of 'rogue architect', that of an architect who practised architecture alone and had no followers. Subsequently Lamb's architecture was criticized as eccentric, extraordinary and bizarre or even grotesque and abnormal, but further study by modern authors have begun to show Lamb had sound and well developed principles which he followed throughout his life. This study continues the re-appreciation of Lamb's work by addressing the practical application of the principles Lamb used in his churches in an attempt to understand his use of 'structure'. His treatment of the construction elements of wall and roof with variations of colour, texture and form and their relationship to the overall composition is also addressed. This suggests that Lamb's practice was an object lesson for architects and that they study the principles of the buildings of the past, to establish a new style, rather than simply copy the styles of previous ages. Lamb always saw architecture as a progressive art and was willing to experiment with new forms, materials and construction.

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1.0 INTRODUCTION

In June 1972 Berkhamsted Town Hall closed its doors to the public. The intention was to carry out alterations and refurbishment in order that the building could regain its music and dancing licence, which had been revoked following the tightening of fire regulations throughout the country in 1967. Dithering and delays by the Local Authority, who were the Trustees of the building, on the course of action to take, and an estimate received for the work over twice the available budget, led to the inevitable deterioration of the empty and unused building. The Urban District Council earmarked £30,000 for the project, but with an estimate of £63,000 for refurbishment they decided to split the work into two phases. Tenders for Phase 1 were invited in October 1972 and the lowest returned was for £36,736.

¹ The Council then agreed that a survey of the Town Hall should be carried out to see whether they would be justified in spending this sum on Phase 1 with the likelihood that a similar sum would be required to complete the renovation of the building.² The Council also investigated the possible demolition of the building except for the Grade II listed facade, as an alternative to refurbishment in the mistaken belief that a brand new building could be obtained for the same outlay as for refurbishment. A scheme from a local architect for rebuilding was submitted to the Town Hall Committee for discussion and a quantity surveyor and structural engineer appointed.³ The new design was costed at £171,000 by the quantity surveyor with a warning that with the escalating building costs of the time in six months the figure could be £200,000.⁴ The Local Authority continued their deliberations for the next two years and was not helped by the Local Government Reorganisation that took place in 1974, where Berkhamsted Urban District Council was downgraded to Berkhamsted Parish Council.

By 1975 the building had been savagely attacked by vandals, who had stripped large quantities of lead from the roof, but still no building work had been carried out. However, a positive move was made by three sixteen-year-old schoolboys. They formed a Rescue and Action Group and obtained permission to carry out a holding operation on the building

¹ Finance Committee Minutes for Berkhamsted Urban District Council, 13th October 1972, Item 10 states that J & J Fitzgerald (Harrow) Ltd tender was £36,736.52.

² Finance Committee Minutes for Berkhamsted Urban District Council, 11th January 1973, Item 14, payment of £185.05 to Sedgwick Weall and Beck for survey.

³ Town Hall Committee Minutes, Berkhamsted Urban District Council, 12th December 1972.

⁴ Finance Committee Minutes for Berkhamsted Urban District Council, 29th March 1973.

to minimise further deterioration. Wet and dry rot had broken out in many places and attempts were made to contain these outbreaks.

It was this Group that I joined as a fourteen-year-old schoolboy, helping to sweep up and mop floors, and so I was first introduced to the wonder of an Edward Buckton Lamb designed building (Fig. 1). My hands-on involvement with Berkhamsted Town Hall continued for many years with varying degrees of commitment which included helping with temporary repair work, completing measured drawings, attending open days, fund-raising, and appeals committee work. The building was saved from demolition at the eleventh hour, transferred to a new trustee body, and eventually brought back into use in stages from 1983 to 1999. During this time I embarked upon and completed a course of architecture, started my career and learnt more about the other works by Lamb and about his life.

Early on in my quest for details it became apparent that little information was to be found in the reference books on Victorian architects and architecture, and most of what I learnt had to be from original research. To my delight I found that a considerable number of his buildings still survived, with most of them hidden away in villages in the countryside, and I began to visit and photograph these.

By the middle of 2002 I began to consider the possibility of formalising my research to date and joined the Society of Architectural Historians of Great Britain. It was at their joint symposium in Sheffield in association with the Royal Historical Society where I re-met Neil Jackson. He suggested that, as I was a practising architect, working daily with computers, that I should use these two strengths to direct my study of Lamb's architecture. My architectural training and experience together with my life-long interest in his work provides me with a unique position from which to analyse Lamb's architecture.

In this dissertation a small selection of his work has been examined from the large list of his known buildings determined by such factors as access to the building for surveying, surviving original documents (both drawings and specifications), photographs, letters, articles in the architectural press and the number and severity of alterations or additions to the building.

The range of selected work spanned his main career and allows the comparison between his buildings over a period of approximately twenty years to highlight the similarities, differences and development of his style. This study reappraises Lamb's work by studying his use of the principles he outlined in the late 1830s and early 1840s and stuck to rigidly throughout his career.

Once a detailed measured survey had been conducted, 2D drawings and 3D models of each chosen building were produced. In some cases these included the full building, as well as a detailed look at the various elements, such as windows, roofs, chimneys, doors, buttresses, plinths and columns. All these are unique elements, which make up a Lamb building.

Architecture is not just about bricks and mortar. The final edifice is the culmination of a complex interaction of various factions, which together inevitably results in a compromise. To put the buildings in context, some of Lamb's secular work has also been included. His relationship with clients and contractors is considered, particularly with reference to the buildings that have been drawn and modelled in the present study. The finance and costs associated with these buildings and others play a vital part in the process by determining the extent to which Lamb's ideas can be manifested. Lamb's relationship with authority is also an important issue in many of his buildings.

Finally, Lamb's pursuance of continuing his professional development is identified and shown to have played a significant role during the whole of his career. He studied all aspects of architecture with particular reference to the country's ancient buildings and more importantly passed on his knowledge to both the other members of his profession and to the public. He achieved this by giving lectures and attending meetings and by exhibiting at the Royal Academy and Architectural Exhibition as will be shown later. He was also a prominent member of the RIBA serving on the council and committees having been elected a Fellow of the IBA in 1837 after completing the necessary minimum 7 years in practice. Lamb rose to be on the Council by 1843 and again later in the 1860s.

In 1858 he became a Director of the Architectural Union Company and was in the chair at its inaugural Annual General Meeting in that year. The Architectural Union Company was set up in 1857 to provide and maintain meeting rooms and exhibition galleries at 9 Conduit

Street in London for the RIBA, Architectural Exhibition the Architectural Association and the Architectural Photographic Society among others.

Lamb was also a regular contributor to the main architectural journals such as *The Civil Engineer and Architects Journal*, *The Builder*, and *The Building News*.

Lamb was a significant voice in the architectural world of Victorian London for over 30 years with many opportunities for his work and ideas to be seen by both his peers and the public. He was always experimenting with his buildings and each new building was determined afresh from his clearly defined principles.

This study provides a greater knowledge of the structure of Lamb's buildings, by a detailed analysis of composition, planning and building elements and of his professionalism by an analysis of his relationship with clients, contractors and authority to build up a full and rounded picture of Lamb as an architect. This sheds light on why the works of architects such as G. E. Street, W. Butterfield and G. G. Scott were accepted and followed at the time, whereas Lamb only ever had a small practice and none of his ideas appeared to have been taken up by any other architects.

2.0 HISTORIOGRAPHY

It was only three years after Lamb died before there would have been the first opportunity for his work to be included in an important analysis of Victorian Architecture. The year was 1872 and the analysis was the *History of the Gothic Revival* written by the architect, writer and journalist Charles Eastlake (1836-1906). However, this comprehensive study of this period, which was the first of its kind, fails to mention Lamb's contribution to the Gothic Revival in Victorian architecture. This is made all the more odd, as we know that Eastlake was fully aware of the man and his work.

Eastlake had become the Secretary to the Royal Institute of British Architects in 1866 and he remained in the post till 1877. Lamb had been re-elected to the RIBA in 1859 and had by 1866 also become a member of the Council where he remained till his death in 1869.⁵ They would both have been at the same Council meetings for these three years and Eastlake would have had to minute matters referred to by Lamb. Eastlake must surely have made a conscious decision not to refer to Lamb in his work. Even if Eastlake did not approve of Lamb's eccentric work it is odd that no mention at all of his architecture is included. To help compile his work Eastlake circulated a standard letter to architects asking for contributions to the book. If Eastlake sent one out after August 1869 then it would have been to Lamb's widow, Catherine and she may have declined to answer. Lamb's eldest son, Edward was only 13 years old and too young to reply on his mother's account.

Another factor to consider is the etiquette surrounding Victorian bereavement, which was a complicated system. There were strict periods of mourning and customs to be observed within the family depending on the relationship of the mourner to the bereaved. Mourning was split into two stages: full or deep mourning and half-mourning. A widow mourning a husband was subject to the longest periods expected of a family member. Full mourning was for a year with an all-black wardrobe followed by another year of half-mourning.

⁵ *Minute Book of the RIBA*, Volume 4, Meeting of the Council held on Monday February 13th 1860, p154 indicates E.B.Lamb re-elected as Fellow and *RIBA Report of Council 1863-1866 and 1867-1869*, E.B.Lamb listed as Council Member for 1866, 1867 and 1868, in same volumes.

Caroline's social life for this period would have been severely restricted and Eastlake may not have deemed it appropriate to send a letter to the family.⁶

The reasons behind the omission may never be known, but it began Lamb's oblivion from the architectural world. The next appraisal of the period was *The Gothic Revival; An Essay in the History of Taste* by Kenneth Clark published over fifty years later in 1928. This too failed to mention Lamb. It was to be eighty years after his death before Lamb's contribution was to be brought to the attention of the architectural profession as will be shown later.

Since there have been so few analyses of Lamb's work in the following sections it is important to include all major studies and references to his buildings which have attempted to understand his architecture. These include lectures, books, and four theses. It is interesting to note, regarding the theses, that they increased in academic level and scope with each containing more information than the last. The first was a BA thesis where Lamb was only one of many architects and the second was also a BA thesis this time wholly devoted to Lamb although only concentrating on his churches. The third was an MA thesis concentrating on the whole of Lamb's life and career and finally the fourth was a PhD thesis with a comprehensive study and reappraisal of his work. These works show how the attitude and importance of Lamb's work changed in the brief period between 1971 and 1984. This change continued with a greater mention of Lamb in further books such as *The Faber Guide to Victorian Churches* edited by Peter Howell and Ian Sutton in collaboration with the Victorian Society where all Lamb's extant churches are fully described and *Muscular Churches – Ecclesiastical Architecture of the High Victorian Period* by C.M. Smart Jr., which includes a whole chapter on Lamb's churches. Both of these were published only five years later in 1989, continuing the interest in Lamb which remains to this day.

⁶ Anne Douglas, *Victorian Mourning Customs*, PageWise, Inc. 2002, p 1.

2.1 "Rogue Architects of the Victorian Era" by H.S. Goodhart-Rendel (1949)

In March of 1949 a paper was read before the RIBA by the architect and architectural historian and a past-President of the Institute, H.S. Goodhart-Rendel entitled "Rogue Architects of the Victorian Era"⁷. It covered the work of the more eccentric and unorthodox architects of the nineteenth century. Whereas most architects of this period were content to conform to establishment thinking, reviving either the Gothic or the Classical style, there were a few who continued to express their ideas in a far more idiosyncratic manner. Despite these few architects obtaining numerous commissions, many with repeat clients, they were unable to convince their fellow professionals to adopt their views and as a result were without followers.

The term Goodhart-Rendel coined for these unique individuals was 'rogue-architect', a definition still in use today. He derived this descriptive from the definition of a rogue elephant, one that is "driven or living apart from the herd". Whether this was through personal choice or not, was not the main issue. It was the fact that they practised an architecture of their own and that they had no disciples, for this would have altered their status from that of rogue to that of pioneer, which is important.

Even after further study the architects whom Goodhart-Rendel tarred with the 'rogue' brush are still today regarded as different from other architects of the same period. What has changed however, is a reduction in their number. Originally the likes of Thomas Harris (1830-1900), Joseph Peacock (1821-93), Samuel Sanders Teulon (1812-73) and Enoch Bassett Keeling (1837-86), as well as Edward Buckton Lamb, stood side by side with men such as Edward Prior (1852-1932) and to a limited extent, William Butterfield (1814-1900). It is difficult today to see how these latter two could ever have been thought of as 'rogue' by Goodhart-Rendel as they all had a considerable influence on the direction architecture was to take during the latter half of the nineteenth century. Far from being ignored, Prior and Butterfield became and stayed mainstream, influential men. William Butterfield was closely involved with the Ecclesiological Society, a powerful voice in the influence of church architecture from 1841 to 1868, designing the pivotal architectural work of the church, clergy-house, and school of All Saints, Margaret Street, London

⁷ H.S. Goodhart-Rendel, *Rogue Architects of the Victorian Era*, read before the Royal Institute of British Architects 8th March 1949 and published in *RIBA Journal*, April 1949, pp. 251-9.

(1849-59) as the model church of the Society. It differed markedly from architecture at that time with its polychrome exterior brickwork and interior of glazed bricks and tiles, but it was not a 'one-off'. It was a turning point in nineteenth century architecture and is considered to mark the beginning of the High Victorian Gothic Revival.

Even though Butterfield's work was criticised, despite his designs strictly following the popular principles of both the Ecclesiologists and of the polemicist A.W.N.Pugin (1812-1852), he developed his style producing such stunningly diverse works as Keble College, Oxford (1867-83); St. Paul's, Hensall, Yorks (1853-4); and St. Anne, Dropmore, Bucks (1865-66). Goodhart-Rendel acknowledges that he did not know of any other architect who imitated Butterfield's particular mannerisms and that this should categorise him as a 'rogue', but he refuses to do so due to Butterfield's tremendous influence on nineteenth century architecture. To him, 'Butterfield proved himself a leader and evangelist' and you 'cannot make a rogue of a man from whom almost all contemporary Gothicists accept the tenet that angles are more Christian than curves'.⁸

Butterfield's influence on architecture continued to the end of the nineteenth century to the extent that in 1884 he was awarded the RIBA Royal Gold Medal. In his domestic work at Milton Ernest Hall, Bedfordshire (1853-6) Butterfield used a boldness with a simple arrangement of tall, plain geometric shapes and thin steep pitched roofs, which was similar to that used by Richard Norman Shaw twenty-five years later at Cragside, Rothbury, Northumberland (1870-1884).

Edward Prior was articulated to Richard Norman Shaw (1831-1912), and went on to be the first to produce an X-shaped or butterfly plan for his domestic work that may well have been inspired by Shaw's Chesters in Northumberland (1889-91). Many architects, including Edwin Lutyens, and Baille Scott, copied this innovative floor plan after it first appeared in The Barn, Exmouth, Devon (1895). Prior used a variation on the X-shape at Home Place, near Holt, Norfolk (1903-5) with mass concrete in the walls of the house and garden which were faced with pebbles. He even used concrete for the floors and was one of the pioneers of the Arts and Crafts architects in his experiments with this material using

⁸ Ibid., p. p254.

it in a way that was subsequently adopted by succeeding architects making it clearly at odds with Goodhart-Rendel's definition of a 'rogue'.

One such architect considered a 'rogue' by Goodhart-Rendel and arguably remaining so today, is Lamb. Goodhart-Rendel made the first study of Lamb's work concentrating for his paper mainly on his churches. Goodhart-Rendel in his lecture was also the first to latch onto Lamb's desire to create a large centralised auditorium for preaching contrary to the accepted doctrine of the traditional Latin cross floor plan strongly urged by the Ecclesiological Society. Lamb had said in his lecture at the Architectural Exhibition in 1857 'that the long nave and narrow aisles, divided from each other by numerous columns which screen the minister from the view of his congregation, and also in some degree intercept sound, are inconveniences frequently felt'.⁹ He also went on to criticise other architects by stating that 'in new designs for such buildings the form is still retained' but, no doubt with the Ecclesiologists in mind, he noted the architect's dilemma that 'any deviation from such orthodox forms would be pronounced heterodox in the extreme'.¹⁰

The wide-open spaces which Lamb generated in his plans, led inevitably to the complex timber roof structures which became a hallmark of his church interiors. These became steadily more complicated and extreme as Lamb refined his designs while his church commissions became grander as his career advanced.

By using projected images, Goodhart-Rendel also introduced to his audience the decorative details of Lamb's work: his chamfers and curls, his corbels and his weatherings. He did question whether people's stomachs turned at these details, but said that, although their use was somewhat unusual, and although not altogether palatable 'none of them really turns me up'.¹¹ The use of a variety of materials from flint and pebbles, to brick and stone, not only on the exterior of the building but occasionally on the interior, was also covered. Regarding design he commented on its peculiarities with his use of cusped tracery, peculiar pinnacles and buttresses which were no longer just constrained to the walls but also continued through windows. In the short period of his talk he successfully showed the

⁹ E.B.Lamb, *Architectural Composition*, lecture delivered at the Architectural Exhibition 3rd February 1857 and published in *The Building News*, 20th February 1857, p. 190.

¹⁰ *Ibid.*, p. p190.

¹¹ H.S.Goodhart-Rendel, *Rogue Architects of the Victorian Era*, read before the Royal Institute of British Architects 8th March 1949 and published in *RIBA Journal*, April 1949, pp. 251.

apparent oddity of Lamb's work. Unfortunately there are many times when a first impression unfairly forms an opinion. There is no doubt that Lamb's work is of a different, if not unique, style and that a quick glance is enough to deter all but the most determined from a more thorough look.

However, the paper did bring to the attention of the architectural profession certain buildings from the previous century by architects prepared to try something new and to step away from the current trend and experiment. Although during the questions afterwards members of Goodhart-Rendel's audience mistakenly put this 'roguery' down to a lack of education, he reiterated the point which he had made earlier, that these architects had studied and measured far more ancient buildings than he believed modern students would ever do. Some of these architects, including Lamb, had even published their results in etchings and books and written papers delivered before the profession. Lamb published *Etchings of Gothic Ornament* in 1830¹², *Studies of Ancient Domestic Architecture* in 1846¹³, at least seven full articles on designs and observations in the *Architectural Magazine* from 1834 to 1838,¹⁴ as well as delivering at least four lectures, one each in 1857, 1860, 1861 and 1862.¹⁵

Clearly these men were not ignorant of previous architectural styles. They were prepared not just to repeat the styles of a previous age, as some other architects were doing, but to study in depth this ancient body of work and adapt those styles to modern needs, expressing their age in a new architectural language.

¹² E.B.Lamb, *Etchings of Gothic Ornament*, 1830, copy at the RIBA Library.

¹³ E.B.Lamb, *Studies of Ancient Domestic Architecture*, 1846, copies at the RIBA Library and with the author.

¹⁴ *The Architectural Magazine*, edited by J.C.Loudon from 1834 to 1838, copy at the RIBA Library. Articles by E.B.Lamb including *On Ornamental Chimney Pots*, April 1834, p. 63, *Villa in the Norman Style*, November 1834, pp. 333-347, 'Villa in the Style of Architecture of the Thirteenth Century', June 1835, pp.257-275, 'Amendments to the Thirteenth Century Villa Design', September 1835, pp. 425-428, 'Observations on Gothic Architecture', October 1835, pp.429-445, 'Villa in the Style of the Second Class of Gothic Architecture', October 1836, p. 456, 'Amendments to the Second Class Villa Design', February 1837, p. 86, 'Villa in Stuttgart', January 1838, p.18, 'Brief Hints on Preservation of Architectural Remains of the Middle Ages', March 1838, p. 159.

¹⁵ Refer note 3 and E.B.Lamb, *Suggestions on Architectural Composition*, lecture delivered at the Architectural Exhibition May 1860 and published in *The Building News*, 1st June 1860 and E.B.Lamb, *Architectural Progression*, lecture delivered at the Photographic Exhibition February 1861 and published in *The Building News*, 1st March 1861 and observations to the younger members at the Conversazione of the Architectural Association on April 11th, 1862 published in *The Builder*, April 19th 1862.

2.2 "Buildings of England Series" by Nicholas Pevsner (1951-1974)

Late in the 1940s the architectural historian Nicholas Pevsner (1902-83) began a series of publications called the "Buildings of England" with the first volume appearing in 1951 and the last volume appearing in 1974. He was ably supported by a number of different assistants who would research a county for about a year preparing notes from publications before he undertook his tour. In the early years, his wife drove him around the country and following her death in 1963 students at London University or the Courtauld Institute of Art undertook this task.¹⁶ Such is the value of the series that it is still edited and revised today. Pevsner had the advantage over other architectural critics of English architecture in that he was an émigré having been born in Leipzig and living in Germany before being forced to leave in 1935. He was able to look at and comment on the architecture with detachment. With a separate volume for each county, Pevsner listed alphabetically all the cities, towns, and villages with historical and architectural comments on all the important buildings and every church. It is an essential starting point for determining the architect of a building and from the series it was possible for the first time to produce a list of much of Edward Buckton Lamb's work.

It is quite apparent from the series that Pevsner did not hold Lamb's architectural ability in high regard, describing his churches as: 'perverse', 'mischievous', 'craziest', 'harrowing', 'nightmarish' and his most popular adjective 'odd'. The polychrome interior of St. Simon and St. Jude at Englefield Green, Surrey, (1856-59) is described as 'unforgettable'¹⁷ and the east and west views of All Saints, Thirkleby, (1849-50) 'cannot easily be forgotten'.¹⁸ The details at St. Mary, Braiseworth, Suffolk, (1857) show 'Lamb in all his perversity'¹⁹ and at St. Margaret at Leiston, Suffolk, (1853) has 'antics of carpentry' with a 'crazily heavy west gallery' and 'gargantuan flamboyant tracery'.²⁰

Pevsner describes Lamb as the most challenging of Victorian architects with a desire for 'mischievous details'. When describing St. Stephen, Aldwark, Yorkshire, (1851-53)²¹

¹⁶ Pevsner Architectural Guides and The Buildings Books Trust website, www.pevsner.co.uk, last accessed 15th August 2010.

¹⁷ N.Pevsner, *The Buildings of England, Surrey*, 1962, Englefield Green, p. 213.

¹⁸ N.Pevsner, *The Buildings of England, Yorkshire The North Riding*, 1966, Thirkleby, p. 364.

¹⁹ N.Pevsner, *The Buildings of England, Suffolk*, 1961, Braiseworth, p. 109.

²⁰ N.Pevsner, *The Buildings of England, Suffolk*, 1961, Leiston, p. 329.

²¹ N.Pevsner, *The Buildings of England, Yorkshire The North Riding*, 1966, Aldwark, p. 58.

Pevsner believes that Lamb's 'concern was to combine a centralised, i. e. Protestant, plan with a maximum of quirks in the details of execution'. Pevsner does acknowledge the originality of Lamb's work and his desire for a central auditorium in his churches; an approach not at all dissimilar to that of Christopher Wren (1632-1723) such as St. Clement's, Eastcheap, London (1683-87). In this way he agrees with Goodhart-Rendel's original analysis.

When discussing Lamb's secular work, Pevsner is even less restrained. The whole building of Eye Town Hall (1856-57) is described as 'horrible' and the tower is singled out for criticism with the same adjective.²² Lamb's work at Hughenden Manor, Buckinghamshire, (1862-3) for Benjamin Disraeli, where he restored the original house, Pevsner describes as being 'ruthlessly dramatized' and states that 'his details are excruciating, everything sharp, angular and aggressive'. Apparently 'as much brickwork as possible is set diagonally, the battlements stepped and with diagonally-place pinnacles' and finally he gives up with the window-heads by simply saying they are 'indescribable'.²³ In the same county, Lamb designed Holy Trinity, Prestwood (1849) that is 'self-assertive and unbeautiful' with 'very odd scissor-bracing of the roof in the nave, and even odder roof in the W baptistry'.²⁴ But not all work by Lamb is so unfavourably described. The rectory at Aston Clinton escapes with 'by E.B.Lamb, but quite harmless externally'.²⁵

Clearly Lamb's work left an impression on Pevsner and his views seem to have remained consistent over the thirteen years, which cover the counties with the majority of Lamb's buildings.²⁶ Pevsner was able to appreciate that Lamb was different from the other Victorian architects and certainly one who was experimenting and at least he recorded Lamb's buildings in his guides even if the comments he made suggest that Lamb's architectural experiments did not appeal to his tastes.

The Buildings of England Series is still published today and editions are regularly being revised and there has been a change to some of the descriptions to Lamb's buildings as

²² N.Pevsner, *The Buildings of England, Suffolk*, 1961, Eye, p. 151.

²³ N.Pevsner, *The Buildings of England, Buckinghamshire*, 1960, Hughenden, p. 173.

²⁴ N.Pevsner, *The Buildings of England, Buckinghamshire*, 1960, Prestwood, pp. 38, 225.

²⁵ N.Pevsner, *The Buildings of England, Buckinghamshire*, 1960, Aston Clinton, p. 53.

²⁶ The first major reference to an E.B.Lamb building is in the first edition of *The Buildings of England, County Durham* in 1953 and the last major reference building is in the first edition of *The Buildings of England, Yorkshire The North Riding* in 1966.

more interest and understanding has developed. For example, although the descriptions for Hughenden Manor and the vicarage at Aston Clinton remain the same, those for Prestwood have changed to a 'very curious nave roof of closely-spaced arch-braced scissor trusses'.²⁷

²⁷ N.Pevsner and Elizabeth Williamson with Geoff Brandwood, *The Buildings of England, Buckinghamshire*, 2003, Prestwood, p. 601.

2.3 "Collins Guide to English Parish Churches" edited by John Betjeman (1958 and 1968)

While Pevsner's long task for his Buildings of England series was being undertaken in an organised and systematic way, it occurred to John Betjeman that there was no single source listing the better nineteenth and twentieth century churches in England and he set about correcting this omission. There were at that time over 16,000 parish churches in the country, so he limited his work by excluding cathedrals as well as colleges, almshouses and hospital chapels and concentrated only on Church of England parish churches, producing a list of over 4100 churches. Then, with the help of a contributor for every county, entries for each church were assimilated into a single volume first published in 1958 and later published in a two-volume pocket version in 1968. While Pevsner was an 'academic, lecturer and codifier' concentrating in great detail on history, details and dates, Betjeman was a 'poet, journalist and media manipulator'²⁸ and thus the entries for each church were to be more artistic and describe 'their atmosphere and aesthetic merit'.²⁹

In the introduction, Betjeman believed that architects like William Butterfield (1814-1900), George Edmund Street (1824-1881), John Loughborough Pearson (1817-1897) and William Burges (1827-1881) had styles of their own continuing from the medieval Gothic, without resorting to copying. This is something of which Lamb would have wholeheartedly approved. Betjeman immediately follows this with a list of architects whom he believed imitated these four including Lamb alongside Enoch Bassett Keeling (1836-1886), Samuel Sanders Teulon (1812-1873), Henry Woodyer (1816-1896) and William White (1825-1900).³⁰ The first of these was also known by Goodhart-Rendel and ten years earlier at his lecture, he had classified him as a 'rogue architect' as he had done with Lamb. Betjeman's single comment on Lamb, in his introduction, that he was someone 'who invented a style of his own' maybe taken at face value. However, this is not as a result of imitating his contemporary architects, but because Lamb was always following his own path based on his continual studies of original Gothic and ancient domestic architecture.

²⁸ Timothy Mowl, *Stylistic cold wars: Betjeman versus Pevsner*, Murray, 2000, p 2.

²⁹ John Betjeman, editor, *Collins Pocket Guide to English Parish Churches-The South*, Collins, 1968, p. 15 and *Collins Pocket Guide to English Parish Churches-The North*, Collins, 1968, p. 15.

³⁰ *Ibid.*, p. 88.

In the main text, Lamb's churches are included with varying levels of appreciation. Christ Church, West Hartlepool, Durham (1850-54) is described only as 'a collector's piece for the connoisseur of odd and ugly churches'³¹ echoing similar comments made by Pevsner in his *Buildings of England*.³² St. Simon and St. Jude, Englefield Green (1856-59) has 'eccentric details' and the interior walling a 'strange mixture of stone and brick'.³³ Lamb's work at St. Martin, Gospel Oak (1864-1866) is described as 'extraordinary outside and in' and has 'strange tracery' with an even 'stranger' interior layout and hammer-beam roof support brackets so unusual that 'no one could call this imitating medieval'.³⁴ This may be the case if the spaces, layout and interior roof construction are compared directly with medieval churches, but Lamb's use of a central, wide, open-timber roofed volume reflects those of medieval barns both in form and construction.

Some churches of Lamb receive more appreciative comments. His other large London church of St. Mary Magdalene, Addiscombe (1868-69) is 'very striking and original within and without' and the 'effect of space inside is tremendous, and is created by a wonderful timber roof'.³⁵ Addiscombe received an architecturally different entry from Gospel Oak although both churches were built within two years of each other using almost identical plans, composition, detailing, fenestration, timber roof construction and Kentish rag walling. At St. Stephen, Aldwark, Yorks (1851-53), the 'plan of the church is unusual yet effective both within and without' with 'an elaborate roof of open timbering' and that the 'external walling is rich in texture and colouring, being a conglomeration of pebble-stones, herringbone brickwork and freestone dressings'.³⁶ Betjeman also acknowledges in this entry that Lamb was one of Goodhart-Rendel's 'Rogue Architects' and the *bête noire* of the Ecclesiologists but makes no further comments.

Perhaps Betjeman's best description is of St. Andrew, Blubberhouses, Yorks (1849-50) a delightfully picturesque composition nestling on the side of a valley, noting that Lamb's 'imaginative, coarse detailing suits its grand mountainous site'.³⁷ Sadly though, the entry for Lamb's most important first church of the 1840s St. Paul, Healey, Yorks (1845-48)

³¹ *Ibid.*, The North, p. 133.

³² N. Pevsner, *The Buildings of England, County Durham*, 1953, West Hartlepool, p. 256.

³³ ³³ John Betjeman, editor, *Collins Pocket Guide to English Parish Churches-The South*, Collins, 1968., p. 379.

³⁴ *Ibid.*, The South, p. 277.

³⁵ *Ibid.*, The South, p. 265.

³⁶ *Ibid.*, The North, p. 306.

³⁷ *Ibid.*, The North, p. 335.

only lists the architect and date³⁸, and of All Saints, Thirkleby, Yorks (1849-50), built as a memorial for his patron Sir Robert Frankland-Russel (1784-1849) by his widow, also receives no architectural or aesthetic comment.³⁹

The references to the Lamb churches in the guide are therefore somewhat diverse but we must remember that Betjeman only edited the guide. Many different people wrote the entries and Betjeman might not have visited all the Lamb churches himself. Despite these variances, nine of the thirteen Lamb churches in England remaining at the time were mentioned and particularly when the pocket version was published, professional and amateur enthusiasts alike were hopefully encouraged to visit and assess the churches for themselves and form their own opinion. This large number is significantly higher than in Simon Jenkins guide *England's Thousand Best Churches* published in 2000, where there is only mention of a single Lamb church. All the Yorkshire and Buckinghamshire churches are omitted and it is only St. Martin, Gospel Oak (1864-6) that receives an entry. Jenkins states that the church falls into the 'love them, or hate them' category and that it is 'the antithesis of the stern Gothic of the Ecclesiologists'. The 'massive wooden roof' is 'a wild web of struts and hammerbeams' and but does conclude that the 'congregation must have found Lamb's interior a pleasant distraction' from the sermons.⁴⁰

³⁸ Ibid., *The North*, p. 312.

³⁹ Ibid., *The North*, p. 311.

⁴⁰ Jenkins, Simon, *England's Thousand Best Churches*, London, 2000, p. 430.

2.4 "Mr. Loudon's England" by John Gloag (1970)

John Gloag's biography of John Claudius Loudon was the first work on the famous horticulturist whose achievements include the introduction of the arboretum, prototype designs for many suburban houses, the 'ridge and furrow' roof construction for conservatories, and the introduction to London of the plane tree.⁴¹ Lamb was Loudon's principal illustrator, working with him from the time they first met in 1831 through to around the late 1830s, with several of Lamb's commissions being in association with Loudon or directly resulting from an introduction made by him. Loudon was also keen to educate the general public, publishing many books on horticulture and editing *The Gardeners Magazine* from 1826, *The Suburban Gardener and Villa Companion*, 1838 and the five volumes of *The Architectural Magazine* from 1834 to 1838.

The latter immediately followed what is arguably his most important work for architects, namely *the Encyclopaedia of Cottage, Farm, and Villa Architecture and Furniture*, which was published in 1833 and had an extremely influential effect on taste during the remaining years of the nineteenth century with the demand sufficient to require a second edition in 1846 with further editions following. It consisted of over a thousand pages of designs in numerous styles covering anything from a piano to a mansion or from a garden to a chair.

Lamb contributed many drawings and articles to both the original *Encyclopaedia* and to the *Supplement to the Encyclopaedia* first published in 1842. His thirty-seven credited contributions to both these works included such diverse subjects as a 'Country School in the Italian Style',⁴² 'Cenotaph in the Grecian Style'⁴³ and 'Drawing Room Furniture in the Gothic Style'.⁴⁴ Lamb designed the frontispiece to *The Architectural Magazine* as well as contributing a dozen articles throughout its short life covering such diverse subjects as 'On Ornamental Chimney Pots,' 'Villa in the style of the Second Class of Gothic Architecture' and a design for 'An Architect's Desk'.⁴⁵

⁴¹ John Gloag, *Mr. Loudon's England*, Oriel Press Limited, 1970, p.17, 45.

⁴² J.C.Loudon, *Encyclopaedia of Cottage, Farm, and Villa Architecture and Furniture*, 1833, p. 757.

⁴³ *Ibid.*, p. 997.

⁴⁴ *Ibid.*, p. 1094.

⁴⁵ *The Architectural Magazine*, edited by J.C.Loudon. Articles by E.B.Lamb, *On Ornamental Chimney Pots*, April 1834, p. 63, *Villa in the style of the Second Class of Gothic Architecture*, October 1836, p. 456 and *An Architect's Desk*, June 1838, p. 262

Gloag's book devotes an entire chapter to Lamb and includes several illustrations from the *Encyclopaedia* of his interiors and furniture. But the text is disappointing. It does not go into any great depth on Lamb himself, and concentrates instead on quotes of Lamb from the *Encyclopaedia*, which describe the illustrations. There is very little comment by Gloag on the various styles which Lamb applied to his design of rooms, or to their success or suitability, choosing instead to repeat comments made by Loudon at the time.

He does, however, acknowledge that Lamb was prepared to design in any style and that Loudon gave the young Lamb ample opportunity with these publications to indulge his fantasies. The Lamb contributions of designs for furniture covered the Norman, Tudor, Elizabethan, and Stuart styles. His designs in the *Encyclopaedia* in the Elizabethan style were clumsy and badly drawn, and Gloag suggests, somewhat unlikely, that as a result Lamb might have been responsible for mid-Victorian furniture makers mistaking certain items of mid-17th century furniture as Elizabethan.

Gloag concentrates mainly on Loudon's work even in the chapter on Lamb, which is justifiable, given that Loudon is the principal subject of his book, but we learn little more about Lamb other than his contributions to Loudon's publications as an illustrator of many styles. This is a shame considering that Lamb knew Loudon for over twelve years and played such an important role in Lamb's earlier life as an architect as will be seen later.

2.5 "Victorian Architecture in England: Four Studies in Evaluation" by John Summerson (1970)

In March 1968, John Summerson delivered four lectures at the invitation of Columbia University, New York which were later published as "Victorian Architecture in England: Four Studies in Evaluation" in 1970.⁴⁶ The third lecture titled 'Two London Churches' compares St. James the Less, Thorndike Street, London (1858-61) by George Edmund Street with St. Martin's, Gospel Oak, London (1862-65) by Edward Buckton Lamb.

Such a comparison is interesting since Summerson was present at Goodhart-Rendel's lecture on 'Rogue Architects' given nearly twenty years earlier and also took part in the discussion afterwards. He had clearly been aware of Lamb's work for some time and most likely even before 1949. He was well aware that St. James the Less was 'applauded as a fine and original work of art' with G. E. Street 'proceeded to become a national figure' while St. Martin's was 'either abused or ignored by most' and Lamb 'did not achieve fame and is only cursorily mentioned if at all in the reference books'.⁴⁷

Summerson chose these two churches because they were of the same age, built by rich patrons in poverty-stricken tracts of the outskirts of London, and yet in almost every other way they were different. He shows how St. James is picturesque, owes a debt to Butterfield and is in a foreign rather than English style. Comparing St. Martin's he agrees that it is certainly picturesque and he further he states that it is not only 'totally un-Butterfieldian, but also that it owes absolutely nothing to any other living architect' and that it is 'purely English'.⁴⁸

Summerson highlighted the fundamental beliefs Lamb had stated early in his career that he 'adhered consistently to this idea of the prolongation of late Perpendicular into the nineteenth century not by copying (which he despised) but by re-creating in a new nineteenth-century image'.⁴⁹ The form of the church outside shows that 'on the basis of

⁴⁶ John Summerson, *Victorian Architecture in England. Four Studies in Evaluation*, Columbia University Press, 1970, p. 47.

⁴⁷ *Ibid.*, pp. 47, 50.

⁴⁸ *Ibid.*, p. 71.

⁴⁹ *Ibid.*, p. 72.

Lamb's theory of character and the picturesque it works out pretty well'.⁵⁰ When it comes to the plan arrangement 'he has adopted a thoroughly sound plan enabling a congregation of a thousand to participate in a service at the altar'⁵¹ and later repeats Goodhart-Rendel's description of the success of this central space idea.

Summerson puts Lamb's 'roguery' down to an accident of birth. Lamb was thirty-one when Pugin's *Contrasts* appeared in 1836 and was already on 'a Gothic Revival of his own and had the courage and pertinacity to stick to it'.⁵² There is no doubt that Lamb's style was always different from that prevailing at the time. Writing in 1968 he does admit 'that today Lamb, whose forms seem so often bizarre and without precedent, has the edge over Street, for whose forms precedent can usually be found if you look hard enough'.⁵³

What is interesting about Summerson's choice of Street as a comparison to Lamb and something of which he may not have been aware, is the relationship between these two architects. In 1850 Street became the Diocesan Architect of Oxford, which gave him an immense power over other architects in the diocese since all grant applications had to receive his approval. One such architect was Lamb and his designs for the vicarage at Great Kimble, Bucks (1858-59) received strong objections by Street on the cisterns, leadwork and the provision against damp. The walls were of flint rubble lined with brick, a style Lamb had used in 1836 and 1839 in buildings at Chequers and Ellesborough less than two miles away. This reflected the local materials, but Street insisted that they were replaced with solid brick and such a change duly occurred.⁵⁴ Lamb and Street had also crossed swords earlier at work in Wheatley, Oxfordshire in 1850 where Lamb was due to build the Vicarage and the Church, but only built the former while Street built the latter himself. Finally a scheme by Lamb for the proposed church at Stoke Talmage, Oxfordshire in 1859 was so heavily criticised by Street that it was abandoned.⁵⁵

Summerson identified the originality of Lamb's work, his picturesque beliefs, his concept of centralised church planning and his desire to progress Gothic architecture from where it had ceased at late Perpendicular. And he was the first to show that Lamb was older than

⁵⁰ Ibid., p. 73.

⁵¹ Ibid., p. 73.

⁵² Ibid., p. 75.

⁵³ Ibid., p. 76.

⁵⁴ G.E. Street, *Oxford Diocesan Society Papers*, Bodleian Library, Oxford, 1857-8

⁵⁵ G.E. Street, *Diocesan Architect's Reports*, Bodleian Library, Oxford, 1860

the Gothic Revivalist architects who were practising during the time that he worked; he was older than G. E. Street by 19 years. Lamb's education was complete by the time that Pugin and the Cambridge Camden Society laid down their doctrinaire principles and he was already sailing his own course.

2.6 "High-Victorian Rogue Architecture" BA Thesis by Gavin Stamp (1971) unpublished

The 1970s saw a developing awareness of our Victorian architectural past especially with the increase in influence of such bodies as The Victorian Society (founded 1957), which led to the study of not only the orthodox architects of the period, but also the rogues.

Gavin Stamp's undergraduate dissertation for the History of Art Department at Cambridge on "High-Victorian Rogue Architecture" covered a wide selection of rogues and included a section devoted to Lamb.⁵⁶ The work was undoubtedly supervised by David Watkin who went on to publish *Morality and Architecture: The Development of a Theme in Architectural History and Theory from the Gothic Revival to the Modern Movement* in 1977. The work is a BA thesis and with a small section on Lamb, but it is important for its inclusion of his secular work and details of his life. It becomes clear that Lamb was a diverse architect, not only in the secular and ecclesiastical buildings he designed, but also in the eccentricity of his architecture.

Direct references to Lamb's publications of *Etchings of Gothic Ornament* (1830) and *Studies of Ancient Domestic Architecture* (1846) are made for the first time. The former was a series of six monthly publications consisting of plates of Gothic fragments. The latter is a book of twenty plates and thirty pages of text explaining his ideas on architecture. In this later work Stamp drew our attention to Lamb's important conclusion that architects should be 'not mere Mimics but ARTISTS, taking for our motto "IMITATE BY EMULATING"', but confesses that his early work shows 'little of his later originality'.

⁵⁷ What must be appreciated though, is that a great deal of Lamb's early work was church restoration and this would probably have restricted his opportunity to emulate. Restoring the existing fabric, which Lamb favoured as a result of his time with Cottingham, would have restricted and constrained him. With a new building on an open site there is more freedom and scope to design. For example the work to the parish church in Thirsk, Yorkshire (1844) involved restoring the chancel and adding a new east window and the

⁵⁶ Gavin Stamp, *High-Victorian Rogue Architecture*, BA Thesis, 1971, Cambridge University, unpublished, pp. 47-61

⁵⁷ *Ibid.*, p. 49.

major part of the restoration to St. Mary's, Wendover, Buckinghamshire (1839) was the opening of the base of the tower into the body of the church.⁵⁸

Stamp considers the Town Hall at Eye, Suffolk (1856-57), to be 'perhaps Lamb's most successful building aesthetically';⁵⁹ quite a contrast to Pevsner's description of 'horrible'.⁶⁰ The tower of St. Martin's, Gospel Oak, London (1864-66) is acknowledged by Stamp as demonstrating Lamb's mannerism of 'the cutting away and building up of forms by a series of corbels and 45 degree chamfers'. A characteristic of High-Victorian taste, of course, but 'no one else used it quite like Lamb'.⁶¹

Stamp concludes that Lamb was 'a child of the picturesque who was yet a highly original planner, who kept more than abreast of fashion by the perverse and original interpretation of High-Victorian Gothic detail',⁶² but also that his 'response to the architectural environment of his day deserves more credit than has usually been granted to him'.⁶³

Stamp was the first academic to study the work of Lamb and his BA thesis became the first of several such studies to play a significant part in bringing Lamb to the attention of architectural historians.

⁵⁸ *Companion to the Almanac*, 1839, p 222.

⁵⁹ *Ibid.*, p. 56.

⁶⁰ N.Pevsner, *The Buildings of England, Suffolk*, 1961, Eye, p. 151.

⁶¹ *Ibid.*, p. 55.

⁶² *Ibid.*, p. 61.

⁶³ *Ibid.*, p. 61.

2.7 "The Churches of E. B. Lamb" BA Thesis by W. L. Davison (1976) unpublished

The study of the rogue architects continued with W. L. Davison at the University of Newcastle-upon-Tyne preparing another undergraduate thesis in 1976 which studied Lamb's fourteen new churches spanning the primary period of his career from 1845 to 1869.⁶⁴ This work is important as a first study centred only on Lamb's churches and begins to look directly at the architecture of these buildings in more detail. In the biographical section he acknowledges, contrary to the opinion of Gloag, that Lamb had considerable ability as a draughtsman evident from his drawings in his book *Studies of Ancient Domestic Architecture*.⁶⁵

Davison, like those before him, highlights the principle underlying Lamb's work that he 'was not aiming at copy-book Gothic, but rather straining towards a new style altogether'⁶⁶ and he goes on to emphasise this message using extracts from Lamb's published lectures.

By limiting himself to the new churches, Davison is able in his study to look at a few of the architectural elements which make up this type of building, but little reference is made to the liturgical function. The plan form is discussed beginning with the originality of St. Stephen, Aldwark, Yorks (1851-53). This is shown to be improved upon in the later churches of Christ Church, West Hartlepool, Durham (1851-54), St. Margaret, Leiston, Suffolk (1853) and St. Martin, Gospel Oak, London (1864-66) although the later similar plan at St. Mary Magdalene, Addiscombe (1868-69) is not included here.

The materials Lamb used are also detailed and begin to show how he made wide use of the more traditional stone, brick and flint and concentrated on using local materials whenever possible. Lamb was not averse to mixing materials in the same building, be it flint with stone, flint with brick or even stone with brick and pebbles as at Aldwark. Davison also shows how Lamb varied the texture of these materials using smooth and rough stone as well as different colours with yellow, red, blue and even white bricks. Tiles of red and

⁶⁴ W.L.Davison, *The Churches of E.B.Lamb*, BA Thesis, 1976, University of Newcastle-upon-Tyne, unpublished.

⁶⁵ E.B.Lamb, *Studies of Ancient Domestic Architecture*, 1846, copies at the RIBA Library and with the author.

⁶⁶ W.L.Davison, *The Churches of E.B.Lamb*, BA Thesis, 1976, University of Newcastle-upon-Tyne, unpublished, p.7.

blue set out in a diaper pattern was a common feature of the expansive roofs, making it clear that Lamb used very little applied colour in any area, preferring the use of constructional polychromy and allowing the materials to express their natural appearance.

Davison analyses the styles used by Lamb showing that he designed in Norman, Early English and Perpendicular but mostly in a flowing Decorated style, although they are all freely expressed interpretations of their respective styles. The originality of Lamb's timber roofs is acknowledged identifying those where valley rafters are treated as principals, those with the absence of common rafters and those not only with common rafters but also 'common purlins'.⁶⁷ There is no discussion, however, on the reasons behind Lamb striving for originality, which was in order to emulate his medieval forebears.

In his conclusion, Davison picks up on the conflict between Lamb's desire not to copy and his help in producing Loudon's *Encyclopaedia of Cottage, Farm, and Villa Architecture and Furniture*. This work significantly helped promote copyism in the nineteenth century, although Lamb must have undoubtedly believed that the *Encyclopaedia* was there to educate designers providing them with inspiration for their own designs and ideas. Incurring the wrath of the Ecclesiologists with the possibility of losing future clients would have deterred other architects from following Lamb's example and he concludes with a very astute comment that Lamb's 'achievement was more in the nature of that of one who registers a protest than one who initiates a revolution'.⁶⁸

⁶⁷ Ibid., p. 33.

⁶⁸ Ibid., p. 45.

2.8 "E. B. Lamb (1806-1869): The Development of a Nineteenth Century Architect's Career", MA Thesis by A. Winduss (1978), unpublished

In 1978 the first full and detailed account of the life and work of Lamb was completed by Ann Winduss at Manchester University.⁶⁹ Dr Nicholas Penny, who was lecturing in art history, supervised the work. He became an important art historian publishing many articles and books on painting and sculpture and is now the Director of the National Gallery in London. The comprehensive work by Winduss includes a great deal of new and additional information from an extensive amount of original research. A Catalogue of Works and Activities includes many previously unknown buildings and competition entries by Lamb and also covers the Royal Academy exhibits and designs for Loudon, together with a detailed list of sources.

Winduss divides her thesis chronologically across Lamb's career, breaking it down into chapters, which neatly highlight the major divisions in his life. It is now possible to see clearly how his apprenticeship with L.N.Cottingham followed by his initial work with J.C.Loudon set him off on his early career, building to the productive years of the 1850s before his short plateau and decline of the 1860s.

Throughout the chapters as much information as possible is included about Lamb's family, friends, offices and residences, helping to place his work in context. For the first time Lamb's involvement with the Architectural Exhibition as an organiser and exhibitor and his connection with the Architectural Union Company, where he was a Director and chaired the Annual General Meeting in 1857, are fully discussed.⁷⁰ His relationship with the Institute of British Architects is covered including his unexpected early resignation from this body in 1844 for reasons, which until a recent discovery in April 2004 were unknown and will be explained and discussed in more detail later.

Winduss rightly shows the importance of Lamb's time with Cottingham, where he would have begun his interest in antiquarian study and which he 'would continue to examine until

⁶⁹ Ann Winduss, *E.B.Lamb (1806-1869): The Development of a Nineteenth Century Architect's Career*, MA Thesis, 1978, Manchester University, unpublished.

⁷⁰ *Ibid.*, pp. 174, 244.

his death'.⁷¹ This was 'to give an understanding of the principles of a style....to encourage students to continue to develop the style in the manner its originators had been following....for Lamb the understanding of the principles of the style, with a view to further development, was the crucial factor'.⁷²

Working with Loudon immediately following Cottingham was also instrumental in defining Lamb's views and ideas. He 'provided Lamb with a fertile and unique environment and his role in the young architect's development was crucial' and also 'Loudon was there to channel [his talents] in a particular direction'.⁷³ Loudon was keen to educate through his *Encyclopaedia*, magazines and many books on landscaping and horticulture. Lamb used his unique style 'in a Loudonian manner; that is, he considered it a device to instruct the uneducated observer'.⁷⁴

Loudon was also interested in modern technology and this undoubtedly influenced Lamb who 'was quick to adopt modern heating appliances, fire-proof constructional methods, modern bricks and machine-made ornament'.⁷⁵ It also becomes clear that Lamb worked with Loudon on many schemes from 1831 to 1843 with Lamb concentrating on working on the architectural elements leaving Loudon with the landscaping and planting as will be seen later.

Winduss describes in great detail many of Lamb's buildings and competition entries and a more rounded and complete image of the man and his work begins to form. It is clear Lamb was prepared to consider any work large or small whether it was a fountain or gate, chapel or church or cottage or even a country manor. Winduss acknowledges that Lamb had a 'more developed attitude to style' but that he continued to develop it right up to his unexpected death in 1869. He was finally experimenting with 'such features as hipped dormers, exposed timbering and oriel windows' and he 'may have come to the kinds of style which Shaw and his contemporaries arrived at and thus ended his career on a more salubrious note'.⁷⁶

⁷¹ Ibid., p. 39.

⁷² Ibid., p. 39.

⁷³ Ibid., p. 29.

⁷⁴ Ibid., p. 30.

⁷⁵ Ibid., p. 43.

⁷⁶ Ibid., p. 317.

Winduss shows that Lamb was a successful and accomplished architect for almost forty years with an immense range of buildings of varying sizes, types and styles from the early days of the Gothic Revival in the 1830s right through to the High Victorian Gothic of the 1860s. His involvement right at the heart of the architectural world of Victorian London for thirty years is shown for the first time contrary to Goodhart Rendell's description of a rogue as someone practising independently and we begin to see Lamb in a different light.

2.9 "The Life and Work of E. B. Lamb 1805-1869", PhD Thesis by E. N. Kaufman (1984) unpublished

The interest in the work of Lamb continued into the 1980s with further study by Edward Kaufman at Yale University culminating in a PhD thesis defended in 1984. Kaufman's adviser at Yale was George Hersey who had published his work on *High Victorian Gothic: A Study in Associationism* in 1972 with its short section on Lamb. Kaufman's mammoth tome continues the work of Winduss and attempts to 'reassess his work and his place in Victorian Architecture'.⁷⁷ Kaufman believes Lamb 'called for a new style which would synthesize the Gothic and the Classical' and so in his study 'Lamb's secular architecture is analyzed as the manifestation of this search for synthesis'.⁷⁸ Compared to previous authors, this is an unusual assumption to make as Lamb stated in his published lectures that Classical architecture was foreign and unsuited to this land. Lamb was more concerned with progressing the vernacular architecture of England to form a new style from the Tudor, Elizabethan and Gothic. He believed that the 'difficulty of applying Classical architecture in our own country has been the means of resorting to a system of construction unworthy of art'.⁷⁹ In fact, Lamb's secular architecture, particularly of the 1860s, although in a distinct style, shows no origins from Classical architecture either in their elements or their planning. Classical buildings are inherently symmetrical and there is always something in a Lamb building which prevents this symmetry even in those buildings, which at first appear symmetrical. It is possible that Kaufman was referring more to The Battle of the Styles and suggesting that Lamb's new 'style', whatever it was, should be the victor rather than either the Gothic or the classic.

Kaufman asks if Lamb was a rogue and his answer is 'not really - but the question cannot be answered as simply as it can be asked, for it really involves a minute analysis of everything he ever built'.⁸⁰ He acknowledges that he was not a 'lonely creator, an outcast from the profession' but that his 'career was vitally involved in the mainstream of the

⁷⁷ Edward Kaufman, *The Life and Work of E.B.Lamb 1805-1869*, PhD Thesis, 1984, Yale University, USA, unpublished, p. 1.

⁷⁸ Ibid., p. 1.

⁷⁹ E.B.Lamb, *Architectural Composition*, lecture delivered at the Architectural Exhibition 3rd February 1857 and published in *The Building News*, 20th February 1857, p. 187.

⁸⁰ Edward Kaufman, *The Life and Work of E.B.Lamb 1805-1869*, PhD Thesis, 1984, Yale University, USA, unpublished, p. 31.

profession'.⁸¹ Kaufman believes that if he had been a rogue then Lamb's 'relationship with the Ecclesiologists would have been simple - yet it was anything but that'.⁸² But the relationship was indeed simple. The Ecclesiologists criticised all Lamb's church work and finally used the ultimate criticism by ignoring him completely. Although there are some twenty references to the churches designed by Lamb mentioned in the pages of the *Ecclesiologist* they are all comments on drawings at the architectural exhibitions of the day. The only exception is their comments on Brompton Hospital Chapel, London (1849) where it appears that the writer actually visited a completed Lamb building. Their experience did little to alter their opinion unfortunately and were so concerned about the health of the patients that they hoped 'their attendance at church not prove fatal to any of them!'⁸³

Kaufman mistakenly attributes the text in Lamb's *Studies of Ancient Domestic Architecture* to William Henry Leeds (1795-1866) who had in fact only written a three sentence anti-copyist manifesto on the front page. Kaufman attributed this to a reference in the publisher, Weale's catalogue. He appears unaware that following the repeat of this mistake in an article in the *Building News* on Leeds shortly after he died in 1866, a letter from Lamb was published in the same journal stating that Leeds only gave 'valuable suggestions' and 'corrected the press'.⁸⁴ It is more likely that Lamb was the author since the lectures he gave use the same language and the same phrases. He talks of 'unity, harmony of form, harmony of material, and harmony of construction'⁸⁵ at the lecture in 1857 and uses these words many times over in his book. The word harmony, for instance, appears on practically every page.

A great deal of emphasis is placed on the influence of Pugin on Lamb, particularly regarding Lamb's church at St. Paul, Healey (1845-48), with its unusual central tower. It is the similarity of the 'Steeple in the Christian style' to a tower drawn in Pugin's book *True Principles of Pointed or Christian Architecture* published in 1841⁸⁶ which leads him to believe that Lamb was using the figure directly and failing to understand the 'true

⁸¹ Ibid., p. 5.

⁸² Ibid., p. 32.

⁸³ New Churches, *The Ecclesiologist*, No. LXXX, October 1850, (New Series No. XLIV), p 195

⁸⁴ E.B.Lamb, letter, *Building News*, Volume 14, 1867, p. 746.

⁸⁵ E.B.Lamb, *Architectural Composition*, lecture delivered at the Architectural Exhibition 3rd February 1857 and published in *The Building News*, 20th February 1857, p. 187.

⁸⁶ A.W.N.Pugin, *True Principles of Pointed or Christian Architecture*, Weale, 1841, p 8.

principles'. This is contrary to the views of Summerson who believed that since Lamb was seven years older than Pugin his ideas were firmly developed by this time thanks to his association with Cottingham and Loudon.

Pugin had published four of his many books by the time Lamb published his own one. The first of these was *Contrasts: or, A Parallel between the Noble Edifices of the Fourteenth and Fifteenth Centuries, and Corresponding Buildings of the Present Day; shewing the Present Decay of Taste* first published in 1836 and caused quite a stir coming from an untrained architect with only a single building to his name. Pugin's second book was *True Principles* following in 1841 based on lectures he had given after December 1837. The book set out from the first page what Pugin stated were 'two great rules for design' that 'there should be no features about a building which are not necessary for convenience, construction or propriety' and secondly 'that all ornament should consist of enrichment of the essential construction of the building'. Lamb would have been pleased to see the importance Pugin placed on 'principles' but concerned about the emphasis on 'rules'. Lamb firmly believed that too much importance had been placed on the latter and not the former as will be seen later. Pugin followed these with two books in 1843; *An Apology for the Revival of Christian Architecture in England* and *On The Present State of Ecclesiastical Architecture in England*. The second of these contain two articles first published in the *Dublin Review* in 1841 and 1842. Only three years later Lamb published his book on *Studies of Ancient Domestic Architecture* in 1846 because his ideas were different from those of Pugin and he had something important to say. He still had strong Loudonian ideas, which he felt needed now to be said, and they had to be said by him, since his master had died in 1843.

Pugin and Lamb also differed on two related issues, namely the use of pattern books and progression. Pugin thought pattern books were dangerous because people would just copy bits from different sources mixing them together. Lamb, as we have already seen with his work on Loudon's *Encyclopaedia*, saw them as a perfect way to educate and inform. Pugin considered that architecture peaked with the Middle Pointed style in the fourteenth century while Lamb was always saying, even before Pugin's first book, that architecture should advance and a design take into account modern ideas, materials and needs. Pugin was always changing his mind in practice and in print while Lamb steadfastly stuck to his principles regardless of criticism.

Lamb's complex roofs are again covered and acknowledgement made by Kaufman to the fact that of all Lamb's elements they 'are undoubtedly the most important' and 'his most daring and original constructions'.⁸⁷ That they also 'rest on a deep understanding of medieval structures', that Lamb 'experimented restlessly to extend it' and the medieval elements 'were coaxed to bring forth entirely new forms'.⁸⁸

Kaufman not only continues the work of Winduss by discovering new information on Lamb buildings, patrons and family but also discovers a few more buildings previously unknown as well as suggesting many others which should be attributed to Lamb. Kaufman also discovers the intricate relationships of Lamb's patrons for the first time. The two most important of these were Sir Robert Frankland Russell (1784-1849) and his wife Lady Louisa Frankland Russell (1790-1871). Sir Robert's ancestral home was at Thirkleby in Yorkshire where he was the M.P. for Thirsk from 1815 to 1834. Lady Louisa's father was Bishop of St. David's in Wales and her brother was George Murray, the Bishop of Rochester.

Sir Robert inherited land in Buckinghamshire including the estate at Chequers near Ellesborough, from a distant relative Sir Robert Greenhill Russell (1753-1836) in 1836.⁸⁹ He immediately took on his benefactor's surname and set about stamping his influence on the locality. Chequers itself was restored and lodges added to the grounds with churches at Wendover, Stokenchurch, Little Kimble, Aston Clinton and Little Hampden also restored.

Sir Robert also influenced brand new buildings in the area securing Lamb as the architect for Ellesborough School, 1839, The Judges Lodgings, Aylesbury, 1849-50 and Holy Trinity church, schoolhouse, schoolmaster's house and vicarage at Prestwood, 1848-49. Following her husband's death, Lady Louisa continued to employ Lamb securing at least eight further buildings during the twenty years commencing with the church of All Saints, Thirkleby, Yorks (1849-51) to her husband's memory. Other churches included St. Andrew's, Blubberhouses (1849-51), St. Stephen's, Aldwark (1851-53) and St. Mary's,

⁸⁷ Edward Kaufman, *The Life and Work of E.B. Lamb 1805-1869*, PhD Thesis, 1984, Yale University, USA, unpublished, p. 260.

⁸⁸ *Ibid.*, p. 264.

⁸⁹ J. Gilbert Jenkins, *Chequers: A History of the Prime Minister's Buckinghamshire Home*, London, 1967, p. 62.

Bagby, (1860-62) all on her country estates in Yorkshire. She also recommended Lamb to friends, neighbours and relatives which included Lord Walsingham, Ralph Neville Grenville, Sir Edward Kerrison and Sir Brydges Henniker where Lamb carried out alterations or enlargements to their country houses and estates.⁹⁰

With the majority of Lamb's work as a direct result of the Frankland Russells or their extended family, Kaufman describes how this relative safety kept Lamb free from the pressure of competing on the open market and allowed him to experiment far more with his architecture. This may be a good reason why so many of Lamb's buildings are so different from each other. Having repeat clients over a long period provides an architect with more opportunities to try out new ideas knowing that his architecture is acceptable not only in terms of style but also materials, costs and use. He was also able to enter over thirty competitions although he was only successful in three, and one of these was subsequently not built.

Here, for the first time, a study is made of Lamb's son Edward Beckitt Lamb (1857-1934) and Lamb's assistant Arthur Vernon (1846-92?). Lamb unfortunately died when his son was only twelve and it is not known when the son decided to become an architect. We know his cousin Henry William Lamb, Junior (1833-78) worked with Lamb and perhaps it was the cousin who influenced Lamb's son. Some of Edward Beckitt Lamb's buildings of churches and libraries were published in the *Builder* and *Building News* in the 1880s. Eventually he became a 'Temporary Architectural Assistant and Draughtsman at the Office of Works'⁹¹ in October 1909, 'in which employment he enjoyed a distinguished official career' before he retired and moved to Scotland.⁹²

Kaufman discovered more about Arthur Vernon who was 'the son of Disraeli's estate agent, George Vernon'.⁹³ He took up architecture in 1864 when he was articled to E.B.Lamb, and presumably worked with Lamb on Hughenden Manor. After Lamb's death in 1869, he returned to work with his father in High Wycombe and continued to work with some of

⁹⁰ For a detailed analysis of all Lamb's patrons see Edward Kaufman, *E.B.Lamb: A Case Study in Victorian Architectural Patronage*, *Art Bulletin*, Vol. 70., no. 2, June 1988, pp. 314-345.

⁹¹ Entry in the *Temporary Staff: Register No.3* of the Office of Works, Public Record Office, Kew, WORK 22/232, n.p.

⁹² Edward Kaufman, *The Life and Work of E.B.Lamb 1805-1869*, PhD Thesis, 1984, Yale University, USA, unpublished, p. 451.

⁹³ *Ibid.*, p. 442.

Lamb's patrons including Disraeli and Phillip Rose. Vernon carried on in a style similar to Lamb's and could well have been described by Goodhart-Rendel as 'a follower', but he was the only person known to have built in a similar style to his master and this is insufficient to remove the 'rogue' label as Goodhart-Rendel defined it.

2.10 Summary of existing analysis

Edward Buckton Lamb died suddenly on August 29th 1869 at his residence in Hinde Street, London, at the age of sixty-three and, after a few obituaries in the architectural press, he was promptly forgotten. It was over a century before the first full studies of his life and work were begun, each one adding that little bit more to our knowledge and understanding of this unique architect.

Gratefully for architectural history, the architect and historian Goodhart-Rendel rediscovered him and brought him to the attention of the architectural profession. Unfortunately this was in a lecture where he coined the term 'rogue-architect' for those architects who stood out from the rest with their eccentric architecture. From the outset Lamb was thought of as an outsider whose contribution to Victorian architecture was unimportant and he was viewed in a negative light. He was even crowned the 'arch-rogue' and the 'rogue' title has stuck with him and is still one Lamb has been unable to shake off sixty-years later.

The works by Pevsner and Betjemen in the 1950s began to codify and record the forgotten works of Lamb and prepare the way for the more detailed studies that followed in the 1970s and 1980s. Stamp initiated the academic study of Lamb and included his secular work and made references to Lamb's two publications. Davison continued with a detailed study of Lamb's churches where the materials, style and architectural planning are discussed.

Winduss provided the first full and detailed account of the life and work of Lamb and the importance of his time learning with Cottingham and experimenting with Loudon. She showed his involvement with the Architectural Exhibition and the Architectural Union Company which placed him at the heart of the architectural world of Victorian London. We see that far from 'practising outside the herd' as Goodhart-Rendel had said thirty years earlier, Lamb was well connected, well placed and well known and we began to see him in a new light. Winduss also listed for the first time all of Lamb's known works including those discovered during her study.

Kaufman added some buildings to this list, removed a few and suggested some which he considered should be attributed to Lamb, but the main importance of Kaufman's work is the study of Lamb's patrons. Kaufman discovered Lamb's connection to the intricate network of family patronage through the Frankland-Russells which provided Lamb with a greater opportunity to experiment with his architecture than would have been possible if Lamb had to compete in the open market place. Kaufman also included more about Lamb's family life, particularly his son Edward Beckitt and also Arthur Vernon who was Lamb's assistant in the 1860s.

All four of these later studies increased in size and depth from the one before with each adding more information and helping to change our understanding of Lamb. There was a steady move away from an obscure, unorthodox, uninformed and solitary architect with unusual and unimportant architecture to a highly knowledgeable, educated, accomplished architect working at the hub of the Victorian architectural world and practising sound, well worked out architectural principles throughout his career. These main objectives were for architects to study the principles of the buildings of the past, to establish a new style, rather than simply to copy the styles of previous ages and thus progress architecture. All the studies have led us to a much more rounded and accurate picture of Lamb and his architecture and have allowed an improved assessment of his contribution and place in Victorian architecture.

3.0 METHODOLOGY

All the previous studies by Stamp, Davison, Winduss and Kaufman have concentrated on the general arrangement of the buildings and the style adopted. They concern themselves with the shape of the box and the wrapping paper of Lamb's presents to architecture. It is now time for a more detailed look at the box itself. Time to look at Lamb's use of 'structure'. How were the buildings constructed? What were the materials? Were there any innovations? How original was he? Were any repairs needed to his buildings? Are there actually similarities between the buildings? Such study will help to see how successful Lamb was as an architect and the value of his work in relation to the other nineteenth century architects.

It is time also to take a more detailed look at Lamb the 'professional' with his relationships with his clients and contractors as well as his relationship with committees and Diocesan Architects. Analysis of the financial side of the projects is important to see not only the costs of the buildings but also any claims, outstanding bills and financial disputes and how this might have affected his architecture. Were his buildings economical? Did his clients pay his fees? Were there any claims made against him?

Finally Lamb's commitment to the education of others and to himself is considered to see if, unusually for the age, he continued his professional development in the emerging new profession of architect. Did he continue to study? Did he pass on his knowledge to others? Did he keep up to date with changes in the architectural world?

The study of Lamb's use of 'structure' in association with Lamb the 'professional' will cover the many widespread and diverse areas of architecture necessary to practise and will give a full and more rounded picture of Lamb as an architect. Only then will it be possible to see how successful he was and how important his work is to the period of late Georgian and early to mid Victorian architecture.

3.1 Information Availability

Any research attempted on Lamb's buildings has to take into account the following criteria.

- a) Access to the building in order that a detailed survey can take place.
- b) Original documents relating to the building including design and detailed drawings, specifications and other contract documents.
- c) Lamb's letters with clients and builders and any personal diaries.
- d) Contemporary articles in the architectural press including reviews, letters, and transcripts of Lamb's lectures.
- e) Photographs and other record information during the building's life.
- f) Historical study of the building by others.

The amount and the type of primary source information available helped to establish the most appropriate buildings to study. Unfortunately, Lamb's daughter-in-law Bathea Lamb (née Woolard) disposed of the majority of his drawings, photographs and manuscripts when her husband Edward Beckett Lamb died in 1934.⁹⁴ There are however, some of Lamb's original design drawings in County Record Offices and in the RIBA Drawings Collection together with many other contract documents, including four buildings with specifications. There are also three main collections of letters and various minutes and other miscellaneous items across a variety of the projects.⁹⁵

There also exists a considerable amount of information by Lamb covering the whole period of his professional career, which was published at the time. This includes letters, articles and designs, in publications such as the *Architectural Magazine*, *The Civil Engineer and Architect's Journal*, Loudon's *Encyclopaedia*, *The Building News* and *The Builder*. Reports on construction work, descriptions of exhibition drawings, lists of tenders received and criticisms of his work are also available for many of his more significant buildings.

Most important of all are the full transcripts of three lectures published in *The Builder*, which explain Lamb's principles for architectural composition. When studying the ideas

⁹⁴ Edward Kaufman, *The Life and Work of E.B.Lamb 1805-1869*, PhD Thesis, 1984, Yale University, USA, unpublished, p. 451.

⁹⁵ The three main collections are the 'Healey Letters' detailing correspondence regarding St. Paul, Healey, the letters to Mrs Disraeli concerning Hughenden Manor, Bucks and letters to the Town Council regarding Eye Town Hall, Suffolk

of an architect the words written by the man himself are vitally significant. They allow the buildings that were designed and constructed to be compared with the known ideas of the architect to see the success of their implementation, although one must also be aware that sometimes they attempt to justify what has been done. Lamb also published nine long articles in the *Architectural Magazine* between 1834 and 1838 and some of these make reference to his architectural principles showing that these were formed early in his career. He also published his book *Studies of Ancient Domestic Architecture* (1846) with over thirty pages of text explaining his ideas on architecture. The fact that these two publications were at the early part of his career, at the time of his first major churches, and that the lectures were in the 1860s at the end of his career allows a comparison between the ideas of a young and old man. Any changes to his ideas during his career as they were put into practice with real buildings for real clients can be assessed.

Table 1 details all the above information found from visits to such places as the RIBA Library, Buckinghamshire County Record Office, The Society of Antiquaries, The Yorkshire Archaeological Society, and the Lambeth Palace Library. Information for each building is identified by type with a separate record for each location and the data is shown chronologically listed by building. Also included in the table is all the Secondary source information found for the same buildings. A total of eighty-three separate buildings have primary source data and only eleven of these buildings are now demolished. The extant Lamb buildings span thirty-two years, which is over 80% of his career, and provide a rich source for the study of the changes that took place in his architecture. Preliminary investigations indicated that his architecture steadily developed during this period, refining and honing with each building, yet retaining the strong original principles he set out with in the late 1830s.

Table 2 details the amount of information available by building type and shows that a great deal of this information relates to his churches, chapels, vicarages, rectories and manors.

Table 3 details the same information but excludes any buildings which have been remodelled or restored, and shows that although this reduces the number of churches, it more drastically reduces the number of manors. Any study will also have to take into account any alterations and extensions made to the buildings during their lifetime.

Luckily, in most cases Lamb's churches and chapels closely match their original state both externally and internally with alterations usually limited to reseating and the repositioning

of the font. These churches also span the major part of his career from 1845 to 1869 and cover a vast range of building materials.

The few surviving vicarages and rectories where Lamb's original drawings and specifications still exist have all been altered, extended or improved over their lifetime due to the nature of their function. This is only to be expected for habitable buildings with their twenty-four hour usage that are between 138 and 158 years old. Although their main use as domestic buildings has remained the same, the needs of the individual inhabitants will have changed over the generations due to the changes in society requiring adaptation to the building. These include the repositioning of doors and walls, re-fenestration and alterations in the mode of heating usually resulting in the blocking up or removal of fireplaces and chimneys and the installation of radiators. There will also have been much necessary maintenance to the building fabric itself as well as the possible adherence to changes in the building codes along the way. In some cases the buildings were so large that they have been subdivided into smaller houses and flats. These changes make it difficult to make an accurate study of the original Lamb building and thus draw any significant conclusions.

There are many distinctive features of a Lamb building and these fall into ten main categories:-

- 1 Roofs - complex carpentry, matchboarding and tile patterns
- 2 Chimneys - dramatic vertical visual features
- 3 Windows - individual expression of tracery
- 4 Doors - heavy and solid expression
- 5 Buttresses - bold, angled and flying
- 6 Plinths - simple, double-banded simple and double-banded complex
- 7 Columns - square, octagonal and round
- 8 Rainwater Collection and Disposal - ingenious solutions to valley gutters and internal downpipes
- 9 Towers - dramatic vertical visual features
- 10 Corbels - unique head mouldings and gable parapets

To study Lamb's use of 'structure' it is important to select those buildings which today remain as close as possible to the original building and contain a wide selection of the

distinctive features of a Lamb building. The extant churches by Lamb provide the best examples to study. They are also easy to access in order to carry out a detailed survey and have the most surviving original documentation. Table 4 details all the new churches and chapels designed by Lamb cross-referenced with the distinctive features presently known to be of special significance. This selection of eighteen churches and chapels together covers a good number of buildings for each feature. The list can be refined because two of these buildings have been demolished. The first is the Cambridge Cemetery Chapel (1842) demolished sometime in the early twentieth century and the other is the City of London Hospital Chapel, London (1857) reduced to rubble in the bombing of London during World War II. This list can be further refined by the removal of St. Phillip's, Granville Square, London (1830), which was a Commissioners Church. Although it was Lamb's first major project following completion of his articles it was demolished in 1930. Existing drawings have survived and show a typical Commissioners Church plan with no significant differences from other such churches being constructed at the time for the Church Commissioners. The church is also separated from his next church by 15 years, but is however worth inclusion when studying Lamb the 'professional' as details survive regarding the difficulties he encountered during the administration of the project.

St. Mary Magdalene, Addiscombe, London, (1868-9) has also been excluded, as it was incomplete at his death due to insufficient funds. There are three extant churches that have been considerably altered during their lifetimes. St. Oswald's, Sowerby (1839-1842), was not a new church but one enlarged by Lamb with significant further alterations and additions taking place by Hodgson Fowler in 1882-83, greatly altering Lamb's work. St. Mary's, Braiseworth (1857), has been deconsecrated and was converted to a private house in the 1970s. It was a small church containing just a nave and short chancel and reused many stones from the previous Norman church. Christ Church, West Hartlepool (1850-54) was deconsecrated in 1974 and used as a store before it was converted to an art gallery and tourist information centre, opening in 1996. However, there has been minimal altering of the internal configuration to this Listed building and due to the importance of the internal planning and the design of the un-built first scheme, it has been included in the analysis.

This reduces the list to twelve churches all of which were new buildings on unused open sites, are easily accessible, have had minimal alterations and cover the important part of his career from 1845 to 1869.

Table 5 shows all twelve churches which have been included together with one final addition of the skylight to Berkhamsted Town Hall and Market House, Hertfordshire (1859-60). This has been included as it is the only Lamb-designed timberwork which was recorded when removed and disassembled allowing an exact analysis of the joints used.

3.2 Information Collection and Representation

A number of plans already exist in libraries, collections and record offices for the twelve buildings that have been included for the drawing set. These have either been drawn by Lamb himself, illustrated in periodicals of the time or produced by others at some later stage in the building's lifetime. Where possible these drawings have been used to assist in the creation of the drawings, but in all cases there has always been a checking of major and important dimensions on site. Any conflicting measurements have been extremely minor and can be attributed to changes or mistakes during setting-out and construction. For all buildings without drawings the author has taken all measurements. Smaller measurements were taken with six-inch and twelve-inch steel rulers and larger dimensions using either a twenty-six foot expanding steel tape or a Leica 'DISTO classic a' laser distance meter. Professionals in the construction industry use such equipment for taking accurate measurements and it was required for a significant number of the longer and more inaccessible vertical measurements needed for the 3D models.

Although all architectural drawings today are carried out in metric with architects using millimetres and engineers using metres, it was not considered appropriate to use the metric system for the analysis of Lamb's buildings. In all cases the units used for both the measurements and the subsequent drawings and models were feet and inches as this was the unit of measurement originally used by Lamb. After only a few measurements on site in a Lamb building it becomes clear that the imperial system is the appropriate one to use. Widths of 24, 30 and 36 inches appear regularly, together with dimensions of 4, 5, 6 and 8 feet and smaller whole measurements of 1, 2, 3, 4, 6 and 9 inches in the details. The significance of the simplicity of such whole number measurements would be lost using the metric system.

There are two approaches to the drawing up of a building following a survey. The first approach is termed a 'measured drawing' where the aim is to achieve an accurate a representation of the building as possible. In general terms this includes exact measurements of wall lengths, doors and windows including their positions and the angles of walls on plan ascertained by taken many diagonal measurements. The drawings would show any places where right angles were not true and any minor differences between window sizes and positions in repetitive bays along a nave or even in the bay dimensions

themselves. Also any subsidence of the building would be included showing changes in the ground plane or any out of true walls. Any alterations or additions to the building during its lifetime such as extensions or repairs would also be included. At the detailed level an exact representation of the stonework would be shown down to the size and shape of individual stones, flints and bricks. This type of drawing is not considered appropriate for the analysis of Lamb's buildings as it is far too in depth in unimportant areas and includes much unwanted information.

The second approach to the drawing up process has been used to produce what would be more closely termed 'design drawings' rather than drawings of the buildings as they are now. Most of Lamb's churches have a degree of symmetry in plan and so in these places the drawing is drawn exactly symmetrical based on an analysis of the measurements taken of both parts of the church. If the church has a number of regular-width bays they are all drawn the same but again based on the measurements taken of all the bays. Overall dimensions are taken in several places to ascertain Lamb's intended dimension and in some cases it has been possible to cross-check this when the dimension is annotated on his original drawings held in County Record Offices, the RIBA Drawings Collection or at Lambeth Palace Library.

In many cases there are a number of regularly sized windows and it has been possible to deduce the intended sizes based on a number of measurements taken from different windows in the same building. It has also been possible to deduce the intended window sizes due to a similarity of the windows between different Lamb buildings, as there is a high degree of the re-use of window shapes and detailing. Many vertical dimensions were required in order to ascertain the intended dimensions of the roof structures due to a high degree of building settlement over the last hundred or more years. Also the contracting in the timbers due to their age and the weight of the roof and the sagging of floors inevitably led to more measurements being required.

This method of measurement and subsequent drawing-up has attempted to create drawings that are as close as possible to those that Lamb would have produced as design and working drawings. The drawings and models allow an analysis of Lamb's planning and structure without the clutter of alterations, additions and enlargements or any unnecessary minor and insignificant differences present in the actual building. This benefits the study of

St. Paul's Healey, Yorkshire, for instance, where it is possible to produce a plan as Lamb intended based on that at the ICBS as well as a plan of the church as-built.⁹⁶ At Holy Trinity, Prestwood, Buckinghamshire, it has been possible to create drawings as Lamb intended as well as those of the church as built without the changes to the chancel and the additions and changes to the vestry.⁹⁷ A similar set of drawings has been produced of the chapel at the Brompton Hospital, London where it has been possible to deduce Lamb's original design prior to the enlargement and changes to the chancel and the north aisle carried out by William White (1825-1900) in 1889.⁹⁸ Finally, drawings of the church of St. Jude, Englefield Green, Surrey, can be produced showing both an approximation of the original building of 1856 deduced from records at Lambeth Palace Library and on-site analysis, as well as plans of 1867 following the addition by Lamb of the longer north transept and crossing transept.⁹⁹

This approach to the drawings and the use of computers also allows different drawings to be produced showing other seating layouts. In many churches there has been re-pewing and in some cases the pews were initially not laid out as Lamb intended. The layout of the seating was a significant part of the design of Lamb's churches and it is vitally important that it is Lamb's original layout that is analysed and not that of a subsequent architect or designer.

This method of the drawing up of the survey was constantly reviewed throughout the project both during surveys and the drawing-up process and in no cases was it considered that this approach had any detrimental effect on any conclusions which were drawn.

The level of detail in the drawings of the plans is deliberately simple in order that they are not overcomplicated with unnecessary detail. Generally the walls and columns are shaded and the external walls shown with the size and position of doors and windows without dimensions. This approach is similar to that taken by Timothy Brittain-Catlin in his recent

⁹⁶ The intended plan is preserved in the Incorporated Church Building Society records, Lambeth Palace, London, ICBS 03522

⁹⁷ Original drawings are preserved at Buckinghamshire County Record Office, Aylesbury, PR168A/3/1-18.

⁹⁸ Plans and reports were kindly supplied to me by Robert Adams, RIBA, Cayenne Design, London architects for the conversion of Brompton Hospital to luxury apartments and the preservation of St. Luke's chapel by Northacre PLC.

⁹⁹ Documents and forms indicating pew sizes and seating numbers are preserved in the Incorporated Church Building Society records, Lambeth Palace, London, ICBS 05323 and ICBS 06711

study of the residential architecture of Pugin and shown in the plans in his book *The English Parsonage in the Early Nineteenth Century* published by Spire Books in 2008.

Plans for all twelve of the Lamb churches selected for study have been drawn up in this manner. More detailed elevations and sections have been drawn of St. Stephen, Aldwark, which is Lamb's first church where a centralised plan was used. The plinth details for all twelve churches have also been drawn to study the similarities between the churches to ascertain any standards or hierarchy.

A detailed 3D model of one building has been undertaken together with several other simpler 3D computer models of Lambs buildings or parts of buildings to determine his solutions to specific problems. St. Stephen, Aldwark, Yorks (1851-53), his most significant early church, is the most detailed model and includes all timberwork, rainwater disposal and parapet and corbel details. St. Andrew, Blubberhouses, Yorks (1849-50) has been modelled to include the nave roof to a level of individual timbers, plates and bolts as well as a simply model of the church to demonstrate the tower, structure and rainwater disposal. St. Martin, Gospel Oak, London (1864-66) has been modelled to a massing level to allow the study of roof design and rainwater disposal of a large and later Lamb church. Finally the skylight to the Market House at Berkhamsted Town Hall and Market House, Herts (1859-60) has been modelled to the level of individual timbers to discover construction detailing and methods.

The selection of areas to study in 2D and 3D across the twelve churches and the number needed to study a particular aspect has been carefully chosen to allow a representative quota. Hence, all twelve were required for the study of the seating and viewing and plinths but only two to show rainwater disposal problems with small and large buildings. In cases where only one or a few of the churches have been drawn in 2D or modelled in 3D the analysis has been backed up by evidence from other churches without the need for individual drawings.

Finally a series of tables has been produced across all twelve churches covering styles, roof construction, roof pitches, plinths and materials.

A Pentax S4i digital camera was used to take all the photographs during the study supplemented with photographs taken by the author and his father at various times between 1974 and 2002. These slides were scanned into digital format and collected together as Albums in the iPhoto software by Apple Computers Inc. These were then all transferred to an iPhone greatly assisting analysis at site visits. At any one site it was possible to compare the actual features of the building with the images of all the others that had been visited to see similar features and detailing.

3.3 Archival Research

The two main types of archival information are primary source, where the information is by Lamb and secondary source, where the information is about Lamb. Table 1 shows the extent of primary source information that is available in the RIBA Library, County Record Offices, the Society of Antiquaries, the Lambeth Palace Library and other collections and libraries. The information these bodies hold with their dimensioned plans and detailed grant application forms has helped to create as accurately as possible drawings of the churches that Lamb intended. This helps to assess the structure of Lamb's buildings; but the libraries also contain information to help assess Lamb's other qualities necessary to be an architect.

From various sources of primary information it is possible to see Lamb's relationship with clients, contractors and authorities. The 'Healey Letters', dating from 1845 to 1848, written by Lamb to his client Harcourt over the duration of the project to design and build St. Paul's, Healey (1845-48), have survived.¹⁰⁰ There are also some letters between Lamb and the Corporation of Eye from 1856 to 1858 relating to Eye Town Hall and detailing conflicts between the client, the builder and the architect.¹⁰¹ These are very important and are a fascinating insight into Lamb's client and contractor relationships as well as his handling of a project. They also help to show how Lamb dealt with the financial side of a project and with disputes both during and following construction. Other libraries have primary source information on costs, bills and fees located in various letters and minute books. These provide isolated yet significant data over his career which show how successful Lamb was at handling money and go some way towards explaining the financial difficulties which seem to have beset him at least twice during his lifetime.

Finally, as primary source information, the RIBA, as well as having a few of Lamb's drawings in their Drawings Collection, has records of his time as a member of the RIBA Council in the 1840s prior to his resignation in 1844 and then, again when he was re-elected in 1860.¹⁰²

¹⁰⁰ E.B.Lamb to Captn Harcourt, R.N., 1st April 1846, *Healey Letters*, North Yorkshire County Record Office.

¹⁰¹ E.B.Lamb to Eye Town Council., 22nd May 1856 to 2nd Dec 1858, Suffolk Record Office, Ipswich.

¹⁰² RIBA Drawings Collection, Victoria and Albert Museum, London and the *Minute Book of the Council of RIBA*, Volumes 1 to 4, RIBA Library, Portland Place, London.

There are many secondary sources and the majority of these are the numerous entries in the periodicals of the day, which have been used to assess his relationship with the architectural world and the part which he played. His contributions to published work began in the 1830s with contributions to the *Architectural Magazine* and continued throughout his career including designs, letters and transcripts of lectures.¹⁰³ There are also many reports of his work on display at the Royal Academy and Architectural Exhibitions and of the important part he played in the organising of the latter and for the Architectural Union Company.

Summary

The objective of this work is to study Lamb as an architect by concentrating on a direct analysis of his use of structure with reference to his professionalism. A high percentage of Lamb's churches are extant and in most cases have remained very close to their original design both internally and externally. They provide a rich source which allows the measurement and analysis of Lamb's architecture from overall planning and design down to the detail of construction. Modern computers allow the replication of the building in electronic form and the ability to analyse Lamb's work in ways that are impossible to do with the building itself. By covering at various levels of detail fifteen buildings stretching over twenty-one years throughout the main period of his career allows an accurate interpretation and analysis of his use of structure. The various collections of original Lamb letters and drawings which have survived, although small, in most cases relate directly to the buildings chosen for study, contribute to the analysis of the structure. They also provide a vital insight into how good Lamb was as a practising architect in dealing with the important relationships with the client, builder and authorities essential to the smooth running of a project. They also give an intriguing insight into his project management skills and the financial control of large and small projects. The supporting published articles and letters in the periodicals of the time, his exhibition drawings at the Royal Academy and the Architectural Exhibition and his relationship with the RIBA allow his contribution to the architectural profession as a whole to be interpreted. All of these allow an accurate picture to form of Lamb's ability as an architect.

¹⁰³ E.B.Lamb's first contribution was the frontispiece to the first issue of the *Architectural Magazine*, March 1834 and his last a letter to the *Building News*, October 25th, 1867, p. 746.

4.0 PREPARATION FOR PRACTICE

Early Years

Edward Buckton Lamb was the third son of James and Frances Lamb and born on 17th May 1805¹⁰⁴, probably in London, into a Georgian England then at war with France. By 1823 the family home was a terraced house at 7 Swinton Street on the south side of a short cul-de-sac off the Grays Inn Road originally called Constitution Hill.¹⁰⁵ At the turn of the nineteenth century this was an area of virtually open land a quarter of a mile north of the Foundling Hospital then rapidly developing with new housing.

Lamb was one of seven siblings and christened at St. Mary Magdelene, Old Fish Street, London on 26th June 1805.¹⁰⁶ He had two elder brothers, Joseph and Henry, two older sisters, Frances and Sarah and two younger brothers, Thomas and Charles. While Lamb grew up to be an architect, Henry became a Superanatea/Registrar in the Insolvent Debtors Court.¹⁰⁷ Henry also helped out his brother in at least one of his architectural projects¹⁰⁸ while Thomas was apprenticed to an Auctioneer and Appraiser¹⁰⁹ and later became a Law Stationer.¹¹⁰ Thomas had a son, Henry who also became an architect¹¹¹ and worked with his uncle Edward. Lamb's sister Frances remained a spinster and lived with him in the 1850s.¹¹²

Lamb's father was a Civil Servant and worked in the Insolvent Debtors Court Office.¹¹³ He was also an amateur artist and exhibited work at the Royal Academy in 1827, 1832, 1833

¹⁰⁴ Edward Buckton Lamb son of James and Frances Lamb, born May 17 1805 in *Parish Register of St. Mary Magdalen, Old Fish Street 1757-1812*, MS 10.225 Guildhall Library London.

¹⁰⁶ James Lamb's address is given on Edward Buckton Lamb's article document, Bainbridge Collection.

¹⁰⁶ Edward Buckton Lamb son of James and Frances Lamb, baptized June 26 1805 in *Parish Register of St. Mary Magdalen, Old Fish Street 1757-1812*, MS 10.225 Guildhall Library London.

¹⁰⁷ Occupation indicated in 1871 Census for 20 Cromwell Road, London, Public Record Office.

¹⁰⁸ Henry deputised for Lamb at a meeting regarding Judges Lodges, Aylesbury on 9th August 1850, *Minutes of Meetings of Committee for disposal of the Old Gaol and for providing Judge's Lodgings*, Q/AG/22, Buckinghamshire County Record Office, Aylesbury.

¹⁰⁹ Indenture apprenticing Thomas to John Davis of Rathbone Place, Auctioneer and Appraiser for 3 years, dated 28th June 1825, Bainbridge Collection.

¹¹⁰ Occupation indicated in Birth Certificate of his daughter Edith Margaret Lamb, 29th March 1845, Public Record Office.

¹¹¹ Occupation indicated in 1871 Census for 11 Dorchester Place, London, Public Record Office and a signed receipt for drawings is preserved at the Incorporated Church Building Society, Lambeth Palace, London.

¹¹² Frances Lamb is recorded at 26 Charlotte Street, Portland Place in 1861, Public Record Office, London

¹¹³ Edward Buckton Lamb entry, *Dictionary of National Biography*, London, 2004.

and 1834.¹¹⁴ Little is known about Lamb's childhood but it can be inferred that he must have received a sound education, either by attendance at a local school or by a private tutor, for much of his published work contains Latin references, his surviving letters are well written and even from his early articles he shows a mature command of the English language.

¹¹⁴ James Lamb's exhibited paintings are recorded in *The Royal Academy Exhibitors Records*, Royal Academy, London.

4.1 Lewis Nockalls Cottingham

On 23rd February 1823, when Lamb was seventeen, he was articled to the Mediaevalist architect, designer, engineer, artist and antiquary Lewis Nockalls Cottingham (1787-1847). He was to take him 'as his apprentice for the term of five years to be taught and instructed in the business Art and Profession of an Architect Surveyor of Building and Ornamental draughtsman'. The fee for the training was 'the sum of £63', or 60 Guineas and the hours of work were 'from 9:30am to 4:00 in the afternoon, then from 7:00 till 9:00 in the evening.'¹¹⁵ This is an eight and a half-hour day with a three-hour gap in the middle and would require a great deal of work to be undertaken by candlelight or gaslight in the evenings particularly in the winter months. Although long, these hours were shorter than those in Sir John Soane's office where the standard day by 1810 was 9:00am to 8:00pm, some eleven hours having been reduced from twelve hours. The £63 fee was also a much smaller sum than that which Soane required which was £105, or 100 Guineas between 1786 and 1795 and which increased to £157, or 150 Guineas thereafter for five or six years training.¹¹⁶

It is not known how Lamb or his father became aware that Cottingham was an architect and one also with a willingness to take on students. But it is known that a year earlier in 1822 Cottingham had published his book, *Plans, Elevations, Sections, Details and Views of the Magnificent Chapel of King Henry VII at Westminster Abbey* where at the end of the description of plates he stated that he 'takes this opportunity to acquaint young gentlemen who are studying the profession, that he gives lessons on civil architecture'.¹¹⁷ At this time Cottingham was thirty-five years old and resided at 66 Great Queen Street, Lincoln's Inn Fields where he had been carrying out his professional career for the last eight years¹¹⁸ and was less than a mile from Lamb's parents' house.

In this year of 1822 Cottingham had been appointed architect and surveyor to the Cooks' Company and had also married Sophia, the second daughter of Robert Turner Cotton, Esq

¹¹⁵ Indenture apprenticing Edward Buckton Lamb to Lewis Nockalls Cottingham, architect and surveyor for 5 years, dated 28th February 1823, Bainbridge Collection.

¹¹⁶ Margaret Richardson, 'Learning in the Soane Office', *The Education of the Architect*, (1993), p15.

¹¹⁷ L. N. Cottingham, *Plans, Elevations, Sections, Details and Views of the Magnificent Chapel of King Henry VII at Westminster Abbey Church, the History of its Foundation and an authentic account of its Restoration*, Priestley and Weale, London, Volume 1, 1822.

¹¹⁸ *Ibid.*

of Finsbury.¹¹⁹ The book on the King Henry VII Chapel followed directly on from his first book, *Plans of Westminster Hall*, which included four plates, but no text and had been published earlier in the same year.¹²⁰ Both books began to look at Gothic architecture in a different way by emphasising a structural analysis of the buildings rather than concentrating only on the visual aspects of the design as other contemporary writers were doing.

The Westminster Hall plates included an elevation of the 'Principal Entrance' taken 'from actual measurements' in Plate I, and detailed plans, sections and elevations in Plate II showing the roof timbers in great detail accompanied by measurements of the timbers. Plate III shows a highly detailed transverse section indicating the roof structure and showing the elevation of the end of the hall. Finally, Plate IV shows plan, section and elevation details of various windows, doors, buttress caps and spandrels in a sheet covered with over sixty individual drawings all fully dimensioned and annotated.

It is quite clear that this is a comprehensive study of construction in both the general elements of the building and its details. Cottingham continued this theme in his following book, the first Volume of King Henry VII's Chapel, with numerous drawings at different scales all dimensioned to an accuracy of 1/4 of an inch, large enough to 'exhibit the minutest decorations of the parts they relate to'. This work also contained a Preface where Cottingham pointed out that his work was to be 'really serviceable to the architect and practical builder' and that regarding the plates 'truth and accuracy should be studied rather than the fineness of the engraving'.¹²¹

In the opening statement of the book on the King Henry VII Chapel, there was a single page of text entitled 'To The Young Architects of Great Britain'. Here Cottingham directly addresses the reader and states that the intention is to present him 'with a set of accurate working drawings' and to 'endeavour to show you the principles upon which it is constructed'.¹²² This Henry VII Chapel book was Volume 1 and concentrated on the exterior of the building with some forty-five plates while 'a second volume on the same

¹¹⁹ The Art-Union, October 1847, pp. 377-8.

¹²⁰ L. N. Cottingham, *Plans of Westminster Hall*, Rodwell and Martin, London, 1822.

¹²¹ L. N. Cottingham, *Plans, Elevations, Sections, Details and Views of the Magnificent Chapel of King Henry VII at Westminster Abbey Church, the History of its Foundation and an authentic account of its Restoration*. Priestley and Weale, London, Volume 1, 1822, Preface.

¹²² *Ibid.*, Opening Statement.

scale, explanatory of the interior' was shortly to be published although it was not completed until 1829.

In both works Cottingham was expressing his interest in Gothic architecture, which he acknowledged was contrary to the current architectural thinking. He noted that 'in speaking with admiration as I do of Gothic architecture, I am fully aware that I subject myself to the censure of some of my profession whose prejudice in favour of the Grecian style prevents them seeing merit in any other'¹²³. The Classical style, with its emphasis on proportion and harmony, dominated architectural thinking at this time and when a student was articled to an architect it was usual to spend many months learning and drawing the Classical orders and drawing various casts of capitals, mouldings and other classical fragments.¹²⁴

Cottingham's office obviously had a different emphasis and whether by choice or accident Lamb became part of a group that was to concentrate on the Gothic architecture of Great Britain rather than the Classical architecture which Lamb identified as having originated from a foreign land. Lamb may have had a strong desire to learn about his native architecture, that we know later on from his writings and his projects he preferred, or his father may have simply decided that the lower premium of Cottingham was the decisive factor. In either case Lamb joined an office where the work going on in 1823 included not only the measured drawings for the publications but also the architectural projects of restorations and new builds. All were in the Gothic style and would have had a profound effect on Lamb's young mind and significantly have influenced the path his career would take.

Following Volume 1 of the Henry VII's Chapel work Cottingham published *Working Drawings of Gothic Ornament and Designs for a Gothic Mansion*¹²⁵ and *The Ornamental Metal Worker's Director Containing a Series of Designs and Patterns of Ornamental Iron and Brass Work*.¹²⁶ Both were published in 1823 the year when Lamb joined the office. These works were enlarged and re-issued the following year and this gives an indication

¹²³ Ibid.

¹²⁴ Margaret Richardson, 'Learning in the Soane Office', *The Education of the Architect*, (1993), p16.

¹²⁵ L. N. Cottingham, *Working Drawings of Gothic Ornament and Designs for a Gothic Mansion*, Priestley and Weale, London, 1823.

¹²⁶ L. N. Cottingham, *The Ornamental Metal Worker's Director Containing a Series of Designs and Patterns of Ornamental Iron and Brass Work*, London, 1823.

that they were widely used by architects. The former eventually contained forty-two plates of various capitals, bases, corbels, spandrels, doors, windows and mouldings from Westminster Abbey and Strawberry Hill as well as designs for a Gothic Mansion. *The Ornamental Metal Worker's Director* was the first of its kind in England in the nineteenth century and it included eighty-two plates in the final 1824 version when it was re-titled *The Smith and Founders' Director*. It was full of patterns for gates, railings, fences, balconies, balustrades and newels for staircases, fanlights, lamps and lampposts. Other interior designs included candlesticks, candelabra, chandeliers, stoves and fenders.

One architect who used designs derived from the *The Ornamental Metal Worker's Director* was Henry Goodridge (1797-1864) the son of James Goodridge the builder, who practised extensively in Bath. Goodridge used bold anthemia, rosettes and other Grecian decorations on the balconies at Woodland Place (1826) and Nos. 6 and 9 Cleveland Place (1827-30), on the stair balusters to his own house Fiesole (1846-8) and on the railings of Cleveland Bridge (1827). The latter was built for the Duke of Cleveland and has been described by Michael Forsyth in the Buildings of England series guide for Bath as 'one of the finest late Georgian bridges in Greek Revival style, combining the antique with expressive use of new materials'.¹²⁷ Goodridge also has his name cast in iron on the bridge as the architect, which as Forsyth points out, is 'an eloquent indication of the growing professional status of architects, in contrast to the blurred architect/builder role of the C18'.¹²⁸ Lamb was also to put his initials on many of his buildings in stone, stained glass and tile as will be seen later.

The fact that both these books by Cottingham were republished in 1824 and in the case of the latter for a third time in 1840, shows that they were well used as a handbook, with the designs either used directly or as a basis for new ones. Most of the designs are unaccredited but it is extremely likely that in a small office some in the enlarged editions are probably the work of Lamb.

These four publications cover a large subject area and show Cottingham's clear reasoning behind his desire for a Gothic Revival. The first two books recorded two great works of Gothic architecture in accurate detail through measured drawings and the latter two continued the recording of work but progressed into designs for 'new' Gothic buildings

¹²⁷ Michael Forsyth, *Bath*, (Pevsner architectural guide), Yale University Press, 2003, p. 230.

¹²⁸ *Ibid.*, p. 35.

with a single design as well as numerous designs for the details. As has been made clear by Janet Myles in her 1996 biography on Cottingham he had a 'clear message that a Gothic Revival was not a matter of simple copyism. A revival should stem from an archaeologically correct basis, but at the same time create an architecture that related to the needs of its own time'.¹²⁹

Studying Gothic Architecture

Cottingham working in the 1820s had not been the first to show an interest in Gothic architecture. Seventy years earlier Horace Walpole the son of England's first Prime Minister had transformed the late seventeenth century house of Strawberry Hill in Twickenham into 'a little Gothic castle' between 1747 and 1792. The existing house was virtually doubled in size and many Gothic rooms were created and towers and battlements created. It quickly became a very popular tourist attraction forcing Walpole to issue tickets and restrict entry numbers and times, but did begin the interest in the reviving of Gothic architecture¹³⁰. During the period of the transformation of Strawberry Hill, the Society of Antiquaries of London under its President Richard Gough (1735-1809) published the first volume of *Archaeologia* in 1770 beginning the interest in the country's architectural past. In order for research into Gothic architecture to progress there was a need for accurate drawings and others such as James Essex (1722-84) published several pioneering papers on medieval architecture in the Society's Journal.¹³¹ More researchers followed including John Carter (1748-1817), another antiquary to the Society, and who published his *Ancient Architecture of England* in two volumes in (1795-1805) and (1807-14). This was the first history of architecture and attempted to set out British architecture through the Roman, Saxon and Norman periods up to the reign of Edward III. It was a serious attempt to study and classify the national architecture even though a study by J. Mordaunt Crook in his book on John Carter, published in 1995, points out that Carter's 'nomenclature is eccentric'. Furthermore his chronology is 'perhaps best described as wilful' and 'his obsessive nationalism assigns all credit for the genius of Gothic architecture to England' and has as

¹²⁹ Janet Myles, *L. N. Cottingham 1787-1847 Architect of the Gothic Revival*, Lund Humphries Publishers, London, 1996, p 72.

¹³⁰ Friends of Strawberry Hill website, www.friendsofstrawberryhill.org, last accessed 15th August 2010.

¹³¹ James Stevens Curl, *A Dictionary of Architecture*, Oxford University Press, Oxford, 2000, p233.

such 'flawed what would otherwise have been Carter's crowning achievement'.¹³²

Nevertheless this publication and others he produced together with over 350 writings in *The Gentleman's Magazine* from 1797 to his death in 1817 shows how concerned he was to record and discuss the subject in an open forum over a prolonged period.

John Britton (1771-1857) continued the analysis and recording of the country's architecture and published five volumes on the *Architectural Antiquities of Great Britain* from 1807-26. The first four of these volumes were published over the seven-year period to 1814 and were compilations of the original works published in parts from 1805 to August 1814. Britton began to supplement the artistic perspective views of the buildings with ground plans and some elevations all to scale and some with measurements. He was beginning to push antiquarian studies from pure picturesque illustrations towards accurate and informative drawings. This movement steadily increased throughout the series with the addition of sections, details and more measurements until the 1814 edition where the illustrations of plans, sections, elevations and details are far more architectural. Britton's work was welcomed and praised by Sir John Soane prompting Britton to dedicate Volume III to him in 1812 with much verbosity boarding on the sycophantic.

It was while Britton was working on his *Architectural Antiquities of Great Britain* that he met the watercolourist, engraver and teacher Augustus Charles Pugin (1769-1832), the father of Augustus Northmore Welby Pugin (1812-1852). Britton assisted Pugin in the undertaking of *Specimens of Gothic Architecture consisting of doors, windows, buttresses, Pinnacles, etc selected from ancient buildings at Oxford* published in 1816 which was 'calculated to afford hints, and something like data, for the experienced Architect'.¹³³ The book contained sixty-one plates but no accompanying text. The plates were typical of those in *Architectural Antiquities* with perspectives including shadows, trees and vegetation but there were views almost square on to doorways and windows and these had a limited number of measurements written over the drawing. There was also the occasional measurement to some of the more architectural close-up views of buttresses and turrets. Clearly this book was continuing in the vein of the antiquarian studies but

¹³² J. Mordaunt Crook, *John Carter and the mind of the Gothic Revival*, W.S Maney & Son Ltd in association with the Society of Antiquaries of London, 1995, p42.

¹³³ Pugin, *Specimens of Gothic Architecture consisting of doors, windows, buttresses, Pinnacles, etc selected from ancient buildings at Oxford*, M.A. Nattali, London, 1816, Preface

beginning to incorporate more useful architectural information and shows the crossover to the more measured drawings emphasis of Cottingham's work which was to follow.

Augustus Pugin acknowledged the limitations of his work in the Preface to his next major work *Specimens of Gothic architecture selected from various ancient edifices in England* published in June 1821 although previously issued in parts from June of 1820. He stated that the 'style of execution, and the character of many of the subjects, are not adequate to the demands of enlightened collectors, or very creditable to the taste of the artists'¹³⁴. The book begins well with Plate I entitled Various Modes of Forming Arches showing twenty-five different styles of arches and their setting out points. Plates follow showing plans, sections and elevations of windows, doorways, pinnacles, fireplaces, spandrels, spires, buttresses, brackets and columns all including measurements to an accuracy of one eighth of an inch. The buildings included the cathedrals of York and Lincoln, Windsor Castle and St. George's Chapel as well as Westminster Hall and the King Henry VII Chapel to be published in far greater detail a year later by Cottingham.

The work was a success and Volume II of *Specimens* followed in 1823, which included a 'Chronological Sketch of English Architecture' by Edward James Willson (1787-1854) with the dates and periods of architecture. A classification and delineation of Gothic Architecture had been attempted by many including Thomas Rickman (1776-1841) who published his observations on medieval architecture in *An attempt to Discriminate the Styles of English Architecture from the Conquest to the Reformation* in 1817. This was the culmination of all the previous work by Gough and Carter as well as the ongoing work by Britton and Pugin and by subdividing the medieval styles into 'Norman', 'Early English', 'Decorated English' and 'Perpendicular English' he set what was to become the definitive order and names. Rickman made clear in his preface to the first edition that the publication was to furnish 'a view of the principles of architecture' to assist the 'guardians of ecclesiastical edifices' and to 'enable them to judge with considerable accuracy of the restorations necessary'. It was also as 'a text-book for the architectural student' and his aim was 'by a constant reference to buildings, to instil the principles of practice rather than

¹³⁴ Pugin, *Specimens of Gothic architecture selected from various ancient edifices in England*, M.A. Nattali, London, Volume 1, 1821, Preface

mere theoretical knowledge'.¹³⁵ Rickman practised as an architect with numerous early works in a Gothic Revival style in Liverpool as early as 1813 with St. George's Church, Everton, (1813-14), St. Michael's, Toxteth (1814-15) and St. Philip's, Hardman Street, (1815-16). These three were not strictly speaking truly Gothic, but more Georgian churches with Gothic details indicating the transitional period and the desire to revive the Gothic style.

In 1829 Cottingham published a second volume of *Plans, Elevations, Sections, Details and Views of the Magnificent Chapel of King Henry VII at Westminster Abbey* with sixty-five plates showing details of the interior. He also included a preface where he attempted to define his own classification of Gothic into three classes. Cottingham designated them as '1st, the highly pointed arch without tracery;- 2dly, the equilateral pointed arch with flowing tracery;- and, 3rdly, the obtuse pointed arch with rectilinear panelling'.¹³⁶ The date ranges were from the beginning of the 13th century for First Class, from 1272-1377 for Second Class and then to the end of the 15th Century for Third Class. Cottingham made clear the sound reasons behind his attempt to define these classes. There were too many students who fell into the trap of mixing 'the first class of pointed architecture, in the beginning of the thirteenth century with the third class in the latter end of the fifteenth century' which he considered 'barbarous'.¹³⁷

In his summation of his Preface he directed his views to the young architect stating that although books were fine he would 'strongly recommend him, in the commencement of his arduous career, to study the buildings themselves,' because 'it is from these he must gain his information'. He continued to stress it was 'from actual observation' that he would 'learn effect, composition, decoration, character and construction' and 'must visit these magnificent piles again and again'.¹³⁸

Lamb joined an office where there were strong beliefs in the research and study of existing Gothic architecture in order to carry out accurate restorations and new Gothic buildings

¹³⁵ Thomas Rickman, *An Attempt to Discriminate the Styles of Architecture in England*, John Henry and James Parker, Oxford and London, 1817, Preface to the First Edition

¹³⁶ L. N. Cottingham, *Plans, Elevations, Sections, Details and Views of the Magnificent Chapel of King Henry VII at Westminster Abbey Church, the History of its Foundation and an authentic account of its Restoration*, Priestley and Weale, London, Volume 2, 1829, Preface.

¹³⁷ *Ibid*, Preface, n. p.

¹³⁸ *Ibid*, Preface, n. p.

with correctly observed styles: an office whose leader, Cottingham, was at the heart of the discussions on a Gothic Revival and who was determined to emphasise that the study of both the decoration and the construction of Gothic buildings was essential to the understanding of the architecture. Such an atmosphere of enthusiasm and determination would have had a profound effect on a young man of seventeen and the desire to study ancient architecture and learn its principles, or 'antiquarising' as Lamb called it, remained with Lamb for the rest of his life.¹³⁹ At the *Conversazione* of the Architectural Association some thirty years later on April 19th 1862, Lamb was asked 'to make a few observations to the younger members'.¹⁴⁰ It is reported in *The Builder* that Lamb detailed how Britton and Carter had commenced the 'resuscitation' of Gothic architecture in England with the elder Pugin laying the foundation in a 'sound and solid way.' He continued by telling students to be studious and self-reliant 'because although they might study under the most eminent and successful architect, it was impossible that he could devote his time exclusively to their instruction'. For the student 'their advancement depended upon their own thoughtful and industrious application to the types and models set before them'.¹⁴¹

Part of architectural studying involved the drawing of Gothic architecture and this was possible either by visiting the buildings in person or by drawing various fragments of this architecture or their casts. Lamb had an advantage here by being in Cottingham's office. Shortly after he arrived in London in 1814 and commenced his professional career Cottingham began to collect models and casts and establish his museum of medieval antiquities. Only eight years later in 1822 it was described as an 'extensive collection' in the Preface to his work on Henry VII's Chapel.¹⁴² By 1840 it was reported to be 'an immense collection of specimens, about 31,000 we understand, of domestic and ecclesiastical architecture' by *The Civil Engineer and Architect's Journal* and they urged that 'every architect, artist and lover of antiquity should not fail to visit this museum'.¹⁴³ The museum was also physically large consisting of 'an Elizabethan parlour and anteroom, two large galleries connected by an intermediate room, a chapel with a series of vaulted chambers, two rooms devoted to monumental sculpture and a number of studios filled with objects of architectural detail of every description'. The chapel was in the basement

¹³⁹ E.B.Lamb to Capt'n Harcourt, R.N., 1st April 1846, *Healey Letters*, North Yorkshire County Record Office.

¹⁴⁰ Report on *Conversazione*, *The Builder*, Volume 20, April 19th, 1862, p270-271

¹⁴¹ *Ibid.*, p270-271

¹⁴² Refer Note 18

¹⁴³ Editorial, *Civil Engineer and Architect's Journal*, July, 1840, p 249.

reached by a staircase lined with carved panels.¹⁴⁴ But this figure is probably an exaggeration as we know that chimney pieces, whole ceilings, panelling, fireplaces and windows were included as well as doors, friezes, pilasters and furniture. And if the collection was indeed amassed over the twenty-six years from 1814 to 1840 then this would require an average of twenty two new items a week. Eleven years later in February 1851 it would seem likely that the number of objects would have increased but a more realistic figure was reported of 'no less than 1,453 articles in the museum'.¹⁴⁵ Furthermore at the time of the sale of his Museum later that year in November there were some 2,205 lots listed¹⁴⁶ in the catalogue and it took eleven days to complete.¹⁴⁷

Nevertheless, Cottingham's collection was extremely important and the casts and items salvaged from demolished or ruined buildings did not only relate to ecclesiastical work but also included those of ancient domestic origin. These included architectural features from great manor houses in Kent and Herefordshire as well as Derbyshire and Suffolk. He was thus showing in the best possible manner the importance of domestic buildings in the history of the development of the country's architecture by preserving them and putting them on show for architects, students and the general public.

Snelston Hall

There were many real commissions being undertaken in Cottingham's office during the time Lamb was articulated to him. When he joined in 1823, Snelston Hall and the Estate Village, which had commenced the year before, were underway for John Harrison. The Hall was a new mansion designed by Cottingham in the classical style reflecting the Greek Revival of the early 1820s. By 1826, however, the designs changed to a Gothic style no doubt reflecting the work and interest Cottingham was showing in Gothic architecture at the time. Cottingham's mature handling of the style with well-proportioned elevations in an early Perpendicular style shows an architect in command of his subject. There were numerous buttresses, turrets and battlements and crisp lines of string courses and window-head mouldings. The design is very similar to the style Lamb was later to use in his

¹⁴⁴ Janet Myles, *L. N. Cottingham 1787-1847 Architect of the Gothic Revival*, Lund Humphries Publishers, London, 1996, p 28.

¹⁴⁵ Mr Cottingham's Museum of Mediaeval Art, *The Ecclesiologist*, No. LXXXII. February 1851, p58

¹⁴⁶ *Catalogue of Sale*, The Museum of Mediaeval Art collected by the late L.N.Cottingham FSA, Messrs Foster & Son, auctioneers

¹⁴⁷ Sale of the Cottingham Museum, *The Builder*, Volume 9, November 8th, p710.

designs published in the *Architectural Magazine* and the *Encyclopaedia of Cottage, Farm, and Villa Architecture* in the 1830s and that he put into practice with his work at Wadhurst Castle in Sussex in 1842. This latter work was for Benjamin Harding and is a large two storey building with four octagonal towers similar to Cottingham's 1826 design and this too has battlements and string courses. The windows are also simple rectangles with a single mullion and transom and while Cottingham's mullion is always central, Lamb's is above centre to create a pair of smaller rectangles above two larger ones. Cottingham's work for Snelston Hall and its Estate Village continued for the whole period that Lamb was in the office. The work to the Estate Village commenced with a series of designs for cottages and gatehouses in 1825. Cottingham produced a book containing seventeen watercolours in a delightful collection of picturesque designs of single and two storey buildings. Three of the designs were Neo-classical but the remaining were based on the vernacular of the Tudor period and constructed in a variety of materials with brick and stone walls, tile, slate stone and thatch roofing with timber for porches and half-timbering to some of the upper storeys.

There are important aspects of this work, which can be seen to have influenced Lamb, such as the picturesque design and the use of the vernacular with a harmonious use of materials. The Picturesque was the standard of taste that became prominent in the eighteenth century and was mainly concerned with landscape and paintings to create vistas and scenes that were pleasing to the eye. But architecture was also influenced by this freeing of the composition. One that necessitated the move away from pure symmetry to balanced asymmetrical compositions of small irregular features. Such an architectural language favoured the freedom of the Gothic rather than the restrictions of the Classical and no doubt the picturesque ideas, around at the same time as the interest in antiquities, helped to lead to the Gothic Revival. In his lecture on *Architectural Composition* given in 1857 at the Architectural Exhibition, Lamb noted 'that the architectural plan must be defined in its limits, whereas the painter may soar to any extent of extravagance his fancy may dictate'. He went on to say that the architect must form a composition 'providing a perfect work to be seen from various sides, and under different influences of light, shade and position'. Lamb realised the greater number of issues, which need to be considered in a three-dimensional architectural composition rather than a two-dimensional painting, but that

'harmonious combination of form and construction so necessary to the production of the beautiful or the picturesque' could still be achieved in architecture.¹⁴⁸

The use of vernacular architecture, especially of the domestic, was something that concerned Lamb to such an extent that he studied the subject in the early 1840s in great depth. This culminated in the publishing of his only book *Studies of Ancient Domestic Architecture* in 1846. It consisted of twenty plates showing examples of medieval domestic architecture predominantly in Buckinghamshire, Sussex and the south of England preceded by thirty pages, some thirty thousand words, of text which describes the success or otherwise of each composition. The reason he gave for the study of this architecture was that it had been 'overlooked altogether' when medieval architecture was re-introduced while 'the Ecclesiastical style of former times was taken, or to speak more correctly, mistaken as one for imitation in modern residences'.¹⁴⁹ The many Gothic cottages, which were being built by architects at the time, had their 'gothicism' in having 'pointed arch apertures for windows' something which does not occur in the designs for the cottages in the Snelston Estate Village.

Lamb's critique of the drawings points out the composition of major elements of the buildings such as storey bays and gable projections, the disposition of the windows, eaves lines, the treatment of surfaces, decoration and details. Lamb, in his book, refers for the first time to his principles of architectural composition, namely that the harmony of construction by the application of materials will lead to a harmony of form. These remained fundamental principles throughout his career and are referred to again in his lecture in 1857 and the later ones in the 1860s.

Waterloo Bridge Road

The other major secular work being carried out in Cottingham's office during Lamb's period was the Waterloo Bridge Road or Field Estate which was begun in 1824 and completed in 1833. The elevations for Nos 80-86 are a Neo-classical design reflecting the fashionable contemporary designs by Soane and Nash. Each of the four storeys of the

¹⁴⁸ E.B.Lamb, *Architectural Composition*, lecture delivered at the Architectural Exhibition on February 3rd, 1857 and published in full in *The Building News*, February 20th, 1857

¹⁴⁹ E.B.Lamb, *Studies of Ancient Domestic Architecture*, 1846, copies at the RIBA Library and with the author.

building is treated differently. The first floor has a series of large round arched windows above large full frontage shop windows rising from a low sill to a high bold fascia. The windows are divided vertical into three sections by pilasters with simple bases and capitals creating an outer ten-pane window each side of a larger twenty-pane window in the centre. The second floor has simple twelve-pane sash windows immediately above the corresponding windows on the first floor with a strong horizontal cornice separating similarly placed six-pane windows on the third floor. The elevation is completed with a parapet with a low-pitch slate roof hidden from view behind.

Thus a balanced composition was created with pleasing proportions to the eye. The shapes and sizes of the window openings express the function behind of shop, main room, bedroom and servants quarters. The end unit, No 80 was wider than the others by another bay allowing three windows to the upper floors while the ground floor had a central door partnered on each side by a more elaborate arched window. Rather than a single dwelling this was the York Hotel. Number 86, at the other end of the short terrace, was Cottingham's own house and was specifically designed for his library and his now vast museum collection. He moved here from Great Queen Street in 1828.

His designs for other parts of the estate in Anne Street and Bazing Place show two-storey terraced housing typical of the period, with a long continuous flat elevation with the regular repetition of door and window to the ground floor and regular windows to the first floor. A cornice or parapet runs the full length completing the elevation and there is no attempt to create any degree of individual identity to any of the dwellings. Such an elevation is unlikely to have been favourably received by Lamb. He wrote in his *Studies of Ancient Domestic Architecture* that 'the street architecture of London [is] little more than a mere nonentity - lines of brick walls with square holes in them': although he did go on to point out that this was due to regulations to limit fire spread, projections and window widths. Lamb repeated this opinion fourteen years later in his 1860 lecture at the Architectural Exhibition entitled *Suggestions of Architectural Composition* where he talked of the 'ugliness of our "hole-in-the-wall" street architecture'. But again he pointed out that creating compositions with 'oriel windows' or 'buttressed walls' might see 'infinite rows of Gothic houses in place of our present dingy structures' and that there was now 'limited

space and means, as well as the fear of the Building Act before our eyes'¹⁵⁰. Lamb was always balancing the architectural designs of the artist with the practical restrictions of the architect.

Church Restorations

Cottingham's other main work in his office was the restoration of churches and cathedrals. His extensive research and study of Gothic architecture for his four principal books placed him in an ideal position to undertake such work. His major commission was at Rochester Cathedral, which began in 1825 while Lamb was in his office, and continued until 1840. The cathedral was in a serious need of repair with dry rot in the roof of the choir, leaning walls and the tower built mainly of rubble just capable of supporting the eighteenth-century spire. Cottingham took down the spire and repaired the tower walls with iron ties and removed all the decayed main timbers of the belfry floor. During the removal of these parts fragments of the original tower came to light and Cottingham was able to use this as a basis for his design of the tower coupled with his knowledge of Gothic architecture obtained from his studies. Further work was carried out to the rest of the cathedral with repairs to turrets, battlements, parapets and the great east window. Cottingham also worked on the interior of the cathedral in 1825 and 1826, which included the removal of a brick wall over the doorway to a chapel revealing a range of arches and unblocking other windows. There were other more sensitive minor restorations with the replacing of doors, restoring mutilated figures and removing paintwork from the choir stalls.¹⁵¹

The complete range of work carried out at Rochester from the essential to the cosmetic shows the depth of Cottingham's capabilities as a competent architect and restorer. Lamb was learning to be an architect in an ideal environment with a project looking at one of England's finest cathedrals in such detail. There are no specific records of Lamb working on Rochester cathedral but with so much work being undertaken with this project it is difficult to imagine that he had no involvement. The numerous site visits to take measurements and check progress together with the many drawings that would have been necessary indicate that Lamb must have been involved to some degree. Even if this

¹⁵⁰ E.B.Lamb, *Suggestions on Architectural Composition*, lecture delivered at the Architectural Exhibition on May 29th, 1860 and published in full in *The Building News*, June 1st, 1860

¹⁵¹ Rev. R. Stevens, *Notebook of Repairs to Rochester Cathedral 1825-6*, Kent County Record Office.

involvement only included the odd visit and a few drawings he would have been aware of those drawn by others in the office. Regardless of the exact extent Lamb was closely involved with the practical work necessary to repair and restore architecture in both construction and detail over a range of materials including stone and brick, iron and lead, timber, glass and paint.

Royal Academy

Lamb did a great deal of drawing work in Cottingham's office. He was clearly an accomplished draftsman from an early age as within a year of his time with Cottingham he had a 'design for a church' exhibited at the Royal Academy in London.¹⁵² Lamb followed this with a 'design for a public monument' in 1825 and two further designs each in 1826 and 1827. To have six works exhibited at the Royal Academy in four successive years while Lamb was only 22 and still articled is impressive. Due to the long hours worked in the office it would be interesting to know if Lamb completed these designs out-of-hours or if he was allowed to spend time working on them during the day. Whenever the designs were completed, Cottingham could see Lamb's abilities and in 1827 recommended him to the Royal Academy School, to be a student in architecture.

To gain entry Lamb had first to 'present an Architectural Design, and also a specimen of his drawing from plaister to the Keeper'. Then when the Council of the Academy approved it Lamb had to 'make another Architectural Design in the presence of the Keeper and also a drawing from one of the Antique figures, or some portion of ornamental Sculpture'.¹⁵³ Lamb successfully passed through this entry process and was admitted as Student No. 1440 on October 22nd 1827 for a period of ten years along with five other architects.¹⁵⁴ This is typical of the average yearly intake for this time with thirty-three students enrolling as architects between 1824 and 1829. He would have been given an admission ticket in the

¹⁵² A. Graves, *The Royal Academy of Arts: A Complete Dictionary of Contributors and their works from its foundation in 1769 to 1904*, London, George Bell and Sons, 1905.

¹⁵³ *Royal Academy of Arts in London: Laws relating to the Schools, the Library, and the Students. (1814) Section 1 Admission of Students*, Royal Academy, London.

¹⁵⁴ Students Admitted In The Royal Academy from 1769 to 1830 reproduced in Sidney C. Hutchinson, *The Royal Academy Schools, 1768-1830, The Walpole Society, XXXVIII, 1962*

form of an ivory disc, known as a 'bone', with his name and date of admission, which showed he had been admitted to the Antique School.¹⁵⁵

The school was open for students 'every day except Sundays and in vacations' from 10:00am to 3:00pm but these were of little use to the architectural students who were articulated. Lamb was in Cottingham's office for all these five hours.¹⁵⁶ However, the school was also open from 5:00pm to 7:00pm in the summer and 6:00pm to 8:00pm in the winter, although again Lamb was in Cottingham's office for some of these hours. It is possible for Lamb to have visited the Royal Academy for some of the two hours he was free as the Academy were based in Somerset House, in the Strand at the time. This is less than five hundred yards away from Cottingham's office in Great Queen Street and after 1828 it is just across Waterloo Bridge from his offices in Waterloo Bridge Road.

The main reason why architectural students joined the Antique School was to use the extensive Library, which had 236 volumes on architecture alone in 1802 and Lamb would most certainly have made use of this facility. Another important reason (apart from the fact that the school was provided free to all students) was that there was an annual series of lectures given in the Great Room early in the new year.¹⁵⁷ These were compulsory, but it is highly likely that the architectural students during Lamb's time would not have needed such an incentive, as the Professor of Architecture from 1806-1837 was Sir John Soane (1753-1837).¹⁵⁸ In each series he was to speak for one evening a week for six weeks. But Soane stopped delivering his lectures in 1820 and they did not begin again until 1832. By this time Soane's eyesight had failed and the lectures from 1832 to 1836 were read for him by Henry Howard, Secretary of the Royal Academy.¹⁵⁹ Lamb therefore heard them but not delivered by the man himself.

¹⁵⁵ Architecture at the Royal Academy Schools, 1768 to 1836 by Neil Bingham in *The Education of the Architect, Proceedings of the 22nd Annual Symposium of the Society of Architectural Historians of Great Britain*, 1993, p 6.

¹⁵⁶ *Royal Academy of Arts in London: Laws relating to the Schools, the Library, and the Students. (1814) Section 2 Schools. Times of Study*, Royal Academy, London.

¹⁵⁷ Architecture at the Royal Academy Schools, 1768 to 1836 by Neil Bingham in *The Education of the Architect, Proceedings of the 22nd Annual Symposium of the Society of Architectural Historians of Great Britain*, 1993, p 8.

¹⁵⁸ Sidney C. Hutchinson, *The History of The Royal Academy 1768-1986*, Robert Royce Limited, 1986, p 69.

¹⁵⁹ David Watkin, editor, *Sir John Soane: The Royal Academy Lectures*, Cambridge, 2000., p. 21.

Finally all architectural students could enter the annual drawing competition which was split into a measured drawing competition and a design competition. In the former, Silver medals were presented every year for the best measured drawing and in the latter a single Gold medal every other year for the best design drawing. The Gold medal was worth winning 'for the best Design in Architecture consisting of one or more plans, an elevation and section on a sheet of paper' as it also came with 'fifty guineas'.¹⁶⁰ Gold medallists were also given the opportunity to be sent abroad at the expense of the King to study architecture. The Gold medal was a worthy prize and even a Silver medal winner was presented with a bound copy of the lectures of the Professors. Lamb did not win any medals and there are no surviving records of entries other than the winners, but it seems highly likely that he would have entered either or both these competitions at some time and possibly on more than one occasion. During his career he is known to have entered at least 32 national architectural competitions and four of these were during his ten years as a student at the Academy including the competition for the Houses of Parliament in 1835.

Lamb also continued sending designs to the Royal Academy whilst a student with another fifteen designs accepted and exhibited up to 1837. Even after this he continued to submit designs and had between one and four drawings each year accepted right through to 1850 totalling fifty three designs and he failed to have an exhibit in only three of these years.¹⁶¹

Architectural training in England differed markedly from that on the continent. In France there were schools open six days a week with formal lectures as well as discussions with the professors. In England there was the system of pupillage which took all the daylight hours leaving the student only the evenings free. The Royal Academy thus devoted its time with the students to design, knowing that the student had spent the day copying drawings and carrying out other basic office duties. A principle still adopted today with the Schools of Architecture concentrating on design while relying on the two 'year outs' in architects' offices to supplement the training. Becoming a student at the Royal Academy was a privilege and a significant benefit both to the student and the office to which he was articled. The student had the opportunity to meet the greatest architects of the time, make

¹⁶⁰ H.C.Morgan, *A history of the organisation and growth of the Royal Academy Schools from the beginning of the academy to 1836, with specific reference to academic teaching and conditions of studies*, University of Leeds, 1964, MA Thesis unpublished, copy at Royal Academy Library.

¹⁶¹ A.Graves, *The Royal Academy of Arts: A Complete Dictionary of Contributors and their works from its foundation in 1769 to 1904*, London, George Bell and Sons, 1905.

social contacts and become known to the public and potential clients through the Exhibition. The office benefited from having students at the academy, their designs exhibited and the additional training they received. Lamb was into the last four months of his artiled time with Cottingham when he entered the Schools in October 1827 and may well have been given more time to attend the schools by his employer during this period.

Completion of Articles

At the completion of his articles it is not known how long Lamb remained in the office. There are no recorded architectural works but there were two designs each for 1828 and 1829 exhibited by Lamb at the Royal Academy. The address recorded for these drawings is 9, Hamilton Place, New Road, London so Lamb had by this time left home and taken up residence in a new part of London in King's Cross less than a quarter of a mile from his family home. Lamb may have continued with Cottingham whilst a student at the Royal Academy and helped out with the drawings to Volume 2 of *Plans, Elevations, Sections, Details and Views of the Magnificent Chapel of King Henry VII at Westminster Abbey*. Not all the plates are indicated as being by Cottingham and some are obviously in a different hand. Lamb certainly continued to draw for in 1830 he undertook his first published work that of *Etchings of Gothic Ornament*. This was a collection of his drawings in a series of six monthly publications and Volume 1 was published in April 1830 and consisting of five plates of various Gothic fragments.¹⁶² Only four of the volumes were published and the final two never appeared. Today the work is extremely rare although copies have survived at the RIBA Library. The drawings are not as accomplished as would be expected of a Royal Academy student or as impressive as the drawings of Cottingham, but they do show Lamb continued to study Gothic architecture and get such studies into the public domain.

Summary

Lamb benefited significantly from being artiled to Cottingham who was one of the leading Gothic architects of the day with numerous books, new buildings and restorations to his name. Lamb spent five years in an environment where the research and study of

¹⁶² E.B.Lamb, *Etchings of Gothic Ornament*, 1830, copy at the RIBA Library.

Gothic architecture was considered fundamental for the accurate restoration of buildings and the design of new ones. The office was restoring and designing Gothic buildings throughout his time there as well as measuring, recording and publishing details of Gothic buildings for the benefit of students, architects and the public. Lamb therefore received a sound education in Gothic architecture, not only in the detail and the design, but also in the construction and use of materials. These materials would have included the stone and the timber that were to become so fundamental in his churches.

Attendance at The Royal Academy Schools would have aided and advanced this education and provided him with the opportunity to meet the greatest architects of the time.

Exhibiting his designs at the Royal Academy Annual Exhibitions presented him with the chance to show off his work to his peers, the public and potential clients. All this over a five-year period would have had a profound effect on a keen young man in his late teens and early twenties eager to become an architect, giving him a strong foundation in all aspects of architecture and helping shape the path his architectural career would take.

4.2 John Claudius Loudon

The years from 1828-1831

In 1818 the first Church Building Act was passed which set up the Church Building Commission with the object of providing new churches throughout the country and particularly in the expanding cities to spread the religious and moral teaching of the Church as an attempt to combat any revolutionary desires of the masses.¹⁶³ The Act granted a million pounds to build a hundred churches to be administered by the appointed Commissioners and by 1830 over 130 churches had been built with the help of a further £500,000 provided by the Second Church Building Act of 1824.¹⁶⁴ These churches were designed by some of the leading architects of the day, including Robert Smirke (1781-1867), Thomas Rickman, Charles Barry (1795-1860), C. R. Cockerell (1788-1863), John Nash (1752-1835), Sir John Soane, Edmund Blore (1787-1871) and Decimus Burton (1800-1881).¹⁶⁵

Lamb's first recorded project in his own name following his time articulated to Cottingham was the new church of St. Philip's, Granville Square, London for the Church Commissioners, designed in 1830 and built between 1831 and 1832.¹⁶⁶ Towards the end of 1829, Lamb succeeded in acquiring this project for the new church in Clerkenwell, having had his scheme successfully chosen over that of one from a Richard Dixon following submission in December 1829.¹⁶⁷

The building was typical of one of the new Commissioners Churches being built at this time consisting of a simple rectangular box with galleries: in other words a Georgian church with Gothic details (Figs. 2 and 3). The facing materials were an odd mix of white bricks with Bath stone dressings and certainly helped to keep the costs under £5,000. The west end had a single tall window either side of buttresses with high finials. By contrast the east window was of three lights with tracery and there was a rose window each side of

¹⁶³ M. H. Port, *Six Hundred New Churches - The Church Building Commission 1818-1856*, Spire Books Ltd. 2006, p. 15.

¹⁶⁴ *Ibid.*, p. 247.

¹⁶⁵ *Ibid.*, pp. 226-229.

¹⁶⁶ Editorial, *The Architectural Magazine*, Volume 1, 1834, p. 90.

¹⁶⁷ I am indebted to Andrew Saint for allowing me to see a draft copy of the revised and updated entry for St. Philip's Church, Granville Square for the *Survey of London*.

the chancel. The roof had a flat painted ceiling in complete contrast to the church roofs he was later to design. The construction phase of the project was fraught with difficulties for Lamb with the builder becoming bankrupt and the clerk of works demanding payment from Lamb for rectifying apparent mistakes in his drawings.

For the twenty-five year-old Lamb to acquire a new church seating 1,000 people to be built for a cost of £4,805 as a first project was an impressive achievement. An analysis of the ages of the architects who designed the churches for the Commissioners from 1818 to 1830 shows that Lamb was practically the youngest architect to be employed. Only Samuel Sharp (1808-74), the architect for St. James, Thornes, Yorkshire (1829-30), was at twenty-one, younger than Lamb. Even Charles Barry was aged 27 for his first commissions of St. Matthew, Camp Field, Manchester, Lancashire (1822-5) and All Saints, Stand, Lancashire (1822-5), and Decimus Burton was the same age with his first church for the Commissioners of Holy Trinity, Tunbridge Wells, Kent (1827-9).¹⁶⁸ Despite his young age Lamb was able to convince the Commissioners he was capable of carrying out such a large project on his own. Such a prestigious commission would have been important to Lamb to help to begin to establish himself as an architect with this new church in a high profile area of London on the Lloyd Baker Estate expanding with new houses. Added to this was the fact that the church was actually constructed before the surrounding housing and thus stood out even more as an example of his work from the physically elevated position on its site.¹⁶⁹

Lamb continued as a student at The Royal Academy providing him with the opportunity to meet other architects and to exhibit designs at the Academy's Annual Exhibitions allowing him to show his work to the public and potential clients, including 'designs for an altar', 'designs for a mansion, and 'design for a cemetery chapel' between 1828 and 1831, following four designs in the previous two years.¹⁷⁰ One other major work recorded at this time is Lamb's first published work of *Etchings of Gothic Ornament*, published in April 1830, a collection of plates of various Gothic fragments.¹⁷¹ During these four years from 1828 to 1832, Lamb was endeavouring to establish himself as an architect in these

¹⁶⁸ Ibid., pp. 326-347. Analysis of Tables in Appendix 1.

¹⁶⁹ Church of England Record Centre, File 18196.

¹⁷⁰ A. Graves, *The Royal Academy of Arts: A Complete Dictionary of Contributors and their works from its foundation in 1769 to 1904*, London, George Bells and Sons, 1905, entry for E. B. Lamb.

¹⁷¹ E. B. Lamb, *Etchings of Gothic Ornament*, 1830, copy at the RIBA Library.

three ways, from his London home of 9 Hamilton Place, New Road, and subsequently 27 Henry Street, Pentonville, and 3 Barnard's Inn.

Finally, the publication of his own work also presented him with the chance to show off his drawing skills and interest in Gothic architecture to potential clients. Lamb thus continued to be active in the architectural world in London, meeting other architects at the Royal Academy and marketing to the general public and it was during this period in 1831 that he was to meet the man who would have a profound influence on his life for the next twelve years.

John Claudius Loudon

Sometime during 1831 Lamb was introduced to the horticulturist, architect, writer, critic and landscape gardener, John Claudius Loudon (1783-1843). It is not known exactly when this occurred or who introduced the young twenty-six year old to the forty-eight year old, and by then highly established Loudon, since the only record is given by Lamb in his Memoir of 1843 referring to his 'twelve years of our acquaintance'.¹⁷² This was a fortuitous meeting for Lamb since at least three projects during this period were directly associated with Loudon's work¹⁷³ and at least a further ten schemes or buildings were published in one or more of Loudon's publications.¹⁷⁴

Loudon was born at Cambuslang in Lanarkshire, in 1783, and grew up on his father's farm of Kerse Hall, about five miles from Edinburgh. Here he showed a lively interest in horticulture and farming on a patch of land given to him by his father to cultivate himself.

¹⁷⁵ When he was ten years old he was sent to live with an uncle in Edinburgh where he

¹⁷² E. B. Lamb, *Memoir of the late J. C. Loudon, Esq.*, read at the Ordinary Meeting of the R.I.B.A., 18th December 1843.

¹⁷³ Nottingham Cemetery Chapel competition entry, 1837, Derby Arboretum, 1840, and Cambridge Cemetery Chapel, gates and lodge, 1842.

¹⁷⁴ Wadhurst Castle, Kent, *The Gardeners Magazine*, Vol 18, 1843 pp. 610-611. The following were all published in the *Architectural Magazine*: Ingress Park, Kent, Vol I, 1834, p. 47., Cottage at Northfleet, Kent, Vol III, 1836, p. 237., Tiroli Tavern, Kent, Vol III, 1836, p. 237-238., North Lodge, Chequers Court, Bucks, Vol IV, 1837, p. 306 and King of Wurtemberg's Villa Stuttgart, Vol V, 1838, p. 18. The following were all published in The Supplement to the *Encyclopaedia of Cottage, Farm and Villa Architecture and Furniture, 1842*, Villa near Stranraer for John Murry, p. 1185, Villa in the Neighbourhood of Ayr, p. 1186 and Land Steward's House near Inverness, designed in conjunction with the owners, p 1195 ff.

¹⁷⁵ Jane Loudon, *A Short Account of the Life and Writings of John Claudius Loudon*, printed in *Self-Instruction for Young Gardeners, Foresters, Bailiffs, Land-Stewards and Farmers*, Longman, Brown Green

attended the public school learning Latin, drawing and arithmetic as well as botany and chemistry.¹⁷⁶ At the age of fourteen he studied French and later Italian using the former in a Journal for many of the thirty years he maintained it. At fifteen Loudon was employed as a draughtsman and assistant to John Mawer, a landscape gardener in Easher Dalry, near Edinburgh and afterwards spent four years with Dickson, of Leith Walk, Edinburgh, another landscape gardener before moving to London in 1803 at the age of twenty.¹⁷⁷

Loudon set himself up as a landscape gardener with the help of a number of letters of recommendation, many from Dr Coventry who had taught him at the University of Edinburgh and only a year later in 1804 published the first of his many works. This was *Observations on the Formation and Management of Useful and Ornamental Plantations; on the Theory and Practice of Landscape Gardening; and on Gaining and Embanking Land from Rivers or the Sea* and is important because Loudon acknowledges being influenced by the ideas of Sir Uvedale Price's essay *On the Picturesque* written in 1795. Here the author had argued that the picturesque required an irregularity of line and asymmetrical grouping of features and Loudon stated 'I believe that I am the first who has set out as a landscape gardener, professing to follow Mr Price's principles. How far I shall succeed in executing my plans, and introducing more of the picturesque into improved places, time alone must determine'.¹⁷⁸ Certainly the layout of Derby Arboretum in 1840, over 35 years later, shows a high degree of irregularity, non-symmetry and informality with its meandering paths and mounds and layout of the trees, shrubs and plants complemented by the Elizabethan and Tudor styles used by Lamb in the design of the lodges, gatehouses and pavilions as will be seen later.

In 1806 Loudon took lodgings at a farmhouse in Pinner called Wood Hall and the lease was taken by his father the following year on Loudon's recommendation presenting him with the opportunity to study English farming methods. Following the publication of a pamphlet on his farm methods in 1808,¹⁷⁹ Loudon was offered a portion of land from

and Longmans, London, 1845, reprinted in John Gloag *Mr Loudon's England*, Oriel Press Limited, 1970, p. 182.

¹⁷⁶ John Gloag, *Mr Loudon's England*, Oriel Press Limited, 1970, p. 23.

¹⁷⁷ *Ibid.*, pp. 24-25.

¹⁷⁸ J C Loudon, *Observations on the Formation and Management of Useful and Ornamental Plantations, on the Theory and Practice of Landscape Gardening and on Gaining and Embanking Land from Rivers or the Sea*, Longman, Hurst, Rees & Orme, London, 1804, pp. 214-215.

¹⁷⁹ J C Loudon, *The Utility of Agricultural Knowledge to the Sons of the Landed Proprietors of England, and to Young Men intended for Estate Agents*, Longman, Hurst, Rees & Orme, London, 1809.

General Stratton at Great Tew, Oxfordshire, for him to apply Scottish farming methods. Here he set up one of the first agricultural colleges in England for the instruction of the sons of landed proprietors to enable them to take up positions as stewards, bailiffs and agents on large farms as described in another pamphlet of 1809.¹⁸⁰ Loudon's father, William, died that same year and Loudon continued with the agricultural college for only another two years before it was closed in 1811. By now, Loudon had amassed a considerable fortune of £15,000, and resumed his practice as a landscape gardener and advisor on estate management with his wealth giving him the luxury of being able to pick and choose his clients.

By 1813, Napoleon had lost almost all of Europe and with the continent open to travellers, Loudon began his first trip, taking in Gothenburg, Sweden, and then Konigsberg and Danzig, Berlin, Frankfurt, Posen and Warsaw before going on into Russia taking in Riga, St Petersburg and Moscow. He recounted later to his wife that he saw at first hand the ravages of war in these countries with ruined buildings, skeletons on the roadside and many refugees. During his tour he took a great interest in the local farming methods and made many sketches, including that of a picturesque fort where he was mistaken for a spy. He also visited as many of 'the palaces and large rural residences' and 'principal gardens' as he could, amassing information he would later publish in forthcoming works. He also visited the eminent scientific men in the cities he passed through and 'was elected a member of the Imperial Society of Moscow, the Natural History Society at Berlin' and 'the Royal Economical Society at Potsdam'.¹⁸¹ From Russia he continued to Cracow, Vienna, Prague, Dresden, Leipzig, Magdeburg and Hamburg, returning to England in September 1814 to find that his fortune had all but gone due to bad speculations of underwriting ships at Lloyds.¹⁸²

¹⁸⁰ J. C. Loudon, *The Utility of Agricultural Knowledge to Sons of the Landed Proprietors of England, and to Young Men intended for Estate-Agents*, Longman, Hurst, Rees and Orme, 1809.

¹⁸¹ Jane Loudon, *A Short Account of the Life and Writings of John Claudius Loudon*, printed in *Self-Instruction for Young Gardeners, Foresters, Bailiffs, Land-Stewards and Farmers*, Longman, Brown Green and Longmans, London, 1845, reprinted in John Gloag *Mr Loudon's England*, Oriel Press Limited, 1970,, pp. 194-195.

¹⁸² *Ibid.*, p. 195.

Conservatories and Hothouses

Loudon spent the next few years experimenting with various types of construction of hothouses by erecting several different kinds in the garden of a house he had taken in Bayswater, London. He had been inspired by a paper read before the Horticultural Society by Sir George Mackenzie, on August 1st, 1815, entitled '*On the Form which the Glass of a Forcing-House ought to have, in order to receive the greatest possible quantity of Rays from the Sun.*' Here Mackenzie advocated that 'the surface of your greenhouse roof should be 'parallel to the vaulted surface of the heavens'¹⁸³ thus implying a roof which was a segment of a circle. Such a form requires a curvilinear glazing system and from his experiments Loudon invented in 1816 a wrought-iron sash-bar that could be bent to take up the curved form.¹⁸⁴ His experiments also led to the form of roof construction he called 'ridge and furrow' where two angled planes of glass were inserted between two glazing bars, the 'furrow' with the higher join of the glass forming the 'ridge'. This system was adopted and used by many including Joseph Paxton (1803-1865) at the conservatory at Chatsworth for the Duke of Devonshire in 1838-1840 and the Crystal Palace housing the Great Exhibition of the Works of All Nations, 1851, in Hyde Park, London. Loudon received no financial remuneration for his important invention having 'transferred, in 1818, our right in the invention of the bar to efficient tradesmen (W. and D. Bailey, 272, Holborn, London)'.¹⁸⁵ This seems at first to be a short-sighted decision considering his recent financial losses although it is wholly in keeping with Loudon's desire 'to render all these improvements available by the public'.¹⁸⁶ But to do so has been pointed out by John Gloag as a 'misguided sense of public service and total lack of business acumen'.¹⁸⁷

The Gardening Books and Periodicals

Following his experiments in the construction of greenhouses, Loudon now turned his attention to gardening and the production of books and periodicals. He became a fellow of the Horticultural Society in May 1818. This may have inspired him to set out on the major

¹⁸³ George Mackenzie, *On the Form which the Glass of a Forcing-House ought to have, in order to receive the greatest possible quantity of Rays from the Sun*, in August, 1815.

¹⁸⁴ J. C. Loudon, *An Encyclopaedia of Gardening*, Longman, Orme, Brown, Green and Longmans, 1822, Vol I, p.357, fig 160.

¹⁸⁵ *Ibid.*, p. 357.

¹⁸⁶ *Ibid.*, p. 357.

¹⁸⁷ John Gloag *Mr Loudon's England*, Oriel Press Limited, 1970, p. 51.

task of producing his *Encyclopaedia of Gardening* although it may have been an idea 'that had occurred to him while he was travelling, from the great number of gardens he had seen, and the various modes of gardening that he had found practised in different countries' during 1813 and 1814.¹⁸⁸

Loudon was ever a man who considered that if a job was worth doing, it was worth doing well, and as he had only toured the north of Europe he should also tour the south and he left Dover for France in Spring 1819. His five-month tour included Paris, Lyons, Avignon, Marseilles and Nice before sailing to Italy and taking in Genoa, Pisa, Florence, Rome, Naples, Bologna, Venice, Monza and Milan. He returned through Switzerland via Geneva and Basle and then Strasbourg, Paris again and finally Brussels, Ghent, Bruges,¹⁸⁹ and Ostend. The following two years were devoted to this first immense work, the *Encyclopaedia of Gardening* which was complete for publication in 1822. It was a remarkable book and included a great number of 'finished wood-engravings being printed with the text' and the 'book had an extraordinary sale, and fully established the literary fame of its author' as his wife wrote.¹⁹⁰ A second edition was published only two years later in 1824 and in the following year Loudon wrote and published the *Encyclopaedia of Agriculture*, 1825.

With the success of these publications Loudon seized upon this general interest in horticulture and agriculture to found, in 1826, *The Gardener's Magazine and Register of Rural and Domestic Improvement*, to give its full title. It started as a quarterly publication, moved to every two months and finally became a monthly publication indicating its popularity. It lasted for over nineteen years and was Loudon's most successful enterprise earning him an annual income of £750 during the first five years alone.¹⁹¹ Apparently it was his favourite as he was able to 'communicate his own thoughts and feelings to the public'.¹⁹² From the outset he was aware how useful the publication would be to the art of gardening which was 'one daily undergoing so much improvement' and that 'a great many

¹⁸⁸ Jane Loudon, *A Short Account of the Life and Writings of John Claudius Loudon*, printed in *Self-Instruction for Young Gardeners, Foresters, Bailiffs, Land-Stewards and Farmers*, Longman, Brown Green and Longmans, London, 1845, reprinted in *John Gloag Mr Loudon's England*, Oriel Press Limited, 1970, p. 197.

¹⁸⁹ *Ibid.*, pp. 197-200.

¹⁹⁰ *Ibid.*, p. 201.

¹⁹¹ *John Gloag Mr Loudon's England*, Oriel Press Limited, 1970, p. 57.

¹⁹² *Ibid.*, p. 202.

occurrences must take place worthy of being recorded for the instruction of practitioners in the art'.¹⁹³

Loudon spent the next two years fully devoted to the *Gardener's Magazine* publishing articles on suggestions how gardeners could improve themselves and how landowners should direct their architects to improve their cottages for their gardeners so that they were comfortable to live in. Loudon did not restrict his articles simply to gardening and agriculture, but also book reviews which were not specifically horticulturally related. One such book was '*The Mummy! A Tale of the Twenty-Second Century*' reviewed in the third volume in 1828, and its author was to become extremely important in the rest of Loudon's life.

Jane Webb

Jane Wells Webb (1807-1858) was the daughter of Thomas Webb a prosperous Birmingham businessman. Biographical details are scarce, but it seems that her mother died when she was twelve, leaving her father to bring her up alone. After a brief tour with Jane to the Continent in 1819 he returned to the midlands before retiring with her to a country estate at Kitwell House, Bartley Green near Birmingham. Following the death of her father in 1824, Jane Webb took up writing to help support herself and wrote a wild and highly imaginative novel called '*The Mummy! A Tale of the Twenty-Second Century*' published anonymously in 1827 when she was only twenty. The book is in the author's own words 'a strange, wild novel'¹⁹⁴ and describes an England in the year 2126 ruled over by a female sovereign. Webb endeavours to imagine a world of technological advancement in an unstable country with declining political and moral values. The story is centred round the reanimated mummy of Cheops whose Great Pyramid at Giza had recently been found to be empty by the explorer and side-show strongman Giovanni Belzoni (1778-1823).¹⁹⁵ The use of an Egyptian mummy at this time was not that strange as Egyptian artefacts had been arriving in England in the previous few years brought by Belzoni and others. Many could be found in the British Museum, such as the Rosetta Stone exhibited from 1802 or in the large collection of Sir John Soane in Lincoln's Inn Fields.

¹⁹³ J. C. Loudon, *The Gardener's Magazine*, 1826, Vol 1, p. 1.

¹⁹⁴ Refer note 191, p. 205.

¹⁹⁵ Giovanni Belzoni, *A Narrative of the Operation and Recent discoveries with the Pyramids, Temples, tombs, Excavations, in Egypt and Nubia*, London, John, Murray, 1822.

The novel is not just imaginative for its use of a 'galvanic battery' for 'reanimating a dead body',¹⁹⁶ and thus predating Edgar Allan Poe's short story 'Some Words with a Mummy' published in 1845, but for its vision of science and technology of the future with its numerous prophetic ideas. These include a 'steam-mowing apparatus' and 'the electrical machine' to make it rain from a 'black heavy-looking cloud',¹⁹⁷ and instantaneous long distance communications using light.¹⁹⁸ Even letters have a new mode of travel. They are put into balls and fired by steam-cannon from place to place being caught in a net of 'woven wire' with a smaller ball with a hole in its side always preceding the post ball and making 'a kind of whizzing noise, to admonish people to keep out of the way'.¹⁹⁹ Other inventions include 'asbestos paper' and 'Caoutchouc' which was 'a substance capable of astonishing dilation and contraction' from which some of the characters created a balloon to transport themselves using the imaginative idea of rising 'seventeen miles' and then waiting 'till the turning of the globe should bring Egypt directly under our feet'.²⁰⁰ In fact throughout the book it is air travel by balloon that is the worldwide transportation system.

The book was reviewed in the *Literary Gazette* and it was this that Loudon saw and sought out a copy to read. There was naturally a great use of steam power in the book as the 1820s were seeing the beginning of its use in factories and railways. Webb describes 'a steam-boat at the rate of sixty miles an hour',²⁰¹ 'wounds dressed by the automaton steam surgeon',²⁰² and houses 'with grooves in the bottom' that 'fit on the iron railings', and as they are propelled by steam, they slide on without much trouble'.²⁰³ Machines are described in many places and Webb is not restricted by a lack of imagination describing one where 'coats are to be those woven in machines, where the wool is stripped off the sheep's back by one end and the coat comes out completely made, in the newest fashion, at the other'.²⁰⁴ Also included were milking machines for dairies and a steam plough and these may well have been why Loudon chose to review the novel in *The Gardener's*

¹⁹⁶ Jane Webb, *The Mummy! A Tale of the Twenty-Second Century*, 1827, reprinted by the University of Michigan Press, 1995, Volume I, Chapter 11, pp. 13 and 17.

¹⁹⁷ *Ibid.*, Chapter 11, p. 13.

¹⁹⁸ *Ibid.*, Chapter 11, p. 14 describes an automatic machine deciphering light signals received from France.

¹⁹⁹ *Ibid.*, Vol I, Chapter IV, p. 28.

²⁰⁰ *Ibid.*, Chapter VIII, pp. 59-60.

²⁰¹ *Ibid.*, Chapter VIII, p. 59.

²⁰² *Ibid.*, Vol II, Chapter III, p. 222.

²⁰³ *Ibid.*, Vol I, Chapter VII, p. 50.

²⁰⁴ *Ibid.*, Chapter VIII, p. 59.

Magazine. He was so impressed with the work he had a strong desire to seek out the author as it had been published anonymously. A chance remark to a mutual friend secured a meeting in February 1830 and to his surprise he was confronted, not by a man as he expected, but a young woman. He was apparently immediately taken by her and they married only seven months after in late September 1830.

The Meeting 1831

John and Jane Loudon were both remarkable people. By 1831 John Loudon had become a leading authority on horticulture through his *Encyclopaedia of Gardening* now in its second edition, *The Gardener's Magazine*, now in its fifth year, and his *Encyclopaedia of Plants* published in 1829. He had practised and taught agriculture at Tew Park as well as publishing books and pamphlets on the subject from 1811. His experiments with the construction of hothouses had led to the invention of a new wrought iron sash bar and the ridge and furrow system, and he had written seven publications on the subject, including not only their construction but also their use. In the twenty-eight years since his move to London he had published at least eighteen pamphlets, books or encyclopaedias and had spent almost two of these years abroad on two separate tours visiting several European countries.

All this is even more remarkable given the number of health problems that beset him throughout his life. In 1806 he caught a fever having been soaked to the skin while travelling on a coach back from Wales to London, which left stiffness in his left knee. This became chronic by 1820 and also had affected his right arm, which doctors then succeeded to break in their inept attempt to cure him using a course of treatment known as 'shampooing and stretching'. The break was near the shoulder and was never set properly due to this difficult location, and Loudon had to wear day and night from 1823 an iron case clamped around the shoulder. Further treatment in 1825 led to a second break which was this time an intentional attempt to heal the arm by his doctors, whose increasingly dubious medical advice can only be questioned even for the 1820s. Finally the arm had to be amputated shortly afterwards and with the loss of his right hand he would need to resort to drawing and writing with his left hand. Unfortunately, by this time the thumb, first and second fingers of his left hand had contracted rheumatism to such an extent 'as to render them useless'. He could with difficulty and much pain make sketches to transfer his ideas

to others but writing was now impossible and he was compelled to dictate to others from then on.

When Loudon was, therefore, introduced to Jane Webb at a party hosted by a mutual friend in 1830, she would have seen a highly respected professional and partially disabled Scotsman and at twenty-four years her senior, over twice her age. He saw a young, attractive and intelligent novelist with an obvious fervent imagination, having written *The Mummy* when only twenty and perhaps the perfect amanuensis and one may even suggest a nurse or travelling companion. It was indeed an important and fortuitous meeting and Jane Loudon recalled in 1845 that she believed 'that from that evening he formed an attachment for me'. Whatever they saw in each other it was enough for them to marry within seven months and create a powerful literary partnership lasting for the next twelve years producing a further dozen pamphlets and books and another magazine with a five-year life. The first of these was a brand new encyclopaedia on architecture, destined to become his most important and influential work requiring the help of several draftsmen, one of whom was Lamb.

The Encyclopaedia of Cottage, Farm, and Villa Architecture

The first work that Loudon undertook specifically on architecture rather than horticulture and with his new bride, Jane, as sole amanuensis was the *Encyclopaedia of Cottage, Farm, And Villa Architecture*, begun in 1832 and published in 1833. This was a massive work incorporating 1100 pages, nearly 100 lithographs and over 2000 engravings.²⁰⁵

Such a task, therefore, required several draftsmen and over 75 contributors are acknowledged in the *Encyclopaedia* and include Lamb for the first time in one of Loudon's publications. Lamb recalls that he first met Loudon at this time²⁰⁶ but does not indicate how they became acquainted. Loudon was then a highly successful writer with *The Gardener's Magazine* well established and being published monthly. He had an impressive track record and with a move by Loudon towards architecture this was an ideal time for a young architect to become involved. Lamb had already undertaken his *Etchings*

²⁰⁵ J. C. Loudon, *Encyclopaedia of Cottage, Farm, And Villa Architecture and Furniture*, Longman, Brown, Green and Longmans, 1833.

²⁰⁶ See Note 9

of *Gothic Ornament* two years earlier and had continued to make drawings of architecture. In September of 1832 he wrote a letter to the *Society for the Diffusion of Useful Knowledge*, a body set up for the 'imparting of useful information to all classes of the community, particularly to such as are unable to avail themselves of experienced teachers, or may prefer learning by themselves'.²⁰⁷ Lamb stated he 'should be glad of an opportunity of appropriating part of my time in taking Topographical Views or any other Drawings they might require for their publications' having spent the last 'four years' making 'many Drawings from the best examples of "Ancient Buildings" and 'acquiring a thorough knowledge of Gothic Architecture'.²⁰⁸ Lamb was keen not only to progress an architectural career as an architect through his building work, but also to supplement this by utilising his drawing skills.

The opportunity to work with Loudon on the *Encyclopaedia* would be too good to pass over, as it involved not just drawings but also the design of the buildings and furniture as well. This was an excellent occasion for Lamb to produce designs for all types of buildings and have them published in a work by a successful author where they would be seen by hundreds of potential clients. Whether Lamb wrote a similar letter to Loudon, was introduced by a mutual friend or Loudon saw Lamb's work exhibited at the Royal Academy, is not known, but it was not long before a close professional relationship developed. Loudon appears to be quite happy with Lamb's work from the start and he is given one of the largest descriptions in the list of contributors. In fact there are over forty designs or drawings which can be attributed to Lamb by direct reference to the index or to the text.

Loudon sets out his reasons for undertaking the *Encyclopaedia* in the opening sentence of the Introduction with 'to improve the dwellings of the great mass of society' and 'to create and diffuse among mankind, generally, a taste for architectural comforts and beauties'.²⁰⁹ The means by which he was to achieve this was by 'submitting a series of Designs for human dwellings' with 'analytical and critical remarks' to include 'the finishings, fittings up, fixtures, and furniture' as well as 'the gardens' and all by 'avoiding, when it is not

²⁰⁷ *Prospectus of the Society for the Diffusion of Useful Knowledge*, 1829, p. 1.

²⁰⁸ E. B. Lamb, letter to the *Society for the Diffusion of Useful Knowledge*, 1st Sept. 1842.

²⁰⁹ J. C. Loudon, *Encyclopaedia of Cottage, Farm, And Villa Architecture and Furniture*, Longman, Brown, Green and Longmans, 1833, p. 1.

absolutely necessary, the use of terms peculiar to Architecture.²¹⁰ Loudon was endeavouring to provide a publication ‘more attractive to a general reader, as well as of more immediate practical utility to persons intending to build or furnish’²¹¹ and thus simultaneously increasing the readership potential and maximising the potential sales.

Throughout his travels of the previous twenty years in England, Scotland and Europe, Loudon had seen at first hand the accommodation used by the majority of the population of labourers and farm workers and he saw that there was an opportunity to improve their dwellings with a series of designs. The very first design in the *Encyclopaedia* is for a ‘Cottage of One Storey’ and straightaway sets out Loudon’s intentions. The design includes a ground plan accompanied by eleven pages of text and further drawings with detailed descriptions of the planning, layout, orientation, form, and construction together with details of heating, water closets and cisterns and a general estimate of the costs. Loudon was always keen to promote new building methods and construction and innovations in fittings and machinery. This design clearly shows a cavity wall construction and is ‘built of brick, eleven inches wide, with a vacuity in the centre’ and goes on to describe how the walls are ‘much handsomer on the fair side’, ‘always dry’ and ‘less easily penetrated by the cold in winter, or the heat in summer’.²¹² This type of construction for the external walls of dwellings was not generally adopted in Britain until the 1920s almost 100 years later.

To pump the water from the main tank beneath the building which collected the rainwater from the roof Loudon ‘recommended Siebe’s rotatory pump’ where turning a handle by hand used a series of pads to create vacuums to ‘produce a continual stream’ of water.²¹³ This is one of numerous examples throughout the *Encyclopaedia* where Loudon describes new machinery or devices. Others include water closets automatically flushing when doors are opened²¹⁴ traps²¹⁵ and ‘drying closets’ formed over the oven in the kitchen.²¹⁶

²¹⁰ *Ibid.*, p. 1.

²¹¹ *Ibid.*, p. 1.

²¹² *Ibid.*, p. 14.

²¹³ *Ibid.*, p. 17.

²¹⁴ *Ibid.*, p. 150.

²¹⁵ *Ibid.*, p. 243.

²¹⁶ *Ibid.*, p. 152.

New products and designs were also included throughout the *Encyclopaedia* including chimney pots, gates, sash-window fasteners, fireplaces, ventilator grills, footscrapers, coat hooks and umbrella stands.²¹⁷

The *Encyclopaedia* is divided into four books: the first three are all to do with designs while Book IV is entitled *The Principles of Criticism on Architecture* and consists of twenty pages of text devoid of illustrations. Here Loudon sets out the objective to the Book 'to present in a systematic form, those leading principles of architectural criticism which have been scattered throughout the work' and devotes a short chapter to the 'fitness for the end in view; expression of the end in view; and, expressions of architectural style'.²¹⁸

In the first chapter Loudon describes in detail how the fitness covers the 'arrangements of the building for its uses' as well as 'its construction for strength and durability' stating that 'the architect must be supposed to understand the uses of whatever building he undertakes to design' and that 'buildings which are not of frequent and general construction by Architects are more likely to be imperfect in arrangements than those which are continually being erected by them.'²¹⁹ Loudon is clearly stressing the importance of choosing the right architect for the right job with the correct knowledge and experience for the building in hand. The assessment of architects and designers is very much relevant today as part of the Construction (Design and Management) Regulations 2007 where clients need to assure themselves that 'the person has the necessary task knowledge and experience needed to fulfil the role'.²²⁰

Regarding materials, Loudon describes how best to use timber, stone and brick, the importance of timber preservation, lightning conductors and ventilation and the addressing of the construction of fireplaces and chimney flues.

Chapter II covers the expression of the end in view of both 'the use' and of a 'suitable construction' so that every building 'should appear to be what it is, and every part of an

²¹⁷ Ibid., p. 348 ff.

²¹⁸ Ibid., Book IV, p. 1105.

²¹⁹ Ibid., p. 1106.

²²⁰ *Managing health and safety in construction, Approved Code of Practice*, Health and Safety Executive, 2007, Paragraph 221, p. 48 relating to the Construction (Design and Management) Regulations 2007.

edifice ought to indicate externally its particular use.²²¹ Thus dwelling houses, for example, are characterised by ‘a number of chimney pots’, ‘its entrance door, which is generally ascended to by steps’ and the distribution and sizes of the windows relating to the importance and use of the rooms which they serve. The construction is ‘recognised by every beholder’ and ‘everyone knows walls of brick or stone to be more durable than those of earth, of wood, or of plaster’. Roofs which ‘project considerably at the eaves’ do not have the same ‘durability as when the walls are terminated by stone or brick cornices’ and that walls with ‘ledges or settings back’ when it ‘diminishes as it ascends, is expressive of strength.’²²² Loudon is showing how the materials used in the external construction and the general arrangement of windows, doors, walls and roofs are important elements in the expression of the function and durability of the building.

The final chapter is the longest and is devoted to architectural style. This gives a significant insight into Loudon’s mind as to how he saw the part of style played in an architectural composition at this interesting time in the early 1830s when the Gothic was beginning to be used more extensively at the expense of the Classical. Loudon sets out from the opening sentence that the expression of style ‘is not an essential beauty in a building’ and as ‘edifice may be useful, strong, and durable’ when it is ‘suitable to the use for which it was designed, and of appearing to be what it is’.²²³ He expands further by stating that architecture is ‘an art of taste’ and adds to ‘the beauties of use and truth other beauties’ of firstly ‘the universal and inherent beauties of all architectural styles’ and secondly ‘the historical or accidental beauties of particular styles.’

The first of these other beauties begins with ‘Unity’ which ‘is the fundamental principle of all compositions whatever’ and is further supplemented with paragraphs on variety and harmony, symmetry and uniformity, irregularity and simplicity, order and propriety, magnificence and magnitude, proportion, elegance, effect, ornament, character, novelty and relation, all of which are addressed in great detail. Loudon shows the importance of these items in the design of a building and begins his section on architectural styles by stating that everything in architecture ‘can be effected without the introduction of a single form or line which is considered characteristic of any known architectural style’. He does

²²¹ Ibid., p. 1112.

²²² Ibid., p. 1113.

²²³ Ibid., p. 1114.

not object to the use of a known style and points out that the architect ‘gains a positive beauty at once by the mere exhibition of style; because thousands of spectators in Europe and America, have some crude ideas of what is Grecian and what is Gothic’ and warns that style ‘ought never to be neglected by Architects who wish to gain general applause’²²⁴.

Having described the Grecian, Roman, Gothic, Elizabethan and Egyptian styles, Loudon concludes by emphasising his insistence that ‘the general principles of composition’ are of ‘far greater importance’ than ‘the details of any particular style’. He is of the opinion that architecture has been ‘too generally considered as consisting of an accurate display of the features and details of a style ‘rather than the more important ‘principles of composition’. As a result he believed the architects of the 1830s were neglecting the principles in favour of ‘precedents and to established rules.’

Loudon’s views on architectural composition based on principles rather than rules and his resulting reluctance to favour any particular architectural style was an important influence on Lamb. In his book ‘*Studies of Ancient Domestic Architecture* published thirteen years later in 1846 Lamb is concerned that ‘in modern Architecture... the known forms of art have been reproduced to the inconvenience of arrangement’ and ‘we endeavour to force new ideas into antiquated forms... by blindly adhering to long-established precedent’.²²⁵ Lamb also notes that ‘unfortunately for Architecture, the too great dependence upon mere rules has tended to check all aim at anything beyond them’²²⁶ and in a lecture at the architectural Exhibition in 1857 another eleven years later he is still concerned that ‘too generally has architecture been looked upon as no more than a mechanical science, depending upon immutable rules and mathematical deductions from precedent ... but seldom to principles.’²²⁷ It seems clear that Loudonian principles were still significant to Lamb a quarter of a century later and will be shown in relation to his churches later.

Lamb’s contributions to the *Encyclopaedia* ranged from drawings of other people’s work including the perspectives of circular stables designed by Charles Barry, one in the Italian

²²⁴ Ibid., p. 1122.

²²⁵ E. B. Lamb, *Studies of Ancient Domestic Architecture*, 1846, p. 5.

²²⁶ Ibid., p. 3.

²²⁷ E. B. Lamb, *Architectural Composition*, lecture delivered at the Architectural Exhibition on February 3rd, 1857, and published in full in *The Building News*, February 20th, 1857.

style and the other in the Gothic,²²⁸ through cenotaphs designed by Lamb in Grecian, and Gothic styles²²⁹ to complete designs for a 'Villa in the Gothic Style' with ground plan, full page elevation and internal details (Fig. 4).²³⁰ This latter design is, as Loudon points out in the accompanying text, 'a very original composition' and shows a number of features that were to occur in Lamb's later work. The octagonal turret tower to the stairs appears in the work at Wadhurst Castle, Sussex, 1842; the main entrance tower is a precursor to the main force of St Martin's Gospel Oak, 1862-5, especially with its covered entrance; the stepped gables appear in a number of Lamb's buildings such as Newton Hall, Dunmow, Essex, 1857-8; a diagonally set pinnacles as used on the remodelling of Hughenden Manor, Bucks, 1862-3, and finally the end of the library is similar to the chancel end to St Martin's, Gospel Oak.

The single elevation drawing of the design shows a balanced asymmetrical composition of numerous architectural elements with plinths, string courses, window heads, parapets, chimneys and turrets (Fig. 5). All these are constructed of stone, following Loudonian principles giving a definite unity of composition and durable construction and a clear expression of the end in view. The plan is also intriguing as first impressions indicate a classical layout with a single strong horizontal and vertical axis and the progression from one room to another. The entrance is directly opposite the main staircase on the horizontal axis through large outer and inner halls with the drawing room and library either side of the inner hall on the vertical axis. The picture gallery, breakfast room, ante-room and dining room essentially then occupy the internal angles between. All these rooms are of different sizes and it is here that the plan breaks away from the classic design of a villa by creating an extremely fluid and irregular external wall line interspersed with buttresses, fireplace chimneys and octagons. The result seen from afar, would as Loudon states, 'produce a picturesque effect from every point of view' and is a more successful design than that for 'A Country Public House in the Italian Style'.²³¹ Here Lamb's design consists of two parts either side of an arched carriage entrance linking the two at first floor level. The main public house has a very small bar and bar-room whose combined size is half that of the parlour and with a kitchen twice the size. The other accommodation consists of a

²²⁸ J. C. Loudon, *Encyclopaedia of Cottage, Farm, And Villa Architecture and Furniture*, Longman, Brown, Green and Longmans, 1833, p. 965.

²²⁹ *Ibid.*, p. 996-9.

²³⁰ *Ibid.*, p. 943.

²³¹ *Ibid.*, p. 692.

small parlour, loggia for drinking in and an outside staircase, which spirals around the windowless small parlour to 'rooms for company' above.

The design layout is quite impractical in the size of the rooms and their planning and the elevation view is poorly executed with little regard for the construction with its thin roofs and improbable height of the first floor.

Far more successful is '*A Country School, in the Italian style, including a Dwelling for the Master and Mistress*' although this, too, is not without its inconsistencies.²³² The plan has two large classrooms, one for girls and one for boys as well as another for infants with separate entrances for the sexes and another entrance for the Master. The classrooms have a large full width semi-circular end punctured with nine windows over the 180 degrees to provide maximum light. The elevation drawing shows simple rectangular windows above a strong cill line and string course above a plinth, and immediately below a wide overhanging low pitched roof. This gives a strong horizontality of design similar to that practised by Frank Lloyd Wright (1867-1959) in buildings like the Heurtley House, Oak Park, Chicago (1902).

The design as Loudon points out 'by the masses of unpierced wall in some places, and the groups of openings in others' produces 'strong contrasts both in construction and in effect'. Again Lamb is adhering to Loudonian principles in the construction and design but is still having difficulty with his first floor, which is not shown, as it is unlikely that there is enough headroom on the stairs to reach this level unscathed.

These last two designs are both quite contrary to his other designs for villas and suggest that Lamb did not have sufficient knowledge or experience to know what brief was required for a public house or a school. But Lamb was clearly enjoying this opportunity to experiment with his designs, be it a villa, pub, school or fountain, or even dog-kennels in the Tudor, Gothic and Italian styles for 'sporting dogs', with some of the elements of the designs later being used in his own buildings. Loudon was happy to include the designs in the *Encyclopaedia* and constantly praised them in the accompanying text despite some obvious problems. Loudon was impressed enough though by his drawing skills and he

²³² Ibid., p. 757.

gave Lamb the task of producing the frontispiece to his next work *The Architectural Magazine* only a year later in 1834.

The Architectural Magazine

The *Encyclopaedia* was published in 1833 and was soon a 'beneficial influence' and began 'gradually effecting a reformation in the construction of cottage dwellings'.²³³

But being by its nature a single one-off instruction book it would be some time before a revised edition could be published. The solution in the interim was for Loudon to publish a periodical along similar lines to his successful *Gardeners Magazine* to 'improve the public taste in architecture' and induce 'young architects to read, write, and think, as well as to see and draw'. The first issue of *The Architectural Magazine* was published in March 1834 consisting of forty-eight pages with further monthly editions following regularly until the last issue in January 1839.

Each issue contained articles and designs from contributors, reviews of books, foreign and domestic notices of new buildings and exhibitions and queries and answers sent in by letter. The magazine became more interactive than an encyclopaedia and helped to promote discussions between architects in 'a public forum' while at the same time educating the public who were, after all, the final beneficiaries of their work.

Lamb was a large contributor to the *The Architectural Magazine* with over twenty designs, letters, observations and enquiries. Loudon made known in his Preface to the first edition that 'we are kindly promised, by Mr Lamb, a Series of Designs for Villas, in all the different varieties of the Gothic, Classical, and Italian styles'. And he did not disappoint. Lamb began, in fact, with a design for a 'Villa in the Norman Style' in November 1834 followed by a 'Villa in the style of architecture of the thirteenth century' in June 1835 and a 'Villa in the style of the Second Class of Gothic Architecture' in October 1836. Finally, his 'Design for a Suburban Residence to be erected at Stuttgart, in January 1838, started to cover the Classical and Italian styles.

Lamb's design for the villa in the Norman Style is an extremely adventurous and wild flight of fancy in both the planning and form.²³⁴ The main rooms of hall, dining room,

²³³ J. C. Loudon, *The Architectural Magazine*, Vol 1, 1834, Preface, p. 1.

²³⁴ E. B. Lamb, *The Architectural Magazine*, Vol 1, NOV 1834, Art IV, p. 333 ff.

library, drawing room and kitchen form a series of herringbone patterned rectangular spaces set diagonally, with a large central circular staircase towards the centre.

Lamb takes the requirements of a domestic villa for the 1830s in terms of the room functions and positions, even to the extent of providing a conservatory, to produce a free-flowing plan. The result, as in his designs for the *Encyclopaedia* seen above, produces a varied external wall line and a picturesque compositions of shapes, made even more so, in the one elevation shown, with its single and two storey elements, gables, parapets, chimneys and bell turret.

Lamb states in his text that the three aims behind his design were 'to give a picturesque outline to the building' then 'to arrange it on the principle of fitness' and finally 'with a character which I have endeavoured to keep, as well as the change of manners and customs would allow me'. Here we see Lamb picking up and following Cottingham's belief in the picturesque and Loudon's principles of architectural composition while firmly taking on board the requirements of the present time. Hence the addition of the conservatory, an unheard of feature of the tenth and eleventh centuries, which Lamb himself admits is 'one of the most awkward things to design in the Norman style'. He does attempt an elevation to produce three openings with typical Norman round arches, although large amounts of wall remain giving the effect more of an orangery. Lamb realises that the windows should be smaller so that they are 'in character with the rest of the building' and then in order to maximise the light for the plants suggests the 'roof should be semicircular, on iron ribs, entirely glazed'. Once again Lamb balances the practical necessities of the room function within the limitations of the style whilst utilising modern materials and construction advocated by Loudon.

The 'Villa in the Style of Architecture of the Thirteenth Century' is another grand design by Lamb with the major rectangular rooms radiating from a central octagonal saloon.²³⁵ Again the rooms are those required for a modern residence and include a conservatory and Lamb states here 'the strictest adherence to the character of the time should be observed on this'. The external wall outline is again free flowing but less ambitious than before and the elevation shows a more coherent and straightforward composition of gables, roofs, parapets and buttresses. Despite this simpler, but still picturesque design, the composition

²³⁵ E. B. Lamb *The Architectural Magazine*, Vol 2, June 1835, Art VI, p. 257.

appears more like a converted ecclesiastical building than a purpose-built secular residence.

Lamb's design prompted 'Scruator' to write a long letter to the magazine published two months later with a strong criticism on 'the practicability of his design'.²³⁶ He questioned the location of the bedrooms which he deduced would only be two in number and the impracticality of constructing them, as well as the location of the servants' rooms and implied that Lamb had not considered the section when producing his design. Such a strong attack produced an equally strong reply by Lamb published in September 1835.²³⁷ Firstly Lamb attempted to explain how he deliberately reduced the height of objects further away in the elevation drawing to give 'the purpose of a general view' rather than a true elevation drawing where the height of far objects are shown out of proportion compared to how they would appear as built with near objects. This, Lamb believed, led 'Scruator' to the view that there was not enough room for the first floor accommodation and so went on to describe the 'eight bedrooms and three dressing-rooms' that were possible backed up with a first floor plan, fully in line with the ground floor plan and elevation previously published. There was no further reply from 'Scruator'.

Lamb's third design for a 'Villa in the Style of the Second Class of Gothic Architecture' published in October the following year is perhaps his most practical solution to providing a 'residence of a person of moderate means' being far more compact and regular in plan and straightforward in elevation.²³⁸ The central entrance leads to a hall with staircase ahead, dining room on one side and drawing-room on the other with a kitchen and small study behind and to the rear. This results in a slightly L-shaped simple plan and allows two full width single span roofs at right angles to each other. Lamb stated his intention behind the design was to show 'the application of timber, plaster, and stone' and the elevations show this clearly with the ground floor and chimneys constructed of squared stone with quoins and plinths hammer-dressed, and a first floor of timber and plaster which is jettied out from the floor below. The eaves of the large roofs begin at mid first floor height and are covered in tiles and the gables overhang to include complex exposed timber framing. Jettying, timber and plasterwork was not something Lamb employed in his

²³⁶ Letter by 'Scruator', *The Architectural Magazine*, Vol 2, August 1835, p. 377-378.

²³⁷ Letter by E. B. Lamb, *The Architectural Magazine*, Vol 2, September 1835, p. 425.

²³⁸ E. B. Lamb, *The Architectural Magazine*, Vol 3, October 1836, p. 45 ff.

designs until Fawkham Manor, Kent, 1866 which he designed for himself over thirty years later. The two large chimney stack arrangements each of five stacks are dominant features and appear as important vertical features of a number of Lamb's works such as Newton Hall, Dunmow, Essex, 1857-8, Cambridge Cemetery gatehouse, Cambridge, 1842 and Aldwark Manor, Aldwark, Yorks, 1862 as well as numerous lodges and cottages on the family estates of his patrons.

This design in the *Magazine* also prompted a criticism by a John Tate from Dublin in December, 1836, who believed Lamb had his levels incorrect and did 'not think a person of the ordinary height could get into the door leading from the hall to the kitchen' and demanded 'a section of the design'.²³⁹ Lamb replied in February 1837 explaining in great detail and with measurements that if Tate read the drawing correctly he would see that the necessary additional steps were shown outside the kitchen door and that 'if persons who have occasion to go through this passage are not of an extraordinary height, 6ft 7in will be sufficient headway'.²⁴⁰

In all Lamb's designs he was experimenting as 'it is the business of the architect to invent and not to copy'. He should 'not be cramped with the exact details of our forefathers' and 'are we never to do as they did, try something new?' If we should 'fix upon a style of architecture, let us follow the spirit only of that style' and 'we should recollect that the customs of the nineteenth century differ widely from those of the fourteenth'.²⁴¹

Lamb did not believe that architects should be constrained by the details of a style or by any particular style, but that they should continue to push at the limits of design to create new layouts, constructions and details in the spirit of that style.

In January 1839 the *Architectural Magazine* produced its last monthly edition having successfully continued the debate on architecture in the public forum. Loudon had been working on his *Arboretum Britannicum* which was taking up too much of his time for him to cope with the *Architectural Magazine* as well as the *Gardener's Magazine* and *The Suburban Gardener* he had begun in 1836. Once the *Arboretum Britannicum* was finished

²³⁹ Letter by John Tate, *The Architectural Magazine*, Vol 3, December 1836, p. 584.

²⁴⁰ Letter by E. B. Lamb, *The Architectural Magazine*, Vol 4, February 1837, p. 86 ff.

²⁴¹ *Ibid.*, p. 87.

in the midsummer of 1838, Loudon resumed his profession as a landscape-gardener and also worked on the *First Supplement to the Encyclopaedia of Cottage, Farm and Villa Architecture, and Furniture* published in 1842. This included many further designs sent in by architects as they had done for the original *Encyclopaedia* and included several again by Lamb. Seven of these are for theoretical designs for cottages and villas in a variety of styles in Italian, Gothic and Grecian and are significant in that they show maturity in their design compared to those of 1833. The planning is more compact and structured with simpler layouts showing that Lamb is applying much more thought to the construction and the buildability, but he is still displaying a fervent inventiveness in elevational treatment and a reluctance to design in any one particular style.

More importantly the *Supplement* contains many other designs by Lamb of actual buildings for real clients. They go some way to show how Lamb's other theoretical designs have become more practical due to the experience he was receiving in his role as an architect and most of his work in the 1830s can be attributed to contacts he made via Loudon or as a result of Lamb's designs being shown in these publications.

Projects 1831 – 1843

Lamb is known to have undertaken at least thirty buildings during the period he knew Loudon and these include lodges, schools, villas, churches and chapels. These begin with the detached villas and gardens at Ingress Park, Gravesend, 1834, for James Harmer²⁴², just a few months after the publication of the *Encyclopaedia* and there are details in the *Architectural Magazine*. Here Lamb is also described as a 'landscape-gardener' and he may well have carried out this work with the assistance of Loudon drawing on his enormous experience and knowledge of landscape matters.

A partnership between Loudon and Lamb may have commenced at this early stage in their acquaintance, but it is known for certain that they worked together from 1836 commencing with their competition entry for Nottingham Cemetery Chapel. By this time Lamb would have sufficiently convinced Loudon of his architectural skills as a designer and it must have seemed natural to Loudon to collaborate with him on such a project. Lamb, as the

²⁴² J. C. Loudon, *The Architectural Magazine*, Vol 1, 1834, p. 47.

architect, was able to design the chapel and Loudon as the landscape designer, the layout of the cemetery. Unfortunately they were not successful in the competition, losing out to S. S. Rawlinson.²⁴³ The partnership did, however, continue and in 1839 they collaborated on Derby Arboretum, which was one of the first parks to be specifically designed for use by the public in England.²⁴⁴

Derby Arboretum

In September 1840 Derby Arboretum opened as the first park to be specifically designed for the public in England.²⁴⁵ It was provided for the people of Derby as a gift by Joseph Strutt (1765-1844), an important local businessman and the Derby's first Mayor who became a 'kind and excellent friend' to Loudon.²⁴⁶ Strutt was the youngest of three brothers and was a wealthy manufacturer, having a hosiery manufacturing business, which had been started by his father, and was a member of the Unitarian Church. His funeral oration called him 'a consistent supporter of civil and religious liberty' and 'a Father to the Poor, supporting Public Institutions and Sunday Schools'.²⁴⁷ The site chosen for the park by Strutt in July 1839 was an irregular shape; a long narrow dog-legged area of eleven acres on the outskirts of the town. Loudon was required to make sure that the park was inexpensive to maintain and to be provided with two lodges with gates, each with a room for the public's use. To keep the maintenance costs low, Loudon decided on an arboretum rather than a botanical garden and the basic design of a central, straight, formal path and cross path at the change in direction, balanced with a longer, meandering, winding walk surrounding the whole park.²⁴⁸ A series of undulating mounds deliberately conceals views out of the site and between the two walks creating a degree of privacy, intrigue and expectation for visitors.

²⁴³ Identification of successful architect indicated by Anne Winduss yet to be confirmed.

²⁴⁴ The first public park in England was the Royal Victoria Park in Bath designed in 1829 by Edward Davis and predates both the Derby Arboretum of 1839 by Loudon and the People's Park at Birkenhead of 1843-7 by Joseph Paxton. Refer Michael Forsyth, *Bath*, (Pevsner architectural guide), Yale University Press, 2003, p. 237.

²⁴⁵ Report of opening ceremony in the *Derby Mercury* newspaper for 16th September 1840, Derby Reference Library.

²⁴⁶ Jane Loudon, *A Short Account of the Life and Writings of John Claudius Loudon*, printed in *Self-Instruction for Young Gardeners, Foresters, Bailiffs, Land-Stewards and Farmers*, Longman, Brown Green and Longmans, London, 1845, reprinted in John Gloag *Mr Loudon's England*, Oriol Press Limited, 1970, p. 215.

²⁴⁷ Noah Jones, *Life and Death of Joseph Strutt*. Funeral oration delivered 21/1/1844.

²⁴⁸ George F. Chadwick, *The Park and the Town: Public Landscape in the nineteenth and twentieth centuries*, London, p. 62.

Strutt 'called in the aid of Mr E. B. Lamb' for the designs for the two lodges and gates and two small pavilions in the park where visitors could rest.²⁴⁹ The Entrance lodge is in the Elizabethan style constructed of brick with tile roofs and curved and stepped gables, stone mullioned windows with stone flat window-heads, all in a picturesque composition. The East lodge is in the Tudor style and again of brick and tile with gables consisting of two blocks stepped in places to form an asymmetrical composition. Finally the two pavilions in the park are in the style of James I and are more formal to fit in with the main walks, which they adjoin. They are rectangular in plan with three open round-headed arches between two square columns on the long side and the whole building finished in stucco. These two constructions are the only ones by Lamb known to be completely symmetrical.

Cambridge Cemetery Chapel

The final known collaboration between Loudon and Lamb was a return to a scheme for a cemetery. The Cambridge Cemetery Chapel (1842-43) with its associated entrance gates and lodge was not a competition this time, but a direct commission from the 'Directors of the Cemetery Company at Cambridge'²⁵⁰. The 'cemetery building' or chapel was by Lamb with assistance 'by Mr Loudon, in laying out the ground', and the building was 'going on under direction of the architect'²⁵¹. The ground was about three acres in area and situated to the north of Cambridge on the Histon Road. The entrance lodge was of 'white brick, forming the ground of an ornamental interlacing pattern in red brick; and the roof is covered with round end plain tiles of a whitish grey hue'. The overall style was Tudor and offered 'a remarkably pleasing and characteristic composition' according to the British Almanac review of 1844.²⁵² The chapel was in the centre of the ground on a raised low terrace and cruciform in plan with small transepts. It was built of 'rubble' with the quoins, copings, mouldings, and windows of Caen stone as in the separate entrance lodge also designed by Lamb.

²⁴⁹ J C Loudon, *The Derby Arboretum, containing a catalogue of the trees and shrubs included in it: a description of the grounds: a copy of the address delivered when it was presented to the Town Council of Derby by its founder, Strutt*, Longman, Orme, Brown, Green and Longmans, London, 1840, p.78.

²⁵⁰ E. B. Lamb, *Memoir of the late J. C. Loudon, Esq.*, read at the Ordinary Meeting of the RIBA, 18th December 1843, p. 4.

²⁵¹ Letter by W. W. *The Builder*, Sat July 8th, 1843, p. 270.

²⁵² Review, *The British Almanac*, 1844, p. 231.

Lodges and Villas

Loudon's *Supplement to the Encyclopaedia* published in 1842 includes thirty designs for cottages and villas, which are stated as being commissions for clients and that, have also been constructed and a third of these were designed by Lamb. Three of the designs are for lodges on the estates of Sir Robert Frankland Russell (1784-1849) at Chequers, Buckinghamshire and Blubberhouses, Yorkshire: the Dairy Lodge, Chequers,²⁵³ was built in 1836, followed by Home Lodge, Chequers, in 1838 and 'the keeper's lodge, Blubberhouses in 1843 based on a similar design built at another of Frankland Russell's estates at Thirkleby Park, Yorkshire 'some years ago'²⁵⁴. The remaining designs are for villas in various styles including Roman, Gothic and Swiss and four of these are for villas in the Gothic style at James Harmer's project at Ingress Park, Gravesend that Lamb had begun eight years earlier. However the large scheme 'ultimately failed' and 'none of them were erected, except one, which, with some variations, was built by a gentleman in the neighbourhood'.²⁵⁵

All these designs are for projects in the south and north of England but there are also three for sites in Scotland. Loudon was a Scot and made extensive tours of Scotland with at least one in the company of Lamb, probably in 1843.²⁵⁶ The first of these schemes is 'A Villa in the Swiss Style for John Murray', 'the author of many esteemed works on natural and experimental science', on his property in the neighbourhood of Stranraer and is peculiar for its adoption of the Swiss style.²⁵⁷ The building has large overhangs at the eaves and the gables and there are no gutters, hips or valleys. The Stranraer region is on the west coast of Scotland in Dumfries with high mountains and heavy precipitation of snow in winter. Lamb was looking to the architecture of a country with a similar climate, that of Switzerland, and applying their design solutions, developed over a considerable time to the problem now in hand, namely to create a Villa for the 1840s.

²⁵³ E. B. Lamb, *The Dairy Lodge erected at Chequers Court, Buckinghamshire, for Sir Robert Frankland Russell, Bart.*, Supplement, 1842, Longmans, Design XVI, p. 1163.

²⁵⁴ E. B. Lamb, *The Keeper's Lodge, at Blubberhouses [sic]*, Supplement, 1842, Longmans, Design XXXI, pp. 1174-5.

²⁵⁵ E. B. Lamb, *Small Villas in the Gothic Style*, Supplement, 1842, Longmans, Designs IX to XII, pp. 1195-7.

²⁵⁶ E. B. Lamb, *Memoir of the late J C Loudon, Esq.*, read at the Ordinary Meeting of the RIBA, 18th December, 1843, p. 2.

²⁵⁷ E. B. Lamb, *A Villa in the Swiss Style*, Supplement, 1842, Longmans, Design I, p. 1185-6.

The second scheme for 'A Villa adapted for a Situation in the Neighbourhood of Ayr' immediately follows the previous design and although the 'design was made for a situation in the neighbourhood of Ayr, nearly flat, with a command of the sea' there is no indication that it was completed or for whom.²⁵⁸ The third design in Scotland is for 'A Land-Steward's House in the Neighbourhood of Inverness', but again does not indicate for whom other than by saying it is a 'gentleman'.²⁵⁹

The importance of all these designs in the *Supplement* is that it shows Lamb was steadily building a client base in the first decade as he practised as an architect and was continuing to experiment with his designs with Swiss, Gothic and Roman styles, showing his commitment to progress architecture and not just to copy it.

Summary

Meeting the multi-talented Loudons in 1831 was a significant and fortuitous event for Lamb and the following twelve years had a profound influence on the path his career would take. John Loudon had published over eighteen publications on landscape and gardening by the time they met as well as two successful magazines. He had just married Jane Webb and Lamb was there at the beginning of this perfect partnership, which was now to add to John Loudon's back catalogue with many publications on architecture. Lamb, the recently qualified architect, was in exactly in the right place at the right time. He was able to contribute his thoughts and ideas to the five books and the one magazine that the Loudons were to produce by 1843. These included articles with designs of many building types in many different styles. The publications were an ideal place to promote his designs to potential clients and show the scope of his architectural abilities. The medium also allowed Lamb to try out new ideas for designs and give him the freedom to experiment. Loudon was well connected and able to secure projects with landscape requirements from clients and if they also needed an architectural input, Lamb was well placed to assist him. Lamb had this successful relationship for the last three to four years that he knew the Loudons, but this was suddenly brought to a dramatic halt in December

²⁵⁸ E. B. Lamb, *A Villa adapted for a Situation in the Neighbourhood of Ayr*, Supplement, 1842, Longmans, Design II, p. 1186.

²⁵⁹ E. B. Lamb, *A Land-Steward's House in the Neighbourhood of Inverness*, Supplement, 1842, Longmans, Design XIV, p. 1205.

1843. On the morning of the 14th of the month, while dictating for his book on *Self-Instruction* for young gardeners, John Loudon died literally on his feet and fell into the arms of his beloved wife Jane. The loss of Loudon must have had a marked effect on Lamb; after all Lamb did read a memoir to the RIBA at their next meeting only four days later where he refused to let the 'present time pass without paying that tribute to the memory of Mr Loudon which his varied talents merited'²⁶⁰. Loudon was an important man who for more than the last decade had been helping Lamb to mould his principles in a Loudonian way and with Loudon now gone, Lamb had to rethink his career. Little did he know that the next year was to be quite eventful.

²⁶⁰ E. B. Lamb, *Memoir of the late J C Loudon, Esq.*, read at the Ordinary Meeting of the RIBA, 18th December, 1843, p. 1.

4.3 1844 – The Year of Transition

RIBA Council Member

By 1844, Lamb had been practising as an architect for over 15 years and with at least 28 new buildings to his name ranging from small lodges and pavilions such as those at the first public park of Derby Arboretum, Derby in 1840 through to the large private mansions of Elkington Hall, Lincolnshire in 1841 for the Reverend W. Smyth and Wadhurst Castle, Sussex in 1842 for Benjamin Harding. Lamb had also worked on many restorations and additions including the churches of St Mary's, Wendover, Bucks, 1839 and St Oswald's, Sowerby, North Yorks, 1839-42 and had entered at least seven competitions, including that for the Houses of Parliament, London, 1835 and Nottingham Cemetery Chapel, Nottingham, 1837. Lamb had exhibited at the Royal Academy every year except 1831 and 1833, with 38 entries, with usually more than one each year, including churches, villas, cottages and schools.²⁶¹ Finally Lamb's nomination for a fellow of the RIBA²⁶² was approved at the Council Meeting held on Monday 27th of February 1837 having been proposed by the required minimum of three fellows.²⁶³ In Lamb's case four fellows actually recommended him and these were J. Noble, T.L. Donaldson, C. Fowler and A. Pointer.²⁶⁴

In 1843 Lamb was elected to the Council of the RIBA²⁶⁵ and his attendance at his first meeting is recorded in the minutes for 8th May 1843.²⁶⁶ Only six meetings later, Lamb was

²⁶¹ A. Graves, *The Royal Academy of Arts: A Complete Dictionary of Contributors and their works from its foundation in 1769 to 1904*, London, George Bells and Sons, 1905, entry for E. B. Lamb.

²⁶² The Institute of British Architects received its Royal Charter from William IV on 11th January 1837. (Refer Angela Mace, *RIBA: A guide to its architecture and history*, London, Mansell, 1986, p.3.) becoming The Royal Institute of British Architects. Some of its own publications refer to it as The Institute of British Architects of London and subsequently The Royal Institute of British Architects of London. Reports in the architectural newspapers of the day were still referring to The Institute of British Architects into the mid 1840s as was Lamb himself. For consistency all footnotes and quotes refer to the name given in the source and all references in the main text are to the RIBA.

²⁶³ Meeting of the Council, Monday 27th February 1837, *Minute Book of the Council of the Institute of British Architects, 1835-45*, RIBA Library, p. 91.

²⁶⁴ The Fellows who recommended Lamb are stated in Lamb's entry in the *Directory of British Architects 1834-1900*, 1993, RIBA. According to the RIBA Library the original documents recorded in 'Transactions of the RIBA' for 1837 are no longer available at Portland Place.

²⁶⁵ *List of Office Bearers 1843 – Council, List of Members; The report of the Council, Read at the Annual General Meeting held 1st May 1843; with the Balance Sheet, and List of Contributors to the Collection, Library and General Funds*, London 1843. n.p.

²⁶⁶ Meeting of the Council, Monday 8th May 1837, *Minute Book of the Council of the Institute of British Architects, 1835-45*, RIBA Library, p. 354.

in the chair for the meeting of 2nd August 1843.²⁶⁷ It appears that he may well have taken advantage of this position when he put forward a proposal 'for the use of Cotman's etchings by Rickman and Cavaliers Gothic architecture, for a few days', as it was resolved that 'the request be complied with'.²⁶⁸

In January of 1844, Lamb became a member of the Committee to decide on the merits of the drawings sent in competition for the Soane Medallion together with four others which included Barry and Donaldson.²⁶⁹ Lamb continue to attend every meeting, right up to and including, that for 6th May 1844²⁷⁰ including signing the minutes of the meeting of 4th March 1844²⁷¹ and being in the chair for the following meeting on 18th March 1844 showing his involvement and commitment to this new institution.²⁷²

Bankruptcy

Lamb's presence at the centre of the architectural world of the 1840s was thus firmly established with his architectural work, the exhibiting of his designs, articles and criticisms in the architectural press and his involvement at the highest level of the RIBA working alongside his contemporary peers. It is therefore all the more strange and surprising then that on 16th May 1844 he should write a letter to the RIBA resigning from the Society.²⁷³ The letter is short and to the point, consisting of only four sentences:

'Circumstances have occurred which render it necessary for me to tender my resignation as a Member of the Institute of British Architects. I do so with the greatest regret as I have always looked forward to the Meetings as some of the most agreeable and instructive which I have ever passed. It is unnecessary for me now to enter into further particulars. I have no doubt you will soon obtain a more useful member to fill my place on the Council but no one I am sure can feel a greater interest in the welfare of the Society.'

²⁶⁷ Ibid., Wednesday 2nd August 1843, p. 368.

²⁶⁸ Ibid.

²⁶⁹ Ibid., Monday 8th January 1844, p. 383.

²⁷⁰ Ibid., Monday 6th May 1844, p. 398. The minute book also records Lamb's presence at all the eight previous meetings.

²⁷¹ Ibid., Monday 4th March 1844, p. 391.

²⁷² Ibid., Monday 18th March 1844, p. 393.

²⁷³ Ibid., Monday May 1844, p. 400

Lamb does not state exactly why he is resigning, but there must have been an important reason for resigning completely from the RIBA and not just resigning from the Council and remaining in the background as a Fellow. Instead he chose to separate himself from this relatively new society which was beginning to establish the professional status of the architect.

The reason or reasons remained unknown until recently, prompting discussion and speculation by some modern researchers as to why Lamb resigned so suddenly. Stamp did not mention it and neither did Davison. Winduss was the first to talk about the resignation but does not go into detail or speculation as to the reasons. Kaufmann does note that it 'is all very mysterious' and speculates that the 'resignation may have been the result of a personal conflict, or perhaps of his infringement of a rule which barred from professional membership those who engaged in quantity surveying'.²⁷⁴

Under the Charter of Incorporation, passed by the RIBA at their ordinary meeting of 6th February 1837, Section IV Bye Law 21 states that there are grounds for expulsion of Fellows or Associates who are engaged in 'measurement, valuation, or estimation of any works undertaken or proposed to be undertaken by any building artificer, except such as are proposed to be executed or have been executed under the Member's own designs or directions'.²⁷⁵ However even if this was the case, this was not the sole reason why Lamb resigned. It was because of another breach of the Bye Law 21, namely 'for any conduct which, in the opinion of the council, shall be derogatory to his professional character'.²⁷⁶ The very next day after Lamb's letter, on Friday, 17th May 1844 a notice appeared in the London Gazette,²⁷⁷ repeated in the Times, on Saturday 18th of May 1844, indicating that 'Edward Buckton Lamb, Burton-crescent, builder' was 'to surrender May 24, at 12 o'clock, at the Bankrupts Court'.²⁷⁸

²⁷⁴ Edward Kaufman, *The Life and Work of E.B.Lamb 1805-1869*, PhD Thesis, 1984, Yale University, USA, unpublished, p. 88.

²⁷⁵ *Charter of Incorporation, IBA, 6th February 1837, Bye Laws, Section IV of the Election of Fellows, Associates, Honorary Fellows, and Honorary Members*, 21, p. 17.

²⁷⁶ *Ibid.*, p. 17.

²⁷⁷ *The Times*, Saturday May 18th, 1844. p. 5.

²⁷⁸ *Ibid.*

On the previous Monday, 13th May 1844 a Fiat of Bankruptcy was awarded and issued by the Lord Chancellor against Lamb, therefore declaring him a bankrupt.²⁷⁹ The petitioning creditor was William Bracher, a painter and glazier from Great Ormond Street in London and Lamb's solicitor was Mr H. Palmer at Mitre Court, Temple.²⁸⁰ Lamb's address is given as '10, Burton Crescent, St. Pancras' a large four-storey and basement Georgian townhouse built in 1810 by the builder John Burton, who had leased this southern part of The Skinner's Company's Estate in 1807.²⁸¹ Lamb had moved in by 1841²⁸² from his previous residence at 25, Henrietta Street, Brunswick Square, a much smaller property in a less fashionable area of the capital.²⁸³ Lamb's increasing income in the late 1830s and early 1840s had allowed him to make such an up market move due to the major projects at Derby Arboretum, 1839-40, St. Oswald's, Sowerby 1839-42 and estate works for Sir Robert Frankland Russell at Chequers, Bucks. Work continued to improve with the projects at Cambridge Cemetery Chapel and Gatehouse, 1842, Wadhurst Castle, 1842 and at least six other villas and lodges and these should have provided a sufficient income, yet by 1844 Lamb was being pursued for a debt of £50.²⁸⁴

In the 1840s it was vital that if you were in debt and being pursued by creditors you were not declared an insolvent debtor since you remained responsible for your debts and were subject to common law proceedings. This usually led to indefinite imprisonment where debtors remained for the rest of their lives, as they were unable to work and therefore pay off their debts. Such an illogical and self-defeating system of indefinite punishment and impossible rehabilitation continued until 1869.²⁸⁵ To avoid such a fate it was vital to acquire the legal status of being a bankrupt. This was confined to traders owing £50 or more with the legal definition of 'trader' being those who made a living by buying and selling or who bought materials to work on and then resold them.²⁸⁶ To be called a trader a very common description designed to be both general and misleading employed at the time

²⁷⁹ *Register of Commissions of Bankruptcy*, Public Record Office, Kew, B4/50 January 1843-July 1846, n.p.

²⁸⁰ *Fiat Book 1842-1847*, Public Record Office, Kew, B6/84 No. 3, n.p.

²⁸¹ Walter H. Godfrey and W. McB Marcham editors, *Survey of London Volume 24*, 1952, (online edition), pp. 83-93.

²⁸² A. Graves, *The Royal Academy of Arts: A Complete Dictionary of Contributors and their works from its foundation in 1769 to 1904*, London, George Bells and Sons, 1905, entry for E. B. Lamb where his address is given as 10 Burton Crescent in 1841.

²⁸³ *Ibid.*, Lamb's address is given as 25 Henrietta Street in 1840.

²⁸⁴ *Fiat Book 1842-1847*, Public Record Office, Kew, B6/84 No. 3, n.p.

²⁸⁵ *Bankrupts and Insolvent Debtors: 1710-1869, Legal Records Information 5*, Public Record Office, Kew, Section 2, p. 1.

²⁸⁶ *Ibid.*, p. 1.

was 'dealer and chapman' and this was used by Lamb in the Fiat, but expanded to give a description of 'Builder, Dealer and Chapman'.²⁸⁷

Once the Fiat of Bankruptcy was issued, Lamb was required to present himself in front of the Commissioner to make 'a full discovery and disclosure of his estates and effects'.²⁸⁸

On the following Friday, 24th of May 1844, Lamb duly appeared in front of Sir Charles Frederick Williams at 11 o'clock where 'the creditors' came 'to prove their debts' and 'to choose assignees'.²⁸⁹ Assignees were independent assessors until 1831 when a number of Official Assignees were appointed in order to prevent fraud.²⁹⁰

The Commissioner took statements from Lamb and Bracher and then appointed 'Mr George John Graham, No 25, Coleman Street, London'²⁹¹ as the Official Assignee whose job it was to value Lamb's assets, pay cash from their sale into the Bank of England and then distribute the monies as dividends amongst the creditors.²⁹² Only William Bracher is recorded as a creditor in the Fiat and there are no other records at the National Archives indicating that any other creditors were involved. The accounts consisting of journals, ledgers, balance and deposit books are unfortunately not available for 1844.²⁹³ However, there are various 'Unclaimed Dividend Account Ledgers' which cover the period from 1844 through to 1855 relating to the 'Official Assignees Pennell and Graham'.²⁹⁴ There are no records here either of any monies left unclaimed by creditors relating to Lamb. Whether there were any other creditors may also never be known, but Bracher and any other creditors were satisfied as a request for a 'Certificate of Conformity' was made and Lamb duly appeared before the Commissioner, Graham, on Tuesday 1st October 1844 at 12 noon.²⁹⁵

²⁸⁷ *Fiat Book 1842-1847*, Public Record Office, Kew, B6/84 No. 3, n.p.

²⁸⁸ *London Gazette*, Friday 17th May, 1844, Reproduced at Public Record Office, Kew, ZJ 1/240, n.p.

²⁸⁹ *Ibid.*, n.p.

²⁹⁰ *Bankrupts and Insolvent Debtors: 1710-1869, Legal Records Information 5*, Public Record Office, Kew, Section 5, p. 1.

²⁹¹ *London Gazette*, Friday 17th May, 1844, Reproduced at Public Record Office, Kew, ZJ 1/240, n.p.

²⁹² *Bankrupts and Insolvent Debtors: 1710-1869, Legal Records Information 5*, Public Record Office, Kew, Section 5, p. 1.

²⁹³ Although the book has survived it is considered too fragile to be seen by members of the public.

²⁹⁴ *Unclaimed Dividend Account Ledger late Sundry Estates Account, Official Assignees Pennell and Graham, No. 1*, 1845 Oct - 1852 Dec, PRO BT40/5, 1844 Jan - 1847 Mar, B5/105, 1842 Aug - 1855 Jun, B5/111.

²⁹⁵ *Certificates of Conformity Deposited 1843-1845*, Public Record Office, Kew, B6/38, n.p.

A Certificate of Conformity was issued effectively stating that Lamb had satisfied all the legal requirements and was discharged. This was dated October 25th and formerly 'delivered out' on 29th October 1844 and delivered not to Lamb but to Thomas Lamb, his younger brother Thomas.²⁹⁶ Thomas is recorded only four years later in 1848 as being a 'Law Stationer' and it is appropriate that he should receive such a document on Lamb's behalf.²⁹⁷

Thomas was not the only other member of the Lamb family that might have played a part in this saga. Lamb's father, James Lamb, had been a 'Clerk in Debtors Court Office'²⁹⁸ and his eldest son Henry William Lamb²⁹⁹ had followed him into this profession rising by 1871 to 'Superanatea/Registrar Insolvent Debtors Court'.³⁰⁰ Although Lamb's father had died by May 1844,³⁰¹ no death certificate is recorded at the National Archives, it seems highly probable that when Lamb encountered financial difficulties in this year he would have turned to his elder brother for advice. Henry would have been in an excellent position, not only to warn him of the dangers of becoming a debtor and their prison fate, but to advise him that the best course of action was to be declared bankrupt. Seeking his advice would also have kept the knowledge of Lamb's financial difficulties within the confines of the Lamb family.

This was also not the only time that Lamb was to encounter William Bracher. Five years later in 1849, Lamb won his first architectural competition with his design for the Judges Lodgings at Aylesbury, Bucks, 1849³⁰² and duly went out to tender in May. There were six builders who submitted tenders for the work and their prices are recorded in *The Builder* for June 9th, 1849. The third lowest tender was 'William Bracher and Sons' and it is interesting to imagine how the project might have progressed if Bracher had been chosen by the client as the builder for the project.

²⁹⁶ Ibid., n.p.

²⁹⁷ Birth Certificate of Edith Margaret Lamb, (Niece to Lamb), 29th March 1845, (registered 6th May 1848), Public Record Office.

²⁹⁸ Death Certificate of Frances Lamb, (Mother to Lamb), 9th May 1846, Public Record Office.

²⁹⁹ Henry William Lamb born 19th May 1799 and baptized 30th May 1805 in *Parish Register of St. Mary Magdalen, Old Fish Street 1757-1812*, MS 10.225, Guildhall Library, London.

³⁰⁰ Census Record for 20 Cromwell Road, London, 1871, Public Record Office.

³⁰¹ Death Certificate of Frances Lamb, 9th May 1846, Public Record Office, indicates 'widow'.

³⁰² Tenders, *The Builder*, June 9th, 1849, p.274.

Financial Difficulties

The few years leading up to 1841 were productive and he may well have been encouraged enough by his financial situation to believe that a move to a larger house such as in Burton Crescent was now possible. But current workload is never in architecture a good indication of future workload. This is as much relevant today as it was in the nineteenth century. Although, the work at Cambridge and Wadhurst in 1842 came after the move to Burton Crescent, only the two lodges at Blubberhouses for Sir Robert Frankland Russell and a Shooting Lodge at Loch Tulla for the Marquis of Bredalbane are known to have been carried out by Lamb during 1843.³⁰³ Lamb was still working with Loudon at this time and had secured the work at Cambridge through him. But Loudon's health at this time was poor, having become seriously ill in 1842 with pneumonia which re-occurred in 1843.³⁰⁴ This restricted his ability to work on his book *On the Laying Out, Planting, And Managing of Cemeteries and on the Improvement of Churchyards*.³⁰⁵ As well as Cambridge, other cemeteries were laid out by Loudon at Southampton and Bath, but Lamb was not employed as the architect for either. The work at Southampton Old Cemetery, 1843-44, was carried out by Frederick John Francis (1818-1896) and the Abbey Cemetery at Bath, 1844 was carried out by George Phillips Manners (1789-1866), the city architect from 1823 to 1862.³⁰⁶

Loudon was himself in serious financial difficulties in 1843 with debts of £2,400 for his book the *Arboretum* and another debt for £1,200 when he took on the publishing costs himself of the *Encyclopedia of Trees and Shrubs* and some of his other works.³⁰⁷ The creditors agreed that the publishers, Longmans, should hold the books in trust and not pay any monies to Loudon until all the creditors had been paid. Loudon died in December 1843 with the debts remaining, having been in these financial difficulties for some time. Lamb

³⁰³ The Shooting Lodge, Loch Tulla for the Marquis of Bredalbane was exhibited at the Royal Academy, 1843.

³⁰⁴ Jane Loudon, *A Short Account of the Life and Writings of John Claudius Loudon*, printed in *Self-Instruction for Young Gardeners, Foresters, Bailiffs, Land-Stewards and Farmers*, Longman, Brown Green and Longmans, London, 1845, reprinted in John Gloag *Mr Loudon's England*, Oriel Press Limited, 1970, p. 212.

³⁰⁵ J.C.Loudon, *On the Laying Out, Planting, And Managing of Cemeteries and on the Improvement of Churchyards*, Longman, Brown, Green and Longmans, 1843.

³⁰⁶ Parks & Gardens Data Services Ltd, York, www.parksandgardens.ac.uk, last accessed 15th August 2010.

³⁰⁷ Jane Loudon, *A Short Account of the Life and Writings of John Claudius Loudon*, printed in *Self-Instruction for Young Gardeners, Foresters, Bailiffs, Land-Stewards and Farmers*, Longman, Brown Green and Longmans, London, 1845, reprinted in John Gloag *Mr Loudon's England*, Oriel Press Limited, 1970, p. 215.

was Loudon's principal illustrator for the *Encyclopedia*, as has been shown earlier, and he would have presumably been paid by Loudon direct, although no records of payments to Lamb have survived. If such arrangements were present, Loudon may have unwittingly contributed to Lamb's predicament if the payments to him were delayed.

Loudon's Last Will and Testament, dated 30 November 1838, leaves his possessions and future income from his published works to his wife Jane, his sisters, Ann, Jane and Mary and finally his daughter Agnes.³⁰⁸ The executors were a Francis Sewell and a Thomas Woodhouse and it seems that the close relationship Lamb had with Loudon, referred to in the memoir he gave to the RIBA mentioned earlier, was solely a working one with Lamb being neither a benefactor nor an executor.³⁰⁹ Jane Loudon continued her husband's work, completing his *Self Instruction for Young Gardeners, Foresters, Bailiffs, and Land-Stewards, and Farmers* in 1845³¹⁰ and republishing the *Encyclopaedia of Cottage, Farm and Villa Architecture and Furniture* including the *Supplement* in 1846.³¹¹ There are no notable or identifiable differences in this second edition or any records to indicate whether Lamb assisted Jane Loudon or made any further contributions. If he had been involved these publications then any money received for his work would obviously have helped Lamb's financial situation. Any financial worries for Jane were further helped in April that year when a 'pension of 100 L. per annum' was 'granted by her Majesty to the widow of the estimable author'.³¹²

It appears therefore that Lamb may simply have overstretched himself financially when he moved to Burton Crescent and with the following workload not being maintained may merely have built up debt.

After the bankruptcy

Once knowledge of his bankruptcy became known it might be expected that he would take a break from the architectural world and keep a low profile. But this was not the case.

³⁰⁸ Last Will and Testament of John Claudius Loudon, Public Record Office, London, n.p.

³⁰⁹ Ibid., Jane Loudon was appointed sole executor as long as she remained unmarried and then the executors were to be a Francis Sewill of Elanor Street, Marylebone and a Thomas Woodhouse of Stepney Street.

³¹⁰ J.C.Loudon, *Self Instruction for Young Gardeners, Foresters, Bailiffs, and Land-Stewards, and Farmers'*, Longmans, 1845.

³¹¹ J.C.Loudon, *Encyclopaedia of Cottage, Farm and Villa Architecture and Furniture*, Longmans, 1846, published by Jane Loudon.

³¹² The Late Mr. Loudon, *The Builder*, Volume 4, 1846, p.165.

Lamb continued to exhibit at the Royal Academy in 1844 and 1845, although as the exhibition in 1844 was in May he may already have submitted his entries before he was declared bankrupt. The three schemes exhibited in 1844 were a 'Morning Room' and 'The Belvedere, Isle of Wight' together with a 'Church at Carlton, Bedfordshire' which does not appear to have gone ahead.³¹³ The Belvedere and the church are described as real projects, but in each case it has not been possible to determine if such a schemes went ahead. The Morning Room does not relate to a specific location and may well have been a general design.

There were four schemes exhibited at the exhibition in 1845 including a 'Monument and obituary window' and a 'Village School'.³¹⁴ As in the previous year neither of these two entries relate to specific locations and may well have simply been designs. The other two designs exhibited in 1845 were Lamb's competition entries for the Congregational Chapel at Holloway, 1845-6 and for Magdalen College Choristers School Oxford, 1845.³¹⁵ Lamb did not win either of these competitions; the Holloway scheme being won by Messrs Emmett and Chadwick and the Oxford scheme being won by Mr. Derrick of Oxford. Both these design competitions were high profile events receiving much coverage in *The Builder*. Lamb was continuing to work both on designs and real projects at this time, apparently unaffected by the bankruptcy proceedings against him. However the type of entries had changed compared to those submitted previously.

Lamb exhibited only pure designs and not commissions that were to be built, for various buildings to the Royal Academy from his first exhibition entry a 'Design for a Church' in 1824 through to his 'Design for a Villa' in 1836 some 16 entries later. He continued to send exhibition entries from 1837 through to 1843 totaling 21 entries, but all these were now for real projects with their locations identified. There were no pure designs sent in by Lamb for these years. Reverting to designs did impress the reviewer of the Royal Academy Exhibition 1844 for the *Civil Engineer and Architects Journal* who hoped that 'we shall behold his "Series of Designs" in a published form; for it certainly would prove a

³¹³ A. Graves, *The Royal Academy of Arts: A Complete Dictionary of Contributors and their works from its foundation in 1769 to 1904*, London, George Bells and Sons, 1905, entry for E. B. Lamb

³¹⁴ Ibid.

³¹⁵ Roger H. Harper, *Victorian Architectural Competitions: An Index to British and Irish Architectural Competitions in The Builder, 1843-1900*, London, 1983, pp. 132 and 210.

most excellent companion work to those by Joseph Nash'.³¹⁶

One way for Lamb to keep out of the public eye would be to avoid mention in the architectural newspapers of the day. It has already been seen that Lamb's entries to the Royal Academy exhibition had been reviewed in the *Civil Engineer and Architects Journal* with further reviews in *The Builder*. In fact rather than avoid mention in the newspapers Lamb actually did the opposite and wrote a letter to the editor of *Civil Engineer and Architects Journal* in August 1844.³¹⁷ This was not only less than three months after he had become bankrupt but actually during the bankruptcy proceedings against him were still taking place. The letter Lamb wrote was regarding the British Museum stating his belief 'that Gothic architecture has not had its due share of accommodation in the National Museum' and hoped that 'a separate gallery were established for such objects'. Lamb was following up on 'some little stir' taking place recently in 'the House of Commons relative to British Antiquities and the British Museum' and in his letter stated that two years previously he had 'waited upon Sir Henry Ellis' to explain his views which had received encouragement.³¹⁸ Lamb subsequently wrote to the Trustees of the British Museum on 7th November 1842 and received a reply on 18th November 1842 stating that 'the trustees are not prepared to recommend her Majesty's Government to provide in the museum for any general collection of remains of Gothic architecture of Great Britain'.³¹⁹

If Lamb was endeavoring to maintain a low profile then writing a letter to be published in a National architectural newspaper including his name and full address was obviously not the best way to go about it. There is however evidence that Lamb may have changed the type of work and activities that he took following his bankruptcy. Throughout the latter part of 1844 and 1845 he worked on the production of his second and most important publication *Studies of Ancient Domestic Architecture*. The book, as has been shown earlier, contained 20 illustrations and 40 pages of text explaining his ideas on architecture. The work was dedicated to Sir Robert Frankland Russell (1784-1849) who in the early 1840s was Lamb's most important patron.

³¹⁶ Royal Academy Exhibition Review, *Civil Engineer and Architects Journal*, Volume 7, May 1844, p. 184.

³¹⁷ E.B.Lamb, 'Suggestions for a National Collection of Studies of our National Architecture', *Civil Engineer and Architects Journal*, Volume 7, August 1844, pp. 302-4.

³¹⁸ Ibid

³¹⁹ Ibid.

In 1836, Sir Robert Frankland who lived at Thirkleby Park, Yorkshire had inherited land in Buckinghamshire including the estate of Chequers Court from his distant kinsman Sir Robert Greenhill Russell (1753-1836).³²⁰ Sir Robert added the name of his benefactor to his own and set about employing Lamb to work at Chequers Court in 1837 restoring the North front and building a two-storey service wing addition at the Southwest corner. Lamb carried out other new work at Chequers with the North Lodge (1837) the Home Lodge (1838) the Bailiffs Cottage (1840) and a Tudor Seat and Plant Cabinet (1838).³²¹ Sir Robert was a founder member of the *Architectural and Archaeological Society for the County of Buckinghamshire* and Lamb was an honorary member.³²² Sir Robert was responsible for promoting architecture in Bucks with new buildings and church restorations until his premature death in March 1849. Lamb continued to work with the Frankland Russells or their families and friends for the next 20 years. In fact, up to 80% of Lamb's work can be attributed back to a connection with either Sir Robert or his widow Lady Louisa Frankland Russell (1790-1871).

It was in 1845 that Sir Robert was to secure Lamb a scheme for a new church at Healy in North Yorkshire and this became his first significant church. St. Paul's was Lamb's first completely new church since St. Philips, Granville Square, London for the Church Commissioners some 15 years earlier and is the first of the twelve churches considered in detail in this study.

³²⁰ J. Gilbert Jenkins, *Chequers: A History of the Prime Minister's Buckinghamshire Home*, London, 1967, p. 62.

³²¹ Various documents, Centre for Buckinghamshire Studies, Aylesbury, D138/12/1-47, D138/13/3 and d138/14/3-12.

³²² 'Architectural and Archaeological Society for the County of Buckinghamshire', *The Ecclesiologist*, February 1849, p. 327.

5.0 LAMB THE PRACTITIONER

5.1 Introduction

By the middle of the 1840s following Lamb's completion of his articles with Cottingham, his work with Loudon and his other independent commissions, Lamb firmly believed that architecture should be based on principles rather than rules. These determined his approach to planning, function and construction and formed the basis for his principles in composition. This section examines these principles by an examination of aspects of his work by type rather than by a simple chorological progression church by church where the information gleaned would be less clear.

The model follows the approach taken by Paul Thompson in his study of William Butterfield published in 1971. Thompson breaks down the work into sections on 'Patronage', 'The Profession' and 'The Builders', before looking more deeply at the construction and materials. He states that it is 'simplest to begin at the base of his buildings, and consider foundations, walls and roofs in turn.'³²³ Once the walls and the roof were considered Thompson then followed with sections on 'Colour', 'The Line', 'The Mass', and 'Composition'. With this method Thompson is able to compare buildings and analyse Butterfield across all his work to build up a much clearer view on how his work changed and evolved over his career.

The approach taken in this section is similar, with first a detailed look at the 'Plan Types and Development' in Lamb's churches to see how the success of his centralised preaching space, before considering how the 'Geometry and Proportion' of these churches might have been setout. A detailed analysis of Lamb's 'Roof Types and Development' follows to see how they were influenced both by the works of mediaeval carpenters and the available funds for each project. This is covered in further detail in 'Carpentry and Construction' to show the methods Lamb adopted to create simple and easy to build roof constructions.

The churches Lamb created gave scope for both simple and complicated measures necessary for the 'Rainwater Collection and Disposal' from the large roofs of his buildings

³²³ Paul Thompson, *William Butterfield*, The M.I.T. Press, Cambridge, Massachusetts, 1971, p. 128.

and the problems this created, which is addressed in the next section. Lamb described in detail in his lecture on Architectural Composition in 1857, how a building should rise from the ground. Both the base of the wall and the top of the wall are considered in the section on 'Plinths and Eaves' to categorise these elements into types and see if Lamb followed his stated principles.

Lamb was one of the first architects in the nineteenth century to experiment with constructional polychromy and this is analysed in association with his use of materials, not just to concentrate on colour, but also on texture, appearance and pattern in the section on 'Polychromy and Materials'.

The final section looks at the repairs and 'Restorations' to his churches throughout their long life where known, to see how successful Lamb was with the constructional design of the original building and highlight any problem areas for on-going maintenance.

5.2 Plan Types and Development

In February 1857 Lamb gave a lecture to The Architectural Exhibition on 'Architectural Composition' where he outlined his principles for the composition of a great work of architecture.³²⁴ His four cornerstones were unity, harmony of form, harmony of material and harmony of construction. He firmly voiced his opinion that the use of these principles, rather than relying on rules, would elevate architecture and allow it to return to a more equal position with its sister arts. The current use of 'copyism' would be avoided and architecture would progress as an art. 'Changes of customs, changes of position, and other circumstances obliged him to change the forms of his buildings, in order to meet new wants and new refinements, which rendered a progressive invention in art a necessity; still the same principles of unity were maintained, and in no instance in the early practice of architecture do we find the works of previous ages reproduced.'³²⁵

Lamb commented on the many difficulties associated with applying Gothic architecture to the country's 'habitations' and 'public edifices' and also strangely to 'our ecclesiastical structures'. But, he fully believed, 'if our associations would allow us, we might overcome' them.³²⁶

One of Lamb's prime concerns of his ecclesiastical buildings was to create a plan form that allowed the greatest number of people in the congregation to see the minister, while still maintaining a layout which was clearly ecclesiastical. The traditional church plan in the Christian world was derived from the emblem of the Christian religion the cross and symbolic of the cross on which Christ was crucified. The most traditional church plan from the Romanesque period is the Latin cross with three equally long topmost arms and a much longer bottom arm. There are also cases where the top vertical arm maybe shorter than the two horizontals. When this symbol is applied as the architectural plan of a church the longer arm is represented by the Nave becoming the main body of the church. The horizontals on each side become the Transepts and the remaining shorter arm at the end of the nave becomes the Chancel. The junction in the centre becomes the Crossing and in many cases is surmounted by a tower.

³²⁴ E. B. Lamb, 'Architectural Composition', lecture delivered at the Architectural Exhibition on 3 February, 1857, and published in full in *Building News*, 20 February 1857, p. 185.

³²⁵ *Ibid.*, p. 185.

³²⁶ *Ibid.*, p. 185.

The nave is used by the laity and is where the main congregation is seated, with additional seating in both the north and south transepts. The chancel is used by those officiating in the services and may well be hidden behind a screen. It is the most sacred part of the church containing the sanctuary with the high altar at the extreme east end. In larger churches and cathedrals the chancel will also contain the choir. This church layout allows for a processional route from the west end of the church through the nave and crossing to the chancel at the east, and is an important element of church services. To the north east side of the church, either in the nave or in the crossing, is a pulpit or a partially enclosed desk, usually elevated to some degree from where the preacher can preach to the congregation.

To increase the accommodation in churches, the nave could either be extended to the west, or side aisles added to the south or north or the nave. The former resulted in increasing the distance of some of the congregation from the preacher. The latter required the introduction of columns in the nave walls thus restricting the practicality of the additional seating. Lamb saw this as a problem, saying that 'there can be no doubt that the long nave and narrow aisles, divided from each other by numerous columns which screen the minister from the view of his congregation, and also in some degree intercept sound, are inconveniences frequently felt'.³²⁷

Lamb believed that despite the development of Gothic churches over four hundred years, they still had problems needing solving and that he had the solution. He knew that in the new buildings at the time the form was still retained and feared for architects trying anything different, as 'any deviation from such orthodox forms would be pronounced heterodox in the extreme'.³²⁸ But did this deter Lamb? He believed strongly that architecture was a progressive art and that architects should look to the past for ideas and inspiration and rather than copy these they should 'imitate by emulating'.³²⁹ For the previous twelve years he had been designing new churches and experimenting with alternative forms despite the criticisms he received in *The Ecclesiologist* at the time. And did he have the solution? Was there a form he had developed without long naves and numerous columns that gave better sightlines? Today the use of a computer-aided design

³²⁷ Ibid., p.186.

³²⁸ Ibid., p.186.

³²⁹ E. B. Lamb, *Studies of Ancient Domestic Architecture* (London, 1846), p. 1.

package allows these statements to be tested to see if they were indeed his intended design principles or simply a later attempt to justify his work.

One such area for study in Lamb's churches is the relationship of the seating for the congregation, the pulpit and the structure and in particular the influence of the internal columns. For Lamb and his Low Church clients it was the pulpit which formed the key focus for the building rather than the altar and a clear view from as many seats as possible was vital in allowing people to see and hear the preacher. The Low Church had begun in the 16th and 17th centuries with a view to minimising the continuity with the medieval past and the role of bishops and sacraments. They attached relatively little importance to traditional rituals and doctrines. To them it was the sermon that was important with emphasis on the pulpit rather than ceremony and emphasis on the chancel.

With Lamb being born in 1805 he was much older than the leading Gothic Revivalist architects who were practising at the same time as him. For example he was 7 years older than the polemicist A. W. Pugin, 9 years older than prolific William Butterfield and 19 years older than the High Victorian G. E. Street (Table 9). This age difference is crucial to the understanding of Lamb's work. His education was complete by the time that Pugin and the Cambridge Camden Society laid down their doctrinaire principles. Following completion of his articles with Cottingham in 1828 he began to practise architecture following the Picturesque principles of composition and materials. He continued to do this during the twelve years he also worked with Loudon from 1831 to 1843 assisting him with the architectural work of his landscaping projects of cemeteries and parks.

The first attempt

It was following his work with Loudon that in 1845 Lamb's patron, Sir Robert Frankland-Russell (1784-1849), secured him a scheme for a church in the small hamlet of Healey in North Yorkshire (Fig 6). This was Lamb's first significant church. St Paul's was built for Admiral Lord Harcourt who lived in the nearby village of Swinton and the church Lamb designed shows a plan form with little change from those which other architects of the day were using but were from the plans that were to come later in his career.

The plan is a Latin cross and this was one of only two churches where Lamb adopted this simple form without endeavouring to create a new one. The nave is a simple rectangle of 40ft x 17ft 4in and the chancel a rectangle of 22ft x 15ft separated by the 10ft-wide crossing from which there are two identically sized 10ft x 8ft transepts with part of the northern one set aside for a vestry. Lamb completes the traditional form with a tower over the crossing and a porch at the south-west corner of the nave. The smallness of the church allows Lamb to cover the nave and chancel without the need for any internal columns by using a scissor-truss roof, albeit with additional elaborate braces. Any restrictions on the view of the preacher from the pews is therefore only from the supports for the nave, chancel and transept arches.

St Paul's was supported by a grant from the Incorporated Church Building Society (ICBS) and records exist at Lambeth Palace Library of Lamb's original seating layout including the seats allocated for both adults and children.³³⁰ Once the church has been measured, the structure entered accurately into a computer model and the internal pews, pulpit, reading desk, and other fittings added, it is then a simple task to add the relevant number of people in their positions, assuming between 18 and 20ins width per seat, to ascertain the success of his church planning in his new forms without having to resort physically to filling the church with people. It is now possible to show all seats which have a clear view of the preacher with a shaded area, highlighting those seats outside this area whose view is obscured (Fig. 18). Out of the 275 total seats, including 14 in the chancel, only 11 adults and 9 children are without a clear view giving a 93% success rate. In fact the layout shown by Lamb was not the one eventually used and the pulpit was moved from the side of the chancel arch to be in front of the nave arch, the vestry enlarged to take up the whole of the north transept and all the seating in the south transept for the children gave way for the organ. The seating in the chancel was doubled and all the seating beneath the crossing removed. This new layout now meant that 100% of the nave seats had a clear view, although the first two rows on the south side are in front of the preacher and only 16 seats of the 28 in the chancel have an obstructed view. In Lamb's original design it was the nave wall line, which continued into the crossing while in the church as built, it was the chancel wall line that was followed creating a narrower seating area (Fig 19). No working drawings exist to show whether this was an intended alteration following the initial design or poor

³³⁰ Signed plan, 15 May 1847, ICBS 3522.

setting out on site. Lamb did have many difficulties with the builder at Healey with poor workmanship and with the standard of the clerk of works. Lamb certainly began his career with a church with a well-planned seating layout, even if there was a huge reduction of 102 seats compared to the initial design. The majority of the reduction was in the seat allocation of the children, which dropped from 99 to only 25, and Lamb may simply have overestimated the requirements for accommodating the juveniles in the area.

Controversy begins

While St Paul, Healey, was under construction Lamb began the design for his next church – Holy Trinity, Prestwood in Buckinghamshire built between 1847 and 1849 (Fig. 7). Here he was required to accommodate a similar-sized congregation, which he achieved by the addition of a north and south aisle for the whole length of the nave. The chancel abuts the nave directly with no crossing or transepts. There is also no tower and the bell is housed in a turret over the west end, thickened in the centre to support it. Beyond this to the west, Lamb added a large, 14ft-square extension to form a baptistery. Such a strange addition was a controversial feature that caused much consternation in the review in *The Ecclesiologist* in April 1848. ‘We must express our dissatisfaction ... The chapel has a chancel at each end, – seriously: at least we cannot otherwise explain the design ... the chapel is most unsuccessful’.³³¹ The ICBS also thought ‘the chancel like appearance of the projection at the west end of the nave is to be regretted’ and suggested that ‘surely the effect of the base of a future tower would be preferable to this unusual feature’ giving the building a more traditional form when fully completed.³³² The nave is quite narrow and at 15ft 6in almost 2ft narrower than that at Healey so only a braced scissor-truss is required again, but this time in its simplest form and at a high level to allow for a clerestory above the shallow monopitched aisle roofs. The addition of the two aisles meant that to gain access to them from the nave it was necessary to use the normal method and form arches in this division wall, thus introducing four columns into the design. The only other possible viewing restrictions of the preacher are the chancel and nave arches and the internal buttresses needed to help support the bell-turret.

³³¹ *The Ecclesiologist*, 8 (1848), p. 320.

³³² Report on scheme by ICBS architect, ICBS 3941, item 18 in file.

A signed plan by Lamb dated 1849 exists showing the intended seating layout for a total of 241 sittings.³³³ An analysis of the viewing lines shows that out of the 39 seats with an obstructed view, all but six are due to the introduction of the four columns thus reducing the 'success' of the plan to only 84% (Fig. 20). A grant for this church was also requested from the ICBS, where records show that an earlier scheme for 281 sittings was first envisaged. Unfortunately no plan survives of this layout. The ICBS still retains Form B, which was completed when the grant was applied for a new church or chapel and was two sides of foolscap containing details of the building including dimensions, style, construction and estimated costs. Although the form includes pew lengths, numbers and positions in the church, numerous attempts to ascertain the layout have not been successful.³³⁴ All the pews were entirely rebuilt and re-spaced in 1920 and the total number of settings was further reduced to 195, which is its capacity today (Fig. 21).³³⁵ The original timber floor to the pews, however, was not replaced and there are a few tantalisingly small areas of timber remaining where the original pews were cut off at floor level. An analysis of this surviving evidence of the original pews indicates that the pew layout installed was not that of the 1849 layout, but unfortunately there are not enough of the original pews remaining to ascertain what this layout might have been.

Viewing success improves

Lamb's next ecclesiastical project was a chapel at the Brompton Hospital for Consumption and Diseases of the Chest in London, 1849-50 (Fig. 8).³³⁶ The chapel of St Luke was added when Sir Henry Foulis (1800-1870), who was the rector of Great Brickhill in Buckinghamshire, paid for its erection as a memorial to his recently deceased sister, Sofia Francis Paunceforte Duncombe. At this chapel Lamb reverted to the simpler traditional plan form with a large rectangular nave 60ft x 24ft and a chancel 26ft 6in x 14ft with two-bay-ended transepts, only 16ft 8in wide by 8ft deep. This was Lamb's widest church to date and he chose to use a hammer-beam roof, thus following the lead of his medieval forebears when wider spans were required. Lamb was always striving to progress architecture and rather than use a single hammer-beam with a crown-post roof above the

³³³ Signed plan, 1849, Centre for Buckinghamshire Studies, Aylesbury, PR168A/3/4.

³³⁴ Form B, ICBS 3941, item 9 in file.

³³⁵ Desmond Keen, *Prestwood Parish Church: A Short History of Holy Trinity Church* (church guide, 1997), p. 20.

³³⁶ 'The Brompton Hospital Estate', *Survey of London, vol. XLI, Southern Kensington: Brompton* (London, 1983), pp. 135-9.

hammer posts, he used a scissor-truss and not at the higher level to replace the crown post, but at the lower level of the hammer-beam. Lamb thus creates an entirely new form by superimposing two traditional ones and which was described disparagingly by *The Ecclesiologist* as 'a chaos of carpentry so near our heads we have seldom seen'.³³⁷

Again, there are no internal columns with the viewing restrictions arising only from the supports for the two arches to the two transepts, as the chancel arch is the full width of the chancel. Because of the site relationship of the chapel to the hospital, Lamb was able to accommodate the other remaining requirements of porch, vestry and bell-tower as a separate entity to the south of the chapel to form part of a long corridor linking the chapel to the central wing of the hospital. Lamb created a seating plan where all the seats were located in the nave with just a small row of five seats each, on either side of the chancel for the hospital dignitaries. No seats were placed in the two transepts either, which were quite small and predominantly used as a circulation space and the south transept contains a memorial window to Sofia. The sightlines for seats in the nave to the pulpit are uninterrupted, as are those to the south side of the chancel. There are only five seats on the north side of the chancel with no view of the preacher and of the 168 seats in total in the channel, 97% therefore have a clear view or 100% of the 158 seats in the nave (Fig. 22).

The traditional plan highlights the problem

In March 1849, Lamb's patron Sir Robert Frankland Russell died and was buried with his ancestors at the family seat of Thirkleby Park, North Yorkshire (Fig. 9).³³⁸ His widow, Lady Louisa (1790-1871), employed Lamb to build a memorial church to her late husband on the site of the existing Georgian church. Lamb was somewhat constrained in his design for All Saints by having to leave the Frankland vault undisturbed. Perhaps also with a desire to impress Lady Frankland Russell with a view to retaining her as his client, he produced one of his most orthodox church plans. A long nave of 48ft 6in with a width of 17ft 8in is joined to a 25ft x 15ft chancel whose size is determined by the Frankland vault below. To the south of the chancel and to its full-length, is the Frankland Aisle leading to the small Frankland Chapel, while to the north is a small vestry. The nave has a 7ft 6in wide aisle on each side, with that to the south running the full length of the nave. The aisle

³³⁷ *The Ecclesiologist*, 11 (1850), p. 196.

³³⁸ *The Builder*, 12 October 1850, pp. 485-6.

to the north is cut short at the west end by the intrusion of the porch and a small internal lobby area leading to the base of the tall tower at the north-west corner which houses the font. This is the only area on the plan where Lamb introduced a somewhat unusual, though highly logical and practical variation, to what otherwise is an arrangement which can be seen in many parish churches in England. The nave here is narrower than at Brompton but Lamb chose to use the same hammer-beam roof principle again, this time without any scissor-truss form, relying on a simple collar at high-level and a large brace-arch beginning at the internal end of the hammer-beam and finishing below the collar. There are then, in effect, no hammer posts and the roof is more of the false hammer-beam type, although the remaining features added by Lamb create yet another new form.

As at Prestwood, Lamb introduced a series of arches and columns in the division walls between aisles and nave. There are four columns for the south aisle, but only three for the north due to the arrangement of the porch and tower. The only other remaining restriction for sight lines are the supports to the chancel arch which are minimal as the arch is made as wide as possible.

The seating plan at Thirkleby, has all 183 seats in the nave and two aisles with none in the chancel and therefore all are in front of the pulpit. This is again placed to the north side of the chancel arch. The introduction of the seven columns has a detrimental impact on the viewing with seats for 10 adults and 4 children having interrupted views, but with only three of the columns creating these problems Lamb still achieves a 92% success rate (Fig. 23).

A column is born

At the same time as Thirkleby, All Saints, Lamb was commissioned by Lady Frankland Russell to build a chapel of ease on part of her estate at Blubberhouses, North Yorkshire some twenty miles to the south-west (Fig. 10). With no requirement to seat a large congregation, Lamb's scheme consists of a rectangular nave, 40ft x 17ft 3in and a short chancel of 16ft 3in x 13ft, with a small vestry to the south. A narrow north aisle of only 4ft 6in runs two thirds of the nave to accommodate the font, with the tower base adjacent and next to this the porch at the far north-west corner. These four spaces then make up a larger rectangle of 40ft x 23ft 6in internally creating Lamb's simplest and most regular external

outline. The nave width is 17ft 3in, only 3 inches narrower than that at Healey, but rather than using a simple scissor truss he chooses to take this scissor-truss principle and create his own variation, which will be discussed in greater detail later.

The wall between the nave and the north aisle is completely removed and the space is spanned by a wall-plate acting as a beam supporting the nave roof and assisted by a single column placed at mid-span. The location of the column also supports one of the two principal trusses to the nave. The column has a stone corbel on each face; one to support the roof truss, two to support timber braces for the wall plate/beam and one to support the roof timbers of the aisle roof. This configuration of a corbel on each face of a column supporting timber work may well have sparked an idea that was to become a key feature of many of the Lamb's later churches as we will see later (Fig. 104).

The single column is therefore the only restriction to the sightlines to the pulpit and views to the chancel are greatly increased with only minimal supports to the chancel arch. In his seating layout, all the 113 seats are confined to the nave, where in fact the pews from the old Georgian church at Thirkleby are re-used. All seats are in front of the pulpit that this time is located to the south of the chancel arch rather than the north. This is possibly due to the location of the vestry on the south side of the chancel placed here by Lamb to make full use of the higher part of the sloping site. There is no interruption to sightlines due to the single column as the north aisle is given over solely to the font and for the first time there is a success rate of 100% visibility (Fig. 24).

The 'Latin-Quadrate cross' plan appears

Shortly after the completion of St Andrew's, Blubberhouses, Lamb was working on his third church for Lady Frankland Russell on another of her estates at Aldwark, North Yorkshire. St Stephen's, was built between 1851 and 1853 and is one of Lamb's most important churches (Fig. 11). He took on board the new trend of polychromy, inspired by William Butterfield at All Saints', Margaret Street, London, which was designed in 1849 and under construction at the time, creating a church of stone, brick and pebbles with coloured tile diaper patterning in the roof. The use of polychromy in all Lamb's churches will be discussed in greater detail later.

The single pier from Blubberhouses is used four times to create a large central space where the four columns divide the central space into nine smaller spaces. Lamb has effectively used a Quadrate cross (Fig. 55), but then superimposed a larger Latin cross to give a shorter arm for the chancel and a longer arm for the nave. The combination of these two crosses provides Lamb with a new form: the Latin cross giving the more traditional long nave and short chancel while the Quadrate cross at the crossing allows a larger centralised area nearer the pulpit. In the resultant form, the barriers between the crossing and the nave, and the nave and the transepts, are now more fluid and freely expressed. The chancel is Lamb's first where it is wider than it is long and is so small that it only has space for the altar. The pulpit and reading desk positions are brought forward from the chancel arch and into this new central space. There are short north and south transepts and these are based on the bay shapes he had used a few years earlier at Brompton Hospital Chapel, London. The tower is to the north-west and almost isolated from the church, joined to the main building only by a small circulation space with a door in each wall. This space provides a route for the congregation into the nave using two of the doors and for the vicar using the other two doors because the vestry is under the tower. The plan does not allow a separate vestry to be added to any part of the east end of the church successfully so Lamb used the last remaining available space. The nave width at Aldwark is again rather narrow at only 17ft and a simple double collar principal truss is used with a single king-post and arched braces below. The transepts use a similar roof design and as they are 2ft narrower the purlins are below those of the nave, allowing the lower purlins to meet those of their counterparts in the nave in a simple pin joint at the crossing. The four columns introduced have minimal effect on the viewing lines with only four seats in the north transept being obstructed due to the column nearest the pulpit (Figs 52, 53 and 54). All the other 123 seats situated under the crossing, nave and in the south transept have clear sightlines giving another high success rate at 97% (Fig. 25).

The new plan develops

Lamb began working on two larger versions of this new centralised design at about the same time at opposite ends of the country; his revised scheme of Christ Church, West Hartlepool, Co. Durham, built in 1852-4 and his rebuilding scheme of St Margaret, Leiston, Suffolk, 1853-4 (Figs. 12 and 13). Both churches take the Quadrate cross form with a larger Latin cross superimposed as used at Aldwark, but the four corner spaces of

the central nine spaces are now each large enough to form a serve as more than mere circulation spaces. They either become additional seating areas or spaces for the organ, vestry or baptistery. At West Hartlepool the central space is now 60ft 9in long by 62ft 4in wide compared to the 27ft long by 31ft wide at Aldwark, but at Leiston the east-west length becomes longer at 54ft 2in than the north-south width of 51ft 6in, giving more dominance to the principal axis of the church. Also for the first time, the four columns of the crossing form a perfect square compared with West Hartlepool and Aldwark where the width between columns across the nave was wider than that across the transepts giving more emphasis to the north-south axis.

Both churches also have short transepts to each side of the church, although they are square with gables rather than with a hipped polygonal-ended bay. The naves are longer and 28ft wide, finishing in a tall square tower centrally placed at the west end. At Leiston, this tower was the thirteenth-century original which had to be retained when the original very long and thin church was rebuilt and its location may have influenced Lamb's design at West Hartlepool. He also continued in both churches with short chancels, not large enough for any seating, with that at Leiston only 12ft 6in deep. However, the pulpit is brought out in front of the chancel arch and well into the central space, placing it adjacent to the north-east column of the four central columns, allowing the space between this and the chancel to have seating for a choir.

These large churches with wide naves and chancels and Lamb's central space called for a change in the way the spaces were roofed. The four corner spaces were large enough for their own roofs, rather than relying on a continuation of the transept and nave roofs at a lower pitch, which was all that was required for the smaller church at Aldwark. The nave roof at West Hartlepool is a larger version of the form at Aldwark with slight variations, using a single collar principal truss with single king-post and arched braces below, a form also used in the transepts. Leiston, however, despite the identical nave width, reverts to a hammer-beam roof as used at the Brompton Hospital Chapel. Lamb makes the central arch braces much larger and wider forcing the scissor truss higher up the roof so the rafters do not cross well below the collar but at the collar itself, where a king-post tie descends to meet the top of the braces. Lamb uses the scissor truss to a much more dramatic effect elsewhere in the church by forming two principal scissor trusses running diagonally from opposite columns at the crossing. This forms the valleys to the transept and nave roofs

causing eight timbers to cross at the same point over the centre of the crossing in a wonderful demonstration of carpentry (Fig. 156).

There are two surviving seating layouts for Leiston; one in the ICBS records and one reproduced in a contemporary review in *The Builder*.³³⁹ As seems to be the norm, the pew numbers and lengths given on the ICBS Form C totalling 835 seats do not relate to the unsigned and copied plan surviving in the ICBS records. This only gives a total of 655 sittings as the 135 seats in the crossing and 24 in the choir are omitted, but strangely a note below says that 'allowing for proportion for children will give the 690 required'. If the plan is taken in preference to the form and filled with all the full complement of people, then only 20 out of the 790 excluding the choir have a restricted view due solely to the two west-most columns; a success of 97.4% including 120 people who Lamb seated in a full-width gallery at the west end (Fig. 26). It did indeed meet the design objective which, as the review in *The Builder* for 1854 put it, was for the church 'to be commodious, and with little obstruction to the clear view inside'.

The viewing at West Hartlepool is more difficult to determine, as there are no surviving plans showing Lamb's original seating layout. A photograph taken from the west end looking east gives an indication of a seating layout from which it is possible, using pew sizes from his other churches, to produce a plan and see the viewing lines.³⁴⁰ With a gallery at the west end, there is giving a total of 880 seats excluding the choir of which only 35 would have had an obstructed view; a success of 96% (Fig. 27). There are a great number of similarities between these two churches with the central west tower, small chancel and west galleries, which is not surprising as Lamb was designing them both at virtually the same time. Each church was reviewed in the architectural press at the time, but while Leiston was described as 'plain, neat and characteristic' and with 'materials of construction so disposed as to prevent a monotonous appearance'³⁴¹, West Hartlepool was, in the opinion of *The Ecclesiologist*, 'one of those uncouth and grotesque combinations of incongruous architectural *tours de force*, which it requires the inartistic and withal presumptuous mind of Mr Lamb to conceive'.³⁴²

³³⁹ *Ibid.*, 2 September 1854, p. 462.

³⁴⁰ The photograph is displayed in the gallery of the church, which has now been deconsecrated and converted to the Hartlepool Art Gallery.

³⁴¹ *The Builder*, 2 September 1854, p. 462

³⁴² 'Architectural Room at the Royal Academy', *The Ecclesiologist*, 16 (1855), p. 150.

Variations on two themes

After ten years of planning over eight churches Lamb had by 1855 arrived at two basic church layouts. The first was a traditional Latin cross of nave and chancel with and without north and south transepts with no internal columns, developed from the churches at Healey, Blubberhouses and Brompton. The second was the Quadrate cross with Latin cross superimposed creating a large central space with four columns, developed from the churches at Prestwood, Thirkleby, and Aldwark and subsequently developed further at Leiston and West Hartlepool.

Lamb used the Latin cross form again in further churches in 1856 at St Jude's, Englefield Green, Surrey and at St Ninian, Castle Douglas, Dumfries in Scotland (Figs. 14 and 15). St Ninian's had no crossing or transept, but did have an organ recess on the south side of the chancel and a vestry with tower above on the north side. All seating was restricted to the nave and with the pulpit situated in front of the chancel arch to the south, all the seats had an uninterrupted view of the preacher (Fig. 28). St Jude's on the other hand, did have a small transept to the north, which housed a large rose window as a memorial to the eldest son of the vicar, Dr James Monsell, who died on his way to the Crimea, while to the south there was the base of the tower.³⁴³

A grant was requested from the ICBS, but no plan by Lamb has survived and to complicate matters further, Lamb returned in 1867 to enlarge the church by rebuilding and extending the north transept and changing the shape of the vestry. However, the pew lengths, positions and seat numbers are recorded on the society's Form B, and this time, unlike the church at Prestwood, it has been possible, with trial and error and some site investigations, to attempt a likely layout.³⁴⁴ All planned 320 sittings can be accommodated and only five seats in the south transept under the tower do not have a clear view of the preacher; a success rate of 98.4% (Figs. 29 and 30).

Lamb went on to develop his other form of the centralised plan with four columns at St Martin's, Gospel Oak, London, of 1862-65, where the patron was John Derby Allcroft

³⁴³ Richard Falkner, *Church and School in Englefield Green* (church guide printed by Brian Hooker, 1973), p. 6.

³⁴⁴ Form B, ICBS 5323, items 3 and 4.

(Fig. 16). Lamb moved away from arranging all the columns at the corners of a square reverting to a rectangle with the dominant axis north-south as he had at West Hartlepool. The chancel again has a polygonal east end and the vestry is also to the north-east. The tower moves from the west end to the north-west and the main entrance to the church moves with it. The nave is Lamb's widest so far at 32ft requiring him to use a hammer-beam construction as at Leiston, now with a complete scissor truss above the central braces and crossing at the collar due to the increased space available in this larger roof. The seating is highly successful with only 8 seats without a view of the preacher giving a 98.8% (Fig. 31). Finally, Lamb produced the ultimate centralised plan with no columns at St Mary, Bagby, North Yorkshire in 1862, (Fig. 17) providing a large 28ft square crossing, with no transepts, roofed with a pyramid and short nave giving a 100% visibility success (Figs. 32). This is the original seating plan by Lamb and not the one that was laid out. In the actual seating installed the nine rows in the central area were reduced to eight and the pulpit moved to the front and side of the chancel. Not only did this layout reduce the number of seats, but also give a restricted view to four of the seats in the nave (Fig. 33).

A successful dozen?

Looking at all the twelve churches (Table 6) it can be seen that of the 3,995 seats Lamb provided, only 134 had a restricted view thus giving a very high figure of 96.6% with a clear view of the preacher.³⁴⁵ There were also only 28 columns in total in these churches giving an average of only a little over two per church. During the twenty-year period Lamb had slowly and steadily refined his plans to provide churches with both a central space and minimal columns allowing as many of the congregation as possible to see and hear clearly the sermons preached from the pulpit.

³⁴⁵ This figure increases by only 0.5% to 97.2% if the chancel is excluded as some of Lamb's churches do have seats in their chancels.

Seating compared to circulation

But such a form did have its drawbacks. Computers are calculating machines and the computer models created for each church allow the internal areas of the different functions to be determined. The relationship between the areas of seating and the areas of circulation needed in order to be able to reach that seating can be assessed. Beginning with Healey, there is almost as much area required as circulation space as there is for the seating itself giving only a 53.1% seating area as a percentage of the total space, despite the church having no columns (Fig. 34). There was less circulation in Lamb's original seating layout, but this was not the one carried out (Fig. 35). At Prestwood, the success improves slightly to 58.2% even though Lamb has introduced four columns into the design (Fig 36). Again this was not Lamb's original seating layout although in this case there is little difference in the figures (Fig. 37). At the next churches of Blubberhouses and Brompton the seating areas drop below 50% to 48.1% and 49.4% respectively (Figs. 38 and 39). Thirkleby is even worse with 42.5% due to the seven columns (the greatest number for any single church), the large area inside the west door and the base to the tower (Fig. 40).

Lamb's next church was Aldwark where he created his large central seating space for the first time and ironically it has the least success of any of his churches at only 39.8% (Fig. 41). The reason for such a low figure is that the four outside spaces of Lamb's quadrate cross plan being 5 feet square, are too small for seating and have to be given over exclusively to circulation. As Lamb developed this space in his larger churches it became subsequently large enough to contain seating as demonstrated at Leiston where the seating area increases to the highest figure so far at 68.1% (Fig. 42). Englefield Green is a church without columns and the seating is again a high figure at 60.0% (Fig. 43) and at West Hartlepool the percentage is Lamb's largest at 69.5% (Fig. 44). At Castle Douglas the figure drops to Lamb's second lowest at 47.5%, which is surprising for such a small church, but with a narrow chancel arch width compared to the width of the nave, Lamb had to stop the seating short in order for these seats to maintain a view of the altar (Fig. 45).

At Bagby the small column-less church has a high seating area at 66.8% as Lamb just has a single central aisle (Fig. 46). The original Lamb seating layout has similar high values (Fig. 47). Finally at Gospel Oak, the figure drops to 51.3% due to the fact that there is no

seating in front of the chancel or to the spaces to the north or south. In fact almost a third of Lamb's central area contains no seats at all rather defeating the object (Fig. 48).

A summary of all the churches is included at Table 7 and shows that despite the emphasis on a large centralised space and a short nave, a high percentage of the floor area is required for circulation, something that is not obviously apparent from the plans. Over the twelve churches it works out that on average a little under half the internal space is not available for the congregation to sit in.

Comparative Plans

Now that all the twelve churches are available, comparative plans, that identify the areas of main seating, secondary seating, transepts, tower, porch and chancel, can be studied to see any development in their size, shape and relationship or any common themes (Figs. 49, 50 and 51). At first it seems that the only consistency is the fact that the chancel is in the usual place at the east end with the main seating space to its west; even Lamb had to follow this orthodoxy, while it seems he was quite content to move the position of the tower to virtually any compass point. Towers appear centrally, to the south, to the north and to the west, with the most popular position of the north-west in the four churches of Blubberhouses, Thirkleby, Aldwark and Gospel Oak.³⁴⁶ But a closer study reveals that there has been a steady change over the twenty years, from an entrance at the west end and a longer route through a rectangular preaching space, to a central entrance and a shorter processional route through a squarer central preaching space. One other common factor in this route is that there is always either a covered porch or a covered waiting space immediately outside the door to the nave. Such a private space provides time for people to prepare their attire before entering the main public space of the church, not only for the congregation, but also for the bride and her father at weddings.

Lamb had indeed followed the design statements in his lecture of 1857 in both the nine churches in the preceding twelve years and the three churches in the eight years that followed. Lamb had a fundamental belief that architecture was a progressive art and he saw any rules laid down for the planning of churches more as guidelines, allowing him

³⁴⁶ At his last church at St. Mary Magdalene, Addiscombe in 1868, which was unfinished at his death, he chose to place the tower in the south-east corner adjacent to the chancel wall.

freedom to experiment with the form without destroying the function in his desire to create new church forms.

Today's computer-aided design software provides a valuable tool to help understand Lamb's buildings; to see the success of the planning when creating a central preaching space for worship and maximising the number of seats with a view of the preacher.

5.3) Geometry and Proportion

During the surveys of the churches in this study, Lamb's use of whole numbers soon became apparent. Almost all of the dimensions in plan are multiples of 1 foot, with a view of multiples of 6 inches and the odd one of 3 inches. This made some of the churches easier to survey, as it was often possible to deduce what the measurement would be before it was taken. Lamb's simplicity of whole numbers also applied with the smaller measurements in the church with buttresses, string courses and plinths, which were usually in multiples of 3 inches. Buttresses, for example, commenced from 18 inches and continued with 21, 24, 27, 30, 33 and 36 inches in their widths and lengths in the churches.

The plan dimensions, which have already been discussed, show that Lamb used whole numbers with nave widths of 17', 24' and 28' with the half multiple again at 17' 6", 15' 6", and 27' 6". Nave lengths were also of whole feet with 40', 43' and 60' in some cases. Most of the chancels also had similar whole number widths and lengths with 13', 15' and 17' appearing quite regularly and depths of 8', 20', 22', 27' and 25' (Figs. 56 to 70).

In Lamb's lecture at the Architectural Exhibition in June 1860, entitled *Suggestions on Architectural Composition* he had a great deal to say on the use of proportion. With these 12 churches now surveyed it is possible to look at them in detail, with reference to the lecture, to see how Lamb set them out. He was concerned that 'proportion is too frequently considered a fixed standard or type of art; it should rather be considered a relative quality, by which we regulate the numerous details of the composition'³⁴⁷ and 'proportion must be a relative, quality as it must have a direct reference to some other thing'. He went on further to say that 'proportion, we have been taught to believe to be also a fixed standard in the dimension of rooms, and that when the measure is many breadths in length and height, that such proportions are essential to beauty in architecture. But are these the only proportions that we must look to for a satisfactory and aesthetic composition?'³⁴⁸

³⁴⁷ E. B. Lamb, *Suggestions on Architectural Composition*, lecture delivered at the Architectural Exhibition May 1860 and published in *The Building News*, 1st June 1860, p. 440.

³⁴⁸ *Ibid.*, p.440.

Aldwark

Lamb's church at Aldwark consists of a great number of whole number dimensions with only the nave length being a multiple of 6 inches. The church is small and simple and the first instance of his central preaching space. It provides the opportunity to try to investigate how Lamb arrived at these dimensions and proportions and see if there is any underlying geometry in the setting out of this building.

Studying the plan shows that it is quite possible to set out the whole of this church in 11 steps. Step 1 is to use four squares, each of 17 feet in length, with one placed centrally for the central space and one joining each side to the north, south and east (Fig. 71). The second step is to draw an octagon within each of these latter three squares, with those to the north and south providing the bay ends to the transepts (Fig. 72). Step 3 requires the setting out of a 7 foot square at the apex of the remaining octagon where it meets the north and south chancel walls. These squares are then mirrored along the vertical axis of the central space (Fig. 73). In step 4, the placing of 2 foot squares in the corner of the intersection of the 7 foot squares and the original central 17 foot square, provides the four central columns (Fig. 74).

In step 5, these 2 foot squares, when taken out of the 7 foot squares, leave 5 foot squares, which corresponds exactly to the outside circulation space Lamb provides around the columns (Fig. 75). In step 6, a similar 5 foot square and 7 foot square usage generates the porch (Fig. 76). An 11 foot square and four 3 foot squares adjacent to the porch set out the base of the tower. However, it is not possible for any of this geometry to work exactly and requires further investigation. This may be due to a fault in the geometry or in the setting out of the building on site.

In step 7, a 13 foot square can be placed between the two outside corners of the central columns to set out the internal faces of each transept (Fig. 77). In step 8, a similar 13 foot square can be placed centrally in the chancel to set out the internal face of the chancel walls (Fig. 78). Step 9, first requires the placing of a 7 foot square centrally on the 17 foot square for the chancel walls and then a 2 foot square in the corner. This sets out the width of the chancel arch as well as its thickness (Fig. 79). Step 10 is the setting out of the nave with its strange dimension of 23' 6"; the only area where it is not a multiple of a whole foot

(Fig. 80). The nave width has already been determined by the original central 17 foot square, but the length is difficult to ascertain using similar geometry used in the rest of the church.

Orthogons

It is only possible to determine the length of the nave by looking at the geometry that Lamb has produced in the church so far, in relation to his use of orthogons. An orthogon is a rectangular figure, or four-sided polygon, where there are two sets of parallel edges. The rectangles referred to as orthogons are all constructed from a square using a compass and ruler.

There are twelve orthogons, which can be constructed using this technique. The most common of these is the Auron, from the word 'aur', meaning gold and it is more commonly known as the Golden Section. The Auron is constructed by first drawing a square and then taking the distance from the mid point of the lower side as a baseline, to the top right corner of the square as the radius for an arc drawn clockwise to meet the baseline. The distance along the baseline from this point to the bottom left corner of the original square becomes the longer length of the rectangle with the original length of the square as the shorter length of the orthogon. The ratio between the two sides is therefore 1 to $1/2 +$ the square root of $5/2$ or 1:1.618. This number is referred to as Phi and rather than being arrived at by geometry it can also be determined by pure mathematics using the Fibonacci series.

Leonardo Fibonacci discovered a simple numerical series by starting with 0 and 1 and making each new number the sum of the two before it. Thus the series begins 0,1,1,2,3,5,8,13,21,34,..... and continues indefinitely. It is then the ratio of each successive pair of numbers, which approximates to Phi, becoming more accurate the higher the number pairs used in the series.³⁴⁹

The second most common orthogon is the Diagon, where the rectangle is constructed similarly to the above except that the radius of the arc is the diagonal of the square and

³⁴⁹ Gary Meisner, PhiPoint Solutions, www.goldennumber.net, last accessed 15th August 2010.

begins at the bottom left hand corner. The resultant ratio is then 1 to the square root of 2 or 1:1.414. There are other othogons, with ratios nearer 1:1, such as the Quadriagon with 1:1.207 and the Hemidiagon with a ratio of 1:1.118.³⁵⁰

The Golden Section has been found in both the plan and the elevation of The Parthenon, a temple to the goddess Athena, at The Acropolis in Greece, built around 440-430BC, although there are no surviving documents indicating that this use was intended. The main west facade of Notre Dame Cathedral in Paris, built between 1163 and 1250, also shows the width and position of the two towers and the height and position of the upper arcade are based on the Golden Section.

Studying the plan of Aldwark using the setting out geometry described above for the presence of any Golden Section or Diagon, produces some interesting results. The ratio of the length of the outside width of the chancel to the outside depth including the chancel arch wall is that of the Diagon. Two further Diagon can be found in each transept, with the ratio of the width of the transept to the depth from the nave to the outside wall. If a Diagon is drawn to include its longer length as the outside width of the nave, starting at the east face of the west-most columns it closely matches the outside wall of the porch (Fig. 80). Step 10 shows that if another identical Diagon is placed alongside it, the outside face of the west end wall is located and with a 2 foot thick wall, used in the rest of the church, the 23' 6" internal nave length is the result.

If this possible geometric setting out has produced the presence of at least five Diagon, then are there any Golden Sections as well? There are in fact at least three, with the most obvious being the ratio of the inside wall lengths of the chancel of 8 feet to 13 feet, being 1:1.625 or only 7 thousandths different from that of the Golden Section. If the exact ratio were applied this difference would only equate to half an inch in the width of 13 feet. A second Golden Section can be found in the width of the crossing between the inside faces of the columns related to the depth between the outside faces of the columns. Again this ratio of 13 feet to 21 feet at 1:1.615 is not exactly correct, but is closer to Phi with only 3 thousands difference. Finally, a golden section can be found with the length of the nave and crossing to the width of the nave and porch/transepts, with the 45' 6" length and 28

³⁵⁰ Ibid.,

producing a ratio of 1:1.625, exactly the same as that of the chancel (Fig. 81).

Orthogons in Lamb's other churches

There are no surviving drawings by Lamb for Aldwark showing his intended setting out or measurements, so it may never be known if the presence of the Diagon and Golden Section is intentional or an inherent property of the setting out geometry. It is still worthwhile checking to see if any of Lamb's other churches contain orthogons, with particular relation to the chancel. Beginning at Healey, the Diagon fits almost exactly inside the internal walls excluding the chancel arch. At Prestwood, the Diagon is the same although there are far more intriguing reasons for the setting out of this church as will be shown later. At Brompton, the Diagon fits almost exactly to the side outside walls including the chancel arch and at Blubberhouses the Diagon fits almost exactly inside the internal walls including the chancel arch. Leiston can fit a Diagon roughly inside the chancel walls including the chancel arch and at Castle Douglas the Diagon fits almost exactly inside the internal walls excluding the chancel arch. Bagby, despite being a rebuilding and therefore having a fixed chancel width of 13' 8", the Diagon does fit to the inside walls excluding the chancel arch and may have determined the depth of the chancel from the fixed east wall. There surely seems no other reason why Lamb chooses to place the new 28' square central area to give a chancel depth of 11' 4". Both West Hartlepool and Gospel Oak have octagonal chancels and at Thirkleby and Englefield Green neither orthogon fits. Thirkleby is a new church on existing foundations which were determined by the Frankland vault below and may have limited Lamb's freedom of design. Englefield Green on the other hand, seems to have an entirely different setting out as will be shown later.

Prestwood

The lack of surviving documents for Aldwark means that it cannot be certain if the setting out proposed above took place, but the plan for Prestwood church, signed by Lamb, has survived and includes key measurements. If it appears that Lamb did have a principle for the setting out of churches that he used at Aldwark, such a principle can be tested at Prestwood against the known dimensions to see if it is valid. As with Aldwark, it is possible to set out the church at Prestwood in 10 steps. Step 1 begins in the same way with

two squares of 17 feet long sides placed one above each other. The top and bottom sides then set out the internal face of the walls to the south and north aisles (Fig. 82). Step 2 is to position two rectangles each 17 feet by 13 feet next to each other with the centre of their touching sides located at the centre of the two touching sides of the first two squares. The corners of the east rectangle sets out all of the four columns in the church (Fig. 83). Step 3 places another two rectangles of 17 feet by 3 feet on either side of the previous two rectangles. The outermost sides to the east and west, now set out the length of the nave (Fig. 84).

In step 4, a 7 foot 6 inch by 8 foot 6 inch rectangle, located at each corner intersection of the first two 17 foot squares with the second two 17 foot by 13 feet rectangles, completes the corners to the north and south aisles (Fig. 85). Step 5 sets out the chancel by arranging a group of four identical, 11 foot by 7 foot rectangles on the centre line of the church and set against the side of the 17 foot by 3 foot rectangle (Fig. 86). Two smaller rectangles of 7 feet by 3 feet at the west end of the nave in step 6, set out the depth of the short nave wall return (Fig. 87). In step 7, exactly the same arrangement of four rectangles that were used for the chancel are placed from the end of the short nave wall extending west to set out the west end of the nave containing the font (Fig. 88).

Step 8 uses two 7 foot squares on the central line of the preceding group of four rectangles to set out the porch at the west end and another in the north east corner of the north aisle with the chancel, offset by the 2 foot wall thickness, to create the vestry (Fig. 89). Step 9 begins with an 11 foot by 3 foot rectangle placed centrally at the west end of the nave which sets out the width of the nave arch as well as its thickness. This leaves the internal walls of the font area, which is a group of 7 foot squares. At the east end, an 11 foot by 2 foot rectangle sets out the width of the chancel arch and its thickness. There is then a use of four 7 foot by 5 foot rectangles where two each set out the internal walls of the porch and the vestry, while the remaining two set out the depth of the sanctuary (Fig. 90). As step 9 sets out the width of a number of the walls at 2 feet, step 10 is adding 2 foot thick walls around all the outside of all the existing geometry (Fig. 91).

Comparing the complete church to the original drawing by Lamb, shows it relates to the 38ft, 36ft, 14ft, 20ft and 14ft measurements exactly. But there are areas where some of the walls are out by 2 inches. This is because the geometry setting out has been based on a 2

foot wall thickness, as Lamb used at Aldwark, whereas at Prestwood it is noted as only being 1' 10" i.e. 2 inches less. The other area where walls do not line up is in the width of the porch, which is wider at 8 feet again due to the change in the wall thickness and the requirement of the porch doors to be central. If the setting out geometry is adjusted to take into account the thinner wall thickness, then the above setting out geometry sets out every wall and column in the church perfectly.

It is surprising that Lamb reduced the wall thickness, especially as the church was seeking a grant from the ICBS. Their requirements for wall thicknesses had been revised only five years earlier in 1842, where the wall thickness for 'brick, faced with flint or stone' for external walls 'less than twenty feet high and carrying a roof not exceeding 20' span' should be '2' 0"' ³⁵¹. Lamb had also indicated 1' 10" on the ICBS Form B, setting out details of the church, however the ICBS assessing architects, when they made their comments, were only concerned with the low roof pitch of the aisles and the lack of measures to deal with condensation on the windows. They possibly considered that the narrower width of 15' 6" and the three buttresses on each side of the church were sufficient.³⁵²

Prime number use?

All the figures used in the setting out of Prestwood listed in ascending order gives 2, 3, 5, 7, 11, 13 and 17 and returning to Aldwark, all the numbers used here in ascending order are also the same set of 2, 3, 5, 7, 11, 13 and 17. They are all prime numbers, meaning that they cannot be divided by any other whole number. Lamb had said in his lecture in 1860 that 'every single design is governed by the principles of harmony which principles are universal' ³⁵³ and there is nothing more universal or harmonious than the sequence of prime numbers.

In Lamb's other churches there are also many occurrences of prime numbers in the measurements on plan. The internal base of the tower at Thirkleby, for example is 11 foot square and the chancel width at Blubberhouses 13 feet, but nearly all other measurements

³⁵¹ Incorporated Society for Promoting the Enlargement, Building and Repairing of Churches and Chapels. Suggestions and Instructions (As amended, May 1842), Point 7 Walls, published in *The Ecclesiologist*, No. X., July 1842, p. 152.

³⁵² Incorporated Church Building Society records, Lambeth Palace, London, ICBS 03941.

³⁵³ E. B. Lamb, *Suggestions on Architectural Composition*, lecture delivered at the Architectural Exhibition May 1860 and published in *The Building News*, 1st June 1860, p. 441.

are not primes. Some churches such as Healey have no prime numbers at all in the measurements and it is difficult to establish any prime numbers in the larger and more complex churches at West Hartlepool, Leiston and Gospel Oak or indeed any possible system of setting out.

Castle Douglas

At Castle Douglas, prime numbers can be found in the 7 foot internal dimensions of the porch width and length and in the length of the nave, where there is Lamb's largest prime number found so far at 43 feet (Fig. 66). The width, however, at 24 feet is not a prime and neither are any dimensions in the other spaces of chancel, vestry or organ recess. The nave of this church may well have been set out by the roof construction. There are five bays with six principal trusses at exactly 8' centres. The end two trusses are each set 1' 6" from their respective walls, thus giving the 43' nave and the fact that this is a prime maybe a red herring. There is also a lower and upper purlin each side of the roof and with the ridge and wall plates included they are therefore set out at 4' centres across the nave width. The roof can then be set out using a straightforward 8' by 4' grid.

The chancel roof consists of three bays with four principal trusses at 6' 6" centres with the end trusses set 1' 3" from their walls giving the 22' chancel length. The two purlins on each side are also similarly placed and therefore set out at 2' 6" centres across the 15' width. The roof can be set out with a 6' 6" by 2' 6" grid. In the plan, all the internal wall faces for the two main spaces of chancel and nave are now set and the remaining rooms added with prime numbers for the porch, whole foot numbers for the organ recess and half foot numbers for the vestry.

Englefield Green

The plan at Lamb's original church at Englefield Green, prior to the later extension in 1867, has only two prime numbers with the 5' depth of the porch and the 19' width of the north transept (Fig. 67). There is evidence that Lamb used 12' as a length in determining the plan. The base of the tower has an internal dimension of 12' square and the four principal trusses are set out at 12' centres. The chancel width is 16' or 1.5 times 12' and the nave width is 24' or 2 times 12'. The chancel length, including the chancel arch, is 29' 3"

and as the nave width is 1.5 times wider than the chancel, using the same factor would give a nave length of 43' 10". The actual nave length is longer at 68' 2", but this includes the crossing, which would work out as being 24' 4" i.e. the difference between the two figures. With a width the same as the nave of 24' this space is very close to 2 times 12'. There are upper and lower purlins in the nave roof and with the wallplate and the ridge gives a setting out of 4' centres, which is identical to that found at Castle Douglas. Both churches were being designed in 1856 and it seems that Lamb may at this time be setting out these churches using a 4' grid, although there are no surviving records yet discovered for either church to confirm this hypothesis.

Summary

In his 1860 lecture quoted above, Lamb went on to say that 'Rules, I have before stated, must give place to principles, and a clear conception of harmonious arrangement.'³⁵⁴ At Aldwark and Prestwood there may have been a use of prime numbers and at Castle Douglas and Englefield Green a use of a 4' module. Each conform to the 'principle' of a system that determines how a plan should be laid out, rather than a 'rule' that any particular system of prime numbers, modules or othogons should be used thus concurring with Lamb's architectural objectives. This all seems quite possible until Lamb continues in his lecture with his comments on 'the ingenious modes of ascertaining the system of composition which produced those marvellous works the ecclesiastical edifices of the Middle Ages'³⁵⁵ based on a combination and intersection of a series of triangles, and might apply to two or three structures, but rarely fits more than that number'.³⁵⁶ Instead he believed that the works were the 'result of an intuitive and artistic inspiration, - in the first instance roughly sketched out, then reduced to the principles of harmony in form, colour, material, and construction'.³⁵⁷ And as if to make the point even clearer that he 'would rather take this system of composition with strict analysis, than all the piling of triangles one above another according to the theories most alluded to'.³⁵⁸

³⁵⁴ Ibid., p.441.

³⁵⁵ Ibid., p.441.

³⁵⁶ Ibid., p.441.

³⁵⁷ Ibid., p.441.

³⁵⁸ Ibid., p.441.

Lamb was also not convinced of 'the system of composition founded upon squares' as his 'objections, however ill-founded, apply equally to that system' and were 'but expedients - helps to composition, and lame helps too' and that 'they fetter the mind, and cramp the energies'.³⁵⁹

Are we therefore to understand that Lamb did not use any system at all when setting out his churches? Did he in fact just start with intuition and artistic inspiration 'roughly sketched out' and then simply rationalize the plan later to whole feet numbers? Was his artistic eye so tuned that the spaces he created conformed to the Golden Section and Diagon orthogons almost exactly? It seems unlikely, but it is possible. Without surviving drawings it may never be known and as has been noted by Wittkower in his study of proportion in architecture, 'that in trying to prove that a system of proportion has been deliberately applied by a painter, a sculptor or an architect, one is easily misled into finding those ratios which one sets out to find'.³⁶⁰ Wittkower goes on to say that 'if we want to avoid the pitfall of useless speculation we must look for unmistakable guidance by the artists themselves'.³⁶¹ In which case Lamb did not use any system. The setting out of the church at Prestwood may seem over complicated and difficult to imagine being carried out by Lamb, but the rectangles are there in the plan. The setting out at Aldwark is a lot clearer and one strong pointer to such a system is the setting out of the bays as stated in step 2 above (Fig. 72). There is no reason why the length of the transepts are the length they are. They could have been shorter or longer, but instead they are on the exact line of the octagons within the square. Lamb does seem to have been following a system in the late 1840s and early 1850s based on prime numbers and then a system based on a grid in 1856 even though for some reason he chooses not to admit it in his subsequent lecture in 1860.

³⁵⁹ Ibid., p.441.

³⁶⁰ Rudolf Wittkower, *Architectural Principles in the Age of Humanism*, Academy Editions, 1998, p. 120.

³⁶¹ Ibid., p. 120.

5.4 Roof Types and Development

Crown Post roofs

Lamb was always looking to the past for inspiration, from his mediaeval forebears, cathedrals, barns and houses which he had studied when articulated to Cottingham and continued to study or 'antiquarianising' as he called it, for the whole of his life.

Blubberhouses is the first church where he really experimented with a new roof form, but one that can be shown to be based on a traditional design. One of the most traditional roof designs is that of a Crown Post roof that might be expected in a mediaeval open hall. Such designs were common in the 13th century and examples still exist in places such as Place House, Ware ³⁶², circa 1295 a two-bay open hall with crown post and Little Chesterfield Manor house, Essex circa 1250 ³⁶³.

Using colour allows the easy identification of the elements which make up the roof. Reds for rafters. Browns for tie beams. Greens for braces. Blues for purlins and plates. (Fig. 92). The crown post roof design consisted of principle trusses made from two rafters joined at the ridge and tied together with the tie beam at the bottom at wall plate level. A collar was used at high level between the two rafters and then a crown post was placed in the centre of the roof between the collar and the tie beam it sat on. Diagonal braces were added at the top of the crown post either side between the crown post and the collar. A collar purlin ran at right angles to the collar on top of the crown post tying the principal trusses together while further braces between the collar purlin and the crown post helped stop the roof from racking.

One of the variations to this roof, to allow the removal of the tie beam at the bottom, and thus create a more open space, was the scissor truss. With reference to figure 93, the principal rafter in red and the collar in brown are still present but the removal of the tie beam requires the addition of two other braces, shown in blue, within the truss running diagonally, and crossing each other in a half a lap joint above the collar, forming the characteristic scissor shape.

³⁶² Cecil Hewitt, *English Historic Carpentry*, Phillimore and Company Limited, 1980, p. 122.

³⁶³ *Ibid.*, p. 132.

There are many examples of scissors truss roofs in the cathedrals of England. Coggeshall Abbey in the 'chapel outside the walls'³⁶⁴, 1219-20 has a scissor truss roof, as does the roof of the North East transept at Salisbury Cathedral, 1237³⁶⁵. Later examples can be found in the North transept, Westminster Abbey, 1269³⁶⁶ and in the south-west of England in the nave and transept roofs of Exeter Cathedral circa 1325.³⁶⁷ All these examples are similar to the scissor truss design shown in figure 93 where the collar in brown is below the crossing point of the scissors just shown in blue.

Lamb uses this design at Blubberhouses but with a variation. He has the wall plate and the principal rafters, which are linked with the collar. Then there is the scissor truss, which crosses below the level of the collar rather than above and the members do not continue to meet the principal rafter. Normally the scissor truss sits within the principal rafter, but here Lamb playfully sits them on the scissor truss. By a simple repositioning of just these two timbers out of only five Lamb has already created a new roof design (Fig. 94).

But Lamb goes further. Additionally a vertical tie, in the position of the crown post, is taken from the ridge junction down to the collar and even extended below to form a king post. This is difficult to achieve in the same plane as the truss and so is two members bolted together through the main timbers. The scissor truss is also bolted to the collar with the aid of plates (Fig. 95). To help support the rafters, there is a purlin that runs between the trusses, supported by two similar ties. These are again bolted through the principal rafter and the scissor truss, and also descend below (Fig. 96). To brace the roof laterally there are timbers between these ties and the purlin. Although appearing as a single curve, each is actually made from three separate pieces. This does not only aid in construction, but also allows each to be carved from straight timbers as we shall see in more detail later (Fig. 97). To brace the truss, more for visual than structural reasons, two further timbers descend from the principal rafter near the wall plate on the face of the wall, and are bolted to a brace that arches up to meet the timbers below the purlin. Again this curved element is actually made from two pieces carved from straight timbers (Fig. 98). The lower ties sit on a corbel, and the bottom of the middle and upper ties are finished with small timbers which simulate corbels (Fig. 99). Using the same colour references on the completed truss shows

³⁶⁴ Ibid., p. 90.

³⁶⁵ Ibid., p. 91.

³⁶⁶ Ibid., p. 99.

³⁶⁷ Ibid., p. 150.

that all the usual members required for a roof are present (Figs. 100 and 101).

Lamb uses two of these trusses in the nave to form a unique roof, but one, which was fundamentally based on the traditional scissor truss design (Figs. 102 to 105 and 119). It can be argued that such timber work is over complicated and excessive considering the fact that the nave is only 17 feet wide. However the roof finish is stone with some slabs over 1 inch thick and the church is in an area of the country with heavy winter snowfalls, Lamb may well have simply chosen to be overcautious in his design.

King Post roofs

One other type of traditional roof construction is the king post roof mainly used in mediaeval Yorkshire. This roof consists of a central post, called the king post, which sits centrally on the tie beam in much the same way that the crown post does, but in this case rises right up to support the ridge of the roof. From a structural point of view the king post prevents the tie beam from sagging and carpenters were well aware of this as certain mortise and tenon joints between the king post and the tie beam are known to have been formed in a dove-tail shape. Once the king post is in place with a wedge it is impossible to withdraw the tenon thus producing a strong solid joint.

In the Blubberhouses truss design, it was shown that Lamb introduced the king post in a modified form, although there is no tie beam present. Lamb's king post effectively performs the same job by linking the centre of the collar with the ridge of the roof thus preventing the collar from sagging. This high king post is also a traditional form and called 'a collar-king-post roof' and an example can be found in the new roof over the south main transept at York Minster (1770-80)³⁶⁸. The replacement roof had to cover a medieval timber 'vault' below and needed no tie beam and a high collar in order to clear the apex of the 'vault' below. Such a centrally placed vertical high collar king post occurs in many of Lamb's other roofs as it allows a clear place for an arched brace.

³⁶⁸ Cecil Hewett, *English Cathedral and Monastic Carpentry*, Phillimore and Company Limited, Oxford, 1985, p. 77.

At St Stephen's Church, Aldwark, Lamb uses a similar roof construction to form one of the simplest and most common of his roof truss construction (Figs. 106 and 122). Lamb again begins with a principal rafter on either side of the roof tied together part of the way from the ridge by a collar. Unlike Blubberhouses there is not a single collar in the same plane as the principal rafters with mortise and tenon joints each end, but two collars, one either side of the principal rafters and bolted through them. At the ridge, the two principal rafters do not meet directly but are separated by a seven sided large piece of timber in the same plane, from which descends as a king post down to the collar. The king post is then able to fit comfortably between the two collar pieces. At the base of the principal rafters, the truss sits on the wall plate and this completes all that is required structurally for this roof truss.

However, Lamb adds a curved brace which extends from the top of a corbel, halfway down the nave wall, and continues in a Gothic curve to meet at the junction of the collar with the king post. Again because this is in the same plane as the principal rafters, it can be sandwiched between the two collar pieces. At the lower end, just as has occurred at Blubberhouses, two vertical ties descend from the wall plate down the face of the wall to the top of the corbel, one either side of the principal rafters and are again bolted through at the lower and higher level. Lamb adds all these elements of two curved braces, two stone corbels and four wall-face vertical ties for purely visual reasons. They give the impression that they are holding up the roof, but in fact are purely unnecessary. Effectively almost 50% of the timber by volume in each principal truss is redundant.

There are two through purlins in the nave roof positioned at one third and two third distances along the principal rafter which has a birds-mouth joint to the latter (Fig. 169). There are no curved braces along the length of the nave and any racking of the roof is prevented by the covering of all the principal and common rafters of the roof with continuous 1 inch thick boarding.

Hammer beam roofs

As Lamb's churches grew larger his roofs needed to be more complex and Lamb therefore drew on the method used by the medieval builders in such situations and drew on the hammer beam roof construction for inspiration.

In any hammer beam roof, instead of the tie beam running the full width of the building to be spanned, the centre part is removed leaving two short horizontal beams protruding from the foot of the principal rafter at either side called hammer beams. These hammer beams are supported by braces from below and the weight of the principal rafters and roof from above. At the end of the hammer beam is a vertical post called the hammer post and now the effective span of the roof is between these posts and is therefore much less than the full width of the building.

If the brace and hammer beam is repeated higher up the roof, it is referred to as a double hammer beam roof. In a traditional single hammer beam roof at the junction of the top of the hammer posts with the principal rafter, a collar usually joins the two principal rafters on either side of the roof. In some cases, such as at Westminster Hall, this collar is like a high-level tie beam and has a king post between its centre and the underside of the ridge. A curved brace, similar to that supporting the hammer beam, starts at the base of the hammer post and curves up to the centre of the underside of the collar to meet its opposite number.

The hammer beam roof originated as a variation of the aisled barn and was predominantly used in secular buildings of high status such as Great Halls and barns. The most famous is probably that of the Great Hall at Westminster built between 1395 and 1400. But the hammer beam roof was also used in ecclesiastical buildings such as Bath Abbey between 1501 and 1539³⁶⁹, St Nicholas at Castle Hedingham before 1535³⁷⁰ and St Mary is Gestingthorpe in 1489.³⁷¹

In a traditional hammer beam roof the two braces form an important part of the roof construction. The upper brace is an important tie to help counteract the force from the weight of the roof pushing out a horizontal force on the walls. If the upper brace should fail, the whole of the weight of the roof is forced on to the principle rafter only which then causes the weak point at the junction of the top of the hammer post with the principal rafter to fail. The upper brace effectively acts as a tie between the end of the hammer beam's junction with the hammer post at the lower end and the centre of the collar at the upper end.

³⁶⁹ Ibid., p. 60.

³⁷⁰ Cecil Hewitt, *Church Carpentry*, Phillimore and Company Limited, 1982, p. 100.

³⁷¹ Ibid., p. 106.

Lamb used the hammer beam roof as the starting point for his roof construction for several of his churches, the first of which was the Brompton Hospital Chapel, 1849.

A first inspection the roof at Brompton seems to suggest that Lamb used a hammer beam roof which he then varied in his own ubiquitous manner. But a more detailed investigation reveals that the roof is primarily based on a scissor truss construction with elaborate additions giving the impression of a hammer beam roof (Figs. 107 and 120).

Lamb begins the roof with the two principal rafters joined at the ridge and then includes a scissor truss starting at the junction of the principal rafter with the wall plate at the lower end and meeting two thirds of the way up on the opposite principal rafter, with the two members crossing in the traditional half lap joint. To create the illusion of a hammer beam roof, Lamb now includes a hammer beam protruding from the junction of the wall plate with the principal rafter and scissor truss supported by a curved arched brace resting on a stone corbel on the nave wall. A vertical tie runs down the face of the wall between the hammer beam and the underside of the scissor truss. The hammer post is now included, but rather than being one piece it is actually made from two pieces placed either side of the hammer beam rising to the principal rafter at the top and crossing the scissor beam between. In most hammer beam roofs it is the hammer beam that protrudes horizontally beyond the hammer post and is often finished with elaborate carvings such as shields, animals or as at Westminster Hall, angels. However, Lamb chooses to extend his double hammer post vertically down past the hammer beam and finish with an elaborate square pendant timber carving.

The top of this pendant moulding is then used as a base for the upper curved brace which curves up to meet its opposite number, not at the centre of a collar, but at just below the centre of the crossing point of the scissor truss. The collar, if there is indeed any such timber in this roof construction, is hidden above a horizontal false ceiling at the level where the top of the scissor truss members meet the principal rafters.

Lamb's version of the hammer beam roof truss contains the four required components of the hammer beam, hammer post and both lower and upper braces and the illusion is complete.

The hammer beam post is on the line of the lower purlin in the roof and a curved brace on either side of the hammer post curve up from the top of the pendant base to the underside of the purlin to help prevent racking of the roof. In this way the construction here is identical to that used at Blubberhouses and it seems that the hammer post is in effect more of a vertical tie hanging down from the scissor truss to support the base for the upper curved brace and the two longitudinal braces. To finish the illusion of the whole roof, areas between the timbers in the principal truss are filled with fretwork, as is the case in most traditional hammer beam roofs, although here Lamb limits the extent of the fretwork only to the lower areas of the roof above all the lower braces. Lamb thus creates an entirely new form by superimposing two traditional ones and was described rather unfavourably by *The Ecclesiologist* as 'a chaos of carpentry so near our heads as we have seldom seen'.³⁷² Far from being disordered and confused the roof at Brompton is a deliberate attempt to create a variation on traditional roof design: to imitate by emulating.

Summary of main roof construction types

A detailed look at the churches at Blubberhouses, Aldwark and Brompton has revealed the main three different types of roof construction Lamb included. Although he used the traditional roof constructions of scissor truss, king post, and hammer beam, Lamb only used them as a starting point in order to produce his own variations. The scissor truss was used at Blubberhouses, but in such a way that is not apparent from a first impression or inspection that this form is present. At Aldwark, Lamb used the king post, but again so differently from the traditional form it is transformed into a new one. Finally at Brompton, although it appears a hammer beam type, it is actually a scissor truss with additional variations to create the illusion of a hammer beam roof.

Now that these three churches have been studied in depth, a more detailed breakdown of the individual roof elements in Lamb's roof construction is now possible. The elements in the roof can be broken down to include scissor braces, principal rafter pairs, king posts, hammer beams and hammer posts, collars and braces. Further elements can then also be included such as the wall faced vertical ties, purlins, fretwork, and the longitudinal purlin braces. Lamb's treatment of rafters, whether they be common, butt common, no common

³⁷² 'New Churches', *The Ecclesiologist*, No. LXXX, October, 1850, 195.

rafters at all or a combined grid of common rafters and purlins can also be looked at. The treatment of the roof finish on the inside including, plaster or boarding and the treatment of the exterior surface of slates, tiles or stone can also be investigated.

A table of the roof construction types for all the 12 churches in this study across all 16 roof elements has been completed. Table 8. A first inspection of a Lamb church always gives the impression that the roof construction of the church is very similar to that at any another, but even a casual glance at the table shows quite clearly that this is not the case. The only common element at every church is the inclusion of principal rafter pairs. Even Lamb found it impossible to deviate from such an essential element of the construction of a roof truss.

Variations on the Scissor Truss roof

Healey

At the church in Healey, Lamb only had to span a width of 17 foot 6 inches and so did not require a complicated roof (Figs. 108, 117 and 172). Lamb uses the truss in its simple form with the scissor brace starting at the base of the junction of the principal rafter with the wall plate and rising up to meet at just over two thirds height of the opposite principal rafter. In this way, Lamb's design is similar to that at Brompton, although here the joining of the principal rafters with a single collar is clearly visible as there is no ceiling. An arched brace rising from a stone corbel midway up the nave wall, arches up to meet its opposite number just below the half lap of the scissor brace crossing. The wall faced vertical ties between the corbel and the wall plate are curved on the inner side facing the nave and take the same shape as the curved brace, thus completely filling the gap between the brace and the wall. A similar piece of timber continues above following the curve of the arched brace, to fill the gap between the brace and the scissor truss. All of the other spaces between the roof timbers above the scissor brace are filled with fretwork.

The effect of the large areas of timber near the braces gives the visual effect of a roof resembling a cruck construction rather than a scissor truss. A true cruck frame truss consists of two long curved timbers rising from ground level, joined at the ridge and with a

collar between. Earliest examples are from around 1200³⁷³ and numerous houses and barns from crucks in the fourteenth and fifteenth centuries can still be found in the North, South, West and the Midlands of England and in all parts of Wales. For example the medieval hall at 86, Main Street, Queniborough, Leicestershire is a cruck frame dated to 1430³⁷⁴ and that of Hallam Barn, near Ogbourne St. John, Wiltshire is fourteenth century³⁷⁵. The largest example of a cruck frame at over 150 feet can be found at Leigh Court Barn, Leigh Sinton, Worcestershire, built for Pershore Abbey in 1344³⁷⁶. Here the cruck frame also has the additional braces between the cruck and the underside of the collar giving overall the impression on an arch.

In some examples of cruck frame construction there can be found a 'cruck spur', which is a link between the wall post and the outside face of the cruck. In Lamb's truss at Healey there is no such member due to the extra width of the wall face vertical tie performing the same role. There is however, an additional strut at a higher level joining the midpoint on the principle rafter between the wall plate and the collar and the scissor truss. Lamb has in effect added what can only be described as a 'scissor spur'. Lamb has created at Healy what appears to be an entirely new form of roof construction by using a combination of traditional cruck and a scissor truss forms.

Prestwood

Another church where Lamb used a scissor truss as the principal form of construction was at Prestwood, where only a width of 15' 6" needed to be spanned (Figs. 109 and 118). Lamb achieved this in his most simple roof construction beginning with a scissor truss from the junction of the principal rafter with the wall plate rising to cross the opposite number in a simple half lap joint to a point this time midway on the opposite principle rafter. Again there is a single collar between the two at the upper connection of the scissor brace members. As in his previous churches an arched brace begins on a stone corbel on the nave wall but at a higher level due to the arches between the nave and the aisle below and to

³⁷³ Richard Harris, *Discovering Timber-Framed Buildings*, Shire Publications Ltd, 1978, pp. 8-9.

³⁷⁴ Martin Cherry and Peter Messenger, *A Medieval Hall and Cross-Wing House in Queniborough*, Transactions of Leicestershire Architectural and Archaeological Society LXII, 1988, p. 9.

³⁷⁵ Robert Albright, *The Conservatin of Historic Farm Buildings*, Wiltshire County Council Conservation Leaflet, nd., www.wiltshire.gov.uk, last accessed 15th August 2010.

³⁷⁶ Leigh Court Barn, Leigh Sinton, Worcestershire, www.english-heritage.org.uk, last accessed 15th August 2010.

allow for a clerestory above the shallow mono pitched aisle roofs. The brace curves up till it meets the underside of the scissor brace where it stops. For some reason the arched brace does not continue to meet its opposite number, although there is no practical reason why this cannot be achieved. A single wall face vertical tie on the nave wall between the collar and the wallplate has its width increased out as far as the arch brace as occurs at Healey. The trefoil cutouts in these braces now are not Lamb's original work, but were added later when work was carried out at the church in 1884. Neither is the current plaster ceiling original, but an attempt to help keep the church warmer which took place in 1919.

Variations on the Hammer beam roof

Thirkleby

There were three other Lamb buildings where he used the hammer beam roof construction as the principal starting point for his roof form and the first of these was at Thirkleby in Yorkshire in 1849 (Figs. 110 and 121). The width of the nave to span is only 17' 8" and is therefore practically identical to the widths at Healey, Aldwark and Blubberhouse and is in fact a full 6 feet narrower than that at Brompton, prompting the question as to why Lamb felt it necessary to choose a hammer beam roof in the first place. Thirkleby, as has been mentioned earlier, was a church built to the memory of Sir Robert Frankland Russell, who had been Lamb's patron since 1836. Perhaps this roof type was chosen both to create a fitting memorial and to impress his widow Lady Frankland Russell with a view to continued patronage.

Lamb followed the traditional form of a hammer beam by finishing the nave end with a simple shield decoration and again there is an arch brace to support it from the top of a corbel below. The corbels are much more elaborate as they sit on a three-quarter round column applied to the face of the nave wall rising from a simple carved ball base. Such an extended column corbel is similar to that Lamb was to employ some ten years later in the main Assembly Hall of Berkhamsted Town Hall in 1859.

Lamb makes his most radical alteration to the hammer beam roof by having no hammer post at all. A single large arch brace begins at where the base of the hammer post should be

arching up past the principal rafter to meet its opposite number in the centre beneath a single collar. As in previous churches there is a single king tie rising vertically from this junction to the ridge.

To brace the roof longitudinally there are small vertical braces immediately below the upper purlin located at collar level with the lower part of the brace fixed to the side of the main arch brace. A similar but even smaller longitudinal brace sits immediately below the lower purlin at the junction of the main arch brace with the principal rafter. There is very little room for this brace, which appears to be no more than 12 inches in depth.

The lower part of the main arch brace between the hammer beam and the principal rafter is quite vertical and would be too close to any hammer post. Lamb therefore omits the hammer post and is happy for its function to be carried out by the main arch brace to form his most radical departure from traditional.

Leiston

Another variation of the hammer beam roof was at Leiston in Suffolk in 1853 where as the width of the nave that required spanning was considerably wider at 27' 9" there was a genuine need to use such a roof design (Figs. 111 and 124). Lamb does have a hammer post and a similar arch brace to that at Thirkleby meeting below the single collar, but this brace is further away from the principal rafter allowing room for the hammer post. This extra space also allows Lamb to add a scissor brace with its lower end beginning halfway up the principal rafter rising to meet the arch brace and finishing below the collar. It does not extend beyond to meet the opposite principal rafter as in the traditional scissor brace form. To help join all of these pieces at this structurally important junction, there is a double king tie from the ridge to the collar and scissor brace junction, which extends down to meet the arch brace below. In this way then Lamb uses a truncated form of the scissor brace with vertical ties just as he had used previously at Blubberhouses.

There are areas of fretwork as at Brompton, but rather than being restricted to only the lower parts of the roof, there is fretwork in all the available gaps between the members of the roof structure in the principal truss.

Large longitudinal braces either side of the hammer post fixed to the underside of the lower purlin to prevent the roof from racking in the same way they were used at Brompton. A higher level longitudinal brace also sits underneath the upper purlin with its lower portion fixed to the junction of the scissor brace with the arch brace in exactly the same manner as that at Thirkleby. Lamb's roof at Leiston, although at first inspection appearing to be a traditional hammer beam roof, is actually only based on one and contains elements from his previous work carried out at Brompton, Thirkleby and Blubberhouses to create another new roof form.

Lamb did not use a full scissor brace in the principal truss but he did use the form in spectacular fashion elsewhere in the building. The crossing area was the first of Lamb's plans where the area was a square, as has been shown earlier, and Lamb decided to make use of this simple geometry with high symmetrical properties by placing a standard scissor truss between diagonally opposite columns and use the principal rafters to form the support for the valley gutters. The first of these trusses presents little constructional complications, however the second scissor truss positioned at right angles creates a wonderful junction where eight timbers all seem to meet as the two scissor braces intersect. This central section was assembled in one piece in a pit outside the church before being hoisted into place.

Gospel Oak

The final church in this study where Lamb experimented with a hammer beam roof was at Gospel Oak in 1862-5 (Figs. 112, 128 and 171). This was his church with the widest nave at 32 feet and therefore a very good reason for the use of a hammer beam construction. Essentially the roof construction is identical to that which Lamb employed at Leiston except for one or two minor and typical Lamb design amendments. Firstly the hammer beam is actually made from two pieces which sandwich the hammer post allowing both the hammer beam and the hammer post to extend beyond their junction where they are finished in a simple rounding off of the timbers. Again there is a scissor truss above the top of the main arch brace, but due to the larger roof area, these scissor brace members extend beyond the junction at the collar where they cross, to meet the opposite principal rafter and thus complete the true scissor truss. The collar is also made from two pieces, as is the

double king post extending below the junction at the apex of the two arch braces as at Leiston. The latter is finished with a simple rounding off of the timbers to match the visible ends of the hammer post and hammer beam. Lamb also uses fretwork in all the gaps in the main timbers in the principal truss.

There are longitudinal braces again at both the upper and lower levels to prevent the roof from racking. The lower ones are identical to that used below the lower purlin at Leiston and the upper ones are identical to that used at the higher level at Thirkleby under the upper purlin positioned at the level of the junction with the collar. Possibly because this was Lamb's largest roof, he chooses to add two further longitudinal braces at both levels. These are horizontal ones from the side of the upper purlin and the side of the collar at the upper level and from the side of the lower purlin and the side of the arch brace at the lower level. Neither of these two braces is apparent in any of Lamb's other work and seems there purely for decorative measures rather than for any structural reasons. These braces would only be needed to prevent any twisting of the principal truss in the vertical plane with independent lateral movement of the base, which is extremely unlikely as the lower parts of the truss are firmly fixed to the wallplate on the nave wall on either side.

Variations on the King-post roof

West Hartlepool

At the same time as Leiston was under construction in Suffolk, Lamb was working on the new church at West Hartlepool and chose to use a variation on the King post roof as a starting point as opposed to a hammer beam roof despite the fact that West Hartlepool was in fact, at 28 feet some 3 inches wider (Figs. 113, 123 and 173).

The make up of the principal truss is identical to that used at Aldwark, consisting of the principal rafters linked together with a collar, king post between the collar and the ridge and the arched braces below rising from a stone corbel, with vertical wall face ties linking the base of the braces with the base of the principal rafters.

Although the span of the nave at West Hartlepool is 11 feet wider than that at Aldwark, the

only differences between the two constructions, apart from the increased size of the individual timbers, are in the collars and the vertical wall face ties. At Aldwark both of these consisted of two members, whereas at West Hartlepool they have changed to single members thus putting them in the same plane as the principal rafter and braces and king post. The only other difference is that three purlins are required on either side, rather than the two at Aldwark, due to the extra size of the roof. There is no longitudinal bracing at all and Lamb roof relies on the horizontal boarding to prevent racking in the nave. There are though two 23' 9" wide transepts which meet the roofs of the nave and chancel at the crossing, where there is a lantern above. These four roofs at right angles to each other will prevent racking within the individual roofs.

Castle Douglas

Two years later in 1856, Lamb began the church at Castle Douglas, Dumfries where the nave is 24 feet wide, some 7 feet wider than that at Aldwark and just over 4 feet narrower than at West Hartlepool (Figs. 114 and 125). Lamb chose to use a king post roof here and one almost identical to that at West Hartlepool. The major difference in this roof construction is he chose to make the arched braces much thicker than he had before. This is achieved by being made up of three pieces with the centre one projecting about 2 inches to given form and shape to the inner face of the arch. In this roof the principal truss, consisting of its single wall face vertical tie, the principal rafters, the arched braces, the collar and the king post are all the same thickness and therefore again everything is in the same plane.

All the members of the principal truss are thus joined together with mortise and tenon joints, pegged together and Lamb chooses to help strengthen the junction between the top of the two braces, the collar and the king post by using a metal strap. This is a three pointed metal tie with prongs at 120 degree intervals, with one vertical on the face of the king post and the remaining two prongs on the face of each brace. Six bolts link through the principal truss to an identical tie on the other side.

Again there is no longitudinal bracing underneath either of the two purlins in this small roof with Lamb again relying on the boarding to prevent racking without the assistance of any transept roofs.

Englefield Green

At the same time as Castle Douglas was under construction in Scotland, Lamb was working on the church at Englefield Green at the other end of the country in Surrey (Figs. 115 and 126). The church nave is identical in width to that at Castle Douglas and Lamb almost uses a virtually identical solution to that at Aldwark. The principal truss is made up of the principal rafters, king post, collar, double wall face vertical tie and the main arched braces. These are now not made up of three pieces, as at Castle Douglas, but revert to the same one-piece construction as at Aldwark. In fact, the only real difference between the two churches is that Englefield Green has a single collar whereas Aldwark has a double and it seems these are the closest matched churches in terms of principal truss construction.

Where Lamb chooses to be very different from any of his previous churches is in his use of the purlin. There are two purlins as at Aldwark and Castle Douglas, but rather than in the usual vertical convention they are angled by approximately 5 degrees. The reason for this angle becomes apparent when investigating Lamb's solution to prevent racking. Lamb uses his conventional solution to prevent racking of boarding over the rafters and supplements this by including longitudinal bracing below each purlin. If these longitudinal braces were vertical, then the bottom of each brace would be in thin air. Lamb would have to have introduced extra vertical ties to help support these braces in a similar vein to that he had used previously at Blubberhouses. There was a significant shortage of funds for the construction of the church. Funds were in fact so short that there were no pews in the church when it was consecrated and the congregation had to bring chairs from the local hall. Lamb would have presumably not wished to add any extra elements to the roof.

By angling the purlins and thus angling the longitudinal braces, it was possible for the bottom of the brace to meet on the side of the main arch braces, for both the upper and lower purlins, without the introduction of any additional timbers. This constructional solution also has a design effect on the end braces where they meet the corbel on the west wall of the church where they allow a much larger West window to be incorporated. If these braces had been vertical, their supporting corbel would have interfered with the West window head and only a much lower and narrower west window would have been possible (Fig. 168). Lamb had used vertical longitudinal braces at Blubberhouses and despite having two narrow west windows the corbel is still very close to the window head.

Bagby

The final church in this study where Lamb used a variation of the king post roof, is at St. Mary, Bagby in 1862 (Figs. 116 and 127). As has been mentioned earlier this was not a new building, but a re-building on the same foundations to reduce costs, hence the narrow nave with its unusual width of 13' 8". A simple king post roof was all that was required and Lamb based it on the church at Aldwark. Typically there were variations yet again, this time with the use of a single collar and a double king post tie, which was a combination not used before.

Lamb chose to increase the accommodation of the church by creating his favoured central space with a 28 -foot square seating area placed immediately in front of the rebuilt chancel. Such a large columnless space gave him the opportunity for an imaginative and ingenious solution to support the roof. The main construction is that of a pyramid, with the four roofs of the nave, chancel and two transepts joining it. The transepts do not project beyond the central space in plan and the wall is taken up to express this feature, allowing a large window in what effectively becomes a huge gable. Lamb's ingenious solution to the roofing problem his plan created, is to begin with four large arched braces spanning the complete 28 feet, beginning at stone corbels at the very low level of only 5 feet from the floor. Two of these arched braces run from East to West, between the chancel and the nave, with two others at 90 degrees, running between the walls of the North and South transepts. These braces are all set 7 feet in from the corners of the central space and thus intersect with each other beneath the hips of the pyramid roof as they rise.

At the apex level of the braces are two four-sided ring beams, with one set inside the other at 45 degrees in plan. The larger outer one has its corners at the hips while the smaller inner one has its corners at the apex of each of the four arched braces. A further four sided ring beam is above supporting the base of a small turret while struts starting from the centre of each side of the inner ring beam below pass it to help support the bell housed in the turret. A further ring beam, which runs at the level of the single purlin in the nave, also doubles up as a purlin as does the outer ring beam at the level of the apex of the arch braces.

There are no other longitudinal braces required in the roof as the two intersecting ring beams in the centre form a series of triangles which prevent any racking of the pyramid roof. The usual timber boarding plane over all the rafters is again present throughout the roof. At first glance the roof looks over complicated and a confusion of carpentry, but there are in fact no redundant timber members and is based on a sound common sense approach.

Summary

The roof type Lamb arrived at in each of the twelve churches is unique. All show that they can be derived from three of the traditional roof forms of king-post, scissor brace and hammer beam, but combined together, altered and twisted in practical and logical ways to create new forms.

5.5 Carpentry and Construction

Roof pitches.

Pugin had stated in his *True Principles of Pointed or Christian Architecture* that it 'will be found, on examination, that the most beautiful pitch of a roof or gable end is an inclination sufficiently steep to throw off snow without giving the slate or lead covering too perpendicular a strain, which is formed by two sides on an equilateral triangle'³⁷⁷. The pitch of the roof as advocated by Pugin is therefore 60 degrees. Now that all the twelve churches in this study have been measured, an examination of the roof pitches used by Lamb can be made (Table 8).

Lamb's first churches at Healy and Prestwood have an angle of approximately 57 degrees which is remarkably close to that advocated by Pugin. This was then followed by approximately 54 degrees at Blubberhouses before he reverted to around 57 degrees at Brompton and Thirkleby. After this all Lamb's remaining seven churches are more or less identical reverting to around 54 degrees. The first of these is that at Aldwark, which has been surveyed and measured in more detail than any other church in this study and detailed nave section drawings produced (Fig. 129). To set out an angle in degrees accurately on site is quite difficult and it is much easier to use the geometry of a right-angled triangle. Using the latter the roof pitch at Aldwark equates very closely to that of a 3, 4, 5 right-angled triangle producing an angle of 53.13 degrees and close to the surveyed angle of 54 degrees. It would be very easy for workmen to set out such a triangle on site or in a workshop without the need of complicated expensive equipment. All that is required are three lengths of string or timber of the three lengths in question. There are no surviving working drawings for Aldwark, so it is not possible to determine how Lamb arrived at this particular roof pitch. However, a tantalisingly small number of working drawings do exist of Lamb's last church in this study at Gospel Oak, and miraculously this includes one signed by Lamb indicating the roof pitch (Figs. 130 and 131). In a small drawing showing the details of the plinth, Lamb draws a simple right-angled triangle notating a measurement of 10 feet for the base and 13 feet 9 inches for the height. Accompanying this triangle is the statement that 'plinths, weatherings, roofs etc to be of this angle except where

³⁷⁷ Pugin, A. W. N., *The True Principles of Pointed or Christian Architecture set forth in two lectures delivered at St. Marie's, Osrott*, London, 1841, p.p. 10-11.

otherwise described'. Although at first sight the numbers seem strange this gives an hypotenuse almost exactly 17 feet and it would therefore be very easy to set out on site or in a workshop. This triangle has an angle of 53.97 degrees. It does seem that Lamb, at least in one instance, used a triangle to indicate the roof pitch and may well have used the same method in his other churches.

One other importance of this drawing is that Lamb states that the weatherings and the roof are to be the same pitch. All Lamb's churches with buttresses have been checked to see if the pitch of their weatherings comply and have been found to do so. The advantage of these being the same is that with these weatherings always in stone and with many to chose from, a more accurate figure for the pitch of the roof can be ascertained.

With all of Lamb's 12 churches either being a pitch of around 54 degrees or 57 degrees, it is interesting to speculate why he came up with this figure in the first place. Lamb was articled to Cottingham who had made extensive measurements and drawings at Westminster Hall with its impressive hammer beam roof, as has been shown earlier, and an analysis of the drawings he made shows that the angle of the roof is approximately 53 degrees. If Lamb was also looking to the mediaeval barns for inspiration he may well have looked or visited Cressing Temple, mentioned earlier, where the pitch also equates to approximately 53 degrees (Figs. 132 to 135). Students at Canterbury School of Architecture carried out a study of mediaeval barns during the 1980s. At Hode Farm, Patricbourne, Kent there is 15th century aisled barn with a pitch of approximately 52 to 53 degrees³⁷⁸ and another analysis of the mediaeval barns, within a 10 mile radius of Canterbury, showed that although the lowest was 50 degrees at Upper Hardres and the highest 60 degrees at Brenley, the majority at places such as Brook, Faversham, Throwley and Godmersham, all have pitches between 52 and 54 degrees.³⁷⁹

Contemporary architects were using similar roof pitches, as has been shown by Paul Thompson in his study on Butterfield, where he states that his 'early roofs are all steep, their gables approximating to the equilateral triangle recommended by Pugin in *True Principles*'. But unlike Lamb who kept to the same angle, Thompson found that from 'about

³⁷⁸ Simon Beck, Graham Doyle, Anthony Edwards and Andrew Wittich, 'Hode Farm, Patricbourne', *Traditional Kent Buildings No. 2*, Kent County Council Educational Committee, 1981, pp. 5-10.

³⁷⁹ Frank E. Brown, 'Aisled Timber Barns in East Kent', *Traditional Kent Buildings No. 1*, Kent County Council Educational Committee, 1980, pp. 22-28.

1860' the pitch is invariably lowered to forty-five degrees outside'.³⁸⁰ Butterfield also used many different types of roof construction with the church of St. Bartholomew, Wick, Gloucestershire (1849-50), which was completed by him having been started by Charles Dyer of Bristol, closely matching the roof form used by Lamb at Aldwark.³⁸¹

Timber type

It is difficult to identify exactly what type of wood Lamb used in his roofs without taking away samples to be analysed. There are however the Forms B and C used in the ICBS which state the timber Lamb proposed to use in at least the four churches at Prestwood, Leiston, Englefield Green and Bagby where it is stated that they are to be 'framed in fur'.³⁸² Lamb used this readily available and easy to work cheaper timber, as opposed to more expensive and rarer oak, and then applied a stain so that they resembled the latter in appearance.

In most of Lamb's churches this stain has darkened over time and in some cases like at Gospel Oak have become very dark indeed and at Healey and West Hartlepool the timbers have been painted black. All this results in great difficulty in understanding how the individual pieces have been put together. During the measuring of the truss at Blubberhouses, with close inspection of the four main arch braces, it was possible to see how they had been constructed and attempt to determine the joints.

Construction techniques

This single curved brace beneath the purlin and middle tie at Blubberhouses is actually made from three separate pieces. Figure 136 simply shows one of these braces in green with part of the purlin in purple, the middle vertical tie in orange and the imitation timber corbel in pink. It is now possible to dismantle the timbers by firstly removing the bolt and the small imitation timber corbel (Fig. 137). Removing the two pegs in the purlin which fix the tenons in the brace allows the brace to be withdrawn from the mortise now that the bolt has been removed (Fig. 138). The complete brace is now free from the rest of the structure

³⁸⁰ Paul Thompson, *William Butterfield*, The M.I.T. Press, Cambridge, Massachusetts, 1971, p. 205.

³⁸¹ *Ibid.*, p. 184.

³⁸² ICBS Records are held at Lambeth Palace Library, London for Prestwood 03941, Leiston 04602, Englefield Green 05323 and Bagby 05568.

(Fig. 139). It can be rotated, (Fig. 140), and the two pegs, one to each tenon and mortise, can be removed to separate the three pieces (Fig. 141). A standard 8 foot length of scantling of 8" x 6" can now be brought in (Fig. 142). All three timbers can be laid over this standard timber to show that all can be carved from this one piece (Fig. 143). No need to hunt through a large forest to find just the tree that you need. Only standard timbers are required.

In the 1840s the fir timber in general use was 'imported from Memel, Riga, Dantzic and Sweden'.³⁸³ Timber from Memel was the most convenient size and that from Riga was the best quality and could always be dependent upon although it was the dearest in price. Timber from Danzic, when it was free from large knots, was considered the strongest and timber from Sweden the toughest. There are no records at Blubberhouses to indicate what type of fir was used or from where it came. The 8" x 6" cross-sectional area is one of the 15 standard sizes used in the 1840s, from 4" x 3" to 12" x 11" as indicated in 'Laxton's Builders Prices' for 1846, where this size of timber is given a price of one shilling per foot run.³⁸⁴ This does not include any workmanship and is purely for materials the day price given for a 'carpenter and joiner is six shillings per day or 7 1/4 p per hour.'³⁸⁵

As well as in Blubberhouses it has been possible to ascertain that the braces in at least the three churches at West Hartlepool, Brompton and Healey have been made up of several pieces all of which have been joined with pegged mortise and tenon joints. Dr James W.P. Campbell, in his studying of timber roofs has pointed out that it is difficult to determine 'the joints, which are very difficult to record without taking the timbers apart' and this is indeed something which neither myself, nor the vicar, would be happy to see occur.³⁸⁶

Berkhamsted Town Hall

However, to make greater use of the limited building space at Berkhamsted Town Hall, it was necessary to remove Lamb's skylight over the Market House and this allowed the

³⁸³ William Laxton, *Laxton's Builders' Prices*, John Weale, London, 1846, p. 15.

³⁸⁴ *Ibid.*, p. 40.

³⁸⁵ *Ibid.*, p. 41.

³⁸⁶ James W. P. Campbell, 'Between Archaeology and Architectural History: Studying Bricks and Carpentry', *Current Work in Architectural History*, Society of Architectural Historians of Great Britain, 2004, p. 67.

timbers to be measured (Figs. 144 and 145)³⁸⁷. The skylight is square and is made up from two trusses shown in Figure 146 in dark brown, blue and green with a ring beam at low level shown in yellow. The timbers sit on long timber corbels setting on Lamb's usual quarter round stone corbels. Further diagonal timbers shown in red, match those shown in blue and brace the truss at 90 degrees (Fig. 147). A ring beam, shown in brown, then links the tops of the main truss vertical posts, shown in green (Fig. 148). With all these structural members in place, the bottom board of the box gutter can be supported (Fig. 149). A diagonal member at the hips of the skylight is then placed between the corner of the gutter and the corner of the vertical truss post, shown in light blue (Fig. 150). Finally the vertical outer face of the box gutter can be slotted into place (Fig. 151). Firing pieces were added to the flat bottom gutter board to give a fall to another bottom gutter board and the whole gutter lined with lead to outlets in opposite corners (Figs. 152 and 153). The glazing bars were removed in the 1950s to be replaced with corrugated plastic sheeting and no records have been traced as to how the rooflight was glazed.

An exploded view Figure 154 shows the complicated mortices and tenons making up the truss. The vertical post has a bolt from beneath rising vertically into a captive nut to secure the tenon. A close look at the diagonal member appears to show a poor joint with a small nib left behind. But this cleverly locates the vertical face of the box gutter and stops it falling over. This nib also stops short at the bottom to allow the lower horizontal board of the gutter to slide in over it. The high ring beam is made from four pieces with each having a tenon on each end. This sits into an open mortice on the top of the vertical post. A normal closed mortice cannot be used, as the pieces can only be located after the two trusses are in place and there is no room for any lateral movement with both the mortices fixed.

There is clear indication that a great deal of thought has gone into the both the design of the individual timbers and the sequence of construction (Fig. 155)³⁸⁸. Unfortunately, no construction drawings of either Blubberhouses or Berkhamsted survive so we must remember it may never be known how much of these joints are down to the ingenious Lamb and how much to the practical and experienced carpenter on site.

³⁸⁷ See also 'A rogue architect at work: E. B. Lamb in Hertfordshire and Buckinghamshire', included as item 4 of Dissemination of Knowledge, for plans and elevations of Berkhamsted Town Hall.

³⁸⁸ See also Figure 156 for details of the roof at Leiston and Figure 157 for that at Bagby.

Triple construction.

Constructing principle trusses of mortise and tenon joints is time-consuming, difficult and costly, requiring a skilled labour force. There is evidence to show that Lamb tried to limit the number of these joints in his roofs. The principal rafters are continuous in all his churches, as are the scissor braces. The former requires a simple half lap joint at the ridge and the latter the same type of joint where they cross. A half lap joint can be made easily and quickly with two saw cuts to a depth of half the brace and the removal of the timber between with a chisel. The arched brace is the main element of the roof which requires the mortise and tenon joints as it is a large and curved piece of timber which needs to be all in the same plane. It is with the remaining components of the principal truss where Lamb minimised the number of these joints. All of his church roofs have collars and the majority are single collars in the same plane as the principal rafters. They are therefore joined with a tenon on the end of the collar housed in the mortise of the principal rafter and pegged. In the churches at Aldwark and Gospel Oak, Lamb simplifies the construction by using a double collar made up of one piece of timber either side of the principal rafter bolted through with a single bolt (Fig. 158). In the churches at Blubberhouses, Leiston and Bagby, where he used a king post, Lamb also chose to use two pieces in a similar fashion, so that they were bolted to the side of the collar and principal rafter.

The main change where Lamb used a variation of from the single piece to the double was in the wall face vertical tie between the top of the corbel and the base of the principal rafter. In the churches with a patron where funds were sufficient as at Brompton, Thirkleby, Castle Douglas and West Hartlepool, he uses a single piece requiring mortise and tenon joints where this tie meets the principal rafter and the curved arch brace (Fig. 159). In Lamb's other churches, he uses a much simpler and straightforward solution by using two wall face ties, again with one each side of the brace sitting on the corbel and rising to the base of the principal rafter (Figs. 160 to 166)³⁸⁹. Bolts at both the lower and upper ends of the tie from one tie to its opposite number secure the timbers and is a much simpler and cheaper alternative to using joints. Finally, Lamb also uses this two-piece system in all the vertical ties at Blubberhouses, as has been shown in detail earlier.

³⁸⁹ Lamb also used this technique in his secular buildings like the main hall at Eye Town Hall, 1857, see Figure 167.

These construction techniques limit the use of mortise and tenon joints only to areas where they are absolutely necessary in order to maintain the same plane of the completed and larger element and where they are necessary for structural reasons. In all other cases Lamb uses the addition of simple timbers to each side and then ties them together through the principal truss with bolts. In this way Lamb is allowing the simple, standard, readily available timbers of small dimensions, such as 4" x 3" or 5" x 6", to be used that are only required to be cut to fit and then held together structurally by standard bolts. This leads to a 'triple construction' i.e. where at any one point it appears the principal truss is made up of three thicknesses of timber. At first sight this gives the impression that any Lamb roof is a massive chaos of unnecessary timbers and very a complex construction, when in fact it is a simple, quick, cheap and practical solution.

Lamb's roof where always finished with a layer of 1 inch thick boarding covering the principal rafters and in every church, except Healey, these were exposed on the inside and stained to match the rest of the timber work. Healey was Lambs first church and the internal finish on the inside was lath and plaster. Whether this finish was Lamb's choice or an additional necessity, due to the poor quality of the timber used, is not known. But such a finish appears in no other Lamb church. Using a 1 inch thick standard board 8" wide was another cheap, practical solution Lamb adopted as he was effectively using a floorboard and covering the roof as one would cover a timber floor. If Lamb had used thinner boards these would have been less easily available and also not provide adequate strength to resist the racking in the roof. During construction the 1" thick boards were also strong enough to support the workman working on the roof to fix the battens and the roof coverings, without the need for any additional scaffolding.

The only other church where Lamb intended boarding, but had to resort to an alternative solution was the church at Prestwood. Here funds were so short by the time that the roof was under construction, that no boarding was possible at all and Lamb used 3 inch wide batons instead. It was therefore possible from the inside church, to see the underside of the tiles as there was no felt or torching and the church was very cold in winter. In all bar one of Lamb's churches the boarding runs horizontally along the length of the nave. It is in the last church in this study at Gospel Oak, where there is a very expensive solution with the boarding running diagonally above a framework grid of purlins.

Summary

Lamb shows that he was quite capable of constructing his roofs to take into account the funds available. The construction techniques of using double pieces with bolts, although suggesting additional expensive, actually reduce costs by eliminating the labour intensive mortise and tenon joints. They also simplify the method of construction reducing the time costs. Using fir or pine as the main timber and applying stain reduces costs again and implies expensive oak. Finally, using standard timbers that are easily available also reduces costs even further.

Lamb's roofs are based on sound traditional principles, employ easy construction techniques, modern materials and readily available timbers, to create entirely new forms and show his desire to learn from the past and attempt to emulate it.

5.6 Rainwater Collection and Disposal

Lamb required some ingenious solutions to the simple task of removing rainwater from the roofs of his churches; due to the way he evolved his plans into the third dimension. Even in his smaller and simpler churches with smaller roof areas to drain his planning created problems. All his churches have pitched roofs over the chancel and nave allowing an eaves or parapet gutter on the north and south sides falling to outlets leading to rainwater pipes. It was where there additional areas of porches and vestries were added to the plan that the problems began to occur. Finally, it was the crossing area, which generated the greatest problems with the surface water collection as Lamb took his idea of a centralised plan into his larger churches.

Porches

The collection and disposal of rainwater from a porch, which is a simple addition to the nave, should be a straightforward task only requiring a gutter on each side linking to a rainwater pipe. Lamb did employ this solution to the porches of his churches at Castle Douglas (Fig. 174), Brompton (Fig. 175), and at the rebuilding of St. Leonard, Thornton-le-Street, North Yorkshire (1855) (Fig. 176). At Healey, the porch has a parapet gutter on either side, but there was no outlet or downpipe on either side leading to the inevitable problems with deterioration of the stonework, which will be shown later (Fig. 177). At Englefield Green the main porch has a stone eaves gutter to each side, but again no downpipes (Fig. 178). The present one on the east side appears to be an addition and bizarrely one has not been added to the identical west side. There are two porches at West Hartlepool, one at the west end and one to the south east corner. The latter has eaves gutters and downpipes as expected while the former has no eaves gutters and the water is simply thrown away from the building. There is no need to collect the water, as the roof area is less than 10 square feet due to the small projection of the porch. Despite the fact that this solution has proved successful for over 150 years with no deterioration to the stonework, the recent restoration in 1993-4 has added a conspicuous downpipe to each side (Fig. 188).

In many cases Lamb's porches are not simple additions; they butt up against the nave or the tower requiring a more complicated collection and discharge system on one side. The first

example of such a porch is at Blubberhouses where the plan shows that the full north side of the nave consists of a square porch at the west end, square tower on the east side and rectangular north aisle to the nave (Fig. 179). The porch roof has created a problem for Lamb. It is a simple pitched roof, but this creates a valley gutter where the far pitch meets the tower. A CAD model shows this more clearly from a 'birds eye' view (Fig. 180). The roof needs to be drained, but no downpipe is visible outside the porch, and indeed this is not something that would be visually acceptable. Lamb's solution is to take a lead pipe diagonally through the two corner buttresses of the tower on the left, to appear on the north wall of the tower. Lamb tries his best to hide this, but it can just be seen to the right of the lower window, poking out only sufficiently to throw the discharge clear of the building (Fig. 181).

This is not the only rainwater disposal problem in this area. The tower has two buttresses on each face, one at each corner. If the normal function of the buttress were carried out on those two on the south face, then they would break through the roof and finish on the floor of the nave, which is quite clearly not an acceptable situation. The buttresses must both be corbeled out from the tower, before becoming visible from the outside. They are more of an encumbrance than a structural necessity, and surely only present for visual purposes. A rare case where Lamb built for picturesque reasons alone. Adding the rafters and matchboarding to the model suggests that these buttresses are visible from inside, which is indeed the case, as we can see the first buttress here at the top right, where there is a break in the matchboarding (Fig. 182). Lamb has created another area requiring a valley gutter along the south face of the tower and this must be large and wide enough to pass the two buttresses or they would both act as a barrier and create a pond.

The butting of Lamb's porches did lead to other some simple yet ingenious solutions as well. At Thirkleby the buttress has been cut through to allow the water to be removed from the porch roof (Fig. 183). This cheekily creates a sort of flying buttress, which even Lamb has to mirror on the other side to make the end of the church symmetrical. At Bagby, the porch has a very low level eave to the west side of the porch and a valley gutter to the east where it meets the main pyramid roof. Lamb then needs to use lead flashings at the junction of the roof and the porch wall for two feet before the water can be safely discharged into the main roof gutter. This returns around the corner of the hip to a conveniently placed downpipe (Fig. 184.) and again, as at Blubberhouses, avoiding one

close to the main entrance. The west side has an eaves gutter and a downpipe at the end nearest the nave, which has a swanneck into a downpipe from the nave roof.

Internal rainwater pipes

At the south west entrance to the nave at Gospel Oak, the porch is so far into the building there is danger of loosing the door as well in order that the ridge is placed centrally over the centre line (Fig. 185). A valley gutter occurs where the roof meets the nave wall and discharges through the gable parapet to a hopper and downpipe very close to the door. A similar situation arises at the south west entrance at Leiston where the door is so close to the transept wall, Lamb chooses not to have a downpipe at all. The water in the valley gutter is discharged through an internal rainwater pipe hidden in the depth of the wall and is apparently one of many in the building. During the restoration in 2005 it was discovered that due to 'Lamb's desire to avoid any external rainwater pipes meant that a 300mm clay surface water drain was found under the nave floor.'³⁹⁰ There are now several external rainwater pipes visible but these are new to replace the internal ones, which had leaked and damaged the fabric.

Leiston was not the only Lamb church known to have internal downpipes. At Castle Douglas there was one within the west vestry wall to take water from the valley gutter between the north vestry roof and the south chancel roof. The water could have been taken eastwards to an external downpipe at the junction of the east vestry wall and the south chancel wall. Lamb did in fact discharge the water in this direction as well, but again choose to use an internal rainwater pipe in the east wall of the vestry rather than a simple external one only six inches from it. Lamb also used internal rainwater pipes of lead at Prestwood, where they 'were discovered buried within the aisle walls' in restoration work to the church in 1980.³⁹¹ The porch to the main entrance at Prestwood has an eaves, gutter and downpipe to the west side and a valley gutter to the east side. Lamb is not able to remove the water from the latter without adding an internal downpipe due to the high parapet wall to the west end of the south aisle (Fig. 186). The downpipe currently installed was added in the 1980 restoration to replace the internal pipe.

³⁹⁰ Simon Merrett, 'St. Margarets Leiston, Church re-ordering inspired by Italian sabbatical', *Church Building*, 100, pp. 36-7.

³⁹¹ Desmond Keen, *Prestwood Parish Church: A Short History of Holy Trinity Church* (church guide, 1997), p. 23.

Larger churches

There were many additional problems associated with the collection and disposal of the surface water in Lamb's larger churches of West Hartlepool, Leiston and Gospel Oak. As the centralised plan created larger areas at the centre of the church at the crossing, the roofs needed to cover them also became larger making the interaction between the various individual roofs more complex. The largest of Lamb's churches at Gospel Oak highlights the problems he created for himself and the ingenious solutions he employed. These problems can be analysed with a CAD model by using blocks for the main elements to build a simple massing model of the building. Beginning with the plan and the seating (Fig. 189) the nave with its associated gables and narrowing at the west end can be added (Fig. 190). Then the transepts with their different end treatments of a gable at the north end and a hip at the south end and the octagonal ended chancel (Fig. 191). There is no problem with rainwater collection at this stage as a simple perimeter eaves gutter and regularly spaced downpipes are possible. The problems are created when the remaining spaces are added starting with the four corner areas of Lamb's Quadrate cross plan, two of which are chapels, which introduce four valley gutters (Fig. 192). The addition of the tower on the north side, with its stair and the porch at the south west corner all mean further valley gutters and roof flashings are required (Fig. 193). The vestry at the back with its chimney and finally the four turrets at the changes in width of the nave and at the chancel junction complete the church (Fig. 194).

If the colours are now switched to those differentiating the walls from the roofs the vast area of roofs that are created become apparent (Fig. 195). Adding only the valley gutters in red, shows just how many areas of the roof need to be drained (Fig. 196).

Some areas of the roof have eaves gutters and others have valleys between the roofs and gutters behind parapets and two of these areas are worth further study.

An aerial view from the model of the south east corner shows the chapel with its own roof and the valley gutter created indicated in red. In reality the gutter is discharged at the eastern end next to the spire through a hopper connected to a downpipe (Fig. 197). This is a straightforward solution and one that Lamb had used previously in the same situation at West Hartlepool and at Leiston.

The diagonally opposite corner at Gospel Oak is a different proposition altogether. It appears the same but Lamb is unable to discharge the water in the same way. There is an additional roof over the link between the tower and the nave, which gets in the way. There are roofs on all four sides and one of his ingenious solutions is required to avoid creating a sort of high level pond (Fig. 198). Lamb lets the water exit at the east end and travel north through the smaller roof in a pipe to the north to exit at the gutter level of the north transept. This solution was verified during a site visit by the author in 2004 when some vital work was carried out to the roof at St. Martin. The valley gutter was covered with blue plastic at the time and only part of the replacement roofs was complete including the exit from the pipe discharging into the gutter below.

Figure 199 is another composite view showing firstly a view from the model on the exit side of the pipe and the gutter with a large flat roof area over the baptistery below, together with photographs showing that the gutter discharges its water onto this area through a short downpipe. One of the reasons for the drainage problems with the roof here, was that this small pipe was frequently blocked as pigeons found it an excellent place to build their nests.

Summary

Lamb created many problems for himself when he took his plans into the third dimension, but saw these as opportunities to be inventive with his solutions. Rather than amend the design of the plan he sought and more importantly found, a solution that worked in every case. This required a large use of leadwork and vertical internal downpipes as well as near horizontal internal pipes, as at Gospel Oak. Many odd junctions, asymmetrically shaped gables and clashes of walls and roofs became part of his design, but were added through necessity. Lamb had stated in his lecture to the Architectural Exhibition in 1857, that 'Truthfulness in the architectural composition should invariably present itself in the most unmistakable manner; all expedients for the purpose of producing effects that are not warranted by the arrangement of the plan, or the rational application of the material in the construction, must lead to discordant expression.' Any oddities thus produced in the third dimension due to the two dimensional plan were acceptable. And there are many in a Lamb church and not all as a result of the requirements for rainwater collection. Unfortunately, due to the latter, Lamb introduced many problems in his churches with

internal lead pipes hidden inside the internal walls, which deteriorated, leaked and damaged the fabric. The decay went on undetected only becoming apparent when damp appeared much later on the internal walls. The need for large areas of lead gutters in the valleys and behind the parapets was also an area which subsequently deteriorated and leaked allowing water to penetrate the building damaging walls and roofs. However, Lamb was making the same use of lead as other architects at the time with similar results as will be seen later. He could have amended his plans to avoid all these drainage problems associated with the porches, by moving the porches of his churches at Gospel Oak, Leiston, Blubberhouses, Bagby and Prestwood away from corners, but he chose not to. For Lamb the plan was more important and as has been shown above, he knew that however bizarre or unusual he could find a solution, producing the wonderful quirks which are such a distinctive signature.

5.7 Plinths and Eaves

Plinths

In his lecture on 'Architectural Composition' which he gave at the Architectural Exhibition in 1857, Lamb had stated that the 'main qualities necessary for the composition of a great work in fine art architecture are –unity, harmony of form, harmony of material, and harmony of construction'³⁹². To Lamb it was important that in every composition 'the forms should rise easily out of one another, and be so united that any one part removed would destroy the unity of the whole.' In buildings, this began at ground level rising 'by gradual steps from the ground, the most massy features of the simplest character, the plainest and strongest material uniting with the ground upon which it stands'. Lamb continued that the whole base should be carried throughout – except the doorways – and completely round the building, binding the whole firmly together: for abrupt starting out of the ground always gives a poor, tame, and even weak appearance' and that the 'want of gradual rising from, and union with the ground' would produce a 'decidedly disagreeable effect.'

Lamb was concerned with the relationship of the terrace to the building at his first church of St. Paul, Healey. In a letter he wrote to his client, Captain Vernon Harcourt, he wanted the terrace otherwise 'if the Church stands only upon the sloping ground the eye is offended by the abrupt appearance of a strictly artificial work rising at once out of the natural ground without any suitable preparation to unite the two extremes.'³⁹³

The link between the ground and the building was clearly important to Lamb and the reason why all his churches have plinths. In fact, Lamb appears to have given plinths to all his new buildings and of the approximate 75 or more extant of these buildings that have been visited by the author, there is not one without a plinth of some form or other.

An analysis of the plinths to Lamb's churches in this study shows that it is possible to categorise them into two main types with one variation. Type 1 consists of a single change in the wall plane from a wider base back to the main wall thickness. Such a setback is

³⁹² Editorial, *The Architectural Magazine*, Volume 1, 1834, p. 90.

³⁹³ E.B.Lamb, letter to Captain Vernon Harcourt, 4th August 1848, n. p.

either 3” or 3.5” and always has a sloping surface between the two wall planes over a height of 4” to 4.5”. The resultant pitch of the plinth then closely matches that of the roof pitch of the building concurring with Lamb’s statement on the surviving plinth drawing for Gospel Oak as mention earlier. Lamb used a single plinth at Blubberhouses, Aldwark, Leiston and Castle Douglas (Figs. 201 to 203).

Type 2 consists of a double change in the wall plane from a wider base to the main wall thickness with a smaller intermediate wall plane between resulting in two distinct plinth lines. The lower line change is always simpler and identical to the Type 1 plinth with setbacks of between 1.5” to 2.5” with one at 4” and over a height of 2” to 3” with one at 5”. The upper line is a more complicated change and always has a projection beyond the intermediate wall plane of up to 3”. This is undercut at an angle, which is always at 90 degrees to the main sloping surface of the plinth that then slopes back up to the main wall face. The pitch matches closely the main roof pitch in most cases and naturally exactly at Gospel Oak. Lamb uses this double plinth at Healey, Prestwood, Thirkleby, Englefield Green, Bagby and Gospel Oak (Figs. 204 to 209). The most dramatic example is at West Hartlepool where the upper plinth is so large it is divided in two parts and the full plinth has a 13” set back with the top of the plinth almost 5 feet from the ground (Fig. 210).

The one variation to this Type 2 double plinth is at Brompton where there is the simplest of lower plinths with only a 1” setback over a 2” height. This is compensated by an upper plinth line with a 3” setback over 9” with elaborate curved stone mouldings as does not appear on any of Lamb’s other churches (Fig. 211). Brompton was a memorial chapel from a private donor and there were sufficient funds available for such an expensive carved decoration around the whole building including the buttresses. It was also Lamb’s first major commission in London and would have helped to create an impression in the architectural world.³⁹⁴

Summary

Although the plinths to Lamb’s churches can be divided into two types, every one is different and shows that he was again following the principal that all buildings should have

³⁹⁴ Images for all the plinths of the churches can be found from Figures 212 to 223.

a plinth and not the rule that all plinths must take the same form. One might also expect that the Type 1 single plinth would occur on the smaller churches and the Type 2 double plinth on the larger ones. But this is not the case. The small churches at Blubberhouses and Aldwark do have a single plinth, but the large church at Lesiton also has a single plinth. The large churches at West Hartlepool and Gospel Oak have a double plinth, but so does the small church at Bagby. Lamb used what he believed to be the appropriate type in his compositions.

Eaves Treatments

In his lecture on Architectural Composition, Lamb does not mention the treatment of eaves at all and nor does he in his lecture on Suggestions on Architectural Composition. But since it appears that Lamb was following firm principles at the base of the wall in his plinths designs, it is still worth investigating to see if he was following any principles at the top of the wall at the eaves. There are two standard treatments for the junction where the roof meets the external wall. One is where the wall continues passed the roof to form a parapet and the other where the roof continues over the top of the wall to form the eaves. Lamb used both types in his churches, separately and in combination. Parapets are used at Brompton and at Healey throughout the churches. At Gospel Oak Lamb predominantly used eaves, but had to use a parapet at the west end where the church nave width narrowed and chose to use a parapet at the east end around the chancel. All Lamb's other churches in this study, and others where he added transepts and aisles, had eaves throughout.

Parapets

The parapets at Healey, Brompton and Gospel Oak all follow the same principle. A horizontal string course occurs along the top of the external wall at the level of the gutter behind the parapet as if to suggest where the eaves should be. The profile of this detail is similar to that Lamb uses as the upper plinth-course and all these three churches are those which have a Type 2 double plinth. The external wall continues to form the parapet that is completed with a stone capping and the parapet gutter is formed behind in leadwork. The buttresses rather than stopping short continue through the string course and the capping and completed with a stone pinnacle. The latter is simple and plain at Healey, mimicking the main tower over the crossing, while those at Brompton are more pointed and

elaborately carved. Gospel Oak only has buttresses to the gable ends of the nave and the north transept, but does have four very large pinnacles at the junction of the parapets with the eaves (Fig. 239).

Eaves

An analysis of the remaining nine churches in this study and another four other churches with major repairs, rebuilding or additions, indicates that Lamb had a principle for the setting out of the eaves. It has already been shown that Lamb made great use of stone corbels inside his buildings for the supporting of the timberwork for roofs and skylights and he used the same externally at the eaves. Stone corbels at the top of the external wall set at regular intervals project from the face of the wall and support a series of stone lintels in a continuous band to form the gutter. This principle of a corbel-table can be divided into six basic types.

Type 1 consists of Lamb's simplest and most often used corbel of a square stone finished in a quarter circle from its lower meeting with the wall to the upper meeting with the stone lintel with a simple 45 degree angle between the underside horizontal face and the vertical outer face. The inside of these lintels is carved out to form a gutter, which is lined with lead. Lamb used this type at Bagby (Fig. 224), Castle Douglas (Fig. 225), and Englefield Green (Fig. 226) as well as at the north aisle extension at St. Leonard, Butleigh (1856), (Fig. 227), the rebuilding of St. Leonard, Thornton-le-street (1855), (Fig. 228) and the repairs at St. Mary, Washbrook, Suffolk (1866) (Fig. 229). Type 2 is a simple variation where Lamb only uses the stone corbels to support a continuous cast iron gutter spanning the corbels and these are used at Blubberhouses (Fig. 230), Prestwood (Fig. 231), Thirkleby (Fig. 232) and Little Hampden Church, Little Hampden, Bucks (1854), (Fig. 233).

Type 3 is the same as Type 1 but instead of the plain wall between the stone corbels Lamb fits another stone, which is carved, with a deep convex profile. As the stone is between the corbels it has to be supported by the wall and is therefore in fact another very wide corbel whose principal function is supporting itself rather than the gutter lintel above. Lamb used this type at Aldwark (Fig. 234) and at West Hartlepool (Fig. 235).

Type 4 is similar to Type 1, but instead of the simple quarter round corbel they are square ended with a 45 degree cut back and only used at Gospel Oak (Fig. 236). Type 5 is similar to Type 3 with the additional stone between the corbels, but this time it is the gutter lintel above which is cut back with a 45 degree angle at the support over the corbels and used only once at Leiston (Fig. 237).

Finally with Type 6, Lamb has square ended stone corbels that project less than 2" from the face of the wall supporting the stone lintels above, which only project a further inch. Lamb used this once at Prestwood to the north and south aisles (Fig. 238). The water is collected with a continuous cast iron gutter fixed to the side of the stone gutter lintel. Much restoration work has occurred at this church with re-roofing and repairing of the aisles in 1961, 1980 and 1996 and it has not been possible to determine the original rainwater collection system. It is quite possible that water was collected at the top of the wall and taken away through internal downpipes. The roofs are of such a shallow pitch as to be virtually flat and this type of collection may explain why there is only a small projection in this case.

Summary

Lamb was following a simple design principle with his parapets and eaves. The former only occurred on churches with double plinths and had a string course, capping and pinnacle. The latter had essentially one system of stone corbels supporting stone gutters with five variations. Both show Lamb following the same principle over the twenty years of the sixteen churches without resorting to a fixed rule.

5.8 Polychromy and Materials

Lamb as one of the first architects in the nineteenth century to experiment with constructional polychromy. As early as 1839 he used the whites, blues and yellows of whole flint as the main wall facing material with red brickwork quoins to the corners and window reveals at Ellesborough School (1839) financed by his patron Sir Robert Frankland Russell (Fig. 250). There were also horizontal red brickwork bands to mark the plinth and to define the storey heights as well as under the cill and over the window heads. It is not unusual for Lamb to be using such materials here in Buckinghamshire as they were local to the area. Nor is it unusual for Lamb to be making use of colour in his buildings. Lamb was a member of the Royal Institute of British Architects at the time and the use of colour in ancient Greek architecture was being investigated and debated by the Institute.³⁹⁵ This all took place under the guidance of T.L. Donaldson, a prominent member and one of the four to propose Lamb for membership in 1837.³⁹⁶

The Polychrome Committee was set up under a resolution passed at an Ordinary General Meeting of the IBA in December 1836 to investigate the Greek's use of colour and in particular the remains of coloration of the Elgin Marbles.³⁹⁷ This interest in England of the use of polychromy in architecture continued similar work that had started in France in the 1820s by Jacques Ignace Hittorff (1792-1867). Hittorff had made an architectural tour of Sicily, Italy and Greece in 1823-24 and a discovery at a temple on the Selinontan acropolis led him to conclude that colour had been used in ancient Greek architecture, which he discussed in his *Architecture polychrome chez les Grecs* published in 1830.³⁹⁸ The importance of this work was recognised in England and Hittorff was elected an Honorary Corresponding Member of the IBA on 25th May 1835. Donaldson also acknowledged that it was Hittorff, as one 'who had first alluded to the subject', who had discussed at length that the ancient Greeks had 'boldly adopted the system of Polychromatic Architecture in all its fullness'.³⁹⁹

³⁹⁵ Meeting of the Council, Monday 3rd January 1838, *Minute Book of the Council of the Institute of British Architects, 1835-45*, RIBA Library, pp. 116-8.

³⁹⁶ For further information refer to Neil Jackson, 'Christ Church, Streatham, and the Rise of Constructional Polychromy', *Architectural History*, 43 (2000), pp. 218-52.

³⁹⁷ *Ibid.*, p. 225.

³⁹⁸ Hittorff biography at www.dictionaryofarthistorians.org last accessed 15th Sep 2010.

³⁹⁹ T.L. Donaldson. Introduction to 'On the Polychromy of Greek Architecture', *Transactions of The Institute of British Architects of London, 1835-36*, Vol 1, Part 1, p. 73.

The subject of polychromy in Greek architecture was also discussed extensively in Germany at the same time by Gottfried Semper (1803-1879). While a student at Göttingen University in 1823 studying history and mathematics, Semper had attended the lectures of Karl Otfried Müller (1797-1840) then Germany's foremost classical archaeologist.⁴⁰⁰ Semper's interest in ancient architecture was enough for him to go on to study architecture at the University of Munich in 1825 and to tour Italy and Greece between 1830 and 1833. His observations on the use of colour in both Roman and Greek architecture led to general theories on polychromy and his publication on the subject *Vorläufige Bemerkungen über bemalte Architectur und Plastik bei den Alten* in 1834. Semper continued studying colour in architecture leading to the publication of his *Über Polychromie und ihren Ursprung* in 1851.⁴⁰¹

It could be argued that the arrangement of the materials at Ellesborough Lamb used is due to constructional necessity, with the coursed strong bonding of the brickwork framing and supporting the weaker bonded flints rather than a deliberate attempt to use colour in an artistic manner. But this cannot be said for Lamb's second known use at the gatehouse at Cambridge Cemetery Chapel only three years later in 1842. Here the building is predominantly of white brick, but all the vertical surfaces, including the chimneys, has diaper work picked out in a contrasting red brick (Fig. 241).

Lamb's use of constructional polychromy preceded its use in High Victorian architecture such as Butterfield's church of All Saints, Margaret Street (1849-59) and Ruskin's work on colour in *The Stones of Venice* (1851 and 1853) making Lamb contemporary with other pioneers like James Wild (1814-92) at Christ Church, Streatham (1840-42)⁴⁰². The London based Lamb may well have visited the latter building since it was only 2 miles from his house in Camden. Lamb continued to make use of constructional polychromy in other secular buildings after the gatehouse in Cambridge. The three Town Halls he designed are all constructed from brickwork with a strong use of colour. The first at Watton, Norfolk (1853) is a red brick building with yellow brick diaper work and horizontal banding (Fig. 257). The second at Eye, Suffolk (1857) has alternate bands of red

⁴⁰⁰ L.D.Ettlinger, 'On science, industry and art: some theories of Gotfried Semper', *Architectural Review*, 1964, July, p.57.

⁴⁰¹ English titles are 'Preliminary observations on architecture and sculpture painted by the ancients' and 'About the origin of Polychromy'.

⁴⁰² Neil Jackson, 'Clarity or Camouflage? The Development of Constructional Polychromy in the 1850s and Early 1860s', *Architectural History*, 47 (2004), p.201.

and blue brickwork and the diaper work is this time in whole flints. No course is the same as the previous and there are no more than half a dozen continuous bricks in a course without a change to a flint. The only continuous brickwork course is the top of the plinth course and the construction must have required a great deal of concentration by the bricklayers (Figs. 243 and 249). The final Town Hall was at Berkhamsted, Hertfordshire (1859-60) where with only one facade to proclaim its importance to the town, Lamb used a red brick with diaper patterning in blue brickwork and to some of the stretchers in the arches over the windows and doors (Fig. 260).

Also in the 1860s, Lamb used yellow brickwork with horizontal bands of red brickwork at the Headmaster's House, Englefield Green, Surrey (1864), now sadly demolished (Fig. 242) and at Fawkham Manor, Fawkham, Kent (1866) the building is knapped flintwork contained by quoins and horizontal bands of yellow brickwork with sporadic use of red brickwork in the bands and panels to the bay windows (Fig. 251).

Lamb had noted in his lecture on Architectural Composition in 1857 that the 'existing remains of ancient art show the progressive changes of form, and the application of the local materials to construction - a necessary condition arising out of the changes in custom, climate, and religion'.⁴⁰³ Lamb had studied the countries ancient architecture in great deal and was well aware of the importance of the locality in determining the constructional materials. All of the six buildings mention above use mainly local materials, with only the stonework at Fawkham Manor and the copings at Cambridge and Watton having to come from further afield. Lamb made full use of constructional polychromy in his ecclesiastical buildings although in his earlier churches he appeared more interested in the texture of the material than the colour. The size and shape of the individual stones, the roughness and smoothness contrast between the materials used and the use of visible or non-visible coursing were all important features that Lamb considered. Each church in this study, used a different mixture of these considerations and it is simpler to identify those for each building by considering the two main surfaces of wall and roof separately in date order.

⁴⁰³ E. B. Lamb, 'Architectural Composition', lecture delivered at the Architectural Exhibition on 3 February, 1857, and published in full in *Building News*, 20 February 1857, 185.

Walls

Lamb's first church at Healey uses a single semi-dressed stone to the exterior with medium sized rectangular or square blocks laid in strong visible courses (Fig. 254). The stones to the windows and door surrounds are more finely dressed. The plinth blocks are also finely dressed and are much larger than those of the main wall in line with Lamb's desire to emphasise a strong base, as shown earlier. The interior is also similarly dressed stone for the walls and jambs and unusually not plastered as other churches were at this time in the 1840s.

At Prestwood, Lamb uses flint as the main building material as he had similarly in Buckinghamshire at Ellesborough, in both whole and knapped form with finely dressed stone to the window and door jambs, buttresses and plinth. The interior was plastered and the two columns of finely dressed stone (Fig. 255). Lamb had originally tried to use an alternative local material for these columns which had proved disastrous. He had attempted to construct them in a cheap hard building chalk called Totternhoe Stone used in Chiltern medieval churches such as Great Hampden.⁴⁰⁴ But the material absorbed too much water and the autumn frosts meant the pillars were⁴⁰⁵ 'split to atoms'. An example were Lamb's drive for economy and attention to the use of local materials resulted in false economy as the pillars all had to be replaced in Bath Stone.

Blubberhouses is also of dressed stone in a similar manner to Healey, but there are areas with distinctive coursing as well as those without any visible coursing lines (Fig. 253) and the interior of this church is plaster. Brompton uses a more roughly dressed stone to the main wall with a contrasting finely dressed stone for the quions, jambs and plinth. There is no attempt at coursing and the variably polygonal blocks of small sizes of 3" wide to 12" wide are arranged in a random manner (Fig. 252). The inside of the church is again plastered. At Thirkleby, Lamb also used roughly dressed randomly shaped stones set in a random manner with finely dressed stones for the corner junctions (Fig. 244) and with a plaster interior.

⁴⁰⁴ Desmond Keen, *Prestwood Parish Church, A Short History of Holy Trinity Church*, church guide published by the church 1997, p. 8.

⁴⁰⁵ *The Builder*, Volume 6, 1848, p. 618.

All Lamb's first five churches rely on the contrast between the roughly and finely dressed stones for effect and it is not until Aldwark that Lamb first begins to make use of colour and different materials (Fig. 240). The church is faced with large loose pebbles from the bed of the local river separated by bands of evenly spaced, red herring-bone brickwork. There are dressed stones for the buttresses, quoins and for the window surrounds as before and the stone gutter. The pebbles are not random, but carefully laid in bands of different thicknesses to give distinct courses. They are also sorted by shape, with courses of round pebbles, courses of thin or oval ones laid vertically and courses of squarer and more rectangular ones. Lamb creates what at first seems a pleasant random wall with brick bands, yet is actually a highly organised composition making full use of the red, browns, yellows and creams of the three materials.

West Hartlepool reverts to the same arrangement as at Thirkleby, but with much larger individual blocks and squarer in shape (Fig. 247), while Leiston reverts to that used at Prestwood with whole and knapped flints contained with dressed stone (Fig. 256). Lamb also introduces strong horizontal bands of dressed stone at regular intervals throughout the height of all the external walls. This may not be just as a feature, but also for structural reasons. There are no buttresses to this church and Lamb may have been using this stone coursing to help tie together the weaker areas of flint.

At Castle Douglas, Lamb reverts to simply using stone, but decides to have both the main wall stone and the containing stones for quoins, gables, windows and plinth left roughly dressed. The stones are grey granite, sandstone and whinstone. The latter is the main wall material and displays the various colours and crystals of felspar and quartz. The variation in fine tooling between the different stones gives an interesting effect (Fig. 246).

Englefield Green is Lamb's most ambitious attempt in the use of constructional polychromy although this is not apparent from the exterior. The main wall material is stone of square and rectangular small sizes only semi-dressed and set in a random manner with no visible course lines constrained by finely dressed stones for quoins, buttresses and jambs (Fig. 258). This is similar to his other churches at West Hartlepool and Thirkleby, but instead of a simple plaster interior he uses a riot of colour, material, shape and texture (Fig. 248). All the interior walls are made of varying bands with strong visible coursing consisting of red bricks in stretcher courses and header courses, red herring-bone

brickwork picked out with blue brick and yellow sandstone, finely dressed continuous yellow sandstone blocks, alternate sandstone blocks and red brick headers and rough dressed bath stone rectangular blocks in a random course. At this time in 1856, Lamb was reacting to the comments by Ruskin in his recently published book *The Stones of Venice* and to the interior of Butterfield's All Saints, Margaret Street under construction at the time, in his own unique manner.

At Bagby, Lamb used natural stone in irregular shapes from very long and thin to square set with no visible course lines using little tooling in the main wall material, but more finely dressed sandstone for the windows, quoins, corbels and plinth stones and a simple plaster interior (Fig. 245). Finally at Gospel Oak, despite there being no shortage of funds, the main wall material is a randomly laid roughly dressed bath stone left as natural as possible to contrast with the finely dressed stones for buttresses, plinth, gutter and windows (Fig. 259).

Summary

The question has recently been raised by Jackson in his article on constructional polychromy as to whether the use in the 1850s and 1860s was for clarity or camouflage. He states that Lamb at Aldwark used polychromy 'to enhance the security of loose building materials in the wall-veil' and that this 'is not expressive of function, as Street would have it, but pragmatic, and actually traditional'.⁴⁰⁶ Lamb endeavoured to use traditional methods and materials where possible in his quest for buildings where the composition was to achieve 'harmony of form' and 'harmony of material'.⁴⁰⁷ The desire for buildings with these two qualities meant that it was not just the polychromy which Lamb considered important, but also the texture and surface treatment. In fact, the latter appears more important in his churches as externally it is only the church at Aldwark where there is any significant use of polychromy. In all the other churches it is the natural quality of the material which Lamb exploits with size, shape and texture in his seeking of 'harmony'.

⁴⁰⁶ Neil Jackson, 'Clarity or Camouflage? The Development of Constructional Polychromy in the 1850s and Early 1860s', *Architectural History*, 47 (2004), p.213.

⁴⁰⁷ E. B. Lamb, 'Architectural Composition', lecture delivered at the Architectural Exhibition on 3 February, 1857, and published in full in *Building News*, 20 February 1857, 185.

Roof Coverings

Lamb uses the large expanses of roofs that his church plans created, as canvases to apply various patterns using the three main materials of slate, stone and tile. Lamb seemed to be aware of just how large and visible these areas were and unlike walls, which were broken up with openings, buttresses, plinths and string courses, the roofs were unbroken surfaces composed of regular, monotonous small components.

Slates

In his smaller churches at Bagby and Brompton, Lamb used straightforward regular identically sized slates relying only on their blue and grey colour for relief (Figs. 261 and 8). At Castle Douglas, Lamb introduced a round edged slate and the roof was made up of bands consisting of three courses of round edged slates separated by four bands of normal square edged slates (Fig. 262). A similar use was made at the repairing of All Saints, Stuston, Suffolk (1860-62) except that the bands were equal with four courses to each (Fig. 263).

Stone

Lamb only used stone on his church at Blubberhouses in an area where there are heavy snowfalls. It is a traditional roof material and in order to add effect and reduce the monotony graduates the individual stone tiles from large ones at the eaves to smaller ones at the ridge (Fig. 264).

Tiles

Lamb's roof covering employed to greatest effect in his ecclesiastical and secular buildings is a clay roof tile. In the gatehouse at Cambridge, the main roof is covered with tiles finished with a point rather than square or round ended. The angle of the point is such that when rows of the same tile are placed on the roof the resultant shape left exposed is a hexagon, producing a uniform but interesting and unusual effect (Fig. 265). At Fawkham Manor, Lamb uses bands of tiles in the same manor as he had used bands of slates. Instead of changes in the shape he uses colour, with alternate bands of five courses of red tiles and

three courses of blue tiles (Fig. 266). At his work to St. Mary, Washbrook, Lamb again uses five courses of plain red tiles, this time interspaced with five courses of a blue tile where a quarter circle shape is cut from each side of the lower exposed end. This results in a running shape of alternate half circle and straight line across the roof when the tiles are placed on the roof (Fig. 267).

Lamb's greatest use of plain and shaped tiles to create a pattern effect is in his churches at Aldwark, Thirkleby, West Hartlepool, Gospel Oak and Leiston. In all these churches he uses a plain red tile as the main tile and a scalloped shaped blue tile in a diaper pattern to relieve the large expanses. Sadly, the roof at Leiston has been lost, but was indicated in the illustration reproduced in *The Builder*⁴⁰⁸. As is to be expected from Lamb, although the five churches appear the same there are differences, which become apparent after closer inspection.

At Aldwark, the blue diaper tiles make up a square grid of nine tiles with the grid on the nave roof set equal distance between the eaves and the ridge (Fig. 268). At the same time at Thirkleby there is an identical nine tile square grid, but this time it is set out so that the intersection of the grid meets at the ridge (Fig. 269). This might seem a coincidence, but it is true for both sides of the nave and for the porch and must have been intentional. In fact, exactly the same appears at Gospel Oak, with a nine tile square grid of scalloped blue tiles set out so that they meet at the ridge (Figs. 270 and 271). This setting out requires planning as the builders found out when they re-roofed Gospel Oak in 2004. All roofs are tiled from the eaves and in order for the grid to meet correctly at the ridge they had to lay temporary tiles all the way up in order to work out how to set out the first row at the eaves. This had not occurred to them when they costed the project and worked out at an extra two days cost to the job. The roof at West Hartlepool was originally set out with a similar diaper pattern and this was replaced in the reroofing work in 1995. The replacement work has a different and much larger grid of sixteen tiles and the grid meets at the eaves (Fig. 272). This was the original grid pattern and setting out by Lamb in 1854 shown in a nineteenth century photograph.⁴⁰⁹ Lamb may have decided on a much larger grid for this larger church, however he reverted to a nine-tile grid in his later church at Gospel Oak of a similar size.

⁴⁰⁸ *The Builder*, 2nd September 1854, pp. 462-63.

⁴⁰⁹ Tim Argyle, 'New Life for Christ Church Hartlepool', *Church Building*, September/October 1995, a photograph appears on page 33.

Summary

Lamb was obviously aware of the large expanses of roofs and saw it as an opportunity to apply colour and pattern. As Jackson points out this ‘camouflaged the layered construction of the roofing itself’ and shows Lamb ‘demonstrating the palpable thinness of the material’.⁴¹⁰ By contrast, Street had set his diaper pattern ‘between long horizontal lines’ and ‘thus preserving the layered effect and tying in the mass of the roof with the striped body of the church’. Street was ‘emphasizing the roof as mass, rather than surface’⁴¹¹ which was something Lamb was also doing with the strong bands of tiles at Castle Douglas, Stuston and Washbrook. Lamb used colour, shape and material in his roof coverings as both clarity and camouflage.

⁴¹⁰ Neil Jackson, ‘Clarity or Camouflage? The Development of Constructional Polychromy in the 1850s and Early 1860s, *Architectural History*, 47 (2004), pp. 213-14.

⁴¹¹ *Ibid.*, p. 214.

5.9 Restorations and Repairs

A strong indication of the success of Lamb as an architect is the amount and frequency of repairs necessary in his buildings. All of the twelve churches in this study are extant; the youngest is a mere 145 years old and the oldest 165 years old.⁴¹² When Lamb built his churches he built to last. Some of his churches developed problems rather quickly and others lasted over 150 years before any major work was required. In most cases where the history of the church is well known it is the lack of funds at the initial build leading to the use of cheaper materials and shortcuts where the problems began. It must be remembered that there was a significant change in the nineteenth century from the master mason to the contractor. As Thompson has pointed out this, 'resulted in the lowering of standards of execution, for while the old craftsman made his name for quality, the new contractor's success depended upon speed and cheapness'.⁴¹³

Prestwood

The first of Lamb's churches where false economies in the roof construction lead to major problems requiring attention within thirty years was at Prestwood. The original long section design drawing by Lamb shows that the nave had four trusses, yet there are eight trusses installed.⁴¹⁴ The proposed four would have needed to be stronger as each would have been supporting more of the roof and presumably Lamb intended there to be purlins between common rafters with timber boarding over as in his other churches. As funds were short towards the end of the project when the roof was being installed the change to eight trusses at closer centres also meant that he could omit the purlins and the common rafters altogether. The boarding was also omitted and replaced with thick 3.5" wide battens to have the dual purpose of boarding and batten.⁴¹⁵ The tiles were changed from new to second-hand and fixed with no torching. The roof leaked quite badly with the plaster walls soaked with water and the roofs to the nave, porch and west end were all replaced between 1877 and 1884 with hand-made Blue Brosely tiles.⁴¹⁶ The low pitched roofs to the aisles were originally to be in lead, but Lamb had to replace these with zinc at the request of the

⁴¹² St. Martin, Gospel Oak, 1865 and St. Paul, Healey, 1845.

⁴¹³ Paul Thompson, *William Butterfield*, The M.I.T. Press, Cambridge, Massachusetts, 1971, p. 70.

⁴¹⁴ Un-signed long section, 1849, Centre for Buckinghamshire Studies, Aylesbury, PR168A/3/5.

⁴¹⁵ Desmond Keen, *Prestwood Parish Church: A Short History of Holy Trinity Church* (church guide, 1997), p. 14.

⁴¹⁶ *Ibid.*, p. 23.

ICBS architects.⁴¹⁷ Despite the change, further restoration work was required with the zinc replaced in the 1877-84 restorations to the north aisle and in 1899 to the south aisle. Finally both roofs were replaced with Nuralite in 1980 and stainless steel in 1996.⁴¹⁸

Gospel Oak

Structural defects were discovered in the tower, its walls and foundations at Gospel Oak when the large choir vestry was added adjacent to the tower in 1928-9. An extensive restoration was carried out 1933-36 throughout the church as well as strengthening work.⁴¹⁹ It is probably at this time that the tie rods were added across the nave at the hammer beam level, but it has not been possible to ascertain if this was an essential measure or as a precaution. Major work was required to the roof by 2002 and with the assistance of a grant from English Heritage the whole of the church was re-roofed in 2004 by E.J. Roberts under the direction of the architects Donald Insall Associates.

During the work to the roof it quickly became apparent that the tiles were both oversized at 10.5" by 6" and had no holes for nail fixing. The tiles were all torched and laid over the battens fixed directly to the 1" boarding. After over 140 years the lime mortar mix had turned to dust and the church had to be closed while workers in full body protection removed the tiles (Figs. 273 and 274). The replacement roof has counter battens at 450mm centres, with a Tyvek Supro felt and new battens. The original tiles have then been reused where possible and new tiles added with holes so that every four row can be secured with copper nails (Fig. 275). The original diaper grid pattern has been maintained.

Other major work requiring attention was to the lead gutter mentioned earlier. Lamb had used large oversized and long lengths of lead, which according to the experience of the contractor, was typical of the period.⁴²⁰ Lead expands and contracts greatly with changes in temperature and therefore requires short lengths and places to allow for expansion. Lamb may well have decided that a long continuous sheet without joints was better than

⁴¹⁷ Report on scheme by ICBS architect, ICBS 3941, item 18 in file.

⁴¹⁸ Desmond Keen, *Prestwood Parish Church: A Short History of Holy Trinity Church* (church guide, 1997), pp. 23-4.

⁴¹⁹ Nicholas Cox, *History of St. Martin's Church, Gospel Oak*, September 2002, for the restoration appeal for funds.

⁴²⁰ Presentation to the public on the restoration work at the church given by Steve O'Flarety of E.J. Roberts, 7th July 2004.

several smaller sheets with joints that could leak. Unfortunately, the longer lengths expanded and contracted, split, leaked and water penetrated the roof causing damp and decay. The timber beam supporting this gutter was to be replaced with a modern steel beam, but common sense prevailed and the original replaced with an identical timber beam. The gutter was replaced with new lead in shorter lengths to modern design with appropriate expansion joints (Fig. 276). It was however found that Lamb had used asphalt to the inside of the main gutters in the church rather than lining with lead as he had used in his other churches.

Healey

Gospel Oak is not the only Lamb church needing major restoration work and a replacement roof in the 21st Century. St. Paul's, Healey required extensive stonework repairs, new guttering and outlets, repairs to the spire and a replacement roof in 2005⁴²¹ The original welsh slates were removed revealing that they were fixed directly to the 1" boarding without any battens. A similar replacement roof to that at Gospel Oak was used with counter battens on the boarding, felt, battens and the replacement of the original slates where possible. The roofs over the transepts were also replaced, but as these were not of as shallow a pitch as at Prestwood, slates could still be used. Repairs were also necessary to the plaster to the north east corner of the nave (Figs. 277 to 282).

Lamb had originally only had one gutter outlet to the parapet gutter of the nave roof and the falls to the replacement gutter were installed both ways and an additional gutter outlet added at the west end of the nave. New downpipes were also installed to drain the porch roof.

Major restoration work was required to the spire requiring the removal of the top 3m, revealing that most of this section was hollow and not solid as expected for spires. Another expected discovery was 4" to 5" inches of stone dust on the floor of the inside of the spire beneath the bell. The openings to the four sides of the spire had allowed the wind through and were sufficient to create eddies to erode the masonry from the inside. The top of the spire was reconstructed and the whole spire repointed on the inside and outside.

⁴²¹ I am grateful to the assistance of Hartley, Moyes, Chairman of the Restoration Committee, for the information on the restoration and to Ian Whittaker for the images of the restoration work.

Replacement stones were required especially to the top stone which had split and they were replaced securely with stainless steel pins vertically between the course (Figs. 283 to 288). The whole of the restoration work was carried out by Swaledale Stone Masonry and also included a replacement iron finial and weathervane.

Other churches

At West Hartlepool the church had many piecemeal repairs to the roof and with shrinking congregations was finally made redundant in 1974. The local council took over the building and simply used it as a store carrying out minimal maintenance until the full refurbishment scheme in 1993-95 when it was restored to become the Hartlepool Art Gallery. Cracks in the tower walls were repaired, stonework replacements to the external walls and the whole roof replaced with the restoring of the original tile pattern.⁴²²

Blubberhouses has had only minor repairs to the stonework and the guttering to the south side of the nave and still has its original roof. It is presently in need of repairs to the west end as there are clear signs of water penetrating the west wall. Englefield Green needed to have its roof replaced, but this was not necessary until 1935, almost 80 years later. The church guide states that 'the original red roof tiles were replaced with graduated Westmorland slate' and indicates that perhaps Lamb had a grid of blue tiles as he had in some of his other churches in the 1850s.⁴²³ It is likely that during the work to the roof at this time the dormer windows to the nave were added to increase the light to the church.

The roof at Leiston was in need of retiling and reboarding in 1871 after only seventeen years. Since the roof was of identical construction to that of his other churches lastly many times longer, it suggests that the original workmanship and materials were not of a high standard.⁴²⁴ In 2005 the church underwent a major reordering and repairs carried out to the fabric, including a new floor, replacement rainwater pipes and a new underfloor heating

⁴²² Tim Argyle, 'New Life for Christ Church Hartlepool', *Church Building*, September/October 1995, pp. 32-3.

⁴²³ Richard Falkner, *Church and School in Englefield Green*, Church guide, 1973, p. 8. The source for this statement has not yet been identified.

⁴²⁴ Roy Tricker, *St. Margaret's Church, Leiston, Suffolk, History and Guide*, published by the church locally in 1990, p. 7.

system. This new system replicated Lamb's original underfloor system of ducts radiating from a large central firebox accessed from the outside by an underground tunnel.⁴²⁵

Summary

Lamb's churches did require the usual maintenance and repairs that are to be expected in buildings and did not require major work for several decades. The exception is the church at Prestwood, where major work was required within thirty years due to the changes Lamb had to make to the roof construction due to a shortage of funds. There are no records of any correspondence by Lamb at the time to indicate if he made any strong objections to this change in specification and knew that such lower standards would inevitably lead to problems in the future.

⁴²⁵ Simon Merrett, 'St. Margaret's Leiston, Church re-ordering inspired by Italian sabbatical', *Church Building*, 100, pp. 36-7.

6.0 END OF A PRACTICE

Lamb had worked on over 150 known commissions resulting in buildings by 1866, including the completion of all the twelve new churches in this study and was at the height of his career. He had now just turned sixty and was beginning to contemplate his retirement as he began to work on a large country house for himself at Fawkham Manor, Fawkham, Kent (1866). The story has been told in detail by Winduss in her MA thesis in 1978, but only the details are recounted and no great significance is shown of the impact this project appears to have had on Lamb's life.⁴²⁶

Lamb had been able to amass enough money by this time to embark on such a large scheme. The records preserved at the ICBS show that Lamb received for each church the standard architect's commission of 5% of the cost of the project with an additional cost for expenses, which varied by project. The records at Eye show that Lamb also received a 5% commission for the work at the Town Hall in 1857. Over the twenty-year period from 1845-65, Lamb worked on 132 commissions and records exist showing either the exact fee Lamb received or the tenders for 22 of these. An analysis indicates that Lamb received a known income of at least £2,250 for these, which is one sixth of the total commissions. The 22 include 8 of the churches in this study and all three of the Town Halls with the remainder including other larger projects during this period. It is unlikely that the fees for the remaining lesser and smaller commissions is five times the known income, but even a conservative estimate of only three times would give a total income of £9,000 over this twenty-year period.

For half of this time he was single, not marrying Caroline Nixon till 1855 and beginning a family in 1857 with the birth of Edward Beckitt Lamb. During this time he was working either from his two London houses at 26 Charlotte Street or from his house at 3 Hinde Street, Manchester Square. He did not work from separate offices and is only known to have employed his nephew Henry William Lamb⁴²⁷ for most of this work to assist him

⁴²⁶ Ann Winduss, *E.B.Lamb (1806-1869): The Development of a Nineteenth Century Architect's Career*, MA Thesis, 1978, Manchester University, unpublished. p. 298.

⁴²⁷ A signed receipt by Henry William Lamb for 27th December 1847 is preserved at the Lambeth Library for Prestwood Ref ICBS 03941 Item 15 in the file.

and Arthur Vernon towards the end when working at Hughendon Manor.⁴²⁸ No accounts for Lamb's office have survived and it is not known what salary his two assistants were on. However, the account books for Butterfield's office do survive for 1863-4 and show that the four assistants there were on annual salaries ranging from £50 to £90.⁴²⁹

Lamb's Hinde Street house was rented and he was employing a cook and a servant by the time of the census in 1861.⁴³⁰ The wages for a cook in 1861 varied between £14-£30 and that for a Maid-of-all-work £9-£14.⁴³¹ Rent for houses varied from £15 to £50 a year depending on the size and location. Hinde Street's location in the west end is likely to have been nearer the top end of this bracket as it is classed as 'Middle class- Well to do' in Charles Booth Poverty Map 1889.

With a possible average income of this period equating to at least £450 a year, it is certainly quite reasonable for Lamb to have amassed sufficient funds to embark on this project. It is odd then that Lamb also took out a loan and that it 'was foreclosed when work had reached the first floor'. He was forced to sell the half-completed house in 1868 to 'the owner of the estate Henry Booth Hohler' and complete it as a normal project for a client. Winduss speculates that Lamb may have 'tried to supplement the considerable capital he had amassed' with 'an over-ambitious loan' anticipating that the steady flow of income from his projects would continue. Lamb would also have decided to continue to work over the following years taking him into his late sixties for a five-year loan period. Winduss appreciates that 'clearly some catastrophe overtook him', but does not speculate as to what this might be.⁴³²

Overend & Gurney Crisis

A significant event took place in the financial world on 10th May 1866 with the collapse of Overend & Gurney leading to one of the major financial disasters of the nineteenth century and the first instance of the description *Black Friday*. Overend & Gurney were a company

⁴²⁸ For further information on Arthur Vernon see *The Life and Work of E.B.Lamb (1805-1869)* by Edward Kaufman.

⁴²⁹ Paul Thompson, *William Butterfield*, The M.I.T. Press, Cambridge, Massachusetts, 1971, p. 64.

⁴³⁰ Census of 1861 for 3 Hinde Street, Manchester Square, London

⁴³¹ Table 4, Wages of female servants from *Mrs Beeton's, Book of Household Management 1861* reproduced in Pamela Horn, *The Rise and Fall of the Victorian Servant*, Allan Sutton Publishing Limited, 1990, p. 149.

⁴³² Ann Winduss, *E.B.Lamb (1806-1869): The Development of a Nineteenth Century Architect's Career*, MA Thesis, 1978, Manchester University, unpublished. p. 301.

at the apex of the City's financial network buying and selling bills of exchange at a discount and their fall provoked panic among leaders and investors the following day. When the bank suspended payments on 10th May 1866, they disclosed the shortfall to the Bank of England hoping for a rescue of an immediate advance of £400,000.⁴³³ Their hope was in vain, as the Bank of England refused, although it did lend some £4 million to the money market by the end of the following week. The Chancellor of the Exchequer, William Gladstone, was forced to suspend the 1844 Bank Charter Act so that the Bank of England could maintain currency convertibility. The discount rate increased to 10%, which was a high rate not to be seen again till 1914. There was no reason for the Bank of England to act as a lender of last resort as it was then not publicly owned, but a private bank and under no obligation to rescue Overend & Gurney. The Bank's actions did mean that the immediate panic was arrested, but over 180 houses in the City were still to fail in the following three months.

Whether Lamb had a loan with Overend & Gurney direct or one of the many other banks at that time is not known, but such a momentous event in the financial world would certainly have affected those who loaned to Lamb and may well have been the reason why the loan was foreclosed. It is also possible that Lamb lost savings, forcing him not only to sell his half-completed project, but also readjust his lifestyle. Eight years earlier, in 1858, while Lamb was working on the Town Hall project at Eye, he was paid a cheque for £34 5s 6d drawn on Messrs Fincham, French and Simpson, Bankers, Eye.⁴³⁴ This is preserved at the Suffolk Record Office and bears the ink stamp marked 'London and Westminster Bank Marylebone Branch'. At this time, Lamb was living around the corner at 3 Hinde Street and he may possibly have had a bank account at this branch. The bank eventually became the London County & Westminster Bank Ltd in 1909 and absorbed into the Royal Bank of Scotland where the records are now kept. Unfortunately, although various books and ledgers have survived for the bank, no details of bank accounts have survived for customers for this period. It is not possible to establish if Lamb did have an account at this bank.⁴³⁵

⁴³³ Michael Collins, *Overend Gurney Crisis, The New Palgrave Dictionary of Money and Finance*, Macmillan Press Ltd, 1992, Vol 3, p. 101.

⁴³⁴ Bundle of papers 1856-58, Eye Town Hall, Suffolk Record Office, EE2/N/4

⁴³⁵ Limited information is kept at the Royal Bank of Scotland Head Office in Edinburgh, but there are no details of Lamb as a customer according to the archivist.

1866-1869

Over the next three years from the crisis of 1866, Lamb is recorded as having worked on only three projects and two unsuccessful competition entries. In 1866, Lamb worked on the Stables and Yard at Hughenden Manor for Benjamin Disraeli and the extension to the vicarage at Wheatley as well as entering the competition for Manchester Town Hall, which was won by Alfred Waterhouse.⁴³⁶ In 1867 he began another enlargement, this time to the church of St. Jude's, Englefield Green, where he increased the size of the north transept. In 1868 he entered the competition for the Smithfield Martyr's Memorial Church in Clerkenwell, where he was unsuccessful losing out to E.L. Blackburne.⁴³⁷

Finally, also in 1868 he started work on the church of St. Mary, Magdalene, Addiscombe, Croydon. This was an unusual project from the start. The patron Rev Maxwell Ben Oliel, a brilliant Jewish theologian and preacher, who had converted to Christianity, had been the first assistant curate to the local church of St. Matthews. Soon a larger church was needed due to the increase in local population and the popularity of his preaching. The local vicar refused to co-operate so Ben Oliel decided to set up a new church outside the authority of the Church of England. This new church was in Canning Road to Lamb's design and originally called St. Pauls. Controversy continued even after the church was finished with a temporary west end and only the first 30' of the tower due to shortage of funds. It was not formally recognised by the Church of England until 5th August 1874 when it was renamed St. Mary Magdalene.⁴³⁸

Was Lamb desperate for work by this stage that he would take any project? Or was this just another chance for him to demonstrate his central plan church design? The reasons may never be known, but Lamb was working on fewer and smaller projects than he had done since the 1840s. He may have been under severe stress during this period to maintain an income for his wife and three children and this is likely to have contributed to his unexpected death on 29th August 1869. His death certificate records the cause of death as

⁴³⁶ Roger Harper, *Victorian Architectural Competitions, An Index to British and Irish Architectural Competitions in The Builder, 1843-1900*, Mansell Publishing Limited, 1993, p. 117.

⁴³⁷ *The Building News*, Volume 15, 1869, p. 404 and *The Buildings of England, London 4: North*, Yale University Press, 2002, p. 634.

⁴³⁸ History of St. Mary Magdalene, www.stmmm.org.uk, last accessed 15th August 2010.

'apoplexy 4 hours' or heart failure possibly from a stroke.⁴³⁹ The death was sudden as he did not leave a will and his total wealth was calculated at probate at under £450.⁴⁴⁰ His eldest son, Edward Beckitt, was only 13 and unable to carry on his father's practice; although he did go on to have a successful career as an architect in his own right. He worked in Tonbridge Wells before completing his career in London at the Office of Works where he designed the fleche for Westminster Hall and the coffin for the Unknown Warrior buried in Westminster Abbey.⁴⁴¹ Lamb's nephew, Henry William Lamb, Jnr, also went on to become an architect although details of his life and work are unknown.⁴⁴² Of his two daughters, who were still school children of 10 and 8, the elder Caroline grew up to be a school governess while Marion kept in the family business and is recorded as being a 'plan tracer for architects' in the census of 1881.⁴⁴³ Lamb's wife Caroline, reverted to being a Music Teacher, which she had been before she married, in order to support her family.⁴⁴⁴

Lamb's small practice ceased at his death having it seems been in sharp decline for three years. It is a shame that he was unable to complete Fawkham Manor for himself and so end his career on a higher note. The architecture here shows he was still trying out new ideas in his old age with hipped dormers, jettied timber bays on the first storey and oriel windows. There are typical Lamb brick details, colours, string courses, use of local materials, banding of coloured tiles and head details, but in a new, fresh manner (Fig. x).

The last references in the journals to Lamb were his obituaries. The one in *The Builder*⁴⁴⁵ stated that 'he continued to express originality sometimes at the expense of beauty' and that in *The Architect*,⁴⁴⁶ 'his designs will not please everyone... what he did was ever his own.' He was also mentioned outside the capital with *The Manchester Times* recognising he was 'an architect of considerable reputation, long practice, and unusual ability'.⁴⁴⁷

⁴³⁹ Death certificate of Edward Buckton Lamb, 29th August 1869, Public Record Office.

⁴⁴⁰ Wills and Admons, 1869, Vol 12, p. 229, at the London Probate Department. Edward Buckton Lamb, Letters of Administration granted to Caroline Francis Lamb 12th November 1869.

⁴⁴¹ Information kindly supplied by Vera Coomber currently researching the life and work of Edward Beckitt Lamb (1857-1934).

⁴⁴² Henry William Lamb is recorded as an 'architect and surveyor' in the census of 1871 at his residence 11 Dorchester Place, London.

⁴⁴³ Marion Lamb, Census 1881 at 109 Stamford Street, London.

⁴⁴⁴ Letter to Mary Disraeli dated 7th March 1870 regarding giving piano lessons, Hughenden Papers, Box 194.

⁴⁴⁵ Obituary of Edward Buckton Lamb, *The Builder*, September 1869, p.720.

⁴⁴⁶ Obituary of Edward Buckton Lamb by William Young, *The Architect*, September 4th 1869, p. 114.

⁴⁴⁷ Art and Literary Gossip, *The Manchester Times*, Saturday 18th September, 1869, p. 4.

7.0 CONCLUSION

This in depth study into Lamb's architecture has shown an architect who established firm principles of construction and design early on in his life and then followed them during his career. Cottingham was one of the leading Gothic architects of the day and Lamb spent five years articulated to him in an environment where the research and study of Gothic architecture was considered fundamental for the accurate restoration of buildings and the design of new ones. The measuring and restoring of Gothic buildings and the designing of new Gothic buildings being undertaken throughout his time in the office gave Lamb a firm training. He received a sound education in Gothic architecture, in detail and design, as well as construction and the use of materials, particularly in stone and timber which became so fundamental in his churches.

Lamb's education was advanced with his attendance at The Royal Academy Schools and provided him with the opportunity to meet the greatest architects of the time. He was also able to produce his own designs and show them off to his peers, the public and potential clients by exhibiting at the Royal Academy Annual Exhibitions. Such an environment had a profound effect on Lamb who was in his late teens and early stages and gave him a strong foundation in all aspects of architecture.

Loudon allowed Lamb to develop and test his principles as he began his architectural career. It was fortuitous for Lamb that he met Loudon in 1831 shortly after he had married Jane Webb at the beginning of what was to become a perfect partnership. He had published over eighteen publications on landscape and gardening as well as two successful magazines and she had written a wild and highly imaginative novel. Lamb was in the right place at the right time and was able to contribute his thoughts and ideas to the five books and the one magazine that the Loudons were to produce by 1843.

Lamb produce many articles with designs of many building types in different styles for *The Architectural Magazine*, the *Encyclopaedia of Cottage, Farm, And Villa Architecture*, and the *Supplement to the Encyclopaedia*. The publications were an ideal place to continue to promote his designs to a wider audience of potential clients than through the annual exhibitions only in London. The medium also allowed Lamb to try out new ideas for designs and gave him the freedom to experiment.

Loudon was also able to secure projects with landscape requirements due to his connections using Lamb to assist him with any architectural input. This successful relationship lasted for the last three to four years that Lamb knew the Loudons and helped to establish his architectural career with the projects of Ingress Park, Derby Arboretum and Cambridge Cemetery Chapel as well as lodges for Sir Robert Frankland Russell and three Villas in Scotland.

By the completion of his articles with Cottingham, his work with Loudon and his other independent commissions, Lamb firmly believed that architecture should be based on principles rather than rules. These determined his approach to planning, function and construction and formed the basis for his principles in composition. Lamb was forty years old in 1845 and well placed to try out these principles on church design. Over the next twenty years he worked on twelve major churches where he tested and developed these principles.

The church plans began with simple Latin cross based plans at Healey and Brompton and progressed to Quadrate cross based plans originally developed at Aldwark and refined at Leiston and West Hartlepool to his final church in this study at Gospel Oak. Lamb was slowly and steadily refining his plans to provide churches with both a central space and minimal columns allowing as many of the congregation as possible to see and hear clearly the sermons preached from the pulpit. There was also a change from an entrance at the west end and a longer route through a rectangular preaching space, to a central entrance and a shorter processional route through a squarer central preaching space. One other common factor in this route is that there is always either a covered waiting space or porch outside the door to the nave which provides a private space for people to prepare their attire before entering the main public space of the church.

Lamb had a fundamental belief that architecture was a progressive art and he saw any rules laid down for the planning of churches more as guidelines, allowing him freedom to experiment with the form without destroying the function in his desire to create new forms. Thus the chancel is always in the usual place at the east end with the main seating to its west, but the position of the tower is at virtually any compass point and the vestry is equally free to be placed at any convenient location in the plan without effecting the use of the church as a preaching space.

Lamb does seem to have been following a system for the setting out of the churches at Aldwark and Prestwood based on prime numbers and then later a system based on a grid at Castle Douglas and Englefield Green . Each conform to the ‘principle’ of a system that determines how a plan should be laid out, rather than a ‘rule’ that any particular system of prime numbers or modules. The Golden Section and the Diagon can also be found in the plans of his churches. Whether these are deliberately set out or because his intuition and artistic inspiration of his eye was so tuned that the spaces he created conformed to these orthogons almost exactly may never be known. But all this geometry and proportion occurs despite the fact that Lamb does not admit to such use in his later lectures.

Lamb conjured up impressive roofs for his churches which appear at first to be confusing and complicated. He was always looking to the past for inspiration, from his mediaeval forebears cathedrals and barns and in particular to the way these large buildings were roofed. A detailed look at the churches at Bluberhouses, Aldwark and Brompton revealed that Lamb used the three traditional roof forms of king-post, scissor brace and hammer beam, but only as a starting point in order to produce his own variations. A detailed breakdown of the individual roof elements in Lamb’s roof construction from scissor braces, principal rafter pairs, king posts, hammer beams and hammer posts, collars and braces to vertical ties, purlins, fretwork and longitudinal purlin braces and the treatment of the internal and external finishes shows the only common element at every church was the inclusion of principal rafter pairs. Despite this essential element of roof construction that even Lamb had to include did not stop each roof being unique. Lamb combined the traditional roof types together, altered and twisted them in practical and logical ways to create new forms for each of the twelve churches.

Lamb also used a pitch of around 54 degrees or 57 degrees in all twelve of his churches for all plinths, weatherings and roofs adhering to the pitches known to have used at mediaeval barns in Sussex, Suffolk and Kent.

The construction techniques took into account the funds available for each project using the standard sized timbers of the day to make up the timbers in the roof. The larger and more awkwardly shaped curved braces were made up of several pieces all of which were joined with pegged mortise and tenon joints. Lamb supplemented this with construction

techniques using double pieces with bolts and plates and although all suggesting additional expensive were actually reducing costs by eliminating the labour intensive mortise and tenon joints. These techniques also simplified the method of construction reducing the time costs. Lamb used the readily available and easy to work cheaper timber of fir or pine as the main timber and then applied stain to reduce costs again and imply the use of more expensive and rarer oak. Finally, the use of the standard width and breath timbers that were easily available also reduced costs even further.

Lamb created many problems for himself as he took his plans into the third dimension when it came to the collection and disposal of rainwater, but saw these as opportunities to be inventive with his solutions. Rather than amend the design of the plan, he sought and more importantly found, a solution in every case. Many odd junctions, asymmetrically shaped gables and clashes of walls and roofs that he used as solutions then became part of his design. But all were added through necessity which Lamb were considered for the truthfulness in the architectural composition warranted by the arrangement of the plan. Any oddities thus produced in the third dimension due to the two dimensional plan were acceptable.

Some of the solutions were successful, but others Lamb introduced created many problems in his churches with his use of internal lead pipes hidden inside the internal walls, which deteriorated, leaked and damaged the fabric. Lamb was however making the same use of lead as other architects at the time and he could have amended his plans to avoid all the drainage problems, but he chose not to. For Lamb the plan was more important and he knew that however unusual or bizarre he could find a solution and inadvertently produce the wonderful quirks were are such a distinctive feature of a Lamb building.

All the plinths to Lamb's churches can be divided into two distinct types, although every example is different and shows that he was again following the principle that all buildings should have a plinth and not the rule that all plinths must take the same form. As the types are divided into a single plinth and a double plinth one might expect that the former would be used solely in smaller churches and the latter in the larger churches. But this is not the case as Lamb uses a single plinth at the large church at Leiston and a double plinth at the small church at Bagby. Lamb used what he believed to be the appropriate type in his compositions.

Lamb also followed a simple design principle with his parapets and eaves. Parapets only occurred on churches with double plinths such as Healey, Brompton and Gospel Oak. A horizontal string course occurs along the top of the external wall at the level of the gutter with the wall continuing to form the parapet that is completed with a stone capping and stone pinnacle to the tops of the buttresses.

The eaves had essentially one system of stone corbels supporting stone gutters with five variations. The simplest and most often used corbel of a square stone finished in a quarter circle was used at regular intervals on the top of the external wall with a stone lintel carved out and lined with lead spanning between to form the gutter. The other types are variations in the treatment of the stone corbels and lintels with a final type using a continuous cast iron gutter replacing the stone lintels.

In both the treatments of the eaves Lamb followed the same principle over the twenty years of the sixteen churches without resorting to a fixed rule.

Lamb endeavoured to use traditional methods and materials where possible and considered the use of polychromy, texture and surface treatment as important factors in the composition of the building. Aldwark is the only church where Lamb made any significant use of polychromy externally. The main wall material are pebbles brought from the local river bed with horizontal bands of red brick headers set at an angle in herring bone fashion all contained by dressed bath stone at the corners, windows and eaves. In all the other churches it is the natural quality of the material which he exploits with size, shape and texture in his seeking of 'harmony'. Lamb did use polychromy internally, but again it was to be at only one church at Englefield Green. All the interior walls are made of varying bands with strong visible coursing consisting of red bricks in stretcher courses and header courses, red herring-bone brickwork picked out with blue and yellow sandstone, finely dressed continuous yellow sandstone blocks, alternate sandstone blocks and red brick headers and rough dressed bath stone rectangular blocks in a random course.

Lamb also used polychromy in his roofs seeing the large expanses he created with his church designs as an opportunity to apply colour and pattern. He saw them as canvases to apply various patterns using the three main materials of slate, stone and tile. The latter

gave Lamb his greatest effect by using both colour and shape. The roof of the gatehouse at Cambridge is covered with tiles finished with a point rather than square or round ended. The church at Washbrook for example has five courses of plain red tiles interspaced with five courses of a blue tile where a quarter circle shape is cut from each side of the lower exposed end resulting in a running shape of alternate half circle and straight lines across the roof. In his churches at Aldwark, Thirkleby, West Hartlepool, Gospel Oak and Leiston he uses a plain red tile and a scalloped shaped blue tile in a diaper pattern to relieve the large expanses. Lamb used colour, shape and material in his roof coverings as both clarity and camouflage.

Two fundamental things are apparent from this study. Firstly, Lamb was always experimenting. All his churches are different, even if at first sight they appear similar to others. There were always variations in the plan, wall materials, roof construction and the use of colour. Secondly, Lamb was always following principles and not rules. The geometry and setting out of the plans based on prime numbers or modules and the treatment of eaves and plinths he developed allowed him freedom to vary his designs within a principle and not have to resort to using a hard and fast rule every time.

The closer detailed study at Aldwark has shown that although all his churches are different they can be created from a 'kit-of-parts' (Figs. 289 to 303). The quarter round corbel, the corbel table eaves, the arched brace trusses, the timber boarding and the 'triple' construction are all part of this kit and one or more can be found in every church.

Lamb was always trying out new designs or materials with his buildings and some of his experiments were more successful than others. But they do lead to the interesting quirks to be found in Lamb buildings. The vertical bracing at Butleigh has to be two pieces at an angle because there is a window in the way (Fig. 304). The corbel to one of the trusses at Castle Douglas in the chancel is larger as the arch to the south recess is in the way (Fig. 305). The window on the north side of the nave at Castle Douglas is so wide it clashes with the corbels supporting the roof trusses and a further corbel at 90 degrees from the window reveal is needed (Fig. 306). The corbel to one of the trusses at Prestwood in the baptistery cannot be the same as the others as the arch to the main door is in the way (Fig. 307).

All this ruthless experimenting may well be one of the reasons why no architects chose to follow him despite his work being regularly on show at the Royal Academy or Architectural Exhibition. It appeared to other architects that each new building they saw was different. They didn't understand his principles. These had been clearly defined early on during his time with Cottingham and Loudon:

Look at the past and the principles used.

Look at what is required for the building.

Look at the local materials.

Look at new materials and modern construction techniques.

Determine the plan and combine with Unity, Harmony of form, harmony of material and harmony of construction.

No one continued Lamb's ideas, for when a loan voice ceases there is silence. But he left some of the most incredible buildings of his age for which he at least was truly proud, for just as an artist signs his work he did the same with his initials entwined in a pair of compasses in stone, stained glass and floor tile (Figs. 308 and 309).

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“ARCHITECTURAL COMPOSITION”

The following is a transcript of the lecture on "Architectural Composition" delivered by E. B. Lamb on Tuesday 16th February, 1857 at the Architectural Exhibition as reproduced in *The Building News* on 20th February, 1857, pp. 185.

“In the few remarks I am permitted to present to you this evening, I have ventured to take up the subject of Architectural Composition, and, in doing so, I feel that my own ability for the task, and the limited time allotted to me, are alike inadequate to a subject demanding so much study, reflection, and discrimination. I trust, however, that, having launched into this sea of trouble, where so many breakers present themselves in all directions, I may, by your kind indulgence, reach the wished-for haven in comparative safety.

If, in these remarks, I may appear to be going over theories well known, and reasoning upon axioms, let it be considered that the desire of advancing the noble art, of which I am but an humble member, has led me most unwittingly into such error; nor do I wish that the principles I suggest should be taken without ample examination, but in such way only as may lead to the rational practice of the art, out of which practice all agreeable associations arise, and which places architecture on the same level with painting, sculpture, and the other aesthetic arts - if such term may be fairly and consistently used for architecture, when separated from mere building.

In the great advance of knowledge in all the branches of science, art, and literature, within the last few years, architecture has not been forgotten, although it has scarcely held its position with the sister arts, except in its numerous productions. This, no doubt, arises from the abstract principles of the art being little known, or properly understood.

Too generally has architecture been looked upon as no more than a mechanical science, depending upon immutable rules, or known and established examples, and mathematical deductions from precedent, and the reproduction of ancient art of nearly every country. The works hitherto published, treating upon our art, refer chiefly to rules and authorities, but seldom to principles: are usually confined to technical instruction, and have hardly ever attempted to give more than matter-of-fact historical information, without at all endeavouring to establish Catholic principles, based upon sound criticism and the philosophy of aesthetics.

To say of a building that it was a perfect copy of some Greek temple or Gothic cathedral was thought sufficient to stamp it a work of fine art; that the application of the "orders" was correct according to Vitruvius or other luminary of ancient art, was sufficient to place the work out of the pale of criticism, no matter how defective the form, or how contrary to the principles of harmony the balance of parts. Such objections were met with, "It is according to rule;" that is, it was laid down by fixed proportions, established by long practice and dogmatical authority. Mind, invention, original thought, and other qualities which constitute the great and noble in fine art were interdicted; hence it is that the antique portico is pressed into the service of the church, the theatre, or the mansion, without the least regard to its fitness for either purpose; and the same "order" decorates, with equal

consistency, an assembly room or an asylum. Character, expression of purpose, and fitness, are scarcely allowed to hold a position in such company.

This was a sad condition for the fine art architecture to fall into; in such a state memory was superior to mind, and plodding drudgery superseded invention. Happily these crude ideas of the fine art architecture are now fast giving place to more enlarged views, and the distinction between mere building and architecture is becoming better defined and appreciated. The one regulating the arrangement, convenience, accommodation, and fitness for the required purposes of use; the other - soaring above mere utilitarian demands - the result of increased refinements, increased wealth, and the desire to enrich our cities with works of a more noble and cultivated character.

Architecture does not wholly depend upon mechanical rules and fixed proportions, but rather upon principles, the fixed laws of which constitute beauty. Now, although beauty is, and can be only, a relative quality, the laws of aesthetics may be so interwoven in a work of art as to produce, if not perfect beauty, that quality, at least, in an eminent degree. The main qualities necessary for the composition of a great work in fine art architecture are - unity, harmony of form, harmony of material, and harmony of construction. Other qualities I shall incidentally refer to, but I have taken these as relating to the fine art architecture; they are all, however, inseparable from those qualities before alluded to, and which belong more particularly to the physical wants of man, and come under the denomination of the science architecture - building. It would almost seem necessary that these various qualities should be spoken of separately, but, in consequence of their intimate relation to each other, it is exceedingly difficult to do so; this, however, shall be my endeavour when allowed by my subject, but I beg you to bear in mind that these are only suggestion for others, better able than myself, to work into a system - should such suggestions be sufficiently worthy of attention. In its two fold condition architecture may be considered the art of investing the useful with the garb of beauty, but only in such manner as well constitute perfect unity. There is another quality, however, which it is imperative to notice, because to its influence we are indebted for the development of fine art; this I shall call progression and shall simply define it as the quality of invention arising out of the social condition of man, with whole refinements, the refinements of all arts, kept pace. Changes of customs, changes of position, and other circumstances obliged him to change the forms of his buildings, in order to meet new wants and new refinements, which rendered a progressive invention in art a necessity; still the same principles of unity were maintained, and in no instance in the early practice of architecture do we find the works of previous ages reproduced. The buildings of the earliest times, although frequently of the rudest description, were essentially governed in their arrangement and construction by the wants of man and the dictates of his reason. More than a mere protection from the inclemency of the weather, from his enemies, and from wild beasts, was beyond his aim; convenience, utility, warmth, safety, and strength constituted all his requirements in his home, and these for a long period served him; it was for later times to present him with luxuries and other auxiliaries, desired only when his physical wants were satisfied.

As society advanced new desires occupied his thoughts, - the intercourse with his fellow-men enlarged his mind; he then craved for something more than the merely useful, hence he began to cultivate the artistic. Not content with the mere fabric he began to consider form and ornament, but so regulating his principles that all his decorations should arise out of the useful, his natural instinct leading him first to adorn that which yielded him most benefit, and thus the fine art architecture became united to the science construction.

In his improved condition man sought further objects upon which to exercise his taste - he looked abroad for the means of gratifying this new passion - he built temples for the worship of his Deity, and bestowed his labour and his wealth in their aggrandisement.

Humble, indeed, were the forms of the first temples, but the type was for ages handed down unchanged in its outline and general character, but progressively enriched in its decorations, till it attained, in its native soil, the highest power of artistic majesty.

Ages must have elapsed before the humble forms were transmuted into the stately fabrics which even now exist in splendid ruins; it was by slow degrees, and many changes and improvements, and considerable advance in the civilisation of nations that were produced the first edifices of man, which could at all claim the high title of fine art - that combination of forms founded on the useful, and uniting the grand and beautiful in harmonious composition, - when the mind was allowed to have full sway, unfettered, and begun to appreciate the plastic and ennobling powers of art.

Upon examining the principles which appear to have governed the earliest artists, we shall find that the existing outlines were only gradually changed in succeeding periods - that the development of improved forms was the result of slow progression, of a more perfect knowledge of science and art, and increased refinement. Not only did the beautiful in outline result from a more perfect knowledge of the science, but the constructive features became decorated.

The existing remains of ancient art show the progressive changes of form, and the application of the local materials to construction - a necessary condition arising out of the changes in custom, climate, and religion.

The massive and simple forms in the outline and construction in the Egyptian edifices were followed by a similar system practised by the Greeks; new requirements led the Romans to the use, if not the invention, of the arch; and the simple harmony of form and constructions of the previous types of art were rendered more complex by the combination of the two distinct modes of construction.

In succeeding times, in the Basilica, the omission of the entablature from its original position, and the introduction of the arch, spanning the space between the columns, was the cause of greater change in the columns. Columns now became subordinate instead of principal features in the composition, and the arch assumed greater importance. In a short time a more perfect style of form and construction was developed in the Lombardic and Norman periods of art, when a consistent arrangement of materials produced agreeable outlines and harmonious combinations. Next arose the Medieval style, in which progression still went on, and the changes necessary for fitness of purpose yielded new combinations, till a great check was given to its career at the time of the Reformation; yet, at that time, and during a short period subsequently, the change was of such a nature, that that style of the art may be fairly termed the last transition of the actual Medieval character; yet if the same system had continued and the same causes remained which operated in producing the great works of the middle ages, a style might have ensued, possessing in its composition all the requirements of utility in its constructive elements, and of beauty in the harmonious combination of their parts. Such a consummation was not to be effected; and the progression of art in the principles of the great spirits of past ages was forgotten. It was then that a singleness of feeling and uniformity of practice rendered

the whole - at least of the Medieval period, with its progressive changes - one nearly united harmonious system; nor was it warped by the acquaintance with the art of distant countries, or by the desire to introduce a system of architecture unsuited to the climate and materials.

It was in recent times that architecture began to be trammelled by precedent and copyism, until the principles of composition, which worked such great results in former periods, were forgotten, the characteristic art of the country neglected and destroyed.

We had scarcely awakened from this state of architectural lethargy, when we were called upon to enter into another with equal exclusiveness of thought and artistic principles, and the dogma that prescribed positive copyism of the buildings of our own country as the only means of producing an architectural composition, is likely to have an equally short and inglorious reign.

I have referred to the works of the ancients, so far only as related to the principles they appear - if we may judge from the pleasure which we derive from their buildings - to have adopted; and to progression as a means of developing harmony of form, construction, and material. It is now my intention to speak somewhat practically relative to these qualities.

Composition may be simply defined as the arrangement of several parts into a consistent though varied whole, so as to impress the mind with its perfect unity. In architecture, as also in painting, composition must commence with a scheme previously arranged; with this difference in the sister arts, that the architectural plan must be defined in its limits, whereas the painter may soar to any extent of extravagance his fancy may dictate; still, however, the arrangement of his composition must be governed by the same principles of unity and harmony. Another difference, of great important, between the composition in architecture and in paintings is the necessity of the former providing a perfect work to be seen from various sides, and under different influences of light, shade, and position; whereas in painting no such accidental changes can take place.

In architecture, the convenient arrangement of plan must necessarily give place to any arrangement of artistic effects; but careful study will be the means of obtaining both objects, each giving the required expression of purpose. In developing the outline, the several parts should be so disposed that they can be viewed as a whole, without the eye being distracted by the too obtrusive effect of subordinate ones. In a good composition the eye will be immediately attracted by some prominent feature in the outline from which it will glide from point to point, as each feature recedes in consequence or position, and traverse the whole composition by a series of imaginary lines which unite the parts into one harmonious whole; but if, in the course of such scrutiny, the eye is stopped or divided in its attention between the different parts - if the pediments or gables are not of the same inclination - if the outline is scattered by too many uniform parts of equal height and consequence - there will surely be some defect in the unity of the form. Abrupt transitions and violent contrasts are equally offensive to the eye. In every composition the forms should rise easily out of one another, and be so united that any one part removed would destroy the unity of the whole. All lines should have a decided parallel tendency, either horizontally or vertically, or, at least, nearly so, as any great or general deviation from this principle would create too great diversity in the angles of inclination, and would lead to confusion, and thus destroy unity of form. In a style of art, based upon the known forms of the Greek models, the main lines should be vertical and horizontal, the roofs or pediments

of similar inclination, the materials should be in large masses, and of simple construction, the construction clearly and satisfactorily defined; the whole would then form that harmony of arrangement so essential to the simple, not to say severe character of the open portions of the building, and would produce that unity of composition which charms us so much in the ancient prototype. In the ancient temple, the cornices, plinths, and steps are simple parallel lines, uninterrupted and unbroken; and the whole presents one uniform solid mass, differing in outline very little from one of its component parts, thus evidently showing that the application of similar forms produce similar effects when harmoniously combined. If it is intended to adopt a style of architecture whose general character and expression are well known, we are at once thrown upon our associations, and immediately judge of the merit of such work by a reference to its original elements. If the purpose of the building, therefore, is at variance with its assumed architectural character, some violation of principle must ensue - either in the expression of purpose, or in the truthfulness of the application of the style; the result will necessarily be a want of unison between the science and the art, a deception in the whole, and a most unsatisfactory composition.

Truthfulness in the architectural composition should invariably present itself in the most unmistakeable manner; all expedients for the purpose of producing effects that are not warranted by the arrangement of the plan, or the rational application of the material in the construction, must lead to discordant expression. Any attempt to give character and expression to a composition other than that required for its purpose, must be equally defective. Classic temples converted into Act of Parliament houses, castellated conservatories, and miniature cathedrals, are at once evidence of inapplicability of principles, both constructive and aesthetic.

In the examination of a work of art, when the general outline has impressed us with the unity of its parts, the mind seeks for other forms, and naturally glides from those of a less to others of still less importance, and is only interrupted in its course by obtrusive features. It inquires if the foundation is sufficient to carry the superstructure? if it rises by gradual steps from the ground, the most massy features of the simplest character, the plainest and strongest material uniting with the ground upon which it stands - are the moulding, the panelling, or other decorative details ample in their forms, and so blended as to unite the upper with the lower portions of the design? - is the whole base carried throughout - except the doorways - and completely round the building, binding the whole firmly together: for abrupt starting out of the ground always gives a poor, tame, and even weak appearance, although the building be massive in the extreme, owing to the want of gradual rising from, and union with the ground, and to the omission of a defined footing, producing a decidedly disagreeable effect. We further inquire - Are the string courses and cornices carried through the building in sufficient number and size to keep up the same description of connexion, and do they harmonise with other features of a like description? - are the columns, pilasters, or buttresses inseparably united with the main fabric - at least, in one or more of their members, so that, if either were removed, the appearance of the building would be less consistent, both constructively and artistically? - are the openings of the doors and windows of the same character; and when of the same width, do they harmonise in form and construction? - are they covered with a single horizontal stone, evidently sufficient in strength to perform its office: or are they covered with several stones in the forms of an arch, a single one being evidently insufficient for the purpose? - are the same principles of horizontal or arched construction carried out in similar positions throughout the building, and are these important parts of a fabric of such relative

dimensions, as will not distract the eye and draw attention to various points of the composition at one time, and thus keep up a restless and uneasy observation? - is the balance of the openings and solids sufficient for the evident strength and durability of the building? - is it evident, from the architectural expression, that nothing has been introduced for which ample reason cannot be given?

Piers without a base or plinth, supporting arches, particularly where openings are level with the ground, give an insecure appearance to the structure. Where columns or pilasters are placed between arches, either without bases or their bases are of a different form and unconnected with the piers, the design will be deficient in unity, and produce a poor and feeble effect, the supporting and connecting power being divided, instead of united, in strength. It is not always necessary to continue the mouldings of the impost of arches, as a break will frequently be necessary for variety and light and shade; but in all cases the lines of the entablature should connect the piers, arches, and columns into one mass. Where there are several parts of a composition between the principal bases and cornices, and connected in their lower parts with the base only, the cornices should also be carried through, and be united with the subordinate features, as no work of art can be satisfactory to the mind when it can be divided, or one part separated from the other, the actual outline and expression of the edifice still remaining perfect in its composition. A screen of columns, with the attendant embellishments of pedestal and entablature, placed immediately before an arcade, without some of the principal lines being connected therewith, must be defective in composition, as it may be entirely removed without impairing the constructive expression of the design. A balustrade made merely to fit a panel, and without a positive apparent use, is a common defect, and only occupies a space and position which, by a little reflection, might have been appropriated more characteristically; and the form conveys an idea of use to the mind which is contrary to reason and association. Pilasters, including capital and base, set flat against a wall, or only connected by those parts, and when the surface of the wall is of a different description of masonry, and is not in some manner bonded to the pilaster, is defective in constructive unity, as it gives a character of weakness of the building by the vertical division of the parts.

Cornices, bands, and string courses may be carried apparently through projections, as in many buildings of the Medieval period; but in that case the unity of form can be consistently preserved only by some of the lines of cornices or strings being entirely carried round the projections, and the masonry of the two bonded by sound construction. In Gothic buildings cornices or strings are frequently continued over breaks, doors, or windows, and tend greatly to the uniting of the parts; still, if this were too frequently done, confusion and a disjointed effect would occur.

Too great a continuity of cornices and strings, where there are several tiers of them, generates monotony; in such cases it becomes necessary to introduce other features for the eye to rest upon, and so as to create variety.

In compositions of the middle ages cornices or string courses were frequently stopped by bosses of blocks, or other means, or were intercepted by panels, shields, or other things, by which sparkling effects were produced, giving life and spirit to the design, which otherwise would have been tame and monotonous.

It is not necessary, in uniting the parts of an architectural composition, that in all cases the cornices should be carried, uninterrupted, throughout; so that it be not abruptly or entirely stopped in its scrutiny, the mind is generally satisfied with a mere link. A simple union of the parts, in most cases, leads the eye by gentle degrees, and almost imperceptible means, to the satisfactory conclusion that the unity of the composition is preserved. In the composition of any work of art, although the main features and outline should present themselves nearly at one glance, it is essential that the interest and curiosity of the mind should be kept up by other features disclosing themselves. A mere plain mass of building seen at one view, and varied only by a few features of similar forms, soon wearies; its broad masses of light and shade, however striking at a first glance, become tiresome in the extreme, and the more so when the shadows are thrown upon only a flat surface. A painter, if compelled to represent such a subject, would give life to his picture by the introduction of trees, figures, sky, and clouds, and an interest would be immediately given to his work; but the architect has no power to arrange his composition in such manner - he must put his lights and shades, his forms, his effects, into the subject itself.

Harmony of form in Gothic architecture is, perhaps, less understood and more difficult of application than in the Classical style; yet, if we examine any one style of the art of the middle ages, we shall observe that that principle is in nearly every instance carried out; - we have arches, preserving the same form, used in similar positions and for similar purposes; columns in similar clusters and supporting similar weights; windows, with their infinite variety of tracery, with mullions of similar size and form, placed at the same distance apart as in the other windows of the same fabric; and where tracery is used in one window it is also used in the others, although in a less degree, thereby preserving harmony in the decorative features. All gables are of the same angle in the same building, by which great variety of outline is obtained where many gables of different widths are required. Buttresses are not only well connected by their plinths, strings, and constructive masonry, but are amply suited to the resistance of the thrust of arches - in short, in almost all our principal works of the middle ages, the great pleasure which we derive from the contemplation of their works arises from the harmony of form and construction. When composing an architectural subject, we should always bear in mind that all beyond what is requisite for actual use should be considered extraneous and merely ornamental: if that be kept in view, it is obvious that in constructing our designs the decorations should be placed in such positions as would take precedence and importance in the building. The requisite stability of the foundation would suggest decoration for that part of the fabric where it first springs from the ground; the character of the plinth mouldings or ornaments should clearly express their use for this position. The cornices, where connected with the roof, would take the next rank. The intermediate strings or bands, to mark the divisions of floors, and to unite the different parts of the main outline, should be but little interrupted, and then only in subordinate positions. In the application of any style of the art these things should be strictly adhered to as belonging to its universal grammar.

Doors and windows, in their primitive uses, were gaps in the wall, and were made by the mere omission of part of the main construction - the sides being securely bonded or united with the wall. In the decoration of such features the same principle of constructive unity should be carefully preserved. In the architecture of the middle ages this was admirably attended to; the jambs were in small stones, alternately bonding with those of the wall, and evidently uniting the whole, in positions where no other parts of the windows or doors were connected. In these subjects, too, the relative decoration of the window and the wall is consistently united, and not only the harmony of construction satisfactorily

presented, but variety in material and pictorial effect obtained, and the true principles of composition observed; and the progressive development of the beauty of form is thus founded on rational attention to use and proper constructive application of material.

The practice of using large stones in the jambs of doors - of marble, polished granite, or other expensive material, where the whole side of a doorway is frequently in one piece - gives an unconnected effect to the construction: another defect is caused by this mode of practice - the large size of these parts, even if carried out in other positions, is apt to give an apparent reduced size to the whole composition.

If we take examples of doorways, and examine them upon the principles of truthful construction and union with the other parts of a design, we perceive to what extent harmony of form and construction have been properly attended to, and to what extent the rational application of materials has been observed. With regard to these openings - although writers have given them fixed proportions - the examples of ancient as well as modern times vary considerably from such rules. Rules, I have ventured to infer, must give way to principles, and in whatever form our door openings may be, they should, in every respect, harmonise with the other openings with which they are associated, both in form and construction; their heights and breadths must be regulated by their relative proportion to other features - proportion itself being a relative quality; and although a doorway may be lofty and narrow, or low and wide, such proportions - different as they are in themselves - may be the best for the actual particular purpose. It is true, our associations might be shocked in finding what we are accustomed to see, assume a new form, and we might express an opinion that it was too short, or tall, as the case might be; but when in combination with other forms, its proper height and width depends upon the harmony or union with the whole design. Other features throughout a composition must depend - first, upon their fitness for these uses; and then, on their relative proportion to the entire design.

In the Classical style of architecture the composition is a union of large parts in construction, which has been the means of developing a style of art harmonising with such materials; Therefore in carrying out a design which shall be characteristic of that style, it would be inconsistent to use small materials, except in such positions where the large ones could not be applied, as, for instance, a door-head of one block of stone would naturally suggest the same mode of construction in openings of less dimension, by which mode of proceeding perfect harmony of form and construction would be obtained; but if, on the other hand, it were necessary that the arch were applied to the small opening, with its combination of small stones, such mode of construction would be equally necessary for the large one, or the form and construction would be alike discordant.

In Medieval architecture - although differing essentially in its character from the Classical style - the same principles of harmony of form and harmony of construction must be observed - namely, unity of rational construction, out of which the principles of harmony are developed. Much may be said relative to the grouping of doors and windows so as to produce variety without confusion, and such an extent of individual decoration and constructive expression as would blend with the other forms, which, when united, produce an agreeable whole.

Every feature in an architectural design requires an equal attention to its uses and its connexion with the other parts, so that no portion of the composition can be omitted without detriment to the whole.

The elementary forms of fine art architecture being of a decorative, as well as constructive character, may, with propriety, be applied in any position, provided such application produces harmonious combinations. It is true such application may be in disregard of dogmatic rule and common practice, yet little objection could be made to it if the result be aesthetically satisfactory. In this mode we should apply the thoughts of the ancients to our own times, so that we may follow in the progressive steps which have been the means of leaving such wonders of art for our admiration. Let the composition be truthful and harmonious in all its parts, the construction rational, and the materials suitable, and the combination may well assume the proud title of fine art. But mere routine applications of ancient forms are dangerous - they shock our associations, and stagger our reason. The mind requires to be prepared for such changes; and if ancient forms must still be the type for our progression in architecture, the new clothing which the requirements of our times may render necessary for such forms should be assumed gradually.

The difficulty of applying Classical architecture in our own country has been the means of resorting to a system of construction unworthy of art. Beautiful and harmonious as are most of the works of Classic architecture, they are indebted for their harmony of form to the size of the material, and to the rational application of that material in their construction. The large stones which reach safely from column to column in one piece, unite with the large and severe squareness and simplicity of the other parts of the structure. The supports were placed at such intervals that the space could be spanned by the overbeams or architraves, without resorting to any remarkably scientific construction, such, in fact, not being required by the application of the materials; yet this simple construction rendered the work harmonious and pleasing. In Egyptian buildings where the same principles were applied, no doubt grandeur of effect is created, in a great measure by the giganticness of the style; and it is worthy of remark that the greatest effect of harmony and unity is carried out in those structures - greatness of dimensions, massiveness, and simplicity of construction naturally reproducing impressive effect. But in a country where such materials are rarely to be obtained without enormous cost, the application of the Classic style of art in its simple truthfulness becomes almost an impossibility. When we look at our public buildings where Classic imitation has been aimed at, we find the architrave almost invariably composed of several stones with vertical joints over the open spaces, and although practical men know that the construction is safe, although disguised, the general observer must be alarmed for the safety of the fabric. Such a system of false construction condemns itself; for when several stones are arranged in this manner, as is the case in many buildings of this country, when the ordinary settlement which takes place in nearly every structure, occurs, the architrave sinks between the two supports, and presents one of the most disagreeable and offensive effects that can well be conceived; yet how frequently do we see a range of columns supporting an entablature in this defective manner, backed by smaller openings, soundly construction in an arched form - how much must we, therefore, lose in attempting to apply a style of art whose constructive principles are unsuited to our materials, whereas a rational application of them would tend to produce the most perfect agreement of form and construction. If, in the same facade, it is necessary to construct a small arch to carry a weight in one position, it is equally so to construct another over a larger opening; for if the material be not suitable for the horizontal application over a narrow opening, it must be less so in a wide one.

It is said that "attempts to alter the primary forms of the ancients, which have been established by the concurrent approbation of many ages, must ever be attended with dangerous consequences, must always be difficult, and seldom successful," yet it was at the time of the generally supposed decline of art that the "orders" with their attendant trammels, were introduced in this country, having previously travelled from their native soil, and, in successive periods, assumed different forms, till ultimately the original type was entirely lost; and now their so much boasted perfection has only left us false construction, inconvenient, and discordant composition. Formerly the architecture of a nation arose from the various influences of climate, situation, government, and the social condition of the people, and was developed in a manner suitable to the materials for its use. It grew, and was nourished in all the luxuriance of high art and civilisation, keeping pace with the advancement of science, literature, and wealth, declining when they declined, falling when they fell, and in that state remaining the last record of past magnificence and power! It would almost appear that in this condition it was ever to remain, never to be revived there, and impossible to be planted elsewhere; for how futile have been all attempts to reproduce ancient architecture in other countries by mere servile copyism; how absurd the effort, and how frequently derogatory to constructive and aesthetic principles the result!

The architecture of a nation must ever remain, decline, and fall with that nation; for how can we reconcile the customs and wants of one climate to that of another? And however beautiful the edifices of one nation may be, it is hardly possible to apply those buildings, in all their integrity, to another, whose customs, religion, and requirements are of a totally different character. The veneration with which we look upon the works of past ages has created a desire to emulate them, and we copy their buildings in the hope by that means in a short time to acquire the fame which the original obtained; but in this we deceive ourselves, for if we look back and examine the progress of art, we shall find, as I have before shown, that it was by slow degrees, and arising out of the evident wants and improvements of society, that architecture attained that eminence which is chronicled in their mighty ruins.

In the endeavour to establish a style of architecture suitable to the requirements of a country, we should dismiss from our minds, as much as possible, the works of past ages, except so far as we have been able by close study to ascertain the principles by which their great effects have been produced; and, having determined the essential conditions required in building, we may consistently apply our thoughts and imagination to its embellishment, but in accordance with rational principles, taking care that those things which manufacturers have produced for the convenience and perfection of our habitations shall be consistently and honestly applied. A positively new style of architecture, possessing features, forms, or embellishments totally different from any known styles, is a thing scarcely required, if it were even possible for it to be obtained; but a blending of other styles, or borrowing from them, so as to meet the means and improvements of the mechanical contrivances or materials and constructive appliances which have resulted from the advanced condition of society, would necessarily produce new forms arising out of the rational application of new means and resources. That beautiful material, plate glass, for instance, can hardly be employed with full effect in the Gothic style, without cramping its uses to the characteristic expression of the art. Every practical architect has felt this difficulty, and has resorted to numerous expedients to overcome it, but still the mullion - that part of Gothic architecture upon which so much of the expression and character of the style depends - is his great stumbling-block. We all know, and feel -

though sometimes we are unwilling to admit it - that a large sheet of plate glass shows a prospect from a window far better than when the view is obstructed by mullions. There can be no disguising this truth, as in many of the buildings of past times these obstructions have given place to what is a more agreeable though less characteristic treatment of windows. It must be acknowledged, too, that many other features of Gothic architecture are equally difficult to arrange, so as to keep pace with the numerous improvements every day required, and presented to us in our dwellings; and however disagreeable the fact may be, we must still admit the fact that, in nine instances out of ten, the exterior appearance of the building is a mere antiquated garb in which what is essentially modern is dressed up.

In our towns, common sense - not to say common place - constructions all indicate that Gothic architecture, in its perfect and ancient form, is inapplicable to our wants and the improved materials at our command, more especially to our domestic buildings; yet, if the present system is continued of erecting high walls with square holes in them - the rational, though not the most beautiful mode - some characteristic system of decoration springing out of the elementary forms might arise so as to produce an agreeable, harmonious, and even beautiful result, were such mode founded upon the principles I have endeavoured to point out, and were we at once to apply to the resources of the mind rather than to the portfolio. Every day we are shown by the plainest necessary application of building the expression of purpose, but as soon as "taste" is called in, honest form is transformed into "style", which the student has traversed half the world to collect examples of, and which has thrust out of his brain, mind, reflection, and invention, the application of which at his own door might have yielded him consistency, expression, and aesthetic beauty, in an eminent degree.

Not only is it difficult to apply Gothic architecture to our habitations, but nearly the same difficulties arise when that style is applied to our public edifices; and even our ecclesiastical structures present many difficulties, which, if our associations would allow us, we might overcome. There can be no doubt that the long nave and narrow aisles, divided from each other by numerous columns which screen the minister from the view of his congregation, and also in some degree intercept sound, are inconveniences frequently felt; but in new designs for such buildings the form is still retained, and any deviation from such orthodox forms would be pronounced heterodox in the extreme. In ecclesiastical architecture the ancient forms are attended with less difficulty than in domestic, but unless a uniformity of style is practised, the architecture of our streets will never assume that harmonious combination of form and construction so necessary to the production of the beautiful or the picturesque. All will admit that a church, with its vertical tendency of lines, its high pointed gables, and mysterious ramified tracery - its tapering spire, and all its delicate finishings, and ornamentation, however harmonious as a whole, and impressive in character, makes but a strange figure by the side of a first-rate Act of Parliament house, with its four or five tiers of large square-headed windows, its Doric porticoed door, its large cantilever cornice - of such massive form that you fear for the lives of the passing throng - its horizontal string courses and invisible roof, not to speak of its false construction in its portico, and its lath-and-plaster entablature. I can see beauties in the noble works of the Greeks - can admire with intensity of feeling the Roman art, or the mysterious, delicate, and impressive conceptions of what are termed the "dark ages", and I would store my mind and portfolio with reminiscences of all these styles, and would endeavour to find out the principles upon which they were composed, and by which their structures were made to accord respectively with one harmonious system; but we should

not confine our attention to the past. At all events, it would be well for us to try what a rational system of art, founded upon the materials at once at our command, could produce.

Let us take our material and prepare our work, but carefully examine its nature - its fitness for the purpose, and to what extent it may be applied ornamentally as well as constructively. Let the construction grow out of the use, and let the decoration grow out of the construction - but let no desire for novelty or originality lead to extravagance, either in form or material.

The architecture of the present time posses no national characteristic by which, in future ages, a marked distinction and era will be founded. The depressed state of all art, after the great reform in our social, political, and religious systems, was such that it may well be said that art fell asleep, and the few examples which decorate that long period were little better than the shadowy structures of a dream.

Much has, and much will still be said relative to a style of architecture suitable to the present time: but whatever that style will ultimately be, or to what extent preceding styles may be combined with it, unity of form must arise out of necessity, and harmony and beauty out of the skilful and rational applications of material and construction. Style, or what is understood by the term, is merely the vehicle by which we produce great effects, and does not, therefore, constitute beauty in itself, but becomes beautiful when the forms are so arranged as to produce harmonious combinations upon the principles I have ventured to suggest.

The organisation of man's mind is so framed as to endow him with peculiar perceptions, prejudices, and predilections, by which he estimates his likes and dislikes - hence his taste is founded on one or more of these qualities; but the principles of unity, harmony, and beauty combined will create pleasurable sensations in every mind, although individual predilections may not be entirely gratified. Our own particular taste is apt to lead us to form our judgments without sufficient application of our reason. We commonly hear of a work of art not suiting the taste of a particular person, but that a thing is therefore in bad taste is another matter. Too often is mere ridicule made to supply the place of criticism, and sweeping condemnation to save the trouble of reasoning.

Spires are likened to extinguishers - cupolas to pepper-casters - domes to oranges - and other terms equally unworthy of notice, except in showing that the deficiency in the knowledge of art is cloaked by ridicule - ridicule and abuse is commonly current with such critics. We hear such terms of art as nice, heavy, light, ugly, beautiful - all in their way dogmatical, when unsupported by any positive reasons. The prejudices of men who take up one branch of art and condemn all others, only prove how very little they understand aesthetic principles. The true artist will produce charming effects out of simple features and even rude materials - such effects as affect the mind and imagination most agreeably. How frequently we gaze with delight upon the picturesque combinations of a few simple elements when skilfully treated by the painter! Is the architect, then, not to use the same means for the same end; or is he always to be fettered by the dogmas of prejudice?

I have endeavoured - I fear in a very irregular manner - to bring together some few suggestions upon which a more skilful operator may found better and sounder principles of composition in architecture. My object has been to press upon you that the mere fact of confining the mind to mechanical appliances is not the way to arrive at unfettered

judgment, and I have urged the necessity of a rational application of materials, in order to combine unity and harmony of form, harmony of materials, and harmony of construction. I am aware that my endeavours may have been weak, yet my zeal is strong; and I feel assured that by great study and long and deep reflection, invention, novelty, and harmonious construction will ultimately raise the art to that noble eminence it merits, and place it, at least, upon an equal footing with painting, sculpture, poetry, and the other arts of the beautiful and the sublime.”