

The craft tradition

Brenda Vale and Robert Vale

School of Architecture, University of Auckland, New Zealand

ABSTRACT: The Victorian argument over whether 'gothic' or 'classical' formed the basis of a true national style of architecture appropriate for the age in the UK has been well documented. The ensuing Arts and Crafts Movement of the end of the 19th century advocated a return to craft techniques as a means of creating this national style, since these techniques underpinned all that was seen as good in the English vernacular tradition. However, this move coincided with two major educational changes; for architects this meant a move from architectural pupilage to a formal and structured education offering degrees in architecture; for tradesmen education also moved into colleges away from the apprentice system. This paper will set out the historical background to this situation and look at the effect it had on design and building at that time. Knowledge of the history of architectural education may help in understanding the split between technology and design in current architectural education.

Conference theme: Architectural education

Keywords: architecture, building, craft, education

INTRODUCTION

The Arts and Crafts movement of the latter part of the 20th Century, or as it was then called "The New Architecture", was a reaction to the struggle between gothic and classical as representing the English style. Pevsner (1960: 19-20) describes the story of the British Government Offices in Whitehall, built 1868-73 by George Gilbert Scott, in which Scott's unsuccessful gothic competition entry was eventually recast in an Italianate manner, or rather the building was given Italianate decorations. This was the fundamental problem to people like Morris and Ruskin. Architecture could not be a unified whole if the same building form could be hung with crockets one day and pilasters the next. The simplest solution was to do away with ornament, and architects like Voysey and Newton, both famed for their Arts and Crafts houses built at the end of the 19th century and early 20th century, did just this in the name of the New Architecture. Penty, looking back, (1926:441) saw this new art revealed by Voysey as an architecture of space alone, once all the mouldings and ornament had gone. At the time, the editor of *The Studio* ('Some Country and Suburban Houses':157) was of a similar opinion:

If the work of the handful of artists who represent to us the rather fatuously nicknamed "New Architecture" ever comes to be considered as belonging to the "style" of the nineteenth century, one can imagine the "new" critic characterising it as the "style of negation". To breathe to Mr. Ernest Newton, for instance, the very word "style" is to provoke an outburst of righteous indignation against those blind leaders of the blind who can conceive no architecture that cannot be safely and obviously ticketed with the name of some bygone century or period.

However, the same article acknowledges that the architects of the "New Architecture" made use of the elements of the buildings of the past, as if Newton was avoiding the old sentences of design and construction but still making use of the words of the past. (ibid.:158) As Voysey (1915:86-7) stated:

The fact that two forms of arch were seldom, if ever, used together in ancient times, blinds his [the designer's] eyes to

the fact that altered conditions of modern life may demand the consideration of requirements non-existent in previous ages. The individualist is always ready to cast off the shackles of a bygone time, and is willing to meet the needs of the present while still holding fast to all enduring qualities.

This awareness led to a great interest in the vernacular, particularly the domestic vernacular. When Muthesius wrote *Das Englische Haus* in 1904 the first section of the book dealt with the historical development of the English house (Muthesius 1979:3). This fascination with the simple design of the past was to evolve into the Arts and Crafts movement, with its paradoxical censure of the machine in preference to hand crafts, yet having to rely on the wealth created by the machine in order to sell its wares to the new rich who had become the patrons keen to embrace the new art and architecture.

This was not the only paradox to emerge from the Arts and Crafts movement. At a time when craft skills were eulogised, training for both architects and builders was becoming formalised in the schools. Materials and building components were also increasingly machine made, centrally rather than locally. Despite this, study of architecture then was founded on detailed study of the past, in a way that would be unfamiliar to today's students. For this students could probably thank Ruskin, with his insistence that it was not enough to be able to carve the image of a man if the sculptor had the man in front of him, but that it was essential to carve from memory.

If we do not know what a human body is like, we certainly had better look, and look often, at it, before we carve it; but if we already know the human likeness so well that we can carve it by light of memory, we shall not need to ask whether we ought now to look at it or not; and what is true of man is true of all other creatures and organisms—of bird, and beast, and leaf. (Ruskin 1865:140)

What was true for the sculptor was also seen as true for the architect, with the need to measure buildings and to study buildings in order to commit their details to memory, or failing that, at least to the bulging sketchbook.

1. ARCHITECTURAL TRAINING

From the middle of the 19th century a recognised training in architecture began to be developed. By the beginning of the 20th century it had been set, and recognised schools of architecture were offering degrees.

1.1. Pupilage

Pupilage, where the student entered the office of an architect for a fee in order to learn the trade was a hit and miss education at the best.

...for in those days, [1894] before typewriters and manifold devices and photo-lithography had made duplication of specifications and drawings rapid and easy, all copies of both had to be laboriously made by hand, and the slavery of specification—writing up to six copies (Oh, the arid wastes of the "Joiner" section!), and the eye-strain of tracing from pencil drawings, still linger in recollection. As to tuition, apart from what could be "picked up", this was confined to permission to browse in the pages of a French edition of Vignola, and the use of a ponderous copy of Tredgold's *Carpentry*, in which roof-trusses of unimagined complication were the principal fare. (Gunn 1942:27)

What is described is reminiscent of the experience described in *Martin Chuzzlewit*, published in 1843, where the articulated pupil was viewed as a useful source of income for the office. Nevertheless, historians still use the knowledge of who was pupil to whom in order to trace development, whether anything useful was learned or not. (Richardson 1983: 23-58 etc.) In describing the office of Sir Arthur Blomfield, a gothic revival architect who did many Church of England churches and schools, in the 1880s, Richardson (ibid.:94-5) quotes Reginald Blomfield, nephew to Sir Arthur, as recalling the office without fond memories.

I entered his office full of enthusiasm, thinking I should find myself in an atmosphere of high ideals, a modern version of the schools or studios of the Italian Renaissance. Instead of this I found myself in the company of a somewhat depressed managing clerk, two or three assistants and half a dozen cheerful young fellows who were serving their articles as pupils, and most of whom were much more interested in the latest news, sporting or otherwise, than in the latest experiment in Architecture. (Blomfield 1932:35-6)

The pupils, however, had already moved to rescue themselves from this situation, with the establishment of the Architectural Association, which held its first meeting in 1847. Robert Kerr, the president at only 24, described the AA as trying to improve the system for the study of architecture, noting that this move came from the students themselves. (Summerson 1947:75-6)

1.2. Development of Education and the Architectural Association

The education at the AA in the early days consisted of the reading of papers, always followed by an audience discussion, and a design class, all taking place in the evening. There was no design tutor, but a subject was set and then the results brought to a discussion. The object was to learn from each other. This evening activity was eventually formalised into an evening school when Leonard Stokes was President of the Architectural Association in 1889-92. Stokes was to win the RIBA gold medal in 1919 and was President of the RIBA from 1910-12. He was an example of an architect far better known in his own time than in the future, the reverse of Voysey, who was not awarded the RIBA gold medal until 1940, when he was too infirm to collect it in person. Stokes built a number of churches and religious buildings in a clear Arts and Crafts idiom, the convent of London Colney near St. Albans being a fine example. He was also the designer of a number of telephone exchanges in

the UK, many of which used his characteristic glazed arch form to the ground floor elevation, having late in life married the daughter of the manager of the National Telephone Company. (Molesworth Roberts 1946:174)

Stokes was partly behind the establishment of the evening classes and ensuring a methodical approach to the education of students. ('Obituary' 1925-6:149) Stokes wrote little, though an occasion when he was called upon to address the opening of the 1902-3 session at the AA at very short notice produced a succinct account of his views on architectural education. Stokes felt that the design classes were not there to teach design but to assist students in the study of design. He felt, as his buildings suggest, that proportion was fundamental to design. He also felt that students learn when they measure what they look at, and that it was necessary to study both new buildings and old, studying both the inside and out at the same time. Buildings in progress were also worthy of study. Materials also dictated that certain treatments were to be used. Like Voysey, he felt that simplicity was very important, and students, "did not run much risk of being too simple in their work." ('The Architectural Association' 1902:342) Stokes also advocated thinking of design and detail always at full size, as only then could a student be sure of what they were doing. As Drysdale, his pupil and later partner, noted, design for Stokes was complete before he started to put it on the paper. (Drysdale 1927:167) For Stokes, the scale drawing was really for communicating ideas to the builder. Here Stokes was again in agreement with Voysey, who once at an AA evening discussion declared that if the architect worked things out in his head and then drew the detail he would spoil a lot less paper. ('Fine Draughtsmanship Conduces to Fine Architecture' 1910:343)

The desire for simplicity and proportion could be seen as fundamental to Stokes' own very individual architecture. However, how students were to achieve this was seen only in terms of the study and measurement of existing buildings, as Stokes is not advocating students being taught the correct use of proportion. His closing remarks somewhat underline the gap between what it is good to achieve and how students are to educate themselves to achieve it. "If you get a good building, a good mass, a good general effect, then the detail...will more or less grow spontaneously." ('The Architectural Association' op.cit.:342) Stokes did not want to teach students to design like him, his buildings were his own, but he wanted to guide them to develop their own way of architecture.

The syllabus of the AA evening classes was very simple, and designed to help students through the RIBA Intermediate and Final exams. The evening classes ran from 6.00pm to 10.00pm 2 or 3 nights a week, after the pupil had done a full day's work in the office. They consisted of a design class that used voluntary Visitors, or studio classes and lectures given by staff. The Visitors were involved with the Elementary and Advanced design classes, and often set the students projects related to work they had done or were currently undertaking, in the same way that current design education still continues in the studio. A contemporary evening class student remembered the problems could be simple, such as a gateway in a wall or as complex as a whole building. (Gunn 1945:469) What students learned was conditioned on how well the Visitors could communicate with the students about their work.

Leonard Stokes was a certain draw, and always had something biting to say. Ernest Newton was the favourite visitor of many; his remarks and suggestions were helpful,

and his perceptions not restricted to the singling out of bad points. Some measure of encouragement (such as he accorded where he thought it due) can be very beneficial to many natures. C.F.A. Voysey was also a stimulating critic, with a dry vein of humour not commonly met with in visitors. (ibid.)

This method and the drawbacks that accompany it still form the core of design education in architectural schools throughout the world.

At the time, there were also studio classes in draughtsmanship, where students were helped to produce the drawings to get them through the RIBA examinations. These were known as "testimonies of study", such as scale drawings of the orders or full size details of structural subjects. (Gunn 1942:40) At the AA this class was led by W.G.B. Lewis, described as another relic of the Gothic Revival. (ibid.) However, Lewis also initiated the teaching of timed sketch designs with the idea of giving students a method for their earliest attempts at design, in order to make their future design efforts more effective, so there was consideration of other educational objectives, not just the need to fulfil the exam requirements. In terms of lectures, the subjects covered over two years are typical, being history, materials, construction, drainage and water supply, professional practice, ventilation heating and lighting, and land surveying. ('The Architectural Association' 1903a:353) Classes in modelling of details and in water colour painting were also available to the students.

Contemporary with the changes in education was the discussion of architecture as a profession that would require registration. Obviously, this was not possible unless there was a systematic way of deciding who had reached the required standard for registration.

It is, I think, generally admitted that some form of registration is necessary and will arrive...It is the more imperative therefore that we hasten slowly, and make sure of our general principles, before launching out into ambitious and ill-digested schemes which may only lead to waste of money and further confusion of training...

In the first place, I think we ought to realise that we have got to work out our own educational salvation, on lines suited to our particular needs, our climate and our national characteristics. (Maule 1912 :246)

However, the rather ad hoc system developed in the UK was not found in other parts of the world.

1.3. Other Systems

Other countries had by this time developed very different approaches to the education of architects. France was dominated by the Beaux Arts tradition, with the emphasis on competition between students, and with an emphasis on the monumental in terms of building scale. As one Professor of Fine Arts in Edinburgh, writing at the turn of the century said:

It is magnificent but it is not education. The plain business of the future designer of the modest dwelling, the meeting-house, and the institution, is thrust out of sight behind the visionary creations of palaces fit for Kubla Khan, which one sees devised in these more advanced compositions. The numerous huge strainers exhibited on these occasions to illustrate some vast structure which is, and always must be, in the clouds, involve an almost superhuman amount of labour and technical expertness, and this effort is all called forth not merely by architectural study but by competition. The first object of the student will tend to be, not so much to make himself an accomplished artist in everyday building operations as to win the Prix de Rome. (Baldwin Brown 1904:210)

French architectural education had a long tradition, going back to the reign of Louis XIII and the establishment of the French Academies, with the Academy of Architecture appearing in 1671. (Cates 1901:189) Despite being

suppressed during the revolution and reinstated afterwards, competition dominated the French approach, with entry dependent on success at the competitive Entrance Examinations. (ibid.:190) Admission in the UK was by payment of a fee. Nevertheless, prizes were still important in the UK both in the schools, such as the Royal Academy Architectural School and the Architectural Association, and elsewhere - the RIBA also awarded prizes for the best candidates in various categories related to their examinations. In France, there was more contact with those working in the profession as many architects working in ateliers came into the French Schools to work alongside the person setting the design problem in the studio. Thus, the design work was certainly in touch with those working in the profession. In the UK some schools, like that attached to the University of Liverpool, were more welded to the Beaux Arts tradition. Students at the AA were scornful of their 'neo-grec' approach, whereas Liverpool students laughed at the AA with their emphasis on the design of the small cottage and farms. (Gunn 1942:74)

The German approach employed permanent academics, who came with the need to gain a reputation in the academic world for their teaching. This was in contrast to both Britain and France with their major involvement of practitioners in education. (Baldwin Brown 1904:209) Students were also given choice, with the student deciding what they studied, and flexibility in how long the course of study took.

The USA offered yet another model. Here education was firmly placed in the universities and colleges. Moreover, it was felt that a professional person was a better architect for having a liberal rather than a specialised education, and a first degree was encouraged, to be followed by a second degree for the study of architecture. (Cates 1900a:17) The course of the Cornell School of Architecture was laid down by Professor Babcock, who had given a paper on architectural education at the General Conference of Architects in 1887, which had helped to establish the RIBA system of progressive examinations. (Cates 1900b:40) He had clear views on the value of education.

The object of a course in architecture should be not chiefly to develop the artistic powers of the student, but to lay that foundation of knowledge without which there can be no true art. Before an architect can become a true artist he must be master of the art of building, and also a man of science. (Cates 1900b:41)

However, the USA courses would seem to modern eyes to be liberal, despite the goal outlined above. At both Columbia and MIT, students were expected to read works in both French and German. The Cornell course included modelling of architectural ornaments in clay (a course also found at the AA). The MIT course, which was said to be more closely modelled on the German system (Cates 1900c: 52), allowed students to choose between 'Design' and 'Structures and Structural Design' in the third and fourth years. (ibid.:52-3) MIT at that time was also singled out as having a woman on the permanent staff, meaning 8.3% of the staff was female. Not only was there a full and varied curriculum but private study was also encouraged. At MIT bicycle tours had been undertaken in the summer in Canada, England, France and Italy, with students making measured drawings and photographic studies of details and buildings. (ibid.:54) The student of that time not only mentally worked long hours but also found the pursuit of architecture a physical one. Curtis Green, a noted architectural draughtsman in the UK and recipient of the RIBA Gold Medal in 1942 noted that after leaving school he acquired a penny farthing bicycle on which later he

could, "cover 100 miles in the day...from Dartmouth to Winchester, from Winchester to Chester" (Curtis Green 1949:5), all in pursuit of discovering and sketching the English vernacular.

This interest in what an architectural education should be at that time appears to be a global phenomenon. The AA elected a Mr. Sudsuki an honorary member in 1903 on the occasion of the annual prize giving. He was on a four year mission from Japan to study architectural education in the USA and Europe. ('Architectural Association' 1903b:234)

1.4. English Architectural Education

With usual British compromise there was a feeling at the time that it might be possible to graft on the best bits of education overseas to what already existed in the UK. (Baldwin Brown 1904: 211) However, there had always been criticism of what education overseas offered. The French emphasis on competition was felt to be at odds with the overall development of architecture through its practitioners.

It appeared to him that an academic system...leading all the young men to strive for honors in one academy...to gain which they must be trained in one particular line of art, and in one particular school—was one that was detrimental to progress. ('Discussion on Mr. George Burnell's Paper' 1865:162)

The speaker of these words, Arthur Cates, went on to say that it was to the absence of this type of training that, "they owed the freedom and independence of English architecture, and the progress it had made." (ibid.) Echoes of this can still be seen in current education based on the RIBA system, with the need to allow students to decide on their own method of approach to design, which brings with it the difficulty of grading schemes consistently, when often one student is dealing with 'apples' and another with 'pears'.

People like Lethaby, were more stringent, feeling that the UK had nothing to learn from overseas education, apart from, "...some emulation of other nations in the volume and intensity of their effort". (Lethaby 1904:157) He felt that originality and accident in design should be replaced by work that was thoughtful and good, "...the function of the architect is to build. And the purpose of architectural education is to teach him to build well." (ibid. :158) This attitude placed architectural education firmly in the practical side, apart from French competition and American professionalism. In the UK knowledge of how to build was to be essential in education, and that, in its turn, meant a study of history since building knowledge had to be related to what had been constructed.

To sketch and to measure with careful conscientious regard to original purpose and use became the duty of every earnest student. He was instructed by constant and repeated observation and study to drink in the spirit of the old work, and to design his new buildings while under its exhilarating influence. (Pite 1900: 79)

This helps to explain why at a time of the new architecture associated with the Arts and Crafts Movement, and the emphasis that it in turn placed upon craft techniques, students were so bound up with the active study of history in the field. Because most students would only have access to local examples, this in turn, reinforced the 'English' flavour given to the architecture of the time.

The one other feature to emerge from the early discussions of what should constitute an education in architecture in the UK was the need for the student to be somehow taught to become a 'learner' before even reaching the start of an architectural education.

I do not know whose fault it is; I do not know whether it is the fault of the method of teaching in our schools, or the result of

a curious twist in an average English boy's mind, that allows him to absorb facts, but prevents his making deductions; I only know that amongst the students I have had in London and Liverpool, very few had learnt that elementary but most important lesson—how to learn. Of those few, most had had a university training before they commenced their architectural course. These proved the best students; not because they were older, but because they had learned to think. (Simpson 1905: 42)

The one function of any architectural education was, therefore, to remove this discrepancy and teach the student how to learn. The student then had the skills to make up any deficiency in knowledge once they were established in practice. Thus, a curriculum in the UK system never had to cover every topic. It had to give a grounding in the knowledge of architecture, it had to show the student how to build and apply this knowledge to design problems, and it had to make the student into a self-learner.

2. TRAINING OF BUILDERS

2.1. Craft training

At the same time that the foundations of architectural education were being laid, a change was going on in the training of builders and craftsmen, with a move away from apprenticeship towards formalised study in classes and schools.

The general opinion seems to be that the apprenticeship system is doomed, and may soon become a thing of the past, at least in its old form...We hear a great deal about secondary technical schools and advanced technical schools, built and kept up at the expense of the ratepayers, and splendidly fitted up with all the latest tools and machinery...At these schools the young would-be craftsman finds everything ready to his hand, and starts to learn his or her work under, what look to be, most favourable circumstances. (Schultz 1909: pp.4-5)

For Schultz, the worry was not the schools themselves, but whether those teaching in the schools were themselves craftsmen. He acknowledged that at the start they had been, but as time went by they lost touch with the trade conditions or workshop routine, and this would be exacerbated in the future: "In point of fact, technical schoolmasters are rapidly becoming a class by themselves—more of the master, and less of the craftsman." (ibid.:6)

The value of the apprenticeship system was seen as representing a body of working tradition, and one that stretched back many centuries. This did not inhibit the fine craftsman from emerging as an individual, and an individual who could experiment, but it did ensure that the ordinary craftsman had a perfect understanding of the work in hand.

A great artist might make a little advance, a poor artist might stand a little behind, but the work as a whole was customary, and was shaped and perfected by a life experience, whose span was centuries. (Lethaby 1904)

However, what was learned in the schools was dependent on who did the teaching, and this was the concern in the UK. Nevertheless, the success of the technical schools on the continent, which had grown out of the need to apply science to the business of production, was recognised in both the UK and the USA. ('Mr. J.C. Pumpelly writes...in favour of trade schools' 1902:33) However, as discussed above, Germany also had a tradition of dedicated teachers, rather than the English way of teachers with at least one foot in practice. German success in trade was seen as a result of the education in these technical schools and the fact that the workmen who trained there were also trained in the ways and requirements of business. It was this knowledge that

prompted the changes in both the UK and the USA and the introduction of such schools in these countries.

This move had an indirect effect on the education of architects. It meant that craft knowledge could no longer be relied on and the architect had to become master of this knowledge. In some eyes this was seen as advantageous.

The effort to realise the building as the result of a building art rather than of an exercise in so-called architectural style, if made on the part of the architect alone, in default of the executant craftsman, brings a renewing vigour to the process of design and pleasure of execution; the building grows actual in conception in a sense beyond that conveyed by a perspective drawing, and the draughtsmanship of it is a very secondary element at the instant of design—though of course valuable as an art of its own in proper relationship. (Pite 1900:88)

Thus architecture was to be reinvigorated just because the architect was to understand fully what the craftsman had been taught or formally assimilated through apprenticeship. An architectural education was founded on the need to understand the craft of building and all else would grow from that. As Lethaby said when describing the aims of architectural education:

Building at the best is an experimental, even an adventurous, art, and for the conduct of successful building the chief requirement at the bottom is a peculiar type of man—the building type. (Lethaby 1904: 159)

CONCLUSIONS

Many words have been written in accreditation reports on schools of architecture throughout the world on the problems encountered by students in applying what they know of "technology" to "design" projects in the studio. Perhaps the most noticeable aspect of the various courses of architecture described above is that nowhere do their proponents appear to perceive any conflict between "design" and "technology". Indeed, these distinctions, so important to much recent architectural education debate, were never made in the past. It was accepted that no student could design unless equipped with a knowledge of building technology.

The purpose of this paper is to suggest that the hand-wringing of the accreditation reports will only disappear if architectural education is underpinned by a thorough knowledge of how buildings are and have been constructed. The education system inherited from the RIBA and other UK schools is, as has been shown above, based on this premise. Students were expected first and foremost to understand how buildings, both historic and recent, were put together, and this was studied and sketched and discussed at great lengths. This grounding, coupled with making the student into a life-long learner, made the architect who could continue to develop throughout his or her professional life. Architecture was seen as an integral discipline. Perhaps this is the clearest lesson that the discussion of architectural education in the past holds for today. As the Director of the Birmingham School stated:

He [the student] is not to think of construction as merely a necessary basis upon which to exhibit something else—something presumably finer—such as art, style, decoration and so forth. Construction itself, in a most comprehensive sense, is to be his art. (Ball 1905:43)

REFERENCES

- 'The Architectural Association' (1902) *The Builder*, 18th October
- 'The Architectural Association: Opening meeting of Session 1903-4', (1903)a *The Builder*, 10th October
- 'The Architectural Association' (1903)b *The Builder*, 9th October
- Baldwin Brown, G. (1904) 'Architectural Education' *The Architectural Review*, November
- Ball, J.L. (1905) 'Correspondence' *The Architectural Review*, January
- Blomfield, R. (1932) *Memoirs of an Architect* Macmillan: London
- Cates, A. (1900)a 'The Higher Education of Architects' *Journal of the Royal Institute of British Architects* 10th November
- Cates, A. (1900)b 'The Higher Education of Architects' *Journal of the Royal Institute of British Architects* 24th November
- Cates, A. (1900)c 'The Higher Education of Architects' *Journal of the Royal Institute of British Architects* 8th December
- Cates, A. (1901) 'The Higher Education of Architects' *Journal of the Royal Institute of British Architects* 23rd February
- Curtis Green (1949) *The Drawings of Curtis Green R.A.* Batsford: London
- 'Discussion on Mr. George R. Burnell's Paper on the Present Tendencies of Architecture and Architectural Teaching in France', (1865) *Journal of the Royal Institute of British Architects*
- Drysdale, G. (1927) 'The Work of Leonard Stokes' *Journal of the Royal Institute of British Architects*, 8th January
- 'Fine Draughtsmanship Conduces to Fine Architecture' (1910) *The Builder*, 25th November
- Gunn, E. (1942) [using pseudonym "Arbalest"] 'Fond of Drawing' *The Architect and Building News* 9th January
- Gunn E. (1942) [using pseudonym "Arbalest"] 'The A.A. In Early Days. I.', *The Architect and Building News*, 17th April
- Gunn E. (1942) [using pseudonym "Arbalest"] 'The A.A. In Early Days. III.', *The Architect and Building News*, 1st May
- Gunn, E. (1945) 'Architectural Reminiscences' *The Builder* 21st December
- 'Obituary', (1925-6) *Journal of the Royal Institute of British Architects*, December
- Lethaby, W.R. (1904) 'Architectural Education', *The Architectural Review*, October
- Lethaby, W.R. (1904) *Mediaeval Art* Duckworth and Co.:London
- Maule, H.P.G. (1912) 'Architectural Education: A Plea for Breadth and Sanity', *Journal of the Royal Institute of British Architects*, 10th February
- Molesworth Roberts, H.V. (1946) 'Leonard Aloysius Stokes' *The Architectural Review*, December
- Muthesius H. (1979) First English edition *The English House* Crosby Lockwood Staples: London
- 'Mr. J.C. Pumpelly writes...in favour of trade schools' (1902) *The American Architect and Building News* 2nd August
- Penty, A. (1926) 'Authority and Liberty in Architecture iii: The Arts and Crafts Movement' *The Architects' Journal*, 13th October
- Pevsner, N. (1960) *Pioneers of Modern Design* Penguin Books: Middlesex
- Pite, B. (1900) 'A Review of the Tendencies of the Modern School of Architecture', 22nd December
- Richardson, M. (1983) *Architects of the Arts and Crafts Movement* Trefoil Books: London
- Ruskin, J. (1865) 'An Enquiry into some of the Conditions at Present Affecting the Study of Architecture in our Schools', *Journal of the Royal Institute of British Architects*

Schultz R.W. (1909) *The Arts Connected with Building*
Batsford: London
Simpson, F.M. (1905) 'Architectural Education', *The
Architectural Review*, January
'Some Country and Suburban Houses designed by
Ernest Newton', (1899) *The Studio* vol.16 no.73 April

Summerson, J. (1947) 'The Early History of the
Architectural Association' *The Architect and Building
News* 25th April
Voysey, C.F.A. (1915) 1986 ed. *Individuality* Nadder
Books, Element Books Ltd.: Dorset