Establishing a postgraduate programme in Construction History. The experience of South Bank University, London

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Building history in British universities has been subject to a number of pedagogic approaches. In schools of architecture it is generally taught in terms of the stylistic treatment of buildings, being about great buildings designed by important architects. The topics covered typically consist of: Greece and Rome, Medieval building, Florence in the 15th century, Mannerism and Baroque architecture, French and English 17th century buildings, neo-classicism and 18th urbanisation, the Industrial Revolution and finally the problems of architecture, planning and building at the start of the 19th century.

This approach elevates the stylistic treatment of buildings above all other considerations (and in so doing reinforces the importance of the architect) and is often taught in the classroom using a succession of colour slides detailing the peculiarities of different styles. Academically such an approach is justified on two grounds: it introduces the student to the realm of culture, and it provides rich visual material for the student to incorporate into their designs. The student becomes acquainted with a standardised history generally accepted within the architectural profession as a literary «rite de passage».

The teaching of architectural history tends to answer the questions «what happened?» and «how?», but pointedly avoids the question «why?». As a result, the change from one style to another is discussed in terms of the «exhaustion» of that style, or in terms of personal relations —architects «reacted against» their fathers. What is missing from this approach to building history is any recognition of the industrial setting that allowed earlier societies to sometimes build on a large scale. While it is true that architecture is related to its social function, it is also connected to the productive forces that brought it into existence.

Another approach to building history found in the universities is what Hamilton has called the «cultural field . . . (of) one’s own profession», based on the inclusion of history in technical curricula as a way of «enlarging» the sympathies of students beyond the purely technical. Colleges which train the technical and professional specialists for the construction industry sometimes set aside a small number of hours per semester for «history». Thus, civil engineering students might be given a series of lectures on the development of roads, harbours, water supply etc. from the 18th century to the present date; or quantity surveying students might be asked to read Thompson’s Chartered Surveyors or Nisbet’s Quantity Surveying in London during the 19th century.

Much of the history taught on these courses is really about the formation and development of particular professions, whether surveying, civil engineering, architecture, town planning, environmental design and engineering, or landscape gardening. Most of these professions are relatively recent, the earliest dating from the eighteenth century. To restrict building history to the rise of a profession is necessarily to omit the great mass of construction in earlier epochs.
Furthermore, study based on the history of individual professions is inappropriate for the construction industry not only because of the extent of the inter-relationship between professions in this sector, but also (as Ive and McGhie\(^3\) have pointed out) because building is «closely connected with other manufacturing industries and service sectors».

Yet another approach to building history draws its intellectual inspiration from the idea that history has relevance to contemporary society. Morice\(^3\) in his article on the role of history in a civil engineering course gives a two-part justification for the study of building history: it will help engineers design better structures, since building is «littered with examples of (structural) failures which historical insight could probably have avoided»; it will also develop an appreciation of the impact which major engineering works can have on the environment since «historical study will cause the young engineer to be more aware of his public accountability in environmental matters».

Moriec's approach raises a number of questions. At the level of historical scholarship it has not been settled that «lessons can be learnt from history», as witness Hegel's famous dictum; some historians argue that the study of history, as the study of human thought and action, is of intrinsic value irrespective of any practical implications. Moreover, in terms of practical performance it is questionable whether history can be used as an aid to better structural design by «professional engineers». Hatchett\(^4\) has shown in a case study that the failure of the King Street bridge in Australia in 1962 was caused by an unholy mix of new technology (the introduction of high tensile steel), failure in communication between consultants and subcontractors, faulty inspection procedures and difficulties in the method of procurement. Such work suggests that trainee engineers should address general questions relating to the current construction industry by focusing on topics such as methods of procurement, management control, labour relations, technological development etc.

Another approach to building history can be found in those graduate/postgraduate courses focused on urban history. The rise of urban history in Britain in the 1960s and 1970s represented an attempt to subsume construction history within the boundaries of the historical study of the city. H.J. Dyos, the doyen of urban historians, bemoaned the lack of detailed research on the operations of builders and developers and considered this form of history to be an important component of studies on the urban fabric. Later writers on urban history have followed this approach. Ravetz\(^5\), for example, in her book on post-war urban planning gives an excellent description of the way industrialised building techniques (and the forces which created this technology) restructured the urban environment of many cities.

It can be argued, however, that the urban historians' approach to construction history results in an inadequate level of conceptualisation and theoretical perspective to this subject. Despite what Dyos\(^6\) says about the range of research work on the urban past («from the archaeology of urban development in the Dark Ages to community patterns in the modern metropolis, from York in the age of reform to Blackpool in the age of affluence»), most of this work concentrates either on the urban transformation process that began around the year 1800 or on subsequent aspects of urbanisation. Urban history by definition concentrates on the city and gives little attention to the rural aspects of living. What, therefore, do urban historians make of the intensive building activity that occurred in rural England between 1570 and 1670 (what Hoskins called the «Great Rebuilding») that ended the medieval preference for impermanent buildings and resulted in the building and successive rebuilding of permanent vernacular houses? While past civilisations have occasionally been dominated by their urban institutions, throughout historical time most people did not live and work in urban concentrations (even in 1800, when the world's population was estimated to be about 1000 million people, less that 3% could be described as urbanised). This suggests that construction activity was mainly located in rural communities which were geographically diffused and supported a highly localised building industry.

Building history as taught in British universities can be summarised as being about the histories of styles, building types, the rise of the professions, engineering and urbanisation. What is conspicuously missing from these pedagogic approaches is viewing construction as a problem in industrial organisation. Construction throughout historic time has often involved the
mobilisation of thousands of people—either by compulsion or through the market place—and large sums of money (about one-third of church income during the Middle Ages was spent on cathedral building). The organisational problems in erecting buildings, including the supply of materials, construction operations and financial administration, have been mostly ignored. Although the industry satisfied one of man’s most basic needs and was, even into the industrial age, one of the largest employers, it hardly finds a place in most surveys of the economic history of Europe, and its historical development is excluded from college courses dealing with building history.

Only a small amount of work has been published which deals with the theoretical problems associated with furnishing the construction industry with an historical identity. One of the surprises in studying construction history is the lack of attention given to the identity and scope of the subject. Despite the mass of literature written on various aspects of construction from an historical viewpoint, there is a marked paucity of works dealing with the conceptual framework and theoretical basis of the subject. Most of the published work on this topic appears in the journal of the Construction History Society.

Why has this been the case? Part of the reason is found in what Ravetz claims is a «deep division in society in which technical and industrial processes and their workers are socially divided from policy makers, academics and professionals . . . » Construction as a manner of production is considered to have little social relevance. Another reason for the lack of attention given to construction history has been the proliferation of historical specialisms (urban, architectural and economic history) which deal with aspects of construction as part of their academic portfolio.

Construction history as a subject of study focuses attention on a variety of important subjects which might not otherwise be taken seriously. It gives historical perspective to the way the built environment was literally pieced together, dealing with matters such as the structure and ways of working of the building industry, the type of technology used, developments in the labour process, the relationship between construction and the development of the economy etc. There is however no intellectually compelling reason for seeing the subject as an independent historical discipline. Most of the work could be located in one or other of the existing specialisms which deal with the history of the built environment, such as urban history, architectural history or the inter-disciplinary approach found in the Bartlett International Summer School. Each of these has the potential to develop the concepts and methods relevant to the study of building activity, provided only that enough interest is taken in this area.

In practice, however, the history of construction has been largely neglected by these specialisms and instead has been the preserve of amateur historians, technical specialists and academics whose commitment to construction as a field of historical study is restricted to the duration of a few research projects. A price is paid for leaving construction history out—urban history, for example, makes little sense unless some attention is given to the way in which the urban fabric was made. Furthermore, the building industry has been of fundamental importance to many economies for long periods of time. This suggests that construction history should not be dismissed as an idle intellectual pastime. Its main vindication as a subject of study (apart from any intrinsic value) is the unfortunate reluctance of the more pertinent historical specialisms to enter into discussion about building production, counterpoised with a recognition of the importance of this activity to socio-economic life in the past.

The establishment of the Construction History Society in the UK has helped construction history to emerge as a separate intellectual discipline. The Society was founded in 1982 with the intention of providing a focal point where those interested in the history of construction, historians and people in the construction industry could meet and exchange ideas. The principal aims of the Society are to encourage research into the history of construction and to assist in its dissemination while at the same time locating, identifying and listing primary source material and to encourage its preservation. The Society organises an annual lecture/seminar and publishes a prestigious journal and quarterly newsletter.

A small coterie of staff at South Bank University (London) considered it time that construction—which in some cases had the highest concentrations of labour found in any industry before the industrial revolution—found a place in the academy to study its historical development. South Bank University is ideally placed to offer such a programme. With one of
the largest Built Environment Faculties in Europe it contains staff from a variety of backgrounds (architects, construction managers, conservationists, building economists, structural engineers etc.); while the focus of the Faculty is on the needs of the modern building industry, there is a subculture whereby historical topics (seen as peripheral to the core curriculum) are discussed in an informal way.

The undergraduate programme in the Faculty has two units (the History of Building Design and Production and the History of Building Engineering) which not only deal with architectural history (when major transformations occurred in historical style) but also offers an insight into how earlier societies organised their production process. For example, students are both introduced to the refinements of Greek architecture (the orders and sculptural treatment of buildings) and the production process that allowed Greek temples, stoas, theatres, stadia etc. to come into being. Many building accounts have survived from classical times that allow interesting questions to be raised about, for example, the economics of temple building in ancient Greece and the technology employed on building projects.

The University has maintained close links with the Construction History Society through sponsorship of the annual seminar, hosting conferences, publishing papers in the Society’s journal and newsletter, delivering guest lectures, secondment to the committee of the Society and storing archive material.

In recent years the Faculty of the Built Environment has been experiencing declining student numbers, associated with the downturn in the Construction Industry and the difficulty that graduates have in finding work. Also, there has been an oversupply of education courses in construction, with too few students chasing too many courses and, of course, the previous Government had cut funding to the Universities. To offset the decline in graduate numbers, the Faculty has adopted the strategy of developing more postgraduate courses, to attract those in work seeking professional consolidation and development, or those who want to make a career change.

The «traditional» academic view with regard to postgraduate courses is that they should be offered in institutions with a sound research base to support teaching. This strict requirement is difficult to achieve with construction history since the subject area is a focus for a variety of forms of knowledge rather than a form of knowledge itself. Construction history lacks fundamental research that develops models and theories which unify the subject area. Therefore much of the research work associated with construction history while being of direct relevance to the subject area, does not address the core issues involved. Benefits can accrue from this intellectually diffuse approach: the construction historians perspective is positively enriched by not being committed to a single methodology. The lack of agreement as whether to pursue an economic approach based on analysing the influence of building in the economy, or a technological approach that focuses on the various stages of structural development, or an approach that concentrates on the role of labour in the building process, can help to produce a range and variety of research that gives serious consideration to the complex historical processes that have shaped construction.

The Built Environment Faculty at South Bank University is engaged in a variety of research that is of relevance to construction history. This work includes historical studies of speculative builders, housing markets, urban form, building in London and the development of architectural style. It was expected that current research activities together with future projects would underpin teaching on the Master’s course. Once the course is established, commercial research contracts would also be sought.

Currently no university in the UK offers a Master’s programme in construction history and, as far as is known, no higher education institution is proposing to offer such a course. There are no professors in construction history, no chairs on offer and only limited opportunities to consider construction from an historical viewpoint. This suggests one of two things: that resource constraints have prevented the setting up of such a programme or that there is a limited demand for a course in construction history.

**Course details**

The design of the MA curriculum was undertaken by a Course Planning Committee following three simple steps. First, the material that is of central importance to construction history was identified. The aim of the
Committee was to avoid serious omissions on the one hand, while guarding against an over comprehensive approach.

Information on what should be included in the curriculum was collected from a number of different sources including the scrutiny of architectural/engineering history curricula offered by other UK universities, by discussion with academics involved in the research and teaching of both mainstream and building history, by questionnaire survey, by a literature search of books, journals, abstracts, research reports etc. that deal with construction history issues. What constitutes the basic knowledge areas of construction history was surprisingly easy to formulate. The organisational problem of erecting a building breaks down into three distinct tasks: supply of materials and labour, construction operations, and financial administration. This material reality faced builders in the past as well as the present. Using this process model as a guide, it becomes relatively straightforward to disaggregate each step of construction into discrete elements that reflect the complexity of building. The Committee formulated a number of basic knowledge areas including: production of building materials; labour process; design and designers; history of structural engineering; organisation of site operations; conditions of work; building contracts; economics of building; construction and the economy; money supply and wages; building craft guilds; mathematics/geometry and construction; industrialisation of building production and history of building legislation.

The second step followed by the Committee was to organise this material into a coherent curriculum containing material essential to the study of construction history and which could form the basis of compulsory areas of study. The Committee felt time and spatial limits should be placed on the curriculum material: essentially the core programme is focused on construction activity in the UK and to a lesser extent Europe. Where it is essential for the understanding of particular topics (i.e. the development of tall buildings) other locations have been considered. Students undertaking their Dissertation will most likely use archive material relating to building in the UK and therefore the teaching programme should support and interpret this material.

The need to refer to historical sources means the course is focused on the period between the High Middle Ages and recent times. From the High Middle Ages onwards, the written word survives in greater abundance than any other source for Western history. Both Salzman and Colvin summarise the wealth of medieval public records and accounts that deal with aspects of construction. The fifteenth and sixteenth centuries witnessed not only a marked growth in record-keeping by the state and other corporate bodies, but also the rapid spread of printing which encouraged literate productions of all kinds and transformed its prospects of survival. The best archive material for construction historians dates to the 19th and 20th centuries with a mass of historical sources in written, pictorial and oral form. Also more buildings survive from this period with their associated documentation than any other.

Rather than arrange the material chronologically (i.e. considering building production in the 18th, 19th and 20th centuries), the Committee felt the organising principle should be the building process itself. The central problem of construction from a technical viewpoint is the organisation of supply and labour for a building project: this involves given consideration to the organisational problems of erecting a building, the type of contract employed, the supply of materials and labour. Clearly these topics should form a core element of the curriculum.

The urban expansion of the industrial era brought such a soaring demand for more and better housing and for a greater variety of non-residential buildings and public works projects that in the early 19th century the construction industry was transformed and able to undertake much larger operations, helped by mechanisation. The industrial revolution had such an impact on both demand and technology that it is valid to differentiate analytically the building industry before industrialisation and after. With this in mind, the Committee devoted two core units to building production —one dealing with the industry before the modern period (when relatively little structural change occurred) and the other focused on the modern era which is characterised by quantitative leaps in demand, organisation and technology.

Further revolutionary transformation occurred after the second world war. During the war a small number of contractors were allocated large defence contracts
(such as the building of airfields and naval dockyards) which enabled them, once the war had finished, to become national contractors. Some of these companies further transformed themselves into international contractors able to operate on a global scale. The post war era sees the rise of world construction markets, the deskilling of intellectual work by computers (particularly in structural engineering), the introduction of industrialised building techniques, new forms of procurement which undermine the role of the architect, the use of robots to assemble buildings, a massive shift from on-site construction to component assembly, new project management systems making use of software and sophisticated communication and the rise of large multidisciplinary professional service firms. Some of these developments are unique in the history of construction and have radical implications for the way the industry is organised and structured. A core unit devoted to explaining these historical events is thought justified.

Builders throughout historical time have faced the same set of unchanging physical realities — gravity, wind, temperature changes, earthquakes and settlement. How creatively they dealt with these constraints can become an integrating link between different historical periods. The Committee supported a unit devoted to the historical development of structural form and building materials. Also, engineering makes use of mathematical analysis and this allows valuable comparisons between different epochs. For example, most domes built in antiquity have a thickness-to-radius ratio of about 1:50. Compare that to a modern dome building (the most spectacular recent example in the UK being the Millennium dome) where the ratio is a staggering 1:1600. Calculations of this sort can identify in precise terms what constitutes an innovation and how this differed to what went previously.

Despite the long tradition of scholarship directed to the history of European architecture in the medieval and the early modern periods, surprisingly little is known about the economics of building i.e. the cost of putting buildings up and about the impact such expenditure had on the economy as a whole. Most of the work in this area concentrates on the 19th and 20th centuries, for the obvious reason that a lot of data exists on this period from which quantitative statements can be made. The Committee supported a core unit devoted to the economic history of construction, both to open up the question of economic development of building before the 19th century and to explore interesting questions about the modern world, particularly productivity levels, the economics of housing, price and wage fluctuations, market structure and demand.

The products of the building industry are buildings and structures, and these can become objects of historical study. This approach has been adopted by Pevsner and involves the accumulation of facts about selected buildings; when it was built, by whom, when it was modified, what it looks like, who designed it, what architectural style it is etc. While this methodology has some use in establishing authenticity and factual context, it is restricted as an analytical tool to penetrate the forces at work which created these buildings. The work of Pevsner has been supplemented by more powerful analytical techniques in studying older buildings, mainly associated with archaeology and building conservation. For example, archaeologists conducting a petrological analysis of stone can identify very precisely its source and likely quarry location. Dean and Hansen’s study of the building of Neolithic megaliths in Denmark suggests a professional work force was involved in the execution of these tombs, rather than farmers as thought previously. This places the professionalisation of building work at a much earlier date. Other archaeological techniques useful to the study of buildings include ground radar, aerial photography, dendrology, radar surveys, carbon dating etc. Breaking down the professional boundaries between archaeologists, conservationists and construction historians can lead to new ways of considering buildings and new research material. The Committee felt that a unit focused on the confluence of these disciplines would provide new and important insights for students.

The final step involved the Committee in prioritising component parts of the curriculum so that the distinctive «flavour» of the South Bank University course could emerge. The essential ethos of the MA programme in Construction History at South Bank is a focus on building production in the pre-modern and modern era combined with an economic and engineering analysis.
AIMS AND OBJECTIVES OF THE COURSE

The general educational aims of the course were:

- To encourage research into the history of construction and to disseminate this to the wider community
- To offer other disciplines (notably conservation and architectural history) an enhanced insight into their traditional subject areas
- To assist the career development of students from a variety of backgrounds, particularly those interested in an academic career in research
- To offer the opportunity to students to develop their personal study and construction history research interests
- To identify the extent and character of sources useful for construction historians

Students successfully completing the Master's course should:

- be able to use documentary sources to construct historical interpretations
- have developed literary forms capable of producing historical writing
- have an appreciation of historiography and the different approaches to writing history
- acquired a knowledge of the major transformations that have occurred in construction history and developed explanations for these changes
- have acquired analytical skills to discuss the significance and relationships of historical events in construction
- developed specialised knowledge in a particular area (through the Dissertation) which impinges on original work
- be able to use their Dissertation as a bridge to publishing their work

POSTSCRIPT

The MA in Construction History was validated by the University in March 1999 and the course incorporated into the postgraduate prospectus and University web site. An advertising campaign was also launched in relevant newspapers and journals and a mail shot undertaken. By the start of the new academic year (October 1999) 12 prospective students had expressed an interest in the course of which 7 were offered places; of these, three confirmed their intention of beginning the course.

In previous years it was common practice for a Masters course to start with small student numbers and, as the course became known in the wider community, to grow into an established programme. As mentioned previously, South Bank University in common with other UK universities offering built environment courses have been experiencing a massive decline in student numbers. The consequence of this is less grant money from central government and a commensurate reduction in resourcing. In this harsher financial environment senior management in the University adjudged the new Masters programme not to be cost effective - a minimum of 15 students was required to begin the course and justify the staffing costs. It was therefore decided not to run the programme in academic year 1999/00. Since a considerable amount of effort had gone into course preparation, it was considered sensible to continue advertising the programme for a further year and to offer the course afresh in October 2000. Unfortunately, similar numbers of student again applied for the course and it was withdrawn from the university course portfolio.

Offering a Masters course in construction history at South Bank University has not proved to be successful. Why this should be so is very difficult to answer: South Bank is a new university which was previously a Polytechnic specialising in vocational courses. It could be argued that a course in history, albeit a specialist course, is better suited to a traditional university with a track record in the arts. It may be that a specialist course which attempts to give an historical perspective to how the built environment was pieced together has little attraction for young people: most of the delegates who attend conferences and seminars connected with construction history could be categorised as «mature», the young being conspicuous by their absence. It is not immediately obvious what benefits would accrue from a degree/postgraduate qualification in construction history. A career could beckon in academia or perhaps a conservation organisation like English Heritage, but most of the building professional bodies...
in the UK would not grant membership on the basis of such a qualification. My experience of modern students is that they are highly focused on careers and earning potential and often choose academic courses that assist these «real» world pursuits.

Academic fashion can also play a part: certain courses at certain times become unpopular. Currently in Britain many universities offering courses in building conservation are having difficulties recruiting students when, until recently, they experienced buoyant numbers.

It may be that construction history is seen as a technical subject — history with the glamour left out — that deals with only a very limited number of narrow questions, and therefore the preserve of the «anorak» or eccentric.

A further possibility is that a new academic subject like construction history needs to be grown and developed. Initially such a specialist area is likely to attract few students; but as these students graduate and disseminate details of the course it will gain a reputation for being an interesting and plausible university subject. Resource constraints at South Bank meant the course was required to recruit a set number of students from its inception. Had a different strategy been adopted whereby the course was allowed time to develop, a more successful outcome may have ensued.

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NOTES

7. Ibid., p. 23.