Aesthetics, ethics and workmanship: 
The need for a cultural dimension 
to Construction History

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Writing the history of a constructional event is, surely, as worthy an intellectual pursuit as any other. Moreover, since we are dealing with a human trait, we must assume that this activity, construction, and its objects are subject to value judgments, as explained in two of the traditional founts of philosophical discourse, aesthetics and ethics. It would not be possible to write its history otherwise, and the very fact of this congress taking place bears testimony to the de facto existence of such an identifiable field of study. Construction history has already been «named», i. e. particularized in the Hobbesian sense (Hobbes [1651] 1985, 102–3). The purpose of this meeting, as I understand it, is to take the subject into maturity: to seek a closer definition of concepts, of boundaries; to formulate guiding principles and foster the refinement of technique that would bring our work as construction historians wider recognition (academic, professional and public), thus «legitimizing» the activity and ensuring the future growth of the field of study.

As a group of scholars we are heterogeneous, coming as we do from a variety of related disciplines, reflecting the diverse nature of the subject matter. My own background is in architecture, so my view on these matters is inevitably coloured by this fact, and the first observation I would like to make from that perspective is that architectural history, although more securely established than construction history, also has gone through a process of re-examining its basic premises. It would appear as if most academic disciplines have seen intellectual turmoil of this kind in recent decades: having had to justify their very existence and having had their trusted objectives and longstanding practices challenged in the name of postmodern critical theory. It has happened to the core discipline, history, itself (Evans 1997). It has happened to more specialized historical fields, for example the history of technology (Buchanan 1991; Staudenmaier 1994; Roland 1997).

While this may not always be a comfortable state for those caught up in the process, at least late-comers like us have the benefit of learning from the experience of others, since, in order to deal with the crisis practitioners in long-established disciplines have had to externalize the methodologies and philosophical premises by which they operate. Thus a wealth of historiographical knowledge was revealed which otherwise would have remained hidden, and a climate has been created that is susceptible to the introduction of new concepts potentially useful to the construction historian. In that sense it seems to be a good time to «open a new shop!»

The emergence of construction history as a subject in its own right can be seen as a belated manifestation of a trend —prevalent during the latter half of the 20th century— towards the progressive subdivision into specialisms of what had previously been thought of as an integrated body of historical knowledge. Most construction historians would probably agree that in terms of approach and content the new subject area falls somewhere between engineering —and
architectural history, with significant input from socio-economic history and archaeology. In Britain it appears to owe its existence as a separate field for academic enquiry to a feeling amongst some scholars that the role of construction in historic environments has not been given due recognition by historians, more specifically architectural historians, and therefore needed an independent voice, hence the formation of the Construction History Group (now Society), with its annual journal, *Construction History* (1985).

The roots of this tendency in architectural historical and theoretical writing, as well as in architectural practice, namely to separate out various constituents of the building process, privileging the artistic (as embodied in stylistic design) over all others, goes back to the Renaissance, but a crisis point was reached in the 19th century due to the impact of the industrial revolution. What for centuries has been a shared culture that linked those professionally engaged in the act of building then became permanently fragmented. On the one hand the parties involved were driven apart as never before, and set in competition by the centrifugal forces of industrial capitalism, on the other, they were caught up in the fractious stylistic battles of the Victorian art world. The ideological and operational framework for professional relationships within the building industry in Britain established at that time still prevails. It would, therefore, seem to be a good place to start searching for answers regarding the nature of a building culture, if such exists, that might form the epistemological basis for construction history as a field of intellectual enquiry. But first it is necessary to identify what exactly it is that we hope to find there.

At the beginning of this paper it was suggested that without scope for value judgment, or interpretation, as embodied in the philosophical categories of aesthetics and ethics, a subject cannot be classed as, «history», because these are qualities integral to all human activity, the *raison d'être* for historical explanation. In other words, it is the «how» and «why» categories that are the critical criteria in this instance, not the «what», «where» and «when». In architectural history this point was well illustrated by Andor Gomme in his critique of the official survey of the Royal Office of Works in Britain, *The History of the King's Works* (1963–82). Basically he concluded that this monumental work, for all its exemplary scholarship did not add up to a history, because:

a history is more than a sequential chronicle – very much more than a congeries of parallel chronicles — or a narration, however faithful, of names and events important or trivial. It demands in the first place a sustained act of critical judgment, which in the greatest historians inerrantly discriminates between what is historically significant and what is merely incidental or trivial. In parts of the *King's Works* the lack of assimilation or consolidation of small-scale detail, the lack of critical selection and interpretation, leave the book lacking the essential qualities of history (Gomme 1986, 198).

It is a caution that we would do well to remember in our deliberations about the nature of construction history.

Three years earlier, in his inaugural address to the Chair in Architectural History at the University of London, Joe Mordaunt Crook, gave a useful summary of the characteristics that distinguishes architectural history from other types of history. He makes a plea for architectural history to act as a bridge between art, and technology, and social science, for it to function as an «agent of cohesion within the pantheon of history itself». Since all forms of history are concerned with the same thing, the explanation of the past, he argues that all that distinguish them from one another are, «the nature of the evidence with which they have to deal, and the techniques which have to be developed to assimilate that evidence». He identifies three different approaches to the subject:

We can study that building as a monument, as a structure, as a tectonic equation, on internal evidence: that is the archaeological approach . . . Or we can study it vicariously, on the basis of external evidence, manuscripts, drawings, building accounts, correspondence: that is the documentary approach . . . . Or we can study it conceptually, as a work of art, as a design, in relation to aesthetic theory: that is the visual or art-historical approach . . . . Architectural history, at its best, must encompass all three methods, because architecture is palpable history, culture in three dimensions. It cannot be created in *vacio* (Crook [1983] 1984, 570–1).

Architectural history is, of course, only one of a number of disciplines whose territory overlaps with that claimed by the construction historian. Sorting out
what these subject boundaries are, and reaching a resolution as to how best to secure a separate identity for construction history without cutting its natural links with a range of other disciplines, is one of the tasks of this congress. I am assuming here that we are to continue along the disciplinary route initially embarked upon, for there is an alternative way: the interdisciplinary approach propagated by the so-called, «STS» movement, a group of, mainly American scholars who seek to treat Science, Technology and Social studies as one seamless entity (Cutcliffe 2000). Whatever the approach, in the final analysis it is the challenge of culture that has to be faced up to, if construction historians wish to be part of the wider community of historians.

The problem is that the notion of culture in itself is controversial; it is doubly so for the technological subject areas (Pacey, 1983, Pacey, 1999). There are several schools of thought on what constitutes culture. The Dictionary of Concepts in History (Ritter 1986) identifies four basic definitions within two broad categories: an inclusive, society-oriented concept which derives from anthropology and is largely descriptive and neutral, and a more exclusive, normative one rooted in the humanities. Where construction history positions itself with respect to these two viewpoints will affect both its eventual character and its potential as an agent for change in today’s building world. It is the last mentioned conception of culture that seems to pose the more intractable challenge to the construction industry, and by association the construction historian, and therefore perhaps is most urgently in need of clarification because of its topicality.¹

An important reason for this complication with culture is the rather ambivalent stand taken traditionally by the building industry with respect to specific cultural values such as is represented, for example, in the question of standards, be they of an ethical or aesthetic nature, and those values stemming from «context-based insights» which bestow meaning, be they individual or socio-political in origin. The crux of the matter, as far as standards are concerned, seems to be the inescapable fact that the setting of and maintaining high standards of workmanship/production incur additional demand on resources, and therefore inevitably work in opposition to a dominant driving force in the building trade in a market economy: the need for commercial viability.²

As a consequence, issues regarding moral responsibility for «quality assurance» are habitually obfuscated —progressively so as mechanization, in Giedion’s terminology, «takes command». The issues surrounding meaning are more complex and wide-ranging, but here too it is not difficult to see how, for example, a building industry, ideologically governed by what has been called, «technological determinism» —as was the case for much of the 20th century in industrialized countries— could, in refusing to accept the notion of subjectivity as a relevant factor in production, de-humanize the entire building process.³

The construction historian therefore has a dual task. Not only has he/she to create a framework for objective scholarship that could establish the factual basis for a rational understanding of the evolution of what is, essentially, a practical activity, he/she also has to create a framework for discussing different levels of subjective experience of that activity over time. The former falls well within the frame of reference for technical historical writing, and should be relatively straightforward to resolve. The latter, on the other hand, may require a new foundation upon which to build, especially in so far as the humanities are concerned. Architectural history is an obvious point of reference, but the architectural historian concentrates on the role of the architect, and tends to see the building world through the eyes of the «artistic» designer —a perspective that has become increasingly remote from that of the builder/craftsman since, during the industrial revolution, the Renaissance vision of a theory/practice split became widely accepted as the basis for the modern professional structure for the industry.

It is for this reason that I suggest it might be useful for us to retrace our steps to the 19th century, when the negative impact of the fragmentation and polarization of the construction process first assumed critical proportions in practice. It was then that the historic thread of seeing the «building act» as a continuum of human endeavour was finally broken leading, ultimately, to the Modern Movement’s rejection of history itself as an irrelevance. Whereas the nature of this revolution, from an architectural perspective, has been comprehensively explored in all its ramifications, its impact on the building trades, other than in a material and political sense, has received comparatively little attention. We still view this world
largely through the glasses provided by the cultural reform movements of the Victorian era (or, in opposition to that).

It is difficult not to do so because it is so hard to fathom the exact role that craftsmanship played in building prior to the 20th century. Just because handwork is of such little consequence to the modern builder, we tend to forget how much the existence of a craft culture, governed by codes of what constituted «good workmanship», contributed to the creation of the historic built environment that we admire today. Construction history, I believe, will be flawed without a solid grasp on the part of the historian of the nature of this craft culture, founded on aesthetic and ethical codes no less real than those pursued in the fine arts, even though these were rarely articulated as such. It is our business to develop appropriate means that would facilitate this line of enquiry as well, and the 19th century, the moment when the tissues of this fabric were laid bare like never before in history, offers an ideal opportunity for studying a worldview that has become virtually extinct in Western societies.

What this might entail will be explored briefly by comparing the different responses of the building community to the advent of mechanization in the Victorian building industry. By looking at the history of the largest and most versatile of all building trades, the woodworkers I shall attempt to illustrate how mechanization worked its way through the building system in 19th century Britain and how, in the process, age-old conceptions of what craft is and stands for were fundamentally changed.

By the mid-19th century building, as an operational field in Britain had been systematized into three broad domains, each associated with a professional grouping. These were defined in 1869 by the architect, academic, and editor of the journal, The Architect, Thomas Roger Smith, as «the Art of Architecture, the Science of Engineering, and the Practice of Building» (Crook 1984, 560). The names of the categories are self-explanatory regarding the focus of its protagonists: to the first two, the architects and the engineers, were appropriated the functions of design and the direction of building projects, the last mentioned, the building craftsmen, increasingly under the hegemony of the master builder, carried responsibility for the physical construction process on site, for procuring materials and, initially, the manufacturing of all the specified building components. Up to the formation of their professional bodies (in 1818 and 1834, respectively), both the engineering and architectural «professions» recruited heavily from the ranks of the building craftsmen, and their educational as well as practice frameworks continued to reflect this kinship long after. In terms of its organizational structure, however, the new system was hierarchical and, while not always adhered to in practice, the polarized lines of demarcation nevertheless served as the benchmark for both social distinction and professional conduct. It also formed the basis for contractual arrangements throughout the industry. Two aspects of this arrangement in particular should be noted, as they set the parameters for operational behaviour within the industry:

— That the traditional creative/intellectual functions associated with building, and which carried most social status, had come to be reserved for the new class of professional, architects and engineers
— That only the activities of the building craftsmen, the lowest order in this pyramidal framework, were directly affected by mechanization.

Trades where the task consists of off-site manufacturing of relatively small items of a repetitive kind were obvious targets for the introduction of machinery in the workplace, and this applied to a significant section of the woodworking trade which was essentially workshop-based. Woodworking in Britain, England in particular, has a long and illustrious history and by the onset of the industrial revolution generations of practice had fine-tuned the trade into a complex, subtly graduated and interdependent network of skill-based activities, offering work opportunities to an unusually wide range of craftsmen. Comprising the arts of sawing, carpentry, joinery, cabinetmaking and carving, woodworking involved virtually every facet of building and furnishing, from the most mechanical of preparatory tasks to the most delicate of finishing touches. As a group, the woodworkers were amongst the best organized, best trained and best equipped of all the building and related trades; they were, as was pointed out before, also amongst the most vulnerable to large-scale mechanization. Consequently, in the space of a
mere three generations, from c.1815 to c.1895, a highly developed craft culture was destroyed as woodwork moved from being essentially handcrafted to being essentially machine-made. Exceptions to this were carpentry, whose role was equally balanced between the assembly of large-scale structural components and organisational duties, and woodcarving, which proved not to be commercially viable as mass production. A moving contemporary account of this struggle and the problems it caused whole communities of craftsmen is given by Henry Mayhew in his series of articles for the *Morning Chronicle* on the working conditions in London, 1849–50 (Mayhew 1850).

The plight of skilled craftsmen like the woodworkers in a rapidly industrialising British economy drew the support of cultural reformers like John Ruskin (1819–1900), and thus the building world got drawn into the struggle between two opposing forces that were shaping Victorian society: «aesthetic medievalism» and industrial capitalism. Although few in the industry would entirely escape the consequences of this struggle, not all trades were equally conditioned by it. The professional class that was least affected by these events were the engineers who almost by definition belonged to the progressive industrial camp, driven by a quest for improvement through the rational application of science and technology. As long as they confined their activities to the «non-architectural» aspects of building — as was the case with a new class of engineer that rose to prominence at the time, the mechanical engineer — engineers were free to explore the opportunities offered by the expanding industrial economy.

Whereas the civil engineer, like the architect could never entirely escape the social context of construction, mechanical engineers concentrated all their energies on invention and manufacturing. In partnership with capitalist entrepreneurs they formed the vanguard of the campaign towards mechanization, and it is within this group that one is most likely to encounter what a former president of the Newcomen Society, S. B. Hamilton, denounced as, «the adult infantilism of go-getters», who, «used the industrial revolution in the nineteenth century only as an opportunity to exploit the new means of power and production for immediate personal gain, heedless of the human and material waste and mess that they were leaving to be cleared up by posterity» (Hamilton 1945/6, 7). It was this class of men, the precursors of the modern industrial engineer, or engineer-managers who was responsible for developing the technology for mechanized woodworking. (Louw 1992, Louw 1993, Louw 1995, Louw 1996).

The architects, by contrast, found themselves, almost inadvertently, in the thick of the battle and remained ambivalent towards its objectives, which eventually caused the architectural profession, under the pressure of the competitive industrial environment, to split along art v. business lines. (Curiously, this latter development seems to have followed an aesthetic agenda, with the classicists, who saw themselves as «rationalists», generally being more willing to compromise and engage with technological experiment than the Gothic Revivalists who, with few exceptions, carried the flag for «free», artistic expression in a handicraft tradition, modeled on an idealized medieval society). Part of the problem lay with the general sense of insecurity on the part of the architects who found their bid for higher social status and leadership within a transforming building industry undermined in a number of ways:

— By the increasing scale, complexity and cost of building operations, which required new contractual arrangements and stricter financial control, and brought a new specialist, the quantity surveyor, into the architect’s traditional domain.

— By the new structural techniques, materials and services that put the architect in direct competition (often to his detriment) with the other new design professional on the scene, the engineer, for on-site supervision and control of building operations.

— By the rise of the general contractor, employing several trades «in-house» on building projects that progressively cut the architect off from direct dealings with master craftsmen on site.

— By the perfection of mechanized processes for the mass-production of architectural ornament, which encouraged the proliferation of wholesale furnishing firms providing comprehensive interior decoration services for architectural projects, independent of the architect.

Design was the traditional skill of the architect least compromised by the industrial revolution, even
though their inability to create a modern style equal to those of historic cultures which they admired and copied, were calling into question their claim at being artists on par with the painters and sculptors. Not only did their design methods in the process become more abstract and paper-based, the architects also became progressively more protective about the design skill being their «trump card» and exclusive professional right. Unfortunately, this trend coincided with the demand for a greater participation of artisans, including building craftsmen, in the creative process when it became clear that the decorative arts could make a significant contribution to the national economy, which was under threat from international competition in the production and trade of manufactured products. Craftsmen too were now called upon by society to make a specific contribution by improving their skills and expanding their creative capacity. The ensuing campaign to achieve this transformation of the artisan into the so-called, «art-workman» at first concentrated on education: a government-sponsored programme of establishing design schools throughout the country (Bell 1963), and private initiatives such as the Architectural Museum project promoted by the «Gothicists» within the architectural profession (Louw 1996, 23–25).

Both projects, for reasons that will be discussed later, failed to achieve the desired results.

Parallel to these attempts at reform, from c.1850 onwards grew a more radical, anti-machine, anti-professional campaign, which we now know as the Arts & Crafts Movement. Inspired by the teachings of Ruskin and William Morris (1834–96), and repelled by the crassness of mass-produced furnishings, a group of young architects set out to create an alternative model for building and furnishing practice to the prevailing, mechanized industrial one. They were highly critical of the architectural establishment as well as the industry and sought to base their practice instead on the collaborative medieval guild structure, in which the design and making processes were to be re-united by a brotherhood of art-workmen: architects and craftsmen operating on an equal basis in communal workshops, striving together towards achieving holistic projects serving socialist objectives. Ultimately, the quest for an «earthly paradise» by Morris and his fellow art workmen too foundered on the commercial realities of late-Victorian Britain, but not before they had established the norms against which subsequent notions of craft are measured.8

Thus caught, between the relentless push of the manufacturers towards full mechanization of the industry on the one hand, and the equally strong pull of the cultural reformers towards the recreation of pre-industrial world, on the other, how did skilled craftsmen respond to these challenges? What aesthetic and ethical positions did they take, and how did these compare with those of other building professionals? Because more was written about the British working classes and their conditions than they themselves articulated, it is a very difficult theme to study with confidence. Nevertheless, enough first-hand testimony survives in diaries, evidence to official enquiries, exhibition reports, newspaper surveys, trade-union literature and professional magazines and handbooks, to allow some conclusions to be drawn. In the following section I outline a scenario for this event, based on my own research into the case-history of the woodworking trades during the 19th century (Louw 1992, Louw 1993, Louw 1995, Louw 1996):

**Machinery:** Regarding the «machinery question», the catalyst for industrial progress, the woodworkers generally seem to have held a pragmatic view point, responding to its challenge in direct relation to the extent of the perceived threat to their livelihood, not on ideological grounds. Carpenters and joiners participated in the making of machines throughout the century and protests against the use of machinery, though they did occur, were neither common nor exclusively focused on machinery. The craftsmen were aware of the machine’s potential for lightening the burden of physical labour, for expanding the scope of their jobs and for creating extra work. They were, however, not blind to its potential for making their skills redundant and their positive attitude changed as soon as the pace of industrialization accelerated, and the full implications of the division of labour principle that underpinned mechanization became clear during the 1850s. Up till then the skilled workers seem to have been confident of their ability to compete with machinery, if not in terms of quantity at least in quality.

**Morale:** Their spirit was broken by the ruthless exploitation of their labour through new systems of
workshop management and the progressive efficiency of woodworking technology. In an increasingly politicized atmosphere the woodworkers played a leading role in the formation of the labour movement, fighting not only for better wages and working conditions, but also for more direct benefits to the worker from the application of machinery in the workplace. American influence led to the production of a smaller, cheaper class of woodworking machine suitable for general use in the building industry and this had a significant impact. The final blow to the skilled woodworker as a force in the British building industry came during the so-called «Great Depression» (1873–1896), with the large-scale importation of ready-made woodwork from abroad. This stimulated the local industry to mechanize to an even greater extent, demoralized the craftsmen even more and removed any prospect of a general return to handwork practices within the trade. By the early 20th century the culture that sustained their once peerless skill-base had largely disappeared.

**Skill:** For most of the 19th century superior hand-skill remained the benchmark for quality amongst the building trades and the key to success and status within a conservative industry organized on strict hierarchical lines. Amongst the woodworkers joiners and cabinetmakers were seen as the ones possessing the highest levels of skill, with the best training and most expensive sets of tools, of which they were inordinately proud. Master craftsmen like these usually operated independently and had considerable autonomy in the workplace. They were amongst the best in the field and natural candidates for a new class that emerged towards the middle of the century, the so-called, «labour aristocracy». Commercialized mechanization based on the division of labour principle undermined the foundations upon which the skilled woodworkers’ identity and status rested by rendering their hard-won facility for handicraft uncompetitive and ultimately redundant. The need to earn a living drove many to what was called, «scamping», i.e. the lowering of standards of workmanship in order to achieve a higher production rate, causing a moral dilemma with a distinction being drawn in the trade between «honourable» and «dishonourable» practice. The progressive integration of machinery in working practices even began to blur the definitions of what constituted machine-work and what handwork and it is clear that, as far as high quality work is concerned, by the 1870s the two modes of operation were beginning to achieve parity in the eyes of the workmen. Simultaneously, the concepts became politicized again with «machine-work» in its derogatory sense being associated with sub-standard work, unemployment and eventually all imported joinery products.

**Split:** The emergent trades’ union movement, the self-proclaimed champion for workers’ rights, paid little attention to the decline of skill and standards of workmanship in the specialist trades. It was the Carpenters’ and Joiners’ Companies, the modern successors of the traditional crafts guilds, who joined forces with the reform movement in architecture in order to defend the cause of the skilled workers by promoting the conservation of a craft culture and its concomitant educational systems. This allegiance caused a split within the ranks of the woodworkers — which resembled that which occurred within the architectural profession quite closely— between the «artists» or «Gothic men», and the «tradesmen» or «operatives». The term «Gothic men» indicates that the craftsmen involved were drawn from the top range of skill and working mainly in the Gothic idiom. The consequence of this development was that the bulk of the skilled workforce became cut off from this cultural movement with a complete breakdown of communication between the various groups concerned.

**Reform:** For their part the reformers seem to have been either unaware of, or insensitive to the difficult conditions under which craftsmen had to operate, expecting them to unlearn and reform well-honed physical skills and devote what little free time they got in a tough working environment to a programme of cultural self-improvement, for which the facilities were mostly inadequate and inappropriate. That goes for the government design schools as much as for the Architectural Museum project. The Arts & Crafts Movement at least recognized this fact and sought to develop a more congenial work environment and better training facilities, but their efforts, like those of the other reformers were hampered by an inability within their group to accommodate a taste-culture which differed from their own, essentially partisan one. It mattered little whether the motives behind this were social or aesthetic, or both, the outcome was the same
and herein lay one of the most intractable conundrums of this whole issue. In the final analysis, there seems to have been no real place for the ordinary skilled workman in the idealized world of the architectural reformers, not unless they changed their nature, their tastes, their skills and working practices. This most of the craftsmen either could or would not do.

**Horizons:** From the perspective of the craftsmen we get a different picture. Brought up within a skill-based craft culture that went back for centuries, their horizon was circumscribed by custom, tempered (but only incrementally so) by opportunity and natural talent. As individuals they were free to select a career within a general trade, in this case focused on the working of wood and, according to their interests and abilities, train to do a particular kind of work. For those with a desire to engage with structural and organizational tasks, carpentry was an obvious choice; for those who liked indoor work, demanding a high degree of manipulative skill, joinery and cabinet-making served, while those with a more artistic bend could take up wood carving.

**Re-orientation:** Ever since the guild structure in Britain finally began to collapse in the 18th century, the more ambitious amongst working men had opted to pursue careers in the emergent building professions, but the old craft tradition with its finely calibrated scale of manual activities still held sway as the operational framework for most building workers in the early 19th century. Due largely to the efforts of one individual, Peter Nicholson (1765-1844), cabinet-maker-cum-architect-cum-mathematician-cum-author, the woodworking trades had been given a rational science-based theoretical foundation. This re-alignment of the craft of woodworking towards science was reinforced later in the century by the government-sponsored programme of technical education. There was a natural affinity of this science-based technology propagated by Nicholson and his followers with the sober, rule-based rationality of the classical style of architecture—a language which, after two centuries of continuous practical application the English craftsmen had made their own, regarding technique as well as taste.

**Culture Clash:** However much the working men may have admired cultural reformers like Ruskin and Morris—and there is ample evidence of that being the case—the Gothic Revivalists’ demand for the craftsmen to abandon the security of a well-understood decorative language, for which a sophisticated technology had been developed, in order to work with what they considered to be primitive tools according to the whims of designers who themselves were in the process of learning the grammar of the new idiom, was neither realistic nor fair. Moreover, serious-minded craftsmen were totally bemused by the fickleness of stylistic fashions capable of executing a complete volte-face from one generation to the next, without any logical explanation or defense. A classic example of this is the artistic community’s attitude to the question of the relative aesthetic quality of hand-made v. machine-made goods. In the mid-19th century, when machined wooden products were rough compared with the highly finished hand-made item, the «smoothness» of the latter was valued most. When, later in the century, the advanced machine technology could produce goods superior in terms of finish to those made by craftsmen, it was the roughness of surface, or «texture», that became the ideal.

**Two Paths:** Master craftsmen in the woodworking trades in Britain seem to have valued sound construction, economy of execution and precision of workmanship above artistic flair, which is why they failed to be impressed by the much lauded work of French joiners and cabinet makers, even when confronted by these products at international exhibitions and during visits to that country. Given the over-arching context of the divisionary social class structure of Victorian Britain within which these developments took place there was clearly little prospect of reconciling such contrasting perspectives, and thus of bridging the ever-widening gap developing between the arts and technology within the building industry throughout the 19th century. It is a legacy that is still with us today.

The point that I have tried to make in this paper is that, instead of a humanities-based notion of culture being peripheral to the construction historian—a view some practitioners in the field may well subscribe to—it has the potential for acting as a leaven to raise the standards of debate in our subject area, as well as for allowing access to parts of the
inner workings of the field that we seek to explain which no other line of enquiry permits. Without this critical presence within his/her reference-base, or, academic «toolkit», the construction historian’s grasp of the constructive act as a meaningful human activity will definitely be the poorer, and so would be his/her contribution to the future well being of this activity.

I have gone further to suggest that in order to understand the nature of construction history as a subject, and its potential for becoming a new discipline, we have to know what happened to building during the industrial revolution. Why? As I have tried to show with the brief description of how mechanization affected the craft of woodworking during the 19th century, something fundamentally changed within the fabric of the industry at that time which caused a general breakdown of communication between the spheres of art and technology — the loss of a common language, rooted in a common value system. Woodworking in the early-20th century was different from woodworking in the early-19th century in a fundamental way. Hannah Arendt, in her book, *The Human Condition*, has identified what may lie at the heart of this transformation that nearly every craft process in society underwent: She argues that during the industrial revolution usefulness achieved through good workmanship, the ideal of *homo faber*, man the maker, the «fabricator of the world», have been sacrificed to abundance, the ideal of *animal laborans*, man the labouring animal, the consumer. Craft was replaced with labour, that «leaves nothing behind... the result of its effort is almost as quickly consumed as the effort is spent» (Arendt 1958 1989). Construction historians, wishing to deal with the full span of building history, including both the pre-industrial and industrial eras, therefore finds themselves confronted with a dualistic entity. Either a pluralist stance is adopted with the acceptance that our «specialism» cannot achieve disciplinary status, as Malcolm Dunkeld has concluded some years ago (Dunkeld 1987); or, we continue to search for that elusive common thread in building that would provide the focus needed for completing this task.

Should the latter route be taken, there seem to be two different approaches to be explored: one is centred on the process of building as the generating force; the other takes the object of building as the guiding principle. Tom Peters has made a strong case for the former (Peters 1996), and this would undoubtedly be an attractive proposition to a large proportion of those currently working in the field. The second option links up with traditional art/architectural history and, therefore, may be unfashionable. However, I do believe that it ought to be given serious consideration as well. In which case, an obvious touchstone would be the notion of «craft» or «workmanship», as defined by David Pye: «the application of technique to making, by the exercise of care, judgment and dexterity» (Pye 1968 1995, 118). After having been written off as an obsolete concept by industrialists for nearly a century now, the ideal of a craft culture as a humanizing force in the building industry has not gone away. In fact, it seems to be sprouting again and has gained some rather unexpected allies, even in the futuristic world of electronic media (McCullough 1996 1998). At a time of growing concern about the future of biological life on earth (Wilson 2002) it is important to remember that human skill too is a precious natural resource, and the field of construction has in the past nurtured some of the finest specimens of this human attribute. As construction historians we are the custodians of the memory of that achievement. Perhaps the most effective way of keeping that memory alive would be to study the connections between the craft of yesterday and the craft of today; to reveal what bonds of kinship there might lie under the apparently dissimilar features of the old and the new.

For the essence of a craft culture does not reside primarily in the physical reality of the artefact; it rests in the value systems that condition the creation of that artefact. The name by which this enveloping entity has traditionally been known is, «workmanship». The scientist-philosopher, A. N. Whitehead, has given us another, more forward-looking version of this concept which could guide such investigations. In an essay entitled, «The Aims of Education», he calls this quality, «a sense for style»:

> It is an aesthetic sense, based on admiration for the direct attainment of a foreseen end, simply and without waste. Style in art, style in literature, style in science, style in logic, style in practical execution have fundamentally the same aesthetic qualities, namely, attainment and restraint... Style in its finest sense, is the last acquirement of the educated mind; it is also the most useful. It pervades the whole being. The administrator with a sense for style hates waste; the engineer with a sense for style economises his material; the artisan with a sense for style prefers good work. Style is the ultimate morality of mind» (Whitehead 1932, 19).
1. As evidence, both of a fault line in cultural relations across the building community in Britain, as well as its nature, we need look no further than the furore caused recently by the English architect, Richard MacCormac’s criticism of the lack of cultural reference in the construction industry’s affairs (MacCormac 2002).

2. The most effective critic of the negative nature of the «competitive system» propagated by industrial capitalism remains the American economist, Thorstein Veblen (Veblen 1914).

3. I am referring here to the reality in practice. Conceptually, as Tom Peters (Peters 1996, 351–6) has shown, the building process contains a dynamic aesthetic of its own that resonates with a larger cultural as well as natural context.


6. The best «behind the scenes» book amongst the extensive literature on the Arts & Crafts Movement is by Peter Stansky (Stansky 1985).

REFERENCE LIST

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