Architecture, Craft and Building: Some Lessons for Education

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Every generation is damaged in its own way. No one currently involved in architectural education can deny the sense of being a party to that damage, be it in the form of further damage or salve. They are confronted daily by student attitudes which embody a curious set of opposites delineating the tensions within architectural education, and its reflexive relationship to the profession itself.

On the one hand sits the idealist nature of both architecture and its educational institutions. Students and practitioners are overburdened with agenda and the attendant sense of responsibility to make a contribution to solving a range of societal problems.'

On the other hand there is the nous, the streetwise logic of students who are well aware of the intense competition which they can expect to encounter on graduation for the worthwhile jobs, and the next layer of competition they must negotiate for the attention of architectural press, and the concomitant imprimatur of the architectural establishment. Theirs is a world driven by the tension between these poles of idealism and savvy, and it is left in their hands to try understand the relationship between the two.

What they sense, then, is a predicament founded on certain objective factors which have filtered back into the process of their education. The marginalization of the profession by other building specialists; the enormous cohorts of architectural graduates released into the profession each year — these factors are not directly addressed in the array of skills which students must master to achieve success, and to repeat that success.' Yet it is these very processes which largely account for the protected idealism which students internalize and carry with them as an antidote to the exigencies of professional life, and it is to them we need look to understand the roots of that idealism.

Let us begin with the general proposition that architecture is an executive arm of the building industry, and as such is bound to the imperatives of the industry and its clients. This, of course, flies in the face of an architecture which imagines it controls its own agenda. In an idealistic response to this uncomfortable predicament, we might then ask: Is it possible that architects can break this connection, and somehow subvert the client-builder-architect relationship and its particular dictates of efficiency and commercial viability? One considered response is that architects should find client groups outside of their traditional ones, clients whose imperatives are community-based rather than financial.' The prospect, though, of this as a solution applicable to the mainstream seems dubious, for two main reasons.

The first lies in the practice of architecture itself. Architects either operate within the confines of the business world as enterprises in themselves, that is as money-making practices, or they operate as part of the public sector and are paid out of the public purse. Recently we have seen the shrinkage of the public sector in many countries, including Australia. Hence once substantial and influential public

architectural practices such as the New South Wales Public Works Department produce less work at significantly lower quality than in their heyday in the 1960s and 1970s.[4]

This has meant that the vast majority of graduates must find employment in the private sector. Having secured a job, the imperative of lowering costs, that is the stranglehold economy exerts over so much of the work undertaken, is driven home to the recent graduate by the experience of a few initial designs which go out to tender and come in substantially over budget. It is a familiar process to most architects, and one which releases the store of guilt which is the legacy of an idealistic education. Having made every effort to conform to the tenets of good design as they understand it, the graduate assumes that the problem must lie with them: they simply did not try hard enough. Their reactions are predictable. Either they hold their idealism in abeyance, waiting for opportunities with larger budgets, or they lapse into a bitter cynicism, or they remain mute, accepting the conclusion that it is essentially their fault. Whatever their response, they are forced to confront the assault of economy on their education and the strategies it has engendered. The forces of economic imperatives which buffet them are felt in their full pervasive power, without the help of analytic tools which might, at the least, act as a shield.

These forces operate both within the construction industry, where they are visible in the standard detailing which prevails within the industry as a matter of economic logic, and in architectural practice itself. In the latter, however, there is little room to move. For architecture survives in a curious historical broth, one characterized as much by the circumstances which govern how it is practiced as by its ambivalent relationship to the future. The crucial ingredient in this mix is the memory of craft. It is around this phenomenon that the architectural publishing industry survives, documenting the persistence of craft in a building industry where it is constantly subjected to effacement. It is for craft, too, that architectural awards are given under the term "detailing." What else can this term refer to other than the persistent invention by architects of craft techniques — some simple, some complex — against the prevailing methods of construction and their economies of scale? This relationship is borne out by the simple fact that architecturally designed houses are, without exception, considerably more expensive than mass-produced houses of similar size and type of construction.

For the graduate, this represents an inescapable dilemma. It is possible to tailor craft to cost, but this invariably entails stripping away a humanizing level of detail. The resulting austerity is celebrated under a number of guises, all of which require some appreciation of the problems they address if they are to be understood, since they are difficult to warm to: their labels of rationalism, or the industrial aesthetic, or a revived brutalism reveal their tactical nature. If this reductive path is pursued, the result is anaestheticization

of architectural experience to counteract the paucity of small scale elements, which have been sacrificed for economy. Alternatively, the graduate can begin to design using the standardized techniques of the building industry. This keeps down the cost of building, but precludes that distinctive layer of craft which is the key to peer approval. And all of this must be achieved in an office setting which tracks the time spent on individual projects in order to assess its own profitability.

Within the office, too, strategies must be selected. Either the graduate must work efficiently within their standard hours, generally using prevailing building techniques, or they must work beyond paid hours in order to find the necessary time for the development of a distinctive detailing specific to either a single project or to the work of the office as a whole. Architecture, because of its labor-intensive craft base, seems unable to increase efficiency by changing its operating balance between labor and automation. There appear to be no techniques by which the labor component in an architectural office, which includes design, can be significantly reduced through mechanical or electronic means. If computers save labor (and the extent to which they do is a moot point), it is in those offices most attuned to rationalization through building types such as high-rises, because the profession as a whole is distrustful of the consequences of one of the most powerful attributes of computer-aided design, standardization through repetition.' Thus the office mirrors the building craft it sustains, both deriving their identity from their status as practices which are happiest at the margins of the building industry.

In summary, then, to adopt a labor-intensive craft approach is to be driven either towards an austere aesthetic or towards a building whose costs range from high to prohibitive. To forego a craft approach is to forego the imprimatur of a profession whose very existence is predicated on its atavism: a memory of pre-industrial production in a age of rationalized building techniques. It is this identity which accounts for the range of proposed architectural directions which have followed on the demise of high modernism, from regionalism and its elevation of the local (which in its ideal form would carry with it a localized craft tradition), to the obsession with materiality which characterizes much current architecture in its attempt to distinguish itself from the standardized finishes of industrialized building[6]

It is not always so, of course. Some architectural practices survive through designing houses for a client base representing an exceedingly small fraction of the population. Some practices garner large commissions where the fees allow the development of repetitive yet distinctive detailing, a localized craft as it were which yields sufficient economies of scale to meet the project budget. These may be high rise buildings or institutional buildings, but in each case the cohesion which a localized detailing engenders is a prized attribute giving the building or buildings a singular identity.

Architecture survived the advent of industrialization because the constraints on buildings such as site, budget, context and program worked against buildings as commodities. As long as buildings remained one-offs, their designs were consistently unique to a greater or lesser degree. Thus architecture, or rather the historical configuration which we currently recognize as architecture, formed around one of the few industries which had to remain supple in order to remain viable. The components of building could be mass produced, but buildings themselves were large enough to reflect the vagaries and unevenness of topography and market, and as such were capable of carrying an array of fine ideological points. Le Duc, Semper, Ruskin and other nineteenth century theorists of architecture recognized this, and fought over the soul of architecture because of this quality and its potential to outflank the sameness engendered by industrial production.

Even when architecture attempted to make its peace with industrialization, it did so in a symbolic rather than a practical manner. The much-vaunted modernist embrace of industrialized building methods fell away at precisely the moment when those techniques

became the norm across the industry. In early modernism such buildings retained a metaphorical link to industrialization: in their actual construction they represented a highly skilled craft, a paradox which underpinned the work of the Bauhaus. If the Nazis hadn't forced its closure, Alcoa surely would have some decades later with their truly industrialized curtain wall sections.

In the immediate term, then, the reluctance to analyze the role and drift of architecture currently in terms of the building industry has led to a persistence within schools of architecture of an education whose day to day results have been an oversupply of graduates with a set of skills rarely utilized in their entirety in practice.' As a matter of the marketplace, this seems to be self-defeating, an ironic consequence of the expansion of the educational sector over the past thirty years. If, for instance, architectural education became more restrictive in the numbers of students it admits, this may restore some balance between the number of architects and the work available. It seems nearly impossible, given the relationship between architecture and the building industry outlined above, to expand the amount of meaningful architectural work available to keep all architects occupied on *an economically sustainable basis.*

For many students coming straight from school, these issues remain abstract. Older students, however, often make a conscious decision to study architecture precisely because of its craft aspects. They see the complex logic of designing as a challenge, rendered all the more attractive through the infusion into design of aesthetics, which still carries an identity of being somehow free in the face of the perceived regimentation of everyday life. Many of these older students with experience in the working world are eager to assume the attitudes and skills which architects have held as a right within the world of work. Again, it is the persistence of craft within architecture and its concomitant refusal to surrender to the alienation of production which makes the field an attractive one. Its status, almost by definition, is Ruskinian.

This raises the question of whether the mere persistence of architecture in its craft-based incarnation is, in itself, an act of political resistance of the *arriere-garde* variety.[8] Is it possible that the profession as a whole somehow feels charged with an historical duty to keep alive this fragment of craft production as a demonstration of non-alienated work, which survives both as an anachronism and as a portent of how things might be?

The answer seems in the affirmative. The recent *Boyer-Mitgang Report* on architectural eduction for the Carnegie foundation reiterated the virtues and the uniqueness of the design studio in teaching architecture, as well as affirming the range of topics (including Humanities) deemed necessary for an architectural education."The profession, too, continues to laud buildings noteworthy for their detailing. These do not represent the bulk of buildings designed by architects, but they continue to serve as professional ideals.

It is precisely because they do not comprise the bulk of architectural work that meticulously detailed buildings are valued. With the downward pressure on architectural fees over the past two decades, the time which an office can devote to small and medium-scale quality architectural projects has contracted. The standard of public works, too, has declined. Thus we are producing more architectural graduates than ever to enter a building industry where they have less and less chance of controlling any but the smallest building project from notional to detail design. Under these circumstances one can only wonder at the fact that architecture exists at all, let alone with so many impassioned devotees.

To describe this as a crisis is perhaps an overreaction, given how many workplaces are characterized by a similar if not greater lack of control on the part of employees. But it does render the situation of architects unsatisfactory, to say the least. The spectacle of graduates imbued with a taste for the joys of craft design and urban imaginings struggling to make their peace with the rationalized, in many ways diminished, areas of the profession where most will work is a disturbing one. Their conversion into aesthetes given more to the

consumption than production of fine things is a waste of talent. The slide of many into cynicism is a waste of heart.

The traditional counterweight to the marginalization of craft in architecture was the embrace of progressive politics. The demise of the political in architecture in the 1960s made a space for a form of architecture, post-modernism, which was neither overly craft oriented nor overtly political. The current modernist revival has replaced craft with materiality. Copper, zinc, plywood, glass, steel, timber, chunky fixings, chrome — these are its hallmarks, used with an excess that surely conceals profound doubt. Industrial products alone become the object of interest, over and above the imagination which might hold them together.

In summary, then, we can begin to characterize this fundamental dialectic of architecture since at least the mid-19th century as driven by the reiteration or the attempted transcendence of craft, or, to put it another way, a struggle with alienation. If this is true, then as long as there is commodity production within the building industry then architecture will persist in something similar to its current form, where it defines *itself* as not-commodity-production.

Where does this leave our graduates? In the same position, it would seem. Whatever else architects do, the key to their identity will remain that purposive, highly malleable and often deeply gratifying process known as *design*. Their best hope, secretly held, is that commodity production might diminish, allowing the circumstances of collective and individual design which produced the ancient villages and towns which are so admired for their craft and urbanity to again flourish.

Because of this shared dreaming of a life interlaced with the intelligent making of places, architects are particularly susceptible to imagining that they can demand a morality contiguous between their world of work and their leisure (non-work) world. That this is not necessarily feasible continues to surprise them. Consequently they continue to pursue an idealist agenda independent of broad-scale analyses. This process harks back to the professionalization of architects during the last part of the nineteenth century and the first decades of this century when, as part of a general debate on the form which might be given to modernity, they had a large role to play. In those early years, too, the building industry had fewer specialties devoted to the mental work involved in getting buildings up. The recent devolution of the traditional role of architect into an increasing number of sub-specialties is an inevitable consequence of the division of labor within an industrializing industry. Architects, in an attempt to claw back their undivided role and with it the technique by which they retain control over building form at all scales, have continued to reiterate the advantages of the traditional lump-sum or fixed-price contract. And, insofar as it is the legal instrument for instigating localized craft, they are right. But they have avoided the true battleground for a tactical skirmish because they find it harder to articulate the primary concern, which is the value of craft in the creation of an humane environment. It is the means by which people recognize the intervention, the purposiveness of design. It renders the work comprehensible, and collectively constitutes building form as viewed up close and from afar. This connection between form and craft was neatly summed up by Adorno:

> Aesthetic form ought to be the objective organization of all that appears in a work of art, with an eye to rendering it consistent and articulate. Form is the non-repressive synthesis of diffuse particulars; it preserves them in their diffuse, divergent and contradictory condition...In a metaphorical way we may characterize form as the imprint of the human hand on an art work, wherever it passes through. Form is the mark of social labor...[10]

Craft is thus held in a disconcerting tension in the modern building industry between its duty as a seal, a stamp of humanism on building fabric, and the opposing tendency of rationalized building to circumvent craft through industrialization and other repetitive means of effecting economies of scale. Many building projects, especially commercial ones, solve this problem by removing the architect from the contractual enforcement of the building design. Building owners will employ contract managers under various titles: construction managers, facilities managers and some no doubt yet to be invented. With no commitment to craft, these managers are better positioned to ensure the rationalization of the whole process so costs can be reduced to the point where, in many cases, the building merely satisfies market and local authority requirements. In this case architects are employed for their planning and what can be called gross formal skills, as well as their plastic skills in maximizing building space within the legal constraints of the site. They contribute small-scale drawings to the process, the detail construction of which is determined by the builder within guidelines such as standards of finishing materials and quality of fittings. The rest — all that is seen, the vast surfaces of the building interior and exterior, the way the building meets the public domain of the street, the many specific decisions which in their execution make up the density of form in which we see the trace of human intelligence — this vast potential for the inscription and reflection of identity becomes instead the reflection of rationalized building technique.

The situation tends to reproduce itself. Estranged from the on-site building process, many architects have little chance to observe first hand the modifications made to their detailing. Thus they cannot refine their subsequent documentation in the light of experience, leading to a further erosion of their abilities in the eyes of builders.

How can architects conceivably respond to this tendency, and what effect would any response have on architectural education? The enormity of this question might be chipped at by considering tendencies already underway. The most significant, perhaps, is the slow tearing of architecture away from the building industry. Architecture as *will* is in the ascendant. A grasp of the techniques required to bring buildings into being is no longer a cornerstone of our schools. This may be justified as a response to techniques changing so quickly that specific, material-oriented education is obsolete. This is spurious: whilst the processes of building might change in accordance with the principles of rationalization, the materials employed have changed surprisingly little. Parallel attempts to recast the practice of architecture as generic problem solving skills seem equally defeatist the recent experience of many of the traditional duties of the architect being usurped by all manner of professionals would seem to indicate that in this strategy, architects invariably lose.

Architecture must address its atavism before it can grasp its current standing. It has been argued above that the key here is its relationship to the building industry: its soul lies in detailing. In this respect it is inimical to a rationalization which involves the effacement of craft. Thus architecture is perhaps more of a broad front than a profession: a collection of enthusiasts and practitioners holding together a field which fractures naturally along one of the classic fault lines of modernity. There are those, of course, who easily straddle the fault. For many the challenges of large-scale building are stimulation enough. Others are content to practice a marginal architecture, with low incomes and long hours offset by an independence of spirit.

Nonetheless is seems that architecture as we know it, as a practice founded on the tension between industrialization and craft, cannot survive on partial services and reduced fees. It seeks to resurrect itself at the larger scale, in urban design, and at the smaller scale in the obsession with materiality. But in the form which the post-war generation knew it, it is passing. For all its flaws, high modernism, with its obsession with integrity and its earnest speculations, accuses the tenets of current practice.

The institutes of architecture are sentinels at the door of a house rapidly emptying. What is it, exactly. that they seek to protect through the registration of architects'? Rising design standards? High wages for salaried architects and the profitability of all practices?

Excellence in contract administration? These and other aspects of practice had their heyday some decades ago: the institutes need to take stock of what else they might offer members. In the meantime it would benefit the schools if the ties between them and the profession were loosened, as the relationship between the two becomes redefined. If the profession finds it cannot guarantee graduates a reasonable living, then surely its moral authority to dictate the terms of their education is questionable.

It has been assumed in some quarters that the answer is for the schools to produce more efficient graduates, and through efficiency architecture might claw back profitability. But craft, as the forgoing analysis attempts to make explicit, is inimical to efficiency gains. Perhaps one answer is to forget efficiency altogether, and to consider architectural training as a way of discovering aspects of the world. An inevitable byproduct of this would be the production of some architects, but for the rest at least the schools would have fulfilled another crucial role which seems to be everywhere succumbing to the imperative of efficiency the undertaking to provide students with the tools to better understand what makes a life well lived.

NOTES

[1] Typified, for example, by the following exhortation: "Specifically, we recommend that schools of architecture should embrace, as their primary objectives, the education of future practitioners trained and dedicated to promoting the value of beauty in our society; the rebirth and preservation of our cities; the need to built for human needs and happiness; and the creation of a healthier, more environmentally sustainable architecture that respects precious resources." Ernest L. Boyer and Lee D. Mitgang, *Building Community: a New Future for Architecture Education and Practice* (Princeton: The Carnegie Foundation for the Advancement of Teaching, 1996), p. 27.

[2] "...up to 80% of commissions received by architects may be for partial services." John Dean and Heather Olley, *The Market for Architectural Services-an Initial Investigation* (Canberra: RAIA, 1988), p. 7.

[3] See Margaret Crawford, "Can Architects be Socially Responsible" in Diane Ghirardo (ed.), *Out of Site: a Social Criticism of Architecture* (Seattle: Bay Press, 1991), p. 44. This suggestion follows a cogent and convincing analysis which also stresses the links between architecture and building.

[4] The chair of the New South Wales Chapter Architecture Awards Jury in 1995 made the following observations after the jury made fewer awards to public buildings than in prior years: "...this would seem to reflect governments reliance on Design and Construct and other non-traditional procurement methods...[it] would also seem to reflect the NSW State Government's diminishing support of the Government Architect's Branch of the Public Works, a body that has...in the past produced some of our finest buildings." Peter Tonkin, "Architecture Awards" in *Architecture Bulletin* (July 1995): 15.

[5] A study undertaken on behalf of the Royal Australian Institute of Architects in 1988 concluded "The gain is often in quality rather than productivity. Overall, productivity gains from CAD systems are not the spectacular ratios claimed and certainly do not extend to all kinds of work and drawings." Antony D. Radford, *Computers in Australian Architectural Practice* (RAIA: Canberra, 1988), p. 10. Despite subsequent advances in technology anecdotal evidence suggests this conclusion remains valid.

[6] On Regionalism and its relationship to building, see Kenneth Frampton, *Modern Architecture: a Critical History* (London: Thames and Hudson, 1985), pp. 313-327.

[7] The current Australian registered Award salary for a five-year trained architectural graduate entering employment is $23.8 14, as compared with that of a three-year degree trained nurse (New South Wales State Award) which is $30.191.

[8] As outlined in Kenneth Frampton, "Towards a Critical Regionalism: Six Points for an Architecture of Resistance" in Hal Foster (ed.), *Postmodern Culture* (London and Sydney: Pluto Press, 1985), p. 20.

[9] Boyer and Mitgang, *Building Community*, pp. 78, 85.

[10] Theodor Adorno, *Aesthetic Theory* (London: Routledge and Kegan Paul, 1984), p. 207.