From modern construction to postmodern social constructivism: defining the live project in architectural education

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Abstract

This paper presents an historical survey of the live project in architectural education, proposing that the live project can be conceptualised within three distinct periods: a modern period, a transitional period, and a (contemporary) postmodern period. This paper proposes that an evolution from a modern conception of the live project to a postmodern conception provides insight to attitudinal shift in architectural education. In order to explore what pedagogical frameworks might we help to theorising these contemporary forms, the paper contextualises architecture live project practice against pedagogical mechanisms of client-centred learning in three other disciplines.

Keywords

Live projects, architectural education, pedagogy, postmodernity

Introduction

This special edition of the *BeJLT* is welcome evidence of not only growing interest in the live project in architectural education, but also of maturing pedagogical analysis of the form. At least four PhDs have now been written on the live project in architectural education, including Sara, 2004; Brown, 2012; and Harriss, 2014. There have been two dedicated conferences at the Queen's University Belfast in 2011 and Oxford Brookes University in 2012 as well as themed sessions at the first two conferences of the Association of Architectural Educators, at Nottingham Trent University and the University of Sheffield in 2013 and 2014 respectively. There have also been two significant edited collections of writing on live projects: Charlesworth, Dodd & Harrison (2012) and Harriss and Widder (2014). Most usefully, for the dissemination of live project practice between schools of architecture, The Live Projects Network now provides a substantial online archive of more than one hundred case studies from around the world. (http://www.liveprojectsnetwork.org/).

Given this growth in interest, it is now apposite to explore the pedagogical evolution of the live project within architectural education through a two-fold review of the literature – firstly of three other disciplines that employ similar pedagogical tools, and secondly of three distinct pedagogical periods in architecture live projects: a modern period, a transitional period, and a (contemporary) postmodern period. Best and Kellner (1997, p.17) distinguish 'between modernity and postmodernity as two different historical eras; between modernism and postmodernism as two conflicting aesthetic and cultural styles; and between modern and postmodern theories as two competing theoretical discourses'. Whereas the products of architectural practice tend to be discussed in terms of their respective eras or styles, this paper develops a critique of the live project as a pedagogical process that may be conceptualised through its competing theoretical discourses. Subsequently, this paper seeks to propose that an evolution from a modern conception of the live project to a postmodern conception represents an insightful attitudinal shift in architectural education, and a change in focus of the architecture live project from providing experience of architecture as a constructed product to experience of architecture as socially constructivist process.

Client engagement in the pedagogies of other professions

Before considering the three distinct pedagogical periods in architectural live project practice, and in order to provide a broader theoretical context to this study, this enquiry begins with a brief overview of comparable pedagogical frameworks of client-centred learning within three other disciplines.

Lynch (2004, p.54) writes that 'architectural education has always had a double agenda. It prepares students for the day-to-day practice of architecture and it advances and upholds the culture of architecture - our shared understanding of architecture as a historically defined cultural project, social good and creative endeavour'. But this double agenda is not unique to architecture. Larson (1977, p. x) writes that the professions are granted particular power and prestige because they 'have special competence in esoteric bodies of knowledge linked to central needs and values of the social system, and because professions are devoted to the service of the public, above and beyond material incentives'. Graduates of the professions must demonstrate that they have both acquired

the knowledge of their discipline and developed the capacity to practice. This presents a useful opportunity to explore how other professions educate their future practitioners, especially when they use actual 'clients' or end-users. If live projects exist in other disciplines, upon what pedagogical frameworks are they built, and what insight can they contribute to a critique of live projects in architectural education? This paper will briefly examine the pedagogical frameworks of three professions that each engage students with 'clients' at various stages of their education.

Planning

Much like architecture, the planning curriculum in the UK and USA typically combines core projects or workshops with lectures and seminars. (APA, n.d.) Outreach projects are widespread in the USA, where they are not generally referred to as live projects, but as service learning. While service learning is by no means unique to planning, the pedagogical discourse surrounding it in planning is of particular value to architectural educators because of the pedagogical and professional common ground between the two disciplines. Roakes and Norris-Tirrell, (2000, p.109) write that service learning 'represents a particularly appropriate strategy for applied disciplines such as planning because effective professional practice involves more than a conceptual understanding of the knowledge and skills; it also requires an operational understanding'. Students of both architecture and planning need to think and then act upon what they have learnt. Schuman (2006, p.1) notes (with my emphasis) that, 'for the learning to be truly service-based, however, implies a more formal connection between the pedagogy and the product, *where the service component is also a learning experience and not simply a byproduct*'.

Forsyth Lu, and McGirr (2000, p.250) caution that 'service learning is certainly not a panacea for students, faculty, or communities, and requires significant work to deliver on its promises'. Sletto (2010, p.403) writes that 'service learning pedagogy should provide the necessary space and conceptual tools for students to analyze the narratives of place, self, and Other that shape their identities'. Sletto directs pedagogues towards the insights of critical, feminist and border pedagogies, emphasising the importance of supporting critical reflection: 'it is not enough to simply inject students into such situations: effective, critical/feminist pedagogy also requires ongoing, open and supportive reflection activities to draw lessons from such encounters' (*Ibid*, pp. 403-4). Schulman (*op cit*, p. 2) agrees,

emphasising that 'the hallmark of pedagogy is reflection: what intellectual underpinnings inform the process and how is the field experience used to challenge and refine this thinking?'. Bringle and Hatcher (1996, p.222) contextualise the importance this critical reflection, describing how 'students participate in an organized service activity that meets identified community needs and reflect on the service activity in such a way as to gain further understanding of course content, a broader appreciation of the discipline, and an enhanced sense of civic responsibility'. Much of the planning literature draws upon the experiential learning theories of David Kolb (1984) and the reflective learning theories of Donald Schön (1983). Most importantly however, the civic commitment (common to both initiatives in service learning and community design) is credited to the pedagogical contribution of John Dewey (Sanoff, 2003).

Forsyth and McGirr (*ibid*, p. 249) warn that while service learning begins as an educational activity, it is 'also a form of civic service, and as such needs to give real benefits to the host populations'. The danger is, for instance, 'having a university that moves out into the neighborhood in a way that is well-intentioned, but in the end cannot come through with the goods, can do much to destroy trust' (*Ibid*, p. 249). Schulman (*op cit*, p. 2) warns pedagogues that many if not most service learning partnerships between academia and community 'involve an unequal starting point in terms of technical expertise, access to information, and the ability to negotiate with public and private bureaucracies' Because of this unequal balance of expertise, information and power, 'there is an inherent risk of exploitation where the community setting is used as a laboratory to serve the university' (*Ibid*). It is also proposed by some advocates of service learning to approach project participants with a particular attention to the potential for reciprocity. Schulman (*op cit*, p. 2) asks: 'what did the students learn and how did the community benefit; or conversely, what the did the community learn and how did the students benefit?' Dewar and Isaac (1998, p.340) write that: 'the community-university partnership requires careful, and ongoing, examination of the ways that the complex subject positions of students, faculty, and community members are manifested in the conduct of the project'.

Medicine

Medical education in the UK is composed of two distinct phases - pre-clinical and clinical - that reflect an epistemological progression from primarily lecture-based learning to primarily problem-based learning – 'an instructional method in which students learn

through facilitated problem solving ... [that] centers on a complex problem that does not have a single correct answer' (Hmelo-Silver 2004, p.235).

Barr *et al* (2009, p.599) write that 'the provision of formative assessment and reflective opportunities within this context adds meaning to a student's learning and facilitates the evolution of the student's ability to develop his or her own professional doctor–patient relationship capabilities'. The clinical phase of medical education involves rituals such as the daily clinical round, in which students and interns of different levels of residency in a teaching hospital move from patient to patient on a daily basis to monitor their progress, each being asked direct questions by the faculty member regarding the patient at hand. Shulman describes this as a pedagogy of 'active study participation... one of inherent contingency and uncertainty', (*ibid*, p.20) one that expects students to continually negotiate between established method and uncertain content.

In a review of the literature on the involvement of patients as teachers in medical education between 1970 and 2001, Wykurz and Kelly (2002) found wide agreement that involving patients in medical education benefits students. In some instances, students expressed a clear preference for learning from direct contact with patients as opposed to from qualified doctors, suggesting that the combination of pre-clinical lecture-based and clinical problem-based learning from patients allows students with different learning styles to experience success through different learning paradigms. Dammers *et al.* (2001) have established that students surveyed during a seven-week problem-based learning module at the University of Newcastle clearly preferred the use of real patients as opposed to 'paper cases'. Bell *et al.* (2009) found a paucity of in-depth studies of what is referred to as real patient learning yet will still able to conclude that its benefits far outweigh the difficulties. Bell *et al.* speculate that an adverse reaction to real patient learning early in medical training may be a helpful indicator of a student's unsuitability for a medical career, and therefore that 'year 3 was rather late to be introducing real patient learning' (p.1041).

Medicine provides perhaps the greatest insight to live projects with regard to the ethics surrounding the involvement of real patients in medical education. The American Medical Association (AMA, 2001) lists nine principles of medical ethics, including the potentially conflicting principles that 'a physician shall, while caring for a patient, regard responsibility to the patient as paramount' and 'a physician shall continue to study, apply, and advance scientific knowledge, maintain a commitment to medical education, make relevant

information available to patients, colleagues, and the public, obtain consultation, and use the talents of other health professionals when indicated'. Yentis (2005) describes this as an awkward negotiation between a doctor's ethical obligation to consider the patient, a legal obligation to maintain acceptable standards and a professional obligation to contribute to the continuous development of medical education and collective professional development. Howe and Anderson (2003, p.326) argue that medical practitioners cannot expect patients to always agree to participate in the education of future practitioners. Whereas Jagsi and Lehmann (2004) explain that while the education of future practitioners is essential for society as a whole, individual patients may not benefit from trainee doctors or medical students participating in their care. Chiong (2007, p.1046) writes that the 'conflicts that arise in medical education are not specific to any time or place but instead are intrinsic to medicine as a learned profession and must be faced by every physician in the course of his or her training'. Furthermore, Larson (*op cit*, p.19) notes that 'the first and most obvious fact to consider is that the market for medicine is based on a vital and universal need: its potential for expansion is therefore unlimited, at least in principle'. In other words, a patient's need for medical care is (compared to a client's discretionary need for architectural services) non-negotiable. Finally, Lapsley (2004) suggests that patients' willingness to 'give something back' may well be closely tied to their status as recipients of public (as opposed to private) healthcare.

Law

In England, Wales and Northern Ireland there are two principal paths to legal practice, either as a solicitor or barrister, the latter being defined by a greater orientation towards the court system. A candidate for both professions must have completed either a Bachelor of Laws (LLB) or a recognised graduate conversion course. Shulman (2005a, p.55) describes Socratic lectures as the signature pedagogy of the discipline, based around:

> ...a set of dialogues that are entirely under the control of an authoritative teacher; nearly all exchanges go through the teacher, who controls the pace and usually drives the questions back to the same student a number of times. The discussion centers on the law, as embodied in a set of texts ranging from judicial opinions that serve as precedents, to contracts, testimonies, settlements, and regulations; in the legal principles that organize and are exemplified by the texts; and in the expectation that students know the law and are capable of engaging in intensive

verbal duels with the teacher as they wrestle to discern the facts of the case and the principles of its interpretation.

The nature of the legal profession's dependence on textual material permits law's signature pedagogy to bring students into close and sustained interaction with the resources and processes of legal practice long before direct interaction with clients is necessary. It is therefore normally at the postgraduate stage, when a solicitor or barrister begins their apprenticeship, that a graduate will begin to work with real clients. Clinical legal education, while not uncommon in the UK, is far more widely developed in American legal education. In the earlier twentieth century, a number of American law schools established legal dispensaries in which students could volunteer to provide pro-bono services to those unable to afford a lawyer, while simultaneously developing their skills under the supervision of a professor or specialist faculty member (Sheppard, 2007).

The emergence of the terms 'legal dispensaries' and subsequently 'clinical experience' reflects the close parallels between the legal discipline and medicine, for it was the more developed model of teaching hospitals providing pro bono healthcare that gave clinical legal profession its model for experiential education with a commitment to public service. At this time, such participation in these early legal clinics was extra-curricular, although for many students of law it provided their first experience of legal practice before they entered a post-graduate period of articled pupillage (Lewis, 2012).

As far back as 1921, the Carnegie Foundation for the Advancement of Teaching recommended that law education be re-shaped around three core components, namely a general foundational education, a theoretical knowledge of the law, and practical skills training (Reed, 1921). However it was not until the nineteen-sixties that law clinics became more widespread. By 1973, 125 out of 147 American law schools had some form of clinic-based education (Lewis, *op cit*, pp. 16-17). By comparison, a survey of UK law schools in 1994 found that 13% made use of live-client clinics (Grimes, 1995 cited by Lewis, *ibid*).

Clinic situated legal education introduces students to simulated or real problem situations that are simultaneously concrete, complex and unrefined (Amsterdam, 1984). Students are required to take responsibility for identifying and analysing a problem, formulating and evaluating possible responses to it, planning a course of action, executing that course of action and then, most crucially, entering a 'post mortem' critical review of their actions with

their educators and student peers. Video recordings of their interactions and written evidence can be called upon to support these reviews: 'the students' own thinking and behavior in role were thus made the central subject of study, just as, in a traditional classroom course, a judicial opinion or a statute would have been the subject of study' (*Ibid*, p. 616-7).

Clinical legal education is seen to nurture self-evaluative methodologies that complement experiential learning, 'the kind of learning that makes law school the beginning, not the end, of a lawyer's legal education' (*Ibid*). The method is regarded as existing in opposition to the Socratic method at the heart of legal education, which some argue has been relied upon too heavily to adequately socialise students of law into the practice of their discipline (Sullivan *et al.,* 2007). While the Socratic method has been recognised for teaching analytical reasoning, Sandefur and Selbin (2009) write that

> Law schools provide too little direct training in practice – what we typically think of as 'skills training' – and also fail to develop students' sense of professional identity and responsibility. This 'lack of attention to practice and inadequate concern with professional responsibility', so the critique goes, ill-prepares students for the profession which most will enter after law school.

Through a national survey of early-career attorneys in America, Sandefur and Selbin found that clinical legal education was considered by graduates of law to have been more useful than traditional lecture or casebook learning for their transition to legal practice. Clinical legal education was also found to have strengthened the civic interest of those graduates who entered legal education with a particular interest in improving society or helping individuals (*Ibid*, p. 102).

Three attitudinal periods of live project pedagogies

This paper now makes a brief historical survey of the live project within British architectural education. It should be noted that as live projects have become more widespread in architectural education in recent years, so the literature describing them become more sophisticated. As a result, this survey is relatively dependent on a small number of documentary sources for its historical examples.

The modern live project

Most studies of architectural education regard the 1958 Oxford Conference as a turning point in British architectural education (Musgrove, 1983; Crinson and Lubbock, 1994; Ewing, 2008). Yet the first significant programme of live projects, at the Birmingham School of Architecture, was under way some seven years earlier from 1951 to 1962. The report of the RIBA Board of Education inspection of the Birmingham school in October 1952 wrote that it 'felt that the general standard of work in the studios fell below what might reasonably be expected of a school with RIBA Final recognition and they think that this might be due in part to over-emphasis on the "Live Projects".' (RIBA, 1952). The Report made reference to one of the school's first live projects: a row of terraced houses in Rednal completed the previous year (Anon, 1951). The RIBA Board highlighted that only the strongest students benefited from the live projects, and that 'the students who have to make drawings for their own alternative scheme, which are not to be built, benefit no more than from a normal school programme' (RIBA, *op cit*). Douglas Jones, head of the Birmingham School from 1947 to 1962, defended the live project programme, contrasting the popular view 'that students on qualifying should make useful assistants and justify their existence by paying their way as soon as they qualify', with the view that 'it is the duty of the Schools not only to try to train useful assistants but also to train people who will one day make good architects with vision and initiative'.

Jones evidently sought to develop what can be described as a modern live project: an attempt to synthesise the apparently divergent interests of a formal education and practical experience by situating live architectural problem-solving in the academic environment. Jones' moves to align the school with the university confirmed that he saw architectural education as a highly intellectual and creative activity, while his championing of construction projects emphasised the discipline's alternate focus on practical knowledge and problem-solving.

Initiated during the period of transition of architectural education from practice-based apprenticeship to university-based education, the Birmingham live projects sought to provide a singular solution to the complex tension between the joint professional requirements of design creativity and technical know-how. During what Jones (*op cit*) called an 'age of architectural chaos', the Birmingham school pursued an academic model to make sense of an uncertain pedagogical and professional future.

At the 1958 Oxford Conference, Leslie Martin argued that if the realism of professional practice was to be provided in architectural education, it could best be provided in one of two ways: either through in-curriculum live projects, or through a sandwich alternating full-time study with periods in practice (Martin, 1958). The sandwich model would prevail, giving rise to the model of the RIBA Part I, II and III.

The transitional live project

From the end of the Birmingham live projects in the early nineteen-sixties until the early nineteen-eighties, there are only isolated instances of design-build live projects in the UK. The longest lasting example of a live projects programme and Project Office was at the Welsh School of Architecture (WSA), established in 1968 'to undertake the practice from a position within the academy.' (Forster, Coombs & Thomas, 2008, p.363). Critical literature on both the WSA Project Office and its contemporaries is extremely limited, with only a handful of sources providing limited detail on the projects (Fowles, 1984; Newman, 1995; Forster et al.,, *op cit*). WSA faculty member Bob Fowles (*op cit*, p.8) conducted a literature search in 1984 for similar projects, finding that there was 'very limited design/build activity', finding a handful of articles in trade journals at the schools of architecture in Bristol, (Anon, 1977) Leicester, (Anon, 1979a & 1980) Portsmouth, (Anon, 1979b), Liverpool and Nottingham (Anon 1979c). Fowles also looked to overseas for further precedents, citing live projects of various types at the universities of California (Corbett, 1977) and Victoria, New Zealand (Clark & Daish, 1979) as well as Yale School of Architecture (Newman, 1980). Fowles went on to identify these overseas live projects as being broadly similar to those at the WSA in that their construction was either traditional or low-tech or low-budget, financed from sources or donations external to the school and that the 'emphasis is frequently placed on the acquisition and development of social skills within the student group and between the students and community groups, with frequent reference to the students' appreciation of the integrative nature of the design-build process; but with little mention of the aim to acquire building skills' (*op cit,* p. 8).

There were two distinct kinds of design/build projects in the undergraduate first year at the WSA: a two to four week on-campus Shelter Project at the beginning of the academic year and a longer off-campus 'Build Project' that ran from 1974 to 1979 with eighteen projects constructed by students. The 'Shelter Project' was conceived as a temporary structure for

one or two people that could be occupied overnight. The Shelter Project 'introduces students to a way of working with each other within the studio, and with tutors. This helps to create the ambience for the ensuing course' (*Ibid*, p. 9). The Shelter Project therefore performed both a pedagogical as well as a social function, combining multiple aspects of design and construction into a single project, while also acting as a cohesive devise that builds community amongst the students and staff. The larger and more sophisticated Build Project was originally conceived as an extension to the first year undergraduate construction module, in which students would visit construction sites in order to witness the sequences of construction and relationships of materials. Fowles looks to the possibilities of allied educational and architectural learning outcomes by asking 'could we achieve a good architectural product while achieving a good educational process?' (*Ibid*, pp. 12-13)

Between 1974 - 1977, the Build Project focused on the refurbishment and construction of various farm buildings, including a cowshed at Bardons Hill, Vale of Glamorgan (1974); a barn at Michaelston (1975); the new foundations for and construction of a pre-fabricated steel frame barn (1976) and a new-build barn (1977) at Vishwell. As suitable sites and projects for farm buildings became scarcer, the WSA turned its attention to more urban and community orientated projects. Fowles makes reference to Garrott's (1983) particular exploration of experiential learning in design education, which would in turn have introduced the WSA programme to the pedagogical experiments in America of Raymond Lifchez (1978, 1981) as well as studios at the University of Kansas and Carolina State University. Acknowledging that these live projects were about more than just the 'concrete' aspects of a project, Fowles writes that:

> This direct physical involvement forcibly brought within the students' collective and individual experience and collective and individual responsibility a whole range of aspects of the project ranging from the abstract to the concrete. They were operating, for example, within the constraints of a real client, the functional requirements of users, and the availability of certain materials. They were experiencing the relationship between and the interdependence of design drawings, models, working drawings and the real thing. They were experiencing conditions on site, for example how heavy and cumbersome building materials are, how great an amount of energy and equipment is needed to build, the discomfort of nailing battens and slates on a roof in the cold and rain, and how the hot sun can accelerate the drying of a concrete floor slab to produce shrinkage cracks. In

contrast there was the thrill and excitement as trusses were raised in position, creating and defining 3D space around oneself which had previously been lines on paper (Ibid, p. 12).

The shift from modest built projects to community projects was to change the nature of the WSA live projects. As more and more stakeholders became involved, the less 'desirable' direct design and construction experience the students had. Fowles articulates a shift in focus from the construction-oriented (modern) live project and the client-oriented (postmodern) live project:

> By becoming involved in the politics of the process, the issue was raised of the students moving further and further away from the central activity of architecture, that of designing buildings. However, this did allow students a direct experience of the workings of Local Authorities, legislative bodies, sponsors, clients and users, and of their consequent range of conflict values and requirements (Ibid).

At Birmingham and the Welsh School of Architecture, the core activity of architectural practice was seen to be the design of buildings. The WSA Project Office remained focused on providing a holistic experience of designing-and-building, yet providing this for multiple human clients was considered to be too much for first year undergraduates to cope with, full-time teaching staff to manage, or a single academic year to contain.

The postmodern Live Project

With a multitude of live project practices now established in schools of architecture, a number of contemporary definitions of the live project have been offered. Anderson and Priest (2015) write that: 'A live project comprises the negotiation of a brief, timescale, budget and product between an educational organisation and an external collaborator for their mutual benefit. The project must be *structured to ensure that students gain learning that is relevant to their educational development'*.

For Watt & Cottrell (2006, p. 98),

A live project is one that exposes students to 'real life' situations, usually including team-work and interaction with clients, community groups or building users. Some believe the best way to develop professional competencies is to embed learning processes in authentic learning tasks and social contexts. Live projects necessarily place increased emphasis on the process, which is determined by external rather than academic factors.

Other definitions place ever greater emphasis on the presence of a client as a vital Live Project component. For example, Charlesworth *et al.* (2012, p. 2) write that 'live projects are those university-based studio design projects that involve both a real client and liaising with communities outside the university.' Petrescu and Chiles write that live projects 'are student led projects in real contexts, happening in real time with real people' (2009, p. 110). Sara, whose doctoral thesis into the live project was the first substantial piece of research into Live Projects offers the broadest definition of the Live Projects (2006, p. 1), stating that:

> The live project is defined here as a type of design project that is distinct from a typical studio project in its engagement of real clients or users, in real-time settings. Students are taken out of the studio setting, and repositioned in the 'real-world'. This external involvement tends to result in students producing something that is of value to the client/user group, which might range from ideas, feasibility reports, or research, to a completed design scheme, a construction or other intervention. The project is typically worked out in collaboration with the external collaborators, rather than being imposed by the design studio tutor (in fact the tutor is often very much a part of the team). As a result, the process is more dialogic and inclusive than traditional studio projects, allowing and embracing alternative voices in the studio environment. Perhaps because of this, live projects have been used to specifically attract and encourage a higher proportion of women to take up skills training and higher education in Built Environment courses. Students learn to manage their time and the project in a real-world setting, which also introduces a contingent element to the work, whereby unexpected and unpredictable occurrences influence and affect the work as it progresses.

The contemporary definitions of the live project – unlike those of the modern period discussed above - do not emphasise the direct experience of architecture as constructed

product or building-as-process, but the experience of real clients, communities and end users.

Discussion

While the modern architectural live project focused upon architecture-as-built-product, the postmodern live project places great emphasis on architecture-as-process, one that is dialogic, collaborative and inclusive, and therefore questioning of the role of both the school and the professional in the wider community. The live project client ceases to be a passive recipient of the professional service, becoming instead an active partner. In this light, we can now look back at Birmingham's live projects and understand that they were not particularly live by contemporary standards. Students worked in much the same way as they did in non-live projects, individually working up their own designs for the first part of the project. And while the Birmingham live projects lead to students designing or participating in the construction of buildings that were eventually realised, there was apparently little declared engagement of students with clients or end-users other than to receive briefs from the public bodies that participated in them, and little added value was brought to the process by the involvement of the students. There was, therefore, no collaboration with those clients or users in the brief writing or design process, and the teacher operated not as collaborator equal to the students, but a traditional overseer of the process. There is little evidence either to suggest that the Birmingham live projects lead to increased contingency or risk, with small, often client-less pre-agreed briefs being chosen. The postmodern live project shifts the focus of the students' learning experience from architecture as built product to a wider conception of architecture as process. The subject is no longer the experience of designing for construction or the act constructing itself, but the act of providing an expanded and contingent architectural service.

As we have seen in the first part of this paper, similar projects can be found in at least three other professional disciplines. What can be learnt from the pedagogical frameworks and insight of teachers in those disciplines?

In Planning, service learning demands that the equal attention is given to the priorities of education and service, process and product, and experience and reflection. Pedagogues are cautioned not to regard service learning as a panacea for improving university-community relationships, nor engendering habits of critical reflection. These must be

engendered (both in clients and students) through carefully structured projects that are attentive to the differing needs and expectations of the different project participants. The experience of service learning projects in planning also provides a number of red flags for live projects, namely the imbalance of skills, language and power that results when an academic institution partners with a non-academic community. There is a danger of communities being exploited, and unrealistic expectations leading to disappointment.

The highly developed knowledge base of medical education, meanwhile, has provided one of the most advanced bodies of theoretical discourse on the ethical, practical and pedagogical issues involving 'clients' (i.e. patients) in the education of future practitioners. While the scale and breadth of learning opportunities available in a teaching hospital (a unified site of teaching, research and practice) might not easily be replicated in architectural education, the rich theoretical discourse surrounding medical education can nonetheless provide some insight. Medicine makes explicit the transition between two pedagogical paradigms, from lecture-based learning (LBL) to problem-based learning (PBL). In the words of Shulman, (2005b, p. 22) whereas 'law schools do a brilliant job of teaching students to think like a lawyer ... the pedagogies of medicine, however, put enormous emphasis on learning to practice the profession', or thinking and acting like a doctor. Real patient learning (RPL) is highly routinised, allowing students to reflexively witness and engage with the diverse and complex nature of quotidian medical practice. It is the highly developed knowledge base of medical education that provides us with the most sophisticated body of theoretical discourse on the ethical, practical and pedagogical issues involving 'clients' (i.e. patients) in education.

The signature pedagogy of law education is based on the profession's textual knowledge base, so in normative legal education, there is no experience of clients until after graduation. Clinical legal education has emerged as a means of training students to 'act like a lawyer'. While a heightened social awareness in the USA born in the nineteen-sixties and seventies contributed to a resurgence in clinical legal education, the profession of law has a strong lineage of community outreach through early dispensaries inspired by teaching hospitals. Key to the pedagogical model of clinical legal education are the rigorous and structured 'post-mortems', in which students and educators collaboratively and constructively critique not only the outcome, but also the thinking processes of the student. Methodologies of critical reflexivity and self-evaluation are intended to be nurtured through this demanding process.

This paper proposes that there have been three distinct periods of live projects in architectural education in the UK. The modern live project emerged at the Birmingham School of Architecture in the early nineteen-fifties as a means of simulating architectural practice in the academy. Faced with competing demands to either train students for architectural practice or educate them for critical thought, the Birmingham live projects sought to develop a hybrid pedagogy that could achieve both these divergent tasks within the academy. The Welsh School of Architecture sought to achieve a similar reconnection between the acts of design and construction, and there is some evidence to suggest that emergent theories of experiential learning influenced these developments. But having started out with modest rural buildings that placed particular emphasis on experiential learning of construction, the focus of the WSA live projects evolved, turning to community-oriented projects that were both more practicable and more in keeping with the changing pedagogical interests of the school.

The modern and predominantly experiential live project was shaped by pedagogies that sought to unify a new form of architectural education, one that was simultaneously intellectual (in the university) and pragmatic (on the building site) and focused on the processes involved in the construction of buildings. Through the transitional live project of the Welsh School of Architecture in the late seventies and early eighties, a postmodern conception of the live project emerges, one that less concerned with the built product of architecture and more concerned with architecture as socially constructivist process. Contemporary postmodern definitions of the live project emphasise a change in focus from providing experience of architecture-as-constructed-product to experience of architecture-as-process. A focus on the experience of working with construction has given way to a focus on the experience of working collaboratively with clients who equal participants in the learning process. Described against the normative design studio in which many of them sit, live projects are noted in the literature for their dialogic, collaborative and inclusive nature. With the engagement of a client, the live project begins to interrogate the role of the school in the community. The client becomes an active partner, one who wants, values, and contributes to an unpredictable outcome. This can be understood pedagogically as a profound shift from a approach based predominantly on experiential learning to one centred on socially constructivist learning. Students, educators and clients enter into a process that involves a certain degree of risk and uncertainly without the relative stability of the architect-client relationship of normative architectural practice. By

engaging with and designing for a specific client, students and educators in the postmodern live project enter into a highly contingent and dynamic learning experience.

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