

Interior Design/Interior Architecture Educators Association

**IDEA**

Interior Design/Interior Architecture Educators Association

**IDEA**



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IDEA was formed to encourage and support excellence in Interior Design/Interior Architecture education and research and be the regional authority on, and advocate for, Interior Design/Interior Architecture education and research.

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The objectives of IDEA are to:

- act as an advocate for interior design/interior architecture undergraduate and postgraduate degree programs;
- support the diversity of degree programs;
- provide recognition for excellence through refereed citations awarded to academic staff of the above programs;
- publish and disseminate results of research and refereed work carried out in member Institutions;
- foster and encourage collaboration within and beyond the membership of IDEA;
- foster an attitude of lifelong learning; and
- encourage academic exchange within the membership of IDEA.

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# Towards an Interior History

Suzie Attiwill, RMIT University, Australia

**Abstract:** *An interior history as a concept brings together history and interior design with a particular emphasis on addressing the spatial and temporal qualities that are implicit in both practices. Titled 'Towards an Interior History', this paper focuses on a process of making, hence the word 'towards' an interior history. It is not yet in a position to define what an interior history is – to answer the question 'what is an interior history?' – and may never be. By the end of the paper, it is hoped that questions such as 'How does an interior history work?' 'How does it function?' will be understood as more useful to pose. Why? Because dominant models of history and interior design have produced particular kinds of histories of interior design – ones which privilege the visual, hence objects and permanent architectural elements, as well as structures of enclosure and containment. An interior history as a concept celebrates the role of history in the production of the new and seeks to respond to current forces emerging in the design of interiors – for example, temporality, movement, change, encounters. The position here is not one of criticism and a quest for a better history, an attempt to re-write the past in order to re-right. The term 'inter-story' – formed from a conjunction between interior and history – is introduced as a technique for re-thinking history and interior design and as an approach to be taken up in a movement towards an interior history in the making of an interior history.*

**Keywords:** *interior, history, inter-story*

## Introduction

An interior history is, at this stage, a concept that is in the process of taking shape. The process involves questioning the history of interior design and rethinking the disciplines of history and interior design with a particular emphasis on addressing the spatial and temporal qualities that are implicit in both practices. In the conjunction between interior and history different possibilities emerge leading to an interior history. Titled 'Towards an interior history', this paper presents the making of this concept. It will not attempt to exemplify what this concept produces so much as open up the possibility of thinking differently, and provide some tools and techniques by collecting together ideas and methods useful in its making. In this sense, this paper is 'a box of tools'. This analogy is taken from the writings of the philosopher Gilles Deleuze. He goes on to say that: 'It must be useful. It must function. And not for itself. If no one uses it, beginning with the theoretician himself (who then ceases to be a theoretician) then the theory is worthless or the moment is inappropriate' (Deleuze & Foucault, 1972, p. 208).

While the concept of history is not only acknowledged but also celebrated as a participant in the making of the new and assisting processes of emergence, the paper also argues for a rethinking of history, as constant variation, if it is to engage with the kinds of interiors that are emerging. Structures of categorisation and a privileging of the visual in relation to knowledge have produced histories of interior design, which are histories of objects and static form such as interior architecture, decoration and/or furniture. It is worth observing the shared dominant structures of both history and interior design: containers and enclosures, be they boxes of categories or boxes of architecture.

The position taken up here is not one of criticism and a posing of a better history, which re-writes to re-right. Instead it is an investigation in the possibility of writing a history of interiors that does not necessarily involve processes of enclosure. It is about reorienting and shifting dominant models to find a useful method to make a history that responds to emerging aspects of interior design that currently do not find a lineage in any of the existing histories and, in the process, produce a platform for new work and ideas. This platform, once made, will offer interior design students a diagram composed of multiple connections, spatialities and temporalities. It will then operate alongside existing histories organised around spatial concept of enclosure and fixed categories such as modernism and postmodernism, and temporal concepts of linearity such as past, present and future.

The research for this proposition draws on a number of philosophers' writings including Michel Foucault, Brian Massumi, Elizabeth Grosz and John Rajchman. The thread that links them together and invites them into this paper is Gilles Deleuze. The connection to their work is not one of referencing to add substance to a position nor as an example of precedence but a connection of usefulness – their writings have stimulated these ideas and offered directions that have been useful to the rethinking of an interior history. Their philosophies address and open up notions of both history and interiors.

The motivation for this research finds expression in the subtle yet startling shift of emphasis expressed by Foucault in *Discipline and Punish* when he considers his reasons for writing history: 'Why? Simply because I am interested in the past? No, if one means by that writing a history of the past in terms of the present. Yes, if one means writing the history of the present' (Foucault, 1997, p. 31). Foucault makes apparent spatial distributions and temporal events as composing forces. Massumi's 'productionist approach' is another tool in this box – an approach that challenges the disciplines of the humanities, including history, in terms of the privileging of critical thinking to advocate instead an active relation of invention and affirmation to knowledge. Grosz and Rajchman – bring the temporal to the surface of their

focus. From their texts, I have picked up attitudes and styles, techniques and methods. All of these have been adapted and fashioned to become tools for the making of an interior history that seeks to pursue the directions offered up as well as take up the lines of potential expressed in students' projects.

### **Interior design and history**

The use of the term 'interior design' is deliberate and not interchangeable with interior architecture. A distinction is made here to indicate that the design of interiors is not to be limited to inside built form. This is vital to the ability to apprehend emerging forces. Fixed architectural enclosures are no longer the dominant shaping and mediating element for interior and exterior relations, for example – the change in the work environment. An office was once defined by a building – an office building. Now a building may have different functions at different times, sometimes an office, other times a home. An office then becomes a temporal and spatial occurrence involving a reorganising of relations – for example, from domestic to office environment. Another example is disciplinary confinement where it is no longer necessarily a physical enclosure such as a prison but may be a surveillance network that operates on a global positioning system. The question of interior and exterior are still pertinent and potent but they are dynamic, changing *relations* rather than one of permanence defined by built form. Interior design then becomes an activity of organising material spatially and temporally.

Similarly, the term 'history' is useful to tease out and question dominant and dominating structures. Mitchell Dean writes in his book, *Critical and Effective Histories. Foucault's method and historical sociology*: 'For no matter how much historical writing is about dimensions or aspects of the past, and refer to events, irruptions, discourses, and social practices that can be given a particular time-space, it is in fact an *activity* that is irrevocably linked in its current *uses*. One way of getting at this idea of history, as a *practice* within a definite present is to note that certain kinds of history arise from the rather simple necessity of having to deal with the records of one sort or another produced within and across the boundaries of national societies. ... This is not simply a repetition of the idea that all histories are written from a particular viewpoint or perspective, because it is also concerned to come to terms with history as a *practice*, as a *particular set on actions brought to bear on a particular material* (Dean, 1994, pp. 14–15).

I have italicised the words 'activity', 'uses' 'practice' and the phrase 'a particular set of actions ... on a particular material' to draw focus to design qualities implicit in this kind of attitude to history. Both design and history involve processes of ordering. Approached in

this way, history is understood as an activity involving a process of selection, collection and arrangement to construct an encounter with material and produce meaning. Museums are a wonderful example of three-dimensional histories in this sense – where visitors encounter history through processes of collection, organisation, arrangement and juxtaposition. They are spatial, temporal and material constructions that locate and energise objects and subjects to produce knowledge in relation.

This highlights a relation to history where the *making* of history is made apparent. In museums, for example, this involves a shift from displaying the object as the thing to be known and the subject as the knower to the event of encounter as the space where knowledge is produced (Whitehead, 1933, pp. 204–205). Massumi's concept of a 'productionist approach' where knowledge is produced and inventive, in contrast to knowledge as critique and interpretation, expresses a similar orientation (Massumi, 2002, p. 13).

While Massumi does not specifically address design or history in this context, his use of concepts of production and invention are qualities which connect to design thinking, especially in relation to the projective nature of design activity. As with Foucault, we are presented with the potential of history as a material practice involving actions and techniques in the production of what can be known. This approach is taken up in this paper as a vital ingredient in re-orienting history; to project, add and experiment in the making of an interior history. To pause then to consider existing histories of interior design which actualise a particular set of circumstances.

### **Existing histories of interior design**

Histories of art, architecture and interior design are strikingly similar in structure and methods of organisation. They are chronological accounts that privilege the visual and hence focus primarily on objects (which are able to be collected and categorised) and the process of containing (in systems of taxonomies and physically, in museums). It is the dominant model. The words of prominent Australian art historian Bernard Smith, for example, could also be applied to existing histories of interior design: '... classification in art history is primarily visual classification. That is why, in my view, art history is grounded epistemologically in the concept of style, and visual style at that. ... style addresses artefacts in their visuality, bringing order to that visuality. Nor is visual style an essential tool only to art history. It is essential also to archaeology for example' (Smith, 2000, pp. 6–7). It is interesting to note that Smith wrote this in a text titled *In Defence of Art History* which was a response to a series of papers on the challenges facing art history by practices, such as performance art, which do not privilege visual form.

Studying interior design in the early nineties, I found it curious that the history we were exposed to as students focused entirely on objects, mainly furniture and this contrasted to what we were engaged with in our design studios – spatial explorations. This history was also linear – beginning with Egyptian head stools and ending with postmodernism, which was addressed as a visual style of historical pastiche. It was apparent that this history was not able to incorporate the concept of spatiality. I was intrigued why interior design history did not respond to what was happening within its discipline and practice.

Histories of interior design are sparse on library and bookshops shelves. Those that exist follow the dominant model of history outlined above. John Pile's *A History of Interior Design* is a recent text and one of few texts dedicated to interior design yet it is a classical history text in that it demonstrates a linear chronological and stylistic model of history. Michael Bogle's *Designing Australia. Readings in the History of Design* is interesting as a collection of essays because the collection exposes what can be said and thought under such a title in the year 2002 in Australia. Under the heading of 'Interior Design' are four essays and each concerns decoration, domesticity and the home. *A Philosophy of Interior Design* by Stanley Abercrombie deals with the inside of architecture and breaks the interior into thresholds of inside/outside as defined by an architectural enclosure, for example doors, windows. *The Interior Dimension. A Theoretical Approach to Enclosed Space* by Joy Monice Malnar is another significant text, which attempts to position interior design – and as indicated in the title, interior is equated with enclosure.

In all of the above, interior design and history, and therefore the history of interior design – focus on objects and enclosure where the visual and static built form is privileged. My position is not one that dismisses these histories so much as highlight how they are shaped is due to the nature of their box of tools and this produces structures and systems. I am curious as to the potential of other ways of thinking and doing – of taking up a different attitude.

### **Interior design – current forces**

The condition of interior and interiority is generally conceived of as one of frames and enclosures – a container condition which is static, defined by boundary conditions and a pre-existing void to be filled. Different mobilities and technologies however are transforming boundaries and incite new possibilities. The relation between interior and exterior becomes dynamic and multiple, constantly changing and inverting. In final year RMIT interior design student thesis projects one can see the effect of these forces and shifts to concerns with mobility and the transient, to interstitial spaces in the production of interiors.

The temporal – how space is inhabited – is a vital force in these designs. ‘The emerging discipline of interior design is differentiated from interior decoration or architecture by its being a discipline of spatial performance and experience rather than one of composition or style’ (Pringle, 2001). In many ways, temporality is emerging as a defining element of current practice. From an interior design position, this offers much to consider and rather than interior as always already inside something – inside a container – it suggests an interior as produced through the spatialisation of matter by time: an event.

Elizabeth Grosz writes of the temporal in relation to architecture and while she does not specifically mention interior design, her question ‘How can we understand space differently, in order to organise, inhabit, and structure our living arrangements differently?’ addresses an interior condition. She goes on to suggest that answers lie in the ‘direction of time, duration, or temporal flow, which is usually conceptualised as the other, the outside, or the counterpart to space. [Her] central argument throughout is that architecture, geography, and urban planning have tended to neglect or ignore temporality or to reduce it to the measurable and the calculable, that is, to space. It is central to the future of architecture that the question of time, change and emergence become more integral to the process of design and construction (Grosz, 2001, p. xix).

Interior design histories have also ignored temporality in the design of interiors through a focus on objects and built space as static form. Or perhaps, it is due to an aspiration to equate interior design with architecture. Grosz’s writing, together with the other references made here, suggest – and advocate – a shift that is rich with possibilities and offers incentive to directions already being explored and experimented with through the discipline of interior design.

### **Inter-story – an attitude**

In an article on the question of what’s new in architecture with reference to Foucault and Jacques Derrida, John Rajchman makes a poignant observation that ‘the spaces we inhabit are always events that cannot be ever quite exhausted by the meanings with which we invest them’ (Rajchman, 1991, p. 153).

The concept of ‘inter-story’ is introduced here as a way to apprehend and incorporate the temporal as a composing force in the design of interiors. It plays on a combination of the words ‘interior’ and ‘history’ – becoming inter- and -story. To enter between them: outside the enclosures of both; in the encounter between them. It is posed as a place and attitude for making an interior history. The interior as a concept of enclosure is *intervened* and opened – becoming a dynamic spatial and temporal condition between things where interiors and exteriors are in constant production.

The *interrupting* of history as a strategy to destabilise models, assumptions and givens of both history and interior design is the main driving force. Inter-story gestures towards a different order from a linear or dialectical one, and enters between. Stories that are 'inter', both spatially and temporally, that interrupt dominant narratives, interfere with models, and intervene to dislocate plans, as 'a way of spacing that gives its place to the event' (Rajchman, 1991, p. 157). In contrast to history as a processing of enclosing and fixing, it becomes a question of building a platform for arrivals and departures where the emphasis is not on finding and fixing meaning but on *making* sense, on producing and inventing. A writing of interior design as a history of temporal inter-faces with space shifts the focus from a history of static objects and built form to, both, history and interiors as dynamic productions in the inhabitation of space.

'History is the archive, the drawing of what we are and what we are ceasing to be, whilst the current is the sketch of what we are becoming' (Deleuze, 1992, p. 164). A drawing of 'what we are and what we are ceasing to be' – it is these tangled lines and a process of drawing them out which provide conjunctions for creativity. Inter-story engages these spatial and temporal relations to consider differently other ways of drawing, producing maps and experimentations, diagrams of orientation and stylistic stances where movement, change, and temporality produce interiors and exteriors. What kinds of inter-stories will perform this interior history? The sketch has been done here – if ever so lightly – in a process of becoming.

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The word 'inter-story' came about in a conversation with Tom Loveday in December 2002. It evolved from the term 'inter-space' which was the focus of a paper titled 'an interior history' I presented at *Mind the Map. The Third International Conference on Design History and Design Studies* Istanbul, Turkey, July 2002. For 'inter-space', I would like to acknowledge Norman Davis's contribution to my research project.

## Side-by-side: A Pedagogical Basis for (Design) Transdisciplinarity

*Associate Professor Jill Franz and Professor Steffen Lehmann, Queensland University of Technology, Australia*

**Abstract:** *In this paper, a pedagogical model for fostering transdisciplinarity in the built environment is described. Unlike learning situations in design education which use multidisciplinary teams, this model is characterised by students working side-by-side on the same project each producing their own proposal. As is explained, the development of this model was inspired by a growing awareness of the need to look beyond discipline boundaries in order to more effectively address issues involving the design of the built environment; issues associated with a rapidly changing and increasingly technologically complex world. In this respect, transdisciplinarity formed the philosophical and theoretical basis for the development and implementation of a cross-discipline studio elective for architecture and interior design students from years three to six in their course. While there are limitations with the model, the evaluation reveals insights into how we might continue with constructing more appropriate learning opportunities for engendering transdisciplinary attitudes in students and graduates.*

**Keywords:** *architecture; interior design; cross-disciplinarity; transdisciplinarity*

### Introduction

This paper describes the development, implementation and evaluation of a design studio elective by the authors Professor Steffen Lehmann (Coordinator of Architecture) and Associate Professor Jill Franz (Coordinator of Interior Design). Unlike cross-disciplinary studios that involve students from various disciplines working in teams to produce joint proposals, in this elective, students of architecture and interior design worked side-by-side on the same project with common aims and objectives producing their own individual proposal. The intention here was to provide a communal and 'co-operative' (Wright & Lander, 2003) as opposed to 'collaborative' environment; the latter commonly being associated with team work. While we recognise the need for students to learn how to work in a team, we were more concerned in this case with challenging them to move conceptually beyond their discipline boundary to a situation reflecting the 'holistic reality of the world' (Klein, date unknown) and the limitations of discipline compartmentalised knowledge; limitations we argue exist even with multidisciplinary approaches.

## **The impetus for review and development**

The catchcry at the moment in Australian higher education is 'collaboration'. For the most part, this appears to us to be underpinned almost exclusively by the desire to use resources in the most efficient way possible rather than by an explicit acknowledgement that world issues are highly complex and ill-defined; issues that not only require multiple perspectives but an overarching framework developed via 'new modes of knowledge production' (Klein). Where design schools have recognised the need to introduce a more integrated curriculum, from our observations this has been rather piecemeal and not explicitly informed by theory, particularly overarching transdisciplinary theory. According to Cys & Ward (2003), '[T]he existing literature describing collaborative architecture and interior design studio pedagogy is sparse, suggesting that collaboration between the disciplines is assumed to occur more than it actually does.

The majority of the published material in this area describes collaboration in studio projects predominantly in terms of the problematic nature of teamwork and communication between students from the two disciplines' (pp. 5–6). They go on to cite an IDEA (Interior Design/ Interior Architecture Educators' Association of Australia and New Zealand) 2003 survey which reveals that: out of ten of the eleven undergraduate interior design programmes in Australia and New Zealand that are members of IDEA, only two programmes offered upper level collaborative architecture and interior design studios on a regular basis (Cys & Ward, 2003, p. 6). They propose that this may in part be due to the closeness of the professions and '...what might be termed a current condition of territorial imperative' (p. 7).

In exploring initiatives that have encouraged students to step beyond their professional territory, Cys & Ward (2003) describe a project by Jennifer Magee where teams of interior design and architecture students worked together on an urban design project. The main outcome reported here was an appreciation of other ways of designing (Magee, 2000 in Cys & Ward, 2003). An appreciation of other discipline ways of designing is, we believe, useful in the process towards an understanding of design in transdisciplinary terms. However, there is a problem, as we conceive it, in the framing of the project as an 'urban design' activity. As the following section will highlight, a transdisciplinary approach demands that the issue of focus be related to the world rather than to a specific discipline or even collaborative effort by several disciplines.

## **Theoretical background**

In this paper, cross-disciplinarity is used in a generic way to describe various forms of discipline interaction including those of an interdisciplinary and multidisciplinary as well as transdisciplinary nature. Because of the tendency to confuse these terms, it is important to highlight the distinctions as we understand them before proceeding further.

As Nicolescu (1997) notes, 'interdisciplinarity' 'concerns the transfer of methods from one discipline to another' (p. 1), or as Geisler (2002) describes it, the 'borrowing [of] ... techniques, values, or mandates of a nearby discipline in order to address pressing problems' (p. 9). Interior designers, for example, borrow, through the process of consultancy, the mandate of architects or engineers when their 'interior' work has structural implications that are outside their field of expertise or authority. Another example from the educational context is a collaborative studio developed by the architectural author of this paper where five teams of eleven architecture students each consulted with a civil engineering student on a project involving the design of selected Brisbane bridges. This form of interdisciplinary collaboration is illustrated in Figure 1.

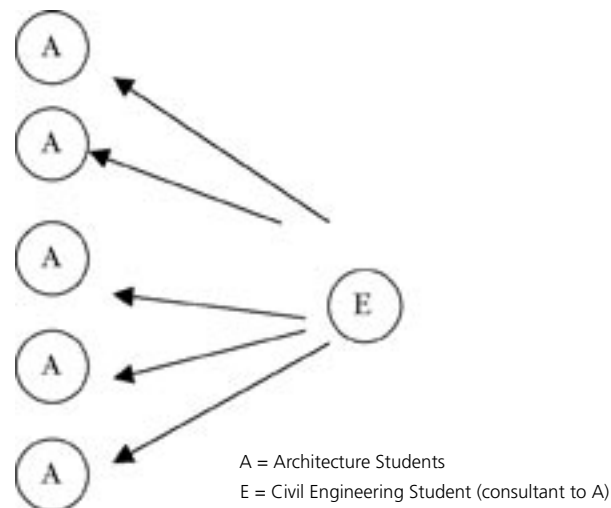


Figure 1: Interdisciplinary Collaboration Model (Lehmann, 2003).

As an alternative, a 'multidisciplinary' approach is characterised by a co-contribution to a project by various disciplines. Sometimes, this is nothing more than a sequential process where 'one discipline accepts the product of the first as a given and works with it from there' (Geisler, 2002, p. 12). This is exemplified in situations where interior designers are employed to select furniture, fittings, furnishings and finishes after decisions have been made usually by architects about form and spatial arrangement. Sometimes, however, representatives from various disciplines start working on the same project at its inception. Here, all viewpoints are presented up-front where they are explained and debated and hopefully respected for their unique view of the situation. By its very definition, there is an acceptance that

project members cannot have mutual understanding of the specialised knowledge, skills and cultural values of all disciplines. Collaboration in this sense means trying to make this interrelationship work, '...of always assuming a fundamental respect for each other and each other's disciplinary bases; of taking up the burden of making or explaining and persuading others of one's disciplinary conclusions; of forgoing the opportunity for disciplinary silence and retreat when asked to explain ourselves' (Geisler, 2002, p. 12). A collaborative project, also an initiative of the architectural author, illustrates this (Figure 2). The project involved teams of one architecture student and one art student from another university collaborating to produce a site-specific installation for a particular public space in Brisbane.

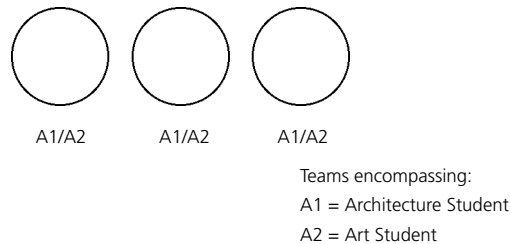


Figure 2: Multidisciplinary Collaboration Model (Lehmann, 2003).

While different in the sense described, interdisciplinarity and multidisciplinary are similar in that their goals always remain within the framework of the discipline (Nicolescu, 1997), that is, the autonomy of each discipline usually remains in tact. This is unlike 'transdisciplinarity' where the concern is '...that which *is* at once *between* the disciplines, *across* the disciplines, and *beyond* all discipline. Its goal is *the understanding of the present world*, of which one of the imperatives is the unity of knowledge' (Nicolescu, 1997, p. 2). As mentioned before, transdisciplinarity recognises the holistic reality of the world and the associated need to deal with this complexity, heterogeneity and hybridity by focusing beyond the discipline to the development of an overarching framework (Klein). For the purist transdisciplinarians, the discourse should be one that allows relationships to be drawn between, among and, most significantly, beyond other discourses. It is in this respect 'overarching'.

As Klein reminded us, some disciplines already have strong cross-disciplinary character. While she cited philosophy as an example, we suggest that design represents another example. Despite designers recognising the holistic nature of the issues they deal with, cross-disciplinarity where it occurs, remains at the interdisciplinary and multidisciplinary levels. In the elective described here the intention was to explore the possibility of design as a transdisciplinary medium and of how we might structure learning environments to engender a transdisciplinary attitude in students.

### The elective – ‘Inside of Outside: Redefining the Australian Beach House’

As mentioned previously, the elective was not collaborative in the sense of students working together to produce a joint proposal. Rather they worked communally in a studio environment on a project that actively sought their cooperation in breaking down the boundaries between the disciplines of interior design and architecture inviting in the process a view across and beyond each discipline (Figure 3).

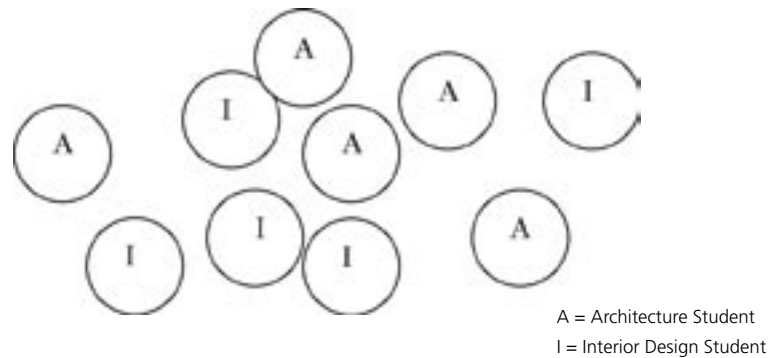


Figure 3: Transdisciplinary Encounter Model (© Franz & Lehmann 2004).

### The philosophical tenets of the elective

Before describing the elective, it is important to explain the pedagogic ground for situating it within the context of a design studio. It is important for several reasons. First, problems in team teaching often relate to the parties having differing sometimes conflicting conceptions of teaching and learning. Second, the transdisciplinary attitude depends on having an epistemology and ontology of the world that is holistic and overarching. As such, the development of the task and the learning environment had to be compatible as well as, for want of a better description, universal or all-encompassing. In this philosophical sense, a studio project developed from an interpretive position seemed to offer the most potential.

From an interpretive position, people and environment are understood to mutually include and define each other (Bognar, 1985). Ontologically, then, experience is regarded as a ‘relationship between subject and object, encompassing both’ (Marton, 1994, p. 91). And from such a position, knowledge is viewed as being constituted in and through action within a context involving some ‘one’ and some ‘thing’. In summary, an interpretive position is underpinned by the assumption that there are multiple factors contributing to an event, action, and understanding and that instead of one reality there are various

multifaceted realities (Candy, 1984, p. 4). Such a multifaceted reality is not served well by a compartmentalised discipline approach despite respective disciplines' depth of knowledge. As conveyed earlier, the goal of transdisciplinarity is a holistic understanding of the world, of which unity of knowledge is one of the imperatives (Nicolescu, 1997, p. 2). In line with this view is an understanding of learning as an activity integrally tying together content and approach. At its optimum, learning is the ability of the person to change this orientation to achieve effective, efficient and ethical outcomes (Franz, 2003). In a transdisciplinary sense, changing one's orientation means being able to appreciate the limitations as well as the potential of a specific discipline, of being prepared to transcend the confines of the discipline by seeking the cooperation of others in employing and preserving plurality and relationality rather than seeking conformity, universality and certainty; concepts emphasised by Klein as qualifying the character of transdisciplinarity. Developing the ability to do this involves attitudinal as well as conceptual change; it is something more than memorisation, acquiring new knowledge and developing discipline-specific skills. Likewise, teaching (lecturing and tutoring) is something more than transmission and encouragement. It is facilitating conceptual and attitudinal change to the level where the student becomes an independent and critical learner explicitly aware of the complex, relational and qualitative nature of the world and of the need to orientate themselves in different ways to the issue at hand (Franz, 2003).

In this respect, the design studio can play an integral role. The speculative, heuristic and reflective nature of designing demands that content is presented and engaged within a praxis situation. Studios which involve students in working on simulated or real-life scenarios play a vital role in helping them develop a holistic appreciation of the world including the role of design in addressing world related issues such as dwelling and habitation. The projects of the studio constitute conceptual wholes giving students the opportunity to move iteratively between parts and the whole, between the act and the content of learning (Franz, 2003). Projects connect with practice, the professions and the community engendering enculturation and the associated chance not only to learn the discipline's discourse through the playing out of roles but also to acknowledge its limitations. The nature of this learning demands group and one-to-one interaction between students and students, and students and educators (Franz, 2003). Physically, the studio can be formal or informal providing for different types of interaction. In line with the tenets of transdisciplinarity, the studio is a construct that acknowledges the need to supplant isolated modes of work with affiliations, coalitions and alliances (Klein, p. 25). As current practice shows, however, the studio and project-based design alone do not guarantee a transdisciplinary approach or outcome. Rather it is their structure that plays a central role.

### The structure of the elective and its learning environment

The transdisciplinary studio was offered as an elective to give students the choice of participating. It was decided to open the elective to students in the later years of their architecture and interior design programmes mainly because they would have an understanding of their own discipline's discourse and roots. This may seem contradictory but for us one has to know what one's discipline is to be able to transcend it. It was also decided to limit the number of students in the class to ten, five students from architecture and five students from interior design. This was to attempt to minimise the influence of student numbers on the quality of student performance providing for a less implicated understanding of the relationship between the student and the transdisciplinary task. The process of selecting students involved two phases. In phase one, we identified students who had performed well throughout their course, informed them of the elective and invited them to an interview. In phase two, we interviewed interested students and on the basis of the interview selected five students from each discipline. We conducted the interviews jointly and made decisions together about the student's design ability, level of confidence, and preparedness to move beyond their discipline boundary. At the conclusion of this process, the student cohort for the elective comprised three third year interior design students (female), one fourth year interior design student (male), two fourth year architecture students (female and male), two fifth year architectural students (male and female), and one sixth year architectural student (male).

Figure 4 depicts the structure of the elective studio as two axes, a horizontal across-disciplinary axis and a vertical across-year axis. Sometimes referred to as 'vertical studios', the idea here was to encourage boundary crossing; to have a non-differentiated hybrid group of students; heterogeneity as opposed to homogeneity, as is the case in a complex, multidimensional world.



Figure 4: Structure of the elective studio.

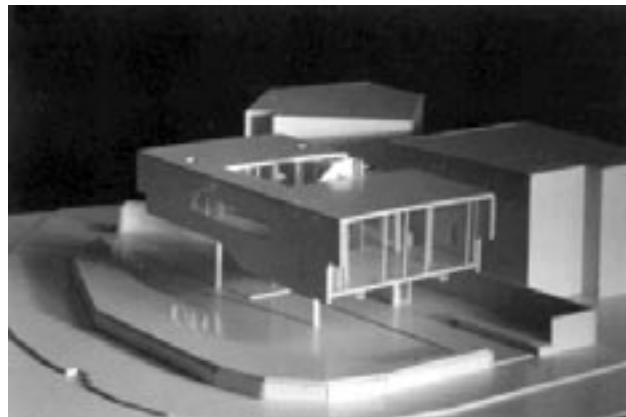


Another decision we made was to have each student working individually and parallel on the same project rather than in teams. This was mainly to encourage students to focus on the issue beyond their own discipline rather than being side-tracked by the dynamics of working in a team and the associated tendency to reinforce boundaries in order to protect discipline interests and reinforce its autonomy and authority. According to Wright and Lander (2003), 'even when students are in mixed cultural groups there can be little assurance of profitable intercultural interaction because of the dominance of one cultural group' (p. 239). The other side of the coin, however, is that group work being an encounter of different cultures does encourage the development of skills distinct from working in culturally homogeneous groups (Wright & Lander, 2003, p. 239), skills which facilitate moving beyond a discipline. Just as importantly, it helps reveal assumptions that are deeply embedded within the culture of a discipline (Wright & Lander 2003, p. 239) providing a basis for questioning the influence of these on developing a holistic appreciation of a situation. Recognising these points, we attempted to allow students to 'encounter' each other's discipline and their own biases by having them work side-by-side in the same studio at the same time, in a situation of open dialogue and social interaction.

The elective was conducted one evening per week for three hours over a period of thirteen weeks. We contributed equally to the lecture content and undertook both joint and individual tutorial sessions with all students in the same room. Four guest lectures were incorporated that dealt with issues beyond but related to the project, issues such as landscape architecture, urban design, graphic design, and subtropical design. Students were encouraged to draw on each others' knowledge and experience in the process describing and explaining their schemes to each other. Informal social interaction was also encouraged through a relaxed and flexible studio setting that had tea and coffee making facilities. In hindsight it may have been more symbolically appropriate to have the class in a neutral environment although the interior design studio selected was appropriate to the size of the group, providing the facilities and flexibility required. Any references to it as belonging to a specific discipline (such as posters, student work from other classes) were removed. We were also cognisant of being completely open and critical of our own biases, attempting to move beyond our own disciplines through the use of references, comments, and examples outside our associated discipline. This was aided by our personal experience of working across boundaries both in design as well as in the social sciences and the humanities. The end of semester presentation incorporated a critique by academics and practitioners from architecture and interior design. Again in hindsight, this should have been extended to include people representing various interests in the community as well as other disciplines informing person-environment interaction and issues at a global level.

### The project and its site

The substantive focus of the elective was the redefinition of the Australian beach house. The redefinition aspect was an invitation to students to go beyond discipline constrained stereotypical examples of beach house design in Australia particularly in South-East Queensland. To encourage this, students were presented with an existing proposal for the site that challenged current trends in a tectonic way using heavy weight concrete instead of light-weight timber and steel (Figure 5). This was based on the assumption that order, stability and permanence would help to develop a refreshing antithesis to the dominating mainstream of light-weight coastal architecture (Lehmann in Lehmann & Franz, 2004). They were also encouraged to explore other ways in which this could be approached such as using sustainability as an underpinning theme and integrating this with a more critical examination of socio-cultural factors such as: regionalism/globalisation, localism and identity, and related issues of disconnection, displacement, disempowerment and alienation; technology and separation of action and outcome, time and space; consumerism especially its connection to individualism and lifestyle and their paradoxical relationship with conformity; and change and rate of change (Day, 2002). Philosophically, the students were asked to externalise their own ontological position pertaining to the relationship between people and environment, the role of design and designer, and interior designer and architect. Students were asked to consider dwelling as being at 'the inside of the outside'; of conceiving of the building envelope as a construct rather than something physical that conventionally differentiates the roles of interior designer and architect.



*Figure 5: Model of the proposal previously developed for the clients (Lehmann, 2003).*

Students were given a real vacant site on a corner block behind dunes and ocean (Figure 6) with real clients (Steffen Lehmann and his partner) and were challenged to think experimentally about the project and the outcome. Steffen's partner is a Brazilian graphic designer and installation artist and was keen for the students to exploit the art aspect of architecture and design particularly its symbolic and open-ended qualities. Gender also provided another source of development. The students were reminded that in architectural history female clients have been central to major changes in residential design challenging cultural assumptions and architectural convention producing in the process a redefinition of domesticity as spatial, physical and experiential. For this, the houses of Lina Bo Bardi and Frida Kahlo were studied. The students were also aware of the clients' desire for the house to clearly reflect the qualities of a weekender, not a permanently used retreat.



*Figure 6: Project site, Sunshine Coast, Queensland  
(Photography: Interior Design Author).*

All students regardless of their discipline were required to design for the site producing amongst other possibilities a site plan showing the footprint of the building as well as landscaping, floor plans, external elevations, sections and internal elevations, detailed drawings of interior elements, perspectives and a three dimensional model. As well as considering the building's form and materiality, students were also asked to focus on interior finishes, fittings, furniture and furnishings. They were asked to address practical,

instrumental, psycho-social and existential forms of interaction thinking about the broader social, physical and temporal context as well as the site specific and local context. We also identified several local and international architectural and interior design projects for consideration, discussion and debate. We provided students with literature dealing with home, interiority and the inside/outside binary structure with its associated notions of boundary, margin and liminality. We encouraged them to identify other binaries such as sea/land and working day/weekend. Considered as 'wholes', binaries are very effective devices for exploring issues and tensions and extending the potential for innovative holistic thinking.

### **The elective as a site for research**

A complex and dynamic world demands that our practice be more systematic, rigorous, and ethical; and that teaching, research and application be integrated producing what Clark (1998) described as 'pathways of transformation'. This combined with the experimental nature of the unit required that we also conceptualised the unit as a research project guided by an appropriate methodology/methodologies.

Given the relational nature of transdisciplinarity, we recognised that a qualitative rather than quantitative approach was more appropriate at this time. Two methodologies were considered and implemented to varying degrees. These included a case study approach and action research both of which are compatible with the philosophical tenets of transdisciplinarity and the interpretive paradigm. As a case study, the elective provided us with a legitimate exploratory setting bounded sufficiently to possess its own particularities; particularities that it was hoped would shed light on the predisposition of an educational setting to facilitate transdisciplinarity as we defined it.

To maximise understanding of the case, we asked: What aspects reveal the case's uniqueness? To treat the case as an exemplar we asked: What aspects help reveal something about the predisposition of the design educational setting to facilitate transdisciplinarity for design? To evaluate the study, we asked: Which issues help reveal merit and shortcoming? (Stake, 2000, p. 240). With respect to an action research approach, this provided us with an overarching methodology that allowed this case to be understood as the beginning of an ongoing process of research informed curriculum development that has a social rather than just educative agenda. Some of the qualities of action research include: a preparedness to ignore boundaries when they 'restrict effective understanding and action'; a process in which the value of research results are tested through the collaborative involvement of researchers and others involved in the study, where the diversity of experience and capacities within the

local group are treated as an opportunity for enriching the research/action process; a process that is context-centred aiming to solve real-life problems through the integration of theory and practice (Greenwood & Levin, 2000, pp. 94–96).

During the implementation of the elective, we tape recorded (with the students' permission) group as well as individual tutorials. At the end of the semester, we also tape recorded a focus group session that invited students to critique the elective in terms of what they understood they had achieved and if it were offered again the changes they would like to see. The students' submissions including a project diary recording their process and reflections are also understood as data and for this paper were used to respond to the three questions referred to previously; this latter aspect forming the bases of our analytical approach in the study. To reiterate, our objective in writing this paper was to provide some preliminary insight into how transdisciplinarity incorporating transdisciplinary attitudes might be fostered and more effectively engendered in the design educational context.

## **Findings of the project**

### **What aspects of the project reveal the case's uniqueness?**

As described previously, this studio was different to other cross-disciplinary studios in having students from interior design and architecture work side-by-side on the same project rather than in teams. Asking students to cross disciplinary boundaries produced more emotional angst than perhaps we were prepared for. In the case of the interior design students, this was manifested as frustration with having only a very basic understanding of domestic construction methods and building materials. This was particularly evident in those tutorials where the focus was on spatial differentiation, the relationship of the beach house to its context, and on external building form and materiality. Some found an external view and formal driven process at philosophical odds with an 'interior' place making approach that commenced with the lived experience of the occupants and of the qualities needed in the environment to support this experience. Their discomfort was heightened by their decision to start anew rather than using the existing form of the building previously developed for the client; a decision based on a strong dissatisfaction with the climatic orientation of the proposed building. The frustration was alleviated somewhat when after developing rapport with the architecture students they felt secure in discussing their proposals and inviting comments and suggestions. It also enabled them to see that a couple of the architecture students were experiencing similar frustrations although in general the architecture students did tend to be more confident in this area, particularly those in the later years of their course.

The decision to give students the choice to work within the constraints of the initial proposal or to 'start from scratch' was another unique feature of the studio; one presenting students with an interesting dilemma. For the interior design students, it meant that they could choose to work in a more conventional way focusing on the interior environment. For the architecture students, it meant that they also could give more emphasis to interior quality or 'the nitty gritty' as it was described. As indicated previously, all interior design students elected to set the initial proposal aside revealing preparedness to move beyond their discipline boundary despite the emotional angst. 'I was really surprised. I just thought you would be less inclined to change the plan' (An architecture student speaking to interior design students). In this respect however, all students believed that they would not have come up with the outcome they did had they not had the initial proposal which through its materiality and form, particularly the ramp entry, helped them to challenge the stereotypical notions of the Australian beach house as a light-weight structure. Unfortunately, as discussed, they did not tend to go much beyond this in their 'redefinition'. As one interior design student commented: 'It became more about the sculpture of the building rather than what it is like to live in'.

While the architecture students experienced a reluctance and difficulty in employing an interior experientially driven approach, they initially seemed less concerned with this and tended to revert to their usual way of designing. In general, they focused on interior elements after they had developed the compositional arrangement and circulation of the building, and because the formal development took up most of the semester the interior environment was not fully developed by the submission date. As one architectural student stated: 'I thought the focus of the elective was to get to the nitty gritty and I am so not there'. Having said this, they did try to compensate for this in their oral presentation by highlighting the emotive aspects of entry to and journey through the house: 'Entering through the entry wall is small and humbling, yet this changes after passing through and the entire space opens up into a grand volume. The enormous void to the external world open [sic] up like a stage curtain, so as to unfold the drama of the landscape. One is aware that the wall to the perimeter of the space is habitable. This wall offers a space to sit, relax and enjoy the drama of the coastal landscape' (Architecture student). Another architecture student even questioned the requirement to produce a model of the building suggesting a resentment of its focus on the exterior of the building.

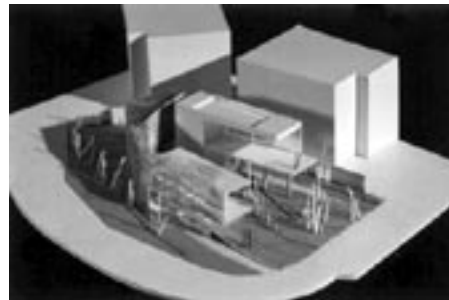
**What aspects of the case help reveal something about transdisciplinarity in the design educational context?**

For the most part, the interior design students tended to work iteratively between the inside and outside and while their building form was generally not quite as resolved as the architecture students (Figures 7 and 8) they more consistently considered the interior as they did the experiential and psycho-social qualities of the building and site as a whole. Figure 9 shows the placement by an interior design student of a drying rack at the under-croft entrance of the building. Not only is this intended to be functional providing a convenient drying place for beach towels, it also doubles as a flag mast reinforcing the beach house theme as well as signalling when someone is home (Figure 9).

The use of an overarching concept was instrumental in helping the interior design students achieve this, something which until this class the architecture students claim they had not been introduced to. In her project summary, one of the interior design students describes how she used the concept of tension: 'The main concept driving the scheme is TENSION

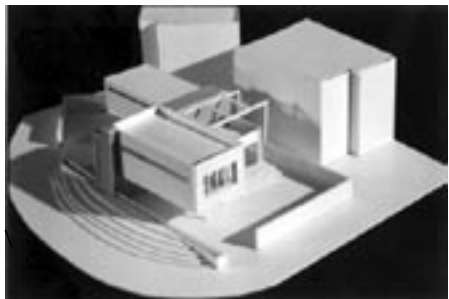


(a)



(b)

*Figure 7: Selected proposals by architecture students: (a) Joe Adsett; (b) Emma Termont-Schenk.*



(a)



(b)

*Figure 8: Selected proposals by interior design students: (a) Cushie Pie; (b) Krissy Collum.*

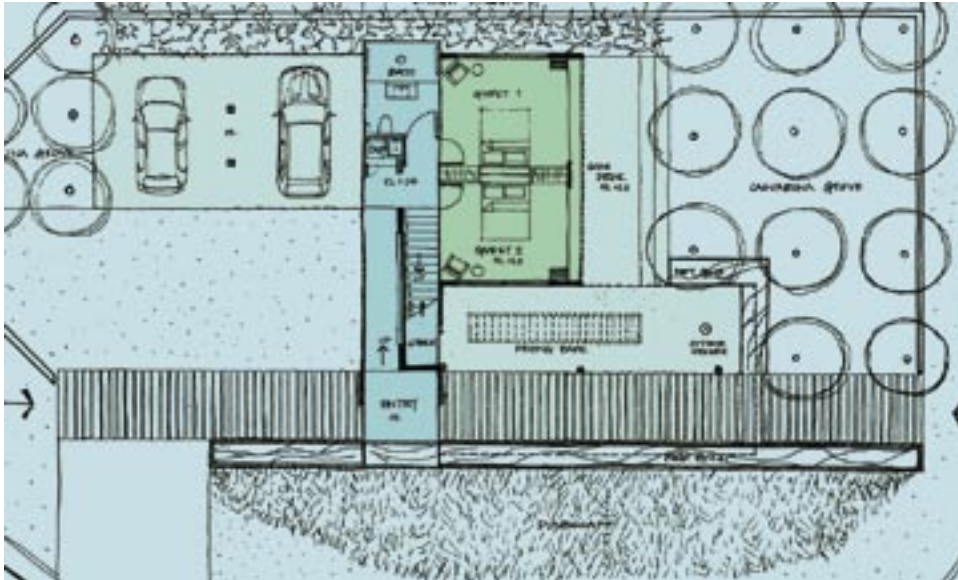


Figure 9(a): Drying rack in the entry foreground (Cushie Pie).



Figure 9(b): Drying rack as flag mast (Cushie Pie).



– between the physical elements themselves and within the different ways of experiencing the building psychologically. This concept stems from the form of the ramps in the original scheme – the tension in ramps inherent in the contradiction of their dynamic scissoring form visually and the slowed and flowing experiential quality of ascending. The concept [is also based on] the beach experience itself – half energy, action and activity and half sun-soaked sleepy relaxation’. In referring to the interior, she describes how ‘The tension in these types of spaces and experiences [will] challenge how we use and perceive a holiday home, and challenge what a beach house is ‘meant’ to be’. For another interior design student, the concept was about ‘the journey, the destination and making of moments’. In the interpretation of this concept of ‘toward destination’, the student played with the senses contrasting the sense of sensory deprivation experienced in travelling in a car from the city to the beach house with the sense of sensory awakening facilitated through the design of the beach house and its connection to the natural environment.

In the early stages of this paper, we discussed how transdisciplinarity is connected to an overarching framework. The experience of this elective suggests a strong association between this and the use of a concept as an abstract and metaphorical linguistic tool which allows design thinking to transcend the confines of the site and discipline boundaries.

In all, the interior design students gave greater emphasis to the affective quality of the environment; ‘we think about being in the space’ (Interior Design student). This was something applauded by some of the architecture students. They described how the interior design students obviously felt more comfortable using as they described it ‘touchy feely terms’ and lamented that this was not condoned in architecture. The tendency to be more demonstrative affectively was also evident in the presentation drawings of the interior design students which were highly colourful and textural (Figure 10a, b) compared with the less textual, in some cases, black and white drawings of the architecture students. Where the architecture students did use colour this mainly enhanced the formal qualities of the building (Figure 11a, b).



Figure 10(a): Fully coloured section by interior design student highlighting textual quality (Michelle Fielding).



Figure 10(b): Fully coloured elevation by interior design student highlighting textual quality (Michelle Fielding).

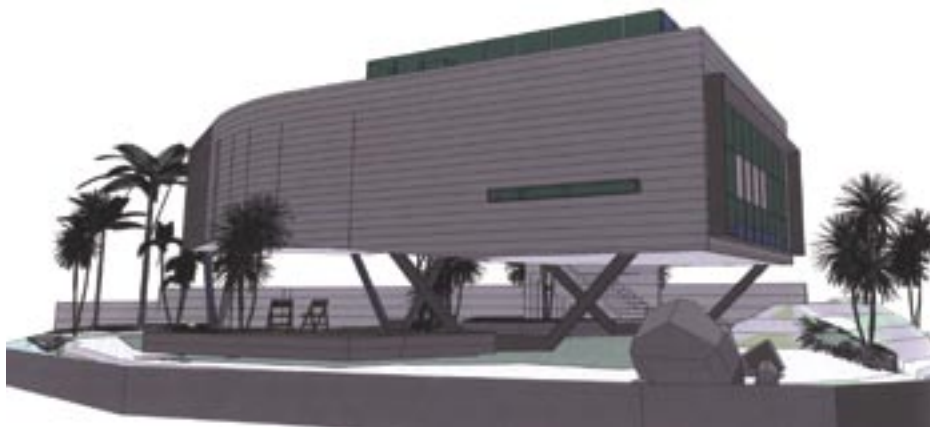
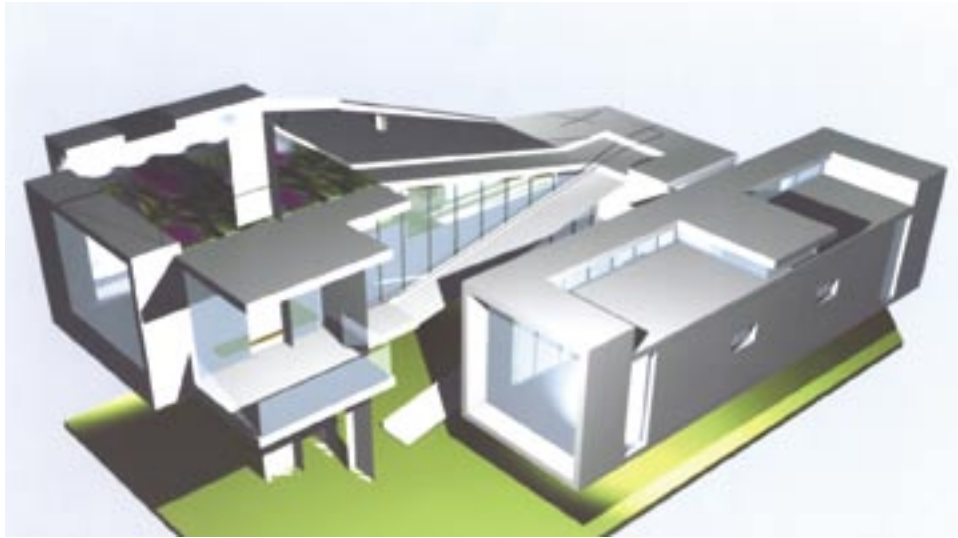


Figure 11(a): Perspective rendering by architectural student (Ben Carson).



*Figure 11(b): Perspective rendering by architectural student (Sandi Kuzman).*

#### **Which issues help reveal merit and shortcoming?**

The substantive focus of the elective was the redefinition of the Australian beach house. The redefinition aspect was an invitation to students to go beyond discipline constrained stereotypical examples of beach house design in Australia particularly South-East Queensland. A previous section describing the project explains the various philosophical and conceptual ways by which we encouraged students to do this. Despite this, the main challenge made by the students to current beach house design was in terms of the tectonics of their proposals. In most cases, lightweight timber/steel construction was replaced with heavyweight concrete construction which could be justifiably interpreted as the imposition of contemporary architectural urban form on a beach site resulting in very little distinction between the permanency of city dwelling and the temporality of a beachside weekend dwelling. We suspect this is linked to the perception of a concrete structure as significant to the client (it was after all developed as an initial proposal) as well as the students' reluctance to explore examples at a sufficiently broad theoretical level possibly because they do have that knowledge in the first place.

Developing a transdisciplinary attitude and being able to operate in this way we believe depends on having a broad educational base; a base informed by various theories and perspectives outside the discipline particularly from disciplines such as the humanities and social science. It is interesting to note that the interior design programme has substantially

more units that focus exclusively on the psycho-social aspects of design than the architectural programme. In addition, the interior design course is explicitly defined by a critical interpretive understanding of person-environment interaction. It is therefore apparent from this elective that in design studios the project should be situated within society as a whole and explicitly link to overarching themes such as sustainability and person-environment interaction. Even with an emphasis on sustainability few students in the class investigated and incorporated this as fully as they could. Where they did it was generally restricted to climatic considerations and weakened by other decisions that were not sustainable. What was also surprising was the students' insensitivity to the neighbours and how the proposed house would impact on the neighbours' experience of living next door or down the street. This would suggest that students need to be more aware of their social responsibility as designers, also a significant aspect of operating in a transdisciplinary way.

While as noted previously the students recognised the strengths in each discipline, they started to question the need for the two to be separate arguing that all issues should be conceived and addressed with equal emphasis given to the site and the exterior and interior of a building. The interior design students also expressed feeling confused: '...that's part of the problem, we don't know where we really fit'. Despite this however they appreciated the chance to go outside the interior: 'I felt like [previously] I was constrained. The project is more holistic. It has made me think about lot more'. From the students' feedback there was general consensus that the interior design students were more successful in incorporating newly obtained architectural knowledge into their proposal than the architectural students were in incorporating interior design knowledge into theirs. This is supported by comments from the interior design students who stated that they now have a better appreciation of architecture as a result of the elective. The architecture students also stated that they have greater respect for and understanding of interior design and were genuinely surprised by the interior design students' ability.

The comments of the students suggest that there has been some development in terms of multidisciplinary as well as a tenuous movement towards a transdisciplinary understanding of the world and of the role of design in realising this. Overall, it is somewhat ironic that interior design students rather than architecture students displayed a greater disposition and aptitude for this. Architecture is generally regarded as a more generalist encompassing discipline and interior design as a more specialist discipline operating within the confines of a structure's boundary. While this needs to be studied in greater depth, the difference appears to be due in part to a perception of the outcome of mainstream architecture in objective

terms (the building) contrasting with the understanding in interior design of the outcome as experience; experience that is the result of a dialectic process involving people and the environment both of which are conceived in macro as well as micro terms. This observation lends support for the idea of transdisciplinarity as being tied to the issue and its context and, subsequently of the redundancy of the design disciplines as they are currently defined.

In terms of further projects of this nature, we will be much more aware of how the same terms can have different meanings for different disciplines even if they are closely allied as well as of the need to frame the project in a way that demands and encourages greater movement beyond the representative disciplines to the issue at hand. Associated with this will be more reliance on abstraction and less reliance on conventional norms and practices of the disciplines including the usual modes of representation and presentation. Having said this, the projects should be designed to align with society and its multidimensional quality, and should be conducted, as we have in this case, with small groups of students to facilitate one to one as well as group interaction.

## **Conclusion**

In this paper, we have described the development, implementation and evaluation of a design studio elective comprising architecture and interior design students working side-by-side on the same project producing their own individual proposal. While we recognised the need for students to learn how to work in a team, we were more concerned in this case with providing them with an opportunity to develop a better appreciation of the holistic nature of design 'problems' and, hopefully in so doing, be more predisposed as students and graduates to operate in transdisciplinary ways. To facilitate this, we drew upon the long history of collaboration and good working relationships between the architect and the interior designer while at the same time realising that the resources a contemporary designer can draw upon are no longer closed bodies of knowledge.

The preliminary evaluation of the elective undertaken to date suggests that the elective was successful in engendering a transdisciplinary attitude characterised by a holistic appreciation of the world and associated design issues although improvements could be made to the unit and to design courses in general to further facilitate this. Understanding the commonality across the design disciplines also will, we believe, lead to a better appreciation of design in general and of its potential to contribute in transdisciplinary ways. Correspondingly, understanding the distinctive qualities of the design disciplines will provide opportunities for challenging discipline viewpoints in the process strengthening each discipline's contribution to a holistic appreciation of the world.

In conclusion, we see our role as professors in encouraging open communication between and beyond the different fields and facilitating such transdisciplinary design and research processes which can result in a more diverse student experience, increased student motivation, and new design awareness.

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Photography credit: Model photographs by Richard Stringer, Brisbane.

# Cooperative Learning in an Interior Architecture Studio

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**Abstract:** *Design studio in interior architecture education is rarely conducted as a group learning activity, despite the benefits of preparing students for team-based industry work environments. Students have learnt to be protective of their design ideas and are not always encouraged to share resources, although theories on social learning indicate a deeper learning experience is achieved through collaboration. The theoretical framework for cooperative learning, as a form of collaboration, is extensive and positively supports the virtues of group work as an effective learning activity. This paper describes an action research cycle of preparation, implementation and reflection of a cooperative learning project with third year interior architecture students. For the purposes of this research, cooperative learning is defined as a structured group work activity, with participants working together towards a series of common objectives. The main objectives were for students to experience a typical interior architecture work environment, to promote deeper learning and foster a culture of sharing ideas and resources.*

**Keywords:** *cooperative learning, design studio, interior architecture education, design pedagogy*

## Engaging in group work

Students have learnt to protect their work, particularly in secondary school where they are required to demonstrate their individual learning capacity. Collaborative learning blurs the ability to define each person's contribution, yet in many prevailing industries, teamwork is an everyday occurrence requiring considerable human resources and skills. Interior architecture is no different: teamwork pervades the culture of most mid to large sized design companies. Regardless of this, tertiary design students seldom learn how to work effectively in groups, or are encouraged to appreciate the benefits and relevance of collaborative activities.

As an initial experiment, I facilitated a group work activity for part of a third year interior architecture design project. Students were asked to collaborate throughout the design analysis, research and conceptual phases of a semester long project contemplating an eating experience of the future. Initially sceptical as to how the groups (comprising four students) would cope with the creative aspects of this assignment, I was able to observe each group effectively absorb abundant design research and enthusiastically embrace the conceptual phase. Through sharing their ideas, students were completely engaged in the design process; their conceptual presentations exceeded expectations in terms of research,



theoretical framework, innovation, visual and oral presentation. The structure of the project enabled students to divide tasks; their attentive diligence in completing designated tasks far outweighed any perceived disadvantage of not participating in every part of the process. The success of this experience led me to further research on group work pedagogy, in particular theories of cooperative learning, with the view of implementing a six week group project as an 'action research' activity.

This more recent project involved groups of four third year students conceptualising and developing a contemplation space, contextually set within a city laneway: grungy by day, although on the fringe of corporate activity, and the locale of numerous niche clubs by night. I devised this project to encourage students to step out of their comfort zone and consider design from an alternative perspective; working in groups would compel students to listen to each other and engage in critical analysis to justify their individual design ideas.

My broad objectives for implementing cooperative learning into an interior architecture design project were to:

- promote deeper learning for students;
- encourage students to take more responsibility for their own learning;
- simulate aspects of a typical interior architectural work environment;
- enable students to experience design from other perspectives, other than their own individual viewpoint;
- develop critical analysis skills;
- enable students to learn to study with each other, fostering a culture of sharing resources, helping and supporting each other.

### Literature

Extensive research has been published on the benefits of collaborative and cooperative learning. From late in the nineteenth century, John Dewey emerged as one of the pioneering philosophers to expound the value of social learning in children.

*I believe that the only true education comes through the stimulation of the child's powers by the demands of the social situations in which he [sic] finds himself [sic]. Through these demands he [sic] is stimulated to act as a member of a unity, to emerge from his [sic] original narrowness of action and feeling, and to conceive of himself [sic] from the*

*standpoint of the welfare of the group to which he [sic] belongs. Through the responses which others make to his own activities he [sic] comes to know what these mean in social terms. The value which they have is reflected back into them (Dewey, 1897, pp. 77–80).*

Similarly, Piaget illuminated social theories of learning throughout the early twentieth century. In Flavel (1963), Jean Piaget asserts ‘...without interchange or thought and co-operation with others the individual would never come to group his [sic] operations into a coherent whole: in this sense, therefore, operational grouping presupposes social life’ (p. 201).

More recently, Gergen (1999), Bruffee (1994), Biggs (1999) and Ramsden (1992), have prolifically published and shared their research on learning through collaboration, supporting the relevance and effectiveness of student-centred learning in higher education. For example, Bruffee (1994) examines research concerning collaborative learning in primary and secondary schools and supports the general trend of evidence confirming the positive effects of collaborative learning in higher education. He claims: ‘students learn better through non-competitive collaborative group work than in classrooms that are highly individualized and competitive’ (Bruffee 1994, p. 40).

There is significant debate regarding the distinction between the terms collaborative learning and cooperative learning as highlighted by Panitz (1996) and Cooper et al (2002). Despite the two words having similar meanings and both strategies acknowledging the influence of John Dewey, the theoretical base of the two terms comes from disparate sources. Where early theorists of cooperative learning were educationalists and sociologists targeting application at the K-12 level, collaborative learning theorists were more likely to have come from humanities and social sciences, exploring political and philosophical issues (Matthews et al., 2002). Various definitions have been attempted and contested over decades of research, but the fundamental difference appears to be in the level of structure applied to the learning experience. Matthews et al., (2002) defines the respective terms as follows:

*Cooperative learning tends to be more structured in its approach to small-group instruction, to be more detailed in advice to practitioners, and to advocate more direct training of students to function in groups than does collaborative learning (URL cover page).*

*Collaborative learning practitioners are inclined to assume students are responsible participants who already use social skills in undertaking and completing tasks. Therefore students receive less instruction in group skills and roles and perform less structured reflection on group interaction than in cooperative-learning classrooms (URL cover page).*

Some differences as described by Matthews et al., (2002) include:

- degree of involvement with and function of the teacher;
- resemblance of authority between student and teacher;
- the necessity for students to need to be trained to work in groups;
- the importance of students in groups being considered for their personal, social and/or cognitive growth;
- implementation concerns, such as group formation, task breakdown, and the degree of accountability within the group to ensure fair distribution of work and assessment.

Matthews et al., (2002) also articulate some similarities:

- recognition that active learning is more effective than passive forms of teaching and learning activities;
- the teacher is a facilitator or guide, rather than centre of attention;
- teaching and learning are shared experiences between teacher and students;
- higher order thinking skills are enhanced when participating in small-group activities;
- students take more responsibility for their learning.

While collaborative learning encourages higher cognitive learning through greater student autonomy and less teacher interaction, it was crucial to reinforce the importance of students firstly learning to work with each other. This led to the implementation of a cooperative learning structure rather than one of collaborative learning. The cooperative learning structure enabled students to set their own framework for progress, with monitoring and supervision by teaching staff as required.

### **Preparing for cooperative learning**

Planning the introduction of group work was a critical component of the teaching cycle, particularly recognising the importance of assisting students to learn to work in groups; assuming students do not have the necessary skills.

Introduction of the unit and design project was synonymous with standard design education practice, that is, students were issued with a unit guide outlining resources and conditions, as well as a design brief outlining the functional and conceptual requirements of the project. A site was identified, visited and analysed during the first week.

### **Cooperative learning kit**

I conducted an informal lecture on the objectives of cooperative learning; its relevance as an interior architecture learning activity and the research base of the methodology. A 'cooperative learning kit' (CL kit) was provided to all students outlining these issues giving useful information on 'good and bad group behaviour' (Race, 2000; Tiberius, 1999). Some excerpts of research material were included for further validity, with the intention that students would respond positively to a new type of learning activity if they understood the pedagogical framework.

### **Group selection**

While there are many alternative ways of forming a group (UTS, 2003; Gibbs, 1995); groups of three or four students were determined to be ideal. Torn between imposing group selection and allowing students to form their own groups, I adopted a combination by firstly allowing each person to nominate a 'study buddy', then grouping pairs together. This way each person had someone they were comfortable with and another two people with whom they would get to know better. Assembling groups involved selecting diverse pairs based on their previous performances in design (that is, mixing weaker and stronger students together), as well as on gender and cultural sensitivities (Tinzmann et al., 1990).

### **Team charter**

The first activity for each group was to develop a team charter (UTS, 2003). This was intended to clarify the ground rules for working together, that is, acceptable behaviour, unacceptable behaviour and the consequences of both. Talking about these issues brought them to the forefront and brought about clear communication between all participants. Issues such as attendance at group meetings, what happens if someone is running late, when is it acceptable to not attend a meeting, what happens if group deadlines are missed, were defined and tabled in the team charter.

### **Group process**

Each group was encouraged to establish a process of communication, division of tasks and record of meetings through completion of a team report (UTS, 2003). This was included in the CL kit for recording design decisions, actions and deadlines and was to be submitted to me on a weekly basis for monitoring. Each group member was directed to take turns in recording the meeting decisions and objectives.

As part of the group structure, students were recommended to adopt specific roles during their meetings (Gibbs, 1998): One person to chair the meeting, ensuring meeting objectives are set and

met (the 'leader'); another to generate innovative ideas (the 'innovator'); another to challenge the innovative ideas (the 'devil's advocate'); the fourth person to record the outcomes (the 'reporter'). Roles were rotated at each meeting. Rather than having four people simultaneously offering their design ideas, these roles encouraged critical analysis of each contribution, enabling worthwhile ideas to be explored and developed. Performance of individuals in their respective roles was open to scrutiny by group members in the peer review survey.

### **Monitoring progress**

Within the single four-hour studio session per week, monitoring of each group's progress was essential. Students were encouraged to contact staff directly with any significant problems. Weekly submission of team reports enabled me to check the degree of activity outside of contact hours, group progress from week to week, and monitor the general effectiveness of each group. Group presentations were scheduled for the third and fourth weeks of the semester, with the final presentation in the sixth week. Interim presentations were a useful gauge of how well groups were working together; slow progress was identified enabling appropriate staff intervention.

### **Assessment**

Assessment is typically the most contentious part of facilitating a group work project, evidenced in the amount of variation documented in research. Pros and cons of various types of assessment – from providing a standard group mark to individual assessment and variations thereof – are documented by Gibbs (1995), UTS (2003), and Jaques (2000), amongst others. A hybrid assessment method was adopted in this case to incorporate an assessment of each person's performance, enabling each student to be graded on their merits. The approach I employed here was to:

- (a) assess the project response as a group mark;
- (b) assess each student's log book for evidence of their design process and progress;
- (c) have students review each other's performance by completing a survey relating to their effort and effectiveness as a group participant (Gibbs, 1995). In their groups, students were asked to openly discuss and agree to a response to the specific criteria for each group member. This involved a tick in a box against a rating of 'excellent', 'more than acceptable', 'acceptable', 'less than acceptable' and 'unacceptable' requiring a high degree of maturity, honesty and diplomacy (see Table 1).

Criteria	Excellent	More than acceptable	Acceptable	Less than acceptable	Unacceptable
How well did the person contribute to research?					
How well did the person contribute to analysis?					
How would you rate the person's ability to generate a concept?					
How well did the person respond to criticism, advice and/or instructions?					

*Table 1: Extract of peer review survey*

Criteria for the peer review survey were selected based on the range of skills and activities that were required to be undertaken by each group member. Criteria were also constructed to investigate group and individual design process. Twenty two questions were framed to capture each person's effectiveness at specific tasks, enabling individuals to reflect on their group contribution, as well as recognise aspects of their design process that need to improve. A separate matrix was also completed by students to rank the degree of contribution each person made to each part of the design process, that is, research and analysis, concept development, design development, decision making, model making, visual presentation and oral presentation. This proved to be useful, as group members who shared the activities ranked themselves equal, whereas individuals who had not pulled their weight in certain areas were ranked low compared to their group members.

### Essay

Students were encouraged to reflect on cooperative learning as a design activity as well as investigate the relevance of team-based activities to the professional career they were studying for. Each student was required to interview or research two architectural companies that actively utilise team-based work, then relate those responses to their own experience of working in groups, and translate their analysis into an essay describing the variant professional and experiential models they observed.

## Reflections

There were many positive experiences to emulate from this studio experiment. Studio time was more enjoyable for staff as there was time to thoroughly engage in the discourse of each group's design. The studio environment was dynamic, noisy and vibrant with constant design dialogue taking place. Students immersed themselves in each other's design processes and were subject to rigorous scrutiny of their own design process. Conflict was expected and handled constructively; this was recognised in many essay responses as a crucial aspect of the overall learning experience. The essays presented an opportunity for students to comment on the positive and negative aspects of working in groups. While many students experienced some degree of frustration due to the group process, most students expressed a sense of fulfilment in being able to share design ideas, share research and discuss the implications of specific research to the project. A number of students conveyed satisfaction from the outcomes of debating design issues and having to justify their design decisions. The following anonymous excerpts from the reflective essays represent a typical range of responses, reinforcing the notion that group work and cooperative learning in particular is an appropriate and effective teaching and learning activity for interior architecture students.

*...we found ourselves striving to justify why the group should incorporate our own individual ideas. These discussions and justifications alone were the most time consuming and trying parts of our process. However, these conflicts and compromises became the most valuable learning experiences of our entire design project.*

*As we had never worked in a team situation before we found it difficult to define our objectives. Some obstacles were fulfilling the roles of leader, devil's advocate, scribe etc. Although these roles were allocated they were not fulfilled as the participants all wanted to contribute to the creative process.*

*If the team then works to resolve conflict there is the potential for the members to better understand one another and bring the group closer together....we became more aware of our breaking points, learnt the need to control our emotions and listen to opinions with an open mind.*

*What I observed...was that others were often able to see what I had missed or had failed to recognise because the problem had become too familiar. In this way, problems which I had harboured on for hours were quickly and effectively resolved.*

*Group work to me was (previously) presented as a challenge – an unnecessary challenge. I found that exploring ideas as a group became tedious due to the restrictions of politeness. Diplomacy always seems to conquer production. However, from my most recent experience, 'stepping on toes' did not seem to hurt but instead helped make decisions.*

The most difficult aspect of implementing the cooperative learning design project was assessment. As evidenced in the range and breadth of published research on group work assessment, there was no apparent formula for getting it right. By establishing a range of assessable criteria (that is, the group product, the individual's log book and the peer performance review) there was semblance of an equitable and transparent process. Students were unlikely to be rewarded either for slothful behaviour or resting on the laurels of stronger students.

Peer performance review is a valid form of group work assessment, but there were inherent difficulties in each group responding to the criteria consistently. Students were required to respond openly to each other on each person's performance, requiring a mature and honest approach; in many cases students erred on the side of conservatism and rated each other kindly to avoid conflict. As students will be continuing to study together in a competitive environment for at least a further eighteen months, this exercise may have been too confronting. Having to openly criticise a group member for their poor performance in a particular criteria has the potential to be interpreted by the recipient as destructive rather than constructive, unless handled diplomatically. Some students voiced their difficulty in allocating criticism to their peers, but recognised this as a skill to be developed as part of their industry experience. In the next cycle of cooperative learning implementation, students may benefit from receiving more guidance on how to openly dispense criticism for the peer performance review component of assessment. Development of a performance rubric will potentially relieve the issue of inconsistency of responses between groups.

I will continue to advocate the virtues of working collaboratively and cooperatively; the benefits to students are potentially extraordinary. Students who have previously received mediocre design results seem likely to improve their design process; group work gives them the confidence to better communicate their design ideas. Stronger design students appear to struggle with issues of having their ideas subjected to peer criticism, as well as having to conform to the group structure; but this too achieves important learning objectives, such as experiencing design from alternative perspectives and practicing critical analysis, rehearsing listening skills and performing compromise.



Students have developed greater insight into typical working practices of interior architecture. Through participation in this project they have benefited from stepping outside their comfort zones, viewing design from their group members' perspectives and forging relationships with their fellow students. I anticipate continuing encouragement of sharing ideas and resources, both formally through cooperative learning, and informally through fostering a culture of collaborative activities.

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# Architecture of Alienation: The Double Bind and Public Space

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*Between the idea*

*And the reality*

*Between the motion*

*And the act*

*Falls the Shadow*

T.S. Eliot: *The Hollow Men* (1925)

*Double Bind, it seems to me, restates the artist's enduring themes – of presence and memory – and his preoccupation with the place of the spectator, as both agent and witness to the enigmatic condition of the artwork. There are those who criticize him for his theatricality, for his sometimes baroque impurity and poeticism as a stylist. These, in my view, are among his strengths.*

Adrian Searle: Tuesday June 12, 2001: *The Manchester Guardian*

**Abstract:** *This paper approaches the emergence, over the 20th century, of a public architecture that occupies sights/sites once associated with industry and social alienation, in this case the conversion of London's Bankside Power Station into the Tate Modern Art Museum. Utilising Bertolt Brecht's revolutionary theories on performance, the celebrated architecture of Herzog and De Meuron is investigated alongside 'Double Bind', an installation by the late Spanish artist Juan Muñoz whose work highlights the quality of isolation in the contemporary metropolis. In investigating architecture and installation, a space is opened up between the art and architecture revealing a performativity that engages with 20th century trauma and the crisis of the modern. This spatial dynamic forms an architecture of alienation where the participants are estranged from the environment, rendering them strangers, even within familiar environments ... tourists in their own land.*

**Keywords:** *art museum, architecture and alienation, performance theory.*

## Specular provocation

*This time a lone figure, arms outstretched as if frozen in terror, confronted himself in a large round mirror. Transfixed by his self-image, this histrionic gesturer wore a sardonic disconcerted grin, as if to placate if not dissipate his welling fears (Cooke, 1999. p. 24).*

*Perhaps 'the tourist' was really an early postmodern figure, alienated but seeking fulfillment in his own alienation – nomadic, placeless, a kind of subjectivity without a spirit, a 'dead subject' (MacCannell, 1999. p. xvi).*

In Juan Muñoz's 1998 installation, *Streetwise* (Site Santa Fe: June 6 – August 2, 1998), we come across a room in which a plastery-grey statue faces its own reflection. Stuffed-glove hands fray out in a gesture of tension, whilst his enigmatic grimace and blank eyes are caught in both the mirror and the glaring light of the gallery. What we also realise is that we too, as observers of the observer, are implicated in the mirror's gaze. We are caught in the double bind of the viewer and the viewed, becoming complicit witness to an eternal moment. This moment of estrangement, where the individual is isolated and confronted could be considered a Brechtian moment, isolating and challenging the role of individuals in a collective audience. The space of alienation is a specular/spectral space, reflecting and haunting the spectator confronted with her own image. In this paper the work of theatrical revolutionary, Bertolt Brecht, and installation artist, Juan Muñoz, form book-ends to an inquiry into an 'architecture of alienation' and its relationship to cultural production. The trajectory is from the industrial to the post-industrial, from a discursive Theatre of Alienation to a proposed Architecture of Alienation, from the desire to find a suitable theatrical model to the formulation of a hybrid construction. Whilst industrial architecture takes centre-stage the paper begins by mining the texts of Brecht and ends with an analysis of Muñoz's final installation (2002) in London's Tate Modern art museum. Embedded within it is a question: why are contemporary audiences drawn to industrial sights/sites associated with alienation and cruelty, which are proving popular as public spaces and tourist attractions?

### **Epic moves (industrial sites)**

*Architecture and urbanism, those pre-eminent arts of spatial definition, offer a suggestive lexicon for evoking displacement, nomads, and estrangement as the foundation of the modern condition (Cooke, 1999. p. 25).*

At the heart of this paper is the 'Theatre of Alienation' of German Playwright Bertolt Brecht and its potential to inform art and interior practice. As a theatre revolutionary he sought to re-act to and act upon the preconceptions of the art form. His historicity allowed him to work through existing forms, disrupting them with what he called the *verfremdungseffekt* or *alienation technique*; a transformation of the familiar into the strange in order to create that dialectical moment for the audience.

Alienation, as a product of industrial society and the totalities of the modernisation process, tends to reduce the subject to a state of passivity inducing a soporific effect. This paper adopts a different strategy by engaging with alienation as a necessary and active agent in cultural productions, a production itself rather than a product. For Bertolt Brecht alienation was a creative act leading to a positive outcome... something that occurs in the irretrievable state of modernity's exile. His theatrical model was to arouse wakefulness in the spectator/participant... 'Let them dream in blazing clarity' (Brecht in Esslin, 1985, p. 125).

Whilst this paper constitutes the search for a theatrical model, it focuses on the role architecture plays in cultural production, especially at that membrane where the body and the building meet. A performance lens on architecture encourages the, all too often underestimated, inter-action between body and object in space. The sheer scale of buildings, such as public art museums, tends to overwhelm the attention to the detail of their inhabitation, so rarely discussed or represented in architectural discourse. Instead the building is reduced to an object through which the masses flow. This is due mainly to the 'epic' nature of the institution where the intimate and ordinary are dominated and alienated by the extra-ordinary. However an investigation of the 'epic theatre' of Bertolt Brecht revises the relationships between the body and the built. Although Brecht wrote very little on the role of architecture in his theatrical formulations, a close reading reveals ideas, which can be translated into spatial terms. Before attending to his writing it is necessary to establish a link between art, industry and the era out of which he emerged as a theatre revolutionary.

The recent transformation of London's redundant Bankside Power Station into the Tate Modern was initially accused of being a conservative act, smacking of Britain's obsession with heritage. However this converted behemoth of outmoded industry, which has become a major tourist site in London (contributing to the development of Southwark and the Thames Southbank as a lively cultural precinct), demonstrates a move throughout the latter half of the 20th century to occupy industrial sites for the exhibition of contemporary art. According to Tate Director, Nicholas Serota, the choice of that particular site was never an exercise in industrial archaeology, but rather 'driven by the view... that adapted industrial spaces made more sympathetic and inspiring spaces for exhibiting art than purpose-built new ones' (Moore & Ryan, 2000, p. 17). In fact a canvassing of artists and curators in the early stages revealed a fascination of industrial spaces as 'buildings with integrity' (Moore & Ryan, 2000, p. 55). This notion was over discussed a decade ago at the *New Museology* conference, held in London where Joseph Kosuth stated:

*...architecture in relation to art should be naturalised in a way that serves the art. The meaning of the architecture should be useable. That is why buildings that were originally intended for something else, that have been taken over by contemporary art, tend to work quite well* (Papadakis, 1991, p. 21).

However these buildings, which are invariably warehouses, power stations, disused army sheds and factories suggest more than simply an aesthetic fascination with industrial architecture as vessels for the exhibition of art. There are plenty of architectural typologies that could be said to embody integrity or usability. As technological icons of what Rayner Banham calls 'the first machine age', they are cruel sites of labour, transformed into cultural sights of art and tourism. Further I would contend that they are sites of alienation with an attendant sense of estrangement necessary to the experience of contemporary art.

The rise of the modern movement in architecture was inspired and motivated by the rise of industry. Such an alliance between creativity and technology exists in the concurrent rise of the historic avant-garde whose shock techniques stemmed from a celebration-of and reaction-to science and production. Industry became aligned with a new 'concrete' utopia (Banham, 1960, p. 7). During the first four decades of the 20th century architecture, industry and the avant-garde coalesced in the movements of Expressionism, Dadaism, Russian Constructivism, Futurism, the Russian post-revolutionary Proletcult and Surrealism. The machine became an aesthetic symbol for architects and artists and the massive concrete structures of industry represented a brave new world of science and technology. Industrial buildings were likened to ancient monuments and classical temples. They embodied 'some kind of technological utopia' (Banham, 1960). It was this rational and technological utopia that Bertolt Brecht took up in his project of epic theatre. Hoping that modern technologies would contribute to building a socialist mass culture, Brecht embraced the 'concrete utopian process' as a means of warding off antiquarianism in cultural production. Fredric Jameson (1998) refers to this as:

*...the task of Brecht's 'modernism' in the narrower, technological or industrial sense; the delight of aeroplanes and in the radio, the dimension of 'workers' to be added to that of peasants' in any Gramscian aesthetic alliance* (p. 3).

Brecht (1964) wished to change the machine rather than be changed by the machine (p. 40). Even though he was neither prolific nor explicit in the architectural definition of his new theatre he tended to appropriate the language and aesthetics of the industrial age. We must therefore operate upon his texts to reveal an implicit architecture. Therein lies the *gestus* of the built, the epic space of cultural production, an architecture of alienation.

## Revealing the apparatus

*In Brecht's theatre, the protagonists are placed in the full glare of the stage lights, but the very brilliance of the lights and the bareness of the dramatic space deliberately isolate and distance them (Lefebvre, 1991, p. 22).*

For Bertolt Brecht the theatre was an 'apparatus' with a social function that had been commandeered by society 'in order to reproduce itself'. He saw it as mode of production linked to capitalist consumption and therefore in need of revolutionising. This required a transformation of cultural institutions 'from places of entertainment into organs of mass communication' (Brecht, 1964, p.41). As Benjamin (1966) points out, the 'epic theatre' was a means of uncovering conditions rather than reproducing them (p. 4). Rather than creating illusion through concealment it was to illustrate reality through revelation. The audience was to be considered a gathering of technical experts to whom conditions were exposed through an interruptive process. This also derived from Brecht's interest in new technical forms of communication such as cinema and radio, which did not require sustained attention from an audience. The incorporation of these forms in performance allowed for the use of overlay and montage, seen in designer Casper Neher's application of text, projections and juxtapositions of real and simulacra. Rejecting a theatre that immersed the collective audience within an empathetic experience, the epic theatre was a device constituting a technology of estrangement whereby each individual spectator was confronted not only with the awareness of their participation within the performance, but their presence within the space of the auditorium. However this instrument they occupied was deliberately outmoded, incomplete and heir to failure.

The physical space became absorbed into the apparatus. It was utterly necessary that the environment be referenced as part of the production. Here the already existing architecture is co-opted within the apparatus as an already outmoded machine for production, bringing its own character and a sense of history to the performance. The atmosphere of the play works in tandem with what Neher (1986) calls 'the life of reality';

*In other words we ought to be studying the environment; and then if we are real, all too real, we get back to the atmosphere once more ... (p. 76).*

The atmosphere becomes a doubling of the existing and the produced. History is incorporated into the present moment. This is in keeping with Banham's suggestion that the historic avant-garde were interested in industry from the first machine age which was, already recent history. It constitutes a romanticisation and heroicisation of technology because it is always and already 'in the past'.



## Estranged in everyday architecture

*Brecht perceived the epic content of everyday life superbly; the hardness of actions and events, the necessity of judging. To this he added an astute awareness of the alienation to be found in everyday life. To see people properly we need to place them at a reasonable distance, like the objects we see before us. Then their many-sided strangeness becomes apparent: in relation to ourselves, but also within themselves and in relation to themselves. In this strangeness lies their truth, the truth of their alienation (Lefebvre, 1991, p. 20).*

Industrial buildings were more akin to the 'everyday', valorised by Brecht, than the established palaces of culture such as purpose-built theatres and museums. However, as palaces and temples of industry they were bestowed with their own epic qualities (that is, grand, monumental and heroic). In their current reuse as cultural institutions they have come to replace one 'epic' architecture for another. This highlights the gap which falls between the pre- and post- Brechtian definitions of the 'epic'; a gap which continues to open up as a paradox in the work of Brecht and the historic avant-garde's revolutionary embrace of industry's liberating force. This paradox also endures in refurbished industrial sites today.

Brecht's revolutionary epic theatre was set against the backdrop of melodramatic and naturalistic theatre; a theatre of immersion, where passive spectatorial involvement hindered audience's ability to act and alter situations. In opposition to this hypnotic and intoxicating model he created his own 'epic theatre', which required an audience to be critically detached and to reflect on the action self-consciously presented without illusory trappings. Whilst this drew on the old model, where the epic poet reported events from the past, it resisted the requirement for empathy or identification.

Brecht establishes 'epic theatre' through the archetypal *Street Scene*; where a traffic accident has occurred on a city corner and the witnesses are re-constructing the event in order to communicate the facts. Their re-enactment involves quotation, repetition, interruptions, montage and gestures, all creating a necessary critical distance. This choice of the everyday incident as an epic event illustrated the requirement for events to reflect a 'lived' rather than 'staged' reality. It was also a 'de-heroisation' of the old epic model; an anti-epic epic theatre. Brecht bemoaned the fact that the audience handed in their 'everyday life' in the theatre lobby along with their cloaks. It represented the missing ingredient within which the audience should be immersed rather than the intoxication of illusory magic. Henri Lefebvre (1991) sees the Brechtian Theatre as an apparatus of production, filtering the everyday and discarding the weakest part, associated with magic and illusion (p. 23).

The epic theatre does not represent a seamless whole but rather presents a montage effect. As in the retelling on a street corner, all the chaotic elements within the city continue to simultaneously exist, but they come in and out of view when required and each creative participant must work hard to focus on the task at hand. However the environment never disappears. This sets up an oscillation between staging and reality, between attraction and distraction, between epic and intimate, between experience and distance; 'The spectator wavers between an externalised judgement... and an immersion in the image proposed' (Lefebvre, 1991, p. 23). This wavering exists as a direct result of Brecht's resistance to the *Gesamtkunstwerk* (total work of art; a unity of theatrical elements) and is highlighted by his commitment to a separation of elements within the 'epic theatre'. The resulting action-in-flux also serves to destabilise the viewers, constantly reminding them that they are active participants in a production. A dialogue is established between the spectator and the spectacle, creating a growing tension; '...The spectator cannot relax. He is not allowed to' (Lefebvre, 1991, p. 22). This happens when the architecture refuses to recede into the background, giving precedence to performance, but instead becomes implicated in the performance. A collapse occurs between the place of the stage (scenography) and the space of the theatre (architecture). Architecture therefore becomes part of the fractured *mise en scene*.

Revealing the technology and revealing the architecture are deliberately alienating techniques which Brecht (1964) maintains surround us in everyday life... 'turning the object of which one is made aware, to which one's attention is to be drawn, from something ordinary, familiar, immediately accessible, into something peculiar, striking and unexpected' (p. 143). This deployment of the 'alienation effect' (*verfremdungseffekt*), like the mirror in Munoz's *Streetwise*, catches us unaware, shocking and shifting the audience from participant to stranger. The refusal to transport the spectator, heightens their awareness of contradictions, and inconsistencies, breaking through the hermetic membrane and unity of the *Gesamtkunstwerk*.

The alienation effect, as estrangement, also carries with it a sense of the uncanny. It is a by-product of that disturbing oscillation. In Brecht's constant challenging of the real and the simulacra, a doubling occurs through the paradox of his project. Moving between immersion and distantiation, a spatial estrangement takes place for the audience, caught between the fictive world of performance and the architectural reality of the everyday. Conflicting modalities of time and space are also distilled and contained within the experience of the production.

'Estrangement from the world', wrote Theodor Adorno in 1969, 'is a moment of art' (p. 262). However, over 30 years later, Andreas Huyssen (1986) suggests; 'In an age saturated with information, including critical information, the v-effekt has lost its demystifying power' (p. 15). No one can deny that Brecht's radicality is no longer as acute as it was half a century ago, nor dispute the way many of his ideas have been absorbed into the form of theatre he reviled and condemned. (This includes exposing lighting fixtures, the use of projections, quoted gesture and narration to name but a few incorporations into the mainstream.) Nevertheless traces are left by his theories, which can help make sense of contemporary cultural productions. As Barbara Kirshenblatt-Gimblett (1998) asks, in *Destination Culture*: '... how has the avant-garde prepared us for watching and valuing what we don't know how to react to?' (p. 203). There is value to their legacy supported by Huyssen's claim that the historic avant-garde and their shock techniques were progenitors of the post-modern condition. Like the refurbished industrial buildings their presence remains palpable and disturbing. What follows is an analysis of an industrial building transformed into a cultural institution, within which an installation throws into relief an *architecture of alienation*.

### **Anti-monumental monumentality**

When the Georges Pompidou Centre opened its doors in 1977 it was greeted with a mixture of agitation and excitement. The Beaubourg's factory image created a shock-effect in its historic Parisian neighborhood, referred to by an agitated Jean Baudrillard (1997, p. 210) in an article that began 'Beaubourg-Effect... Beaubourg-Machine...Beaubourg-Thing – how can we name it?' He then proceeded to name it 'incinerator', 'refinery', 'hypermarket' whilst also insinuating it resembled a slaughterhouse, within which the masses are treated like 'cultural livestock'. Quarter of a century later the industrial aesthetic, with exposed services and structures, has become commonplace in cultural buildings. Those offending escalators, previously associated with department stores and shopping malls, are now installed in countless arts institutions including Covent Garden Opera House and the Tate Modern in London, which is the site now under discussion.

The Centre Pompidou also established a precedent for art museums as architectural spectacles, referred to in France as *grands projets*. These are defined as epic, political and architectural gestures and most recently include Daniel Libeskind's Jewish Museum in Berlin and Frank Gehry's Guggenheim Museum in Bilbao (both completed for the new millennium). Such buildings have become associated, as much with the architects who created them as the cities they inhabit. Rowan Moore refers to them as 'visibly signed' objects... 'collectible as the works they contain' (Moore & Ryan, 2000, p. 7).

The Tate Modern represents a departure from this idea of a signature work. As a reused industrial building it is difficult to separate the mark of the original architect Giles Gilbert (see Scott, 1950) and the more recent Swiss architectural firm, Herzog and de Meuron. What dominates is the seemingly mundane architecture, unmistakably representing an industrial typology, more particularly that of a power station, signaled by the commanding central smokestack. Sited on axis with St Paul's Cathedral, its industrial chimney confronts the ecclesiastical dome across the Thames, forming a curious dialogue between monuments to industry and God... both now cathedrals to the cultural life of London. In *The Architectural Uncanny*, Anthony Vidler (1998) establishes the play of doubling as one 'where the other is, strangely enough, experienced as the replica of self, all the more fearsome because apparently the same' (p. 3). Such an uncanny mirroring creates a performative loosening in which the world is made strange. Transforming an inaccessible, dangerous and literally electric site into a permeable public building sets into motion the oscillating factor of Brecht's estrangement.

Prior to its refurbishment, as part of Britain's millenium projects, Bankside Power Station lay dormant for 20 years, adrift in the once industrial wasteland of Southwark; a redundant piece of history. Until revived for the purposes of the Tate Museum, it was a remnant in the act of disappearing; what Michel de Certeau refers to as; a 'legendary object'; a resistant fragment from a persistent past (de Certeau & Giad, 1998, p. 133). Refurbishing the building may have transformed it into a contemporary institution but its history and typology endure in the enormous bulk of its brickwork, the assertion of its smoke-stack and the hyperbolic space of its Turbine Hall. It is as much a temporal phenomenon as a spatial reality. This building as 'stranger' conjures up Michel de Certeau's notion of 'haunted narrativity' in everyday life. Focusing on the relationship between strangeness and familiarity, he sees the city as 'a fascinating theatre' transformed, by strange and fragmentary pasts, into 'an immense memory where many poetics proliferate' (de Certeau & Giad, 1998, p. 141). De Certeau encourages the awakening of stories that sleep in the streets, to reveal an uncanniness of the 'Already There' and create a city to be imagined, dreamed and lived in. This mythic element is present in previously overlooked areas such as London's Dockland's and the now revitalized Bankside area in Southwark.

The Tate Modern's publication on this building tends to a romantic and egalitarian language claiming it to be no glamorization of heritage and with an appeal 'not to the eternity of the Acropolis or the Pyramids but to the continually shifting present' (Moore & Ryan, 2000, p. 11). This latter statement refers almost directly to cultural institutions and architectural masterpieces such as the Getty Museum overlooking Los Angeles and the Louvre's Pyramid

extension in Paris, which like many monumental museums over the last 50 years are considered significant architectural masterpieces. However the brick monumentality of Giles Gilbert Scott's 1950 creation and its massive spaces are financially impossible to replicate in contemporary London where projects such as these are principally funded by public Lottery money. Therefore Herzog and de Meuron, the Switzerland-based design team, which won a limited architectural competition to transform the building, wisely did less rather than more, drawing upon the strange nature of the old power station. This was emphasized by the simple additive gesture of glowing containers both on the exterior and interior; a single elongated horizontal form crossing the dark vertical marker of Scott's campanile/chimney and a series of ghostly boxes from which viewers can regard the colossal public space of the Turbine Hall.

Clearly the pre-Brechtian 'epic' is inscribed into the historic building, with its exterior scale and allusion to cathedral and monument. This is trumped by the extraordinarily vertiginous effect elicited on entering the building via a ramp down and out into the spectacular central space, set aside as an internal public plaza for the exhibition of large works. The impact is visceral and powerful on the visitor, one of 10,000 moving through the building every day. However the epic quality doubles as a Brechtian phenomenon, destabilizing and unsettling through its overwhelming scale and lack of sensual ornamentation.

Architect Jacques Herzog (in Moore & Ryan, 2000) speaks of the influence of Hitchcock films on his practice of architecture, claiming the filmmaker 'describes normal people and shows that whatever is special or scary or beautiful comes out of these very normal situations' (p. 52). Here everyday life is deliberately made strange by the architectural gestures, which are both subtle and overt. It is difficult to see where the old architecture finishes and the new begins. Details and finishes are played with and played down, collapsing past and present within the building. The gallery boxes glow eerily within the well-lit interior of the turbine hall and the sheer scale creates a pervading and disturbing silence. Yet it has the scale of a micro-city, suggesting a world within a world through which thousands of people pass daily. Unlike the smaller, adjoining galleries, which are calm, well measured and articulated white cubes, the Turbine Hall is a disturbing alienating and compelling space. The carefully articulated rawness of this hall with its riveted steel columns and beams, march of overhead trusses, giant gantry cranes, glazed skylights, strip lighting, precipitous bridge and ramping floors come together in a way that creates a space simultaneously multiplicitous and totalizing. The montage of old and new, rudimentary materials, layered vertigo and sloping floors resist a grandiose monumentality. As Herzog claims;

*We are not longing for monumentalism. We hate monumentalism. Monumentalism doesn't mean something that is big but having a one and only goal, which is to impress and manipulate people* (Moore & Ryan, 2000, p. 53).

Like Brecht's un-epic epic space this is an attempt at non-monumental monumentality. Herzog refers to the building as a 'heterotopic place'. This indexes Foucault's idea of architectural heterotopias, described by Aaron Betsky (1990) as: '... 'other' fragments of a utopian world floating in the real world, distorted mirrors of reality whose floor plans are maps for possible other worlds' (p. 31). According to Foucault museums, theatres, cemeteries, libraries and fairs, set apart from everyday activity, production and consumption create illusory spaces staging and projecting an alternative world. They do so through the part they play in the real world, whilst operating as world's apart within that world. Herzog reinforces this idea with his phrase 'artificial normality' (Moore & Ryan, 2000, p. 53).

Herzog and de Meuron's architecture of alienation achieves a Brechtian strategy outlined by Susan Buck-Morse (1990) in *The Dialectics of Seeing*: 'mobilizing historical objects by connecting the shock of awakening with the discipline of remembering' (p. 272). It is the industrial building, as an outmoded machine that reawakens us to the dream of the apparatus, a lost time when artists and engineers sang the praises of an industrialized utopia, whilst in-the-moment we move through its spectacular brick, glass and steel remains. The outmoded machine has become an apparatus for viewing art. Yet we have to question how the visitors are compelled to participate in, rather than be processed by, this hybrid viewing machine. We cannot rely on the architecture alone to stage and interrupt the action. The architecture provides an epic environment within which artists can utilise gestures-in-flux to negotiate between the real and the illusory. Installation art has become a means of performative expression in the contemporary art museum and the Turbine Hall was designed for provoking and housing epic installations; augmenting and supplementing a montaged and alienating space.

Architecture therefore works in tandem with the artists, in the curious spectacle of the Tate Modern's Turbine Hall, in order to engage with, and interrupt, the collective parade of individuals moving through and around it. The montage effect, conjoining postwar power plant and post-industrial modern art museum, requires further alienation-effects to stage and project an-other world? It took the work of Juan Muñoz to seize hold of this epic space and render it a form of epic theatre, a work which sadly proved to be his final production, opening only two months before his untimely death at the age of forty-eight.

## Performance in exile

*The war separated*

*Me, the writer of plays, from my friend the stage designer.*

*The cities where we worked are no longer there.*

*When I walk through the cities that still are*

*At times I say: that blue piece of washing*

*My friend would have placed it better* (Brecht in Neher, 1986, p. 12).

Brecht's, post-exile drift through Germany's post-WWII cities, elicits a longing for the designed *gests* furnished by Caspar Neher in so many of their collaborative productions. The playwright/director relied on his friend, the designer, to visually orchestrate the environment, not only through sets, props, sounds, lighting and an incorporation of the existing architecture, but by envisioning the various groupings of performers, which he referred to as 'nodes of action'. This interruptible orchestration of the various autonomous elements contributed to the epic theatre's alienation effect. Half a century later another artist-in-exile brings together such elements in the Tate Modern's Turbine Hall.

It has been said to leave home is to impose exile, a condition which remains even after you return home. Juan Muñoz, who left Spain at 17 years old, to seek his schizophrenic brother in London, who was seeking a psychiatrist, who was an alcoholic seeking something at the bottom of a bottle (an event seen by Muñoz as a 'Double Bind' based on Gregory Bateson's theory of a paradoxical interpersonal relation where no matter what a person does, he can't 'win') remained in England to study art and sculpture. He considered himself to be in a permanent state of exile, even 'at home' in his Madrid studio. Exile is an inherent and repeated theme in his work; an estrangement that represents being nowhere and everywhere; a form of alienation. As Edward Said writes:

*Exiles cross borders, break barriers of thought and experience...*

*Exile is never the state of being satisfied, placid or secure...*

*It is nomadic, de-centered, contrapuntal* (in Muñoz, 1999).

Muñoz is fascinated with the contemporary condition of urban exile in modern cities, where people inhabit the cracks and crevices of vast structures. This alienation is captured in his earlier installations with titles such as *Wasteland* (1987), *A Place Called Abroad* (1996) and *Streetwise* (1998), in which he created disturbing urban landscapes with dead end streets, precarious balconies, blind windows, empty elevators and dangerous stairs. These sites are populated by the grey figures of fiberglass men, alone or in groups, engaged in enigmatic activities. These disturbing characters, with their tightly closed eyes, caught in corners, against

walls, gazing in mirrors and blinded by light; are referred to as *Conversation Pieces*. They form secret tableaux of the mundane. The preoccupations and aesthetic elements of these previous works are brought together into his final installation in the Tate Modern.

It is a sense of exile and isolation within the collective that Muñoz sought to achieve in the vast and alienating space of the Turbine Hall, where this elliptic journey comes to rest. Set aside for major installations (beginning with the invasion of Louise Bourgeois' giant spider for the millenium opening) the scale and interior-cityscape is a daunting site to respond to, but one that contained the inherent characteristics Muñoz has previously worked with. Rather than create an urban landscape within a white gallery, as he had done in previous installations, he had only to embrace the existing conditions (both psychic and physical) of the hall. The main challenge was how to interrupt the visitors' drift and isolate them within the greater context.

The visitor enters the vast space by moving down the ramping concrete floor and, looking up into the empty and vertiginous space of the Turbine Hall, sees little evidence of a major installation. What abides is an overwhelming sense of emptiness and silence, in spite of the numbers of other museum-goers moving through the building. The stillness and silence are broken by two elevator cages in the distance, suspended from the glazed roof's gantry cranes, grinding their way vertically up and down at varying speeds. These vacant machines are relentless in their redundant task, but they draw the visitor forward towards the bridge in the center of the hall. Although aware of others viewing from differing vantage points within the space, the visitor is still unclear as to the objects of their gaze.

Muñoz bifurcated the hall in its height and depth, with a large plane running between the bridge and the end wall. This can only be apprehended as you approach the stairs that take you up onto the deck, from which you gaze onto a vast, flat and inaccessible surface, punctuated by black squares that suggest a grid of black voids, through two of which the elevators continue their inexorable journeying. This passing through of the machines, draws attention to the fact that there is a subterranean space below which is accessed by returning down the stairs.

Entering a gloomy world of dark steel columns and industrial ceiling panels, punctured by pools of light from the voids above, we realize that not all the black squares above are light-wells into this lower realm. The artist has utilized *trompe l'oeil* to confound our experience. As we look up through the voids into the intense solar light, our eyes adjust between gloom and glare to find a further world exists, a horizontal slice of inhabitation. Here are the grey figures, populating an interior zone of shuttered windows, air-conditioning units and fluorescent strip



lighting. The inhabitants appear to stare down at you from the balcony edges of the light wells, or disappear into the labyrinthine world concealed between ceiling and the floor above. One is balanced on the back of a chair that tilts precariously over the protruding ledge, another moves into the maze as though repeating a familiar routine. An ensemble of men clutch each other in a conga line, whilst others move inward holding sheets (or shrouds). It is not clear what their tasks are or if they are merely playing. It also occurs that these men and their environment are only one third life-size and their eyes are shut tight, further unsettling phenomena within this installation that shuttles between reality and illusion.

In looking up we isolate ourselves from our fellow spectators and find ourselves the object of an-other's gaze, returned from the closed eyes of small gray men. Like Muñoz, seeking his brother in an alien environment, we are disoriented and unable to apprehend the mysteriously mundane environment sandwiched between floor and ceiling. We are ourselves caught in the double bind; between architecture and scenography, reality and illusion, the gaze and blindness, fun and fear, engagement and isolation. In looking for others we are seeking ourselves. And what we find is a series of images which the artist has forced into emptiness:

*The elevators carry nobody. The windows lead nowhere. They imply night, the closing down of the street, the moment of closure. Everything seems to be closed down. All the figures have very tightly closed eyes* (Munoz, 2001, p. 76).

Yet, as Muñoz (2001) insists, this emptiness is not complete closure; 'You don't show the emptiness. You show the wish for it to be full' (p. 77).

Muñoz's epic theatre, which completes an architecture of alienation in the Turbine Hall, was inspired by the existing space as well as to the visceral and psychological responses it elicited. His subtle spatial dislocations come from an already dislocated space. Unlike the white cube galleries in which he had previously constructed environments of estrangement, this place already contained raw material and, as the artist maintains (Cooke); 'You just have one material world to explain another material world and the gap in between is the territory of meaning.' He took the existing architecture (already a montage of old and new) and added further architectural devices; *trompe-l'oeils*, staircases, balconies, balconies and elevators. As with the work of Herzog and de Meuron, it is difficult to discern where the interventions begin and end. This is an extension of the building that is, in itself, an extension of history.

*Double Bind*, attempts to re-address museum-goers that 'just drift through without caring', by forcing them, as individuals, to 'pay attention' (cited by Campbell-Johnston, p. 5). This is achieved through a mixture of unnerving tricks and architectural realities. Like the epic

theatre of Brecht it wishes to engage directly with each spectator through the presentation of a sequence of isolated events within the whole, as well as setting up a distance that is both literal and psychological. It attempts to engage the viewer through strategies, which are 'more distanced, more dispassionate, less immersive.', rendering her/him both participant and stranger. This is done through interruptive strategies (in the architecture) and quotable gestures (in the sculptures). The repeatable figure of the man with closed eyes is like Brecht's 'untragic hero', narrating events and leaving the audience to come to its own conclusions. The theatrical devices of both Munoz and Brecht, which present us with these empty figures in their alien environments, are designed to confront our own contemporary existence. As Benjamin writes:

*[Brecht] goes back, in a new way, to the theatre's greatest opportunity: the opportunity to expose the present. In the center of his experiments is man. Man of today; a reduced man therefore, a man kept on ice in a cold world. But since he is the only one we have, it is in our interest to know him. To subject him to tests and observations...* (in Buck-Morse, 1990, p.149).

It seems that installation art has become a means for cultural production that bridges theatre and the art object within an immersive site-specific environment. Architecture, more about site-seeing than sight-seeing, is itself a means of cultural production that holds a historicity within its very fabric. As Benjamin (1966) claims the epic stage was no longer 'the planks which signify the world... but a convenient public exhibition area' (p. 2). The architecture of alienation, which draws upon a Brechtian model of theatre, is one where objects, the body and the built come together to be displayed in disruptive ways. This montage effect highlights the subject's awareness of her own exile. Recent trends in converting old buildings into art galleries and museums illustrate a search for something more than neutral white cubes and singular architectural gestures within which to exhibit art. These buildings, such as warehouses, factories, and the reused Bankside power station, connect to the collective awareness of a mechanized past and utopian dream. They also constitute a threat of estrangement that both haunts and delights the exiled postmodern subject, having the potential to halt their drift, to bring them home through the un-homely.

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# The SICO Color Naming Project: Forging Ties Between Educators and Industry

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**Abstract:** *How can interior design educators develop closer ties to industry? How do we develop mutually beneficial relationships, which respect the integrity of academic intellectual freedom and contribute to the development of disciplinary knowledge while providing useful services to industries competing in a market-driven economy?*

*The SICO Color Naming Project was a successful university-industry collaboration that used design knowledge and methods as the basis for an innovative, result-driven process. It explains how an industry need led to the development of a new way to name colours, and how colour affectivity played a key role in the project, providing a catalyst for the naming process. During this process, a multidisciplinary team worked together to develop a novel framework for designing coherent, structured, and emotionally resonant links between colours and names.*

*This paper describes the phenomenologically grounded strategy used to manage the design process and guide the team through the naming of 2400 colours in two languages.*

**Keywords:** *colour affectivity, phenomenological research, colour research.*

## Introduction

Interior design education often seems separate from industrial practice and its real-world cycles of research, development, and implementation. Here in Canada, a distinct line exists between industrial and educational institutions. This creates a gap between academic research initiatives and industry-led projects integrating innovative design thinking. However, given the status of design as a professional, practice-based discipline, it is important that educators ensure that this gap does not become too wide. Teachers need to stay abreast of trends and tendencies and students must acquire the skills and expertise that will allow them to succeed professionally, while industries would do well to recognise that design schools are hotbeds of creative, multidisciplinary thought. There is room to work together to the mutual benefit of education and industry alike.

This paper describes the design methods and strategies used in the SICO Color Naming Project, an academic-led design project carried out at the University of Montreal, which successfully created names for the 2400 colours comprising the new product line of SICO, a major Canadian paint manufacturing company.

## Practice-based research

The SICO Color Naming Project is an example of what Zmud (1998) calls ‘practice-based research.’ In such projects, the context of intervention drives the activity, while the methodology emerges during the course of the project. This is a common form of research in contexts of sponsored research: the goals are frequently diffuse at the beginning of the project, and several steps of negotiation are required to define aims and methods before entering into production.

<p><b>Practice-driven</b></p> <ul style="list-style-type: none"><li>• topic defined by sponsors</li><li>• end-point is a ‘moving target’</li><li>• framed by nature of phenomena</li><li>• designed jointly by researcher and sponsor</li></ul>
<p><b>Researcher-driven</b></p> <ul style="list-style-type: none"><li>• topic defined by researchers</li><li>• end-point is initially known</li><li>• framed by a research model</li><li>• designed by researcher</li></ul>

*Table 1: Practice-driven research vs. researcher-driven research  
(adapted from Zmud, 1998).*

Such projects are also exemplary of what Buchanan (1996) and Rittel & Webber (1973) refer to as ‘wicked problems’; complex problems that resist reductive approaches. Two relevant characteristics of such projects are that they are *unique* – which is to say that specific contexts must be addressed on their own terms – and that they have *no definite formation*, which is to say that the formulation of the problem makes up a significant part of the project (Kimbell & Perry, 2001).

Thus, in the SICO Color Naming Project, the results had to satisfy certain project constraints defined by the client in response to the specific corporate history, socio-cultural context, and business climate. These constraints were site-specific and not readily generalised. Likewise, neither the extent of the mandate nor the scope of the project were clearly defined or understood at the outset. However, the core issue itself – the relationship between colours and names – is of more universal interest, just as there are elements in the process and method used for this project which speak to more widespread design concerns.

## Colour theory and colour names

*No one has to tell you what you're seeing or how you're feeling as you sit in the glow of a late summer sunset. But how would you describe the pink of that sky? Dazzling? Fleshy? Glistening? Iridescent?* (Herman Miller, 2001, p. 1).

Colour theory and colour use have been extensively explored in interior design and other design disciplines (for example, Pile, 1997; Birren, 1978). Less understood is the relationship of colours to the names now commonly used to identify them. While designers and colour professionals tend to specify paints by manufacturer and product number, colour names are a well-accepted tool in the paint retail business, and are deeply enmeshed in the cycles determining national and international colour trends. In North America, the complex evolution of these trends involve many factors, including both deliberate top-down actions of industrially affiliated institutions like the influential Color Marketing Group and the organic bottom-up actions of individual purchases that represent consumer choices.

The exact role of colour names within this cycle is uncertain. There appear to be no publicly available systematic studies explaining the psychological impact of colour names on the consumer, and fewer studies explaining the influence of names on the experience of interior spaces. Colour choices are made daily by people, but not entirely rationally; colour is emotionally affective at a pre-conscious or unconscious level (Birren, 1978).

The SICO Color Naming Project took as a basic premise that an affective response is created through the linkage of colours and words. Naming colours creates curious, often poetic relationships between sensory experience and mental imagery. The relationship of colours and names can be seen as analogous to Barthes' (1977) description of the role that a caption plays in conjunction with a photograph. A photograph exists as a field of potential that the caption anchors, reducing it to a single state. Giving names to colours is thus a creative act that simultaneously reveals and creates a relationship that can be straightforward, surprising, playful, delightful or mysterious. As a tool in interior design, colour names can evoke a mood or feeling, a sense of space, or a time and place.

## The case study

SICO is one of Canada's largest paint manufacturers. Already established in Quebec and Eastern Canada, the company is currently enjoying a period of strong growth and expansion into new Canadian markets. A significant portion of current product sales are within French-speaking communities.

In 2002, interior design faculty member Dr. Tiiu Poldma, from the University of Montreal, contacted SICO for assistance with a scholarship program. This request had an unexpected result: in subsequent conversations with the company, it became clear that they were deciding how to best address a design concern. The 2400 colours of their new product line had to be named, and the launch date was rapidly approaching. This offered an intriguing opportunity for interior design educators to engage with a very familiar material – paint – in a most unfamiliar way.

### **Establishing the relationship: the initial meeting**

The client relationship was built in stages. The first step was to demonstrate that design knowledge and design methods (and more particularly those of interior design) would provide appropriate tools with which to address the design problem. Thus, in September of 2002, with initial financing from the company, Dr. Poldma, assisted by graduate student Hans Samuelson, assembled a multidisciplinary team consisting of professional interior and industrial designers, artists, colour specialists, and graduate design students. This team joined the client's marketing department for an intense one-day brainstorming session during which the participants familiarised themselves with the parameters of the design problem and with the company's vision and goals in order to establish the brief for the project.

The client's initial presentation of the project context provided the team with the broad outline of the project, the corporate context and history of the company, and details on the existing client base and plans for growth. The team then proceeded with the brainstorming session, first splitting into smaller groups to discuss the different aspects of the problem, then coming together to review the ideas, following the method detailed by Jones (1992). The multidisciplinary composition and diversity of viewpoints of the team proved invaluable in this process.

A number of possible strategies were spontaneously developed during this initial phase, and the group proceeded to analyse and evaluate the most valuable ideas. Potential concepts, strategies, and possible subjects for naming the categories emerged for future development. In particular, the conceptual idea of naming the colours for emotional affectivity was identified as the overarching principle which would guide the process as a whole, while the basic marketing tool, a 'paint chip' with eight gradations of a particular colour, emerged as the a primary physical constraint.

In the space of only a few hours, using only paper and markers, the team laid the groundwork for a project methodology that would soon guide a year of work. Furthermore,

trust and confidence in the academic-led design team was established through this first intensive work session, since the participation and presence of the marketing team and other company representatives validated the work of the designers. As a result, the marketing group agreed that the University design team should proceed with a second brainstorming session to further refine the concept and come up with a strategy for generating names.

### **The initial design phase**

A follow-up brainstorming session involving only the University of Montreal design team took place one month later, in November of 2003. This phase of the project focused on the development of a workable strategy for the project as a whole. The group was modified slightly to include:

- Dr. Poldma, an interior design professor-practitioner with expertise in the use of colour in interior design;
- Hans Samuelson, a masters student in the Design and Complexity program at the School of Industrial Design;
- Vincent Bédard and Lora Di Fabio, colour experts from the industrial design profession; and
- Denyse Roy, an industrial design professor specialising in textiles and colours.

Of this group, three were females aged 35–50 and two were males aged 25–45, from variously anglophone and francophone backgrounds, ensuring a balance of gender and linguistic sensibilities. Changing the composition of the team also ensured a fresh perspective on the project and provided a balance between objectivity and continuity.

The concept developed through an intensely focused reflection on the creation of affective linguistic meanings, how words should and could be grouped together, and what ‘glue’ could be used to create a coherent program that would work with the entire palette of 2400 colours. This discussion revealed the following key design parameters:

(a) Information design:

- the basic unit for presentation was a ‘paint chip’ containing eight gradations of one basic color with increasing density;
- this unit had to be respected and would remain the main marketing tool; it could not be revised or altered;



- names had to be short (for printing purposes) and could not repeat names from the past two series of client colours;
- the colours were already established and could not be altered;
- paint chips should be treated as units and given a thematic continuity.

(b) Affective design:

- emotional resonance was the main design objective, and would override purely logical considerations, though logic should also be respected;
- a range of rather contradictory themes were perceived as desirable: security and safety (in an unstable geopolitical climate); travel and adventure (especially in Italy and Mediterranean countries); domesticity (food, drink, home) ; exoticism and escape.

(c) Demographic:

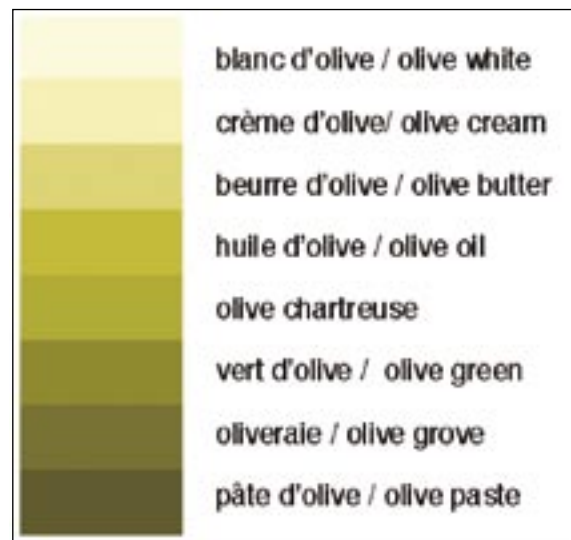
- the company's market data suggested that the main target was women aged between 35–55;
- the Ontario market was targeted for growth and the Quebec market for maintenance, while other anglophone markets were also seen as important;
- the names would be expected to serve for approximately five years, and should not be too closely tied to ephemeral cultural phenomena.

The final key issue was language itself. In Quebec, local design interventions must often take into consideration what information designers call 'localisation,' the 'adaptation of a product to a target language and culture' in response to the 'difficulty of translating text from one language to another and conveying the original sense and content so that it is acceptable across cultures' (Perrault & Gregory, 2000, p. 234). This proved to be a constantly recurring theme throughout the design process, as the poetics and pragmatics of French and English are not identical, and balancing these sensibilities proved to be a major challenge.

These parameters guided the development of a phenomenologically-based method. The 2400 colours were already subdivided into 300 paint chips of 8 colours each. Based on the results of the two brainstorming sessions, the group made two key decisions. The first of these was that each paint chip would be treated as a family, and that all eight shades of the colour would be thematically linked. This represented a break from past practice, since in all other cases, individual colours appeared to have been named in isolation, resulting in extremely heterogeneous paint chips containing eight unrelated names.

The second decision was inspired by the philosopher Edmund Husserl's famous phenomenological maxim 'To the things themselves,' which involves '[C]onfronting the essence and content of a being itself, that which truly constitutes a thing in its own identity' (Seifert 1987, p. 13). It was determined that each set of colours would be approached as innocently and clearly as possible, and that the most striking or powerful colour from each family be allowed to reveal itself. This colour would then serve as the lead colour for that family. The process thus involved a subjective, perceptually determined selection of the dominant colour from the family, a validation of the selection with other members of the group to ensure some degree of objectivity, and a process of reflection in which a space was opened for the colour to evoke a resonance among members of the research team.

The following example, generated during the brainstorming session, illustrates the concept. In this case, the 'olive oil' colour was the lead colour that determined the theme for the entire family. The colours are challenging to reproduce in a medium other than the original paint.



*Figure 1: Sample of initial naming card with proposed names.*

Once the concept had been put to the test, the team prepared to present the implementation strategies to the client. The initial brief called for the research team to name all 2400 colours. The second brainstorming session made it clear that for this to happen, many work sessions would be required. It was also evident that frequent reconfigurations of the team would be desirable, both to assure variety and to address an often difficult palette; shades of mauve, as it turns out, are particularly challenging to name, while multiple perspectives and changes in interpersonal dynamics would help to avoid creative blockages.

## Approval of concept

The compiled results of these meetings were presented to the client in December of 2002, and proved compelling enough that the team was engaged to take the project through to production. A budget was established based on an initial estimate of 12 work sessions, assuming that approximately 200 names would be named at each session. The project plan was then formed, as shown in the following chart.

	client role	phase	design team	
preliminary development	client presentation	brainstorming	multidisciplinary team	concept
		development	core team	
	client evaluation	presentation	project leaders	
production		planning	project leaders	plan
		initialization	reconfigured team	
	occasional client participation	naming sessions	reconfigured team	
completion		revision	core team	strategy
	client approval	delivery	project leaders	
				process
				product

Table 2: Project plan.

## Production

For the production phase, the University research team was reconfigured once again, and a specific strategy developed for the naming sessions. It was determined that the five original concept creators would be team leaders, and each work session would include at least two of these lead designers. Four other masters students and one translator-artist were added to the pool of participants from which teams were drawn.

Two work sessions were held each week, lasting three to four hours each time and composed of between four and seven team members including at least one female, one male, one native English speaker, and one native French speaker; the members representing a spectrum of ages. Individual styles and modes of working were accepted and woven into the design process. The mix of poetic, concrete, spontaneous and researched names was both accepted and encouraged. Individual team members would often arrive with possible themes, names and families of colours that they had come up with during the course of the week, as well as inspirational books and magazines.

Good food contributed to an amiable and supportive work environment. The lead in the setup of each work session was taken on by the authors. Initial sessions involved only members of the University team, but once the project was successfully underway and the session dynamics were well established, the client's marketing team was invited to participate in the naming sessions. This helped the client track the team's progress and created 'buy-in' with regard to both process and results.



*Figure 2: The project under way.*

It took 12 naming sessions to name the first 2100 colours; somewhat longer than originally estimated. This work was done from the beginning of March until the beginning of May, 2003. The client was kept informed of the process and approved the continuation of the work. Although the work seemed endless, in reality all 2400 names were named in 15 work sessions of 4–5 hours per session.

## **Validating the results**

During the naming process work sessions, each group of names was validated by all group members for content, suitability, and English and French coherence; when each family was complete, it was read aloud and critiqued by the group, and then modified as required. At the end of the naming, one of the project leaders verified the naming for both content and translatability, with help from the translator in the group. Another colleague was asked to verify the French accuracy, while still another researcher looked through the entire project as a final assurance of quality control.

The project was handed over to SICO as a completed document in late June of 2003. At that point the client proceeded to fine-tune and test the names within their marketing department, resulting in modifications to approximately ten percent of the names. The product line was released in early spring of 2004.

## **Discussion**

Design research and development at the academic level must seek to be rigorous and forward-looking, as well as sufficiently flexible and general that it can be adapted for use in a variety of contexts. But at the same time, sponsored projects tend to be highly contextually determined. The broader applicability and general lessons of such projects may well be the processes and methods employed, not the specific results.

The SICO Color Naming Project was a successful experimental project inspired and guided by phenomenological theory. Through a structured unveiling of the affective meanings connected to words, phrases, and colors, researchers were able to create a concept that remained spontaneous and productive throughout a long and challenging design process.

The client was directly engaged with the design process at all stages of the project, and developed a deeper understanding of the creativity and complexity of design thinking. When the project was handed over, the client tested the names and made modifications within the framework established by the process. This meant that the client appropriated both process and result, which will be valuable in the long-term viability of the approach.

## **Conclusion**

The success of the project and the client acceptance of both process and product demonstrate the real potential of forging academic design links with industrial partners. The project demonstrated the benefits of design processes in generating methods and methodologies, explored the process of creating emotionally resonant names, and serves as

an example where designers successfully engaged with researchers and experts from diverse fields to create a research project of benefit to the interior design profession.

The SICO Color Naming Project demonstrates ways in which industrial practice can be informed by design theory. Furthermore, projects of this type can be used in undergraduate programs as models of interdisciplinary teamwork that also clearly show the pertinence, value, and widespread applicability of design theory. And finally, the project helped contribute to the corporate perception of design as a comprehensible and transparent process that is at once complex, challenging, time-consuming and rigorous. It is hoped that this will contribute to the disciplinary evolution of interior design, encouraging research and project development that will in turn lead toward increased rigour and enhanced relevance.

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# Visual and Textual Interfaces in Design Research: Considering the Value of Concept Maps as an Interior Design Research Tool

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**Abstract:** *Art and design creative techniques are increasingly used in educational and social sciences research as means to complement narrative qualitative research methodologies. Less known is the means by which interior design and visual arts students may use collage, concept maps or other artful visual tools when analysing the narrative in research. This paper demonstrates how artful methods can be combined with more traditional qualitative methodologies to uncover meaning in research texts or during the data analysis process. The authors show how both the phenomenon used and the method applied to data analysis offers a creative way to allow for meaning to emerge, while situating the research firmly in a phenomenological perspective of lived experience of the researcher through a collaborative conversation. Two visual examples are presented to demonstrate the phenomenon, and the discussion situates the usefulness of this type of research inquiry method.*

**Keywords:** *concept maps; design research; interior design*

## Introduction

Writing and narrative as research in interior design is not a common activity in Canada. More often, research is grounded in development of products and processes, as opposed to developing knowledge situated in the processes of interior design. Conversely, drawings and design sketches are the major form of expression for creating design projects in the design studio or in practice (Arnheim in Margolin & Buchanan, 2000; Vaikla-Poldma, 2003), where writing often takes second place, being usually limited to specifications and contract documents (Vaikla-Poldma, 2003). However, in education and social sciences research, artful analytic methods are increasingly used as a means for the research ‘...(to) approach the data in more holistic ways to get at the core of meaning within a particular context’ (Butler-Kisber et al, 2003, p. 127). This type of qualitative inquiry allows for artful methods, such as design drawings and design concept sketches, to exist within research as a tool for data analysis. Methods such as concept map drawing and collage, when juxtaposed against more traditional narrative methods such as reflective conversations, analytic memos and poetic representation (Davis & Butler-Kisber, 1999; Ely et al., 1997), help researchers to get at the meanings in the qualitative analysis. In essence, the goal is to make the ‘...work



more accessible, empathetic, evocative, and ethical....' (Butler-Kisber et al., 2003, p. 160). Insights are gained through exploration using both visual and narrative mediums, and the juxtaposition of different forms of analysis assures that trustworthiness can be achieved (Butler-Kisber et al., 2003).

In this paper, we will show how artful methods such as visual concept maps or collage, when juxtaposed with narrative research methods, allow for a design researcher to step out of the research and uncover meanings in narrative. We will show how new meanings emerge through the example of our conversation and how we used a visual form of expression to understand the narrative analytic texts in the research that we were studying. We will also show how this interface between the visual and the verbal is a unique phenomenon that evolved through the research itself, and how this method of inquiry helps to uncover issues that perpetuate further inquiry. Finally, the discussion and conclusions focus on what this may mean for future interior design students wishing to use narrative and visual forms of expression as interfaces within their design research studies.

### **The context of the study and process of inquiry**

If we consider art and design as primarily visual curriculum choices, then the thought of producing a doctoral dissertation may be viewed as daunting. Certainly, in Canada, doctoral dissertations produced in interior design are rare, and writing generally is not a common occurrence in the interior design profession when considered to be an academic exercise. Advanced design research in general, and interior design research in particular, are usually located within the scientifically situated behavioural models, and many research studies in interior design that look at the design activities in the studio measure behaviour causally (Canestaro & Carter, 1992; Watson & Thompson, 2001). However, few actually consider the student narrative and the visual activities that they engage in terms of direct aesthetic experience in the phenomenological sense (White, 1998). Qualitative research methodologies offer an alternative means to broaden the research perspective for design, as they seek to uncover the subject voice in the research inquiry (Butler-Kisber et al., 2003; Charmaz, 1988; El et al., 1997). In interior design research, studies are increasingly done with this perspective in mind, where the subject is situated as an active participant in the research experience (Franz, 2000). This type of research requires both a contextual and contiguous approach rooted in the social and interpersonal experiences of subjects (Davis & Butler-Kisber, 1999). In such an approach, it is necessary to look at part of the events as they occur, while simultaneously investigating how this event may compare to similar situations, thus providing the context (Butler-Kisber et al., 2003). This context may be personally investigated, or examined using a collaborative approach with colleagues or fellow researchers (Heron &

Reason, 2001; Butler-Kisber et al., 2003). The goal is to uncover meanings as they emerge, and to uncover these meanings in ways that are considered transparent and trustworthy.

### **Artful methods considered as a research method for interior design: the choice of concept mapping and collage**

Artful methods such as concept mapping and collage are considered to be useful as a means to juxtapose narrative inquiry with a different type of analysis, in order to uncover the ways that the emerging analysis may be examined in detail and how a part of an event may be understood (Butler-Kisber et al., 2003). Two choices are examined in this paper: concept mapping and collage. The choice of concept mapping is particularly interesting choice for interior designers, as this method closely parallels the brainstorming methods that designers use to develop their initial ideas. Concept maps are also considered by qualitative researchers to be a legitimate means by which ideas, rough thoughts, and emerging conceptual ideas might be considered (Ely et al., 1997, Maxwell, 1996). Mapping the innermost thoughts of the designer is also an active means for the designer to sketch out initial thoughts and ideas, as a means to get at creative design ideas and map inner space ideas, as held in the mind (Arnheim, 2000; Margulies, 2002).

The second choice of collage is an artful analytic method favored by qualitative researchers as a means to interpret in depth emerging ideas about a phenomenon (Davis & Butler-Kisber, 1999; Butler-Kisber et al., 2003). In artful analysis, '...the researcher approaches the data in more holistic ways to get at the core of meaning within a particular context (Butler-Kisber et al., p. 127). Collage is one of these artful methods, and these form part of the interpretive inquiry methods such as narrative, poetic representation and visual methodologies such as ethnographic and phenomenological study (Ely et al., 1997; Rose, 2001; Butler et al., 2003).

### **Our role in the process**

We were two students studying and doing our own doctoral work in 2001 when we came together in a collaborative group of students exploring artful forms of analysis in qualitative research. We explored methods including cartoon analysis, poetic representation, concept maps and collage as potential artful visualisation tools that could help us to juxtapose insights emerging in our narrative data analysis. We explored what artful analysis is within a qualitative research framework (Butler-Kisber et al., 2003), defining it as follows:

*Artful analysis is a stance that a qualitative researcher appropriates in order to use alternative 'tools' such as found poetry, collage, dance, video, narrative, photography, and so on, to move beyond the more traditional, categorizing analytic approaches. It serves to open the 'reading' of the data to a peripheral vision, to a more embodied, intuitive and*

*vulnerable interpretation. These more porous readings can be used as either interim and/or final representational forms...* (Butler-Kisber et al, 2003, p. 133).

### **Tiiu's story**

As an interior designer and teacher who came to research through my own masters and doctoral work, I was intrigued by the use of artful methods in research as an analytic counterpart to the more traditional narrative methods commonly used (Ely et al, 1997; Clandinin & Connelly, 2000). I decided to try out some of these methods, including poetic representation, collage and visual concept mapping (Maxwell, source unknown). In particular, I was interested in the ways that narrative could be interfaced with visual as a means of articulating issues, using the visual methods as intuitive and creative catalysts for the narrative inquiry. For example, Ely et al., (1997) describe a process by which artists collaborate, and their conversation creates a creative tension, referring to Glenn Zorpette, who interviewed visual artists and their collaborative work: '...pairs of visual artists...our best ideas are born from talking...Then the creative spark comes' (p. 308). I thought about how students in design classes talk to one another, talk to the teacher, do research and then use concept maps such as bubble diagrams to express non-visual thoughts and ideas, as they move towards artful visual expression of their designs. I also considered how art allows for the expression of unspeakable things, whether through collage or dance. For example, collage can be used as a means to explore an emerging theme in research when juxtaposed with narrative tools such as reflective memorandums, journal entries written to the self during the data collection process (Davis & Butler-Kisber, 1999; Markus in Butler Kisber et al., 2003; Vaikla-Poldma, 2003).

I decided to see if this might work in data analysis as well. I had begun the study with narrative methods such as reflective journal writing, analysing the events unfolding reflectively (Clandinin & Connelly, 2000), as I was recording them and transcribing the data. I appreciated quickly that this alone did not get at heart of the issues. I was growing frustrated realising that I needed to delve deeper into the underlying issues somehow. I decided to sketch out the issues using design concept visual mapping techniques to tease out the narrative analysis that I was engaged in. Juxtaposing these visual maps against the written words was helpful, as they moved the narrative into more conceptual meanings when drawn in visual form.

### **The process from the point of view of Mary**

During the summer of 2002, while Tiiu was working on her study, she was losing the meaning of her analysis. She had been using concept maps as a means to juxtapose her reflective memos and poetic re-transcriptions (Ely et al., 1997; Butler-Kisber et al., 2003), and was having trouble seeing the emerging issues clearly. She decided to get an outside opinion, and met with Mary.

Mary and Tiiu looked at the data, sitting side by side, much like the teacher and design student as the design student sketches an idea. While Mary looked at the data, Tiiu explained the process and both began to sketch small concept maps. Through this immediate experience, an interface emerged between the narrative text of the analysis and the emergent visual concept map (see Figure 1). Insights emerged about what data were analysed, what was missing, and how Tiiu could go about completing her analysis by substantiating her claims, an essential ingredient of qualitative research (Anfara et al., 2002).

### **Mary's story**

Tiiu and I both feel the day she spent at my home in July was an 'eureka' experience on two levels. First, she came to a much deeper and clearer understanding of her own data by sharing her emerging ideas in the way she has already described. Although we were both doctoral students at the time, I was able to offer a number of concrete suggestions because, at that point, I was farther along in the process. In addition to this, however, the power of talking 'through' the generation of a concept map became evident to me for the first time. As a seasoned classroom and physical education teacher I was already cognisant of, and appreciated, the advantages of working and thinking through various genres to come to know things in different ways (Gardner, 1982). However, it was only as we tried to untangle and make sense of rather complicated bits of Tiiu's data that I first fully appreciated the powerful way one could use language and the visual experience concurrently to break through what we had been unable to do using either language or visuals alone. Without even being consciously aware of what we were doing until later when we reflected on the experience, Tiiu and I seemed to gravitate to this hybrid medium because it allowed us to share our thinking and move forward so effectively. In many ways we were like children who speak different languages but are so intent on playing together that they 'invent' ways to communicate almost effortlessly. The new space I occupied that morning helped me appreciate Tiiu's perspective as an artist and educator in a way I had not done so before, and powerfully convinced me of the need to remain open to using language and visual tools interchangeably and fluidly as particular challenges present themselves.

### **Discussion**

#### **How the insight emerges through the use of concept mapping and collage**

As demonstrated in Tiiu's doctoral study, this process became an immediate artistic means to engage in analysis, as she describes how both researchers:

*...simultaneously sketch some concept and relational diagrams. Not only...making meaning in the method ...(but) also seeing the data differently. ...Mary identifies how*

*we made sense of the data, shoulder to shoulder, both of us drawing and learning from our own sketches and from each other. We create meaning through conceptual conversational meaning-making, and this occurs while talk and draw (Vaikla-Poldma, 2003, pp. 177–178).*

If we consider that learning in part is constructed in the conversations that we have with fellow students and teachers, then the interface of conversations with written words or images is fundamental to help transform into expression actions and experiences. Visual forms of expression such as visual mapping and collage help move the emergent insights forward in both research and design thinking, by offering a new and different perspective from the written word.

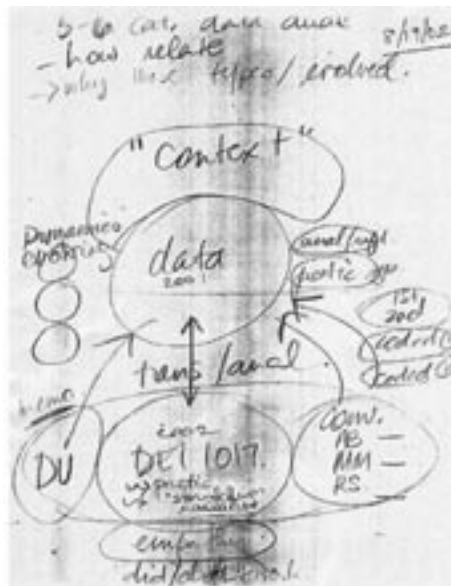


Figure 1: Concept map generated with Mary.

### Considering collage

We began by using concept mapping quite spontaneously to express the thoughts and discussions that we had together. We have since moved towards collage as an alternative means to explore thoughts held in narrative that might be difficult to express. For example, currently we are exploring our individual research journey with a collaborative group of researchers. We have explored concept mapping, and are currently exploring collage as an artful form of analysis, juxtaposed against our narrative accounts of our individual and collaborative research work. We

show an example of a collage that Tiiu created in Figure 2. As a group we discuss ideas about artful research collectively, and then we use our individual voices to situate our understanding of our current role in the research process in our collective research group, through the use of collage. This particular example of collage is an individual piece of work that forms part of a larger group of collages that the group has generated over a period of two years. We are in the process of examining the collages in order to understand our individual roles within our collective research group as we explore collage as an analytic method.



*Figure 2: Tiiu's idea about her individual research journey, as part of a collective group of researchers.*

These artful methods allow for the creative idea generation and for a placement of the visual within more formal forms of narrative analysis. For art and design research students, this phenomenon allows for the creation of new insights using art either as the starting point for creative thought generation or as the means by which new meanings in the research can be uncovered. Artful methods of analysis may also be used to substantiate emerging issues that when seen from a new perspective. This helps to contextualise those issues uncovered while adding rigour to the research process (Butler-Kisber et al., 2003; Vaikla-Poldma, 2003).

## **Conclusion**

Concept maps and collage are two artful analytic methods that can be used as a means to visualise the narrative conceptually. The visual and textual interface of these tools can both help students to generate visual images to express verbal concepts, and to formulate ways to write about the visual experiences that they may have in the classroom, or during the development of research ideas. It is the interface of the two that helps new insights to emerge, be it in the design studio or in design research, such as was done in the study explored herein.

Interior designers, who situate much of their professional lives using visual methodologies, can use these concepts as a means to engage in the development of design research questions. In the first stages of the design concept development, quite often bubble diagrams are used as visual exploratory methods for generating ideas prior to the developed design stage. In this sense concept maps are useful tools that help to situate narrative ideas in a visual format during the research process. Collage can be used as a method to express ideas about a concept, and give the designer who researches a visual outlet for expression of these ideas. In essence, both allow for an interface between the visual and the textual, thus enriching the design researcher's analytic process.

Design research is complex and demands both the visual as much as the narrative, and the subjective/intuitive as much as the quantitative. The techniques discussed herein offer a means for interior designers to engage in research in ways that use their skills and thinking. These methods also help the design researcher to triangulate the data and create a framework for emergent issues and ideas that is considered, transparent and trustworthy (Anfara et al., 2002; Butler et al., 2003). Insight and voice emerge through the phenomenon analysed both verbally and visually, and help design researchers to 'see' the data in a new way.

It is important for interior designers to document the activities of design research, design engagement and design thinking, as these occur in the design studio and in practice. By looking at possible tools that could be used to frame these types of research, this paper attempts to offer real and tangible techniques that are already known to the designer. These techniques require some knowledge of the visual arts, as is normally understood by the designer. Future explorations could include looking at the ways that students use the verbal and visual as complementary interfaces that lead to creative, well-formed design research solutions, and how artful forms of analysis in research become framed in the master thesis or the doctoral dissertation, as a means of providing validity to qualitative studies situated in design. This paper informs the process as an initial means to understand data in design research as a complex and layered exercise, and how visual methods such as collage and concept mapping are things that we as interior designers may find useful as research tools.

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# Re-discovering the Creative Collage in the Architectural Representation

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**Abstract:** *Collage has been termed the most important artistic device of the twentieth century in artistic representation. Collage proposed radically different ideas about the nature of order, and about the nature of artistic space. It is not limited to the visual arts, but also provides a means of contending with a diverse sense of order by association and dependence on the relationships of disparate elements, not necessarily the elements themselves. It is a unique means of presentation that has had a profound effect on art and architecture. This paper raises two critical questions: which new order does collage propose? How has the idea of collage affected the making of architecture? As a means of understanding the implications of collage as a method of representation, this study aims to describe how these principles – order, relationships, and communication – have been used in the contemporary architectural representation.*

**Keywords:** *collage; order; relationship; communication*

## Introduction

The idea of collage has affected many different arts in the twentieth century. The collagists proposed radically different ideas about the nature of order, and about the nature of artistic space. The collage substitutes an order that is constructed on relationships for the more rigid order of traditional art. The collage employs a figure-ground principle through which the background of a picture is an object, or consists of objects, much like any of the objects in front of it; and it is equally susceptible to any manipulations. In addition, the relationship between figure and ground is, on the whole, quite the same as the relationship between one object, or a group of figures and another – such as still-life objects and the table on which they are resting, or simply between one object and another. The background serves the special function of defining and confining the space depicted in the picture. As the statement of the limits of the depth of the picture and of the confining and supporting foundations as well, it provides the frame of reference by which, as it were, we get our bearings in experiencing the picture's spatial content.

Collage was first introduced to fine arts in 1911 when Pablo Picasso attached a piece of oilcloth patterned like chair caning to the surface of *Still Life With Chair Caning* (Butler, 1980), and Juan Gris gave his forms strong outlines in *Bottle of Wine* and *Water Jar* (Cooper, 2002). This is the first manifestation of one of the most significant artistic ideas of the

twentieth century – collage. Collage involves a fundamental change in the artist's view of the world. Collage is mainly dependent on the individual elements that comprise the work of art and the relationships between them, rather than an overriding order that is superimposed on the work of art. The relationships between the component parts of the collage create much of the significant content of the work and are also used as a device to involve viewers in the work of art by encouraging them to determine these relationships (Butler, 1980; Evans, 1983; Janson, 1986; Krauss, 1980; Libeskind, 1981; Wolfram, 1975). This is the essential idea of collage, of bringing into association unrelated images and objects to form a different expressive identity.

Collage has the potential to have profound effects on the architectural process, the modes of perception of architecture, and its physical form. Drawing analogy between other art forms that have come under the influence of the collage idea and architecture may serve as a valuable tool in understanding the changes which architecture is undergoing today. This paper raises two critical questions: which new order does collage propose? How has the idea of collage affected the making of architecture? As a means of understanding the implications of collage as a method of representation, the making of architecture in terms of its implications of order, of relationships and of communication with the viewer are discussed.

### **New order proposed by collage**

As collage developed, and became more sophisticated and diverse, its role expanded and the uses for its properties of association and reinterpretation grew. The Russian Revolution embraced many of the avant-garde notions of the day, and constructivist art had much to do with the ideas behind collage. In 1919, Yurii Annenkov had experimented with collage and showed how three-dimensional characteristics and the use of intruder elements change perceptions and add a sense of ambiguity and abstraction to the compositions of painting (Lodder, 1983). These principles have found themselves utilised within the field of architecture as well. When examining past works, such as Hadrian's Villa in Tivoli, significance can be explained through such notions as collage.

'In [Hadrian's Villa], apart from physical collisions, we are, above all else, in the presence of a highly impacted condition of symbolic reference; and which is further to introduce an argument,...., that, in [Hadrian's Villa], we are in the presence of something like what, today, it is customary to speak of as collage' (Rowe, 1975, p. 82). This physical representation of a pre-existing order, the order of the city of Rome, was used as a model for the order that finds itself recreated as an order of the Villa. The set-pieces are themselves representative of city fragments, and the structure that binds them is very similar to the methods found

in the art of collage. While Lawrence Vail produced a collage depicting the confusion and haphazard senses of order in a set of three panels created in 1941 (Wolfram, 1975), Leon Krier found the classic European city as a place of order embedded in its past that at the same monuments celebrated those classic values of historic order and represented a utopian vision of current harmony reflective of his views of what the city could be. This comparison shows the diversity possible within the medium of collage. These two extremes and opposites begin to set up the sense of orders that are constantly interacting; the notions of harmony and chaos, unity and fragmentation, reality and abstraction, truth and fantasy that begin to define the order, the meaning of the city and its architecture.

Order in architecture is not seen as a static, in which all tensions are resolved, but as a situation in which conflict plays a primary role. Many architects are using fragments of various sorts to recall particular ideas and to give their buildings greater depth of meaning. Charles Moore and Robert Venturi used architectural fragments for their associative value. 'Moore uses isolated and partial lexical figures such as roofs, windows, and colonnades and composes them in ways that are characteristically modern – that is to say, according to a syntax that is functional and picturesque and to a semantic which verges on the parodic. In both Moore and Venturi the figure tends to become isolated as a sign no longer restricted to the specific category of the architectural sign' (Colquhoun, 1978, p. 35). Moore and Venturi tend to use fragments that are literal copies or very slight deviations from their referents. The fragments remain legible in this way, and their associative value is relatively clear.

Aldo Rossi (1983) argues that architecture had to achieve formal autonomy, to gain identity, in order to communicate meaningfully. Rossi makes use of fragments that are related to memory. He draws on both his personal memories and on the collective memory as sources for fragments which will evoke the order of memory of his buildings. Rossi wanted to take in the whole of reality, object and subject, history and memory (Tafuri, 1987). This fragmented construction of forms left the observer to play out the game proposed by the architect, throwing oneself into the deciphering and recognition of the elements of his puzzle (Tafuri, 1987). This construction takes place in the memory of the viewer. In such readings, the meaning comes from motivations behind the architecture, individual and collective (Rossi, 1983).

The incomplete, clashing structures in the whole creates tension directed toward the realisation of potential order. Therefore, the order of collage leaves room for conflict and for tension, and defies any attempt at totalisation. This different view of order is significant for architecture as an art that has traditionally been associated with the creation of order. The order which collage proposes can be incorporated into the work of architecture to produce a work based on elements rather than an overriding concept or form.

## Representation

In collage, the deliberate discontinuity of the collaged work of art defies any simple reading of the whole. The work is understood on the basis of the numerous relationships that it establishes. The tension or harmony and the dialogue that is created between the components of the collage replace the overriding order. The message of the collage is contained in a web of relationships both within and outside of the collage. The construction of these relationships into a comprehensible whole or their acceptance as a random collection of elements is left to the viewer. The relationships within the collage; between the various elements, and those which relate to things which are outside of the collage; between the fragments and their referents, and between the artist and the viewer, are what ultimately creates the order of collage.



*Figure 1: Model, Jewish Museum, Daniel Libeskind, 1992.*



*Figure 2: Interior View, Jewish Museum, Daniel Libeskind, 1992.*

The work of Daniel Libeskind serves as an example of how collage has been introduced into an architectural context. His plans and three-dimensional representations of those plans are extraordinarily pure in their use of the medium. Libeskind carves existing plans into meaningless segments and then reassembles them with concern not for spatial implications of the diagram, but textual preferences of how light and dark interact. His assemblages are an attempt at re-definition of architectural values by allowing fragments to assume a renewed vitality through the seemingly arbitrary disposition of once united architectural elements (Figures 1 & 2).

Architecture capitalises on its relationships with things that are present within the building. Context, history and memory can all serve as referents for the work of architecture. In this sense, buildings are texts which are generated by assembling three-dimensional mosaics of fragments, excerpts, citations, passages and quotations; and every building is an absorption and transformation of other buildings (Frasconi, 1985). James Stirling showed the dichotomy in Staatsgalerie in Stuttgart between the formality of museums in the past and the informal approach: representational and abstract, monumental and informal, traditional and high tech. The new additions are treated externally with a grid of stone pilasters used to establish visual order on walls where the random positioning of windows relates to the varied size of rooms. In addition, the handrails of the outdoor ramps have swollen into colorful guides of bright blue and pink which house the lighting system. Like the glazed sweep of the entrance (Figure 3), they undermine the monumental posturing of the stone-clad, U-shaped building with its classicising overtones, and thematise access to the building. The climax of the highly allusive architectural collage is the sunken rotunda in the courtyard (Figure 4), where the U-shaped palazzo building is echoed and placed on a high plinth above the traffic.



*Figure 3: Entrance, Staatsgalerie, James Stirling, 1977.*



Figure 4: Courtyard, Staatsgalerie, James Stirling, 1977.

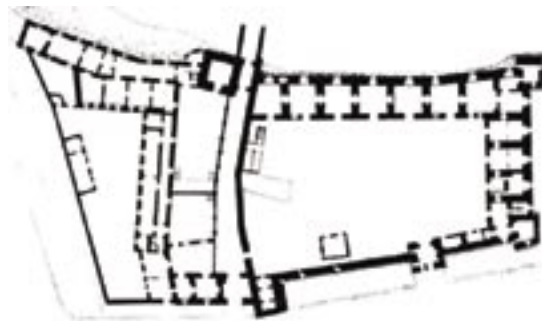
Arata Isozaki explored the principles of collage within the practice of architecture. Isozaki freely borrows previously used motifs and reinserts them into his own compositions. In a Surrealistic collage the elements of the Tsukuba Civic Center, some of which have been derived from Ledoux, are reconstituted to make a fragmented heterogeneous assemblage (Drew, 1982). This use of precedent endows his work with a specific cultural meaning, and imparts to that meaning an inertia that permits a universal and enduring perception. The Tsukuba Civic Center explored design as the provision of equipment in the environment for encounters, creating a theater of actions, a foundation upon which narratives may unfold. Isozaki supplied a narrative – a spatial core based on program requirements and the surrounding context. Thus special attention is given to the analysis of desired situations that give rise to encounters, and particular obligations of architectural elements that contribute to those situations, in particular program, boundary, surfaces, and circulation.

In terms of circulation, pedestrian movement was separated from the vehicular movement by positioning the highways and roads at ground level with elevated pedestrian walkways above. In addition, the variations in material such as concrete, tile, and aluminum, together with their reflectivity highlight the different volumes and forms in the figural space. The forum at the center is patterned after the mythic symbol of Rome's elevated center, *Campidoglio*. In the Tsukuba Civic Center, topographical position of the monument is reversed: while occupying the center it is at the lowest point of the complex providing a view of the collage of buildings from the bottom of the hole. Like the Tsukuba Civic Center, Scarpa used the notion of narrative in the restoration of Castelvecchio in Verona, Italy (Figures 5 & 6). His restoration has brought out tension between the different phases of construction over time of the castle and the transformation into an active narrative through time of museum art works. The ideas of purpose, memory, event and procession enhance the visitor's experience.

*Scarpa's plan is clearly visible to the visitor because it consists substantially of a circuit which starts from the entrance gate after the castle's drawbridge and develops in straightforward fashion, providing the visitor with opportunities to emerge into the open and then re-enter on the tour of inspection (Licisco, 1982, p. 79).*



*Figure 5: Entrance Courtyard, Castelvecchio, Carlo Scarpa, 1958.*



*Figure 6: Plan, Castelvecchio, Carlo Scarpa, 1958.*

Much of the significance of collage comes from the relationship that the artist establishes. This dependence on relationship gives the collage numerous levels on which it can be read and a complexity of intention that may be difficult to achieve with a more traditional media or method. The viewer has a larger burden of interpretation placed on him or her by such work, which requires their active participation in the interpretative process. Therefore, architects may use the formal and compositional principles of collage to increase a building's dependence on relationship, and thus encourage the viewer to be involved in the interpretation of the building.



## **Communication: sign and meaning**

The elements of the collage play a double role; they are manipulated, cut out, overlaid, drawn on or painted over to give them a representational role within the painting, but they retain their identity as scraps of material; fragments of the real world. Their function is both to represent and to present (Janson, 1986). In fact the collaged element is simultaneously a part of the work of art – something that is bound up with its physical context, and an autonomous fragment of the world outside of the work of art. The modern work of art no longer seeks to depict its subject matter, but attempts to recall it through the interplay of a system of signs. As a system of signs, the meaning of a work such as a collage depends of the relationship between a signifier (the collage element) and the signified (the meaning of the element) (Saussure, 1959).

A general application of the signified/signifier in architecture can be related to Vitruvius's comment about the arts that are composed of two things: the actual work and the theory of it (Granger, 1985). The theory is the signified and the work is the signifier. In Book I of *The Ten Books of Architecture* the section on 'Arrangement' describes the architecture signified: 'The modes of drawing arise from imagination and invention. Imagination rests upon the attention directed with minute and observant fervour to the charming effect proposed. Invention however is the solution of obscure problems; the treatment of a new undertaking disclosed by an active intelligence' (Granger, 1985, p. 25). It is through the signifier of drawing and signified of thought which Vitruvius makes reference to as imagination and invention that composes the architectural sign.

Edmund Husserl observed that the sign is indispensable for every representation that relates past or present to one another (Habermas, 1987). A phoneme or grapheme is presented in an operation or a perception, however, it can function as a sign, and in general as language, only if a formal identity enables it to be issued again and to be recognized (Habermas, 1987). The presentation, as form or image, of the sign, changes with each re-presentation. Any word, collage fragment, or architectural figure which acts as a sign first marks itself as a sign – as something which is different from that which it signifies. This marking necessitates both the self-conscious use of an element as a sign and the creation of a sign that is different in some way from its referent.

Charles Moore and Robert A.M. Stern attempted to reinforce the historical figure into their work to add a greater depth of meaning. When a person imagines the function of a column or roof, that person sees in their mind's eye a particular column or roof, and proceeds to make associations of meaning. In Frank Gehry's California Aerospace Museum

(Figure 7), the airplane is literally a sign for the building, but also a marker for the door and entrance. The disruption of the viewer's frame of reference which is brought about by using an airplane as an architectural element could lead the observer to reflect on the nature of architectural and aeronautical elements, the use of signs and symbols, the appropriateness of materials, architectural decorum; it confronts the viewer and asks him or her to think about the relationships between airplanes and architecture, more significantly, architecture and themselves.



*Figure 7: California Aerospace Museum, Frank Gehry, 1982.*

Like Gehry's work, what does the architectural figure mean? Colquhoun (1978) explains the architectural figure similar to the concept of collage's symbolic representation. 'By figure I mean a configuration whose meaning is given by culture, whether or nor it is assumed that this meaning ultimately has a basis in nature.... The figure gives an approximation, as faithfully as possible, of a content which remains ineffable. Thus when we look at figures we do not see truth itself, but its reflections, or its emblems' (Colquhoun, 1978, p. 28).

The figure is a relatively simple architectural form, such as the aedicule or the Vitruvian orders which can draw together and crystallize a series of complex experiences that are diffuse and imperceptible. The figure, hence, is a condensation, the immediate effect of which is to suggest the complexity of reality (Colquhoun, 1978). The figure's meaning, like that of the collaged fragment, is established through associations that it evokes in the viewer's mind and becomes conventionalised and refined through repeated use.

Isozaki and Gehry seem to have manipulated the sensuous qualities of matter (by means of reflections, colors, shadows, forms) until they begin to resonate with the memories in the mind of the viewer. After a building is built, these memories develop from the proximal effects of the experience of moving through a building, as well as from images of long

forgotten experiences of forms. In this way forms begin to come alive, as an aesthetic object, simultaneously imposing itself upon the viewer, but also opening up the possibility for multiple interpretations. In addition, a key to an architect's method of formal investigation in relation to collage is on the basis of vision and experience, through color, line, reflection, shadow, touch, smell. A method of architectural signification could be conceived based on the physical and psychic relationship with the forms with which the viewer comes into contact in terms of all the senses.

## **Conclusion**

One of the fundamental shifts made by collage is the change from viewing art as an artifact to conceptualising art as a process in which the object is only one part. Collage alters the nature of the artwork from a complete, finished work to one that is unfinished and open-ended. Architecture generates numerous physical points of view due to its nature as a three dimensional object which both occupies and defines space. Procession, movement, and relationships with various viewpoints have always been fundamental to architecture. Multiple messages and complex thought are all possible outcomes of the communication between the architecture and the public. Architecture is by nature a complex art form, having to combine pragmatic, artistic and intellectual concerns. A work of architecture is simultaneously a functional shelter and a cultural expression. It is a compendium of ideas, a palimpsest of concepts that must be judged from numerous points of view to be richly understood.

First, the architecture is, like collage, seen as a desire to divorce architecture from traditional cultural and programmatic concerns. Just as the collagist sought to abolish the single viewpoint of illusionistic painting, modern architecture sought to abolish the single, axial viewpoint for comprehending the work of architecture. The identification of the autonomous in architecture is more a matter of tendencies than one of accountable and specific items. Thus the concept of autonomous architecture allows for the possibility of a self-referential architecture. Eisenman's House X is a symbol of the loss of physical and conceptual unity that pervades contemporary society. Formal relationships may be fully explored since functionalism is rejected as the primary determinant of form. The autonomous architecture in Eisenman's work is discovered through the exploration of the relation between plane, line or column, and volume; a relation organised by a rule system borrowed from the linguistic system. Therefore, autonomy is artistic activity as play, conducted within conventions.

Second, the notion of discontinuity attempts to create through the use of collage and collision an architecture that controls movements and emphasises major architectural spaces. Design discontinuity embodies an approach contrary to the Modernist idea of spatial

continuity. Space is interrupted and broken into figures that create places. By producing places people know where they are and who they are. The space is designed for activity. Discontinuity is a device that enables the architect to create a rich and lively architectural promenade, a variety of spatial conditions. In the figure/ground composition, the inherent intrigue is in the solid/ void sustained debate. This joint existence creates illusions of perspective, movement and directional invitations that produce a satisfying setting for people.

Third, collage creates a figural space in architecture, which is memorable, and which creates a sense of place and a hierarchy in spatial sequence. The figure, like the collaged fragment, represents a certain set of ideas and associations but is also an abstract, yet a physical part of an overall composition. A figural space is the void within; a recognisable enclosed body of space. These defined spaces express the nature of the building and incorporate the rituals of society. Architecture has traditionally been concerned with monuments – to one God or to many, to the power of a ruler, to the glory of a republic, or the dynamism of a machine. The critical nature of collage is one of its most significant effects on the world of architecture, for, as Heidegger said, ‘building in the sense of preserving and nurturing is not making anything’ (Heidegger, 1971, p. 117).

Finally, architecture necessarily exists in the world of three-dimensional space and time, and must use various subterfuges to allow the viewer’s mental sense of space to supplant the actual space that is presented, or to suspend the viewer’s sense of time. The collagist can destroy visual space in order to create space within the mind of the viewer. For the architect, this means using actual space to redirect the viewer’s attention from the space that he or she creates to the space that the viewer creates in his or her mind.

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## inside-out: speculating on the interior

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**Abstract:** *In this paper, I have speculated on the interior as a site and an idea of betweenness. Feminist philosopher Luce Irigaray (Irigaray 1999) has associated the concept of interior with dualist and gendered philosophies. Nevertheless, the interior as a site has offered many opportunities for artists and occupants to challenge how we inhabit and change architecture. In this paper, I will focus on a design project that involves experimental making and living as part of a subversive approach to architecture: suggesting that we might re-conceptualise 'interior' as the space of betweenness rather than the space of the contained. This paper, part of my ongoing doctoral research, has extended ideas about the interior that I explored in the 2003 IDEA journal and has reflected my personal experience of collaborative, experimental design practices. The purpose of my research is to explore the betweenness of spatial practice.*

**Keywords:** *interior, architecture, betweenness*

### interior as a philosophical idea

Firstly, I will establish a conceptual framework for the idea of interior, which I will later use to critique my personal experience of design practice in interior sites. I have drawn from writings about space by two feminist philosophers, Luce Irigaray and Elizabeth Grosz. Both authors have associated interior space with being oppressed in dualist, gendered philosophy: both have sought alternative ways to think about space differently. For this reason, I believe their ideas are provocative for thinking about interior space and practice, focusing in particular on alternative approaches to the making of physical interior environments.

According to Irigaray's (1999) feminist critique of space, in the philosophical writings of Martin Heidegger (1975) the interior has been reduced to a space associated with containment. In Heidegger's writings, the concept of interior relies on a clear division between inside and outside, to the extent that the interior is a conceptual space that contains in an oppressive, negative way (Irigaray, 1999, pp. 95–96). Irigaray believes Heidegger reduced space to a singular construct by relating all of our interrelations with space and architecture to the overarching concept of *Being*. Heidegger has therefore constructed a 'world' that encloses and suppresses other kinds of thinking within his philosophy: 'by organizing the parts of space into a single totality...man obtains an 'interiority' (Irigaray, 1999, p. 95). Consequently, Heidegger's descriptions of architecture embody patriarchal and dualist thinking: the interior created by 'his' architectural envelope is an oppressive and exclusive space (Irigaray 1999, p. 95). In other words, the interior is inferior and limited by

the architectural form that contains it. The only way to overcome this conceptual interiority is, for Irigaray, to redefine space through its interrelationship with time, birth and movement (Grosz, 2001, p. 157). The space created by the womb is, for Irigaray, the original space of the 'maternal-feminine body' (Grosz 2000, p. 263 ): a space associated with the gift of life, the passage of birth and a sharing of life *between* male and female (Grosz, 2001, p. 159).

Grosz (2001) describes Irigaray's interest in the interval or between as a way of acknowledging the difference denied in patriarchal thinking: the between refers to '...the movement or passage from one existence to another' (Grosz, 2001, p. 157). The blurring of interior and exterior, for example, equally acknowledges both qualities while allowing for the sharing or merging reflected in the processes of birth. Grosz (2001) speculates on the implications of this thinking for architects and architecture, suggesting we might think beyond functional and fixed notions of space, to make:

*...architecture as envelope, which permits the passage from one space and position to another, rather than the containment of objects and functions in which each thing finds its rightful place. Building would not function as finished object but rather as spatial process, open to whatever use it may be put to in an indeterminate future, not as a container of solids but as a facilitator of flows: 'volume without contour', as Irigaray describes it in Speculum (Grosz, 2001, p. 165).*

### **interior as a physical site**

I believe Grosz's and Irigaray's thinking is provocative for the discipline of interior design, as it has highlighted how interior space is contained and constrained by the architectural envelope in philosophical writing. Grosz and Irigaray have also described how we can think of architecture as more than a space that contains – and, consequently, how interiors and interior objects can be more than that which is 'contained' by architecture. Grosz' has also speculated on how this shift in thinking might affect architectural practice, suggesting that buildings might be less restrictive in terms of how they can be occupied. I have explored how designing might be enmeshed with building and occupying space in my doctoral research, and have used Grosz's and Irigaray's thinking to critique and re-conceptualise practice as a blurring of these activities. In this paper, I have focused on the alteration of an existing residence, *Avebury St*, which I have worked on for many years. Using Grosz's and Irigaray's thinking about interior space and containment, I have been able to reconceptualise the manipulation of spaces and objects inside a building as *betweenness* and blurring. The *Avebury St* project has reflected a blurring of *both* interior and exterior physical space *and* the processes of designing, making and occupying space. As a consequence, the

architectural envelope has been physically and conceptually eroded through our experimental, collaborative designing of this project. Designing from the inside-out has provided my collaborators and I with an opportunity for practice denied in the restrictive, dualist practice of professional architecture. My family and I have extended the making of our personal home into a practice based in a broader social ritual and experimental construction, and as such, I believe the interior has become a space that interconnects rather than contains. Many artists have used the interior as a project site in which to question notions of containment and boundary: artists such as Gordon Matta-Clark (Diserens, 1993, p. 35; Ran-Moseley, 1995, p. 81), Andrea Zittel (Bartolucci, 2003, pp. 14–15) and Allan Wexler (Shulz, 1998, p. 46) have created experimental spaces and interior installations that reflect a questioning of how we inhabit space. Rather than being a site of containment, the interior has provided a site in which these artists might question the conceptual boundaries of building envelopes and spatial occupation. The *Avebury St* project has extended this approach into an everyday, family and collaborative, rather than artistic, context.

*Avebury St* has involved the alteration of an existing, termite-eaten, one-bedroom house at West End. Unlike conventional architectural projects, my partner and I have lived in the site as part of the design and building process. As we do not have the budget to extend the building shell, we have focused on the interior and the materials and surfaces of the architectural envelope. My partner and I have struggled to accommodate myself and my family within a dilapidated and inadequate building structure, re-working existing and salvaged materials. Aided by my partner's cabinetmaking and building skills, we have developed an approach to the building that resembles the experimental making of Do-It-Yourself projects and installation art rather than professional design practice. In conventional architectural and design practice, I developed a design concept for the client: I produced drawings of the proposal that represented the qualities of the design and which could be used for building approval and costing; I then arranged for a builder to construct the design on behalf of the client. In professional practice, each activity of designing, building and occupation is normally performed by separate entities and as distinct stages. The architect or interior designer is also regarded as the design 'author', such that the builder and building occupant become peripheral to the design process. This has resulted in Western architectural practice reflecting a segregated approach to society and building (Willis, 1999, pp. 206–209). At *Avebury St*, we have taken a more experimental approach, exploring space through simultaneous building and inhabitation, thus 'developing the concept from the making' (Guedes, 2004) rather than through drawing. We have valued the physical and conceptual contributions of friends, colleagues and visitors as an essential aspect of the experimental making and living,



and, most importantly, the design process. Projects such as *Avebury St* can help us 'rethink' the interior as a blurring of physical and conceptual boundaries of space: Irigaray's 'volume without contour' (Grosz, 2001, p. 165).



Figure 1: Before and after external images of *Avebury St*, 2001.  
(Photography: Matthew Dixon, project collaborator)

### **a provisional life: the ephemeral nature of interiors**

In the following sections, I have highlighted four important issues of making the *Avebury St* interior that contribute to its conceptual *betweenness*. The first issue relates to the provisional nature of designing. We have treated our alterations at *Avebury St* as built propositions about how we might live in space. These propositions in turn generate subsequent questions which we investigate through altering our environments. This reflects the idea that building is a process of becoming, rather than producing a finite, finished object: acknowledging that life is provisional and experimental to some degree (Brand, 1994, p. 23; Willis, 1999, p. 114). We have treated spaces, their uses and the objects in them as ephemeral installations: for example, a walk-in wardrobe has been transformed into several different uses including study, bedroom, dining room, play space, and a library / office. Termite-eaten walls were removed, and then replaced with walls made of shelves. We reinvent the space, and it reinvents how we live through simultaneous designing, making and occupation.



*Figure 2: Evolving space at Avebury St, 2000–2004. Wardrobe/bedroom, dining room, workshop, library/study, and beyond...  
(Photography: Matthew Dixon, project collaborator)*



*Figure 3: Maintenance or building work? 2002  
(Photography: Matthew Dixon)*



*Figure 4: Views inside-out, 2004.  
(Photography: Author)*



*Figure 5: Screen installation, 2004.  
(Photography: Matthew Dixon)*



*Figure 6: Edge space, 2003.  
(Photography: Matthew Dixon)*

### **architectural envelope as interior objects**

Interior objects and decorations are often seen as unnecessary and inferior to the quality of space and function defined by architecture (Miles, 2000, p. 80). Objects exist in space: architecture makes space. By re-appropriating standard interior objects and materials as architectural elements, we have challenged the boundaries of what constitutes the architectural envelope and its internal and external limits. For example, objects that once sat inside space (IKEA bookshelves, timber bath mats) have become interior walls and external security screens. By using objects in different ways, Rendell (1998) believes that we can re-imagine how the world defines us, and therefore the construct of what is outside (world) and what is inside (us) (p. 245). Objects and spaces are no longer associated with the singular functions they were originally allocated – cupboards might be for storage, define rooms inside the building, and frame views of the landscape outside the building. I believe when interior objects can become and define the quality of spatial enclosure, the interior is no longer bounded by the structure of architecture.

### **material re-invention**

Similarly, working with found and recycled materials on site helps architects and designers to be connected with the social and material conditions of architecture (Willis, 1999, p. 115): materials become part of the 'story' and the continuity of a place. In professional practice in Western societies, architects and designers develop concepts away from the site and construction using drawings and abstract ideas about materials (Robbins, 1994; Willis, 1999). At *Avebury St*, designing and materials were blurred, because designs were tested at full-scale on site using the materials salvaged from local construction site bins and demolition shops. We used drawing as an active part of our making on site, rather than the abstract representation of ideas. Materials were also salvaged from the existing building. We demolished non-structural timber walls and lining to open up interior spaces: later transforming the material into timber battens forming internal and external screen walls.

### **undoing edges: surface as a blurring between interior and exterior**

Recognising that 'a border has thickness and edges' (Hill, 1998, p. 150), we have treated the architectural envelope as a space that contributes to both the internal and external building quality. We replaced solid external wall cladding with layers of translucent, transparent and 'broken' materials like polycarbonate sheeting and recycled timber boards. We also re-made existing window and door openings with new joinery, awnings and vertical screens. Both strategies have created new transitional zones that physically and visually blur interior and exterior space while working with the existing architectural volume. By removing existing, non-structural walls, we have also enabled all internal rooms and spaces to have views through each other, and through the new thresholds, to soft or green landscapes. The existing house was once defined by solid materials and small internal spaces, so that we were contained by the building fabric. By re-constructing the interior and its edge materials, the interior has become a space of conceptual and physical blurring with the external landscape.

### **redefining making as *betweenness***

For social theorist Tanya Titchkosky (1996), *betweenness* refers to a state of blurring, a transitional condition involving people coming to terms with their place in the world. We could also describe the process of designing at *Avebury St* as *betweenness*. In professional practice, professionals 'design' and builders 'make'. At *Avebury St*, we have extended the concept of making to embrace everyday social activities inside the house as well as conventional construction work. Making has therefore included: conceptual and physical contributions by friends, neighbours and visitors; repairing termite-eaten structure; building

of furniture installations, screens and stairs; and painting and decorating. According to local building regulations, this work may be interpreted as building maintenance rather than new building work. We may not often consider maintaining building materials, furniture and interiors as design or art practice (Morgan, 1998, p. 114), yet I believe this collaborative design-and-making reflects the potential for practice to be simultaneously driven by the social, ethical and experimental aspects of architecture. Our friends and colleagues have valued the opportunity to participate in the project (Brisbin & Tocker, 2003; McMahon, 2003): revealing the potential of an 'above-subsistence sociality' (Grosz 2001, p. 165) beyond the functional mandates of commercial architectural practice. *Avebury St* has recently become a more 'public' space through two changes in circumstances: the expansion of the household to accommodate our child, and mother/mother-in-law: and the participation in the *Not for Sale* public art project, selected to be part of the *Art and Arch Infinite* exhibition in September – October 2004. This art project involved other artists and extended from our negative experiences of real estate in West End: our proposal involved the installation of re-coded real estate signs in front of the properties of project participants around the suburb. Our group did not proceed with the installation due to the onerous public liability placed on the participants. Nevertheless, the proposal has helped our project become part of a broader social practice of people, materials, places and place-making politics.

### **summary: interior as *betweenness***

What are the implications of experimental projects like *Avebury St* for architecture and design? These projects demonstrate that by challenging the conceptual, qualitative and physical boundaries associated with architectural envelopes, we can redefine the concept of interior from *being contained* to *betweenness*. This redefinition highlights a number of issues for design practice. Firstly, our approach shows how space can be made to reflect the provisional, ephemeral and experimental nature of life. The participants and I have been able to design in collaborative, experimental ways denied in commercially-orientated professional practice, segregated from the processes of making and building occupation. Small, interior-scaled objects and cladding materials have provided opportunities for experimental building without the safety issues associated with alterations to building structure. Furthermore, interior elements, cladding materials and non-structural installations have enabled us to reconnect the interior to external landscape, such that interior is neither secondary to nor limited by the existing architectural form. We should think of the interior as more than an empty fitout space, a container to be filled by our 'interior design', as this implies that the interior is defined by and secondary to architecture. Instead, we might think of interior as a site of possibilities for making, occupying and most importantly, generating architecture from the inside-out.

In my professional practice experience, interior designing was seen as an activity that either happened within, or in opposition to, the framework established by architectural structure and master planning. However, this study has shown that interior space can be re-made and re-imagined beyond the conceptual categories of interior / exterior space, structure, decoration and fitout. Daniel Willis (1999) has stated that activities that are different to professional practice, such as experimental building, help to rekindle the imaginative, material and social dimensions of architecture so easily lost within the complexities of the commercial world (p. 203). *Avebury St* is an example of one such practice. As an educator, I believe design students need opportunities for designing through experimental making, to show how architecture can be made as more than a discrete form or container, and how the interconnections of people, materials and sites can generate space. These approaches require a significant investment of time and resources. An excessive degree of change in both life and space can be emotionally and physically demanding on the physical occupants, as highlighted by the project participants: at *Avebury St*, my family and I have struggled with limited finances, internal space, materials, time and labour. Nevertheless, if we had approached the project in a conventional architectural manner by extending and altering the existing building volume according to a preconceived plan, we would have limited our people-space interactions to the dictates of the architectural form - thus becoming 'contained' by the architecture. Projects like *Avebury St* provide opportunities for designers and architects that are unlike conventional practice, and thus *disclose* the social and conceptual *betweenness* of architecture: in these projects, the interior provides the medium through which we reveal the social, collaborative and ephemeral aspects of space that are repressed in conventional design practice.

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Figure 7: *Edges, materials, protrusions, 2004.*  
(Photography: Matthew Dixon)

# COLOUR and SPACE: An Investigation of Three-Dimensionality

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**Abstract:** *Monica Billger, in her doctoral dissertation, states 'The feasibility of working consciously with colours is limited by our knowledge about how the appearance of coloured materials varies with context, that is, how a coloured surface is affected by its spatial situation' (Billger, 1999, p. 5). In association, however, we can also seek to understand how the application of colour provides the spatial context and/or potentiates our experience of spatiality.*

*Within this paper, I will discuss some of the issues involved in our understanding and interpretation of spatiality. These include firstly, space and its relationship to colour; secondly, colour education in relation to colour and space, and thirdly, the potential of paintings or photographs of artists' work in understanding colour and space. The two dimensional work of artists (such as Mark Rothko, Bridget Riley, Claude Monet, and Wassily Kandinsky) is a valuable source of information for emerging designers in the field of colour as a consequent of investigating and/or observing the work. Key relationships may be understood and applied to three dimensional spaces abstractly, and in practice, to environmental projects that are relevant to Interior Design and Architecture. Finally, I will explore the way I, in association with the tutors, have raised the students' awareness of colour as a tool to assist in the moulding of three dimensions or space. This will include the discussion of one student's work as an example of the process undertaken before summarising the link between three dimensional investigations and two dimensional observations and/or practices.*

**Keywords:** *colour, space, design, three-dimensionality*

## Introduction

Students of design often have difficulty in extrapolating theoretical or studio exercises in colour to the design of three dimensional space. This occurs because 'real' spaces are not able to be readily tested. Generally the principles can only be applied to representations of spaces. Although analyses of existing environments, drawing the designs for new environments or interiors, making working models, or developing presentation models can be incorporated into the coursework, the level of engagement with appropriately scaled or life size spaces is very limited for a student. Monica Billger, in her doctoral dissertation, stated that the 'feasibility of working consciously with colours is limited by our knowledge about how the appearance of coloured materials varies with context, that is, how a coloured surface is affected by its spatial situation' (Billger, 1999, p. 5). However, we can also seek to understand



how the application of colour contributes to the spatial context and/or potentiates our experience of spatiality. A number of differing procedures have been integrated into design programs by me (Smith, 1993; Smith, 1995) and by other educators to develop relevant skills and knowledge.

The work of the artist and academic Lois Swirnoff as reported in *Dimensional Color* (1992) acted as a source of inspiration for the studio work described in this paper. Swirnoff's investigations involved the construction of 'a unit' or installation consisting of several clear sheets to which colour patches were adhered. 'Students were challenged to think of the unit as a total field....Some students regarded each plane as an entity, making separate two-dimensional patterns against which each, when combined, formed a larger, complex unit' (pp.115–116). The purpose was to explore if 'the constellating effects of color, by their localizing, spacing, and dispersion can be visualised as surface patterns.'(p.114). Her concept of applying the two dimensional principles conceptually and pragmatically to a three dimensional setting was appealing. I posited that this would directly assist in the development of skills and knowledge applicable to students of the built environment.

Within this paper, I will discuss some of the issues involved in our understanding and interpretation of spatiality. These include firstly, space and its relationship to colour; secondly, colour education in relation to colour and space; and thirdly, the potential of paintings or photographs of artists' work in understanding colour and space. As a consequence of investigating and/or observing the work, the two dimensional work of artists (such as Mark Rothko, Bridget Riley, Claude Monet, and Wassily Kandinsky) is a valuable source of information for emerging designers in the field of colour. Key relationships may be understood and applied to three dimensional spaces abstractly, and in practice, to environmental projects that are relevant to Interior Design and Architecture. Finally, I will explore the way I, in association with the tutors, have raised the students' awareness of colour as a tool to assist in the moulding of three dimensions or space. This will include the discussion of one student's work as an example of the process undertaken before summarising the link between three dimensional investigations and two dimensional observations and/or practices.

### **Phenomena – perception of space**

Space was traditionally understood as something that could be defined and measured. However, although space can be described mathematically, alternative understandings are evident. Space, as discussed by Arnheim (1975), is that which is not solid in an everyday

sense but is created due to the placement of objects – it has potency and is flexible as the defining elements move. Subsequently, interpretive definitions of space have arisen and with the notion of space as a temporarily bounded entity arises issues of permeability and fluidity.

With the advent of Gestalt psychology, our understanding of the role of the viewer in deciphering the world around him or her within the visual field as an objective reality removed from the interpreter was challenged. The figure ground puzzles, which most of us are familiar with, exemplify how a dominant element can define the spatial characteristics of a situation at a particular point of time. As part of the visual encounter some aspects are the background while others become the foreground. The latter are therefore seen to be 'in front', more active, and/or instrumental in how a situation is understood spatially.

The experience of space as described by Berleant in his book *Art and Engagement*, gives reference to space in relation to paintings. He states that the usual treatment of space in painting is based on Newton's physics – that is, 'both space and time are objective and absolute. Space is a medium that is abstract, universal, and impersonal, a medium in which discrete objects are placed and in which they can be located clearly and irrefragably... We continue unwittingly to apply this repudiated spatial orientation to pictorial, as well as to ordinary, experience' (Berleant, 1991, p. 55).

With the development of relativity as a concept, alternative understandings of space have arisen. These are also captured within Berleant's discussion. A viewer's position is a locality from which other relationships arise resulting in the generation of the spatial relations of the situation (Berleant, 1991). As I have discussed elsewhere in regard to the person-environment relationships, people interact and experience the world – and in particular, the built environment – through a series of person-states. The viewer (the person looking at an environment) and the participant (the person entering the environment) are two of these states (Smith, 2000). Therefore, we can understand the environment is at times objectified and removed, while at other times the environment comes 'to meet you' or you are interdependent with it.

If we return to an analysis of paintings what can we observe? In regard to the portrayal of the landscape, Berleant (1991) defines panoramic and participatory relationships. The first focussed on distance and separation; the second requires that we look into the space, that we enter it, and that we become part of it. This he states is similar to our perception of our everyday surroundings. Therefore, I will now consider how colour is part of our spatial and worldly experience of our environments.

## Colour and space

Our built environment is not experienced as a lifeless achromatic environment. Instead, it is moulded by shadows and light, brushed with varying hues, or saturated in intense colour such that, we are engaged, comforted, confronted and/or simply supported in what we are doing as the environment falls into the role of the *unconscious backdrop*.

The architect, Galen Minah (1996) in his discussion of high density cityscapes, notes diagramming techniques used in a formal analysis can reveal the ordering of buildings in terms of figure-ground relationships. These can be amplified by colour as demonstrated by investigations into the perception of spatial phenomena which is due (in part) to colour contrast, juxtaposition of colour surfaces, and to the effects of atmospheric conditions upon the colour palette and the level of contrast. Certain colour phenomenon fall into categories which are recognisable and generalisable. These categories, Minah states, are understood as 'the familiar' and 'general' world of colour interactions, and can also be represented through diagrammatic analysis of the environment. As with formal analysis of buildings, a colour field can be named using the same terminology as architectural forms: centre, perimeter, figure and ground. As an example of a colour field, an abstract painting 'can be analysed, diagrammed, and interpreted in much the same way as a work of architecture, although colour juxtapositions become only formal elements' (Minah, 1996, p. 13).

In association, what we perceive is affected by the inherent colour of the materials used and/or the colours applied to the surface. The outcome of the combination of the material and the colour is a spatial composition. As the educationalist Freisner (2000) points out, the building surface affects how the building is perceived. In addition she notes that contrast affects our perception of architecture. For example, the light and dark contrasts can create three dimensional effects on flat planes, with broken surface appearing smaller, and the smoother, flat surfaces appearing larger. Colour use can reverse these effects. For example, 'a building containing many (dark) windows embedded in white grid or surface will appear smaller than the same sized building with blue-tinted windows set in a steel wall' (Freisner, 2000, p. 143).

There are multiple factors such as illumination, distance from the object, and the influence of surrounding colours, which affect the colour appearance of a material. Billger (1999) makes the important point in her doctoral research that the spatial effects of colour have been reported, however, these are only through discussions concerning figure-ground features in pictures or the like. In contrast, situations where we are surrounded by colours had not

been investigated to any great extent prior to her research (Billger, 1999). She observed some aspects which contradicted previously held beliefs. For example, the colour appearance due to simultaneous contrast 'was not discernable when surfaces were separated in space or met each other at an angle. On the contrary, the effects of reflections or overspreading were most striking during these observations. In other words, the colours became more alike instead of contrasting with each other' (Billger 1999, p. 23). Others' observations, such as the effect of distance, were also used to provide insights into spatial context and colour appearance.

### **COLOUR in 2D and/or 3D**

By using the ordering principles that the Gestalt psychologists identified, we are able to explain the apparent existence of three dimensional spaces in two dimensional representations such as paintings or photographs. Principles such as figure-ground propose that we perceive some aspects of our visual world, which are located on the same plane, as being dominant objects or surfaces (the figure), and therefore, to be 'in front' of other components (the ground). As a consequence spatial order is transformed and/or challenged by the context and the way that a person perceives the relative relationships between the elements.

Colour can influence the ordering of such elements. For example, certain elements can be unified or differentiated by the selection of a particular hue, the amount of hue, the variety of hues, tints or shades, and/or the degree of contrast. The integration of colour can cluster elements together or divide the grouping, unify a composition or cause it to fracture. Depending on the level of contrast the ability of aspects of the visual field to appear to move forward, to recede, to expand or to contract is affected.

It is also appropriate to note that certain colours have spatial qualities that differ from others. The tendency for some to advance and for others to recede is readily observed. This can be linked to various properties such as value, hue, temperature, and/or contrast.

The seminal work of the psychologist Katz (1935) included a list of the characteristics of the filmic appearance of colours which included colour's indefinite location. For example, the colour 'extended into space...; it appeared to have a spongy texture; one perceived one could reach into it; it was localised in a bi-dimensional...plane; it maintained a frontal position to the viewer; it was relatively smooth... and positioned its definition opposite to that of a definition of colour as a property of a surface (Willard, 1995, p.157). Willard proposes two elements associated with colour juxtaposition to be involved. These are 'high contrast of hue or near assimilation of hue and repeating element of design' (p.161). 'Although we perceive

the surface design of the painting, duration in viewing and optical mixing of the colours quickly generates an illusion of non-surface localized colour...'. It is important to also note that he claims that photographs cannot duplicate the filmic effects evident when looking at a painting. Viewing distance, size of receptive field, and luminance all play a role in the perception of the 'filmic mode of appearance' (p.162).

### **Colour and design education**

These observations are all important in the design of the built environment where the form, space and experience are interrelated. Colour as an active player influences how people interpret and experience space or place. Therefore, colour effects need to be understood in relation to space. As we are largely unable to test our schemes in-situ, it is important to endeavour to capture the proposed spatial and colour effects in the studio.

The psychologist, J.J. Gibson 'criticised studies of spatial perception that were two dimensional and focused on one point of the visual field', and more recently Dahlin, in Scandinavian Colour Institute Report, states that because colour education often concerns two-dimensional studies there is a deficiency in applying such knowledge in space (Bilinger, 1999). As Billger goes on to say, there are major differences between looking into a room or site and when we are located in a room.

Educators world wide have strived to address this issue. For example, Thomson (1995) states that experimentation with the contrast of temperature results in an illusionistic progression of space. Meanwhile the design educator, Linton (1995) outlines how research into an artist's composition can reveal the influence of cultural background and aesthetic beliefs on three dimensional interpretation. This is the basis of his studio projects titled 'A spatial interpretation of a 2-D composition'.

In regard to the work discussed in this paper, the studio project (as part of an undergraduate course in Interior Design) has evolved over a number of years in an attempt to deal with these and other concepts. It was recognised through the evolution of the project work that the integration of two dimensional artists' work is highly appropriate for design education for those students who need to think and engage with design spatially. It will now be described.

### **Three dimensionality in artwork**

By referring to paintings (or more specifically a body of work by an artist) we are able to see how particular patterns or practices of colour use can potentiate the way that we experience three-dimensionality in the two dimensions. For example, the works of artists such as Rothko,

Kandinsky, Bridget Riley, Matisse, Monet, or Mondrian represent different ways that colour can be integrated into works to create differing spatial characteristics. Feisner (2000), in her book *Colour. How to use colour in art and design*, states that Paul Cezanne 'demonstrated that subtle changes in the surface of a form and its spatial relationship to others could be expressed primarily in facets of color, modulated by varying degrees of tone, intensity, and temperature and the by the introduction of complementary color accents.' (p.139). Each artist's work involves a number of principles that can give us insights into colour juxtaposition and interpretation within a situation. The contextualisation of colour usage – as opposed to isolated colour chips or mixing exercises – is important for those people interested in the design of three dimensional spaces.

In order to help students to visualise the outcome of proposals for colour application and integration with the built environment, the project has been incorporated into a first year unit in the Interior Design degree course at the Queensland University of Technology, Australia. For interior and architectural design students a process that included the study of a two dimensional artist's work provided a stimulating and interesting reference source to assist them negotiate the application of colour to a context which is already three dimensional. The process and its outcomes will be described below.

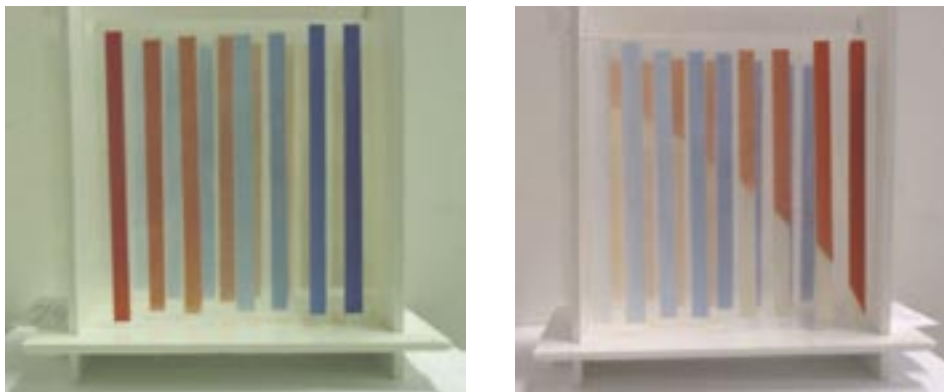
### **The activity**

The activity titled *Colour Application 1: 2D and 3D Relationships* involves three discrete yet interwoven stages. These are (a) a research component carried out in small groups, (b) the design of a three dimensional spatial 'installation' completed with a buddy, and finally (c) each student designed a colour design for an enclosed three dimensional space – a cube. The objective is for the student to apply in an informed manner their research (including observation and analysis), and for the students to develop their communication skills, knowledge of colour relationships and the associated theories, an ability to adapt and apply 2D principles to three dimensional forms and spaces, and an ability to successfully work in teams toward resolving a design task.

The research task is to investigate the light and colour theories of one artist or designer selected from a list provided. The group is required to identify who the artist/designer is, the period during which he/she worked, any group to which he/she belonged, typical examples of his/her body of work, and the principles of light and colour that are being applied.

Having completed the research and presented a seminar, each student creates a suspended 'installation'. This requires the student to identify the key principle/s of the artist's work that

they wish to explore and demonstrate. They may extend this principle beyond the artist's interpretation by considering the principle in conjunction with their knowledge of colour juxtaposition and the perception of spatial relationships. As previously highlighted, the installation design is based on the work of Lois Swirnof and is demonstrated in Figure 1. The students are asked to propose what may happen visually, to experiment, and to test their ideas. They are also asked to reflect upon what they have learnt and to explain their observations and analysis in terms of the theory in a work book or journal. The installation assists the student in visualising the two dimensional principles in three dimensions without having to apply them to a built form in the traditional sense.



*Figure 1: Spatial Installation (Student work: Krissy Collum, 2002).*

The third step expands on the above principles through the application of colour to an enclosed space. The student is asked to consider the concepts of containment, expansion, and emotion as part of their design in association with the colour theory which had been discussed to date. The enclosed space (or cube) represents the three dimensionality of the built environment. Squares or rectangles may be cut from any of the sides to allow light into 'the interior' which is to be divided into two equal spaces as depicted in Figure 2. One of the sides is to be fully openable. On the right hand side an appropriate spatial quality and atmosphere is nominated to be created, while on the left hand side, a scheme that portrays the opposite spatial effect and atmosphere is to be designed. Vertical and horizontal planes may be inserted into the cube on either side. Every plane is to be a solid block of colour (not a pattern) and the colours are mixed by the student so the exact colour is obtained. Students are also asked to experiment, explore and test ideas and to record their hypotheses and the results in practice in their workbooks or journals as in the previous steps.

There are a number of artists which collectively demonstrate a cross section of principles that are relevant to designers of the built environment such as interior designers and architects. By

extracting these principles students are able to clearly identify the relationship between form, space, colour and perception.

A key role of the educative process is to inform students that colour application is more than decoration applied as a response to personal taste or style. Instead colour design addresses and extends the design concept and as a result is an active element in the design's development and resolution.

### **Student work: a case study**

The example chosen is the work of Carolyne Jackson (and her research group). Carolyne was selected as she demonstrated a willingness to engage in the process and to readily explore the artists' work, to reflect on the principles revealed in association with her existing knowledge, and to apply the principles to the finished project through experimentation and self-evaluation. The research group selected Mark Rothko as their artist. The work of Rothko was broken down into periods by the group and the main points in relation to colour space and form identified. As Rothko is said not to like to be called a colourist, it is interesting how the students extracted information from other sources and then attempted to make linkages between their knowledge, interior design, and the 'new information' that they are acquiring. To demonstrate this point, quotes from their presentation are listed as follows.

*Colour is no longer a secondary element that supports shape, it is now form & the vessel for transcendental meaning; [The work] was an art of spatial illusion; [It] creates figure-ground relationships; The colour floats in shallow depth over the colour field; and, He achieves this through adjusting colour values and its extent (Powerpoint presentation, 2002).*



Figure 2: Reflective journal (Carolyne Jackson).



Figure 2 shows Carlyne's process journal. The journal is a document in which the student records his or her observations as they are developing their strategy and schemes. Unfortunately, not all students are as methodical or open to experimentation. The following comments (with her permission) are taken from Carlyne's journal. They demonstrate her ability to extrapolate information and to hypothesise what may happen when the principles are adapted to her work.

REFLECTIONS: *Hypothesis*

*My original layout proved most successful. Based on the theories lectured to date it was based on the premise that colours of lighter value are most potent in their illusionary quality to advance. This may be manipulated by adopting contrast of extension evidenced in Rothko's work, although not the premise of this section of experiments. So too, the one dimensionality being explored may be represented by adopting Goethe's mathematical approach. Time permitting I would love to explore both these theories and many others further From the observation made side I. I would hypothesise that ordering of side B will be as follows ... the interplay of light may be responsible for illusory quality. The RED on side 1 appears to be more intense—red (orange) yet when viewed without O/H the colour is less defined (Carolyne Jackson, 2002).*



Figure 3: *The reflective journal and The BOX: Three dimensional enclosed space (Carolyne Jackson).*

While constructing the box or cube, Carlyne's journal entries again reflect the development of her understanding of colour and space through her observations of the work in progress. An example is included below to demonstrate.

OBSERVATIONS:

*By limiting the amount of natural light permitted, the colour loses the intensity relative to distance from natural light. Therefore, colour is dependent on light. This could be altered by inserting penetrations into the box.*

*SIDE A appears to recede further than side B*

*Therefore, by providing an insertion into the ceiling plane this could be minimised and the chroma therefore intensified. Grey appears more static in side B than A...this is attributed to the presence of the complementary colour Insertion.*

*Side B appears similar in hue to that in Side A although different.*

*This too I believe may be attributed to the absence of light, and the juxtaposition and therefore, interplay of colour where two colours of different hues adjoin, lighter colour appears intensified this contrasts with the interplay of the junction of an achromatic and chromatic colour, where the visual mixing results in a shaded version of the chromatic colour (Carolyne Jackson, 2002).*

### **Student learning**

A selection of students who were still enrolled in the program the following semester were asked to provide feedback on the unit. This was sourced to gain insights into the benefit of the exercise relative to the objectives of the project. Carolyne's feedback was as follows.

COMMENTS:

*Rothko successfully reduced his work as an abstract impressionist to simple blocks of colour, yet despite this minimalist approach his works are dynamic & evoke an emotive response. The way in which he layered his colour, the context & proportion greatly informed by own investigations. The illusions of colour which he explored informed my approach in blurring the three dimensional field and giving the illusion that planes transcend their actual location. I found the activities...interesting, stimulating, useful and the theories both complex and simplistic (C.J., 2003).*

*'I have always been interested in the illusionary properties of colour and had witness the dynamism of colour although did not necessarily understand all the underlying theories...the theories are not in themselves difficult to comprehend but governing factors influencing colour make the theories themselves dynamic and fluid...colour cannot be viewed in isolation of its context and it is often the context that is complex. Such*

*knowledge has certainly been useful, colour (or the absence of) is a great tool to evoke a more emotive/spiritual response in design projects (C. J., 2003).*

Feedback from other students who studied alternative artists or photographs of designers' work also supports the value of this project's approach. For example, the following comments were recorded.

*I learnt about the subtle effects light has on white surfaces... and how different times of the day, eg. dawn and dusk, influence the perception of whiteness. The presence of light therefore added a temporal quality to the overall experience of an otherwise simplistic, white building (K. C., 2003).*

*...interesting, stimulating, useful, complex ... project (K. C., 2003).*

*I found the final box installation to be a simple way on envisaging how colour would affect different surfaces of a building according to proximity and space. The ability to easily change the relationships of colour around and play with the shifting results was helpful in understanding the way colour, light and space work in 3D (K. C., 2003).*

*Studying Barragan's use of colour in the built environment highlighted the importance of the natural environment in the application and selection of colour. His emphasis on light quality and the contribution it makes to our perception of colour was of great interest to me. Whilst Barragan was primarily known for his use of vibrant colours I took great pleasure in studying his more subtle interior colour schemes whose complexity often lies in [the] interplay with natural lighting and earthy textures (C. P., 2003).*

*...interesting and useful ...I found parts of the subject (such as studying Barragan) very interesting and rewarding...I feel the most important thing I learnt from light and colour was how light, shade and texture influence our experience of colour, what's more I think that these are qualities that you can only truly appreciate by physically experiencing the space. Studying Barragan made me aware of these characteristics but I only truly appreciated them by going out and finding examples in the built environment (C. P., 2003).*

## **Summary**

The two major components which are the basis of this project are space and colour. I commenced this discussion by looking at space, describing the shift from Cartesian or defined and measurable space to understandings of relativity; space which is dynamic and experiential in nature. Berleant (1991) raises our awareness of how these concepts may be applied when looking at paintings (or photographs) of landscapes and drew our attention

to how understandings of space are embedded in these works. Our understanding of the resultant spatial phenomena is also due to colour – colour in context.

These effects and/or relationships can be analysed whether the subject of our analysis is an abstract painting or a building as the architect Minah suggests. There is a risk in schools of design to concentrate on the two dimensional aspects of colour because of the tradition of the exercises or practices that inform colour education. As a consequence, some interior design or architecture courses have sought projects which develop exploration and/or conceptualisation of colour relationships in the third dimension. In association, an investigation of interpretation and experience may also be incorporated into the project work.

In the current project through the use of well known artists, the students have a structure and/or strong basis to use as a launch pad to further experiments. Collectively, these aspects are the basis of the project introduced and described in this paper. Through the example given, the potential of the activities to foster positive attitudes toward observation, analysis, experimentation, discovery, as well the development of an understanding of colour theory and confidence in its application is also evident.

The need to examine the work from multiple viewpoints is important. Billger's warning that to look at a space is not the same as being surrounded by it should be noted. In this paper, three-dimensionality is identified as incorporating (a) inherent colour characteristics, (b) relationships, and (c) the particular context. Evidence of how these aspects are 'played out' can be understood by interrogating the work of artists and by exploring the effects in three dimensional sculptures or environments. This also serves to link colour effects with meaning and emotions, thereby, challenging us to move into the work, as well as, to analysis it from the outside in the viewer-state.

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